FINAL Data Summary Report
Q2 2020 Groundwater Sampling Event

CONTRACT NO.: W912DQ-18-D-3008
DELIVERY ORDER NO.: W912DQ19F3048

700 South 1600 East PCE Plume Site
Salt Lake City, Utah

U.S. Army Corps of Engineers
Kansas City District

Department of Veterans Affairs
Veterans Health Administration Salt Lake City
Health Care System

March 12, 2021

CDM Smith

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Acronyms and Abbreviations

bgs	below ground surface
CDM Smith	CDM Federal Programs Corporation
DO	dissolved oxygen
DSR	data summary report
EPA	U.S. Environmental Protection Agency
ESS	East Side Springs
IDW	investigation-derived waste
MCL	maximum contaminant level
mg/L	milligrams per liter
mL/min	milliliters per minute
ORP	oxidation-reduction potential
OU	operable unit
PCE	tetrachloroethene
Q2-2020	second quarter 2020
Q4-2019	fourth quarter 2019
QAPP	quality assurance project plan
RI	remedial investigation
RSL	regional screening level
SOP	standard operating procedure
TCE	trichloroethene
TDS	total dissolved solids
TOC	total organic carbon
UDEQ	Utah Department of Environmental Quality
VAMC	Veterans Affairs Medical Center
VHA	Veterans Health Administration
VOC	volatile organic compound
ZIST	zone isolation sampling technology
µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter

Section 1
Introduction

Under the U.S. Army Corps of Engineers, Kansas City District Contract No. W912DQ-18-D-3008, Task Order No. W912DQ19F3048, CDM Federal Programs Corporation (CDM Smith) was directed to perform a remedial investigation (RI) for Operable Unit (OU) 1 of the 700 South 1600 East Tetrachloroethene (PCE) Plume Superfund Site in Salt Lake City, Utah. This data summary report (DSR) was prepared by CDM Smith to present the results of the second quarter 2020 (Q2-2020) groundwater monitoring event as part of the RI field characterization activities.

1.1 Background

The Salt Lake City Healthcare System George E. Wahlen Veterans Affairs Medical Center (VAMC) is in Salt Lake City, Utah (**Figure 1**). PCE contamination was first identified in groundwater in 1990 at the nearby Mt. Olivet Cemetery irrigation well during routine monitoring by the Salt Lake City Department of Public Utilities. This led to U.S. Environmental Protection Agency (EPA) and Utah Department of Environmental Quality (UDEQ) involvement at the Site and the preliminary determination that the source of PCE in groundwater was the historic dry-cleaning facility located at the VAMC. The Veterans Health Administration (VHA) operated a part-time dry-cleaning operation that used PCE over a 6-year period in the late 1970s and early 1980s. During this period, dry cleaning residuals were disposed of in the sanitary sewer. The PCE groundwater plume is present beneath the VAMC property and in areas hydraulically downgradient, extending to the East Side Springs (ESS) neighborhood. In addition, elevated concentrations of PCE in soil gas and subslab vapor (up to 46,101 micrograms per cubic meter [µg/m^3]) have been observed adjacent to VAMC Buildings 6 and 7 (location of the VAMC dry-cleaning facility).

1.2 Purpose and Scope

The purpose and scope of this DSR is to describe the work conducted and present the analytical and field data collected during the Q2-2020 groundwater monitoring event. Recommendations for improvements for future sampling events are also included.

Section 2
Field Sampling Activities

The following sections outline the field sampling activities that were completed during the Q2-2020 sampling event.

2.1 Groundwater Sampling

The Q2-2020 groundwater monitoring event included collecting samples at 26 existing wells and 5 newly installed wells (MW-23A/B/C, MW-25A/B/C, MW-26A/B/C/D, MW-27 and MW-28). Because of multiple screened intervals at several wells, an anticipated 43 samples were to be collected. All monitoring wells (including previously abandoned wells and wells installed after Q2-2020) are shown on **Figure 1,** and location data and well construction details are presented in **Table 1**. The sampling activities were conducted per the OU2 RI Work Plan (CH2M 2018), OU2 RI Quality Assurance Project Plan (QAPP) (CDM Smith 2019a), Modification #2 to the OU2 RI Work Plan and Sampling and Analysis Plan (CDM Smith 2019b), and Modification #4 to the OU2 RI Work Plan and Sampling and Analysis Plan (CDM Smith 2020).

Several groundwater wells are in the public right-of-way, requiring traffic control and special work requirements to be implemented when those wells are accessed. The associated traffic control permit and location-specific plans acquired from Salt Lake City Division of Transportation are attached (**Appendix A**). Field forms associated with this event, including the field logbook pages, water level measurement recordings, and sample purge forms, are included in **Appendix B**.

2.1.1 Synoptic Water Level Measurement

Prior to beginning sampling activities, synoptic water levels were collected on June 16, 2020 (with the exception of MW-26, which was measured on June 9, 2020), from 44 wells following procedures outlined in Standard Operating Procedure (SOP) 1-6, *Groundwater Level Measurement* (CDM Smith 2019a). Manual water level measurements were recorded from the northern edge of the casing using electronic water level meters. At artesian well MW-14D, the pressure reading on the gauge was recorded and converted to feet above the top of casing. At artesian well MW-17D, a standpipe was installed and the water level above the top of casing was recorded. Water levels are presented in **Table 2**.

Water levels at newly installed wells MW-29, MW-30, MW-31, and MW-34 were measured on July 20, 2020. These measurements were not part of the June 16, 2020 synoptic round; however, a comparison of the transducer measurements in a subset of wells showed negligible changes in water levels over the previous 2 months, therefore, the July measurements can be included with the June synoptic data for contouring and analyses purposes. The July water levels are also included in **Table 2**.

The collection of water level measurements in monitoring wells with dedicated Zone Isolation Sampling Technology (ZIST) pumps requires pulling the pump and allowing the water to

equilibrate in the well casing. ZIST pumps provide isolation of the screen by creating a seal in the well casing when the pump is properly seated in the well screen dock. To collect water level measurements, the pumps were pulled about 1 foot out of the seating in the well casing for approximately 3 hours to allow for the water level to equilibrate following pump removal. After verifying that water levels had stabilized, the manual water level measurement was recorded, and the pump was properly reseated.

The following wells have dedicated ZIST pumps:

- MW-03RA/B/C/D
- MW-08C
- MW-23A/B/C
- MW-25A/B/C
- MW-26A/B/C/D
- MW-29A/B/C
- MW-30A/B/C
- MW-31A/B/C
- MW-32A/B/C
- MW-34A/B/C/D

2.1.2 Groundwater Sampling Procedures

All wells were sampled per project-specific SOP 6-2, *Low-Stress (Low-Flow) Groundwater Sampling* (CDM Smith 2020). All wells, except for MW-14D and MW-17D, were sampled using dedicated pumps.

Prior to collecting groundwater samples with low-flow sampling techniques, each well was purged to remove a minimum volume, which was calculated prior to the event. The minimum purge volume is three times the total amount of stagnant water in the pump and tubing. Low-flow groundwater sampling includes purging the well at a rate typically less than 500 milliliters per minute (mL/min) and with minimal drawdown (less than 0.3 feet) to ensure that the water sampled is representative of the formation surrounding the screened interval and not of the stagnant water column. If the drawdown exceeds 0.3 feet, the stagnant water column is contributing to the purge water and the minimum purge volume must be recalculated. Once the minimum purge volume has been removed and water quality parameters stabilized as described in SOP 6-2, samples were collected.

At MW-14D a permanent valve and gauge were previously installed to assist in controlling the artesian flow at the well. During sampling, the team opened the valve to maximum capacity and noted the flow rate as grab samples were collected for field parameter analysis. The flow rate decreased considerably over the purging period, from an initial flow of approximately 780 mL/min to 300 mL/min.

MW-17D was sampled using a portable bladder pump, set at the midpoint of the screen. MW-17D has been observed to be seasonally artesian and a permanent threaded connection was previously attached to the well head to plug the well. As a result, a dedicated bladder pump can no longer be used to sample the well. During the sampling event, water was not free flowing from MW-17D; therefore, the team installed a standpipe above the height of water elevation to sample the well. The well was purged until parameters were stabilized and samples were collected.

All groundwater sampling was completed according to the project-specific SOP 6-2, *Low-Stress (Low-Flow) Groundwater Sampling* (CDM Smith 2020), with the exception of deviations outlined in Section 2.5. Field documentation of sampling procedures are provided in **Appendix C**.

2.1.3 Sample Analysis

The water quality parameters were analyzed continuously while purging with the use of a flow-through cell. The following parameters were noted and are detailed for each well:

- Dissolved oxygen (DO)
- Oxidation-reduction potential (ORP)
- pH
- Temperature
- Conductivity
- Turbidity

In addition to the field parameters, samples were collected from each well for the following analyses (**Table 3**):

- Volatile organic compounds (VOCs) by EPA Method SW8260C
- Total metals (unfiltered) by EPA Method SW6020A/SW7470A
- Total dissolved solids (TDS) by EPA Method SM2540C
- Alkalinity by EPA Method SM2320B
- Anions (sulfate, chloride) by EPA Method E300.0
- Dissolved gases (methane, ethane, ethene) by RSK-175
- Total organic carbon (TOC) by EPA Method SW9060A
- Nitrate and nitrite by EPA Method SM4500-NO3E
- 1,4-dioxane by EPA Method 8270D
- Ferrous iron (measured in the field using a HACH 8146)

All samples were submitted to EMAX Laboratories in Torrance, California. The analytical results are discussed in Section 3. Laboratory data are included in **Appendix C**. Field quality control samples were collected, including field duplicates, matrix spike/matrix duplicates, and trip blanks (for VOCs only), and are discussed in the Quality Control Summary Report in **Appendix C**. Sample results meet the data quality objectives presented in the QAPP (CDM Smith 2019a) and are useable for the intended purposes.

2.2 Transducer Data Collection

Transducer data were downloaded from 11 groundwater wells during the Q2-2020 groundwater monitoring event. The data from the June 2020 download date back to December 2019. **Table 2** presents the date, time, and location of transducer data downloads during Q2-2020. Hydrographs were prepared from the transducer downloads and are presented in **Appendix D**.

2.3 Groundwater Monitoring Well Repairs

Prior to, during, and following the Q2-2020 groundwater monitoring event, CDM Smith conducted well repairs and upgrades to the existing groundwater monitoring wells. The dates and details associated with the well repairs are outlined below:

- April 2020: Redeployed dedicated bladder pumps (and transducers when present) using stainless steel cables at the following wells: MW-02, MW-04, MW-05R, MW-06, MW-08A/B, MW-08B, MW-12S/D, MW-13S/D, MW-14S, MW-15S/D, MW-16S/D, MW-17S, MW-18, MW-19, MW-20S/D, MW-21, and MW-22. Additionally, new bladders were installed in the dedicated pumps at MW-21 and MW-22. The pump that was removed from MW-17D was decontaminated and redeployed for use with new tubing and cable into MW-01S. An equipment blank was collected from the pump following decontamination and prior to installation in MW-01S.
- June 2020: Push-to-connect fittings with plugs on the water lines and quick-connect fittings on the air lines were installed at the following wells: MW-23A, MW-23B, MW-23C, MW-25A, MW-25B, MW-25C, MW-26A, and MW-26D. Additionally, the quick-connect fittings on the air lines were replaced on the following wells because of corrosion of the existing fitting: MW-03RA, MW-03RB, MW-03RC, MW-03RD, and MW-08C.

Throughout each well repair event, well tags were added to all monitoring wells. Additional well repairs are expected to be conducted during the third quarter 2020 monitoring event, including securing all unlocked wells with tamper-resistant bolts, replacing the filter elements at all new ZIST wells, and installing volume boosters at the following ZIST wells: MW-23A, MW-25A, MW-26A, MW-29A, MW-31A, MW-32A, and MW-34A.

2.4 Decontamination and Investigation-Derived Waste

All nondedicated equipment used during the groundwater sampling event was decontaminated following the procedures outlined in SOP 4-5, *Field Equipment Decontamination at Nonradioactive Sites* (CDM Smith 2019a). Nondedicated equipment used during this event were electronic water level meters. Investigation-derived waste (IDW) was handled per SOP 2-2, *Guide to Handling Investigation-Derived Waste* (CDM Smith 2019a). All decontamination water and purge water

were containerized at their source and transferred to the holding tanks at the VAMC. These tanks will be emptied as needed by a certified IDW disposal company.

2.5 Deviations from the QAPP

Planned groundwater samples could not be collected from all identified wells. Specifically, samples were not collected from the following wells:

- MW-23A/B
- MW-25A/B
- MW-26A/B/C/D

At these locations, samples were not collected because water was not flowing to the surface during purging. These wells were constructed with ZIST sampling systems with stainless-steel filters on the pump intake. Following the Q2-2020 monitoring event, the team evaluated the new pumps at the surface, and it was determined that the stainless-steel filters were corroded and impeding water flow. **Appendix B** (daily quality control report dated June 25, 2020) presents the troubleshooting activities as well as photos comparing the stainless-steel (with obvious corrosion) and polyethylene filters. All stainless-steel filters will be replaced with polyethylene filters by the ZIST provider prior to the next sampling event. These wells will be sampled along with all other newly installed wells during the third quarter 2020 event. As not all newly installed wells were ready to be sampled during the Q2-2020 event, project data needs are not impacted by the lack of sampling at these locations.

Section 3
Groundwater Monitoring Results

Groundwater monitoring results, specifically groundwater elevations and analytical results, are presented below.

3.1 Groundwater Elevations

Measured groundwater elevations are presented in **Table 2** and on the potentiometric groundwater surface maps (**Figures 2** and **3**). The potentiometric groundwater contours were developed from manual groundwater elevation measurements collected during the synoptic event on June 16, 2020, and separate measurements at new wells collected on June 9, 2020 and July 20, 2020. Evaluation of the groundwater elevation data resulted in the following observations.

Based on the combined June and July dataset, the subsurface was divided into the following hydraulic zones:

- Perched Zone: This zone is situated above the water table, exhibiting significantly higher piezometric heads than what is observed at other wells. The only wells that exhibit this behavior are MW-06 (screened 100 to 130 feet below ground surface [bgs]) and MW-29A (screened 120 to 130 feet bgs). Perched zone piezometric head data were not contoured due to the limited occurrence of this zone.
- Shallow Aquifer Zone: This zone extends to approximately 220 feet bgs at VAMC Building 7 and gets shallower to the west as the ground surface dips. The Shallow Aquifer Zone is contoured (using a 10-foot-contour interval) in **Figure 2**.
    - Flow directions are generally east to west, with horizontal gradients approximately 0.014 feet/foot along the 2,500 feet between MW-24 and MW-34. Over the next 1,000 feet between MW-34 and MW-18, the horizontal gradients are approximately 0.012 feet/foot. Between MW-13S and MW-14S (approximately 500 feet), horizontal gradients are an order of magnitude higher, at approximately 0.12 feet/foot.
- Deep Aquifer Zone: This zone sits below approximately 260 feet bgs at VAMC Building 7 and gets shallower to the west as the ground surface dips. The Deep Aquifer Zone heads are contoured in **Figure 3**.
    - Flow directions are generally east to west, with horizontal gradients between MW-23C and MW-34C that are approximately 0.002 feet/foot and 0.024 feet/foot between MW-34C and MW-14D.
    - Piezometric heads at MW-03RB/C/D show that heads are approximately 20 feet lower than in the Shallow Aquifer Zone situated approximately 40 feet above. These steep vertical gradients are indicative of hydraulic separation between the Shallow and Deep

Aquifer zones; likely because of the presence of an aquitard between 220 and 260 feet bgs.

- Heads at MW-03RB/C/D are nearly identical despite spanning nearly 100 vertical feet of the aquifer. This likely indicates the lack of significant aquitard units within the Deep Aquifer Zone.

- Middle Zone: This zone sits between the Shallow and Deep Aquifer Zones (approximately 220 to 260 feet bgs) at wells near VAMC Building 7 including MW-23B, MW-25B, MW-26B, MW-29C, and MW-30A. The zone is characterized by heads that are slightly lower than those in the Shallow Aquifer Zone. It is unclear how laterally extensive this zone is and whether it is bounded by lower permeability units. Head data from this unit have not been contoured.

Vertical gradients, which are typically strongly downward on-site, dissipate along the east to west groundwater flow path. While MW-34C/D are estimated to be screened in the Deep Aquifer Zone, there is little distinction in heads between MW-34C/D and the Shallow Aquifer Zone at MW-34A/B. West of MW-34, vertical head gradients shift upwards, with artesian conditions present in the Deep Aquifer Zone at wells MW-17D and MW-14D, just east of the fault. West of the fault, both the vertical head differences and the distinction between the Shallow and Deep Aquifer zones are not present.

The significant amount of new piezometric head data collected has allowed for the more refined understanding of groundwater flow directions, gradients, and vertical head differences described above. This new hydraulic framework, notably the separation of the aquifer into two distinct hydraulic zones, will be incorporated into the conceptual site model and compared to the other datasets collected from the wells, including lithologic and water quality data. Further refinements to the zonation of the system may be necessary upon review of the conceptual site model and will be incorporated into future reports.

3.2 Groundwater Analytical Results

Analytical results from the Q2-2020 groundwater monitoring event are presented below.

3.2.1 Volatile Organic Compounds

Groundwater samples were collected and analyzed for VOCs (EPA method SW-8260). **Table 4** presents the concentrations of detected VOCs compared to the EPA maximum contaminant levels (MCLs) or regional screening levels (RSLs) for tap water (for compounds without an established MCL). Detections are presented as bolded values and exceedances of the MCL or RSL are presented as highlighted values. Additionally, the approximate extent of PCE in groundwater and results for PCE and trichloroethene (TCE) are shown in **Figure 4**.

PCE exceeded the MCL (5 µg/L) in 15 samples, with concentrations ranging from 6.4 to 210 µg/L. The highest concentrations of PCE were detected in MW-03RB (210 µg/L) and MW-02 (190 J µg/L). PCE was detected at concentrations less than 5 µg/L in 10 samples and was not detected (concentrations less than 1 µg/L) in 10 samples. PCE was nondetect or below the MCL in MW-05R, MW-06, MW-27, and MW-28, bounding the plume to the east. PCE was nondetect or below

the MCL in MW-01D, MW-03RD, MW-08C, MW-23C, and MW-25C, providing a possible vertical extent for the PCE plume in these locations. PCE was nondetect or below the MCL in MW-12S/D, MW-15S/D, and MW-17S/D, providing a southern plume boundary (**Figure 4**). Overall, PCE concentrations in groundwater remained relatively stable between Q4-2019 (CDM Smith 2020) and Q2-2020 (**Table 4**).

TCE was detected at concentrations below the MCL (5 µg/L) in 16 samples, with the highest detection at MW-14S (4.8 µg/L). Low-level (less than 2 µg/L) detections of cis-1,2-dichloroethene were observed in 12 samples, with the highest detection at MW-03RB (1.3 µg/L). There were no detections of vinyl chloride.

3.2.2 1,4-Dioxane

All analytical results for 1,4-dioxane are presented in **Table 4**. Because no MCL is established for 1,4-dioxane, results are screened against the RSL of 0.46 µg/L. No detections of 1,4-dioxane were observed in any sample.

3.2.3 Metals

All analytical results for total (unfiltered) metals are presented in **Table 5**. Overall, concentrations of metals in groundwater remained relatively stable between Q4-2019 and Q2-2020. The following compounds were detected at concentrations greater than the MCL or RSL:

- Cobalt exceeded the RSL (0.6 µg/L) at MW-03RD (0.629 J µg/L), MW-08C (0.844 µg/L), MW-12S (0.928 J µg/L), MW-13S/D (6.33 and 1.52 µg/L, respectively), MW-14S (2.51 µg/L), MW-17S (1.08 µg/L), MW-23C (0.862 µg/L), and MW-28 (0.718 µg/L).
- Manganese exceeded the RSL (43 µg/L) at MW-03RA/D (59.7 and 261 µg/L, respectively), MW-08C (511 µg/L), MW-13S (772 µg/L), MW-14S (201 µg/L), MW-23C (325 µg/L), MW-25C (110 µg/L), and MW-28 (162 µg/L).
- Nickel exceeded the RSL (39 µg/L) at MW-13S/D (239 and 50.8 µg/L, respectively).

3.2.4 General Chemistry

DO, ORP, sulfate, nitrate, ferrous iron, and methane are geochemical parameters that can be used to evaluate redox conditions. Reductive dechlorination of PCE to TCE and cis-1,2-dichloroethene generally occurs under iron-reducing to sulfate-reducing conditions. Complete dechlorination to ethene and ethane generally occurs under sulfate-reducing to methanogenic conditions. As presented in **Table 6**, positive ORP and high DO (greater than 2 milligrams per liter [mg/L]) suggest that groundwater conditions at the site are generally aerobic. Low ferrous iron (less than 0.6 mg/L), low methane (less than 2.5 µg/L), and high sulfate (49.3 to 232 mg/L) in all wells further support the observation that conditions are generally aerobic (**Table 6**).

Chloride concentrations ranged from 26 mg/L (MW-08C) to 415 mg/L (MW-13S). TDS ranged from approximately 599 mg/L (MW-20D) to 1,320 mg/L (MW-02). Alkalinity ranged from 227 mg/L (MW-03RC) to 368 mg/L (MW-15S). TOC was generally less than 2 mg/L except for MW-03RC (2.15 mg/L), MW-03RD (7.95 mg/L), MW-08C (6.64 mg/L), and MW-20S (2.11 mg/L).

The only notable difference in general chemistry between Q4-2019 and Q2-2020 is the lower concentrations of sodium, chloride, and TDS in MW-02. This is likely because of the removal of the salt pile that was close to this well during the Q2-2020 groundwater sampling event.

Section 4
Summary

This report presents the results from the Q2-2020 groundwater monitoring event. The Q2-2020 sampling approach will be repeated during subsequent sampling events in 2020. Further analysis and evaluation of these results will be presented in the RI report.

Groundwater flow directions are generally east to west. There are four distinct hydraulic zones in the subsurface: perched, Shallow Aquifer Zone, Deep Aquifer Zone, and Middle Zone. There is a hydraulic separation between the Shallow and Deep Aquifer zones, likely because of the presence of an aquitard. The lateral extent of the perched and middle zones are unclear. Vertical gradients, which are typically strongly downward on-site, dissipate along the east to west groundwater flow path. West of MW-34, vertical head gradients shift upwards, with artesian conditions present in the Deep Aquifer Zone at wells MW-17D and MW-14D, just east of the fault. West of the fault, both the vertical head differences and the distinction between the Shallow and Deep Aquifer zones are not present.

PCE and TCE concentrations were nondetect or below the MCL in MW-05R, MW-06, MW-27, and MW-28, bounding the plume to the east. PCE and TCE concentrations were nondetect or below the MCL in MW-01D, MW-03RD, MW-08C, MW-23C, and MW-25C, providing a possible vertical extent for the PCE plume in these locations. PCE and TCE concentrations were nondetect or below the MCL in MW-12S/D, MW-15S/D, and MW-17S/D, providing a southern plume boundary. The highest concentration of PCE was detected in wells MW-03RB (210 µg/L) and MW-02 (190 µg/L). The highest TCE concentration was observed in MW-14S (4.8 µg/L) (**Figure 4**). Data collected in newly installed or wells planned to be installed in 2020 (CDM Smith 2019c) will further improve the delineation of PCE in groundwater.

Along with VOCs, samples were collected for the determination of general chemistry: ORP, DO, metals, sulfate, nitrate/nitrite, chloride, alkalinity, TOC, ferrous iron, and dissolved gases. These data can be used to determine redox conditions and assess the presence of degradation daughter products to evaluate the potential for biotic and abiotic attenuation. Because of seasonal variations, the same parameters will be analyzed at all wells during sampling events in 2020. These events are anticipated to cover seasonal high and low groundwater elevations to allow for further analysis to be completed and presented in the RI report. Additional data will be collected in 2020, including magnetic susceptibility and ferrous iron minerals (CDM Smith 2019c), which will be used to further evaluate biotic and abiotic attenuation.

Section 5
References

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Legend

- Monitoring Well
- Abandoned Monitoring Well
- Drinking Water Supply Well
- Irrigation Well
- Landmark
- Red Butte Creek
- Fault Line

Notes:
(1) Location of University of Utah Well #1 is approximate; well is located less than 100 feet east of Fountain of Ute.

OU = operable unit
PCE = tetrachloroethene
VHA = Veterans Health Administration

[1] Davis, F.D. 1983. Geologic Map of the Central Wasatch Front, Utah. Utah Geological and Mineral Survey. Map 54-A – Wasatch Front Series. May.
[2] Personius, S.F. and Scott, W.E. 2009. Surficial Geologic Map of the Salt Lake City Segment and Parts of Adjacent Segments of the Wasatch Fault Zone, Davis, Salt Lake, and Utah Counties, Utah

N
W E
S

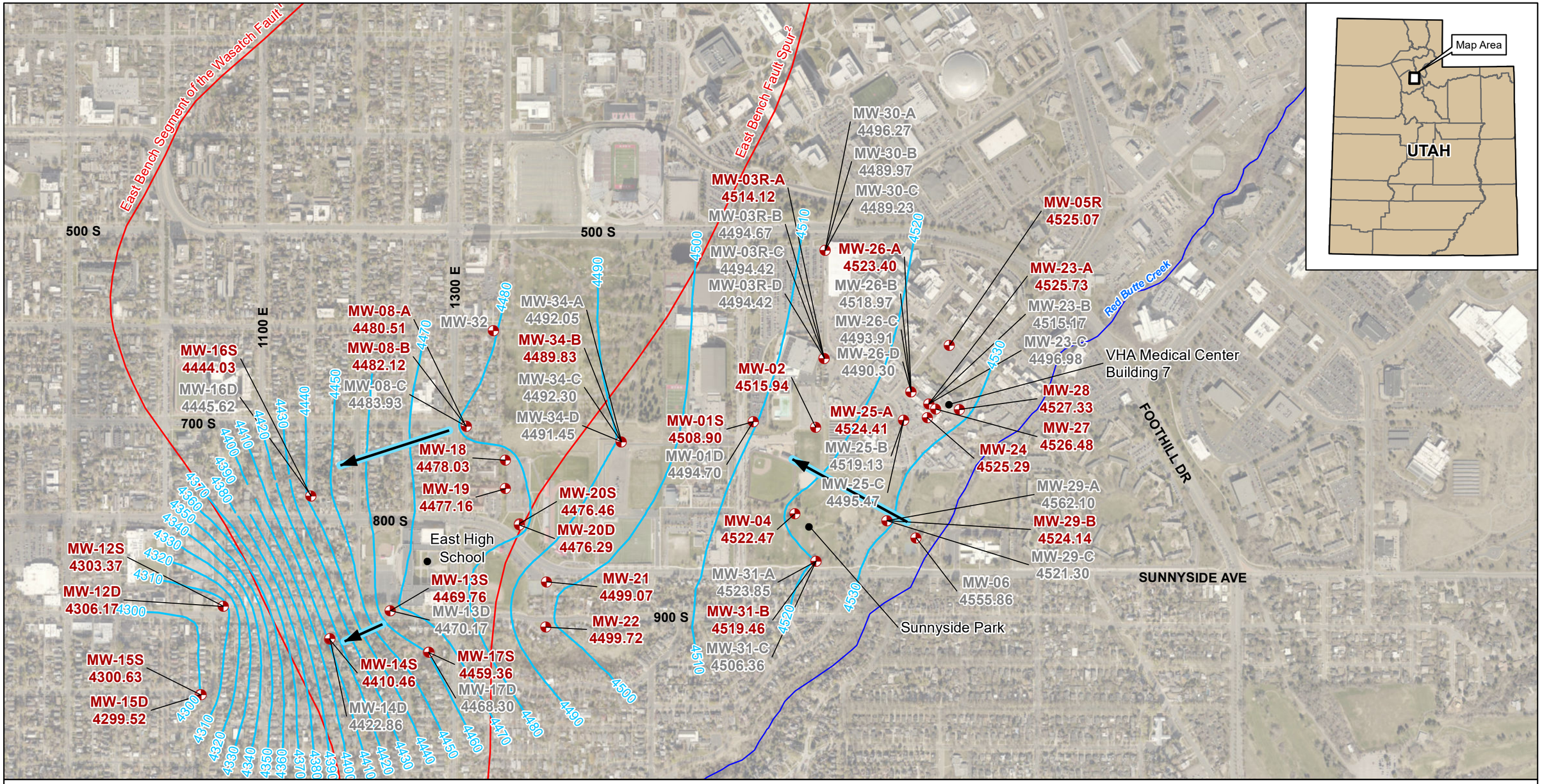
0 500 1,000 Feet

1 inch = 800 feet

Figure 1
Site Location Map

Q2 2020 Data Summary Report
OU1 700 South 1600 East PCE Plume
Salt Lake City, Utah

File Path: J:\238824_VA_Medical_Salt_Lake\MXD\Sampling_2020\DSR_2020Q2\Fig1_DSR_SiteMap.mxd WAGNERA 9/30/2020



Legend

- Monitoring Well
- Landmark
- Red Butte Creek
- Fault Line
- Groundwater Contour
- Groundwater Flow Direction

Notes:
- All ground surface elevations in feet amsl
- Water levels shown in grey were not used for the generation of the potentiometric contours and are shown for information only

amsl = above mean sea level
OU = operable unit
VHA = Veterans Health Administration

[1] Davis, F.D. 1983. Geologic Map of the Central Wasatch Front, Utah. Utah Geological and Mineral Survey. Map 54-A – Wasatch Front Series. May.
[2] Personius, S.F. and Scott, W.E. 2009. Surficial Geologic Map of the Salt Lake City Segment and Parts of Adjacent Segments of the Wasatch Fault Zone, Davis, Salt Lake, and Utah Counties, Utah

N W E S

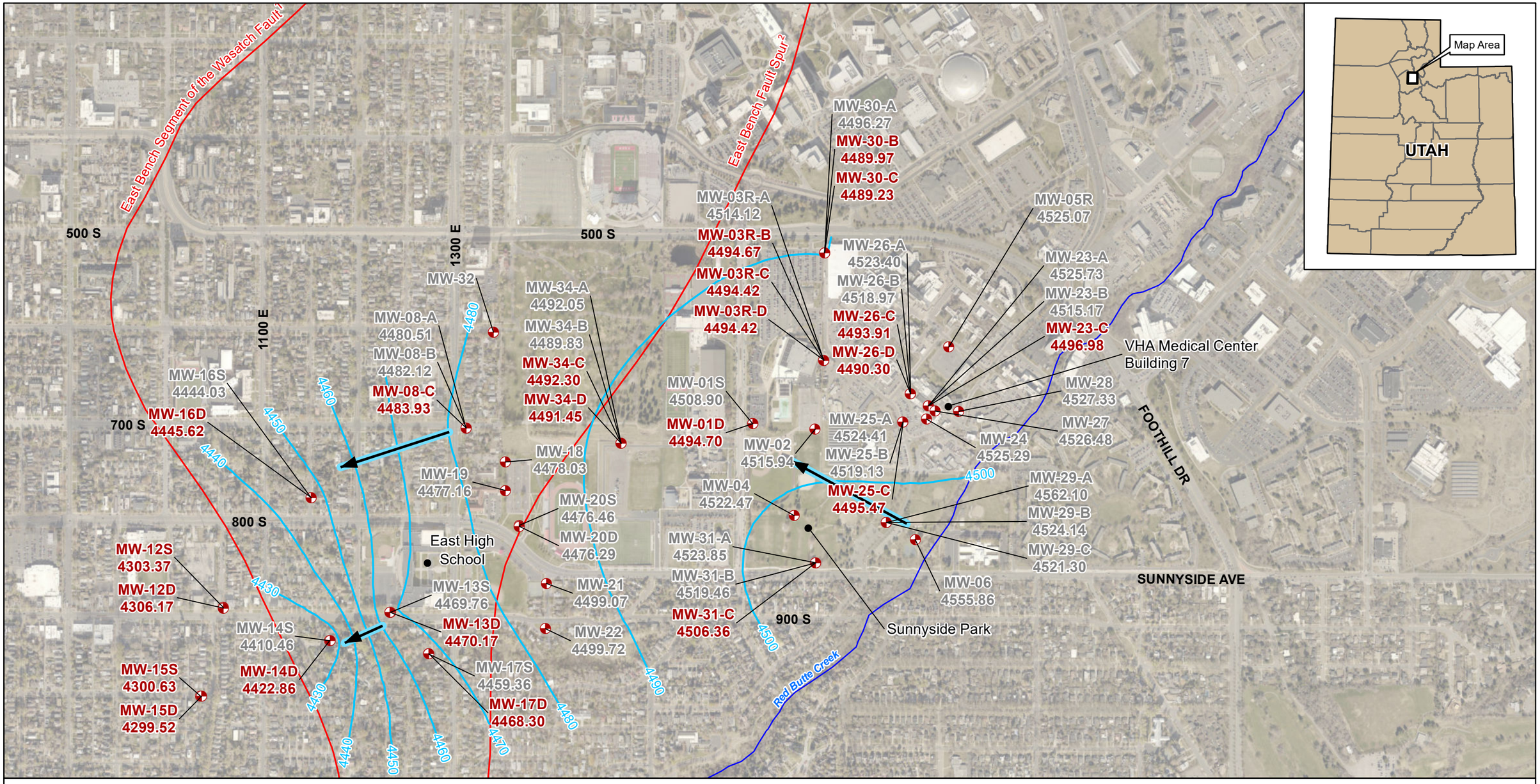
0 500 1,000 Feet

1 inch = 800 feet

Figure 2
Potentiometric Groundwater Surface Map - Shallow Aquifer

Q2 2020 Data Summary Report
OU1 700 South 1600 East PCE Plume
Salt Lake City, Utah

File Path: J:\238824_VA_Medical_Salt_Lake\MXD\Sampling_2020\DSR_2020Q2\Fig2_DSR_GW_A_Aquifer.mxd WAGNERA 11/5/2020 4:16:05 PM



Legend

- Monitoring Well
- Landmark
- Red Butte Creek
- Fault Line
- Groundwater Contour
- Groundwater Flow Direction

Notes:
- All ground surface elevations in feet amsl
- Water levels shown in grey were not used for the generation of the potentiometric contours and are shown for information only

amsl = above mean sea level
OU = operable unit
VHA = Veterans Health Administration

[1] Davis, F.D. 1983. Geologic Map of the Central Wasatch Front, Utah. Utah Geological and Mineral Survey. Map 54-A – Wasatch Front Series. May.
[2] Personius, S.F. and Scott, W.E. 2009. Surficial Geologic Map of the Salt Lake City Segment and Parts of Adjacent Segments of the Wasatch Fault Zone, Davis, Salt Lake, and Utah Counties, Utah

N W E S

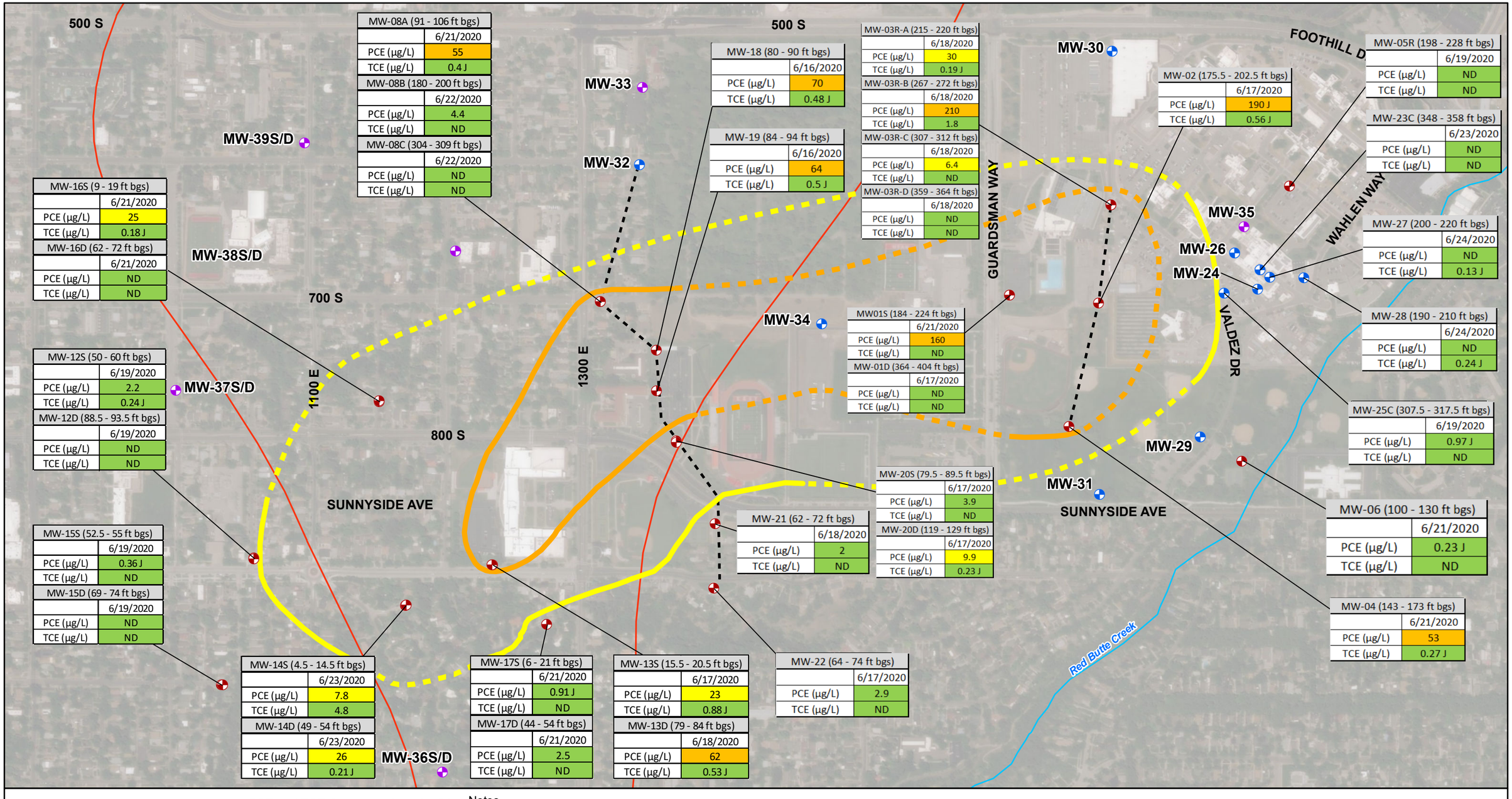
0 500 1,000 Feet

1 inch = 800 feet

Figure 3
Potentiometric Groundwater Surface Map - Deep Aquifer

Q2 2020 Data Summary Report
OU1 700 South 1600 East PCE Plume
Salt Lake City, Utah

File Path: J:\238824_VA_Medical_Salt_Lake\MXD\Sampling_2020\DSR_2020Q2\Fig3_DSR_GW_B_Aquifer.mxd WAGNERA 11/5/2020 4:18:21 PM



Legend

- Monitoring Well
- New Monitoring Well
- Proposed Monitoring Well
- Monitoring Well Transect Line
- Red Butte Creek
- Fault Line

PCE and TCE Concentrations (µg/L)

- = < 5 µg/L
- = 5 - 50 µg/L
- = > 50 µg/L

PCE Contours

- 5 µg/L
- 50 µg/L

Dashed Line - Inferred Extent
? - Extent not Defined

Notes
1. Plume contours were developed using Leapfrog 3-dimensional visualization software to interpolate data from the Q2 2020 groundwater sampling event. The contours represent a top-down view of the 3-dimensional extent of the plume as interpreted in the Leapfrog software.
2. Monitoring wells MW-23 through MW-32 and MW-34 were installed in Q2 2020, however, only MW-23 and MW-25 through MW-28 were ready to be sampled during the Q2 2020 groundwater sampling event.

OU = operable unit
PCE = tetrachloroethene
TCE = trichloroethene
µg/L = micrograms per liter
ft bgs = feet below ground surface
J = Result is estimated
ND = Analyte was not detected

N W E S

0 250 500 Feet

1 inch = 550 feet

Figure 4
Q2 2020 Groundwater PCE and TCE Results and Approximate Extent of PCE in Groundwater

CDM Smith

Q2 2020 Data Summary Report
OU1 700 South 1600 East PCE Plume
Salt Lake City, Utah

File Path: J:\238824_VA_Medical_Salt_Lake\MXD\Sampling_2020\DSR_2020Q2\Fig4_DSR_PCE_and_TCE_in_GW.mxd WAGNERA 3/2/2021

Table 1
Monitoring Well Survey Data and Construction Details

Location	Sample Interval	Y Coordinate (Utah State Plane, ft)[1]	X Coordinate (Utah State Plane, ft)[1]	Surface Elevation (ft amsl)[2]	Top of Casing Elevation (ft amsl)[2]	Total Well Depth (ft bgs)	Screen Start (ft bgs)	Screen End (ft bgs)	Pump Depth (ft bgs)	Pump Type
MW-01S	-	7443663.78	1544832.82	4665.50	4664.80	224	184	224	204	Solinst bladder pump
MW-01D	-				4664.80	404	364	404	384	Solinst bladder pump
MW-02	-	7443618.23	1545346.65	4685.76	4685.24	205.5	175.5	202.5	195	Solinst bladder pump
MW-03R	A	7444184.94	1545418.19	4698.74	4698.12	223	215	220	215	ZIST w/ reciever
	B				4697.90	275	267	272	267	ZIST w/ reciever
	C				4697.92	315	307	312	307	ZIST w/ reciever
	D				4697.93	367	359	364	359	ZIST w/ reciever
MW-04	-	7442902.88	1545176.20	4657.20	4656.85	173	143	173	160	Solinst bladder pump
MW-05R	-	7444293.27	1546450.38	4738.25	4737.99	230	198	228	222	Solinst bladder pump
MW-06	-	7442705.05	1546174.37	4679.13	4678.66	134	100	130	128	Solinst bladder pump
MW-08	A	7443625.54	1542467.21	4540.36	4539.81	106	91	106	99	Solinst bladder pump
	B				4539.77	200	180	200	190	Solinst bladder pump
	C				4539.68	312	304	309	304	ZIST w/ reciever
MW-12D	-	7442139.2	1540464.27	4360.40	4360.07	95	88.5	93.5	90	Solinst bladder pump
MW-12S	-	7442144.27	1540464.18	4360.35	4360.03	65	50	60	60	Solinst bladder pump
MW-13D	-	7442104.65	1541840.18	4482.93	4482.62	90	79	84	82	Solinst bladder pump
MW-13S	-	7442104.9	1541844.99	4483.26	4482.93	22	15.5	20.5	19	Solinst bladder pump
MW-14D	-	7441874.22	1541345.22	4416.45	4415.93	65	49	54	NA	Artesian
MW-14S	-	7441871.55	1541340.04	4415.96	4415.69	15	4.5	14.5	12	Solinst bladder pump
MW-15D	-	7441412.63	1540283.39	4347.99	4347.72	95	69	74	72	Solinst bladder pump
MW-15S	-	7441412.92	1540276.55	4347.65	4347.35	65	52.5	55	54	Solinst bladder pump
MW-16D	-	7443052.83	1541188.80	4455.32	4454.84	73	62	72	67	Solinst bladder pump
MW-16S	-	7443049.27	1541188.74	4455.19	4454.83	20	9	19	16.0	Solinst bladder pump
MW-17D	-	7441762.17	1542159.83	4465.86	4465.69	70	44	54	NA	Artesian
MW-17S	-	7441761.45	1542156.28	4465.51	4465.18	22	6	21	20	Solinst bladder pump
MW-18	-	7443344.52	1542789.74	4559.06	4558.76	110	80	90	88	Solinst bladder pump
MW-19	-	7443109.99	1542791.56	4557.51	4557.16	110	84	94	89	Solinst bladder pump
MW-20D	-	7442813.21	1542905.39	4558.46	4558.19	150	119	129	124	Solinst bladder pump
MW-20S	-	7442822.74	1542905.98	4558.92	4558.61	90.8	79.5	89.5	88	Solinst bladder pump
MW-21	-	7442343.24	1543130.25	4563.57	4563.32	80	62	72	70	Solinst bladder pump
MW-22	-	7441969.31	1543122.59	4563.06	4562.72	120	64	74	72	Solinst bladder pump
MW-23	A	7443809.38	1546280.59	4712.47	4711.80	222	210	220	210	ZIST w/ reciever
	B				4711.77	262	250	260	250	ZIST w/ reciever
	C				4711.69	360	348	358	348	ZIST w/ reciever
MW-24	-	7443698.74	1546266.48	4709.77	4709.19	250	209.5	239.5	211	Solinst bladder pump
MW-25	A	7443676.94	1546071.97	4703.04	4702.02	213	201	211	201	ZIST w/ reciever
	B				4702.09	243	231	241	231	ZIST w/ reciever
	C				4702.07	320	307.5	317.5	308	ZIST w/ reciever
MW-26	A	7443907.17	1546132.96	4713.25	4712.29	217	205	215	205	ZIST w/ reciever
	B				4712.55	247	235	245	235	ZIST w/ reciever
	C				4712.51	327	315	325	315	ZIST w/ reciever
	D				4712.50	360	347.75	357.75	348	ZIST w/ reciever
MW-27	-	7443766.76	1546337.14	4712.61	4712.34	220	200	220	210	Solinst bladder pump
MW-28	-	7443764.76	1546532.92	4712.80	4712.54	210	190	210	204	Solinst bladder pump
MW-29	A	7442845.95	1545935.59	4679.35	4678.46	132	120	130	128	ZIST w/o reciever
	B				4678.45	202	190	200	190	ZIST/Gas - w/ reciever
	C				4678.68	242	230	240	230	ZIST/Gas - w/ reciever
MW-30	A	7445073.45	1545424.98	4723.07	4722.00	252	240	250	NA*	NA*
	B				4721.79	294	282	292	NA*	NA*
	C				4721.92	329	317	327	317	ZIST w/ reciever
MW-31	A	7442512.47	1545351.52	4655.22	4654.27	150	138	148	138	ZIST w/o reciever
	B				4654.39	202	190	200	190	ZIST w/ reciever
	C				4654.35	230	228	238	228	ZIST w/ reciever
MW-32	A	7444416.40	1542692.62	4566.22	4565.67	126	114	124	119	Solinst bladder pump
	B				4565.63	182	170	180	170	ZIST w/o reciever
	C				4565.59	272	260	270	260	ZIST w/o reciever
MW-34	A	7443498.84	1543745.66	4623.61	4623.09	152	140	150	148	ZIST w/o reciever
	B				4622.71	187	175	185	175	ZIST w/o reciever
	C				4622.63	262	250	260	250	ZIST w/o reciever
	D				4622.58	327	315	325	315	ZIST w/o reciever

Notes:

[1] X/Y Coordinates measured using NAD 83 State Plane Coordinate System

[2] Elevations measured using NAVD 88 vertical datum

* Well intervals were damaged, wells will be abandoned and replaced

Acronyms:

amsl = above mean sea level

bgs = below ground surface

ft = feet

NA = not applicable

ZIST = Zone Isolation Sampling Technology

Table 2
Groundwater Elevations and Transducer Locations and Download Dates

Location	Sample Interval	Screen Start (ft bgs)	Screen End (ft bgs)	Top of Casing Elevation (ft amsl)[1]	Aquifer Zone	Water Level Measurement Date and Time	Water Level Depth (ft btoc)	Water Level Elevation (ft amsl)[1]	Direction of Vertical Gradient[2]	Vertical Gradient[2]	Transducer Download Date and Time
MW-01S	-	184	224	4664.80	Shallow	6/16/20 12:12	155.90	4508.90	down	0.08	-^
MW-01D	-	364	404	4664.80	Deep	6/16/20 12:19	170.10	4494.70			6/18/20 14:21
MW-02	-	175.5	202.5	4685.24	Shallow	6/16/20 12:28	169.30	4515.94	-	-	-^
MW-03R	A	215	220	4698.12	Shallow	6/16/20 12:32	184.00	4514.12	down	0.34	-
	B	267	272	4697.90	Deep	6/16/20 12:45	203.23	4494.67			-
	C	307	312	4697.92	Deep	6/16/20 12:37	203.50	4494.42			-
	D	359	364	4697.93	Deep	6/16/20 12:32	203.51	4494.42			-
MW-04	-	143	173	4656.85	Shallow	6/16/20 10:00	134.38	4522.47	-	-	6/18/20 10:13
MW-05R	-	198	228	4737.99	Shallow	6/16/20 10:48	212.92	4525.07	-	-	
MW-06	-	100	130	4678.66	Perched	6/16/20 10:20	122.80	4555.86	-	-	6/18/20 9:44
MW-08	A	91	106	4539.81	Shallow	6/16/20 13:18	59.30	4480.51	up	0.01	-
	B	180	200	4539.77	Shallow	6/16/20 13:17	57.65	4482.12			-
	C	304	309	4539.68	Deep	6/16/20 13:33	55.75	4483.93			-
MW-12S	-	50	60	4360.03	-	6/16/20 11:09	56.66	4303.37	up	0.08	-
MW-12D	-	88.5	93.5	4360.07	-	6/16/20 11:06	53.90	4306.17			-
MW-13S	-	15.5	20.5	4482.93	Shallow	6/16/20 10:52	13.17	4469.76	up	0.01	-
MW-13D	-	79	84	4482.62	Shallow	6/16/20 10:51	12.45	4470.17			6/18/20 12:08
MW-14S	-	4.5	14.5	4415.69	Shallow	6/16/20 10:39	5.23	4410.46	up	0.26	6/18/20 12:40
MW-14D*	-	49	54	4415.93	Deep	6/16/20 10:37	-6.93	4422.86			-
MW-15S	-	52.5	55	4347.35	-	6/16/20 11:21	46.72	4300.63	down	0.06	-
MW-15D	-	69	74	4347.72	-	6/16/20 11:19	48.20	4299.52			6/18/20 12:25
MW-16S	-	9	19	4454.83	Shallow	6/16/20 11:37	10.80	4444.03	up	0.03	-
MW-16D	-	62	72	4454.84	Shallow	6/16/20 11:41	9.22	4445.62			6/18/20 13:03
MW-17S	-	6	21	4465.18	Shallow	6/16/20 12:40	5.82	4459.36	up	0.23	-
MW-17D‡	-	44	54	4465.69	Deep	6/16/20 12:20	-2.61	4468.30			-
MW-18	-	80	90	4558.76	Shallow	6/16/20 9:10	80.73	4478.03	-	-	-
MW-19	-	84	94	4557.16	Shallow	6/16/20 9:29	80.00	4477.16	-	-	-
MW-20S	-	79.5	89.5	4558.61	Shallow	6/16/20 9:45	82.15	4476.46	down	0.00	6/18/20 10:45
MW-20D	-	119	129	4558.19	Shallow	6/16/20 9:43	81.90	4476.29			6/18/20 10:53
MW-21	-	62	72	4563.32	Shallow	6/16/20 10:00	64.25	4499.07	-	-	6/18/20 11:02
MW-22	-	64	74	4562.72	Shallow	6/16/20 10:18	63.00	4499.72	-	-	6/18/20 13:19
MW-23	A	210	220	4711.80	Shallow	6/16/20 15:00	186.07	4525.73	down	0.23	-
	B	250	260	4711.77	Intermediate	6/16/20 15:05	196.60	4515.17			-
	C	348	358	4711.69	Deep	6/16/20 15:10	214.71	4496.98			-
MW-24	-	209.5	239.5	4709.19	Shallow	6/16/20 11:40	183.90	4525.29	-	-	-
MW-25	A	201	211	4702.02	Shallow	6/16/20 13:45	177.61	4524.41	down	0.14	-
	B	231	241	4702.09	Intermediate	6/16/20 13:40	182.96	4519.13			-
	C	307.5	317.5	4702.07	Deep	6/16/20 13:35	206.60	4495.47			-
MW-26	A	205	215	4712.29	Shallow	6/9/2020	188.89	4523.40	down	0.13	-
	B	235	245	4712.55	Intermediate	6/9/2020	193.58	4518.97			-
	C	315	325	4712.51	Deep	6/9/2020	218.60	4493.91			-
	D	347.75	357.75	4712.50	Deep	6/9/2020	222.20	4490.30			-
MW-27	-	200	220	4712.34	Shallow	6/16/20 14:05	185.86	4526.48	-	-	-
MW-28	-	190	210	4712.54	Shallow	6/16/20 12:05	185.21	4527.33	-	-	-
MW-29	A	120	130	4678.46	Perched	7/20/2020	116.36	4562.10	down	0.72	-
	B	190	200	4678.45	Shallow	7/20/2020	154.31	4524.14			-
	C	230	240	4678.68	Intermediate	7/20/2020	157.38	4521.30			-
MW-30	A	240	250	4722.00	Intermediate	7/20/2020	225.73	4496.27	down	0.14	-
	B	282	292	4721.79	Deep	7/20/2020	231.82	4489.97			-
	C	317	327	4721.92	Deep	7/20/2020	232.69	4489.23			-
MW-31	A	138	148	4654.27	Shallow	7/20/2020	130.42	4523.85	down	0.08	-
	B	190	200	4654.39	Shallow	7/20/2020	134.93	4519.46			-
	C	228	238	4654.35	Deep	7/20/2020	147.99	4506.36			-
MW-32	A	114	124	4565.67	-	NM	NM		-	-	-
	B	170	180	4565.63	-	NM	NM				-
	C	260	270	4565.59	-	NM	NM				-
MW-34	A	140	150	4623.09	Shallow	7/20/2020	131.04	4492.05	down	0.06	-
	B	175	185	4622.71	Shallow	7/20/2020	132.88	4489.83			-
	C	250	260	4622.63	Deep	7/20/2020	130.33	4492.30			-
	D	315	325	4622.58	Deep	7/20/2020	131.13	4491.45			-

Notes:
[1] Elevations measured using NAVD 88 vertical datum
[2] Direction and magnitude of vertical gradient is calculated between shallow and deep paired wells
*Water level measured using pressure gauge, converted to height above top of casing (head [ft] = pressure [psi] x 2.31)
‡ Water level measured using stand pipe above top of casing
^ Transducer was redeployed at MW-01S (6/18/20 15:05), transducer was malfunctioning at MW-02
† Water level not used in potentiometric surface contours

Acronyms:
amsl = above mean sea level
bgs = below ground surface
btoc = below top of casing
ft = feet
NM = not measured
psi = pounds per square inch

Table 3
Groundwater Sampling Analytes

Analysis	Method	Sample Container	Number of Containers	Preservative
VOCs	EPA Method SW8260C	40 mL VOA	3	HCl to pH < 2, 4°C (±2°C)
1,4-Dioxane	EPA Method SW8270D	1 L amber glass	2	4°C (±2°C)
Dissolved Gasses	EPA Method RSK-175	40 mL VOA	3	HCl to pH < 2, 4°C (±2°C)
Total Metals (unfiltered)	EPA Method SW6020A/SW7470A	250 mL HDPE	1	HNO_3 to pH < 2, 4°C (±2°C)
TDS[1]	EPA Method SM2540C	1 L HDPE	1	4°C (±2°C)
Alkalinity[1]	EPA Method SM2320B	1 L HDPE	1	4°C (±2°C)
Anions (sulfate, chloride)	EPA Method E300.0	125 mL HDPE	1	4°C (±2°C)
TOC	EPA Method SW9060A	250 mL amber glass	1	H_2SO_4 to pH < 2, 4°C (±2°C)
Nitrate and Nitrite as Total Nitrogen	EPA Method SM4500-NO3E	125 mL HDPE	1	H_2SO_4 to pH < 2, 4°C (±2°C)

[1] TDS and Alkalinity are collected in the same container

Notes:
VOC = volatile organic compound
TOC = total organic carbon
TDS = total dissolved solids
Agency
VOA = volatile organic analysis
L = liters
mL = milliliters
HDPE = high density polyethylene
HCl = hydrochloric acid
HNO_3 = nitric acid
H_2SO_4 = sulfuric acid
°C = degrees Celcius

Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-01D		MW-01S				MW-02		MW-03RA		MW-03RB	
Sample Name			MW01D-GW061720		FD01-GW062120		MW01S-GW062120		MW02-GW061720		MW03RA-GW061820		MW03RB-GW061820	
Sample Date			6/17/2020		6/21/2020		6/21/2020		6/17/2020		6/18/2020		6/18/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.41*	*U*	*0.42*	*U*	*0.42*	*U*	*0.41*	*U*	*0.4*	*U*	*0.42*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.12**	**J**	**0.15**	**J**
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.14**	**J**
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	*1*	*U*	**0.33**	**J**	**0.33**	**J**	**0.38**	**J**	**0.54**	**J**	**0.48**	**J**
Carbon tetrachloride	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**0.17**	**J**	**4**		**4**		**4**		**5.1**		**3.4**	
cis-1,2-Dichloroethene	70[a]	µg/L	*1*	*U*	**0.48**	**J**	**0.47**	**J**	**0.39**	**J**	*1*	*U*	**1.3**	
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	*1*	*U*	**150**		**160**		**190**	**J**	**30**		**210**	
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	**0.56**	**J**	**0.19**	**J**	**1.8**	

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

EPA = U.S. Environmental Protection Agency

MCL = maximum contaminant level

RSL = regional screening level

Q = qualifier

J = Result is estimated

U = Analyte was not detected at the associated value

Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-03RC		MW-03RD		MW-04		MW-05R		MW-06		MW-08A	
Sample Name			MW03RC-GW061820		MW03RD-GW061820		MW04-GW062120		MW05R-GW061920		MW06-GW062120		MW08A-GW062120	
Sample Date			6/18/2020		6/18/2020		6/21/2020		6/19/2020		6/21/2020		6/21/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.42*	*U*	*0.44*	*U*	*0.41*	*U*	*0.4*	*U*	*0.46*	*U*	*0.41*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.55**	**J**
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	**3.8**	**J**	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	**0.11**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	**0.19**	**J**	*1*	*U*	**0.41**	**J**	**0.29**	**J**	**0.35**	**J**	**0.51**	**J**
Carbon tetrachloride	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**1.4**		*1*	*U*	**4.7**		**6.1**		**2.8**		**4.2**	
cis-1,2-Dichloroethene	70[a]	µg/L	*1*	*U*	*1*	*U*	**0.11**	**J**	*1*	*U*	*1*	*U*	**0.17**	**J**
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.19**	**J**
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	**6.4**		*1*	*U*	**53**		*1*	*U*	**0.23**	**J**	**55**	
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	*1*	*U*	*1*	*U*	**0.27**	**J**	*1*	*U*	*1*	*U*	**0.4**	**J**

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

EPA = U.S. Environmental Protection Agency

MCL = maximum contaminant level

RSL = regional screening level

Q = qualifier

J = Result is estimated

U = Analyte was not detected at the associated value

Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-08B				MW-08C		MW-12D		MW-12S		MW-13D	
Sample Name			FD02-GW062220		MW08B-GW062220		MW08C-GW062220		MW12D-GW061920		MW12S-GW061920		MW13D-GW061820	
Sample Date			6/22/2020		6/22/2020		6/22/2020		6/19/2020		6/19/2020		6/18/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.39*	*U*	*0.39*	*U*	*0.39*	*U*	*0.39*	*U*	*0.46*	*U*	*0.44*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.55**	**J**
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.2**	**J**
Acetone	1400[b]	µg/L	**2.8**	**J**	*20*	*U*	**4.3**	**J**	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	**0.13**	**J**	1	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	**0.17**	**J**	**0.15**	**J**	*1*	*U*	**0.44**	**J**	**0.16**	**J**	**0.27**	**J**
Carbon tetrachloride	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**1.7**		**1.7**		**0.15**	**J**	**5.2**		**1.6**		**2.3**	
cis-1,2-Dichloroethene	70[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.36**	**J**
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	**4.7**		**4.4**		*1*	*U*	*1*	*U*	**2.2**		**62**	
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.24**	**J**	**0.53**	**J**

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

EPA = U.S. Environmental Protection Agency

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Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-13S		MW-14D		MW-14S		MW-15D				MW-15S	
Sample Name			MW13S-GW061820		MW14D-GW062320		MW14S-GW062320		FD03-GW061920		MW15D-GW061920		MW15S-GW061920	
Sample Date			6/18/2020		6/23/2020		6/23/2020		6/19/2020		6/19/2020		6/19/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.45*	*U*	*0.44*	*U*	*0.41*	*U*	*0.44*	*U*	*0.41*	*U*	*0.45*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	**0.15**	**J**	**0.53**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethane	2.8[b]	µg/L	**0.14**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	1	*U*	**0.16**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	*1*	*U*	**0.25**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Carbon tetrachloride	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**0.7**	**J**	**2.1**		**0.3**	**J**	**3.5**		**3.5**		**2.8**	
cis-1,2-Dichloroethene	70[a]	µg/L	**0.18**	**J**	**0.25**	**J**	**0.89**	**J**	*1*	*U*	*1*	*U*	*1*	*U*
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	**23**		**26**		**7.8**		*1*	*U*	*1*	*U*	**0.36**	**J**
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	**0.88**	**J**	**0.21**	**J**	**4.8**		*1*	*U*	*1*	*U*	*1*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

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Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

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Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-16D		MW-16S		MW-17D		MW-17S		MW-18		MW-19	
Sample Name			MW16D-GW062120		MW16S-GW062120		MW17D-GW062120		MW17S-GW062120		MW18-GW061620		MW19-GW061620	
Sample Date			6/21/2020		6/21/2020		6/21/2020		6/21/2020		6/16/2020		6/16/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.42*	*U*	*0.44*	*U*	*0.42*	*U*	*0.42*	*U*	*0.41*	*U*	*0.41*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	**0.33**	**J**	*1*	*U*	*1*	*U*	**0.75**	**J**	**0.66**	**J**
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.21**	**J**	**0.24**	**J**
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	*1*	*U*	**0.17**	**J**	**0.23**	**J**	*1*	*U*	**0.28**	**J**	**0.22**	**J**
Carbon tetrachloride	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**1.9**		**6.2**		**2.5**		**1.7**		**2.9**		**2.4**	
cis-1,2-Dichloroethene	70[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.25**	**J**	**0.29**	**J**
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	*1*	*U*	**25**		**2.5**		**0.91**	**J**	**70**		**64**	
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	*1*	*U*	**0.18**	**J**	*1*	*U*	*1*	*U*	**0.48**	**J**	**0.5**	**J**

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

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Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

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Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-20D				MW-20S		MW-21		MW-22		MW-23C	
Sample Name			FD04-GW061720		MW20D-GW061720		MW20S-GW061720		MW21-GW061820		MW22-GW061720		MW23C-GW062320	
Sample Date			6/17/2020		6/17/2020		6/17/2020		6/18/2020		6/17/2020		6/23/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.38*	*U*	*0.4*	*U*	*0.42*	*U*	*0.44*	*U*	*0.43*	*U*	*0.4*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.77**	**J**
Bromodichloromethane	80[a]	µg/L	**0.23**	**J**	**0.21**	**J**	**0.14**	**J**	*1*	*U*	**0.34**	**J**	*1*	*U*
Carbon tetrachloride	5[a]	µg/L	1	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**1.8**		**1.8**		**1.5**		**1.9**		**2.2**		*1*	*U*
cis-1,2-Dichloroethene	70[a]	µg/L	**0.13**	**J**	**0.12**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.14**	**J**
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.12**	**J**
Tetrachloroethene	5[a]	µg/L	**11**		**9.9**		**3.9**		**2**		**2.9**		1	*U*
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**0.57**	**J**
Trichloroethene	5[a]	µg/L	**0.23**	**J**	**0.23**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	1	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

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Bold indicates detected values

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Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

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Table 4

1,4-Dioxane and Detected VOC Analytical Results

Location			MW-25C		MW-27		MW-28	
Sample Name			MW25C-GW061920		MW27-GW062420		MW28-GW062420	
Sample Date			6/19/2020		6/24/2020		6/24/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q
1,4-Dioxane	0.46[b]	µg/L	*0.46*	*U*	*0.38*	*U*	*0.46*	*U*
1,1,1-Trichloroethane	200[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethane	2.8[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
1,1-Dichloroethene	7[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Acetone	1400[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*
Benzene	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Bromodichloromethane	80[a]	µg/L	**0.4**	**J**	**0.4**	**J**	**0.35**	**J**
Carbon tetrachloride	5[a]	µg/L	**0.11**	**J**	*1*	*U*	*1*	*U*
Chloroform	80[a]	µg/L	**3.1**		**6.1**		**4.8**	
cis-1,2-Dichloroethene	70[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Dichlorodifluoromethane	20[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Ethylbenzene	700[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
o-xylene	19[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Tetrachloroethene	5[a]	µg/L	**0.97**	**J**	*1*	*U*	*1*	*U*
Toluene	1000[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*
Trichloroethene	5[a]	µg/L	*1*	*U*	**0.13**	**J**	**0.24**	**J**

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

VOC = volatile organic compound

µg/L = micrograms per liter

EPA = U.S. Environmental Protection Agency

MCL = maximum contaminant level

RSL = regional screening level

Q = qualifier

J = Result is estimated

U = Analyte was not detected at the associated value

Table 5
Metals Analytical Results

		Location	MW-01D		MW-01S		MW-01S		MW-02		MW-03RA	
		Sample Name	MW01D-GW061720		FD01-GW062120		MW01S-GW062120		MW02-GW061720		MW03RA-GW061820	
		Sample Date	6/17/2020		6/21/2020		6/21/2020		6/17/2020		6/18/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	**238**		*100*	*U*	*100*	*U*	*100*	*U*	*100*	*U*
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.359**	**J**	**0.714**	**J**	**0.686**	**J**	**1.08**		**0.64**	**J**
Barium	2000[a]	µg/L	**23.3**		**54.6**		**54**		**80.9**		**73.2**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**136000**		**155000**		**152000**		**179000**		**184000**	
Chromium	100[a]	µg/L	**4.26**		**0.681**	**J**	**0.745**	**J**	**1.83**		**1.83**	
Cobalt	0.6[b]	µg/L	**0.133**	**J**	**0.105**	**J**	**0.11**	**J**	**0.162**	**J**	**0.315**	**J**
Copper	1300[a]	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	**0.727**	**J**
Iron	1400[b]	µg/L	*100*	*U*	*100*	*U*	*100*	*U*	*100*	*U*	**38.3**	**J**
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**37900**		**53500**		**52900**		**64200**		**62800**	
Manganese	43[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	**59.7**	
Nickel	39[b]	µg/L	**1.98**		*1*	*U*	*1*	*U*	**0.823**	**J**	**3.43**	
Potassium	--	µg/L	**2280**		**2300**		**2280**		**2730**		**2620**	
Selenium	50[a]	µg/L	**1.22**		**0.818**	**J**	**0.826**	**J**	**0.679**	**J**	**0.844**	**J**
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	**0.113**	**J**	*1*	*U*
Sodium	--	µg/L	**38700**		**86500**		**84800**		**152000**		**93700**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**1.44**		**2.19**		**2.17**		**2.54**		**1.67**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

RSL = regional screening level

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Table 5
Metals Analytical Results

		Location	MW-03RB		MW-03RC		MW-03RD		EPA-MW-04		EPA-MW-05R	
		Sample Name	MW03RB-GW061820		MW03RC-GW061820		MW03RD-GW061820		MW04-GW062120		MW05R-GW061920	
		Sample Date	6/18/2020		6/18/2020		6/18/2020		6/21/2020		6/19/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	**40.5**	**J**	*100*	*U*	*100*	*U*	*100*	*U*	**93.3**	**J**
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.437**	**J**	**0.504**	**J**	**0.323**	**J**	**1.07**		**0.754**	**J**
Barium	2000[a]	µg/L	**36.6**		**24.8**		**27.8**		**47.9**		**72.8**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**135000**		**119000**		**126000**		**135000**		**169000**	
Chromium	100[a]	µg/L	**0.655**	**J**	**0.724**	**J**	**0.527**	**J**	**3.46**		**4.85**	
Cobalt	0.6[b]	µg/L	**0.155**	**J**	*1*	*U*	**0.629**	**J**	**0.139**	**J**	**0.213**	**J**
Copper	1300[a]	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	**1.72**	**J**	**0.604**	**J**
Iron	1400[b]	µg/L	**43.2**	**J**	100	U	**56**	**J**	*100*	*U*	**42.8**	**J**
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**45100**		**37500**		**38400**		**47600**		**62300**	
Manganese	43[b]	µg/L	**32.5**		**4.17**		**261**		*1*	*U*	**1.8**	
Nickel	39[b]	µg/L	**1.01**		**0.774**	**J**	**3.92**		**2.32**		**2.79**	
Potassium	--	µg/L	**1920**		**1850**		**2190**		**2320**		**2890**	
Selenium	50[a]	µg/L	**0.985**	**J**	**1.13**		**0.964**	**J**	**0.664**	**J**	**0.779**	**J**
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Sodium	--	µg/L	**33500**		**25900**		**49600**		**114000**		**63800**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**1.45**		**1.89**		**0.589**	**J**	**2.63**		**1.98**	
Zinc	600[b]	µg/L	**5.64**	**J**	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

RSL = regional screening level

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Table 5
Metals Analytical Results

		Location	EPA-MW-06		MW-08A		MW-08B		MW-08B		MW-08C	
		Sample Name	MW06-GW062120		MW08A-GW062120		FD02-GW062220		MW08B-GW062220		MW08C-GW062220	
		Sample Date	6/21/2020		6/21/2020		6/22/2020		6/22/2020		6/22/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	*100*	*U*	**209**		*100*	*U*	*100*	*U*	*100*	*U*
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**1.46**		**0.712**	**J**	**0.446**	**J**	**0.452**	**J**	**0.507**	**J**
Barium	2000[a]	µg/L	**53.2**		**77.2**		**31.1**		**30.6**		**45.8**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**119000**		**182000**		**132000**		**128000**		**109000**	
Chromium	100[a]	µg/L	**0.711**	**J**	**1.27**		**0.978**	**J**	**1.02**		**0.254**	**J**
Cobalt	0.6[b]	µg/L	*1*	*U*	**0.216**	**J**	*1*	*U*	*1*	*U*	**0.844**	**J**
Copper	1300[a]	µg/L	**1.01**	**J**	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Iron	1400[b]	µg/L	*100*	*U*	**195**		*100*	*U*	*100*	*U*	**288**	
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**36500**		**65400**		**43800**		**43500**		**38500**	
Manganese	43[b]	µg/L	*1*	*U*	**20**		**2.6**		**2.43**		**511**	
Nickel	39[b]	µg/L	*1*	*U*	**0.425**	**J**	*1*	*U*	*1*	*U*	**3.48**	
Potassium	--	µg/L	**1960**		**2830**		**2030**		**2020**		**2330**	
Selenium	50[a]	µg/L	**0.677**	**J**	**0.923**	**J**	**1.02**		**1.03**		**1.01**	
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Sodium	--	µg/L	**69800**		**89500**		**34900**		**34200**		**31600**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**2.56**		**2.17**		**1.86**		**1.8**		**0.672**	**J**
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	**17.3**	**J**
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

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Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

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Table 5
Metals Analytical Results

		Location	MW-12D		MW-12S		MW-13D		MW-13S		MW-14D	
		Sample Name	MW12D-GW061920		MW12S-GW061920		MW13D-GW061820		MW13S-GW061820		MW14D-GW062320	
		Sample Date	6/19/2020		6/19/2020		6/18/2020		6/18/2020		6/23/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	*100*	*U*	**81.2**	**J**	**78.7**	**J**	**39.2**	**J**	*100*	*U*
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.693**	**J**	**0.635**	**J**	**0.746**	**J**	**0.557**	**J**	**0.582**	**J**
Barium	2000[a]	µg/L	**49.7**		**68.2**		**46.8**		**71.9**		**47.2**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**144000**		**161000**		**146000**		**179000**		**135000**	
Chromium	100[a]	µg/L	**1.88**		**3.43**		**17.7**		**5.7**		**0.93**	**J**
Cobalt	0.6[b]	µg/L	**0.164**	**J**	**0.39**	**J**	**1.52**		**6.33**		*1*	*U*
Copper	1300[a]	µg/L	*2*	*U*	**0.587**	**J**	**1.1**	**J**	**0.543**	**J**	**0.877**	**J**
Iron	1400[b]	µg/L	**26.2**	**J**	**73.8**	**J**	**192**		**135**		*100*	*U*
Lead	15[a]	µg/L	**0.0991**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**52900**		**74600**		**51900**		**77200**		**46800**	
Manganese	43[b]	µg/L	**5.8**		**3.08**		**12.3**		**772**		**0.571**	**J**
Nickel	39[b]	µg/L	**0.331**	**J**	**4.2**		**50.8**		**239**		**1.41**	
Potassium	--	µg/L	**3020**		**3950**		**2490**		**4380**		**2500**	
Selenium	50[a]	µg/L	**1.74**		**1.84**		**0.835**	**J**	**0.297**	**J**	**0.869**	**J**
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	**0.365**	**J**	**0.15**	**J**	*1*	*U*
Sodium	--	µg/L	**77800**		**88200**		**57100**		**127000**		**54900**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**1.91**		**1.85**		**1.97**		**0.509**	**J**	**1.69**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	**46**	
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

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Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

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Table 5
Metals Analytical Results

		Location	MW-14S		MW-15D		MW-15D		MW-15S		MW-16D	
		Sample Name	MW14S-GW062320		FD03-GW061920		MW15D-GW061920		MW15S-GW061920		MW16D-GW062120	
		Sample Date	6/23/2020		6/19/2020		6/19/2020		6/19/2020		6/21/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	**160**		**101**		**88.2**	**J**	**29.8**	**J**	**52.6**	**J**
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**2.28**		**0.546**	**J**	**0.513**	**J**	**0.581**	**J**	**0.495**	**J**
Barium	2000[a]	µg/L	**76.7**		**45.2**		**46.4**		**65.5**		**29.7**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**145000**		**170000**		**167000**		**167000**		**123000**	
Chromium	100[a]	µg/L	**2.99**		**1.62**		**1.74**		**6.23**		**5.75**	
Cobalt	0.6[b]	µg/L	**2.51**		**0.207**	**J**	**0.215**	**J**	**0.309**	**J**	**0.493**	**J**
Copper	1300[a]	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	**0.743**	**J**
Iron	1400[b]	µg/L	**740**		**105**		**103**		**107**		**53.5**	**J**
Lead	15[a]	µg/L	*1*	*U*	**0.119**	**J**	**0.13**	**J**	**0.0864**	**J**	*1*	*U*
Magnesium	--	µg/L	**48900**		**65900**		**65400**		**76600**		**43100**	
Manganese	43[b]	µg/L	**201**		**6.37**		**6.73**		**3.33**		**5.46**	
Nickel	39[b]	µg/L	**4.39**		**2.26**		**2.26**		**2.8**		**19.6**	
Potassium	--	µg/L	**3260**		**4080**		**4040**		**4930**		**2110**	
Selenium	50[a]	µg/L	**0.585**	**J**	**2.71**		**2.61**		**2.45**		**1.01**	
Silver	9.4[b]	µg/L	**0.137**	**J**	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Sodium	--	µg/L	**70500**		**142000**		**140000**		**180000**		**33300**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	*1*	*U*	**1.41**		**1.37**		**1.57**		**1.66**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

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Acronyms:

µg/L = micrograms per liter

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Table 5
Metals Analytical Results

		Location	MW-16S		MW-17D		MW-17S		MW-18		MW-19	
		Sample Name	MW16S-GW062120		MW17D-GW062120		MW17S-GW062120		MW18-GW061620		MW19-GW061620	
		Sample Date	6/21/2020		6/21/2020		6/21/2020		6/16/2020		6/16/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	**505**		**229**		**102**		**56.6**	**J**	**56.6**	**J**
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.592**	**J**	**1.01**		**0.226**	**J**	**0.699**	**J**	**0.812**	**J**
Barium	2000[a]	µg/L	**56**		**72.7**		**120**		**97.8**		**76.3**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**145000**		**165000**		**161000**		**180000**		**165000**	
Chromium	100[a]	µg/L	**3**		**1.55**		**5.55**		**1.09**		**3.21**	
Cobalt	0.6[b]	µg/L	**0.124**	**J**	**0.344**	**J**	**1.08**		**0.195**	**J**	**0.218**	**J**
Copper	1300[a]	µg/L	*2*	*U*	**0.581**	**J**	**0.611**	**J**	*2*	*U*	*2*	*U*
Iron	1400[b]	µg/L	**85.7**	**J**	**323**		**210**		**152**		**398**	
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**54900**		**56400**		**60700**		**73100**		**63200**	
Manganese	43[b]	µg/L	**1.23**		**30.7**		**26.6**		**7.47**		**10.2**	
Nickel	39[b]	µg/L	**0.659**	**J**	**0.475**	**J**	**33.5**		**0.385**	**J**	**1.67**	
Potassium	--	µg/L	**2580**		**2740**		**4200**		**3300**		**3230**	
Selenium	50[a]	µg/L	**0.824**	**J**	**0.814**	**J**	**0.789**	**J**	**0.935**	**J**	**0.868**	**J**
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	**0.169**	**J**	*1*	*U*	**0.207**	**J**
Sodium	--	µg/L	**73500**		**109000**		**170000**		**100000**		**89500**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**1.5**		**2.75**		**0.551**	**J**	**1.84**		**2.17**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	*20*	*U*	**8.68**	**J**
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

RSL = regional screening level

EPA = U.S. Environmental Protection Agency

Q = qualifier

J = Result is estimated

U = Analyte was not detected at the associated value

Table 5
Metals Analytical Results

		Location	MW-20D		MW-20D		MW-20S		MW-21		MW-22	
		Sample Name	FD04-GW061720		MW20D-GW061720		MW20S-GW061720		MW21-GW061820		MW22-GW061720	
		Sample Date	6/17/2020		6/17/2020		6/17/2020		6/18/2020		6/17/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	*100*	*U*	*100*	*U*	*100*	*U*	**702**		**54.3**	**J**
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.685**	**J**	**0.685**	**J**	**0.878**	**J**	**0.997**	**J**	**0.719**	**J**
Barium	2000[a]	µg/L	**41.9**		**42.3**		**47.4**		**129**		**67.6**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**107000**		**109000**		**94000**		**150000**		**152000**	
Chromium	100[a]	µg/L	**1.6**		**1.64**		**1.41**		**1.63**		**1.69**	
Cobalt	0.6[b]	µg/L	**0.118**	**J**	**0.115**	**J**	**0.113**	**J**	**0.148**	**J**	**0.174**	**J**
Copper	1300[a]	µg/L	*2*	*U*	*2*	*U*	**1.22**	**J**	*2*	*U*	*2*	*U*
Iron	1400[b]	µg/L	**63**	**J**	**68.6**	**J**	*100*	*U*	**60.4**	**J**	**149**	
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**35800**		**36500**		**29300**		**53300**		**52600**	
Manganese	43[b]	µg/L	**2.1**		**2.24**		**1.5**		**2.11**		**7.54**	
Nickel	39[b]	µg/L	**0.445**	**J**	**0.464**	**J**	**3.39**		**0.57**	**J**	**1.37**	
Potassium	--	µg/L	**2160**		**2240**		**3500**		**2970**		**2690**	
Selenium	50[a]	µg/L	**0.84**	**J**	**0.776**	**J**	**0.576**	**J**	**0.814**	**J**	**0.856**	**J**
Silver	9.4[b]	µg/L	*1*	*U*	*1*	*U*	**0.146**	**J**	*1*	*U*	*1*	*U*
Sodium	--	µg/L	**44000**		**46300**		**75300**		**158000**		**110000**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**1.91**		**2.05**		**1.93**		**2.83**		**2.1**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	**15.9**	**J**	*20*	*U*	*20*	*U*
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

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U = Analyte was not detected at the associated value

Table 5
Metals Analytical Results

		Location	MW-23C		MW-25C		MW-27		MW-28	
		Sample Name	MW23C-GW062320		MW25C-GW061920		MW27-GW062420		MW28-GW062420	
		Sample Date	6/23/2020		6/19/2020		6/24/2020		6/24/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	2000[b]	µg/L	*100*	*U*	*100*	*U*	*100*	*U*	*100*	*U*
Antimony	6[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Arsenic	10[a]	µg/L	**0.344**	**J**	**0.356**	**J**	**1.2**		**0.822**	**J**
Barium	2000[a]	µg/L	**30.6**		**40.6**		**69.8**		**86.7**	
Beryllium	4[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Cadmium	5[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Calcium	--	µg/L	**133000**		**118000**		**158000**		**163000**	
Chromium	100[a]	µg/L	**0.184**	**J**	**0.407**	**J**	**0.786**	**J**	**0.524**	**J**
Cobalt	0.6[b]	µg/L	**0.862**	**J**	**0.52**	**J**	**0.174**	**J**	**0.718**	**J**
Copper	1300[a]	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Iron	1400[b]	µg/L	**183**		*100*	*U*	*100*	*U*	**63.8**	**J**
Lead	15[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Magnesium	--	µg/L	**39400**		**37500**		**53200**		**53800**	
Manganese	43[b]	µg/L	**325**		**110**		**20.9**		**162**	
Nickel	39[b]	µg/L	**6.97**		**1.52**		**0.682**	**J**	**2.75**	
Potassium	--	µg/L	**2510**		**2110**		**2610**		**2770**	
Selenium	50[a]	µg/L	**0.933**	**J**	*1*	*U*	**0.789**	**J**	**0.774**	**J**
Silver	9.4[b]	µg/L	**0.103**	**J**	*1*	*U*	*1*	*U*	*1*	*U*
Sodium	--	µg/L	**27200**		**25500**		**122000**		**143000**	
Thallium	2[a]	µg/L	*1*	*U*	*1*	*U*	*1*	*U*	*1*	*U*
Vanadium	8.6[b]	µg/L	**0.657**	**J**	**1.08**		**2.64**		**1.76**	
Zinc	600[b]	µg/L	*20*	*U*	*20*	*U*	*20*	*U*	**7.01**	**J**
Mercury	2[a]	µg/L	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*	*0.5*	*U*

Notes:

[a] Screening level is EPA MCL

[b] Screening level is EPA Tap Water RSL (target cancer risk 1 x 10-6, harzard quotient = 0.1)

Highlight indicates values greater than screening level

Bold indicates detected values

Italics indicates nondetected values

Acronyms:

µg/L = micrograms per liter

MCL = maximum contaminant level

RSL = regional screening level

EPA = U.S. Environmental Protection Agency

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U = Analyte was not detected at the associated value

Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-01D		MW-01S				MW-02		MW-03RA		MW-03RB		MW-03RC	
Sample Name			MW01D-GW061720		MW01S-GW062120		FD01-GW062120		MW02-GW061720		MW03RA-GW061820		MW03RB-GW061820		MW03RC-GW061820	
Sample Date			6/17/2020		6/21/2020		6/21/2020		6/17/2020		6/18/2020		6/18/2020		6/18/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Nitrate/Nitrite	10[a]	mg/L	**0.905**		**2.04**		**1.86**		**2.4**		**0.811**		**1.14**		**0.905**	
Chloride	-	mg/L	**107**		**270**		**271**		**402**		**371**		**166**		**72.6**	
Sulfate	-	mg/L	**149**		**49.7**	**J**	**105**	**J**	**101**	**J-**	**97.7**		**111**		**157**	
Ethane	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Ethene	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Methane	-	µg/L	2	U	2	U	2	U	**0.28**	**J**	**0.24**	**J**	**0.2**	**J**	*2*	*U*
Alkalinity	-	mg/L	**254**		**267**		**269**		**298**		**273**		**229**		**227**	
TDS	-	mg/L	**680**		**984**		**996**		**1320**		**1120**		**731**		**677**	
TOC	-	mg/L	**0.278**	**J**	**0.472**	**J**	**0.436**	**J**	**0.524**	**J**	**0.897**	**J**	**1.79**		**2.15**	
DO	-	mg/L	**5.62**		**6.12**		-		**5.65**		**4.94**		**4.73**		**5.66**	
Ferrous Iron	-	mg/L	**0.06**		**0.03**		-		*0*	*U*	**0.08**		**0.06**		**0.04**	
ORP	-	mV	**117.3**		**133.8**		-		**114.1**		**50.5**		**-80.7**		**77.5**	
pH	-	su	**6.95**		**7.03**		-		**6.81**		**6.88**		**7**		**7.05**	
Specific Conductance	-	mS/cm	**1.083**		**1.575**		-		**2.128**		**1.895**		**1.202**		**1**	
Temperature	-	deg C	**14.3**		**13.6**		-		**13.4**		**14.9**		**14.9**		**14.5**	
Turbidity	-	NTU	**0.77**		**1.04**		-		**0.03**		**1.48**		**6.35**		**2.26**	

Notes:
[a] Screening level is EPA MCL
Bold indicates detected values
Italics indicates nondetected values
[1] Nitrate and nitrite as total nitrogen
[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
J- = Result is estimated biased low
U = Analyte was not detected at the associated value

Acronyms:
deg C = degrees Celsius
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
ORP = oxidation reduction potential
mg/L = milligrams per liter
µg/L = micrograms per liter
MCL = maximum contaminant level
mS/cm = millisiemens per centimeter
mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
Q = qualifier

Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-03RD		MW-04		MW-05R		MW-06		MW-08A		MW-08B			
Sample Name			MW03RD-GW061820		MW04-GW062120		MW05R-GW061920		MW06-GW062120		MW08A-GW062120		MW08B-GW062220		FD02-GW062220	
Sample Date			6/18/2020		6/21/2020		6/19/2020		6/21/2020		6/21/2020		6/22/2020		6/22/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	FD	FD
Nitrate/Nitrite	10[a]	mg/L	**0.884**		**1.73**		**2.4**		**0.966**		**2**		**1.92**		**1.75**	
Chloride	-	mg/L	**83.4**		**250**		**275**		**154**		**383**		**114**		**114**	
Sulfate	-	mg/L	**199**		**49.3**		**98.5**		**95.3**		**97.3**		**141**		**144**	
Ethane	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Ethene	-	µg/L	**0.31**	**J**	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Methane	-	µg/L	**0.47**	**J**	2	U	2	U	2	U	0.45	J	2	U	2	U
Alkalinity	-	mg/L	**257**		**284**		**315**		**266**		**267**		**237**		**238**	
TDS	-	mg/L	**691**		**909**		**996**		**690**		**1130**		**787**		**758**	
TOC	-	mg/L	**7.95**		**0.519**	**J**	**0.479**	**J**	**0.523**	**J**	**0.456**	**J**	**0.333**	**J**	**0.333**	**J**
DO	-	mg/L	**3.72**		**6.87**		**5.33**		**3.35**		**6.43**		**5.51**		-	
Ferrous Iron	-	mg/L	**0.07**		**0.12**		*0*	*U*	*0*	*U*	**0.5**		**0.03**		-	
ORP	-	mV	**-85.4**		**-20.2**		**-40.9**		**-42.8**		**108.5**		**-43**		-	
pH	-	su	**7.09**		**7.09**		**6.96**		**7.31**		**6.95**		**7.09**		-	
Specific Conductance	-	mS/cm	**1.111**		**1.515**		**1.614**		**1.136**		**1.855**		**1.084**		-	
Temperature	-	deg C	**13.8**		**12**		**14.1**		**12.5**		**14.4**		**13.9**		-	
Turbidity	-	NTU	**0.55**		**0.59**		**0.54**		**0.32**		**24.6**		**0.47**		-	

Notes:
[a] Screening level is EPA MCL
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Italics indicates nondetected values
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[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
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Acronyms:
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mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
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Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-08C		MW-12D		MW-12S		MW-13D		MW-13S		MW-14D		MW-14S	
Sample Name			MW08C-GW062220		MW12D-GW061920		MW12S-GW061920		MW13D-GW061820		MW13S-GW061820		MW14D-GW062320		MW14S-GW062320	
Sample Date			6/22/2020		6/19/2020		6/19/2020		6/18/2020		6/18/2020		6/23/2020		6/23/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Nitrate/Nitrite	10[a]	mg/L	**1.22**		**2.25**		**2.35**		**3.1**		**1.12**		**0.916**		**1.86**	
Chloride	-	mg/L	**26**		**196**		**281**		**210**		**415**		**213**		**251**	
Sulfate	-	mg/L	**78.7**		**160**		**114**		**100**		**219**		**105**		**127**	
Ethane	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Ethene	-	µg/L	**0.33**	**J**	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Methane	-	µg/L	**0.83**	**J**	*2*	*U*	*2*	*U*	*2*	*U*	**3**		**0.3**	**J**	**0.26**	**J**
Alkalinity	-	mg/L	**242**		**276**		**341**		**241**		**332**		**248**		**253**	
TDS	-	mg/L	**602**		**905**		**1090**		**858**		**1270**		**872**		**960**	
TOC	-	mg/L	**6.64**		**0.41**	**J**	**0.678**	**J**	**0.399**	**J**	**1.1**		**0.443**	**J**	**0.913**	**J**
DO	-	mg/L	**2**		**4.76**		**3.72**		**5.23**		**2.62**		**3.4**		**0.41**	
Ferrous Iron	-	mg/L	**0.35**		*0*	*U*	**0.03**		*0*	*U*	**0.03**		**0.11**		**1**	
ORP	-	mV	**-87.5**		**110.2**		**58.4**		**81.9**		**104**		**88**		**11.1**	
pH	-	su	**7.24**		**7.31**		**7.14**		**7**		**7.01**		**7.24**		**7.05**	
Specific Conductance	-	mS/cm	**0.914**		**1.432**		**1.766**		**1.349**		**2.036**		**1.331**		**1.803**	
Temperature	-	deg C	**14.9**		**15**		**19.8**		**14.4**		**16.5**		**18.2**		**20.2**	
Turbidity	-	NTU	**4.11**		**2.13**		**1.71**		**4.08**		**3.07**		**0.59**		**21.8**	

Notes:
[a] Screening level is EPA MCL
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Italics indicates nondetected values
[1] Nitrate and nitrite as total nitrogen
[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
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U = Analyte was not detected at the associated value

Acronyms:
deg C = degrees Celsius
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
ORP = oxidation reduction potential
mg/L = milligrams per liter
µg/L = micrograms per liter
MCL = maximum contaminant level
mS/cm = millisiemens per centimeter
mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
Q = qualifier

Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-15D				MW-15S		MW-16D		MW-16S		MW-17D		MW-17S	
Sample Name			MW15D-GW061920		FD03-GW061920		MW15S-GW061920		MW16D-GW062120		MW16S-GW062120		MW17D-GW062120		MW17S-GW062120	
Sample Date			6/19/2020		6/19/2020		6/19/2020		6/21/2020		6/21/2020		6/21/2020		6/21/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Nitrate/Nitrite	10[a]	mg/L	**3.11**		**2.35**		**3.24**		**2.11**		**1.95**		**3**		**2.09**	
Chloride	-	mg/L	**310**		**313**		**378**		**98.2**		**255**		**269**		**322**	
Sulfate	-	mg/L	**147**		**143**		**139**		**144**		**87.6**		**108**		**121**	
Ethane	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Ethene	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*
Methane	-	µg/L	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	*2*	*U*	**0.2**	**J**	**0.25**	**J**
Alkalinity	-	mg/L	**350**		**364**		**368**		**229**		**265**		**286**		**310**	
TDS	-	mg/L	**1230**		**1120**		**1240**		**689**		**939**		**971**		**1130**	
TOC	-	mg/L	**0.594**	**J**	**0.7**	**J**	**0.637**	**J**	**0.294**	**J**	**0.478**	**J**	**0.52**	**J**	**0.86**	**J**
DO	-	mg/L	**4.17**		-		**4.79**		**6.32**		**5.35**		**4.94**		**0.6**	
Ferrous Iron	-	mg/L	**0.05**		-		*0*	*U*	*0*	*U*	**0.03**		**0.28**		*0.01*	*U*
ORP	-	mV	**-62.1**		-		**114**		**111.8**		**72.6**		**109.3**		**35.3**	
pH	-	su	**6.94**		-		**6.97**		**7.12**		**6.94**		**7.07**		**7.12**	
Specific Conductance	-	mS/cm	**1.919**		-		**2.14**		**1.062**		**1.505**		**1.618**		**1.91**	
Temperature	-	deg C	**14.3**		-		**14.4**		**14**		**13.6**		**17**		**19.8**	
Turbidity	-	NTU	**18.1**		-		**3.97**		**1.24**		**4.23**		**47.6**		**17.3**	

Notes:
[a] Screening level is EPA MCL
Bold indicates detected values
Italics indicates nondetected values
[1] Nitrate and nitrite as total nitrogen
[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
J- = Result is estimated biased low
U = Analyte was not detected at the associated value

Acronyms:
deg C = degrees Celsius
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
ORP = oxidation reduction potential
mg/L = milligrams per liter
µg/L = micrograms per liter
MCL = maximum contaminant level
mS/cm = millisiemens per centimeter
mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
Q = qualifier

Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-18		MW-19		MW-20D				MW-20S		MW-21		MW-22	
Sample Name			MW18-GW061620		MW19-GW061620		MW20D-GW061720		FD04-GW061720		MW20S-GW061720		MW21-GW061820		MW22-GW061720	
Sample Date			6/16/2020		6/16/2020		6/17/2020		6/17/2020		6/17/2020		6/18/2020		6/17/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Nitrate/Nitrite	10[a]	mg/L	**3.78**		**3.52**		**3.25**		**3.4**		**2.55**		**3.21**		**3.44**	
Chloride	-	mg/L	**358**		**311**		**126**		**123**		**115**		**363**		**266**	
Sulfate	-	mg/L	**106**		**103**		**96.6**	**J-**	**134**	**J-**	**89.7**	**J-**	**80.3**		**121**	
Ethane	-	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Ethene	-	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methane	-	µg/L	2	U	0.18	J	2	U	2	U	0.52	J	2	U	2	U
Alkalinity	-	mg/L	**279**		**261**		**242**		**252**		**285**		**279**		**288**	
TDS	-	mg/L	**1120**		**1020**		**666**		**652**		**599**		**1080**		**934**	
TOC	-	mg/L	**0.552**	**J**	**0.521**	**J**	**0.405**	**J**	**0.446**	**J**	**2.11**		**0.716**	**J**	**0.478**	**J**
DO	-	mg/L	**6.71**		**6.49**		**5.12**		-		**4.22**		**6.23**		**5.89**	
Ferrous Iron	-	mg/L	*0.01*	*U*	**0.04**		*0*	*U*	-		*0*	*U*	*0*	*U*	**0.08**	
ORP	-	mV	**53**		**69.2**		**18.4**		-		**-29.7**		**92.1**		**-18.1**	
pH	-	su	**6.94**		**7.03**		**7.16**		-		**7.35**		**6.85**		**6.96**	
Specific Conductance	-	mS/cm	**1.984**		**1.779**		**0.988**		-		**0.969**		**1.841**		**1.625**	
Temperature	-	deg C	**13.1**		**13.6**		**13.6**		-		**13.7**		**14.6**		**13.4**	
Turbidity	-	NTU	**2.97**		**10.37**		**1.45**		-		**1.3**		**2.61**		**4.34**	

Notes:
[a] Screening level is EPA MCL
Bold indicates detected values
Italics indicates nondetected values
[1] Nitrate and nitrite as total nitrogen
[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
J- = Result is estimated biased low
U = Analyte was not detected at the associated value

Acronyms:
deg C = degrees Celsius
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
ORP = oxidation reduction potential
mg/L = milligrams per liter
µg/L = micrograms per liter
MCL = maximum contaminant level
mS/cm = millisiemens per centimeter
mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
Q = qualifier

Table 6
General Chemistry Analytical Results and Field Parameters

Location			MW-23C		MW-25C		MW-27		MW-28	
Sample Name			MW23C-GW062320		MW25C-GW061920		MW27-GW062420		MW28-GW062420	
Sample Date			6/23/2020		6/19/2020		6/24/2020		6/24/2020	
Analyte	Screening Level	Unit	Result	Q	Result	Q	Result	Q	Result	Q
Nitrate/Nitrite	10[a]	mg/L	**3.59**		**1.98**		**1.56**		**2.52**	
Chloride	-	mg/L	**63.4**		**86.7**		**338**		**373**	
Sulfate	-	mg/L	**232**		**133**		**106**		**110**	
Ethane	-	µg/L	**4.5**		**0.39**	**J**	*2*	*U*	*2*	*U*
Ethene	-	µg/L	1.7	J	*2*	*U*	*2*	*U*	*2*	*U*
Methane	-	µg/L	**7.4**		**1.2**	**J**	2	U	**0.21**	**J**
Alkalinity	-	mg/L	**288**		**236**		**288**		**297**	
TDS	-	mg/L	**1410**		**620**		**1160**		**1230**	
TOC	-	mg/L	**0.971**	**J**	**0.332**	**J**	**0.45**	**J**	**0.491**	**J**
DO	-	mg/L	**0.31**		**4.46**		**4.89**		**4.76**	
Ferrous Iron	-	mg/L	**0.23**		**0.03**		**0.28**		**0.07**	
ORP	-	mV	**-156.7**		**-80.7**		**91.8**		**30.7**	
pH	-	su	**7.32**		**7.21**		**6.82**		**6.9**	
Specific Conductance	-	mS/cm	**1.071**		**0.948**		**1.889**		**2.016**	
Temperature	-	deg C	**24.2**		**15.4**		**17.1**		**15.4**	
Turbidity	-	NTU	**0.8**		*0*	*U*	**0.42**		**3.91**	

Notes:
[a] Screening level is EPA MCL
Bold indicates detected values
Italics indicates nondetected values
[1] Nitrate and nitrite as total nitrogen
[2] Total alkalinity as calcium carbonate ($CaCO_3$)

J = Result is estimated
J- = Result is estimated biased low
U = Analyte was not detected at the associated value

Acronyms:
deg C = degrees Celsius
DO = dissolved oxygen
EPA = U.S. Environmental Protection Agency
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mg/L = milligrams per liter
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MCL = maximum contaminant level
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mV = millivolts
NTU = nephelometric turbidity unit
su = standard units
TDS = total dissolved solids
TOC = total organic carbon
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Appendix A

Salt Lake City Division of Transportation Traffic Control Permit

Traffic Control Permit

Salt Lake City Community and Neighborhoods
Division of Transportation
349 South 200 East #150
Salt Lake City, Utah 84111
Telephone (801) 535-6630
E-Mail TechPermit@slcgov.com

Permit # TRN2019-03813

Organization Name: Wasatch Environmental
Address: 2410 W California Ave SALT LAKE CITY, UT 84104
Contact Person: EMMA ROTT Phone: 4062413259 Cell: 315-254-9949
Barricade Company: Barricade Phone:

All work conducted in the public right of way shall conform to the current edition of the M.U.T.C.D. part 6. The Organization issued the Traffic Control Permit shall be responsible for all barricade placement and maintenance.

Project Name / Description: Sampling ground water wells for the VA at various locations.
General Work Type: Staging Specific Work Type: Barricade
City Project # Public Way Permit #
Special Event Permit # Block Party Permit #

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**Elizabeth St.**	**785 S**	**785 S**	**E**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**McClelland St.**	**900 S**	**900 S**	**E**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Approved By: Dave Pratt Issue Date: 11/27/2019

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**Alpine Place**	**1150 E**	**1150 E**	**E**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**Gilmer Dr**	**1280 E**	**1280 E**	**S**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**14th E**	**Sunnyside Ave**	**Sunnyside Ave**	**W**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**Belmont Ave**	**McClelland St.**	**McClelland St.**	**S**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Approved By: Dave Pratt

Issue Date: 11/27/2019

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**University St.**	**700 S**	**700 S**	**S**

Start Date	*End Date*	*Full Road Closure?*	*Barricade Manual Fig #*	*Description*	*Special Requirements*
12/03/2019	06/25/2020	No	TA-6	TESTING GROUND WATER NOT DRILLING OR TRENCHING	SHALL MAINTAIN ACCESS TO ALL PROPERTIES AND COORDINATE WITH RESIDENTS AND BUSINESSES AFFECTED. WORK HOURS SHALL BE BETWEEN 9AM & 4PM. MAY WORK FROM 6PM TO 6AM.

Approved By: Dave Pratt

Issue Date: 11/27/2019

Appendix B
Field Forms

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/16/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Karla Leslie CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Kelby Depner Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	Sunny	**Partly Cloudy**	Overcast	Rain	**Snow**
Temperature	85+ º F	70 to 85º F	**50 to 70 º F**	32 to 50 º F	To 32 º F
Wind	Still	**Moderate**	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Water levels collected:

Team conducted a synoptic round of water levels, collecting measurements at each well within the monitoring well network.

Samples collected:

Samples were collected from the following wells:

- MW18-GW061620
- MW19-GW061620

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

Team attempted to install pressure gauge and sampling spigot on MW-17D on 6/15/2020. While water was freely flowing over the top of the well casing, the water pressure was not great enough to freely flow from the sampling spigot or register on the pressure gauge. On 6/16/2020 a standpipe was purchased and installed at MW-17D. Once the water level in the standpipe stabilized, the water level measurement was recorded. The standpipe in combination with a portable bladder pump will be used to complete low-flow groundwater sampling at this well during this event.

Projected Work – Near Term:

6/17/2020 – Collect groundwater samples

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

Date: 6/16/2020

Location: MW-19

Description: Team sampling MW-19.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/17/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Karla Leslie CDM Smith – Breanna Moak CDM Smith – Maria Day Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	Sunny	**Partly Cloudy**	Overcast	Rain	**Snow**
Temperature	85+ º F	70 to 85º F	**50 to 70 º F**	32 to 50 º F	To 32 º F
Wind	Still	**Moderate**	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-20S
- MW-20D
- MW-22
- MW-02
- MW-01D

Pump deployment:

Team re-deployed the pump at MW-01S. The team will return to sample the pump in the near future.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

The team encountered a similar issue at both MW-19 and MW-02 after minimum purge had been met, and shortly before parameter stabilization. Apparent bladder disconnection had occurred at both wells based on lack of discharge water and frequent surges of air through the discharge line. The team resolved the issues at both wells by pulling the pump, securing the bladder, re-deploying the pump and re-started purging until stabilization was reached.

Projected Work – Near Term:

6/18/2020 – Collect groundwater samples

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	Date: 6/17/2020 **Location:** MW-20 **Description:** Team sampling at MW-20S.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Date: 6/17/2020

Location: MW-01S/D

Description: Sampling setup at MW-01S.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/18/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Karla Leslie CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Joe Miller Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	85+ º F	**70 to 85º F**	**50 to 70 º F**	32 to 50 º F	To 32 º F
Wind	Still	**Moderate**	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-22
- MW-13D
- MW-13S
- MW-03RA
- MW-03RB
- MW-03RC
- MW-03RD

Transducer downloads

Team downloaded data from all the transducers located within the monitoring well network. Additionally, the transducer associated with MW-01S was redeployed.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

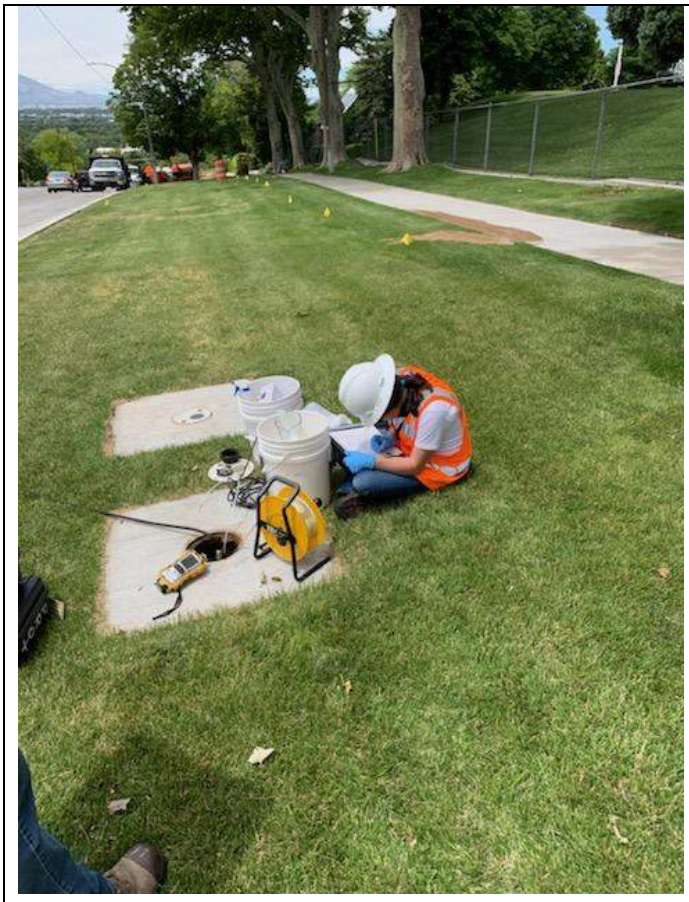
While sampling at MW-13S, an apparent spill of drilling mud occurred due to utility construction in the area (downgradient of the sample location). The construction workers brought in a vacuum truck to remove the spill while the team was filling sample bottles at MW-13S. The team stopped filling bottles and allowed the well to continue purging. Once the work was completed, the team continued sampling.

Projected Work – Near Term:

6/19/2020 – Collect groundwater samples

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	**Date: 6/18/2020** **Location:** MW-13 **Description:** Team sampling at MW-13. The construction where the spill and associated cleanup occurred can be viewed in the background.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/19/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Karla Leslie CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Whitney Treadway Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	85+ º F	**70 to 85º F**	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-15S
- MW-15D
- MW-12S
- MW-12D
- MW-05R
- MW-25C

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

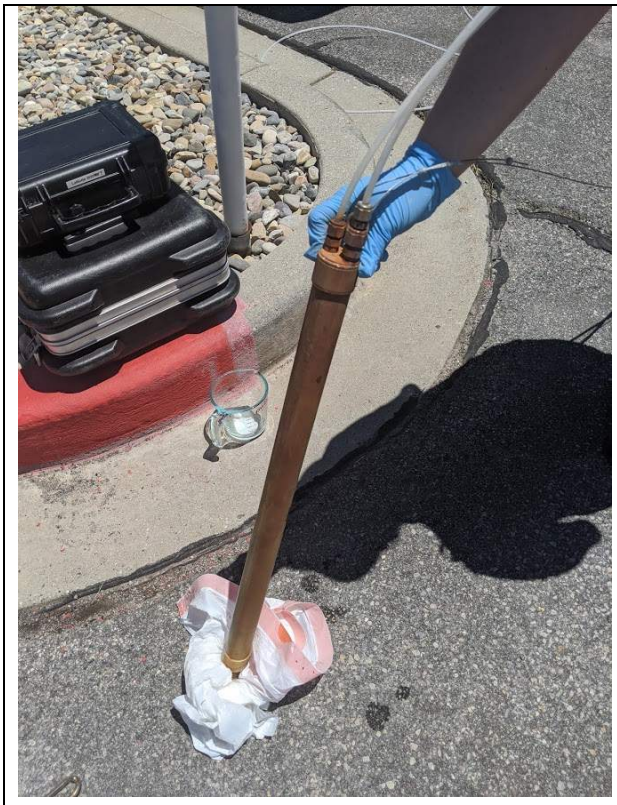
The team found a second quick-connect failure on the air line at MW-05R upon arrival. The team pulled the pump and retrieved the tubing. The team then re-deployed the pump and proceeded with purging and sampling.
The team also encountered issues with sampling at MW-25. The team experienced breakthrough at both MW-25a and MW-25b when the purge was flowing at greater than 50 ml/min. Additional troubleshooting indicated that the recharge of the sample system requires 3-4 minutes between discharge cycles. This would result in a very slow sampling rate. After discussion with BESST, the team determined that the slow recharge could be caused by clogging of the filter in the pump or slow recharge from the screened interval, which may require more aggressive development to attempt to increase recharge rate. Further discussion with the VA and USACE next week is requested.

Projected Work – Near Term:

6/20/2020 – K. Leslie to demobilize. The remainder of the team will have a rest day and will resume sampling on 6/21/2020.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	**Date: 6/19/2020** **Location:** MW-05R **Description:** The team had to pull the pump to retrieve the disconnected air line from the well at MW-05R. After pulling the pump, the team was able to re-deploy and sample.
	Date: 6/19/2020 **Location:** MW-12S **Description:** Team sampling at MW-12S

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/21/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Ben Carreon CDM Smith – Whitney Treadway CDM Smith – Joe Miller Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	85+ º F	**70 to 85º F**	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-16S
- MW-16D
- MW-17S
- MW-17D
- MW-01S
- MW-06
- MW-04
- MW-08A

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

The resident located at 1123 Alpine Place voiced his frustrations with the team attempting to setup to sample MW-14S/D today. He appeared to be upset that the team was sampling on Sunday near his home and stated that he will be calling the VA to discuss his frustrations with the project. Our team cleaned up their equipment and left the area. We will consider returning to sample after further discussions with the VA.

Projected Work – Near Term:

6/22/2020 – Continue groundwater sampling.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

Date: 6/21/2020

Location: MW-17D

Description: Team sampling at MW-17D using a portable bladder pump and standpipe.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/22/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Ben Carreon Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	**85+ º F**	70 to 85º F	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-08B
- MW-08C

Well repairs conducted:

The air and water lines were shortened, duct tape removed, push-to-connect fitting with plug on the water line reinstalled, and an NPT quick-connect fitting was installed on the airline to the following wells:

- MW-23A
- MW-23B
- MW-23C
- MW-26A
- MW-26D
- MW-25A
- MW-25B
- MW-25C

The NPT quick connect fitting for the airline was replaced on the following wells based on the corrosion occurring on the current fittings:

- MW-03RA
- MW-03RB
- MW-03RC
- MW-03RD
- MW-08C

Well tags were added to the following wells:

- MW-23A
- MW-23B

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

- MW-23C
- MW-27

The dedicated pump was installed at the following well:

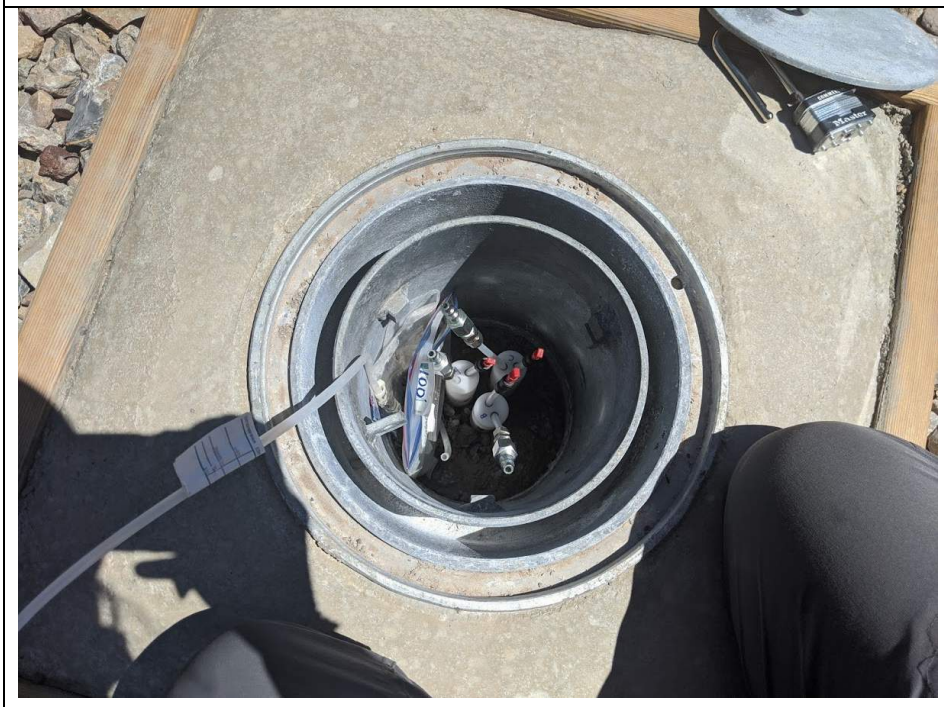
- MW-27

Projected Work – Near Term:

6/22/2020 –Continue groundwater sampling.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	Date: 6/22/2020 **Location:** MW-27 **Description:** Dedicated pump installed at MW-27.
	**Date: 6/22/2020** **Location:** MW-25 **Description:** Well repairs were conducted at MW-25 by trimming the air and water lines, replacing the push-to-connect on the airline with an NPT quick connect and re-installing the push-to-connect fitting on the water line.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/23/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Ben Carreon Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	**85+ º F**	70 to 85º F	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-23C
- MW-14S
- MW-14D

Other activities:
The dedicated pump for MW-28 was installed today.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

The team also encountered issues with sampling at MW-23. The team experienced breakthrough at both MW-23a and MW-23b. The team saw breakthrough at MW-23a immediately at a very low pressure and discharge time. The team saw breakthrough at MW-23b when the system was purging at greater than 50 ml/min. The team pulled the pump at MW-23b and did not notice any visible defects to the system. The team will return tomorrow to continue troubleshooting.

Projected Work – Near Term:

6/23/2020 –Continue groundwater sampling.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	Date: 6/23/2020 **Location:** MW-23 **Description:** Team purging at MW-23c.
	Date: 6/23/2020 **Location:** MW-23b **Description:** The team pulled the pump from MW-23b to inspect it for any visual signs of damage while troubleshooting the well. No visible deficiencies were noted.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/24/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Ben Carreon Wasatch Environmental – Anna Fiorini
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	**85+ º F**	70 to 85º F	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard area.

Samples collected:

Samples were collected from the following wells:

- MW-27
- MW-28

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):

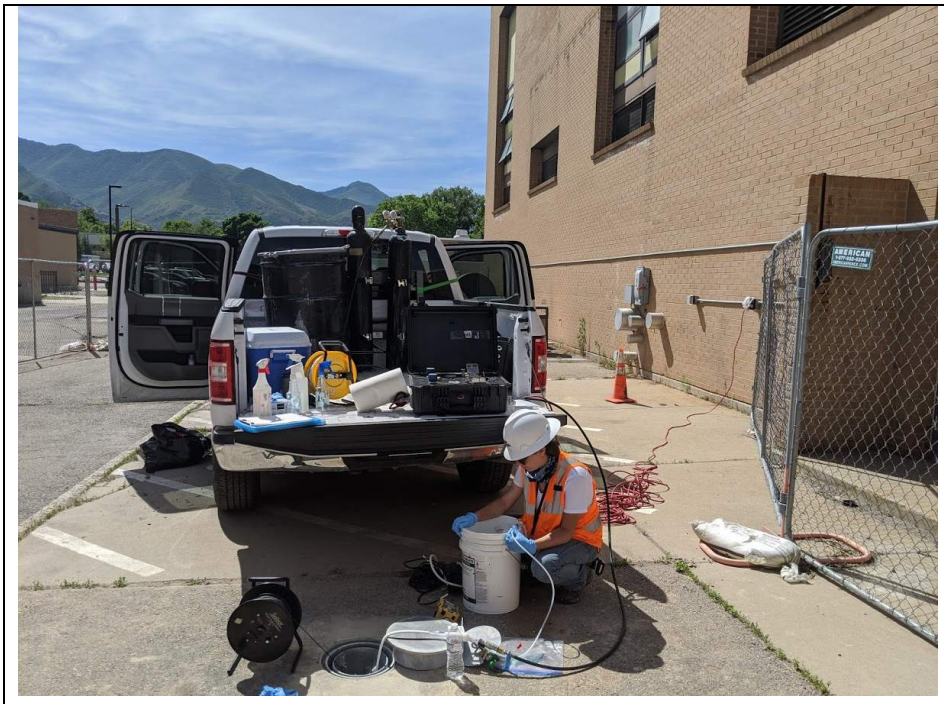
The team continued to troubleshoot sampling at MW-23. The pumps in both MW-23b and MW-23a were pulled up slightly to unseat the pump from the receiver at the top of the screen and to operate the pump in open water. The team experienced similar issues with the pumps operating in the open water as compared to be seated in the pump receiver. The team pulled the pumps from both MW-23b and MW-03Rb to ship back to BESST for troubleshooting.

Projected Work – Near Term:

6/24/2020 – Ship rental equipment back and continue with well repairs as needed.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:

	**Date: 6/24/2020** **Location:** MW-23 **Description:** Team troubleshooting at MW-23b.
	Date: 6/24/2020 **Location:** MW-28 **Description:** Team purging at MW-28.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 6/25/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Breanna Moak CDM Smith – Maria Day CDM Smith – Ben Carreon
Visitors/Others:	

Weather	**Sunny**	Partly Cloudy	Overcast	Rain	Snow
Temperature	**85+ º F**	70 to 85º F	50 to 70 º F	32 to 50 º F	To 32 º F
Wind	**Still**	Moderate	High		
Humidity	Dry	**Moderate**	Humid		

Equipment in Use (field instruments, subcontractor equip, etc.)	• Low flow groundwater sampling equipment

Description of Field Activities – including samples/data collected, etc.:

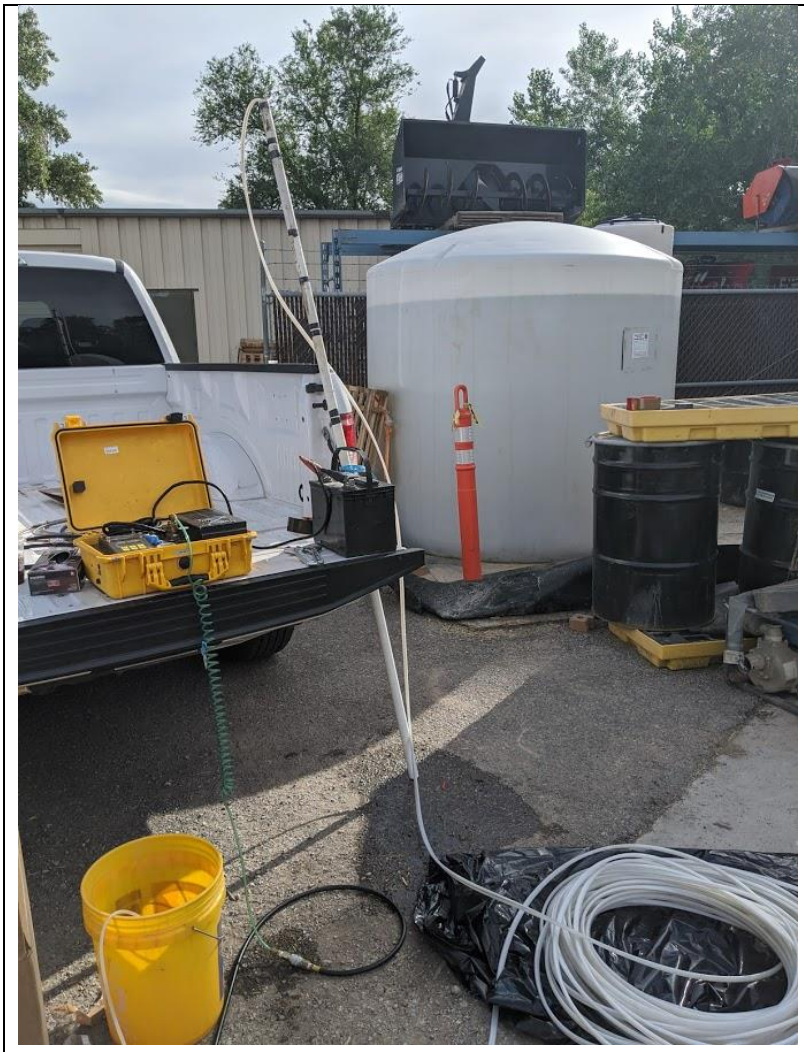
- H&S tailgate was conducted at the IDW yard area.
- Team tested the tubing for MW-23b, as compared to MW-03Rb in the IDW yard area, as requested by BESST. The team used approximately 8 ft of capped 2" casing and filled it with DI water. The team then deployed MW-03rb into the casing and attempted to purge the water in the casing. The pump / tubing functioned properly. The team then attempted to purge the water with the pump and tubing from MW-23b. The system functioned in a similar way that was observed at the wells – sporadic water droplets with breakthrough. The team then removed the tubing from the MW-03Rb and placed the tubing on the pump from MW-23b. The system again only produced air with some water bubbles. The team was able to conclude that the issues occurring at MW-23b were not due to tubing.
- Shipped both pumps and tubing from MW-03Rb and MW-23b to BESST for troubleshooting.
- Added caps and additional labels to the soil vapor monitoring points at the following wells:
  - MW-24
  - MW-25
  - MW-27
  - MW-28

Projected Work – Near Term:

6/26/2020 – Team to demobilize.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

Photos:



Date: 6/25/2020

Location: IDW Yard

Description: Team testing the tubing from the pumps pulled from MW-03RB and MW-23B.

Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 06/25/2020 **Location**: IDW yard **Description**: Team members removed working pump from MW-03RB for troubleshooting purposes. It was tested in the IDW yard and found to have adequate water flow. BESST requested this pump be shipped to them to aid in their troubleshooting of the lack of water flow at new ZIST wells (MW-23, MW-25, MW-26).
	Date: 06/25/2020 **Location**: IDW yard **Description**: Team members removed malfunctioning pump from MW-25B for troubleshooting purposes. It was tested in the IDW yard and found to not have adequate water flow. Visible corrosion can be observed on the filter. BESST requested this pump be shipped to them to aid in their troubleshooting of the lack of water flow at new ZIST wells (MW-23, MW-25, MW-26).

Location Salt Lake City Date June 15, 2020

Project / Client VA / 700 South 1600 East PCE Plume

Weather:
PPE: Modified Level D
Personel: EMMA ROTT, KARLA LESLIE, MARIA DAY, BREANNA MOAK
CDM Smith personell onsite for drilling work: Joe Miller, Whitney Treadway
Wasatch Environmental: Anna Fiorni
Planned activites: ~~Synoptic WLs, GW Sampling~~ ER 6/15/20
Organize equiptment for GW sampling
0800 K. Leslie, E. Rott onsite. Collect supplies to install pressure guage and spigot on MW-17D.
0930 Arrive at MW-17D. Attempt to install pressure guage. Noted that the new guage doesn't fit in casing.
0940 Remove K-packer from well, water level is rising so the well is flowing.
0950 After installing pressure guage no pressure or flow was observed. Determined that the head is not big enough to exceed the height of the guage.

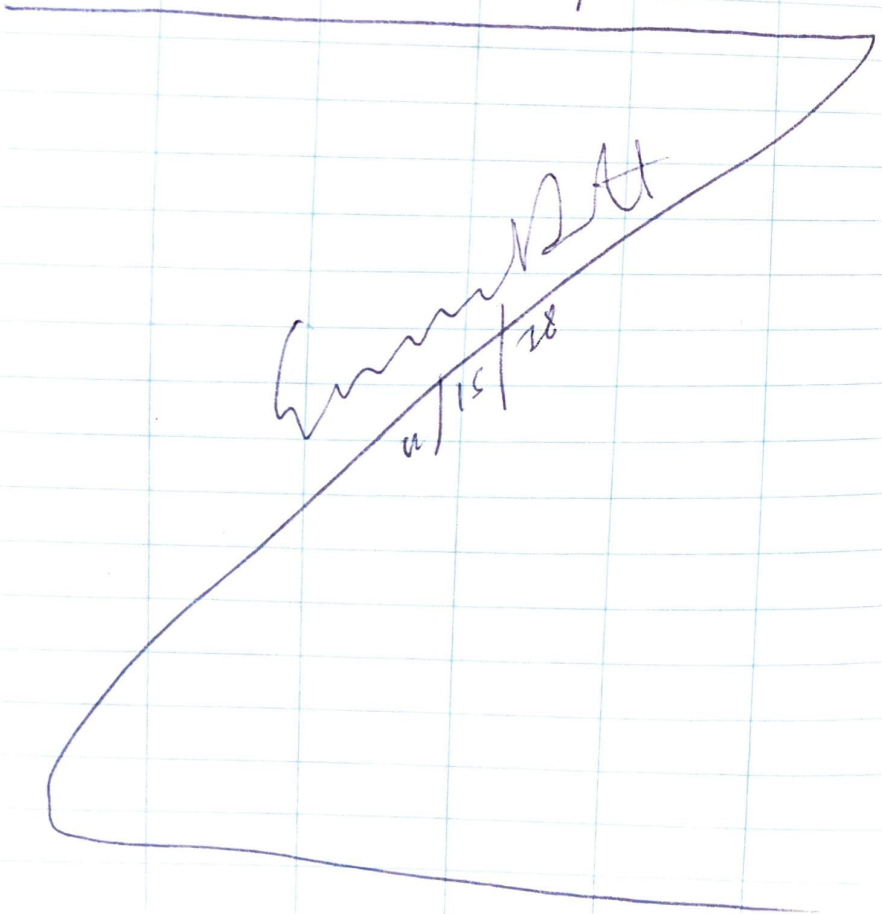
Location Salt lake City Date 6/15/20

Project / Client VA 1700 South 1600 East PCE Plume

1000 Team to Home depot to get supplies for sampling.

1200 Team to Wasatch to pickup equiptment from Field Environment and the sample bottles.

1400 E. Rott, K. Leslie to hotel to make bottle kits for each well to be sampled.



Location VA Plume SLC Date 6/16/20

Project / Client VA 1700 South 1600 East PCE Plume

Weather: Overcast

PPE: Modified Level D

Personnel: COM Smith - E. Rott, Kelby Depner, Breanna Moak, Karla Leslie, Mari Day

Wasatch - Anna Fiorni

Planned Activities: Synoptic WL event, GW Sampling

0700 Field team onsite. Health and Safety melting.

0730 Calibrate PIDs and YSIs.

0800 Organize equiptment.

0830 Field team to MW-18 to measure WL and check all WLM against eachother.

0915 Take WL at MW-18, confirm all WLM are all with reason.

0930 E. Rott, B. Moak, M. Day to Badging office. K. Leslie to hotel to pick up package. A. Fiorni, ~~K~~. Depner to continue taking WLs.

1030 K. Leslie, B. Moak to Enterprise to get rental vehicle for Breanna.

1130 E. Rott, M. Day to 21st wells on campus. Pull up pump and let the WL equilibreate, will return in ~1 hour.

Rite in the Rain

Location Salt Lake City Date 6/16/20
Project / Client VA 700 South 1600E PCE Plume

1200 Team to MW-26. Two intervals with no pump are not labeled. Team takes TD measurement to determine which will is which.
1230 K. Leslie to Home Depot to get stand pipe for MW-17.
1235 Team labeled the casing for MW-26
1245 K. Leslie verified that standpipe in combination with portable bladder pump will be used on MW-17D for this event.
1400 E. Rott meets Marc Yalom (VA) to enter construction zone for WL measurements at MW-27 + MW-23.
1415 K. Leslie, B. Moak, M. Day to MW-18 for sampling.
1436 Begin purge at MW-18. E. Rott, K. Depner, A. Forni to MW-18.
1500 E. Rott BACK to MW-27/23 area to meet M. Yalom (VA) for water level measurements of MW-23 2ist wells after letting them equilibrate.

Location Salt Lake City Date 6/16/20
Project / Client VA / 700S 1600E PCE Plume

1508 Collect MW18-GW061620
1530 Team moves to MW-19
1614 Begin purge at MW-19.
1645 Well begins to produce only air from effluent discharge line. Team pulls pump to inspect. Noted that bladder may have been loose. Redeployed and began purge again.
1725 Decision to sample at MW-19 although turbidity is not ±10% or <10 NTU. Decision made because turbidity increased due to pump removal. Team purged much more than min purge (~4 gal).
~~1800 Team~~ + QR 6/16/20
1728 Collect MW19-GW061620

1800 Field team offsite.

Emmett
6/16/20

Location SALT LAKE CITY Date 6/17/20

Project / Client VA / 700S 1600E PCE Plume

Weather: Overcast, ~50°F

PPE: Modified Level D

Personnel: CDM Smith: E. Rott, B. Moak, M. Day, K. Leslie

Wasatch: Anna Forini

Planned activities: Low-flow GW sampling

0700 Field team onsite.

0715 Calibrate YSIs and PIDs.

0730 H+S meeting at the tailgate

0800 Team organizing equipment for sampling.

0900 E. Rott, B. Moak, M. Day to MW-20
K. Leslie, A. Forini to MW-2.

0925 Begin purge at MW-20S.

1025 Begin purge at MW-20D.

1030 Marc Yalom (VA) onsite at MW-20.

1102 Collect ~~MW-20S-GW061720~~ ER
MW20S-GW061720

1135 Collect MW02-GW061720
Collect MS/MSD at this location.

1140 Collect MW20D-GW061720

1145 M. Yalom offsite

1205 Collect FD04-GW061720 at MW-20D.

Location SLC Date 6/17/20

Project / Client VA 700S 1600E PCE Plume

1300 E. Rott, M. Day, B. Moak to connex for supplies.

1400 E. Rott, M. Day, B. Moak to MW-22

1500 Collect TB01-GW061720

1505 Collect TB02-GW061720

1510 Collect TB03-GW061720

1515 Collect TB04-GW061720

1520 K. Leslie, A. Forini to MW-01S/D.
Redeployed pump in MW-01S.
Note: 1/4" x 1/4" setup for tubing

1525 Collect MW22-GW061720

1600 E. Rott, M. DAY, B. MOAK to connex to finish packing coolers

*1630 M. Day, B. Moak to Fedex to ship.

→ *1625 Collect MW01D-GW061720
used almost 2 full nitrogen tanks on the purge.

1730 Field team offsite!

Emma Rott
6/17/20

* See next page

Location Salt Lake City Date 6/18/20

Project / Client VA 7005 1600E PCE Plume

Weather

PPE: Modified Level D

Personel: CDM Smith - Emma Rott, K. Leslie, B. Moak, M. Day
Wasatch - A. Fiorini

Task: GW sampling

6/17/20 NOTES:

* Add notes to MW02 → team encountered issues right befor stabilization and after min purge had been met. Apparent bladder had fallen off from the bubbles coming out of the discharge line. Team pulled pump, ensured bladder was secure, re-deployed and re-started purge parameter stabilization.

0700 Team onsite.
0715 H+S meeting at tailgate.
0730 Calibrate YSIs and PIDs.
0830 Team to MW-3A to learn how to use the Zist pump and setup.
0900 ~~Team begins~~ QR 6/18/20 Converter from connex was smoking when plugged in. Team used inverter from Wasatch instedd.

Location SALT LAKE CITY Date 6/18/20

Project / Client VA 7005 1600E PCE Plume

0930 Start purge on MW-3RB. See break through after ~10 min purge. Stop system.
0930 Start purge at MW-3RA, See break through after ~5 min purge. Stop system. K. Leslie, M. Day to MW-21
1030 Attempted to start purge at MW-3RC. Apparent check valve, water would run back down tubing on recharge cycle.
1045 Team lifted pump slightly to "shake" for check valve fix. Unsuccessful. Tubing does not have an additional cable for security, not comfortable shaking it.
1100 Team starts purge on MW-BRD.
1115 Team attempts to surge system on MW-3RC with air to fix check valve.
1115 Collect MW21-GW061820
1130 Break through at MW-03RC. Turn system off and allow for system to re-equilibrate.
1135 K. Leslie, M. Day to MW-13S/D.
1230 Restart purge at MW-03RC.
1235 Collect MW03RD-GW061820

Location SLC

Project / Client VA | 700S 1600E PCE Plume

Date 6/18/20

1240 Start purge at MW-13S

1325 Collect ~~MW~~ ER 6/18/20 MW03RC-GW061820

1325 Collect MW13S-GW061820

1343 Begin purge at MW-03RB.

1420 Begin purge at MW-03RA.

1430 Construction occuring down-gradient of MW-13S caused a spill. Vac truck showed up to cleanup the silty-water. Team at MW-13S stopped filling bottles until equiptment exited the area.

* 1520 Begin purge at MW-13D.

↳ 1505 Collect MW-03RB

1540 Collect MW-03RA

1545 E. Root begins to pack coolers.

1600 Collect TB05-GW061820

1605 Collect TB06-GW061820

1610 Collect TB07-GW061820

1615 Collect TB08-GW061820

1620 Collect MW-13D-GW061820

1630 J. Miller (CDM Smith) spent day downloading transducer data at all locations.

Location SLC

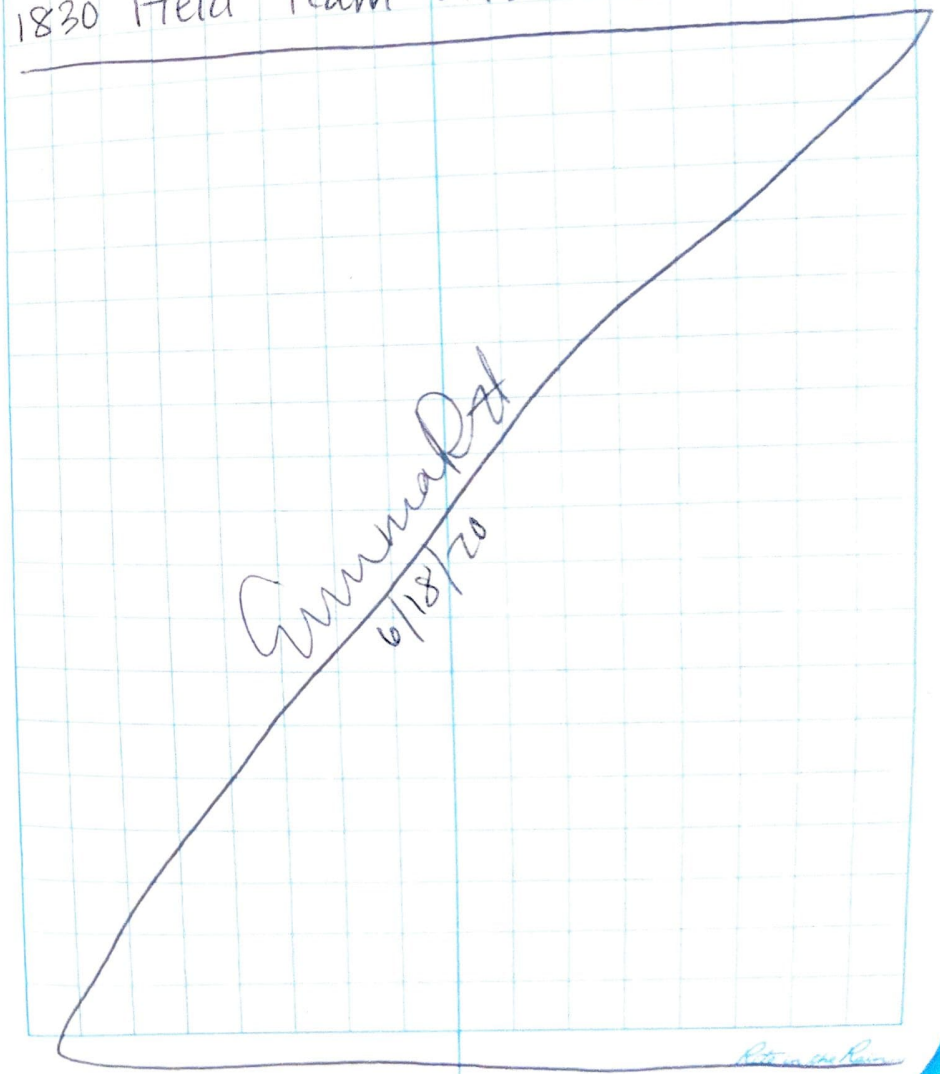
Project / Client VA | 700S 1600E PCE Plume

Date 6/18/20

1700 J. Miller re-deployed transducer at MW-01S.

1730 B. Moak to fedex to shop samples.

1830 Field team offsite.



Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 6/19/20

Weather: Sunny, 70°F
PPE: Modified Level D
TASK: GW Sampling
Personnel: CDM Smith - Emma Rott, B. Moak, M. Day, K. Leslie, W. Treadway. Wasatch Env. - A. Fiorni

0700 Field team onsite. H&S meeting at the tailgate.
0730 Calibrate YSIs, PIDs. Load compressed gas into 2 trucks and traffic control.
0800 E. Rott, M. Day, W. Treadway to MW-15S/D. E. Rott helps set up traffic control.
0815 E. Rott, B. Moak to MW-01S.
K. Leslie, A. Fiorni to MW-25.
0815 Start purge at MW-15D.
0825 Start purge at MW-15S.
0825 Start purge at ~~MW-01S.~~ EK 6/19/20
MW-25A. Team immediately saw breakthrough. Stop purge and will attempt different borehole.
0840 Team start purge at MW01S.
0850 Start purge at MW25B

Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 6/19/20

0900 Collect MW15D-GW061920 at MW15D
0905 Collect FB03-GW061920
0915 Collect MW15S-GW061920
0930 Breakthrough occuring at MW25B. Team to stop for troubleshooting.
0940 No water coming from MW01S. Thought broken MP10H. Team to MW05R for trouble shooting MP10H. Will return to MW01S to try again.
1000 E. Rott to MW15S/D. Helped team move traffic control and purge water to MW12S/D.
1015 Start purge at MW25C.
1100 E. Rott, B. Moak to MW05R. WLM malfunctioning.
1130 Start purge at MW12S.
1130 MW05R air line second quick connect was disconnected. Team to pull pump and retrieve tubing.
1155 Collect MW25C-GW061920
1240 Collect MW12S-GW061920
1250 Attempt restart purging at MW25B.
1325 Breakthrough occurs again at MW25B. K Leslie to call BESST and Neil Smith to discuss.

Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 6/19/20

1345 E. Rott confirms MP10H not functioning at MW05R. calls Field to order new one. Sets up using solinst controller.

1400 Start purge at MW05R.

1508 Start purge at MW12D. Team experienced slowing discharge while filling bottles for MW12S.

1515 Collect MW05R-GW061920

1535 Collect MW12D-GW061920

1600 Team to Connex to pack coolers.

1610 Collect TB09-GW061920

1615 Collect TB10-GW061920

1620 Collect TB11-GW061920

1625 Collect TB12-GW061920

1630 K. Uslue continues troubleshooting MW25. Options: low recharge well, low head resulting in 3-4 min recharge and 50 ml/min breakthrough. Will discuss with VA/USACE about options.

1800 Field team offsite.

Signature

6/19/20

Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 6/21/20

Weather: Sunny, 80°F

PPE: Modified Level D

Task: GW Sampling

Personell: COMSmith - E. Rott, M. Day, B. Moak, N. Treadway, J. Miller, B. Carreon

Wasatch - A. Fiorni.

0700 Field team onsite. Calibrate YSIs, PIDs.

0730 H+S meeting at tailgate.

0815 N. Treadway, M. Day to MW16S/D. J. Miller follows to set up traffic control

0850 J. Miller, B. Carreon, B. Moak to walk in for sampling at MW04. E. Rott, A. Fiorni to MW01S.

0843 Purge start at MW16S

0845 Attempt purge at MW01S. Team notes no water. May need to switch lines at top of pump after re-installation

0912 Team switches lines at MW01S. Purge start successful.

0920 Purge start at MW04.

0930 Collect MW16S-GW062120

1000 Collect MW01S-GW062120

1000 Collect MW04-GW062120

Location SLC

Project / Client VA / 7005 1600E PCE Plume

Date 6/21/20

1008 Start purge at MW16S

1015 Collect FD01-GW062120

1020 J. Miller, B. Moak, B. Carreon to MW06.

1030 E. Rott, A. Fiorni to MW17S/D.

1040 Collect MW16D-GW062120

1115 Purge start at MW06.

1150 Purge start at MW17S.

1200 Collect MW06-GW062120

1205 W. Treadway, M. Day to MW14S/D.

1210 Resident at 1123 Alpine Place yelled at team at MW14S/D. Upset about Sunday sampling, project as a whole, threatened to call VA and make sure cannot sample.

1215 W. Treadway, M. Day leave 14S/D, join team at MW17S.

1230 E. Rott calls N. Smith (COM Smith) to discuss incident. Will need to call VA on Monday to discuss and make plan for sampling.

1245 J. Miller offsite. E. Rott, B. Carreon, M. Day, B. Moak to MW08.

~~1400~~ ER 6/21/20

Location SLC

Project / Client VA 7005/1600E PCE PLUME

Date 6/21/20

1250 Collect MW17S-GW062120

1330 Team at MW08 having issues with ZIST controller. No apparent power. Changed inverter, extension cord, car, Changed inverter, extension cord, car,

1400 Begin setting up on MW08A

1430 Purge start at MW08A.

1440 Install standpipe at MW17D. Use portable bladder pump to sample.

1450 Purge start at MW17D.

1525 Collect MW17D-GW062120

1540 Team able to take "face" off of ZIST controller and found un-connected wire. Pluged back in. Controller now working.

1600 Change from solinst controller to MP10A at MW08A b/c solinst not functioning properly.

1615 Re-install K-packer at MW17D.

1630 Collect MW08A-GW062120 MS/MSD

1700 Collect EB01-GW062120 from portable bladder pump after MW17D, decon event.

1800 Field team offsite.

ER 6/21/20

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/22/20

Weather: Hot, 80°F, Sunny
PPE: Modified Level D
Task: GW Sampling
Personnel: CDM Smith – E. Rott, B. Moak, M. Day, B. Carreon
Wasatch – A. Fiorni

0700 Field team onsite.
0730 Calibrate YSIs and PIDs
0745 H+S meeting at tailgate
0815 B. Moak, B. Carreon, A. Fiorni to MW08 to collect 2 other intervals.
0830 E. Rott, M. Day packing coolers
0900 Collect TB13-GW062220
0905 Collect TB14-GW062220
0910 Collect TB15-GW062220
0910 Purge start at MW08C.
0935 Purge start at MW08B
0945 E. Rott spoke with Marc Yalom (VA) about resident at MW14S/D. He stated resident is difficult to deal with. CDM team made right decision. Asked team to wait until 6/23 to sample at there so Shannon Smith (VA) can contact them. Team will verify with VA prior to sampling

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/22/20

0945 M. Yalom also gave E Rott OK to work with construction crews near MW23/27 for sampling schedule
1000 Collect MW08B-GW062220
1010 Collect FD02-GW062220 at MW08B
1020 Collect MW08C-GW062220
1030 M. Day to Fedex + Home depot for ferrules
E. Rott to swagelock/grainger for following parts:
1/4" tubing to 1/4" NPT swagelock for 2st airline
1/4" air quick connect for 2st wells replacement
10/32" NPT to 1/4" tubing to replace top of pump barbs
* need to order more, only 2 available at swagelock

1100 A. Fiorni, B. Moak attempted installing red plug on water outlet push connect at MW01 Verified that solinst cap won't fit, therefore will not continue with that task
1200 Team packing more coolers
1300 Collect TB16-GW062220
1400 Team to MW27 to install pump well completion/vault too shallow for solinst 4" to 2" coupler. Team to ACE to find shorter solution

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/22/20

1430 Team to MW23. Shorten air/water lines, remove duct tape, reinstall push-to-connect on water, install swagelock + air quick connect to airline. Install well tags. Install lock on well.

1500 Team to MW26. Complete well repairs as described for MW23 (except no well tags) for A/D intervals.

1530 Team to MW25. Complete well repairs for A, B, C intervals. Need well tags.

1600 Team to MW03R. Replace corroded air quick connect on all intervals.

1630 Team to MW08 Replace corroded air quick connect on MW08C.

1700 Team to MW27. Determine can install Solinst coupler after cutting top black part ~2". Team will not be able to put metal lock plate in but can lock well w/solinst cap.

1730 Install 2 1/4" swagelock fittings on top of pump to replace hose barbs. Using 1/4" x 1/4" bonded tubing. Water line teflon lined. Hang pump on steel cable.

1830 Install pump at 210' at MW-27.

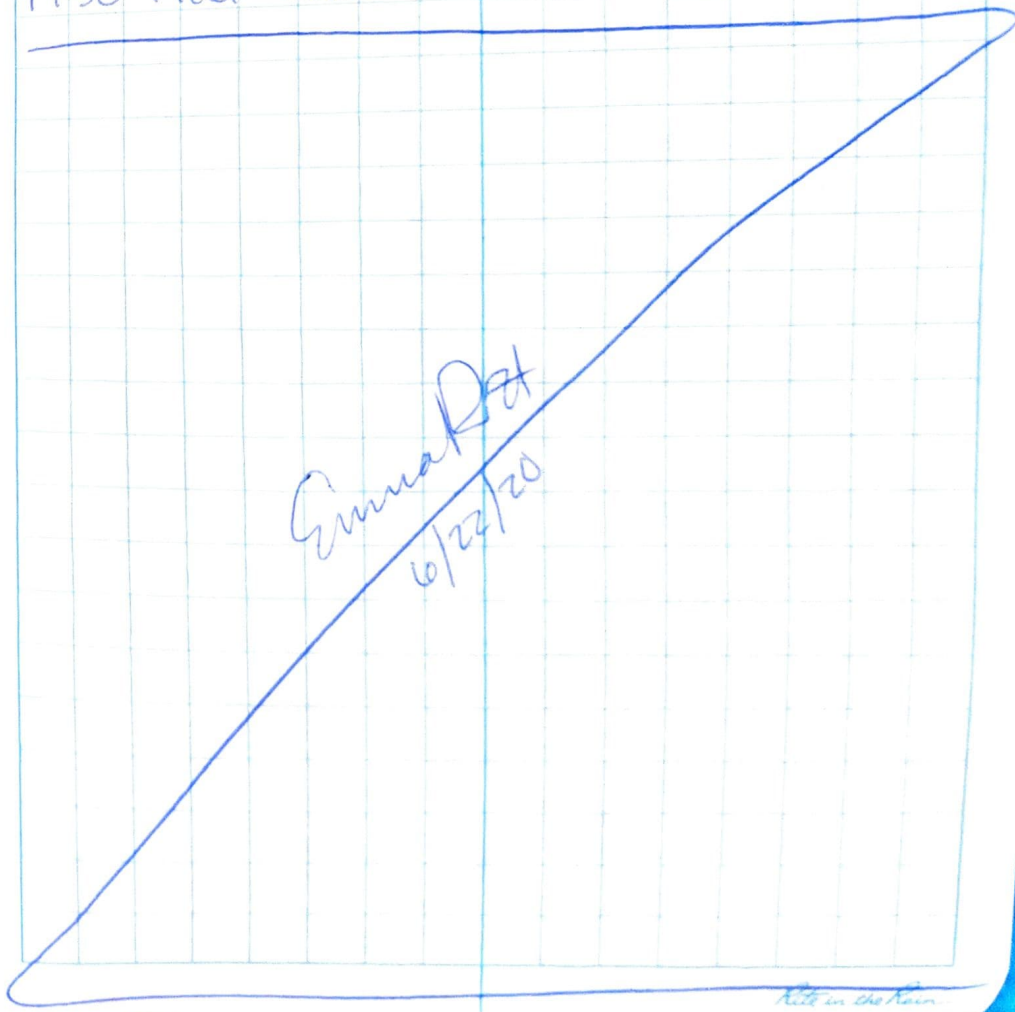
Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/22/20

1900 Team to MW-28. Determine alternate solution will need to be made for hanging pump. Team will also need to order swagelock fittings for top of pump.

1930 Field team offsite.



Location SLC

Project / Client VA 700S 1600E PCE PLUME

Date 6/23/20

Weather: Sunny 80°F
PPE: Modified Level D
Task: GW Sampling
Personell: CDM Smith – E. Rott, B. Moak, M. Day, B. Carreon
Wasatch – A. Fiorni

0700 Field team onsite.
0730 Calibrate PIDs and YSIs
0740 H+S meeting at tailgate
0800 M. Day, A. Fiorni to MW14S/D.
E. Rott, B. Moak, B. Carreon to MW23
0830 Purge start at MW-23B
0910 Breakthrough at MW-23B.
0930 Cause breakthrough at MW-23A, only 90 ml standing water, minimal recharge noticed.
0910 Purge start at MW14S
0940 Start purge steps on MW23C to see what recharge time will be. See purge form for detailed notes.
1040 Collect MW14S-GW062320
1100 Purge start at MW14D
1150 Start purge steps on MW23B again.
1140 Collect MW14D-GW062320

Location SLC

Project / Client VA / 700S 1600E PCE PLUME

Date 6/23/20

1250 Collect MW23C-GW062320 note flowing at ~75 ml/discharge cycle which equates to ~40 ml/min. Decision to sample at this rate b/c can still fill 1 VOA with one discharge cycle.
1312 Conduct recharge test on MW23B by removing air line following discharge cycle and connecting flexible tubing into water. Time for bubbling to stop. ~120s, determined to continue purging.
1335 Breakthrough occurs at MW23B. Team to allow well to recharge.
1340 B. Carreon, M. Day, A. Fiorini to deploy MW-28 dedicated pump. pump will be held by PVC cap with new fittings screwed on b/c Solenst receiver is too tall for well casing.
Deploy at 204' top of pump.
Pump deployed with 2 1/4" hose barbs (as supplied by Solenst) b/c no swagelock fittings available. Ordered some for replacement if needed in future.

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/23/20

1400 M. Yalom (VA) onsite. Spoke with E. Rott. Told him team sampled at MW 14S/D without issues today. He stated than Shannon Smith (VA) is to contact Tom Davis (UDEQ) about this issue and for him to resolve the homeowner's questions.

1420 ~~1500~~ QP 6/23/20 M. Yalom (VA) offsite.

1430 E. Rott Begins trouble shooting MW-23b again with easing into purging.

1500 See break through immediately. May not have recharged enough.

1600 Team pull pump from MW23b. Take WL = 997.74' therefore plenty of water.
No visible sedimentation on intake. One quick-connect was slightly loose.

1630 Team re-deploys pump. Spoke with N. Smith. Team will try and sample with pump slightly pulled up and watch WL to see recharge issues.

1700 Field team offsite.

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/24/20

Weather: Hot, Sunny, ~90°F
PPE: Modified Level D
Personel: EDM Smith: E. Rott, M. Day, B. Moak, B. Carreon
Wasatch: A. Fiorini
Task: GW Sampling

0700 FIELD TEAM ONSITE.
0730 H+S meeting at tailgate
0745 Calibrate YSIs and PIDs
0800 E. Rott, M. Day to MW 23, B. Carreon, A. Fiorini, B. Moak to MW-27
0830 Purge start at MW27
0835 M. Day to drilling crew to get Site skinny dipper WLM (Black cord) - rented solinst does not fit down the well (21ST well with pump still in it
0845 M. Day onsite. E. Rott, M. Day begin troubleshooting on MW23b by pulling the pump up slightly to purge in open water column.
See purge form for detailed notes.
0935 Collect MW27-GW062420
1030 Purge start at MW28.
1035 Team at MW23 begin troubleshooting

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/24/20

1035 (con't) at MW23a

1110 Collect MW28-GW062420

1130 Team at MW23 was not able to get a constant stream from either MW23a or MW23b. Breakthrough occuring with no apparent recharge to the pump.

1145 M. Day, B Moak to assist drilling crew.

1200 Collect TB17-GW062420

1205 Collect TB18-GW062420

1210 Collect TB19-GW062420

1230 Shannon Smith (VA) onsite. E. Rost discussed the troubleshooting that occurred. Agreed that no further ~~new~~ ZIST wells will be attempted

1240 Shannon Smith (VA) offsite.

1300 Team pulls pump from MW23b per Neil Smith's instruction. After he spoke with BESST, the team will send one new pump and pump from MW03Rb, which has worked to see if the newly designed pump is malfunctioning.

1310 Pulled pump from MW03RB

Location SLC V

Project / Client VA 700S 1600E PCE Plume

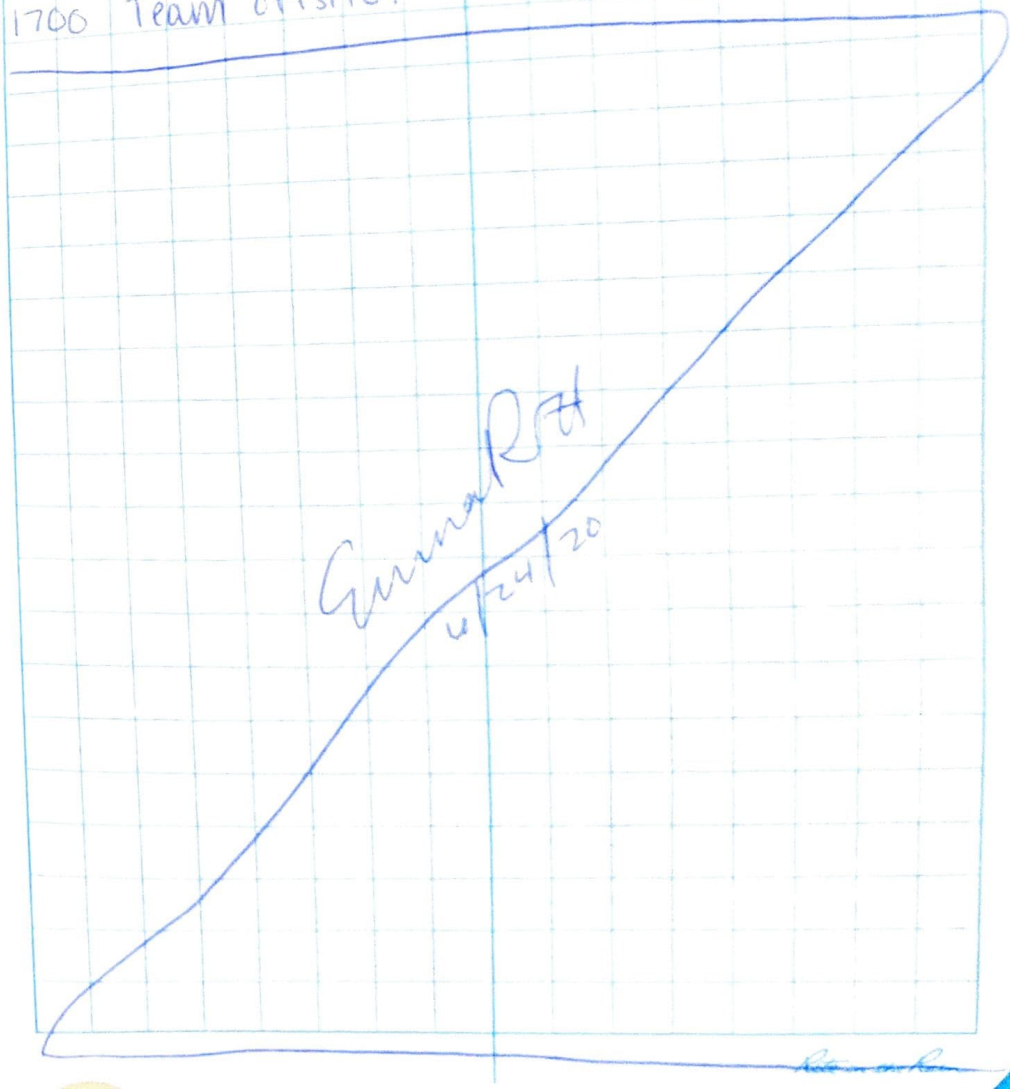
Date 6/24/20

1400 Team to connex to organize equiptment.

1600 Collect FB01-GW062420

1630 To Fedex to ship coolers

1700 Team offsite.



Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 6/25/20

Weather: Sunny, 90°F
PPE: Modified Level D
Task: Well repairs, ship equiptment from GW event
Personell: E. Rott, B. Carreon

0700 Team onsite. H+S meeting at tailgate

0730 Team begins to organize equiptment to ship back to Field Environmental.

0930 Team to troubleshoot & test tubing from MW-23b:
Put together ~8 ft of 2" casing and capped it. filled w/ DI water.
Placed Pump from MW03Rb inside
Connected to MP50. Set at 15 psi, 3 CPM, 10 on/10 off.
Saw clear flow instantly.
Stop. Remove MW03Rb from casing.
Place MW23b pump in casing.
Start using same settings.
Sporadic air/water through line, no solid stream. Similar to what was seen at the well.
Stop, remove tubing from MW03Rb pump. Place on 23b pump.

Location SLC VA

Project / Client VA 700S 1600E PCE Plume

Date 6/25/20

(cont) Place pump back in casing. Start cycles. Observe same air/water through line, no solid stream. Assume tubing not causing the issue.

1040 Team packs pumps/tubing for shipment back to BESST.

1100 Team to MW03Rb. Place cap on B interval.

1105 Team to MW24. Reliable soil moisture tubing. Place caps on lines.

1110 Team to MW23b. Place cap.
Team to MW27. Placed caps on soil gas lines. Ran out of swagelocks left 2 deepest intervals unapped.

1130 Team to Fedex to ship equiptment/pump + tubing.

1230 Team to MW28, MW06, MW04, MW17 and MW14D to determine bolt size for replacement tamperproof bolts.

1400 Team offsite.

Emm RAH
6/25/20

PREPARATORY INSPECTION/MOBILIZATION CHECKLIST

Activity: Groundwater Sampling **Date:** 6/16/20

Answer each question by checking the appropriate column (yes, no, not observed [N/O] or not applicable [N/A]). If "no" is checked, provide an explanation on the form.

Activity	Yes	No	N/O	N/A	Remarks
1. Have copies of all work plans, including the health and safety plan, been printed for availability onsite? Have appropriate copies of all forms in the plans been prepared for site use?	✓				
2. Have pertinent work plans and requirements been explained to project personnel, including project documentation and recordkeeping requirements?	✓				FPM on 6/11/2020
3. Have all personnel working onsite read over the health and safety plan provided by CDM Smith (acknowledgement is by signing the health and safety plan signature form from the SSHP)?	✓				
4. Are the required materials, supplies, and equipment available, on-hand, in working order, and in accordance with plans and technical specifications?				✓	Will check equiptment onsite
5. Have all applicable Safety Data Sheets been made available at the site?	✓				
6. Has all equipment been properly calibrated per manufacturer's requirements?				✓	Will check onsite
7. Have sample locations been marked out using a GPS unit or by a surveyor, as appropriate?	✓				
8. Have all applicable permits, licenses, and certificates been identified and/or obtained?	✓				
9. Have all utilities been marked out prior to the start of activities?				✓	
10. Does the subcontractor need to clear heavy underbrush or any overhead obstructions to access any locations?		✓			
11. Was all subcontractor equipment thoroughly checked, including inspection and testing of the emergency shutdown button on the drilling rig, generators, etc.?				✓	
12. Have the necessary laboratories been contracted to perform the requested analyses?	✓				
13. Has a designated staging area been established to store IDW and hold the decontamination pad?	✓				
14. For sample locations not in public right-of-way, have all appropriate access agreements ben obtained?	✓				
15. For existing wells, have keys been obtained?	✓				

FIELD DOCUMENTATION CHECKLIST

Activity: Groundwater Sampling **Date:** 6/16/20

Answer each question by checking the appropriate column (yes, no, or not applicable [N/A]). If "no" or "N/A" are checked, provide an explanation in the comments section.

Field Documentation	Yes	No	N/A
1. Was all original field data recorded in indelible ink?	✓		
2. Were log books and field forms (including DQCRs) filled out properly, accurately recounting the day's events? This includes documenting activities performed, weather conditions, personal protective equipment used, problems encountered, details of samples collected, site visitors, descriptions of photos taken, notes of conversations with Project Manager/Field Team Leader/Project Geologist, decontamination procedures used, etc.	✓		
3. Were deficiencies reported to the Project Manager?	✓		
4. Were the equipment arrival date, equipment type, onsite storage location, and serial number recorded on the log for each field instrument?	✓		
5. Were factory calibration certificates received with the field instruments and recorded on the log?	✓	✓	
6. Are instruments being calibrated before and after use when necessary, and against know standards and/or per manufacturer specifications? (Passing calibration is within 10% of the standard.)	✓		
7. Are all instrument calibrations being accurately documented on the appropriate logs, including frequency of calibration checks, calibration acceptance criteria, and corrective actions for calibration failures?	✓		
8. Was the date that the field instrument left the site recorded in the logbook or on the instrument's log?	✓		
9. Was all IDW segregated by matrix/type to facilitate analysis and disposal? Were all IDW containers properly labeled as required in the QAPP?	✓		

Comments and Corrective Actions

List all corrective actions. Initial and date when corrective actions have been implemented.

Not all calibration certificates were recieved from Field Environmental. Those that were were scanned and documented.

The Field Team Leader and Project Manager shall sign this checklist upon completion of all items on the checklist.

Field Team Leader: Emma Rat Date 6/16/20

Project Manager: _____ Date _____

WATER LEVEL AND MONITORING WELL SAMPLING CHECKLIST

Activity: Synoptic water level measurements + Groundwater sampling **Date:** 6/16/20

Answer each question by checking the appropriate column (yes, no, or not applicable [N/A]). If "no" or "N/A" are checked, provide an explanation in the comments section.

Synoptic Water Level Measurements	**Yes**	**No**	**N/A**
1. Were synoptic water level measurements collected prior to each groundwater sampling event, with all measurements for the event collected within the required 24-hour period?	✓		
Monitoring Well Sampling Procedures			
2. Was sampling equipment appropriate for the purpose and site conditions?	✓		
3. Were new protective gloves worn between sampling locations and/or intervals?	✓		
4. Was sampling equipment decontaminated between each location and/or sampling intervals, or dedicated/disposable equipment used?	✓		
5. Was the correct technique/method used to purge each well prior to sample collection?	✓		
6. If using a submersible pump, was the depth to which the pump was lowered recorded in the logbook or field form?			✓
7. Was low-flow sampling conducted in accordance with the approved UFP-QAPP and SOP?	✓		
8. Were field water quality monitoring instruments (e.g., YSI) calibrated per the UFP-QAPP?	✓		
9. Was a steady pumping rate reached and maintained so that total drawdown in the well was < 0.3 feet; or was the pump kept at a flow rate between 200 to 500 mL per minute?	✓		
10. Were wells purged until parameters stabilized before collecting samples?	✓		
11. Were purge parameters recorded in the logbook or on the well sampling form?	✓		
12. Was the purge line disconnected from the flow-through cell prior to sample collection and the flow rate < 250 mL per minute?	✓		
13. Were the bottles pre-preserved as required in the UFP-QAPP?	✓		
14. Were bottles adequately protected prior to sample collection to prevent cross-contamination?	✓		
15. Was headspace in sample containers for volatiles eliminated?	✓		
16. Were the appropriate QA/QC samples collected (duplicates, rinsate blanks, MS/MSD)?	✓		
17. Were sample containers filled in the correct order – VOCs, hydrocarbons, metals, geochemical parameters?	✓		
18. Was purge water properly containerized as IDW?	✓		
Sample Shipment			
19. Was the following information recorded on each sample label and in the logbook and/or field form – sample ID (including sample depth interval), location, analysis, date, time, preservative, sampler initials, and any other relevant information?	✓		
20. Were adhesive labels placed on each sample using indelible ink, or covered with clear tape?	✓		
21. Were duplicate samples labeled such that they would be "blind" to the laboratory?	✓		

Sample Shipment (continued)	Yes	No	N/A
22. Were MS/MSD samples noted in the logbook/field form and on the COC?	✓		
23. Were the COCs properly filled out, readable, and signed?	✓		
24. Were the sample coolers properly packed, including ice, trip blank (if appropriate), temperature blank, and a COC unique to the cooler?	✓		
25. Were copies of the COCs retained by field personnel?	✓		
26. Were custody seals signed, dated, and placed on each cooler prior to shipment?	✓		
27. Were the coolers shipped priority overnight for next day delivery to the laboratory?	✓		

Comments and Corrective Actions

List all corrective actions. Initial and date when corrective actions have been implemented.

The Field Team Leader and Project Manager shall sign this checklist upon completion of all items on the checklist.

Field Team Leader: Emma Rat Date 6/19/20

Project Manager: _____ Date _____

DECONTAMINATION CHECKLIST

Activity: Groundwater Sampling **Date:** 6/26/20

Answer each question by checking the appropriate column (yes, no, not observed [N/O] or not applicable [N/A]). If "no" is checked, provide an explanation on the form.

Equipment	**Yes**	**No**	**N/O**	**N/A**
1. Was the decontamination pad constructed onsite per the UFP-QAPP?	✓			
2. Was all sampling equipment decontaminated properly prior to use and between sample intervals?	✓			
3. Was each decontamination event recorded in the log book?	✓			
4. Was clean equipment stored separately from non-decontaminated equipment?	✓			
5. Was phosphate-free detergent and/or steam cleaning used?	✓			
6. Was IDW handled in accordance with the approved work plan?	✓			

Comments and Corrective Actions

Initial and date when corrective actions have been implemented.

The Field Team Leader and Project Manager shall sign this checklist upon completion of all items on the checklist.

Field Team Leader: Emma Rat Date 6/26/20

Project Manager: _____ Date _____

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA ROTT Date: 6/16/20 Time: 0720

Site: VA Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE TCE *Other:*

Protective Clothing/Equipment: Modified Level D - steel toe, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE

Physical Hazards: Heat, traffic, slips/trips/falls, COVID-19

Emergency Actions: First aid kit in each vehicle. Hospital Route printed for each vehicle.

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)	***Signature***
EMMA ROTT CDM Smith	EmmaRott
Kelly Dyer CDM Smith	
Maria Day CDM Smith	
Breanna Moak CDM Smith	
Anna Fiorini Wasatch	
Kala Leslie CDM Smith	

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA Rott Date: 6/17/20 Time: 0730

Site: VA Plume 700S 1600E PCE Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 SR 6/17/20 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D- steel toes, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment,

Chemical Hazards: PCE, TCE, compressed gas

Physical Hazards: Weather, traffic control wells, slips/trips/falls COVID-19

Emergency Actions: First aid kit in each vehicle. Route to hospital printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)	***Signature***
Maria Day CDM Smith	
Breanna Moak CDM Smith	Breanna Moak
Kora Leslie CDM Smith	
Anna Fiorini Wasatch	
Emma Rott CDM Smith	Emma Rott

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA ROTT Date: 6/18/20 Time: 0730

Site: VA Plume 700S 1600E PCE Plume SLC

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D - steel toes, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE, compressed gas

Physical Hazards: Heat, traffic control, COVID-19, bugs

Emergency Actions: First aid kit in each vehicle, Route to hospital printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		***Signature***
Anna Fiorini	Wasatch	
Maria Day	CDM Smith	
Breanna Moak	CDM Smith	
EMMA ROTT	CDM Smith	
Kora Losie	CDM Smith	

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA ROTT Date: 6/19/20 Time: 0730

Site: 700S 1600E PCE Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified Level D: steel toes, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE, compressed gas

Physical Hazards: Heat, traffic, COVID-19, bugs

Emergency Actions: First aid kit in each vehicle, route to hospital printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		***Signature***
Whitney Treadway	CDM Smith HLN	
Maria Day	CDM Smith	
Breanna Moak	CDM Smith	
Anna Fiorini	Wasatch	
EMMA Rott	CDM Smith	

Field Health and Safety Meeting Record

CDM Smith Trainer: Emma Rott Date: 6/21/20 Time: 0730

Site: 700S 1600E PCE Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D: steel toe boots, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE, compressed gas

Physical Hazards: Heat, traffic, COVID-19

Emergency Actions: First aid kit in each vehicle, route to hospital printed.

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		***Signature***
Whitney Treadway	CDM Smith HLN	
Maria Pay	CDM Smith DEN	
Ben Cameron	CDM Smith	
Anna Fiorini	Wasatch	
Breanna Moak	CDM Smith	
Joe Hill	CDM	
Emma Rott	CDM Smith	Emma Rott

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA ROTT Date: 6/22/20 Time: 0730

Site: VA Plume, 700S 1600E PCE Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D: steel toes, safety vest, glasses, hard hat

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE

Physical Hazards: Heat, traffic, slips/trips/falls, bugs, COVID-19

Emergency Actions: First aid kit in each vehicle, hospital Route printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		***Signature***
Maria Day	CDM Smith	
Breanna Moak	CDM Smith	
Anna Fiorini	wasatch	
Ben Carrean	CDM Smith	
Emma Rott	CDM Smith	

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA Rott Date: 6/23/20 Time: 0730

Site: 700S 1000E PCE Plume

Review:

- Health & Safety Plan
- Weather Concerns
- Buddy Teams
- Potential Problems
- Hospital Route/Nearest Phone Location
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D: safety vest, hard hat, steel toes, safety gl

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE/TCE

Physical Hazards: Heat, traffic, bugs, COVID-19

Emergency Actions: First-aid kit in each vehicle, hospital route printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		***Signature***
Maria Day	CDM Smith	
Breanna Moak	CDM Smith - DEN	
Anna Fiorini	Wasatch	
~~Ben Carson~~	CDM Smith	
Emma Rott	CDM Smith	

Field Health and Safety Meeting Record

CDM Smith Trainer: EMMA RDA Date: 6/24/20 Time: 0730

Site: 700S 1600E, PCE Plume

Review:

- Health & Safety Plan
- Buddy Teams
- Hospital Route/Nearest Phone Location
- Weather Concerns
- Potential Problems
- Problems Previously Occurred

Action Levels: 10 ppm air concentration PCE/TCE *Other:*

Protective Clothing/Equipment: Modified level D= hard hat, steel toes, safety vest, glasses

Special Equipment: PID, groundwater sampling equiptment

Chemical Hazards: PCE, TCE

Physical Hazards: Heat, traffic, slips/trips/falls, COVID-19

Emergency Actions: First-aid kit in each vehicle, hospital Route printed

Other Issues:

Check:

- H&S Monitoring Equipment/Calibration
- First Aid Kit/Eye Wash Station
- Fire Extinguisher Communications/Radio Check
- H&S Plan (each item) Respiratory Protection/Cartridges

Name/Firm/Office (Please Print)		*Signature*
Breanna Moak	CDM Smith	
Maria Day	CDM Smith	
Ben Carreon	CDM Smith	
Anna Fiorini	Wasatch	
Emma RDA	CDM Smith	

CDM Smith

WATER LEVEL MEASUREMENTS

Project VA Plume
Weather Conditions Overcast
Site Conditions
Measurement Device
Elevation Datum

Project No.
Date 6/16/20
Measured By ER/MD
Calculations By

Well	Time	Depth to Water	Reference	Reference Elevation	Water Elevation	Comments
MW-18	0910	80.73				water in casing
MW-5	1648	212.92				
MW-26A	13 10	188.89				
MW-26B	1306	179.54				no pump
MW-26C	1309	171.43				no pump
MW-26D	13 20	217.35				
MW-24	1140	183.90				PVC shaving in casing + WLM
MW-28	1205	185.21				
MW-3R-A	1232	180.0				
MW-3R-B	1245	203.23				
MW-3R-C	12 37	203.50				
MW-3R D	12 48	203.51				
MW-25A	1345	177.61				
MW-25B	1340	182.96				
MW-25C	1335	206.60				
MW-27	1405	185.86				
MW-23A	1500	186.07				
MW-23B	1505	196.60				
MW-23C	1510	214.71				
~~MW-23D~~						

AR 6/16

Additional Comments

CDM Smith

WATER LEVEL MEASUREMENTS

Project 700 South 1600 East PCE Plume — Project No. _____

Weather Conditions Overcast 75°F — Date June 16, 2020

Site Conditions _____ — Measured By Karla Cosh

Measurement Device Geotech — Calculations By _____

Elevation Datum _____

Well	Time	Depth to Water	Reference	Reference Elevation	Water Elevation	Comments
MW-04	10:00	134.38	btoc			needs locking bolt plug
MW-20	10:20	122.81	btoc			needs locking bolts
MW-17D	12:20	+2.61	atoc			take elevation for needs locking bolts
MW-17S	12:40	5.82	btoc			

Additional Comments _____

CDM Smith

WATER LEVEL MEASUREMENTS

Project VA Plume
Project No. _____
Weather Conditions overcast, 70°F, sunny
Date 6/16/2020
Site Conditions _____
Measured By AF KD
Measurement Device U79833X
Calculations By _____
Elevation Datum _____

Well	Time	Depth to Water	Reference	Reference Elevation	Water Elevation	Comments
MW-19	929	80.0				
MW-20D	943	81.90				purge water from casing
MW-20S	945	82.15				
MW-21	1000	64.25				
MW-22	1018	63.00				
MW-14S	1039	5.23				
MW-14D	1037	—				3 psi
MW-13D	1051	12.45				
MW-13S	1052	13.17				
MW-12D	1106	53.9				
MW-12S	1109	56.66				
MW-15D	1119	48.20				
MW-15S	1121	46.72				
MW-16S	1137	10.8				
MW-16D	1141	9.22				
MW-01S	1212	155.9				cap not sealed, casing filled with liquid; reading taken from top cas
MW-01D	1219	170.1				
MW-02	1228	169.3				
MW-08B	1317	57.65				
MW-08A	1318	59.30				
MW-08	1333	55.75				taken from TOC, north

Additional Comments _____

CDM Smith

WATER LEVEL MEASUREMENTS

Project _____ Project No. _____

Weather Conditions _____ Date _____

Site Conditions _____ Measured By _____

Measurement Device _____ Calculations By _____

Elevation Datum _____

Well	Time	Depth to Water	Reference	~~Reference~~ Elevation	~~Water~~ Elevation	Comments
MW6	0944	122.64	TOC	~~84%~~	97%	Salt Buildup on cable
MW4	1013	134.12	TOC	~~85%~~	~~78%~~	
20S	1045	82.18	Notch	~~96%~~	96%	
20D	1053	81.91	Notch	—	~~95%~~	
21	1102	54.36	Notch	—	97%	white team Sampled
22	1119	62.93	Notch	—	97%	
13D	1208	12.65	Notch	—	96%	
15D	1225	48.32	Notch	—	96%	Temp Reading Issue
14S	1240	6.38	Notch	—	97%	
16D	1303	9.26	Notch	—	96%	
1D	1421	170.01	Notch	~~78%~~	78%	white Buildup
1S	1505	155.70	Notch	—	—	~~Res~~ deploy Sensor

Additional Comments _____

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): PID multirae V70814X

Manufacturer: Rae Systems

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/16/20	ø	Fresh air	—	no	ø	pass	AF
6/16/20	100	100ppm VOC	LBJ-X02A199 CP34 2066-1 12/17/23	no	100ppm	pass	AF
6/17/20	ø	Fresh air	—	no	ø	pass	AF
6/17/20	100	100ppm VOC	LBJ-X02A199 CP34 2066-1 12/17/23	no	100 ppm	pass	AF
6/18/20	0	Fresh air	—	no	ø	pass	MD
6/18/20	100	100 ppm VOC	LBJ-X02A199 CP34 2066-1 12/17/23	no	100 ppm	Pass	MD
6/19/20	ø	Fresh Air	—	NONE	ø	Pass	BM
6/19/20	100	100 ppm VOC	LBJ-X02A199 2066-1 CP34 12/17/23	NONE	100.1 ppm	Pass	BM
6/21/20	ø	Fresh Air	—	None	0	Pass	MF
6/21/20	100	100ppm VOC	LBJ-X02A1992 CP342066-1 12/17/23	None	97ppm	Pass	MF
6/22/20	ø	Fresh Air	—	No	ø	Pass	RM
6/22/20	100 ppm	100ppm VOC	LBJ-X024A992 B66-1 CP34 12/17/23	NONE	100.1 ppm	Pass	BM
6/23/20	ø	Fresh air	—	no	ø	Pass	MD
6/23/20	100 ppm	100ppm VOC	LBJ-X024A992 CP34 2066-1 12/17/23	no	100 ppm	Pass	MF

EQUIPMENT CALIBRATION LOG

SITE NAME: UA PCE Plume

Instrument (Name/Model No./Serial No.): PID - U70814X

Manufacturer: MULTI RAE

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/24/20	Ø ppm	Fresh Air	———	NONE	Ø	Pass	
6/24/20	100 ppm	100 ppm VOC	LBJ-X02 A199CP3 A2066-1 12/1/23	NO NE	101 ppm	Pass	

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): PID multiRae U673558X

Manufacturer: Rae Systems

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/16/20	0	Fresh air	—	No	0	pass	ER
↓	100	100 ppm VOC	LBJ X02A199CP 12/17/23 342066-1	No	100 ppm	pass	ER
6/17/20	Ø	Fresh air	—	no	Ø	pass	AF
6/17/20	100	100ppm VOC	LBJ-X0AA199CP 31-2066-1	no	100 ppm	pass	AF
6/18/20	0	Fresh air	—	no	0	Pass	MD
6/18/20	100	100 ppm VOC	LBJ-X02A199CP 12/17/2023 342066-1	no	100 ppm	Pass	MD
6/19/20	0	Fresh air	~~——~~	no	0	Pass	MD
6/19/20	100	100 ppm VOC	LBJ-X02A199CP 342066-1 12/17/23	no	100 ppm	Pass	MD
6/21/20		Fresh Air	—	none	~~pass~~ 0	Pass	WF
6/21/20		100 ppm VOC	LBJ-X02A199CP3 92066-1 12/17/23	none	100 ppm	pass	WF
6/22/20	0	Fresh Air		None	Ø	Pass	BW
6/22/20	100	100pm VOC	LBJ-X024199 CP342066-1 12/17/23	NONE	100ppm	Pass	BW
6/23/20	0	Fresh Air	—	no	0	Pass	MD
6/23/20	100 ppm	100 pm VOC	LBJ-X024199 CP342066-1 12/17/23	no	100 ppm	Pass	MD

EQUIPMENT CALIBRATION LOG

SITE NAME: UA PCE Plume

Instrument (Name/Model No./Serial No.): PID - U67358X

Manufacturer: MultiRAE

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/24/20	Ø	Fresh Air	———	NONE	0 PPM	Pass	BL
6/29/20	100 PPM	100PPM VOC	LBJ-X02A199CP3 42066-1 12/1/2023	NONE	100 PPM	Pass	BL

EQUIPMENT CALIBRATION LOG

SITE NAME: _____

Instrument (Name/Model No./Serial No.): RFWZZ51T

Manufacturer: _____

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/16/20	7.02	pH 7.0	7906299 6/1/21	No	7.01	pass	ER
6/16/20	4.01	pH 4.0	7906203 9-1-21	No	4.00	Pass	
6/16/20	10.08	pH 10.0	7905101 5-1-21	No	10.04	Pass	
6/16/20	1280	Conductivity Standard 1409 umho/cm	7906263 6-1-21	No	1490	Pass	
6/16/20	257.6	240.0 mV ORP solution	0GTB1143 NOV/21	No	289.4	Pass	
6/16/20	99.0%	DO 25.21 mHg		No	100%	Pass	
6/17/20	7.05	pH 7.0	7906290 6-1-21	No	7.04	Pass	
6/17/20	4.04	pH 4.0	7909203 9-1-21	No	4.00	Pass	
6/17/20	9.98	pH 10.0	7905101 5-1-21	No	10.00	Pass	
6/17/20	1287	1409 umho/cm	7906263 6-1-21	No	1409	Pass	
6/17/20	101.4%	DO %	~~6061~~ New DO	No	99.2%	Pass	
6/17/20	246.3	240.0 mV ORP	0GTB1143 NOV/21	No	240.2	Pass	

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): RFW 22517

Manufacturer: YSI

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/18/20	7.16	pH 7.0	7906290 6-1-21	NONE	7.10	Pass	BM
6/18/20	10.09	pH 10.0	7905101 5-1-21	NONE	10.18	Pass	BM
6/18/20	5.20	pH 4.0	7909203 9-1-21	NONE	4.06	Pass	BM
6/18/20	1342	Conductivity 1409	7906263 6-1-21	NONE	1371	Pass	BM
6/18/20	101.2%	DO - 100%	—	NONE	96.6%	Pass	BM
6/18/20	232.3	ORP-240mV	06B1K13 NOV-21	NONE	240.4	Pass	BM
6/19/20	6.89	pH 7.0	7906290 6-1-21	None	7.01	Pass	KC
"	9.96	pH 10.0	7905101 5-1-21	None	10.02	Pass	KC
"	4.05	pH 4.0	7909203 9-1-21	None	4.04	Pass	KC
"	1407	1407 m/cm	7906263 6-1-21	None	1407	Pass	KC
"	104.3%	100% DO Sat	—	None	100%	Pass	KC
"	246.4	220 mV	7912091 Sep 2020	None	220.0	Pass	KC
"							
"							

EQUIPMENT CALIBRATION LOG

SITE NAME: VA PCE Plume

Instrument (Name/Model No./Serial No.): RFW22517

Manufacturer: YSI +

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/21/20	7.04	pH 7.0	7906290 6-1-21	NONE	7.05	Pass	BL
6/21/20	4.14	pH 4.0	7909203 6-1-21	NONE	4.08	Pass	BL
6/21/20	10.05	pH 10.0	7905101 5-1-21	NONE	10.01	Pass	BL
6/21/20	97.0	DO-100%	———	NONE	100.5%	Pass	BL
6/21/20	~~1409~~ MIL	conductivity 1409	7906263 6-1-21	NONE	1409	Pass	BL
6/21/20	227.8	ORP-220 mV	7912061 sep. 2020	NONE	220.0	Pass	BL
6/22/20	7.03	pH 7.0	7906290 6/1/21	no	7.00	pass	AF
6/22/20	4.06	pH 4.0	7909203 9/1/21	no	4.00	pass	AF
6/22/20	10.00	pH 10.0	7905101 5/1/21	no	10.01	pass	AF
6/22/20	1404	1409 umho/cm	7906263 6/1/21	no	14.09	pass	AF
6/22/20	104.4	100% sat env	———	no	97.8	pass	AF
6/22/20	218.9	220 mV	7912061 sep 2020	no	220.0	pass	AF

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): RFW22517

Manufacturer: Professional Series

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/23/2020	7.02	pH 7.0	7906290 6/1/21	no	7.01	pass	AF
6/23/2020	4.03	pH 4.0	7909203 9/1/21	no	4.00	pass	AF
6/23/2020	10.02	pH 10.0	7905101 5/1/21	no	10.02	pass	AF
6/23/2020	1385	1409 umho/cm	7906263 6/1/21	no	1409	pass	AF
6/23/2020	102.9	100% sat.	—	no	99.9	pass	AF
6/23/2020	218.5	220 mV	7912061 Sep 2020	no	220.1	pass	AF
6/24/2020	7.04	pH 7.0	SAA	no	7.00	Pass	BC
↓	9.89	pH 4.0	SAA	↓	10.01	↓	↓
↓	4.02	pH 10.0	SAA	↓	4.00	↓	↓
↓	1236	1409 umho/cm	SAA	↓	1408	↓	↓
↓	95.6	100% Sat	—	↓	100.0	↓	↓
↓	217.8	220 mV	SAA	↓	220.0	↓	↓

EQUIPMENT CALIBRATION LOG

SITE NAME: _____

Instrument (Name/Model No./Serial No.): YSI 22512 605404

Manufacturer: _____

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/16/2020	7.03	pH 7.0	1906290 6-1-21	No	7.01	Pass	
6/16/2020	3.98	pH 4.0	7909203 9-1-21	No	3.99	Pass	
6/16/2020	10.06	pH 10.0	7905101 5-1-21	No	10.03	Pass	
6/16/2020	1400	Conductivity standard 1409 uS/cm	7906263 6-1-21	No	1409	Pass	
6/16/2020	236.1	240.0 mV ORP Solution	OG1BH43 NOV/21	No	240.0	Pass	
6/16/2020	87.7%	DO @ 25.2 in Hg		No	100.1%	Pass	
6/17/2020	7.14	pH 7.0	7906290 6-1-21	No	7.07	Pass	
6/17/2020	9.92	pH 10.0	7905161 5-1-21	No	10.06	Pass	
6/17/2020	3.95	pH 4.0	7909203 9-1-21	No	3.99	Pass	
6/17/2020	1347	1409	7906263 6-1-21	No	1357	Pass	
6/17/2020	124.6 V.	100% O_2	—	No	99.3 %	Pass	
6/17/2020		240.0 mV	OGB1143 NOV-21	No	250.8	Pass	

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): 22512 YSI Professional Plus

Manufacturer: _____

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/18/20	7.06	PH 7.0	7906290 6-1-21	no	7.05	Pass	MD
6/18/20	10.03	PH 10.0	7905101 5-1-21	no	10.00	Pass	MD
6/18/20	4.10	pH 4.0	7909203 9-1-21	no	4.00	Pass	MD
6/18/20	1318 TRACE	1409 umho/cm	7906263 6-1-21	no	1414	Pass	MD
6/18/20	98.0	DO	—		100%	Pass	MD
6/18/20	248.0	240.0 mV	OGB1143 NOV 21	no	239.9	Pass	MD
6/19/20	6.96	pH 7.0	7906290 6-1-21	no	7.01	Pass	KC
"	9.96	pH 10.0	7905101 5-1-24	no	10.02	Pass	KC
"	4.06	pH 4.0	7909203 9-1-21	no	4.00	Pass	KC
"	1450	1409 umho/cm	7906263 6-1-21	no	1410	Pass	KC
"	98.5%	100% DO Sat	—	no	100%	Pass	KC
"	254	220mV	7912061 Sep 2020	no	220.0	Pass	KC
"							
"							

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): YSI 22512

Manufacturer: Professional Series

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/21/20	7.03	pH 7.0	79062906-21	no	7.00	Pass	MD
6/21/20	4.07	pH 4.0	7909203 9-1-21	no	4.00	Pass	MD
6/21/20	9.92	pH 10.0	7905101 5-1-21	no	9.99	Pass	MD
6/21/20	1384	1409 umho/cm	7904263 6-1-21	no	1406	Pass	MD
6/21/20	100%	DO- 100%	—	no	99.8%	Pass	MD
6/21/20	230.0	220 mV	7912061 Sep 2020	no	220.01	Pass	MD
6/22/20	7.07	pH 7.0	7906296 6-1-21	no	7.00	Pass	MD
6/22/20	4.02	pH 4.0	7909203 9-1-21	no	4.00	Pass	MD
6/22/20	9.93	pH 10.0	7905101 5-1-21	no	10.00	Pass	MD
6/22/20	106.7	100% sat environment	—	no	100.0	Pass	MD
6/22/20	1405	1409 umho/cm @ 25C	7906263 6-1-21	no	1409	Pass	MD
6/22/20	217.7	ORP 220 mV standard	7912061 Sep 2020	no	220.0	Pass	MD

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): 22512

Manufacturer: Professional Series

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/23/2020	7.02	pH 7.0	7906290 6/1/21	no	7.00	pass	AF
6/23/2020	3.97	pH 4.0	7909203 9/1/21	no	4.00	pass	AF
6/23/2020	10.00	pH 10.0	7905101 5/1/21	no	10.04	pass	AF
6/23/2020	1409	1409 umho/cm	79062G3 6/1/21	no	1409	pass	AF
6/23/2020	102.4	100% Sat.	—	no	99.6	pass	AF
6/23/2020	222.4	220 mV	7912061 Sep 2020	no	219.9	pass	AF
6/24/2020	7.08	pH 7.0	7906290 6-1-21	no	7.00	Pass	MD
6/24/2020	4.09	pH 4.0	7909203 9-1-21	no	4.00	Pass	MD
6/24/2020	9.93	pH 10.0	7905101 5-1-21	no	10.00	Pass	MD
6/24/2020	1379	Conductivity 1409 umho/cm	79062G3	no	1406	Pass	MD
6/24/2020	~~93.3~~ 94 % Sat	100% Sat ORP	—	no	100%	Pass	MD
6/24/2020	218.5	ORP 220 mV	7912061 Sep 2020	no	219.7	Pass	MD

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): RFW 22519

Manufacturer: YSI

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/16/20	7.20	pH 7.0	7906290 6-1-21	NONE	7.16	Pass	BL
6/16/20	4.05	pH 4.0	7909203 6-1-21	NONE	4.00	Pass	BL
6/16/20	9.91	pH 10.0	7905101 5-1-21	None	9.93	Pass	BL
6/16/20	1384	Conductivity 1409 mmhos/cm	7906263 6-1-21	None	1503	Pass	BL
6/16/20	239.2	ORP 240.0mV	0GBIIA3 NOV-21	None	237.7	Pass	BL
6/16/20		-	—				
6/17/2020	114.5%	100%	—	NONE	101.1%	PASS	BL
6/17/2020	7.0	pH 7.0	7906290 6-1-21	NONE	7.02	Pasr	BL
6/17/2020	10.0	pH 10.0	7905101 5-1-21	NONE	9.91	Pass	BL
6/17/2020	5.76	pH 4.0	7909203 9-1-21	NONE	4.43	Pass	BL
6/17/2020		1409	7906203 6-1-21				
6/17/2020	240.0	ORP	0GBIIA3 NOV-21	NONE	240.0	Pass	BL

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): RFW 22519

Manufacturer: Professional Series

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/18/20	6.94	pH 7.0	7406290 6/1/21	no	7.05	pass	AF
6/18/20	10.02	pH 10.0	7905101 5/1/21	no	10.14	pass	AF
6/18/20	3.99	pH 4.0	7909203 9/1/21	no	4.00	pass	AF
6/18/20	1396	1409 umho/cm	7906263 6/1/21	no	1396	pass	AF
6/18/20	102.5	~~20~~ 100% sat. env.	—	no	100	pass	AF
6/18/20	243.8	240.0 mV	06B1143 Nov/21	no	244	pass	AF
6/19/20	7.03	pH 7.0	7906290 6-1-21	no	7.03	pass	KL
"	10.27	pH 10.0	7905101 5-1-21	no	10.05	pass	KL
"	3.71	pH 4.0	7909203 9-1-21	no	3.97	pass	KL
"	1401	1409 um/c	7906263 6-1-21	no	1409	pass	KL
"	97.1%	100% DOS A	—	no	98.7%	pass	KL
"	211.7	220 mV	7912061 Sep 2020	no	220.0	pass	KL
"							
"							

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Plume

Instrument (Name/Model No./Serial No.): RFW22519

Manufacturer: ~~Professional~~ Series

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/21/2020	7.31	pH 7.0	~~7906290~~ 6/1/21	no	7.02	pass	AF
6/21/2020	4.00	pH 4.0	~~7909203~~ 9/1/21	no	4.00	pass	AF
6/21/2020	10.07	pH 10.0	~~7905101~~ 5/1/21	no	10.04	pass	AF
6/21/2020	1390	1409 umho/cm	~~7906263~~ 6/1/21	no	1409	pass	AF
6/21/2020	98.4	100% saturated	—	no	99.6	pass	AF
6/21/2020	232.5	220 mV	7912061 Sep 2020	no	220.0	pass	AF
6/22/2020	7.19	pH 7.0	~~7906290~~ 6/1/21	no	7.00	pass	AF
6/22/2020	3.98	pH 4.0	~~7909203~~ 9/1/21	no	4.00	pass	AF
6/22/2020	10.07	pH 10.0	~~7905101~~ 5/1/21	no	10.00	pass	AF
6/22/2020	1401	1409 umho/cm	~~7906263~~ 6/1/21	no	1408	pass	AF
6/22/2020	103.1	100% Sat. env.	—	no	100.2	pass	AF
6/22/2020	217.3	220 mV	7912061 Sep 2020	no	220.1	pass	AF

EQUIPMENT CALIBRATION LOG

SITE NAME: VA PCE Plume

Instrument (Name/Model No./Serial No.): RFW 22519

Manufacturer: YSI +

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/23/20	7.18	pH 7.0	7906290 6-1-21	NONE	6.99	Pass	BM
6/23/20	10.0	pH 10.0	7905101 5-1-21	NONE	10.0	Pass	BM
6/23/20	3.81	pH 4.0	7909203 9-1-21	NONE	3.97	Pass	BM
6/23/26	1380	conductivity 1409	7906263 6-1-21	NONE	1410	Pass	BM
6/23/20	100.0%	DO 100%	———	NONE	99.6%	Pass	BM
6/23/20	220.3	ORP 220mV	7912061 sep. 2020	NONE	220.1	Pass	BM
6/24/20	7.09	pH 7.0	7906290 6/1/21	no	7.01	pass	AF
6/24/20	9.91	pH 10.0	7905161 5/1/21	no	10.01	pass	AF
6/24/20	4.05	pH ~~7.0~~ 4.0	7909203 9/1/21	no	4.00	pass	AF
6/24/20	1400	1409 umho/cm	7906263 6/1/21	no	1409	pass	AF
6/24/20	95.8	100% sat.	———	no	98.0	pass	AF
6/24/20	220.1	220 mV	7912061 sep 2020	no	220.0	pass	AF

EQUIPMENT CALIBRATION LOG

SITE NAME: VA Pine

Instrument (Name/Model No./Serial No.): YSI 556 MPS

Manufacturer: _____

Calibration Date	Initial Setting	Standard/ Gas Used (Concentration)	Lot Control No. Expiration Date	Adjustments Made	Final Reading	Comments Pass/Fail	Signature
6/19/20	6.86	pH 7.0	0GB376 Feb'22	NO	7.01	Pass	KC
"	10.14	pH 10.0	0GB986 Feb'22	NO	10.00	Pass	KC
"	4.07	pH 4.0	0GB875 Feb'22	NO	4.01	Pass	KC
"	1410	1413 uS/cm	0GB594 Feb'21	NO	1414	Pass	KC
"	1179	100% DO Sat	—	NO	82.6	Fail	KC
"	222.0	7912001 Sept 2020 ← 220 uS/cm		NO	220.0	Pass	KC

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** June 17, 2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-01D **Purging/Sampling Device:** Compressed gas/MP-10H **Pump depth (ft bgs):** 384

Initial Static Water Level (feet btoc): 170.35 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-D-oxane

Final Water Level (feet btoc): 170.37 **QC Samples Collected:** None

Purge Start Time: 1508 **Ferrous Iron (mg/L):** 0.06 **Allowable Drawdown (ft):** 0.3

Sample Time: 1625 **Controller Settings: Recharge:** 8 secs **Discharge:** 22 secs **Pressure:** 200 psi

Samplers' Signatures: Kaela Vesi Ame Fain **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1555	170.33	14.7	6.94	1091	7.29	114.8	0.08		purged 3 gal. already
1605	170.33	15.0	6.94	1086	5.55	115.2	0.09	200	minimum purge met
1610	170.36	14.3	6.92	1087	5.79	117.2	0.39	225	
1615	170.36	14.0	6.92	1085	5.77	118.5	1.07	225	
1620	170.36	14.3	6.95	1083	5.62	117.3	0.77	225	
1625									started sampling
									total purge = 5 gal.

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 8 secs **Discharge:** 22 secs
Pressure: 220 psi **Cycles Per Minute:** 2 **Flow Rate:** 200 mL/min

Screened Interval: 364-404 ft bgs **Minimum purge volume:** ~~6.5~~ 3.1 gallons

Purge calculated w/ 3/8" tubing
Well has 1/4" tubing, min purge recalculated

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/24 (AF) 2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-01S **Purging/Sampling Device:** Compressed gas/MP-10H **Pump depth (ft bgs):** 204

Initial Static Water Level (feet btoc): (AF) ~~155.85~~ 156.02 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1-4-dioxane (6/11/2020)

Final Water Level (feet btoc): 156.05 **QC Samples Collected:** ~~None~~ Field duplicate FD01-GW

Purge Start Time: (AF) ~~0840~~ 0912 **Ferrous Iron (mg/L):** 0.03 **Allowable Drawdown (ft):** 0.3

Sample Time: 1000 / 1015 duplicate **Controller Settings: Recharge:** 10 secs **Discharge:** 20 secs **Pressure:** 175 psi

Samplers' Signatures: ER, AF **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0925	156.02	14.2	7.20	1575	6.16	161.6	2.40	350	
0930	156.02	13.8	7.09	1573	5.72	151.3	2.05	350	
0935	156.02	13.6	6.99	1569	6.35	144.5	2.31	350	
0940	156.02	13.6	7.07	1577	5.96	137.1	1.94	350	minimum purge met
0945	156.02	13.8	7.07	1572	6.01	131.0	0.99	350	
0950	156.05	13.6	7.07	1571	6.00	128.4	1.35	350	
0955	156.05	13.6	7.03	1575	6.12	133.8	1.04	350	
1000	SAMPLE								
1015	Collect	Duplicate							

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: ____ secs **Discharge:** ____ secs
Pressure: ____ psi **Cycles Per Minute:** ____ **Flow Rate:** 250 mL/min

Screened Interval: 184-224 ft bgs **Minimum purge volume:** ~~3.5~~ 1.6 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 06/17/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-02 **Purging/Sampling Device:** Compressed gas/MP-10H **Pump depth (ft bgs):** 195

Initial Static Water Level (feet btoc): 169.47 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 169.49 **QC Samples Collected:** MS/MSD

Purge Start Time: 0942 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 11:35 **Controller Settings: Recharge:** 10 secs **Discharge:** 20 secs **Pressure:** 100 psi

Samplers' Signatures: AF, KL Kamaleshi, Anna Ricci **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0944	169.47	14.3	6.30	2930	46.3	-37.2	36.9	150	
0949	169.47	14.1	6.52	2217	5.48	-40.3	6.28	250	
0954	169.47	13.1	6.60	2135	7.59	19.4	1.23	250	
1009	169.48	13.0	6.66	2137	6.14	45.8	0.24	250	purged 3.1 gallons
1019	169.48	12.9	6.69	2138	5.78	67.6	0.79	250	
1025									Pulled up pump, reset, redeployed
1102	169.47	13.6	7.03	2146	6.07	84.2	0.16	250	
1107	169.48	13.5	6.94	2131	6.02	91.3	0.23	250	
1112	169.48	13.3	6.88	2129	5.84	98.6	0.01	250	
1117	169.48	13.2	6.85	2127	5.91	103.2	0.0	250	
1122	169.49	13.4	6.82	2130	6.19	107.9	0.0	250	
1127	169.49	13.3	6.82	2127	5.88	111.4	0.01	250	
1132	169.49	13.4	6.81	2128	5.65	114.1	0.03	250	Purged 7 gallons total
collected sample									

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 10 secs **Discharge:** 20 secs
Pressure: 100 psi **Cycles Per Minute:** 2 **Flow Rate:** 200 mL/min

Screened Interval: 175.5-202.5 ft bgs **Minimum purge volume:** 3.4 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/18/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-03RA **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 215

Initial Static Water Level (feet btoc): n/a **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — **QC Samples Collected:** None

Purge Start Time: 0915 / 1420 **Ferrous Iron (mg/L):** 0.08 **Allowable Drawdown (ft):** NA

Sample Time: 1540 **Controller Settings: Recharge:** 80 secs **Discharge:** 30 secs **Pressure:** 130 psi

Samplers' Signatures: [signature] **Cycles Per Minute:** —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0925	—	12.8	6.89	1897	7.21	-32.1			Breakthrough, restart
~~1440~~ 1440	—	15.5	6.81	1962	4.40	75.4	2.41	125	increase pressure for more flow
1445	—	14.2	6.87	1944	5.17	51.6	3.79	250	minimum purge met
1450	—	14.5	6.87	1944	4.39	44.2			
1455	—	13.3	6.87	1945	4.50	41.5	6.75	250	
1500		13.7	6.86	1940	4.66	39.4	4.78	250	
1505	—	13.4	6.87	1943	4.97	39.4	3.25	250	
1510	—	13.4	6.84	1939	6.81	44.1	3.68	250	
1517	—	14.2	6.87	1926	4.88	45.4	2.22	250	
1523	—	14.6	6.88	1913	4.89	50.1	1.63	225	
1529	—	14.9	6.88	1895	4.94	~~163~~ 50.5	1.99	300	
1540	SAMPLE	—	—	—	—	—	—	—	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 80 secs **Discharge:** 40 secs
Pressure: 130 psi **Cycles Per Minute:** _____ **Flow Rate:** 160 mL/min

Screened Interval: 215-220 ft bgs **Minimum purge volume:** ~~3.7~~ 0.8 gallons KL 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C ✓	DO	±10% OR ✓ ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit ✓		
Specific Cond	±3% ✓		
ORP	±10mV ✓	Turbidity	< 50 NTU and ±10% OR < 10 NTU ✓
Water Level	± 0.3 foot ✓		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume Date: 6/18/20 OVM: FID ☐ PID ■ In Casing (ppm): (Initial) 0 (Vented to) 0

Well ID: MW-03RB Purging/Sampling Device: ZIST/Compressed gas Pump depth (ft bgs): 267

Initial Static Water Level (feet btoc): — Analytical Parameters: VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — QC Samples Collected: None

Purge Start Time: 0923 / 1343 Ferrous Iron (mg/L): 0.06 Allowable Drawdown (ft): NA

Sample Time: 1505 Controller Settings: Recharge: 80 secs Discharge: 35 secs Pressure: 130 psi

Samplers' Signatures: AF, BM, ER Cycles Per Minute: —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1349	—	15.2	6.95	1196	3.63	-96.1	~~2~~ 60.2	225	
1355	—	14.8	6.98	1212	4.17	-90.9	20.3	225	
1405	—	15.8	6.98	1195	4.50	-83.7	17.0	250	
1416	—	15.0	6.98	1203	6.90	-83.1	12.0	225	minimum purge volume
1425	—	15.4	6.99	1185	4.43	-82.9	10.82	225	
1435	—	15.4	7.00	1207	7.82	-82.5	9.02	225	
1445	—	15.0	7.00	1201	4.62	-81.8	7.09	~~225~~ 150	
1455	—	14.9	7.00	1202	4.73	-80.7	6.35	150	
1505	SAMPLE	—	—	—	—	—	—	—	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 80 secs Discharge: 40 secs
Pressure: 150 psi Cycles Per Minute: _____ Flow Rate: 150 mL/min

Screened Interval: 267-272 ft bgs Minimum purge volume: ~~4.6~~ 0.9 gallons JL 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/18/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-03RC **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 307

Initial Static Water Level (feet btoc): — **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — **QC Samples Collected:** None

Purge Start Time: 1030 / 12:30 restart **Ferrous Iron (mg/L):** 0.04 **Allowable Drawdown (ft):** NA

Sample Time: 1325 **Controller Settings: Recharge:** 80 secs **Discharge:** 38 secs **Pressure:** 135 psi

Samplers' Signatures: ER, AF, BM **Cycles Per Minute:** —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1040	—	14.1	7.38	1107	4.32	-67.9	15.6	150	
1045	—	14.0	7.34	973	1.24	-87.8	4.87	150	
1230	—	14.8	7.34	1016	5.52	67.8	43.2	200	Start second purge after trouble shooting
1235	—	13.8	7.14	1004	5.71	66.6	20.8	200	
1240	—	13.8	7.08	1002	5.69	67.0	12.9	200	
1245	—	13.9	7.07	1002	5.63	68.0	12.0	200	
1250	—	14.5	7.06	1000	5.95	70.1	8.56	200	
1255	—	13.7	7.06	1001	5.69	71.6	6.12	200	
1305	—	14.0	7.05	1001	5.83	74.9	3.51	200	minimum purge met
1315	—	14.5	7.05	1000	5.66	77.5	2.26	200	
1325									Started sampling

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 80 secs **Discharge:** 40 secs
Pressure: 150 psi **Cycles Per Minute:** _____ **Flow Rate:** 150 mL/min

Screened Interval: 307-312 ft bgs **Minimum purge volume:** ~~5.3~~ gallons

1:1 KC 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/18/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-03RD **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 359

Initial Static Water Level (feet btoc): n/a **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — **QC Samples Collected:** None

Purge Start Time: 1100 **Ferrous Iron (mg/L):** 0.07 **Allowable Drawdown (ft):** NA

Sample Time: 1235 **Controller Settings: Recharge:** 80 secs **Discharge:** 40 secs **Pressure:** 150 psi

Samplers' Signatures: [signature] **Cycles Per Minute:** X

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1113	—	16.2	6.95	1149	2.39	-78.2	3.28	80	
1121	—	13.5	7.02	1158	0.38	-103.3	2.95	375	
1127	—	14.1	7.23	1154	1.19	-126.0	3.48	375	
1135	—	13.4	7.11	1169	1.74	-107.5	1.22	375	
1141	—	13.4	7.09	1148	2.18	-100.9	0.52	375	
1148	—	13.4	7.09	1123	2.65	-96.2	0.74	375	Minimum Purge Met
1155	—	13.5	7.07	1114	3.05	-92.6	0.70	375	
1205	—	14.0	7.09	1118	3.48	-89.9	1.05	375	
1216	—	13.9	7.08	1100	3.44	-87.8	0.66	375	
1226	—	13.8	7.09	1111	3.72	-85.4	0.55	325	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 80 secs **Discharge:** 40 secs
Pressure: 200 psi **Cycles Per Minute:** _____ **Flow Rate:** 200 mL/min

Screened Interval: 359-364 ft bgs **Minimum purge volume:** ~~6.2~~ 1.3 gallons CC 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C ✓	DO	±10% OR ✓ ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit ✓		
Specific Cond	±3% ✓		
ORP	±10mV ✓	Turbidity	< 50 NTU and ±10% OR < 10 NTU ✓
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** _____

Well ID: MW-04 **Purging/Sampling Device:** ~~Compressed gas/MP-10~~ Solinst (6/21) **Pump depth (ft bgs):** 160

Initial Static Water Level (feet btoc): 134.29 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 134.38 **QC Samples Collected:** None

Purge Start Time: 0920 **Ferrous Iron (mg/L):** 0.12 **Allowable Drawdown (ft):** 0.3

Sample Time: 1000 **Controller Settings: Recharge:** 16 secs **Discharge:** 14 secs **Pressure:** 100 psi

Samplers' Signatures: Ben S Carrion Began S Carrion **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0925	134.26	11.9	6.96	1526	6.61	-47.7	3.21	350	
0930	134.43	12.0	7.02	1524	6.58	-32.6	1.25	350	134.37, water level fluctuating w/ cycling
0935	134.40	12.0	7.05	1520	6.67	-27.8	0.51	350	
0940	134.31	11.9	7.06	1519	6.78	-25.5	0.91	350	
0945	134.39	11.9	7.08	1517	6.55	-23.6	0.36	350	
0950	134.36	12.1	7.09	1517	6.62	-22.5	0.49	350	
0955	134.38	12.0	7.09	1515	6.87	-20.2	0.59	350	Minimum purge reached.

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 8 secs **Discharge:** 22 secs
Pressure: 100 psi **Cycles Per Minute:** 2 **Flow Rate:** 250 mL/min

Screened Interval: 143-173 ft bgs **Minimum purge volume:** 2.8 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

using solinst controller

Site Name: 700S 1600E PCE Plume **Date:** 6/19/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-05R **Purging/Sampling Device:** Compressed gas ~~MP-10~~ QR 6/19/20 **Pump depth (ft bgs):** 222

Initial Static Water Level (feet btoc): 212.77 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 212.80 **QC Samples Collected:** None

Purge Start Time: 1400 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 1515 **Controller Settings: Recharge:** 15 secs **Discharge:** 15 secs **Pressure:** 145 psi

Samplers' Signatures: [signature] **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1415	212.80	14.77	7.08	1644	*9.10	*0.5	1.96	300	*YSI flow through cell leaking purging while waiting for new one.
1425	212.80	15.00	6.99	1629	6.26	-90.6			new YSI readings
1430	212.80	14.40	6.86	1630	5.81	-69.6	1.27	350	Purge 2 gal (new purge)
1435	21281	14.30	6.86	1636	5.70	-60.9	0.86	356	
1440	212.80	19.30	6.88	1627	5.58	-56.2	0.84	350	
1445	212.80	14.40	6.90	1625	5.56	-53.0	0.77	350	
1450	212.79	14.00	6.91	1622	5.51	-47.9	0.57	350	Changed gas cylinders
1500	212.80	14.40	6.92	1622	~~4~~6.37	-43.7	1.03	350	
1505	212.80	14.10	6.94	1623	5.51	-43.1	0.86	356	
1510	212.80	14.10	6.95	1616	5.40	-43.3	0.83	350	
1515	212.80	19.16	6.96	1619	5.33	-40.9	0.64	350	Sampling.

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 12 secs **Discharge:** 18 secs
Pressure: 140 psi **Cycles Per Minute:** 2 **Flow Rate:** 300 mL/min

Screened Interval: 198-228 ft bgs **Minimum purge volume:** 3.9 gallons QR 6/19/20
1.9 gallons → recalculated using 1/4" tubing that is installed

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.00 **(Vented to)** 0.00

Well ID: MW-06 **Purging/Sampling Device:** Compressed gas/MP-10 **Pump depth (ft bgs):** 128

Initial Static Water Level (feet btoc): 122.66 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 122.70 **QC Samples Collected:** None

Purge Start Time: 1115 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 1200 **Controller Settings: Recharge:** 15 secs **Discharge:** 15 secs **Pressure:** 80 psi

Samplers' Signatures: Breanna Moak Breanna Moak **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
~~1220~~ 1120 6/21/20 BM	~~122.60~~ 122.60	12.2	7.20	1142	4.96	-58.0	1.33	~~200~~ 350	
1125	122.66	12.0	7.25	1138	4.64	-50.5	0.50	350	
1130	122.66	12.0	7.25	1139	4.19	-45.1	0.58	350	
1135	122.60	12.1	7.26	1142	4.00	-42.2	0.34	350	
1140	122.70	12.0	7.28	1139	3.89	-41.0	0.47	350	
1145	122.60	12.0	7.28	1140	3.52	-41.3	0.42	350	minimum purge met
1150	~~127.72~~ 122.72	12.1	7.30	1138	3.64	-41.7	0.20	350	
~~1155~~ BM 6/21/20	122.72	~~BM 6/21/20~~	—	—	—	—	—	—	BM 6/21/20
1155	122.70	12.5	7.31	1136	3.35	-42.8	0.32	350	Sampling began
									Total Purge 3.5 gal

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 8 secs **Discharge:** 22 secs
Pressure: 80 psi **Cycles Per Minute:** 2 **Flow Rate:** 200 mL/min

Screened Interval: 100-130 ft bgs **Minimum purge volume:** 2.3 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.00 **(Vented to)** _____

Well ID: MW-08A **Purging/Sampling Device:** Compressed gas/Solinist **Pump depth (ft bgs):** 99

Initial Static Water Level (feet btoc): 59.33 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 59.30 **QC Samples Collected:** MS/MSD

Purge Start Time: 1430 **Ferrous Iron (mg/L):** 0.50 **Allowable Drawdown (ft):** 0.3

Sample Time: 1630 **Controller Settings: Recharge:** 13 secs **Discharge:** 17 secs **Pressure:** 60 psi

Samplers' Signatures: Brett Man Breanna Moak **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1440	59.33	15.6	6.96	1870	8.37	113.3	27.4	300	
1445	59.34	14.4	6.48	1867	6.45	113.6	40.3	300	
1450	59.34	14.0	6.25	1842	6.45	111.6	39.3	300	changed gas cylinder
1500	59.32	19.7	6.09	1880	6.11	104.9	37.1	225	
1505	59.34	15.0	6.95	1851	5.95	107.6	28.8	225	
1510	59.34	15.0	6.92	1862	5.95	108.6	36.9	225	
~~1515~~	~~59.34~~	~~15.2~~	~~6.91~~	~~1863~~					Compressor Error - Reset
1530	59.30	14.3	6.93	1875	6.58	110.2	76.9	300	
1535	59.30	13.8	6.91	1850	6.76	102.8	77.3	300	
1540	59.35	13.8	6.95	1863	6.93	100.2	46.8	400	
1545	59.33	13.7	6.97	1840	6.69	101.7	39.3	400	s
~~1550~~	~~59.34~~	Bm 6/21/20							switched to QED controller
1600	59.32	14.2	6.96	1861	6.39	104.1	27.2	350	from solinist
1605	59.32	13.9	6.94	1854	6.62	106.8	31.3	350	

Bm 6/21/20

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Vent:** 8 secs **Drive:** 10 secs
Pressure: 50 psi **Cycles Per Minute:** 3 **Flow Rate:** 220 mL/min

Screened Interval: 91-106 ft bgs **Minimum purge volume:** 1.7 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

700 S 1600 E

Site Name: PCE Plume **Date:** 6/21/20

OVM: FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-08A

Purging/Sampling Device:

Initial Static Water Level (feet btoc): 59.33 (after pump install)

Analytical Parameters:

Final Water Level (feet btoc):

QC Samples Collected:

Purge Start Time: 1430

Sample Number:

Sample Time:

Controller Settings: Recharge: _____ secs **Discharge:** _____ secs **Pressure:** _____ psi

Samplers' Signatures:

Cycles Per Minute:

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1610	59.32	14.0	6.92	1856	6.43	106.6	28.3	300	
1615	59.32	14.5	6.94	1860	6.33	106.9	25.6	300	
1620	59.33	14.3	6.93	1854	6.52	108.3	24.4	300	
1623		14.4	6.95	1855	6.43	108.5	24.6	300	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO	± 10 %
pH	± 0.1 pH unit	ORP	± 10mV
Conductivity	± 10 %	Water Level	± 0.1 foot
		Turbidity	< 50 NTU

Ferrous Iron (mg/L):

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/22/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-08B **Purging/Sampling Device:** Compressed gas/Solinist **Pump depth (ft bgs):** 190

Initial Static Water Level (feet btoc): 57.90 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-D-oxane

Final Water Level (feet btoc): 57.90 **QC Samples Collected:** Field Duplicate FD02-GW

Purge Start Time: 0935 **Ferrous Iron (mg/L):** 0.03 **Allowable Drawdown (ft):** 0.3

Sample Time: 1000 **Controller Settings: Recharge:** 10 secs **Discharge:** 10 secs **Pressure:** 90 psi

Samplers' Signatures: AF **Cycles Per Minute:** 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0940	57.90	14.1	7.05	1084	4.70	-65.2	2.93	400	
0945	57.90	13.8	7.05	1086	5.52	-44.8	0.69	400	
0950	57.90	13.6	7.07	1085	5.55	-42.3	0.67	400	minimum purge met
0955	57.91	13.9	7.09	1084	5.51	-43.0	0.47	400	
1000	SAMPLE								FD02-GW062120 @ 1010

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Vent:** 10 secs **Drive:** 10 secs
Pressure: 90 psi **Cycles Per Minute:** 3 **Flow Rate:** 450 mL/min

Screened Interval: 180-200 ft bgs **Minimum purge volume:** ~~3.3~~ 1.5 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

Bm 6/22/20

6/22/20

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** ~~6/21/20~~ 6/22/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** _____ **(Vented to)** _____

Well ID: MW-08C **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 304

Initial Static Water Level (feet btoc): — **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — **QC Samples Collected:** None

Purge Start Time: 0910 **Ferrous Iron (mg/L):** 0.35 **Allowable Drawdown (ft):** NA

Sample Time: 1020 **Controller Settings: Recharge:** 22 secs **Discharge:** 15 secs **Pressure:** 85 psi

Samplers' Signatures: Breann Mock Breanna Moak **Cycles Per Minute:** 1.6

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0920	—	15.1	7.52	841	0.16	39.0	5.57	160	
0925	—	14.9	7.42	843	0.16	-74.6	>2000	160	Tubidimeter read over range
0930	—	15.0	7.18	907	1.08	-112.1	52.4	160	
0935	—	15.2	7.20	907	1.22	-109.6	23.4	160	
0940	—	15.0	7.20	907	1.57	-104.1	13.3	160	Purge Volume Reached
0945	—	16.1	7.25	915	2.18	-97.8	9.38	160	Battery turned off - restarted
0955	—	15.1	7.21	914	1.87	-91.3	5.45	160	
1000	—	14.9	7.25	911	1.85	-90.4	4.63	160	
1005	—	14.9	7.24	914	2.00	-87.5	4.11	166	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: ~~10~~ 10 Bm 6/21/20 secs **Discharge:** ~~26~~ ~~14~~ 26 Bm 6/21/20 secs

Pressure: ~~55~~ 55 psi **Cycles Per Minute:** 2 **Flow Rate:** 300 mL/min

Screened Interval: 304-309 ft bgs **Minimum purge volume:** ~~5.2~~ 1.1 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C ✓	DO	±10% OR ±0.2mg/L (whichever is greater) ✓
pH	±0.1 pH unit ✓		
Specific Cond	±3% ✓		
ORP	±10mV ✓	Turbidity	< 50 NTU and ±10% OR < 10 NTU ✓
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/19/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-12D **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 90

Initial Static Water Level (feet btoc): 53.96 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 53.97 **QC Samples Collected:** None

Purge Start Time: 1508 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 1535 **Controller Settings: Recharge:** 16 secs **Discharge:** 14 secs **Pressure:** 55 psi

Samplers' Signatures: WT / MD **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1510	53.97	15.5	7.69	1436	6.19	106.0	27.8	~~375~~ MD 325	
1515	53.97	15.3	7.51	1435	4.83	110.7	7.71	325	
1520	53.97	15.1	7.36	1432	4.71	113.0	4.49	325	minimum purge met
1525	53.97	15.1	7.32	1433	4.87	112.2	2.94	325	
1530	53.97	15.0	7.31	1432	4.76	110.2	2.13	325	
1535	Sample.								
1554	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 16 secs **Discharge:** 14 secs
Pressure: 55 psi **Cycles Per Minute:** 2 **Flow Rate:** 300 mL/min

Screened Interval: 88.5-93.5 ft bgs **Minimum purge volume:** 1.6 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge **NOT** allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/19/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-12S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 60

Initial Static Water Level (feet btoc): 56.76 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-D-excel

Final Water Level (feet btoc): 56.73 **QC Samples Collected:** None

Purge Start Time: 11:24 **Ferrous Iron (mg/L):** 0.03 **Allowable Drawdown (ft):** 0.3

Sample Time: 12:40 **Controller Settings: Recharge:** 49 secs **Discharge:** 11 secs **Pressure:** 45 psi

Samplers' Signatures: WT | MD **Cycles Per Minute:** 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:30	56.76	20.8	7.66	1560	2.42	14.4	28.1	30	turned P up to 35 psi
11:40	56.78	17.7	7.20	1856	3.87	121.7	48.4	50	11:44 turned P up to 40 psi
11:50	56.80	18.3	7.15	1868	4.92	79.1	21.6	80	
12:00	56.80	18.7	7.15	1846	3.80	52.3	6.55	60	12:04 turned P up to 45 psi
12:10	56.79	19.1	7.14	1815	4.19	47.9	4.34	60	
12:05	56.80	19.3	7.14	1804	4.04	49.5	3.93	60	
12:20	56.79	19.5	7.14	1793	3.96	52.0	3.24	60	
12:25	56.79	19.5	7.14	1788	3.82	53.9	2.47	60	reaches minimum purge vol.
12:30	56.79	19.6	7.14	1784	4.04	55.8	2.03	60	
12:35	56.78	19.8	7.14	1766	3.72	58.4	1.71	60	
12:40	Sample.								
14:52	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 49 secs **Discharge:** 11 secs
Pressure: 35 psi **Cycles Per Minute:** 1 **Flow Rate:** 80 mL/min

Screened Interval: 50-60 ft bgs **Minimum purge volume:** 1.0 gallons 3786 mL

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge **NOT** allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** July 18 2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-13S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 19

Initial Static Water Level (feet btoc): 13.19 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 15.02 **QC Samples Collected:** None

Purge Start Time: 12:40 **Ferrous Iron (mg/L):** 0.03 **Allowable Drawdown (ft):** ~~0.3~~ 1.3 KC 6/18/20 Shallower screen

Sample Time: 13:25 **Controller Settings: Recharge:** 54 secs **Discharge:** 6 secs **Pressure:** 18 psi

Samplers' Signatures: Marida Day Karla Leslie **Cycles Per Minute:** 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:46	14	14.7	7.22	2007	5.59	108.7	38.2	100	Large draw down
12:51	14.39	15.7	7.13	2010	3.45	105.3	23.8	50	
12:57	14.4	16.6	7.08	2026	2.88	101.0	11.6	50	
1303	14.41	16.7	7.03	2027	2.69	100.0	6.24	50	
1307	14.4	16.7	7.04	2028	2.59	100.1	5.51	50	
1314	14.42	16.7	7.03	2030	2.45	101.8	4.63	50	Met minimum purge
1319	14.44	16.5	7.01	2030	2.62	104.0	3.07	50	
Collect	Sample								
									Paused sampling while nearby construction truck running, continued purging
1520	Finished	collecting	Sample						

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 54 secs **Discharge:** 6 secs
Pressure: 18 psi **Cycles Per Minute:** 1 **Flow Rate:** 50 mL/min

Screened Interval: 15.5-20.5 ft bgs **Minimum purge volume:** ~~0.3~~ KC 6/18/20 gallons
New purge 0.5 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge **NOT** allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** Jul 8, 2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-13D **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 82

Initial Static Water Level (feet btoc): 12.46 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 13.30 **QC Samples Collected:** None

Purge Start Time: 15:20 **Ferrous Iron (mg/L):** 0.0 **Allowable Drawdown (ft):** ~~0.3~~ 1.0 KL Feb 2020

Sample Time: 1620 **Controller Settings: Recharge:** 20 secs **Discharge:** 10 secs **Pressure:** ~~40~~ psi

Samplers' Signatures: Maria Ag Kala Cooke **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1525	13.02	14.7	7.31	1352	4.47	-63.0	14.7	200	
1530	13.15	14.7	7.30	1353	4.46	-38.2	30.7	200	
1535	13.14	14.7	7.18	1346	4.92	5.6	11.2	200	
1540	13.10	14.8	7.13	1340	5.00	21.1	10.28	200	Turned up P from 20psi to 30psi
1545	13.30	14.4	7.08	1341	4.88	32.8	8.49	275	not much psi
1550	13.30	14.4	7.06	1340	5.02	43.8	8.34	275	
1555	13.30	14.5	7.05	1347	5.29	53.4	6.43	275	
1600	13.30	14.4	7.03	1347	5.30	60.3	6.30	275	
1605	13.30	14.5	7.02	1345	5.35	65.4	5.32	275	
1610	13.30	14.4	7.02	1347	5.33	71.1	4.69	275	
1615	13.20	14.3	7.00	1348	5.33	78.0	5.60	275	
1618	13.30	14.4	7.00	1349	5.23	81.9	4.08	275	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 20 secs **Discharge:** 10 secs
Pressure: 40 psi **Cycles Per Minute:** 2 **Flow Rate:** 250 mL/min
KL Feb 2020

Screened Interval: 79-84 ft bgs **Minimum purge volume:** ~~1.4~~ gallons 2.0 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge **NOT** allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/23/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-14D **Purging/Sampling Device:** Artesian/Open Valve **Pump depth (ft bgs):** NA

Initial Static Water Level (feet btoc): — **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): — **QC Samples Collected:** None

Purge Start Time: 1100 **Ferrous Iron (mg/L):** ~0.11 **Allowable Drawdown (ft):** NA

Sample Time: 1140 **Controller Settings: Recharge:** — secs **Discharge:** — secs **Pressure:** — psi

Samplers' Signatures: AF, MD **Cycles Per Minute:** —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1105	—	22.3	7.31	1337	3.25	80.5	1.81	350	Artesian
1110	—	20.0	7.40	1341	3.23	78.8	2.03	300	
1115	—	20.0	7.17	1342	3.00	80.0	0.72	300	
1120	—	19.2	7.20	1333	3.80	82.4	0.73	300	
1125	—	18.8	7.30	1343	3.42	84.0	0.63	275	
1130	—	19.0	7.27	1339	3.57	88.4	0.54	250	
1135	—	18.2	7.24	1331	3.40	88.0	0.59	300	purged 4.5 gallons
1140	sample	—	—	—	—	—	—	—	—

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** NA **Discharge:** NA
Pressure: NA **Cycles Per Minute:** NA **Flow Rate:** 300-700 mL/min

Screened Interval: 49-54 ft bgs **Minimum purge volume:** 8 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/23/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-14S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 12

Initial Static Water Level (feet btoc): 5.24 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 9.10 **QC Samples Collected:** None

Purge Start Time: 9:10 **Ferrous Iron (mg/L):** 1.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 10:40 **Controller Settings: Recharge:** 54 secs **Discharge:** 6 secs **Pressure:** 15 psi

Samplers' Signatures: _____ **Cycles Per Minute:** _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
930	5.90	17.2	6.97	1581	0.77	-62.4	37.5	100	
935	6.08	18.8	7.02	1561	0.88	-44.1	37.6	80	min purge reached
940	6.18	18.0	7.03	1574	0.65	-37.9	38.8	80	
945	6.48	18.0	7.03	1575	0.89	-33.0	37.0	75	
950	6.57	18.0	7.03	1593	0.89	-27.2	36.7	75	
955	6.74	18.2	7.03	1632	0.39	-21.3	44.5	75	
1000	6.91	18.2	7.03	1687	0.47	-14.0	41.0	75	
1005	7.09	18.5	7.03	1742	0.50	-6.1	35.6	70	
1010	7.18	18.7	7.03	1782	0.47	0.0	31.6	70	
1015	7.48	14.7	7.04	1807	0.48	4.1	28.8	50	
1020	7.46	19.4	7.04	1808	0.47	6.9	25.7	50	
1025	7.56	19.9	7.05	1816	0.41	9.1	23.7	50	
1030	7.54	20.1	7.04	1809	0.47	10.2	22.5	50	
1035	7.58	20.2	7.05	1803	0.41	11.1	21.8	50	Stabilization

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 54 secs **Discharge:** 6 secs
Pressure: 10 psi **Cycles Per Minute:** 1 **Flow Rate:** 50 mL/min

Screened Interval: 4.5-14.5 ft bgs **Minimum purge volume:** 0.2 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/19/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-15D **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 72

Initial Static Water Level (feet btoc): 48.29 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 48.37 **QC Samples Collected:** Field Duplicate FD03-GW @ 0905

Purge Start Time: 0814 **Ferrous Iron (mg/L):** 0.05 **Allowable Drawdown (ft):** 0.3

Sample Time: 0900 **Controller Settings: Recharge:** 11 secs **Discharge:** 9 secs **Pressure:** 40 psi

Samplers' Signatures: MT **Cycles Per Minute:** 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0820	48.36	14.3	6.90	1907	3.92	-55.1	32.2	250	
0825	48.37	14.3	6.89	1911	3.93	-63.1	32.0	275	
0830	48.37	14.2	6.90	1913	3.95	-64.1	26.5	275	
0835	48.37	14.2	6.92	1914	4.05	-63.7	24.0	275	reached minimum purge vol.
0840	48.35	14.2	6.92	1915	4.02	-63.0	20.8	275	
0845	48.37	14.3	6.93	1915	4.07	-62.4	19.5	275	
0850	48.37	14.2	6.93	1918	4.09	-62.2	18.0	275	
0855	48.35	14.3	6.94	1919	4.17	-62.1	18.1	275	
0900	Sample								
0905	Sample dup.								
0945	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 11 **Discharge:** 9
Pressure: 45 **Cycles Per Minute:** 3 **Flow Rate:** 325 mL/min

Screened Interval: 69-74 ft bgs **Minimum purge volume:** 1.3 gallons 4921 mL

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/19/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-15S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 54

Initial Static Water Level (feet btoc): 46.81 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 46.81 **QC Samples Collected:** None

Purge Start Time: 8:25 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 9:15 **Controller Settings: Recharge:** 8 secs **Discharge:** 12 secs **Pressure:** 30 psi

Samplers' Signatures: MD **Cycles Per Minute:** 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:25	46.82	14.5	7.05	2144	4.75	-21.7	68.3	300	
8:30	46.82	14.4	6.88	2136	4.55	22.5	35.1	300	
8:35	46.85	14.4	6.89	2132	4.60	53.1	19.5	300	min purge met
8:40	46.83	14.3	6.90	2135	4.51	68.4	11.4	300	
8:45	46.82	14.4	6.91	2134	4.80	80.7	9.00	300	
8:50	46.82	14.3	6.93	2136	4.80	92.8	6.38	300	
8:55	46.81	14.4	6.95	2138	4.74	99.0	6.25	300	
9:03	46.82	14.4	6.96	2139	4.55	108.7	3.76	300	
9:05	46.82	14.4	6.97	2139	4.80	110.4	3.95	300	
9:10	46.81	14.4	6.97	2140	4.79	114.0	3.97	300	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 8 secs **Discharge:** 12 secs
Pressure: 30 psi **Cycles Per Minute:** 3 **Flow Rate:** 275 mL/min

Screened Interval: 52.5-55 ft bgs **Minimum purge volume:** 0.9 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-16D **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 67

Initial Static Water Level (feet btoc): 9.20 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 9.36 **QC Samples Collected:** None

Purge Start Time: 10:08 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 1040 **Controller Settings: Recharge:** 20 secs **Discharge:** 10 secs **Pressure:** 40 psi

Samplers' Signatures: LT / MD **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1015	9.26	13.9	7.16	1065	6.23	110.5	1.89	210	
1020	9.25	14.0	7.10	1063	6.26	112.0	1.53	210	
1025	9.34	13.9	7.12	1059	6.35	110.1	1.32	~~220~~ 210	
1030	9.34	14.0	7.12	1063	6.20	110.3	1.03	210	reached minimum purge volume
1035	9.35	14.0	7.12	1062	6.32	111.8	1.24	210	
1040	Sample.								
1104	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 20 **Discharge:** 10
Pressure: 40 **Cycles Per Minute:** 2 **Flow Rate:** 300 mL/min

Screened Interval: 62-72 ft bgs **Minimum purge volume:** 1.2 gallons 4543 mL
≈ 22 min.

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-16S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 16

Initial Static Water Level (feet btoc): 10.70 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 10.97 **QC Samples Collected:** None

Purge Start Time: 0843 **Ferrous Iron (mg/L):** 0.03 **Allowable Drawdown (ft):** 0.3

Sample Time: 0930 **Controller Settings: Recharge:** 25 secs **Discharge:** 5 secs **Pressure:** _____ psi

Samplers' Signatures: WT | MD **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0845	10.95	13.8	6.77	1508	5.51	-51.0	54.8	160	
0847	11.00	—	—	—	—	—	—	~~160~~ at	turn PSI down to 15
0850	10.92	13.7	6.81	1509	~~0.7~~ 5.05 at	0.2	34.4	160	reached minimum purge volume
0855	10.92	13.6	6.83	1506	5.18	24.3	23.4	160	
0900	10.97	13.6	6.87	1504	5.25	37.6	17.7	160	
0905	10.94	13.5	6.89	1505	5.07	48.4	10.51	160	
0910	10.97	13.5	6.91	1504	5.22	56.7	8.32	160	
0915	10.97	13.5	6.92	1502	5.38	62.7	5.79	160	
0920	10.98	13.6	6.94	1505	5.31	68.3	5.29	160	
0925	11.00	13.6	6.94	1505	5.35	72.6	4.23	160	
0930	@ Sample.								
0954	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 24 secs **Discharge:** 6 secs
Pressure: 18 psi **Cycles Per Minute:** 2 **Flow Rate:** 160 mL/min

Screened Interval: 9-19 ft bgs **Minimum purge volume:** 0.3 gallons 1136 mL ≈ 7 minutes

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-17D **Purging/Sampling Device:** Artesian/Open Valve **Pump depth (ft bgs):** NA

Initial Static Water Level (feet btoc): 0.80 TOC is above grade **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 0.91 **QC Samples Collected:** None

Purge Start Time: 1450 **Ferrous Iron (mg/L):** 0.28 **Allowable Drawdown (ft):** NA

Sample Time: 1525 **Controller Settings: Recharge:** 12 secs **Discharge:** 8 secs **Pressure:** 28 psi

Samplers' Signatures: **Cycles Per Minute:** 3

↗ above ground

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1455	0.90	17.7	7.29	1614	5.17	93.9	14.6	200	
1500	0.90	17.4	7.15	1615	5.09	100.7	29.8	200	reached minimum purge volume
1505	0.90	17.2	7.10	1617	4.94	104.2	44.2	200	
1510	0.90	17.1	7.09	1616	4.85	106.4	44.5	200	
1515	0.91	17.0	7.07	1618	4.94	109.3	47.6	200	
1525	SAMPLE								
1548	Stop pumping								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** NA **Discharge:** NA
Pressure: NA **Cycles Per Minute:** NA **Flow Rate:** 550 mL/min

Screened Interval: 44-54 ft bgs **Minimum purge volume:** ~~8~~ gallons
(AK) 0.4

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/21/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-17S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 20

Initial Static Water Level (feet btoc): 5.76 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 9.29 **QC Samples Collected:** None

Purge Start Time: 1150 (1) **Ferrous Iron (mg/L):** 0.01 **Allowable Drawdown (ft):** 0.3

Sample Time: 1250 **Controller Settings: Recharge:** 55 secs **Discharge:** 5 secs **Pressure:** 18 psi

Samplers' Signatures: ER, AF **Cycles Per Minute:** 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1200	6.42	17.2	7.35	1908	1.22	-28.1	60.2	150	Change settings to lower flow
1205	6.70	18.4	7.15	1908	0.63	-3.8	50.6	50	
1210	6.92	18.4	7.12	1914	0.82	7.5	44.8	75	minimum purge met
1215	7.14	18.5	7.09	1910	0.66	20.4	(AF) ~~20.4~~ 34.6	75	
1220	7.24	18.7	7.08	1916	0.87	28.2	28.7	75	
1225	7.38	18.9	7.08	1917	0.65	30.5	21.9	50	
1230	7.45	19.1	7.08	1914	0.66	33.1	19.2	50	
1235	7.51	19.3	7.08	1913	0.60	36.0	19.1	50	
1240	7.60	19.8	7.12	1910	0.60	35.3	17.3	50	
1250	SAMPLE								
1407	Stop pumping.								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 48 secs **Discharge:** 12 secs
Pressure: 18 psi **Cycles Per Minute:** 1 **Flow Rate:** 50 mL/min

Screened Interval: 6-21 ft bgs **Minimum purge volume:** 0.4 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

0

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/16/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-18 **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 88

Initial Static Water Level (feet btoc): 80.72 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 80.74 **QC Samples Collected:** None

Purge Start Time: 14:30 **Ferrous Iron (mg/L):** 0.01 **Allowable Drawdown (ft):** 0.3

Sample Time: 1508 **Controller Settings: Recharge:** 18 secs **Discharge:** 12 secs **Pressure:** 48 psi

Samplers' Signatures: Anna Fiorini / Breanna Rock / Mandy Dy **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
~~1446~~	80.74	13.0	6.85	~~1977~~	7.52	55.7	13.7	300	
1452	80.72	13.1	6.94	1988	7.06	45.5	8.58	300	
1457	80.73	12.9	6.94	1979	6.82	47.3	5.70	300	1.5 gal purge reached
1503	80.74	13.1	6.94	1984	6.71	53.0	2.97	300	
~~1500~~									BL
									3.5 gallons purged total

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 18 secs **Discharge:** 12 secs
Pressure: 50 psi **Cycles Per Minute:** 2 **Flow Rate:** 300 mL/min

Screened Interval: 80-90 ft bgs **Minimum purge volume:** 1.5 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/16/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-19 **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 89

Initial Static Water Level (feet btoc): 80.0 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-D-dioxane

Final Water Level (feet btoc): 80.03 **QC Samples Collected:** None

Purge Start Time: 1609 **Ferrous Iron (mg/L):** 0.04 **Allowable Drawdown (ft):** 0.3

Sample Time: 1728 **Controller Settings: Recharge:** 12 secs **Discharge:** 18 secs **Pressure:** 45 psi

Samplers' Signatures: AF, MD, BM, ER, KL **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1614	80.01	13.5	7.13	1778	6.03	-10.9	69.9	350	
1619	80.01	13.3	7.05	1782	6.44	18.2	55.1	350	
1624	80.03	13.3	7.04	1744	9.92	32.8		350	
1645									restarted purging, problem w/ bladder,
1650	80.02	15.5	7.26	1734	6.76	73.0	>2000	250	~~took up~~ pulled up tubing, took apart &
1655	80.04	14.1	7.07	1733	6.23	56.2	>2000	250	put back ~~together~~
1700	80.02	13.8	7.06	1745	6.45	54.4	56.2	200	
1705	80.03	13.6	7.04	1758	6.47	57.8	33.4	200	
1710	80.02	13.5	7.04	1762	6.46	62.1	22.7	200	
1715	80.04	13.6	7.03	1762	6.46	64.4	17.9	200	
1720	80.02	13.7	7.03	1770	6.50	66.9	12.1	200	
1725	80.03	13.6	7.03	1779	6.49	69.2	10.37	200	purged 4 gallons
1728									started sampling

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 12 secs **Discharge:** 18 secs
Pressure: 55 psi **Cycles Per Minute:** 2 **Flow Rate:** 250 mL/min

Screened Interval: 84-94 ft bgs **Minimum purge volume:** 1.5 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/17/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-20D **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 124

Initial Static Water Level (feet btoc): 81.90 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 81.90 **QC Samples Collected:** Field Duplicate FD04-GW

Purge Start Time: 1025 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: ~~1125~~ at 1140, 1205 **Controller Settings: Recharge:** 20 secs **Discharge:** 10 secs **Pressure:** 70 psi

Samplers' Signatures: [signature] **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1030	81.90	12.7	7.09	989	8.70	144.2	—	200	
1040	81.90	13.7	7.18	991	5.23	12.5	5.05	200	
1050	81.90	13.6	7.15	988	5.17	11.0	2.25	200	
1100	81.90	13.6	7.16	988	5.06	13.4	1.30	200	minimum purge met
1105	81.90	13.6	7.16	990	5.20	18.2	1.55	200	~~#~~
1121	81.90	13.6	7.16	988	5.12	18.4	~~1.45~~	200	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: 20 **Discharge:** 10
Pressure: 70 **Cycles Per Minute:** 2 **Flow Rate:** 250 mL/min

Screened Interval: 119-129 ft bgs **Minimum purge volume:** 2.2 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/17/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** ∅ **(Vented to)** ∅

Well ID: MW-20S **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 88

Initial Static Water Level (feet btoc): 82.22 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 82.20 **QC Samples Collected:** None

Purge Start Time: 0925 **Ferrous Iron (mg/L):** 0.0 mg/l **Allowable Drawdown (ft):** 0.3

Sample Time: 1102 **Controller Settings: Recharge:** 11 secs **Discharge:** 9 secs **Pressure:** 45 psi

Samplers' Signatures: Emma Pratt **Cycles Per Minute:** 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0933	82.25	13.5	7.74	1041	4.20	-29.9	6.00	200	
0938	82.25	13.5	7.80	757	5.17	-30.7	20.3	150	
0944	82.25	13.6	7.86	654	5.59	-30.5	11.00	150	
0950	82.25	13.6	7.79	675	5.56	-29.3	19.9	150	
0957	82.25	13.8	7.69	720	5.30	-28.9	2.91	150	minimum purge
1003	82.25	13.5	7.63	764	5.14	-28.5	5.70	150	
1009	82.26	13.5	7.57	803	4.98	-27.7	5.90	150	
1014	82.26	13.4	7.53	830	4.82	-27.2	3.02	150	
1020	82.26	13.4	7.49	857	4.73	-26.6	2.89	150	
1027	82.26	13.5	7.43	892	4.58	-26.3	1.40	150	
1034	82.27	13.7	7.34	918	4.52	-27.1	1.28	130	
1042	82.24	13.7	7.39	940	4.40	-28.8	0.93	130	
1050	82.26	13.9	7.37	958	4.32	-29.7	1.03		
1059	82.25	13.7	7.35	969	4.22	-29.7	1.30	130	

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: **Recharge:** 11 secs **Discharge:** 9 secs
Pressure: 50 psi **Cycles Per Minute:** 3 **Flow Rate:** 280 mL/min

Screened Interval: 79.5-89.5 ft bgs **Minimum purge volume:** 1.5 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C ✓	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit ✓		
Specific Cond	±3%		
ORP	±10mV ✓	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot ✓		

Note: Simultaneous purge allowed

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/18/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** _____ **(Vented to)** _____

Well ID: MW-21 **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 70

Initial Static Water Level (feet btoc): 54.31 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 54.30 **QC Samples Collected:** None

Purge Start Time: 10:35 **Ferrous Iron (mg/L):** 0.00 **Allowable Drawdown (ft):** 0.3

Sample Time: 11:15 **Controller Settings: Recharge:** 13 secs **Discharge:** 7 secs **Pressure:** 40 psi

Samplers' Signatures: Rae Dy Kaeleigh **Cycles Per Minute:** 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:35	54.31	15.0	7.07	1770	9.08	219.7	49.3	300	
10:41	54.31	14.5	6.78	1833	6.49	158.2	15.5	300	
10:46	54.32	14.5	6.78	1832	6.20	133.6	10.44	300	start sample purge
10:51	54.35	14.5	6.80	1837	6.33	114.9	7.71	300	
10:56	54.32	14.5	6.81	1835	5.44	102.2	4.99	300	
11:01	54.35	14.6	6.82	1838	6.12	96.9	3.67	300	
11:06	54.31	14.6	6.85	1837	6.06	93.3	3.09	300	
11:11	54.28	14.6	6.85	1841	6.23	92.1	2.61	300	Purged 4 gallons
Collect sample									

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs
Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** 150 mL/min

Screened Interval: 62-72 ft bgs **Minimum purge volume:** 1.2 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/17/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** _____

Well ID: MW-22 **Purging/Sampling Device:** MP-50 **Pump depth (ft bgs):** 72

Initial Static Water Level (feet btoc): 62.99 **Analytical Parameters:** VOCs, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA, 1,4-Dioxane

Final Water Level (feet btoc): 62.96 **QC Samples Collected:** None

Purge Start Time: 1430 **Ferrous Iron (mg/L):** 0.08 **Allowable Drawdown (ft):** 0.3

Sample Time: 1525 **Controller Settings: Recharge:** 13 secs **Discharge:** 17 secs **Pressure:** 40 psi

Samplers' Signatures: [signature] **Cycles Per Minute:** 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1432	62.99	13.6	6.92	1623	5.74	-55.0	55.7	200	
1437	62.99	13.5	6.89	1627	5.73	-40.2	21.8	200	
1444	62.90	13.5	5.93	1628	5.66	-32.4	14.8	200	
1451	62.95	13.4	6.94	1628	5.68	-27.9	11.2	200	
1500	62.95	13.5	6.96	1627	5.96	-22.6	7.96	~~200~~	350 Purge volume reached
1507	62.94	13.6	6.94	1627	5.74	-21.1	6.94	200	
1513	62.95	13.5	6.98	1624	5.79	-20.0	5.47	200	
1520	62.96	13.4	6.96	1625	5.89	-18.1	4.34	200	
1525		✓	✓	✓	✓	✓	✓		Sample

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs
Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** 300 mL/min

Screened Interval: 64-74 ft bgs **Minimum purge volume:** 1.3 gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C ✓	DO	±10% OR ✓ ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit ✓		
Specific Cond	±3% ✓		
ORP	±10mV ✓	Turbidity	< 50 NTU and ±10% OR < 10 NTU ✓
Water Level	± 0.3 foot ✓		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/23/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-23A **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 210

Initial Static Water Level (feet btoc): _____ **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA

Final Water Level (feet btoc): _____ **QC Samples Collected:** ~~Field duplicate FD01-GW, MS/MSD~~ KL 6/11/2020 None

Purge Start Time: _____ **Ferrous Iron (mg/L):** _____ **Allowable Drawdown (ft):** NA

Sample Time: _____ **Controller Settings: Recharge:** _____ secs **Discharge:** _____ secs **Pressure:** _____ psi

Samplers' Signatures: _____ **Cycles Per Minute:** _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs

Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** _____ mL/min

Screened Interval: 210-220 ft bgs **Minimum purge volume:** ~~3.6~~ 0.8 gallons KL 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

SEE Reverse for field notes

6/23/20

Troubleshooting at MW-23A recharge cycles

1) Blow line out w/settings: ~~10 0~~ 20 ON, 60 OFF, 95 PSI

2) Purged 90 mL, no signs of recharge

3) Start at 10 on, 120 off @ 10 psi, wait 3 cycles

~~23B~~ QR 6/23/20

~~Attempted sample at B. Slowly increase flow rate to 50 mL/min~~ QR 6/23/20

6/24/20

1022 — WL = 186.58

1025 - start at 40 psi 20 on ~~PSI~~ 40 off, breakthrough immediately. test recharge cycle ~120s for recharge

1046 — WL = 186.59 Start at 40 psi, 10 on 50 off

1046 — increase to 50 psi, change to 20 on, 40 off WL = 186.60 discharge has mainly air, some water

1100 — determined breakthrough. Team to stop troubleshooting, no sample collected.

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/23/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** _____ **(Vented to)** _____

Well ID: MW-23B **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 250

Initial Static Water Level (feet btoc): — **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA

Final Water Level (feet btoc): _____ **QC Samples Collected:** None

Purge Start Time: 0830; 1316 restart **Ferrous Iron (mg/L):** _____ **Allowable Drawdown (ft):** NA

Sample Time: _____ **Controller Settings: Recharge:** _____ secs **Discharge:** _____ secs **Pressure:** _____ psi

Samplers' Signatures: _____ **Cycles Per Minute:** _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0910	—	19.7	7.46	1295	0.73	126.6	2.42	100	breakthrough
~~1320~~	—								Restart
1320	—	25.0	7.26	1464	0.28	187.2	16.6	200	
1335	—	20.0	7.16	1530	0.09	-188.5	—	—	Breakthrough, discharged ~ 1 L with no cycling

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs

Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** _____ mL/min

Screened Interval: 250-260 ft bgs **Minimum purge volume:** ~~4.3~~ 0.9 gallons KC 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

see reverse for notes

- Breakthrough after ~ 0.25 gal

Start recharge test on MW23B → DTW on 6/16 = 196.60'
∴ ~85 psi needed

1150 start at 30 psi, 10 on, 120 off
1159 increase to 40 psi, 10 on 120 off
1205 Increase to 50 psi, 10 on 120 off
1212 Increase to 60 psi, 10 on 120 off
1217 Increase to 70 psi, 10 on 120 off
1223 Increase to 80 psi, 10 on 120 off
1229 Increase to 90 psi, 10 on 120 off
1235 Increase to 100 psi, 10 on 120 off
1241 Increase to 110 psi, 10 on 120 off, seeing water bubbles / air in discharge line.
1250 Increase to 120 psi, 10 on 120 off
1256 Increase to 130 psi, 10 on 120 off water flowing; ~ 30 ml per discharge
1310 Increase to 130 psi, 20 on 120 off water flow ~ 80 ml / discharge
1312 Conduct recharge test, ~124 seconds

Restart purge → plan to collect VOCs from water that has re-filled in the line.

1510 Start at 40 psi, 10 on 120 off water bubbles + air cycling through. Likely did not recharge enough.
1520 No water, only air. Did not give the system long enough to recharge (~ 2 hours)
1545 Pull pump
1547 WL = 197.42

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume Date: 6/24/20 OVM: FID ☐ PID ■ In Casing (ppm): (Initial) Ø (Vented to) Ø

Well ID: MW-23B Purging/Sampling Device: _____

Initial Static Water Level (feet btoc): _____ (after pump install) Analytical Parameters: _____

Final Water Level (feet btoc): _____ QC Samples Collected: _____

Purge Start Time: _____ Sample Number: _____

Sample Time: _____ Controller Settings: Recharge: _____ secs Discharge: _____ secs Pressure: _____ psi

Samplers' Signatures: _____ Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

See reverse for field notes

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO	± 10 %
pH	± 0.1 pH unit	ORP	± 10mV
Conductivity	± 10 %	Water Level	± 0.1 foot
		Turbidity	< 50 NTU

Ferrous Iron (mg/L): _____

Notes

0830 Team pulls pump ~ 1 ft above the ZIST seeting. Will try and sample with pump slightly lifted to monitor drawdown → can show if pump is malfunctioning or low recharge

0858 WL = ~~197.25~~ 196.25' ar 6/24/20

0900 Start at 30 psi, 10 on 120 off WL = 196.36

0910 Increase to 40 psi, 10 on 120 off WL = 196.41

0917 Increase to 50 psi, 10 on 120 off WL = 196.45

0923 Increase to 60 psi, 10 on 120 off WL = 196.44.
→ noted that water bubbles in discharge line

0930 Increase to 70 psi, 10 on 120 off WL = 196.45
→ bubbles continue in discharge line

0937 Increase to 80 psi, 10 on 120 off WL = 196.52

0946 Increase to 90 psi, 10 on 120 off WL = 196.50

0955 Leave at 90 psi, change to 15 on, 120 off

1004 Increase to 100psi, change to 20 on 40 off WL = 196.46

1010 Increase discharge to 120 on to see if water comes out

1012 Water discharged ~ 5 seconds solid stream, then apparent breakthrough. WL = 196.57

1400 Team did not collect sample. Removed pump and will send to BESST for trouble shooting

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/23/20 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-23C **Purging/Sampling Device:** ZIST/Compressed gas **Pump depth (ft bgs):** 348

Initial Static Water Level (feet btoc): n/a **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA

Final Water Level (feet btoc): n/a **QC Samples Collected:** None

Purge Start Time: 0940 **Ferrous Iron (mg/L):** 0.23 **Allowable Drawdown (ft):** NA

Sample Time: 1250 **Controller Settings: Recharge:** 120 secs **Discharge:** 20 secs **Pressure:** 130 psi

Samplers' Signatures: Breanna Moak **Cycles Per Minute:**

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1130	—	24.0	7.81	1075	1.26	73.8	2.18	40	
1135	—	23.9	7.77	1075	0.99	70.7	—	40	
1145	—	23.3	7.73	1073	0.67	62.6	0.43	40	
1150	—	23.4	7.72	1078	0.67	60.9	0.10	40	
1155	—	23.9	7.71	1078	0.70	44.2	0.08	40	
1200	—	23.4	7.69	1080	0.54	-10.5	0.00	40	
1205	—	23.4	7.65	1077	0.53	-92.0	0.13	40	
1210	—	23.7	7.60	1077	0.44	-134.0	0.09	40	
1220	—	24.3	7.64	1078	0.44	-165.2	0.68	40	
1225	—	24.0	7.47	1066	0.35	-167.9	1.49	40	
1230	—	24.3	7.44	1052	0.35	-167.9	1.37	40	
1235	—	24.2	7.39	1056	0.30	-165.0	1.13	40	
1240	—	24.4	7.35	1062	0.29	-162.8	1.28	40	
1245	—	24.2	7.32	1071	0.31	-156.7	0.80	40	Purged ~ 1.4 gallons

1250 Collect SAMPLE

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs

Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** _____ mL/min

Screened Interval: 348-358 ft bgs **Minimum purge volume:** ~~6.0~~ 1.2 gallons BL 6/10/2020

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

see reverse for field notes

DTW on 6/16/2020 was 214.7' btoc → need minimum 93 psi

MW23C

6/23/20 Notes

0940 Start at ~~20~~ 30 psi (per 6/23/20); 10 on 120 off for 3-4 cycles

0950 ~~Start~~ (per) increase to ~~30~~ 40 psi (per 6/24/20); 10 on 120 off

0956 Increase to ~~40~~ 50 psi (per 6/23/20); 10 on 120 off

1010 Increase to 60 psi; 10 on 120 off

1016 Increase to 70 psi, 10 on 120 off

1022 Increase to 80 psi, 10 on 120 off

1028 Increase to 90 psi, 10 on 120 off

1035 Increase to 100 psi, 10 on 120 off

1043 Increase to 110 psi, 10 on 120 off, water visible in discharge line.

1049 Increase to 120 psi, 10 on 120 off, water at ~ 10 ml/discharge cycle

1057 Increase to 130 psi, 10 on 120 off, discharge at < 50 ml/min

1110 140 second recharge after purging ~~100~~ 30 mL over one 10 on 120 off cycle @ 130 psi

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

700516.00E

Site Name: ACE Pure **Date:** Jul 19, 2000 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0 **(Vented to)** 0

Well ID: MW-25A **Purging/Sampling Device:** 2IST/Compressed gas

Initial Static Water Level (feet btoc): NA (after pump install) **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, chloride, TDS/Alkalinity, TOC, MEE, Methane/Ethane

Final Water Level (feet btoc): NA **QC Samples Collected:** None

Purge Start Time: 08:25 **Sample Number:**

Sample Time: **Controller Settings: Recharge:** _____ secs **Discharge:** _____ secs **Pressure:** _____ psi

Samplers' Signatures: Karolewski, Jim Fiori **Cycles Per Minute:**

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
									Med breathing at 100 on 80 off
									Switched to 25B
No Sample collected.									
After discussions with RESAT, it is likely a pump problem.									

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Screened Interval (ft bgs): 201-211 Minimum purge volume: 0.7 gallons

Pump depth: 201 ft bgs WL: 199 ft btoc

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO	± 10 % or ± 0.2 mg/L
pH	± 0.1 pH unit	ORP	± 10mV
Conductivity	± ~~10 %~~ 3%	Water Level	± 0.1 foot
		Turbidity	< 50 NTU and ± 10% OR < 10 NTU

Ferrous Iron (mg/L): _____

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: PCE Plume 700516000E Date: July 9, 2010 OVM: FID ☐ PID ■ In Casing (ppm): (Initial) 0 (Vented to) 0

Well ID: MW-25B Purging/Sampling Device: 2" ST / Compressed gas

Initial Static Water Level (feet btoc): NA (after pump install) Analytical Parameters: VOCs, 1,4-Dioxane, metals, mercury, Anions, N+N, TDS/Alkalinity, TOC, MEE

Final Water Level (feet btoc): NA QC Samples Collected: None

Purge Start Time: 0850 Ended 1250 Sample Number:

Sample Time: Controller Settings: Recharge: _____ secs Discharge: _____ secs Pressure: _____ psi

Samplers' Signatures: Kyle Cosh Anne Rai Cycles Per Minute: —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0905	NA	15.7	7.74	1281	2.22	65.9	0.0	80	
0910	NA	15.6	7.75	1284	1.36	67.6	0.0	20	
0915	NA	15.2	7.73	1280	1.07	67.3	0.0	20	purged minimum volume
0920	NA	14.8	7.42	1293	1.60	47.0	0.0	125	
0925	NA	14.2	7.58	1200	0.61	38.8	0.0	125	breakthrough
1325	NA	15.8	—	—	1.50	52.6	—	—	breakthrough
(AF) ~~1400~~	~~NA~~	~~21.2~~	—	—	—	—	—	—	
1400	NA	21.2	7.50	1319	0.54	32.0	0.0	45	
1405	NA	18.8	7.22	1315	1.35	40.5	0.0	75	met minimum purge volume
1410	NA	17.6	7.13	1296	1.81	48.6	0.0	~~75~~	
1415	NA	16.2	7.10	1291	2.56	55.4	0.0	~~75~~	
NO	sample	collected.							

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Screened Interval (ft bgs): 231-241 minimum purge volume: 0.9 gallons Spec

Pump depth: 231 ft bgs WL = 192 ft bgs

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO	± 10 % or ± 0.2 mg/L
pH	± 0.1 pH unit	ORP	± 10mV
~~Conductivity~~ Specific Conductivity	± ~~10~~ 3%	Water Level	± 0.1 foot
		Turbidity	< 50 NTU ± 10 % or < 10 NTU

Ferrous Iron (mg/L): _____

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S1600E PCE Plume Date: 6/19/2020 OVM: FID ☐ PID ■ In Casing (ppm): (Initial) 0 (Vented to) 0

Well ID: MW-25C Purging/Sampling Device: ZIST/Compressed gas

Initial Static Water Level (feet btoc): — (after pump install) Analytical Parameters: VOCs, 1,4 Dioxane, metals, Nitrate, Anions, DRO, TDS/Alkalinity, TOC, MEE

Final Water Level (feet btoc): — QC Samples Collected: None

Purge Start Time: 1015 Sample Number: MW25C-GW061920

Sample Time: 1155 Controller Settings: Recharge: 80 secs Discharge: 30 secs Pressure: 140 psi

Samplers' Signatures: KL, AF Cycles Per Minute: —

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1055	—	15.8	7.75	945	1.87	-162.5	0.0	75	
1100	—	15.8	7.42	948	2.10	-50.7	0.0	75	
1105	—	15.4	7.30	940	2.35	-40.1	0.0	75	
1110	—	15.4	7.29	941	2.82	-135.2	0.0	75	
1115	—	15.3	7.27	944	3.07	-128.3	0.0	75	
1120	—	15.2	7.20	956	3.24	-116.9	0.0	75	
1125	—	15.7	7.22	954	4.03	-106.5	0.0	75	minimum purge met
1130	—	15.5	7.23	946	3.85	-100.8	0.0	75	
1140	—	15.6	7.23	958	4.12	-89.0	0.0	75	switch gas cylinder
1145	—	15.5	7.21	947	4.15	-83.6	0.0	75	
1150	—	15.4	7.21	948	4.46	-80.7	0.0	75	
1155	Collected sample								Rinsed 65 gallons

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Screened Interval (ft bgs): 307.5-317.5 Minimum purge volume: 1.1 gallons Spec

Pump depth: 307.5 ft bgs WL = 206 ft btoc

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO	± 10 % or ± 0.2mg/L
pH	± 0.1 pH unit	ORP	± 10mV
~~Conductivity~~	± ~~10 %~~ 3%	Water Level	± 0.1 foot
		Turbidity	< 50 NTU and ± 10% or < 10 NTU

Ferrous Iron (mg/L): 0.03

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/24/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** 0.0 **(Vented to)** 0.0

Well ID: MW-27 **Purging/Sampling Device:** Compressed gas **Pump depth (ft bgs):** 210

Initial Static Water Level (feet btoc): 186.97 (used lower reference point) **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA

Final Water Level (feet btoc): 186.92 **QC Samples Collected:** None

BM 6/24/20

Purge Start Time: 08:30 **Ferrous Iron (mg/L):** 0.28 **Allowable Drawdown (ft):** NA

Sample Time: 09:35 **Controller Settings: Recharge:** 20 secs **Discharge:** 40 secs **Pressure:** 145 psi

Samplers' Signatures: Breanna Moak **Cycles Per Minute:** 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0850	186.91	20.7	6.84	1944	5.35	93.0	16.2	150	
0857	186.91	20.7	6.80	1917	4.86	92.2	5.20	80	
0905	186.91	19.3	6.83	1923	5.72	90.3	2.04	~~150~~	125 BM 6/24/2020
0910	186.91	17.8	6.78	1899	5.20	92.1	0.98	~~125~~	150
0915	186.91	17.7	6.81	1905	5.11	90.8	0.75	150	
0920	186.91	17.7	6.80	1906	5.16	91.7	0.33	150	
0925	186.91	17.7	6.80	1909	5.14	92.1	1.21	175	
0930	186.91	17.1	6.82	1889	4.89	91.8	0.42	175	minimum purge reached
									2.25 gallons purged

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs

Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** _____ mL/min

Screened Interval: 200-220 ft bgs **Minimum purge volume:** ~~3.7~~ 1.8 gallons

3C

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

GROUNDWATER MONITORING WELL
LOW-FLOW SAMPLING DATA SHEET

Site Name: 700S 1600E PCE Plume **Date:** 6/24/2020 **OVM:** FID ☐ PID ■ **In Casing (ppm): (Initial)** Ø **(Vented to)** Ø

Well ID: MW-28 **Purging/Sampling Device:** Compressed gas **Pump depth (ft bgs):** 200

Initial Static Water Level (feet btoc): 185.82 **Analytical Parameters:** VOCs, 1,4-Dioxane, Metals, Mercury, Anions, TDS/Alkalinity, Nitrate/Nitrite, TOC, MEEA

Final Water Level (feet btoc): 185.81 **QC Samples Collected:** None

Purge Start Time: 10:30 **Ferrous Iron (mg/L):** 0.07 **Allowable Drawdown (ft):** NA

Sample Time: 11:10 **Controller Settings: Recharge:** 20 secs **Discharge:** 40 secs **Pressure:** 140 psi

Samplers' Signatures: BM, BC, AF **Cycles Per Minute:** 1

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (µs/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1040	185.82	15.7	7.03	2008	7.45	13.0	55.4	150	
1045	185.86	15.7	6.98	2004	5.39	8.5	27.5	150	
1050	185.86	15.5	6.94	1998	5.28	15.0	12.33	150	
1055	185.86	15.4	6.93	2018	4.80	23.2	6.98	150	
1100	185.86	15.4	6.92	2020	4.79	28.7	4.19	150	minimum purge reached
1105	185.86	15.4	6.90	2016	4.76	30.7	3.91	150	
1110	Sample								

Casing Volume Calculations:
Water Col. X Casing Factor = Gallons per Casing Volume
Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

Previous controller settings: Recharge: _____ secs **Discharge:** _____ secs
Pressure: _____ psi **Cycles Per Minute:** _____ **Flow Rate:** _____ mL/min

Screened Interval: 190-210 ft bgs **Minimum purge volume:** ~~3.5~~ gallons

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	±1°C	DO	±10% OR ±0.2mg/L (whichever is greater)
pH	±0.1 pH unit		
Specific Cond	±3%		
ORP	±10mV	Turbidity	< 50 NTU and ±10% OR < 10 NTU
Water Level	± 0.3 foot		

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700 South 1600E PCE Plume
COORDINATOR: Chene Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicd@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

TAT
- ☐ Rush 24 hrs.
- ☐ Rush 48 hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ 14 days
- ☐ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE: VOCs / 8260C	1,4-Dioxane / 8270DSIM	Gases MEE / RSK-175	metals + mercury / 6020A +	Chloride + Sulfate / 300	Nitrate + Nitrite / SM4500	Alkalinity + TDS	TOC / 9060	COMMENTS
1	MW18-GW061620		6/16/20	1508	13			GW		X	X	X	X	X	X	X	X	
2	MW19-GW061620		6/16/20	1728	13			GW		X	X	X	X	X	X	X	X	
3	TB01-GW061720		6/17/20	1500	2			GW		X								
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL / RECEIVED BY
Gemma Pat	6/17/20	1900	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT CDM Smith
PROJECT 7005 1600E PCE Plume
COORDINATOR Chene Zakowski
TEL 720-264-1109 FAX EMAIL zakowskicc@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Suite 500
Denver CO, 80201
EMAX PM Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste	SL=Sludge	SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes	PP=Pure Products	ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☒ 7 days
- ☐ 14 days
- ☐ 21 days

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	COMMENTS
1	MW20D-GW061720		6/17/20	1140	13			GW		
2	FD04-GW061720		6/17/20	1205	13			GW		
3	TB02-GW061720		6/17/20	1505	2			GW		
4										
5										
6										
7										
8										
9										
10										

PRESERVATIVE CODE	VOCs / 8260C	1,4-Dioxane / 8270 SIM	Gases MEE / RSK-175	metals / mrc / 6010A / 7470	Chloride+Sulfate / 300	NtN / SM4500	Alkalinity + TDS	TOC / 9060
1	X	X	X	X	X	X	X	X
2	X	X	X	X	X	X	X	X
3	X							

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emmett	6/17/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT CDM Smith
PROJECT 700S 1600E PCE Plume
COORDINATOR Chene Zakowski
TEL 720-264-1109 FAX EMAIL zakowskic@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Suite 500
Rama Denver, CO 80201
EMAX PM ↓

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270SIM; Gases MEE / RSK-175; Metals/Mncr / 6020A 7470; Chloride/Sulfate / 300; Nitrate/Nitrite / SM 4500; Alkalinity + TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☒ 7 days
- ☐ 14 days
- ☐ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW20S-GW061720		6/17/20	1102	13			GW		X X X X X X X X	
2	MW02-GW061720		6/17/20	1135	13			GW	ms/msd	X X X X X X X X	ms/msd
3	TB03-GW061720		6/17/20	1510	2			GW		X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pat	6/17/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associated with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; metals / 6020A; mercury / 7470; chloride / 300; sulfate / 300; Nitrate / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW15D-GW061920		6/19/20	0900	13					X X X X X X X X	
2	FD03-GW061920		6/19/20	0905	13					X X X X X X X X	
3	TB11-GW061920		6/19/20	1620	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL / RECEIVED BY
Emma Rat	6/19/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 160DE PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; metals / mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 48
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW12S-GW061920		6/19/20	1240	13					X X X X X X X X	
2	MW12D-GW061920		6/19/20	1535	13					X X X X X X X X	
3	TB12-GW061920		6/19/20	1625	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pitt	6/19/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not pnor to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270D SIM; Gases MEE / RSK-175; Metals / Mercury 6020A / 7470; Chloride / Sulfate 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW05R-GW061920		6/19/20	1515	13					X X X X X X X X	
2	MW15S-GW061920		6/19/20	0915	13					X X X X X X X X	
3	TB10-GW061920		6/19/20	1615	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pfl	6/19/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

(1)

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Ravnish Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/ Mercury / 6020A / 7470; Cr(VI) / 7196A / 300; Sulfate / 300; Nitrate / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID: CLIENT	SAMPLING: LOCATION	DATE	TIME	CONTAINER: NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW13D-GW061820	~~ER~~	6/18/20	1620	13					X X X X X X X X	
2	MW25C-GW061920		6/18/20	1155	13					X X X X X X X X	
3	TB09-GW061920		6/19/20	1610	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL / RECEIVED BY
[signature]	6/19/20	1700	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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EMAX Laboratories, Inc.

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Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Ramain Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270D SIM; Gases MEE / RSK-175; Metals / 6020A; Mercury / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW08B-GW062220		6/22/20	1000	10			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals, Mercury, Chloride, Sulfate, Nitrate Nitrite, Alkalinity, TOC	
2	MW08C-GW062220		6/22/20	1020	10			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals, Mercury, Chloride, Sulfate, Nitrate Nitrite, Alkalinity, TOC	
3											
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Rat	6/22/20	1500	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48__hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	ANALYSIS REQUIRED: PRESERVATIVE CODE (VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/Mercury / 6020A/7470; Chloride/Sulfate / 300; Nitrate/Nitrite / SM4500; Alkalinity/TDS; TOC / 9060)	COMMENTS
1	MW01S-GW062120		6/21/20	1000	1			GW		X X X X X X X X	no 1,4-Dioxane included
2	FD01-GW062120		6/21/20	1015	1			GW		X X X X X X X X	no 1,4-Dioxane included
3	MW08C-GW062220		6/22/20	1020	3			GW		X	
4	MW08B-GW062220		6/22/20	1000	3			GW		X	
5	FD02-GW062220		6/22/20	1010	3			GW		X	
6	TB16-GW062220		6/22/20	1300	2			GW		X	
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Rat	6/22/20	1500	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Ravnair Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals / 6020A (Mercury / 7470); Chloride / 300; Sulfate / 300; Nitrate / SM4500 Nitrate; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48__ hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ SR
- ☒ 21 days

LAB	SAMPLE ID: CLIENT	SAMPLING: LOCATION	DATE	TIME	CONTAINER: NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW01S-GW062120		6/21/20	1000	2			GW		X	
2	FD01-GW062120		6/21/20	1015	2			GW		X	
3	FD02-GW062220		6/22/20	1010	10			GW		X X X X X X X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Ravnair Singh	6/22/20	1500	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 7005 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/Mercury / 6020A / 7470; Chromium VI / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ EE
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW17S-GW062120		6/21/20	1250	3			GW		VOCs, Alkalinity	
2	MW17D-GW062120		6/21/20	1525	3			GW		VOCs, Alkalinity	
3	MW06-GW062120		6/21/20	1200	3			GW		VOCs, Alkalinity	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pfaff	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals (Mercury) / 6020A 7470; Chloride Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW17S-GW062120		6/21/20	1250	10		C	GW		VOCs, 1,4-Dioxane, Gases MEE, Metals (Mercury), Chloride Sulfate, Nitrate Nitrite, Alkalinity / TDS, TOC	
2	MW17D-GW062120		6/21/20	1525	10			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals (Mercury), Chloride Sulfate, Nitrate Nitrite, TOC	
3	MW06-GW062120		6/21/20	1200	10			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals (Mercury), Chloride Sulfate, Nitrate Nitrite, TOC	
4	TB14-GW062220		6/22/20	0905	2			GW		VOCs	
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER: Emmanuel Ott

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emmanuel Ott	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/ Mercury / 6020A / 7470; Chloride/Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW16S-GW062120		6/21/20	0930	10			GW		VOCs, Gases MEE, Metals/Mercury, Chloride/Sulfate, Nitrate Nitrite, TOC	
2	MW16D-GW062120		6/21/20	1040	10			GW		VOCs, Gases MEE, Metals/Mercury, Chloride/Sulfate, Nitrate Nitrite, TOC	
3	MW04-GW062120		6/21/20	1000	10			GW		VOCs, Gases MEE, Metals/Mercury, Chloride/Sulfate, Nitrate Nitrite, TOC	
4	TB15-GW062220		6/22/20	0910	2			GW		VOCs	
5	EB01-GW062120		6/21/20	1700	3			GW		VOCs	
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pat	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases: MEE / RSK-175; Metals/ Mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS / SM2540C; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW16S-GW062120		6/21/20	0930	3			GW			
2	MW16D-GW062120		6/21/20	1040	3			GW			
3	MW04-GW062120		6/21/20	1000	3			GW			
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pat	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO.
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 160DE PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; chloride/sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

LAB	SAMPLE ID / CLIENT	SAMPLING: LOCATION	DATE	TIME	CONTAINER: NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW08A-GW062120		6/21/20	1630	9			GW	ms/msd	X (Alkalinity/TDS)	ms/msd
2											
3											
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
[signature]	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: zakowskica@cdmsmith.com EMAIL
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
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SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/Mercury / 6020A/7470; Chloride / 300; Sulfate; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48__hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID / CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW08A-GW062120		6/21/20	1630	30			GW	md msd	X X X X X X	ms/msd
2	TB13-GW062220		6/22/20	0900	2			GW		X	
3											
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gunnar Rat	6/22/20	1000	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

EMAX CONTROL NO.

SAMPLE STORAGE

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/ mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
* 1	MW23C-GW062320		6/23/20	1250	13			GW		X X X X X X X X	
* 2	TB19-GW062420		6/24/20	1210	2			GW		X	
* 3	FB01-GW062420		6/24/20	1600	5			GW		X X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma DAT	6/24/20	1600	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 160DE PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicc@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; metals / mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush _24_hrs.
- ☐ Rush _48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9R
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
* 1	MW14S-GW062320		6/23/20	1040	13			GW		X X X X X X X X	
* 2	MW14D-GW062320		6/23/20	1140	13			GW		X X X X X X X X	
* 3	TB17-GW062420		6/24/20	1200	2			GW		X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Rat	6/24/20	1500	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Ramani Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; Metals / Mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48__ hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW23C-GW062320		6/23/20	1250	13			GW		X X X X X X X X	
2	TB19-GW062420		6/24/20	1210	2			GW		X	
3	FB01-GW062420		6/24/20		5			GW		X X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Dat	6/24/20		

NOTICE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 7005 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/Mercury / 6020A/7470; Chloride/Sulfate / 300; Nitrate / SM4500; Alkalinity/TDS; TOC / 9060

TAT: ☐ Rush __24__hrs. ☐ Rush __48__hrs ☐ Rush_72_hrs ☐ 7 days ☒ ~~14 days~~ 5R ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
* 1	MW27-GW062420		6/24/20	0935	13			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals/Mercury, Chloride/Sulfate, Nitrate, Alkalinity/TDS, TOC	
* 2	MW28-GW062420		6/24/20	1110	13			GW		VOCs, 1,4-Dioxane, Gases MEE, Metals/Mercury, Chloride/Sulfate, Nitrate, Alkalinity/TDS, TOC	
* 3	TB18-GW062420		6/24/20	1205	2			GW		VOCs	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pat	6/24/20	1500	

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Appendix C

Quality Control Summary Report

Quality Control Summary Report

June 2020 Groundwater Sampling Event

Operable Unit 2 Remedial Investigation
700 South 1600 East PCE Plume,
Salt Lake City, Utah

September 2020

CDM Smith

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Attachments

Attachment 1 Data Validation Reports
Attachment 2 Data Package Completeness Review Checklist
Attachment 3 Analytical Data Packages

Acronyms

%	percent
%D	percent difference
%R	percent recovery
CDM Smith	CDM Federal Programs Corporation
COC	chain-of-custody
DQI	data quality indicator
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
ICP	inductively coupled plasma
ICP-MS	inductively coupled plasma mass spectrometry
LCS	laboratory control sample
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
MDL	method detection limit
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
OU	Operable Unit
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
PCE	tetrachloroethene
PQL	practical quantitation limit
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
QCSR	quality control summary report
RI	remedial investigation
RL	reporting limit
RPD	relative percent difference
RSD	relative standard deviation
SDG	sample delivery group
SIM	selective ion monitoring
Site	Plume Superfund Site
SM	standard method
SVOC	semivolatile organic compound
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound

Section 1

Data Usability and Assessment Review

Under the U.S. Army Corps of Engineers (USACE), Kansas City District, Contract No. W912DQ-18-D-3008, Task Order No. W912DQ19F3048, CDM Federal Programs Corporation (CDM Smith) was directed to perform a remedial investigation (RI) for Operable Unit (OU) 1 of the 700 South 1600 East Tetrachloroethene (PCE) Plume Superfund Site (Site) in Salt Lake City, Utah. To assist in the ongoing RI at the Site, groundwater samples were collected from June 16 through 24, 2020 and shipped to EMAX Laboratories, Inc. in Torrance, California for sample analysis.

The purpose of this quality control summary report (QCSR) is to summarize the data validation and determine whether the sample results meet the data quality objective (DQO) of data usability outlined in the *Quality Assurance Project Plan, 700 South 1600 East PCE Plume Site, Operable Unit 2, Salt Lake City, Utah, U.S. Army Corps of Engineers Kansas City District, Department of Veterans Affairs Veterans Health Administration Salt Lake City Health Care System, November 2019 (QAPP)* (CDM Smith 2019).

1.1 Usability Summary

Data collected during this field investigation and validated for this QCSR are usable as reported. Applicable data validation qualifiers were added if required. No sample results were rejected. Specific details are provided in the validation reports presented in Section 5 and **Attachment 1** of this report. A summary of the validation is presented in the following sections.

Section 2
Quality Assurance Objectives

Quality assurance (QA) objectives for measurement data are expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS). The QA objectives provide a mechanism for ongoing quality control (QC) and evaluating and measuring data quality throughout the project.

A review of the collected data is necessary to determine if data measurement objectives established in the QAPP (CDM Smith 2019) have been met. In general, the following data measurement objectives were considered:

- Achievement of analytical method and reporting limit (RL) requirements
- Adherence to and achievement of appropriate laboratory analytical QC requirements
- Achievement of required measurement performance criteria for data quality indicators (DQIs) PARCCS
- Adherence to sampling and sample handling procedures
- Adherence to the sampling design and deviations documented on field change notifications if required

The data validation review of the QA objectives verifies that the collected data are of sufficient quality to support their intended use.

Section 3
Field and Laboratory Quality Assurance Activities

CDM Smith completed field sampling activities between June 16 and 24, 2020. A summary of the number of samples collected and the date on which the sampling event occurred follows:

EMAX SDG 20F154 – Groundwater – June 17, 2020
3 samples
1 field duplicate sample
3 trip blank samples
EMAX SDG 20F155 – Groundwater – June 16 and 17, 2020
2 samples
1 trip blank sample
EMAX SDG 20F162 – Groundwater – June 17 and 18, 2020
8 samples
4 trip blank samples
EMAX SDG 20F178 – Groundwater – June 18 and 19, 2020
7 samples
1 field duplicate sample
4 trip blank samples
EMAX SDG 20F179 – Groundwater – June 17 and 18, 2020
4 equipment blank samples
1 trip blank sample
EMAX SDG 20F183 – Groundwater - June 21 and 22, 2020
10 samples
2 field duplicate samples
1 equipment blank sample
4 trip blank samples
EMAX SDG 20F210 – Groundwater – June 23 and 24, 2020
5 samples
1 field blank sample
3 trip blank samples

SDG – sample delivery group

All samples were received intact with proper chain-of-custody (COC) documentation at EMAX Laboratories, Inc.. Sample identification was accurately documented, with the exception of sample TB46-GW061720. The COC form submitted to the laboratory indicated a sample identifier of TB42-GW061720, but the accompanying sample bottle indicated an identifier of TB46-GW061720. The laboratory subsequently contacted CDM Smith and the proper sample identifier (TB46-GW061720) was established.

Table 3-1 presents a list of the samples collected and the analyses performed. **Attachment 2** presents the completeness check review of the data packages. **Attachment 3** includes the analytical data packages.

Sample preparation and analyses were conducted within the method-specified holding times.

The QAPP (CDM Smith 2019) defined the procedures to be followed and the data quality requirements for the field sampling events.

3.1 Deviations from Field Procedures

No deviations from field procedures were encountered during these sampling investigations and the DQOs were met for samples that were collected during the June 2020 sampling event.

3.2 Field Quality Assurance/Quality Control

Four field duplicate pairs were collected for the groundwater samples. The QC sample collection frequency requirement in the QAPP (CDM Smith 2019) (10 percent [%]) has been met.

One field blank and five equipment blank samples were collected. Trip blanks were submitted with each cooler sent to the laboratory, for a total of 20 trip blank samples.

Field QA/QC objectives were accomplished through the use of appropriate sampling techniques and collection of the required QC samples at the required frequencies.

3.3 Laboratory Quality Assurance/Quality Control

Analytical QA/QC was assessed by laboratory QC checks, method blanks, sample custody tracking, sample preservation, adherence to holding times, laboratory control samples (LCSs), matrix spike (MS) samples, calibration recoveries, inductively coupled plasma (ICP) interference checks, and other applicable QC parameters. As presented in the data validation reports in **Attachment 1** of this report, the laboratory QC sample criteria met project requirements with the appropriate qualifiers applied. All data are considered usable.

3.3.1 Laboratory Methods

Samples were analyzed using the following United States Environmental Protection Agency (EPA) or Standard Methods (SM):

Groundwater

- EPA Method SW8260C – Volatile Organic Compounds (VOCs)
- EPA Method SW8270D SIM – Semivolatile Organic Compounds – Selective Ion Monitoring (SVOCs – 1,4-Dioxane)
- EPA Method SW6020A – Metals
- EPA Method SW7470A – Mercury
- Method RSK-175 – Dissolved Gases (Ethane, Ethene, Methane)

- EPA Method E300.0 – Chloride, Sulfate
- Method SM2320B – Total Alkalinity
- Method SM2540C – Total Dissolved Solids
- Method SM4500-NO3E – Nitrogen, Nitrate-Nitrite
- EPA Method SW9060 – Total Organic Carbon
- The methods used met project objectives.

Table 3-1
Sample List and Analysis

Field Sample ID	Matrix	Date Sampled	Laboratory SDG	Method
EB01-GW062120	WG	6/21/2020	20F183	8260C
EB32-GW061720	WG	6/17/2020	20F179	8260C
EB33-GW061820	WG	6/18/2020	20F179	8260C
EB34-SB061820	WG	6/18/2020	20F179	8260C
EB35-GW061820	WG	6/18/2020	20F179	8260C
FB01-GW062420	WG	6/24/2020	20F210	8260C, SW8270DSIM
TB01-GW061720	WG	6/17/2020	20F155	8260C
TB02-GW061720	WG	6/17/2020	20F154	8260C
TB03-GW061720	WG	6/17/2020	20F154	8260C
TB04-GW061720	WG	6/17/2020	20F154	8260C
TB05-GW061820	WG	6/18/2020	20F162	8260C
TB06-GW061820	WG	6/18/2020	20F162	8260C
TB07-GW061820	WG	6/18/2020	20F162	8260C
TB08-GW061820	WG	6/18/2020	20F162	8260C
TB09-GW061920	WG	6/19/2020	20F178	8260C
TB10-GW061920	WG	6/19/2020	20F178	8260C
TB11-GW061920	WG	6/19/2020	20F178	8260C
TB12-GW061920	WG	6/19/2020	20F178	8260C
TB13-GW062220	WG	6/22/2020	20F183	8260C
TB14-GW062220	WG	6/22/2020	20F183	8260C
TB15-GW062220	WG	6/22/2020	20F183	8260C
TB16-GW062220	WG	6/22/2020	20F183	8260C
TB17-GW062420	WG	6/24/2020	20F210	8260C
TB18-GW062420	WG	6/24/2020	20F210	8260C
TB19-GW062420	WG	6/24/2020	20F210	8260C
TB46-GW061720	WG	6/17/2020	20F179	8260C
MW04-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW05R-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW06-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW01D-GW061720	WG	6/17/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
FD01-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW01S-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW02-GW061720	WG	6/17/2020	20F154	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060

Table 3-1
Sample List and Analysis

Field Sample ID	Matrix	Date Sampled	Laboratory SDG	Method
MW03RA-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW03RB-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW03RC-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW03RD-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW08A-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
FD02-GW062220	WG	6/22/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW08B-GW062220	WG	6/22/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW08C-GW062220	WG	6/22/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW12D-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW12S-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW13D-GW061820	WG	6/18/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW13S-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW14D-GW062320	WG	6/23/2020	20F210	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060

Table 3-1
Sample List and Analysis

Field Sample ID	Matrix	Date Sampled	Laboratory SDG	Method
MW14S-GW062320	WG	6/23/2020	20F210	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
FD03-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW15D-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW15S-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW16D-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW16S-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW17D-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW17S-GW062120	WG	6/21/2020	20F183	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW18-GW061620	WG	6/16/2020	20F155	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW19-GW061620	WG	6/16/2020	20F155	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
FD04-GW061720	WG	6/17/2020	20F154	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW20D-GW061720	WG	6/17/2020	20F154	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW20S-GW061720	WG	6/17/2020	20F154	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060

Table 3-1
Sample List and Analysis

Field Sample ID	Matrix	Date Sampled	Laboratory SDG	Method
MW21-GW061820	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW22-GW061720	WG	6/18/2020	20F162	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW23C-GW062320	WG	6/23/2020	20F210	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW25C-GW061920	WG	6/19/2020	20F178	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW27-GW062420	WG	6/24/2020	20F210	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060
MW28-GW062420	WG	6/24/2020	20F210	6020A, 7470A, 8260C, A4500NE, E300.0, RSK-175, SM2320B, SM2540C, SW8270DSIM, SW9060

Acronyms:
ID - identificaton
SDG - sample delivery group
WG - groundwater
8260C - volatile organic compounds
SW8270D SIM - semivolatile organic compounds - selective ion monitoring
6020A - metals
7470A - mercury
RSK-175 - dissolved gases
E300.0 - chloride, sulfate
SM2320B - total alkalinity
SM2540C - total dissolved solids
A4500NE - nitrogen, nitrate-nitrite
SW9060 - total organic carbon

Section 4
Data Validation Procedures

For this QCSR, there were seven laboratory SDGs. Data reported in the seven SDGs were validated and reviewed by qualified CDM Smith data validators not associated with project sampling activities. Data validation was performed in accordance with specified analytical methods and performance criteria outlined in the QAPP (CDM Smith 2019) and in the EPA *National Functional Guidelines for Inorganic Superfund Methods Data Review* (2017) and EPA *National Functional Guidelines for Organic Superfund Methods Data Review* (2017). Validation reports were prepared and are presented in **Attachment 1**. The following SDG data packages were validated:

- EMAX – SDG 20F154
- EMAX – SDG 20F155
- EMAX – SDG 20F162
- EMAX – SDG 20F178
- EMAX – SDG 20F179
- EMAX – SDG 20F183
- EMAX – SDG 20F210

Table 4-1 presents the results that were qualified and the reason for qualification. Qualifiers applied are defined as follows:

- J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J- – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample and may be biased low.
- U – The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ – The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit. The reported quantitation limit is approximate.

Table 4-1
Qualification Summary

Field Sample ID	Method	Analyte	CAS #	Final Result	Unit	Validation Qualifier	Interpreted Qualfier	Qualifier Reason
EB01-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
FD01-GW062120	E300.0	Sulfate	14808-79-8	105	mg/L	J	J	FD
FD03-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
FD04-GW061720	E300.0	Sulfate	14808-79-8	134	mg/L	J-	J-	MS
MW01D-GW061720	SW6020A	Manganese	7439-96-5	1	µg/L	U-RL	U	CCB
MW01S-GW062120	E300.0	Sulfate	14808-79-8	49.7	mg/L	J	J	FD
MW01S-GW062120	SW6020A	Manganese	7439-96-5	1	µg/L	U-RL	U	LB
MW02-GW061720	E300.0	Sulfate	14808-79-8	101	mg/L	J-	J-	MS
MW02-GW061720	SW8260C	Tetrachloroethene	127-18-4	190	µg/L	J	J	MS
MW03RB-GW061820	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	CCB
MW04-GW062120	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW04-GW062120	SW6020A	Manganese	7439-96-5	1	µg/L	U-RL	U	LB
MW04-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW05R-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW06-GW062120	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW06-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW08A-GW062120	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW12D-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW12S-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW13D-GW061820	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW14D-GW062320	SW6020A	Chromium	7440-47-3	0.93	µg/L	J	J	LCS
MW14S-GW062320	SW6020A	Chromium	7440-47-3	2.99	µg/L	J	J	LCS
MW14S-GW062320	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW15D-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW15S-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW16D-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW16S-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW17D-GW062120	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW17D-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW17S-GW062120	SW6020A	Lead	7439-92-1	1	µg/L	U-RL	U	LB
MW17S-GW062120	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW20D-GW061720	E300.0	Sulfate	14808-79-8	96.6	mg/L	J-	J-	MS
MW20S-GW061720	E300.0	Sulfate	14808-79-8	89.7	mg/L	J-	J-	MS
MW23C-GW062320	SW6020A	Chromium	7440-47-3	0.184	µg/L	J	J	LCS
MW25C-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
MW27-GW062420	SW6020A	Chromium	7440-47-3	0.786	µg/L	J	J	LCS
MW28-GW062420	SW6020A	Chromium	7440-47-3	0.524	µg/L	J	J	LCS
TB09-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB10-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB11-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB12-GW061920	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB13-GW062220	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB14-GW062220	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV
TB15-GW062220	SW8260C	Chloroethane	75-00-3	1	µg/L	UJ	UJ	CCV

Acronyms:

ID - identification
SW8260C - volatile organic compounds
SW6020A - metals
E300.0 - chloride, sulfate
µg/L - micrograms per liter
mg/L - milligrams per liter
CAS - Chemical Abstract Service
U - not detected
J - estimated
J- - estimated; biased low
RL - reporting limit
U-RL - result is qualified as nondetect at the reporting limit value
MS - matrix spike criteria
LCS - laboratory control spike criteria
FD - field duplicate criteria
LB - laboratory blank criteria (includes ICB and CCB required actions)
CCB - continuing calibration criteria
CCV - continuing calibration verification criteria

Section 5
Data Quality Indicators

This section summarizes the validation performed and the overall quality of the data based on the PARCCS parameters. The validation reports are provided in **Attachment 1**.

Achievement of the DQO regarding data usability was determined by the use of DQIs. These DQIs for measurement data are expressed in terms of PARCCS. The DQIs provide a mechanism for ongoing control to evaluate and measure data quality throughout the project. These criteria are defined in **Table 5-1** and in the subsections below.

5.1 Precision

Precision is a quantitative term that estimates the reproducibility of a set of replicate measurements under a given set of conditions. It is defined as a measurement of mutual agreement between measurements of the same property and is expressed in terms of relative percent difference (RPD) between duplicate determinations.

RPD is calculated as follows:

$$\mathbf{RPD = absolute\ value\ [(C1 - C2)/\{(C1 + C2)/2)\}] \times 100\%}$$

Where:

C1 = concentration of primary sample
C2 = concentration of duplicate sample

Field and analytical precision were determined from review of the field duplicate results, MS/matrix spike duplicates (MSDs), LCS/laboratory control sample duplicate (LCSDs) and laboratory duplicates. The duplicate sample results were compared after calculating their RPDs. Field duplicate samples were collected in the same manner as the original samples but collected in separate, individual containers; given separate sample identifiers; and treated as unique samples by the laboratory.

Table 5-2 presents the field duplicate sample results. A control limit of 30% RPD was used for the groundwater field duplicate samples when both sample concentrations were greater than 5x the reporting limit (RL). If the sample concentrations were below 5x the RL, then the absolute difference between the samples is calculated and if that value is below the RL than no qualification is required. Laboratory RPDs are specific to the QC parameter. RPD results are summarized below:

- Field duplicate RPDs were within control limits except for sulfate in field duplicate pair MSW01S-GW062120/FD01-GW062120 and MW20D-GW061720/FD04-GW061720, which had RPDs of 71 and 32%, respectively. The sulfate results for these four samples were qualified as estimated "J." The acetone results for the field duplicate pair MW08B-

GW062220/FD02-GW06210 had one detect and one nondetect result. The absolute difference between the results was less than the RL so no qualification was required.

- Laboratory duplicate sample RPDs were within the control limits.
- LCS/LCSD RPDs were within control limits.
- MS/MSD RPD results were within control limits with the exception of vinyl acetate in SDG 20F183, which had an RPD of 21%. Qualification for MS/MSD RPDs outside of criteria is only required for detected results. The vinyl acetate result reported in the initial sample MW08A-GW062120 was nondetect, therefore no qualification was required.

No field or laboratory issues were identified from the RPD results that were outside of criteria, and the exceedances are reasonable for this type of sampling activity.

5.2 Accuracy

Accuracy is the degree of agreement of a measurement with an accepted reference or true value and is a measure of the bias in a system. Two different metrics are evaluated to assess result accuracy—calculation of percent recovery (%R) for spiked analytes with known concentrations and review of blank results for cross-contamination.

5.2.1 Percent Recovery

Accuracy of the data was assessed by comparing LCS and MS recovery, calibration recovery, surrogate recovery, internal standard recovery and by performing ICP interference checks and serial dilutions during metals analyses. Accuracy is expressed as %R, which was calculated by:

$$\textbf{Percent Recovery} = \frac{\textbf{(Total Analyte Found – Analyte Originally Present)} \times \textbf{100}}{\textbf{Analyte Added}}$$

Analytical accuracy for the entire data collection activity is difficult to measure because several sources of error exist. Errors can be introduced by any of the following:

- Sampling procedure and duration of sampling
- Field contamination
- Sample preservation and handling
- Sample matrix
- Sample preparation
- Analytical techniques

Accuracy is maintained by adhering to the laboratory method and approved field and analytical standard operating procedures.

A summary of the accuracy parameters reviewed and the resulting qualifications for the data collected follows:

SDG 20F154

- LCS/LCSD %Rs were within criteria.
- MS/MSD %Rs were within criteria except for tetrachloroethene. The tetrachloroethene result was qualified as estimated "J" in the MS parent sample MW02-GW061720 (320/320%). The TCE result was qualified as estimated "J" in the MS parent sample MW02-GW061720.
- The sulfate MSD result was below criteria at 84%R. Associated sample results were qualified as estimated biased low "J-/UJ."
- The initial and continuing calibration verifications were within criteria.
- Surrogate results were within criteria.
- ICP interference checks were within criteria.
- Inductively coupled plasma mass spectrometry (ICP-MS) tune results were within criteria.
- Internal standard results were within criteria.
- ICP serial dilution results were within criteria.

SDG 20F155 and 20F162

- LCS/LCSD %Rs were within criteria.
- MS/MSD %Rs were within criteria.
- The initial and continuing calibration verifications were within criteria.
- Surrogate results were within criteria.
- ICP interference checks were within criteria.
- ICP-MS tune results were within criteria.
- Internal standard results were within criteria.
- ICP serial dilution results were within criteria.

SDG 20F178

- LCS/LCSD %Rs were within criteria.
- MS/MSD %Rs were within criteria.
- The initial and continuing calibration verifications were within criteria except for chloroethane with a %R of -25.5%. Chloroethane sample results were qualified as estimated "J/UJ."
- Surrogate results were within criteria.

- ICP interference checks were within criteria.
- ICP-MS tune results were within criteria.
- Internal standard results were within criteria.
- ICP serial dilution results were within criteria.

SDG 20F179

- LCS/LCSD %Rs were within criteria.
- The initial and continuing calibration verifications were within criteria.
- Surrogate results were within criteria.
- ICP-MS tune results were within criteria.
- Internal standard results were within criteria.

SDG 20F183

- LCS/LCSD %Rs were within criteria.
- MS/MSD %Rs were within criteria except for calcium (200/200%), magnesium (140%), and sodium (170/160%). Initial sample concentrations were greater than 4x the spike level so no qualifications were required.
- The initial and continuing calibration verifications were within criteria except for chloroethane, with a %R of -25.5%. Chloroethane sample results were qualified as estimated "J/UJ."
- Surrogate results were within criteria.
- ICP interference checks were within criteria.
- ICP-MS tune results were within criteria.
- Internal standard results were within criteria.
- ICP serial dilution results were within criteria.

SDG 20F210

- LCS/LCSD %Rs were within criteria.
- MS/MSD %Rs were within criteria except for magnesium (53%) and calcium (0 /-33%). Initial sample concentrations were greater than 4x the spike level so no qualifications were required.
- The initial and continuing calibration verifications were within criteria.
- Surrogate results were within criteria.

- ICP interference checks were within criteria.
- ICP-MS tune results were within criteria.
- Internal standard results were within criteria.
- ICP serial dilution results were within criteria.

Sample preservation, handling, and holding times are additional measures of accuracy of the data. Samples were analyzed within the appropriate holding times. Cooler temperatures were within criteria and sample handling information was acceptable.

5.2.2 Blank Contamination

Blanks are used to determine the level of laboratory and field contamination introduced into the samples, independent of the level of target analytes found in the sample source. Sources of sample contamination can include the containers and equipment used to collect the sample, preservatives added to the sample, other samples in transport coolers and laboratory sample storage refrigerators, standards and solutions used to calibrate instruments, glassware and reagents used to process samples, airborne contamination in the laboratory preparation area, and the analytical instrument sample introduction equipment. Each analyte group has its own particular suite of common laboratory contaminants. Active measures must be performed to continually measure the ambient contamination level and steps taken to discover the source of the contamination to eliminate or minimize the levels. Random spot contamination can also occur from analytes that are not common laboratory problems but can arise as a problem for a specific project or over a short period. Field blanks, equipment blanks, trip blanks, and laboratory method blanks are analyzed to identify possible sources of contamination.

For this project, one field blank sample was collected to assess potential ambient background cross-contamination of sampled media. Five equipment blank samples were collected to assess potential cross contamination introduced by the dedicated sampling equipment. Twenty trip blank samples were sent with the coolers to assess potential cooler transportation cross contamination. Results for the field, equipment and trip blank samples were nondetect. The following discusses validation actions required as a result of laboratory blank contamination.

SDG 20F154

- Lead, manganese, and sodium were detected in some of the laboratory blank samples. Associated results required no qualification as sample results were either nondetect or greater than the RL.

SDG 20F155

- Calcium, sodium, and vanadium were detected in the some of the laboratory blank samples. Associated results required no qualification as all sample results were greater than the RL.

SDG 20F162

- Lead, manganese, sodium, and mercury were detected in some of the laboratory blank samples. Applicable sample results for manganese and lead were qualified as nondetect “U”

at the RL. All other detected analytes did not require qualification as sample results were either nondetect or greater than the RL.

SDG 20F178

- Lead, manganese, copper, thallium, sodium, and mercury were detected in some of the laboratory blank samples. Lead, manganese, and thallium were detected in the calibration blanks associated with the reanalyzed or diluted sample results and the applicable results were qualified as nondetect "U" at the RL. Results for these analytes were reported from the initial analysis as this analysis was identified as the most defensible set of results. Lead, manganese, and thallium results for these analytes were nondetect in the calibration blanks associated with the initial analysis and therefore no further qualification is required. All other detected analytes did not require qualification as sample results were either nondetect or greater than the RL.

SDG 20F179

- All Associated laboratory blank results were nondetect. No qualifications were required.

SDG 20F183

- Lead, manganese, copper, cadmium, thallium, and mercury were detected in some of the laboratory blank samples. Lead and manganese were detected in the initial calibration blanks associated with the initial analyses. Lead, manganese, and copper were detected in the calibration blanks associated with the reanalyzed or diluted sample results. Applicable lead and manganese results were qualified as nondetect "U" at the RL. The laboratory identified which results were reportable and qualifiers were applied accordingly. All other detected analytes did not require qualification as sample results were nondetect.

SDG 20F210

- Lead, thallium, and mercury were detected in some of the laboratory blank samples. Applicable sample results for lead were qualified as nondetect "U" at the RL. All other detected analytes did not require qualification as associated sample results were nondetect.

Ideally, no contaminants should be found in the blank samples. Blank samples are used to determine the validity of the analytical results by determining the existence and magnitude of contamination resulting from laboratory (or field) activities or baseline drift during analysis. As discussed above, analytes were detected in some of the laboratory blank samples. Concentrations were below the RLs for all detected blank results. Analytes detected in laboratory blanks are common with laboratory analyses and almost unavoidable with possible laboratory contamination.

Associated sample results for the laboratory blanks and or field blank samples were qualified following the appropriate guidelines. Detected blank concentrations were below the RLs and the resulting sample qualifications as nondetect or "U" does not falsely diminish identification of site-related contaminants.

5.3 Representativeness

Representativeness is a qualitative term that expresses the degree to which the sample data accurately and precisely represent the environmental conditions corresponding to the location and/or depth interval of sample collection. Requirements and procedures for sample collection were designed to maximize sample representativeness.

Representativeness can be monitored by reviewing field documentation and/or performing field audits. For this report, a detailed review was performed on the COC and field data collection forms. Appropriate laboratory QA/QC requirements were described in the QAPP (CDM Smith 2019) and laboratory statement of work to confirm that the laboratory analytical results were representative of true field conditions.

Field sampling representativeness was attained through strict adherence to the sampling design and the approved QAPP (CDM Smith 2019) procedures and by using EPA-approved analytical methods for sample analyses. As a result, the data represent as near as possible the actual field conditions at the time of sampling.

Representativeness, as defined above, was met for the fieldwork and laboratory analyses. The data collected are suitable for project use.

5.4 Comparability

Comparability is a qualitative term that expresses the confidence with which a data set can be compared with another. Strict adherence to standard sample collection procedures, analytical detection limits, and analytical methods is necessary so that data from like samples and sample conditions are comparable. This comparability is independent of laboratory personnel, data reviewers, or sampling personnel. Comparability criteria are met for the project if, based on data review, the sample collection and analytical procedures are determined to have been followed or defined to show that variations did not affect the values reported.

To achieve comparability of data generated for the Site, CDM Smith followed standard sample collection procedures and EPA-approved analytical methods during sampling activities. The sample analyses were performed by EMAX Laboratories Inc. using approved standard operating procedures. Utilizing such procedures and methods enables the current data to be comparable to future data sets generated with similar methods and units.

5.5 Completeness

Completeness of the field program is defined as the percentage of samples planned for collection as listed in the QAPP (CDM Smith 2019) versus the actual number of samples collected during the field program (see equation A).

Completeness for acceptable data is defined as the percentage of acceptable data obtained judged to be valid versus the total quantity of data generated (see equation B). Acceptable data include both data that pass all the QC criteria (unqualified data) and data that may not pass all the QC criteria but had appropriate corrective actions taken (qualified but usable data).

A. $$\%Completeness = Cx\frac{100}{n}$$

Where:

C = actual number of samples collected
n = total number of samples planned

B. $$\%Completeness = Vx\frac{100}{n'}$$

Where:

V = number of measurements judged valid
n' = total number of measurements made

The overall completeness goal for this sampling event was 90% for all project data.

All samples outlined in the QAPP (CDM Smith, 2019) were collected as planned. The completeness for the number of samples planned to be collected versus the number of samples collected was 100% for all analyses.

Analyses for the sampling event met the 90% completeness goal of acceptable data for the number of measurements judged to be valid versus the total number of measurements made.

One hundred percent of the data validated and reported are suitable for their intended use for site characterization. No results were rejected, and all data collected met the overall project objective for data usability. The completeness goals for both the number of samples collected for all sampling events and the number of measurements judged to be valid were met.

The data usability DQO was achieved; the data reported are suitable for their intended use as stated in the QAPP (CDM Smith 2019). The achievement of the completeness goals for the data provides sufficient data for project decisions.

5.6 Sensitivity

Sensitivity is related to the ability to compare analytical results with project-specific levels of interest such as delineation levels or action levels. Analytical quantitation limits for the various sample analytes should be below the level of interest to allow an effective comparison.

The method detection limit (MDL) study attempts to answer the question, "What is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero?" The study is based upon repetitive analysis of an interference-free sample spiked with a known amount of the target analyte. The MDL is a measure of the ability of the test procedure to generate a positive response for the target analyte in the absence of any other interferences from the sample.

The method reporting limit (MRL) is generally defined as the lowest concentration at which an analyte can be confidently reported in a sample and its concentration reported with a reasonable degree of accuracy and precision. For samples that do not pose a particular matrix problem, the MRL is typically about three to five times higher than the MDL.

Laboratory results are reported according to rules that provide established certainty of detection. The result for an analyte is flagged with a "U" if that analyte was not detected and reported at the

MRL value or qualified with a "J" flag if associated QC results fall outside the appropriate QC criteria. Additionally, if an analyte is present at a concentration between the MDL and the MRL, the analytical result is flagged with a "J," indicating an estimated quantity. Qualifying the result as an estimated concentration reflects uncertainty in the reported value.

When required, dilutions were performed and accounted for in the reporting of MRLs. For each analyte, laboratory MRLs were low enough to compare to the project criteria stated in the laboratory statement of work and the QAPP (CDM Smith 2019).

Table 5-1 DQIs and Corresponding QC Parameters

Data Quality Indicators	QC Parameters Evaluation in Data Review/Validation
Precision	RPD values of: 1) Laboratory duplicates 2) Field duplicates 3) MS/MSD 4) LCS/LCSD Relative standard deviation (RSD) values of: 1) Initial calibration verifications
Accuracy/Bias	%R or percent difference (%D) values of: 1) LCS/LCSD 2) Matrix spike %R 3) Initial calibration verification/continuing calibration verification %R 4) Serial dilution (ICP metals) 5) ICP interference check standards 6) ICP-MS tune percent RSD 7) ICP-MS internal standard %R intensity 8) Low level check standard 9) Surrogates 10) Internal standards Results of: 1) Instrument and calibration blanks 2) Method (preparation) blanks 3) Field blanks 4) Trip blanks
Representativeness	Results of all blanks Sample integrity (COC and sample receipt forms) Holding times
Comparability	Sample-specific reporting limits Sample collection methods Laboratory analytical methods
Completeness	Data qualifiers Laboratory deliverables Requested/Reported valid results Field sample collection (primary and QC samples) Contract compliance (i.e., method and instrument QC within limits)
Sensitivity	Method reporting limits Low level standards Adequacy of sample dilution

Table 5-2
Summary of Field Duplicate Sampling Results

		Well	MW-01S		MW-01S			MW-08B		MW-08B		
		Sample Name	MW01S-GW062120		FD01-GW062120			MW08B-GW062220		FD02-GW062220		
		Sample Date	6/21/2020		6/21/2020			6/22/2020		6/22/2020		
		Sample Type	N		FD			N		FD		
Method		Unit	Result	Q	Result	Q	RPD (%)	Result	Q	Result	Q	RPD (%)
SW6020A	Aluminum	µg/L	100	U	100	U	NC	100	U	100	U	NC
SW6020A	Antimony	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Arsenic	µg/L	0.686	J	0.714	J	ABS Criteria	0.452	J	0.446	J	ABS Criteria
SW6020A	Barium	µg/L	54		54.6		1.10	30.6		31.1		1.62
SW6020A	Beryllium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Cadmium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Calcium	µg/L	152000		155000		1.95	128000		132000		3.08
SW6020A	Chromium	µg/L	0.745	J	0.681	J	ABS Criteria	1.02		0.978	J	ABS Criteria
SW6020A	Cobalt	µg/L	0.11	J	0.105	J	ABS Criteria	1	U	1	U	NC
SW6020A	Copper	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW6020A	Iron	µg/L	100	U	100	U	NC	100	U	100	U	NC
SW6020A	Lead	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Magnesium	µg/L	52900		53500		1.13	43500		43800		0.69
SW6020A	Manganese	µg/L	1	U	1	U	NC	2.43		2.6		ABS Criteria
SW6020A	Nickel	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Potassium	µg/L	2280		2300		0.87	2020		2030		0.49
SW6020A	Selenium	µg/L	0.826	J	0.818	J	ABS Criteria	1.03		1.02		ABS Criteria
SW6020A	Silver	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Sodium	µg/L	84800		86500		1.98	34200		34900		2.03
SW6020A	Thallium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Vanadium	µg/L	2.17		2.19		ABS Criteria	1.8		1.86		ABS Criteria
SW6020A	Zinc	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW7470A	Mercury	µg/L	0.5	U	0.5	U	NC	0.5	U	0.5	U	NC
SW8260C	1,1,1-Trichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2,2-Tetrachloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2-Trichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2-Trichlorotrifluoroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1-Dichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1-Dichloroethene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,3-Trichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,4-Trichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,4-Trimethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dibromo-3-Chloropropane	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	1,2-Dibromoethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichloropropane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,3,5-Trimethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,3-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,4-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	2-Butanone (MEK)	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	2-Hexanone	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	4-Methyl-2-Pentanone (MIBK)	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	Acetone	µg/L	20	U	20	U	NC	20	U	2.8	J	ABS Criteria
SW8260C	Benzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromochloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromodichloromethane	µg/L	0.33	J	0.33	J	ABS Criteria	0.15	J	0.17	J	ABS Criteria
SW8260C	Bromoform	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromomethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Carbon Disulfide	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Carbon Tetrachloride	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Chlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Chloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Chloroform	µg/L	4		4		ABS Criteria	1.7		1.7		ABS Criteria
SW8260C	Chloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Cis-1,2-Dichloroethene	µg/L	0.47	J	0.48	J	ABS Criteria	1	U	1	U	NC
SW8260C	Cis-1,3-Dichloropropene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Dibromochloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Dichlorodifluoromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Ethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Isopropylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	m,p-Xylene	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	Methyl Acetate	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	Methyl Tert-Butyl Ether	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Methylene Chloride	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	o-Xylene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Styrene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Tetrachloroethene	µg/L	160		150		6.45	4.4		4.7		ABS Criteria

Table 5-2
Summary of Field Duplicate Sampling Results

		Well	MW-01S	MW-01S			MW-08B		MW-08B		
		Sample Name	MW01S-GW062120	FD01-GW062120			MW08B-GW062220		FD02-GW062220		
		Sample Date	6/21/2020	6/21/2020			6/22/2020		6/22/2020		
		Sample Type	N	FD			N		FD		
Method		Unit	Result	Result	Q	RPD (%)	Result	Q	Result	Q	RPD (%)
SW8260C	Toluene	µg/L	1	1	U	NC	1	U	1	U	NC
SW8260C	Trans-1,2-Dichloroethene	µg/L	1	1	U	NC	1	U	1	U	NC
SW8260C	Trans-1,3-Dichloropropene	µg/L	1	1	U	NC	1	U	1	U	NC
SW8260C	Trichloroethene	µg/L	1	1		ABS Criteria	1	U	1	U	NC
SW8260C	Trichlorofluoromethane	µg/L	1	1	U	NC	1	U	1	U	NC
SW8260C	Vinyl Acetate	µg/L	2	2	U	NC	2	U	2	U	NC
SW8260C	Vinyl Chloride	µg/L	1	1	U	NC	1	U	1	U	NC
8270DSIM	1,4-Dioxane	µg/L	0.42	0.42	U	NC	0.39	U	0.39	U	NC
RSK-175	Ethane	µg/L	2	2	U	NC	2	U	2	U	NC
RSK-175	Ethene	µg/L	2	2	U	NC	2	U	2	U	NC
RSK-175	Methane	µg/L	2	2	U	NC	2	U	2	U	NC
SM2320B	Alkalinity, Total (As Caco3)	mg/l	267	269		0.75	238		237		0.42
A4500NE	Nitrate [as N]	mg/l	2.04	1.86		9.23	1.75		1.92		9.26
E300.0	Chloride	mg/l	270	271		0.37	114		114		0.00
E300.0	Sulfate	mg/l	49.7	105	J	71.49	144		141		2.11
SM2540C	Total Dissolved Solids	mg/l	984	996		1.21	758		787		3.75
SW9060	Total Organic Carbon	mg/l	0.472	0.436	J	ABS Criteria	0.333	J	0.333	J	ABS Criteria

Acronyms

µg/L - microgram per liter
mg/L - milligram per liter
N - normal sample
FD - field duplicate
J - estimated
J- - estimated, biased low
NC - not calculated
Q - qualifier
RPD - relative percent difference
U - not detected
Yellow Highlighting - RPD outside of 30% criteria - field duplicate sample and parent sample result qualified as estimated J

ABS Criteria - Sample concentrations less than 5x the reporting limit - absolute difference between the two results less than the reporting limit

Table 5-2
Summary of Field Duplicate Sampling Results

		Well	MW-15D		MW-15D			MW-20D		MW-20D		
		Sample Name	MW15D-GW061920		FD03-GW061920			MW20D-GW061720		FD04-GW061720		
		Sample Date	6/19/2020		6/19/2020			6/17/2020		6/17/2020		
		Sample Type	N		FD			N		FD		
Method		Unit	Result	Q	Result	Q	RPD (%)	Result	Q	Result	Q	RPD (%)
SW6020A	Aluminum	µg/L	88.2	J	101		ABS Criteria	100	U	100	U	NC
SW6020A	Antimony	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Arsenic	µg/L	0.513	J	0.546	J	ABS Criteria	0.685	J	0.685	J	ABS Criteria
SW6020A	Barium	µg/L	46.4		45.2		2.62	42.3		41.9		0.95
SW6020A	Beryllium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Cadmium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Calcium	µg/L	167000		170000		1.78	109000		107000		1.85
SW6020A	Chromium	µg/L	1.74		1.62		ABS Criteria	1.64		1.6		ABS Criteria
SW6020A	Cobalt	µg/L	0.215	J	0.207	J	ABS Criteria	0.115	J	0.118	J	ABS Criteria
SW6020A	Copper	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW6020A	Iron	µg/L	103		105		ABS Criteria	68.6	J	63	J	ABS Criteria
SW6020A	Lead	µg/L	0.13	J	0.119	J	ABS Criteria	1	U	1	U	NC
SW6020A	Magnesium	µg/L	65400		65900		0.76	36500		35800		1.94
SW6020A	Manganese	µg/L	6.73		6.37		5.50	2.24		2.1		ABS Criteria
SW6020A	Nickel	µg/L	2.26		2.26		ABS Criteria	0.464	J	0.445	J	ABS Criteria
SW6020A	Potassium	µg/L	4040		4080		0.99	2240		2160		3.64
SW6020A	Selenium	µg/L	2.61		2.71		ABS Criteria	0.776	J	0.84	J	ABS Criteria
SW6020A	Silver	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Sodium	µg/L	140000		142000		1.42	46300		44000		5.09
SW6020A	Thallium	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW6020A	Vanadium	µg/L	1.37		1.41		ABS Criteria	2.05		1.91		ABS Criteria
SW6020A	Zinc	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW7470A	Mercury	µg/L	0.5	U	0.5	U	NC	0.5	U	0.5	U	NC
SW8260C	1,1,1-Trichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2,2-Tetrachloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2-Trichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1,2-Trichlorotrifluoroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1-Dichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,1-Dichloroethene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,3-Trichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,4-Trichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2,4-Trimethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dibromo-3-Chloropropane	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	1,2-Dibromoethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichloroethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,2-Dichloropropane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,3,5-Trimethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,3-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	1,4-Dichlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	2-Butanone (MEK)	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	2-Hexanone	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	4-Methyl-2-Pentanone (MIBK)	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	Acetone	µg/L	20	U	20	U	NC	20	U	20	U	NC
SW8260C	Benzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromochloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromodichloromethane	µg/L	1	U	1	U	NC	0.21	J	0.23	J	ABS Criteria
SW8260C	Bromoform	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Bromomethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Carbon Disulfide	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Carbon Tetrachloride	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Chlorobenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Chloroethane	µg/L	1	UJ	1	UJ	NC	1	U	1	U	NC
SW8260C	Chloroform	µg/L	3.5		3.5		ABS Criteria	1.8		1.8		ABS Criteria
SW8260C	Chloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Cis-1,2-Dichloroethene	µg/L	1	U	1	U	NC	0.12	J	0.13	J	ABS Criteria
SW8260C	Cis-1,3-Dichloropropene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Dibromochloromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Dichlorodifluoromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Ethylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Isopropylbenzene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	m,p-Xylene	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	Methyl Acetate	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	Methyl Tert-Butyl Ether	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Methylene Chloride	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	o-Xylene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Styrene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Tetrachloroethene	µg/L	1	U	1	U	NC	9.9		11		10.53

Table 5-2
Summary of Field Duplicate Sampling Results

		Well	MW-15D		MW-15D			MW-20D		MW-20D		
		Sample Name	MW15D-GW061920		FD03-GW061920			MW20D-GW061720		FD04-GW061720		
		Sample Date	6/19/2020		6/19/2020			6/17/2020		6/17/2020		
		Sample Type	N		FD			N		FD		
Method		Unit	Result	Q	Result	Q	RPD (%)	Result	Q	Result	Q	RPD (%)
SW8260C	Toluene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Trans-1,2-Dichloroethene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Trans-1,3-Dichloropropene	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Trichloroethene	µg/L	1	U	1	U	NC	0.23	J	0.23	J	ABS Criteria
SW8260C	Trichlorofluoromethane	µg/L	1	U	1	U	NC	1	U	1	U	NC
SW8260C	Vinyl Acetate	µg/L	2	U	2	U	NC	2	U	2	U	NC
SW8260C	Vinyl Chloride	µg/L	1	U	1	U	NC	1	U	1	U	NC
8270DSIM	1,4-Dioxane	µg/L	0.41	U	0.44	U	NC	0.4	U	0.38	U	NC
RSK-175	Ethane	µg/L	2	U	2	U	NC	2	U	2	U	NC
RSK-175	Ethene	µg/L	2	U	2	U	NC	2	U	2	U	NC
RSK-175	Methane	µg/L	2	U	2	U	NC	2	U	2	U	NC
SM2320B	Alkalinity, Total (As Caco3)	mg/l	350		364		3.92	242		252		4.05
A4500NE	Nitrate [as N]	mg/l	3.11		2.35		27.84	3.25		3.4		4.51
E300.0	Chloride	mg/l	310		313		0.96	126		123		2.41
E300.0	Sulfate	mg/l	147		143		2.76	96.6	J-	134	J-	32.44
SM2540C	Total Dissolved Solids	mg/l	1230		1120		9.36	666		652		2.12
SW9060	Total Organic Carbon	mg/l	0.594	J	0.7	J	ABS Criteria	0.405	J	0.446	J	ABS Criteria

Acronyms

µg/L - microgram per liter
mg/L - milligram per liter
N - normal sample
FD - field duplicate
J - estimated
J- - estimated, biased low
NC - not calculated
Q - qualifier
RPD - relative percent difference
U - not detected
Yellow Highlighting - RPD outside of 30% criteria - field duplicate sample and parent sample result qualified as estimated J

ABS Criteria - Sample concentrations less than 5x the reporting limit - absolute difference between the two results less than the reporting limit

Section 6

Data Usability Assessment

One hundred percent of the data reported and validated in this QCSR are suitable for their intended use as stated in the QAPP (CDM Smith 2019). No sample results were rejected.

The achievement of the completeness goals for the number of samples collected and the number of sample results acceptable for use provides sufficient quality data to support project decisions. Sample results that were qualified as estimated are usable for project decisions.

Section 7
References

CDM Smith. 2019. *Quality Assurance Project Plan, 700 south 1600 East PCE Plume Site, Operable Unit 2, Salt Lake City, Utah, U.S. Army Corps of Engineers, Kansas City District, Department of Veterans Affairs, Veterans Health Administration Salt Lake City, Health Care System.* November 2019.

EPA. 2017. *National Functional Guidelines for Inorganic Superfund Methods Data Review*, EPA-540-R-2017-001, January 2017.

EPA. 2017. *National Functional Guidelines for Organic Superfund Methods Data Review*, EPA-540-R-2017-002, January 2017.

EPA 2004. EPA's *Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods* (SW-846 2nd edition 1982, revised 1984; 3rd edition 1986; and Updates I, II, IIA, III, IIIA, and IIIB, 1996, 1998, and 2004.

Attachment 1

Data Validation Reports

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F154
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 06/17/20
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number	Lab ID	Sample Number
F154-01	MW20S-GW061720	F154-05	MW20D-GW061720
F154-02	MW02-GW061720	F154-06	FD04-GW061720
F154-03	TB03-GW061720	F154-07	TB02-GW061720
F154-04	TB04-GW061720		

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:

	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			Yes
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			Yes
Laboratory Control Spike Duplicates RPD within limits?			Yes

Comments (note deviations):

Field Duplicates	8260C	Sample MW20D-GW061720	Duplicate FD04-GW061720	RPD	Qualifiers	Associated Samples
				Acceptable		

MS/MSD	8260C	RPD	Limit	Qualifiers	Associated Samples
MW02-GW061720 MS / MSD		Acceptable			

LCS/LCSD	8260C	RPD	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			

Accuracy:

	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			No
Laboratory Control Sample criteria met?			Yes
Were the Laboratory Method Blank results all < RL?			Yes
Were the Field Blanks results all < RL?			Yes
Was the ICAL criteria met?			Yes
Was the CCV criteria met?			Yes
Was the Tuning criteria met?			Yes
Were the Surrogate % recoveries within laboratory determined control limits?			Yes
Were the Internal Standard areas within ± 50 - 150%?			Yes

Comments (note deviations):

Blanks	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			
MBLK2W		Nondetect			

Field Blank	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
TB03-GW061720		Nondetect			
TB04-GW061720		Nondetect			
TB02-GW061720		Nondetect			

Surrogates	8260C	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8260C	%R	Limit	Qualifiers	Associated Samples
MW02-GW061720 MS / MSD					
	Tetrachloroethene	320 / 320	75-125	J	F154-02

LCS/LCSD	8260C	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			

ICAL	8260C	RRF	%RSD	Qualifiers	Associated Samples
4/02/20 16:47		Acceptable	Acceptable		

CCV	8260C	RRF	%D	Limit	Qualifiers	Associated Samples
06/18/20 8:35		Acceptable	Acceptable			
06/22/20 8:33		Acceptable	Acceptable			

Tune	8260C
	Acceptable

Internal Standards	8260C	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)	**Yes**		
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		

Comments (note deviations):

Field Duplicates	**8270D**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW20D-GW061720	**FD04-GW061720**			
		ND	ND	Acceptable		

MS/MSD	**8270D**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD		Acceptable			

LCS/LCSD	**8270D**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

Accuracy:	**Yes**	**No**	**N/A**
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)	**Yes**		
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?	**Yes**		
Were the Surrogate % recoveries within laboratory determined control limits?	**Yes**		
Were the Internal Standard areas within ± 50 - 150%?	**Yes**		

Comments (note deviations):

Blanks	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
N/A					

Surrogates	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

MS/MSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD		Acceptable			

LCS/LCSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

ICAL	**8270D**	**RRF**	**%RSD**	**Qualifiers**	**Associated Samples**
6/03/20 14:04		Acceptable	Acceptable		

CCV	**8270D**	**RRF**	**%D**	**Limit**	**Qualifiers**	**Associated Samples**
06/19/20 10:36		Acceptable	Acceptable			

Tune	**8270D**				
	Acceptable				

Internal Standards	**8270D**	**Area**	**Area Lower / Upper Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

Dissolved Gases RSK-175

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)	**Yes**		
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			**N/A**

Comments (note deviations):

Field Duplicates	**RSK-175**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW20D-GW061720	**FD04-GW061720**			
		ND	ND	Acceptable		

MS/MSD	**RSK-175**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD		Acceptable			

LCS/LCSD	**RSK-175**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	**RSK-175**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
N/A						

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)	**Yes**		
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?			**N/A**
Were the Surrogate % recoveries within laboratory determined control limits?			**N/A**
Were the Internal Standard areas within ± 50 - 150%?			**N/A**

Comments (note deviations):

Blanks	**RSK-175**	**Concentration**	**MDL / RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**RSK-175**	**Concentration**	**MDL / RL**	**Qualifiers**	**Associated Samples**
N/A					

Surrogates	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

MS/MSD	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD		Acceptable			

LCS/LCSD	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCD1W		Acceptable			

ICAL	**RSK-175**	**RRF**	**%RSD**	**Limit**	**Qualifiers**	**Associated Samples**
4/29/2020		Acceptable	Acceptable			

CCV	**RSK-175**	**RRF**	**%D**	**Limit**	**Qualifiers**	**Associated Samples**
4/29/2020 ' 2:39 pm		Acceptable	Acceptable			

Tune	RSK-175
N/A	

Internal Standards	RSK-175	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
N/A					

Metals SW 6020A / Mercury 7470A

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**Yes**
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?			**Yes**
Are the laboratory control sample duplicates RPDs ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	**Sample MW20D-GW061720**	**Duplicate FD04-GW061720**	**RPD**	**Qualifier**	**Associated Samples**
Metals			Acceptable		
Mercury	ND	ND	Acceptable		

MS/MSD	**RPD**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD	Acceptable		

LCS / LCSD	**RPD**	**Qualifiers**	**Associated Samples**
	Acceptable		

Laboratory Duplicate	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

Accuracy:	**Yes**	**No**	**N/A**
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			**Yes**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**Yes**
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**Yes**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Were the Detection Limit PQL Standards within 70-130?			**N/A**
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			**N/A**
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			**Yes**
Was the tune %RPD <5% (Peak width < 0.75)?			**Yes**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

Serial Dilution	**Analyte**	**Initial Sample Result**	**%D**	**50 x MDL**	**Qualifier**	**Associated Samples**
			Acceptable			

MS/MSD	**Analyte**	**%R**	**Limits**	**Post Digestion**	**Qualifiers**	**Associated Samples**
MW02-GW061720 MS / MSD		Acceptable				

LCS/LCSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
		Acceptable			

ICV/CCV	**Analyte**	**%R**	**Limits**	**Qualifier**	**Associated Samples**
		Acceptable			

Blanks **Prep Blank**		**Result**	**MDL/RL**	**Qualifier**	**Associated Samples**
MBLK1W	Sodium	26.7 J	25 / 100	None	Sample results > RL
MBLK1W (Hg)		Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
		Nondetect			

CCBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
CCB4 / CCB5	Sodium	40 / 30	25	None	Sample results > RL
Associated Samples: F154-01, F154-02, F154-05, F154-06					
CCB4	Manganese	0.4		None	Sample results > RL
	Lead	0.08		None	Sample results nondetect
Associated Samples: F154-01I, F154-02I, F154-05I, F154-06I					
CCB6	Manganese	0.5		None	Sample results nondetect**
	Lead	0.09		None	Sample results nondetect**
CCB3	Mercury	-0.024 / -0.02 / -0.023	0.5	None	-Blank result > - RL

** Applies to diluted reuslts - initial results reported - CCB not applicable

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check	%R	Qualifiers	Associated Samples
N/A			

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?		**No**	
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?	**Yes**		
Are the matrix spike duplicates RPD ≤ 20%?	**Yes**		
Are the laboratory control spike duplicates RPD ≤ 20%?	**Yes**		

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
	MW20D-GW061720	FD04-GW061720			
Sulfate	96.6	134	32%	**J**	**F154-05I & F154-06I**

MS/MSD	%R	Limits	RPD	Qualifiers	Associated Samples
MW02-GW061720 MS / MSD			Acceptable		

LCS/ LCSD	Limits	RPD	Qualifiers	Associated Samples
		Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD %	Qualifiers	Associated Samples
			Acceptable		

Accuracy:	Yes	No	N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?		**No**	
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?	**Yes**		
Was laboratory blank criteria met (within control limits)?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Were ICV/CCV % recoveries within 90-110%?	**Yes**		
Was the tune %RSD <5% ?			**N/A**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

MS /MSD	Analyte	%R	Limits	Qualifiers	Associated Samples
MW02-GW061720 MS / MSD					
	Sulfate	86 / 84	87-112	**J- / UJ**	**All samples**

LCS / LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	%R	Limits	Qualifiers	Associated Samples
	Acceptable			

Blanks	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
		Nondetect			

Field Blank	Analyte	Result (mg/L)	MDL/RL	Qualifiers	Associated Samples
N/A					

Tune	Analyte	%RSD	Limits	Qualifiers	Associated Samples
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	**Yes**		
Were holding times met?	**Yes**		
Was preservation criteria met? (0° C - 6° C)	**Yes**		
Were Chain-of-Custody records complete and provided in data package?	**Yes**		

Comments (note

The cooler temperatures were 2.1, 2.3, 2.7 °C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	**Yes**		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	**Yes**		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	**Yes**		
Do the reporting limits meet project requirements?	**Yes**		

Comments (note deviations):

Comment:

Data is usable with appropriate qualifiers applied.

Data Validator: Kristine Molloy Date: 8/3/2020

Data Reviewer: Cherie Zakowski Date: 8/6/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F155
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/16/2020 & 6/17/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number
F155-01	MW18-GW061620
F155-02	MW19-GW061620
F155-03	TB01-GW061720

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?			Yes

Comments (note deviations):

Field Duplicates	8260C	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	8260C	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?			Yes
Were the Laboratory Method Blank results all < RL?			Yes
Were the Field Blanks results all < RL?			Yes
Was the ICAL criteria met?			Yes
Was the CCV criteria met?			Yes
Was the Tuning criteria met?			Yes
Were the Surrogate % recoveries within laboratory determined control limits?			Yes
Were the Internal Standard areas within ± 50 - 150%?			Yes

Comments (note deviations):

Blanks	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank TB01-GW061720	**8260C**	**Concentration** Nondetect	**MDL /RL**		**Qualifiers**	**Associated Samples**
Surrogates	**8260C**	**%R** Acceptable	**Limit**		**Qualifiers**	**Associated Samples**
MS/MSD N/A	**8260C**	**%R**	**Limit**		**Qualifiers**	**Associated Samples**
LCS/LCSD LCS1W / LCSD1W	**8260C**	**%R** Acceptable	**Limit**		**Qualifiers**	**Associated Samples**
ICAL 4/02/20 16:47	**8260C**	**RRF** Acceptable	**%RSD** Acceptable		**Qualifiers**	**Associated Samples**
CCV 06/19/20 9:34	**8260C**	**RRF** Acceptable	**%D** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**
Tune	**8260C** Acceptable					
Internal Standards	**8260C**	**Area** Acceptable	**Area Lower / Upper Limit**		**Qualifiers**	**Associated Samples**

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?	Yes		

Comments (note deviations):

Field Duplicates	8270D	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	8270D	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8270D	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?	Yes		
Were the Laboratory Method Blank results all < RL?	Yes		
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?	Yes		
Was the CCV criteria met?	Yes		
Was the Tuning criteria met?	Yes		
Were the Surrogate % recoveries within laboratory determined control limits?	Yes		
Were the Internal Standard areas within ± 50 - 150%?	Yes		

Comments (note deviations):

Blanks	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
N/A					

Surrogates	8270D	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8270D	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8270D	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8270D	RRF	%RSD	Qualifiers	Associated Samples
6/03/20 14:04		Acceptable	Acceptable		

CCV	8270D	RRF	%D	Limit	Qualifiers	Associated Samples
06/19/20 10:36		Acceptable	Acceptable			

Tune	**8270D**				
	Acceptable				

Internal Standards	**8270D**	**Area**	**Area Lower / Upper Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

Dissolved Gases RSK-175

Precision:

	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?	Yes		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			N/A

Comments (note deviations):

Field Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	RSK-175	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	RSK-175	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

Accuracy:

	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?	Yes		
Were the Laboratory Method Blank results all < RL?	Yes		
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?	Yes		
Was the CCV criteria met?	Yes		
Was the Tuning criteria met?			N/A
Were the Surrogate % recoveries within laboratory determined control limits?			N/A
Were the Internal Standard areas within ± 50 - 150%?			N/A

Comments (note deviations):

Blanks	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
N/A					

Surrogates	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

MS/MSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

ICAL	RSK-175	RRF	%RSD	Limit	Qualifiers	Associated Samples
4/29/2020		Acceptable	Acceptable			

CCV	RSK-175	RRF	%D	Limit	Qualifiers	Associated Samples
4/29/2020 ' 2:39 pm		Acceptable	Acceptable			

Tune	RSK-175
N/A	

Internal Standards	RSK-175	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
N/A					

Metals SW 6020A / Mercury 7470A

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			N/A
Are the matrix spike duplicates RPD ≤ 20%?			N/A
Are the laboratory control sample duplicates RPDs ≤ 20%?			Yes

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

MS/MSD	RPD	Qualifiers	Associated Samples
N/A			

LCS / LCSD	RPD	Qualifiers	Associated Samples
	Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

Accuracy:	Yes	No	N/A
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			N/A
Was post digestion spike criteria met (if applicable)?			N/A
Was laboratory control sample criteria met?			Yes
Was laboratory blank criteria met (within control limits)?			Yes
Were ICV/CCV % recoveries within 90-110%?			Yes
Were the Detection Limit PQL Standards within 70-130?			N/A
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			N/A
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			Yes
Was the tune %RPD <5% (Peak width < 0.75)?			Yes
Was internal standard criteria met?			N/A

Comments (note deviations):

Serial Dilution	Analyte	Initial Sample Result	%D	50 x MDL	Qualifier	Associated Samples
N/A						

MS/MSD	Analyte	%R	Limits	Post Digestion	Qualifiers	Associated Samples
N/A						

LCS/LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	Analyte	%R	Limits	Qualifier	Associated Samples
		Acceptable			

Blanks					
Prep Blank		Result	MDL/RL	Qualifier	Associated Samples
MBLK1W	Calcium	41.4 J	25 / 100	None	Sample results > RL
MBLK1W (Hg)		Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
		Nondetect			

CCBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
CCB2	Sodium	30	25	None	Sample results > RL
	Vanadium	0.3	0.25	**U-RL**	**F155-01, F155-02****
CCB2/CCB3	Mercury	-0.001 / -0.002	0.5	None	-Blank result > - RL

** CCB applies to both the initial and re-analyzed results - no qualification required for reported results (initial) as SR > RL

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check		%R	Qualifiers	Associated Samples
N/A				

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?			**N/A**
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			**Yes**
Are the matrix spike duplicates RPD ≤ 20%?			**N/A**
Are the laboratory control spike duplicates RPD ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

MS/MSD	**%R**	**Limits**	**RPD**	**Qualifiers**	**Associated Samples**
N/A					

LCS/ LCSD	**Limits**	**RPD**	**Qualifiers**	**Associated Samples**
		Acceptable		

Laboratory Duplicate	**Sample**	**Duplicate**	**RPD %**	**Qualifiers**	**Associated Samples**
			Acceptable		

Accuracy:	**Yes**	**No**	**N/A**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**N/A**
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**Yes**
Were the Field Blanks results all < RL?			**N/A**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Was the tune %RSD <5% ?			**N/A**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

MS /MSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
N/A					

LCS / LCSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
		Acceptable			

ICV/CCV	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
	Acceptable			

Blanks	**Analyte**	**Result**	**MDL/RL**	**Qualifiers**	**Associated Samples**
		Nondetect			

Field Blank	**Analyte**	**Result (mg/L)**	**MDL/RL**	**Qualifiers**	**Associated Samples**
N/A					

Tune	**Analyte**	**%RSD**	**Limits**	**Qualifiers**	**Associated Samples**
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	**Yes**		
Were holding times met?	**Yes**		
Was preservation criteria met? (0° C - 6° C)	**Yes**		
Were Chain-of-Custody records complete and provided in data package?	**Yes**		

Comments (note

The cooler temperature was 2.0 °C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	**Yes**		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	**Yes**		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	**Yes**		
Do the reporting limits meet project requirements?	**Yes**		

Comments (note deviations):

Comment:

Data is usable as reported.

Data Validator: Kristine Molloy Date: 8/3/2020

Data Reviewer: Cherie Zakowski Date: 8/6/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F162
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/17/2020 & 6/18/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number	Lab ID	Sample Number
F162-01	MW22-GW061720	F162-07	MW03RA-GW061820
F162-02	MW21-GW061820	F162-08	MW03RB-GW061820
F162-03	TB05-GW061820	F162-09	TB07-GW061820
F162-04	MW01D-GW061720	F162-10	MW03RC-GW061820
F162-05	MW13S-GW061820	F162-11	MW03RD-GW061820
F162-06	TB06-GW061820	F162-12	TB08-GW061820

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?			Yes

Comments (note deviations):

Field Duplicates	8260C	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	8260C	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?			Yes
Were the Laboratory Method Blank results all < RL?			Yes
Were the Field Blanks results all < RL?			Yes
Was the ICAL criteria met?			Yes
Was the CCV criteria met?			Yes
Was the Tuning criteria met?			Yes
Were the Surrogate % recoveries within laboratory determined control limits?			Yes
Were the Internal Standard areas within ± 50 - 150%?			Yes

Comments (note deviations):

Blanks	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
TB05-GW061820		Nondetect			
TB06-GW061820		Nondetect			
TB07-GW061820		Nondetect			
TB08-GW061820		Nondetect			

Surrogates	8260C	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8260C	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8260C	RRF	%RSD	Qualifiers	Associated Samples
4/02/20 16:47		Acceptable	Acceptable		

CCV	8260C	RRF	%D	Limit	Qualifiers	Associated Samples
06/22/20 8:33		Acceptable	Acceptable			
06/23/20 15:04		Acceptable	Acceptable			

Tune	8260C
	Acceptable

Internal Standards	8260C	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**N/A**
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			**N/A**
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		

Comments (note deviations):

Field Duplicates	**8270D**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
N/A						

MS/MSD	**8270D**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8270D**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			**N/A**
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?	**Yes**		
Were the Surrogate % recoveries within laboratory determined control limits?	**Yes**		
Were the Internal Standard areas within ± 50 - 150%?	**Yes**		

Comments (note deviations):

Blanks	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
N/A					

Surrogates	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

MS/MSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

ICAL	**8270D**	**RRF**	**%RSD**		**Qualifiers**	**Associated Samples**
6/03/20 14:04		Acceptable	Acceptable			

CCV	**8270D**	**RRF**	**%D**	**Limit**	**Qualifiers**	**Associated Samples**
06/23/20 10:34		Acceptable	Acceptable			

Tune	**8270D**	
	Acceptable	

Internal Standards	**8270D**	**Area**	**Area Lower / Upper Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

Dissolved Gases RSK-175

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?	Yes		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			N/A

Comments (note deviations):

Field Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	RSK-175	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	RSK-175	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?	Yes		
Were the Laboratory Method Blank results all < RL?	Yes		
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?	Yes		
Was the CCV criteria met?	Yes		
Was the Tuning criteria met?			N/A
Were the Surrogate % recoveries within laboratory determined control limits?			N/A
Were the Internal Standard areas within ± 50 - 150%?			N/A

Comments (note deviations):

Blanks	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
N/A					

Surrogates	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

MS/MSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A		Acceptable			

LCS/LCSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

ICAL 4/29/2020	**RSK-175**	**RRF** Acceptable	**%RSD** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

CCV 4/29/2020 ' 2:39 pm	**RSK-175**	**RRF** Acceptable	**%D** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

Tune N/A	**RSK-175**

Internal Standards N/A	**RSK-175**	**Area**	**Area Lower / Upper Limit**		**Qualifiers**	**Associated Samples**

Metals SW 6020A / Mercury 7470A

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**N/A**
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?			**N/A**
Are the laboratory control sample duplicates RPDs ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

MS/MSD	**RPD**	**Qualifiers**	**Associated Samples**
N/A			

LCS / LCSD	**RPD**	**Qualifiers**	**Associated Samples**
	Acceptable		

Laboratory Duplicate	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

Accuracy:	**Yes**	**No**	**N/A**
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			**N/A**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**N/A**
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**Yes**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Were the Detection Limit PQL Standards within 70-130?			**N/A**
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			**N/A**
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			**Yes**
Was the tune %RPD <5% (Peak width < 0.75)?			**Yes**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

Serial Dilution	**Analyte**	**Initial Sample Result**	**%D**	**50 x MDL**	**Qualifier**	**Associated Samples**
N/A						

MS/MSD	**Analyte**	**%R**	**Limits**	**Post Digestion**	**Qualifiers**	**Associated Samples**
N/A						

LCS/LCSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
		Acceptable			

ICV/CCV	**Analyte**	**%R**	**Limits**	**Qualifier**	**Associated Samples**
		Acceptable			

Blanks

Prep Blank		Result	MDL/RL	Qualifier	Associated Samples
MBLK1W	Sodium	26.7 J	25 / 100	None	Sample results > RL
MBLK1W (Hg)		Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
		Nondetect			

CCBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
CCB4 / CCB5	Sodium	40 / 30	25	None	Sample results > RL
Associated Samples: F162-01, F162-02, F162-04, F162-05, F162-07, F162-08, F162-10, F162-11					
CCB4	Manganese	0.4	0.25 / 1.0	**U-RL**	**F162-04**
	Lead	0.08	0.05 / 1.0	**U-RL**	**F162-08**
Associated Samples: F162-01I, F162-02I, F162-04I, F162-05I, F162-07I, F162-08I, F162-10I, F162-11I					
CCB6	Manganese	0.5	0.25 / 1.0	**U-RL**	**F162-01I, F162-010I****
	Lead	0.09	0.05 / 1.0	None	Sample results nondetect
	Mercury	0.007 / -0.021	0.5	None	Sample results nondetect

** Initial results reported - no qualification required

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check	%R	Qualifiers	Associated Samples
N/A			

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:

	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?			**N/A**
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?	**Yes**		
Are the laboratory control spike duplicates RPD ≤ 20%?	**Yes**		

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

MS/MSD	%R	Limits	RPD	Qualifiers	Associated Samples
MW22-GW061720 MS/MSD					
	TOC	Acceptable			

LCS/ LCSD	Limits	RPD	Qualifiers	Associated Samples
		Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A					

Accuracy:

	Yes	No	N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?	**Yes**		
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?	**Yes**		
Was laboratory blank criteria met (within control limits)?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Were ICV/CCV % recoveries within 90-110%?	**Yes**		
Was the tune %RSD <5% ?			**N/A**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

MS /MSD	Analyte	%R	Limits	Qualifiers	Associated Samples
MW22-GW061720 MS/MSD					
	TOC	Acceptable			

LCS / LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	%R	Limits	Qualifiers	Associated Samples
	Acceptable			

Blanks	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
		Nondetect			

Field Blank	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
N/A					

Tune	Analyte	%RSD	Limits	Qualifiers	Associated Samples
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	**Yes**		
Were holding times met?	**Yes**		
Was preservation criteria met? (0° C - 6° C)	**Yes**		
Were Chain-of-Custody records complete and provided in data package?	**Yes**		

Comments (note

The cooler temperatures were 2.3, 2.7, 2.8, 3.2 °C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	**Yes**		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	**Yes**		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	**Yes**		
Do the reporting limits meet project requirements?	**Yes**		

Comments (note deviations):

Comment:

Data is usablewith appropriate qualifers applied.

Data Validator: Kristine Molloy Date: 8/3/2020

Data Reviewer: Cherie Zakowski Date: 8/6/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F178
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/18/2020 & 6/19/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number	Lab ID	Sample Number
F178-01	MW13D-GW061820	F178-07	MW15D-GW061920
F178-02	MW25C-GW061920	F178-08	FD03-GW061920
F178-03	TB09-GW061920	F178-09	TB11-GW061920
F178-04	MW05R-GW061920	F178-10	MW12S-GW061920
F178-05	MW15S-GW061920	F178-11	MW12D-GW061920
F178-06	TB10-GW061920	F178-12	TB12-GW061920

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**Yes**
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			**N/A**
Laboratory Control Spike Duplicates RPD within limits?			**Yes**

Comments (note deviations):

Field Duplicates	**8260C**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW15D-GW061920	**FD03-GW061920**	Acceptable		

MS/MSD	**8260C**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8260C**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			

Accuracy:	**Yes**	**No**	**N/A**
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			**N/A**
Laboratory Control Sample criteria met?			**Yes**
Were the Laboratory Method Blank results all < RL?			**Yes**
Were the Field Blanks results all < RL?			**Yes**
Was the ICAL criteria met?			**Yes**
Was the CCV criteria met?			**Yes**
Was the Tuning criteria met?			**Yes**
Were the Surrogate % recoveries within laboratory determined control limits?			**Yes**
Were the Internal Standard areas within ± 50 - 150%?			**Yes**

Comments (note deviations):

Blanks	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			
MBLK2W		Nondetect			

Field Blank	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
TB09-GW061920		Nondetect			
TB10-GW061920		Nondetect			
TB11-GW061920		Nondetect			
TB12-GW061920		Nondetect			

Surrogates	8260C	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8260C	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			

ICAL	8260C	RRF	%RSD	Qualifiers	Associated Samples
5/13/20 14:04		Acceptable	Acceptable		
5/13/20 17:31		Acceptable	Acceptable		

CCV	8260C	RRF	%D	Limit	Qualifiers	Associated Samples
06/26/20 12:52		Acceptable	Acceptable			
06/29/20 11:21	Chloroethane	Acceptable	-25.5	25	J / UJ	All samples

Tune	8260C
	Acceptable

Internal Standards	8260C	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			**N/A**
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		

Comments (note deviations):

Field Duplicates	**8270D**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW15D-GW061920	**FD03-GW061920**			
		ND	ND	Acceptable		

MS/MSD	**8270D**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8270D**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			**N/A**
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?	**Yes**		
Were the Surrogate % recoveries within laboratory determined control limits?	**Yes**		
Were the Internal Standard areas within ± 50 - 150%?	**Yes**		

Comments (note deviations):

Blanks	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**8270D**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
N/A					

Surrogates	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

MS/MSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8270D**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

ICAL	**8270D**	**RRF**	**%RSD**		**Qualifiers**	**Associated Samples**
6/03/20 14:04		Acceptable	Acceptable			

CCV	**8270D**	**RRF**	**%D**	**Limit**	**Qualifiers**	**Associated Samples**
06/23/20 10:34		Acceptable	Acceptable			

Tune	**8270D**	
	Acceptable	

Internal Standards	**8270D**	**Area**	**Area Lower / Upper Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

Dissolved Gases RSK-175

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			**N/A**
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			**N/A**

Comments (note deviations):

Field Duplicates	**RSK-175**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW15D-GW061920	**FD03-GW061920**			
		ND	ND	Acceptable		

MS/MSD	**RSK-175**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**RSK-175**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	**RSK-175**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
N/A						

Accuracy:	**Yes**	**No**	**N/A**
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			**N/A**
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?			**N/A**
Were the Surrogate % recoveries within laboratory determined control limits?			**N/A**
Were the Internal Standard areas within ± 50 - 150%?			**N/A**

Comments (note deviations):

Blanks	**RSK-175**	**Concentration**	**MDL / RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**RSK-175**	**Concentration**	**MDL / RL**	**Qualifiers**	**Associated Samples**
N/A					

Surrogates	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

MS/MSD	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
N/A		Acceptable			

LCS/LCSD	**RSK-175**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCD1W		Acceptable			

ICAL 4/29/2020	**RSK-175**	**RRF** Acceptable	**%RSD** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

CCV 4/29/2020 ' 2:39 pm	**RSK-175**	**RRF** Acceptable	**%D** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

Tune N/A	**RSK-175**

Internal Standards N/A	**RSK-175**	**Area**	**Area Lower / Upper Limit**		**Qualifiers**	**Associated Samples**

Metals SW 6020A / Mercury 7470A

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**Yes**
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?			**Yes**
Are the laboratory control sample duplicates RPDs ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
	MW15D-GW061920	**FD03-GW061920**	Acceptable		

MS/MSD	**RPD**	**Qualifiers**	**Associated Samples**
MW13D-GW061820 MS/MSD	Acceptable		

LCS / LCSD	**RPD**	**Qualifiers**	**Associated Samples**
	Acceptable		

Laboratory Duplicate	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

Accuracy:	**Yes**	**No**	**N/A**
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			**N/A**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**Yes**
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**No**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Were the Detection Limit PQL Standards within 70-130?			**N/A**
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			**N/A**
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			**Yes**
Was the tune %RPD <5% (Peak width < 0.75)?			**Yes**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

Serial Dilution	**Analyte**	**Initial Sample Result**	**%D**	**50 x MDL**	**Qualifier**	**Associated Samples**
N/A						

MS/MSD	**Analyte**	**%R**	**Limits**	**Post Digestion**	**Qualifiers**	**Associated Samples**
MW13D-GW061820 MS/MSD		Acceptable				

LCS/LCSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
		Acceptable			

ICV/CCV	**Analyte**	**%R**	**Limits**	**Qualifier**	**Associated Samples**
		Acceptable			

Blanks

Prep Blank	Result	MDL/RL	Qualifier	Associated Samples
MBLK1W	Nondetect			
MBLK1W (Hg)	Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
6/25/2020		Nondetect			
7/13/2020	Manganese	0.40	1	**U-RL**	**F178-04I****
	Copper	6.00	2	None	Associated results nondetect
	Lead	0.20	1	**U-RL**	**F178-01N, F178-05N, F178-07N, F178-08N, F178-10N, F178-11N****
	Thallium	0.10	1	**U-RL**	**F178-10N****
	Mercury	-0.005	0.5	None	-Blank result > - RL

** CCB applies to diluted or reanalyzed sample results - results reported are initial results - no qualification required

CCBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
6/25/2020					
CCB9 / CCB10	Sodium	90 / 80	100	None	Sample results > RL
7/13/2020					
CCB2	Sodium	30	100	None	Sample results > RL
	The remaining detected results were evaluated/qualified based on ICB detection				
CCB5 / CCB6	Mercury	0.005 / 0.019	0.5	None	Sample results nondetect or > RL
CCB7	Mercury	-0.074	0.5	None	-Blank result > - RL

** Initial results reported - no qualification required

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check	%R	Qualifiers	Associated Samples
N/A			

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?	Yes		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?	Yes		
Are the matrix spike duplicates RPD ≤ 20%?	Yes		
Are the laboratory control spike duplicates RPD ≤ 20%?	Yes		

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
	MW15D-GW061920	FD03-GW061920	Acceptable		

MS/MSD	%R	Limits	RPD	Qualifiers	Associated Samples
	TOC	Acceptable			

LCS/ LCSD	Limits	RPD	Qualifiers	Associated Samples
		Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifiers	Associated Samples
			Acceptable		

Accuracy:	Yes	No	N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?	Yes		
Was post digestion spike criteria met (if applicable)?			N/A
Was laboratory control sample criteria met?	Yes		
Was laboratory blank criteria met (within control limits)?	Yes		
Were the Field Blanks results all < RL?			N/A
Were ICV/CCV % recoveries within 90-110%?	Yes		
Was the tune %RSD <5% ?			N/A
Was internal standard criteria met?			N/A

Comments (note deviations):

MS /MSD	Analyte	%R	Limits	Qualifiers	Associated Samples
	TOC	Acceptable			

LCS / LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	%R	Limits	Qualifiers	Associated Samples
	Acceptable			

Blanks	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
		Nondetect			

Field Blank	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
N/A					

Tune	Analyte	%RSD	Limits	Qualifiers	Associated Samples
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	Yes		
Were holding times met?	Yes		
Was preservation criteria met? (0° C - 6° C)	Yes		
Were Chain-of-Custody records complete and provided in data package?	Yes		

Comments (note

The cooler temperatures were 2.3, 2.4, 2.7, & 2.8 °C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	Yes		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	Yes		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	Yes		
Do the reporting limits meet project requirements?	Yes		

Comments (note deviations):

Comment:

Data is usable with appropriate qualifiers applied.

Data Validator: Kristine Molloy Date: 8/6/2020

Data Reviewer: Cherie Zakowski Date: 8/8/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F179
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/17/2020 & 6/18/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C

Samples in SDG:

Lab ID	Sample Number
F179-01	TB46-GW061720
F179-02	EB32-GW061720
F179-03	EB33-GW061720
F179-04	EB34-GW061720
F179-05	EB35-GW061720

Data validation was performed in accordance with the specific analytical methods and the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?			Yes

Comments (note deviations):

Field Duplicates	**8260C**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
N/A						

MS/MSD	**8260C**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8260C**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?			Yes
Were the Laboratory Method Blank results all < RL?			Yes
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?			Yes
Was the CCV criteria met?			Yes
Was the Tuning criteria met?			Yes
Were the Surrogate % recoveries within laboratory determined control limits?			Yes
Were the Internal Standard areas within ± 50 - 150%?			Yes

Comments (note deviations):

Blanks	**8260C**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			

Field Blank	**8260C**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
		Nondetect			

Surrogates	8260C	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8260C	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8260C	RRF	%RSD	Qualifiers	Associated Samples
5/13/20 14:04		Acceptable	Acceptable		
5/14/20 17:31		Acceptable	Acceptable		

CCV	8260C	RRF	%D	Limit	Qualifiers	Associated Samples
06/26/20 12:52		Acceptable	Acceptable			

Tune	8260C
	Acceptable

Internal Standards	8260C	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	Yes		
Were holding times met?	Yes		
Was preservation criteria met? (0° C - 6° C)	Yes		
Were Chain-of-Custody records complete and provided in data package?	Yes		

Comments (note

The cooler temperature was 3.7°C

Preservation	Cooler Temperature (Degrees C)	Preservation Criteria	Qualifiers	Associated Samples
	Acceptable			

Holding Times	Analyte	Days to Extraction	HT Criteria	Qualifier	Associated Samples
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	Yes		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	Yes		

Comments (note deviations):

Sensitivity:	**Yes**	**No**	**N/A**
Are MDLs present and reported?	**Yes**		
Do the reporting limits meet project requirements?	**Yes**		

Comments (note deviations):

Comment:

A discrepancy was noted by the laboratory upon receipt of samples. The COC indicated a trip blank sample name of TB42-GW061720 and the sample bottle was labeled TB46-GW061720. CDM smith corrected the discrepancy; indicating the correct sample name should read TB46-GW061720.

Data is usable as reported.

Data Validator: Kristine Molloy Date: 8/9/2020

Data Reviewer: Cherie Zakowski Date: 8/11/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F183
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/21/2020 & 6/22/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number	Lab ID	Sample Number
F183-01	MW17S-GW062120	F183-10	TB15-GW062220
F183-02	MW17D-GW062120	F183-11	EB01-GW062120
F183-03	MW06-GW062120	F183-12	MW01S-GW062120
F183-04	TB14-GW062220	F183-13	FD01-GW062120
F183-05	MW16S-GW062120	F183-14	MW08C-GW062220
F183-06	MW16D-GW062120	F183-15	MW08B-GW062220
F183-07	MW04-GW062120	F183-16	FD02-GW062220
F183-08	MW08A-GW062120	F183-17	TB16-GW062220
F183-09	TB13-GW062220		

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	**Yes**	**No**	**N/A**
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)	**Yes**		
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		

Comments (note deviations):

Field Duplicates	**8260C**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
		MW01S-GW062120	**FD01-GW062120**	Acceptable		
		MW08B-GW062220	**FD02-GW062220**			
	Acetone	2.5 U	2.8	NC	None	Sample results < 5xs RL; ABS Diff. < RL

MS/MSD	**8260C**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
MW08A-GW062120	MS/MSD				
	Vinyl Acetate	21	20%	**J****	**F183-08**

**Qualification required for detected results only - associated results nondetect - no qualification required

LCS/LCSD	**8260C**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			

Accuracy:	**Yes**	**No**	**N/A**
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)	**Yes**		
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?	**Yes**		
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**No**		
Was the Tuning criteria met?	**Yes**		
Were the Surrogate % recoveries within laboratory determined control limits?	**Yes**		
Were the Internal Standard areas within ± 50 - 150%?	**Yes**		

Comments (note deviations):

Blanks	**8260C**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
MBLK1W		Nondetect			
MBLK2W		Nondetect			
MBLK3W		Nondetect			

Field Blank	**8260C**	**Concentration**	**MDL /RL**	**Qualifiers**	**Associated Samples**
TB14-GW062220		Nondetect			
TB13-GW062220		Nondetect			
TB15-GW062220		Nondetect			
TB16-GW062220		Nondetect			
EB01-GW062120		Nondetect			

Surrogates	**8260C**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

MS/MSD	**8260C**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
MW08A-GW062120	MS/MSD	Acceptable			

LCS/LCSD	**8260C**	**%R**	**Limit**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			
LCS2W / LCSD2W		Acceptable			
LCS3W / LCSD3W		Acceptable			

ICAL	**8260C**	**RRF**	**%RSD**	**Qualifiers**	**Associated Samples**
5/13/20 14:04		Acceptable	Acceptable		
5/14/20 17:31		Acceptable	Acceptable		

CCV	**8260C**	**RRF**	**%D**	**Limit**	**Qualifiers**	**Associated Samples**
Applicable to samples: F183-01 through F183-07; F183-09 through F183-11						
06/29/20 11:21						
	Chloroethane	Acceptable	-25.5	25	**J / UJ**	**F183-01 through F183-07; F183-09 through F183-11**
Applicable to samples: F183-08 ; F183-12 through F183-16						
06/30/20 12:34		Acceptable	Acceptable			
Applicable to samples: F183-12I; F183-13I						
07/02/20 10:23		Acceptable	Acceptable			

Tune	**8260C**
	Acceptable

Internal Standards	**8260C**	**Area**	**Area Lower / Upper Limit**	**Qualifiers**	**Associated Samples**
		Acceptable			

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	**Yes**		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)	**Yes**		
Laboratory Control Spike Duplicates RPD within limits?	**Yes**		

Comments (note deviations):

Field Duplicates	8270D	Sample	Duplicate	RPD	Qualifiers	Associated Samples
		MW01S-GW062120	**FD01-GW062120**			
		ND	ND	Acceptable		
		MW08B-GW062220	**FD02-GW062220**			
		ND	ND	Acceptable		

MS/MSD	8270D	RPD	Limit	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS/LCSD	8270D	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)	**Yes**		
Laboratory Control Sample criteria met?	**Yes**		
Were the Laboratory Method Blank results all < RL?	**Yes**		
Were the Field Blanks results all < RL?			**N/A**
Was the ICAL criteria met?	**Yes**		
Was the CCV criteria met?	**Yes**		
Was the Tuning criteria met?	**Yes**		
Were the Surrogate % recoveries within laboratory determined control limits?	**Yes**		
Were the Internal Standard areas within ± 50 - 150%?	**Yes**		

Comments (note deviations):

Blanks	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
N/A					

Surrogates	8270D	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8270D	%R	Limit	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS/LCSD	8270D	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8270D	RRF	%RSD		Qualifiers	Associated Samples
6/03/20 14:04		Acceptable	Acceptable			

CCV	8270D	RRF	%D	Limit	Qualifiers	Associated Samples
06/24/20 10:44		Acceptable	Acceptable			

Tune	8270D
	Acceptable

Internal Standards	8270D	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Dissolved Gases RSK-175

Precision:

	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?	Yes		
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)	Yes		
Laboratory Control Spike Duplicates RPD within limits?	Yes		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			N/A

Comments (note deviations):

Field Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
		MW01S-GW062120	FD01-GW062120			
		ND	ND	Acceptable		
		MW08B-GW062220	FD02-GW062220			
		ND	ND	Acceptable		

MS/MSD	RSK-175	RPD	Limit	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS/LCSD	RSK-175	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

Accuracy:

	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)	Yes		
Laboratory Control Sample criteria met?	Yes		
Were the Laboratory Method Blank results all < RL?	Yes		
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?	Yes		
Was the CCV criteria met?	Yes		
Was the Tuning criteria met?			N/A
Were the Surrogate % recoveries within laboratory determined control limits?			N/A
Were the Internal Standard areas within ± 50 - 150%?			N/A

Comments (note deviations):

Blanks	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
N/A					

Surrogates	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

MS/MSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS/LCSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

ICAL 4/29/2020	**RSK-175**	**RRF** Acceptable	**%RSD** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

CCV 4/29/2020 ' 2:39 pm	**RSK-175**	**RRF** Acceptable	**%D** Acceptable	**Limit**	**Qualifiers**	**Associated Samples**

Tune N/A	**RSK-175**

Internal Standards N/A	**RSK-175**	**Area**	**Area Lower / Upper Limit**		**Qualifiers**	**Associated Samples**

Metals SW 6020A / Mercury 7470A

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**Yes**
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?			**Yes**
Are the laboratory control sample duplicates RPDs ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
	MW01S-GW062120	**FD01-GW062120**			
	ND	ND			
	MW08B-GW062220	**FD02-GW062220**			
			Acceptable		

MS/MSD	**RPD**	**Qualifiers**	**Associated Samples**
MW08A-GW062120 MS/MSD	Acceptable		

LCS / LCSD	**RPD**	**Qualifiers**	**Associated Samples**
	Acceptable		

Laboratory Duplicate	**Sample**	**Duplicate**	**RPD**	**Qualifier**	**Associated Samples**
N/A					

Accuracy:	Yes	No	N/A
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			**Yes**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**Yes**
Was post digestion spike criteria met (if applicable)?			**N/A**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**Yes**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Were the Detection Limit PQL Standards within 70-130?			**N/A**
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			**N/A**
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			**Yes**
Was the tune %RPD <5% (Peak width < 0.75)?			**Yes**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

Serial Dilution	**Analyte**	**Initial Sample Result**	**%D**	**50 x MDL**	**Qualifier**	**Associated Samples**
			Acceptable			

MS/MSD	**Analyte**	**%R**	**Limits**	**Post Digestion**	**Qualifiers**	**Associated Samples**
MW08A-GW062120 MS/MSD						
	Calcium	200 / 200	75 - 125	120%	None	ISR > 4xs the spike added
	Magnesium	97 / 140	75 - 125	119%	None	ISR > 4xs the spike added
	Sodium	170 / 160	75 - 125	115%	None	ISR > 4xs the spike added

ISR = Initial Sample Result

LCS/LCSD	**Analyte**	**%R**	**Limits**	**Qualifiers**	**Associated Samples**
		Acceptable			

ICV/CCV	**Analyte**	**%R**	**Limits**	**Qualifier**	**Associated Samples**
		Acceptable			

Blanks

Prep Blank	Result	MDL/RL	Qualifier	Associated Samples
MBLK1W	Nondetect			
MBLK1W (Hg)	Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
7/13/2020					
Associated samples: F183-01I, F183-02I, F183-03I, F183-05I, F183-06I, F183-07I, F183-08I, F183-08J, F183-12I, F183-13I, F183-14I, F183-15I, F183-16I					
	Manganese	0.40	1	**U-RL**	**F183-05I, F183-06I, F183-13I, F183-16I ****
	Copper	6.00	2	None	Associated results nondetect
	Lead	0.10	1	**U-RL**	**F183-02I****
	** CCB applies to diluted sample results - results reported are initial results - no qualification required				
7/20/2020					
Associated samples: F183-01 through F183-03, F183-05 through F183-08, F183-08J, F183-12 through F183-16					
	Manganese	0.40	1	**U-RL**	**F183-07, F183-12**
	Cadmium	0.10	1	None	Associated results nondetect
	Thallium	0.30	1	None	Associated results nondetect
	Lead	0.10	1	**U-RL**	**F183-01, F183-02, F183-03, F183-07, F183-08**
	Mercury	-0.015	0.5	None	-Blank result > - RL

CCBs

Associated samples: F183-01I, F183-02I, F183-03I, F183-05I, F183-06I, F183-07I, F183-08I, F183-08J, F183-12I, F183-13I, F183-14I, F183-15I, F183-16I

CCB3 / CCB4/ CCB5

Detected results were evaluated/qualified based on ICB detection - no further qualification required.

Associated samples: F183-01 through F183-03, F183-05 through F183-08, F183-08J, F183-12 through F183-16

CCB10 / CCDB11 / CCB12

Detected results were evaluated/qualified based on ICB detection - no further qualification required.

CCB4/ CCDB5 / CCB6

Mercury	-0.021 / 0.007 / -0.003	0.5	None	Sample results nondetect or -Blank result > - RL

** Initial results reported - no qualification required

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check	%R	Qualifiers	Associated Samples
N/A			

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?			Yes
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			Yes
Are the matrix spike duplicates RPD ≤ 20%?			Yes
Are the laboratory control spike duplicates RPD ≤ 20%?			Yes

Comments (note deviations):

Field Duplicates		Sample	Duplicate	RPD	Qualifier	Associated Samples
		MW01S-GW062120	FD01-GW062120			
	Sulfate	49.7	105	71.5	J	MW08B-GW062220 & FD02-GW062220
		MW08B-GW062220	FD02-GW062220			
				Acceptable		

MS/MSD	%R	Limits	RPD	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS/ LCSD	Limits	RPD	Qualifiers	Associated Samples
		Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifiers	Associated Samples
			Acceptable		

Accuracy:	Yes	No	N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			Yes
Was post digestion spike criteria met (if applicable)?			N/A
Was laboratory control sample criteria met?			Yes
Was laboratory blank criteria met (within control limits)?			Yes
Were the Field Blanks results all < RL?			N/A
Were ICV/CCV % recoveries within 90-110%?			Yes
Was the tune %RSD <5% ?			N/A
Was internal standard criteria met?			N/A

Comments (note deviations):

MS /MSD	Analyte	%R	Limits	Qualifiers	Associated Samples
MW08A-GW062120 MS/MSD		Acceptable			

LCS / LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	%R	Limits	Qualifiers	Associated Samples
	Acceptable			

Blanks	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
		Nondetect			

Field Blank	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
N/A					

Tune	Analyte	%RSD	Limits	Qualifiers	Associated Samples
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	Yes		
Were holding times met?	Yes		
Was preservation criteria met? (0° C - 6° C)	Yes		
Were Chain-of-Custody records complete and provided in data package?	Yes		

Comments (note

The cooler temperatures were 2.1, 2.3, 2.6, 2.7, 4.2, 4.5, 4.7 & 5.0°C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	Yes		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	Yes		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	Yes		
Do the reporting limits meet project requirements?	Yes		

Comments (note deviations):

Comment:

Data is usable with appropriate qualifiers applied.

Data Validator: Kristine Molloy Date: 8/8/2020

Data Reviewer: Cherie Zakowski Date: 8/11/2020

VA Salt Lake City
Salt Lake City, Utah
Groundwater Validation Report

Sample Delivery Group (SDG) Number: 20F210
Laboratory: EMAX Laboratories, Inc.

Matrix: Water
Collection date: 6/23/2020 & 6/24/2020
Analysis/Methods:

Volatile Organic Compounds SW8260C
Semivolatile Organic Compounds (1,4-Dioxane) SW8270D SIM
Metals SW6020A
Mercury SW7470A
Dissolved Gases - Method RSK 175
Wet Chemistry:
Chloride / Sulfate E300.0
Total Alkalinity SM2320B
Total Dissolved Solids SM2540C
Nitrate / Nitrite - N SM4500 - NO3E
TOC SW9060

Samples in SDG:

Lab ID	Sample Number	Lab ID	Sample Number
F210-01	MW23C-GW062320	F210-06	TB18-GW062420
F210-02	TB19-GW062420	F210-07	MW14S-GW062320
F210-03	FB01-GW062420	F210-08	MW14D-GW062320
F210-04	MW27-GW062420	F210-09	TB17-GW062420
F210-05	MW28-GW062420		

Data validation was performed in accordance with the specific analytical methods, the National Functional Guidelines for Organic Superfund Methods Data Review (EPA January 2017), and the National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA January 2017).

Volatile Organic Compounds 8260C

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**N/A**
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			**N/A**
Laboratory Control Spike Duplicates RPD within limits?			**Yes**

Comments (note deviations):

Field Duplicates	**8260C**	**Sample**	**Duplicate**	**RPD**	**Qualifiers**	**Associated Samples**
N/A						

MS/MSD	**8260C**	**RPD**	**Limit**	**Qualifiers**	**Associated Samples**
N/A					

LCS/LCSD	**8260C**	**RPD**	**Limits**	**Qualifiers**	**Associated Samples**
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			**N/A**
Laboratory Control Sample criteria met?			**Yes**
Were the Laboratory Method Blank results all < RL?			**Yes**
Were the Field Blanks results all < RL?			**Yes**
Was the ICAL criteria met?			**Yes**
Was the CCV criteria met?			**Yes**
Was the Tuning criteria met?			**Yes**
Were the Surrogate % recoveries within laboratory determined control limits?			**Yes**
Were the Internal Standard areas within ± 50 - 150%?			**Yes**

Comments (note deviations):

Blanks	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	8260C	Concentration	MDL /RL	Qualifiers	Associated Samples
TB19-GW062420		Nondetect			
TB18-GW062420		Nondetect			
TB17-GW062420		Nondetect			
FB01-GW062420		Nondetect			

Surrogates	8260C	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8260C	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8260C	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8260C	RRF	%RSD	Qualifiers	Associated Samples
4/14/20 18:31		Acceptable	Acceptable		

CCV	8260C	RRF	%D	Limit	Qualifiers	Associated Samples
06/26/20 15:53		Acceptable	Acceptable			

Tune	8260C
	Acceptable

Internal Standards	8260C	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Semivolatile Organic Compounds 8270D (1,4-Dioxane)

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?			Yes

Comments (note deviations):

Field Duplicates	8270D	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	8270D	RPD	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8270D	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?			Yes
Were the Laboratory Method Blank results all < RL?			Yes
Were the Field Blanks results all < RL?			Yes
Was the ICAL criteria met?			Yes
Was the CCV criteria met?			Yes
Was the Tuning criteria met?			Yes
Were the Surrogate % recoveries within laboratory determined control limits?			Yes
Were the Internal Standard areas within ± 50 - 150%?			Yes

Comments (note deviations):

Blanks	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	8270D	Concentration	MDL /RL	Qualifiers	Associated Samples
FB01-GW062420		Nondetect			

Surrogates	8270D	%R	Limit	Qualifiers	Associated Samples
		Acceptable			

MS/MSD	8270D	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	8270D	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCSD1W		Acceptable			

ICAL	8270D	RRF	%RSD	Qualifiers	Associated Samples
6/03/20 14:04		Acceptable	Acceptable		

CCV	8270D	RRF	%D	Limit	Qualifiers	Associated Samples
06/26/20 12:14		Acceptable	Acceptable			

Tune	8270D
	Acceptable

Internal Standards	8270D	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
		Acceptable			

Dissolved Gases RSK-175

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			N/A
Were the Matrix Spike Duplicate RPDs ≤ 20%? (Or lab defined limits)			N/A
Laboratory Control Spike Duplicates RPD within limits?	Yes		
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?			N/A

Comments (note deviations):

Field Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

MS/MSD	RSK-175	RPD	Limit	Qualifiers	Associated Samples
N/A		Acceptable			

LCS/LCSD	RSK-175	RPD	Limits	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

Laboratory Duplicates	RSK-175	Sample	Duplicate	RPD	Qualifiers	Associated Samples
N/A						

Accuracy:	Yes	No	N/A
Was the Matrix Spike/Matrix Spike Duplicate criteria met? (frequency ≥ 5% and laboratory determined control limits)			N/A
Laboratory Control Sample criteria met?	Yes		
Were the Laboratory Method Blank results all < RL?	Yes		
Were the Field Blanks results all < RL?			N/A
Was the ICAL criteria met?	Yes		
Was the CCV criteria met?	Yes		
Was the Tuning criteria met?			N/A
Were the Surrogate % recoveries within laboratory determined control limits?			N/A
Were the Internal Standard areas within ± 50 - 150%?			N/A

Comments (note deviations):

Blanks	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
MBLK1W		Nondetect			

Field Blank	RSK-175	Concentration	MDL / RL	Qualifiers	Associated Samples
N/A					

Surrogates	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

MS/MSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
N/A					

LCS/LCSD	RSK-175	%R	Limit	Qualifiers	Associated Samples
LCS1W / LCD1W		Acceptable			

ICAL	RSK-175	RRF	%RSD	Limit	Qualifiers	Associated Samples
4/29/2020		Acceptable	Acceptable			

CCV	RSK-175	RRF	%D	Limit	Qualifiers	Associated Samples
4/29/2020 ' 2:39 pm		Acceptable	Acceptable			

Tune	RSK-175
N/A	

Internal Standards	RSK-175	Area	Area Lower / Upper Limit	Qualifiers	Associated Samples
N/A					

Metals SW 6020A / Mercury 7470A

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤50% (soils), <30% (water) or within CRQL criteria?			**N/A**
Are the laboratory duplicate RPDs ≤ 20% for (water / soil) or within CRQL criteria?			**N/A**
Are the matrix spike duplicates RPD ≤ 20%?			**Yes**
Are the laboratory control sample duplicates RPDs ≤ 20%?			**Yes**

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

MS/MSD	RPD	Qualifiers	Associated Samples
MW23C-GW062320 MS/MSD	Acceptable		

LCS / LCSD	RPD	Qualifiers	Associated Samples
	Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

Accuracy:	Yes	No	N/A
Were serial dilutions analyzed and within control limits of ±10% for waters (± for 15% for soils) or initial sample result less than 50x MDL?			**Yes**
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?			**Yes**
Was post digestion spike criteria met (if applicable)?			**Yes**
Was laboratory control sample criteria met?			**Yes**
Was laboratory blank criteria met (within control limits)?			**No**
Were ICV/CCV % recoveries within 90-110%?			**Yes**
Were the Detection Limit PQL Standards within 70-130?			**N/A**
Was the %D on form 16-IN for the initial calibration instrument response and concentration data <30%?			**N/A**
Were ICSA/ICSAB % recoveries acceptable or within CRQL criteria?			**Yes**
Was the tune %RPD <5% (Peak width < 0.75)?			**Yes**
Was internal standard criteria met?			**N/A**

Comments (note deviations):

Serial Dilution	Analyte	Initial Sample Result	%D	50 x MDL	Qualifier	Associated Samples
			Acceptable			

MS/MSD	Analyte	%R	Limits	Post Digestion	Qualifiers	Associated Samples
MW23C-GW062320 MS/MSD						
	Magensium	83 / 53	75-125	97%	None	ISR > 4xs the spike added
	Calcium	0 / -33	75-125	100%	None	ISR > 4xs the spike added

LCS/LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	Analyte	%R	Limits	Qualifier	Associated Samples
		Acceptable			

Blanks					
Prep Blank		Result	MDL/RL	Qualifier	Associated Samples
MBLK1W		Nondetect			
MBLK1W (Hg)		Nondetect			

ICBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
7/30/2020					
Associated samples: F210-01, F210-01I, F210-01J, F210-04, F210-04I, F210-05, F210-05I, F210-07, F210-07I, F210-08, F210-08I					
	Thallium	0.1	1	None	Sample results nondetect
	Lead	0.06	1	None	Sample results nondetect
7/31/2020					
Associated samples: F210-01J, F210-04N, F210-05N, F210-07N, F210-08N					
		Nondetect			
Associated samples: All samples					
	Mercury	0.015	0.5	None	Sample results nondetect

CCBs	Analyte	Result	MDL/RL	Qualifier	Associated Samples
Associated samples: F210-01, F210-01I, F210-01J, F210-01J, F210-04, F210-04I, F210-05, F210-05I, F210-07, F210-07I, F210-08, F210-08I					
CCB4 / CCB5		Nondetect			
Associated samples: F210-01J, F210-04N, F210-05N, F210-07N, F210-08N					
CCB7	Lead	0.06	1	**U-RL**	**F210-07N**
CCB8		Nondetect			
Associated samples: All samples					
CCB3 / CCB4	Mercury	-0.046 / -0.052	0.5	None	-Blank results > - RL

Field Blank	6020A	Concentration	MDL/RL	Qualifiers	Associated Samples
N/A					

ICSA/AB	Analyte - Solution A	%R	Found Sol. A / True A	RL	Qualifier	Associated Samples
		Acceptable				

PQL Standard Check	%R	Qualifiers	Associated Samples
N/A			

Internal Standards	Qualifier	Associated Samples
N/A		

Wet Chemistry Parameters

Precision:	Yes	No	N/A
Are the field duplicate relative percent differences (RPD) ≤30% (soils / water) or within CRQL criteria?			N/A
Are the laboratory duplicate RPDs ≤ 20% for water ≤35% for soils or within CRQL criteria?	Yes		
Are the matrix spike duplicates RPD ≤ 20%?			N/A
Are the laboratory control spike duplicates RPD ≤ 20%?	Yes		

Comments (note deviations):

Field Duplicates	Sample	Duplicate	RPD	Qualifier	Associated Samples
N/A					

MS/MSD	%R	Limits	RPD	Qualifiers	Associated Samples
N/A					

LCS/ LCSD	Limits	RPD	Qualifiers	Associated Samples
		Acceptable		

Laboratory Duplicate	Sample	Duplicate	RPD	Qualifiers	Associated Samples
			Acceptable		

Accuracy:	Yes	No	N/A
Was matrix spike criteria met (frequency 20% and % recovery 75-125%)?	Yes		
Was post digestion spike criteria met (if applicable)?			N/A
Was laboratory control sample criteria met?	Yes		
Was laboratory blank criteria met (within control limits)?	Yes		
Were the Field Blanks results all < RL?			N/A
Were ICV/CCV % recoveries within 90-110%?	Yes		
Was the tune %RSD <5% ?			N/A
Was internal standard criteria met?			N/A

Comments (note deviations):

MS /MSD	Analyte	%R	Limits	Qualifiers	Associated Samples
MW14D-GW062320					
	Nitrate / Nitrite	Acceptable			

LCS / LCSD	Analyte	%R	Limits	Qualifiers	Associated Samples
		Acceptable			

ICV/CCV	%R	Limits	Qualifiers	Associated Samples
	Acceptable			

Blanks	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
		Nondetect			

Field Blank	Analyte	Result	MDL/RL	Qualifiers	Associated Samples
N/A					

Tune	Analyte	%RSD	Limits	Qualifiers	Associated Samples
N/A					

Representativeness:	Yes	No	N/A
Were sampling procedures and design criteria met?	**Yes**		
Were holding times met?	**Yes**		
Was preservation criteria met? (0° C - 6° C)	**Yes**		
Were Chain-of-Custody records complete and provided in data package?	**Yes**		

Comments (note

The cooler temperatures were 3.9, 5.2 & 5.7°C

Preservation	**Cooler Temperature (Degrees C)**	**Preservation Criteria**	**Qualifiers**	**Associated Samples**
	Acceptable			

Holding Times	**Analyte**	**Days to Extraction**	**HT Criteria**	**Qualifier**	**Associated Samples**
		Acceptable			

Comparability:	Yes	No	N/A
Were analytical procedures and methods followed as defined in the QAPP or field change documentation?	**Yes**		

Comments (note deviations):

Completeness (90%):	Yes	No	N/A
Are all data in this SDG usable?	**Yes**		

Comments (note deviations):

Sensitivity:	Yes	No	N/A
Are MDLs present and reported?	**Yes**		
Do the reporting limits meet project requirements?	**Yes**		

Comments (note deviations):

Comment:

Data is usable with appropriate qualifiers applied.

Data Validator: Kristine Molloy Date: 8/8/2020

Data Reviewer: Cherie Zakowski Date: 8/11/2020

Attachment 2

Data Package Completeness Review Checklists

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F154

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		2.1°C, 2.3°C, 2.7 °C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 07/24/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F155

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		2.0 °C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 07/24/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F162

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		2.3°C, 2.7°C, 2.8°C, 3.2 °C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 07/30/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F178

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		2.3°C, 2.4°C, 2.7°C, 2.8 °C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 07/30/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F179

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		COC sample ID / bottle label ID discrepancy – laboratory contacted CDM Smith – proper sample name was assigned to the sample
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		3.7°C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 07/07/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F183

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		2.1°C, 2.3°C, 2.6°C, 2.7°C, 4.2°C, 4.5°C, 4.7°C, 5.0°C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 08/04/2020

Signature

VA SLC OU-1
Data Package Completeness Review Checklist

SDG: 20F210

Required Documentation	Yes	No	Comments
1. Cover letter complete with the following information:	X		
▪ Title of report and laboratory unique report identification (sample delivery group number)	X		
▪ Project name, site location	X		
▪ Name and location of laboratory and second-site or subcontracted laboratory	X		
▪ Client name and address	X		
▪ Statement of authenticity and official signature and title of person authorizing report release	X		
2. Summary of samples received that correlates field sample IDs with the laboratory IDs	X		
3. Laboratory qualifier flags and definitions	X		
4. Preparation and/or analytical methods	X		
5. Sample results for each analyte (dry weight basis for soils)			
▪ Date received	X		
▪ Date analyzed (and time of analysis if the holding time is less than or equal to 48 hours)	X		
▪ Percent solids results for soil samples			Not Applicable
▪ Dilution factor (provide both diluted and undiluted results when available)	X		
▪ Sample-specific reporting limit adjusted for sample size, dilution/concentration	X		
▪ Sample-specific MDL adjusted for sample size, dilution/concentration	X		
▪ Units	X		
6. Case Narrative that addresses the following information at a minimum:	X		
▪ Sample receipt discrepancies	X		
▪ Descriptions of all nonconformances in the sample receipt, handling, preparation, analytical and reporting processes and the corrective action taken in each occurrence	X		
▪ Identification and justification for sample dilution	X		
▪ Sample cooler temperature at time of receipt	X		3.9°C, 5.2°C, 5.7°C
▪ Final residual vacuum of each sample canister immediately prior to analysis, or upon receipt (Air analyses only)			Not Applicable
7. Surrogate percent recoveries (surrogate result, target concentration, percent recovery)	X		

Required Documentation	Yes	No	Comments
8. MS/MSD and LCS spike concentrations, native sample results, spiked sample results, percent recoveries, and RPDs between the MS and MSD results (associated QC limits must also be provided)	X		
9. Method blank results	X		
10. Analytical batch reference number that cross references samples to QC sample analyses	X		
11. Executed COC and sample receipt checklist	X		
12. Analytical sequence or laboratory run log that contains sufficient information to correlate samples reported in the summary results to the associated method QC information, such as initial and continuing calibration analyses	X		
13. Calibration blank results for inorganic analyses (required in hardcopy format only)	X		
14. Inductively coupled plasma (ICP) interference check sample for inorganic analyses, true and measured concentrations and percent recoveries (required in hardcopy format only)	X		
15. Reporting Limit Check Standard for metals analyses, true and measured concentrations and percent recoveries (if applicable, required in hardcopy format only)	X		
16. Post-digestion spike recoveries for metals analyses, (if applicable; required in hardcopy format only)	X		
17. Internal Standard recovery and retention time information, as applicable	X		
18. Initial calibration summary, including standard concentrations, response factors, average response factors, RSDs or correlation coefficients, and calibration plots or equations, if applicable (required in hardcopy format only)	X		
19. Continuing calibration verification summary, including expected and recovered concentrations and percent differences (required in hardcopy format only)	X		
20. Instrument tuning and mass calibration information for ICP /mass spectrometry analyses	X		
21. All associated instrument printouts for all samples, standards, and QC samples (e.g., raw data) necessary to re-calculate results as well as all manual integrations (if performed)	X		
22. Sample preparation logs that include the following information	X		
▪ Preparation start and end times (as applicable)	X		
▪ Beginning and ending temperatures of water baths and digestion blocks	X		

Data package complete and ready for Validation Cherie Zakowski Date: 08/04/2020

Signature

Attachment 3

Analytical Data Packages

EMAX
LABORATORIES, INC.®
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-24-2020
EMAX Batch No.: 20F154

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/18/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW20S-GW061720	F154-01	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW02-GW061720	F154-02	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB03-GW061720	F154-03	06/17/20	WATER	VOCS BY 8260C
TB04-GW061720	F154-04	06/17/20	WATER	VOCS BY 8260C
MW20D-GW061720	F154-05	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
FD04-GW061720	F154-06	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
TB02-GW061720	F154-07	06/17/20	WATER	VOCS BY 8260C
MW02-GW061720DUP	F154-02D	06/17/20	WATER	NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS
MW02-GW061720MS	F154-02M	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ORGANIC CARBON
MW02-GW061720MSD	F154-02S	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC TOTAL ORGANIC CARBON

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F154
PROJECT CODE:

CLIENT CDM Smith
PROJECT 700S 1600E PCE Plume
COORDINATOR Chene Zakowski
TEL 720-264-1109 FAX EMAIL zakowskic@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Suite 500
Rama Denver, CO 80201
EMAX PM ↓

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270SIM; Gases MEE / RSK-175; Metals (MW) / 6020A (Total); Chloride / 300; Sulfate / 300; Nitrate / SM 4500; Nitrite / SM 4500; Alkalinity + TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☒ 7 days
- ☐ 14 days
- ☐ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1 * 1	MW20S-GW061720		6/17/20	1102	13			GW		X X X X X X X X	
2 * 2	MW02-GW061720		6/17/20	1135	13			GW	ms/msd	X X X X X X X X	ms/msd
3 * 3	TB03-GW061720		6/17/20	1510	2			GW		X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.1	
3	2.3	
4	2.7	

SAMPLER
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Ratt	6/17/20	1700	Client 6/18/20 @ 9:20

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE
EMAX CONTROL NO. 20F154
PROJECT CODE:

CLIENT CDMSmith
PROJECT 7005 1600E PCE Plume
COORDINATOR Cherie Zakowski
TEL 720-264-1109 FAX EMAIL zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY CDMSmith
ADDRESS 555 17th St. Suite 500
Denver, CO 80201
EMAX PM Raman Soin

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270SIM; Gases MEE / RSK-175; metals / mercury / 200.7A / 7470; Chloride / sulfate / 300; nitrate / nitrite / SM 4500; Alkalinity + TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☒ 7 days
- ☐ 14 days
- ☐ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
2 * 1	MW02-GW061720	16	6/17/20	1135	26			GW	ms/msd	X X X X X X X X	ms/msd
4 * 2	TB04-GW061720		6/17/20	1515	2			GW		X	
* 3											
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

RELINQUISHED BY	Date	Time
Emma Pratt	6/17/20	1700

COURIER/AIRBILL

RECEIVED BY: FDX 6/19/2020 09:20

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.

1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. 20F154

PROJECT CODE:

CLIENT CDM Smith
PROJECT 7005 1600E PCE Plume
COORDINATOR Chene Zakowski
TEL 720-264-1109 FAX EMAIL zakowskicd@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Suite 500
Denver CO, 80202
EMAX PM Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270 SIM; Gases MEE / RSK-175; Metals (MNC) / 6010A / 7470; Chloride + Sulfate / 300; NH3N / SM 4500; Alkalinity + TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☒ 7 days
- ☐ 14 days
- ☐ 21 days

	SAMPLE ID		SAMPLING		CONTAINER			MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
LAB	CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE				
5 * 1	MW20D-GW061720		6/17/20	1140	13			GW		X X X X X X X X	
6 * 2	FD04-GW061720		6/17/20	1205	13			GW		X X X X X X X X	
7 * 3	TB02-GW061720		6/17/20	1505	2			GW		X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emmanuel	6/17/20	1700	UPS 6/19/2020 @ 9:00

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Type of Delivery	Airbill / Tracking Number	ECN 20F154
☒ Fedex ☐ UPS ☐ GSO ☐ Others	3939 7181 2010 / 3939 7181 2031	Recipient Rosie Carrillo
☐ EMAX Courier ☐ Client Delivery	3939 7181 2042	Date 6/18/2020 Time 9:00

COC INSPECTION

☐ Client Name	☐ Client PM/FC	☐ Sampler Name	☐ Sampling Date/Time	☐ Sample ID	☐ Matrix
☐ Address	☐ Tel # / Fax #	☐ Courier Signature	☐ Analysis Required	☐ Preservative (if any)	☐ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: Corrections are not initialed, dated

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.1 °C	☐ Cooler 2 _____ °C	☑ Cooler 3 2.3 °C	☑ Cooler 4 2.7 °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 192381464	*B - S/N* _____	*C - S/N* 200291756	*D - S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
5	57-69	D10		R1
6	70-82	D10		R1
1-7		D16	Cont's preserv. per label/sticker.	R1-label
2	22	D3	Label - MW02-GW 6/17/20	R1-COC
2	37	D3	Label - MW02-GW	R1-COC
3	59	D3	Sample ID - TBOL-GW 6/17/20 - 1510	R1-COC
6	70-75,80	D7	Label - 6/16/20	R1-COC 6/17

6/18/20

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: HNO_3 bottles & labels read Metals only Analyze Metals + Hg

RS 6/19/20

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in label
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in COC
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

☐ **Continue to next page.**

Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling RS / Cynthia
Date 6/18/2020 / 6/18/20

SRF Cynthia
Date 6/18/20

PM
Date 6/19/20

Raman Singh

From: Rott, Emilie A. <rottea@cdmsmith.com>
Sent: Thursday, June 18, 2020 6:12 PM
To: Raman Singh
Cc: Zakowski, Cherie; Leslie, Karla L.
Subject: RE: SLC VA Plume Sample Shipment

Hi Raman –

I forgot to mention, I checked with the project technical lead, and he would like to continue with the 21 day TAT for the samples as stated in the SOW.

Thanks,
Emma

From: Rott, Emilie A.
Sent: Thursday, June 18, 2020 7:00 PM
To: Raman Singh <RSingh@emaxlabs.com>
Cc: Zakowski, Cherie <ZakowskiCA@cdmsmith.com>; Leslie, Karla L. <lesliekl@cdmsmith.com>
Subject: RE: SLC VA Plume Sample Shipment

Hi Raman,

The sample for #6 (FD04-GW061720) is 6/17. Please adjust as such. The sample #3 should be TB03-GW061720. To clarify, there should be two bottles labeled TB03-GW061720, and two bottles TB04-GW061720. Please let me know if you have any questions.

We shipped four more coolers today with the following tracking numbers:

- 394011446653
- 394011446664
- 394011446675
- 394011446686

I have attached a scanned version of the COCs to this email as well for the samples to expect. Please let me know if you identify any discrepancies.

Thanks,
Emma

From: Raman Singh <RSingh@emaxlabs.com>
Sent: Thursday, June 18, 2020 4:10 PM
To: Rott, Emilie A. <rottea@cdmsmith.com>
Cc: Zakowski, Cherie <ZakowskiCA@cdmsmith.com>; Leslie, Karla L. <lesliekl@cdmsmith.com>
Subject: RE: SLC VA Plume Sample Shipment

Hi Emma,

Please see below for the discrepancies found for the attached SDG:

We've received the first shipment of GW samples. Attached are the COCs and SRFs for SDG 20F154. We found the following discrepancies; please let me know how to proceed:

- For minor discrepancies, we plan to follow the COC
- Please confirm Sample ID for Sample #3: COC= TB03-GW061720 vs. Label (for one vial)= TB04-GW061720
- Please confirm collection date for Sample #6 (FD04-GW061720): COC = 6/17 vs. Label 6/16

Additionally, the COCs for this SDG mark 7 day TAT. For past SDGs for GW, 14 days is always marked and 21 day TAT is noted in the SOW. Please confirm the TAT needed for these samples. (We received another SDG of GW samples (SDG 20F155) with no major discrepancies but 14 day is marked on COC.

Thanks!

Raman Singh | *Project Manager*
EMAX Laboratories, Inc.
1835 W 205th Street, Torrance, CA 90501
Tel: 310-618-8889 x 119
RSingh@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com.

Note:
EMAX will be closed for the following holidays.

Independence Day: 07/03/20

From: Rott, Emilie A. [mailto:rottea@cdmsmith.com]
Sent: Thursday, June 18, 2020 2:51 PM
To: Raman Singh <RSingh@emaxlabs.com>
Cc: Zakowski, Cherie <ZakowskiCA@cdmsmith.com>; Leslie, Karla L. <lesliekl@cdmsmith.com>
Subject: SLC VA Plume Sample Shipment

Hello –

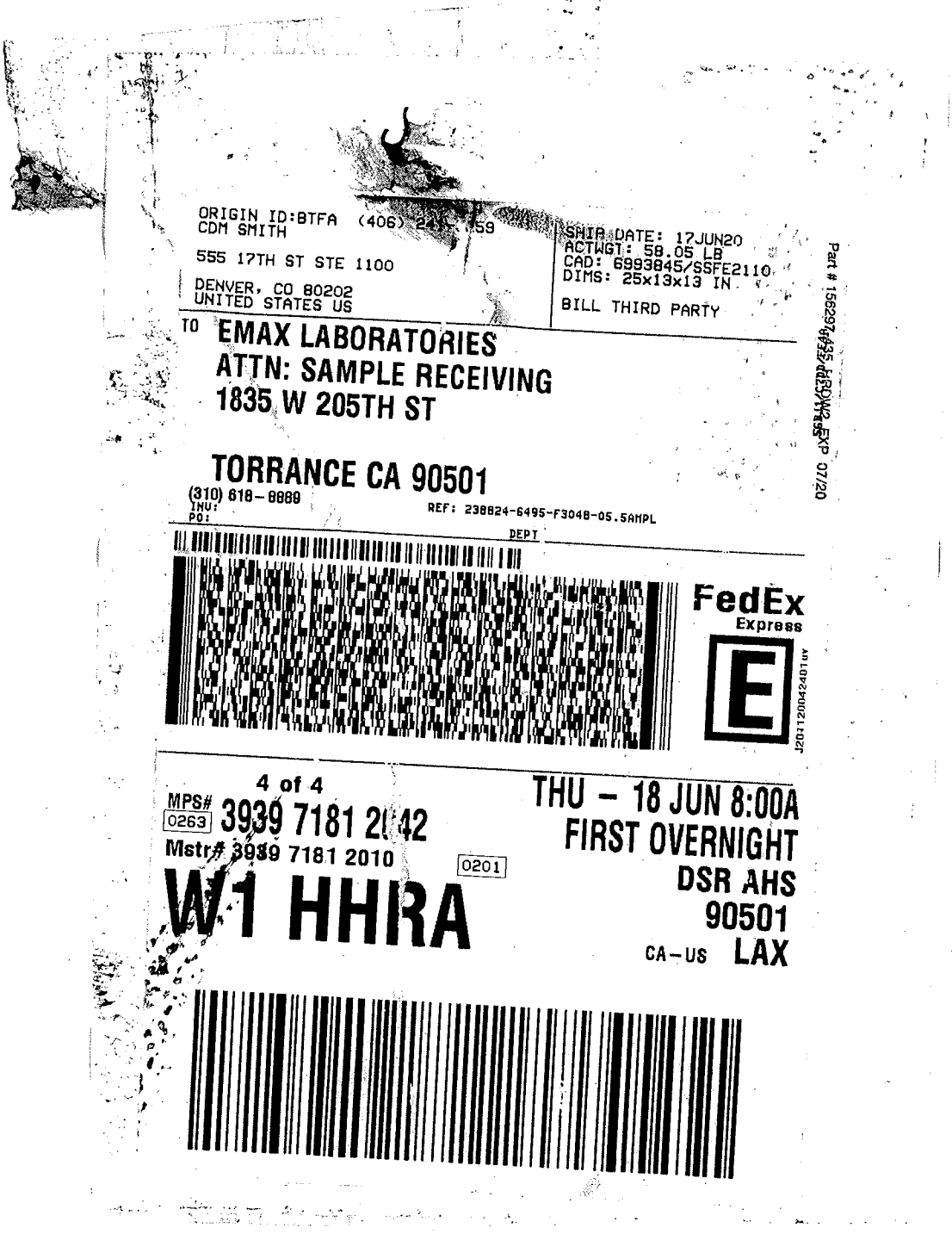
We shipped 4 coolers yesterday (6/17) for delivery today with the following tracking numbers:

- 393971812010
- 393971812020
- 393971812031
- 393971812042

Please see the attached COCs. Please let me know if you see any discrepancies or have any questions.

Thanks!

Emma Rott
CDM Smith
555 17th St., Suite 500, Denver, CO 80202
Office: 303.383.2438
Cell: 406.241.3259
rottea@cdmsmith.com



ORIGIN ID:BTFA (406) 24[illegible]59
CDM SMITH

555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 17JUN20
ACTWGT: 58.05 LB
CAD: 6993845/SSFE2110
DIMS: 25x13x13 IN

BILL THIRD PARTY

Part # 156297-6435-[illegible] EXP 07/20

TO EMAX LABORATORIES
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8888

INV:
PO:

REF: 238824-6495-F3048-05.SAMPL

DEPT

FedEx Express

J2011200424011uv

4 of 4

MPS# 0263 3939 7181 2[illegible]42

Mstr# 3939 7181 2010

0201

W1 HHRA

THU - 18 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US LAX

2.7

2.1 Sealed

Cooler 1

ORIGIN ID:BTFA (406) 241-3259
CDM SMITH

555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 17JUN20
ACTWGT: 57.45 LB
CAD: 6993845/SSFE2110
DIMS: 25x13x13 IN

BILL THIRD PARTY

Part # 156297-435 REV12 EXP 07/20

TO EMAX LABORATORIES
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF: 238824-6495-F3048-05.SAMPL
INV:
PO: DEPT:

FedEx Express

J201120042401uu

1 of 4

TRK# 0201 3939 7181 2010

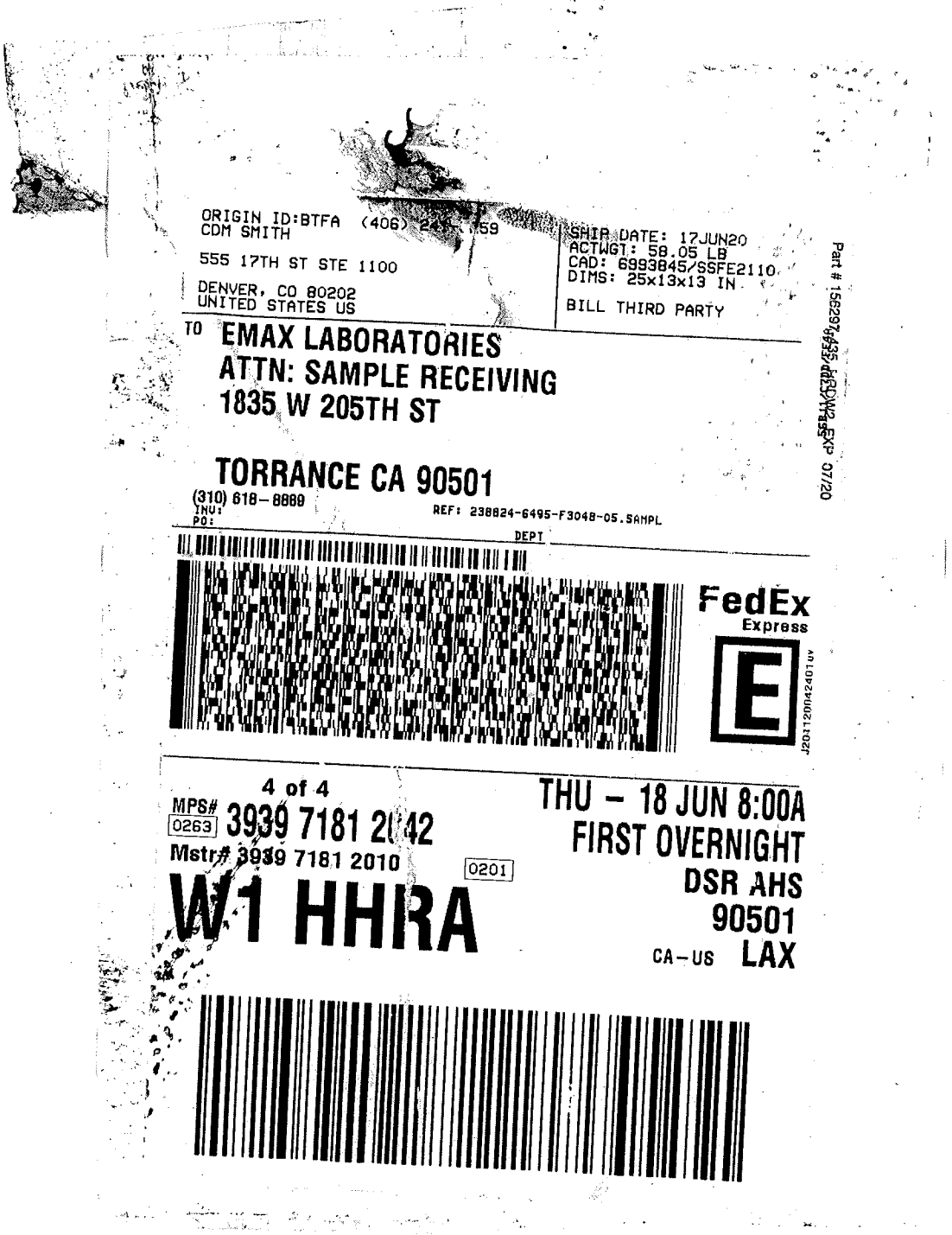
MASTER

W1 HHRA

THU - 18 JUN 8:00A
FIRST OVERNIGHT
DSF AHS
90501
CA-US LAX

[redacted]

[redacted]


ORIGIN ID:BTFA (406) 24[illegible]59
CDM SMITH
555 17TH ST STE 1100
DENVER, CO 80202
UNITED STATES US
SHIP DATE: 17JUN20
ACTWGT: 58.05 LB
CAD: 6993845/SSFE2110
DIMS: 25x13x13 IN
BILL THIRD PARTY
TO EMAX LABORATORIES
ATTN: SAMPLE RECEIVING
1835 W 205TH ST
TORRANCE CA 90501
(310) 618-8889
INV:
PO:
REF: 238824-6495-F3048-05.SAMPL
DEPT
FedEx
Express
4 of 4
MPS# 0263 3939 7181 2042
Mstr# 3939 7181 2010
0201
W1 HHRA
THU - 18 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US LAX
Part # 158297-6435-FRONTEX 07/20

2.7

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F154

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of seven(7) water samples were received on 06/18/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.
Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. VOF3F15B and VOF3F17B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. VOF3F15L/VOF3F15C and VOF3F17L/VOF3F17C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following was noted: F154-02M/F154-02S - Percent recovery for Tetrachloroethene(19X) was not within MS/MSD QC limits. The enclosed value(#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F154
Instrument ID : F3

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VOF3F15B	1	NA	06/18/2010:41	06/18/2010:41	RFR329	RDR007	VOF3F15	Method Blank
LCS1W	VOF3F15L	1	NA	06/18/2009:12	06/18/2009:12	RFR326	RDR007	VOF3F15	Lab Control Sample (LCS)
LCD1W	VOF3F15C	1	NA	06/18/2009:42	06/18/2009:42	RFR327	RDR007	VOF3F15	LCS Duplicate
TB03-GW061720	F154-03	1	NA	06/18/2014:34	06/18/2014:34	RFR337	RDR007	VOF3F15	Field Sample
TB04-GW061720	F154-04	1	NA	06/18/2015:03	06/18/2015:03	RFR338	RDR007	VOF3F15	Field Sample
TB02-GW061720	F154-07	1	NA	06/18/2015:32	06/18/2015:32	RFR339	RDR007	VOF3F15	Field Sample
MW20S-GW061720	F154-01	1	NA	06/18/2016:01	06/18/2016:01	RFR340	RDR007	VOF3F15	Field Sample
MW20D-GW061720	F154-05	1	NA	06/18/2016:30	06/18/2016:30	RFR341	RDR007	VOF3F15	Field Sample
FD04-GW061720	F154-06	1	NA	06/18/2016:59	06/18/2016:59	RFR342	RDR007	VOF3F15	Field Sample
MBLK2W	VOF3F17B	1	NA	06/22/2010:41	06/22/2010:41	RFR383	RDR007	VOF3F17	Method Blank
LCS2W	VOF3F17L	1	NA	06/22/2009:13	06/22/2009:13	RFR380	RDR007	VOF3F17	Lab Control Sample (LCS)
LCD2W	VOF3F17C	1	NA	06/22/2009:42	06/22/2009:42	RFR381	RDR007	VOF3F17	LCS Duplicate
MW02-GW061720DL	F154-02I	25	NA	06/22/2017:27	06/22/2017:27	RFR397	RDR007	VOF3F17	Diluted Sample
MW02-GW061720	F154-02N	1	NA	06/22/2017:56	06/22/2017:56	RFR398	RDR007	VOF3F17	Field Sample
MW02-GW061720MS	F154-02M	1	NA	06/22/2018:26	06/22/2018:26	RFR399	RDR007	VOF3F17	Matrix Spike Sample (MS)
MW02-GW061720MSD	F154-02S	1	NA	06/22/2018:55	06/22/2018:55	RFR400	RDR007	VOF3F17	MS Duplicate (MSD)

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected	: 06/17/20
Project	: VA SALT LAKE CITY	Date Received	: 06/18/20
Batch No.	: 20F154	Date Extracted	: 06/18/20 16:01
Sample ID	: MW20S-GW061720	Date Analyzed	: 06/18/20 16:01
Lab Samp ID	: F154-01	Dilution Factor	: 1
Lab File ID	: RFR340	Matrix	: WATER
Ext Btch ID	: VOF3F15	% Moisture	: NA
Calib. Ref.	: RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.14J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.5	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	3.9	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	10.5	10.00	105	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR340.D Vial: 17
Acq On : 18 Jun 2020 4:01 pm Operator: ENguye/ODinh
Sample : 20F154-01 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:32 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

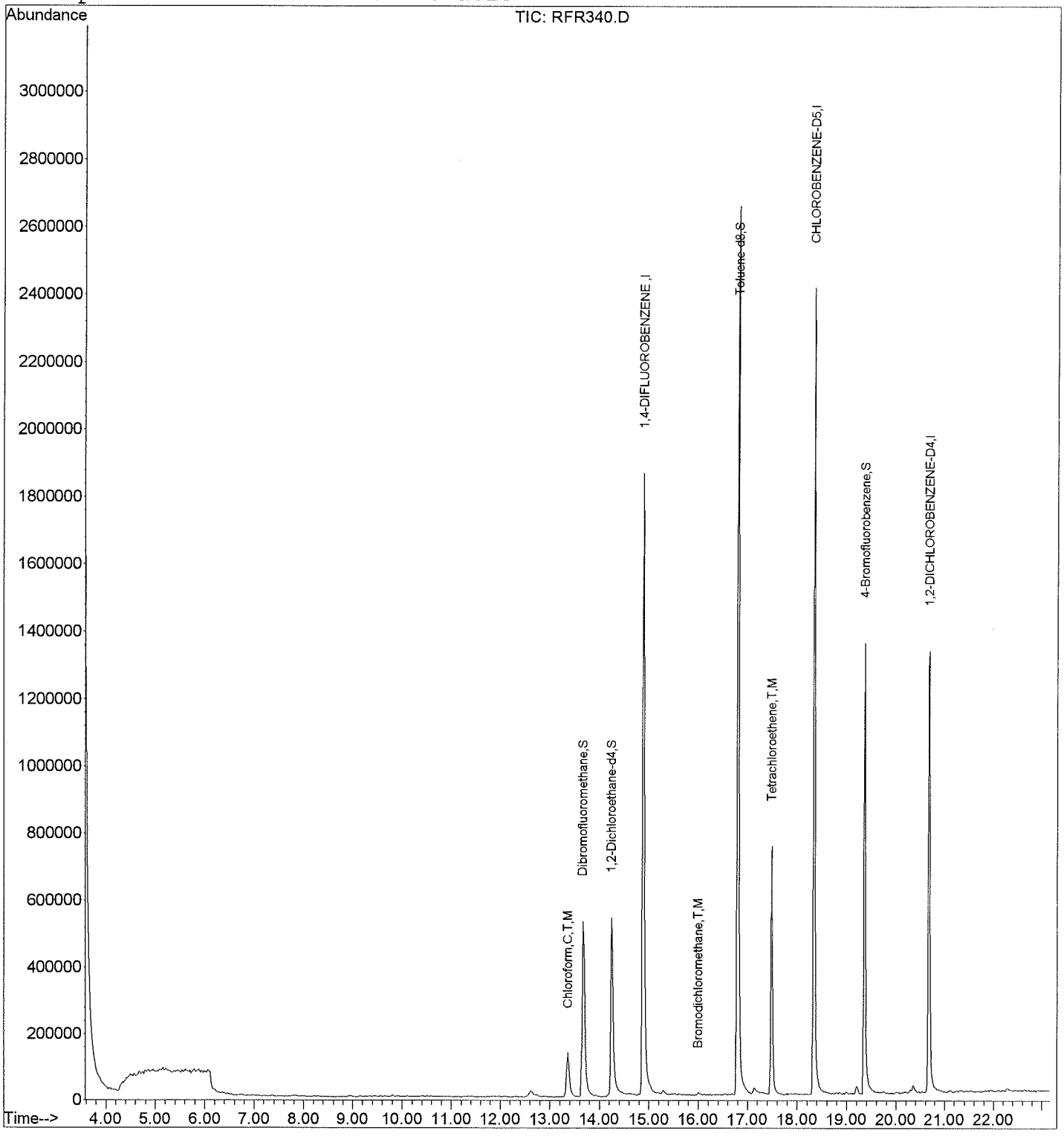
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2000511	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1501821	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	474812	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	732379	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%		
40) 1,2-Dichloroethane-d4	14.24	65	619795	10.63	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.30%		
55) Toluene-d8	16.80	98	2173200	10.45	ug/l	0.02
Spiked Amount 10.000			Recovery =	104.50%		
75) 4-Bromofluorobenzene	19.36	95	628147	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.60%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	202859	1.49	ug/l	98
50) Bromodichloromethane	16.00	83	11217	0.14	ug/l	83
60) Tetrachloroethene	17.48	164	201661	3.94	ug/l	97

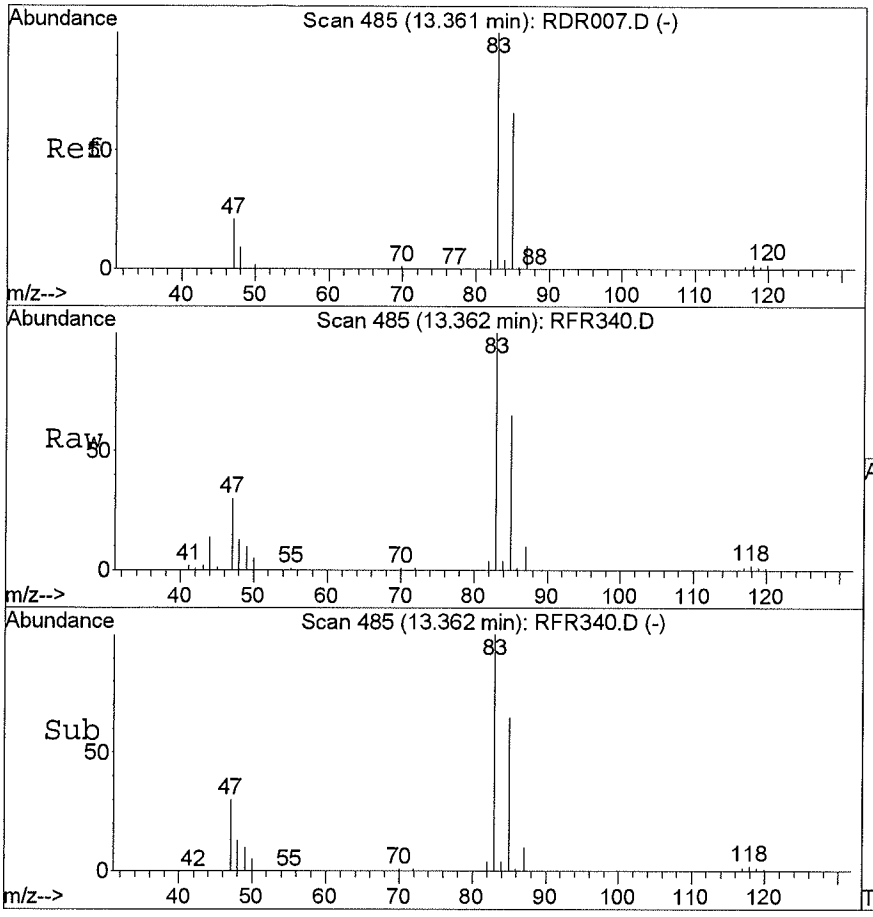
(#) = qualifier out of range (m) = manual integration
RFR340.D VOF3D02.M Tue Jun 23 09:32:35 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR340.D Vial: 17
Acq On : 18 Jun 2020 4:01 pm Operator: ENguye/ODinh
Sample : 20F154-01 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:32 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

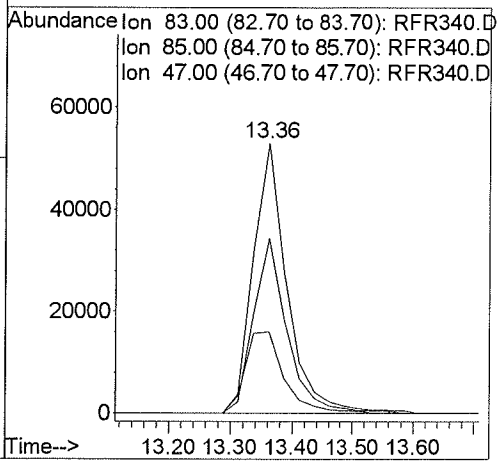


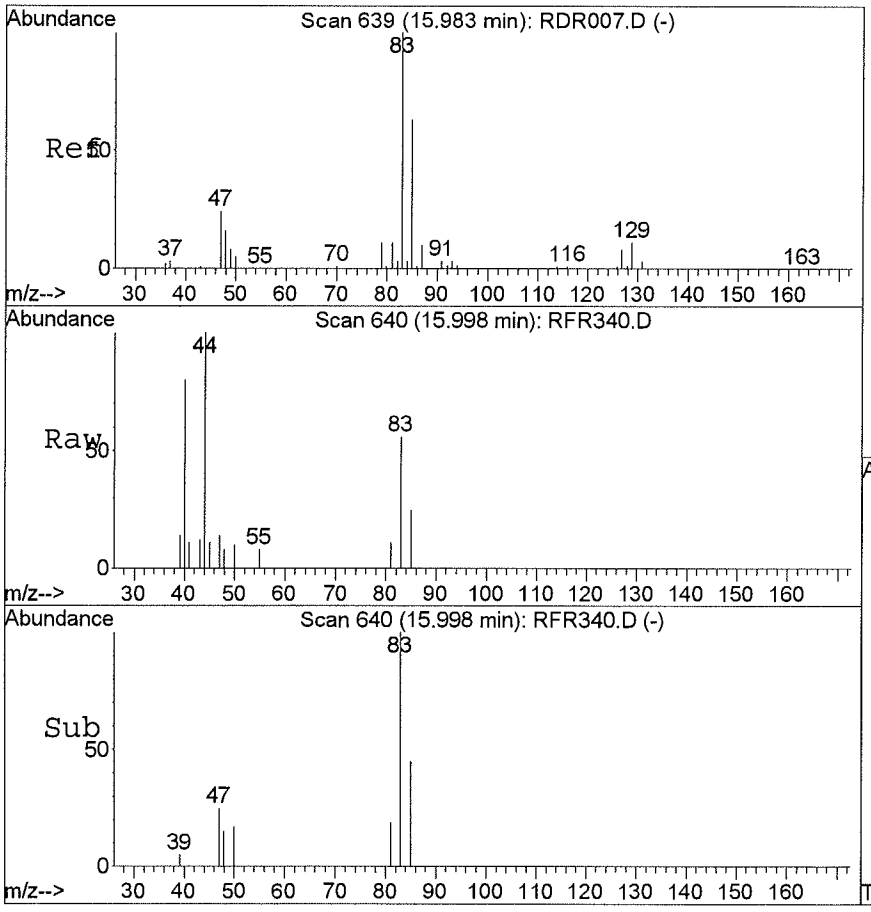


#33
Chloroform
Concen: 1.49 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR340.D
Acq: 18 Jun 2020 4:01 pm

Tgt Ion: 83 Resp: 202859

Ion	Ratio	Lower	Upper
83	100		
85	64.8	35.0	95.0
47	35.0	1.2	61.2

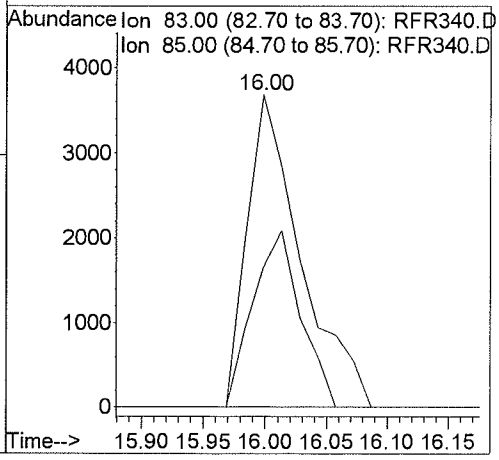


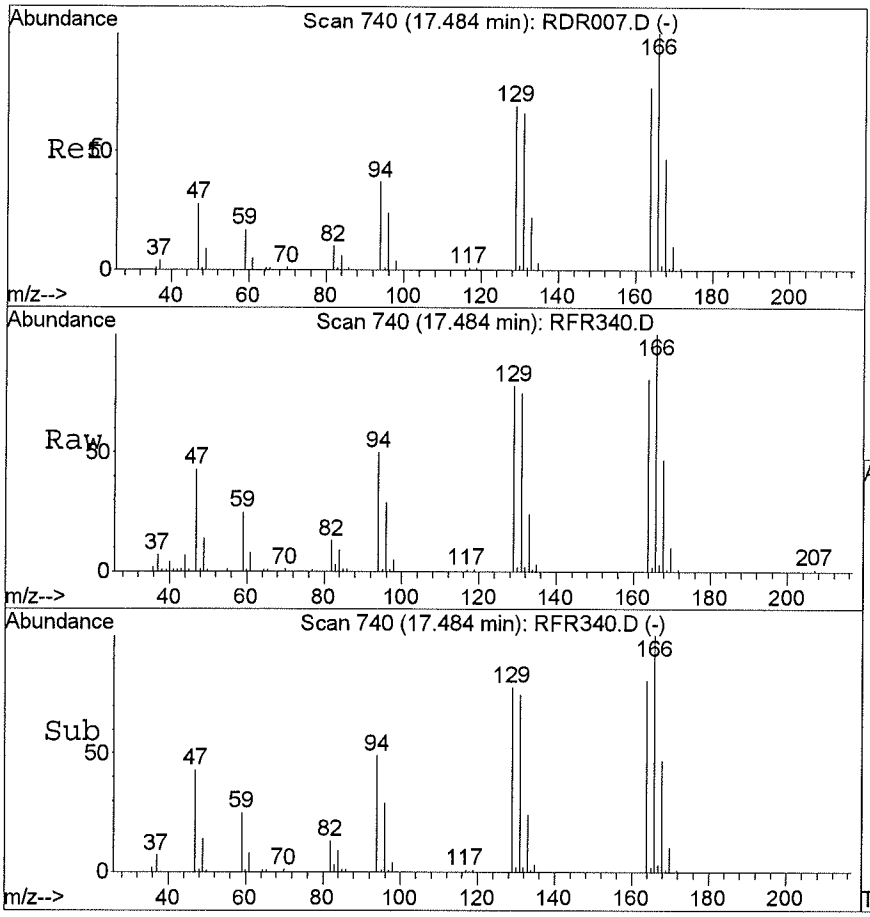


#50
Bromodichloromethane
Concen: 0.14 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.02 min
Lab File: RFR340.D
Acq: 18 Jun 2020 4:01 pm

Tgt Ion: 83 Resp: 11217

Ion	Ratio	Lower	Upper
83	100		
85	50.4	33.6	93.6

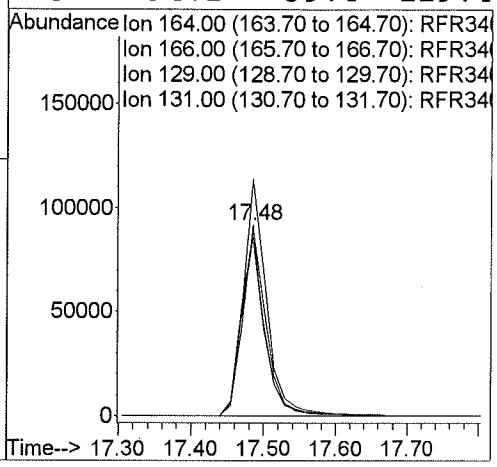




#60
Tetrachloroethene
Concen: 3.94 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR340.D
Acq: 18 Jun 2020 4:01 pm

Tgt Ion:164 Resp: 201661

Ion	Ratio	Lower	Upper
164	100		
166	126.0	97.7	157.7
129	98.5	64.5	124.5
131	94.2	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/22/20 17:56 # 06/22/20 17:27
Sample ID	: MW02-GW061720	Date Analyzed:	06/22/20 17:56 # 06/22/20 17:27
Lab Samp ID	: F154-02N #F154-02I	Dilution Factor:	1 # 25
Lab File ID	: RFR398 #RFR397	Matrix	: WATER
Ext Btch ID	: VOF3F17 #VOF3F17	% Moisture	: NA
Calib. Ref.	: RDR007 #RDR007	Instrument ID	: F3

	PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
	1,1,1-TRICHLOROETHANE	ND	1.0	0.10
	1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
	1,1,2-TRICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHENE	ND	1.0	0.10
	1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
	1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
	1,2-DICHLOROBENZENE	ND	1.0	0.10
	1,2-DICHLOROETHANE	ND	1.0	0.10
	1,2-DICHLOROPROPANE	ND	1.0	0.10
	1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
	1,3-DICHLOROBENZENE	ND	1.0	0.11
	1,4-DICHLOROBENZENE	ND	1.0	0.10
	2-BUTANONE	ND	20	2.5
	2-HEXANONE	ND	20	2.5
	ACETONE	ND	20	2.5
	BENZENE	ND	1.0	0.10
	BROMOCHLOROMETHANE	ND	1.0	0.11
	BROMODICHLOROMETHANE	0.38J	1.0	0.10
	BROMOFORM	ND	1.0	0.15
	BROMOMETHANE	ND	1.0	0.16
	CARBON DISULFIDE	ND	1.0	0.25
	CARBON TETRACHLORIDE	ND	1.0	0.10
	CHLOROBENZENE	ND	1.0	0.10
	CHLOROETHANE	ND	1.0	0.27
	CHLOROFORM	4.0	1.0	0.10
	CHLOROMETHANE	ND	1.0	0.15
	CIS-1,2-DICHLOROETHYLENE	0.39J	1.0	0.10
	DIBROMOCHLOROMETHANE	ND	1.0	0.10
	DICHLORODIFLUOROMETHANE	ND	1.0	0.15
	ETHYLBENZENE	ND	1.0	0.10
	ISOPROPYLBENZENE	ND	1.0	0.10
	M,P-XYLENE	ND	2.0	0.21
	4-METHYL-2-PENTANONE	ND	20	2.5
	METHYLENE CHLORIDE	ND	2.0	0.50
	TERT-BUTYL METHYL ETHER	ND	1.0	0.13
	O-XYLENE	ND	1.0	0.10
	STYRENE	ND	1.0	0.25
#	TETRACHLOROETHENE	190	25	3.8
	TOLUENE	ND	1.0	0.10
	TRANS-1,2-DCE	ND	1.0	0.10
	CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
	TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
	TCE	0.56J	1.0	0.10
	TRICHLOROFLUOROMETHANE	ND	1.0	0.15
	VINYL CHLORIDE	ND	1.0	0.12
	1,2-DIBROMOETHANE	ND	1.0	0.10
	VINYL ACETATE	ND	2.0	0.25
	TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
	METHYL ACETATE	ND	2.0	0.25

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
	BROMOFLUOROBENZENE	11.5	10.00	115	70-130
	TOLUENE-D8	10.1	10.00	101	70-130
	DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130
#	1,2-DICHLOROETHANE-D4	257	250.0	103	70-130
#	BROMOFLUOROBENZENE	277	250.0	111	70-130
#	TOLUENE-D8	246	250.0	98.5	70-130
#	DIBROMOFLUOROMETHANE	251	250.0	100	70-130

Members of the Associated File

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/22/20 17:56
Sample ID: MW02-GW061720	Date Analyzed: 06/22/20 17:56
Lab Samp ID: F154-02N	Dilution Factor: 1
Lab File ID: RFR398	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.38J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.0	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.39J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	200E	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.56J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	11.5	10.00	115	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR398.D Vial: 21
Acq On : 22 Jun 2020 5:56 pm Operator: ENguye/ODinh
Sample : 20F154-02N 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:24 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

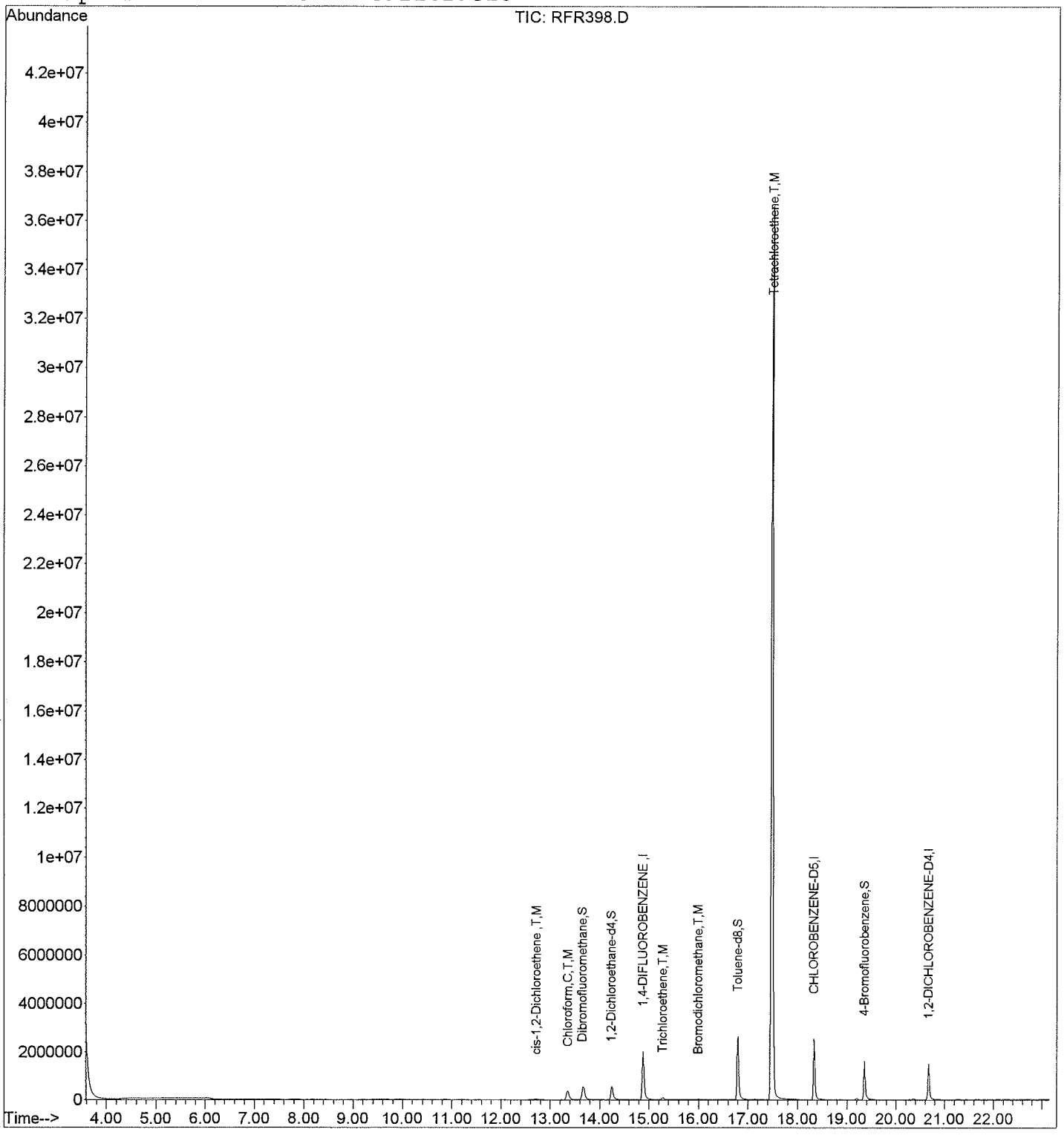
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2168807	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1639141	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	529522	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	781515	10.18	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.80%		
40) 1,2-Dichloroethane-d4	14.24	65	645455	10.21	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.10%		
55) Toluene-d8	16.80	98	2292715	10.10	ug/l	0.02
Spiked Amount 10.000			Recovery =	101.00%		
75) 4-Bromofluorobenzene	19.36	95	764795	11.53	ug/l	0.00
Spiked Amount 10.000			Recovery =	115.30%		
Target Compounds						Qvalue
28) cis-1,2-Dichloroethene	12.72	96	34211	0.39	ug/l	92
33) Chloroform	13.36	83	588017	3.99	ug/l	98
45) Trichloroethene	15.28	130	44979	0.56	ug/l	95
50) Bromodichloromethane	16.00	83	33733	0.38	ug/l	98
60) Tetrachloroethene	17.48	164	11356897	203.22	ug/l E	98

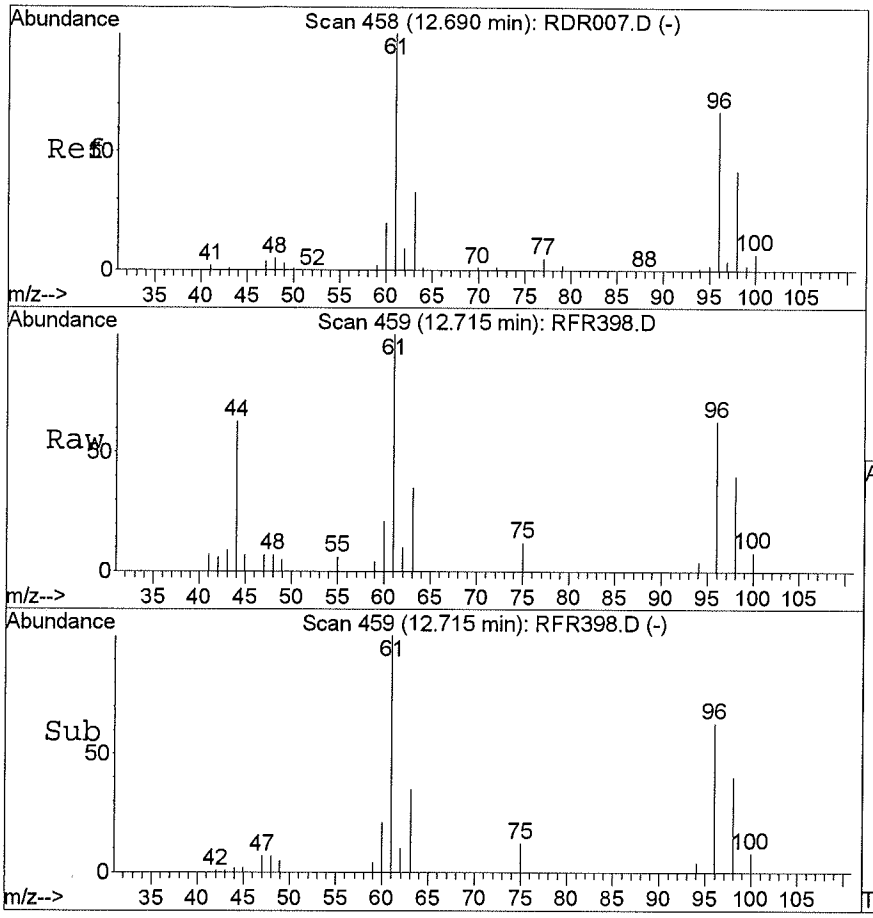
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR398.D Vial: 21
Acq On : 22 Jun 2020 5:56 pm Operator: ENguye/ODinh
Sample : 20F154-02N 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:24 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

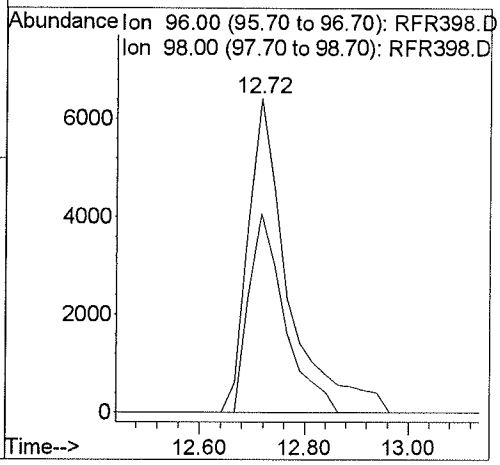


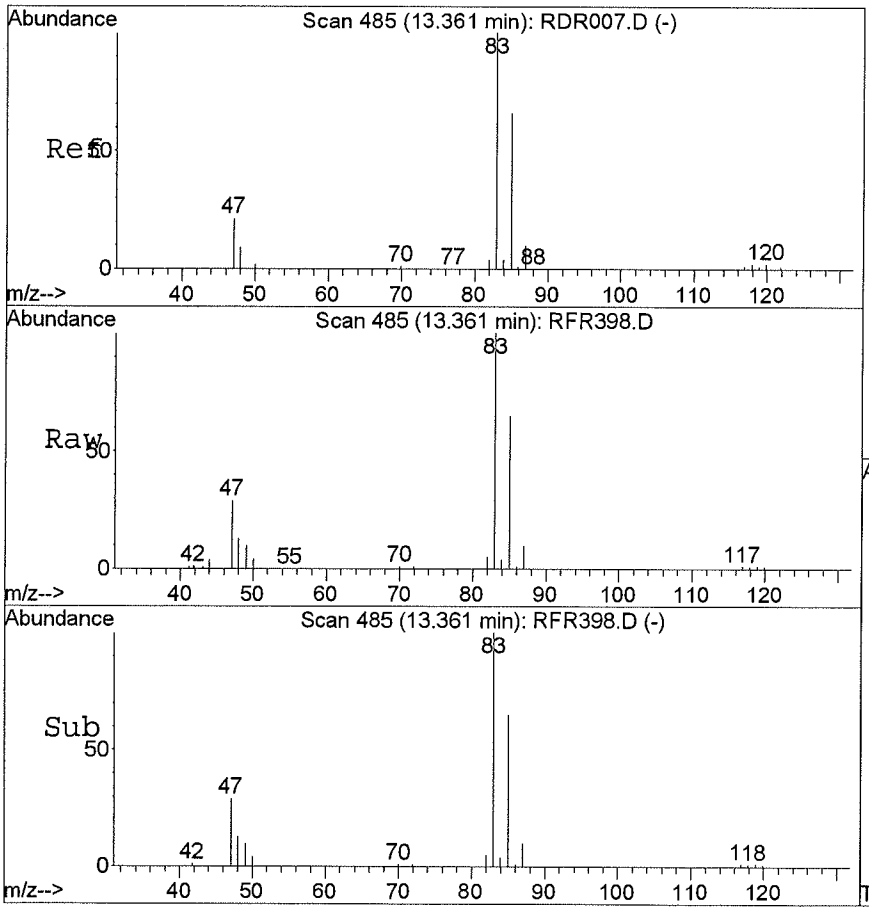


#28
cis-1,2-Dichloroethene
Concen: 0.39 ug/l
RT: 12.72 min Scan# 459
Delta R.T. 0.03 min
Lab File: RFR398.D
Acq: 22 Jun 2020 5:56 pm

Tgt Ion: 96 Resp: 34211

Ion	Ratio	Lower	Upper
96	100		
98	56.6	33.2	93.2

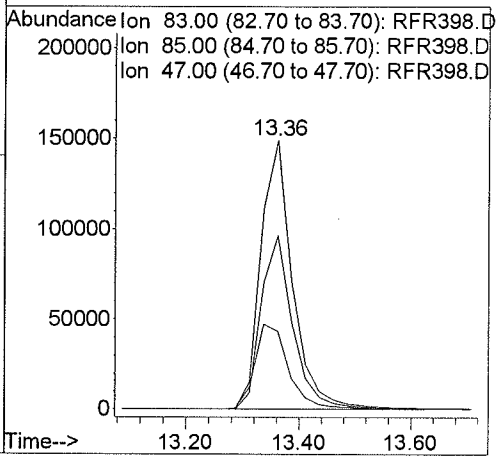


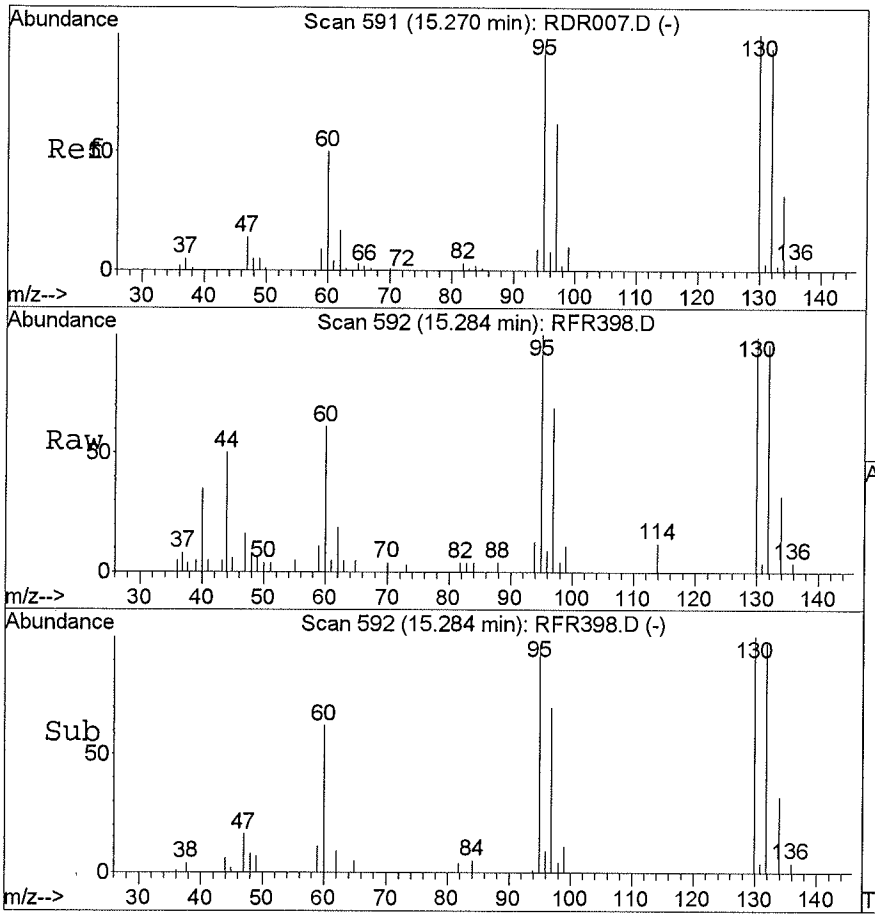


#33
Chloroform
Concen: 3.99 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR398.D
Acq: 22 Jun 2020 5:56 pm

Tgt Ion: 83 Resp: 588017

Ion	Ratio	Lower	Upper
83	100		
85	65.2	35.0	95.0
47	34.1	1.2	61.2

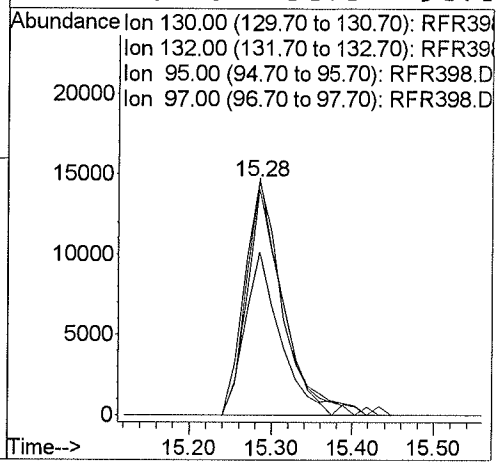


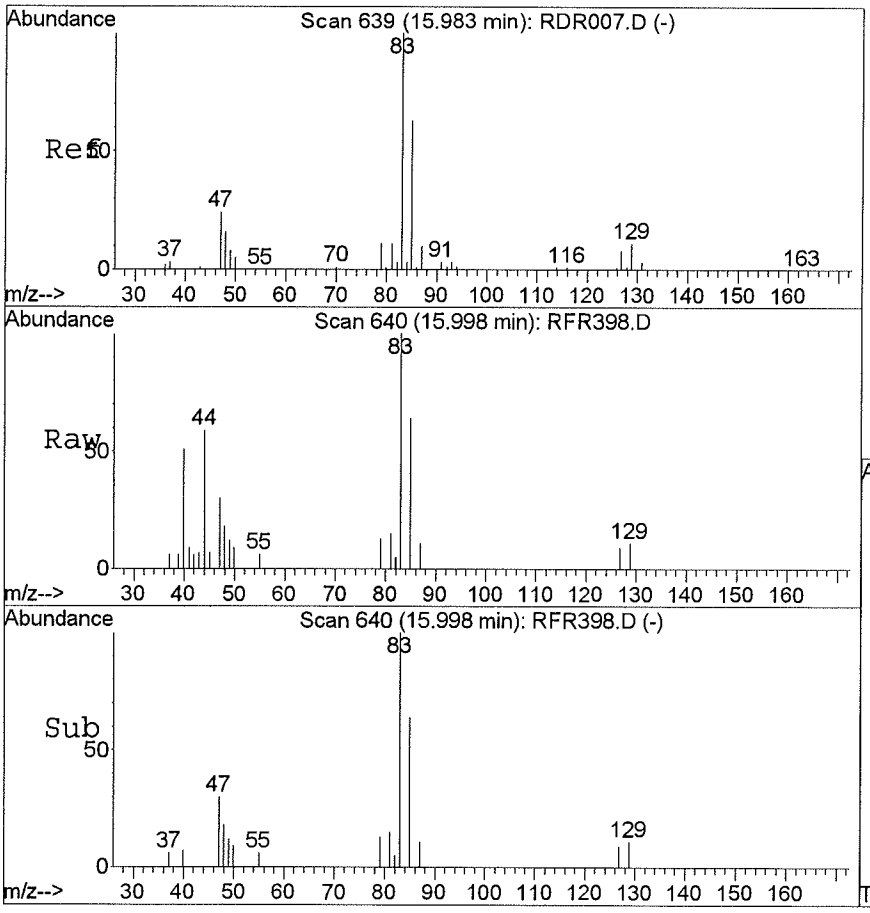


#45
Trichloroethene
Concen: 0.56 ug/l
RT: 15.28 min Scan# 592
Delta R.T. 0.01 min
Lab File: RFR398.D
Acq: 22 Jun 2020 5:56 pm

Tgt Ion:130 Resp: 44979

Ion	Ratio	Lower	Upper
130	100		
132	98.1	64.1	124.1
95	106.3	70.1	130.1
97	67.0	34.4	94.4

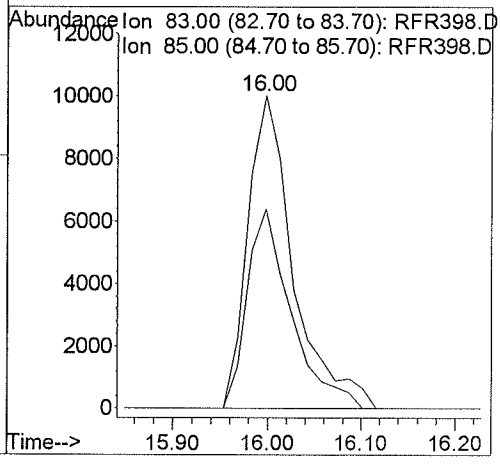


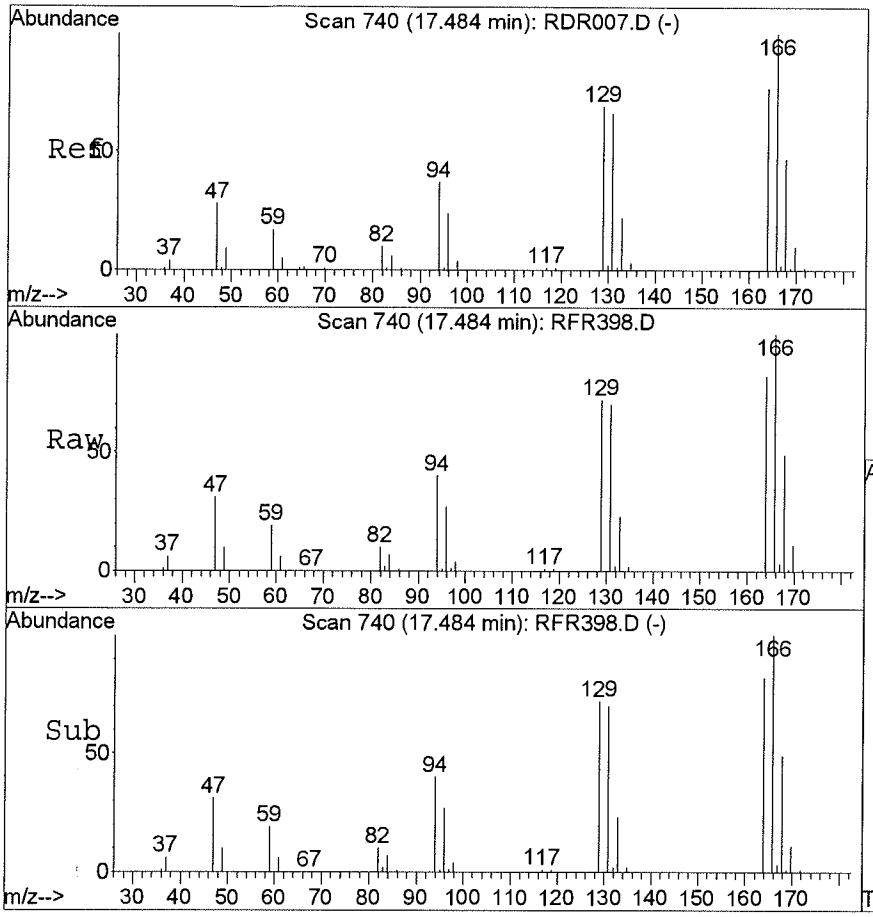


#50
Bromodichloromethane
Concen: 0.38 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.01 min
Lab File: RFR398.D
Acq: 22 Jun 2020 5:56 pm

Tgt Ion: 83 Resp: 33733

Ion	Ratio	Lower	Upper
83	100		
85	61.9	33.6	93.6

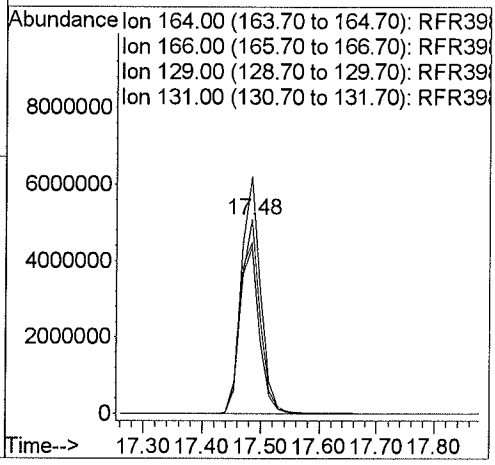




#60
Tetrachloroethene
Concen: 203.22 ug/l
RT: 17.48 min Scan# 740
Delta R.T. -0.00 min
Lab File: RFR398.D
Acq: 22 Jun 2020 5:56 pm

Tgt Ion:164 Resp:11356897

Ion	Ratio	Lower	Upper
164	100		
166	124.5	97.7	157.7
129	93.0	64.5	124.5
131	89.6	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/22/20 17:27
Sample ID:	MW02-GW061720DL	Date Analyzed:	06/22/20 17:27
Lab Samp ID:	F154-02I	Dilution Factor:	25
Lab File ID:	RFR397	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	2.5
1,1,2,2-TETRACHLOROETHANE	ND	25	2.8
1,1,2-TRICHLOROETHANE	ND	25	2.5
1,1-DICHLOROETHANE	ND	25	2.5
1,1-DICHLOROETHENE	ND	25	2.5
1,2,3-TRICHLOROBENZENE	ND	25	3.8
1,2,4-TRICHLOROBENZENE	ND	25	3.8
1,2,4-TRIMETHYLBENZENE	ND	25	2.7
1,2-DIBROMO-3-CHLOROPROPANE	ND	50	6.2
1,2-DICHLOROBENZENE	ND	25	2.5
1,2-DICHLOROETHANE	ND	25	2.5
1,2-DICHLOROPROPANE	ND	25	2.5
1,3,5-TRIMETHYLBENZENE	ND	25	3.1
1,3-DICHLOROBENZENE	ND	25	2.7
1,4-DICHLOROBENZENE	ND	25	2.5
2-BUTANONE	ND	500	62
2-HEXANONE	ND	500	62
ACETONE	ND	500	62
BENZENE	ND	25	2.5
BROMOCHLOROMETHANE	ND	25	2.8
BROMODICHLOROMETHANE	ND	25	2.5
BROMOFORM	ND	25	3.8
BROMOMETHANE	ND	25	4.1
CARBON DISULFIDE	ND	25	6.2
CARBON TETRACHLORIDE	ND	25	2.5
CHLOROBENZENE	ND	25	2.5
CHLOROETHANE	ND	25	6.7
CHLOROFORM	4.7J	25	2.5
CHLOROMETHANE	ND	25	3.8
CIS-1,2-DICHLOROETHYLENE	ND	25	2.5
DIBROMOCHLOROMETHANE	ND	25	2.5
DICHLORODIFLUOROMETHANE	ND	25	3.8
ETHYLBENZENE	ND	25	2.5
ISOPROPYLBENZENE	ND	25	2.5
M,P-XYLENE	ND	50	5.3
4-METHYL-2-PENTANONE	ND	500	62
METHYLENE CHLORIDE	ND	50	12
TERT-BUTYL METHYL ETHER	ND	25	3.3
O-XYLENE	ND	25	2.5
STYRENE	ND	25	6.2
TETRACHLOROETHENE	190	25	3.8
TOLUENE	ND	25	2.5
TRANS-1,2-DCE	ND	25	2.5
CIS-1,3-DICHLOROPROPENE	ND	25	2.5
TRANS-1,3-DICHLOROPROPENE	ND	25	2.8
TCE	ND	25	2.5
TRICHLOROFLUOROMETHANE	ND	25	3.8
VINYL CHLORIDE	ND	25	2.9
1,2-DIBROMOETHANE	ND	25	2.6
VINYL ACETATE	ND	50	6.2
TRICHLOROTRIFLUOROETHANE	ND	25	3.8
METHYL ACETATE	ND	50	6.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	257	250.0	103	70-130
BROMOFLUOROBENZENE	277	250.0	111	70-130
TOLUENE-D8	246	250.0	98.5	70-130
DIBROMOFLUOROMETHANE	251	250.0	100	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR397.D Vial: 20
Acq On : 22 Jun 2020 5:27 pm Operator: ENguye/ODinh
Sample : 20F154-02I 1ml Inst : F3
Misc : DF = 25 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:19 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2081729	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1633462	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	500657	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	739240	10.03	ug/l	0.00
Spiked Amount 10.000			Recovery = 100.30%			
40) 1,2-Dichloroethane-d4	14.25	65	623325	10.27	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.70%			
55) Toluene-d8	16.80	98	2227494	9.85	ug/l	0.02
Spiked Amount 10.000			Recovery = 98.50%			
75) 4-Bromofluorobenzene	19.36	95	695783	11.09	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.90%			
Target Compounds						Qvalue
33) Chloroform	13.36	83	26763	0.19	ug/l	98
60) Tetrachloroethene	17.48	164	431514	7.75	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFR397.D VOF3D02.M Tue Jun 23 09:26:48 2020 Page 1

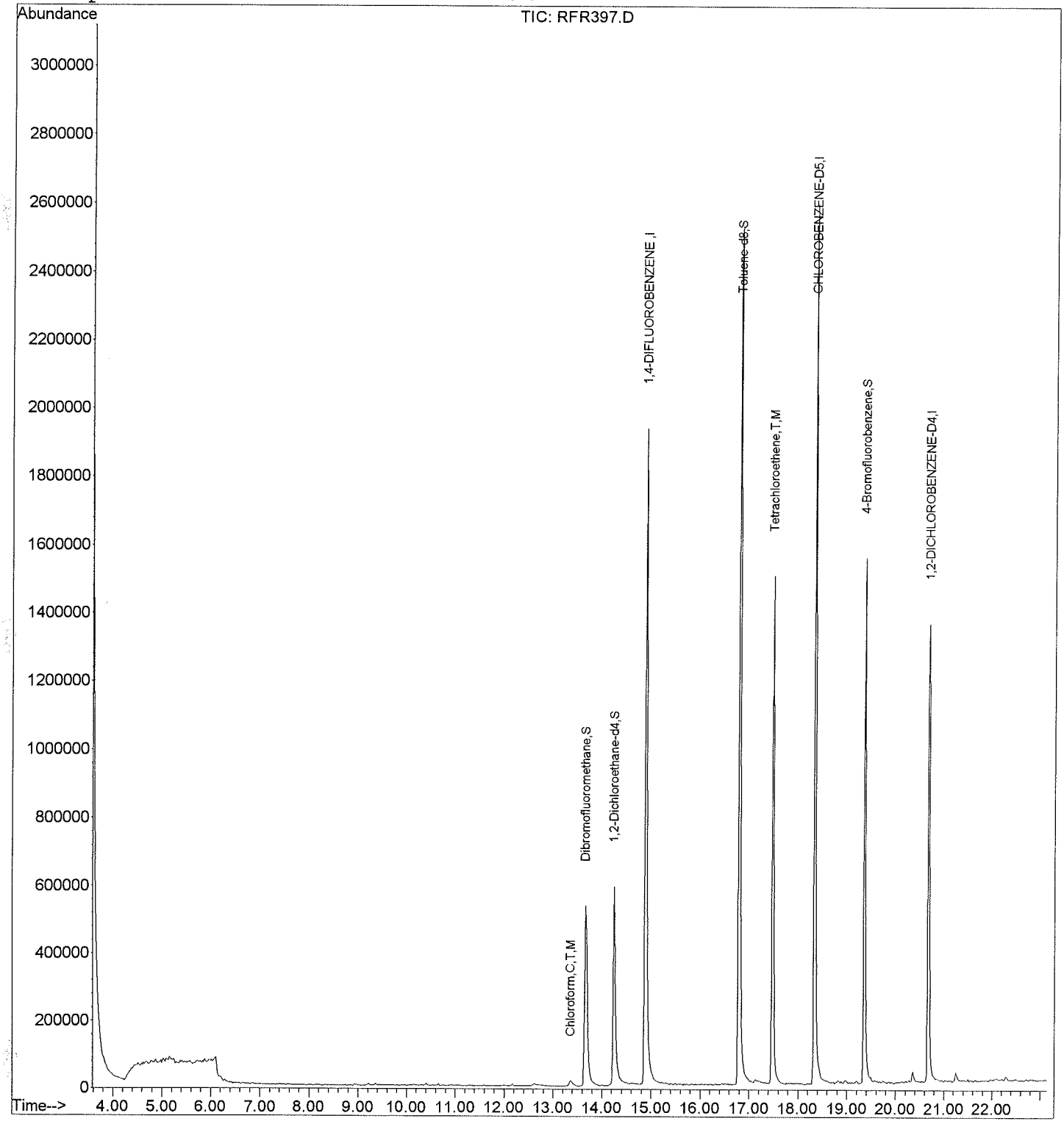
Quantitation Report

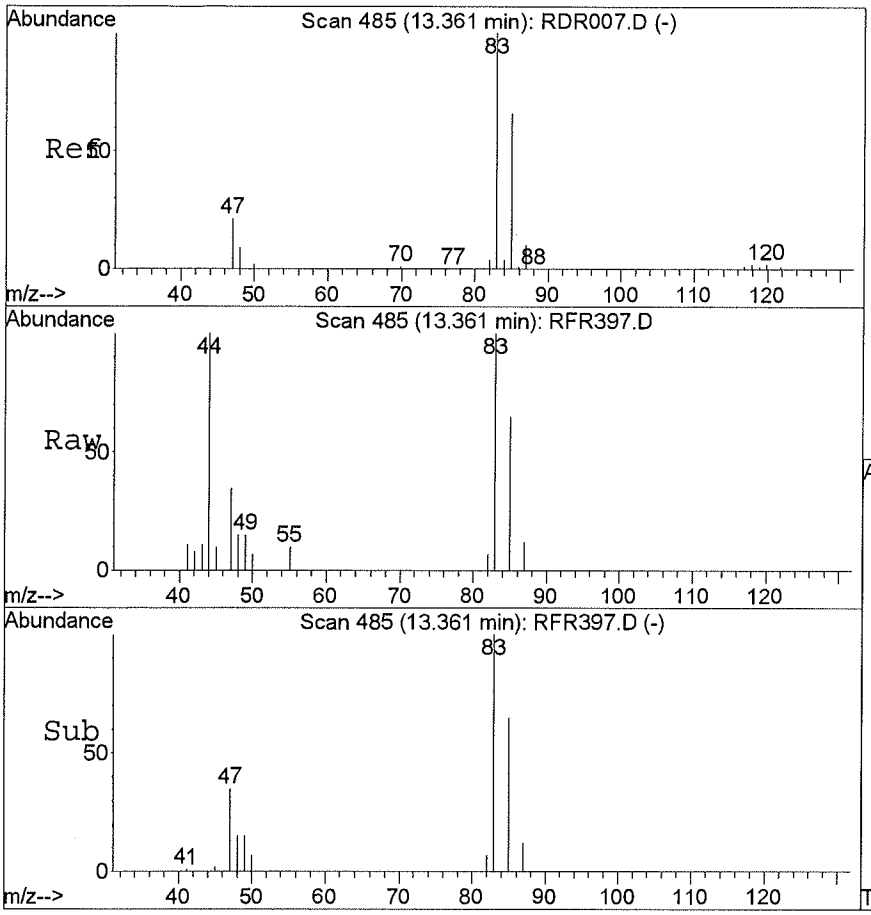
Data File : C:\HPCHEM\1\DATA\20F22\RFR397.D
Acq On : 22 Jun 2020 5:27 pm
Sample : 20F154-02I 1ml
Misc : DF = 25
MS Integration Params: RTE.P
Quant Time: Jun 23 9:19 2020

Vial: 20
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

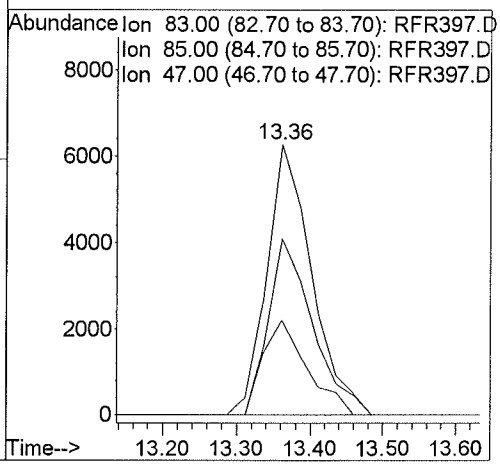


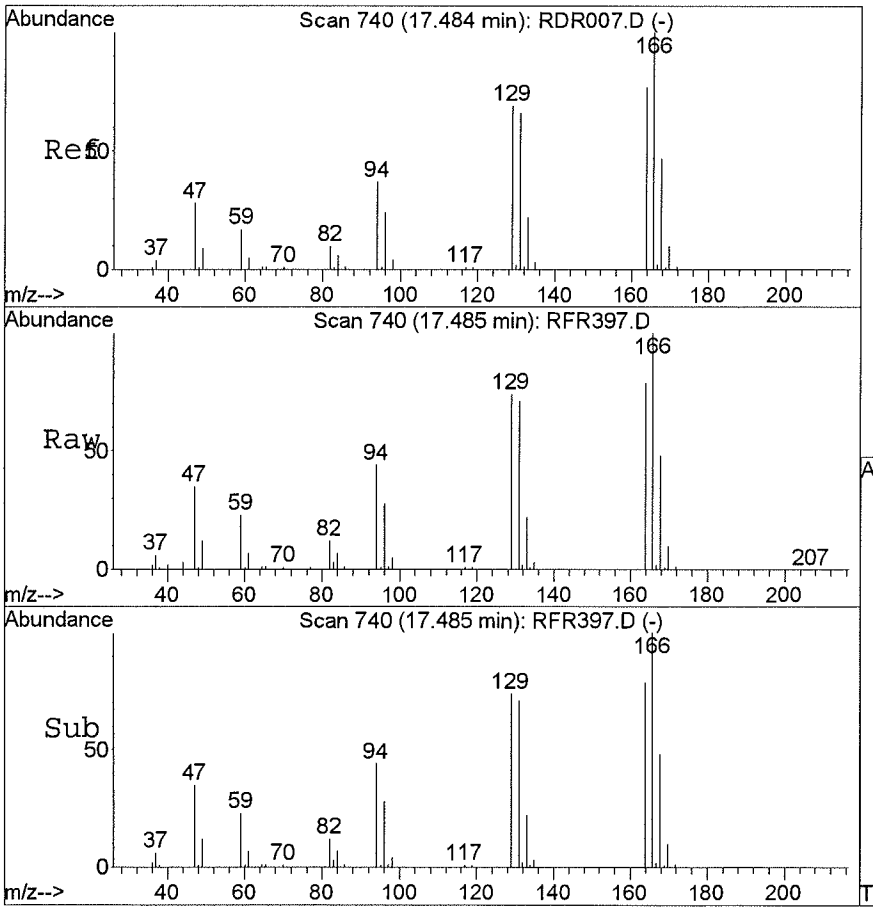


#33
Chloroform
Concen: 0.19 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR397.D
Acq: 22 Jun 2020 5:27 pm

Tgt Ion: 83 Resp: 26763

Ion	Ratio	Lower	Upper
83	100		
85	64.7	35.0	95.0
47	34.6	1.2	61.2

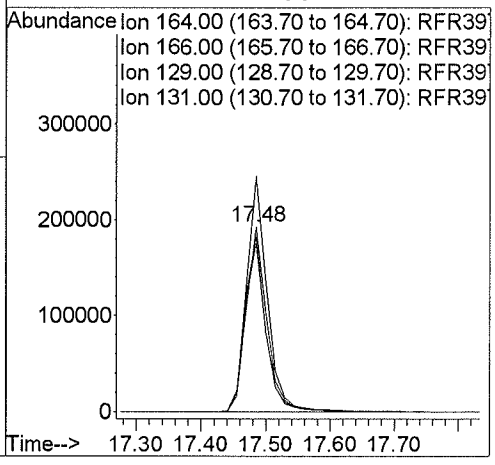




#60
Tetrachloroethene
Concen: 7.75 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR397.D
Acq: 22 Jun 2020 5:27 pm

Tgt Ion:164 Resp: 431514

Ion	Ratio	Lower	Upper
164	100		
166	127.4	97.7	157.7
129	96.4	64.5	124.5
131	93.2	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 14:34
Sample ID:	TB03-GW061720	Date Analyzed:	06/18/20 14:34
Lab Samp ID:	F154-03	Dilution Factor:	1
Lab File ID:	RFR337	Matrix	: WATER
Ext Btch ID:	VOF3F15	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-130
BROMOFLUOROBENZENE	11.5	10.00	115	70-130
TOLUENE-D8	9.67	10.00	96.7	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR337.D Vial: 14
Acq On : 18 Jun 2020 2:34 pm Operator: ENguye/ODinh
Sample : 20F154-03 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 13:40 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1966493	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1565288	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	459443	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	712151	10.23	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.30%		
40) 1,2-Dichloroethane-d4	14.24	65	616447	10.75	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.50%		
55) Toluene-d8	16.80	98	2095515	9.67	ug/l	0.02
Spiked Amount 10.000			Recovery =	96.70%		
75) 4-Bromofluorobenzene	19.36	95	664145	11.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	115.40%		

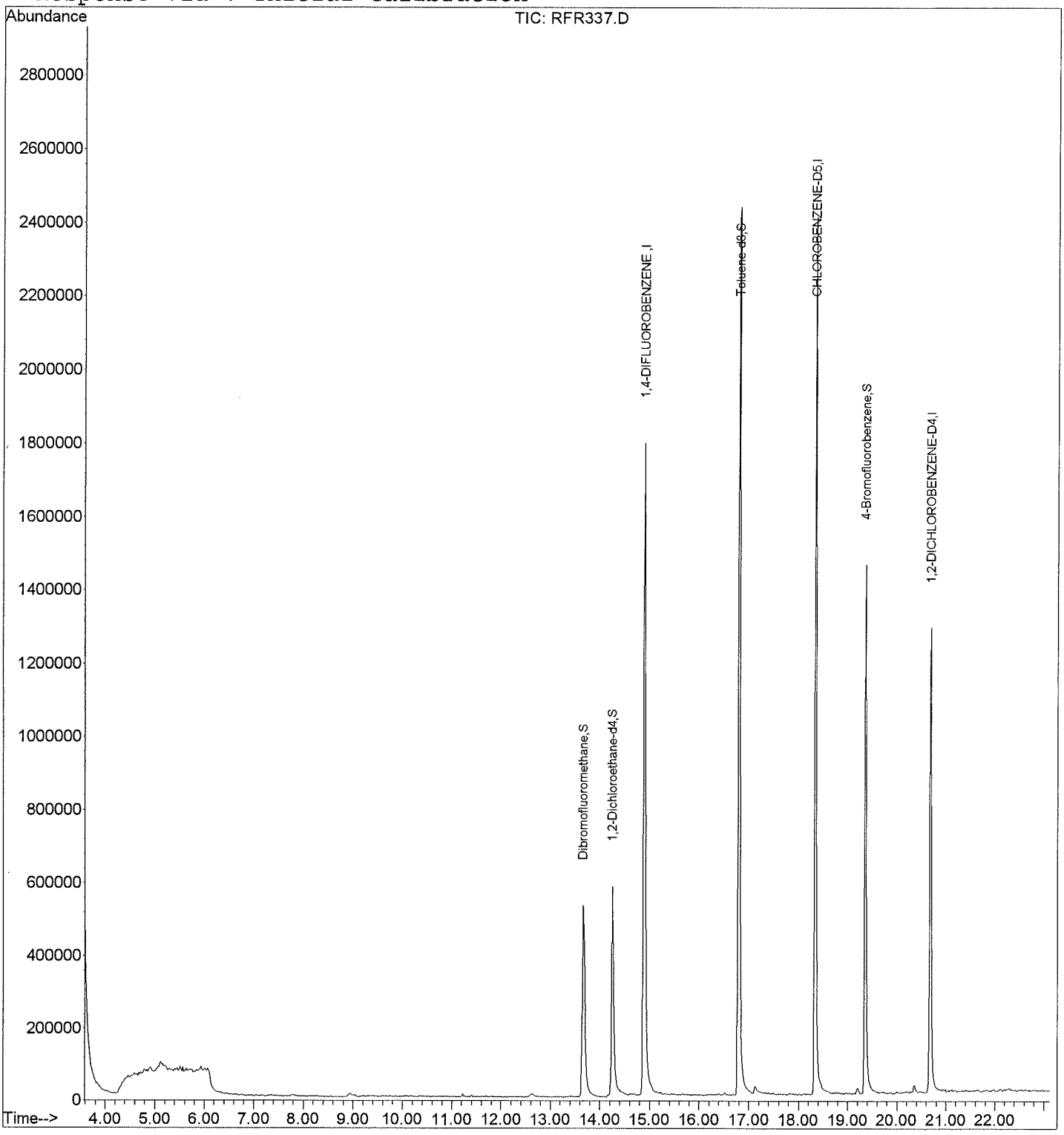
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR337.D VOF3D02.M Fri Jun 19 14:13:45 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR337.D Vial: 14
Acq On : 18 Jun 2020 2:34 pm Operator: ENguye/ODinh
Sample : 20F154-03 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 13:40 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 15:03
Sample ID: TB04-GW061720	Date Analyzed: 06/18/20 15:03
Lab Samp ID: F154-04	Dilution Factor: 1
Lab File ID: RFR338	Matrix : WATER
Ext Btch ID: VOF3F15	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.3	10.00	113	70-130
BROMOFLUOROBENZENE	11.4	10.00	114	70-130
TOLUENE-D8	9.62	10.00	96.2	70-130
DIBROMOFLUOROMETHANE	11.0	10.00	110	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR338.D Vial: 15
Acq On : 18 Jun 2020 3:03 pm Operator: ENguye/ODinh
Sample : 20F154-04 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 13:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1880840	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1511883	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	470388	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	730719	10.97	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.70%		
40) 1,2-Dichloroethane-d4	14.25	65	619342	11.30	ug/l	0.00
Spiked Amount 10.000			Recovery =	113.00%		
55) Toluene-d8	16.80	98	2014300	9.62	ug/l	0.02
Spiked Amount 10.000			Recovery =	96.20%		
75) 4-Bromofluorobenzene	19.36	95	670473	11.38	ug/l	0.00
Spiked Amount 10.000			Recovery =	113.80%		

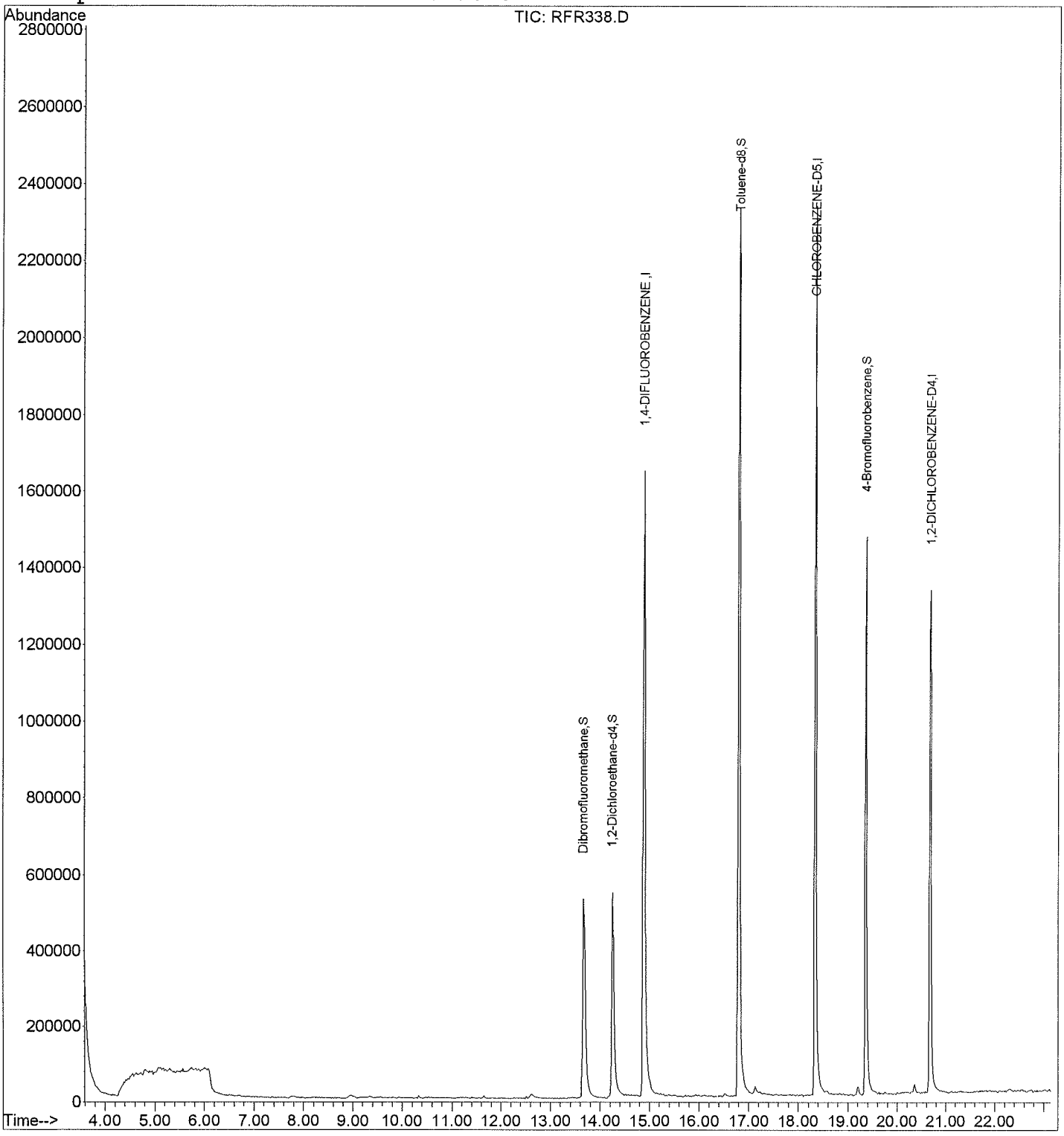
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR338.D VOF3D02.M Fri Jun 19 13:43:17 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR338.D Vial: 15
Acq On : 18 Jun 2020 3:03 pm Operator: ENguye/ODinh
Sample : 20F154-04 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 13:42 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 16:30
Sample ID:	MW20D-GW061720	Date Analyzed:	06/18/20 16:30
Lab Samp ID:	F154-05	Dilution Factor:	1
Lab File ID:	RFR341	Matrix	: WATER
Ext Btch ID:	VOF3F15	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.21J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.8	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.12J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	9.9	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.23J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.95	10.00	99.5	70-130
DIBROMOFLUOROMETHANE	9.97	10.00	99.7	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR341.D Vial: 18
Acq On : 18 Jun 2020 4:30 pm Operator: ENguye/ODinh
Sample : 20F154-05 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:06 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

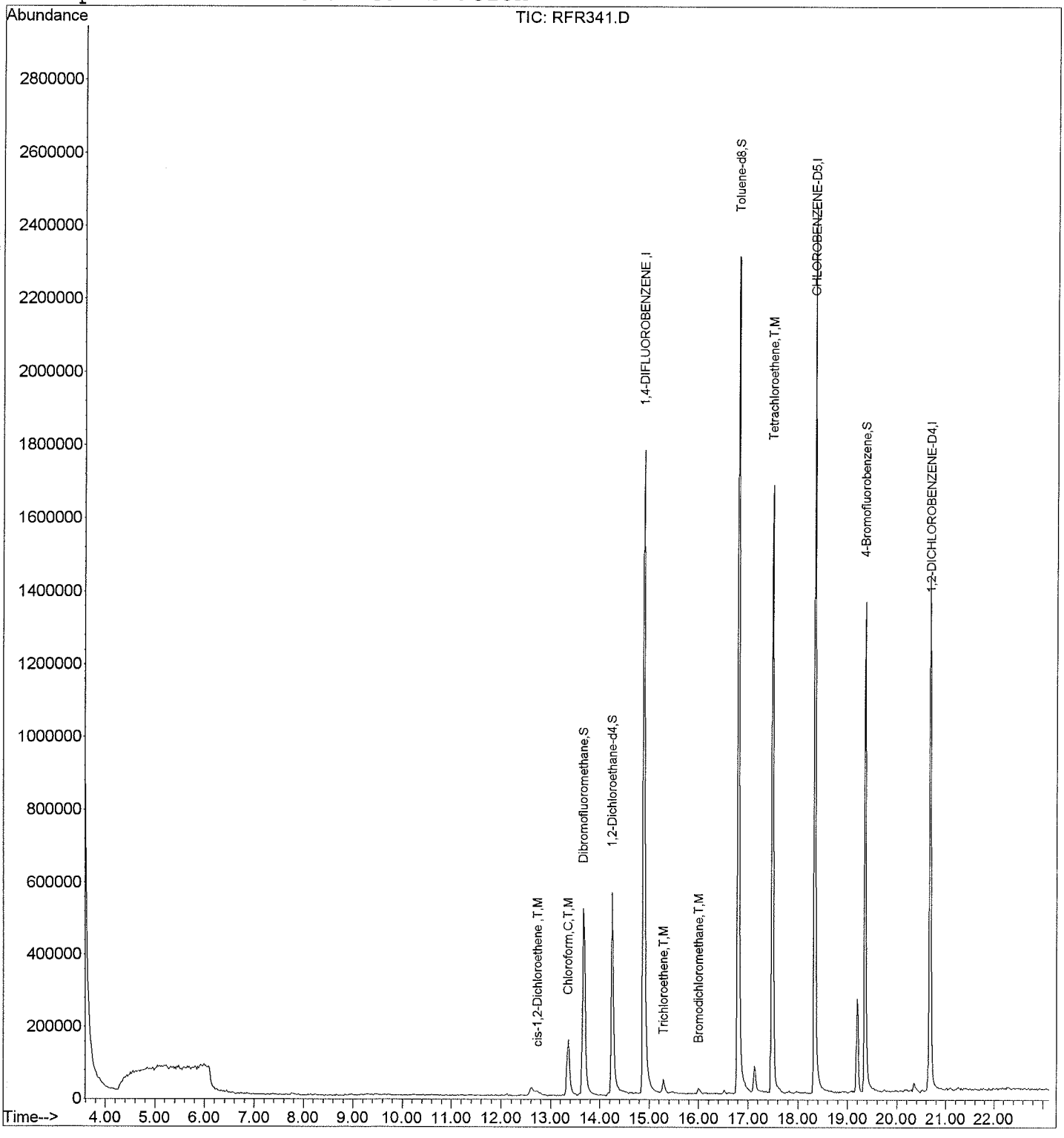
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1994328	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1487826	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	472174	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	703929	9.97	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.70%		
40) 1,2-Dichloroethane-d4	14.25	65	604545	10.40	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.00%		
55) Toluene-d8	16.80	98	2050188	9.95	ug/l	0.02
Spiked Amount 10.000			Recovery =	99.50%		
75) 4-Bromofluorobenzene	19.36	95	638921	10.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.00%		
Target Compounds						Qvalue
28) cis-1,2-Dichloroethene	12.74	96	9488	0.12	ug/l	96
33) Chloroform	13.36	83	241848	1.78	ug/l	97
45) Trichloroethene	15.29	130	16725	0.23	ug/l	86
50) Bromodichloromethane	16.00	83	16803	0.21	ug/l	94
60) Tetrachloroethene	17.48	164	503311	9.92	ug/l	96

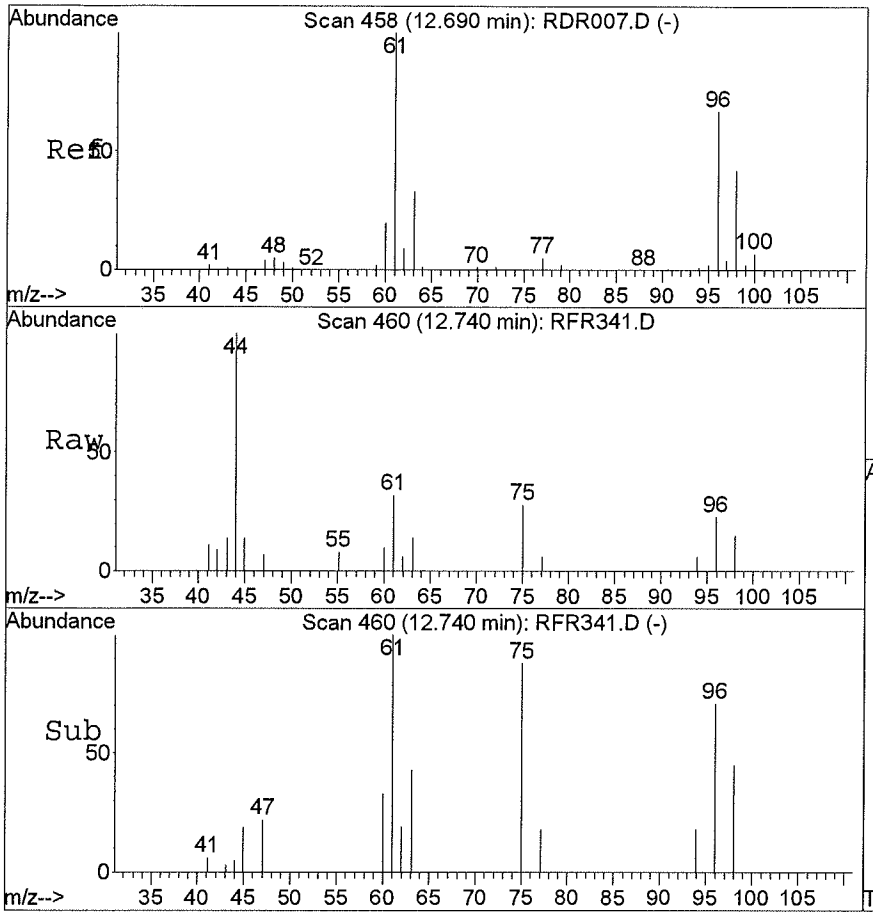
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR341.D Vial: 18
Acq On : 18 Jun 2020 4:30 pm Operator: ENguye/ODinh
Sample : 20F154-05 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:06 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

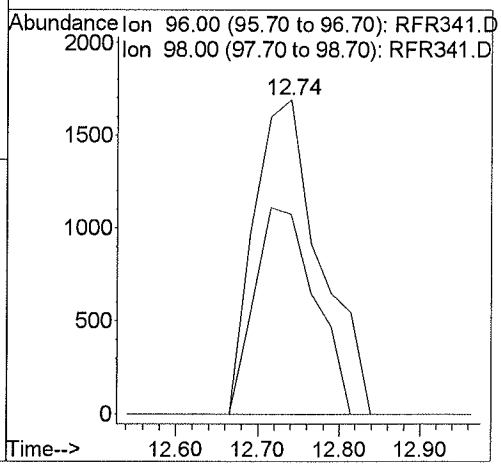


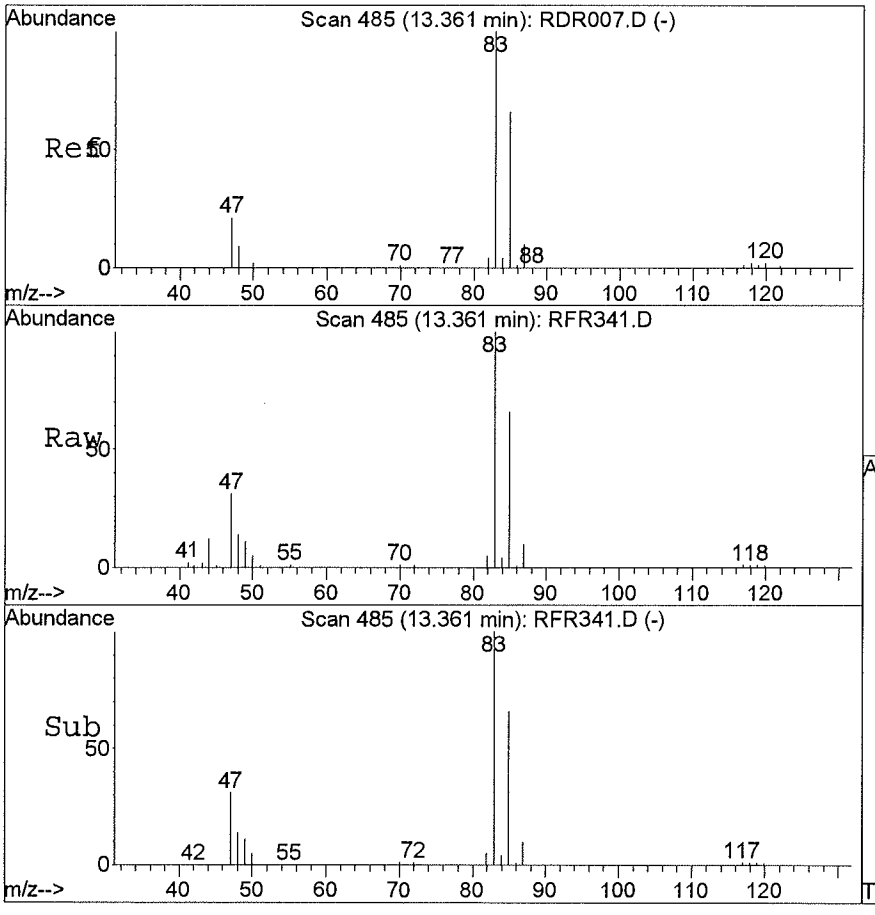


#28
cis-1,2-Dichloroethene
Concen: 0.12 ug/l
RT: 12.74 min Scan# 460
Delta R.T. 0.05 min
Lab File: RFR341.D
Acq: 18 Jun 2020 4:30 pm

Tgt Ion: 96 Resp: 9488

Ion	Ratio	Lower	Upper
96	100		
98	60.3	33.2	93.2

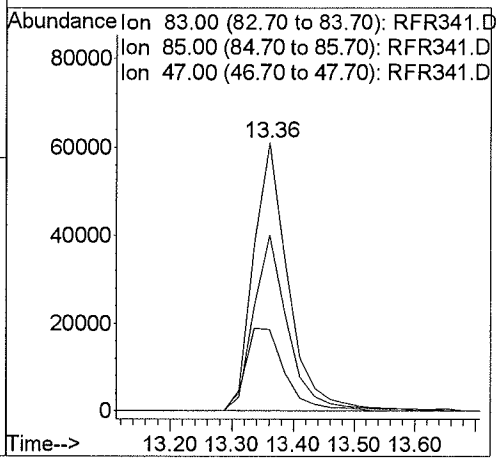


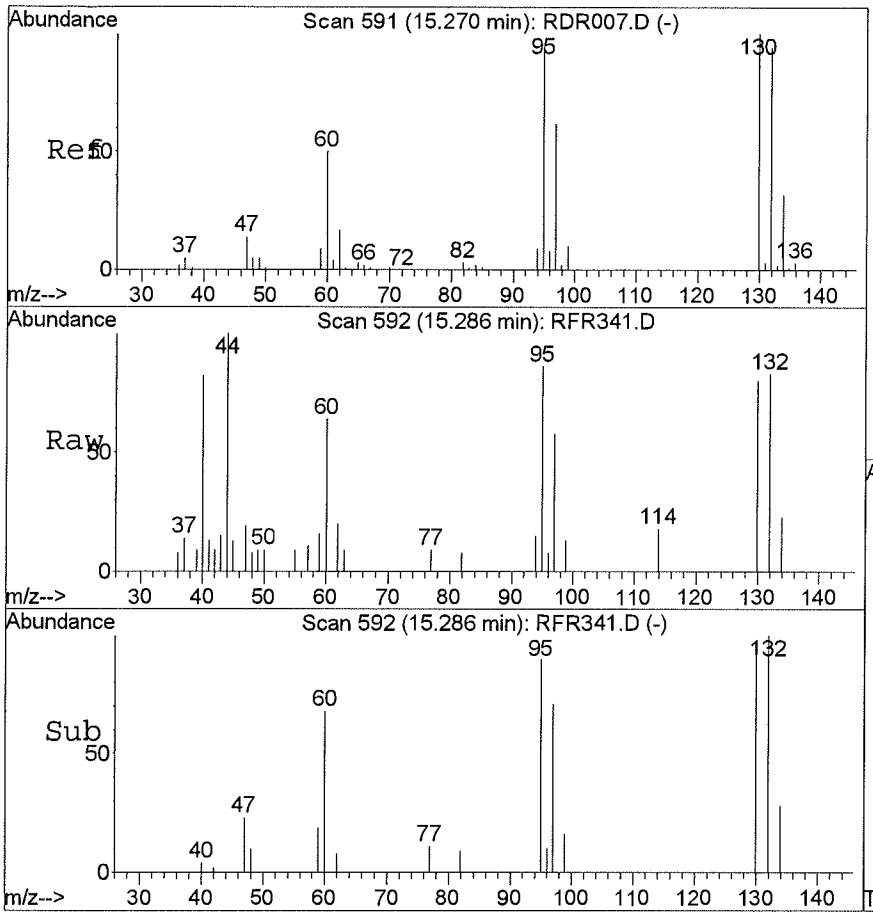


#33
Chloroform
Concen: 1.78 ug/l
RT: 13.36 min Scan# 485
Delta R.T. -0.00 min
Lab File: RFR341.D
Acq: 18 Jun 2020 4:30 pm

Tgt Ion: 83 Resp: 241848

Ion	Ratio	Lower	Upper
83	100		
85	64.4	35.0	95.0
47	35.0	1.2	61.2

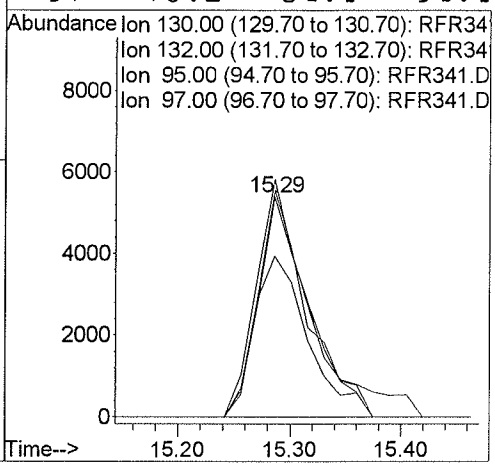


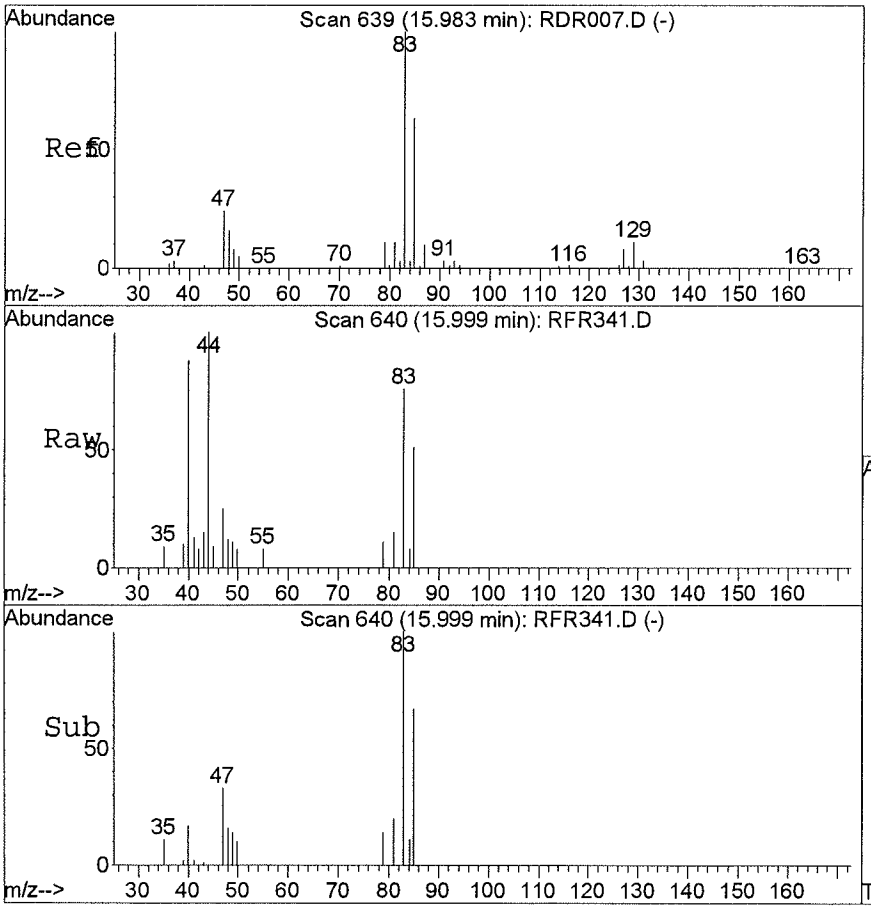


#45
Trichloroethene
Concen: 0.23 ug/l
RT: 15.29 min Scan# 592
Delta R.T. 0.02 min
Lab File: RFR341.D
Acq: 18 Jun 2020 4:30 pm

Tgt Ion:130 Resp: 16725

Ion	Ratio	Lower	Upper
130	100		
132	101.4	64.1	124.1
95	117.0	70.1	130.1
97	78.1	34.4	94.4

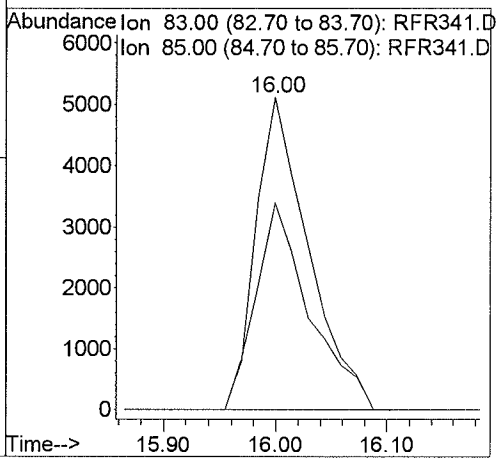


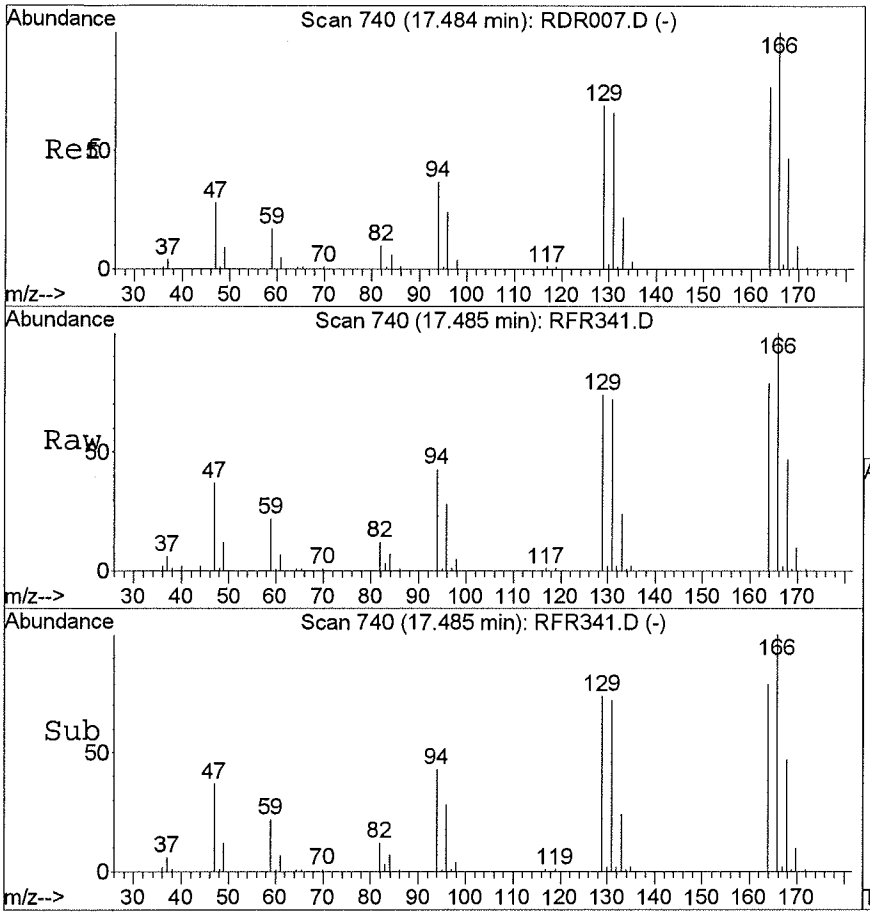


#50
Bromodichloromethane
Concen: 0.21 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.02 min
Lab File: RFR341.D
Acq: 18 Jun 2020 4:30 pm

Tgt Ion: 83 Resp: 16803

Ion	Ratio	Lower	Upper
83	100		
85	68.1	33.6	93.6

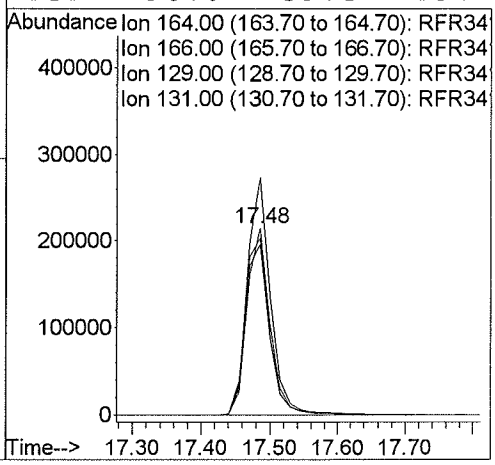




#60
Tetrachloroethene
Concen: 9.92 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR341.D
Acq: 18 Jun 2020 4:30 pm

Tgt Ion:164 Resp: 503311

Ion	Ratio	Lower	Upper
164	100		
166	127.1	97.7	157.7
129	100.6	64.5	124.5
131	96.0	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 16:59
Sample ID:	FD04-GW061720	Date Analyzed:	06/18/20 16:59
Lab Samp ID:	F154-06	Dilution Factor:	1
Lab File ID:	RFR342	Matrix	: WATER
Ext Btch ID:	VOF3F15	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.23J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.8	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.13J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	11	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.23J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.9	10.00	109	70-130
TOLUENE-D8	10.3	10.00	103	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR342.D Vial: 19
Acq On : 18 Jun 2020 4:59 pm Operator: ENguye/ODinh
Sample : 20F154-06 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:11 2020 Quant Results File: VOF3D02.RES

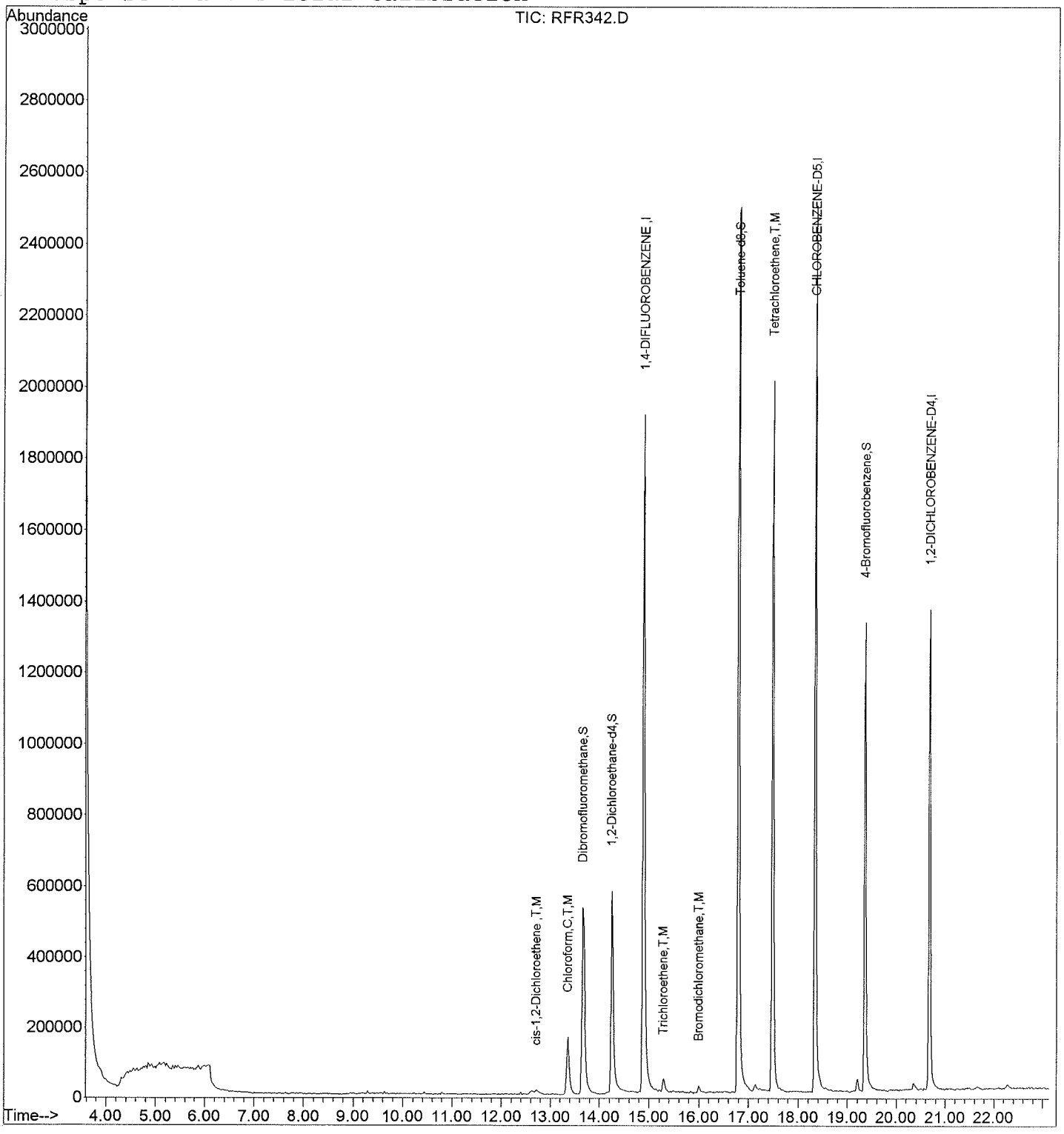
Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

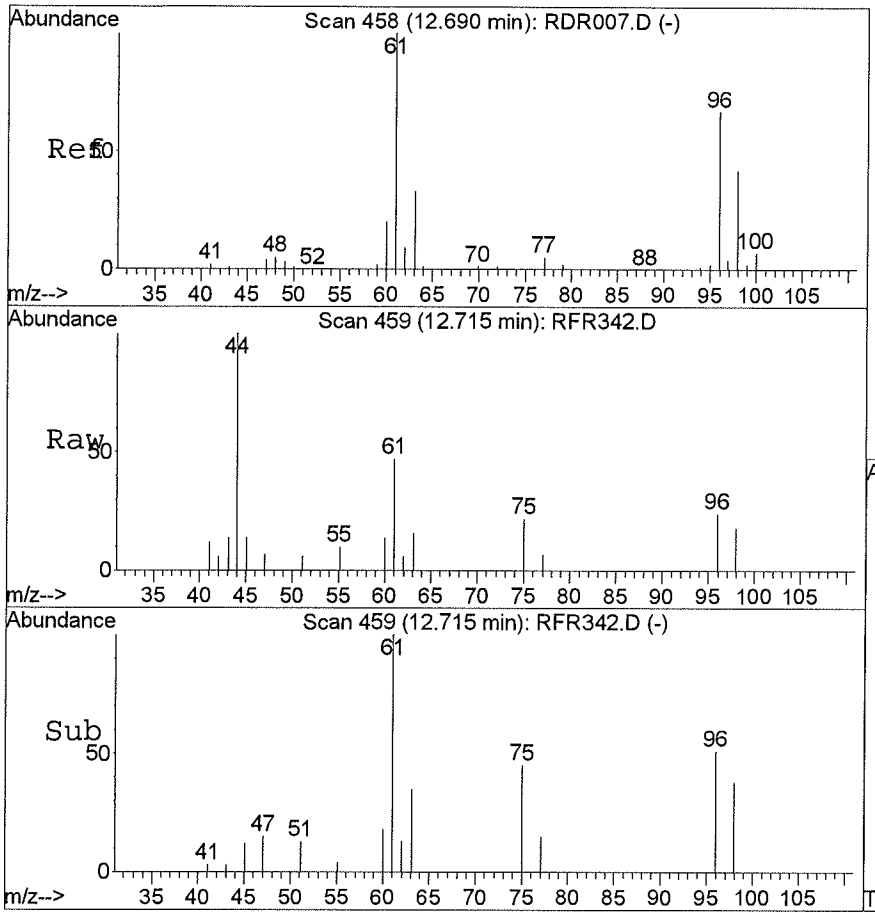
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2040076	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1495973	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	470585	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	739422	10.24	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.40%		
40) 1,2-Dichloroethane-d4	14.25	65	626819	10.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.40%		
55) Toluene-d8	16.80	98	2134617	10.31	ug/l	0.02
Spiked Amount 10.000			Recovery =	103.10%		
75) 4-Bromofluorobenzene	19.36	95	642495	10.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.00%		
Target Compounds						Qvalue
28) cis-1,2-Dichloroethene	12.72	96	11030	0.13	ug/l	90
33) Chloroform	13.36	83	242873	1.75	ug/l	96
45) Trichloroethene	15.29	130	17752	0.23	ug/l	84
50) Bromodichloromethane	16.00	83	19064	0.23	ug/l	97
60) Tetrachloroethene	17.48	164	541492	10.62	ug/l	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F18\RFR342.D Vial: 19
Acq On : 18 Jun 2020 4:59 pm Operator: ENguye/ODinh
Sample : 20F154-06 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:11 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

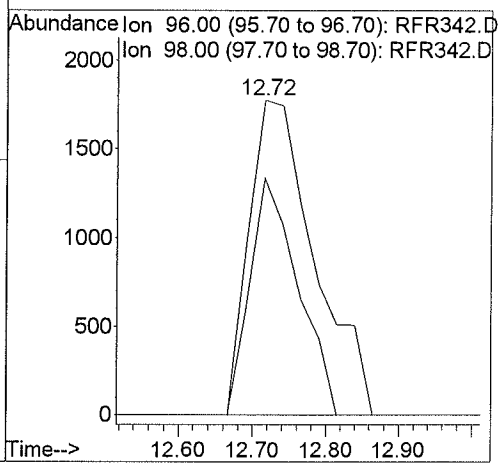


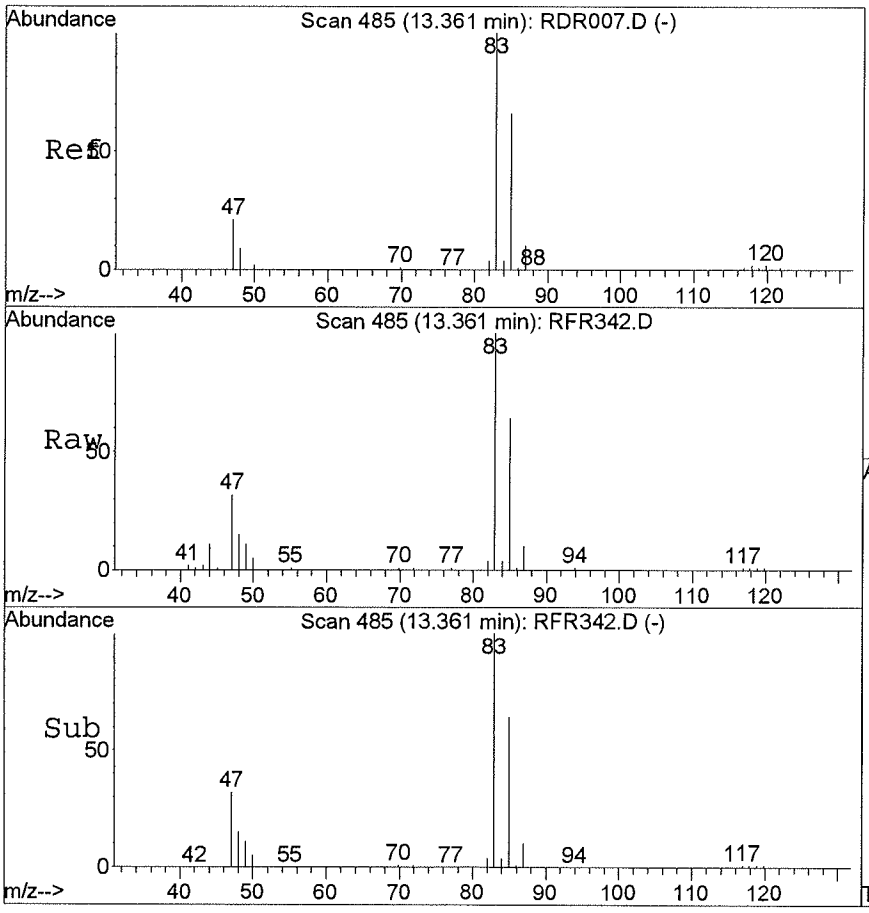


#28
cis-1,2-Dichloroethene
Concen: 0.13 ug/l
RT: 12.72 min Scan# 459
Delta R.T. 0.03 min
Lab File: RFR342.D
Acq: 18 Jun 2020 4:59 pm

Tgt Ion: 96 Resp: 11030

Ion	Ratio	Lower	Upper
96	100		
98	55.4	33.2	93.2

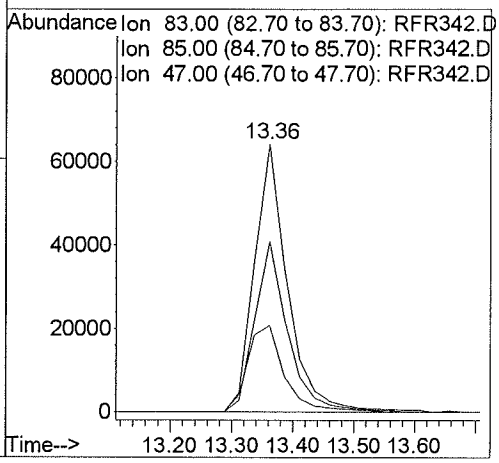


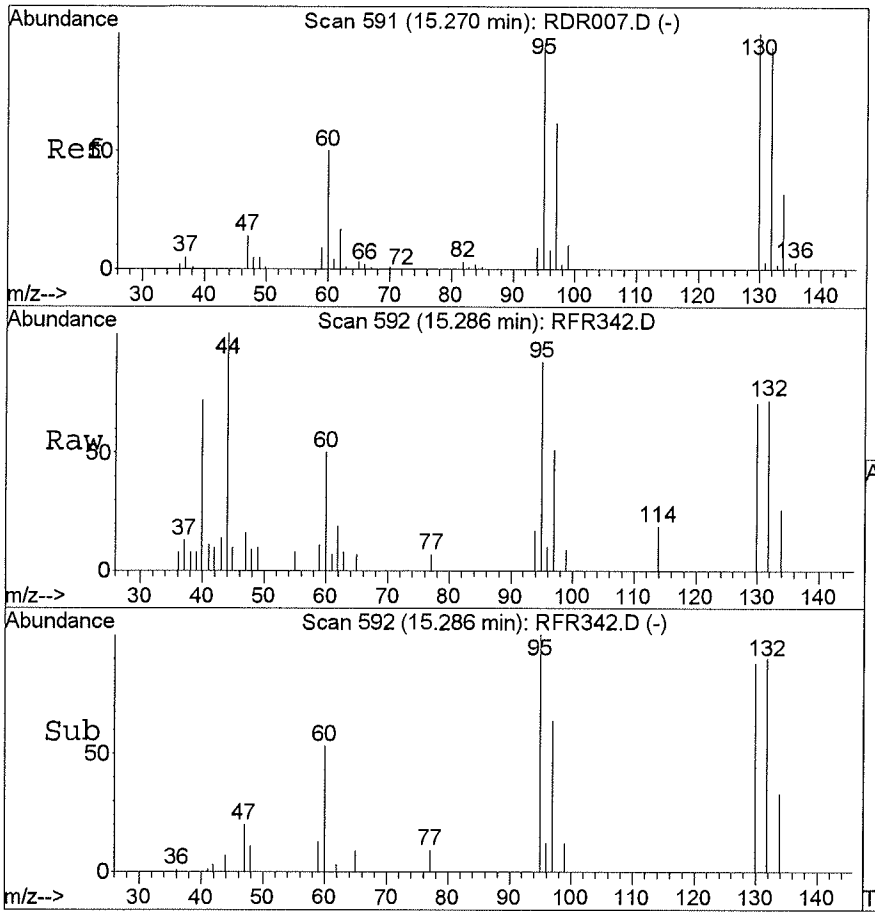


#33
Chloroform
Concen: 1.75 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR342.D
Acq: 18 Jun 2020 4:59 pm

Tgt Ion: 83 Resp: 242873

Ion	Ratio	Lower	Upper
83	100		
85	63.8	35.0	95.0
47	36.2	1.2	61.2

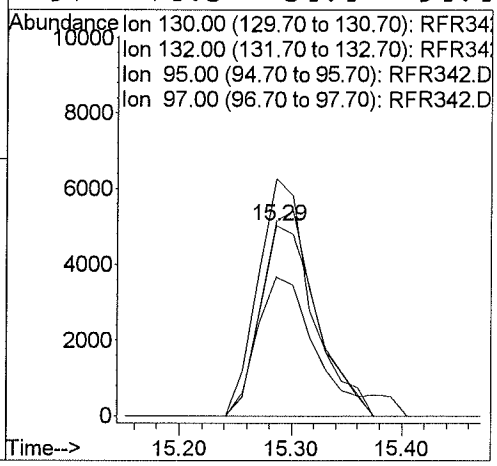


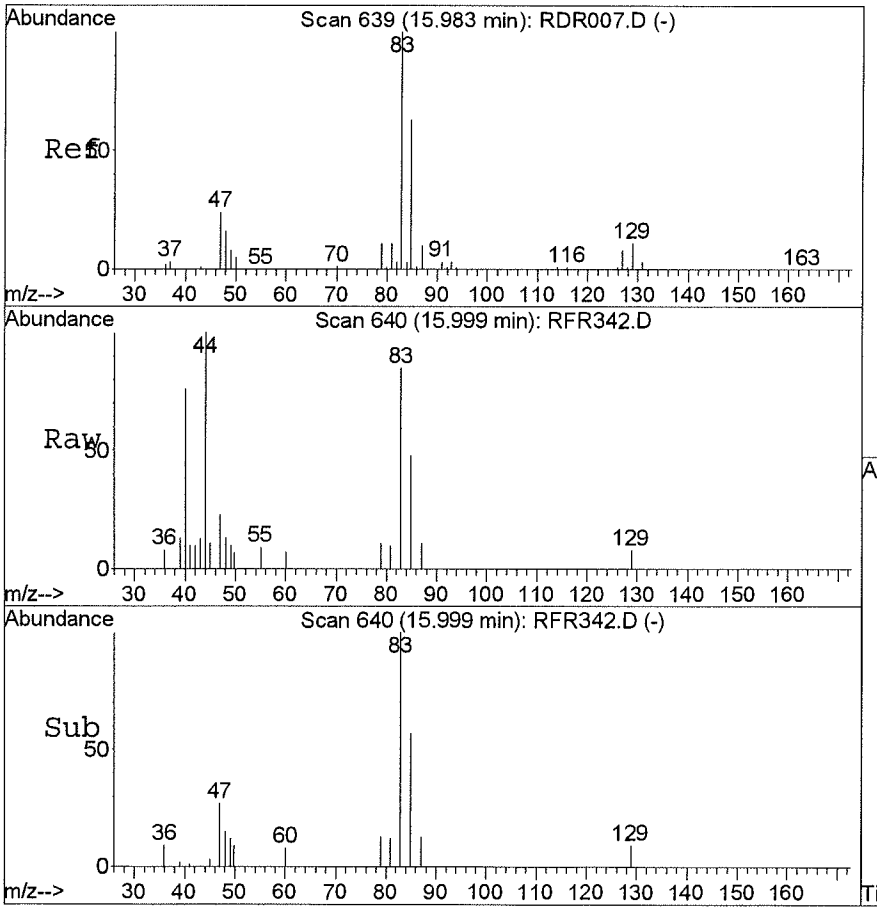


#45
Trichloroethene
Concen: 0.23 ug/l
RT: 15.29 min Scan# 592
Delta R.T. 0.02 min
Lab File: RFR342.D
Acq: 18 Jun 2020 4:59 pm

Tgt Ion:130 Resp: 17752

Ion	Ratio	Lower	Upper
130	100		
132	104.3	64.1	124.1
95	122.5	70.1	130.1
97	74.3	34.4	94.4

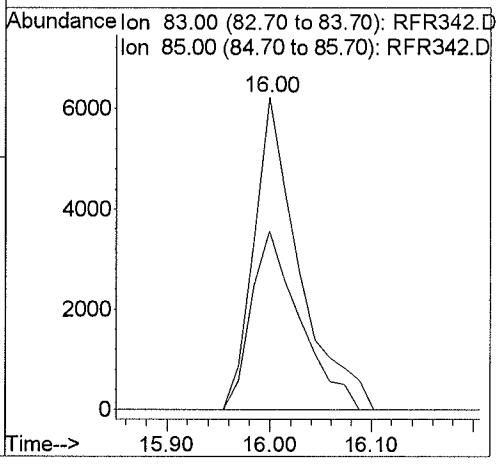


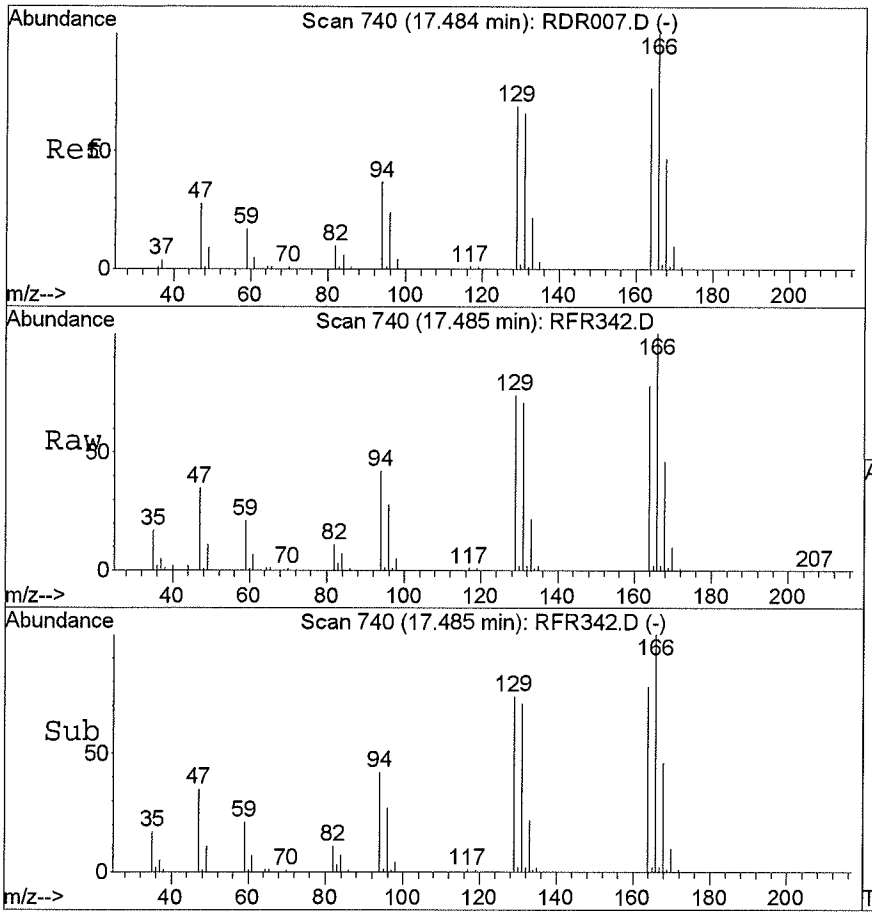


#50
Bromodichloromethane
Concen: 0.23 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.02 min
Lab File: RFR342.D
Acq: 18 Jun 2020 4:59 pm

Tgt Ion: 83 Resp: 19064

Ion	Ratio	Lower	Upper
83	100		
85	61.6	33.6	93.6

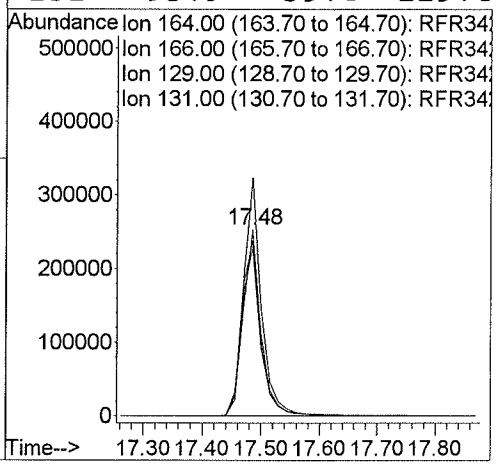




#60
Tetrachloroethene
Concen: 10.62 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR342.D
Acq: 18 Jun 2020 4:59 pm

Tgt Ion:164 Resp: 541492

Ion	Ratio	Lower	Upper
164	100		
166	128.2	97.7	157.7
129	100.7	64.5	124.5
131	95.9	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 15:32
Sample ID: TB02-GW061720	Date Analyzed: 06/18/20 15:32
Lab Samp ID: F154-07	Dilution Factor: 1
Lab File ID: RFR339	Matrix : WATER
Ext Btch ID: VOF3F15	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	9.89	10.00	98.9	70-130
DIBROMOFLUOROMETHANE	9.92	10.00	99.2	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR339.D Vial: 16
Acq On : 18 Jun 2020 3:32 pm Operator: ENguye/ODinh
Sample : 20F154-07 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:01 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1977239	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1505494	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	467505	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	694504	9.92	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.20%			
40) 1,2-Dichloroethane-d4	14.24	65	604153	10.48	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.80%			
55) Toluene-d8	16.80	98	2060775	9.89	ug/l	0.02
Spiked Amount 10.000			Recovery = 98.90%			
75) 4-Bromofluorobenzene	19.36	95	646773	11.04	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.40%			

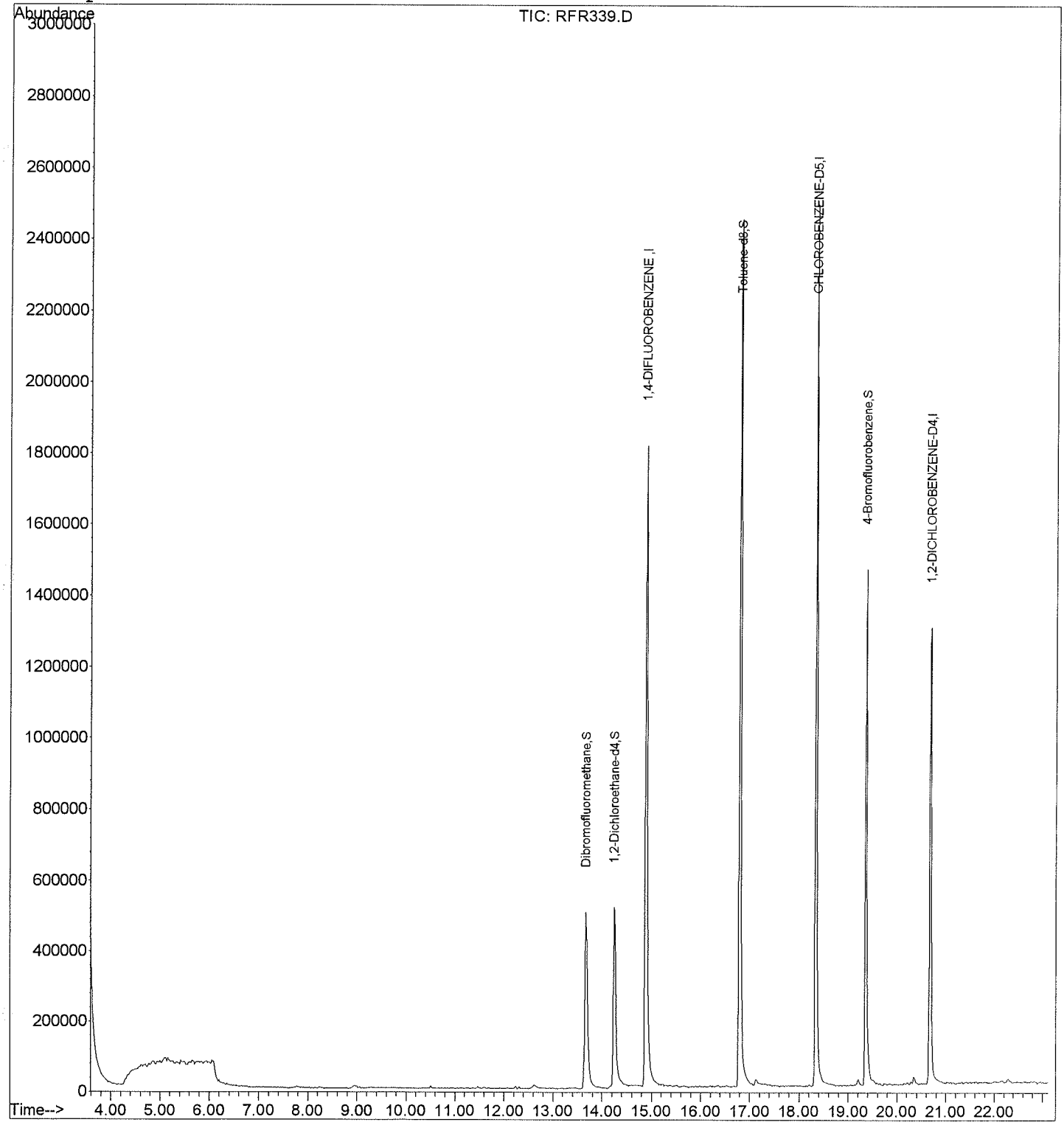
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR339.D VOF3D02.M Fri Jun 19 14:02:28 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR339.D Vial: 16
Acq On : 18 Jun 2020 3:32 pm Operator: ENguye/ODinh
Sample : 20F154-07 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:01 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 10:41
Sample ID: MBLK1W	Date Analyzed: 06/18/20 10:41
Lab Samp ID: VOF3F15B	Dilution Factor: 1
Lab File ID: RFR329	Matrix : WATER
Ext Btch ID: VOF3F15	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-130
BROMOFLUOROBENZENE	10.2	10.00	102	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.0	10.00	100	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VOF3F15B VOF3F15L VOF3F15C
LAB FILE ID: RFR329 RFR326 RFR327
DATE EXTRACTED: 06/18/2010:41 06/18/2009:12 06/18/2009:42 DATE COLLECTED: NA
DATE ANALYZED: 06/18/2010:41 06/18/2009:12 06/18/2009:42 DATE RECEIVED: 06/18/20
PREP. BATCH: VOF3F15 VOF3F15 VOF3F15
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	11.2	112	10.0	10.7	107	5	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	11.2	112	10.0	11.6	116	4	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.3	103	10.0	11.0	110	7	80-119	20
1,1-Dichloroethane	ND	10.0	11.2	112	10.0	11.0	110	2	77-125	20
1,1-Dichloroethene	ND	10.0	11.0	110	10.0	10.6	106	4	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.64	96	10.0	9.53	95	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.65	96	10.0	9.37	94	3	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	10.7	107	10.0	10.9	109	2	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	11.1	111	10.0	10.9	109	2	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.2	102	10.0	10.1	101	1	80-119	20
1,2-Dichloroethane	ND	10.0	11.2	112	10.0	11.5	115	2	73-128	20
1,2-Dichloropropane	ND	10.0	11.1	111	10.0	10.7	107	4	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	11.0	110	10.0	10.3	103	7	75-124	20
1,3-Dichlorobenzene	ND	10.0	11.0	110	10.0	10.3	103	7	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.2	102	10.0	10.5	105	3	79-118	20
2-Butanone	ND	50.0	47.5	95	50.0	49.4	99	4	56-143	20
2-Hexanone	ND	50.0	48.9	98	50.0	52.7	105	8	57-139	20
Acetone	ND	50.0	49.2	98	50.0	52.3	105	6	39-160	20
Benzene	ND	10.0	10.9	109	10.0	10.8	108	2	79-120	20
Bromochloromethane	ND	10.0	10.3	103	10.0	10.2	102	1	78-120	20
Bromodichloromethane	ND	10.0	11.5	115	10.0	11.5	115	0	79-125	20
Bromoform	ND	10.0	11.7	117	10.0	12.1	121	3	66-130	20
Bromomethane	ND	10.0	9.61	96	10.0	8.83	88	8	53-141	20
Carbon Disulfide	ND	10.0	12.2	122	10.0	11.8	118	4	64-133	20
Carbon Tetrachloride	ND	10.0	12.0	120	10.0	11.4	114	5	72-136	20
Chlorobenzene	ND	10.0	10.7	107	10.0	10.8	108	1	82-118	20
Chloroethane	ND	10.0	10.4	104	10.0	9.67	97	7	60-138	20
Chloroform	ND	10.0	10.8	108	10.0	10.5	105	3	79-124	20
Chloromethane	ND	10.0	12.2	122	10.0	11.3	113	8	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.3	103	10.0	10.1	101	2	78-123	20
Dibromochloromethane	ND	10.0	10.7	107	10.0	11.5	115	7	74-126	20
Dichlorodifluoromethane	ND	10.0	10.7	107	10.0	9.89	99	7	32-152	20
Ethylbenzene	ND	10.0	10.7	107	10.0	10.9	109	3	79-121	20
Isopropylbenzene	ND	10.0	11.3	113	10.0	11.4	114	1	72-131	20
m,p-Xylene	ND	20.0	21.1	106	20.0	21.2	106	0	80-121	20
4-Methyl-2-Pentanone	ND	50.0	52.0	104	50.0	55.4	111	6	67-130	20
Methylene Chloride	ND	10.0	11.5	115	10.0	11.3	113	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.07	91	10.0	9.38	94	3	71-124	20
o-Xylene	ND	10.0	10.7	107	10.0	10.6	106	0	78-122	20
Styrene	ND	10.0	10.8	108	10.0	11.0	110	1	78-123	20
Tetrachloroethene	ND	10.0	10.9	109	10.0	10.4	104	5	74-129	20
Toluene	ND	10.0	10.8	108	10.0	10.7	107	1	80-121	20
Trans-1,2-DCE	ND	10.0	10.7	107	10.0	10.7	107	0	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.6	116	10.0	11.5	115	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	11.3	113	10.0	12.1	121	6	73-127	20
TCE	ND	10.0	10.9	109	10.0	9.74	97	12	79-123	20
Trichlorofluoromethane	ND	10.0	11.5	115	10.0	10.8	108	7	65-141	20
Vinyl Chloride	ND	10.0	11.8	118	10.0	11.0	110	7	58-137	20
1,2-Dibromoethane	ND	10.0	10.9	109	10.0	11.8	118	9	77-121	20
Vinyl Acetate	ND	10.0	11.1	111	10.0	11.1	111	1	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.93	89	10.0	8.83	88	1	70-136	20
Methyl Acetate	ND	10.0	8.74	87	10.0	8.64	86	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.7	107	70-130
Bromofluorobenzene	10.0	10.6	106	10.0	10.5	105	70-130
Toluene-d8	10.0	10.2	102	10.0	10.4	104	70-130
Dibromofluoromethane	10.0	10.2	102	10.0	9.91	99	70-130

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/22/20
Batch No.	: 20F154	Date Extracted:	06/22/20 10:41
Sample ID:	MBLK2W	Date Analyzed:	06/22/20 10:41
Lab Samp ID:	VOF3F17B	Dilution Factor:	1
Lab File ID:	RFR383	Matrix :	WATER
Ext Btch ID:	VOF3F17	% Moisture :	NA
Calib. Ref.:	RDR007	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.71	10.00	97.1	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.93	10.00	99.3	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK2W
LAB SAMP ID: VOF3F17B VOF3F17L VOF3F17C
LAB FILE ID: RFR383 RFR380 RFR381
DATE EXTRACTED: 06/22/2010:41 06/22/2009:13 06/22/2009:42 DATE COLLECTED: NA
DATE ANALYZED: 06/22/2010:41 06/22/2009:13 06/22/2009:42 DATE RECEIVED: 06/22/20
PREP. BATCH: VOF3F17 VOF3F17 VOF3F17
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.5	105	10.0	10.1	101	3	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.3	103	10.0	10.4	104	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	9.96	100	10.0	10.2	102	2	80-119	20
1,1-Dichloroethane	ND	10.0	10.1	101	10.0	10.5	105	3	77-125	20
1,1-Dichloroethene	ND	10.0	9.83	98	10.0	9.85	98	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.17	92	10.0	9.60	96	5	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.26	93	10.0	9.40	94	2	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	10.0	100	10.0	10.4	104	3	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	10.5	105	4	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.79	98	10.0	10.1	101	3	80-119	20
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	9.95	99	4	73-128	20
1,2-Dichloropropane	ND	10.0	10.5	105	10.0	10.2	102	2	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.3	103	10.0	10.1	101	1	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.90	99	10.0	10.3	103	4	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.94	99	10.0	9.72	97	2	79-118	20
2-Butanone	ND	50.0	43.6	87	50.0	44.9	90	3	56-143	20
2-Hexanone	ND	50.0	40.3	81	50.0	42.9	86	6	57-139	20
Acetone	ND	50.0	40.9	82	50.0	41.9	84	3	39-160	20
Benzene	ND	10.0	10.4	104	10.0	10.4	104	0	79-120	20
Bromochloromethane	ND	10.0	9.78	98	10.0	9.92	99	1	78-120	20
Bromodichloromethane	ND	10.0	10.8	108	10.0	10.8	108	0	79-125	20
Bromoform	ND	10.0	11.5	115	10.0	11.3	113	2	66-130	20
Bromomethane	ND	10.0	8.67	87	10.0	8.54	85	2	53-141	20
Carbon Disulfide	ND	10.0	10.9	109	10.0	10.8	108	1	64-133	20
Carbon Tetrachloride	ND	10.0	11.2	112	10.0	10.9	109	2	72-136	20
Chlorobenzene	ND	10.0	10.0	100	10.0	10.5	105	5	82-118	20
Chloroethane	ND	10.0	9.08	91	10.0	9.00	90	1	60-138	20
Chloroform	ND	10.0	10.3	103	10.0	9.81	98	5	79-124	20
Chloromethane	ND	10.0	10.9	109	10.0	10.7	107	2	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	9.95	100	10.0	9.71	97	3	78-123	20
Dibromochloromethane	ND	10.0	10.8	108	10.0	11.2	112	4	74-126	20
Dichlorodifluoromethane	ND	10.0	9.32	93	10.0	9.06	91	3	32-152	20
Ethylbenzene	ND	10.0	10.1	101	10.0	10.6	106	5	79-121	20
Isopropylbenzene	ND	10.0	10.7	107	10.0	10.6	106	1	72-131	20
m,p-Xylene	ND	20.0	20.0	100	20.0	20.3	102	2	80-121	20
4-Methyl-2-Pentanone	ND	50.0	45.4	91	50.0	46.5	93	2	67-130	20
Methylene Chloride	ND	10.0	9.96	100	10.0	10.1	101	1	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.12	81	10.0	8.44	84	4	71-124	20
o-Xylene	ND	10.0	9.87	99	10.0	10.2	102	3	78-122	20
Styrene	ND	10.0	10.1	101	10.0	10.8	108	7	78-123	20
Tetrachloroethene	ND	10.0	10.9	109	10.0	10.8	108	1	74-129	20
Toluene	ND	10.0	10.0	100	10.0	10.3	103	3	80-121	20
Trans-1,2-DCE	ND	10.0	10.3	103	10.0	10.3	103	0	75-124	20
cis-1,3-Dichloropropene	ND	10.0	10.9	109	10.0	10.8	108	0	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.6	106	10.0	10.4	104	1	73-127	20
TCE	ND	10.0	10.6	106	10.0	10.3	103	3	79-123	20
Trichlorofluoromethane	ND	10.0	10.4	104	10.0	10.3	103	1	65-141	20
Vinyl Chloride	ND	10.0	10.2	102	10.0	10.2	102	0	58-137	20
1,2-Dibromoethane	ND	10.0	10.5	105	10.0	11.0	110	4	77-121	20
Vinyl Acetate	ND	10.0	9.15	92	10.0	9.47	95	3	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.13	91	10.0	9.14	91	0	70-136	20
Methyl Acetate	ND	10.0	6.94	69	10.0	6.99	70	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.9	109	10.0	10.8	108	70-130
Bromofluorobenzene	10.0	10.3	103	10.0	10.4	104	70-130
Toluene-d8	10.0	9.54	95	10.0	10.3	103	70-130
Dibromofluoromethane	10.0	9.79	98	10.0	9.47	95	70-130

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MW02-GW061720
LAB SAMP ID: F154-02N F154-02M F154-02S
LAB FILE ID: RFR398 RFR399 RFR400
DATE EXTRACTED: 06/22/2017:56 06/22/2018:26 06/22/2018:55 DATE COLLECTED: 06/17/20
DATE ANALYZED: 06/22/2017:56 06/22/2018:26 06/22/2018:55 DATE RECEIVED: 06/18/20
PREP. BATCH: VOF3F17 VOF3F17 VOF3F17
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.9	109	10.0	11.1	111	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.3	103	10.0	10.5	105	3	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.3	103	10.0	10.2	102	1	80-119	20
1,1-Dichloroethane	ND	10.0	10.3	103	10.0	10.8	108	5	77-125	20
1,1-Dichloroethene	ND	10.0	10.5	105	10.0	10.9	109	4	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	8.70	87	10.0	8.76	88	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	8.71	87	10.0	8.87	89	2	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	9.35	94	10.0	9.92	99	6	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	9.73	97	10.0	9.75	98	0	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.74	97	10.0	9.69	97	1	80-119	20
1,2-Dichloroethane	ND	10.0	10.8	108	10.0	10.9	109	1	73-128	20
1,2-Dichloropropane	ND	10.0	10.5	105	10.0	10.6	106	1	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	9.52	95	10.0	9.97	100	5	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.82	98	10.0	9.78	98	0	80-119	20
1,4-Dichlorobenzene	ND	10.0	8.94	89	10.0	9.68	97	8	79-118	20
2-Butanone	ND	50.0	43.0	86	50.0	45.7	91	6	56-143	20
2-Hexanone	ND	50.0	38.4	77	50.0	39.5	79	3	57-139	20
Acetone	ND	50.0	39.1	78	50.0	40.5	81	4	39-160	20
Benzene	ND	10.0	10.4	104	10.0	10.7	107	3	79-120	20
Bromochloromethane	ND	10.0	9.74	97	10.0	10.2	102	5	78-120	20
Bromodichloromethane	0.379J	10.0	11.3	109	10.0	11.6	112	3	79-125	20
Bromoform	ND	10.0	10.6	106	10.0	11.0	110	3	66-130	20
Bromomethane	ND	10.0	8.91	89	10.0	8.88	89	0	53-141	20
Carbon Disulfide	ND	10.0	10.9	109	10.0	11.3	113	3	64-133	20
Carbon Tetrachloride	ND	10.0	11.0	110	10.0	11.8	118	7	72-136	20
Chlorobenzene	ND	10.0	9.83	98	10.0	10.1	101	2	82-118	20
Chloroethane	ND	10.0	10.3	103	10.0	9.61	96	7	60-138	20
Chloroform	3.99	10.0	14.4	104	10.0	15.0	110	4	79-124	20
Chloromethane	ND	10.0	12.1	121	10.0	11.6	116	5	50-139	20
cis-1,2-Dichloroethylene	0.391J	10.0	9.97	96	10.0	10.6	102	6	78-123	20
Dibromochloromethane	ND	10.0	10.3	103	10.0	10.4	104	1	74-126	20
Dichlorodifluoromethane	ND	10.0	11.2	112	10.0	10.7	107	4	32-152	20
Ethylbenzene	ND	10.0	9.94	99	10.0	10.1	101	2	79-121	20
Isopropylbenzene	ND	10.0	9.78	98	10.0	10.1	101	3	72-131	20
m,p-Xylene	ND	20.0	19.1	96	20.0	20.3	101	6	80-121	20
4-Methyl-2-Pentanone	ND	50.0	44.2	88	50.0	47.3	95	7	67-130	20
Methylene Chloride	ND	10.0	10.8	108	10.0	11.1	111	3	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.39	84	10.0	8.80	88	5	71-124	20
o-Xylene	ND	10.0	9.79	98	10.0	10.1	101	3	78-122	20
Styrene	ND	10.0	9.19	92	10.0	9.76	98	6	78-123	20
Tetrachloroethene	190	10.0	222E	320*	10.0	222E	320*	0	74-129	20
Toluene	ND	10.0	10.1	101	10.0	10.5	105	4	80-121	20
Trans-1,2-DCE	ND	10.0	10.4	104	10.0	10.9	109	5	75-124	20
cis-1,3-Dichloropropene	ND	10.0	10.4	104	10.0	10.8	108	3	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.0	100	10.0	10.6	106	6	73-127	20
TCE	0.558J	10.0	10.8	102	10.0	11.0	104	2	79-123	20
Trichlorofluoromethane	ND	10.0	11.9	119	10.0	11.6	116	3	65-141	20
Vinyl Chloride	ND	10.0	11.4	114	10.0	11.1	111	3	58-137	20
1,2-Dibromoethane	ND	10.0	10.2	102	10.0	10.3	103	2	77-121	20
Vinyl Acetate	ND	10.0	9.04	90	10.0	8.47	85	6	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.57	96	10.0	9.90	99	3	70-136	20
Methyl Acetate	ND	10.0	5.94	59	10.0	6.09	61	3	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.4	104	10.0	10.2	102	70-130
Bromofluorobenzene	10.0	10.2	102	10.0	10.1	101	70-130
Toluene-d8	10.0	10.4	104	10.0	10.2	102	70-130
Dibromofluoromethane	10.0	10.1	101	10.0	10.1	101	70-130

Client Sample ID: MW02-GW061720DL
Laboratory Sample ID: F154-02I
Parameters: Tetrachloroethene
Dilution Factor: 25
Analysis DateTime: 06/22/20 17:27
Extraction DateTime: 06/22/20 17:27
Sample Data FN: RFR397
Calibration Data FN: RDR007
Prep. Batch: VOF3F17

QC DATA

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR329.D Vial: 6
Acq On : 18 Jun 2020 10:41 am Operator: ENguye/ODinh
Sample : VOF3F15B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1952806	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1472519	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	485573	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	692999	10.02	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.20%		
40) 1,2-Dichloroethane-d4	14.24	65	585657	10.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.90%		
55) Toluene-d8	16.78	98	2077364	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.90%		
75) 4-Bromofluorobenzene	19.34	95	618722	10.17	ug/l	-0.02
Spiked Amount 10.000			Recovery =	101.70%		

Target Compounds Qvalue

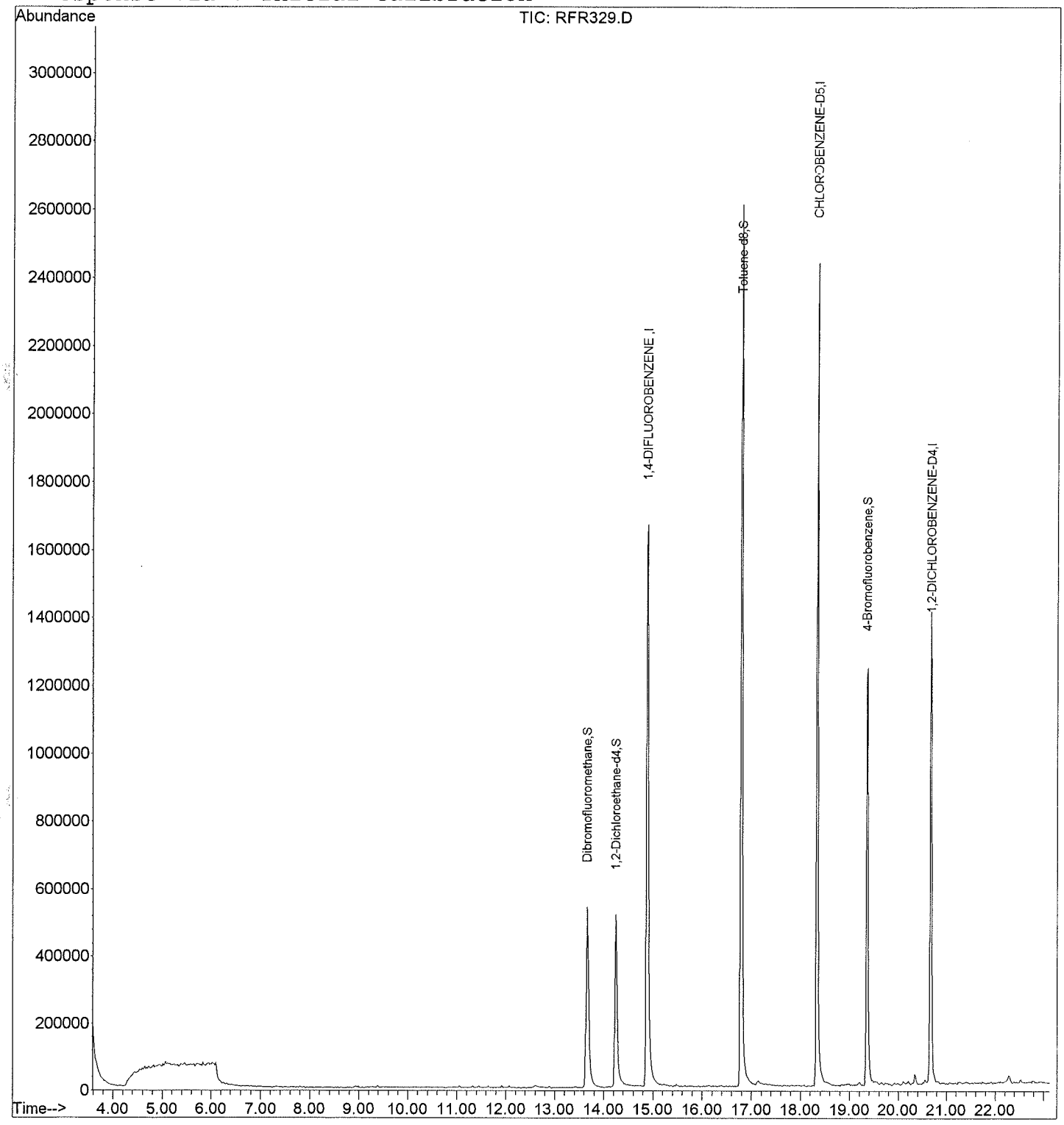
(#) = qualifier out of range (m) = manual integration
RFR329.D VOF3D02.M Fri Jun 19 14:29:35 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR329.D
Acq On : 18 Jun 2020 10:41 am
Sample : VOF3F15B
Misc : BLANK
MS Integration Params: RTE.P
Quant Time: Jun 19 14:29 2020

Vial: 6
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR326.D Vial: 3
Acq On : 18 Jun 2020 9:12 am Operator: ENguye/ODinh
Sample : VOF3F15L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1846429	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1393264	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	459616	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	666295	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.90%		
40) 1,2-Dichloroethane-d4	14.24	65	567592	10.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.40%		
55) Toluene-d8	16.80	98	1974584	10.24	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.40%		
75) 4-Bromofluorobenzene	19.36	95	611631	10.62	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	690039	10.66	ug/l	98
4) Chloromethane	4.27	50	1551164	12.23	ug/l	99
6) Vinyl chloride	4.54	62	1189667	11.80	ug/l	99
7) Bromomethane	5.35	94	681399	9.61	ug/l	98
8) Chloroethane	5.58	64	546091	10.41	ug/l	96
9) Dichlorofluoromethane	6.07	67	1838664	11.84	ug/l	99
10) Trichlorofluoromethane	6.16	101	1012043	11.54	ug/l	99
11) Acrolein	7.31	56	205539	35.45	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	361883	8.93	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1480379	10.95	ug/l	98
14) Acetone	7.71	43	475129	49.21	ug/l	99
15) Iodomethane	7.96	142	1136283	10.16	ug/l	98
16) Methyl acetate	8.60	43	232941	8.74	ug/l	98
17) Carbon disulfide	8.14	76	2930148	12.22	ug/l	100
18) Methylene chloride	8.91	49	1485432	11.55	ug/l	97
19) tert-Butyl alcohol	9.29	59	702849	251.51	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	997649	9.07	ug/l	99
21) trans-1,2-Dichloroethene	9.68	96	761263	10.70	ug/l	98
22) Acrylonitrile	9.76	53	495357	48.17	ug/l	99
23) Isopropyl ether (DIPE)	11.17	45	3069787	10.68	ug/l	97
24) 1,1-Dichloroethane	11.10	63	1721348	11.24	ug/l	99
25) Vinyl acetate	11.27	43	1094142	11.15	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1757884	9.11	ug/l	95
27) 2,2-Dichloropropane	12.62	77	751684	11.40	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	766213	10.27	ug/l	100
29) 2-Butanone	12.74	72	132188	47.45	ug/l	99
30) 2-Butanol	13.24	45	20560	7.82	ug/l	67

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR326.D Vial: 3
Acq On : 18 Jun 2020 9:12 am Operator: ENguye/ODinh
Sample : VOF3F15L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	363728	10.30 ug/l	100
33)	Chloroform	13.36	83	1348632	10.75 ug/l	98
35)	1,1,1-Trichloroethane	13.63	97	904479	11.23 ug/l	98
36)	Cyclohexane	13.68	84	628412	6.69 ug/l	99
37)	1,1-Dichloropropene	13.93	110	378761	11.10 ug/l	98
38)	Carbon tetrachloride	13.91	119	819069	12.01 ug/l	98
42)	Benzene	14.29	78	2871923	10.93 ug/l	99
43)	1,2-Dichloroethane	14.38	62	699399	11.25 ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	203950	9.11 ug/l	99
45)	Trichloroethene	15.27	130	750491	10.93 ug/l	99
46)	Methylcyclohexane	15.48	83	827262	7.65 ug/l	98
47)	1,2-Dichloropropane	15.60	63	832393	11.13 ug/l	100
48)	1,4-Dioxane	15.79	88	41674	225.61 ug/l	97
49)	Dibromomethane	15.81	93	303460	10.69 ug/l	94
50)	Bromodichloromethane	15.98	83	869428	11.46 ug/l	100
51)	2-Chloroethyl vinyl ether	16.33	63	82180	6.27 ug/l	97
52)	cis-1,3-Dichloropropene	16.50	75	1039835	11.60 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1641096	51.99 ug/l	98
56)	Toluene	16.87	91	2587417	10.77 ug/l	99
57)	Ethyl methacrylate	17.16	69	472278	11.04 ug/l	94
58)	trans-1,3-Dichloropropene	17.14	75	777291	11.34 ug/l	99
59)	1,1,2-Trichloroethane	17.37	97	337432	10.33 ug/l	98
60)	Tetrachloroethene	17.48	164	518655	10.92 ug/l	98
61)	2-Hexanone	17.56	43	1133445	48.87 ug/l	97
62)	1,3-Dichloropropane	17.54	76	679300	11.07 ug/l	99
63)	Dibromochloromethane	17.80	129	458248	10.71 ug/l	100
64)	1,2-Dibromoethane	17.93	107	343253	10.86 ug/l	99
65)	1-Chlorohexane	18.26	91	1020431	10.61 ug/l	99
66)	Chlorobenzene	18.36	112	1472343	10.66 ug/l	100
67)	Ethylbenzene	18.42	91	2827014	10.66 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.44	131	485099	10.60 ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	4250741	21.15 ug/l	100
70)	o-Xylene	18.88	91	2093855	10.67 ug/l	99
71)	Styrene	18.90	104	1476909	10.82 ug/l	99
73)	Bromoform	19.15	173	204841	11.71 ug/l	98
74)	Isopropylbenzene	19.18	105	2474314	11.27 ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	394477	11.21 ug/l	100
77)	trans-1,4-Dichloro-2-buten	19.49	53	121133	11.97 ug/l	97
78)	n-Propylbenzene	19.51	91	3296340	11.28 ug/l	100
79)	1,2,3-Trichloropropane	19.52	110	74615	10.92 ug/l	92
80)	Bromobenzene	19.52	156	508851	10.51 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR326.D Vial: 3
Acq On : 18 Jun 2020 9:12 am Operator: ENguye/ODinh
Sample : VOF3F15L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

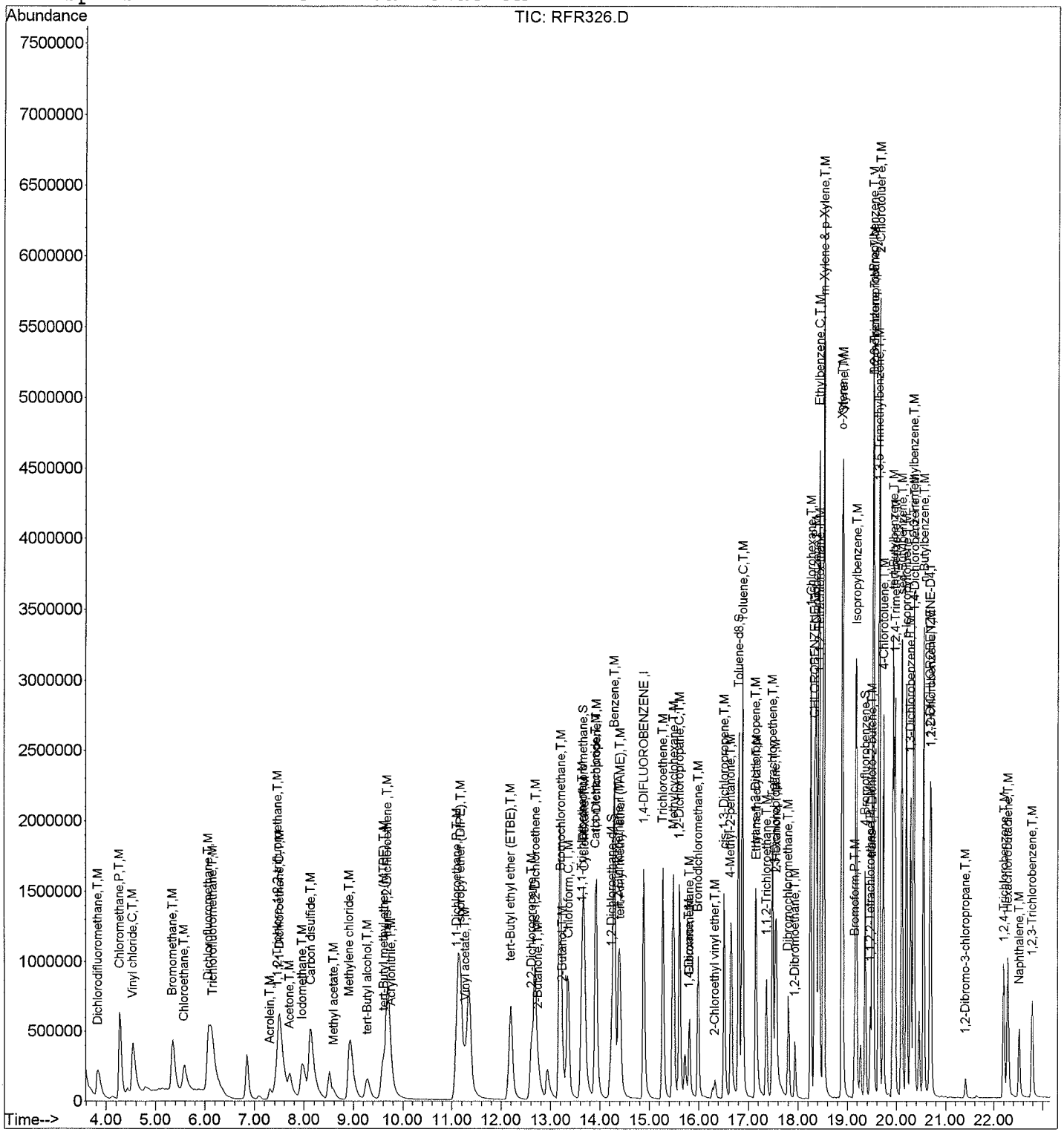
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1887161	11.05	ug/l	99
82)	2-Chlorotoluene	19.64	91	1990500	11.41	ug/l	100
83)	4-Chlorotoluene	19.73	91	1721974	11.14	ug/l	99
84)	tert-Butylbenzene	19.92	134	405283	11.34	ug/l	96
85)	1,2,4-Trimethylbenzene	19.97	105	1761650	10.75	ug/l	99
86)	sec-Butylbenzene	20.10	105	2572004	11.06	ug/l	99
87)	p-Isopropyltoluene	20.19	119	1978946	10.68	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	957837	11.03	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	1483441	9.74	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	905000	10.19	ug/l	98
92)	n-Butylbenzene	20.55	91	2134679	10.52	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	739302	10.24	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	45342	11.13	ug/l	97
95)	1,2,4-Trichlorobenzene	22.21	180	410742	9.65	ug/l	98
96)	Hexachlorobutadiene	22.28	225	266557	10.04	ug/l	99
97)	Naphthalene	22.52	128	569726	9.39	ug/l	99
98)	1,2,3-Trichlorobenzene	22.79	180	319235	9.64	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR326.D Vial: 3
Acq On : 18 Jun 2020 9:12 am Operator: ENguye/ODinh
Sample : VOF3F15L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR327.D Vial: 4
Acq On : 18 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F15C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1870860	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1358079	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	454962	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	656480	9.91	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.10%		
40) 1,2-Dichloroethane-d4	14.25	65	582663	10.68	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.80%		
55) Toluene-d8	16.79	98	1948730	10.36	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.60%		
75) 4-Bromofluorobenzene	19.34	95	597578	10.48	ug/l	0.01
Spiked Amount 10.000			Recovery =	104.80%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	648645	9.89	ug/l	97
4) Chloromethane	4.27	50	1455628	11.32	ug/l	99
6) Vinyl chloride	4.54	62	1120824	10.97	ug/l	100
7) Bromomethane	5.35	94	634345	8.83	ug/l	99
8) Chloroethane	5.60	64	513782	9.67	ug/l	97
9) Dichlorofluoromethane	6.07	67	1774341	11.28	ug/l	99
10) Trichlorofluoromethane	6.16	101	959715	10.80	ug/l	99
11) Acrolein	7.31	56	227841	38.79	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	362686	8.83	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1445659	10.56	ug/l	98
14) Acetone	7.71	43	511634	52.30	ug/l	98
15) Iodomethane	7.98	142	1157989	10.22	ug/l	100
16) Methyl acetate	8.60	43	233406	8.64	ug/l	98
17) Carbon disulfide	8.14	76	2865795	11.79	ug/l	100
18) Methylene chloride	8.93	49	1478587	11.35	ug/l	96
19) tert-Butyl alcohol	9.29	59	729888	257.78	ug/l	97
20) tert-Butyl methyl ether (M	9.61	73	1044373	9.38	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	771538	10.70	ug/l	99
22) Acrylonitrile	9.76	53	508375	48.79	ug/l	99
23) Isopropyl ether (DIPE)	11.18	45	3099469	10.64	ug/l	97
24) 1,1-Dichloroethane	11.10	63	1711863	11.03	ug/l	99
25) Vinyl acetate	11.27	43	1100602	11.07	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1719581	8.79	ug/l	97
27) 2,2-Dichloropropane	12.62	77	763188	11.42	ug/l	97
28) cis-1,2-Dichloroethene	12.69	96	762290	10.09	ug/l	100
29) 2-Butanone	12.74	72	139508	49.43	ug/l	99
30) 2-Butanol	13.26	45	1727	0.65	ug/l #	61

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F18\RFR327.D Vial: 4
Acq On : 18 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F15C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31) Bromochloromethane	13.21	130	365861	10.23 ug/l	99
33) Chloroform	13.34	83	1331292	10.47 ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	874226	10.71 ug/l	98
36) Cyclohexane	13.68	84	587182	6.17 ug/l	99
37) 1,1-Dichloropropene	13.93	110	364536	10.55 ug/l	99
38) Carbon tetrachloride	13.91	119	789091	11.42 ug/l	98
42) Benzene	14.29	78	2864530	10.75 ug/l	97
43) 1,2-Dichloroethane	14.36	62	724101	11.49 ug/l	99
44) tert-Amyl methyl ether (TA	14.39	87	206097	9.09 ug/l	99
45) Trichloroethene	15.26	130	677596	9.74 ug/l	95
46) Methylcyclohexane	15.48	83	795244	7.26 ug/l	97
47) 1,2-Dichloropropane	15.60	63	808027	10.66 ug/l	99
48) 1,4-Dioxane	15.79	88	45422	242.69 ug/l	96
49) Dibromomethane	15.79	93	308668	10.73 ug/l	96
50) Bromodichloromethane	15.97	83	880101	11.45 ug/l	99
51) 2-Chloroethyl vinyl ether	16.31	63	88700	6.68 ug/l	99
52) cis-1,3-Dichloropropene	16.50	75	1043641	11.49 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1770436	55.36 ug/l	98
56) Toluene	16.86	91	2499975	10.67 ug/l	100
57) Ethyl methacrylate	17.14	69	508128	12.18 ug/l	96
58) trans-1,3-Dichloropropene	17.14	75	806114	12.06 ug/l	99
59) 1,1,2-Trichloroethane	17.35	97	351936	11.05 ug/l	97
60) Tetrachloroethene	17.47	164	480133	10.37 ug/l	98
61) 2-Hexanone	17.56	43	1192284	52.74 ug/l	98
62) 1,3-Dichloropropane	17.53	76	704804	11.78 ug/l	99
63) Dibromochloromethane	17.80	129	478555	11.47 ug/l	100
64) 1,2-Dibromoethane	17.93	107	364392	11.83 ug/l	97
65) 1-Chlorohexane	18.24	91	978609	10.44 ug/l	100
66) Chlorobenzene	18.36	112	1452688	10.79 ug/l	99
67) Ethylbenzene	18.41	91	2829502	10.94 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	496334	11.12 ug/l	100
69) m-Xylene & p-Xylene	18.51	91	4161309	21.24 ug/l	100
70) o-Xylene	18.88	91	2035142	10.64 ug/l	99
71) Styrene	18.90	104	1457588	10.96 ug/l	99
73) Bromoform	19.13	173	209431	12.09 ug/l	100
74) Isopropylbenzene	19.16	105	2467996	11.35 ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.45	83	405641	11.65 ug/l	99
77) trans-1,4-Dichloro-2-buten	19.48	53	127515	12.73 ug/l	97
78) n-Propylbenzene	19.51	91	3241894	11.21 ug/l	100
79) 1,2,3-Trichloropropane	19.51	110	79126	11.70 ug/l	84
80) Bromobenzene	19.51	156	518050	10.81 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR327.D Vial: 4
Acq On : 18 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F15C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

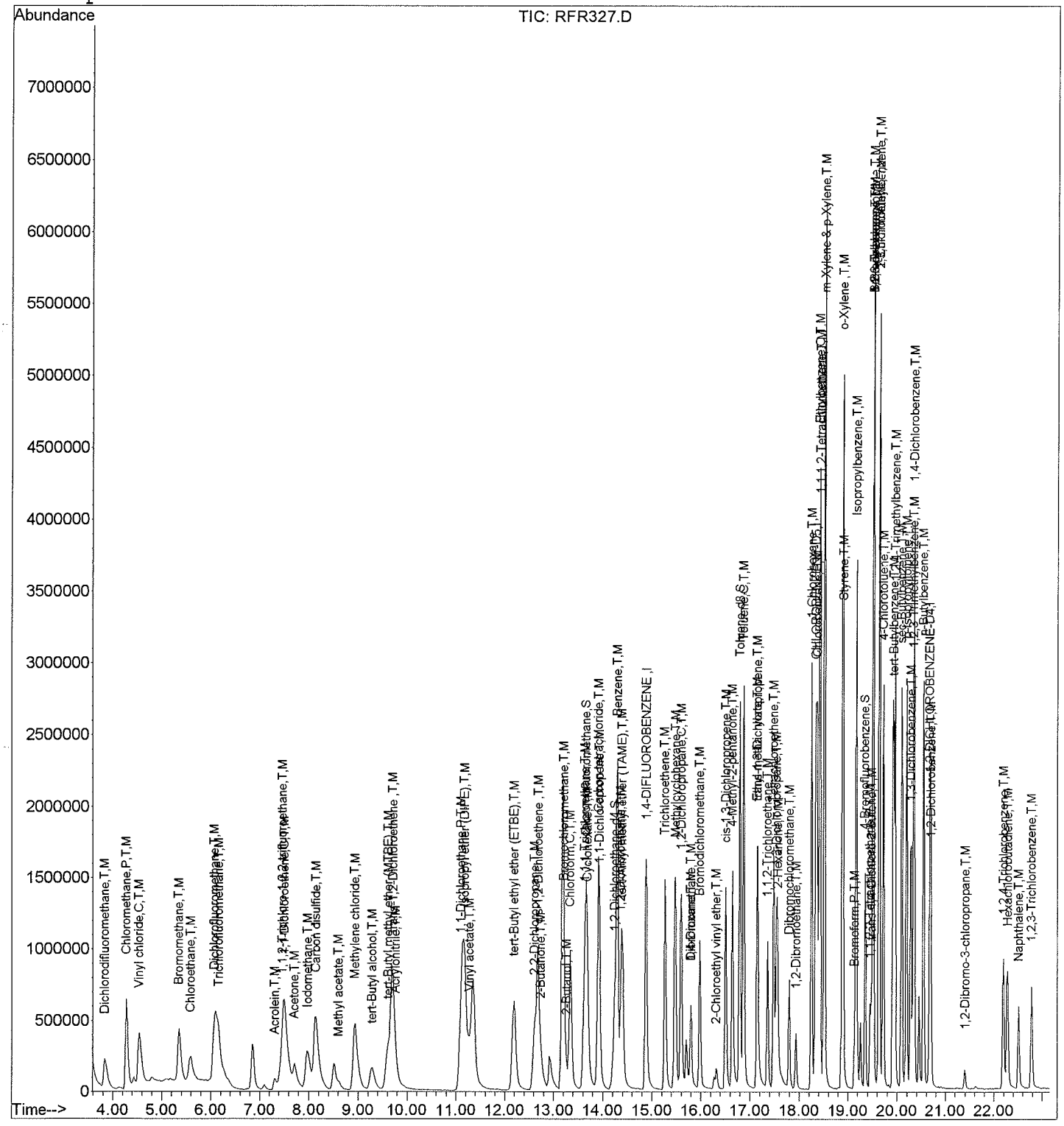
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1747793	10.33	ug/l	99
82)	2-Chlorotoluene	19.62	91	1898467	10.99	ug/l	100
83)	4-Chlorotoluene	19.71	91	1688161	11.03	ug/l	99
84)	tert-Butylbenzene	19.92	134	393684	11.13	ug/l	91
85)	1,2,4-Trimethylbenzene	19.95	105	1774997	10.94	ug/l	98
86)	sec-Butylbenzene	20.09	105	2412162	10.48	ug/l	99
87)	p-Isopropyltoluene	20.19	119	1826865	9.96	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	887272	10.32	ug/l	97
89)	1,2,3-Trimethylbenzene	20.32	105	1477320	9.79	ug/l	99
90)	1,4-Dichlorobenzene	20.34	146	920070	10.47	ug/l	98
92)	n-Butylbenzene	20.53	91	2017425	10.05	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	724464	10.13	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	43847	10.88	ug/l	97
95)	1,2,4-Trichlorobenzene	22.20	180	394803	9.37	ug/l	97
96)	Hexachlorobutadiene	22.28	225	240822	9.17	ug/l	98
97)	Naphthalene	22.51	128	620463	10.33	ug/l	99
98)	1,2,3-Trichlorobenzene	22.77	180	312317	9.53	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR327.D Vial: 4
Acq On : 18 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F15C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:30 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR383.D Vial: 6
Acq On : 22 Jun 2020 10:41 am Operator: ENguye/ODinh
Sample : VOF3F17B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:41 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2390129	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1820053	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	607210	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	862643	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.90%			
40) 1,2-Dichloroethane-d4	14.24	65	676658	9.71	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.10%			
55) Toluene-d8	16.78	98	2502358	9.93	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.30%			
75) 4-Bromofluorobenzene	19.34	95	816059	10.73	ug/l	-0.02
Spiked Amount 10.000			Recovery = 107.30%			

Target Compounds Qvalue

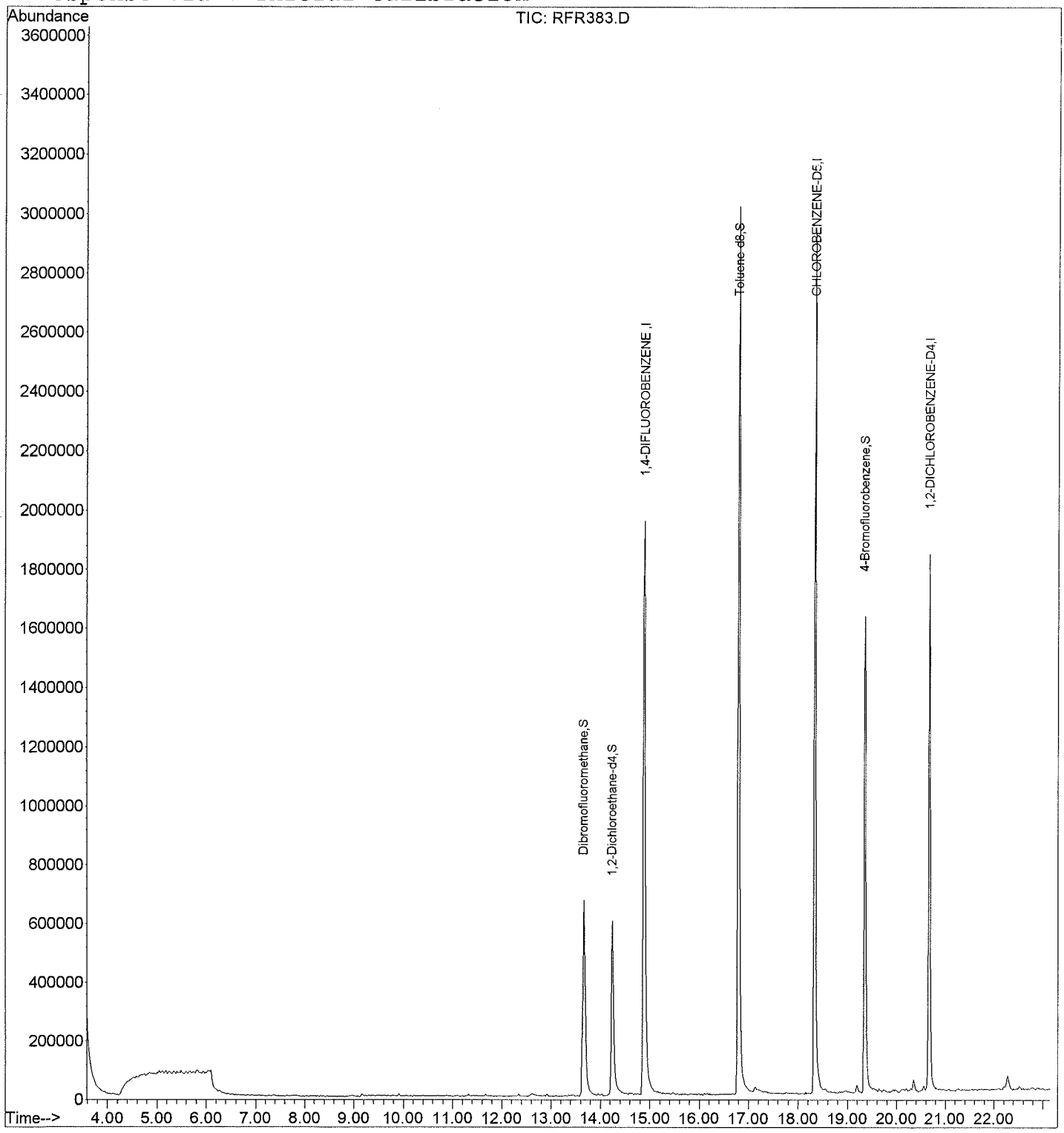
(#) = qualifier out of range (m) = manual integration
RFR383.D VOF3D02.M Tue Jun 23 09:41:50 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR383.D
Acq On : 22 Jun 2020 10:41 am
Sample : VOF3F17B
Misc : BLANK
MS Integration Params: RTE.P
Quant Time: Jun 23 9:41 2020

Vial: 6
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2571371	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1927330	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	642529	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	891801	9.79	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.90%		
40) 1,2-Dichloroethane-d4	14.24	65	819765	10.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.40%		
55) Toluene-d8	16.79	98	2546169	9.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	95.40%		
75) 4-Bromofluorobenzene	19.34	95	826501	10.27	ug/l	-0.01
Spiked Amount 10.000			Recovery =	102.70%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	840103	9.32	ug/l	100
4) Chloromethane	4.29	50	1923202	10.89	ug/l	99
6) Vinyl chloride	4.54	62	1434678	10.22	ug/l	99
7) Bromomethane	5.35	94	856307	8.67	ug/l	99
8) Chloroethane	5.60	64	663154	9.08	ug/l	98
9) Dichlorofluoromethane	6.07	67	2375046	10.98	ug/l	99
10) Trichlorofluoromethane	6.16	101	1265756	10.37	ug/l	99
11) Acrolein	7.31	56	165928	20.55	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	515521	9.13	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1850864	9.83	ug/l	99
14) Acetone	7.71	43	549284	40.85	ug/l	96
15) Iodomethane	7.96	142	1541966	9.90	ug/l	99
16) Methyl acetate	8.60	43	257463	6.94	ug/l	93
17) Carbon disulfide	8.14	76	3652294	10.93	ug/l	100
18) Methylene chloride	8.93	49	1783824	9.96	ug/l	97
19) tert-Butyl alcohol	9.26	59	873815	224.53	ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	1243398	8.12	ug/l	97
21) trans-1,2-Dichloroethene	9.69	96	1021625	10.31	ug/l	98
22) Acrylonitrile	9.76	53	583722	40.76	ug/l	99
23) Isopropyl ether (DIPE)	11.15	45	3624908	9.06	ug/l	98
24) 1,1-Dichloroethane	11.10	63	2156910	10.11	ug/l	99
25) Vinyl acetate	11.28	43	1231937	9.15	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	2102696	7.82	ug/l	100
27) 2,2-Dichloropropane	12.62	77	969343	10.55	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	1033983	9.95	ug/l	99
29) 2-Butanone	12.74	72	169027	43.57	ug/l	96
30) 2-Butanol	13.26	45	9591	2.62	ug/l	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	480880	9.78	ug/l	99
33)	Chloroform	13.34	83	1799337	10.30	ug/l	100
35)	1,1,1-Trichloroethane	13.63	97	1177968	10.50	ug/l	99
36)	Cyclohexane	13.68	84	759169	5.81	ug/l	99
37)	1,1-Dichloropropene	13.93	110	505646	10.65	ug/l	98
38)	Carbon tetrachloride	13.91	119	1064704	11.21	ug/l	98
42)	Benzene	14.29	78	3810014	10.41	ug/l	99
43)	1,2-Dichloroethane	14.36	62	898489	10.37	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	264419	8.49	ug/l	99
45)	Trichloroethene	15.27	130	1015697	10.62	ug/l	99
46)	Methylcyclohexane	15.48	83	1042177	6.92	ug/l	97
47)	1,2-Dichloropropane	15.60	63	1090621	10.47	ug/l	99
48)	1,4-Dioxane	15.79	88	54782	212.96	ug/l	91
49)	Dibromomethane	15.79	93	399835	10.11	ug/l	98
50)	Bromodichloromethane	15.97	83	1142078	10.81	ug/l	99
51)	2-Chloroethyl vinyl ether	16.32	63	108780	5.96	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1356489	10.86	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1995584	45.40	ug/l	99
56)	Toluene	16.86	91	3338133	10.04	ug/l	100
57)	Ethyl methacrylate	17.16	69	626628	10.59	ug/l	97
58)	trans-1,3-Dichloropropene	17.14	75	1002372	10.57	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	450332	9.96	ug/l	98
60)	Tetrachloroethene	17.48	164	713380	10.86	ug/l	99
61)	2-Hexanone	17.56	43	1294408	40.34	ug/l	97
62)	1,3-Dichloropropane	17.53	76	908866	10.71	ug/l	100
63)	Dibromochloromethane	17.80	129	636518	10.75	ug/l	99
64)	1,2-Dibromoethane	17.93	107	461265	10.55	ug/l	100
65)	1-Chlorohexane	18.24	91	1333625	10.02	ug/l	100
66)	Chlorobenzene	18.36	112	1914099	10.02	ug/l	100
67)	Ethylbenzene	18.41	91	3704133	10.10	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	651714	10.29	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	5564961	20.01	ug/l	100
70)	o-Xylene	18.88	91	2679849	9.87	ug/l	100
71)	Styrene	18.90	104	1904545	10.09	ug/l	100
73)	Bromoform	19.13	173	281644	11.51	ug/l	99
74)	Isopropylbenzene	19.16	105	3278978	10.68	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.45	83	506009	10.29	ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.47	53	130890	9.25	ug/l	99
78)	n-Propylbenzene	19.50	91	4254952	10.42	ug/l	100
79)	1,2,3-Trichloropropane	19.50	110	94039	9.84	ug/l	83
80)	Bromobenzene	19.50	156	675375	9.98	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

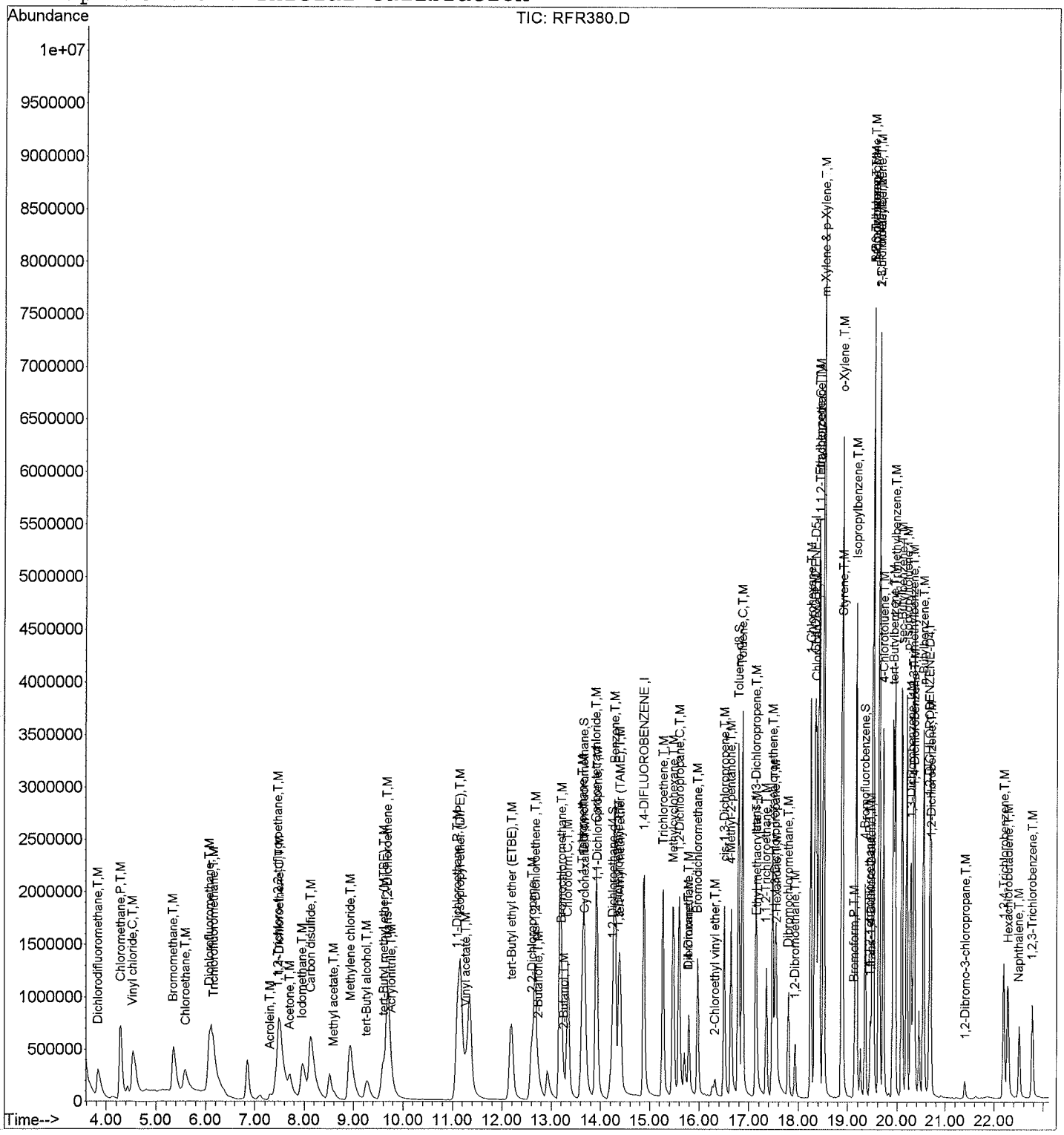
Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81) 1,3,5-Trimethylbenzene	19.62	105	2449032	10.25 ug/l	99
82) 2-Chlorotoluene	19.62	91	2516831	10.32 ug/l	100
83) 4-Chlorotoluene	19.71	91	2204947	10.20 ug/l	99
84) tert-Butylbenzene	19.92	134	537076	10.75 ug/l	95
85) 1,2,4-Trimethylbenzene	19.95	105	2299715	10.03 ug/l	98
86) sec-Butylbenzene	20.08	105	3395222	10.44 ug/l	100
87) p-Isopropyltoluene	20.19	119	2536998	9.80 ug/l	100
88) 1,3-Dichlorobenzene	20.28	146	1201581	9.90 ug/l	97
89) 1,2,3-Trimethylbenzene	20.32	105	1910642	8.97 ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	1233647	9.94 ug/l	97
92) n-Butylbenzene	20.53	91	2741720	9.67 ug/l	99
93) 1,2-Dichlorobenzene	20.69	146	988021	9.79 ug/l	100
94) 1,2-Dibromo-3-chloropropan	21.41	157	57658	10.13 ug/l	97
95) 1,2,4-Trichlorobenzene	22.19	180	550989	9.26 ug/l	97
96) Hexachlorobutadiene	22.28	225	338538	9.13 ug/l	99
97) Naphthalene	22.51	128	775034	9.14 ug/l	100
98) 1,2,3-Trichlorobenzene	22.77	180	424260	9.17 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2467608	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1827658	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	630684	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	827503	9.47	ug/l	0.00
Spiked Amount 10.000			Recovery =	94.70%		
40) 1,2-Dichloroethane-d4	14.25	65	777418	10.81	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.10%		
55) Toluene-d8	16.79	98	2594967	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
75) 4-Bromofluorobenzene	19.34	95	824340	10.43	ug/l	-0.01
Spiked Amount 10.000			Recovery =	104.30%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	783658	9.06	ug/l	99
4) Chloromethane	4.27	50	1807148	10.66	ug/l	100
6) Vinyl chloride	4.54	62	1379527	10.24	ug/l	99
7) Bromomethane	5.35	94	808878	8.54	ug/l	100
8) Chloroethane	5.60	64	630688	9.00	ug/l	98
9) Dichlorofluoromethane	6.07	67	2277305	10.97	ug/l	100
10) Trichlorofluoromethane	6.16	101	1203766	10.27	ug/l	99
11) Acrolein	7.31	56	175572	22.66	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	495152	9.14	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1778745	9.85	ug/l	99
14) Acetone	7.71	43	540919	41.92	ug/l	97
15) Iodomethane	7.96	142	1541127	10.31	ug/l	99
16) Methyl acetate	8.60	43	248869	6.99	ug/l	95
17) Carbon disulfide	8.14	76	3470570	10.83	ug/l	99
18) Methylene chloride	8.93	49	1737590	10.11	ug/l	96
19) tert-Butyl alcohol	9.29	59	855923	229.18	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	1240028	8.44	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	978342	10.29	ug/l	99
22) Acrylonitrile	9.76	53	578632	42.10	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	3550858	9.25	ug/l	98
24) 1,1-Dichloroethane	11.10	63	2143198	10.47	ug/l	99
25) Vinyl acetate	11.27	43	1226395	9.47	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	1990404	7.72	ug/l	100
27) 2,2-Dichloropropane	12.62	77	905699	10.27	ug/l	100
28) cis-1,2-Dichloroethene	12.69	96	967708	9.71	ug/l	100
29) 2-Butanone	12.74	72	167241	44.92	ug/l	99
30) 2-Butanol	13.16	45	538	0.15	ug/l #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	468099	9.92	ug/l	99
33)	Chloroform	13.34	83	1645483	9.81	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	1092214	10.15	ug/l	98
36)	Cyclohexane	13.68	84	697330	5.56	ug/l	100
37)	1,1-Dichloropropene	13.93	110	469929	10.31	ug/l	98
38)	Carbon tetrachloride	13.91	119	996603	10.93	ug/l	98
42)	Benzene	14.29	78	3656363	10.41	ug/l	99
43)	1,2-Dichloroethane	14.36	62	826660	9.95	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	249446	8.34	ug/l	97
45)	Trichloroethene	15.27	130	942032	10.27	ug/l	98
46)	Methylcyclohexane	15.48	83	952072	6.59	ug/l	98
47)	1,2-Dichloropropane	15.60	63	1023559	10.24	ug/l	100
48)	1,4-Dioxane	15.79	88	55531	224.95	ug/l	99
49)	Dibromomethane	15.79	93	385592	10.16	ug/l	99
50)	Bromodichloromethane	15.97	83	1099428	10.85	ug/l	99
51)	2-Chloroethyl vinyl ether	16.33	63	105101	6.00	ug/l	97
52)	cis-1,3-Dichloropropene	16.50	75	1297241	10.82	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1962709	46.53	ug/l	99
56)	Toluene	16.86	91	3261364	10.35	ug/l	100
57)	Ethyl methacrylate	17.14	69	600361	10.70	ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	939275	10.44	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	437091	10.20	ug/l	98
60)	Tetrachloroethene	17.47	164	672812	10.80	ug/l	98
61)	2-Hexanone	17.56	43	1306433	42.94	ug/l	97
62)	1,3-Dichloropropane	17.53	76	855099	10.62	ug/l	98
63)	Dibromochloromethane	17.80	129	626791	11.16	ug/l	99
64)	1,2-Dibromoethane	17.93	107	456289	11.00	ug/l	99
65)	1-Chlorohexane	18.24	91	1293632	10.25	ug/l	100
66)	Chlorobenzene	18.36	112	1901331	10.49	ug/l	99
67)	Ethylbenzene	18.41	91	3691632	10.61	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	648774	10.81	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	5361202	20.33	ug/l	100
70)	o-Xylene	18.88	91	2628864	10.21	ug/l	99
71)	Styrene	18.90	104	1934475	10.81	ug/l	99
73)	Bromoform	19.13	173	272110	11.33	ug/l	99
74)	Isopropylbenzene	19.16	105	3202373	10.63	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.45	83	504520	10.45	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	135864	9.78	ug/l	100
78)	n-Propylbenzene	19.51	91	4197908	10.47	ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	95218	10.15	ug/l	87
80)	Bromobenzene	19.51	156	678132	10.21	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

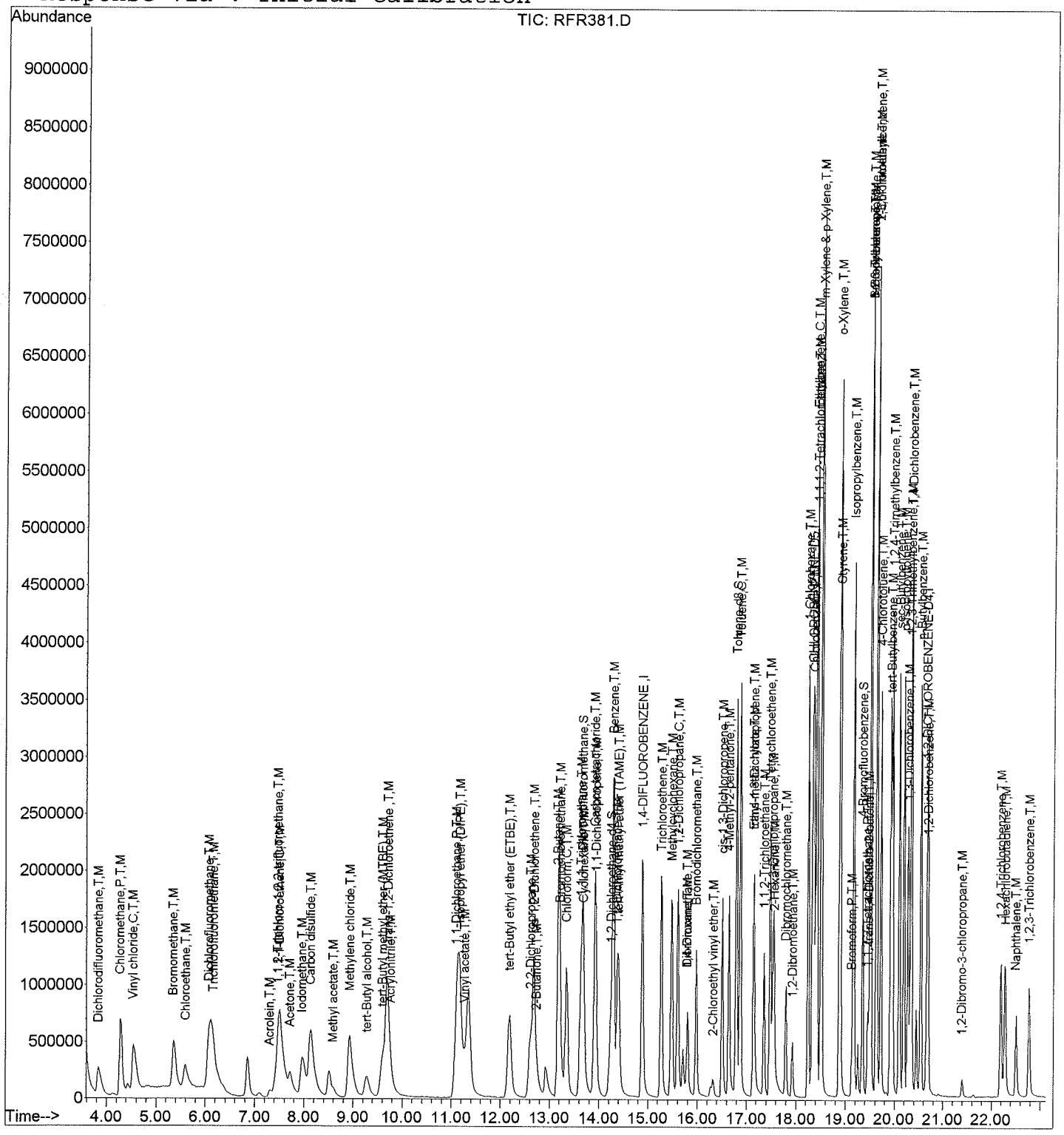
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2375760	10.13	ug/l	98
82)	2-Chlorotoluene	19.62	91	2440666	10.19	ug/l	100
83)	4-Chlorotoluene	19.71	91	2197556	10.36	ug/l	99
84)	tert-Butylbenzene	19.92	134	498865	10.17	ug/l	93
85)	1,2,4-Trimethylbenzene	19.95	105	2329516	10.36	ug/l	97
86)	sec-Butylbenzene	20.08	105	3199288	10.02	ug/l	99
87)	p-Isopropyltoluene	20.19	119	2536409	9.98	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	1224615	10.28	ug/l	97
89)	1,2,3-Trimethylbenzene	20.32	105	1907481	9.12	ug/l	99
90)	1,4-Dichlorobenzene	20.34	146	1184698	9.72	ug/l	97
92)	n-Butylbenzene	20.53	91	2587048	9.29	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	998989	10.08	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.39	157	58762	10.52	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	549097	9.40	ug/l	99
96)	Hexachlorobutadiene	22.28	225	343377	9.43	ug/l	98
97)	Naphthalene	22.51	128	789749	9.49	ug/l	100
98)	1,2,3-Trichlorobenzene	22.77	180	436037	9.60	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR399.D Vial: 22
Acq On : 22 Jun 2020 6:26 pm Operator: ENguye/ODinh
Sample : 20F154-02M 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1963173	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1474453	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	516755	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	704174	10.13	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.30%		
40) 1,2-Dichloroethane-d4	14.25	65	594561	10.39	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.90%		
55) Toluene-d8	16.79	98	2126414	10.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.20%		
75) 4-Bromofluorobenzene	19.36	95	663599	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.85	85	769119	11.18	ug/l	98
4) Chloromethane	4.29	50	1637096	12.14	ug/l	99
6) Vinyl chloride	4.55	62	1226412	11.44	ug/l	100
7) Bromomethane	5.36	94	671209	8.91	ug/l	100
8) Chloroethane	5.59	64	572043	10.26	ug/l	98
9) Dichlorofluoromethane	6.09	67	1817280	11.01	ug/l	100
10) Trichlorofluoromethane	6.16	101	1111778	11.93	ug/l	100
11) Acrolein	7.32	56	163891	26.59	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	412616	9.57	ug/l	100
13) 1,1-Dichloroethene	7.51	61	1508212	10.50	ug/l	98
14) Acetone	7.73	43	400913	39.05	ug/l	98
15) Iodomethane	7.97	142	1217252	10.23	ug/l	98
16) Methyl acetate	8.63	43	168301	5.94	ug/l	94
17) Carbon disulfide	8.13	76	2789652	10.94	ug/l	100
18) Methylene chloride	8.93	49	1482378	10.84	ug/l	99
19) tert-Butyl alcohol	9.29	59	612717	206.22	ug/l	96
20) tert-Butyl methyl ether (M	9.61	73	980514	8.39	ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	788554	10.42	ug/l	100
22) Acrylonitrile	9.76	53	475546	43.49	ug/l	99
23) Isopropyl ether (DIPE)	11.18	45	2825797	9.25	ug/l	100
24) 1,1-Dichloroethane	11.13	63	1674613	10.28	ug/l	99
25) Vinyl acetate	11.27	43	927444	9.04	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	1521437	7.41	ug/l	98
27) 2,2-Dichloropropane	12.62	77	646065	9.21	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	790877	9.97	ug/l	100
29) 2-Butanone	12.76	72	127402	43.02	ug/l	96
30) 2-Butanol	13.29	45	2591	0.93	ug/l #	8

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR399.D Vial: 22
Acq On : 22 Jun 2020 6:26 pm Operator: ENguye/ODinh
Sample : 20F154-02M 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	365752	9.74 ug/l	100
33)	Chloroform	13.36	83	1915243	14.36 ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	936485	10.94 ug/l	98
36)	Cyclohexane	13.68	84	647713	6.49 ug/l	100
37)	1,1-Dichloropropene	13.93	110	364870	10.06 ug/l	100
38)	Carbon tetrachloride	13.91	119	796101	10.98 ug/l	99
42)	Benzene	14.29	78	2911161	10.42 ug/l	99
43)	1,2-Dichloroethane	14.38	62	711444	10.76 ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	193174	8.12 ug/l	100
45)	Trichloroethene	15.27	130	786562	10.78 ug/l	98
46)	Methylcyclohexane	15.48	83	850298	7.40 ug/l	98
47)	1,2-Dichloropropane	15.60	63	831590	10.45 ug/l	99
48)	1,4-Dioxane	15.79	88	37269	189.77 ug/l	100
49)	Dibromomethane	15.79	93	304615	10.09 ug/l	98
50)	Bromodichloromethane	15.98	83	910398	11.29 ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	992981	10.41 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1484382	44.23 ug/l	99
56)	Toluene	16.88	91	2561693	10.07 ug/l	100
57)	Ethyl methacrylate	17.16	69	457229	10.10 ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	726492	10.01 ug/l	100
59)	1,1,2-Trichloroethane	17.35	97	355107	10.27 ug/l	97
60)	Tetrachloroethene	17.48	164	11147453	221.76 ug/l	99
61)	2-Hexanone	17.56	43	943456	38.44 ug/l	98
62)	1,3-Dichloropropane	17.53	76	651870	10.04 ug/l	99
63)	Dibromochloromethane	17.80	129	466361	10.30 ug/l	99
64)	1,2-Dibromoethane	17.93	107	340644	10.18 ug/l	100
65)	1-Chlorohexane	18.26	91	1011069	9.93 ug/l	100
66)	Chlorobenzene	18.36	112	1436909	9.83 ug/l	100
67)	Ethylbenzene	18.41	91	2789037	9.94 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	494091	10.20 ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	4072627	19.15 ug/l	98
70)	o-Xylene	18.88	91	2032620	9.79 ug/l	99
71)	Styrene	18.90	104	1327970	9.19 ug/l	98
73)	Bromoform	19.15	173	209140	10.63 ug/l	99
74)	Isopropylbenzene	19.16	105	2414603	9.78 ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	406735	10.28 ug/l	98
77)	trans-1,4-Dichloro-2-buten	19.49	53	108066	9.50 ug/l	99
78)	n-Propylbenzene	19.51	91	3225277	9.82 ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	72571	9.44 ug/l	89
80)	Bromobenzene	19.52	156	520886	9.57 ug/l	99
81)	1,3,5-Trimethylbenzene	19.62	105	1828124	9.52 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR399.D Vial: 22
Acq On : 22 Jun 2020 6:26 pm Operator: ENguye/ODinh
Sample : 20F154-02M 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	2-Chlorotoluene	19.64	91	1930920	9.84	ug/l	99
83)	4-Chlorotoluene	19.71	91	1737060	9.99	ug/l	99
84)	tert-Butylbenzene	19.92	134	411425	10.24	ug/l	98
85)	1,2,4-Trimethylbenzene	19.95	105	1724182	9.35	ug/l	99
86)	sec-Butylbenzene	20.10	105	2652786	10.14	ug/l	100
87)	p-Isopropyltoluene	20.19	119	2014400	9.67	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	958368	9.82	ug/l	96
89)	1,2,3-Trimethylbenzene	20.34	105	1456149	8.50	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	892380	8.94	ug/l	96
92)	n-Butylbenzene	20.55	91	2013940	8.83	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	790935	9.74	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	44561	9.73	ug/l	100
95)	1,2,4-Trichlorobenzene	22.19	180	416811	8.71	ug/l	99
96)	Hexachlorobutadiene	22.28	225	262281	8.79	ug/l	97
97)	Naphthalene	22.52	128	559514	8.20	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	323788	8.70	ug/l	99

(#) = qualifier out of range (m) = manual integration

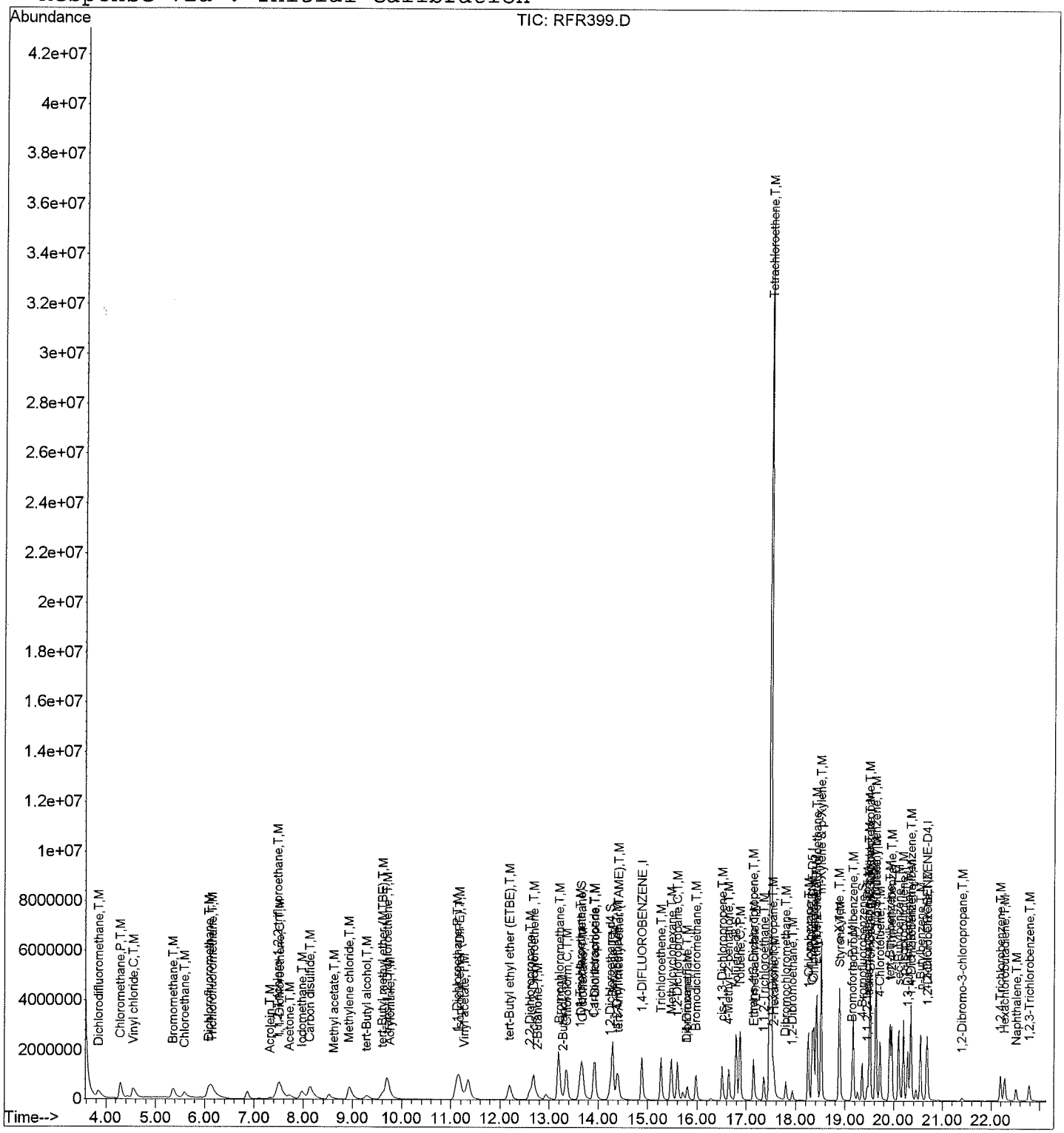
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR399.D
Acq On : 22 Jun 2020 6:26 pm
Sample : 20F154-02M 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 9:29 2020

Vial: 22
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR400.D Vial: 23
Acq On : 22 Jun 2020 6:55 pm Operator: ENguye/ODinh
Sample : 20F154-02S 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1897031	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1442286	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	510282	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	679467	10.12	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.20%		
40) 1,2-Dichloroethane-d4	14.24	65	564051	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.00%		
55) Toluene-d8	16.79	98	2031005	10.17	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.70%		
75) 4-Bromofluorobenzene	19.34	95	643786	10.07	ug/l	-0.01
Spiked Amount 10.000			Recovery =	100.70%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	714046	10.74	ug/l	99
4) Chloromethane	4.29	50	1506642	11.56	ug/l	99
6) Vinyl chloride	4.54	62	1145660	11.06	ug/l	99
7) Bromomethane	5.37	94	646465	8.88	ug/l	100
8) Chloroethane	5.60	64	517881	9.61	ug/l	97
9) Dichlorofluoromethane	6.09	67	1860327	11.66	ug/l	100
10) Trichlorofluoromethane	6.16	101	1043701	11.59	ug/l	100
11) Acrolein	7.31	56	166285	27.92	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	412420	9.90	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1509394	10.87	ug/l	99
14) Acetone	7.73	43	401584	40.48	ug/l	98
15) Iodomethane	7.98	142	1215039	10.57	ug/l	99
16) Methyl acetate	8.62	43	166761	6.09	ug/l	97
17) Carbon disulfide	8.14	76	2789077	11.32	ug/l	100
18) Methylene chloride	8.93	49	1470379	11.13	ug/l	99
19) tert-Butyl alcohol	9.29	59	628117	218.77	ug/l	94
20) tert-Butyl methyl ether (M	9.61	73	993965	8.80	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	798193	10.92	ug/l	99
22) Acrylonitrile	9.76	53	477117	45.16	ug/l	99
23) Isopropyl ether (DIPE)	11.18	45	2837205	9.61	ug/l	100
24) 1,1-Dichloroethane	11.13	63	1698584	10.79	ug/l	100
25) Vinyl acetate	11.27	43	835457	8.47	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1573353	7.93	ug/l	99
27) 2,2-Dichloropropane	12.62	77	660548	9.75	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	811222	10.59	ug/l	99
29) 2-Butanone	12.74	72	130672	45.66	ug/l	98
30) 2-Butanol	13.14	45	468	0.17	ug/l #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR400.D Vial: 23
Acq On : 22 Jun 2020 6:55 pm Operator: ENguye/ODinh
Sample : 20F154-02S 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	370467	10.21 ug/l	99
33)	Chloroform	13.34	83	1930433	14.98 ug/l	100
35)	1,1,1-Trichloroethane	13.63	97	921442	11.14 ug/l	98
36)	Cyclohexane	13.68	84	604218	6.26 ug/l	99
37)	1,1-Dichloropropene	13.93	110	377453	10.77 ug/l	100
38)	Carbon tetrachloride	13.91	119	827658	11.81 ug/l	99
42)	Benzene	14.29	78	2897649	10.73 ug/l	100
43)	1,2-Dichloroethane	14.36	62	693764	10.86 ug/l	98
44)	tert-Amyl methyl ether (TA	14.41	87	190721	8.30 ug/l	97
45)	Trichloroethene	15.27	130	772831	10.96 ug/l	97
46)	Methylcyclohexane	15.48	83	807050	7.27 ug/l	99
47)	1,2-Dichloropropane	15.60	63	811996	10.56 ug/l	99
48)	1,4-Dioxane	15.79	88	39693	209.16 ug/l	93
49)	Dibromomethane	15.79	93	309790	10.62 ug/l	97
50)	Bromodichloromethane	15.98	83	902587	11.58 ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	993000	10.78 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1533038	47.27 ug/l	99
56)	Toluene	16.87	91	2608734	10.49 ug/l	100
57)	Ethyl methacrylate	17.16	69	485084	10.95 ug/l	99
58)	trans-1,3-Dichloropropene	17.14	75	751402	10.59 ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	345562	10.22 ug/l	97
60)	Tetrachloroethene	17.48	164	10909800	221.87 ug/l	98
61)	2-Hexanone	17.56	43	948286	39.50 ug/l	99
62)	1,3-Dichloropropane	17.53	76	646063	10.17 ug/l	100
63)	Dibromochloromethane	17.80	129	460160	10.39 ug/l	100
64)	1,2-Dibromoethane	17.93	107	338340	10.34 ug/l	100
65)	1-Chlorohexane	18.26	91	991945	9.96 ug/l	99
66)	Chlorobenzene	18.36	112	1439279	10.07 ug/l	100
67)	Ethylbenzene	18.41	91	2784227	10.14 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	487949	10.30 ug/l	100
69)	m-Xylene & p-Xylene	18.51	91	4223220	20.30 ug/l	99
70)	o-Xylene	18.88	91	2048692	10.09 ug/l	100
71)	Styrene	18.90	104	1379279	9.76 ug/l	99
73)	Bromoform	19.15	173	213145	10.97 ug/l	100
74)	Isopropylbenzene	19.16	105	2467773	10.12 ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	412102	10.55 ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.49	53	109098	9.71 ug/l	97
78)	n-Propylbenzene	19.50	91	3330695	10.27 ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	77232	10.18 ug/l	84
80)	Bromobenzene	19.52	156	534514	9.95 ug/l	99
81)	1,3,5-Trimethylbenzene	19.62	105	1890589	9.97 ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR400.D Vial: 23
Acq On : 22 Jun 2020 6:55 pm Operator: ENguye/ODinh
Sample : 20F154-02S 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

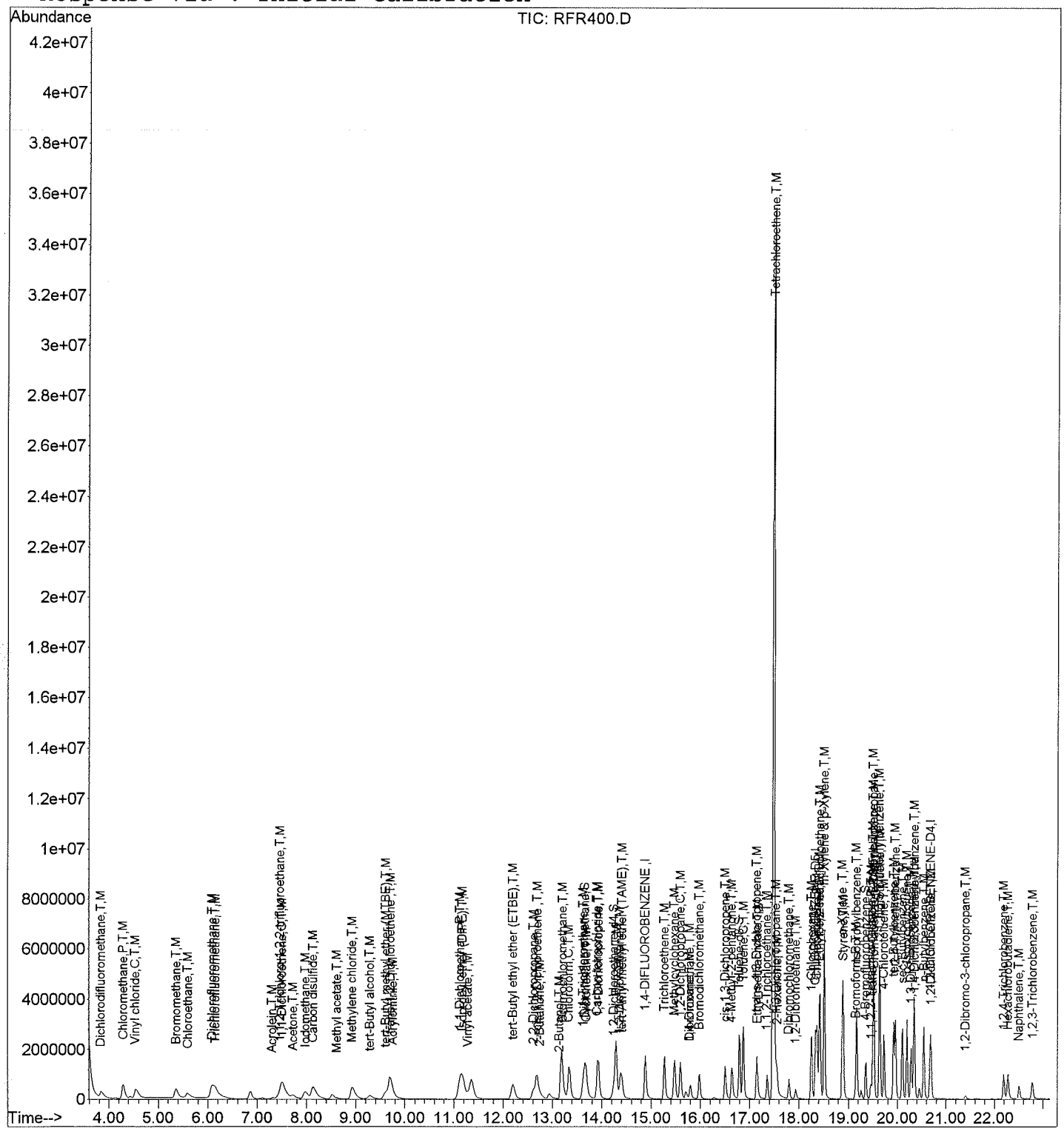
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	2-Chlorotoluene	19.64	91	1980823	10.23	ug/l	98
83)	4-Chlorotoluene	19.71	91	1703629	9.92	ug/l	98
84)	tert-Butylbenzene	19.92	134	413378	10.42	ug/l	99
85)	1,2,4-Trimethylbenzene	19.95	105	1804990	9.92	ug/l	99
86)	sec-Butylbenzene	20.10	105	2527003	9.79	ug/l	100
87)	p-Isopropyltoluene	20.19	119	1974893	9.60	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	942936	9.78	ug/l	100
89)	1,2,3-Trimethylbenzene	20.34	105	1531439	9.05	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	954573	9.68	ug/l	100
92)	n-Butylbenzene	20.54	91	2061283	9.15	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	776676	9.69	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	44094	9.75	ug/l	100
95)	1,2,4-Trichlorobenzene	22.19	180	419165	8.87	ug/l	99
96)	Hexachlorobutadiene	22.28	225	263294	8.94	ug/l	99
97)	Naphthalene	22.51	128	596273	8.85	ug/l	99
98)	1,2,3-Trichlorobenzene	22.79	180	322018	8.76	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR400.D Vial: 23
Acq On : 22 Jun 2020 6:55 pm Operator: ENguye/ODinh
Sample : 20F154-02S 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:30 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RDR001
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm

Contract: ICAL
SAS No.: SDG No.: ICAL
BFB Injection Date : 04/02/20
BFB Injection Time : 16:01
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.44
75	30.0 - 60.0% of mass 95	50.24
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.69
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	72.41
175	5.0 - 9.0% of mass 174	6.02(8.3)1
176	95.0 - 101.0% of mass 174	71.36(98.5)1
177	5.0 - 9.0% of mass 176	5.18(7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VOF3D021	RDR002	04/02/20	16:47
2	VSTD0.5	VOF3D022	RDR003	04/02/20	17:16
3	VSTD01	VOF3D023	RDR004	04/02/20	17:46
4	VSTD02	VOF3D024	RDR005	04/02/20	18:15
5	VSTD05	VOF3D025	RDR006	04/02/20	18:44
6	VSTD010	VOF3D026	RDR007	04/02/20	19:14
7	VSTD020	VOF3D027	RDR008	04/02/20	19:43
8	VSTD050	VOF3D029	RDR010	04/02/20	20:41
9	VSTD100	VOF3D0210	RDR011	04/02/20	21:11

FORM V VOA OLM02.0

SC 4/22/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	0.175	0.165	0.197	0.220	0.222	0.242	0.231	0.184	0.186	0.202	13.37	3.7589
	3	Dichlorodifluoromethane	0.310	0.307	0.373	0.391	0.358	0.388	0.379	0.298	------	0.350	11.16	3.8425
	4	Chloromethane	0.705	0.660	0.714	0.733	0.668	0.719	0.703	0.595	------	0.687	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	0.331	0.302	0.343	0.389	0.375	0.400	0.401	0.322	0.329	0.355	10.42	4.7880
	6	Vinyl chloride	0.500	0.474	0.575	0.599	0.575	0.595	0.605	0.491	0.501	0.546	9.75	4.5528
	7	Bromomethane	0.382	0.360	0.383	0.401	0.380	0.412	0.411	0.343	------	0.384	6.23	5.3574
	8	Chloroethane	0.284	0.261	0.295	0.314	0.286	0.297	0.284	0.252	------	0.284	6.98	5.6044
	9	Dichlorofluoromethane	0.933	0.867	0.884	0.928	0.817	0.878	0.794	0.726	0.743	0.841	8.97	6.0816
	10	Trichlorofluoromethane	0.411	0.403	0.501	0.519	0.513	0.509	0.506	0.437	------	0.475	10.30	6.1711
5	11	Acrolein	------	------	------	0.037	0.034	0.030	0.029	0.029	0.030	0.031	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.222	0.216	0.225	0.246	0.224	0.227	0.217	0.199	0.201	0.220	6.46	7.4752
	13	1,1-Dichloroethene	0.759	0.717	0.776	0.820	0.719	0.769	0.722	0.651	0.655	0.732	7.60	7.5281
5	14	Acetone	------	------	------	0.062	0.058	0.048	0.048	0.048	0.049	0.052	12.14	7.7175
	15	Iodomethane	0.598	0.604	0.601	0.666	0.586	0.584	0.585	0.624	0.605	0.606	4.28	8.0221
	16	Methyl acetate	------	------	------	0.163	0.136	0.143	0.151	0.139	0.134	0.144	7.47	8.5966
	17	Carbon disulfide	1.076	1.118	1.366	1.418	1.351	1.483	1.432	1.260	1.188	1.299	11.19	8.1455
	18	Methylene chloride	0.692	0.700	0.726	0.790	0.701	0.701	0.690	0.657	0.613	0.697	6.84	8.9727
25	19	tert-Butyl alcohol	0.017	0.016	0.015	0.016	0.016	0.013	0.014	0.014	0.015	0.015	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	0.711	0.631	0.604	0.658	0.596	0.529	0.530	0.551	0.548	0.595	10.55	9.6218
	21	trans-1,2-Dichloroethene	0.386	0.383	0.392	0.431	0.385	0.384	0.374	0.376	0.358	0.385	5.12	9.7045
5	22	Acrylonitrile	------	------	0.050	0.059	0.058	0.053	0.055	0.057	0.059	0.056	6.20	9.7634
	23	Isopropyl ether (DIPE)	1.509	1.497	1.572	1.765	1.677	1.548	1.519	1.495	1.426	1.556	6.67	11.1810
	24	1,1-Dichloroethane	0.846	0.802	0.873	0.920	0.841	0.838	0.805	0.791	0.753	0.830	5.89	11.1175
	25	Vinyl acetate	------	------	------	0.357	0.467	0.507	0.609	0.542	------	0.496	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	1.223	1.133	1.187	1.038	0.939	0.961	0.941	0.943	1.045	11.38	12.1937
	27	2,2-Dichloropropane	0.399	0.380	0.388	0.379	0.338	0.315	0.302	------	------	0.357	10.74	12.6159
	28	cis-1,2-Dichloroethene	0.407	0.411	0.428	0.440	0.406	0.387	0.381	0.389	0.386	0.404	5.04	12.6905
5	29	2-Butanone	------	------	------	0.015	0.017	0.015	0.014	0.015	0.015	0.015	5.59	12.7443
25	30	2-Butanol	------	------	0.011	0.016	0.016	0.014	0.015	0.014	0.014	0.014	13.24	13.1447
	31	Bromochloromethane	0.182	0.190	0.194	0.213	0.197	0.178	0.184	0.189	0.193	0.191	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	0.682	0.669	0.696	0.751	0.693	0.657	0.662	0.659	0.646	0.679	4.65	13.3528
	34	Dibromofluoromethane	------	0.317	0.346	0.375	0.361	0.366	0.371	0.342	------	0.354	5.79	13.6698
	35	1,1,1-Trichloroethane	0.426	0.452	0.475	0.487	0.438	0.438	0.430	0.401	0.379	0.436	7.71	13.6343
	36	Cyclohexane	0.506	0.466	0.534	0.552	0.518	0.515	0.529	0.448	------	0.509	6.86	13.6839
	37	1,1-Dichloropropene	0.162	0.181	0.185	0.198	0.198	0.192	0.183	0.185	0.179	0.185	6.05	13.9379
	38	Carbon tetrachloride	0.337	0.349	0.381	0.392	0.392	0.373	0.369	0.370	0.361	0.369	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	0.230	0.287	0.274	0.296	0.307	0.285	0.333	0.315	0.297	0.292	9.98	14.2526
	41	2,2,4-Trimethylpentane	1.403	1.362	1.487	1.742	1.666	1.777	1.733	1.412	------	1.573	11.03	14.3132
	42	Benzene	------	1.366	1.479	1.543	1.432	1.375	1.343	1.427	------	1.424	4.94	14.2933
	43	1,2-Dichloroethane	0.318	0.330	0.352	0.387	0.368	0.318	0.325	0.325	0.307	0.337	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	0.112	0.112	0.124	0.136	0.135	0.113	0.119	0.121	0.119	0.121	7.52	14.4078
	45	Trichloroethene	0.327	0.358	0.369	0.400	0.387	0.366	0.366	0.388	0.385	0.372	5.85	15.2746
	46	Methylcyclohexane	------	0.499	0.583	0.586	0.622	0.605	0.617	------	------	0.585	7.70	15.4780
	47	1,2-Dichloropropane	0.387	0.383	0.434	0.441	0.416	0.406	0.391	0.395	0.392	0.405	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	------	0.001	7.92	15.7868
	49	Dibromomethane	------	0.145	0.149	0.169	0.160	0.144	0.149	0.149	0.166	0.154	6.25	15.7991
	50	Bromodichloromethane	0.407	0.382	0.424	0.445	0.428	0.391	0.412	0.401	0.407	0.411	4.67	15.9796
	51	2-Chloroethyl vinyl ether	------	------	0.062	0.073	0.075	0.067	0.072	0.077	------	0.071	8.10	16.3223
	52	cis-1,3-Dichloropropene	0.463	0.437	0.489	0.521	0.515	0.483	0.478	0.488	0.496	0.486	5.25	16.5146
5	53	4-Methyl-2-pentanone	------	0.146	0.165	0.172	0.197	0.169	0.174	0.176	0.169	0.171	8.26	16.6479
	54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
	55	Toluene-d8	------	1.231	1.295	1.454	1.446	1.432	1.414	1.421	------	1.385	6.24	16.7961
	56	Toluene	1.631	1.707	1.744	1.882	1.788	1.693	1.567	1.785	------	1.725	5.72	16.8783
	57	Ethyl methacrylate	------	0.272	0.284	0.332	0.343	0.298	0.284	0.324	0.321	0.307	8.48	17.1680
	58	trans-1,3-Dichloropropene	0.448	0.460	0.475	0.550	0.535	0.498	0.453	0.515	0.494	0.492	7.37	17.1502

SU
4/22/20

59	1,1,2-Trichloroethane	0.205	0.230	0.241	0.271	0.251	0.224	0.209	0.236	0.242	0.235	8.71	17.3583
60	Tetrachloroethene	0.306	0.334	0.342	0.366	0.347	0.338	0.311	0.355	0.370	0.341	6.42	17.4870
5 61	2-Hexanone	0.180	0.172	0.159	0.182	0.183	0.159	0.143	0.161	0.159	0.166	8.10	17.5910
62	1,3-Dichloropropane	0.398	0.428	0.446	0.486	0.476	0.435	0.402	0.443	0.450	0.440	6.69	17.5399
63	Dibromochloromethane	0.269	0.285	0.298	0.332	0.327	0.304	0.289	0.320	0.340	0.307	7.81	17.8024
64	1,2-Dibromoethane	0.199	0.203	0.219	0.259	0.247	0.220	0.218	0.233	0.244	0.227	8.99	17.9361
65	1-Chlorohexane	0.707	0.714	0.673	0.714	0.727	0.694	0.608	0.695	0.682	0.690	5.12	18.2564
66	Chlorobenzene	0.940	0.964	1.005	1.092	1.007	1.015	0.933	1.047	0.918	0.991	5.79	18.3621
67	Ethylbenzene	1.800	1.920	1.966	2.125	1.959	1.928	1.785	1.746	------	1.904	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	0.288	0.319	0.328	0.371	0.336	0.338	0.301	0.346	------	0.329	7.94	18.4274
2 69	m-Xylene & p-Xylene	1.446	1.406	1.449	1.635	1.408	1.412	1.344	------	------	1.443	6.36	18.5134
70	o-Xylene	1.356	1.389	1.399	1.568	1.434	1.468	1.323	1.330	------	1.408	5.79	18.8825
71	Styrene	0.921	0.923	0.953	1.142	1.051	1.055	0.924	0.989	0.856	0.980	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	0.275	0.340	0.396	0.418	0.389	0.369	0.411	0.448	0.381	14.10	19.1406
74	Isopropylbenzene	4.524	4.937	4.839	5.023	5.017	5.178	4.577	4.131	------	4.778	7.21	19.1685
75	4-Bromofluorobenzene	1.200	1.231	1.159	1.281	1.297	1.351	1.282	1.222	------	1.253	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	0.746	0.729	0.822	0.858	0.841	0.733	0.675	0.721	------	0.766	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	0.238	0.217	0.237	0.245	0.214	0.204	0.199	0.206	0.220	7.97	19.4861
78	n-Propylbenzene	5.850	6.629	6.237	6.731	6.660	6.451	5.929	------	------	6.355	5.63	19.5090
79	1,2,3-Trichloropropane	------	0.159	0.142	0.174	0.170	0.139	0.134	0.132	0.138	0.149	11.08	19.5121
80	Bromobenzene	0.935	1.083	0.999	1.148	1.134	1.055	0.995	1.035	1.092	1.053	6.57	19.5162
81	1,3,5-Trimethylbenzene	3.697	3.883	3.670	3.846	3.837	3.858	3.405	3.544	------	3.717	4.64	19.6255
82	2-Chlorotoluene	3.704	4.003	3.715	4.036	3.935	3.918	3.462	3.596	------	3.796	5.46	19.6403
83	4-Chlorotoluene	3.294	3.481	3.352	3.595	3.397	3.444	3.093	3.257	------	3.364	4.56	19.7220
84	tert-Butylbenzene	0.740	0.847	0.765	0.761	0.829	0.794	0.690	0.798	0.775	0.778	6.04	19.9223
85	1,2,4-Trimethylbenzene	3.488	3.757	3.655	3.717	3.644	3.532	3.156	3.587	------	3.567	5.28	19.9579
86	sec-Butylbenzene	5.021	5.448	5.124	5.215	5.019	5.353	4.703	4.598	------	5.060	5.83	20.1010
87	p-Isopropyltoluene	4.207	4.425	3.906	4.135	4.017	4.078	3.624	3.857	------	4.031	6.01	20.1901
88	1,3-Dichlorobenzene	1.914	1.849	1.796	2.034	2.003	1.877	1.675	1.899	1.954	1.889	5.77	20.2790
89	1,2,3-Trimethylbenzene	3.143	3.491	3.459	3.469	3.291	3.307	3.053	3.308	------	3.315	4.76	20.3387
90	1,4-Dichlorobenzene	1.805	1.999	1.923	2.074	1.861	1.967	1.758	1.987	2.017	1.932	5.41	20.3533
91	Benzyl Chloride	1.029	1.050	0.914	1.045	1.085	0.958	0.897	0.992	1.031	1.000	6.47	20.4507
92	n-Butylbenzene	4.394	4.739	4.335	4.497	4.475	4.558	4.071	4.243	------	4.414	4.62	20.5468
93	1,2-Dichlorobenzene	1.521	1.571	1.583	1.652	1.601	1.491	1.498	1.561	1.664	1.571	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	0.081	0.089	0.096	0.087	0.083	0.096	------	0.089	7.42	21.4067
95	1,2,4-Trichlorobenzene	0.902	0.852	0.860	0.947	0.961	0.934	0.863	0.983	1.032	0.926	6.69	22.1991
96	Hexachlorobutadiene	0.549	0.591	0.550	0.576	0.614	0.627	0.535	0.586	0.568	0.577	5.32	22.2850
97	Naphthalene	1.303	1.349	1.173	1.378	1.411	1.283	1.211	1.311	1.459	1.320	6.93	22.5161
98	1,2,3-Trichlorobenzene	0.656	0.654	0.699	0.741	0.781	0.749	0.663	0.761	0.779	0.720	7.34	22.7869

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.4 Max_%RSD : 18.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
25	Vinyl acetate	-0.04163	0.56891	0.9974

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INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	87	82	98	109	110	120	114	91	92	11.6	13.37	3.7589
	3	Dichlorodifluoromethane	89	88	107	112	102	111	108	85	------	9.8	11.16	3.8425
	4	Chloromethane	103	96	104	107	97	105	102	87	------	5	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	93	85	97	110	106	113	113	91	93	9.2	10.42	4.7880
	6	Vinyl chloride	92	87	105	110	105	109	111	90	92	8.9	9.75	4.5528
	7	Bromomethane	99	94	100	104	99	107	107	89	------	4.7	6.23	5.3574
	8	Chloroethane	100	92	104	111	101	105	100	89	------	4.9	6.98	5.6044
	9	Dichlorofluoromethane	111	103	105	110	97	104	94	86	88	7.5	8.97	6.0816
	10	Trichlorofluoromethane	87	85	105	109	108	107	107	92	------	9.1	10.30	6.1711
5	11	Acrolein	------	------	------	119	110	97	94	94	97	8.1	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	101	98	102	112	102	103	99	90	91	4.6	6.46	7.4752
	13	1,1-Dichloroethene	104	98	106	112	98	105	99	89	89	6	7.60	7.5281
5	14	Acetone	------	------	------	119	112	92	92	92	94	9.9	12.14	7.7175
	15	Iodomethane	99	100	99	110	97	96	97	103	100	2.9	4.28	8.0221
	16	Methyl acetate	------	------	------	113	94	99	105	97	93	5.8	7.47	8.5966
	17	Carbon disulfide	83	86	105	109	104	114	110	97	91	9.5	11.19	8.1455
	18	Methylene chloride	99	100	104	113	101	101	99	94	88	4.3	6.84	8.9727
25	19	tert-Butyl alcohol	113	107	100	107	107	87	93	93	100	6.7	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	119	106	102	111	100	89	89	93	92	8.3	10.55	9.6218
	21	trans-1,2-Dichloroethene	100	99	102	112	100	100	97	98	93	3	5.12	9.7045
5	22	Acrylonitrile	------	------	89	105	104	95	98	102	105	4.8	6.20	9.7634
	23	Isopropyl ether (DIPE)	97	96	101	113	108	99	98	96	92	4.9	6.67	11.1810
	24	1,1-Dichloroethane	102	97	105	111	101	101	97	95	91	4.5	5.89	11.1175
	25	Vinyl acetate	------	------	------	99	97	96	111	97	------	4.4	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	117	108	114	99	90	92	90	90	9.7	11.38	12.1937
	27	2,2-Dichloropropane	112	106	109	106	95	88	85	------	------	9.4	10.74	12.6159
	28	cis-1,2-Dichloroethene	101	102	106	109	100	96	94	96	96	4	5.04	12.6905
5	29	2-Butanone	------	------	------	100	113	100	93	100	100	3.3	5.59	12.7443
25	30	2-Butanol	------	------	79	114	114	100	107	100	100	8.2	13.24	13.1447
	31	Bromochloromethane	95	99	102	112	103	93	96	99	101	3.8	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	100	99	103	111	102	97	97	97	95	3.4	4.65	13.3528
	34	Dibromofluoromethane	------	90	98	106	102	103	105	97	------	4.6	5.79	13.6698
	35	1,1,1-Trichloroethane	98	104	109	112	100	100	99	92	87	5.6	7.71	13.6343
	36	Cyclohexane	99	92	105	108	102	101	104	88	------	5.2	6.86	13.6839
	37	1,1-Dichloropropene	88	98	100	107	107	104	99	100	97	4.1	6.05	13.9379
	38	Carbon tetrachloride	91	95	103	106	106	101	100	100	98	3.7	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	79	98	94	101	105	98	114	108	102	6.8	9.98	14.2526
	41	2,2,4-Trimethylpentane	89	87	95	111	106	113	110	90	------	10	11.03	14.3132
	42	Benzene	------	96	104	108	101	97	94	100	------	3.7	4.94	14.2933
	43	1,2-Dichloroethane	94	98	104	115	109	94	96	96	91	6.4	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	93	93	102	112	112	93	98	100	98	5.7	7.52	14.4078
	45	Trichloroethene	88	96	99	108	104	98	98	104	103	4.4	5.85	15.2746
	46	Methylcyclohexane	------	85	100	100	106	103	105	------	------	5.1	7.70	15.4780
	47	1,2-Dichloropropane	96	95	107	109	103	100	97	98	97	4.2	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	100	100	100	100	100	------	0	7.92	15.7868

For 8260C
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49	Dibromomethane	------	94	97	110	104	94	97	97	108	5.4	6.25	15.7991
50	Bromodichloromethane	99	93	103	108	104	95	100	98	99	3.6	4.67	15.9796
51	2-Chloroethyl vinyl ether	------	------	87	103	106	94	101	108	------	6.1	8.10	16.3223
52	cis-1,3-Dichloropropene	95	90	101	107	106	99	98	100	102	3.7	5.25	16.5146
5 53	4-Methyl-2-pentanone	------	85	96	101	115	99	102	103	99	5.1	8.26	16.6479
54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
55	Toluene-d8	------	89	94	105	104	103	102	103	------	5	6.24	16.7961
56	Toluene	95	99	101	109	104	98	91	103	------	4.4	5.72	16.8783
57	Ethyl methacrylate	------	89	93	108	112	97	93	106	105	7.4	8.48	17.1680
58	trans-1,3-Dichloropropene	91	93	97	112	109	101	92	105	100	6	7.37	17.1502
59	1,1,2-Trichloroethane	87	98	103	115	107	95	89	100	103	6.5	8.71	17.3583
60	Tetrachloroethene	90	98	100	107	102	99	91	104	109	4.9	6.42	17.4870
5 61	2-Hexanone	108	104	96	110	110	96	86	97	96	6.8	8.10	17.5910
62	1,3-Dichloropropane	90	97	101	110	108	99	91	101	102	5	6.69	17.5399
63	Dibromochloromethane	88	93	97	108	107	99	94	104	111	6.6	7.81	17.8024
64	1,2-Dibromoethane	88	89	96	114	109	97	96	103	107	7.4	8.99	17.9361
65	1-Chlorohexane	102	103	98	103	105	101	88	101	99	3.5	5.12	18.2564
66	Chlorobenzene	95	97	101	110	102	102	94	106	93	4.7	5.79	18.3621
67	Ethylbenzene	95	101	103	112	103	101	94	92	------	5	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	88	97	100	113	102	103	91	105	------	5.9	7.94	18.4274
2 69	m-Xylene & p-Xylene	100	97	100	113	98	98	93	------	------	4	6.36	18.5134
70	o-Xylene	96	99	99	111	102	104	94	94	------	4.3	5.79	18.8825
71	Styrene	94	94	97	117	107	108	94	101	87	7.3	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	72	89	104	110	102	97	108	118	10.4	14.10	19.1406
74	Isopropylbenzene	95	103	101	105	105	108	96	86	------	5.8	7.21	19.1685
75	4-Bromofluorobenzene	96	98	92	102	104	108	102	98	------	4	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	97	95	107	112	110	96	88	94	------	7.3	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	108	99	108	111	97	93	90	94	6.8	7.97	19.4861
78	n-Propylbenzene	92	104	98	106	105	102	93	------	------	4.7	5.63	19.5090
79	1,2,3-Trichloropropane	------	107	95	117	114	93	90	89	93	9.7	11.08	19.5121
80	Bromobenzene	89	103	95	109	108	100	94	98	104	5.2	6.57	19.5162
81	1,3,5-Trimethylbenzene	99	104	99	103	103	104	92	95	------	3.7	4.64	19.6255
82	2-Chlorotoluene	98	105	98	106	104	103	91	95	------	4.7	5.46	19.6403
83	4-Chlorotoluene	98	103	100	107	101	102	92	97	------	3.4	4.56	19.7220
84	tert-Butylbenzene	95	109	98	98	107	102	89	103	100	4.5	6.04	19.9223
85	1,2,4-Trimethylbenzene	98	105	102	104	102	99	88	101	------	3.7	5.28	19.9579
86	sec-Butylbenzene	99	108	101	103	99	106	93	91	------	4.4	5.83	20.1010
87	p-Isopropyltoluene	104	110	97	103	100	101	90	96	------	4.5	6.01	20.1901
88	1,3-Dichlorobenzene	101	98	95	108	106	99	89	101	103	4.2	5.77	20.2790
89	1,2,3-Trimethylbenzene	95	105	104	105	99	100	92	100	------	3.6	4.76	20.3387
90	1,4-Dichlorobenzene	93	103	100	107	96	102	91	103	104	4.4	5.41	20.3533
91	Benzyl Chloride	103	105	91	104	108	96	90	99	103	5.3	6.47	20.4507
92	n-Butylbenzene	100	107	98	102	101	103	92	96	------	3.5	4.62	20.5468
93	1,2-Dichlorobenzene	97	100	101	105	102	95	95	99	106	3	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	91	100	108	98	93	108	------	5.6	7.42	21.4067
95	1,2,4-Trichlorobenzene	97	92	93	102	104	101	93	106	111	5.4	6.69	22.1991
96	Hexachlorobutadiene	95	102	95	100	106	109	93	102	98	4.2	5.32	22.2850
97	Naphthalene	99	102	89	104	107	97	92	99	111	5.4	6.93	22.5161
98	1,2,3-Trichlorobenzene	91	91	97	103	108	104	92	106	108	6.5	7.34	22.7869

For 8260C
SM

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Compound List Report F3

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
Total Cpnds : 98

K#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	14.88	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	3.76	0.252	A	1	A	B
3	T	Dichlorodifluoromethane	85	3.85	0.258	A	1	A	B
4	T	Chloromethane	50	4.29	0.288	A	1	A	B
5	T	2-Chloro-1,1,1-trifluoroethane	118	4.80	0.322	A	2	A	B
6	T	Vinyl chloride	62	4.55	0.306	A	1	A	B
7	T	Bromomethane	94	5.36	0.360	A	1	A	B
8	T	Chloroethane	64	5.61	0.377	A	1	A	B
9	T	Dichlorofluoromethane	67	6.09	0.409	A	1	A	B
10	T	Trichlorofluoromethane	101	6.17	0.415	A	1	A	B
11	T	Acrolein	56	7.32	0.492	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	7.48	0.503	A	1	A	B
13	T	1,1-Dichloroethene	61	7.53	0.506	A	2	A	B
14	T	Acetone	43	7.73	0.519	A	1	A	B
15	T	Iodomethane	142	8.03	0.539	A	1	A	B
16	T	Methyl acetate	43	8.59	0.577	A	1	A	B
17	T	Carbon disulfide	76	8.15	0.548	A	1	A	B
18	T	Methylene chloride	49	9.00	0.604	A	2	A	B
19	T	tert-Butyl alcohol	59	9.29	0.624	A	1	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	9.61	0.646	A	1	A	B
21	T	trans-1,2-Dichloroethene	96	9.71	0.652	A	1	A	B
22	T	Acrylonitrile	53	9.76	0.656	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	11.18	0.751	A	1	A	B
24	T	1,1-Dichloroethane	63	11.13	0.748	A	2	A	B
25	T	Vinyl acetate	43	11.27	0.757	L	1	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	12.19	0.819	A	1	A	B
27	T	2,2-Dichloropropane	77	12.62	0.848	A	2	A	B
28	T	cis-1,2-Dichloroethene	96	12.69	0.853	A	1	A	B
29	T	2-Butanone	72	12.74	0.856	A	1	A	B
30	T	2-Butanol	45	13.14	0.883	A	1	A	B
31	T	Bromochloromethane	130	13.21	0.888	A	1	A	B
32	T	Tetrahydrofuran	71	13.26	0.891	A	1	A	B
33	T	Chloroform	83	13.36	0.898	A	2	A	B
34	S	Dibromofluoromethane	111	13.66	0.918	A	1	A	B
35	T	1,1,1-Trichloroethane	97	13.63	0.916	A	2	A	B
36	T	Cyclohexane	84	13.68	0.919	A	1	A	B
37	T	1,1-Dichloropropene	110	13.93	0.936	A	1	A	B
38	T	Carbon tetrachloride	119	13.91	0.934	A	1	A	B
39	T	tert-Amyl alcohol	59	14.33	0.963	A	1	A	B
40	S	1,2-Dichloroethane-d4	65	14.24	0.957	A	1	A	B
41	T	2,2,4-Trimethylpentane	57	14.32	0.962	A	1	A	B
42	T	Benzene	78	14.29	0.960	A	2	A	B
43	T	1,2-Dichloroethane	62	14.36	0.965	A	1	A	B
44	T	tert-Amyl methyl ether (TAME)	87	14.41	0.968	A	1	A	B
45	T	Trichloroethene	130	15.27	1.026	A	3	A	B
46	T	Methylcyclohexane	83	15.48	1.040	A	2	A	B
47	T	1,2-Dichloropropane	63	15.60	1.048	A	1	A	B
48	T	1,4-Dioxane	88	15.79	1.061	A	1	A	B
49	T	Dibromomethane	93	15.79	1.061	A	2	A	B
50	T	Bromodichloromethane	83	15.98	1.074	A	1	A	B
51	T	2-Chloroethyl vinyl ether	63	16.31	1.096	A	1	A	B
52	T	cis-1,3-Dichloropropene	75	16.50	1.109	A	2	A	B
53	T	4-Methyl-2-pentanone	43	16.64	1.118	A	3	A	B

SC 4/22/2

4	I	CHLOROBENZENE-D5	117	18.33	1.000	A	2	A	B
5	S	Toluene-d8	98	16.79	0.916	A	1	A	B
6	T	Toluene	91	16.87	0.921	A	1	A	B
7	T	Ethyl methacrylate	69	17.16	0.936	A	1	A	B
8	T	trans-1,3-Dichloropropene	75	17.14	0.935	A	1	A	B
9	T	1,1,2-Trichloroethane	97	17.35	0.946	A	2	A	B
0	T	Tetrachloroethene	164	17.48	0.954	A	3	A	B
1	T	2-Hexanone	43	17.56	0.958	A	1	A	B
2	T	1,3-Dichloropropane	76	17.53	0.956	A	1	A	B
3	T	Dibromochloromethane	129	17.80	0.971	A	1	A	B
4	T	1,2-Dibromoethane	107	17.93	0.978	A	1	A	B
5	T	1-Chlorohexane	91	18.26	0.996	A	1	A	B
6	P,M	Chlorobenzene	112	18.36	1.002	A	1	A	B
7	T	Ethylbenzene	91	18.42	1.005	A	1	A	B
8	T	1,1,1,2-Tetrachloroethane	131	18.42	1.005	A	1	A	B
9	T	m-Xylene & p-Xylene	91	18.51	1.010	A	1	A	B
0	T	o-Xylene	91	18.88	1.030	A	1	A	B
1	T	Styrene	104	18.90	1.031	A	2	A	B
2	I	1,2-DICHLOROBENZENE-D4	152	20.68	1.000	A	1	A	B
3	T	Bromoform	173	19.13	0.925	A	2	A	B
4	T	Isopropylbenzene	105	19.16	0.927	A	3	A	B
5	S	4-Bromofluorobenzene	95	19.36	0.936	A	2	A	B
6	T	1,1,2,2-Tetrachloroethane	83	19.46	0.941	A	1	A	B
7	T	trans-1,4-Dichloro-2-butene	53	19.47	0.942	A	1	A	B
8	T	n-Propylbenzene	91	19.50	0.943	A	2	A	B
9	T	1,2,3-Trichloropropane	110	19.52	0.944	A	1	A	B
0	T	Bromobenzene	156	19.52	0.944	A	1	A	B
1	T	1,3,5-Trimethylbenzene	105	19.62	0.949	A	2	A	B
2	T	2-Chlorotoluene	91	19.64	0.950	A	1	A	B
3	T	4-Chlorotoluene	91	19.71	0.953	A	1	A	B
4	T	tert-Butylbenzene	134	19.92	0.963	A	1	A	B
5	T	1,2,4-Trimethylbenzene	105	19.95	0.965	A	1	A	B
6	T	sec-Butylbenzene	105	20.10	0.972	A	1	A	B
7	T	p-Isopropyltoluene	119	20.19	0.976	A	2	A	B
3	T	1,3-Dichlorobenzene	146	20.28	0.981	A	2	A	B
9	T	1,2,3-Trimethylbenzene	105	20.34	0.983	A	2	A	B
0	T	1,4-Dichlorobenzene	146	20.35	0.984	A	2	A	B
1	T	Benzyl Chloride	91	20.44	0.989	A	3	A	B
2	T	n-Butylbenzene	91	20.54	0.994	A	2	A	B
3	T	1,2-Dichlorobenzene	146	20.69	1.001	A	1	A	B
4	T	1,2-Dibromo-3-chloropropane	157	21.41	1.035	A	1	A	B
5	T	1,2,4-Trichlorobenzene	180	22.19	1.073	A	2	A	B
6	T	Hexachlorobutadiene	225	22.28	1.078	A	2	A	B
7	T	Naphthalene	128	22.51	1.088	A	1	A	B
8	T	1,2,3-Trichlorobenzene	180	22.79	1.102	A	2	A	B

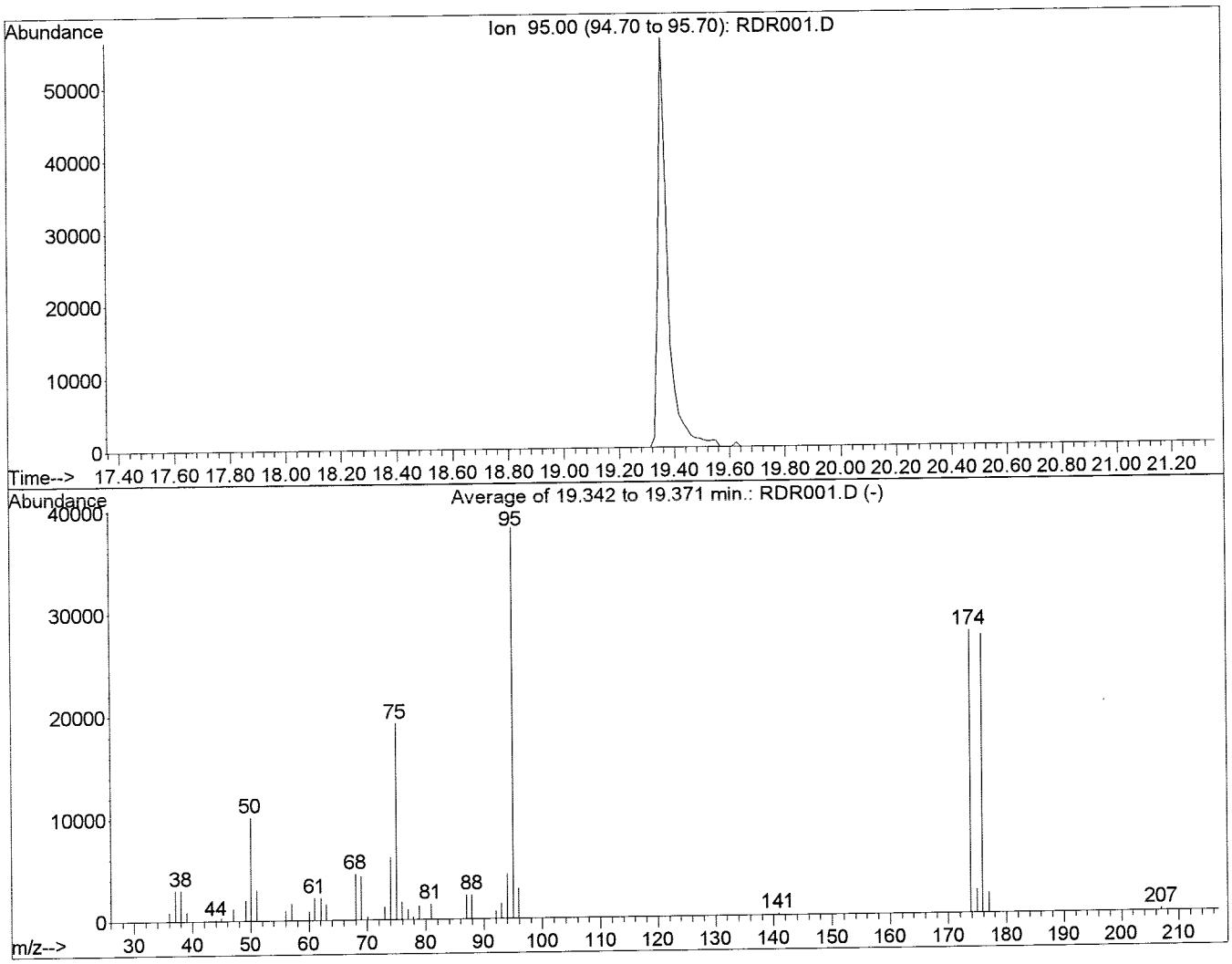
al A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
Qual = number of qualifiers
A/H = Area or Height
D R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VOF3D02.M Thu Apr 16 17:33:18 2020

SW 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR001.D
Acq On : 2 Apr 2020 4:01 pm
Sample : BFBF3D01
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.4	10107	PASS
75	95	30	60	50.2	19203	PASS
95	95	100	100	100.0	38219	PASS
96	95	5	9	7.7	2940	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.4	27673	PASS
175	174	5	9	8.3	2302	PASS
176	174	95	101	98.5	27271	PASS
177	176	5	9	7.3	1980	PASS

RDR001.D VOF3D02.M Mon Apr 06 13:02:52 2020

SV 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2298716	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.35	117	1901409	10.00	ug/l	0.01
72) 1,2-DICHLOROBENZENE-D4	20.68	152	649361	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	20119	0.25	ug/l	0.03
Spiked Amount 10.000			Recovery =	2.50%		
40) 1,2-Dichloroethane-d4	14.29	65	15842	0.24	ug/l	0.04
Spiked Amount 10.000			Recovery =	2.40%		
55) Toluene-d8	16.83	98	60959	0.23	ug/l	0.04
Spiked Amount 10.000			Recovery =	2.30%		
75) 4-Bromofluorobenzene	19.37	95	23380	0.29	ug/l	0.01
Spiked Amount 10.000			Recovery =	2.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	12072	0.26	ug/l	98
3) Dichlorodifluoromethane	3.85	85	21390	0.27	ug/l	95
4) Chloromethane	4.29	50	48596	0.31	ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	22801	0.28	ug/l	88
6) Vinyl chloride	4.55	62	34513	0.27	ug/l	92
7) Bromomethane	5.36	94	26333	0.30	ug/l	93
8) Chloroethane	5.59	64	19583	0.30	ug/l	97
9) Dichlorofluoromethane	6.09	67	64314	0.33	ug/l	69
10) Trichlorofluoromethane	6.17	101	28370	0.26	ug/l	97
11) Acrolein	7.34	56	13334	1.85	ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	7.46	151	15275	0.30	ug/l	95
13) 1,1-Dichloroethene	7.53	61	52366	0.31	ug/l	100
14) Acetone	7.76	43	28400	2.36	ug/l	86
15) Iodomethane	8.03	142	41265	0.30	ug/l	97
17) Carbon disulfide	8.17	76	74229	0.25	ug/l	100
18) Methylene chloride	8.98	49	47729	0.30	ug/l	97
19) tert-Butyl alcohol	9.31	59	29519	8.48	ug/l	98
20) tert-Butyl methyl ether (M	9.64	73	49053	0.36	ug/l	84
21) trans-1,2-Dichloroethene	9.71	96	26634	0.30	ug/l	98
23) Isopropyl ether (DIPE)	11.20	45	104056	0.29	ug/l	100
24) 1,1-Dichloroethane	11.13	63	58340	0.31	ug/l	98
26) tert-Butyl ethyl ether (ET	12.22	59	98267	0.41	ug/l	100
27) 2,2-Dichloropropane	12.62	77	27524	0.34	ug/l	90
28) cis-1,2-Dichloroethene	12.72	96	28096	0.30	ug/l	94
31) Bromochloromethane	13.24	130	12550	0.29	ug/l	99
33) Chloroform	13.36	83	47042	0.30	ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	29348	0.29	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
36)	Cyclohexane	13.68	84	34906	0.30	ug/l	86
37)	1,1-Dichloropropene	13.96	110	11149	0.26	ug/l	88
38)	Carbon tetrachloride	13.93	119	23254	0.27	ug/l	96
41)	2,2,4-Trimethylpentane	14.32	57	96746	0.27	ug/l	99
42)	Benzene	14.32	78	99592	0.30	ug/l	99
43)	1,2-Dichloroethane	14.41	62	21940	0.28	ug/l	98
44)	tert-Amyl methyl ether (TA	14.42	87	7720	0.28	ug/l	90
45)	Trichloroethene	15.30	130	22530	0.26	ug/l	93
46)	Methylcyclohexane	15.49	83	35217	0.26	ug/l	91
47)	1,2-Dichloropropane	15.63	63	26709	0.29	ug/l	97
50)	Bromodichloromethane	16.00	83	28053	0.30	ug/l	100
52)	cis-1,3-Dichloropropene	16.55	75	31960	0.29	ug/l	95
53)	4-Methyl-2-pentanone	16.70	43	48287	1.23	ug/l	91
56)	Toluene	16.89	91	93025	0.28	ug/l	97
57)	Ethyl methacrylate	17.25	69	15771	0.27	ug/l	84
58)	trans-1,3-Dichloropropene	17.19	75	25576	0.27	ug/l	79
59)	1,1,2-Trichloroethane	17.38	97	11702	0.26	ug/l	96
60)	Tetrachloroethene	17.50	164	17462	0.27	ug/l	93
61)	2-Hexanone	17.74	43	51309	1.62	ug/l	86
62)	1,3-Dichloropropane	17.56	76	22690	0.27	ug/l	91
63)	Dibromochloromethane	17.83	129	15366	0.26	ug/l	92
64)	1,2-Dibromoethane	17.96	107	11326	0.26	ug/l	96
65)	1-Chlorohexane	18.27	91	40336	0.31	ug/l	87
66)	Chlorobenzene	18.37	112	53638	0.28	ug/l	98
67)	Ethylbenzene	18.43	91	102687	0.28	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.43	131	16440	0.26	ug/l	87
69)	m-Xylene & p-Xylene	18.52	91	164960	0.60	ug/l	95
70)	o-Xylene	18.89	91	77337	0.29	ug/l	96
71)	Styrene	18.92	104	52535	0.28	ug/l	95
73)	Bromoform	19.16	173	6321	0.26	ug/l	95
74)	Isopropylbenzene	19.18	105	88125	0.28	ug/l	98
76)	1,1,2,2-Tetrachloroethane	19.47	83	14525	0.29	ug/l	86
77)	trans-1,4-Dichloro-2-buten	19.52	53	2921	0.20	ug/l	70
78)	n-Propylbenzene	19.52	91	113968	0.28	ug/l	99
79)	1,2,3-Trichloropropane	19.53	110	1997	0.21	ug/l	61
80)	Bromobenzene	19.53	156	18222	0.27	ug/l	99
81)	1,3,5-Trimethylbenzene	19.64	105	72014	0.30	ug/l	97
82)	2-Chlorotoluene	19.65	91	72163	0.29	ug/l	99
83)	4-Chlorotoluene	19.74	91	64170	0.29	ug/l	96
84)	tert-Butylbenzene	19.94	134	14408	0.29	ug/l	98
85)	1,2,4-Trimethylbenzene	19.98	105	67941	0.29	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
86)	sec-Butylbenzene	20.11	105	97819	0.30 ug/l	99
87)	p-Isopropyltoluene	20.20	119	81949	0.31 ug/l	98
88)	1,3-Dichlorobenzene	20.29	146	37293	0.30 ug/l	96
89)	1,2,3-Trimethylbenzene	20.35	105	61229	0.28 ug/l	97
90)	1,4-Dichlorobenzene	20.37	146	35161	0.28 ug/l	91
91)	Benzyl Chloride	20.47	91	20054	0.31 ug/l	97
92)	n-Butylbenzene	20.56	91	85604	0.30 ug/l	96
93)	1,2-Dichlorobenzene	20.71	146	29632	0.29 ug/l	95
95)	1,2,4-Trichlorobenzene	22.21	180	17570	0.29 ug/l	98
96)	Hexachlorobutadiene	22.30	225	10701	0.29 ug/l	80
97)	Naphthalene	22.54	128	25390	0.30 ug/l	95
98)	1,2,3-Trichlorobenzene	22.80	180	12775	0.27 ug/l	98

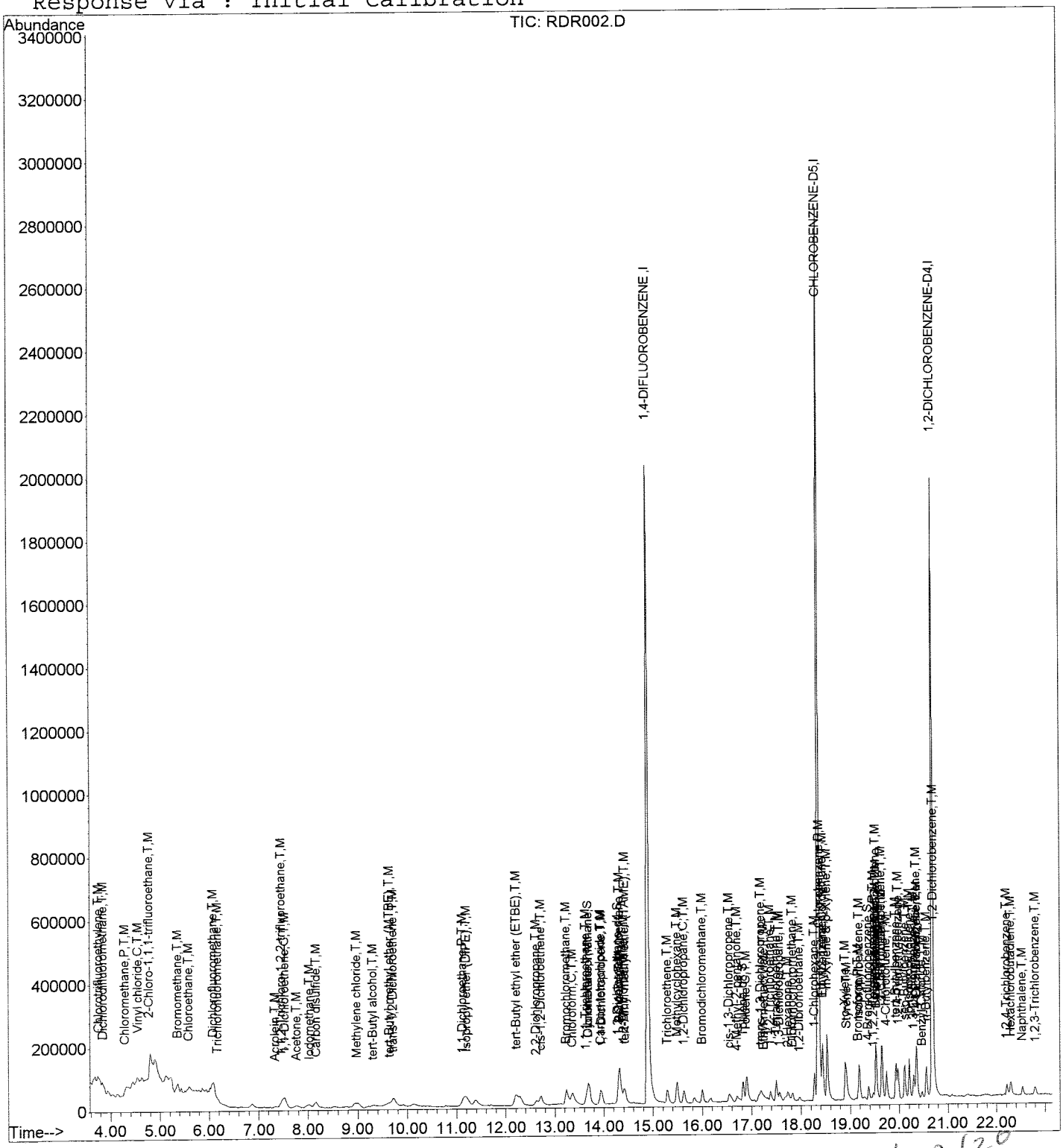
(#) = qualifier out of range (m) = manual integration SA 4/24/20
RDR002.D VOF3D02.M Thu Apr 16 17:32:17 2020 Page 3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Su 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2253751	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1733328	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	581543	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.68	111	35702	0.45 ug/l	0.03
Spiked Amount 10.000			Recovery =	4.50%	
40) 1,2-Dichloroethane-d4	14.27	65	32358	0.49 ug/l	0.03
Spiked Amount 10.000			Recovery =	4.90%	
55) Toluene-d8	16.82	98	106648	0.44 ug/l	0.03
Spiked Amount 10.000			Recovery =	4.40%	
75) 4-Bromofluorobenzene	19.36	95	35807	0.49 ug/l	0.00
Spiked Amount 10.000			Recovery =	4.90%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	18571	0.41 ug/l	99
3) Dichlorodifluoromethane	3.84	85	34544	0.44 ug/l	92
4) Chloromethane	4.29	50	74323	0.48 ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	34075	0.43 ug/l	89
6) Vinyl chloride	4.55	62	53371	0.43 ug/l	94
7) Bromomethane	5.36	94	40563	0.47 ug/l	99
8) Chloroethane	5.61	64	29449	0.46 ug/l	98
9) Dichlorofluoromethane	6.09	67	97710	0.52 ug/l	79
10) Trichlorofluoromethane	6.17	101	45426	0.42 ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	24358	0.49 ug/l	97
13) 1,1-Dichloroethene	7.53	61	80771	0.49 ug/l	100
14) Acetone	7.74	43	38513	3.27 ug/l	86
15) Iodomethane	8.04	142	68007	0.50 ug/l	99
17) Carbon disulfide	8.15	76	126024	0.43 ug/l	100
18) Methylene chloride	8.98	49	78847	0.50 ug/l	95
19) tert-Butyl alcohol	9.31	59	45037	13.20 ug/l	81
20) tert-Butyl methyl ether (M	9.63	73	71118	0.53 ug/l	95
21) trans-1,2-Dichloroethene	9.73	96	43209	0.50 ug/l	100
22) Acrylonitrile	9.88	53	24620	1.96 ug/l	93
23) Isopropyl ether (DIPE)	11.20	45	168710	0.48 ug/l	100
24) 1,1-Dichloroethane	11.13	63	90367	0.48 ug/l	97
26) tert-Butyl ethyl ether (ET	12.19	59	137773	0.58 ug/l	99
27) 2,2-Dichloropropane	12.62	77	42773	0.53 ug/l	94
28) cis-1,2-Dichloroethene	12.71	96	46334	0.51 ug/l	96
30) 2-Butanol	13.26	45	22244	6.93 ug/l	90
31) Bromochloromethane	13.24	130	21378	0.50 ug/l	99
33) Chloroform	13.36	83	75369	0.49 ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:21 2020 SK 4/22/20 Page 1

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35)	1,1,1-Trichloroethane	13.63	97	50931	0.52	ug/l	98
36)	Cyclohexane	13.68	84	52538	0.46	ug/l	96
37)	1,1-Dichloropropene	13.96	110	20371	0.49	ug/l	96
38)	Carbon tetrachloride	13.93	119	39345	0.47	ug/l	98
41)	2,2,4-Trimethylpentane	14.30	57	153510	0.43	ug/l	98
42)	Benzene	14.30	78	153883	0.48	ug/l	98
43)	1,2-Dichloroethane	14.39	62	37179	0.49	ug/l	94
44)	tert-Amyl methyl ether (TA	14.42	87	12602	0.46	ug/l	94
45)	Trichloroethene	15.29	130	40307	0.48	ug/l	97
46)	Methylcyclohexane	15.48	83	56253	0.43	ug/l	84
47)	1,2-Dichloropropane	15.61	63	43195	0.47	ug/l	99
49)	Dibromomethane	15.82	93	16286	0.47	ug/l	94
50)	Bromodichloromethane	15.98	83	43085	0.47	ug/l	99
52)	cis-1,3-Dichloropropene	16.53	75	49224	0.45	ug/l	88
53)	4-Methyl-2-pentanone	16.68	43	82213	2.13	ug/l	95
56)	Toluene	16.89	91	147943	0.49	ug/l	99
57)	Ethyl methacrylate	17.23	69	23605	0.44	ug/l	97
58)	trans-1,3-Dichloropropene	17.17	75	39857	0.47	ug/l	93
59)	1,1,2-Trichloroethane	17.37	97	19938	0.49	ug/l	94
60)	Tetrachloroethene	17.50	164	28978	0.49	ug/l	97
61)	2-Hexanone	17.66	43	74474	2.58	ug/l	92
62)	1,3-Dichloropropane	17.56	76	37126	0.49	ug/l	98
63)	Dibromochloromethane	17.81	129	24733	0.46	ug/l	95
64)	1,2-Dibromoethane	17.95	107	17584	0.45	ug/l	98
65)	1-Chlorohexane	18.26	91	61916	0.52	ug/l	95
66)	Chlorobenzene	18.36	112	83583	0.49	ug/l	100
67)	Ethylbenzene	18.42	91	166391	0.50	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.44	131	27684	0.49	ug/l	92
69)	m-Xylene & p-Xylene	18.52	91	243672	0.97	ug/l	98
70)	o-Xylene	18.88	91	120352	0.49	ug/l	100
71)	Styrene	18.91	104	79991	0.47	ug/l	98
73)	Bromoform	19.15	173	7990	0.36	ug/l	79
74)	Isopropylbenzene	19.18	105	143566	0.52	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	21184	0.48	ug/l	92
77)	trans-1,4-Dichloro-2-buten	19.51	53	6926	0.54	ug/l	73
78)	n-Propylbenzene	19.52	91	192741	0.52	ug/l	100
79)	1,2,3-Trichloropropane	19.52	110	4616	0.53	ug/l	70
80)	Bromobenzene	19.52	156	31503	0.51	ug/l	92
81)	1,3,5-Trimethylbenzene	19.62	105	112901	0.52	ug/l	99
82)	2-Chlorotoluene	19.64	91	116393	0.53	ug/l	99
83)	4-Chlorotoluene	19.73	91	101216	0.52	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D
Acq On : 2 Apr 2020 5:16 pm
Sample : VOF3D022
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 3
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84) tert-Butylbenzene	19.92	134	24617	0.54 ug/l	83
85) 1,2,4-Trimethylbenzene	19.97	105	109229	0.53 ug/l	98
86) sec-Butylbenzene	20.10	105	158425	0.54 ug/l	99
87) p-Isopropyltoluene	20.19	119	128655	0.55 ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	53755	0.49 ug/l	98
89) 1,2,3-Trimethylbenzene	20.34	105	101496	0.53 ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	58125	0.52 ug/l	98
91) Benzyl Chloride	20.46	91	30520	0.52 ug/l	93
92) n-Butylbenzene	20.55	91	137810	0.54 ug/l	96
93) 1,2-Dichlorobenzene	20.69	146	45688	0.50 ug/l	91
94) 1,2-Dibromo-3-chloropropan	21.42	157	1717	0.33 ug/l	99
95) 1,2,4-Trichlorobenzene	22.21	180	24774	0.46 ug/l	94
96) Hexachlorobutadiene	22.28	225	17178	0.51 ug/l	97
97) Naphthalene	22.52	128	39224	0.51 ug/l	98
98) 1,2,3-Trichlorobenzene	22.79	180	19020	0.45 ug/l	96

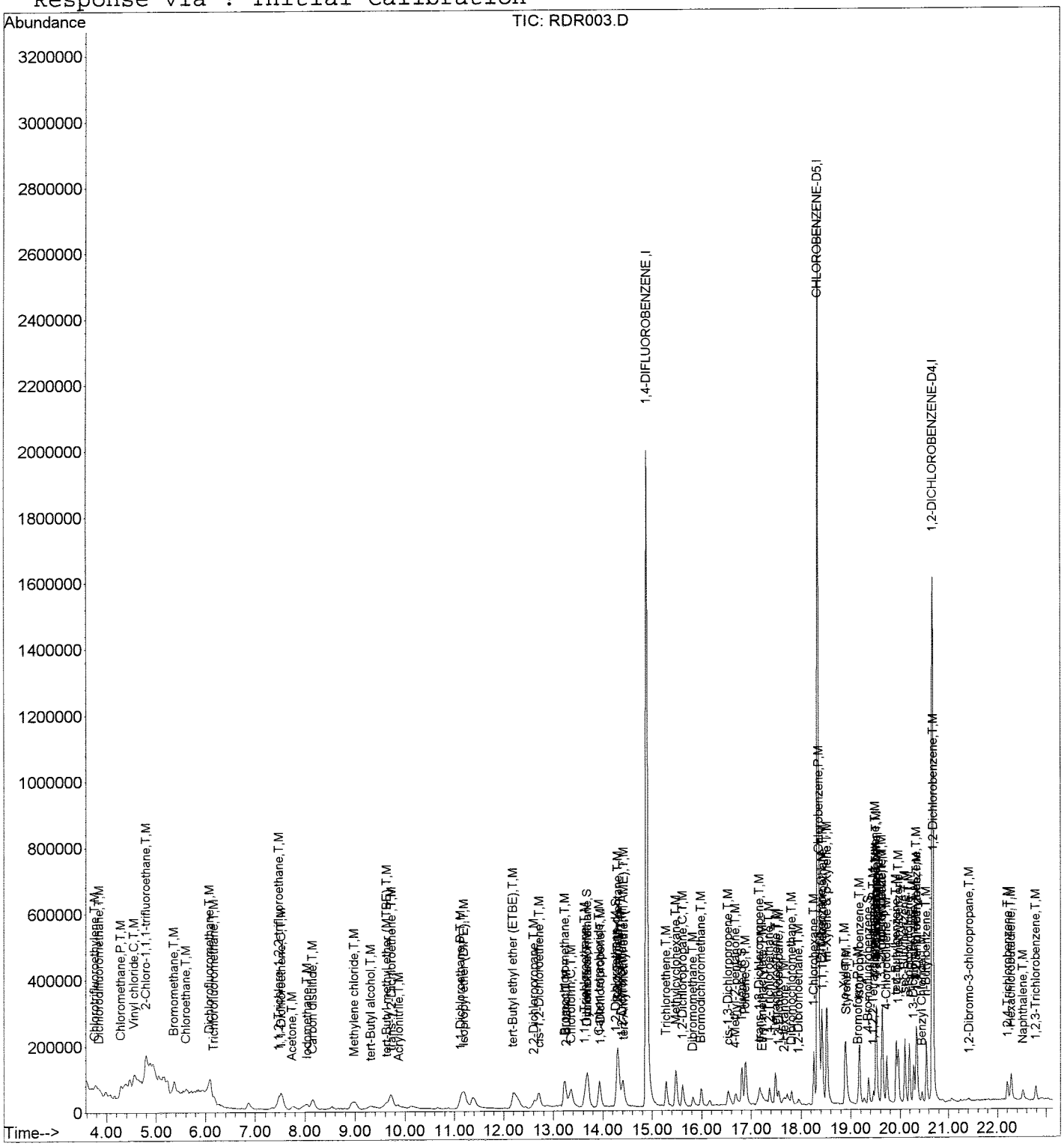
SA 4/22/20

(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:22 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2169726	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1735707	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	588690	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	75178	0.98	ug/l	0.03
Spiked Amount 10.000			Recovery =	9.80%		
40) 1,2-Dichloroethane-d4	14.26	65	59462	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
55) Toluene-d8	16.80	98	224740	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
75) 4-Bromofluorobenzene	19.36	95	68218	0.92	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.20%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	42705	0.97	ug/l	96
3) Dichlorodifluoromethane	3.84	85	80903	1.06	ug/l	97
4) Chloromethane	4.29	50	154823	1.04	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	74512	0.97	ug/l	95
6) Vinyl chloride	4.55	62	124867	1.05	ug/l	97
7) Bromomethane	5.36	94	83152	1.00	ug/l	97
8) Chloroethane	5.61	64	63990	1.04	ug/l	99
9) Dichlorofluoromethane	6.08	67	191814	1.05	ug/l	93
10) Trichlorofluoromethane	6.17	101	108662	1.05	ug/l	96
11) Acrolein	7.34	56	42600	6.25	ug/l	86
12) 1,1,2-Trichloro-1,2,2-trif	7.50	151	48834	1.02	ug/l	99
13) 1,1-Dichloroethene	7.53	61	168399	1.06	ug/l	99
14) Acetone	7.76	43	58922	5.19	ug/l	98
15) Iodomethane	8.02	142	130400	0.99	ug/l	100
16) Methyl acetate	8.66	43	14933	0.48	ug/l	94
17) Carbon disulfide	8.15	76	296376	1.05	ug/l	98
18) Methylene chloride	8.92	49	157447	1.04	ug/l	99
19) tert-Butyl alcohol	9.31	59	82087	25.00	ug/l	95
20) tert-Butyl methyl ether (M	9.64	73	130992	1.01	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	84964	1.02	ug/l	100
22) Acrylonitrile	9.83	53	53937	4.46	ug/l	94
23) Isopropyl ether (DIPE)	11.20	45	341006	1.01	ug/l	99
24) 1,1-Dichloroethane	11.13	63	189312	1.05	ug/l	99
25) Vinyl acetate	11.40	43	45383	1.10	ug/l	96
26) tert-Butyl ethyl ether (ET	12.19	59	245915	1.08	ug/l	98
27) 2,2-Dichloropropane	12.62	77	84179	1.09	ug/l	95
28) cis-1,2-Dichloroethene	12.69	96	92838	1.06	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30) 2-Butanol	13.21	45	57846	18.72	ug/l	93
31) Bromochloromethane	13.21	130	42186	1.02	ug/l	100
33) Chloroform	13.36	83	150906	1.02	ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	103067	1.09	ug/l	99
36) Cyclohexane	13.68	84	115790	1.05	ug/l	99
37) 1,1-Dichloropropene	13.93	110	40038	1.00	ug/l	99
38) Carbon tetrachloride	13.93	119	82623	1.03	ug/l	100
41) 2,2,4-Trimethylpentane	14.30	57	322724	0.95	ug/l	99
42) Benzene	14.30	78	320915	1.04	ug/l	98
43) 1,2-Dichloroethane	14.39	62	76406	1.05	ug/l	98
44) tert-Amyl methyl ether (TA	14.41	87	26925	1.02	ug/l	99
45) Trichloroethene	15.28	130	80066	0.99	ug/l	97
46) Methylcyclohexane	15.48	83	126436	1.00	ug/l	94
47) 1,2-Dichloropropane	15.61	63	94256	1.07	ug/l	98
48) 1,4-Dioxane	15.83	88	3613	16.65	ug/l	85
49) Dibromomethane	15.81	93	32398	0.97	ug/l	99
50) Bromodichloromethane	15.98	83	92088	1.03	ug/l	98
51) 2-Chloroethyl vinyl ether	16.35	63	13386	0.87	ug/l	72
52) cis-1,3-Dichloropropene	16.52	75	106137	1.01	ug/l	95
53) 4-Methyl-2-pentanone	16.67	43	178757	4.82	ug/l	94
56) Toluene	16.87	91	302771	1.01	ug/l	100
57) Ethyl methacrylate	17.20	69	49213	0.92	ug/l	97
58) trans-1,3-Dichloropropene	17.16	75	82460	0.97	ug/l	97
59) 1,1,2-Trichloroethane	17.37	97	41917	1.03	ug/l	98
60) Tetrachloroethene	17.48	164	59372	1.00	ug/l	97
61) 2-Hexanone	17.60	43	138270	4.79	ug/l	94
62) 1,3-Dichloropropane	17.54	76	77422	1.01	ug/l	99
63) Dibromochloromethane	17.81	129	51679	0.97	ug/l	99
64) 1,2-Dibromoethane	17.94	107	38092	0.97	ug/l	97
65) 1-Chlorohexane	18.26	91	116850	0.97	ug/l	98
66) Chlorobenzene	18.36	112	174428	1.01	ug/l	99
67) Ethylbenzene	18.42	91	341233	1.03	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.44	131	56921	1.00	ug/l	99
69) m-Xylene & p-Xylene	18.51	91	502861	2.01	ug/l	99
70) o-Xylene	18.88	91	242873	0.99	ug/l	97
71) Styrene	18.91	104	165454	0.97	ug/l	99
73) Bromoform	19.15	173	19990	0.89	ug/l	96
74) Isopropylbenzene	19.18	105	284874	1.01	ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	48415	1.07	ug/l	98
77) trans-1,4-Dichloro-2-buten	19.51	53	12764	0.98	ug/l	88
78) n-Propylbenzene	19.51	91	367180	0.98	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D Vial: 4
Acq On : 2 Apr 2020 5:46 pm Operator: RMinam
Sample : VOF3D023 Inst : F3
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	1,2,3-Trichloropropane	19.52	110	8379	0.96	ug/l	84
80)	Bromobenzene	19.52	156	58838	0.95	ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	216034	0.99	ug/l	99
82)	2-Chlorotoluene	19.64	91	218692	0.98	ug/l	99
83)	4-Chlorotoluene	19.73	91	197331	1.00	ug/l	100
84)	tert-Butylbenzene	19.92	134	45023	0.98	ug/l	98
85)	1,2,4-Trimethylbenzene	19.97	105	215140	1.02	ug/l	98
86)	sec-Butylbenzene	20.10	105	301672	1.01	ug/l	96
87)	p-Isopropyltoluene	20.19	119	229967	0.97	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	105731	0.95	ug/l	96
89)	1,2,3-Trimethylbenzene	20.34	105	203626	1.04	ug/l	96
90)	1,4-Dichlorobenzene	20.35	146	113207	1.00	ug/l	98
91)	Benzyl Chloride	20.46	91	53791	0.91	ug/l	96
92)	n-Butylbenzene	20.55	91	255194	0.98	ug/l	98
93)	1,2-Dichlorobenzene	20.69	146	93163	1.01	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	4748	0.91	ug/l	99
95)	1,2,4-Trichlorobenzene	22.21	180	50651	0.93	ug/l	98
96)	Hexachlorobutadiene	22.28	225	32354	0.95	ug/l	98
97)	Naphthalene	22.52	128	69056	0.89	ug/l	97
98)	1,2,3-Trichlorobenzene	22.79	180	41146	0.97	ug/l	95

Su 4/22/20

(#) = qualifier out of range (m) = manual integration

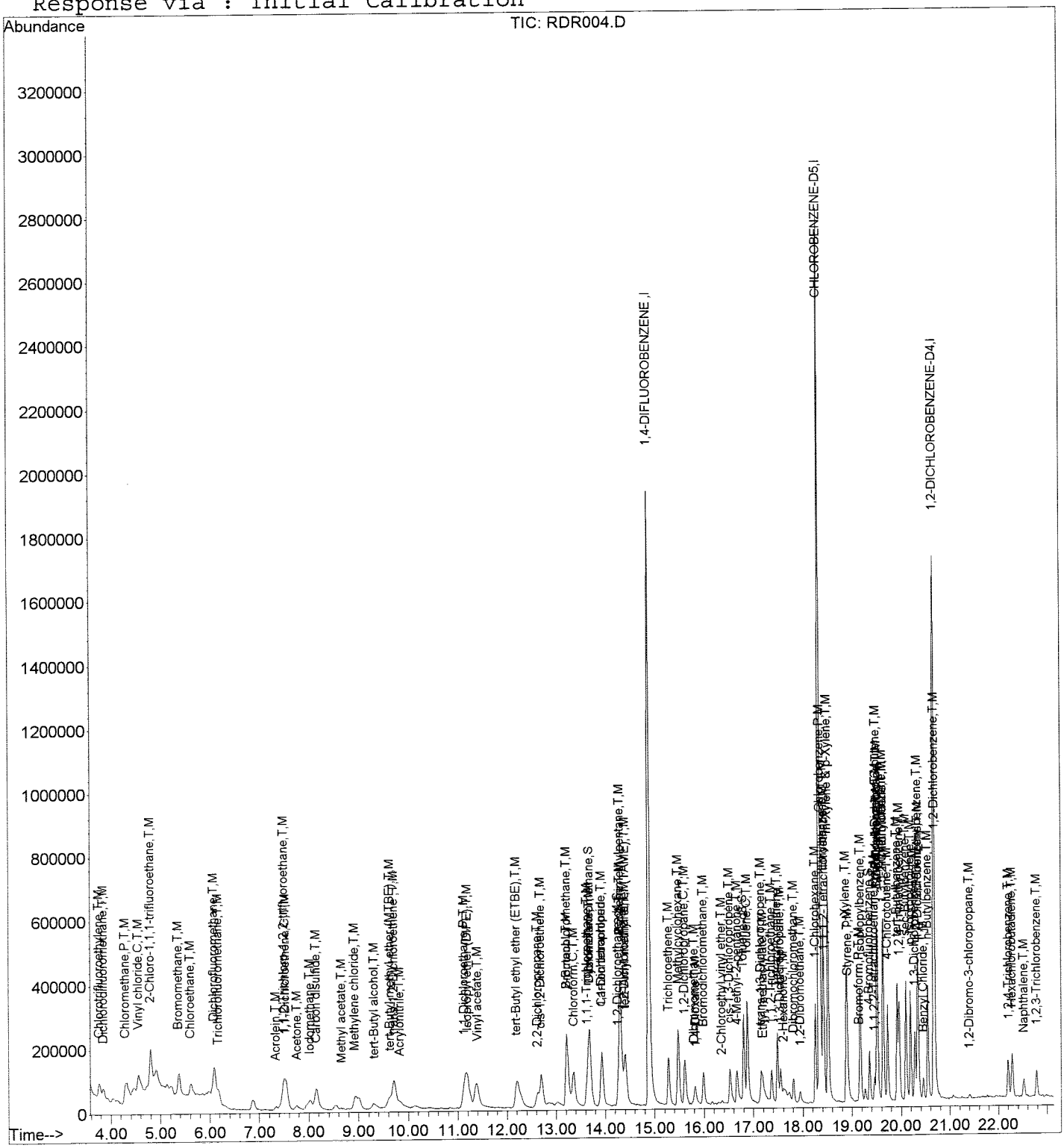
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D Vial: 5
Acq On : 2 Apr 2020 6:15 pm Operator: RMinam
Sample : VOF3D024 Inst : F3
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2079658	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1598101	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	591493	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	156092	2.12	ug/l	0.03
Spiked Amount 10.000			Recovery =	21.20%		
40) 1,2-Dichloroethane-d4	14.24	65	122970	2.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.30%		
55) Toluene-d8	16.80	98	464750	2.10	ug/l	0.01
Spiked Amount 10.000			Recovery =	21.00%		
75) 4-Bromofluorobenzene	19.36	95	151526	2.04	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.40%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	91312	2.17	ug/l	98
3) Dichlorodifluoromethane	3.84	85	162686	2.23	ug/l	97
4) Chloromethane	4.29	50	304853	2.13	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	161834	2.19	ug/l	96
6) Vinyl chloride	4.55	62	248984	2.19	ug/l	99
7) Bromomethane	5.36	94	166615	2.09	ug/l	98
8) Chloroethane	5.61	64	130681	2.21	ug/l	98
9) Dichlorofluoromethane	6.08	67	386182	2.21	ug/l	95
10) Trichlorofluoromethane	6.17	101	215714	2.18	ug/l	99
11) Acrolein	7.32	56	76970	11.79	ug/l	90
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	102199	2.24	ug/l	98
13) 1,1-Dichloroethene	7.53	61	341160	2.24	ug/l	100
14) Acetone	7.74	43	129316	11.89	ug/l	93
15) Iodomethane	8.01	142	277069	2.20	ug/l	99
16) Methyl acetate	8.64	43	67606	2.25	ug/l	87
17) Carbon disulfide	8.15	76	589707	2.18	ug/l	100
18) Methylene chloride	8.98	49	328496	2.27	ug/l	99
19) tert-Butyl alcohol	9.29	59	169134	53.74	ug/l	93
20) tert-Butyl methyl ether (M	9.64	73	273692	2.21	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	179185	2.24	ug/l	99
22) Acrylonitrile	9.79	53	121779	10.51	ug/l	93
23) Isopropyl ether (DIPE)	11.18	45	733965	2.27	ug/l	99
24) 1,1-Dichloroethane	11.13	63	382453	2.22	ug/l	100
25) Vinyl acetate	11.32	43	148338	1.99	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	493545	2.27	ug/l	98
27) 2,2-Dichloropropane	12.62	77	157455	2.12	ug/l	97
28) cis-1,2-Dichloroethene	12.69	96	183151	2.18	ug/l	98

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:30 2020 Page 1

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.82	72	30937	9.86 ug/l	69
30) 2-Butanol	13.19	45	164096	55.40 ug/l	89
31) Bromochloromethane	13.21	130	88764	2.23 ug/l	99
33) Chloroform	13.36	83	312318	2.21 ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	202547	2.23 ug/l	99
36) Cyclohexane	13.68	84	229731	2.17 ug/l	100
37) 1,1-Dichloropropene	13.93	110	82530	2.15 ug/l	99
38) Carbon tetrachloride	13.91	119	162969	2.12 ug/l	99
41) 2,2,4-Trimethylpentane	14.30	57	724349	2.21 ug/l	99
42) Benzene	14.29	78	641972	2.17 ug/l	99
43) 1,2-Dichloroethane	14.38	62	161059	2.30 ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	56363	2.24 ug/l	96
45) Trichloroethene	15.27	130	166548	2.15 ug/l	98
46) Methylcyclohexane	15.48	83	243573	2.00 ug/l	96
47) 1,2-Dichloropropane	15.60	63	183361	2.18 ug/l	99
48) 1,4-Dioxane	15.80	88	7220	34.70 ug/l	72
49) Dibromomethane	15.80	93	70141	2.19 ug/l	98
50) Bromodichloromethane	15.98	83	185058	2.17 ug/l	99
51) 2-Chloroethyl vinyl ether	16.34	63	30415	2.06 ug/l	92
52) cis-1,3-Dichloropropene	16.52	75	216775	2.15 ug/l	99
53) 4-Methyl-2-pentanone	16.65	43	357713	10.06 ug/l	99
56) Toluene	16.87	91	601609	2.18 ug/l	99
57) Ethyl methacrylate	17.17	69	106043	2.16 ug/l	99
58) trans-1,3-Dichloropropene	17.16	75	175849	2.24 ug/l	99
59) 1,1,2-Trichloroethane	17.36	97	86599	2.31 ug/l	99
60) Tetrachloroethene	17.48	164	116852	2.14 ug/l	99
61) 2-Hexanone	17.57	43	290598	10.92 ug/l	95
62) 1,3-Dichloropropane	17.54	76	155387	2.21 ug/l	100
63) Dibromochloromethane	17.80	129	106260	2.16 ug/l	100
64) 1,2-Dibromoethane	17.93	107	82669	2.28 ug/l	97
65) 1-Chlorohexane	18.26	91	228141	2.07 ug/l	100
66) Chlorobenzene	18.36	112	349057	2.20 ug/l	99
67) Ethylbenzene	18.42	91	679155	2.23 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.43	131	118731	2.26 ug/l	99
69) m-Xylene & p-Xylene	18.51	91	1045474	4.53 ug/l	100
70) o-Xylene	18.88	91	501229	2.23 ug/l	98
71) Styrene	18.89	104	365066	2.33 ug/l	100
73) Bromoform	19.15	173	46800	2.08 ug/l	99
74) Isopropylbenzene	19.16	105	594160	2.10 ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	101480	2.24 ug/l	99
77) trans-1,4-Dichloro-2-buten	19.49	53	28041	2.15 ug/l	91

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020

SV 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.50	91	796249	2.12	ug/l	99
79)	1,2,3-Trichloropropane	19.52	110	20578	2.34	ug/l	87
80)	Bromobenzene	19.52	156	135809	2.18	ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	454985	2.07	ug/l	99
82)	2-Chlorotoluene	19.64	91	477481	2.13	ug/l	99
83)	4-Chlorotoluene	19.73	91	425279	2.14	ug/l	99
84)	tert-Butylbenzene	19.92	134	90043	1.96	ug/l	100
85)	1,2,4-Trimethylbenzene	19.95	105	439709	2.08	ug/l	99
86)	sec-Butylbenzene	20.10	105	616892	2.06	ug/l	98
87)	p-Isopropyltoluene	20.19	119	489141	2.05	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	240610	2.15	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	410392	2.09	ug/l	97
90)	1,4-Dichlorobenzene	20.35	146	245312	2.15	ug/l	97
91)	Benzyl Chloride	20.46	91	123591	2.09	ug/l	97
92)	n-Butylbenzene	20.54	91	531977	2.04	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	195472	2.10	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	10490	2.00	ug/l	95
95)	1,2,4-Trichlorobenzene	22.19	180	112067	2.05	ug/l	99
96)	Hexachlorobutadiene	22.28	225	68180	2.00	ug/l	95
97)	Naphthalene	22.52	128	163016	2.09	ug/l	98
98)	1,2,3-Trichlorobenzene	22.79	180	87704	2.06	ug/l	98

Su 4/24/20

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020

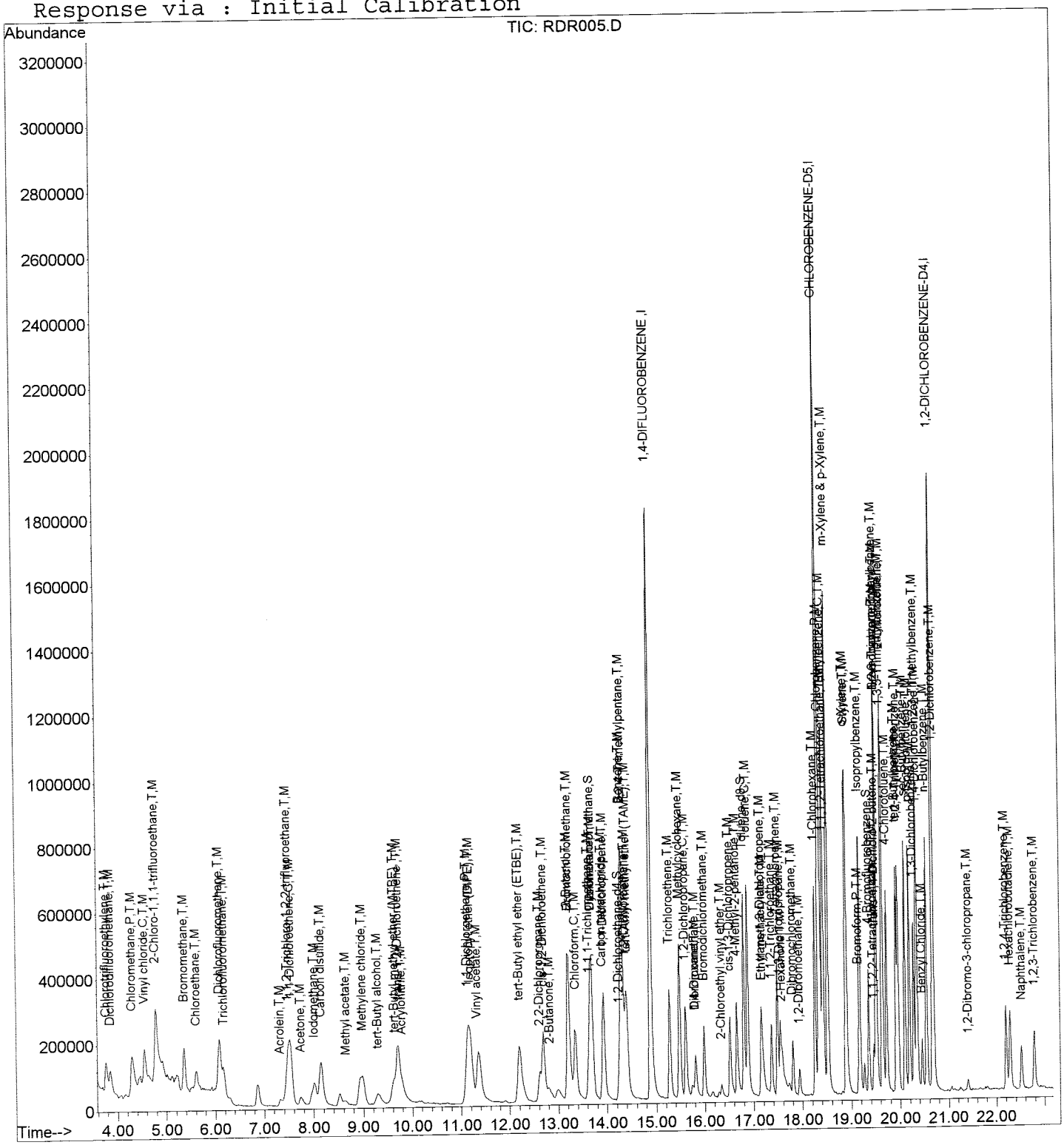
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Surg 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2269548	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1732127	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	585067	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	409582	5.10 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.00%	
40) 1,2-Dichloroethane-d4	14.24	65	348607	5.27 ug/l	0.00
Spiked Amount 10.000			Recovery =	52.70%	
55) Toluene-d8	16.80	98	1252485	5.22 ug/l	0.02
Spiked Amount 10.000			Recovery =	52.20%	
75) 4-Bromofluorobenzene	19.36	95	379351	5.17 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	252123	5.49 ug/l	100
3) Dichlorodifluoromethane	3.85	85	406098	5.11 ug/l	100
4) Chloromethane	4.29	50	758113	4.86 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	425925	5.29 ug/l	99
6) Vinyl chloride	4.56	62	653016	5.27 ug/l	100
7) Bromomethane	5.37	94	431203	4.95 ug/l	100
8) Chloroethane	5.61	64	324333	5.03 ug/l	99
9) Dichlorofluoromethane	6.09	67	926567	4.85 ug/l	100
10) Trichlorofluoromethane	6.18	101	581955	5.40 ug/l	99
11) Acrolein	7.31	56	191106	26.82 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	253894	5.09 ug/l	99
13) 1,1-Dichloroethene	7.54	61	815585	4.91 ug/l	100
14) Acetone	7.71	43	331807	27.96 ug/l	99
15) Iodomethane	8.03	142	664633	4.83 ug/l	99
16) Methyl acetate	8.61	43	154667	4.72 ug/l	98
17) Carbon disulfide	8.14	76	1532701	5.20 ug/l	100
18) Methylene chloride	8.98	49	795019	5.03 ug/l	99
19) tert-Butyl alcohol	9.29	59	442682	128.88 ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	676502	5.01 ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	437410	5.00 ug/l	99
22) Acrylonitrile	9.76	53	327566	25.91 ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	1903093	5.39 ug/l	98
24) 1,1-Dichloroethane	11.12	63	954580	5.07 ug/l	100
25) Vinyl acetate	11.30	43	530095	4.84 ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	1178276	4.97 ug/l	99
27) 2,2-Dichloropropane	12.62	77	383661	4.73 ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	460245	5.02 ug/l	100

(#) = qualifier out of range (m) = manual integration

4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.76	72	93923	27.43 ug/l	99
30) 2-Butanol	13.14	45	465054	143.87 ug/l	98
31) Bromochloromethane	13.21	130	223912	5.16 ug/l	99
33) Chloroform	13.36	83	786309	5.10 ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	497132	5.02 ug/l	97
36) Cyclohexane	13.68	84	588069	5.09 ug/l	98
37) 1,1-Dichloropropene	13.93	110	224888	5.36 ug/l	99
38) Carbon tetrachloride	13.93	119	444394	5.30 ug/l	98
41) 2,2,4-Trimethylpentane	14.32	57	1890595	5.30 ug/l	99
42) Benzene	14.29	78	1625036	5.03 ug/l	100
43) 1,2-Dichloroethane	14.38	62	418098	5.47 ug/l	97
44) tert-Amyl methyl ether (TA	14.41	87	153376	5.58 ug/l	97
45) Trichloroethene	15.27	130	438964	5.20 ug/l	98
46) Methylcyclohexane	15.48	83	705381	5.31 ug/l	99
47) 1,2-Dichloropropane	15.60	63	472393	5.14 ug/l	100
48) 1,4-Dioxane	15.79	88	24145	106.35 ug/l	93
49) Dibromomethane	15.81	93	181898	5.21 ug/l	98
50) Bromodichloromethane	15.98	83	485177	5.20 ug/l	100
51) 2-Chloroethyl vinyl ether	16.33	63	84872	5.27 ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	584691	5.30 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1118199	28.82 ug/l	99
56) Toluene	16.88	91	1548698	5.18 ug/l	100
57) Ethyl methacrylate	17.16	69	296758	5.58 ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	462972	5.43 ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	217348	5.35 ug/l	100
60) Tetrachloroethene	17.48	164	300179	5.08 ug/l	98
61) 2-Hexanone	17.56	43	792214	27.47 ug/l	98
62) 1,3-Dichloropropane	17.54	76	412312	5.40 ug/l	99
63) Dibromochloromethane	17.80	129	283435	5.33 ug/l	97
64) 1,2-Dibromoethane	17.93	107	214054	5.45 ug/l	100
65) 1-Chlorohexane	18.26	91	629576	5.26 ug/l	100
66) Chlorobenzene	18.36	112	872273	5.08 ug/l	100
67) Ethylbenzene	18.41	91	1696705	5.15 ug/l	99
68) 1,1,1,2-Tetrachloroethane	18.42	131	291106	5.12 ug/l	98
69) m-Xylene & p-Xylene	18.51	91	2438200	9.76 ug/l	99
70) o-Xylene	18.88	91	1242264	5.09 ug/l	98
71) Styrene	18.90	104	910546	5.37 ug/l	99
73) Bromoform	19.15	173	122298	5.49 ug/l	98
74) Isopropylbenzene	19.16	105	1467552	5.25 ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	246106	5.49 ug/l	98
77) trans-1,4-Dichloro-2-buten	19.49	53	71676	5.56 ug/l	99

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78) n-Propylbenzene	19.51	91	1948312	5.24	ug/l	99
79) 1,2,3-Trichloropropane	19.51	110	49731	5.72	ug/l	86
80) Bromobenzene	19.52	156	331681	5.38	ug/l	97
81) 1,3,5-Trimethylbenzene	19.62	105	1122358	5.16	ug/l	99
82) 2-Chlorotoluene	19.64	91	1151043	5.18	ug/l	100
83) 4-Chlorotoluene	19.71	91	993608	5.05	ug/l	100
84) tert-Butylbenzene	19.92	134	242610	5.33	ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1066132	5.11	ug/l	100
86) sec-Butylbenzene	20.10	105	1468360	4.96	ug/l	99
87) p-Isopropyltoluene	20.19	119	1175142	4.98	ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	586001	5.30	ug/l	96
89) 1,2,3-Trimethylbenzene	20.34	105	962751	4.96	ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	544286	4.81	ug/l	96
91) Benzyl Chloride	20.46	91	317415	5.43	ug/l	99
92) n-Butylbenzene	20.55	91	1309167	5.07	ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	468214	5.09	ug/l	99
94) 1,2-Dibromo-3-chloropropan	21.41	157	28146	5.43	ug/l	98
95) 1,2,4-Trichlorobenzene	22.19	180	281122	5.19	ug/l	99
96) Hexachlorobutadiene	22.28	225	179571	5.32	ug/l	97
97) Naphthalene	22.52	128	412667	5.34	ug/l	99
98) 1,2,3-Trichlorobenzene	22.79	180	228545	5.42	ug/l	99

SCM 4/22/20

(#) = qualifier out of range (m) = manual integration

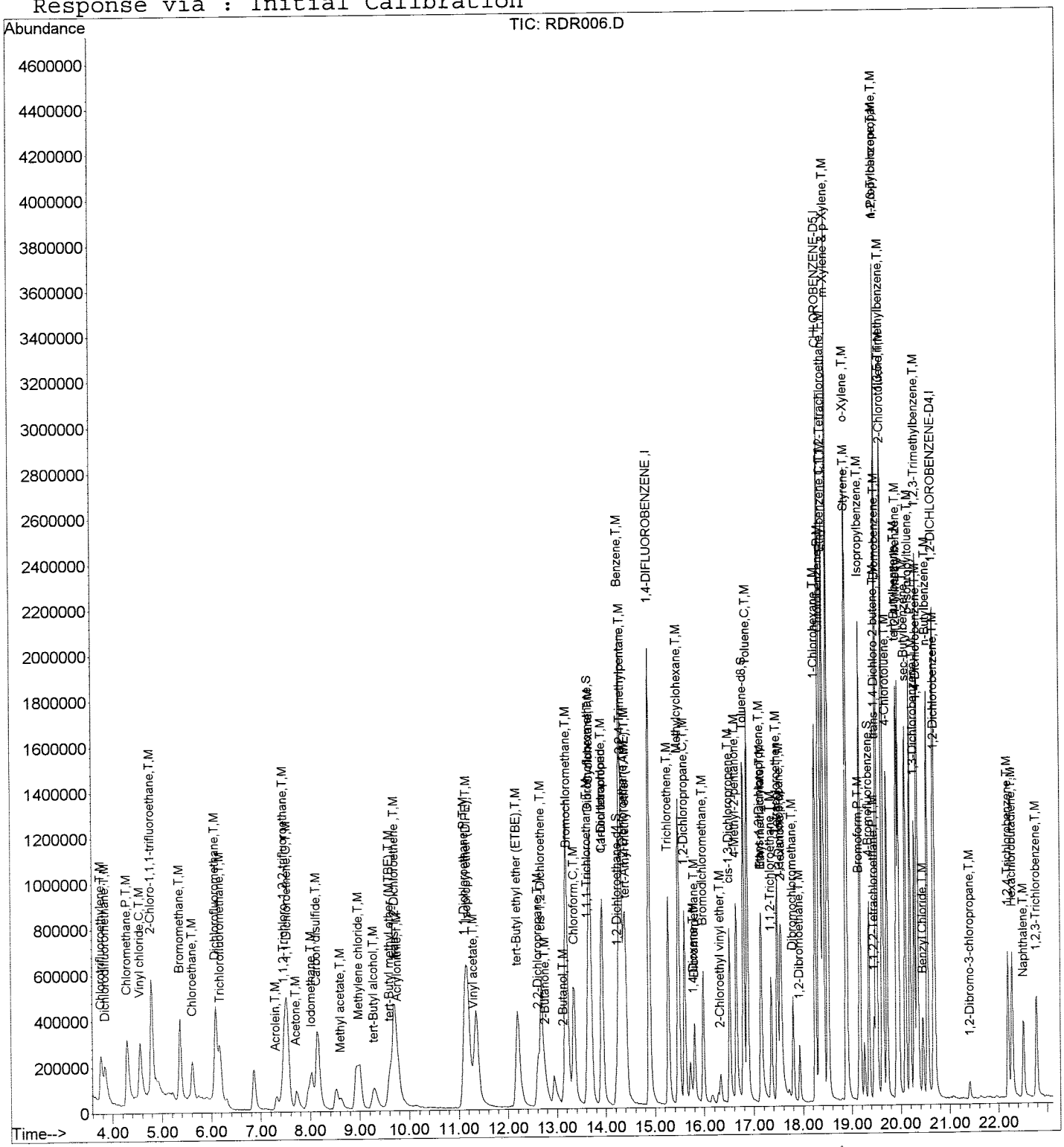
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2165754	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1703394	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	566102	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	792396	10.33	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.30%			
40) 1,2-Dichloroethane-d4	14.24	65	616662	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.70%			
55) Toluene-d8	16.79	98	2438755	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.40%			
75) 4-Bromofluorobenzene	19.36	95	764976	10.79	ug/l	0.00
Spiked Amount 10.000			Recovery = 107.90%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	523722	11.95	ug/l	100
3) Dichlorodifluoromethane	3.85	85	839521	11.06	ug/l	100
4) Chloromethane	4.29	50	1556176	10.46	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	866029	11.27	ug/l	100
6) Vinyl chloride	4.55	62	1287803	10.89	ug/l	100
7) Bromomethane	5.36	94	891656	10.72	ug/l	100
8) Chloroethane	5.61	64	643518	10.46	ug/l	100
9) Dichlorofluoromethane	6.09	67	1901230	10.44	ug/l	100
10) Trichlorofluoromethane	6.17	101	1102298	10.72	ug/l	100
11) Acrolein	7.32	56	327662	48.18	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	492686	10.36	ug/l	100
13) 1,1-Dichloroethene	7.53	61	1664559	10.50	ug/l	100
14) Acetone	7.73	43	522304	46.12	ug/l	100
15) Iodomethane	8.03	142	1264125	9.63	ug/l	100
16) Methyl acetate	8.59	43	309510	9.90	ug/l	100
17) Carbon disulfide	8.15	76	3211738	11.42	ug/l	100
18) Methylene chloride	9.00	49	1517590	10.06	ug/l	100
19) tert-Butyl alcohol	9.29	59	696160	212.39	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1146553	8.89	ug/l	100
21) trans-1,2-Dichloroethene	9.71	96	831569	9.96	ug/l	100
22) Acrylonitrile	9.76	53	570150	47.27	ug/l	100
23) Isopropyl ether (DIPE)	11.18	45	3352056	9.94	ug/l	100
24) 1,1-Dichloroethane	11.13	63	1814166	10.10	ug/l	100
25) Vinyl acetate	11.27	43	1098671	9.65	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	2033135	8.98	ug/l	100
27) 2,2-Dichloropropane	12.62	77	682250	8.82	ug/l	100
28) cis-1,2-Dichloroethene	12.69	96	839009	9.59	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29) 2-Butanone	12.74	72	157636	48.25	ug/l	100
30) 2-Butanol	13.14	45	732972	237.63	ug/l	100
31) Bromochloromethane	13.21	130	386133	9.32	ug/l	100
33) Chloroform	13.36	83	1422826	9.67	ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	949420	10.05	ug/l	100
36) Cyclohexane	13.68	84	1114527	10.12	ug/l	100
37) 1,1-Dichloropropene	13.93	110	415107	10.38	ug/l	100
38) Carbon tetrachloride	13.91	119	807848	10.10	ug/l	100
41) 2,2,4-Trimethylpentane	14.32	57	3847593	11.30	ug/l	100
42) Benzene	14.29	78	2977972	9.66	ug/l	100
43) 1,2-Dichloroethane	14.36	62	688570	9.44	ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	243896	9.29	ug/l	100
45) Trichloroethene	15.27	130	793653	9.86	ug/l	100
46) Methylcyclohexane	15.48	83	1310550	10.34	ug/l	100
47) 1,2-Dichloropropane	15.60	63	879701	10.02	ug/l	100
48) 1,4-Dioxane	15.79	88	43128	199.06	ug/l	100
49) Dibromomethane	15.79	93	311891	9.36	ug/l	100
50) Bromodichloromethane	15.98	83	847204	9.52	ug/l	100
51) 2-Chloroethyl vinyl ether	16.31	63	144603	9.40	ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	1046916	9.95	ug/l	100
53) 4-Methyl-2-pentanone	16.64	43	1828274	49.38	ug/l	100
56) Toluene	16.87	91	2883096	9.81	ug/l	100
57) Ethyl methacrylate	17.16	69	507697	9.70	ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	847606	10.11	ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	382072	9.56	ug/l	100
60) Tetrachloroethene	17.48	164	575978	9.92	ug/l	100
61) 2-Hexanone	17.56	43	1352770	47.71	ug/l	100
62) 1,3-Dichloropropane	17.53	76	741498	9.88	ug/l	100
63) Dibromochloromethane	17.80	129	518460	9.91	ug/l	100
64) 1,2-Dibromoethane	17.93	107	375199	9.71	ug/l	100
65) 1-Chlorohexane	18.26	91	1182938	10.06	ug/l	100
66) Chlorobenzene	18.36	112	1729725	10.24	ug/l	100
67) Ethylbenzene	18.42	91	3284767	10.13	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	575664	10.29	ug/l	100
69) m-Xylene & p-Xylene	18.51	91	4809194	19.57	ug/l	100
70) o-Xylene	18.88	91	2500715	10.42	ug/l	100
71) Styrene	18.90	104	1797912	10.78	ug/l	100
73) Bromoform	19.13	173	220358	10.22	ug/l	100
74) Isopropylbenzene	19.16	105	2931013	10.84	ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	414973	9.57	ug/l	100
77) trans-1,4-Dichloro-2-buten	19.47	53	121424	9.74	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78) n-Propylbenzene	19.50	91	3652186	10.15 ug/l	100
79) 1,2,3-Trichloropropane	19.52	110	78970	9.38 ug/l	100
80) Bromobenzene	19.52	156	597373	10.02 ug/l	100
81) 1,3,5-Trimethylbenzene	19.62	105	2184073	10.38 ug/l	100
82) 2-Chlorotoluene	19.64	91	2217816	10.32 ug/l	100
83) 4-Chlorotoluene	19.71	91	1949864	10.24 ug/l	100
84) tert-Butylbenzene	19.92	134	449382	10.21 ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1999628	9.90 ug/l	100
86) sec-Butylbenzene	20.10	105	3030392	10.58 ug/l	100
87) p-Isopropyltoluene	20.19	119	2308422	10.12 ug/l	100
88) 1,3-Dichlorobenzene	20.28	146	1062525	9.94 ug/l	100
89) 1,2,3-Trimethylbenzene	20.34	105	1872199	9.98 ug/l	100
90) 1,4-Dichlorobenzene	20.35	146	1113696	10.18 ug/l	100
91) Benzyl Chloride	20.44	91	542066	9.58 ug/l	100
92) n-Butylbenzene	20.54	91	2580233	10.33 ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	843896	9.49 ug/l	100
94) 1,2-Dibromo-3-chloropropan	21.41	157	49298	9.83 ug/l	100
95) 1,2,4-Trichlorobenzene	22.19	180	528898	10.09 ug/l	100
96) Hexachlorobutadiene	22.28	225	355146	10.87 ug/l	100
97) Naphthalene	22.51	128	726534	9.72 ug/l	100
98) 1,2,3-Trichlorobenzene	22.79	180	423816	10.39 ug/l	100

(#) = qualifier out of range (m) = manual integration

SM 4/22/20

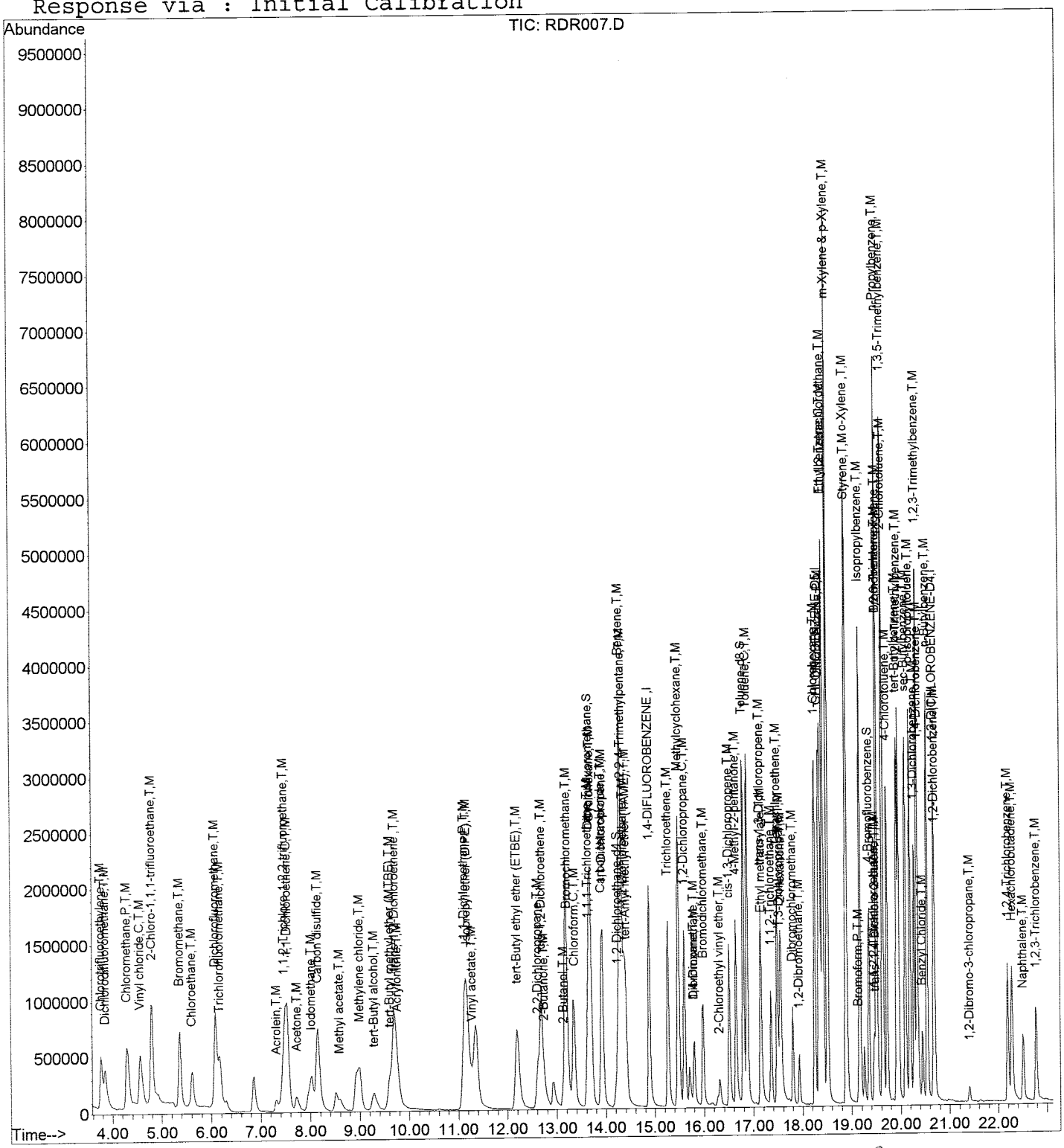
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2063384	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1723015	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	597413	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	1532375	20.97 ug/l	0.00
Spiked Amount 10.000			Recovery =	209.70%	
40) 1,2-Dichloroethane-d4	14.24	65	1374809	22.85 ug/l	0.00
Spiked Amount 10.000			Recovery =	228.50%	
55) Toluene-d8	16.79	98	4871167	20.42 ug/l	0.00
Spiked Amount 10.000			Recovery =	204.20%	
75) 4-Bromofluorobenzene	19.34	95	1531997	20.47 ug/l	-0.01
Spiked Amount 10.000			Recovery =	204.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	952227	22.81 ug/l	99
3) Dichlorodifluoromethane	3.83	85	1565858	21.65 ug/l	99
4) Chloromethane	4.29	50	2903113	20.48 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	1653168	22.59 ug/l	99
6) Vinyl chloride	4.56	62	2495321	22.15 ug/l	99
7) Bromomethane	5.35	94	1695025	21.40 ug/l	99
8) Chloroethane	5.60	64	1170504	19.97 ug/l	99
9) Dichlorofluoromethane	6.07	67	3275647	18.88 ug/l	100
10) Trichlorofluoromethane	6.16	101	2087791	21.31 ug/l	100
11) Acrolein	7.31	56	591336	91.27 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	897092	19.80 ug/l	99
13) 1,1-Dichloroethene	7.52	61	2980007	19.73 ug/l	100
14) Acetone	7.71	43	992226	91.96 ug/l	100
15) Iodomethane	8.01	142	2415162	19.32 ug/l	100
16) Methyl acetate	8.58	43	624623	20.97 ug/l	100
17) Carbon disulfide	8.14	76	5909977	22.05 ug/l	100
18) Methylene chloride	8.98	49	2848193	19.82 ug/l	99
19) tert-Butyl alcohol	9.26	59	1448642	463.88 ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	2186492	17.80 ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	1542047	19.39 ug/l	100
22) Acrylonitrile	9.74	53	1133648	98.65 ug/l	96
23) Isopropyl ether (DIPE)	11.15	45	6268612	19.52 ug/l	100
24) 1,1-Dichloroethane	11.10	63	3322744	19.41 ug/l	99
25) Vinyl acetate	11.25	43	2513419	22.14 ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	3964564	18.38 ug/l	99
27) 2,2-Dichloropropane	12.62	77	1247181	16.92 ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	1572251	18.86 ug/l	99

(#) = qualifier out of range (m) = manual integration

SV 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D Vial: 8
Acq On : 2 Apr 2020 7:43 pm Operator: RMinam
Sample : VOF3D027 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	290435	93.30	ug/l	100
30)	2-Butanol	13.11	45	1569596	534.10	ug/l	98
31)	Bromochloromethane	13.21	130	758313	19.22	ug/l	100
33)	Chloroform	13.34	83	2732803	19.49	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	1774054	19.71	ug/l	100
36)	Cyclohexane	13.68	84	2183036	20.80	ug/l	99
37)	1,1-Dichloropropene	13.93	110	754942	19.81	ug/l	97
38)	Carbon tetrachloride	13.91	119	1524378	20.00	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	7149846	22.03	ug/l	100
42)	Benzene	14.29	78	5543561	18.87	ug/l	99
43)	1,2-Dichloroethane	14.36	62	1343260	19.33	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	493145	19.72	ug/l	98
45)	Trichloroethene	15.27	130	1512359	19.71	ug/l	99
46)	Methylcyclohexane	15.48	83	2548070	21.10	ug/l	100
47)	1,2-Dichloropropane	15.60	63	1614957	19.32	ug/l	99
48)	1,4-Dioxane	15.78	88	83935	406.63	ug/l	98
49)	Dibromomethane	15.79	93	614229	19.36	ug/l	99
50)	Bromodichloromethane	15.97	83	1698756	20.04	ug/l	99
51)	2-Chloroethyl vinyl ether	16.31	63	298129	20.35	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1973692	19.69	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	3595056	101.92	ug/l	99
56)	Toluene	16.87	91	5398259	18.17	ug/l	100
57)	Ethyl methacrylate	17.14	69	977124	18.47	ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	1561757	18.42	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	720786	17.84	ug/l	98
60)	Tetrachloroethene	17.48	164	1071431	18.24	ug/l	99
61)	2-Hexanone	17.54	43	2464977	85.94	ug/l	100
62)	1,3-Dichloropropane	17.53	76	1385565	18.26	ug/l	100
63)	Dibromochloromethane	17.80	129	994322	18.79	ug/l	100
64)	1,2-Dibromoethane	17.93	107	749904	19.18	ug/l	98
65)	1-Chlorohexane	18.24	91	2093768	17.60	ug/l	100
66)	Chlorobenzene	18.36	112	3214803	18.82	ug/l	100
67)	Ethylbenzene	18.41	91	6149847	18.75	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	1037090	18.32	ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	9262242	37.26	ug/l	99
70)	o-Xylene	18.88	91	4559377	18.79	ug/l	100
71)	Styrene	18.90	104	3184034	18.87	ug/l	99
73)	Bromoform	19.13	173	441272	19.40	ug/l	98
74)	Isopropylbenzene	19.16	105	5468315	19.16	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.45	83	807023	17.64	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	243884	18.54	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D Vial: 8
Acq On : 2 Apr 2020 7:43 pm Operator: RMinam
Sample : VOF3D027 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.51	91	7084414	18.66	ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	160594	18.08	ug/l	91
80)	Bromobenzene	19.51	156	1189233	18.90	ug/l	99
81)	1,3,5-Trimethylbenzene	19.62	105	4068116	18.32	ug/l	99
82)	2-Chlorotoluene	19.64	91	4136953	18.24	ug/l	100
83)	4-Chlorotoluene	19.71	91	3695415	18.39	ug/l	100
84)	tert-Butylbenzene	19.92	134	824766	17.75	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	3771128	17.70	ug/l	99
86)	sec-Butylbenzene	20.10	105	5619156	18.59	ug/l	100
87)	p-Isopropyltoluene	20.19	119	4329955	17.98	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	2001918	17.74	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	3647746	18.42	ug/l	100
90)	1,4-Dichlorobenzene	20.35	146	2100844	18.20	ug/l	98
91)	Benzyl Chloride	20.44	91	1071202	17.93	ug/l	99
92)	n-Butylbenzene	20.55	91	4864345	18.45	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	1790236	19.07	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	98846	18.68	ug/l	100
95)	1,2,4-Trichlorobenzene	22.19	180	1030551	18.63	ug/l	99
96)	Hexachlorobutadiene	22.28	225	638808	18.52	ug/l	98
97)	Naphthalene	22.51	128	1446991	18.35	ug/l	99
98)	1,2,3-Trichlorobenzene	22.77	180	792111	18.41	ug/l	100

SU 4/22/20

(#) = qualifier out of range (m) = manual integration
RDR008.D VOF3D02.M Thu Apr 16 17:32:49 2020 Page 3

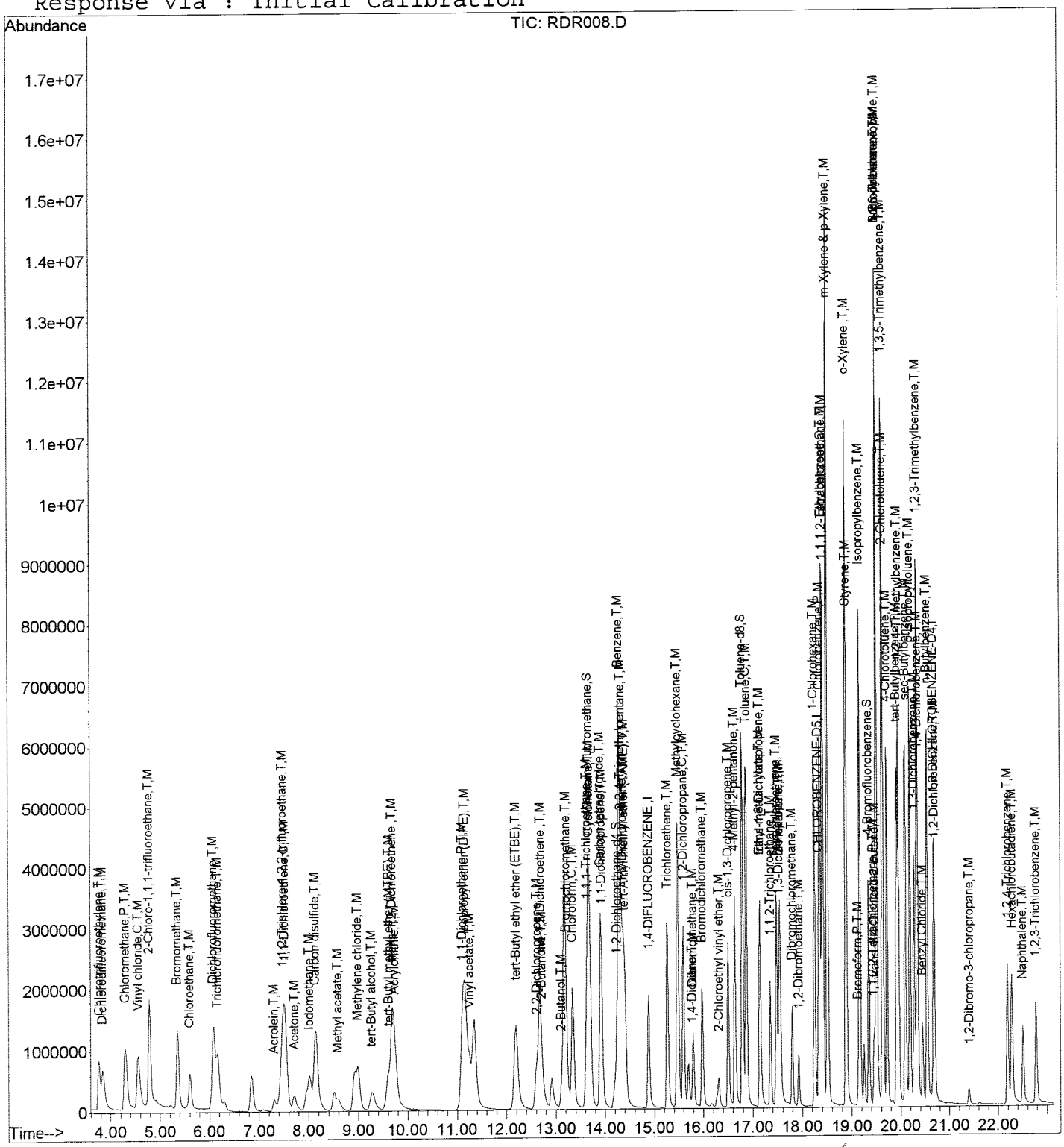
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D Vial: 10
Acq On : 2 Apr 2020 8:41 pm Operator: RMinam
Sample : VOF3D029 Inst : F3
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2201167	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1649481	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	595666	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	3763680	48.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	482.90%		
40) 1,2-Dichloroethane-d4	14.24	65	3467360	54.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	540.30%		
55) Toluene-d8	16.78	98	11723209	51.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	513.30%		
75) 4-Bromofluorobenzene	19.34	95	3639415	48.76	ug/l	-0.02
Spiked Amount 10.000			Recovery =	487.60%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	2020415	45.37	ug/l	100
3) Dichlorodifluoromethane	3.83	85	3282920	42.55	ug/l	98
4) Chloromethane	4.29	50	6552468	43.33	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	3543708	45.39	ug/l	97
6) Vinyl chloride	4.56	62	5405019	44.97	ug/l	100
7) Bromomethane	5.33	94	3779429	44.72	ug/l	99
8) Chloroethane	5.60	64	2771670	44.32	ug/l	98
9) Dichlorofluoromethane	6.07	67	7992501	43.17	ug/l	100
10) Trichlorofluoromethane	6.16	101	4811488	46.03	ug/l	100
11) Acrolein	7.29	56	1606058	232.37	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	2186009	45.23	ug/l	99
13) 1,1-Dichloroethene	7.52	61	7166691	44.48	ug/l	97
14) Acetone	7.70	43	2627026	228.23	ug/l	97
15) Iodomethane	8.01	142	6867035	51.49	ug/l	97
16) Methyl acetate	8.58	43	1531683	48.20	ug/l	95
17) Carbon disulfide	8.14	76	13865961	48.49	ug/l	100
18) Methylene chloride	8.97	49	7235673	47.19	ug/l	94
19) tert-Butyl alcohol	9.29	59	3981948	1195.28	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	6067702	46.30	ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	4136691	48.76	ug/l	99
22) Acrylonitrile	9.74	53	3147947	256.77	ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	16459056	48.04	ug/l	98
24) 1,1-Dichloroethane	11.10	63	8706237	47.67	ug/l	99
25) Vinyl acetate	11.25	43	5967485	48.39	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	10355123	45.00	ug/l	99
27) 2,2-Dichloropropane	12.62	77	2904329	36.94	ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	4276966	48.10	ug/l	100

(#) = qualifier out of range (m) = manual integration

SM 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29)	2-Butanone	12.72	72	832697	250.75 ug/l	98
30)	2-Butanol	13.11	45	3835105	1223.32 ug/l	96
31)	Bromochloromethane	13.21	130	2076279	49.33 ug/l	99
33)	Chloroform	13.34	83	7252531	48.50 ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	4410708	45.94 ug/l	99
36)	Cyclohexane	13.68	84	4934197	44.08 ug/l	99
37)	1,1-Dichloropropene	13.93	110	2039912	50.17 ug/l	97
38)	Carbon tetrachloride	13.91	119	4072503	50.09 ug/l	98
41)	2,2,4-Trimethylpentane	14.32	57	15539520	44.89 ug/l	99
42)	Benzene	14.29	78	15709096	50.13 ug/l	98
43)	1,2-Dichloroethane	14.36	62	3580472	48.30 ug/l	100
44)	tert-Amyl methyl ether (TA	14.41	87	1337059	50.12 ug/l	98
45)	Trichloroethene	15.27	130	4272411	52.20 ug/l	98
46)	Methylcyclohexane	15.48	83	5770059	44.79 ug/l	96
47)	1,2-Dichloropropane	15.60	63	4350813	48.78 ug/l	99
48)	1,4-Dioxane	15.77	88	232766	1057.06 ug/l	98
49)	Dibromomethane	15.79	93	1642350	48.51 ug/l	97
50)	Bromodichloromethane	15.97	83	4418326	48.86 ug/l	99
51)	2-Chloroethyl vinyl ether	16.29	63	851209	54.47 ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	5370532	50.24 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	9689792	257.51 ug/l	98
56)	Toluene	16.87	91	14720005	51.75 ug/l	98
57)	Ethyl methacrylate	17.14	69	2670729	52.72 ug/l	95
58)	trans-1,3-Dichloropropene	17.13	75	4251432	52.38 ug/l	98
59)	1,1,2-Trichloroethane	17.35	97	1948996	50.38 ug/l	100
60)	Tetrachloroethene	17.48	164	2925471	52.02 ug/l	99
61)	2-Hexanone	17.54	43	6654938	242.36 ug/l	97
62)	1,3-Dichloropropane	17.53	76	3650895	50.25 ug/l	100
63)	Dibromochloromethane	17.80	129	2639963	52.10 ug/l	100
64)	1,2-Dibromoethane	17.93	107	1921917	51.35 ug/l	99
65)	1-Chlorohexane	18.26	91	5729017	50.30 ug/l	99
66)	Chlorobenzene	18.36	112	8636502	52.81 ug/l	100
67)	Ethylbenzene	18.40	91	14397005	45.85 ug/l	93
68)	1,1,1,2-Tetrachloroethane	18.42	131	2853722	52.66 ug/l	99
70)	o-Xylene	18.88	91	10967059	47.21 ug/l	99
71)	Styrene	18.89	104	8157497	50.49 ug/l	98
73)	Bromoform	19.13	173	1224233	53.99 ug/l	99
74)	Isopropylbenzene	19.16	105	12302184	43.22 ug/l	95
76)	1,1,2,2-Tetrachloroethane	19.44	83	2146145	47.06 ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.47	53	593948	45.29 ug/l	97
78)	n-Propylbenzene	19.50	91	14228791	37.59 ug/l	91

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
79) 1,2,3-Trichloropropane	19.50	110	393805	44.46 ug/l	88
80) Bromobenzene	19.50	156	3083885	49.16 ug/l	100
81) 1,3,5-Trimethylbenzene	19.62	105	10554149	47.66 ug/l	99
82) 2-Chlorotoluene	19.64	91	10708900	47.36 ug/l	98
83) 4-Chlorotoluene	19.71	91	9699694	48.41 ug/l	98
84) tert-Butylbenzene	19.92	134	2377980	51.34 ug/l	96
85) 1,2,4-Trimethylbenzene	19.95	105	10683536	50.28 ug/l	100
86) sec-Butylbenzene	20.10	105	13693583	45.43 ug/l	95
87) p-Isopropyltoluene	20.19	119	11486106	47.84 ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	5654380	50.25 ug/l	97
89) 1,2,3-Trimethylbenzene	20.34	105	9852368	49.89 ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	5919399	51.43 ug/l	97
91) Benzyl Chloride	20.44	91	2954054	49.60 ug/l	99
92) n-Butylbenzene	20.54	91	12636476	48.06 ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	4650409	49.68 ug/l	99
94) 1,2-Dibromo-3-chloropropan	21.41	157	286605	54.31 ug/l	99
95) 1,2,4-Trichlorobenzene	22.19	180	2927932	53.08 ug/l	99
96) Hexachlorobutadiene	22.28	225	1745136	50.74 ug/l	96
97) Naphthalene	22.51	128	3905828	49.68 ug/l	100
98) 1,2,3-Trichlorobenzene	22.79	180	2267325	52.84 ug/l	100

SG 4/22/20

(#) = qualifier out of range (m) = manual integration

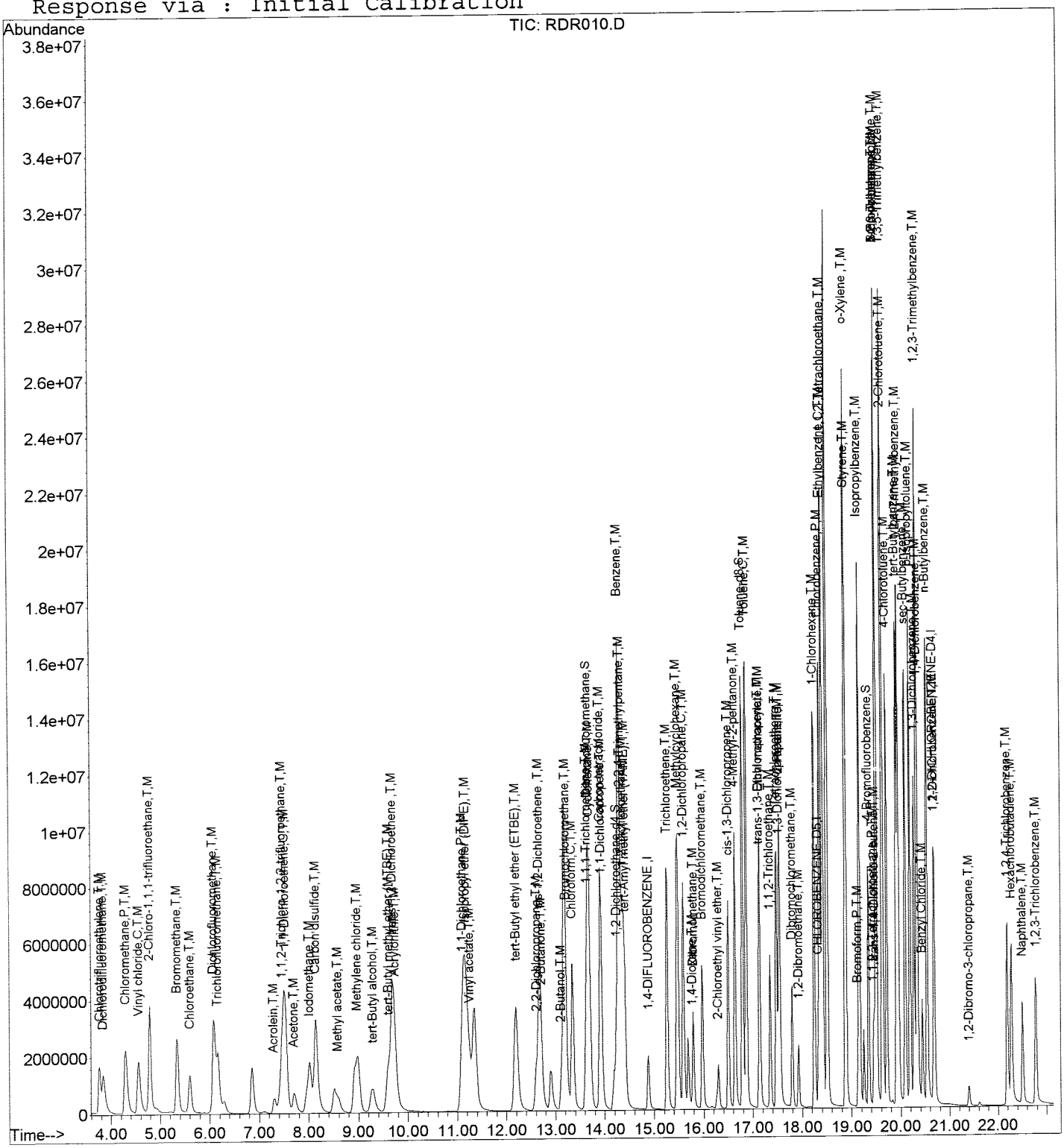
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2110802	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1617324	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	584160	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	6635181	88.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 887.70%			
40) 1,2-Dichloroethane-d4	14.23	65	6270930	101.91	ug/l	-0.02
Spiked Amount 10.000			Recovery = 1019.10%			
55) Toluene-d8	16.78	98	17474129	78.03	ug/l	0.00
Spiked Amount 10.000			Recovery = 780.30%			
75) 4-Bromofluorobenzene	19.34	95	6574044	89.82	ug/l	-0.02
Spiked Amount 10.000			Recovery = 898.20%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	3929628	92.03	ug/l	100
3) Dichlorodifluoromethane	3.83	85	6233367	84.25	ug/l	99
4) Chloromethane	4.29	50	12079946	83.30	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	6945857	92.77	ug/l	96
6) Vinyl chloride	4.55	62	10570032	91.70	ug/l	100
7) Bromomethane	5.31	94	5406218	66.71	ug/l	100
8) Chloroethane	5.58	64	4731020	78.89	ug/l	99
9) Dichlorofluoromethane	6.07	67	15682906	88.34	ug/l	100
10) Trichlorofluoromethane	6.16	101	9248248	92.27	ug/l	100
11) Acrolein	7.31	56	3124342	471.39	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	4234724	91.36	ug/l	98
13) 1,1-Dichloroethene	7.52	61	13826626	89.48	ug/l	96
14) Acetone	7.71	43	5174728	468.82	ug/l	98
15) Iodomethane	8.01	142	12777083	99.91	ug/l	97
16) Methyl acetate	8.58	43	2827358	92.78	ug/l	94
17) Carbon disulfide	8.14	76	25067392	91.42	ug/l	100
18) Methylene chloride	8.96	49	12940927	88.01	ug/l	92
19) tert-Butyl alcohol	9.29	59	7772874	2433.10	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	11563581	92.01	ug/l	97
21) trans-1,2-Dichloroethene	9.69	96	7546971	92.77	ug/l	99
22) Acrylonitrile	9.73	53	6233790	530.25	ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	30092972	91.60	ug/l	97
24) 1,1-Dichloroethane	11.10	63	15892280	90.74	ug/l	99
25) Vinyl acetate	11.23	43	10868655	91.24	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	19897746	90.16	ug/l	100
27) 2,2-Dichloropropane	12.62	77	5034549	66.77	ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	8151108	95.60	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:06 2020 Page 1

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	1617399	507.90	ug/l	99
30)	2-Butanol	13.11	45	7477122	2487.15	ug/l	95
31)	Bromochloromethane	13.21	130	4084146	101.18	ug/l	99
33)	Chloroform	13.34	83	13641218	95.12	ug/l	98
35)	1,1,1-Trichloroethane	13.63	97	7994012	86.83	ug/l	97
36)	Cyclohexane	13.68	84	8099640	75.45	ug/l	99
37)	1,1-Dichloropropene	13.93	110	3778597	96.91	ug/l	96
38)	Carbon tetrachloride	13.91	119	7628403	97.84	ug/l	98
41)	2,2,4-Trimethylpentane	14.32	57	26049523	78.47	ug/l	100
43)	1,2-Dichloroethane	14.36	62	6469803	91.01	ug/l	100
44)	tert-Amyl methyl ether (TA	14.39	87	2501890	97.81	ug/l	98
45)	Trichloroethene	15.25	130	8121847	103.48	ug/l	97
46)	Methylcyclohexane	15.48	83	9710338	78.60	ug/l	95
47)	1,2-Dichloropropane	15.60	63	8266177	96.65	ug/l	98
48)	1,4-Dioxane	15.77	88	533217	2525.17	ug/l	95
49)	Dibromomethane	15.79	93	3493763	107.62	ug/l	96
50)	Bromodichloromethane	15.97	83	8591352	99.08	ug/l	100
51)	2-Chloroethyl vinyl ether	16.29	63	1805721	120.50	ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	10460819	102.04	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	17799741	493.29	ug/l	92
57)	Ethyl methacrylate	17.14	69	5194473	104.58	ug/l	92
58)	trans-1,3-Dichloropropene	17.13	75	7993009	100.44	ug/l	97
59)	1,1,2-Trichloroethane	17.35	97	3919599	103.34	ug/l	99
60)	Tetrachloroethene	17.48	164	5982101	108.49	ug/l	98
61)	2-Hexanone	17.54	43	12866214	477.87	ug/l	95
62)	1,3-Dichloropropane	17.53	76	7274835	102.12	ug/l	100
63)	Dibromochloromethane	17.79	129	5491688	110.53	ug/l	100
64)	1,2-Dibromoethane	17.93	107	3953415	107.73	ug/l	99
65)	1-Chlorohexane	18.26	91	11035250	98.81	ug/l	99
66)	Chlorobenzene	18.36	112	14850913	92.62	ug/l	89
68)	1,1,1,2-Tetrachloroethane	18.43	131	6069383	114.23	ug/l	98
70)	o-Xylene	18.88	91	16047397	70.45	ug/l	75
71)	Styrene	18.89	104	13848286	87.42	ug/l	90
73)	Bromoform	19.13	173	2616586	117.66	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	4285249	95.82	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.47	53	1204276	93.64	ug/l	96
79)	1,2,3-Trichloropropane	19.50	110	808263	93.05	ug/l	91
80)	Bromobenzene	19.50	156	6376144	103.65	ug/l	100
84)	tert-Butylbenzene	19.92	134	4524934	99.61	ug/l	92
86)	sec-Butylbenzene	20.10	105	18013806	60.94	ug/l	71
88)	1,3-Dichlorobenzene	20.28	146	11412673	103.43	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
89)	1,2,3-Trimethylbenzene	20.34	105	15615969	80.64	ug/l	85
90)	1,4-Dichlorobenzene	20.35	146	11779631	104.36	ug/l	96
91)	Benzyl Chloride	20.44	91	6021210	103.08	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	9719365	105.89	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	614193	118.67	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	6029494	111.46	ug/l	99
96)	Hexachlorobutadiene	22.28	225	3320468	98.45	ug/l	97
97)	Naphthalene	22.51	128	8525265	110.57	ug/l	100
98)	1,2,3-Trichlorobenzene	22.77	180	4550493	108.14	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:07 2020

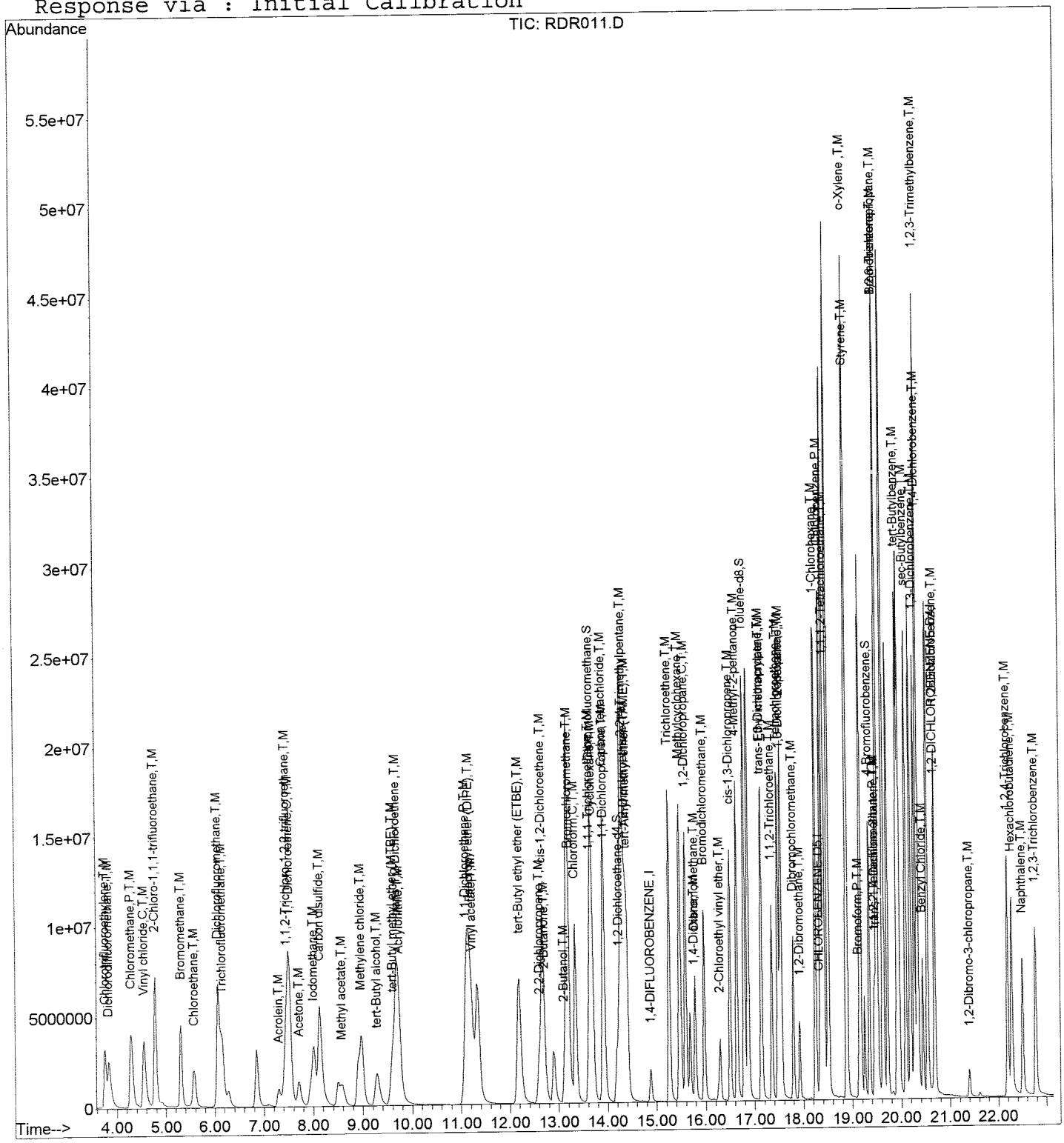
4/22/20

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: RDR019 BFB Injection Date : 04/06/20
Instrument ID: F3 BFB Injection Time : 10:37
GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.41
75	30.0 - 60.0% of mass 95	48.18
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.07
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	68.92
175	5.0 - 9.0% of mass 174	5.24(7.6)1
176	95.0 - 101.0% of mass 174	67.96(98.6)1
177	5.0 - 9.0% of mass 176	4.44(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	IVOF3D0202	RDR020	04/06/20	11:22

SW 4/22/20

FORM V VOA OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F3
IC Beginning DateTime :04/02/20 16:47
Spike Amount :10 PPB
CC/CV File :RDR020
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
IC Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02
Date_Time :04/06/20 11:22

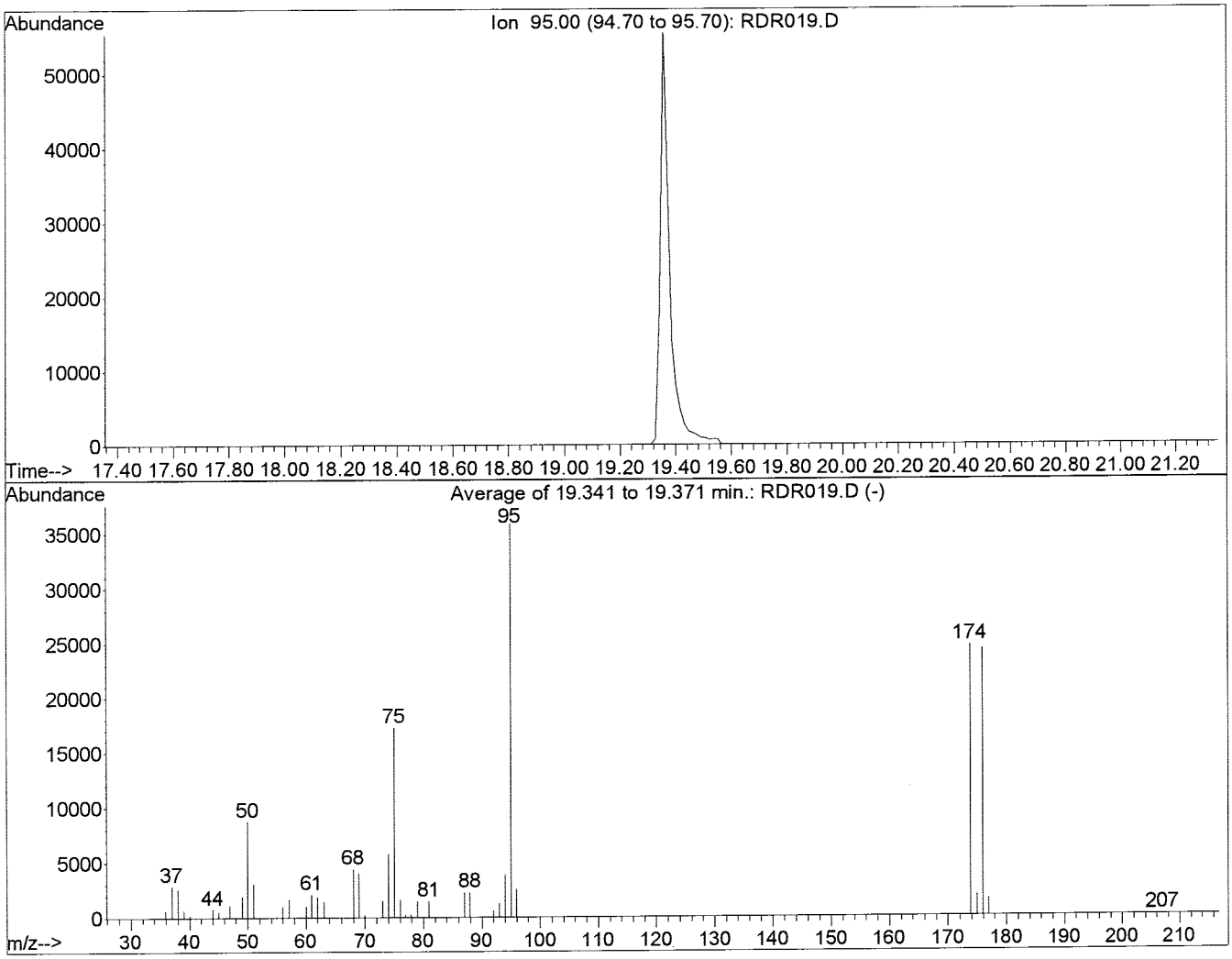
M	IDX	Parameters	CC_Con	CC% D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	% RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	2184009	1	1	14.884	14.883	0				
	2	Chlorotrifluoroethylene	9.856	-1.4	435479	0.199	0.202	3.756	3.759	13.37				
	3	Dichlorodifluoromethane	10.860	8.6	831345	0.381	0.350	3.844	3.842	11.16				
	4	Chloromethane	10.237	2.4	1536000	0.703	0.687	4.285	4.288	6.49				
	5	2-Chloro-1,1,1-trifluoroethane	9.925	-0.7	768887	0.352	0.355	4.779	4.788	10.42				
	6	Vinyl chloride	10.090	0.9	1203406	0.551	0.546	4.550	4.553	9.75				
	7	Bromomethane	8.409	-15.9	705143	0.323	0.384	5.344	5.357	6.23				
	8	Chloroethane	8.795	-12.1	545697	0.250	0.284	5.608	5.604	6.98				
	9	Dichlorofluoromethane	9.705	-2.9	1782782	0.816	0.841	6.085	6.082	8.97				
	10	Trichlorofluoromethane	10.353	3.5	1073710	0.492	0.475	6.173	6.171	10.30				
5	11	Acrolein	49.987	-0.0	342800	0.031	0.031	7.302	7.309	10.43				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.260	-7.4	444090	0.203	0.220	7.478	7.475	6.46				
	13	1,1-Dichloroethene	9.234	-7.7	1476332	0.676	0.732	7.531	7.528	7.60				
5	14	Acetone	43.453	-13.1	496254	0.045	0.052	7.708	7.718	12.14				
	15	Iodomethane	10.924	9.2	1445521	0.662	0.606	8.025	8.022	4.28				
	16	Methyl acetate	9.114	-8.9	287361	0.132	0.144	8.590	8.597	7.47				
	17	Carbon disulfide	10.630	6.3	3016056	1.381	1.299	8.149	8.146	11.19				
	18	Methylene chloride	9.806	-1.9	1491898	0.683	0.697	8.978	8.973	6.84				
25	19	tert-Butyl alcohol	234.770	-6.1	776017	0.014	0.015	9.287	9.293	8.47				
	20	tert-Butyl methyl ether (MTBE)	9.061	-9.4	1178251	0.539	0.595	9.610	9.622	10.55				
	21	trans-1,2-Dichloroethene	10.325	3.2	869017	0.398	0.385	9.709	9.705	5.12				
5	22	Acrylonitrile	48.333	-3.3	587928	0.054	0.056	9.759	9.763	6.20				
	23	Isopropyl ether (DIPE)	9.647	-3.5	3279197	1.501	1.556	11.174	11.181	6.67				
	24	1,1-Dichloroethane	10.061	0.6	1823359	0.835	0.830	11.125	11.118	5.89				
	25	Vinyl acetate	9.619	-3.8	1104226	0.506	0.496	11.274	11.280	18.92	-0.0416	0.5689		0.9974
	26	tert-Butyl ethyl ether (ETBE)	8.915	-10.9	2035624	0.932	1.045	12.193	12.194	11.38				
	27	2,2-Dichloropropane	9.117	-8.8	711282	0.326	0.357	12.615	12.616	10.74				
	28	cis-1,2-Dichloroethene	9.606	-3.9	847440	0.388	0.404	12.689	12.691	5.04				
5	29	2-Butanone	49.316	-1.4	162493	0.015	0.015	12.739	12.744	5.59				
25	30	2-Butanol	258.394	3.4	803750	0.015	0.014	13.137	13.145	13.24				
	31	Bromochloromethane	10.089	0.9	421340	0.193	0.191	13.211	13.218	5.43				
	32	Tetrahydrofuran												
	33	Chloroform	9.817	-1.8	1456634	0.667	0.679	13.335	13.353	4.65				
	34	Dibromofluoromethane	10.500	5.0	812064	0.372	0.354	13.658	13.670	5.79				
	35	1,1,1-Trichloroethane	10.319	3.2	982955	0.450	0.436	13.633	13.634	7.71				
	36	Cyclohexane	10.031	0.3	1114175	0.510	0.509	13.683	13.684	6.86				
	37	1,1-Dichloropropene	9.854	-1.5	397533	0.182	0.185	13.931	13.938	6.05				
	38	Carbon tetrachloride	10.491	4.9	846356	0.388	0.369	13.906	13.918	4.93				
5	39	tert-Amyl alcohol												
	40	1,2-Dichloroethane-d4	9.861	-1.4	627875	0.287	0.292	14.245	14.253	9.98				
	41	2,2,4-Trimethylpentane	10.403	4.0	3573267	1.636	1.573	14.319	14.313	11.03				
	42	Benzene	10.195	1.9	3169225	1.451	1.424	14.289	14.293	4.94				
	43	1,2-Dichloroethane	9.997	-0.0	735324	0.337	0.337	14.364	14.378	7.93				
	44	tert-Amyl methyl ether (TAME)	9.751	-2.5	258083	0.118	0.121	14.408	14.408	7.52				
	45	Trichloroethene	10.495	5.0	852319	0.390	0.372	15.270	15.275	5.85				
	46	Methylcyclohexane	10.942	9.4	1398629	0.640	0.585	15.478	15.478	7.70				
	47	1,2-Dichloropropane	10.040	0.4	888491	0.407	0.405	15.597	15.603	5.18				
20	48	1,4-Dioxane	221.829	10.9	48466	0.001	0.001	15.790	15.787	7.92				
	49	Dibromomethane	10.069	0.7	338226	0.155	0.154	15.790	15.799	6.25				
	50	Bromodichloromethane	10.624	6.2	953228	0.436	0.411	15.983	15.980	4.67				
	51	2-Chloroethyl vinyl ether	10.498	5.0	162767	0.075	0.071	16.310	16.322	8.10				
	52	cis-1,3-Dichloropropene	10.791	7.9	1144601	0.524	0.486	16.503	16.515	5.25				
5	53	4-Methyl-2-pentanone	51.025	2.1	1905019	0.174	0.171	16.637	16.648	8.26				
	54	CHLOROBENZENE-D5	10.000	0	1590689	1	1	18.331	18.332	0				
	55	Toluene-d8	10.943	9.4	2410226	1.515	1.385	16.786	16.796	6.24				
	56	Toluene	10.739	7.4	2945920	1.852	1.725	16.875	16.878	5.72				
	57	Ethyl methacrylate	11.175	11.8	545953	0.343	0.307	17.157	17.168	8.48				
	58	trans-1,3-Dichloropropene	10.965	9.6	858219	0.540	0.492	17.142	17.150	7.37				
	59	1,1,2-Trichloroethane	10.345	3.5	385947	0.243	0.235	17.350	17.358	8.71				
	60	Tetrachloroethene	11.093	10.9	601599	0.378	0.341	17.484	17.487	6.42				
5	61	2-Hexanone	48.845	-2.3	1293445	0.163	0.166	17.558	17.591	8.10				
	62	1,3-Dichloropropane	10.809	8.1	757342	0.476	0.440	17.529	17.540	6.69				
	63	Dibromochloromethane	11.130	11.3	543900	0.342	0.307	17.796	17.802	7.81				
	64	1,2-Dibromoethane	11.104	11.0	400755	0.252	0.227	17.930	17.936	8.99				
	65	1-Chlorohexane	10.489	4.9	1152116	0.724	0.690	18.257	18.256	5.12				
	66	Chlorobenzene	10.896	9.0	1718392	1.080	0.991	18.361	18.362	5.79				
	67	Ethylbenzene	10.687	6.9	3236047	2.034	1.904	18.405	18.416	6.48				
	68	1,1,1,2-Tetrachloroethane	11.091	10.9	579586	0.364	0.329	18.420	18.427	7.94				
2	69	m-Xylene & p-Xylene	20.966	4.8	4811490	1.512	1.443	18.509	18.513	6.36				
	70	o-Xylene	10.233	2.3	2292655	1.441	1.408	18.881	18.882	5.79				
	71	Styrene	10.976	9.8	1710105	1.075	0.980	18.896	18.902	9.07				
	72	1,2-DICHLOROBENZENE-D4	10.000	0	570957	1	1	20.679	20.678	0				
	73	Bromoform	11.629	16.3	252763	0.443	0.381	19.133	19.141	14.10				
	74	Isopropylbenzene	10.201	2.0	2782776	4.874	4.778	19.163	19.169	7.21				
	75	4-Bromofluorobenzene	10.872	8.7	777769	1.362	1.253	19.341	19.354	4.89				
	76	1,1,2,2-Tetrachloroethane	10.178	1.8	444905	0.779	0.766	19.460	19.458	8.62				
	77	trans-1,4-Dichloro-2-butene	11.128	11.3	139875	0.245	0.220	19.490	19.486	7.97				
	78	n-Propylbenzene	10.552	5.5	3828902	6.706	6.355	19.505	19.509	5.63				
	79	1,2,3-Trichloropropane	10.405	4.0	88331	0.155	0.149	19.505	19.512	11.08				
	80	Bromobenzene	10.558	5.6	634782	1.112	1.053	19.520	19.516	6.37				
	81	1,3,5-Trimethylbenzene	10.085	0.9	2140533	3.749	3.717	19.624	19.625	4.64				
	82	2-Chlorotoluene	10.157	1.6	2201391	3.856	3.796	19.639	19.640	5.46				
	83	4-Chlorotoluene	10.519	5.2	2020459	3.539	3.364	19.713	19.722	4.56				
	84	tert-Butylbenzene	10.610	6.1	471082	0.825	0.778	19.921	19.952	6.04				
	85	1,2,4-Trimethylbenzene	10.189	1.9	2075018	3.634	3.567	19.951	19.958	5.28				
	86	sec-Butylbenzene	10.135	1.3	2928107	5.128	5.060	20.099	20.101	5.83				
	87	p-Isopropyltoluene	10.913	9.1	2511639	4.399	4.031	20.188	20.190	6.01				
	88	1,3-Dichlorobenzene	11.491	14.9	1239348	2.171	1.889	20.278	20.279	5.77				
	89	1,2,3-Trimethylbenzene	9.849	-1.5	1864114	3.265	3.315	20.337	20.339	4.76				
	90	1,4-Dichlorobenzene	10.362	3.6	1143160	2.002	1.932	20.352	20.353	5.41				
	91	Benzyl Chloride	10.688	6.9	610193	1.069	1.000	20.441	20.451	6.47				
	92	n-Butylbenzene	9.623	-3.8	2425121	4.247	4.414	20.545	20.547	4.62				
	93	1,2-Dichlorobenzene	10.368	3.7	930159	1.629	1.571	20.694	20.695	3.93				
	94	1,2-Dibromo-3-chloropropane	10.536	5.4	53297	0.093	0.089	21.407	21.407	7.42				
	95	1,2,4-Trichlorobenzene	10.150	1.5	536658	0.940	0.926	22.194	22.199	6.66				
	96	Hexachlorobutadiene	10.407	4.1	343062	0.601	0.577	22.284	22.285	5.32				
	97	Naphthalene	9.451	-5.5	712284	1.248	1.320	22.521	22.516	6.93				
	98	1,2,3-Trichlorobenzene	10.308	3.1	423964	0.743	0.720	22.789	22.787	7.34				

Spike Amount = Nominal Amount * M

Sm 4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR019.D
Acq On : 6 Apr 2020 10:37 am
Sample : BFBF3D02
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.4	8746	PASS
75	95	30	60	48.2	17264	PASS
95	95	100	100	100.0	35829	PASS
96	95	5	9	7.1	2535	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.9	24694	PASS
175	174	5	9	7.6	1879	PASS
176	174	95	101	98.6	24350	PASS
177	176	5	9	6.5	1592	PASS

RDR019.D VOF3D02.M Mon Apr 06 14:55:58 2020

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	10.000	9.856	1.4	83	0.00
3	T,M	Dichlorodifluoromethane	10.000	10.860	-8.6	99	0.00
4	P,T,M	Chloromethane	10.000	10.237	-2.4	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	9.925	0.7	89	-0.02
6	C,T,M	Vinyl chloride	10.000	10.090	-0.9	93	0.00
7	T,M	Bromomethane	10.000	8.409	15.9	79	-0.02
8	T,M	Chloroethane	10.000	8.795	12.1	85	0.00
9	T,M	Dichlorofluoromethane	10.000	9.705	2.9	94	0.00
0	T,M	Trichlorofluoromethane	10.000	10.353	-3.5	97	0.00
1	T,M	Acrolein	50.000	49.987	0.0	105	-0.02
2	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.260	7.4	90	0.00
3	C,T,M	1,1-Dichloroethene	10.000	9.234	7.7	89	0.00
4	T,M	Acetone	50.000	43.453	13.1	95	-0.02
5	T,M	Iodomethane	10.000	10.924	-9.2	114	0.00
6	T,M	Methyl acetate	10.000	9.114	8.9	93	0.00
7	T,M	Carbon disulfide	10.000	10.630	-6.3	94	0.00
8	T,M	Methylene chloride	10.000	9.806	1.9	98	-0.02
9	T,M	tert-Butyl alcohol	250.000	234.770	6.1	111	0.00
0	T,M	tert-Butyl methyl ether (MT	10.000	9.061	9.4	103	0.00
1	T,M	trans-1,2-Dichloroethene	10.000	10.324	-3.2	105	0.00
2	T,M	Acrylonitrile	50.000	48.333	3.3	103	0.00
3	T,M	Isopropyl ether (DIPE)	10.000	9.647	3.5	98	0.00
4	P,T,M	1,1-Dichloroethane	10.000	10.061	-0.6	101	0.00
5	T,M	Vinyl acetate	10.000	9.619	3.8	101	0.00
6	T,M	tert-Butyl ethyl ether (ETB	10.000	8.915	10.9	100	0.00
7	T,M	2,2-Dichloropropane	10.000	9.117	8.8	104	0.00
8	T,M	cis-1,2-Dichloroethene	10.000	9.606	3.9	101	0.00
9	T,M	2-Butanone	50.000	49.316	1.4	103	0.00
0	T,M	2-Butanol	250.000	258.394	-3.4	110	0.00
1	T,M	Bromochloromethane	10.000	10.089	-0.9	109	0.00
2	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
3	C,T,M	Chloroform	10.000	9.817	1.8	102	-0.03
4	S	Dibromofluoromethane	10.000	10.500	-5.0	102	0.00
5	T,M	1,1,1-Trichloroethane	10.000	10.319	-3.2	104	0.00
6	T,M	Cyclohexane	10.000	10.031	-0.3	100	0.00
7	T,M	1,1-Dichloropropene	10.000	9.854	1.5	96	0.00
8	T,M	Carbon tetrachloride	10.000	10.491	-4.9	105	0.00
9	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-0.01
0	S	1,2-Dichloroethane-d4	10.000	9.861	1.4	102	0.00
1	T,M	2,2,4-Trimethylpentane	10.000	10.404	-4.0	93	0.00

(#) = Out of Range

SM 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
2	T,M	Benzene	10.000	10.195	-2.0	106	0.00
3	T,M	1,2-Dichloroethane	10.000	9.997	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	10.000	9.751	2.5	106	0.00
5	T,M	Trichloroethene	10.000	10.495	-4.9	107	0.00
6	T,M	Methylcyclohexane	10.000	10.942	-9.4	107	0.00
7	C,T,M	1,2-Dichloropropane	10.000	10.040	-0.4	101	0.00
8	T,M	1,4-Dioxane	200.000	221.828	-10.9	112	0.00
9	T,M	Dibromomethane	10.000	10.070	-0.7	108	0.00
0	T,M	Bromodichloromethane	10.000	10.624	-6.2	113	0.00
1	T,M	2-Chloroethyl vinyl ether	10.000	10.498	-5.0	113	0.00
2	T,M	cis-1,3-Dichloropropene	10.000	10.791	-7.9	109	0.00
3	T,M	4-Methyl-2-pentanone	50.000	51.025	-2.0	104	0.00
4	I	CHLOROBENZENE-D5	10.000	10.000	0.0	93	0.00
5	S	Toluene-d8	10.000	10.943	-9.4	99	0.00
6	C,T,M	Toluene	10.000	10.739	-7.4	102	0.00
7	T,M	Ethyl methacrylate	10.000	11.175	-11.8	108	0.00
8	T,M	trans-1,3-Dichloropropene	10.000	10.965	-9.6	101	0.00
9	T,M	1,1,2-Trichloroethane	10.000	10.345	-3.5	101	0.00
0	T,M	Tetrachloroethene	10.000	11.093	-10.9	104	0.00
1	T,M	2-Hexanone	50.000	48.845	2.3	96	0.00
2	T,M	1,3-Dichloropropane	10.000	10.809	-8.1	102	0.00
3	T,M	Dibromochloromethane	10.000	11.130	-11.3	105	0.00
4	T,M	1,2-Dibromoethane	10.000	11.104	-11.0	107	0.00
5	T,M	1-Chlorohexane	10.000	10.489	-4.9	97	0.00
6	P,M	Chlorobenzene	10.000	10.896	-9.0	99	0.00
7	C,T,M	Ethylbenzene	10.000	10.687	-6.9	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	10.000	11.091	-10.9	101	0.00
9	T,M	m-Xylene & p-Xylene	20.000	20.966	-4.8	100	0.00
0	T,M	o-Xylene	10.000	10.234	-2.3	92	0.00
1	T,M	Styrene	10.000	10.976	-9.8	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	101	0.00
3	P,T,M	Bromoform	10.000	11.629	-16.3	115	0.00
4	T,M	Isopropylbenzene	10.000	10.201	-2.0	95	0.00
5	S	4-Bromofluorobenzene	10.000	10.872	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.178	-1.8	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	10.000	11.128	-11.3	115	0.02
8	T,M	n-Propylbenzene	10.000	10.552	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	10.000	10.405	-4.0	112	-0.01
0	T,M	Bromobenzene	10.000	10.558	-5.6	106	0.00

(#) = Out of Range

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T,M	1,3,5-Trimethylbenzene	10.000	10.085	-0.9	98	0.00
2	T,M	2-Chlorotoluene	10.000	10.157	-1.6	99	0.00
3	T,M	4-Chlorotoluene	10.000	10.519	-5.2	104	0.00
4	T,M	tert-Butylbenzene	10.000	10.610	-6.1	105	0.00
5	T,M	1,2,4-Trimethylbenzene	10.000	10.189	-1.9	104	0.00
6	T,M	sec-Butylbenzene	10.000	10.135	-1.3	97	0.00
7	T,M	p-Isopropyltoluene	10.000	10.913	-9.1	109	0.00
8	T,M	1,3-Dichlorobenzene	10.000	11.491	-14.9	117	0.00
9	T,M	1,2,3-Trimethylbenzene	10.000	9.849	1.5	100	0.00
0	T,M	1,4-Dichlorobenzene	10.000	10.362	-3.6	103	0.00
1	T,M	Benzyl Chloride	10.000	10.688	-6.9	113	0.00
2	T,M	n-Butylbenzene	10.000	9.623	3.8	94	0.00
3	T,M	1,2-Dichlorobenzene	10.000	10.368	-3.7	110	0.00
4	T,M	1,2-Dibromo-3-chloropropane	10.000	10.536	-5.4	108	0.00
5	T,M	1,2,4-Trichlorobenzene	10.000	10.150	-1.5	101	0.00
6	T,M	Hexachlorobutadiene	10.000	10.407	-4.1	97	0.00
7	T,M	Naphthalene	10.000	9.452	5.5	98	0.02
8	T,M	1,2,3-Trichlorobenzene	10.000	10.308	-3.1	100	0.00

SC 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.199	1.5	83	0.00
3	T,M	Dichlorodifluoromethane	0.350	0.381	-8.9	99	0.00
4	P,T,M	Chloromethane	0.687	0.703	-2.3	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.352	0.8	89	-0.02
6	C,T,M	Vinyl chloride	0.546	0.551	-0.9	93	0.00
7	T,M	Bromomethane	0.384	0.323	15.9	79	-0.02
8	T,M	Chloroethane	0.284	0.250	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.841	0.816	3.0	94	0.00
10	T,M	Trichlorofluoromethane	0.475	0.492	-3.6	97	0.00
11	T,M	Acrolein	0.031	0.031	0.0	105	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.203	7.7	90	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.676	7.7	89	0.00
14	T,M	Acetone	0.052	0.045	13.5	95	-0.02
15	T,M	Iodomethane	0.606	0.662	-9.2	114	0.00
16	T,M	Methyl acetate	0.144	0.132	8.3	93	0.00
17	T,M	Carbon disulfide	1.299	1.381	-6.3	94	0.00
18	T,M	Methylene chloride	0.697	0.683	2.0	98	-0.02
19	T,M	tert-Butyl alcohol	0.015	0.014	6.7	111	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.539	9.4	103	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.398	-3.4	105	0.00
22	T,M	Acrylonitrile	0.056	0.054	3.6	103	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.501	3.5	98	0.00
24	P,T,M	1,1-Dichloroethane	0.830	0.835	-0.6	101	0.00
25	T,M	Vinyl acetate	0.496	0.506	-2.0	101	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.932	10.8	100	0.00
27	T,M	2,2-Dichloropropane	0.357	0.326	8.7	104	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.388	4.0	101	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	103	0.00
30	T,M	2-Butanol	0.014	0.015	-7.1	110	0.00
31	T,M	Bromochloromethane	0.191	0.193	-1.0	109	0.00
32	T,M	Tetrahydrofuran	0.000	0.017	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.667	1.8	102	-0.03
34	S	Dibromofluoromethane	0.354	0.372	-5.1	102	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.450	-3.2	104	0.00
36	T,M	Cyclohexane	0.509	0.510	-0.2	100	0.00
37	T,M	1,1-Dichloropropene	0.185	0.182	1.6	96	0.00
38	T,M	Carbon tetrachloride	0.369	0.388	-5.1	105	0.00
39	T,M	tert-Amyl alcohol	0.000	0.010	0.0	0#	-0.01
40	S	1,2-Dichloroethane-d4	0.292	0.287	1.7	102	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	1.636	-4.0	93	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
2	T,M	Benzene	1.424	1.451	-1.9	106	0.00
3	T,M	1,2-Dichloroethane	0.337	0.337	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	0.121	0.118	2.5	106	0.00
5	T,M	Trichloroethene	0.372	0.390	-4.8	107	0.00
6	T,M	Methylcyclohexane	0.585	0.640	-9.4	107	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.407	-0.5	101	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	112	0.00
9	T,M	Dibromomethane	0.154	0.155	-0.6	108	0.00
0	T,M	Bromodichloromethane	0.411	0.436	-6.1	113	0.00
1	T,M	2-Chloroethyl vinyl ether	0.071	0.075	-5.6	113	0.00
2	T,M	cis-1,3-Dichloropropene	0.486	0.524	-7.8	109	0.00
3	T,M	4-Methyl-2-pentanone	0.171	0.174	-1.8	104	0.00
4	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	0.00
5	S	Toluene-d8	1.385	1.515	-9.4	99	0.00
6	C,T,M	Toluene	1.725	1.852	-7.4	102	0.00
7	T,M	Ethyl methacrylate	0.307	0.343	-11.7	108	0.00
8	T,M	trans-1,3-Dichloropropene	0.492	0.540	-9.8	101	0.00
9	T,M	1,1,2-Trichloroethane	0.235	0.243	-3.4	101	0.00
0	T,M	Tetrachloroethene	0.341	0.378	-10.9	104	0.00
1	T,M	2-Hexanone	0.166	0.163	1.8	96	0.00
2	T,M	1,3-Dichloropropane	0.440	0.476	-8.2	102	0.00
3	T,M	Dibromochloromethane	0.307	0.342	-11.4	105	0.00
4	T,M	1,2-Dibromoethane	0.227	0.252	-11.0	107	0.00
5	T,M	1-Chlorohexane	0.690	0.724	-4.9	97	0.00
6	P,M	Chlorobenzene	0.991	1.080	-9.0	99	0.00
7	C,T,M	Ethylbenzene	1.904	2.034	-6.8	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	0.329	0.364	-10.6	101	0.00
9	T,M	m-Xylene & p-Xylene	1.443	1.512	-4.8	100	0.00
0	T,M	o-Xylene	1.408	1.441	-2.3	92	0.00
1	T,M	Styrene	0.980	1.075	-9.7	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	101	0.00
3	P,T,M	Bromoform	0.381	0.443	-16.3	115	0.00
4	T,M	Isopropylbenzene	4.778	4.874	-2.0	95	0.00
5	S	4-Bromofluorobenzene	1.253	1.362	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.779	-1.7	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	0.220	0.245	-11.4	115	0.02
8	T,M	n-Propylbenzene	6.355	6.706	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	0.149	0.155	-4.0	112	-0.01
0	T,M	Bromobenzene	1.053	1.112	-5.6	106	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.749	-0.9	98	0.00
82	T,M	2-Chlorotoluene	3.796	3.856	-1.6	99	0.00
83	T,M	4-Chlorotoluene	3.364	3.539	-5.2	104	0.00
84	T,M	tert-Butylbenzene	0.778	0.825	-6.0	105	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.634	-1.9	104	0.00
86	T,M	sec-Butylbenzene	5.060	5.128	-1.3	97	0.00
87	T,M	p-Isopropyltoluene	4.031	4.399	-9.1	109	0.00
88	T,M	1,3-Dichlorobenzene	1.889	2.171	-14.9	117	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.265	1.5	100	0.00
90	T,M	1,4-Dichlorobenzene	1.932	2.002	-3.6	103	0.00
91	T,M	Benzyl Chloride	1.000	1.069	-6.9	113	0.00
92	T,M	n-Butylbenzene	4.414	4.247	3.8	94	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.629	-3.7	110	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.093	-4.5	108	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.940	-1.5	101	0.00
96	T,M	Hexachlorobutadiene	0.577	0.601	-4.2	97	0.00
97	T,M	Naphthalene	1.320	1.248	5.5	98	0.02
98	T,M	1,2,3-Trichlorobenzene	0.720	0.743	-3.2	100	0.00

SM 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2184009	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1590689	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	570957	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	812064	10.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%		
40) 1,2-Dichloroethane-d4	14.24	65	627875	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
55) Toluene-d8	16.79	98	2410226	10.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.40%		
75) 4-Bromofluorobenzene	19.34	95	777769	10.87	ug/l	-0.01
Spiked Amount 10.000			Recovery =	108.70%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	435479	9.86	ug/l	100
3) Dichlorodifluoromethane	3.84	85	831345	10.86	ug/l	100
4) Chloromethane	4.29	50	1536000	10.24	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	768887	9.93	ug/l	99
6) Vinyl chloride	4.55	62	1203406	10.09	ug/l	100
7) Bromomethane	5.34	94	705143	8.41	ug/l	99
8) Chloroethane	5.61	64	545697	8.79	ug/l	99
9) Dichlorofluoromethane	6.08	67	1782782	9.71	ug/l	100
10) Trichlorofluoromethane	6.17	101	1073710	10.35	ug/l	100
11) Acrolein	7.30	56	342800	49.99	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	444090	9.26	ug/l	99
13) 1,1-Dichloroethene	7.53	61	1476332	9.23	ug/l	99
14) Acetone	7.71	43	496254	43.45	ug/l	95
15) Iodomethane	8.03	142	1445521	10.92	ug/l	99
16) Methyl acetate	8.59	43	287361	9.11	ug/l	97
17) Carbon disulfide	8.15	76	3016056	10.63	ug/l	100
18) Methylene chloride	8.98	49	1491898	9.81	ug/l	98
19) tert-Butyl alcohol	9.29	59	776017	234.77	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1178251	9.06	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	869017	10.32	ug/l	99
22) Acrylonitrile	9.76	53	587928	48.33	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	3279197	9.65	ug/l	100
24) 1,1-Dichloroethane	11.12	63	1823359	10.06	ug/l	99
25) Vinyl acetate	11.27	43	1104226	9.62	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	2035624	8.92	ug/l	99
27) 2,2-Dichloropropane	12.61	77	711282	9.12	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	847440	9.61	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR020.D VOF3D02.M Thu Apr 16 17:33:46 2020 SW 4/24/20 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.74	72	162493	49.32	ug/l	100
30)	2-Butanol	13.14	45	803750	258.39	ug/l	97
31)	Bromochloromethane	13.21	130	421340	10.09	ug/l	99
33)	Chloroform	13.34	83	1456634	9.82	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	982955	10.32	ug/l	99
36)	Cyclohexane	13.68	84	1114175	10.03	ug/l	98
37)	1,1-Dichloropropene	13.93	110	397553	9.85	ug/l	99
38)	Carbon tetrachloride	13.91	119	846356	10.49	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	3573267	10.40	ug/l	100
42)	Benzene	14.29	78	3169925	10.19	ug/l	100
43)	1,2-Dichloroethane	14.36	62	735324	10.00	ug/l	98
44)	tert-Amyl methyl ether (TA	14.41	87	258083	9.75	ug/l	99
45)	Trichloroethene	15.27	130	852319	10.50	ug/l	99
46)	Methylcyclohexane	15.48	83	1398629	10.94	ug/l	99
47)	1,2-Dichloropropane	15.60	63	888491	10.04	ug/l	99
48)	1,4-Dioxane	15.79	88	48466	221.83	ug/l	100
49)	Dibromomethane	15.79	93	338226	10.07	ug/l	100
50)	Bromodichloromethane	15.98	83	953228	10.62	ug/l	100
51)	2-Chloroethyl vinyl ether	16.31	63	162767	10.50	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1144601	10.79	ug/l	100
53)	4-Methyl-2-pentanone	16.64	43	1905019	51.03	ug/l	99
56)	Toluene	16.87	91	2945920	10.74	ug/l	100
57)	Ethyl methacrylate	17.16	69	545953	11.18	ug/l	96
58)	trans-1,3-Dichloropropene	17.14	75	858219	10.96	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	385947	10.35	ug/l	98
60)	Tetrachloroethene	17.48	164	601599	11.09	ug/l	99
61)	2-Hexanone	17.56	43	1293445	48.84	ug/l	99
62)	1,3-Dichloropropane	17.53	76	757342	10.81	ug/l	100
63)	Dibromochloromethane	17.80	129	543900	11.13	ug/l	99
64)	1,2-Dibromoethane	17.93	107	400755	11.10	ug/l	100
65)	1-Chlorohexane	18.26	91	1152116	10.49	ug/l	100
66)	Chlorobenzene	18.36	112	1718392	10.90	ug/l	100
67)	Ethylbenzene	18.41	91	3236047	10.69	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	579586	11.09	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	4811490	20.97	ug/l	100
70)	o-Xylene	18.88	91	2292655	10.23	ug/l	99
71)	Styrene	18.90	104	1710105	10.98	ug/l	98
73)	Bromoform	19.13	173	252763	11.63	ug/l	99
74)	Isopropylbenzene	19.16	105	2782776	10.20	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.46	83	444905	10.18	ug/l	98
77)	trans-1,4-Dichloro-2-buten	19.49	53	139875	11.13	ug/l	97

(#) = qualifier out of range (m) = manual integration

4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.50	91	3828902	10.55	ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	88331	10.40	ug/l	82
80)	Bromobenzene	19.52	156	634782	10.56	ug/l	100
81)	1,3,5-Trimethylbenzene	19.62	105	2140533	10.09	ug/l	99
82)	2-Chlorotoluene	19.64	91	2201391	10.16	ug/l	99
83)	4-Chlorotoluene	19.71	91	2020459	10.52	ug/l	100
84)	tert-Butylbenzene	19.92	134	471082	10.61	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	2075018	10.19	ug/l	100
86)	sec-Butylbenzene	20.10	105	2928107	10.13	ug/l	99
87)	p-Isopropyltoluene	20.19	119	2511639	10.91	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	1239348	11.49	ug/l	95
89)	1,2,3-Trimethylbenzene	20.34	105	1864114	9.85	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	1143160	10.36	ug/l	97
91)	Benzyl Chloride	20.44	91	610193	10.69	ug/l	99
92)	n-Butylbenzene	20.55	91	2425121	9.62	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	930159	10.37	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	53297	10.54	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	536658	10.15	ug/l	98
96)	Hexachlorobutadiene	22.28	225	343062	10.41	ug/l	97
97)	Naphthalene	22.52	128	712284	9.45	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	423964	10.31	ug/l	99

4/22/20
SA

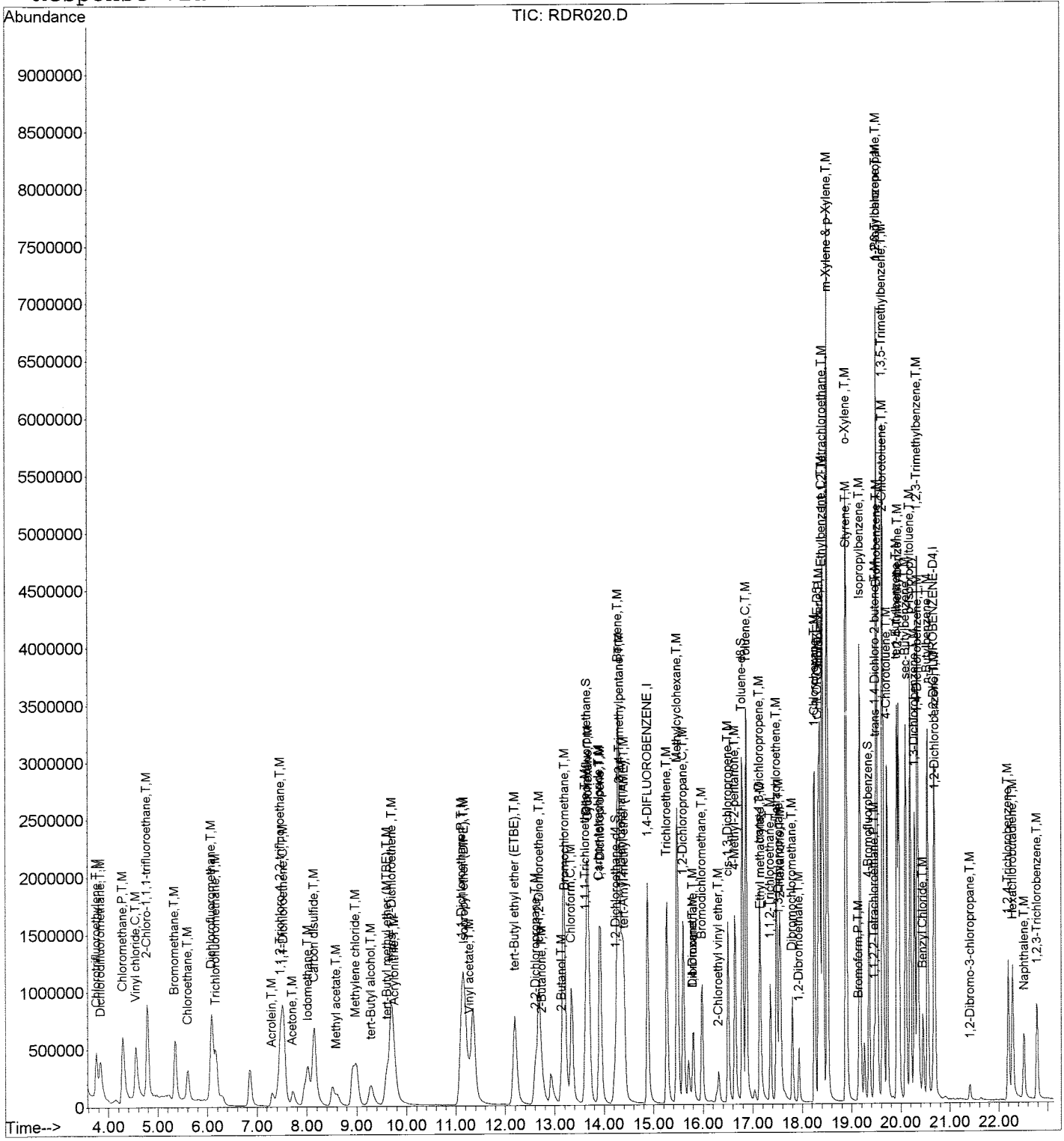
(#) = qualifier out of range (m) = manual integration
RDR020.D VOF3D02.M Thu Apr 16 17:33:46 2020 Page 3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SA 4/24/20

DAILY CALIBRATIONS

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RFR324
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm (mm)

Contract: VA SALT LAKE CITY
SAS No.: SDG No.: 20F154
BFB Injection Date : 06/18/20
BFB Injection Time : 08:06
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.60
75	30.0 - 60.0% of mass 95	49.96
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.96
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	66.97
175	5.0 - 9.0% of mass 174	5.48(8.2)1
176	95.0 - 101.0% of mass 174	66.73(99.6)1
177	5.0 - 9.0% of mass 176	4.48(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVOF3D0231	RFR325	06/18/20	08:35
2	MBLK1W	VOF3F15B	RFR329	06/18/20	10:41
3	LCS1W	VOF3F15L	RFR326	06/18/20	09:12
4	LCD1W	VOF3F15C	RFR327	06/18/20	09:42
5	TB03-GW061720	F154-03	RFR337	06/18/20	14:34
6	TB04-GW061720	F154-04	RFR338	06/18/20	15:03
7	TB02-GW061720	F154-07	RFR339	06/18/20	15:32
8	MW20S-GW061720	F154-01	RFR340	06/18/20	16:01
9	MW20D-GW061720	F154-05	RFR341	06/18/20	16:30
10	FD04-GW061720	F154-06	RFR342	06/18/20	16:59

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDR007
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

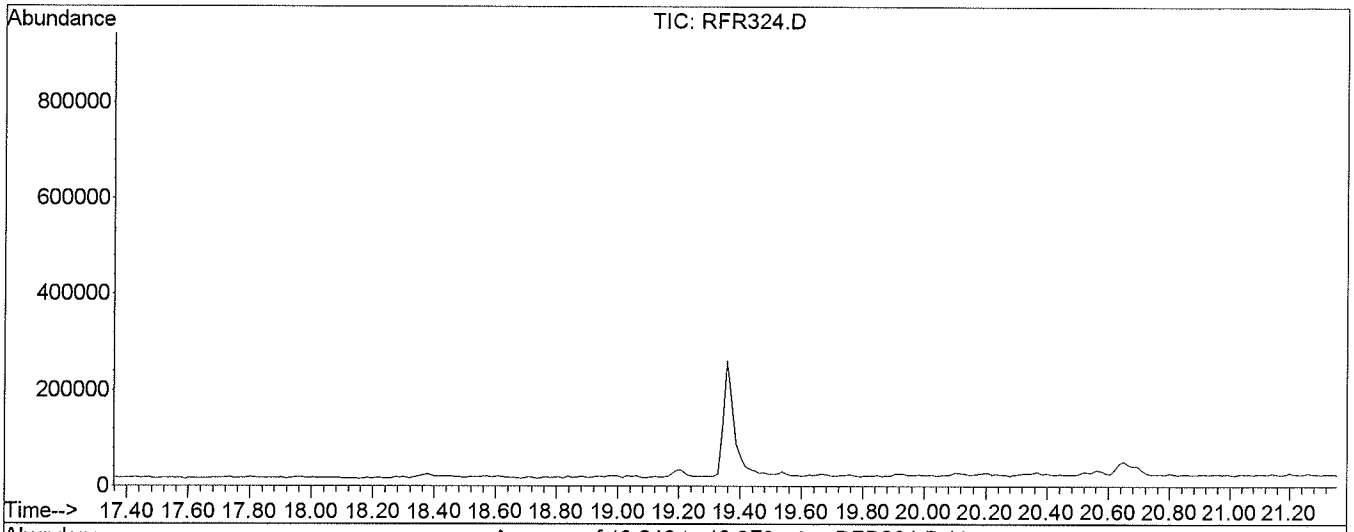
Project: VA SALT LAKE CITY
SDG No: 20F154
Date Analyzed: 04/02/2020
Time Analyzed: 19:14
Heated Purge (Y/N): N

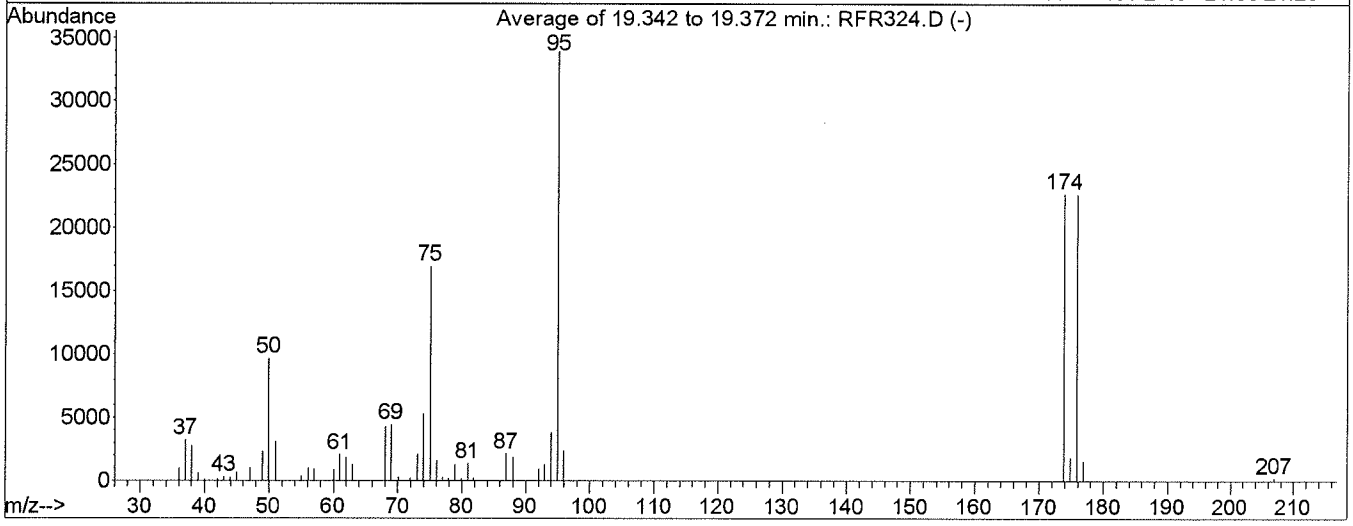
		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2165754	14.88	1703394	18.33	566102	20.68
	UPPER LIMIT	4331508	15.05	3406788	18.50	1132204	20.85
	LOWER LIMIT	1082877	14.71	851697	18.16	283051	20.51
	SAMPLE ID						
1	VSTD010	1846672	14.88	1375169	18.33	445967	20.68
2	MBLK1W	1952806	14.88	1472519	18.33	485573	20.68
3	LCS1W	1846429	14.88	1393264	18.33	459616	20.68
4	LCD1W	1870860	14.88	1358079	18.33	454962	20.66
5	TB03-GW061720	1966493	14.88	1565288	18.33	459443	20.68
6	TB04-GW061720	1880840	14.88	1511883	18.33	470388	20.68
7	TB02-GW061720	1977239	14.88	1505494	18.33	467505	20.68
8	MW20S-GW061720	2000511	14.88	1501821	18.33	474812	20.68
9	MW20D-GW061720	1994328	14.88	1487826	18.33	472174	20.68
10	FD04-GW061720	2040076	14.88	1495973	18.33	470585	20.68

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : C:\HPCHEM\1\DATA\20F18\RFR324.D
Acq On : 18 Jun 2020 8:06 am
Sample : BFBF3F15
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ENguye/ODi
Inst : F3
Multiplr: 1.00





AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.6	9702	PASS
75	95	30	60	50.0	16948	PASS
95	95	100	100	100.0	33925	PASS
96	95	5	9	7.0	2360	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.0	22719	PASS
175	174	5	9	8.2	1858	PASS
176	174	95	101	99.6	22637	PASS
177	176	5	9	6.7	1520	PASS

RFR324.D VOF3D02.M Fri Jun 19 14:17:22 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	85	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-3.76#
3	T,M	Dichlorodifluoromethane	10.000	9.802	2.0	76	-0.01
4	P,T,M	Chloromethane	10.000	9.963	0.4	81	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-4.80#
6	C,T,M	Vinyl chloride	10.000	10.480	-4.8	82	-0.01
7	T,M	Bromomethane	10.000	8.746	12.5	70	-0.01
8	T,M	Chloroethane	10.000	11.095	-11.0	90	-0.01
9	T,M	Dichlorofluoromethane	10.000	9.628	3.7	79	-0.01
10	T,M	Trichlorofluoromethane	10.000	9.441	5.6	75	-0.01
11	T,M	Acrolein	50.000	43.616	12.8	77	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.000	20.0	66	0.00
13	C,T,M	1,1-Dichloroethene	10.000	9.672	3.3	79	-0.03
14	T,M	Acetone	50.000	57.816	-15.6	107	-0.01
15	T,M	Iodomethane	10.000	8.358	16.4	74	-0.06
16	T,M	Methyl acetate	10.000	10.686	-6.9	92	0.00
17	T,M	Carbon disulfide	10.000	9.974	0.3	74	-0.01
18	T,M	Methylene chloride	10.000	10.651	-6.5	90	-0.08
19	T,M	tert-Butyl alcohol	250.000	226.297	9.5	91	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	8.854	11.5	85	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.493	5.1	81	0.00
22	T,M	Acrylonitrile	50.000	54.317	-8.6	98	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	10.170	-1.7	87	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.956	0.4	84	-0.02
25	T,M	Vinyl acetate	10.000	9.867	1.3	87	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	8.297	17.0	79	0.00
27	T,M	2,2-Dichloropropane	10.000	10.380	-3.8	100	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.260	7.4	82	0.00
29	T,M	2-Butanone	50.000	51.863	-3.7	92	0.00
30	T,M	2-Butanol	250.000	236.017	5.6	85	0.00
31	T,M	Bromochloromethane	10.000	8.726	12.7	80	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.534	4.7	84	-0.02
34	S	Dibromofluoromethane	10.000	9.895	1.1	82	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.071	-0.7	85	0.00
36	T,M	Cyclohexane	10.000	8.953	10.5	75	0.00
37	T,M	1,1-Dichloropropene	10.000	9.133	8.7	75	0.00
38	T,M	Carbon tetrachloride	10.000	10.209	-2.1	86	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-14.33#
40	S	1,2-Dichloroethane-d4	10.000	10.346	-3.5	90	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	0.082	99.2#	1	0.09

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.291	7.1	82	0.00
43	T,M	1,2-Dichloroethane	10.000	9.868	1.3	89	0.00
44	T,M	tert-Amyl methyl ether (TAM	10.000	8.174	18.3	75	-0.02
45	T,M	Trichloroethene	10.000	9.032	9.7	78	0.00
46	T,M	Methylcyclohexane	10.000	9.717	2.8	80	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.947	0.5	85	0.00
48	T,M	1,4-Dioxane	200.000	205.805	-2.9	88	0.00
49	T,M	Dibromomethane	10.000	9.514	4.9	87	0.00
50	T,M	Bromodichloromethane	10.000	9.941	0.6	89	-0.02
51	T,M	2-Chloroethyl vinyl ether	10.000	5.444	45.6#	49	0.02
52	T,M	cis-1,3-Dichloropropene	10.000	9.913	0.9	85	0.00
53	T,M	4-Methyl-2-pentanone	50.000	54.750	-9.5	95	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	81	0.00
55	S	Toluene-d8	10.000	10.158	-1.6	79	0.00
56	C,T,M	Toluene	10.000	9.273	7.3	76	0.00
57	T,M	Ethyl methacrylate	10.000	9.298	7.0	77	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	10.027	-0.3	80	0.00
59	T,M	1,1,2-Trichloroethane	10.000	9.648	3.5	81	0.00
60	T,M	Tetrachloroethene	10.000	9.231	7.7	75	0.00
61	T,M	2-Hexanone	50.000	51.536	-3.1	87	0.00
62	T,M	1,3-Dichloropropane	10.000	10.103	-1.0	83	0.00
63	T,M	Dibromochloromethane	10.000	9.709	2.9	79	0.00
64	T,M	1,2-Dibromoethane	10.000	9.751	2.5	81	0.00
65	T,M	1-Chlorohexane	10.000	9.141	8.6	73	0.00
66	P,M	Chlorobenzene	10.000	9.317	6.8	73	0.00
67	C,T,M	Ethylbenzene	10.000	9.710	2.9	77	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	9.862	1.4	77	0.00
69	T,M	m-Xylene & p-Xylene	20.000	18.358	8.2	76	0.00
70	T,M	o-Xylene	10.000	9.366	6.3	73	0.00
71	T,M	Styrene	10.000	9.435	5.6	71	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	79	0.00
73	P,T,M	Bromoform	10.000	10.549	-5.5	81	0.00
74	T,M	Isopropylbenzene	10.000	10.210	-2.1	74	0.00
75	S	4-Bromofluorobenzene	10.000	10.889	-8.9	80	-0.02
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.071	-0.7	83	0.00
77	T,M	trans-1,4-Dichloro-2-butene	10.000	10.011	-0.1	81	0.02
78	T,M	n-Propylbenzene	10.000	9.889	1.1	77	0.00
79	T,M	1,2,3-Trichloropropane	10.000	10.014	-0.1	84	-0.01
80	T,M	Bromobenzene	10.000	9.441	5.6	74	-0.02

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.689	3.1	74	0.00
82	T,M	2-Chlorotoluene	10.000	10.058	-0.6	77	0.00
83	T,M	4-Chlorotoluene	10.000	10.042	-0.4	77	0.00
84	T,M	tert-Butylbenzene	10.000	10.014	-0.1	77	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.509	4.9	76	0.00
86	T,M	sec-Butylbenzene	10.000	9.829	1.7	73	0.00
87	T,M	p-Isopropyltoluene	10.000	9.453	5.5	74	0.00
88	T,M	1,3-Dichlorobenzene	10.000	9.507	4.9	75	0.00
89	T,M	1,2,3-Trimethylbenzene	10.000	9.592	4.1	76	0.00
90	T,M	1,4-Dichlorobenzene	10.000	9.130	8.7	71	0.00
91	T,M	Benzyl Chloride	10.000	0.000	100.0#	0	-20.44#
92	T,M	n-Butylbenzene	10.000	9.337	6.6	71	0.00
93	T,M	1,2-Dichlorobenzene	10.000	9.022	9.8	75	0.00
94	T,M	1,2-Dibromo-3-chloropropane	10.000	9.408	5.9	75	0.00
95	T,M	1,2,4-Trichlorobenzene	10.000	9.013	9.9	70	0.00
96	T,M	Hexachlorobutadiene	10.000	9.332	6.7	68	0.00
97	T,M	Naphthalene	10.000	8.867	11.3	72	0.00
98	T,M	1,2,3-Trichlorobenzene	10.000	8.886	11.1	67	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	85	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.000	100.0#	0#	-3.76#
3	T,M	Dichlorodifluoromethane	0.350	0.344	1.7	76	-0.01
4	P,T,M	Chloromethane	0.687	0.684	0.4	81	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.000	100.0#	0#	-4.80#
6	C,T,M	Vinyl chloride	0.546	0.572	-4.8	82	-0.01
7	T,M	Bromomethane	0.384	0.336	12.5	70	-0.01
8	T,M	Chloroethane	0.284	0.315	-10.9	90	-0.01
9	T,M	Dichlorofluoromethane	0.841	0.810	3.7	79	-0.01
10	T,M	Trichlorofluoromethane	0.475	0.448	5.7	75	-0.01
11	T,M	Acrolein	0.031	0.027	12.9	77	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.176	20.0#	66	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.708	3.3	79	-0.03
14	T,M	Acetone	0.052	0.060	-15.4	107	-0.01
15	T,M	Iodomethane	0.606	0.506	16.5	74	-0.06
16	T,M	Methyl acetate	0.144	0.154	-6.9	92	0.00
17	T,M	Carbon disulfide	1.299	1.296	0.2	74	-0.01
18	T,M	Methylene chloride	0.697	0.742	-6.5	90	-0.08
19	T,M	tert-Butyl alcohol	0.015	0.014	6.7	91	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.527	11.4	85	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.366	4.9	81	0.00
22	T,M	Acrylonitrile	0.056	0.061	-8.9	98	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.583	-1.7	87	-0.02
24	P,T,M	1,1-Dichloroethane	0.830	0.826	0.5	84	-0.02
25	T,M	Vinyl acetate	0.496	0.520	-4.8	87	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.867	17.0	79	0.00
27	T,M	2,2-Dichloropropane	0.357	0.371	-3.9	100	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.374	7.4	82	0.00
29	T,M	2-Butanone	0.015	0.016	-6.7	92	0.00
30	T,M	2-Butanol	0.014	0.013	7.1	85	0.00
31	T,M	Bromochloromethane	0.191	0.167	12.6	80	0.00
32	T,M	Tetrahydrofuran	0.000	0.014	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.648	4.6	84	-0.02
34	S	Dibromofluoromethane	0.354	0.350	1.1	82	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.439	-0.7	85	0.00
36	T,M	Cyclohexane	0.509	0.455	10.6	75	0.00
37	T,M	1,1-Dichloropropene	0.185	0.169	8.6	75	0.00
38	T,M	Carbon tetrachloride	0.369	0.377	-2.2	86	0.00
39	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-14.33#
40	S	1,2-Dichloroethane-d4	0.292	0.302	-3.4	90	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	0.013	99.2#	1#	0.09

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.424	1.323	7.1	82	0.00
43	T,M	1,2-Dichloroethane	0.337	0.332	1.5	89	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.121	0.099	18.2	75	-0.02
45	T,M	Trichloroethene	0.372	0.336	9.7	78	0.00
46	T,M	Methylcyclohexane	0.585	0.569	2.7	80	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.403	0.5	85	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	88	0.00
49	T,M	Dibromomethane	0.154	0.146	5.2	87	0.00
50	T,M	Bromodichloromethane	0.411	0.408	0.7	89	-0.02
51	T,M	2-Chloroethyl vinyl ether	0.071	0.039	45.1#	49#	0.02
52	T,M	cis-1,3-Dichloropropene	0.486	0.481	1.0	85	0.00
53	T,M	4-Methyl-2-pentanone	0.171	0.187	-9.4	95	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	81	0.00
55	S	Toluene-d8	1.385	1.407	-1.6	79	0.00
56	C,T,M	Toluene	1.725	1.599	7.3	76	0.00
57	T,M	Ethyl methacrylate	0.307	0.286	6.8	77	0.00
58	T,M	trans-1,3-Dichloropropene	0.492	0.493	-0.2	80	0.00
59	T,M	1,1,2-Trichloroethane	0.235	0.226	3.8	81	0.00
60	T,M	Tetrachloroethene	0.341	0.315	7.6	75	0.00
61	T,M	2-Hexanone	0.166	0.172	-3.6	87	0.00
62	T,M	1,3-Dichloropropane	0.440	0.445	-1.1	83	0.00
63	T,M	Dibromochloromethane	0.307	0.298	2.9	79	0.00
64	T,M	1,2-Dibromoethane	0.227	0.221	2.6	81	0.00
65	T,M	1-Chlorohexane	0.690	0.631	8.6	73	0.00
66	P,M	Chlorobenzene	0.991	0.924	6.8	73	0.00
67	C,T,M	Ethylbenzene	1.904	1.848	2.9	77	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.329	0.324	1.5	77	0.00
69	T,M	m-Xylene & p-Xylene	1.443	1.324	8.2	76	0.00
70	T,M	o-Xylene	1.408	1.319	6.3	73	0.00
71	T,M	Styrene	0.980	0.924	5.7	71	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	79	0.00
73	P,T,M	Bromoform	0.381	0.402	-5.5	81	0.00
74	T,M	Isopropylbenzene	4.778	4.878	-2.1	74	0.00
75	S	4-Bromofluorobenzene	1.253	1.364	-8.9	80	-0.02
76	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.771	-0.7	83	0.00
77	T,M	trans-1,4-Dichloro-2-butene	0.220	0.220	0.0	81	0.02
78	T,M	n-Propylbenzene	6.355	6.285	1.1	77	0.00
79	T,M	1,2,3-Trichloropropane	0.149	0.149	0.0	84	-0.01
80	T,M	Bromobenzene	1.053	0.994	5.6	74	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.602	3.1	74	0.00
82	T,M	2-Chlorotoluene	3.796	3.818	-0.6	77	0.00
83	T,M	4-Chlorotoluene	3.364	3.378	-0.4	77	0.00
84	T,M	tert-Butylbenzene	0.778	0.779	-0.1	77	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.392	4.9	76	0.00
86	T,M	sec-Butylbenzene	5.060	4.974	1.7	73	0.00
87	T,M	p-Isopropyltoluene	4.031	3.810	5.5	74	0.00
88	T,M	1,3-Dichlorobenzene	1.889	1.796	4.9	75	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.180	4.1	76	0.00
90	T,M	1,4-Dichlorobenzene	1.932	1.764	8.7	71	0.00
91	T,M	Benzyl Chloride	1.000	0.000	100.0#	0#	-20.44#
92	T,M	n-Butylbenzene	4.414	4.121	6.6	71	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.418	9.7	75	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.083	6.7	75	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.835	9.8	70	0.00
96	T,M	Hexachlorobutadiene	0.577	0.539	6.6	68	0.00
97	T,M	Naphthalene	1.320	1.170	11.4	72	0.00
98	T,M	1,2,3-Trichlorobenzene	0.720	0.640	11.1	67	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:18 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1846672	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1375169	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	445967	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	647016	9.89	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.90%			
40) 1,2-Dichloroethane-d4	14.24	65	556970	10.35	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.50%			
55) Toluene-d8	16.79	98	1934182	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.60%			
75) 4-Bromofluorobenzene	19.34	95	608440	10.89	ug/l	-0.02
Spiked Amount 10.000			Recovery = 108.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	634450	9.80	ug/l	98
4) Chloromethane	4.28	50	1264013	9.96	ug/l	100
6) Vinyl chloride	4.54	62	1056897	10.48	ug/l	99
7) Bromomethane	5.35	94	620063	8.75	ug/l	99
8) Chloroethane	5.60	64	582102	11.10	ug/l	96
9) Dichlorofluoromethane	6.07	67	1495408	9.63	ug/l	100
10) Trichlorofluoromethane	6.16	101	827880	9.44	ug/l	100
11) Acrolein	7.31	56	252907	43.62	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.49	151	324396	8.00	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1307472	9.67	ug/l	98
14) Acetone	7.72	43	558305	57.82	ug/l	99
15) Iodomethane	7.96	142	935109	8.36	ug/l	98
16) Methyl acetate	8.60	43	284902	10.69	ug/l	98
17) Carbon disulfide	8.14	76	2392736	9.97	ug/l	100
18) Methylene chloride	8.91	49	1370089	10.65	ug/l	96
19) tert-Butyl alcohol	9.29	59	632473	226.30	ug/l	97
20) tert-Butyl methyl ether (M	9.61	73	973510	8.85	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	675631	9.49	ug/l	99
22) Acrylonitrile	9.76	53	558663	54.32	ug/l	97
23) Isopropyl ether (DIPE)	11.15	45	2923076	10.17	ug/l	97
24) 1,1-Dichloroethane	11.10	63	1525524	9.96	ug/l	99
25) Vinyl acetate	11.28	43	959682	9.87	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	1601828	8.30	ug/l	97
27) 2,2-Dichloropropane	12.62	77	684754	10.38	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	690772	9.26	ug/l	100
29) 2-Butanone	12.74	72	144491	51.86	ug/l	98
30) 2-Butanol	13.14	45	620750	236.02	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:18 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31) Bromochloromethane	13.21	130	308135	8.73 ug/l	100
33) Chloroform	13.34	83	1196210	9.53 ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	811116	10.07 ug/l	98
36) Cyclohexane	13.68	84	840835	8.95 ug/l	98
37) 1,1-Dichloropropene	13.93	110	311555	9.13 ug/l	100
38) Carbon tetrachloride	13.91	119	696362	10.21 ug/l	100
42) Benzene	14.29	78	2442749	9.29 ug/l	99
43) 1,2-Dichloroethane	14.36	62	613721	9.87 ug/l	100
44) tert-Amyl methyl ether (TA	14.39	87	182927	8.17 ug/l	97
45) Trichloroethene	15.27	130	620225	9.03 ug/l	96
46) Methylcyclohexane	15.48	83	1050197	9.72 ug/l	97
47) 1,2-Dichloropropane	15.60	63	744248	9.95 ug/l	99
48) 1,4-Dioxane	15.79	88	38020	205.81 ug/l	99
49) Dibromomethane	15.79	93	270197	9.51 ug/l	96
50) Bromodichloromethane	15.97	83	754171	9.94 ug/l	98
51) 2-Chloroethyl vinyl ether	16.32	63	71376	5.44 ug/l	99
52) cis-1,3-Dichloropropene	16.50	75	889055	9.91 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1728375	54.75 ug/l	98
56) Toluene	16.87	91	2199188	9.27 ug/l	99
57) Ethyl methacrylate	17.16	69	392702	9.30 ug/l	94
58) trans-1,3-Dichloropropene	17.14	75	678515	10.03 ug/l	99
59) 1,1,2-Trichloroethane	17.35	97	311157	9.65 ug/l	99
60) Tetrachloroethene	17.48	164	432777	9.23 ug/l	98
61) 2-Hexanone	17.56	43	1179795	51.54 ug/l	98
62) 1,3-Dichloropropane	17.53	76	611977	10.10 ug/l	100
63) Dibromochloromethane	17.80	129	410143	9.71 ug/l	99
64) 1,2-Dibromoethane	17.93	107	304267	9.75 ug/l	98
65) 1-Chlorohexane	18.26	91	867970	9.14 ug/l	99
66) Chlorobenzene	18.36	112	1270276	9.32 ug/l	99
67) Ethylbenzene	18.40	91	2541847	9.71 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	445514	9.86 ug/l	100
69) m-Xylene & p-Xylene	18.51	91	3642267	18.36 ug/l	100
70) o-Xylene	18.88	91	1814010	9.37 ug/l	99
71) Styrene	18.90	104	1270935	9.44 ug/l	99
73) Bromoform	19.13	173	179099	10.55 ug/l	98
74) Isopropylbenzene	19.16	105	2175618	10.21 ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	343856	10.07 ug/l	98
77) trans-1,4-Dichloro-2-buten	19.49	53	98291	10.01 ug/l	100
78) n-Propylbenzene	19.50	91	2802960	9.89 ug/l	99
79) 1,2,3-Trichloropropane	19.50	110	66402	10.01 ug/l	85
80) Bromobenzene	19.50	156	443377	9.44 ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:18 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

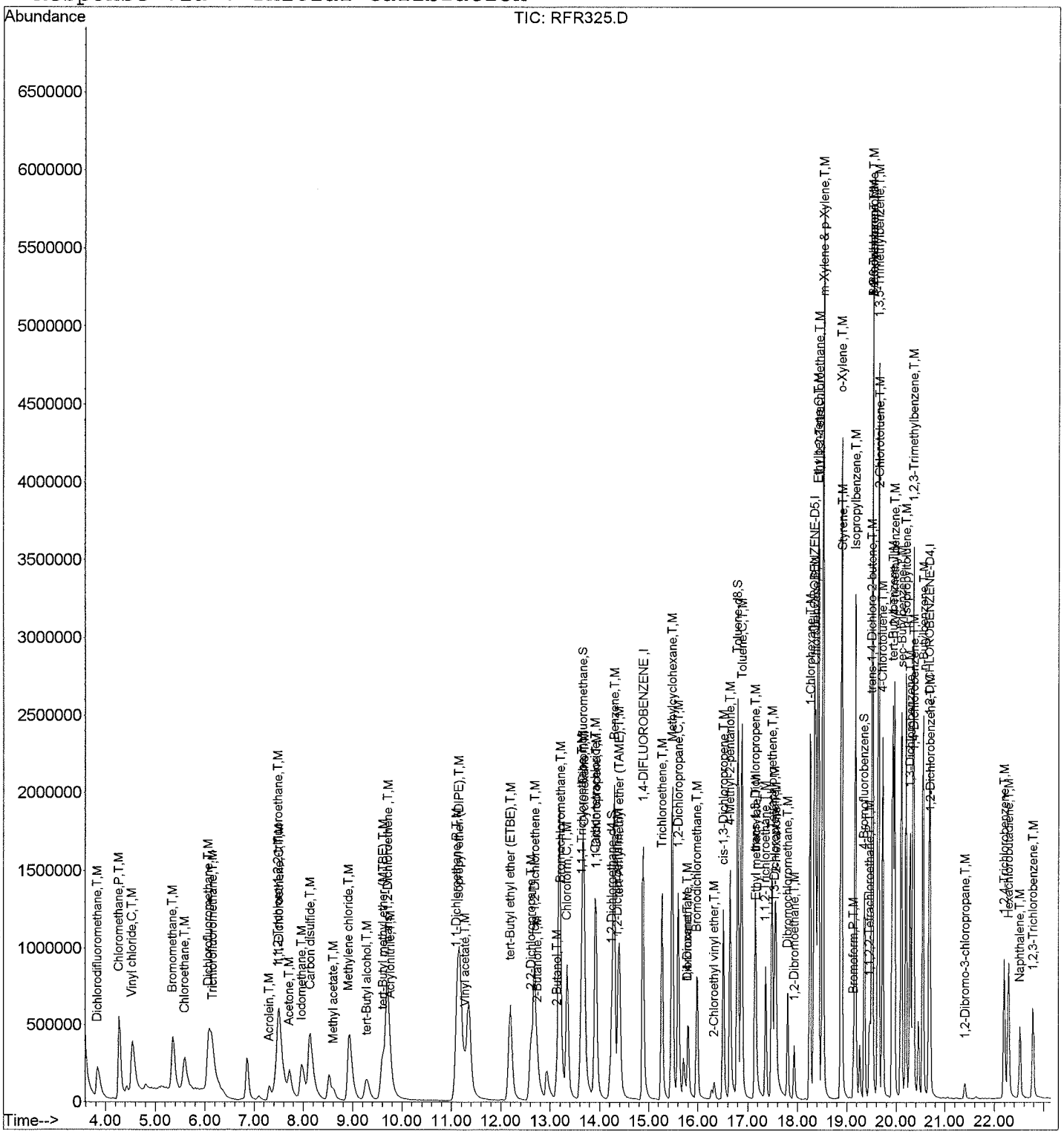
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1606225	9.69 ug/l	99
82)	2-Chlorotoluene	19.64	91	1702765	10.06 ug/l	99
83)	4-Chlorotoluene	19.71	91	1506505	10.04 ug/l	100
84)	tert-Butylbenzene	19.92	134	347272	10.01 ug/l	98
85)	1,2,4-Trimethylbenzene	19.95	105	1512608	9.51 ug/l	100
86)	sec-Butylbenzene	20.10	105	2218198	9.83 ug/l	99
87)	p-Isopropyltoluene	20.19	119	1699337	9.45 ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	800874	9.51 ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	1418177	9.59 ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	786732	9.13 ug/l	98
92)	n-Butylbenzene	20.54	91	1837939	9.34 ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	632238	9.02 ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	37173	9.41 ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	372246	9.01 ug/l	99
96)	Hexachlorobutadiene	22.28	225	240294	9.33 ug/l	97
97)	Naphthalene	22.51	128	521948	8.87 ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	285483	8.89 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F18\RFR325.D Vial: 2
Acq On : 18 Jun 2020 8:35 am Operator: ENguye/ODinh
Sample : CVOF3D0231 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 19 14:18 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F154
Lab File ID: RFR378 BFB Injection Date : 06/22/20
Instrument ID: F3 BFB Injection Time : 08:04
GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.32
75	30.0 - 60.0% of mass 95	46.00
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.25
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	67.43
175	5.0 - 9.0% of mass 174	4.87(7.2)1
176	95.0 - 101.0% of mass 174	64.93(96.3)1
177	5.0 - 9.0% of mass 176	4.47(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVOF3D0233	RFR379	06/22/20	08:33
2	MBLK2W	VOF3F17B	RFR383	06/22/20	10:41
3	LCS2W	VOF3F17L	RFR380	06/22/20	09:13
4	LCD2W	VOF3F17C	RFR381	06/22/20	09:42
5	MW02-GW061720DL	F154-02I	RFR397	06/22/20	17:27
6	MW02-GW061720	F154-02N	RFR398	06/22/20	17:56
7	MW02-GW061720MS	F154-02M	RFR399	06/22/20	18:26
8	MW02-GW061720MSD	F154-02S	RFR400	06/22/20	18:55

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDR007
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

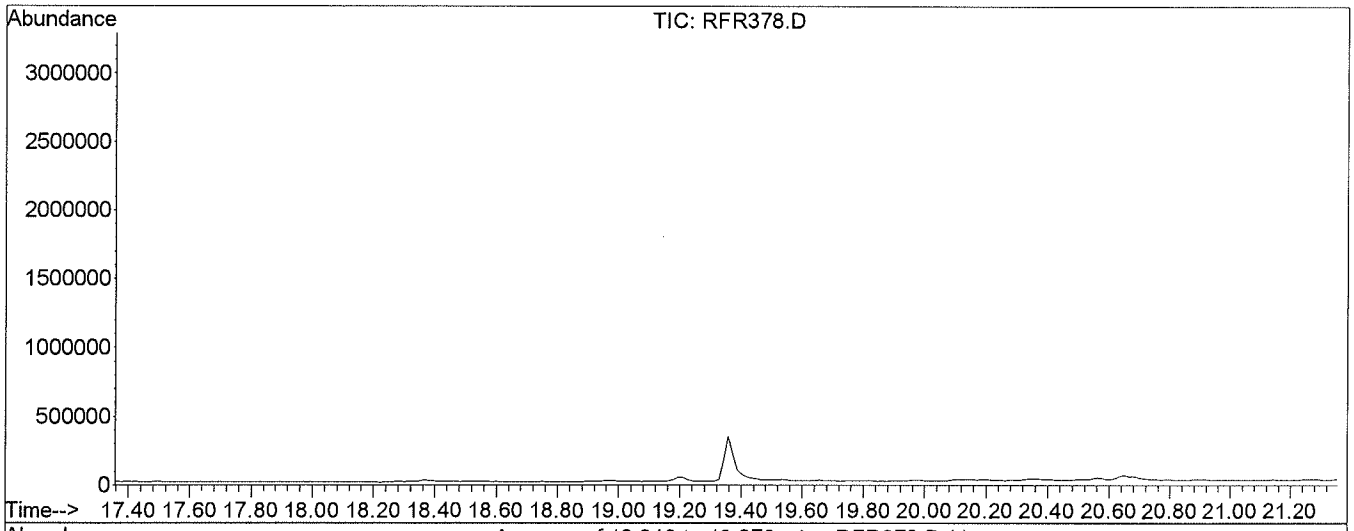
Project: VA SALT LAKE CITY
SDG No: 20F154
Date Analyzed: 04/02/2020
Time Analyzed: 19:14
Heated Purge (Y/N): N

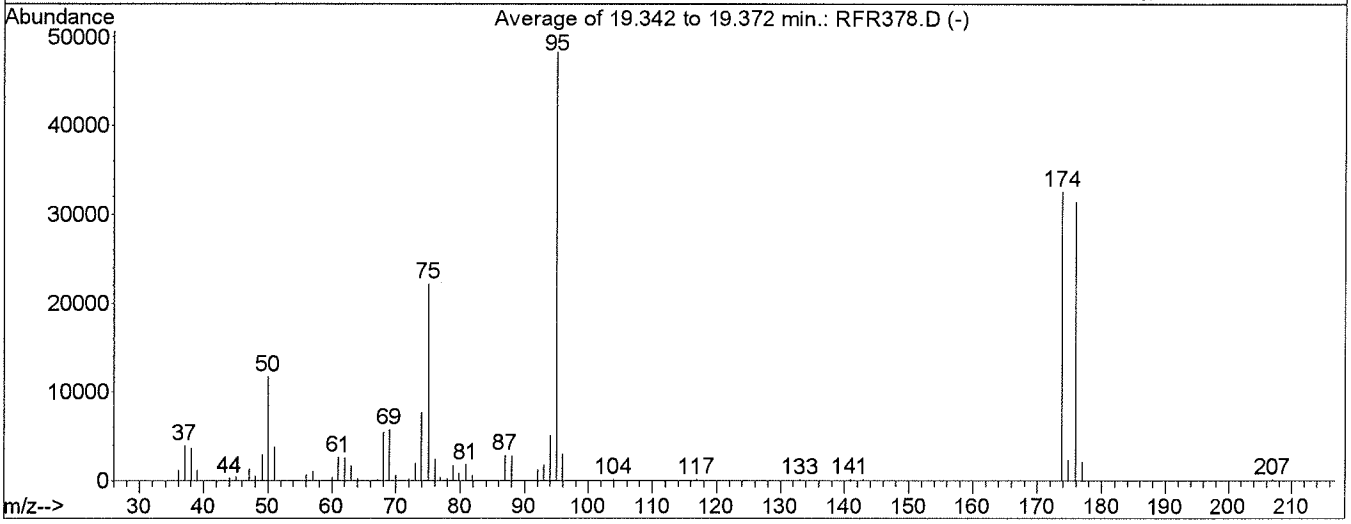
		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2165754	14.88	1703394	18.33	566102	20.68
	UPPER LIMIT	4331508	15.05	3406788	18.50	1132204	20.85
	LOWER LIMIT	1082877	14.71	851697	18.16	283051	20.51
	SAMPLE ID						
1	VSTD010	2412649	14.88	1888391	18.33	608672	20.68
2	MBLK2W	2390129	14.88	1820053	18.33	607210	20.66
3	LCS2W	2571371	14.88	1927330	18.33	642529	20.66
4	LCD2W	2467608	14.88	1827658	18.33	630684	20.66
5	MW02-GW061720DL	2081729	14.88	1633462	18.33	500657	20.68
6	MW02-GW061720	2168807	14.88	1639141	18.33	529522	20.68
7	MW02-GW061720MS	1963173	14.88	1474453	18.33	516755	20.68
8	MW02-GW061720MSD	1897031	14.88	1442286	18.33	510282	20.68

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : C:\HPCHEM\1\DATA\20F22\RFR378.D
Acq On : 22 Jun 2020 8:04 am
Sample : BFBF3F17
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ENguye/ODi
Inst : F3
Multiplr: 1.00





AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	11744	PASS
75	95	30	60	46.0	22216	PASS
95	95	100	100	100.0	48291	PASS
96	95	5	9	6.2	3018	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.4	32560	PASS
175	174	5	9	7.2	2351	PASS
176	174	95	101	96.3	31355	PASS
177	176	5	9	6.9	2158	PASS

RFR378.D VOF3D02.M Tue Jun 23 09:34:48 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	111	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-3.76#
3	T,M	Dichlorodifluoromethane	10.000	9.462	5.4	95	-0.01
4	P,T,M	Chloromethane	10.000	9.257	7.4	99	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-4.80#
6	C,T,M	Vinyl chloride	10.000	10.107	-1.1	103	-0.01
7	T,M	Bromomethane	10.000	8.534	14.7	89	-0.01
8	T,M	Chloroethane	10.000	10.374	-3.7	111	-0.01
9	T,M	Dichlorofluoromethane	10.000	10.172	-1.7	109	-0.01
10	T,M	Trichlorofluoromethane	10.000	9.630	3.7	100	-0.03
11	T,M	Acrolein	50.000	26.886	46.2#	62	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.387	6.1	101	-0.01
13	C,T,M	1,1-Dichloroethene	10.000	9.669	3.3	103	-0.03
14	T,M	Acetone	50.000	53.097	-6.2	128	-0.01
15	T,M	Iodomethane	10.000	8.646	13.5	100	-0.05
16	T,M	Methyl acetate	10.000	9.015	9.8	101	0.00
17	T,M	Carbon disulfide	10.000	9.596	4.0	94	-0.01
18	T,M	Methylene chloride	10.000	9.752	2.5	108	-0.06
19	T,M	tert-Butyl alcohol	250.000	213.721	14.5	112	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	8.193	18.1	103	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.659	3.4	108	0.00
22	T,M	Acrylonitrile	50.000	48.846	2.3	115	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	9.217	7.8	103	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.919	0.8	109	-0.02
25	T,M	Vinyl acetate	10.000	8.370	16.3	95	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	7.805	22.0#	97	0.00
27	T,M	2,2-Dichloropropane	10.000	10.348	-3.5	131	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.568	4.3	111	0.00
29	T,M	2-Butanone	50.000	51.222	-2.4	118	0.00
30	T,M	2-Butanol	250.000	204.842	18.1	96	0.00
31	T,M	Bromochloromethane	10.000	8.642	13.6	103	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.299	7.0	107	-0.02
34	S	Dibromofluoromethane	10.000	9.511	4.9	103	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.005	-0.1	111	0.00
36	T,M	Cyclohexane	10.000	8.917	10.8	98	0.00
37	T,M	1,1-Dichloropropene	10.000	9.794	2.1	105	0.00
38	T,M	Carbon tetrachloride	10.000	10.814	-8.1	119	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-14.33#
40	S	1,2-Dichloroethane-d4	10.000	9.187	8.1	105	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	0.067	99.3#	1	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.216	7.8	106	0.00
43	T,M	1,2-Dichloroethane	10.000	9.043	9.6	107	0.00
44	T,M	tert-Amyl methyl ether (TAM	10.000	8.234	17.7	99	-0.01
45	T,M	Trichloroethene	10.000	9.568	4.3	108	0.00
46	T,M	Methylcyclohexane	10.000	9.172	8.3	99	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.737	2.6	108	0.00
48	T,M	1,4-Dioxane	200.000	198.304	0.8	111	0.00
49	T,M	Dibromomethane	10.000	9.206	7.9	110	0.00
50	T,M	Bromodichloromethane	10.000	9.738	2.6	114	-0.01
51	T,M	2-Chloroethyl vinyl ether	10.000	5.276	47.2#	62	0.02
52	T,M	cis-1,3-Dichloropropene	10.000	9.735	2.7	109	0.00
53	T,M	4-Methyl-2-pentanone	50.000	46.040	7.9	104	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	111	0.00
55	S	Toluene-d8	10.000	9.594	4.1	103	0.00
56	C,T,M	Toluene	10.000	9.463	5.4	107	0.00
57	T,M	Ethyl methacrylate	10.000	8.351	16.5	95	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	9.007	9.9	99	0.00
59	T,M	1,1,2-Trichloroethane	10.000	9.402	6.0	109	0.00
60	T,M	Tetrachloroethene	10.000	9.720	2.8	109	0.00
61	T,M	2-Hexanone	50.000	42.716	14.6	99	0.00
62	T,M	1,3-Dichloropropane	10.000	9.250	7.5	104	0.00
63	T,M	Dibromochloromethane	10.000	9.516	4.8	106	0.00
64	T,M	1,2-Dibromoethane	10.000	9.230	7.7	105	0.00
65	T,M	1-Chlorohexane	10.000	9.445	5.5	104	-0.01
66	P,M	Chlorobenzene	10.000	9.345	6.5	101	0.00
67	C,T,M	Ethylbenzene	10.000	9.353	6.5	102	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	9.182	8.2	99	0.00
69	T,M	m-Xylene & p-Xylene	20.000	18.387	8.1	104	0.00
70	T,M	o-Xylene	10.000	9.061	9.4	96	0.00
71	T,M	Styrene	10.000	8.874	11.3	91	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	108	0.00
73	P,T,M	Bromoform	10.000	10.216	-2.2	107	0.00
74	T,M	Isopropylbenzene	10.000	10.204	-2.0	101	0.00
75	S	4-Bromofluorobenzene	10.000	10.528	-5.3	105	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.600	4.0	108	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	7.978	20.2#	88	0.00
78	T,M	n-Propylbenzene	10.000	9.914	0.9	105	0.00
79	T,M	1,2,3-Trichloropropane	10.000	9.248	7.5	106	-0.01
80	T,M	Bromobenzene	10.000	9.503	5.0	102	-0.01

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.702	3.0	101	0.00
82	T,M	2-Chlorotoluene	10.000	9.978	0.2	104	0.00
83	T,M	4-Chlorotoluene	10.000	9.660	3.4	101	0.00
84	T,M	tert-Butylbenzene	10.000	10.396	-4.0	109	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.381	6.2	102	0.00
86	T,M	sec-Butylbenzene	10.000	9.891	1.1	101	0.00
87	T,M	p-Isopropyltoluene	10.000	9.704	3.0	103	0.00
88	T,M	1,3-Dichlorobenzene	10.000	9.307	6.9	101	0.00
89	T,M	1,2,3-Trimethylbenzene	10.000	9.491	5.1	102	0.00
90	T,M	1,4-Dichlorobenzene	10.000	9.179	8.2	97	0.00
91	T,M	Benzyl Chloride	10.000	0.000	100.0#	0	-20.44#
92	T,M	n-Butylbenzene	10.000	9.261	7.4	96	0.00
93	T,M	1,2-Dichlorobenzene	10.000	9.426	5.7	107	0.00
94	T,M	1,2-Dibromo-3-chloropropane	10.000	9.535	4.6	104	0.00
95	T,M	1,2,4-Trichlorobenzene	10.000	9.429	5.7	100	0.00
96	T,M	Hexachlorobutadiene	10.000	9.517	4.8	94	0.00
97	T,M	Naphthalene	10.000	8.626	13.7	95	0.00
98	T,M	1,2,3-Trichlorobenzene	10.000	9.174	8.3	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	111	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.000	100.0#	0#	-3.76#
3	T,M	Dichlorodifluoromethane	0.350	0.332	5.1	95	-0.01
4	P,T,M	Chloromethane	0.687	0.636	7.4	99	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.000	100.0#	0#	-4.80#
6	C,T,M	Vinyl chloride	0.546	0.552	-1.1	103	-0.01
7	T,M	Bromomethane	0.384	0.328	14.6	89	-0.01
8	T,M	Chloroethane	0.284	0.295	-3.9	111	-0.01
9	T,M	Dichlorofluoromethane	0.841	0.855	-1.7	109	-0.01
10	T,M	Trichlorofluoromethane	0.475	0.457	3.8	100	-0.03
11	T,M	Acrolein	0.031	0.017	45.2#	62	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.206	6.4	101	-0.01
13	C,T,M	1,1-Dichloroethene	0.732	0.708	3.3	103	-0.03
14	T,M	Acetone	0.052	0.056	-7.7	128	-0.01
15	T,M	Iodomethane	0.606	0.524	13.5	100	-0.05
16	T,M	Methyl acetate	0.144	0.130	9.7	101	0.00
17	T,M	Carbon disulfide	1.299	1.247	4.0	94	-0.01
18	T,M	Methylene chloride	0.697	0.679	2.6	108	-0.06
19	T,M	tert-Butyl alcohol	0.015	0.013	13.3	112	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.488	18.0	103	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.372	3.4	108	0.00
22	T,M	Acrylonitrile	0.056	0.054	3.6	115	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.434	7.8	103	-0.02
24	P,T,M	1,1-Dichloroethane	0.830	0.823	0.8	109	-0.02
25	T,M	Vinyl acetate	0.496	0.435	12.3	95	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.816	21.9#	97	0.00
27	T,M	2,2-Dichloropropane	0.357	0.370	-3.6	131	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.387	4.2	111	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	118	0.00
30	T,M	2-Butanol	0.014	0.012	14.3	96	0.00
31	T,M	Bromochloromethane	0.191	0.165	13.6	103	0.00
32	T,M	Tetrahydrofuran	0.000	0.014	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.632	6.9	107	-0.02
34	S	Dibromofluoromethane	0.354	0.337	4.8	103	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.436	0.0	111	0.00
36	T,M	Cyclohexane	0.509	0.453	11.0	98	0.00
37	T,M	1,1-Dichloropropene	0.185	0.181	2.2	105	0.00
38	T,M	Carbon tetrachloride	0.369	0.399	-8.1	119	0.00
39	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-14.33#
40	S	1,2-Dichloroethane-d4	0.292	0.268	8.2	105	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	0.010	99.4#	1#	0.09

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.424	1.312	7.9	106	0.00
43	T,M	1,2-Dichloroethane	0.337	0.305	9.5	107	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.121	0.100	17.4	99	-0.01
45	T,M	Trichloroethene	0.372	0.356	4.3	108	0.00
46	T,M	Methylcyclohexane	0.585	0.537	8.2	99	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.395	2.5	108	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	111	0.00
49	T,M	Dibromomethane	0.154	0.142	7.8	110	0.00
50	T,M	Bromodichloromethane	0.411	0.400	2.7	114	-0.01
51	T,M	2-Chloroethyl vinyl ether	0.071	0.037	47.9#	62	0.02
52	T,M	cis-1,3-Dichloropropene	0.486	0.473	2.7	109	0.00
53	T,M	4-Methyl-2-pentanone	0.171	0.157	8.2	104	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	111	0.00
55	S	Toluene-d8	1.385	1.328	4.1	103	0.00
56	C,T,M	Toluene	1.725	1.632	5.4	107	0.00
57	T,M	Ethyl methacrylate	0.307	0.256	16.6	95	0.00
58	T,M	trans-1,3-Dichloropropene	0.492	0.443	10.0	99	0.00
59	T,M	1,1,2-Trichloroethane	0.235	0.221	6.0	109	0.00
60	T,M	Tetrachloroethene	0.341	0.331	2.9	109	0.00
61	T,M	2-Hexanone	0.166	0.142	14.5	99	0.00
62	T,M	1,3-Dichloropropane	0.440	0.407	7.5	104	0.00
63	T,M	Dibromochloromethane	0.307	0.292	4.9	106	0.00
64	T,M	1,2-Dibromoethane	0.227	0.209	7.9	105	0.00
65	T,M	1-Chlorohexane	0.690	0.652	5.5	104	-0.01
66	P,M	Chlorobenzene	0.991	0.927	6.5	101	0.00
67	C,T,M	Ethylbenzene	1.904	1.780	6.5	102	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.329	0.302	8.2	99	0.00
69	T,M	m-Xylene & p-Xylene	1.443	1.326	8.1	104	0.00
70	T,M	o-Xylene	1.408	1.276	9.4	96	0.00
71	T,M	Styrene	0.980	0.869	11.3	91	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	108	0.00
73	P,T,M	Bromoform	0.381	0.389	-2.1	107	0.00
74	T,M	Isopropylbenzene	4.778	4.876	-2.1	101	0.00
75	S	4-Bromofluorobenzene	1.253	1.319	-5.3	105	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.735	4.0	108	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.220	0.176	20.0#	88	0.00
78	T,M	n-Propylbenzene	6.355	6.301	0.8	105	0.00
79	T,M	1,2,3-Trichloropropane	0.149	0.138	7.4	106	-0.01
80	T,M	Bromobenzene	1.053	1.001	4.9	102	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.607	3.0	101	0.00
82	T,M	2-Chlorotoluene	3.796	3.788	0.2	104	0.00
83	T,M	4-Chlorotoluene	3.364	3.250	3.4	101	0.00
84	T,M	tert-Butylbenzene	0.778	0.808	-3.9	109	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.346	6.2	102	0.00
86	T,M	sec-Butylbenzene	5.060	5.005	1.1	101	0.00
87	T,M	p-Isopropyltoluene	4.031	3.912	3.0	103	0.00
88	T,M	1,3-Dichlorobenzene	1.889	1.758	6.9	101	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.146	5.1	102	0.00
90	T,M	1,4-Dichlorobenzene	1.932	1.774	8.2	97	0.00
91	T,M	Benzyl Chloride	1.000	0.000	100.0#	0#	-20.44#
92	T,M	n-Butylbenzene	4.414	4.088	7.4	96	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.481	5.7	107	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.084	5.6	104	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.873	5.7	100	0.00
96	T,M	Hexachlorobutadiene	0.577	0.549	4.9	94	0.00
97	T,M	Naphthalene	1.320	1.139	13.7	95	0.00
98	T,M	1,2,3-Trichlorobenzene	0.720	0.661	8.2	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2412649	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1888391	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	608672	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	812513	9.51	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.10%			
40) 1,2-Dichloroethane-d4	14.24	65	646164	9.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 91.90%			
55) Toluene-d8	16.79	98	2508419	9.59	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.90%			
75) 4-Bromofluorobenzene	19.34	95	802871	10.53	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.30%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	800151	9.46	ug/l	98
4) Chloromethane	4.27	50	1534411	9.26	ug/l	100
6) Vinyl chloride	4.54	62	1331662	10.11	ug/l	100
7) Bromomethane	5.35	94	790546	8.53	ug/l	99
8) Chloroethane	5.60	64	711090	10.37	ug/l	98
9) Dichlorofluoromethane	6.07	67	2064007	10.17	ug/l	100
10) Trichlorofluoromethane	6.14	101	1103241	9.63	ug/l	100
11) Acrolein	7.31	56	203680	26.89	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	497314	9.39	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1707597	9.67	ug/l	99
14) Acetone	7.71	43	669876	53.10	ug/l	97
15) Iodomethane	7.98	142	1263897	8.65	ug/l	100
16) Methyl acetate	8.60	43	314001	9.01	ug/l	96
17) Carbon disulfide	8.14	76	3007708	9.60	ug/l	99
18) Methylene chloride	8.93	49	1638930	9.75	ug/l	97
19) tert-Butyl alcohol	9.29	59	780398	213.72	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	1176974	8.19	ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	898097	9.66	ug/l	99
22) Acrylonitrile	9.76	53	656361	48.85	ug/l	98
23) Isopropyl ether (DIPE)	11.15	45	3460814	9.22	ug/l	99
24) 1,1-Dichloroethane	11.10	63	1985670	9.92	ug/l	99
25) Vinyl acetate	11.28	43	1048386	8.37	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	1968853	7.81	ug/l	99
27) 2,2-Dichloropropane	12.62	77	891855	10.35	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	932514	9.57	ug/l	100
29) 2-Butanone	12.74	72	186441	51.22	ug/l	96
30) 2-Butanol	13.14	45	703880	204.84	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	398725	8.64 ug/l	100
33)	Chloroform	13.34	83	1524353	9.30 ug/l	100
35)	1,1,1-Trichloroethane	13.63	97	1052793	10.00 ug/l	99
36)	Cyclohexane	13.68	84	1094062	8.92 ug/l	99
37)	1,1-Dichloropropene	13.93	110	436482	9.79 ug/l	96
38)	Carbon tetrachloride	13.91	119	963696	10.81 ug/l	99
42)	Benzene	14.29	78	3165673	9.22 ug/l	99
43)	1,2-Dichloroethane	14.36	62	734779	9.04 ug/l	98
44)	tert-Amyl methyl ether (TA	14.39	87	240750	8.23 ug/l	99
45)	Trichloroethene	15.27	130	858366	9.57 ug/l	97
46)	Methylcyclohexane	15.48	83	1295178	9.17 ug/l	97
47)	1,2-Dichloropropane	15.60	63	951806	9.74 ug/l	99
48)	1,4-Dioxane	15.79	88	47862	198.30 ug/l	92
49)	Dibromomethane	15.79	93	341608	9.21 ug/l	99
50)	Bromodichloromethane	15.97	83	965217	9.74 ug/l	99
51)	2-Chloroethyl vinyl ether	16.32	63	90368	5.28 ug/l	93
52)	cis-1,3-Dichloropropene	16.50	75	1140724	9.74 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1898867	46.04 ug/l	98
56)	Toluene	16.87	91	3081789	9.46 ug/l	100
57)	Ethyl methacrylate	17.16	69	484345	8.35 ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	836958	9.01 ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	416412	9.40 ug/l	99
60)	Tetrachloroethene	17.48	164	625772	9.72 ug/l	99
61)	2-Hexanone	17.56	43	1342839	42.72 ug/l	97
62)	1,3-Dichloropropane	17.53	76	769418	9.25 ug/l	99
63)	Dibromochloromethane	17.80	129	552028	9.52 ug/l	99
64)	1,2-Dibromoethane	17.93	107	395456	9.23 ug/l	100
65)	1-Chlorohexane	18.24	91	1231559	9.44 ug/l	100
66)	Chlorobenzene	18.36	112	1749613	9.35 ug/l	100
67)	Ethylbenzene	18.41	91	3362206	9.35 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	569636	9.18 ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	5009498	18.39 ug/l	100
70)	o-Xylene	18.88	91	2409806	9.06 ug/l	100
71)	Styrene	18.90	104	1641504	8.87 ug/l	100
73)	Bromoform	19.13	173	236726	10.22 ug/l	98
74)	Isopropylbenzene	19.16	105	2967718	10.20 ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.45	83	447367	9.60 ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	106905	7.98 ug/l	96
78)	n-Propylbenzene	19.50	91	3834951	9.91 ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	83695	9.25 ug/l	91
80)	Bromobenzene	19.50	156	609105	9.50 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

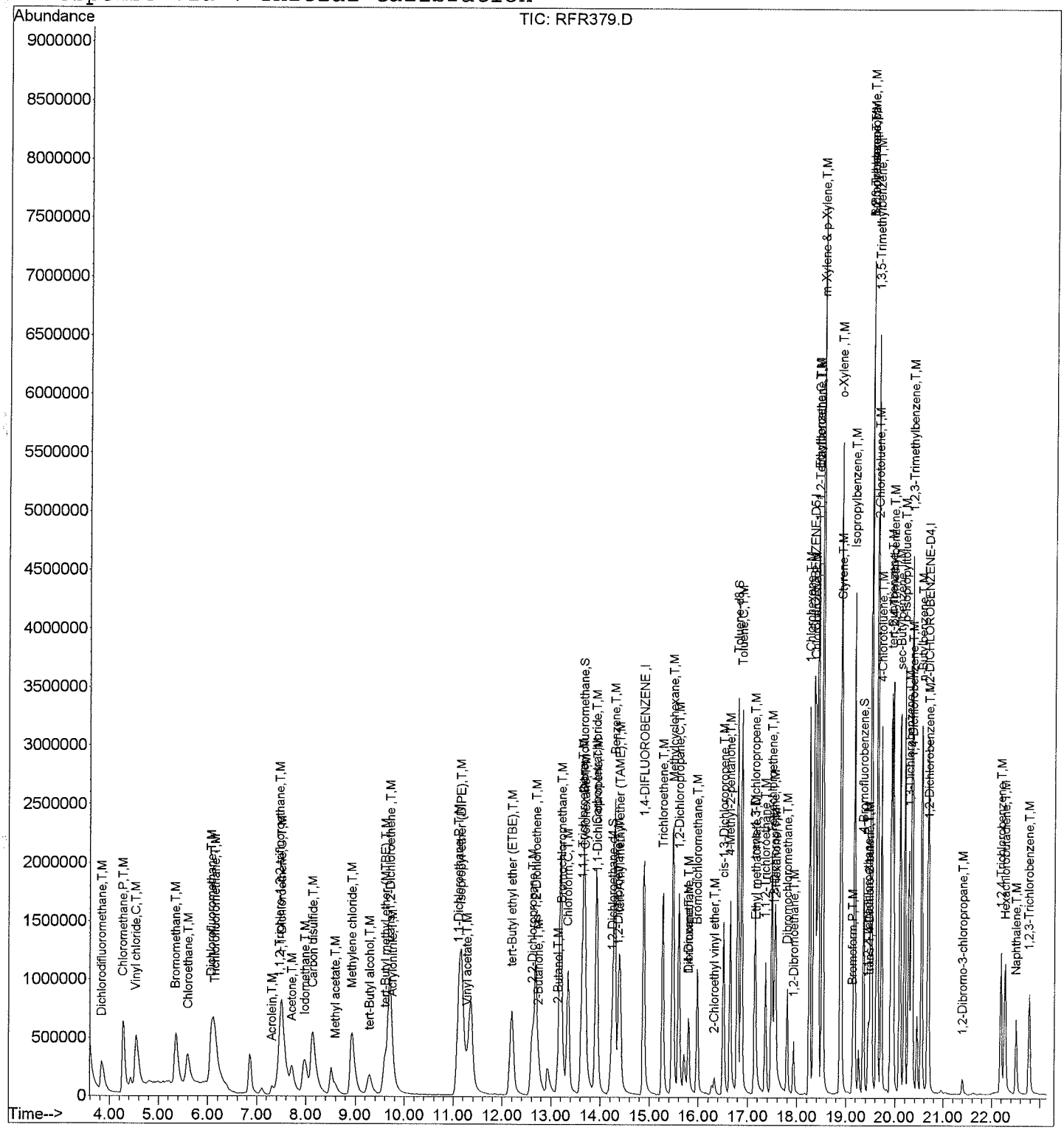
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2195204	9.70	ug/l		99
82)	2-Chlorotoluene	19.64	91	2305566	9.98	ug/l		100
83)	4-Chlorotoluene	19.71	91	1978023	9.66	ug/l		100
84)	tert-Butylbenzene	19.92	134	492049	10.40	ug/l	#	56
85)	1,2,4-Trimethylbenzene	19.95	105	2036753	9.38	ug/l		100
86)	sec-Butylbenzene	20.10	105	3046550	9.89	ug/l		99
87)	p-Isopropyltoluene	20.19	119	2380989	9.70	ug/l		100
88)	1,3-Dichlorobenzene	20.28	146	1070136	9.31	ug/l		97
89)	1,2,3-Trimethylbenzene	20.34	105	1915139	9.49	ug/l		100
90)	1,4-Dichlorobenzene	20.35	146	1079569	9.18	ug/l		98
92)	n-Butylbenzene	20.55	91	2488225	9.26	ug/l		99
93)	1,2-Dichlorobenzene	20.69	146	901487	9.43	ug/l		100
94)	1,2-Dibromo-3-chloropropan	21.41	157	51417	9.53	ug/l		97
95)	1,2,4-Trichlorobenzene	22.19	180	531473	9.43	ug/l		99
96)	Hexachlorobutadiene	22.28	225	334465	9.52	ug/l		98
97)	Naphthalene	22.51	128	692985	8.63	ug/l		99
98)	1,2,3-Trichlorobenzene	22.77	180	402273	9.17	ug/l		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



RFR379.D VOF3D02.M Tue Jun 23 09:35:27 2020 Page 4

ANALYTICAL LOG(S)

ANALYSIS LOG FOR VOLATILES

SOP ☑EMAX-8260 Rev.No. 10 ☑EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/02/20 ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: AF3-021

BATCH VOF3D026

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount A/B (ml)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR001	BFB3D01	0.03/0.15	N/A	N/A	N/A		16:01
02		002	VOF3D0201	0.03/0.15					0.3/1.5/7.5 ppb
03		003	2	0.05/0.25					0.5/2.5/12.5
04		004	3	0.1/0.5					1/5/25
05		005	4	0.2/1					2/10/50
06		006	5	0.5/2.5					5/25/125
07		007	6	1/5					10/50/250
08		008	7	2/10					20/100/500
09		009	8	3/15					30/150/750 bias high
10		010	9	5/25					50/250/1250
11		011	10	10/50					100/500/2500
12		012	RINSE						
13		013							
14		014	IVOF3D0201						gas low
15		015	RINSE						
16		016	LOD1						0.2/4 ppb
17		017	2						0.4/4
18		018	3						0.8/4 00:37
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									Rm 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 224TMP+TAA CS_2	SV1-33-97-03	*	
DCC 4ADD	↓ -97-02	*	
DCC gas 8260	↓ -98-03	*	
DCC KET-AA	SV1-34-07-01	*	
BFB	↓ -08-03	1	50/250/1250/625
IS/SURR. IS SS	↓ -08-02	*	
ICV/LCS CS_2 gas	SV1-34-06-01	1	
ICV/LCS KET TAA	SV1-33-98-01	1	
ICV/LCS 8260 3ADD	↓ -94-01	5	
ICV/LCS 224TMP 2-But	SV1-34-10-03	5	
Data File Folder	↓ -11-01	5	
	↓ -02-02	5	
	SV1-33-62-01	5	
	↓ -50-01	5	
	↓ -16-02	5	
	↓ -39-01	5	
	20D04	12.5 Rm 4/14/20	500

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		↓ -04-06
Methanol		↓ -04-13
$NaHSO_4$		MSV-02-01-07-2
Reagent Water	RWS-19-001	↓ -4
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments: A: gas, CS_2, SS, 224TMP+TAA, 4ADD
B: 8260, KET-AA

☐ Refer to sample weight log

Analyzed By: Rm

Date Disposed: 04/03/20 Disposed By: Rm

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/06/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH IVOF3D0202

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR019	BFBF3D02		N/A	N/A	N/A		10:37
02		↓ 020	IVOF3D0202		↓	↓	↓		10/50/250 ppm 11:22
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
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23									
24									
25									
26									
27									
28									
29									
30									RM 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC			
BFB	SV1-33-34-01	1	
IS/SURR.	↓ -98-01 SV1-34-06-01	1 5	
ICV/LCS	↓ -10-03 SV1-33-74-01	1 1	
ICV/LCS	-62-01 -50-01	5 5	50/250/1250
ICV/LCS	RM 04/14/20 ↓ -16-02 ~~SV1-34-10-03~~	5	
ICV/LCS	SV1-34-11-01 ↓ -02-02	5 5	
Data File Folder	SV1-33-34-01 20D06	12.5	500

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		↓ -04-06
Methanol		MSV-02-01-07-2
$NaHSO_4$		↓ -4
Reagent Water	RWS-19-001	MSV-01-04-13
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: RM

Date Disposed: 04/07/20 Disposed By: RM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/18/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH CVOF3D0231

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		RFR324	BFBF3F15						08:06
02		25	CVOF3D0231						
03		26	VOF3F152						
04		27	↓ C						
05		28	RINSE						
06		29	VOF3F15B	25mL					
07		30	20F152-01		1.0	✓	✓		
08		31	02			✓	✓		
09		32	03			✓	✓		
10		33	04			✓	✓		
11		34	05			✓	✓		
12		35	06			✓	✓		
13		36	↓ 07			✓	✓		
14		37	20F154-03			✓	✓		
15		38	04			✓	✓		
16		39	07			✓	✓		
17		40	01			✓	✓		
18		41	05			✓	✓		
19		42	06			✓	✓		
20		43	02			✓	✓		25x
21		44	02M			✓	✓		} RPD > 20
22		45	↓ 02S			✓	✓		
23		46	EVOF3D0231						18:56
24		47	↓ A						
25		48	B						
26		49	RINSE						
27		50	↓						
28									
29									
30									6/19/20 EN

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	4/2/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-33-98-03	1	
DCC	34-25-01	1	
DCC	34-28-01	1	
DCC	34-30-03 34-21-01	5 5	
BFB	33-82-03	1	
IS/SURR.	34-40-~~01~~ 01 6/19/20 EN	5	50/250
ICV/LCS	33-74-02	1	
ICV/LCS	34-09-02	1	
ICV/LCS	34-11-01	5	
ICV/LCS	↓ 34-20-01 33-49-03	5 5	
Data File Folder	20F18		

	LOT #	Syringe Lot #
pH strip	HC998032	MSV-01-04-08
Chlorine strip	2979	↓ 02-01-04-5
Methanol		↓ 02-01-08-5
$NaHSO_4$		
Reagent Water	RWS-19-007	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: EN/SD

Date Disposed: 6/19/20 Disposed By: EN

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/22/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH CVOF3D033

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RFR378	BFBF3F17						08:04
02		379	CVOF3D02.33						
03		380	VOF3F17L						
04		381	↓ C						
05		382	RINSE						
06		383	VOF3F17B	25mL					
07		384	20F162-03	↓	1.0	✓	✓		
08		385	06		↓	✓	✓		
09		386	09			✓	✓		
10		387	12			✓	✓		
11		388	01			✓	✓		
12		389	02			✓	✓		
13		390	04			✓	✓		
14		391	05			✓	✓		
15		392	07			✓	✓		
16		393	08			✓	✓		25x
17		394	10			✓	✓		
18		395	↓ 11	↓	↓	✓	✓		
19		396	RINSE						
20		397	20F154-02I	25mL	25	✓	✓		
21		398	02N	↓	1.0	✓	✓		
22		399	02M		↓	✓	✓		
23		400	↓ 02S	↓	↓	✓	✓		18:55
24		401	RINSE						
25		402	↓						
26		403							
27		↓ 404	↓						
28									
29									
30									

6/22/20 EN

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	4/2/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-33-98-03	1	
DCC	34-25-01	1	
DCC	34-28-01	1	
DCC	34-30-03 34-21-01	5 5	
BFB	33-82-03	1	50/250
IS/SURR.	34-40-01	5	
ICV/LCS	33-74-02	1	
ICV/LCS	34-09-02	1	
ICV/LCS	34-11-01	5	
ICV/LCS	34-20-01 33-49-03	5 5	
Data File Folder	20F22		

	LOT #	Syringe Lot #
pH strip	#C998032	MSV-01-04-08
Chlorine strip	2979	↓ 02-01-08-05
Methanol		
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: EN 6/20

Date Disposed: 6/23/20 Disposed By: EN

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F154

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of four(4) water samples were received on 06/18/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF060) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF016WL/SVF016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. 1,4-Dioxane (P-DIOXANE) was within MS QC limits in 20F154-02M/20F154-02S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F154
Instrument ID : FO

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF016WB	1	NA	06/19/2010:56	06/18/2012:30	RFF061	RFF005	20SVF016W	Method Blank
LCS1W	SVF016WL	1	NA	06/19/2011:10	06/18/2012:30	RFF062	RFF005	20SVF016W	Lab Control Sample (LCS)
LCD1W	SVF016WC	1	NA	06/19/2011:29	06/18/2012:30	RFF063	RFF005	20SVF016W	LCS Duplicate
MW20S-GW061720	20F154-01	1	NA	06/19/2012:07	06/18/2012:30	RFF065	RFF005	20SVF016W	Field Sample
MW02-GW061720	20F154-02	1	NA	06/19/2012:26	06/18/2012:30	RFF066	RFF005	20SVF016W	Field Sample
MW02-GW061720MS	20F154-02M	1	NA	06/19/2012:45	06/18/2012:30	RFF067	RFF005	20SVF016W	Matrix Spike Sample (MS)
MW02-GW061720MSD	20F154-02S	1	NA	06/19/2013:04	06/18/2012:30	RFF068	RFF005	20SVF016W	MS Duplicate (MSD)
MW20D-GW061720	20F154-05	1	NA	06/19/2013:24	06/18/2012:30	RFF069	RFF005	20SVF016W	Field Sample
FD04-GW061720	20F154-06	1	NA	06/19/2013:43	06/18/2012:30	RFF070	RFF005	20SVF016W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 11:02
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 12:30
Sample ID	: MW20S-GW061720	Date Analyzed:	06/19/20 12:07
Lab Samp ID:	20F154-01	Dilution Factor:	1
Lab File ID:	RFF065	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	FO

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	38.0	42.0	90	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 950ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

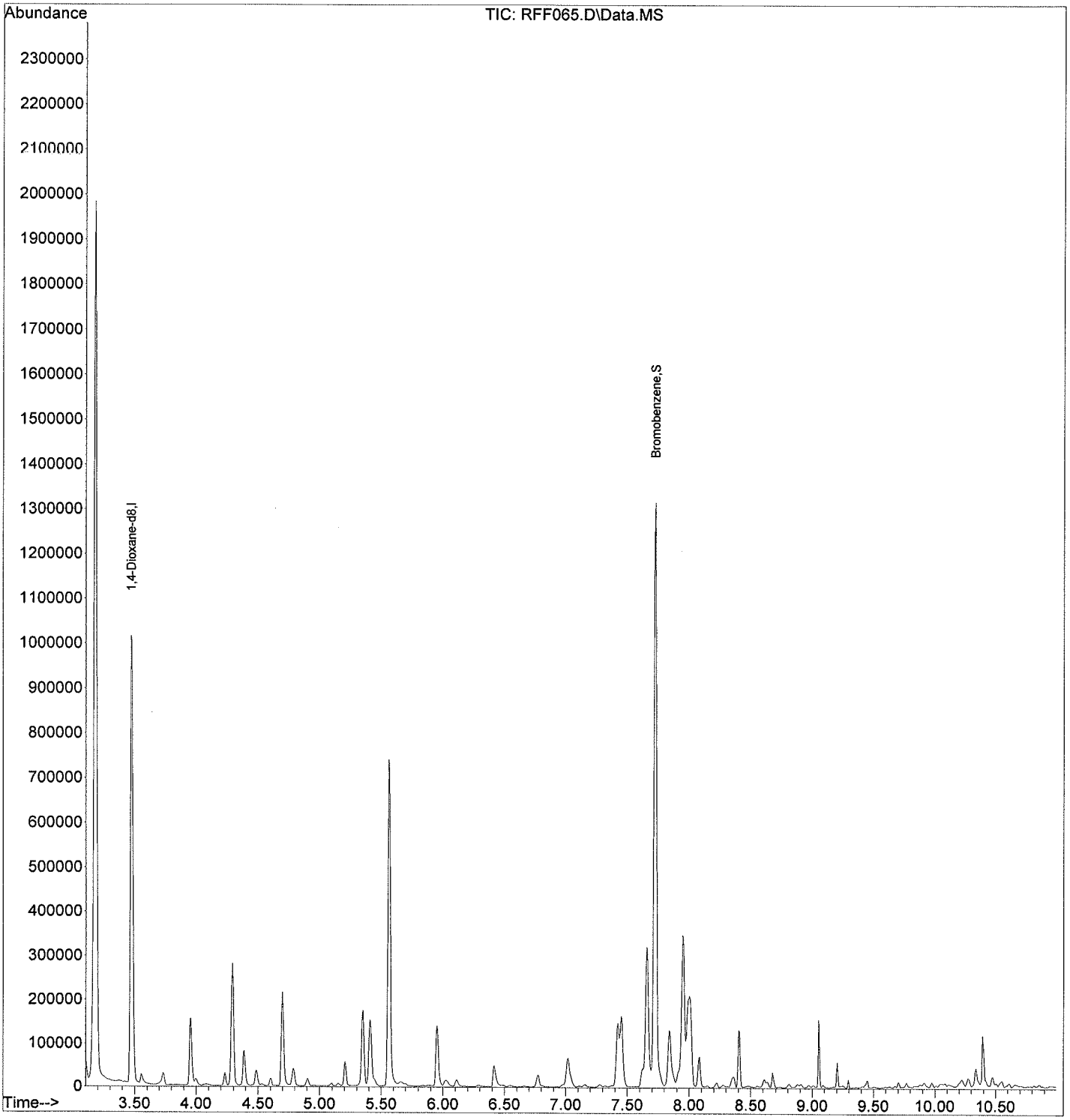
Data File : C:\msdchem\1\DATA\20F19\RFF065.D Vial: 8
Acq On : 19 Jun 2020 12:07 Operator: RMinam
Sample : 20F154-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:29:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	160280	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	243105	18.05	ppm	0.00
Spiked Amount 20.000			Recovery =	90.25%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF065.D Vial: 8
Acq On : 19 Jun 2020 12:07 Operator: RMinam
Sample : 20F154-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:29:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 11:35
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 12:30
Sample ID	: MW02-GW061720	Date Analyzed:	06/19/20 12:26
Lab Samp ID:	20F154-02	Dilution Factor:	1
Lab File ID:	RFF066	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	FO

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	33.1	41.2	80	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 970ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

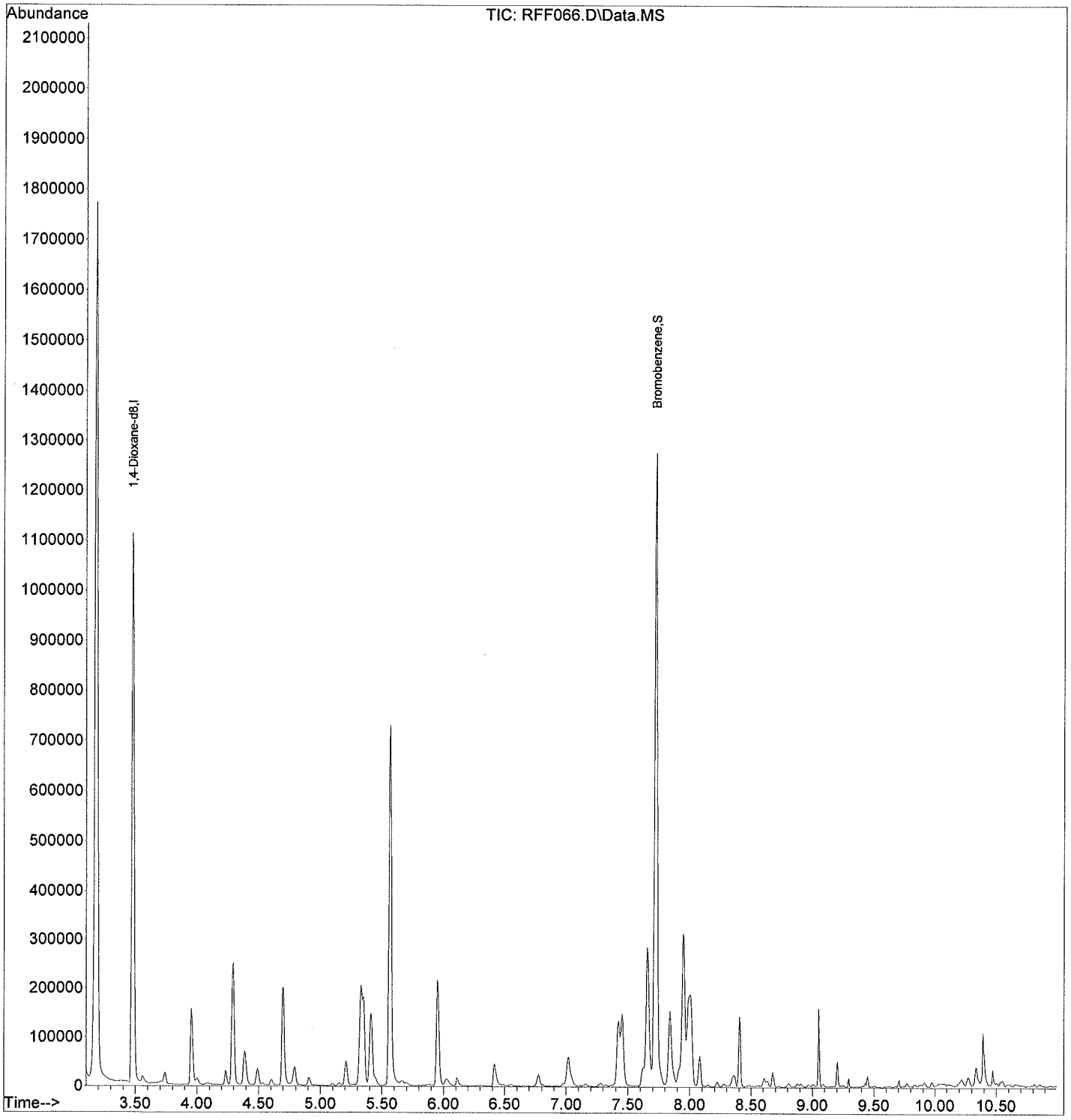
Data File : C:\msdchem\1\DATA\20F19\RFF066.D Vial: 9
Acq On : 19 Jun 2020 12:26 Operator: RMinam
Sample : 20F154-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:30:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	170399	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	229547	16.03	ppm	0.00
Spiked Amount 20.000			Recovery =	80.15%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF066.D Vial: 9
Acq On : 19 Jun 2020 12:26 Operator: RMinam
Sample : 20F154-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:30:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 12:30
Sample ID	: MW20D-GW061720	Date Analyzed:	06/19/20 13:24
Lab Samp ID:	20F154-05	Dilution Factor:	1
Lab File ID:	RFF069	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	37.8	40.0	94	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

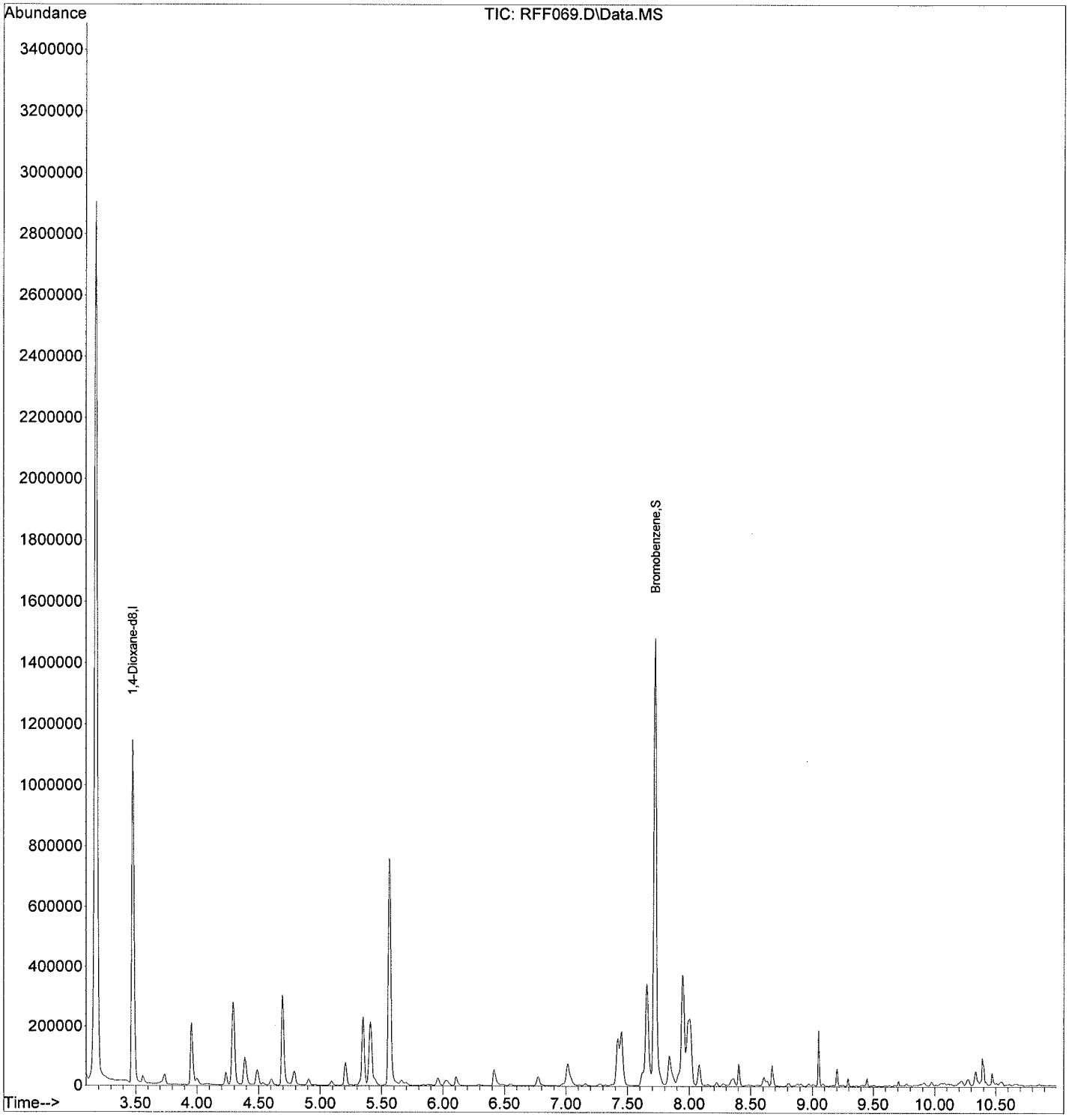
Data File : C:\msdchem\1\DATA\20F19\RFF069.D Vial: 12
Acq On : 19 Jun 2020 13:24 Operator: RMinam
Sample : 20F154-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:31:05 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	169450	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	269031	18.90	ppm	0.00
Spiked Amount 20.000			Recovery = 94.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF069.D Vial: 12
Acq On : 19 Jun 2020 13:24 Operator: RMinam
Sample : 20F154-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:31:05 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 12:05
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 12:30
Sample ID	: FD04-GW061720	Date Analyzed:	06/19/20 13:43
Lab Samp ID:	20F154-06	Dilution Factor:	1
Lab File ID:	RFF070	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.38	0.19

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	35.9	37.6	95	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1060ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

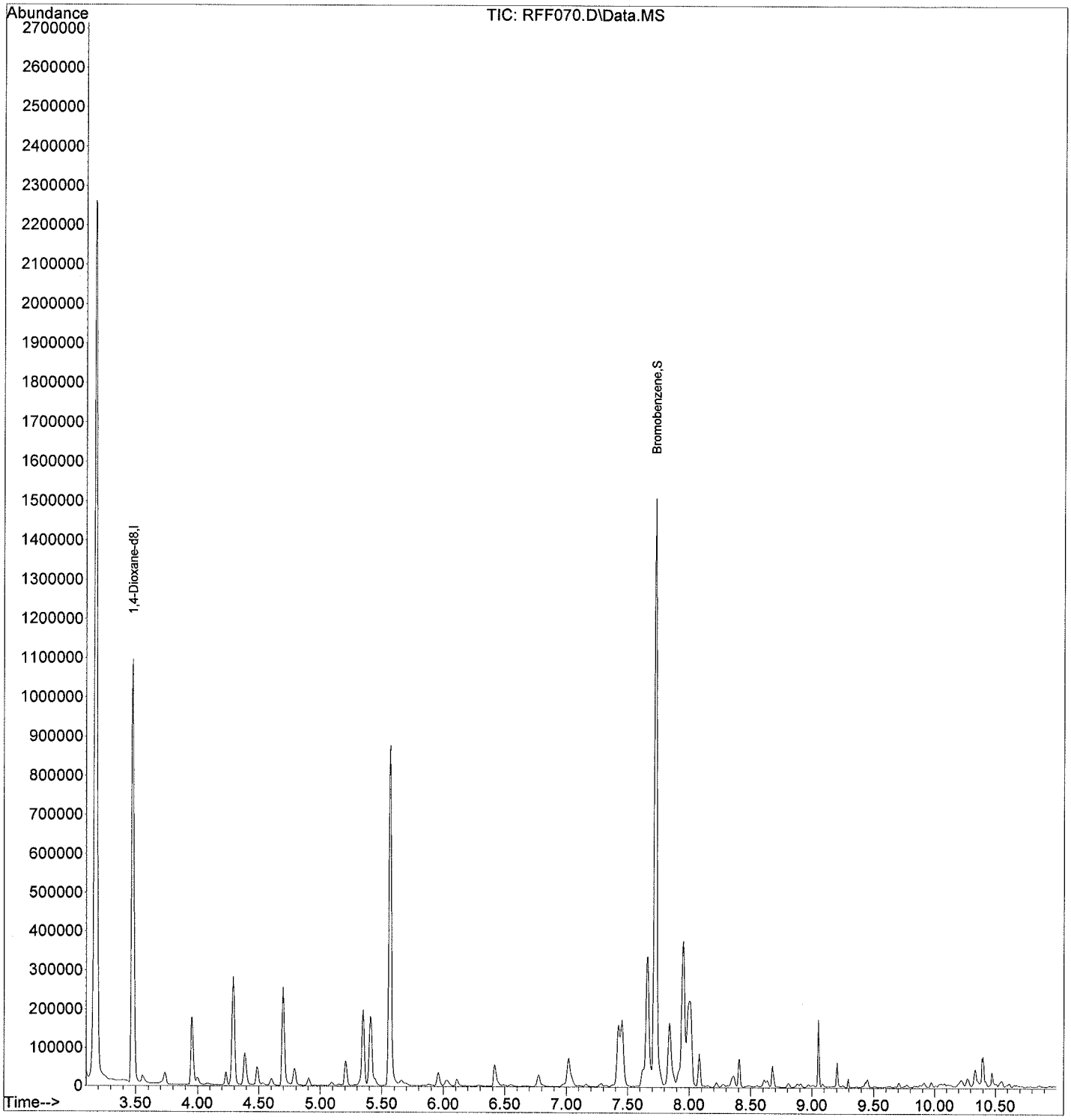
Data File : C:\msdchem\1\DATA\20F19\RFF070.D Vial: 13
Acq On : 19 Jun 2020 13:43 Operator: RMinam
Sample : 20F154-06 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:31:19 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	170976	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	273188	19.02	ppm	0.00
Spiked Amount 20.000			Recovery =	95.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF070.D Vial: 13
Acq On : 19 Jun 2020 13:43 Operator: RMinam
Sample : 20F154-06 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:31:19 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 12:30
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 12:30
Sample ID	: MBLK1W	Date Analyzed:	06/19/20 10:56
Lab Samp ID:	SVF016WB	Dilution Factor:	1
Lab File ID:	RFF061	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	FO

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	42.2	40.0	106	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF016WB	SVF016WL	SVF016WC
LAB FILE ID	: RFF061	RFF062	RFF063
DATE PREPARED	: 06/18/20 12:30	06/18/20 12:30	06/18/20 12:30
DATE ANALYZED	: 06/19/20 10:56	06/19/20 11:10	06/19/20 11:29
PREP BATCH	: 20SVF016W	20SVF016W	20SVF016W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	31.8	80	40.0	33.6	84	6	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	36.0	90	40.0	37.9	95	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID	: 20F154-02	20F154-02M	20F154-02S
LAB FILE ID	: RFF066	RFF067	RFF068
DATE PREPARED	: 06/18/20 12:30	06/18/20 12:30	06/18/20 12:30
DATE ANALYZED	: 06/19/20 12:26	06/19/20 12:45	06/19/20 13:04
PREP BATCH	: 20SVF016W	20SVF016W	20SVF016W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	41.2	32.0	78	41.6	34.5	83	8	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	41.2	36.5	89	41.6	39.1	94	30-160

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

QC DATA

Quantitation Report (QT Reviewed)

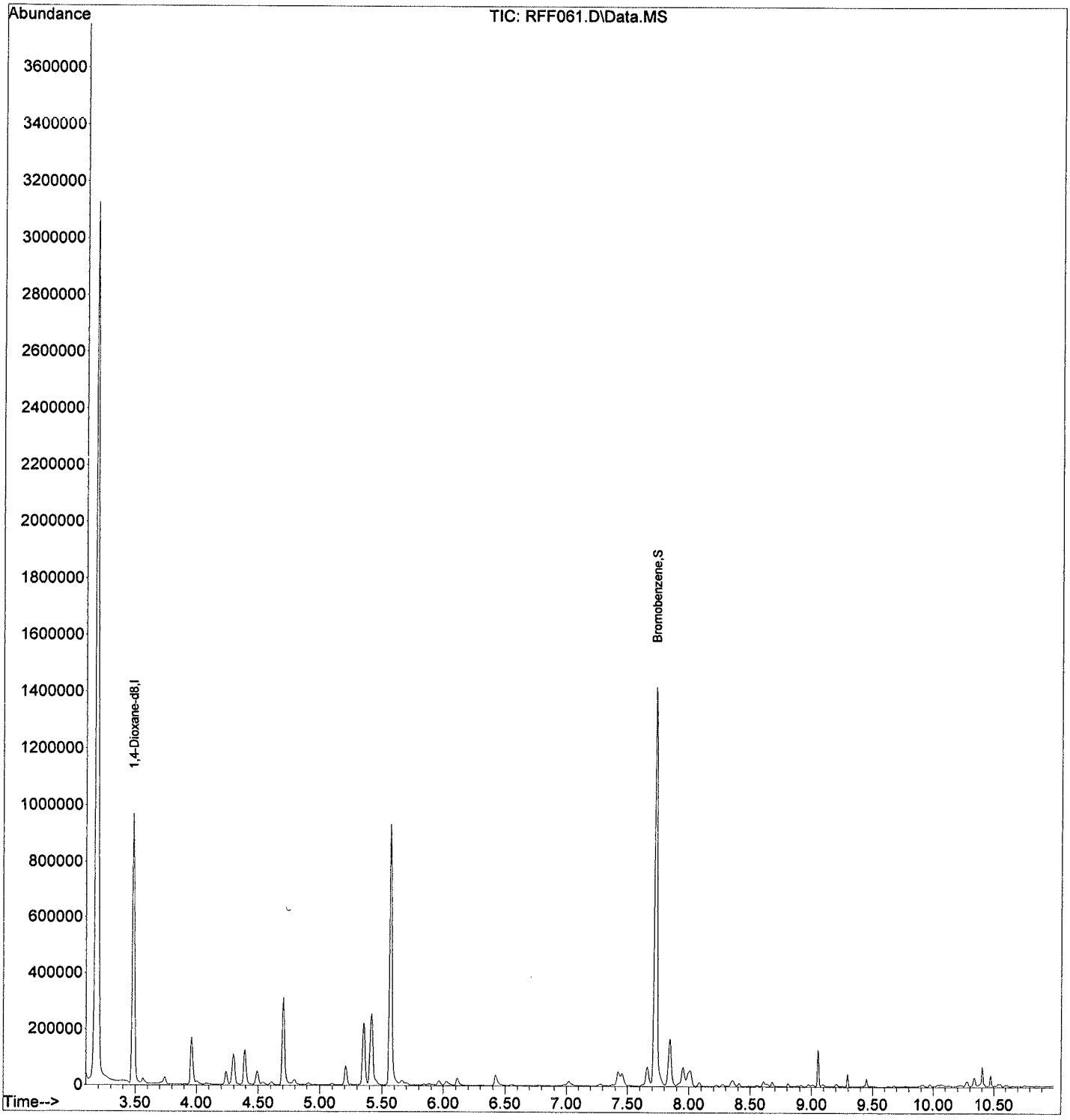
Data File : C:\msdchem\1\DATA\20F19\RFF061.D Vial: 4
Acq On : 19 Jun 2020 10:56 Operator: RMinam
Sample : SVF016WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 11:26:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.483	96	146501	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	7.724	77	259919	21.12	ppm	0.00
Spiked Amount 20.000			Recovery =	105.60%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF061.D Vial: 4
Acq On : 19 Jun 2020 10:56 Operator: RMinam
Sample : SVF016WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 11:26:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

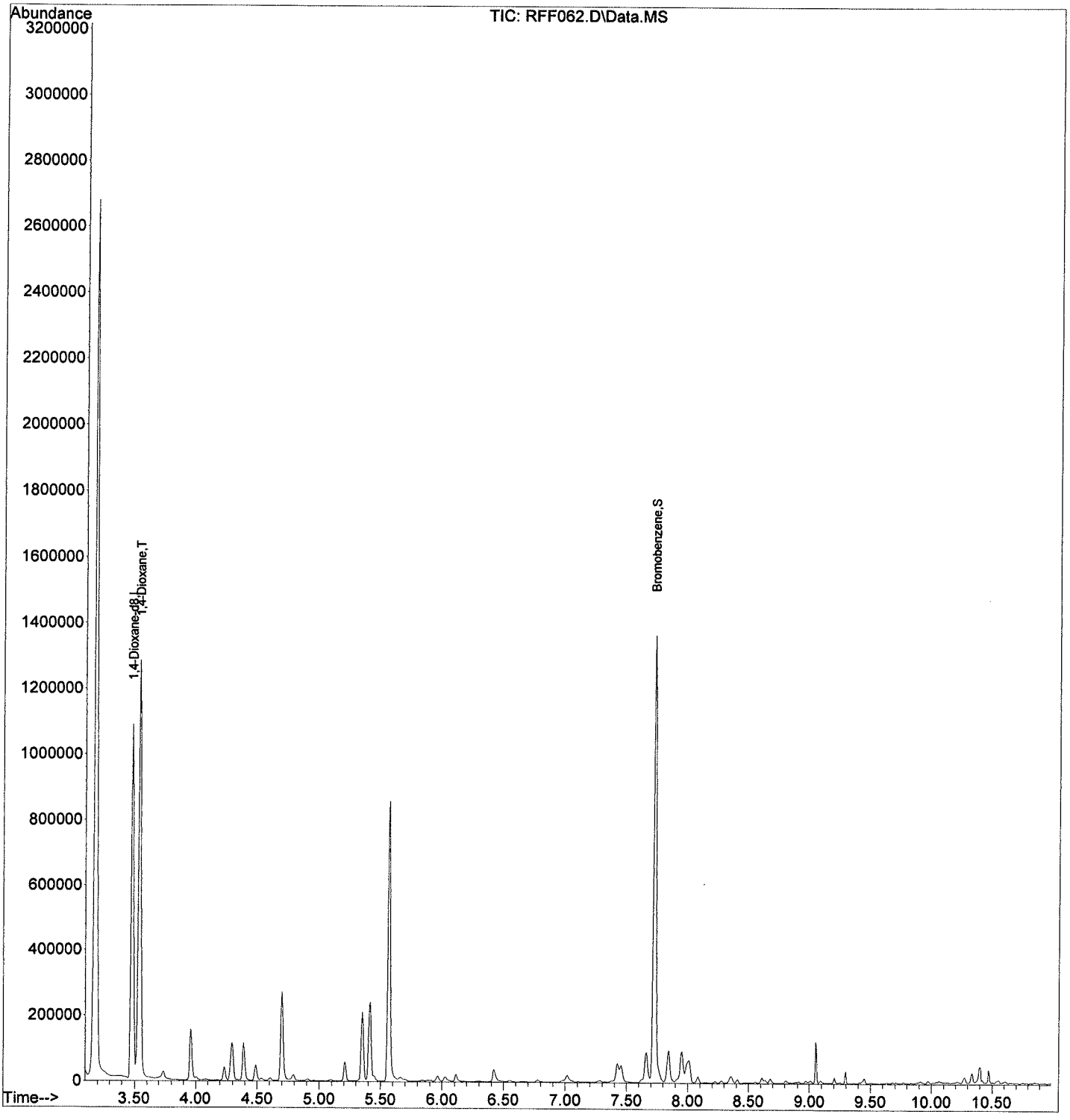
Data File : C:\msdchem\1\DATA\20F19\RFF062.D Vial: 5
Acq On : 19 Jun 2020 11:10 Operator: RMinam
Sample : SVF016WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	163805	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	247645	18.00	ppm	0.00
Spiked Amount 20.000			Recovery =	90.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	179701	15.90	ppm	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF062.D Vial: 5
Acq On : 19 Jun 2020 11:10 Operator: RMinam
Sample : SVF016WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

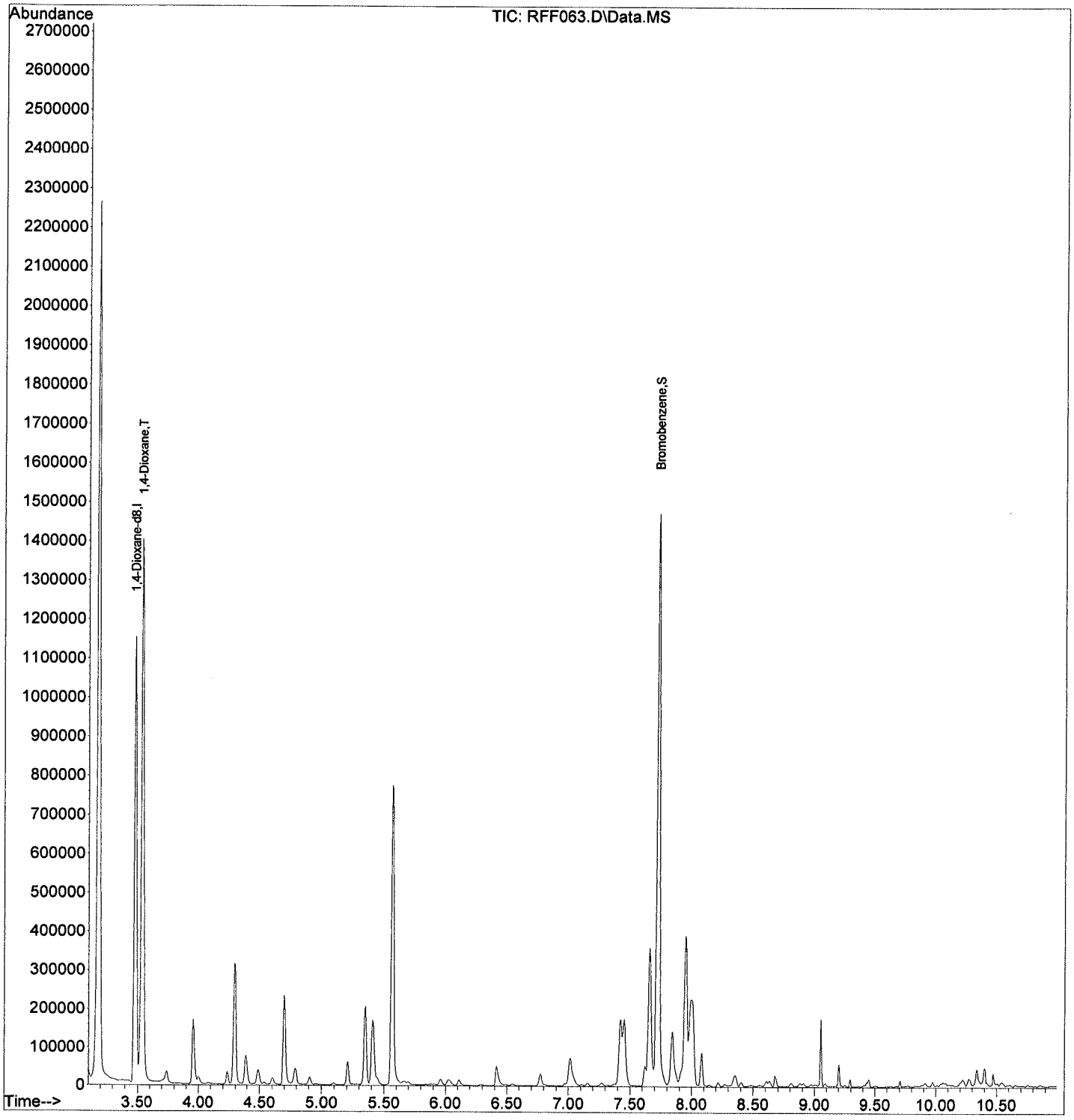
Data File : C:\msdchem\1\DATA\20F19\RFF063.D Vial: 6
Acq On : 19 Jun 2020 11:29 Operator: RMinam
Sample : SVF016WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	171903	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	273737	18.95	ppm	0.00
Spiked Amount 20.000			Recovery = 94.75%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	199529	16.82	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF063.D Vial: 6
Acq On : 19 Jun 2020 11:29 Operator: RMinam
Sample : SVF016WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

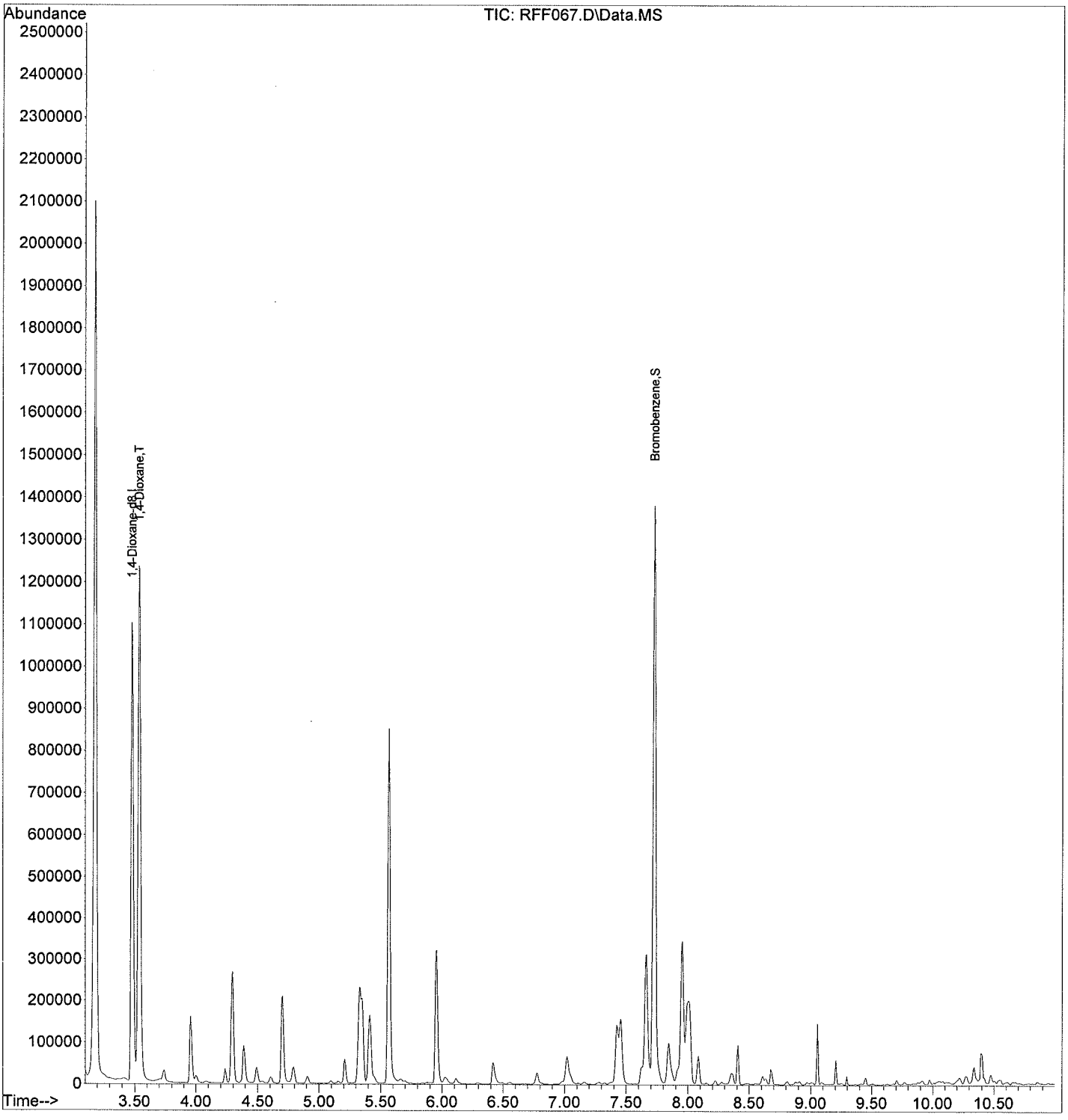
Data File : C:\msdchem\1\DATA\20F19\RFF067.D Vial: 10
Acq On : 19 Jun 2020 12:45 Operator: RMinam
Sample : 20F154-02M Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:26:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	167478	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	248910	17.69	ppm	0.00
Spiked Amount 20.000			Recovery =	88.45%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	179434	15.53	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF067.D Vial: 10
Acq On : 19 Jun 2020 12:45 Operator: RMinam
Sample : 20F154-02M Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:26:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

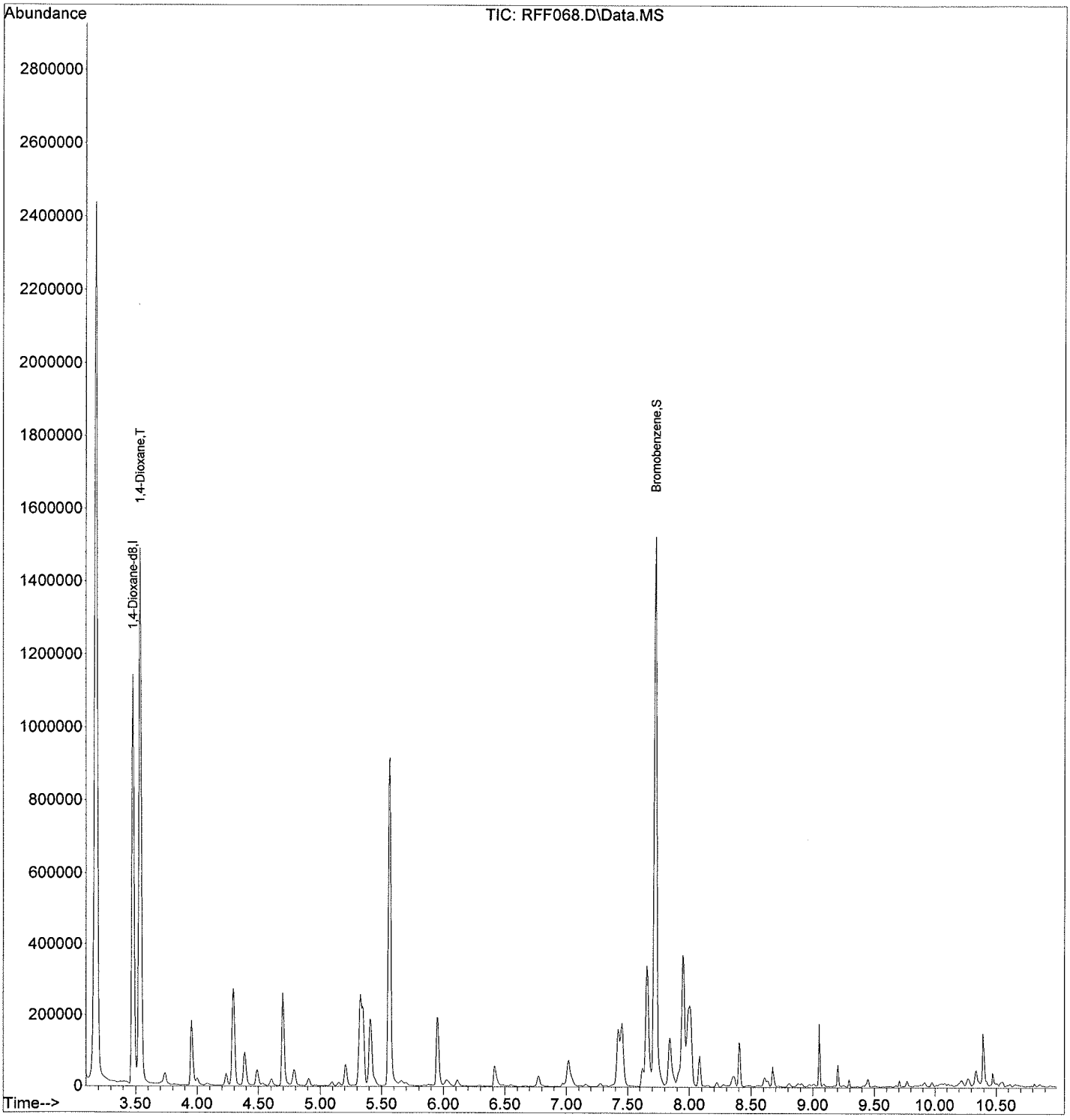
Data File : C:\msdchem\1\DATA\20F19\RFF068.D Vial: 11
Acq On : 19 Jun 2020 13:04 Operator: RMinam
Sample : 20F154-02S Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:26:29 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	171420	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	270077	18.75	ppm	0.00
Spiked Amount 20.000			Recovery =	93.75%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	196168	16.58	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF068.D Vial: 11
Acq On : 19 Jun 2020 13:04 Operator: RMinam
Sample : 20F154-02S Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:26:29 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVFOF03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

MW 6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

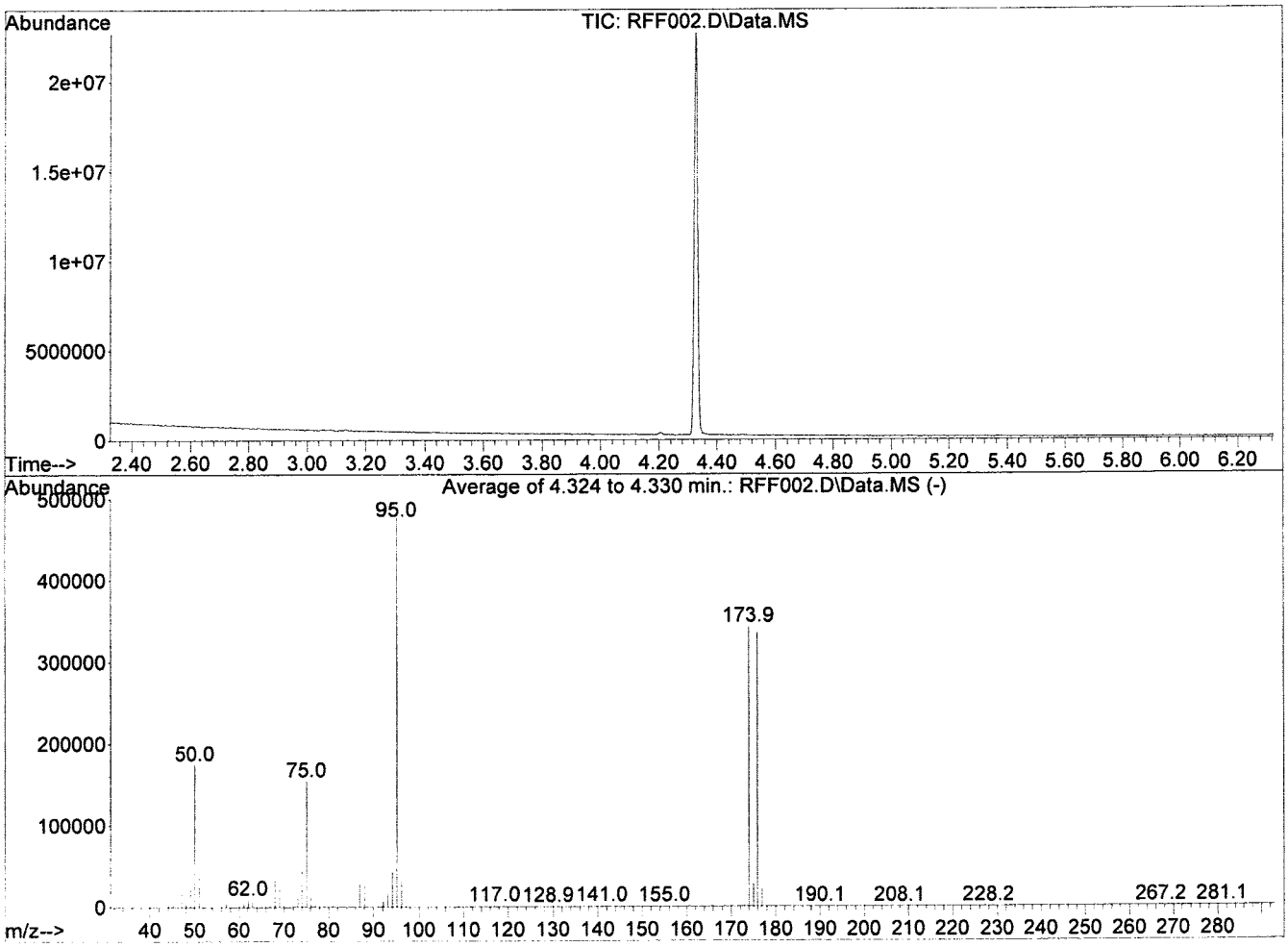
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

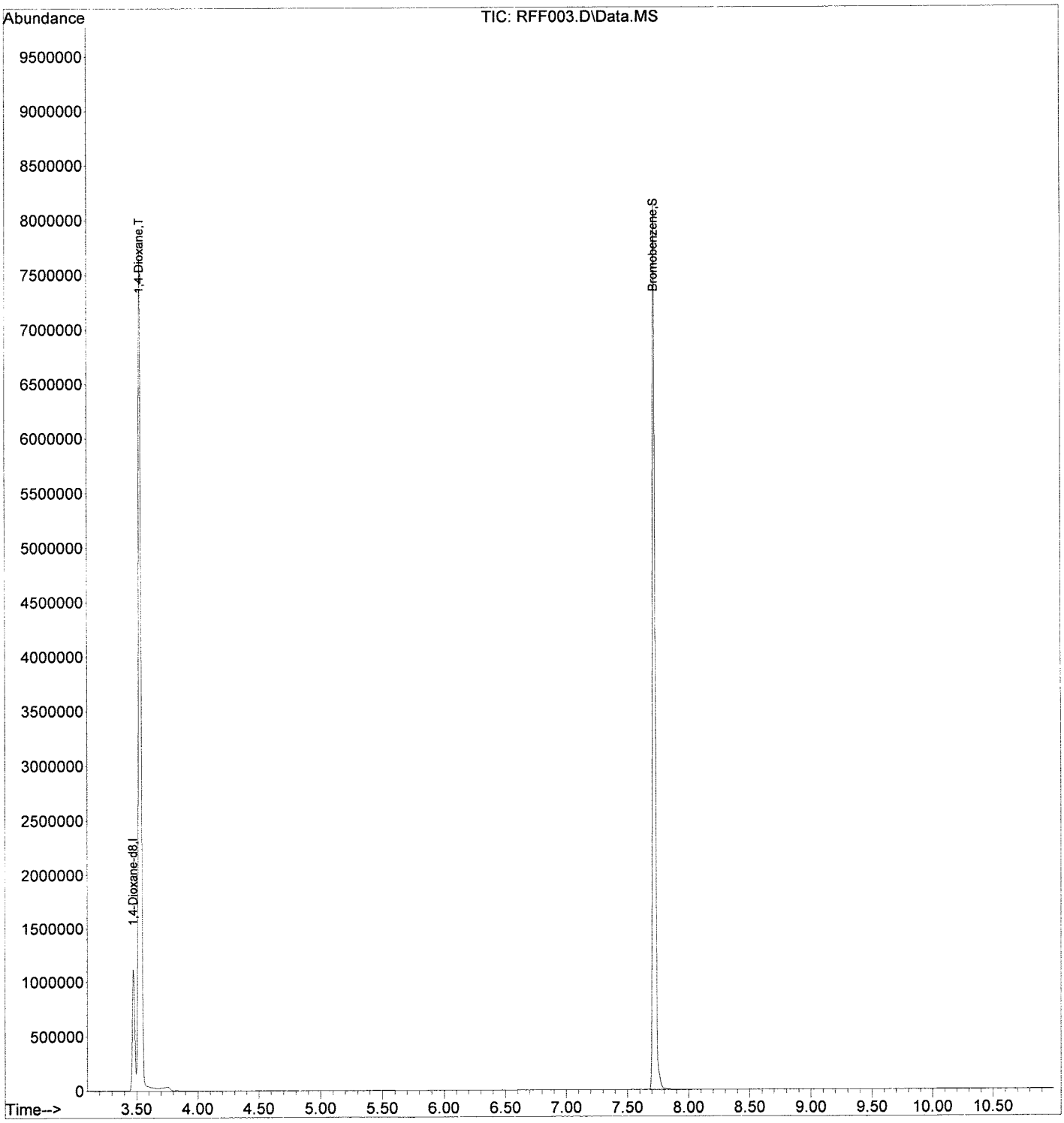
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



VLv 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

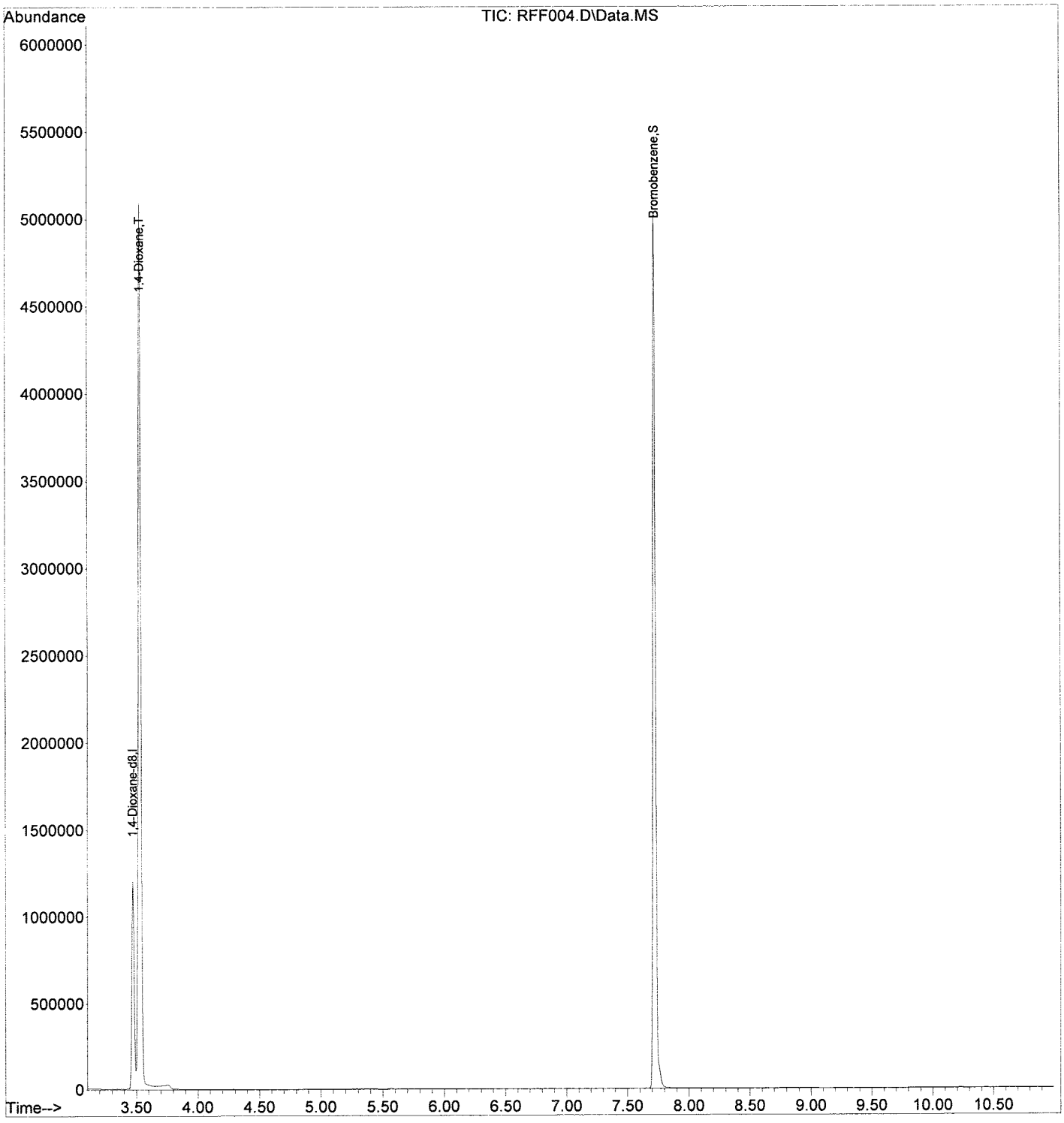
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

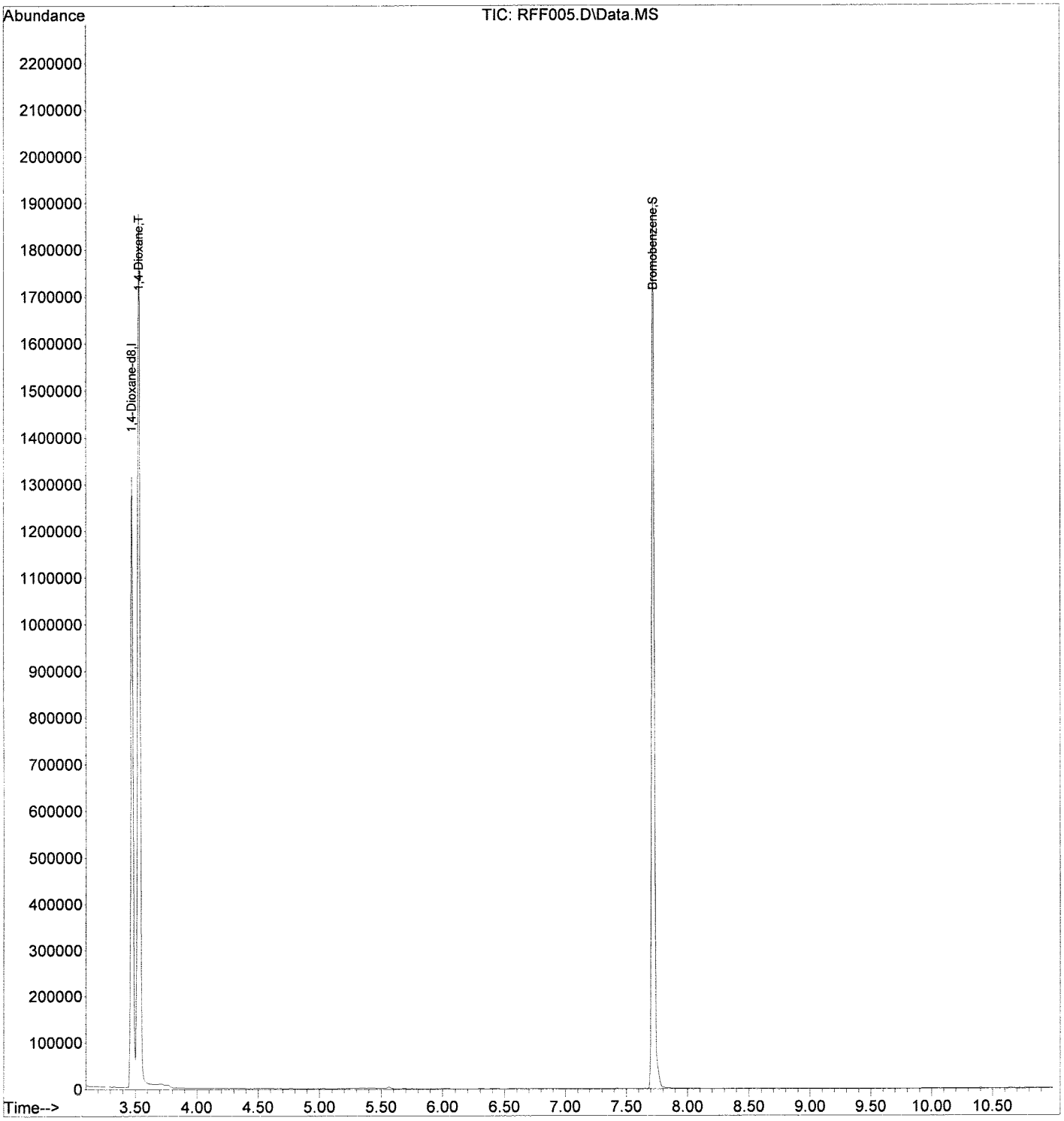
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

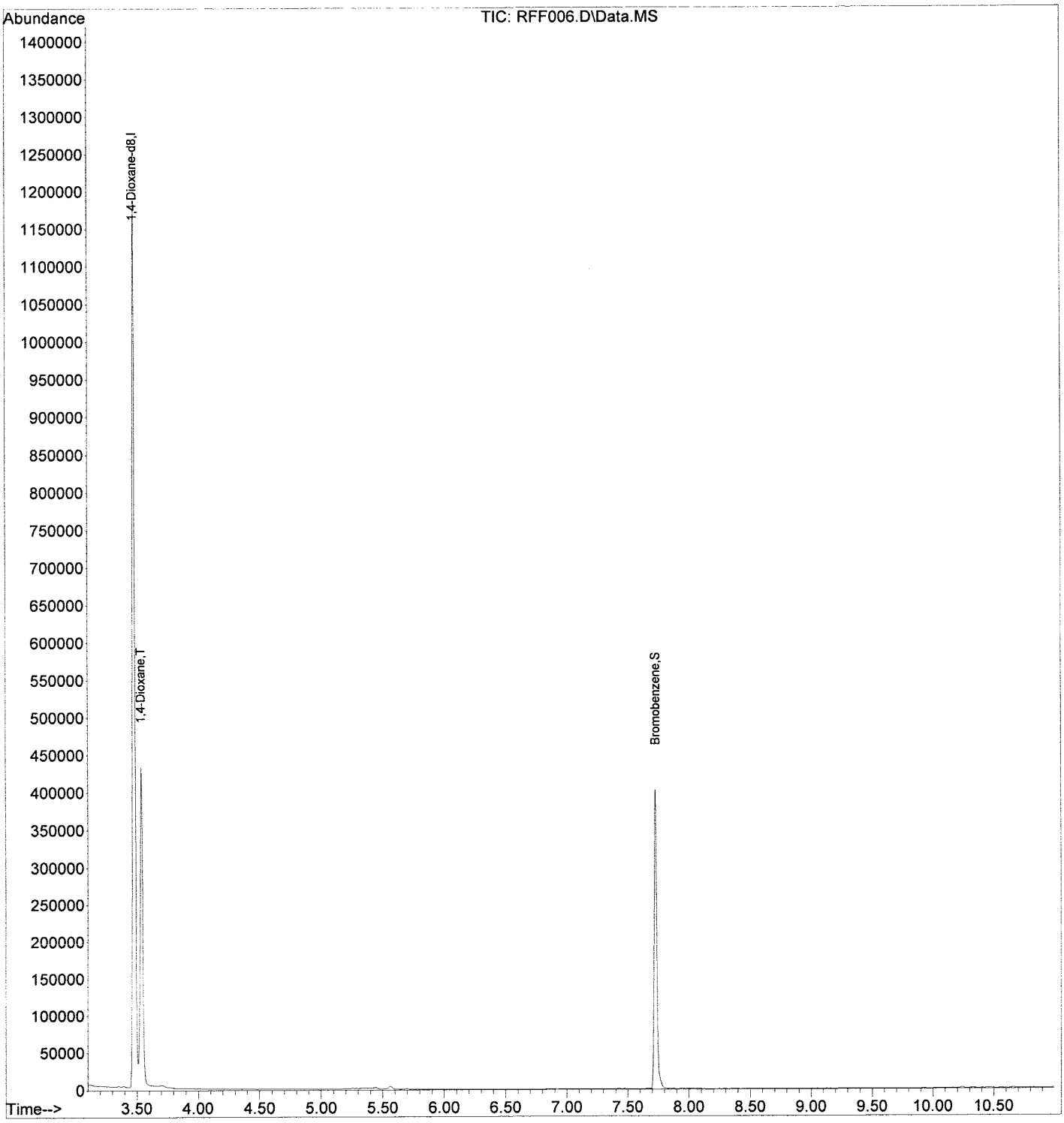
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

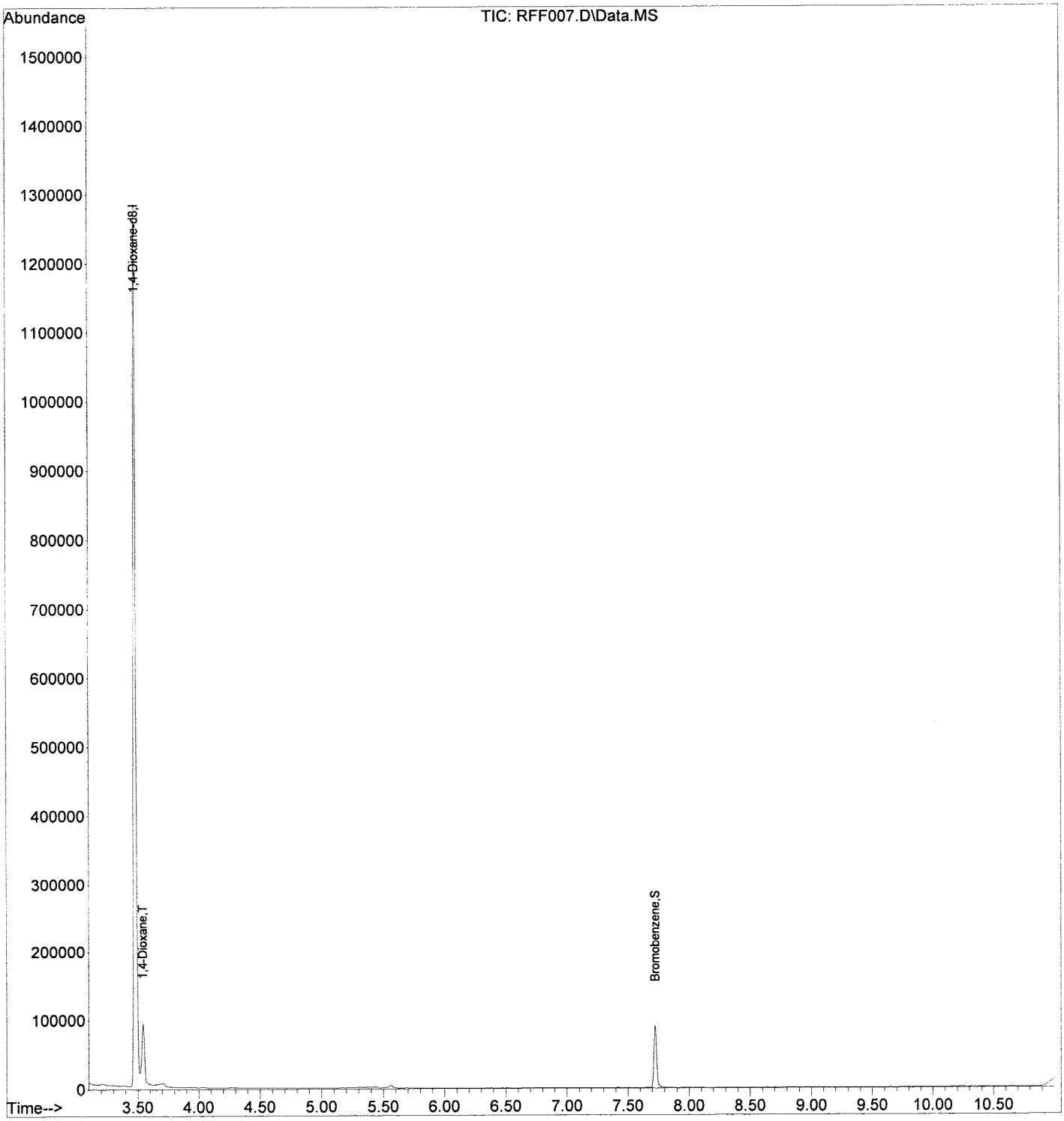
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

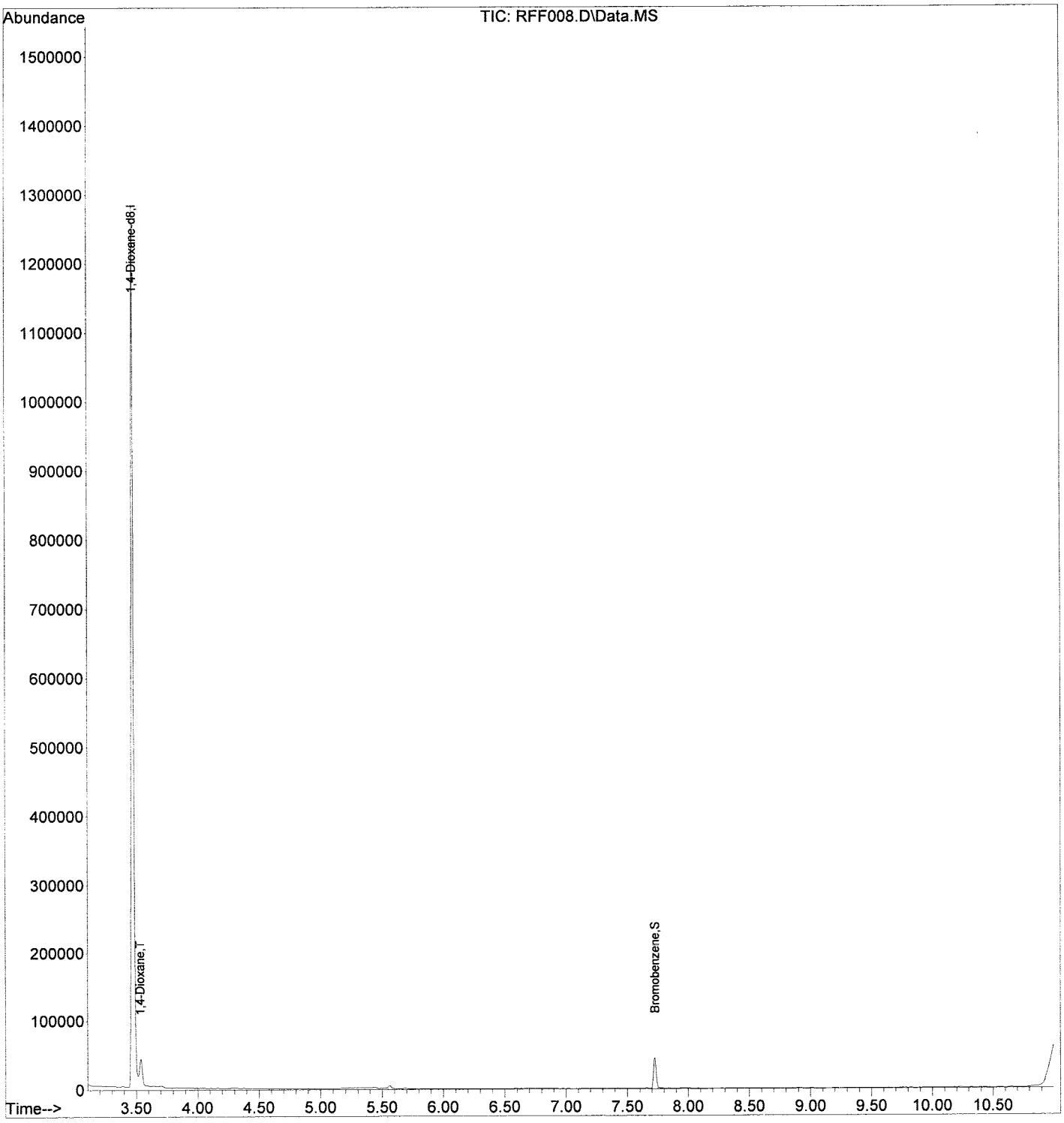
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

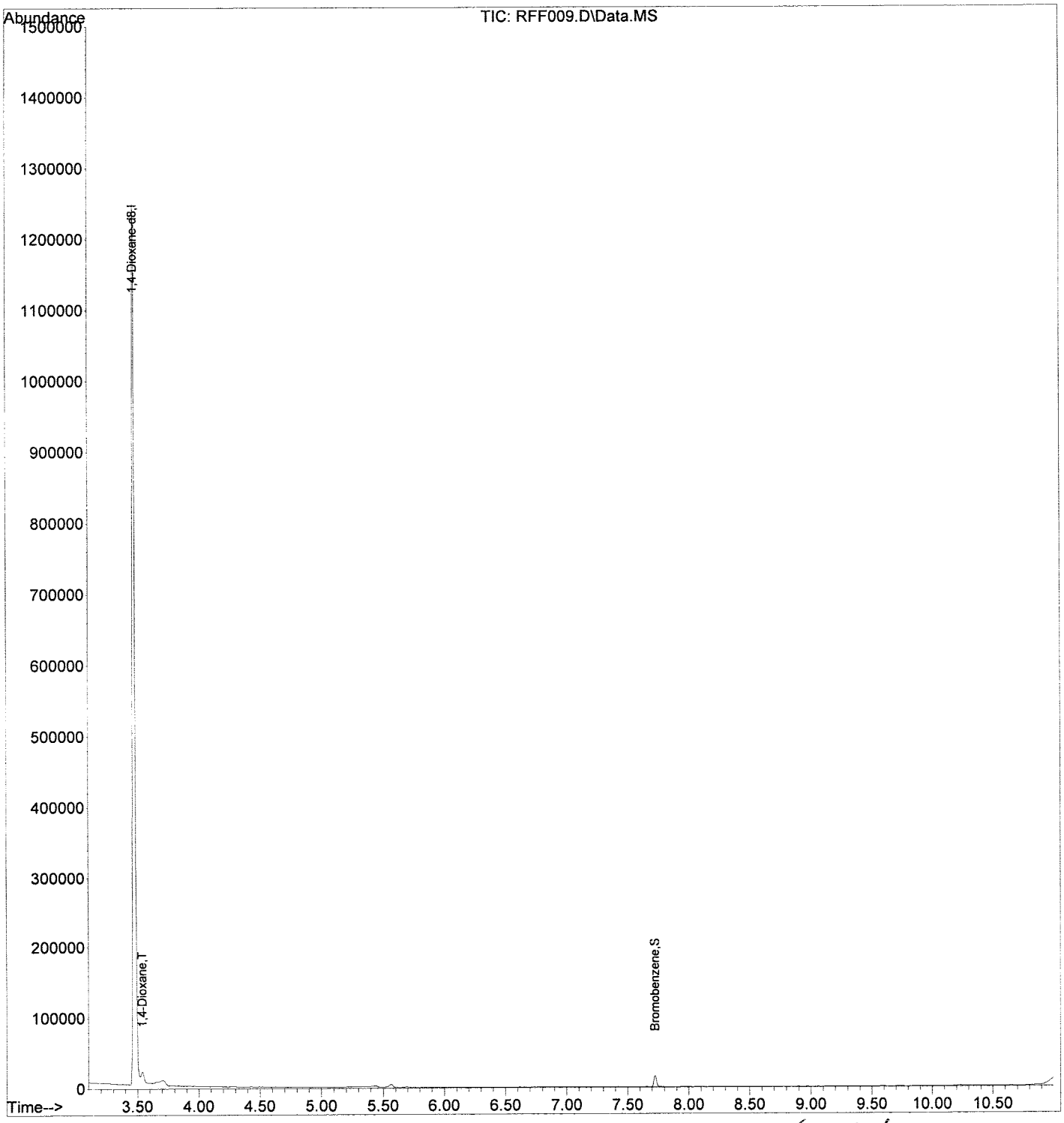
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

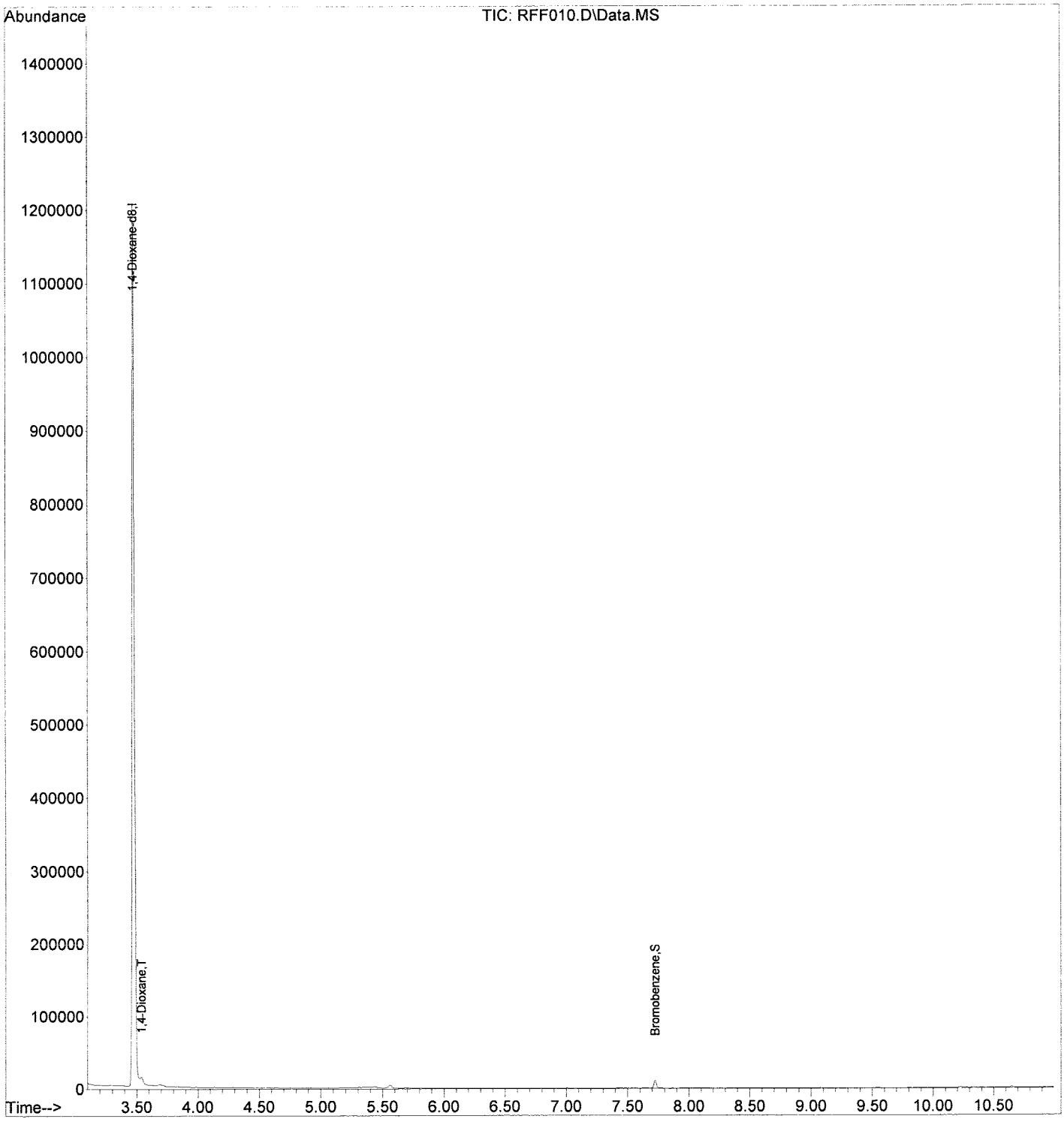
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

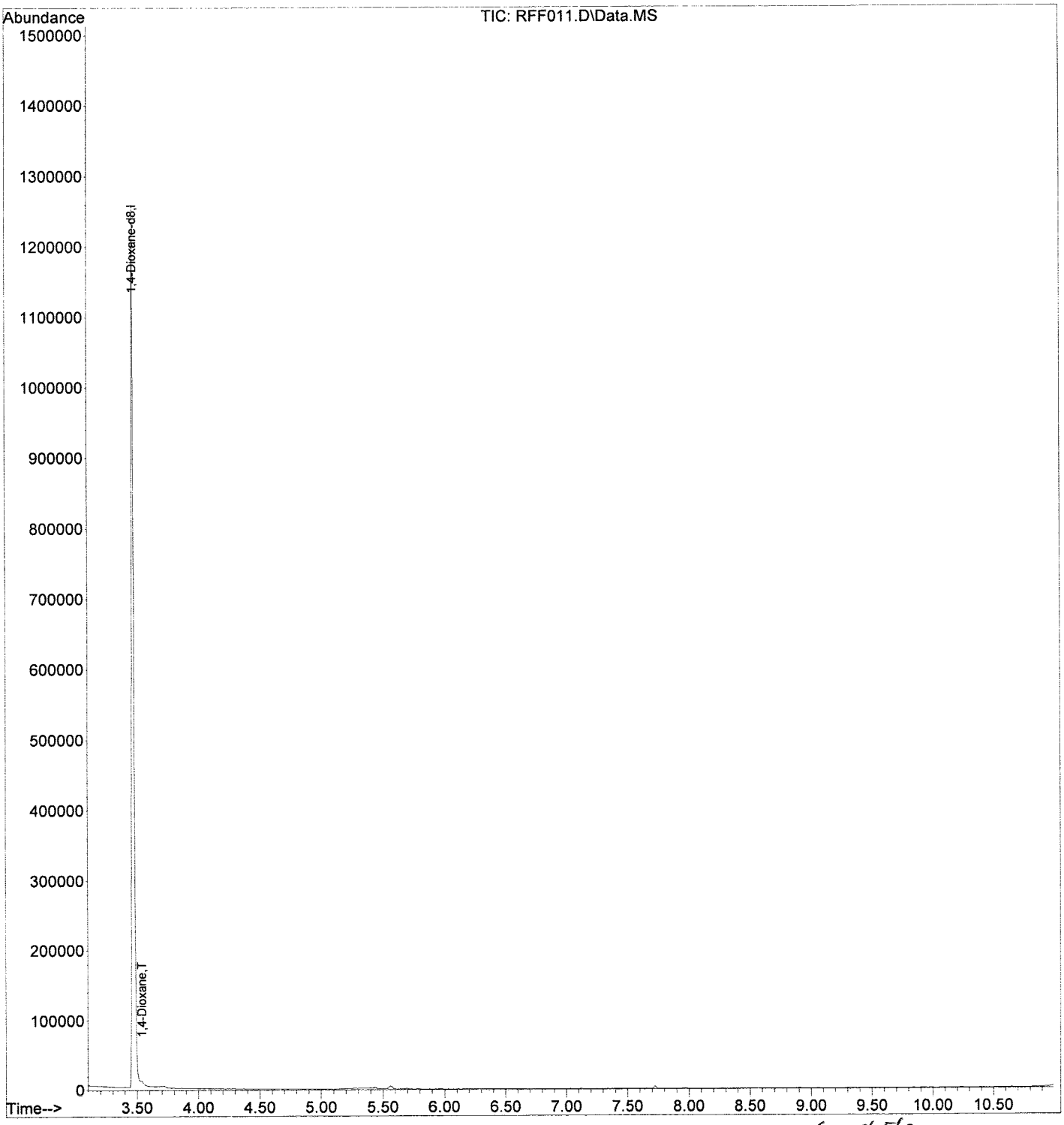
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SVF0F03G.M Thu Jun 04 14:42:14 2020 F0 Page: 2

VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

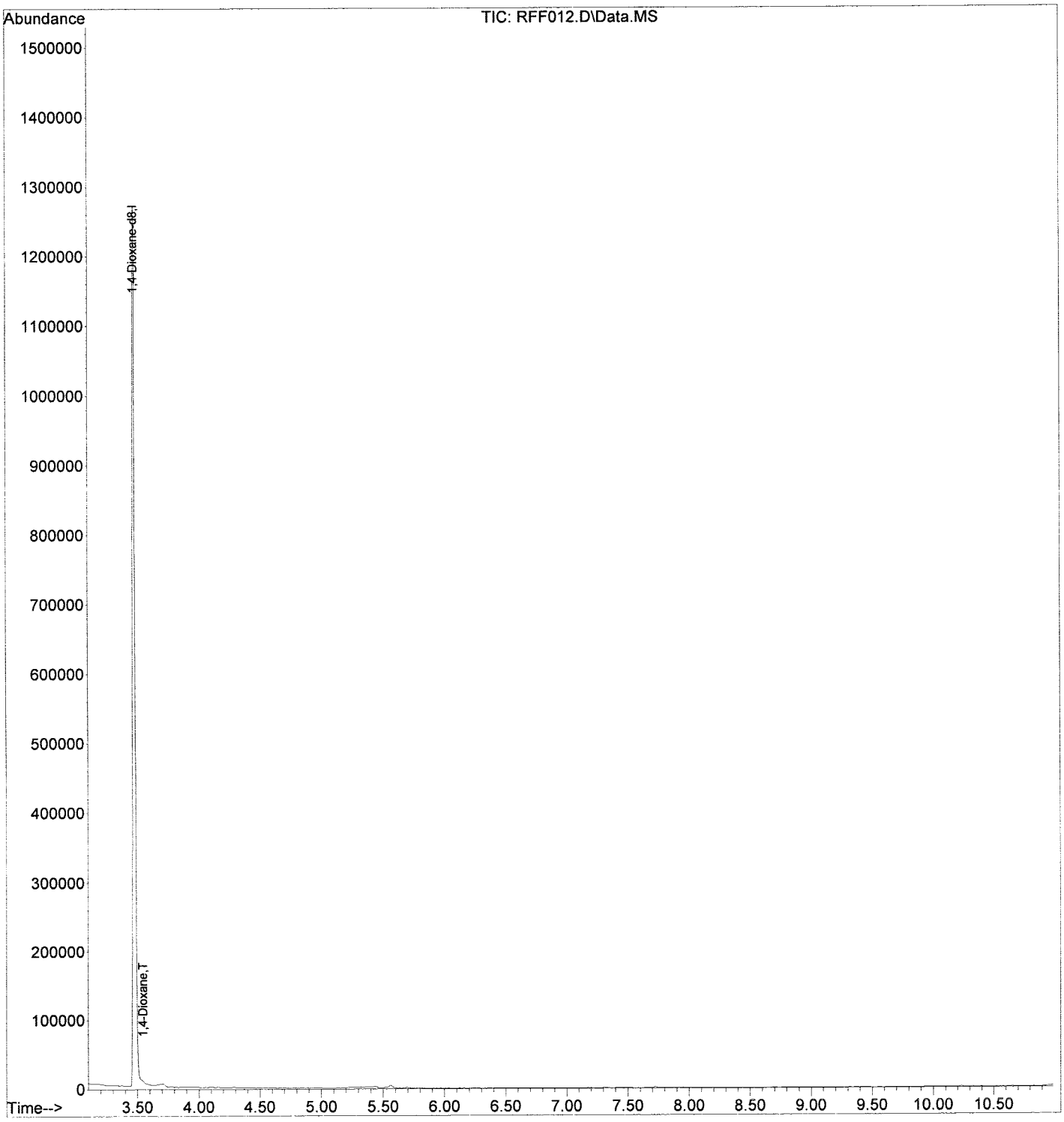
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery =	107.70%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

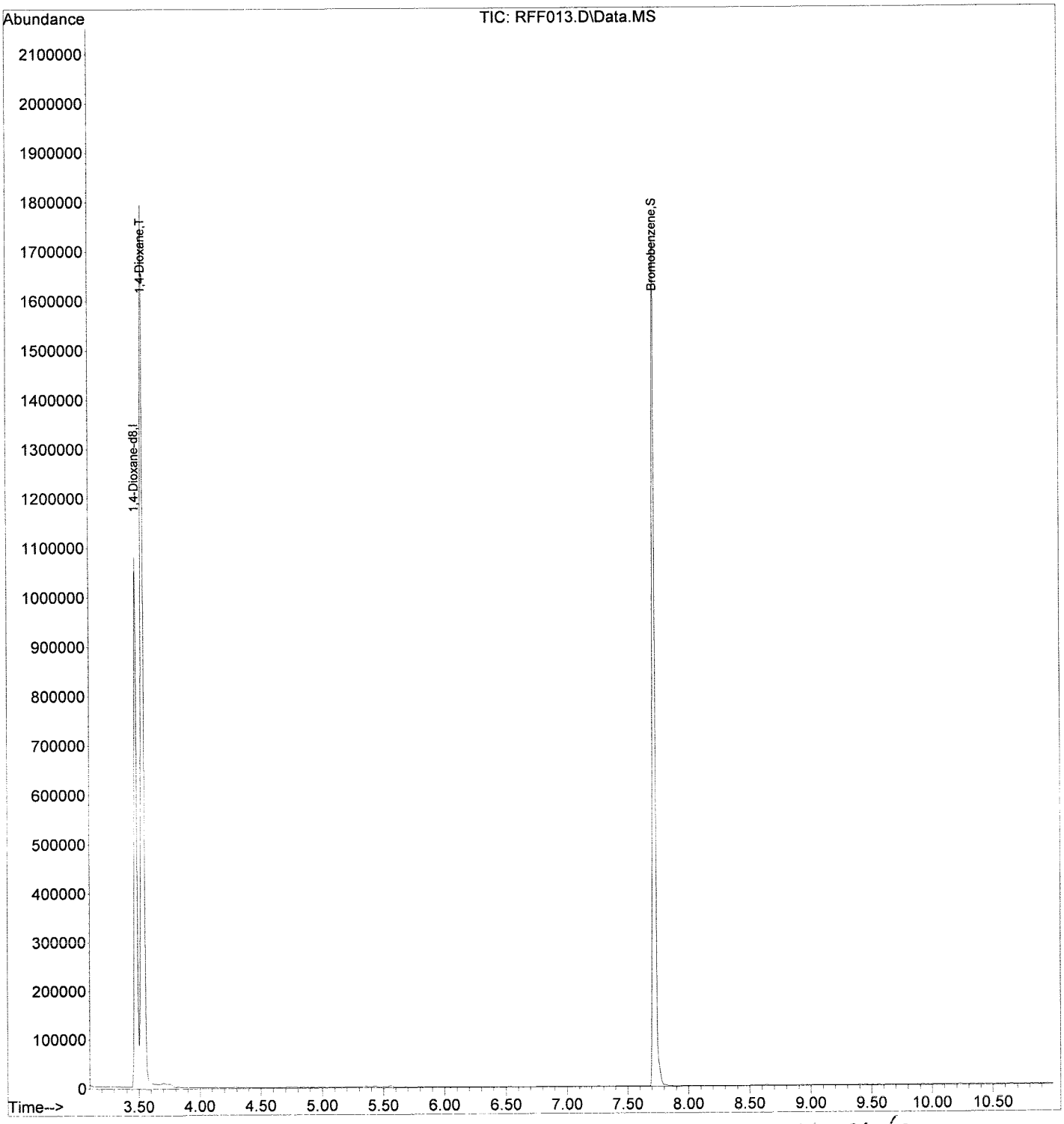
(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D
Acq On : 03 Jun 2020 17:34
Sample : ISVF0F03G1 20ppm
Misc : F0
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



KV 6/5/20

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F154

Lab File ID: RFF059 DFTPP Injection Date: 06/19/20

Instrument ID: F0 DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	37.486
75	30 - 60% of mass 95	35.266
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.600
173	Less than 2% of mass 174	0.118(.16)1
174	50 - 100% of mass 95	73.485
175	5 - 9% of mass 174	5.715(7.78)1
176	95 - 101% % of mass 174	71.945(97.9)1
177	5 - 9% % of mass 176	4.659(6.48)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G09	RFF060	06/19/20	10:36
2	MBLK1W	SVF016WB	RFF061	06/19/20	10:56
3	LCS1W	SVF016WL	RFF062	06/19/20	11:10
4	LCD1W	SVF016WC	RFF063	06/19/20	11:29
5	MW20S-GW061720	20F154-01	RFF065	06/19/20	12:07
6	MW02-GW061720	20F154-02	RFF066	06/19/20	12:26
7	MW02-GW061720MS	20F154-02M	RFF067	06/19/20	12:45
8	MW02-GW061720MSD	20F154-02S	RFF068	06/19/20	13:04
9	MW20D-GW061720	20F154-05	RFF069	06/19/20	13:24
10	FD04-GW061720	20F154-06	RFF070	06/19/20	13:43

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Project: VA SALT LAKE CITY
Lab Code: EMAX
SDG No: 20F154
Lab File ID: RFF005
Date Analyzed: 06/03/20
Instrument ID: F0
Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	193433	3.48
2	MBLK1W	146501	3.48
3	LCS1W	163805	3.48
4	LCD1W	171903	3.48
5	MW20S-GW061720	160280	3.47
6	MW02-GW061720	170399	3.48
7	MW02-GW061720MS	167478	3.48
8	MW02-GW061720MSD	171420	3.48
9	MW20D-GW061720	169450	3.48
10	FD04-GW061720	170976	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :FO
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF060
IC File :RFF005

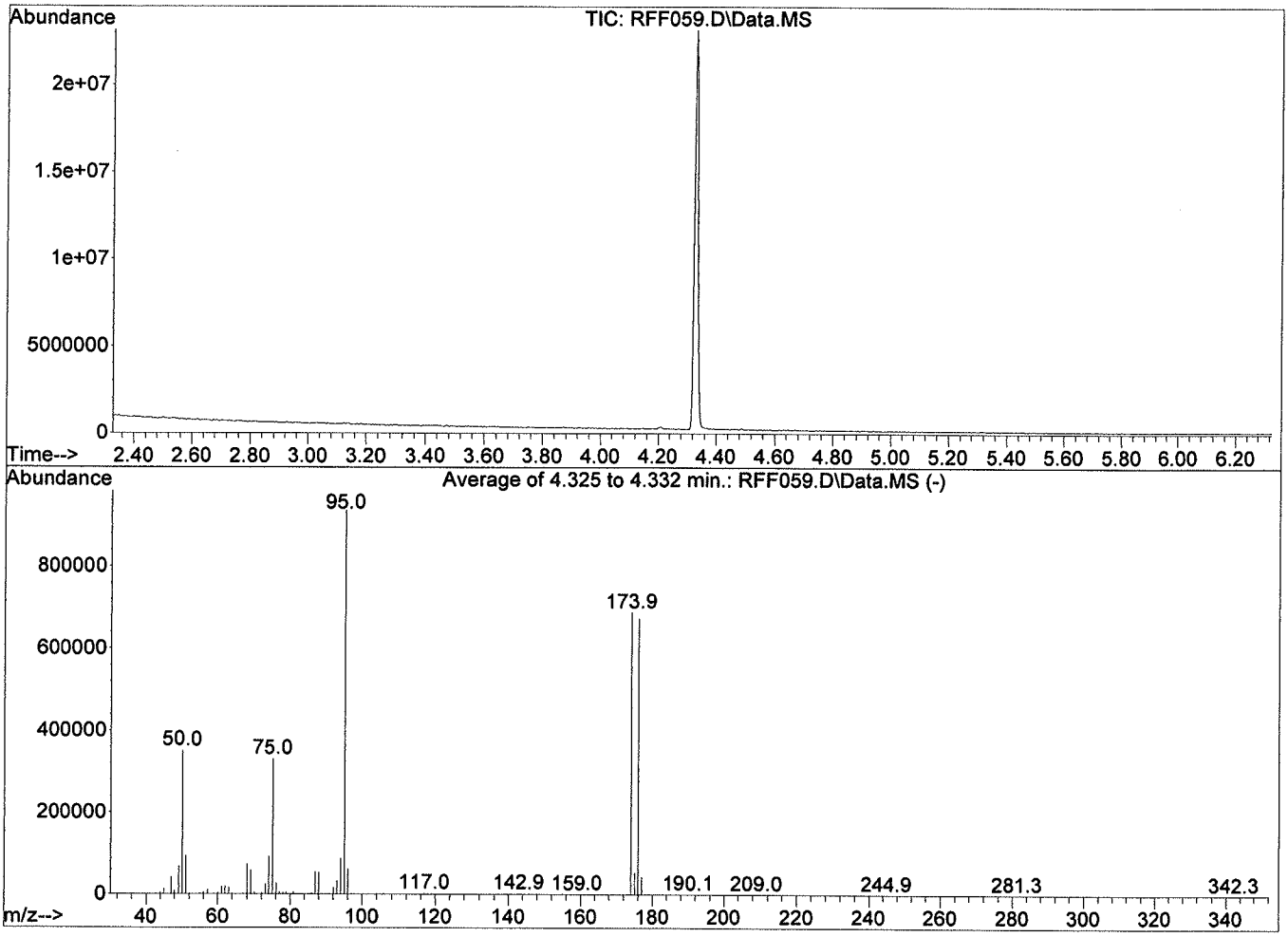
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVFOF03G
Date_Time :06/19/20 10:36

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	193433	1	1	3.477	3.472	0				
2	1,4-Dioxane	20.266	1.3	270517	1.399	1.380	3.534	3.536	9.42				
3	Bromobenzene	20.224	1.1	328665	1.699	1.680	7.725	7.724	2.58				

Data Path : C:\msdchem\1\DATA\20F19\
Data File : RFF059.D
Acq On : 19 Jun 2020 10:18
Operator : RMinam
Sample : BFBF0F03G09
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 634

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	37.5	351001	PASS
75	95	30	60	35.3	330216	PASS
95	95	100	100	100.0	936363	PASS
96	95	5	9	6.6	61801	PASS
173	174	0.00	2	0.2	1106	PASS
174	95	50	100	73.5	688085	PASS
175	174	5	9	7.8	53509	PASS
176	174	95	101	97.9	673664	PASS
177	176	5	9	6.5	43624	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	97	0.00
2	T	1,4-Dioxane	20.000	20.266	-1.3	101	0.00
3	S	Bromobenzene	20.000	20.224	-1.1	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	97	0.00
2	T	1,4-Dioxane	1.380	1.399	-1.4	101	0.00
3	S	Bromobenzene	1.680	1.699	-1.1	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

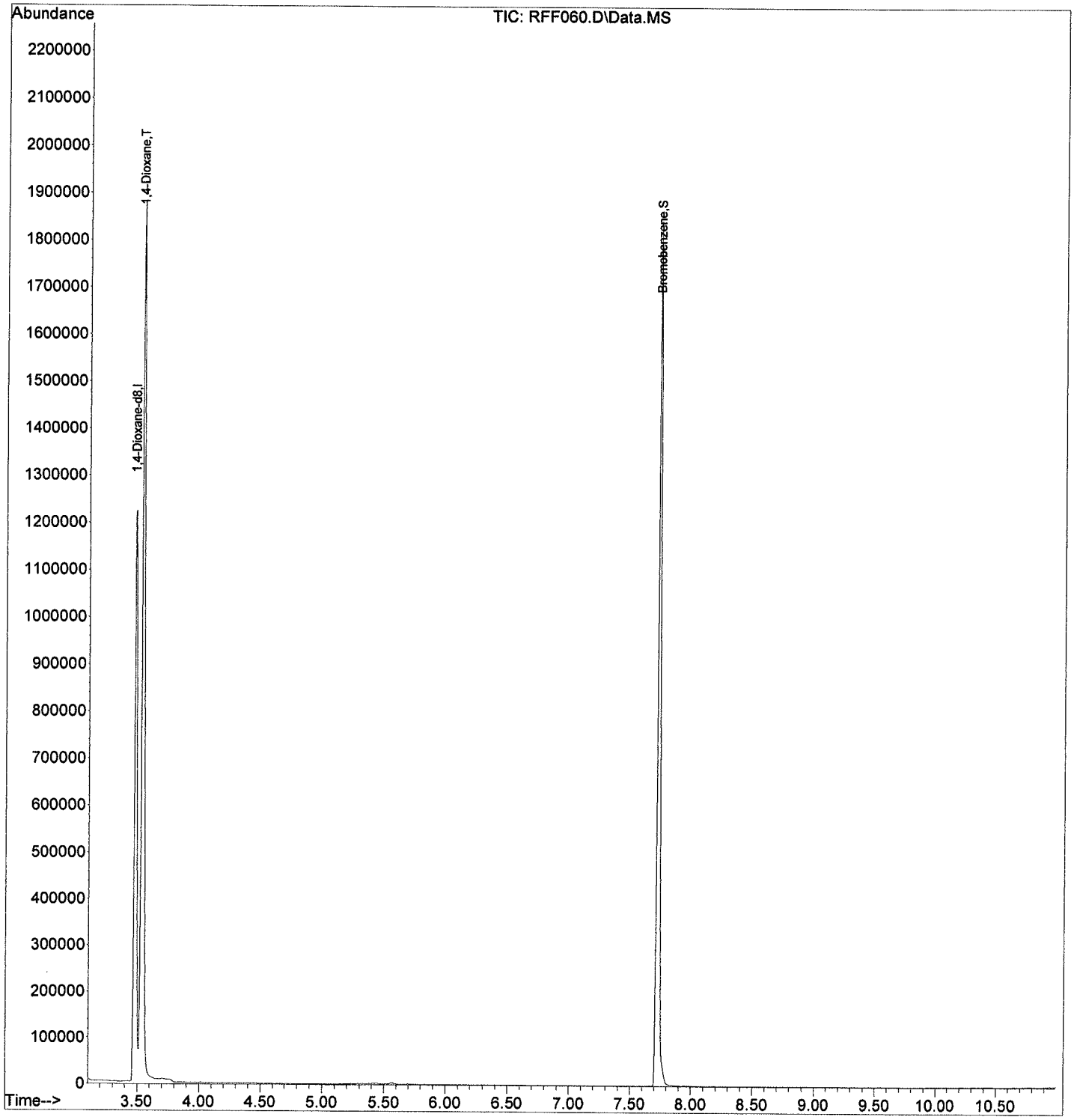
Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	193433	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	328665	20.22	ppm	0.00
Spiked Amount 20.000			Recovery =	101.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270517	20.27	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F03G3

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 (RM 6/5/20)	1			
	002	BFBF0F0301				
	003	SVF0F03G1				100 ppm
	004	2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	10				0.05
	013	ISVF0F03G1				ICV

RM 06/04/20

Instrument No:	F0

INITIAL CALIBRATION REFERENCE

Date	SVF0F03G
ICAL ID	06/03/20

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	0.05-100
BFB	-09-02	50
ICV	-09-03	20

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F03

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AF0-007

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/19/20 10:18 End Date/Time: 06/19/20 14:44

ANALYTICAL BATCH: CVSF0F03G09

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF058	IBF0F03G09				
	059	BFBF0F03G09				
	060	CSVF0F03G09				
SVF016W	061	SVF016WB	ix		x	
	062	↓ L	↓	↓	↓	
	063	↓ C				
	064	20F145-01				
	065	20F154-01				
	066	-02				
	067	-02M				
	068	-02S				
	069	-05				
	070	↓ -06				
	071	20F155-01				
	072	↓ -02	↓		↓	
	073	ESVF0F03G10				

RM 06/19/20

Instrument No:	F0

INITIAL CALIBRATION REFERENCE

Date	06/03/20
ICAL ID	SVF0F03G

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	20
BFB	↓ -09-02	50

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F19

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: 06/19/20

Disposed By: RM

This page is checked during data review.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF016W
Matrix: WATER
Micropipette ID: 1000 µl : PE00-03
Micropipette ID: 100 µl : PE97C-03
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS/1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SWB-006-21-01
H_2SO_4	
NaOH	SPIB-12-92-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-009-02-07
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	17031561

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF016-MB			2
-WL			2
-WC			2
F145-01			2
F154-01			2
-02			2
-02M			3
-02S			3
-05			3
-06			3
F155-01			3
-02			3

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output. > 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2	35	35
3	35	35
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: HW
Witnessed By: ER
Standard Added By: HW
Checked By:
Extract Received By: RM 06/19/20
Location: SE01-10
Disposed By:
Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF016W01	SVF016WB	1000	ml	6/18/20 12:38	2	1000	2	1	
20SVF016W02	SVF016WL	1000	ml	6/18/20 12:38	2	1000	2	1	1,4-Dioxane
20SVF016W03	SVF016WC	1000	ml	6/18/20 12:38	2	1000	2	1	1,4-Dioxane
20SVF016W04	F145-01	920	ml	6/18/20 12:39	2	1000	2	1.09	
20SVF016W05	F154-01	950	ml	6/18/20 12:39	2	1000	2	1.05	Light yellow
20SVF016W06	F154-02	970	ml	6/18/20 12:39	2	1000	2	1.03	
20SVF016W07	F154-02M	970	ml	6/18/20 12:39	2	1000	2	1.03	1,4-Dioxane
20SVF016W08	F154-02S	960	ml	6/18/20 12:39	2	1000	2	1.04	1,4-Dioxane
20SVF016W09	F154-05	1000	ml	6/18/20 12:39	2	1000	2	1	
20SVF016W10	F154-06	1060	ml	6/18/20 12:39	2	1000	2	0.94	
20SVF016W11	F155-01	980	ml	6/18/20 12:39	2	1000	2	1.02	
20SVF016W12	F155-02	970	ml	6/18/20 12:39	2	1000	2	1.03	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/18/20 12:30 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: HWang

☑ Extraction Ended @ 6/19/20 6:30 ☑ pHAdj(≥11) @ 6/18/20 12:30 Vial Cal Ref.: VC-19-020 Checked By:

Comments: volume entered after extraction started, pH=7 for all samples, chlorine not detected Date 6/19/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F154

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD RSK-175
DISSOLVED GASES

A total of four(4) water samples were received on 06/18/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF012WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF012WL/DGF012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. F154-02M/F154-02S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F154
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF012WB	1	NA	06/18/2009:38	06/18/2009:00	BF18003A	BF18002A	DGF012W	Method Blank
LCS1W	DGF012WL	1	NA	06/18/2009:51	06/18/2009:00	BF18004A	BF18002A	DGF012W	Lab Control Sample (LCS)
LCD1W	DGF012WC	1	NA	06/18/2010:04	06/18/2009:00	BF18005A	BF18002A	DGF012W	LCS Duplicate
MW20S-GW061720	F154-01	1	NA	06/18/2011:46	06/18/2009:00	BF18010A	BF18009A	DGF012W	Field Sample
MW02-GW061720	F154-02	1	NA	06/18/2011:58	06/18/2009:00	BF18011A	BF18009A	DGF012W	Field Sample
MW02-GW061720MS	F154-02M	1	NA	06/18/2012:10	06/18/2009:00	BF18012A	BF18009A	DGF012W	Matrix Spike Sample (MS)
MW02-GW061720MSD	F154-02S	1	NA	06/18/2012:23	06/18/2009:00	BF18013A	BF18009A	DGF012W	MS Duplicate (MSD)
MW20D-GW061720	F154-05	1	NA	06/18/2012:36	06/18/2009:00	BF18014A	BF18009A	DGF012W	Field Sample
FD04-GW061720	F154-06	1	NA	06/18/2012:49	06/18/2009:00	BF18015A	BF18009A	DGF012W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 09:00
Sample ID: MW20S-GW061720	Date Analyzed: 06/18/20 11:46
Lab Samp ID: F154-01	Dilution Factor: 1
Lab File ID: BF18010A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

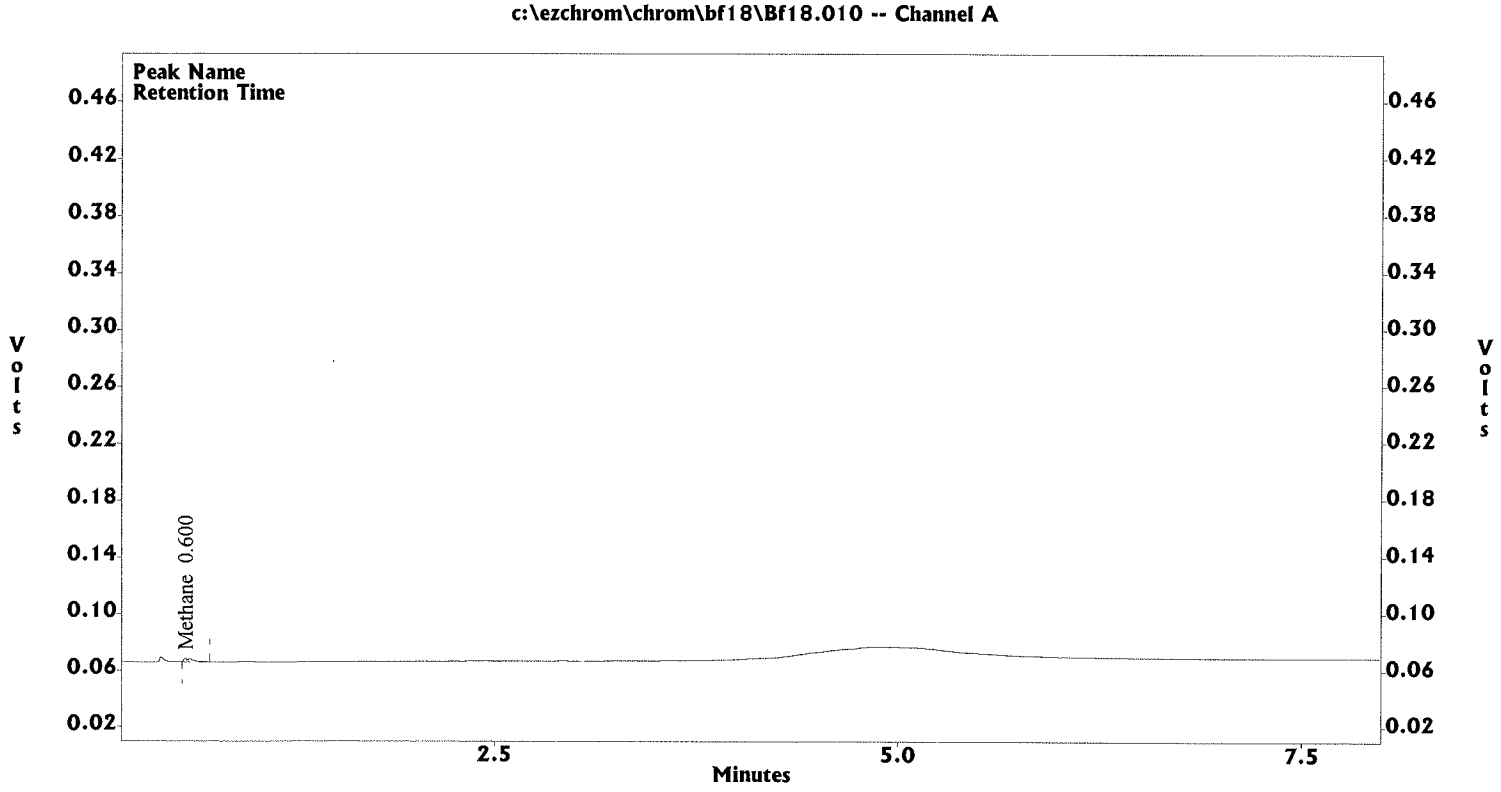
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.52J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.010
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-01
Acquired : Jun 18, 2020 11:46:14
Printed : Jun 18, 2020 11:54:15
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	7319	13975.2	0.524
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 09:00
Sample ID: MW02-GW061720	Date Analyzed: 06/18/20 11:58
Lab Samp ID: F154-02	Dilution Factor: 1
Lab File ID: BF18011A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

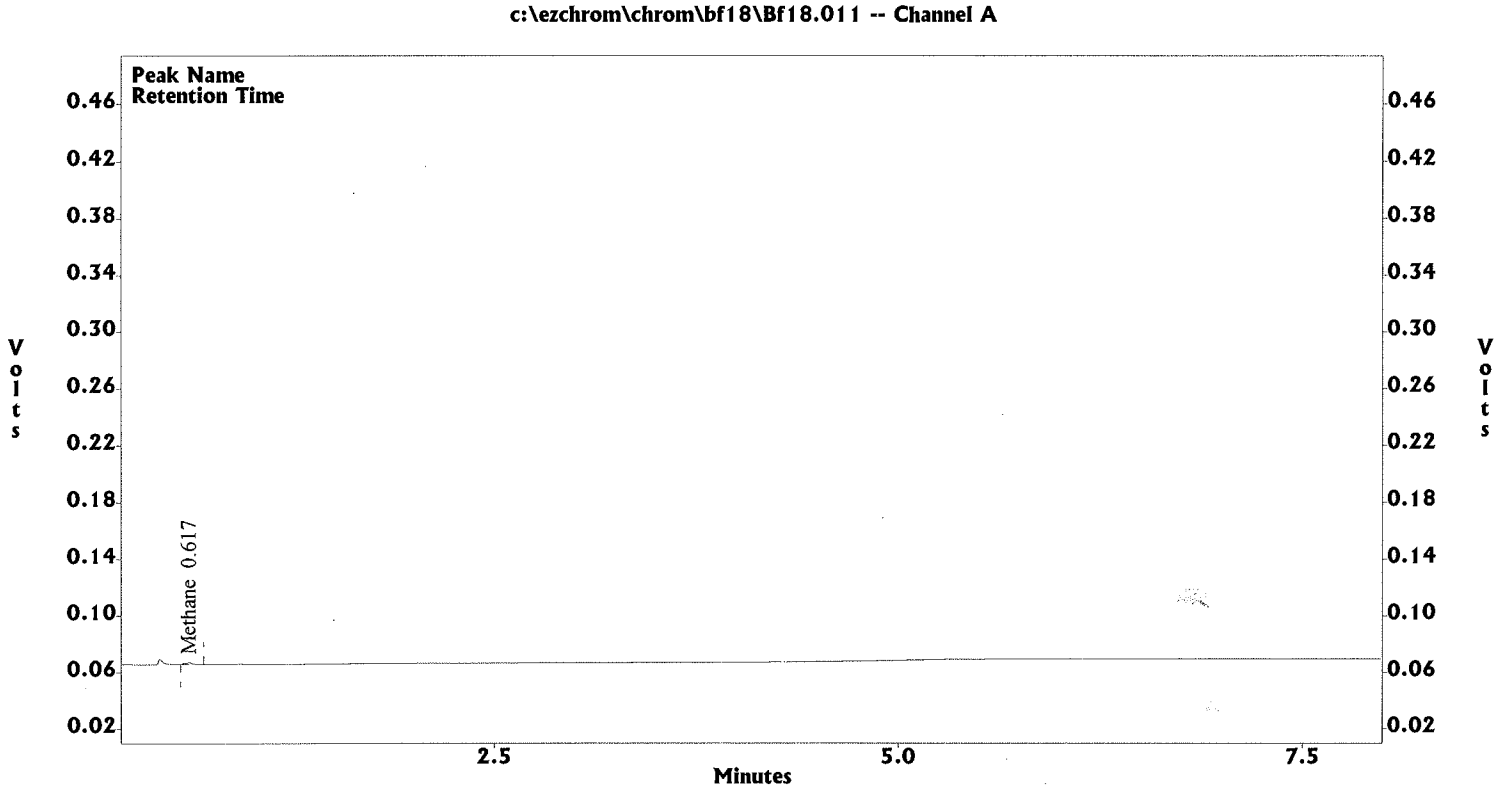
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.28J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.011
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-02
Acquired : Jun 18, 2020 11:58:32
Printed : Jun 18, 2020 12:06:33
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	3913	13975.2	0.280
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 09:00
Sample ID: MW20D-GW061720	Date Analyzed: 06/18/20 12:36
Lab Samp ID: F154-05	Dilution Factor: 1
Lab File ID: BF18014A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

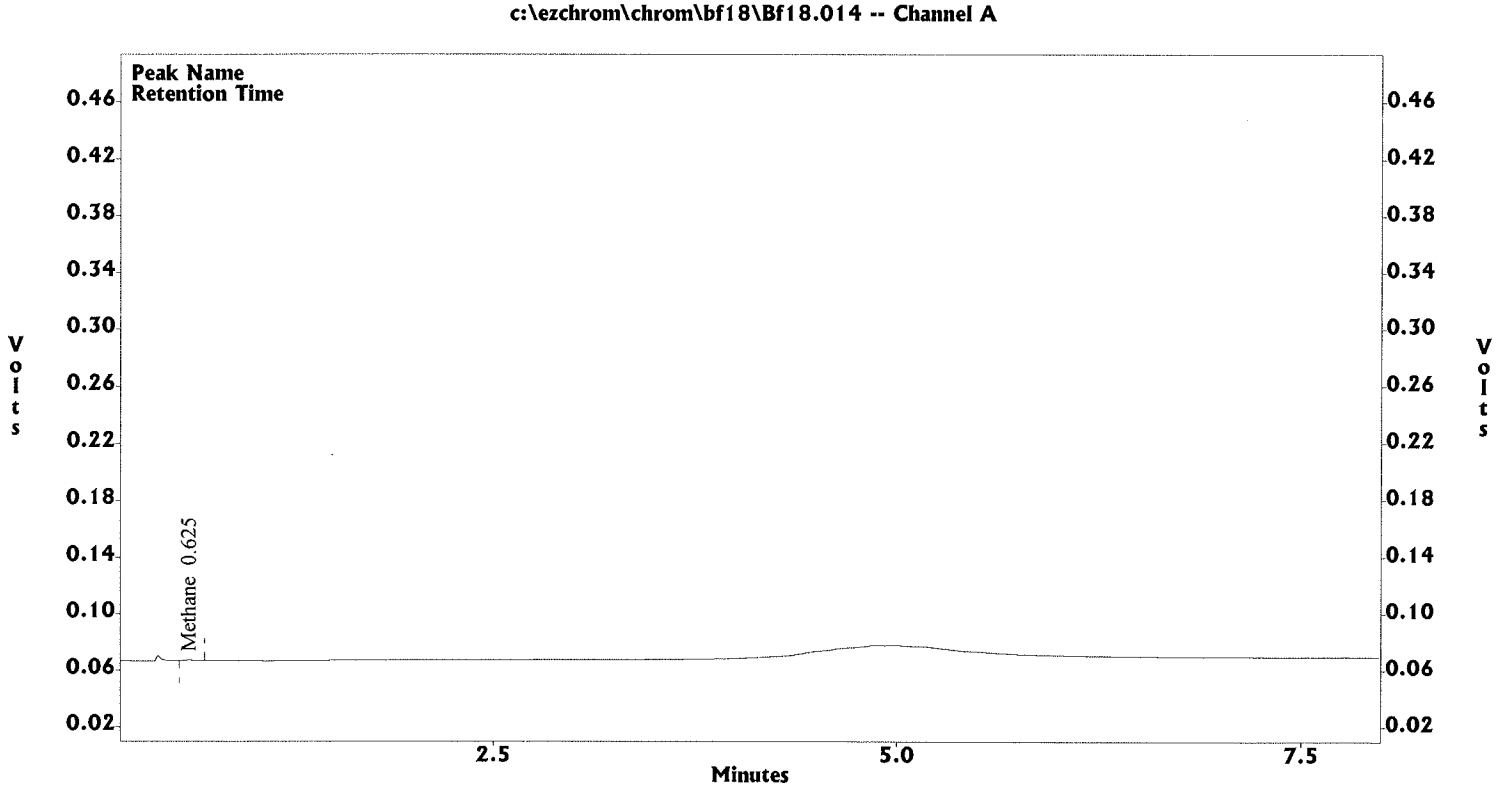
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.014
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-05
Acquired : Jun 18, 2020 12:36:02
Printed : Jun 18, 2020 12:44:03
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1919	13975.2	0.137
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F154	Date Extracted: 06/18/20 09:00
Sample ID: FD04-GW061720	Date Analyzed: 06/18/20 12:49
Lab Samp ID: F154-06	Dilution Factor: 1
Lab File ID: BF18015A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

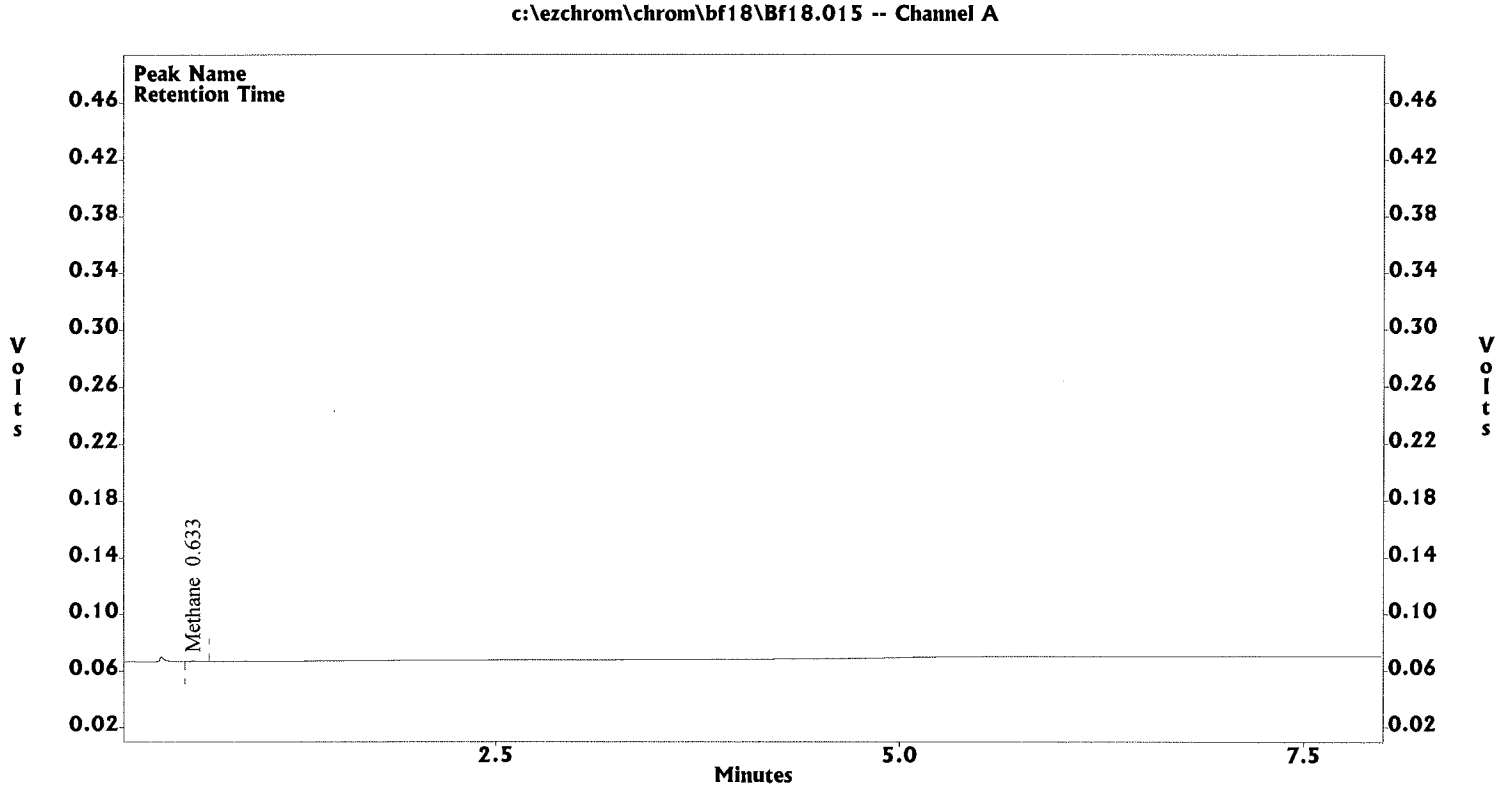
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.015
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-06
Acquired : Jun 18, 2020 12:49:19
Printed : Jun 18, 2020 12:57:20
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.633	1153	13975.2	0.083
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F154	Date Extracted:	06/18/20 09:00
Sample ID:	MBLK1W	Date Analyzed:	06/18/20 09:38
Lab Samp ID:	DGF012WB	Dilution Factor:	1
Lab File ID:	BF18003A	Matrix :	WATER
Ext Btch ID:	DGF012W	% Moisture :	NA
Calib. Ref.:	BF18002A	Instrument ID :	GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF012WB	DGF012WL	DGF012WC		
LAB FILE ID:	BF18003A	BF18004A	BF18005A		
DATE EXTRACTED:	06/18/2009:00	06/18/2009:00	06/18/2009:00	DATE COLLECTED:	NA
DATE ANALYZED:	06/18/2009:38	06/18/2009:51	06/18/2010:04	DATE RECEIVED:	06/18/20
PREP. BATCH:	DGF012W	DGF012W	DGF012W		
CALIB. REF:	BF18002A	BF18002A	BF18002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	24.4	96	25.5	22.8	89	7	70-140	30
Ethene	ND	23.8	22.4	94	23.8	21.1	89	6	70-140	30
Methane	ND	13.6	13.5	99	13.6	12.7	93	6	70-130	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW02-GW061720				
LAB SAMP ID:	F154-02	F154-02M	F154-02S		
LAB FILE ID:	BF18011A	BF18012A	BF18013A		
DATE EXTRACTED:	06/18/2009:00	06/18/2009:00	06/18/2009:00	DATE COLLECTED:	06/17/20
DATE ANALYZED:	06/18/2011:58	06/18/2012:10	06/18/2012:23	DATE RECEIVED:	06/18/20
PREP. BATCH:	DGF012W	DGF012W	DGF012W		
CALIB. REF:	BF18009A	BF18009A	BF18009A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	24.1	95	25.5	23.5	92	2	70-140	30
Ethene	ND	23.8	22.1	93	23.8	21.7	91	2	70-140	30
Methane	0.280J	13.6	13.2	95	13.6	13.2	95	0	70-130	30

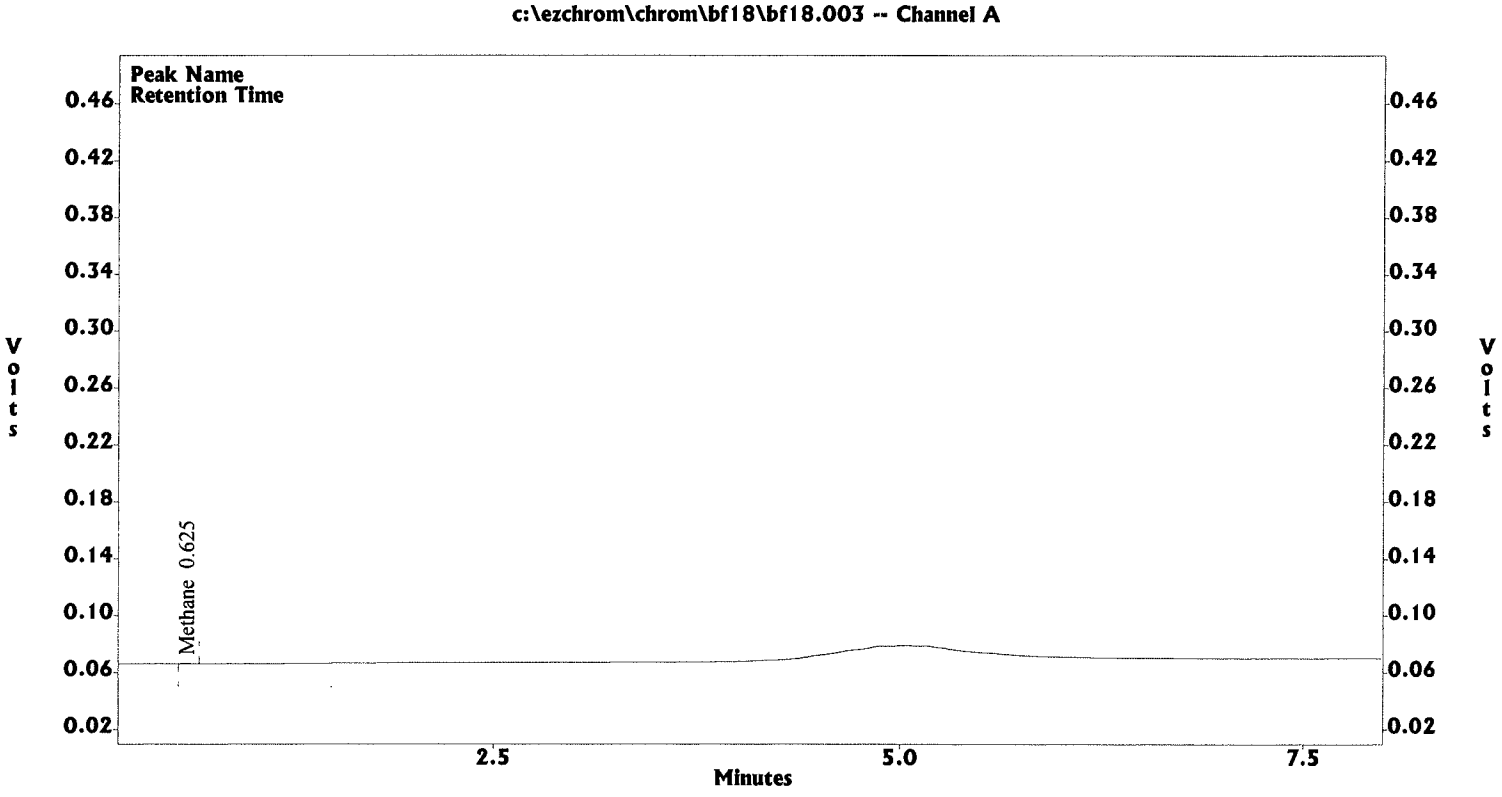
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\bf18.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DGF012WB
Acquired : Jun 18, 2020 09:38:03
Printed : Jun 18, 2020 09:53:52
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	618	13975.2	0.044
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.517	0	0.0	0.000
--	Ethane	2.967	0	0.0	0.000
--	Propane	5.408	0	0.0	0.000

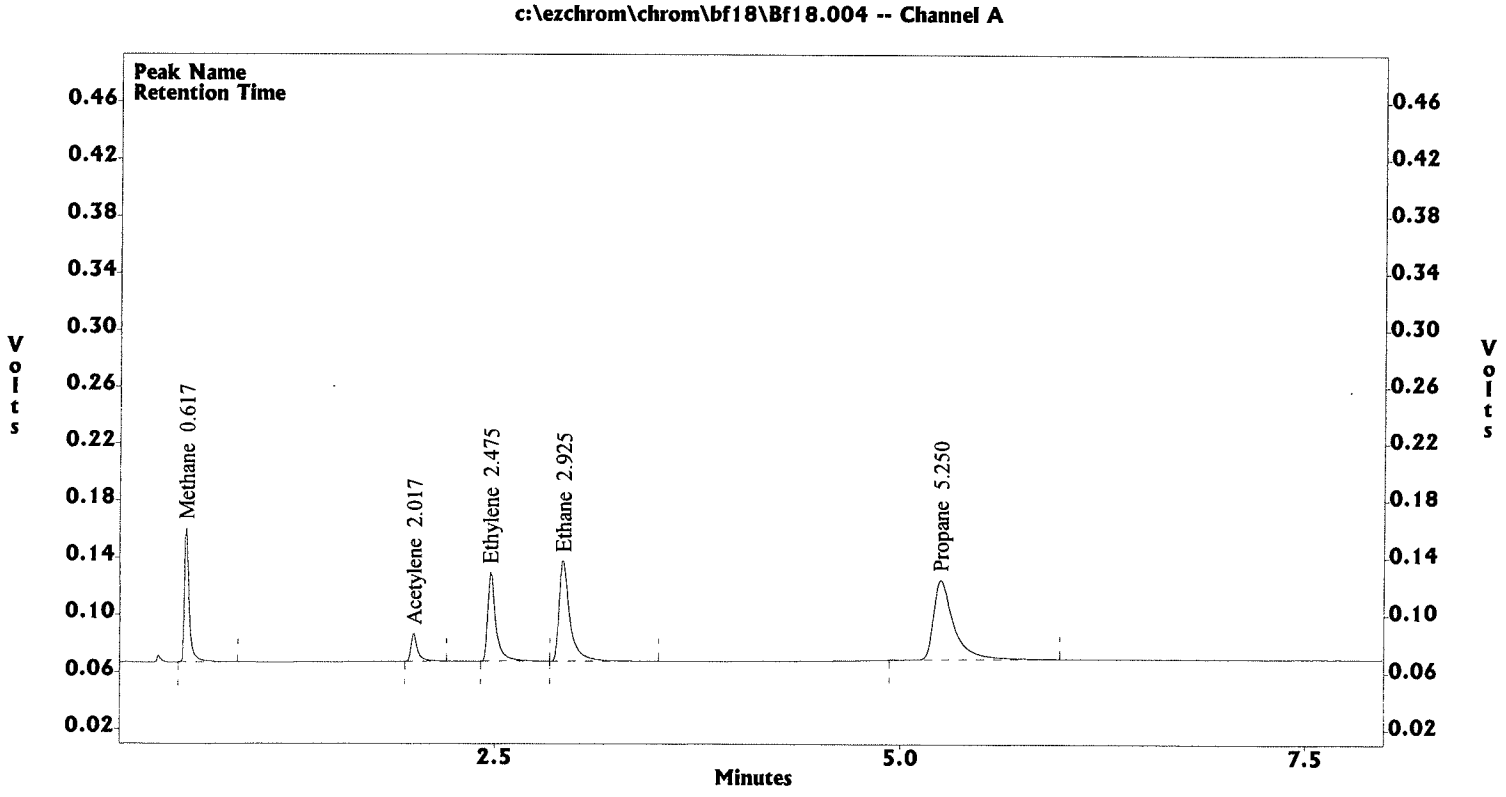


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.004
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF012WL
Acquired : Jun 18, 2020 09:51:55
Printed : Jun 18, 2020 09:59:56
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	188208	13975.2	13.467
2	Acetylene	2.017	54942	2483.4	22.124
3	Ethylene	2.475	212761	9519.0	22.351
4	Ethane	2.925	320077	13110.4	24.414
5	Propane	5.250	490289	13914.6	35.235

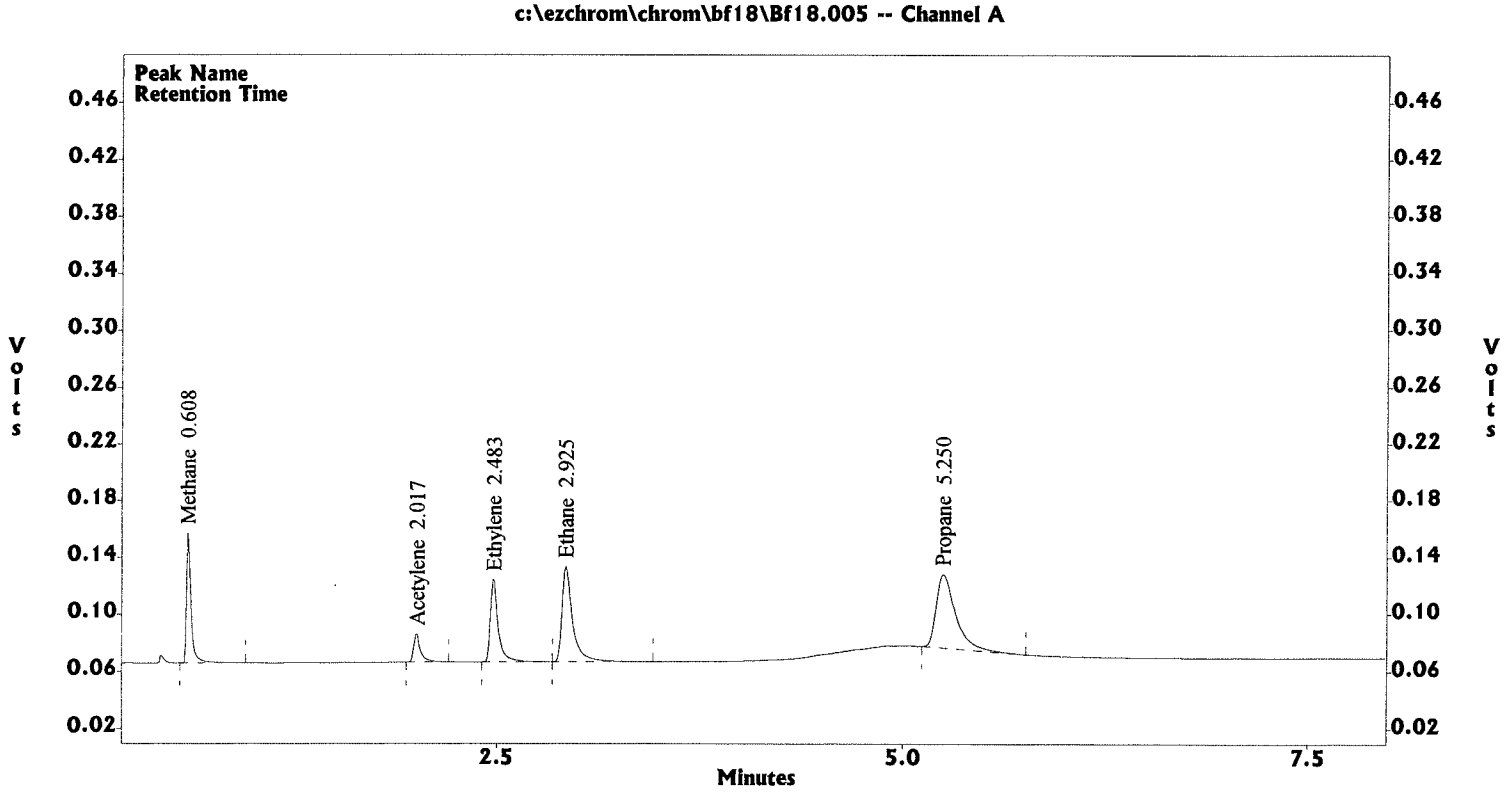


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.005
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF012WC
Acquired : Jun 18, 2020 10:04:27
Printed : Jun 18, 2020 10:12:29
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	177898	13975.2	12.730
2	Acetylene	2.017	55165	2483.4	22.214
3	Ethylene	2.483	200933	9519.0	21.109
4	Ethane	2.925	299333	13110.4	22.832
5	Propane	5.250	431111	13914.6	30.983

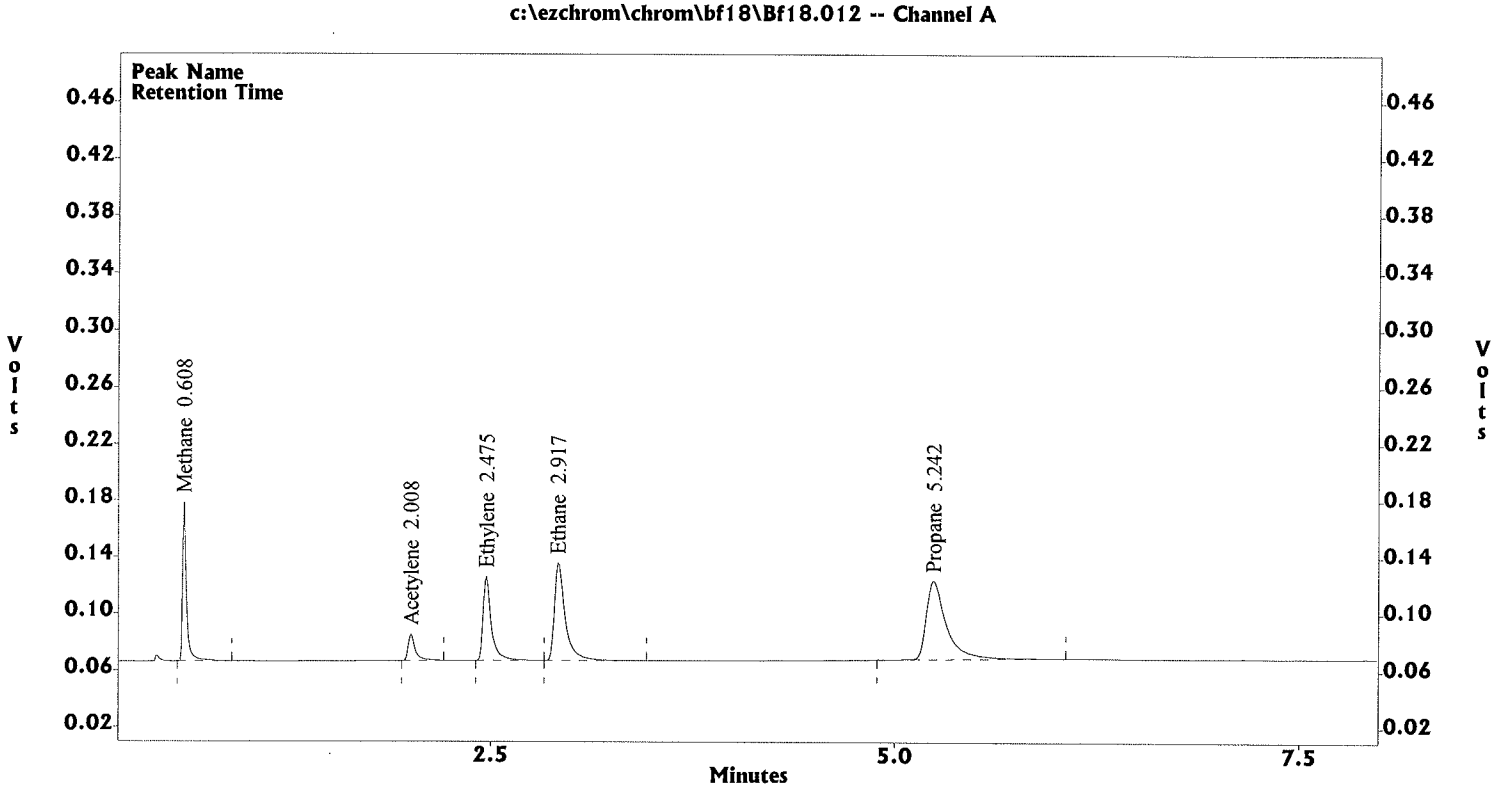


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.012
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-02M
Acquired : Jun 18, 2020 12:10:56
Printed : Jun 18, 2020 12:18:57
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	183939	13975.2	13.162
2	Acetylene	2.008	55187	2483.4	22.223
3	Ethylene	2.475	210270	9519.0	22.090
4	Ethane	2.917	315445	13110.4	24.061
5	Propane	5.242	491501	13914.6	35.323

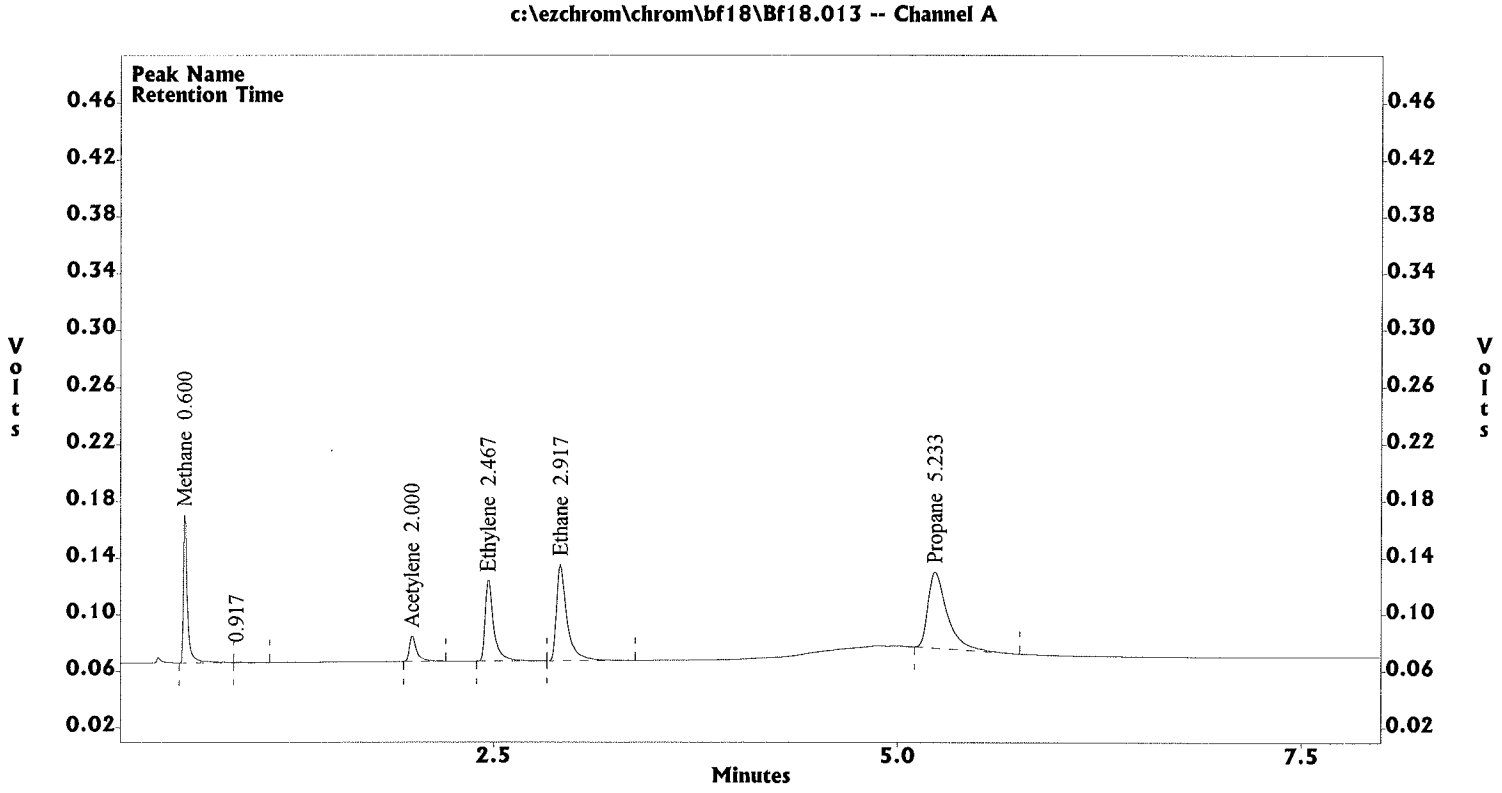


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.013
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F154-02S
Acquired : Jun 18, 2020 12:23:16
Printed : Jun 18, 2020 12:31:17
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	184589	13975.2	13.208
3	Acetylene	2.000	54661	2483.4	22.011
4	Ethylene	2.467	206226	9519.0	21.665
5	Ethane	2.917	308706	13110.4	23.547
6	Propane	5.233	445801	13914.6	32.038



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

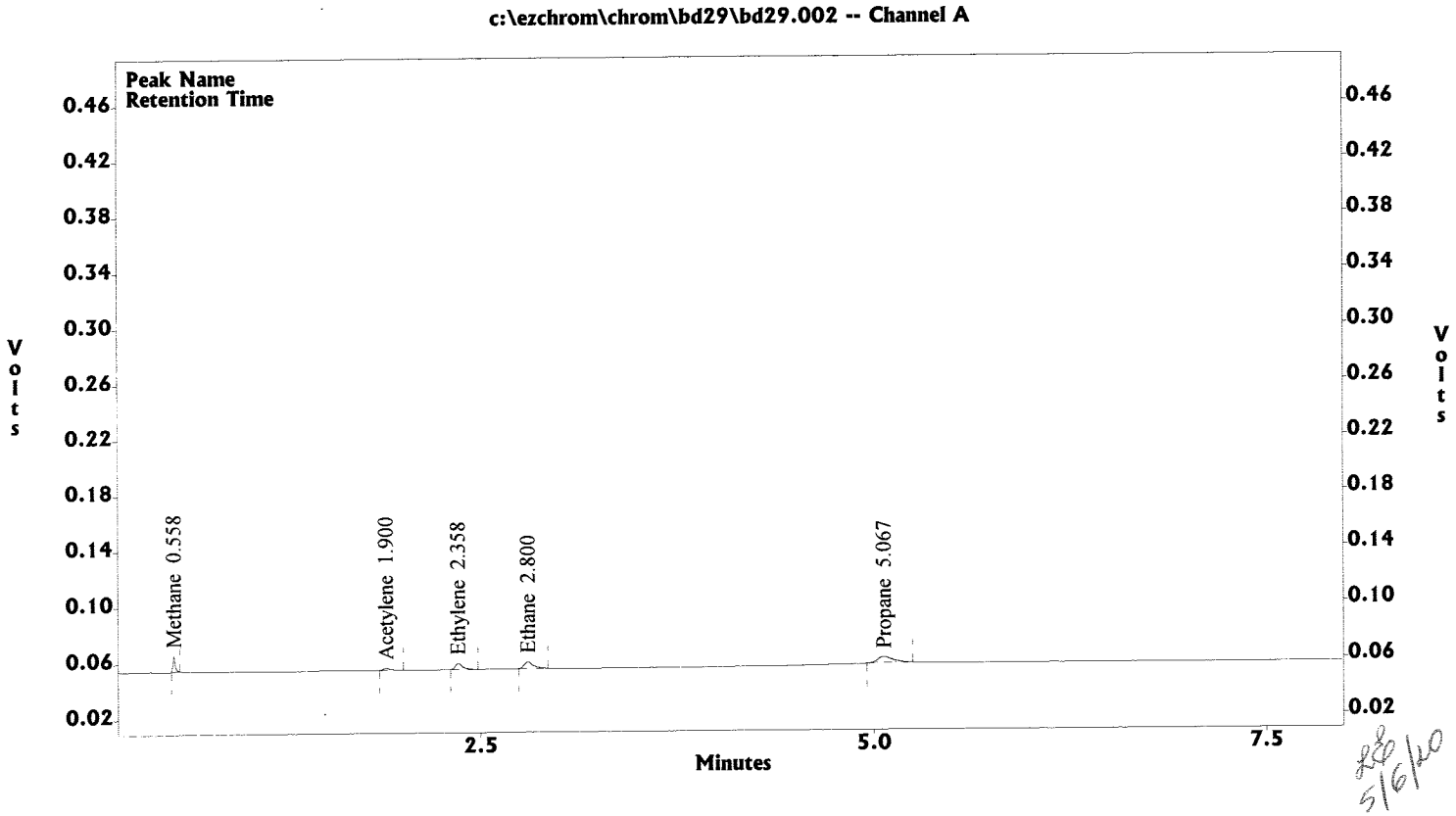
RL 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



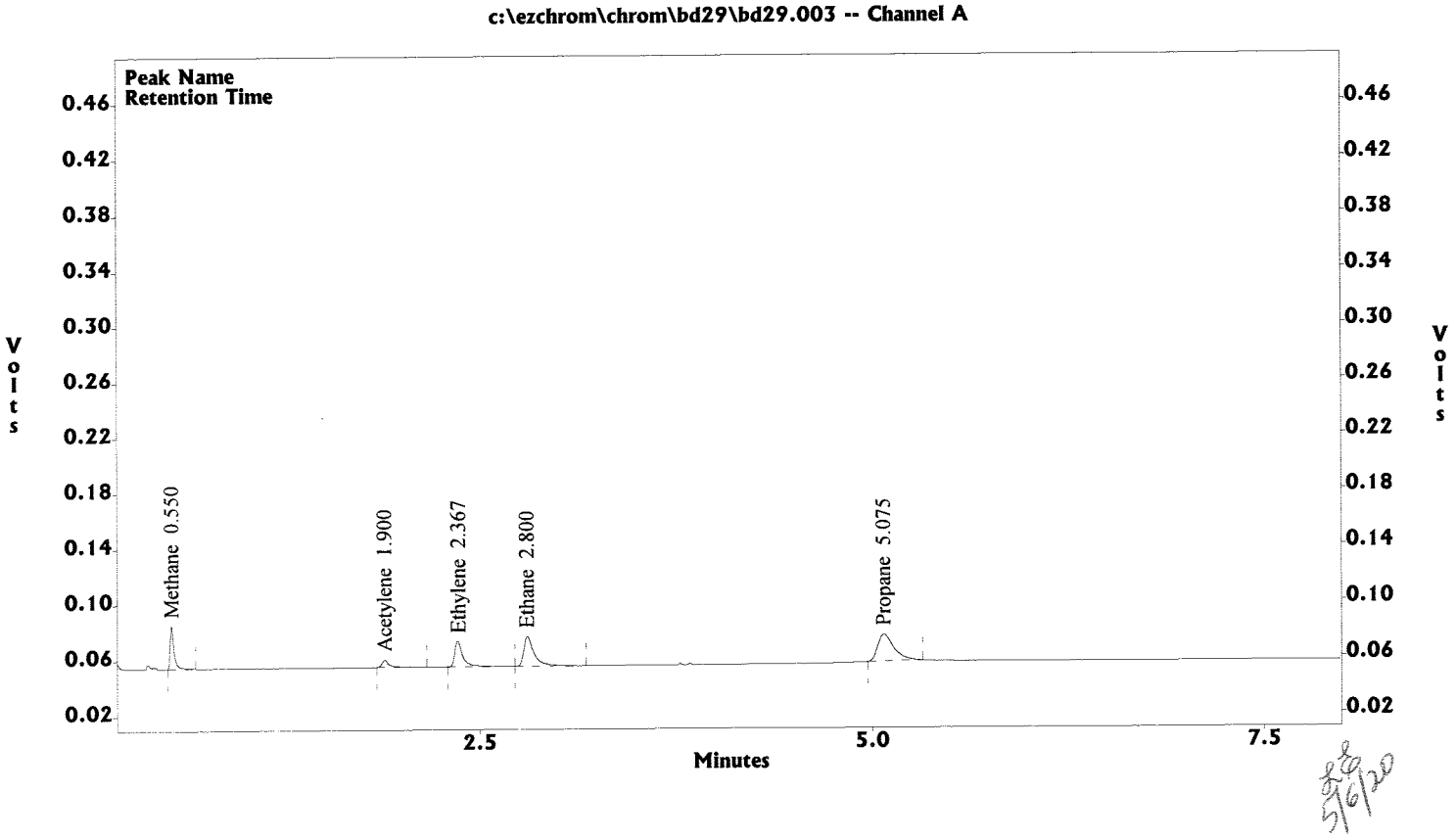
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

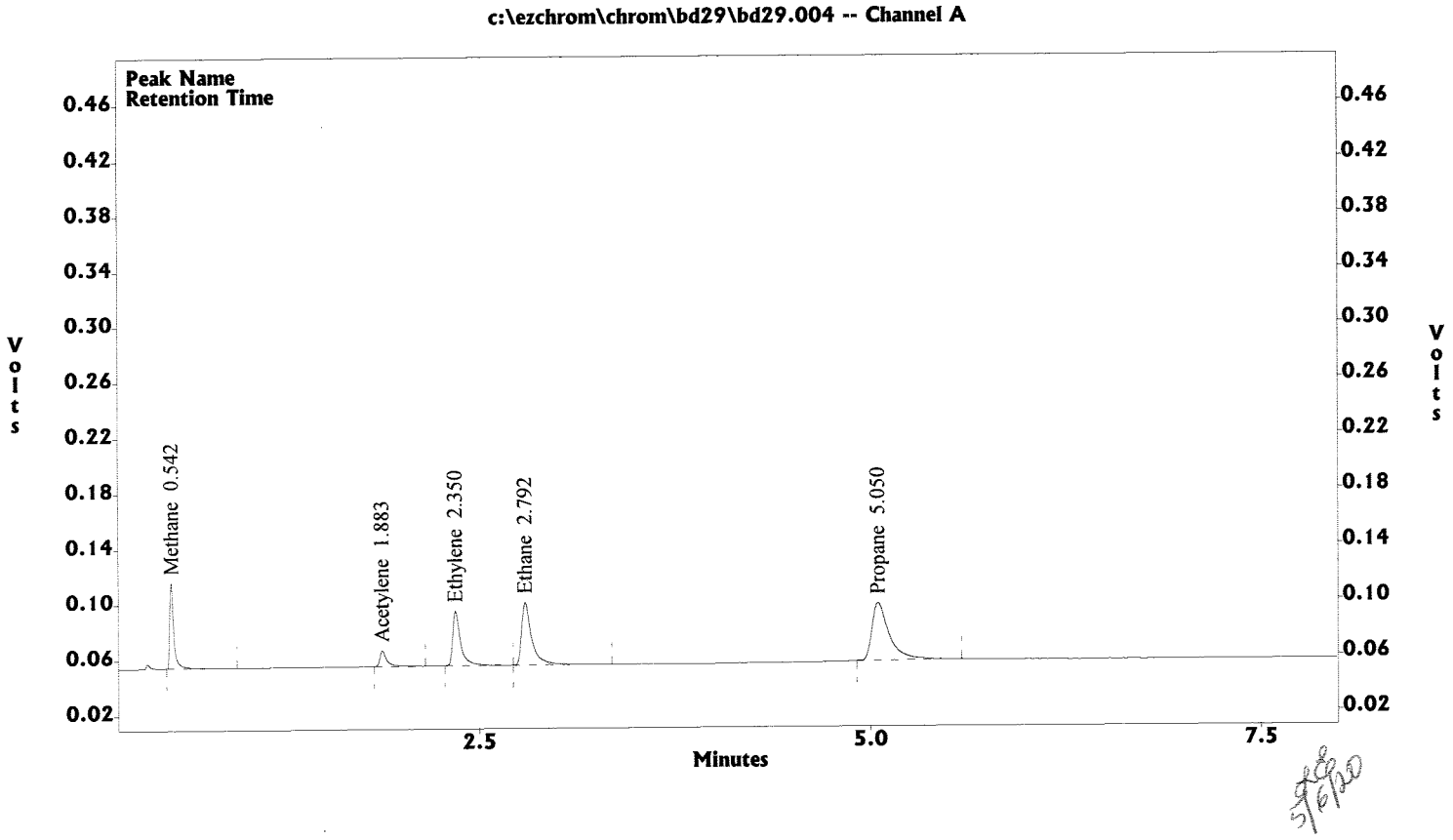


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



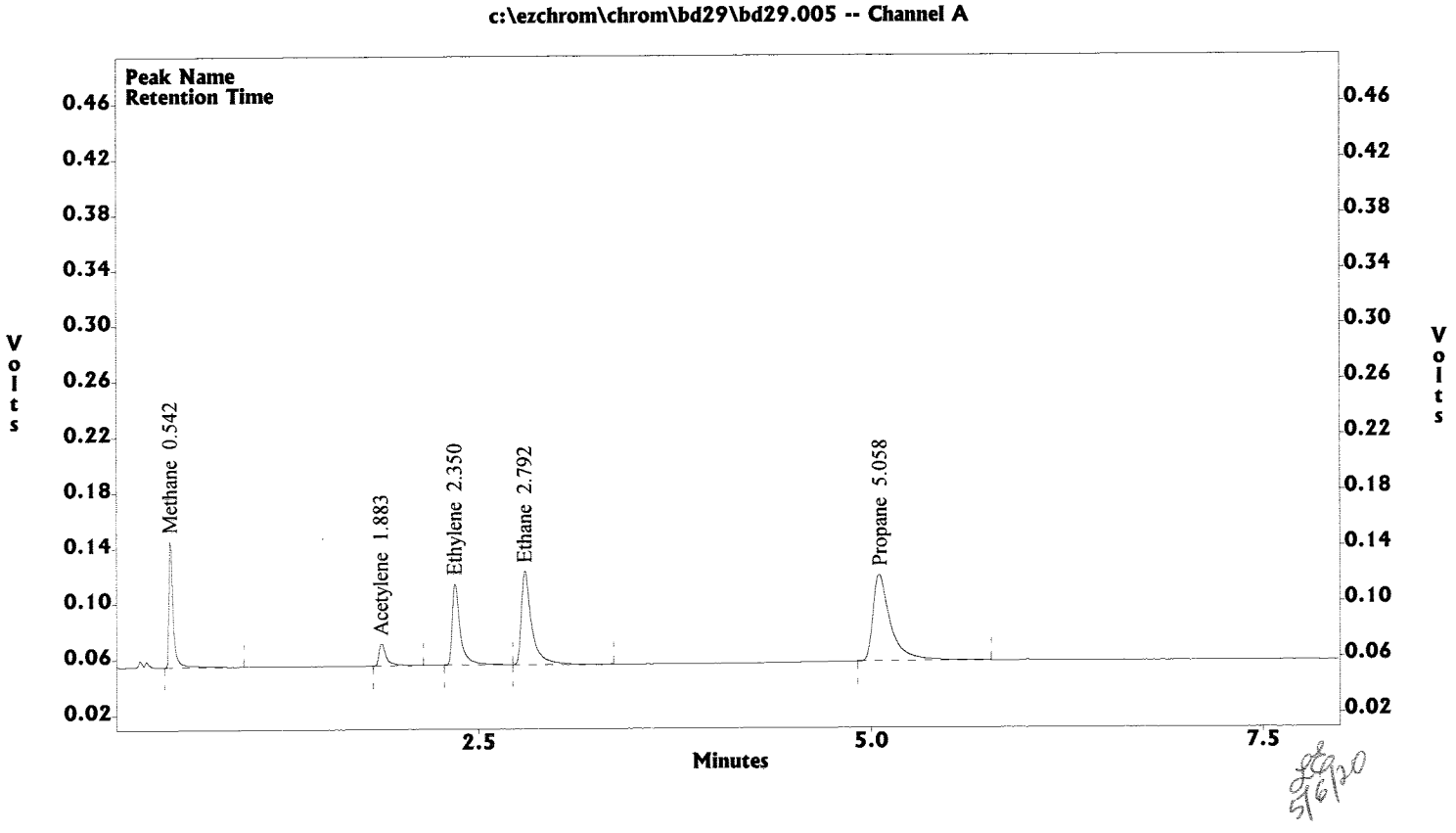
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

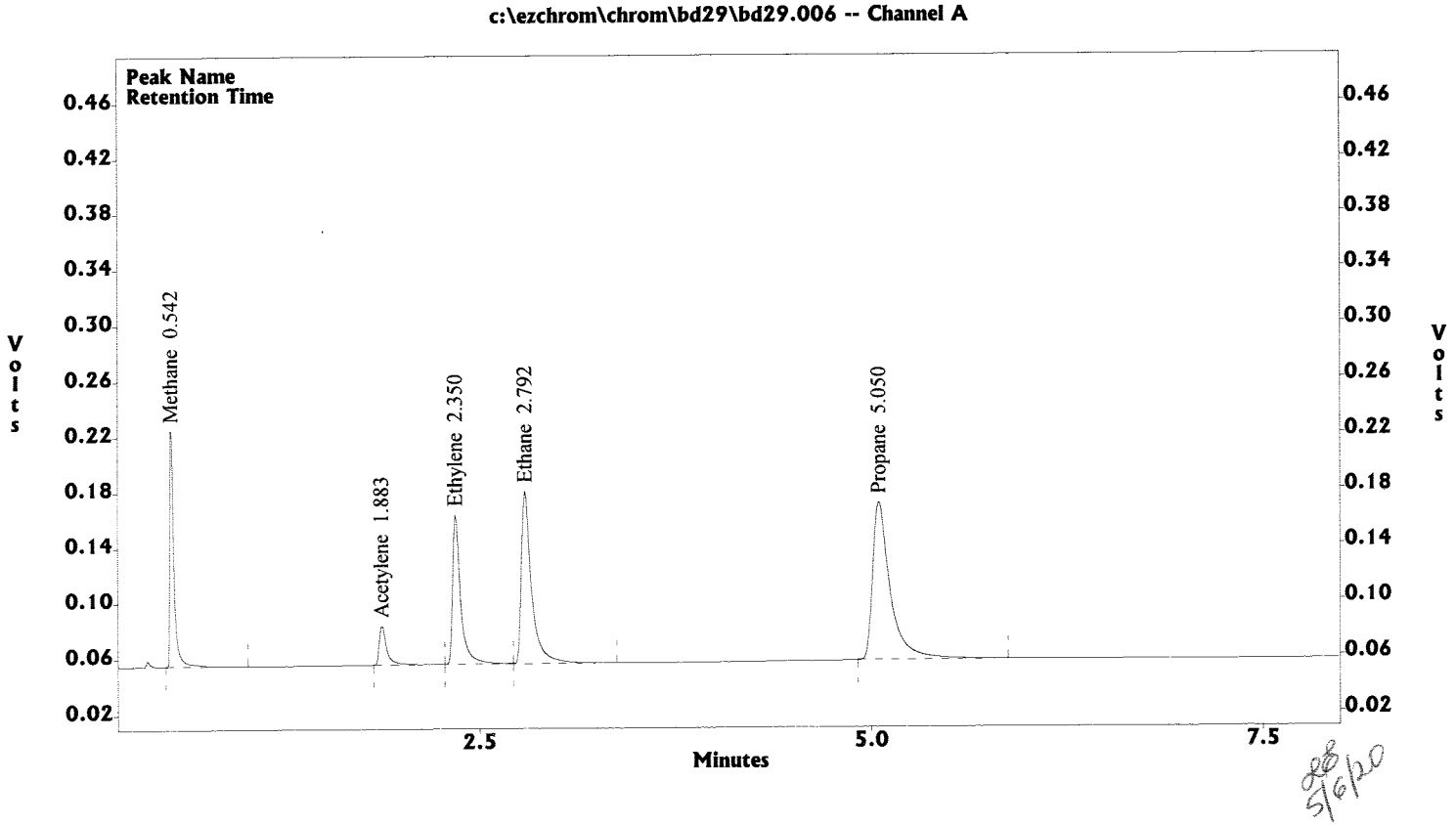


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



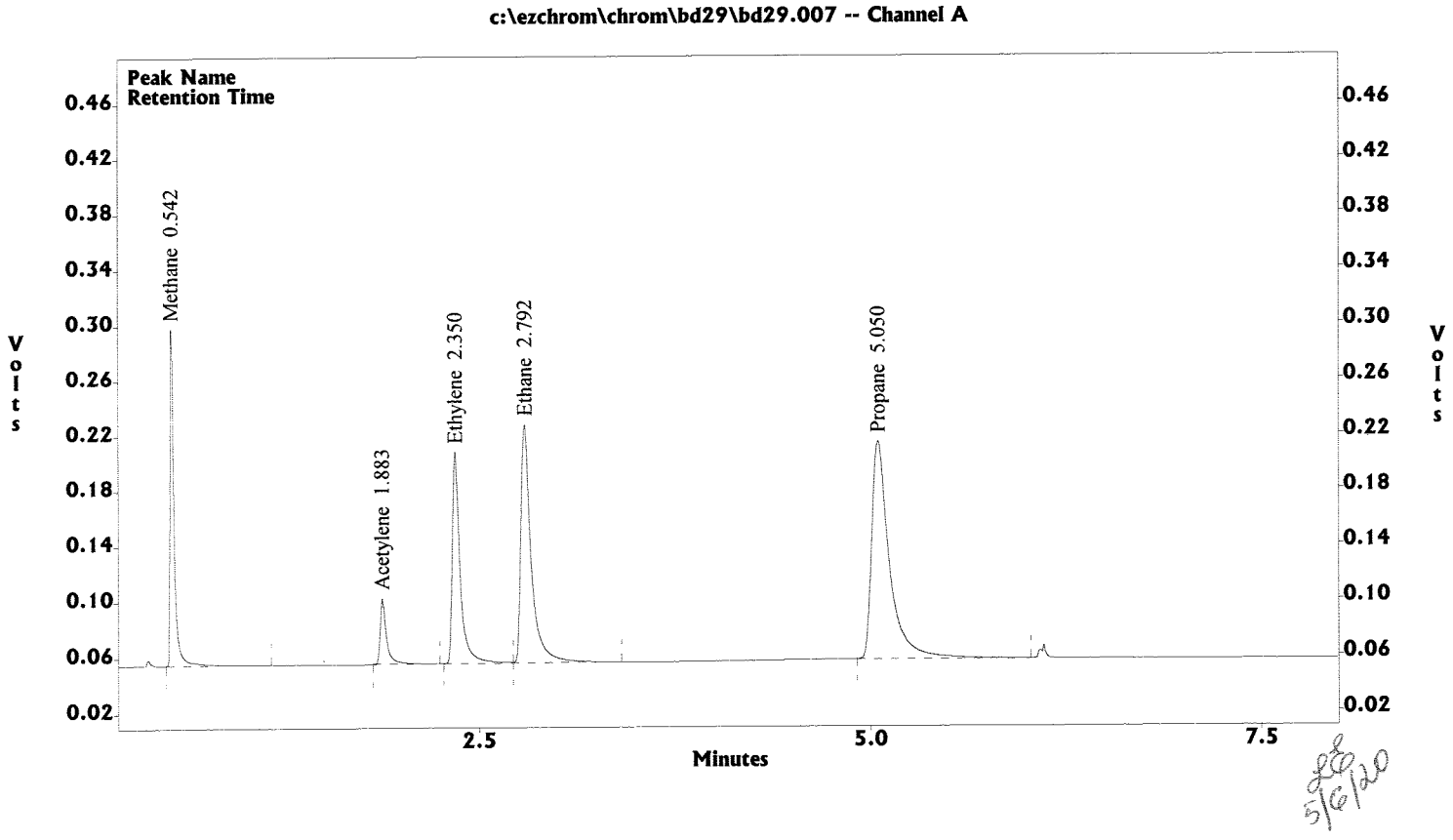
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

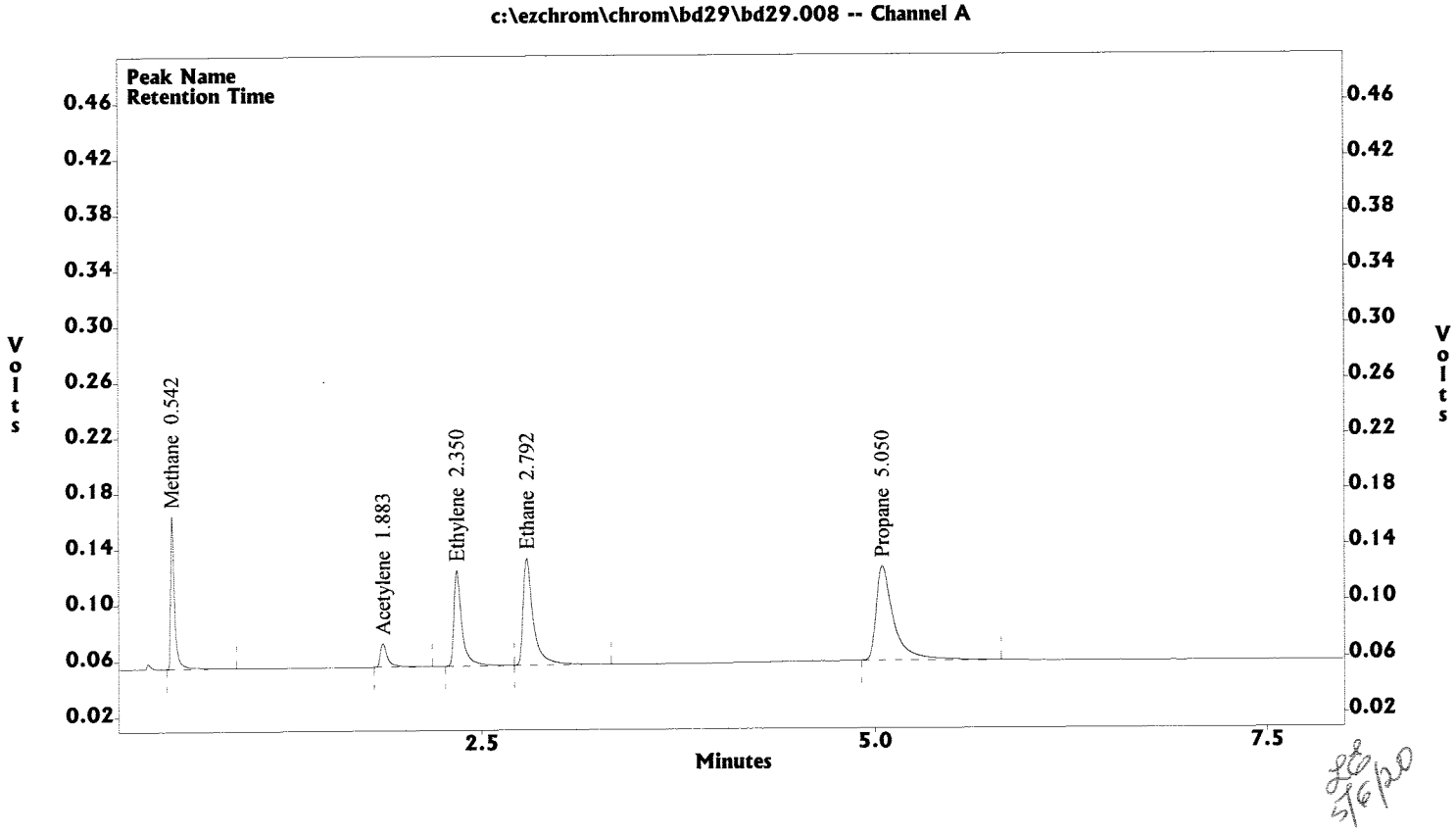
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18002A 06/18/2020 09:25
CONC UNIT : ppb

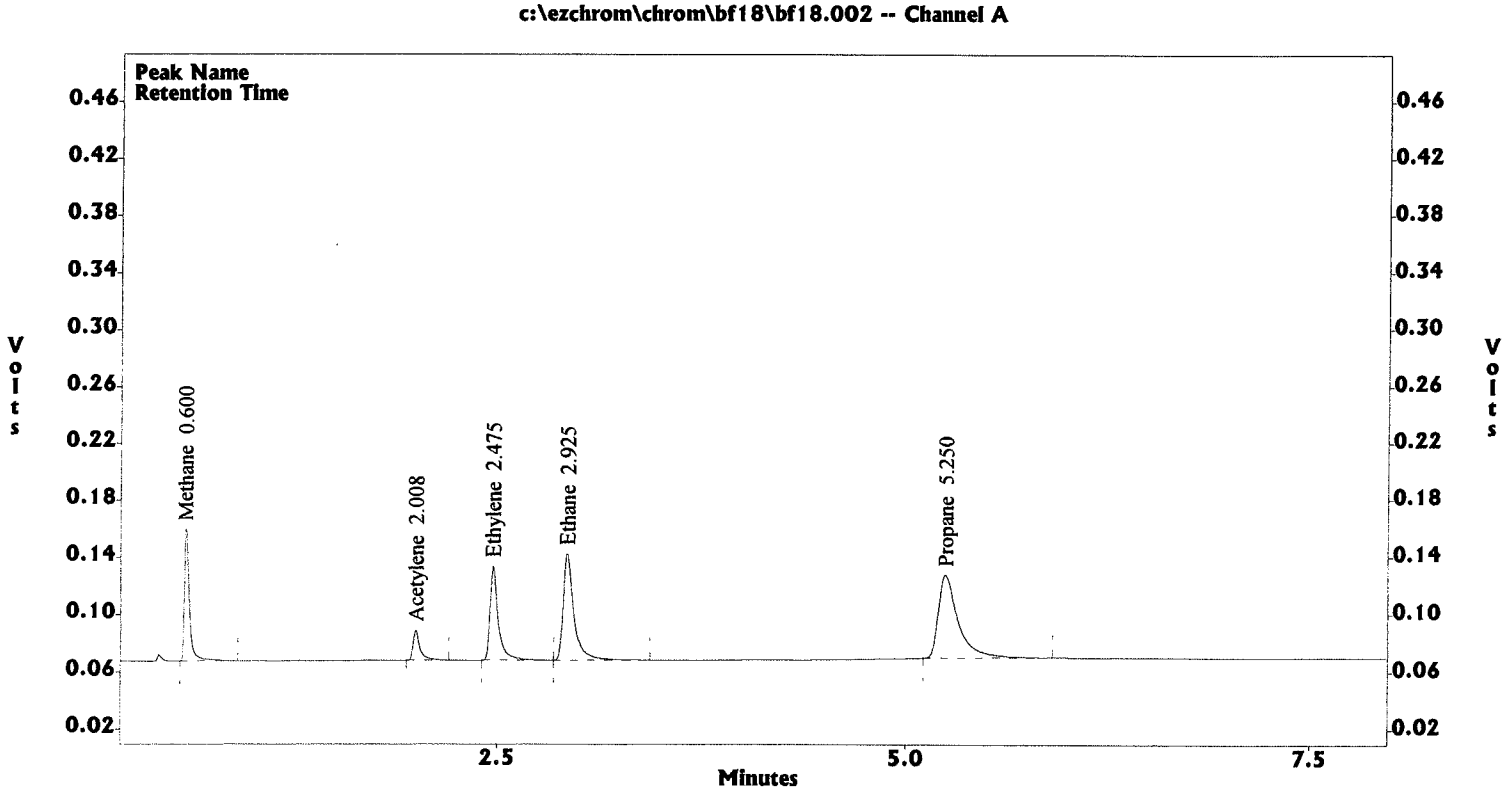
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	198520	14.20	4		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	225566	23.70	-0		15
Ethane	2.925	2.887	2.963	25.5	13110.4	336642	25.68	1		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\bf18.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : CDG72D29115
Acquired : Jun 18, 2020 09:25:32
Printed : Jun 18, 2020 09:35:06
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	198520	13975.2	14.205
2	Acetylene	2.008	59280	2483.4	23.871
3	Ethylene	2.475	225566	9519.0	23.697
4	Ethane	2.925	336642	13110.4	25.677
5	Propane	5.250	503576	13914.6	36.190



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18009A 06/18/2020 11:19
CONC UNIT : ppb

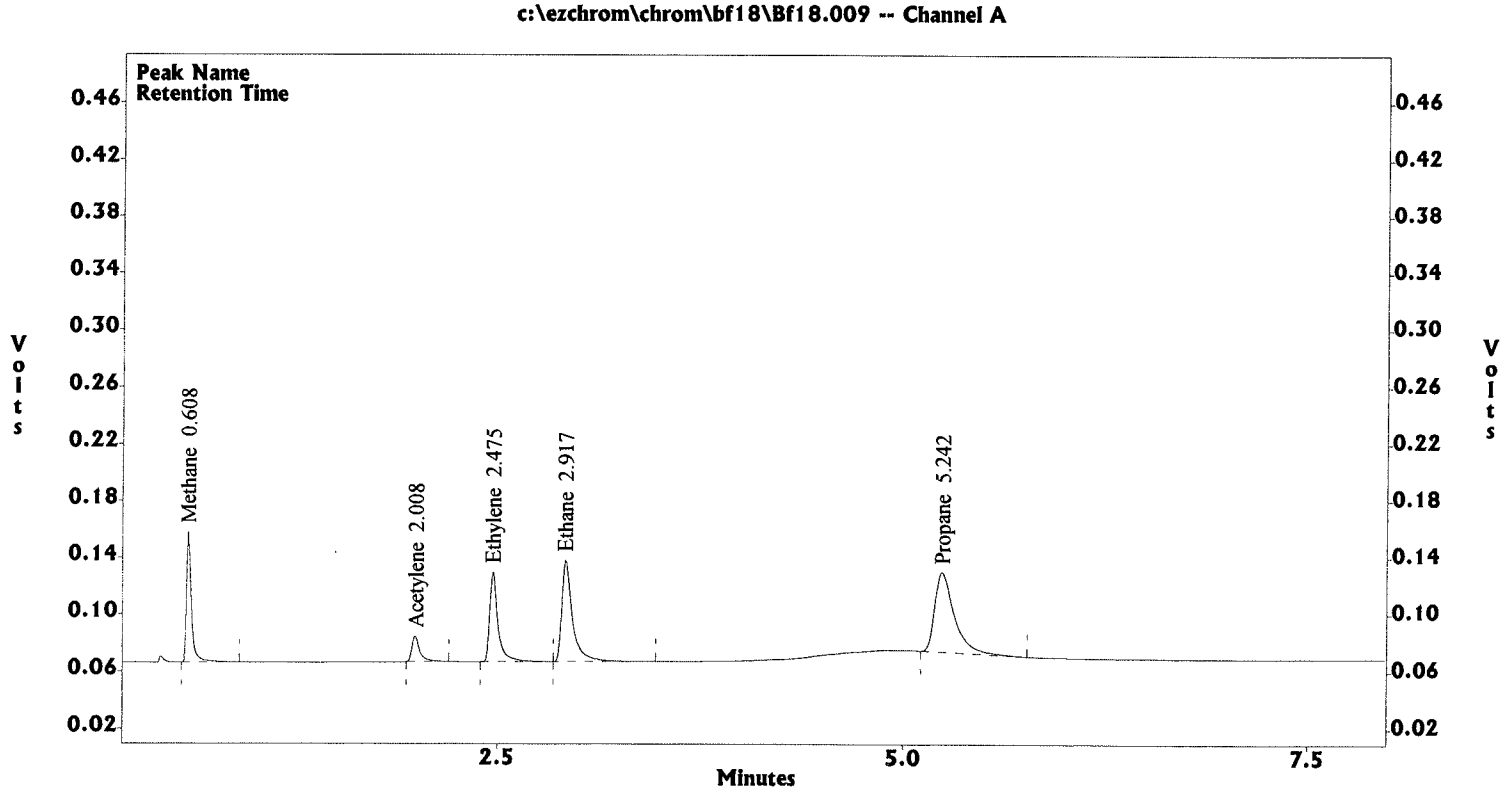
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	192089	13.74	1		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	218952	23.00	-3		15
Ethane	2.917	2.879	2.955	25.5	13110.4	324390	24.74	-3		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.009
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29116
Acquired : Jun 18, 2020 11:19:05
Printed : Jun 18, 2020 11:27:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	192089	13975.2	13.745
2	Acetylene	2.008	57893	2483.4	23.312
3	Ethylene	2.475	218952	9519.0	23.002
4	Ethane	2.917	324390	13110.4	24.743
5	Propane	5.242	466888	13914.6	33.554



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18019A 06/18/2020 14:02
CONC UNIT : ppb

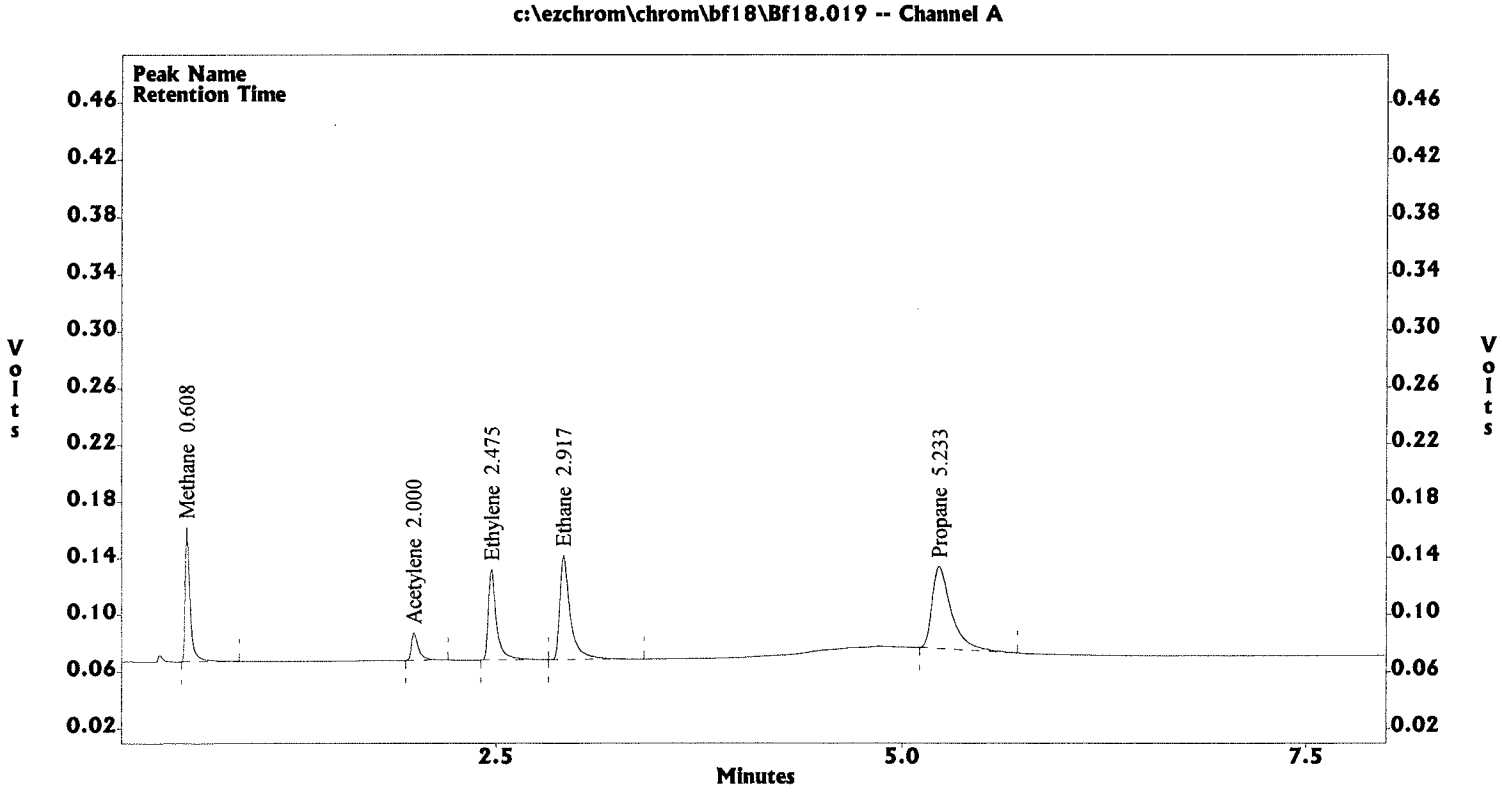
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	198250	14.19	4		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	220096	23.12	-3		15
Ethane	2.917	2.879	2.955	25.5	13110.4	329305	25.12	-1		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.019
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29117
Acquired : Jun 18, 2020 14:02:00
Printed : Jun 18, 2020 14:10:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	198250	13975.2	14.186
2	Acetylene	2.000	56694	2483.4	22.829
3	Ethylene	2.475	220096	9519.0	23.122
4	Ethane	2.917	329305	13110.4	25.118
5	Propane	5.233	473488	13914.6	34.028



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
DISSOLVED GAS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019

Instrument No.: 72

Analytical Sequence: BD29

Method File: DG72D29

Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	5553-18-22-01	10 7500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS

Date: 4/29/20

Disposed By:

Date Disposed:

Batch: bd29.seq

Data File	Sample ID	Method	Sample Name	Position	Inj Vol	Inj/Vial	Sample Type
1	IB72D2901	dg72d29.met	BD29.001	0	500uL	1	
2	DG72D2901	dg72d29.met	BD29.002	1	500uL	1	
3	DG72D2902	dg72d29.met	BD29.003	2	500uL	1	
4	DG72D2903	dg72d29.met	BD29.004	3	500uL	1	
5	DG72D2904	dg72d29.met	BD29.005	4	500uL	1	
6	DG72D2905	dg72d29.met	BD29.006	5	500uL	1	
7	DG72D2906	dg72d29.met	BD29.007	6	500uL	1	
8	IDG72D29001	dg72d29.met	BD29.008	0	500uL	1	

FINAL

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF012W : F123, F154, F155

Book #: A72-019
Instrument No.: 72
Analytical Sequence: BF18
Method File: DG72D29
Analytical Batch: CDG72D29115

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-32-02	200
Temperature (°C)	21	
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC
Date: 6/18/20
Disposed By:
Date Disposed:

Batch: bf18.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F1801	dg72d29.met	BF18.001	500uL	1	
2	CDG72D29115	dg72d29.met	BF18.002	500uL	1	
3	DGF012WB	dg72d29.met	BF18.003	500uL	1	
4	DGF012WL	dg72d29.met	BF18.004	500uL	1	
5	DGF012WC	dg72d29.met	BF18.005	500uL	1	
6	F123-01	dg72d29.met	BF18.006	500uL	1	
7	F123-02	dg72d29.met	BF18.007	500uL	1	
8	F123-03	dg72d29.met	BF18.008	500uL	1	
9	CDG72D29116	dg72d29.met	BF18.009	500uL	1	
10	F154-01	dg72d29.met	BF18.010	500uL	1	
11	F154-02	dg72d29.met	BF18.011	500uL	1	
12	F154-02M	dg72d29.met	BF18.012	500uL	1	
13	F154-02S	dg72d29.met	BF18.013	500uL	1	
14	F154-05	dg72d29.met	BF18.014	500uL	1	
15	F154-06	dg72d29.met	BF18.015	500uL	1	
16	ESS T.BAG TEST	dg72d29.met	BF18.016	500uL	1	BATCH # 28190909
17	F155-01	dg72d29.met	BF18.017	500uL	1	
18	F155-02	dg72d29.met	BF18.018	500uL	1	
19	CDG72D29117	dg72d29.met	BF18.019	500uL	1	

FINAL

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F154

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SW6020A
METALS BY ICP-MS

A total of four(4) water samples were received on 06/18/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sodium(26.7J <1/2 LOQ) was detected at trace level in IMF029WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF029WL/IMF029WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following were noted: F154-02M/F154-02S - Percent recoveries for Calcium(60X), Magnesium(21X) and Sodium(51X) were not within MS/MSD QC limits. The enclosed value(#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F154
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMF029WB	1	NA	6/26/22012:08	06/22/2010:36	H6F22040	H6F22038	IMF029W	Method Blank
LCS1W	IMF029WL	1	NA	6/26/22012:11	06/22/2010:36	H6F22041	H6F22038	IMF029W	Lab Control Sample (LCS)
LCD1W	IMF029WC	1	NA	6/26/22012:14	06/22/2010:36	H6F22042	H6F22038	IMF029W	LCS Duplicate
FD04-GW061720	F154-06	1	NA	6/26/22012:16	06/22/2010:36	H6F22043	H6F22038	IMF029W	Field Sample
MW20S-GW061720	F154-01	1	NA	6/26/22012:19	06/22/2010:36	H6F22044	H6F22038	IMF029W	Field Sample
MW02-GW061720MS	F154-02M	1	NA	6/26/22012:21	06/22/2010:36	H6F22045	H6F22038	IMF029W	Matrix Spike Sample (MS)
MW02-GW061720MSD	F154-02S	1	NA	6/26/22012:24	06/22/2010:36	H6F22046	H6F22038	IMF029W	MS Duplicate (MSD)
MW02-GW061720	F154-02A	1	NA	6/26/22012:27	06/22/2010:36	H6F22047	H6F22038	IMF029W	Analytical Spike Sample
MW02-GW061720	F154-02	1	NA	6/26/22012:29	06/22/2010:36	H6F22048	H6F22038	IMF029W	Field Sample
MW02-GW061720	F154-02J	5	NA	6/26/22012:32	06/22/2010:36	H6F22049	H6F22038	IMF029W	Diluted Sample
MW20D-GW061720	F154-05	1	NA	6/26/22012:40	06/22/2010:36	H6F22052	H6F22050	IMF029W	Field Sample
MW20S-GW061720	F154-01I	10	NA	6/26/22013:11	06/22/2010:36	H6F22063	H6F22061	IMF029W	Diluted Sample
MW02-GW061720MS	F154-02M	10	NA	6/26/22013:14	06/22/2010:36	H6F22064	H6F22061	IMF029W	Matrix Spike Sample (MS)
MW02-GW061720MSD	F154-02S	10	NA	6/26/22013:17	06/22/2010:36	H6F22065	H6F22061	IMF029W	MS Duplicate (MSD)
MW02-GW061720	F154-02A	10	NA	6/26/22013:19	06/22/2010:36	H6F22066	H6F22061	IMF029W	Analytical Spike Sample
MW02-GW061720	F154-02I	10	NA	6/26/22013:22	06/22/2010:36	H6F22067	H6F22061	IMF029W	Diluted Sample
MW02-GW061720	F154-02J	50	NA	6/26/22013:24	06/22/2010:36	H6F22068	H6F22061	IMF029W	Diluted Sample
MW20D-GW061720	F154-05I	10	NA	6/26/22013:27	06/22/2010:36	H6F22069	H6F22061	IMF029W	Diluted Sample
FD04-GW061720	F154-06I	10	NA	6/26/22013:29	06/22/2010:36	H6F22070	H6F22061	IMF029W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:02
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20S-GW061720	Date Analyzed:	6/26/220 12:19
Lab Samp ID:	F154-01	Dilution Factor:	1
Lab File ID:	H6F22044	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.878J	1.00	0.125
Barium	47.4	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.41	1.00	0.100
Cobalt	0.113J	1.00	0.100
Copper	1.22J	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	29300	100	25.0
Manganese	1.50	1.00	0.250
Nickel	3.39	1.00	0.250
Potassium	3500	100	25.0
Selenium	0.576J	1.00	0.150
Silver	0.146J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.93	1.00	0.250
Zinc	15.9J	20.0	5.00

Sample ID:	MW20S-GW061720	Date Analyzed:	6/26/220 13:11
Lab Samp ID:	F154-01I	Dilution Factor:	10
Lab File ID:	H6F22063	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	94000	1000	250
Sodium	75300	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:02
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20S-GW061720	Date Analyzed:	6/26/220 12:19
Lab Samp ID:	F154-01	Dilution Factor:	1
Lab File ID:	H6F22044	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.878J	1.00	0.125
Barium	47.4	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	93400E	100	25.0
Chromium	1.41	1.00	0.100
Cobalt	0.113J	1.00	0.100
Copper	1.22J	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	29300	100	25.0
Manganese	1.50	1.00	0.250
Nickel	3.39	1.00	0.250
Potassium	3500	100	25.0
Selenium	0.576J	1.00	0.150
Silver	0.146J	1.00	0.100
Sodium	73000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.93	1.00	0.250
Zinc	15.9J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:02
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20S-GW061720	Date Analyzed:	6/26/220 13:11
Lab Samp ID:	F154-01I	Dilution Factor:	10
Lab File ID:	H6F22063	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	46.0	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	94000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	31100	1000	250
Manganese	ND	10.0	2.50
Nickel	3.09J	10.0	2.50
Potassium	3500	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	75300	1000	250
Thallium	ND	10.0	1.00
Vanadium	2.84J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:35
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW02-GW061720	Date Analyzed:	6/26/220 12:29
Lab Samp ID:	F154-02	Dilution Factor:	1
Lab File ID:	H6F22048	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.08	1.00	0.125
Barium	80.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.83	1.00	0.100
Cobalt	0.162J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Manganese	ND	1.00	0.250
Nickel	0.823J	1.00	0.250
Potassium	2730	100	25.0
Selenium	0.679J	1.00	0.150
Silver	0.113J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.54	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW02-GW061720	Date Analyzed:	6/26/220 13:22
Lab Samp ID:	F154-02I	Dilution Factor:	10
Lab File ID:	H6F22067	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	179000	1000	250
Magnesium	64200	1000	250
Sodium	152000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:35
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW02-GW061720	Date Analyzed:	6/26/220 12:29
Lab Samp ID:	F154-02	Dilution Factor:	1
Lab File ID:	H6F22048	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.08	1.00	0.125
Barium	80.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	179000E	100	25.0
Chromium	1.83	1.00	0.100
Cobalt	0.162J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	64700E	100	25.0
Manganese	ND	1.00	0.250
Nickel	0.823J	1.00	0.250
Potassium	2730	100	25.0
Selenium	0.679J	1.00	0.150
Silver	0.113J	1.00	0.100
Sodium	152000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.54	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:35
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW02-GW061720	Date Analyzed:	6/26/220 13:22
Lab Samp ID:	F154-02I	Dilution Factor:	10
Lab File ID:	H6F22067	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	79.2	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	179000	1000	250
Chromium	1.54J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	64200	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2730	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	152000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.56J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20D-GW061720	Date Analyzed:	6/26/220 12:40
Lab Samp ID:	F154-05	Dilution Factor:	1
Lab File ID:	H6F22052	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.685J	1.00	0.125
Barium	42.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.64	1.00	0.100
Cobalt	0.115J	1.00	0.100
Copper	ND	2.00	0.500
Iron	68.6J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	36500	100	25.0
Manganese	2.24	1.00	0.250
Nickel	0.464J	1.00	0.250
Potassium	2240	100	25.0
Selenium	0.776J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.05	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW20D-GW061720	Date Analyzed:	6/26/220 13:27
Lab Samp ID:	F154-05I	Dilution Factor:	10
Lab File ID:	H6F22069	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	109000	1000	250
Sodium	46300	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20D-GW061720	Date Analyzed:	6/26/220 12:40
Lab Samp ID:	F154-05	Dilution Factor:	1
Lab File ID:	H6F22052	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.685J	1.00	0.125
Barium	42.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	109000E	100	25.0
Chromium	1.64	1.00	0.100
Cobalt	0.115J	1.00	0.100
Copper	ND	2.00	0.500
Iron	68.6J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	36500	100	25.0
Manganese	2.24	1.00	0.250
Nickel	0.464J	1.00	0.250
Potassium	2240	100	25.0
Selenium	0.776J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	45300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.05	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MW20D-GW061720	Date Analyzed:	6/26/220 13:27
Lab Samp ID:	F154-05I	Dilution Factor:	10
Lab File ID:	H6F22069	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	41.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	109000	1000	250
Chromium	1.27J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	37500	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2270	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	46300	1000	250
Thallium	ND	10.0	1.00
Vanadium	4.81J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 12:05
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	FD04-GW061720	Date Analyzed:	6/26/220 12:16
Lab Samp ID:	F154-06	Dilution Factor:	1
Lab File ID:	H6F22043	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.685J	1.00	0.125
Barium	41.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.60	1.00	0.100
Cobalt	0.118J	1.00	0.100
Copper	ND	2.00	0.500
Iron	63.0J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	35800	100	25.0
Manganese	2.10	1.00	0.250
Nickel	0.445J	1.00	0.250
Potassium	2160	100	25.0
Selenium	0.840J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	44000	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.91	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	FD04-GW061720	Date Analyzed:	6/26/220 13:29
Lab Samp ID:	F154-06I	Dilution Factor:	10
Lab File ID:	H6F22070	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	107000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 12:05
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	FD04-GW061720	Date Analyzed:	6/26/220 12:16
Lab Samp ID:	F154-06	Dilution Factor:	1
Lab File ID:	H6F22043	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.685J	1.00	0.125
Barium	41.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	107000E	100	25.0
Chromium	1.60	1.00	0.100
Cobalt	0.118J	1.00	0.100
Copper	ND	2.00	0.500
Iron	63.0J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	35800	100	25.0
Manganese	2.10	1.00	0.250
Nickel	0.445J	1.00	0.250
Potassium	2160	100	25.0
Selenium	0.840J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	44000	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.91	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 12:05
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	FD04-GW061720	Date Analyzed:	6/26/220 13:29
Lab Samp ID:	F154-06I	Dilution Factor:	10
Lab File ID:	H6F22070	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22061	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	41.5	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	107000	1000	250
Chromium	1.22J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	36700	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2230	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	44900	1000	250
Thallium	ND	10.0	1.00
Vanadium	4.65J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F154	Date Extracted:	06/22/20 10:36
Sample ID:	MBLK1W	Date Analyzed:	6/26/220 12:08
Lab Samp ID:	IMF029WB	Dilution Factor:	1
Lab File ID:	H6F22040	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	ND	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Sodium	26.7J	100	25.0
Thallium	ND	1.00	0.100
Vanadium	ND	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF029WB	IMF029WL	IMF029WC
LAB FILE ID	: H6F22040	H6F22041	H6F22042
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 12:08	6/26/220 12:11	6/26/220 12:14
PREP BATCH	: IMF029W	IMF029W	IMF029W
CALIBRATION REF:	H6F22038	H6F22038	H6F22038

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	3190	106	3000	3040	101	5	80-120	20
Antimony	ND	30	29.7	99	30	28.8	96	3	80-120	20
Arsenic	ND	30	30.3	101	30	29.6	99	2	80-120	20
Barium	ND	30	29.4	98	30	28.6	95	3	80-120	20
Beryllium	ND	30	30.1	100	30	28.9	96	4	80-120	20
Cadmium	ND	30	30.0	100	30	29.4	98	2	80-120	20
Calcium	ND	3000	3110	104	3000	2990	100	4	80-120	20
Chromium	ND	30	31.6	105	30	30.9	103	2	80-120	20
Cobalt	ND	30	32.1	107	30	30.7	102	4	80-120	20
Copper	ND	30	32.6	109	30	31.8	106	2	80-120	20
Iron	ND	3000	3180	106	3000	3080	103	3	80-120	20
Lead	ND	30	31.6	105	30	30.3	101	4	80-120	20
Magnesium	ND	3000	3240	108	3000	3030	101	7	80-120	20
Manganese	ND	30	31.6	105	30	30.2	101	5	80-120	20
Nickel	ND	30	31.8	106	30	31.1	104	2	80-120	20
Potassium	ND	3000	3090	103	3000	3000	100	3	80-120	20
Selenium	ND	30	31.1	104	30	30.9	103	1	80-120	20
Silver	ND	30	31.0	103	30	30.0	100	3	80-120	20
Sodium	26.7J	3000	3160	105	3000	3030	101	4	80-120	20
Thallium	ND	30	31.4	105	30	30.1	100	4	80-120	20
Vanadium	ND	30	31.0	103	30	30.2	101	3	80-120	20
Zinc	ND	60	63.0	105	60	60.3	101	4	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID	: F154-02	F154-02M	F154-02S
LAB FILE ID	: H6F22048	H6F22045	H6F22046
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 12:29	6/26/220 12:21	6/26/220 12:24
PREP BATCH	: IMF029W	IMF029W	IMF029W
CALIBRATION REF	: H6F22038	H6F22038	H6F22038

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	2990	100	3000	2980	99	0	75-125	20
Antimony	ND	30	29.0	97	30	29.6	99	2	75-125	20
Arsenic	1.08	30	31.8	102	30	31.1	100	2	75-125	20
Barium	80.9	30	113	107	30	113	107	0	75-125	20
Beryllium	ND	30	29.2	97	30	28.9	96	1	75-125	20
Cadmium	ND	30	28.5	95	30	28.7	96	1	75-125	20
Chromium	1.83	30	32.8	103	30	32.6	103	1	75-125	20
Cobalt	0.162J	30	29.3	97	30	29.6	98	1	75-125	20
Copper	ND	30	31.0	103	30	30.8	103	1	75-125	20
Iron	ND	3000	3080	103	3000	3020	101	2	75-125	20
Lead	ND	30	29.1	97	30	29.5	98	1	75-125	20
Manganese	ND	30	29.6	99	30	29.5	98	0	75-125	20
Nickel	0.823J	30	30.7	100	30	30.3	98	1	75-125	20
Potassium	2730	3000	5860	104	3000	5760	101	2	75-125	20
Selenium	0.679J	30	31.4	102	30	30.9	101	2	75-125	20
Silver	0.113J	30	28.8	96	30	29.0	96	1	75-125	20
Thallium	ND	30	29.3	98	30	29.7	99	1	75-125	20
Vanadium	2.54	30	33.9	105	30	33.5	103	1	75-125	20
Zinc	ND	60	57.8	96	60	61.2	102	6	75-125	20

PSResult - Parent Sample Result

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 10	10	10
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID	: F154-02I	F154-02M	F154-02S
LAB FILE ID	: H6F22067	H6F22064	H6F22065
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 13:22	6/26/220 13:14	6/26/220 13:17
PREP BATCH	: IMF029W	IMF029W	IMF029W
CALIBRATION REF	: H6F22061	H6F22061	H6F22061

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Calcium	179000	3000	188000	300*	3000	190000	367*	1	75-125	20
Magnesium	64200	3000	69100	163*	3000	69700	183*	1	75-125	20
Sodium	152000	3000	160000	267*	3000	162000	333*	1	75-125	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	5
SAMPLE ID	: MW02-GW061720	MW02-GW061720
LAB SAMPLE ID	: F154-02	F154-02J
LAB FILE ID	: H6F22048	H6F22049
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 12:29	6/26/220 12:32
PREP BATCH	: IMF029W	IMF029W
CALIBRATION REF	: H6F22038	H6F22038

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Aluminum	ND	ND	0	10
Antimony	ND	ND	0	10
Arsenic	1.08	1.10J	NA	10
Barium	80.9	78.2	3	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Chromium	1.83	1.65J	NA	10
Cobalt	0.162J	ND	NA	10
Copper	ND	ND	0	10
Iron	ND	ND	0	10
Lead	ND	ND	0	10
Manganese	ND	ND	0	10
Nickel	0.823J	ND	NA	10
Potassium	2730	2670	2	10
Selenium	0.679J	ND	NA	10
Silver	0.113J	ND	NA	10
Thallium	ND	ND	0	10
Vanadium	2.54	4.26J	NA	10
Zinc	ND	ND	0	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	50
SAMPLE ID	: MW02-GW061720	MW02-GW061720
LAB SAMPLE ID	: F154-02I	F154-02J
LAB FILE ID	: H6F22067	H6F22068
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 13:22	6/26/220 13:24
PREP BATCH	: IMF029W	IMF029W
CALIBRATION REF	: H6F22061	H6F22061

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Calcium	179000	180000	1	10
Magnesium	64200	65300	2	10
Sodium	152000	155000	2	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW02-GW061720	MW02-GW061720
LAB SAMPLE ID	: F154-02	F154-02A
LAB FILE ID	: H6F22048	H6F22047
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 12:29	6/26/220 12:27
PREP BATCH	: IMF029W	IMF029W
CALIBRATION REF	: H6F22038	H6F22038

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Aluminum	ND	3000	3120	104	80-120
Antimony	ND	30	29.5	98	80-120
Arsenic	1.08	30	31.8	102	80-120
Barium	80.9	30	113	107	80-120
Beryllium	ND	30	29.8	99	80-120
Cadmium	ND	30	29.8	99	80-120
Chromium	1.83	30	32.9	104	80-120
Cobalt	0.162J	30	30.2	100	80-120
Copper	ND	30	31.7	106	80-120
Iron	ND	3000	3090	103	80-120
Lead	ND	30	29.9	100	80-120
Manganese	ND	30	30.0	100	80-120
Nickel	0.823J	30	30.9	100	80-120
Potassium	2730	3000	5710	99	80-120
Selenium	0.679J	30	31.6	103	80-120
Silver	0.113J	30	28.8	96	80-120
Thallium	ND	30	30.0	100	80-120
Vanadium	2.54	30	34.1	105	80-120
Zinc	ND	60	61.0	102	80-120

AS - Analytical Spike

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW02-GW061720	MW02-GW061720
LAB SAMPLE ID	: F154-02I	F154-02A
LAB FILE ID	: H6F22067	H6F22066
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 13:22	6/26/220 13:19
PREP BATCH	: IMF029W	IMF029W
CALIBRATION REF	: H6F22061	H6F22061

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Calcium	179000	30000	213000	113	80-120
Magnesium	64200	30000	95600	105	80-120
Sodium	152000	30000	187000	117	80-120

AS - Analytical Spike

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 06|26|20 10:13

End Date: 06|26|20 16:06

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

See analytical sequence

Book #: AH6-005

Instrument No.: H6

Analytical Batch: 1H6F22

Analytical Sequence: H6F22

Method File: E6020H163

Micropipette ID: ☐ 142781004

Micropipette ID: ☑ ICP-06

Micropipette ID: ☑ 339362028

Micropipette ID: ☑ GFAA-07

Micropipette ID: ☐ 339342032

Micropipette ID: ☑ 542780515

Micropipette ID: ☐ 542761827

Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (CAL)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	66-02	Post-Spike 4	↓
ICSAB	67-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 06|26|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F154
Method : METHOD SW6020A
Sequence : IH6F22
InstrumentID: H6

Lab Samp ID :		ICV				ICSA1			ICSAB1		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6F22008				H6F22012			H6F22013		
DateAnalyed :		6/26/22010:28				6/26/22010:40			6/26/22010:43		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.74	30	0.9	99	0.22934	0	>0	19.581	20	98
Beryllium	T	30.32	30	1.4	101	0.000039500	0	<0.10	19.924	20	100
Boron		34.35	30	1.4	115*	9.7536	0	>5.0	22.314	20	112
Sodium	T	28820	30000	0.6	96	94995	100000	95	100250	100000	100
Magnesium	T	29080	30000	0.8	97	93164	100000	93	96322	100000	96
Aluminum	T	29540	30000	1.5	98	93877	100000	94	97151	100000	97
Silicon		3225	3000	0.4	108	4.2173	0	<20	222.69	200	111
Phosphorus		276.9	300	1.7	92	93807	100000	94	97156	100000	97
Potassium	T	29480	30000	0.3	98	98193	100000	98	102000	100000	102
Calcium	T	29360	30000	1	98	97918	100000	98	103860	100000	104
Titanium		293.4	300	1.1	98	2002.7	2000	100	2103.3	2000	105
Vanadium	T	313.3	300	0.7	104	0.11769	0	<0.25	20.156	20	101
Chromium	T	313.3	300	0.7	104	0.27424	0	>0.1	20.739	20	104
Manganese	T	1955	2000	1	98	0.24806	0	<0.25	19.625	20	98
Iron	T	29580	30000	1.4	99	98569	100000	99	103750	100000	104
Cobalt	T	301.3	300	1.5	100	0.35623	0	>0.1	19.546	20	98
Nickel	T	317.5	300	0.1	106	0.31803	0	>0.25	20.557	20	103
Copper	T	309.9	300	1	103	0.27185	0	<0.50	20.450	20	102
Zinc	T	289.1	300	2.1	96	1.6019	0	<5	21.132	20	106
Arsenic	T	313.9	300	0.6	105	0.073077	0	<0.125	20.030	20	100
Selenium	T	315.4	300	0.9	105	0.21767	0	>0.15	21.602	20	108
Strontium		307.6	300	1.2	103	0.77987	0	<1.0	20.142	20	101
Zirconium		27.59	30	1.1	92	0.11514	0	<2.0	8.5487	20	43*
Molybdenum		304.2	300	1.5	101	1967.9	2000	98	2039.5	2000	102
Silver	T	31.01	30	0.6	103	0.010431	0	<0.1	18.948	20	95
Cadmium	T	311.3	300	1.4	104	0.074785	0	<0.1	19.233	20	96
Tin		307.6	300	0.5	103	0.35856	0	>0.2	19.785	20	99
Antimony	T	58.92	60	0.8	98	0.14623	0	<0.25	19.476	20	97
Barium	T	310.2	300	0.7	103	0.40752	0	>0.25	20.078	20	100
Tungsten		32.14	30	1	107	0.18560	0	<1.0	19.295	20	96
Mercury		2.922	3	1.1	97	0.0041308	0	<0.1	1.9416	2	97
Thallium	T	304.1	300	2.2	101	0.0077403	0	<0.1	18.766	20	94
Lead	T	307.0	300	1.2	102	0.080727	0	>0.05	19.123	20	96
Uranium		305.7	300	1.3	102	0.0000052400	0	<0.1	19.160	20	96

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F154
Method : METHOD SW6020A
Sequence : IH6F22
Instrument ID: H6

CCV SampleID			CCV3			CCV4			CCV5			CCV6		
CCV DataFileID			H6F22038			H6F22050			H6F22061			H6F22071		
CCV DateTime			6/26/220 12:01			6/26/220 12:34			6/26/220 13:03			6/26/220 13:32		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.6	98	4.2	24.0	96	3	23.8	95	1.9	25.0	100	4.7
Beryllium	T	25	24.2	97	3.8	23.4	94	1.8	23.3	93	2	24.4	98	4.3
Boron		50	54.3	109	4.9	54.2	108	3.5	53.3	107	4.7	55.7	111*	6
Sodium	T	25000	25100	100	0.2	25000	100	0.7	25200	101	0.5	25000	100	0.4
Magnesium	T	25000	25100	100	0.9	25000	100	1.2	25300	101	2.2	25300	101	2.7
Aluminum	T	25000	24800	99	1.5	24800	99	1.9	24800	99	2.3	24900	100	2.9
Silicon		2500	2480	99	0.7	2470	99	0.7	2510	100	1.2	2460	99	0.8
Phosphorus		250	249	100	0.6	243	97	1.1	244	97	1.6	250	100	3.2
Potassium	T	25000	25000	100	0.1	25100	101	0.3	25500	102	0.3	25100	100	0.4
Calcium	T	25000	24900	100	0.2	24900	100	0.5	25100	100	0.4	24800	99	0.3
Titanium		250	247	99	1.6	241	96	1.7	245	98	1.5	248	99	2.3
Vanadium	T	250	254	101	0.1	251	100	0.3	255	102	0.9	252	101	0.8
Chromium	T	250	254	102	0.7	250	100	0.6	253	101	0.8	251	100	0.6
Manganese	T	1500	1500	100	1.7	1480	98	2.9	1480	99	1.9	1500	100	3.5
Iron	T	25000	25000	100	0.5	25400	101	1	25400	102	0.1	25000	100	1.1
Cobalt	T	250	249	99	1.7	245	98	2.9	248	99	1.6	251	100	3
Nickel	T	250	259	104	0.9	253	101	0.6	252	101	1.1	252	101	0.8
Copper	T	250	256	102	1	254	102	1.2	254	101	0.6	253	101	1.1
Zinc	T	250	245	98	0.8	238	95	1.1	238	95	1.9	242	97	1.7
Arsenic	T	250	249	100	1	247	99	0.6	248	99	0.5	249	100	0.8
Selenium	T	250	257	103	0.1	252	101	0.6	249	100	0.7	253	101	0.6
Strontium		250	246	98	2.2	244	98	2.5	244	98	2.8	247	99	3.1
Zirconium		25	24.2	97	2	23.9	96	2.8	23.7	95	1.8	24.2	97	2
Molybdenum		250	244	98	2.7	243	97	2.7	245	98	2.1	249	99	5.4
Silver	T	25	24.5	98	1.7	24.1	97	0.7	24.4	98	1	24.9	99	3.5
Cadmium	T	250	245	98	0.4	241	97	1.2	241	97	1.1	247	99	3.6
Tin		250	247	99	0.8	243	97	0.7	247	99	1.1	248	99	4.1
Antimony	T	50	49.3	99	1.4	48.1	96	1.2	48.6	97	0.7	49.2	98	4.3
Barium	T	500	499	100	1.9	491	98	1.6	495	99	0.7	503	101	5.2
Tungsten		25	25.0	100	0.8	24.8	99	1.8	24.5	98	1.5	25.1	100	2.4
Mercury		2.5	2.49	99	1.2	2.45	98	0.8	2.45	98	0.7	2.47	99	2.4
Thallium	T	250	250	100	1.6	248	99	1.6	248	99	0.8	251	100	3.4
Lead	T	250	252	101	0.7	250	100	1.5	250	100	0.5	253	101	3.4
Uranium		250	247	99	1.5	243	97	1	241	97	0.8	245	98	2.7

| Unit: ug/L
| T: Target analyte
|%Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F154
Method : SW6020A
Sequence : IH6F22
Instrument ID: H6

CB SampleID		: ICB		CCB3		CCB4		CCB5		CCB6	
CB DataFileID		: H6F22009		H6F22039		H6F22051		H6F22062		H6F22072	
CB DateTime		: 6/26/22010:33		6/26/22012:06		6/26/22012:37		6/26/22013:09		6/26/22013:35	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.09	>0	0.1	>0	0.07	>0	0.2	>0	0.2	>0
Beryllium	T	0.10	0.003	<0.10	0.004	<0.10	0.02	<0.10	0.005	<0.10	0.01	<0.10
Boron		5.0	0.3	<5.0	0.4	<5.0	0.9	<5.0	0.9	<5.0	0.9	<5.0
Sodium	T	25	0.7	<25	20	<25	40	>25	30	>25	10	<25
Magnesium	T	25	0.3	<25	0.5	<25	9	<25	2	<25	9	<25
Aluminum	T	25	0.7	<25	0.4	<25	7	<25	0.5	<25	8	<25
Silicon		20	0.8	<20	0.3	<20	0.5	<20	0.4	<20	0.5	<20
Phosphorus		25	0.5	<25	2	<25	2	<25	1	<25	2	<25
Potassium	T	25	0.7	<25	5	<25	4	<25	4	<25	4	<25
Calcium	T	25	0.4	<25	0.3	<25	3	<25	0.5	<25	4	<25
Titanium		0.5	0.01	<0.5	0.03	<0.5	0.10	<0.5	0.02	<0.5	0.1	<0.5
Vanadium	T	0.25	0.10	<0.25	0.1	<0.25	0.05	<0.25	0.03	<0.25	0.05	<0.25
Chromium	T	0.1	0.01	<0.1	0.04	<0.1	0.03	<0.1	0.05	<0.1	0.02	<0.1
Manganese	T	0.25	0.06	<0.25	0.04	<0.25	0.4	>0.25	0.06	<0.25	0.5	>0.25
Iron	T	25	0.6	<25	0.3	<25	3	<25	0.4	<25	5	<25
Cobalt	T	0.1	0.007	<0.1	0.004	<0.1	0.08	<0.1	0.005	<0.1	0.09	<0.1
Nickel	T	0.25	0.007	<0.25	0.004	<0.25	0.005	<0.25	0.008	<0.25	0.01	<0.25
Copper	T	0.50	0.02	<0.50	0.2	<0.50	0.2	<0.50	0.3	<0.50	0.2	<0.50
Zinc	T	5	0.008	<5	0.07	<5	0.01	<5	0.07	<5	0.01	<5
Arsenic	T	0.125	0.007	<0.125	0.0009	<0.125	0.01	<0.125	0.008	<0.125	0.03	<0.125
Selenium	T	0.15	0.05	<0.15	0.01	<0.15	0.04	<0.15	0.003	<0.15	0.07	<0.15
Strontium		1.0	0.02	<1.0	0.0006	<1.0	0.08	<1.0	0.02	<1.0	0.08	<1.0
Zirconium		2.0	0.002	<2.0	0.002	<2.0	0.005	<2.0	0.003	<2.0	0.010	<2.0
Molybdenum		0.5	0.01	<0.5	0.003	<0.5	0.08	<0.5	0.006	<0.5	0.09	<0.5
Silver	T	0.1	0.0005	<0.1	0.0003	<0.1	0.006	<0.1	0.0005	<0.1	0.007	<0.1
Cadmium	T	0.1	0.02	<0.1	0.008	<0.1	0.10	<0.1	0.009	<0.1	0.1	>0.1
Tin		0.2	0.07	<0.2	0.04	<0.2	0.04	<0.2	0.03	<0.2	0.07	<0.2
Antimony	T	0.25	0.0010	<0.25	0.001	<0.25	0.02	<0.25	0.004	<0.25	0.02	<0.25
Barium	T	0.25	0.01	<0.25	0.007	<0.25	0.1	<0.25	0.009	<0.25	0.1	<0.25
Tungsten		1.0	0.007	<1.0	0.001	<1.0	0.006	<1.0	0.004	<1.0	0.008	<1.0
Mercury		0.1	0.004	<0.1	0.003	<0.1	0.007	<0.1	0.004	<0.1	0.01	<0.1
Thallium	T	0.1	0.03	<0.1	0.0007	<0.1	0.1	>0.1	0.001	<0.1	0.1	>0.1
Lead	T	0.05	0.03	<0.05	0.002	<0.05	0.08	>0.05	0.005	<0.05	0.09	>0.05
Uranium		0.1	0.007	<0.1	0.005	<0.1	0.07	<0.1	0.006	<0.1	0.08	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6F22001.d		1	
2		CalBlk	BLANK		1101	H6F22002.d		1	
3		CalStd	S0		1102	H6F22003.d		1	
4		CalStd	S1		1104	H6F22004.d		2	
5		CalStd	S2		1105	H6F22005.d		3	
6		CalStd	S3		1106	H6F22006.d		4	
7		CalStd	S4		1107	H6F22007.d		5	
8		ICV	ICV		1204	H6F22008.d			1
9		ICB	ICB		1102	H6F22009.d			1
10		LLCCV	MRLF2601 ✓	1/100/10 ppb	1306	H6F22010.d			1
11		LLCCV2	MRLF2602	0.4/40/4 ppb	1307	H6F22011.d			1
12		ICS-A	ICSA1		1304	H6F22012.d			1
13		ICSB	ICSAB1		1305	H6F22013.d			1
14		Sample	MRLF2603	500 ppb CAT	1207	H6F22014.d			1
15		CCV	CCV1		1206	H6F22015.d			1
16		CCB	CCB1		1102	H6F22016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF035WB		2101	H6F22017.d			1
2		LCSW	IMF035WL		2102	H6F22018.d			1
3		LCSW	IMF035WC		2103	H6F22019.d			1
4		Sample	F170-04		2104	H6F22020.d			1
5		Sample	F170-06		2105	H6F22021.d			1
6		Sample	F170-02 Ca↑		2106	H6F22022.d			1
7		Sample	F170-03 Ca↑		2107	H6F22023.d			1
8		Sample	F170-05 Na Ca↑		2108	H6F22024.d			1
9		Sample	F164-01		2109	H6F22025.d			1
10		CCV	CCV2		1206	H6F22026.d			1
11		CCB	CCB2		1102	H6F22027.d			1
12		Sample	F170-06 ✓	UNDIG	3101	H6F22028.d			1
13		Sample	F170-02I		2110	H6F22029.d			10
14		Sample	F170-03I		2111	H6F22030.d			10
15		Sample	F170-05I		2112	H6F22031.d			10
16		Sample	F155-01 Na mg Ca↑		2201	H6F22032.d			1
17		Sample	F155-02 Na mg Ca↑		2202	H6F22033.d			1
18		Sample	F155-01I		2203	H6F22034.d			10
19		Sample	F155-02I		2204	H6F22035.d			10
20		LLCCV	MRLF2604	1/100/10 ppb Na V↑	1306	H6F22036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		LLCCV2	MRLF2605	0.4/40/4 ppb Na V ↑	1307	H6F22037.d			1
22		CCV	CCV3		1206	H6F22038.d			1
23		CCB	CCB3		1102	H6F22039.d			1
24		Blank	IMF029WB		2205	H6F22040.d			1
25		LCSW	IMF029WL		2206	H6F22041.d			1
26		LCSW	IMF029WC		2207	H6F22042.d			1
27		Sample	F154-06 Ca↑		2208	H6F22043.d			1
28		Sample	F154-01 Na Ca↑		2209	H6F22044.d			1
29		Sample	F154-02M Na Mg Ca↑		2210	H6F22045.d			1
30		Sample	F154-02S		2211	H6F22046.d			1
31		Sample	F154-02A		2212	H6F22047.d			1
32		Sample	F154-02		2301	H6F22048.d			1
33		Sample	F154-02J		2302	H6F22049.d			5
34		CCV	CCV4		1206	H6F22050.d			1
35		CCB	CCB4		1102	H6F22051.d			1
36		Sample	F154-05 Na Ca↑		2303	H6F22052.d			1
37		Sample	F162-01 Na Mg Ca↑		2304	H6F22053.d			1
38		Sample	F162-02 Na Mg Ca↑		2305	H6F22054.d			1
39		Sample	F162-04 Ca↑		2306	H6F22055.d			1
40		Sample	F162-05 Na Mg Ca↑		2307	H6F22056.d			1
41		Sample	F162-07 Na Mg Ca↑		2308	H6F22057.d			1
42		Sample	F162-08 Mg Ca↑		2309	H6F22058.d			1
43		Sample	F162-10 Ca↑		2310	H6F22059.d			1
44		Sample	F162-11 Na Ca↑		2311	H6F22060.d			1
45		CCV	CCV5		1206	H6F22061.d			1
46		CCB	CCB5		1102	H6F22062.d			1
47		Sample	F154-01I		2312	H6F22063.d			10
48		Sample	F154-02M		2401	H6F22064.d			10
49		Sample	F154-02S		2402	H6F22065.d			10
50		Sample	F154-02A		2403	H6F22066.d			10
51		Sample	F154-02I		2404	H6F22067.d			10
52		Sample	F154-02J		2405	H6F22068.d			50
53		Sample	F154-05I		2406	H6F22069.d			10
54		Sample	F154-06I		3101	H6F22070.d			10
55		CCV	CCV6		1206	H6F22071.d			1
56		CCB	CCB6		1102	H6F22072.d			1
57		Sample	F162-01I		2407	H6F22073.d			10
58		Sample	F162-02I		2408	H6F22074.d			10
59		Sample	F162-04I		2409	H6F22075.d			10
60		Sample	F162-05I		2410	H6F22076.d			10
61		Sample	F162-07I		2411	H6F22077.d			10
62		Sample	F162-08I		2412	H6F22078.d			10
63		Sample	F162-10I		2501	H6F22079.d			10
64		Sample	F162-11I		2502	H6F22080.d			10
65		CCV	CCV7		1206	H6F22081.d			1
66		CCB	CCB7		1102	H6F22082.d			1
67		LLCCV	MRLF2606 ✓	1/100/10 ppb	1306	H6F22083.d			1
68		LLCCV2	MRLF2607	0.4/40/4 ppb	1307	H6F22084.d			1
69		Blank	IMF013SB		3201	H6F22085.d			1
70		LCSS	IMF013SL		3202	H6F22086.d			1
71		LCSS	IMF013SC		3203	H6F22087.d			1
72		Sample	F106-24		3204	H6F22088.d			1

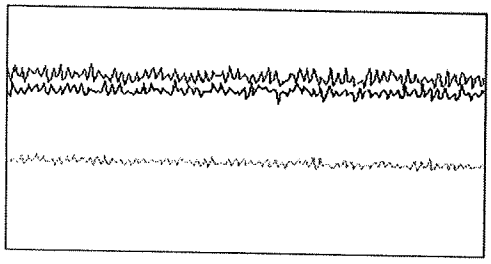
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	F107-10		3205	H6F22089.d			1
74		CCV	CCV8		1206	H6F22090.d			1
75		CCB	CCB8		1102	H6F22091.d			1
76		Sample	F176-02M		2503	H6F22092.d			5
77		Sample	F176-02S		2504	H6F22093.d			5
78		Sample	F176-02A		2505	H6F22094.d			5
79		Sample	F176-02G		2506	H6F22095.d			5
80		Sample	F176-02J		2507	H6F22096.d			25
81		Sample	F176-04G		2508	H6F22097.d			5
82		Sample	F176-06G		2509	H6F22098.d			5
83		CCV	CCV9		1206	H6F22099.d			1
84		CCB	CCB9		1102	H6F22100.d			1
85		Sample	F176-08G		2510	H6F22101.d			5
86		Sample	F176-09G		2511	H6F22102.d			5
87		Sample	F176-10G		2512	H6F22103.d			5
88		Sample	F176-11G		3101	H6F22104.d			5
89		Sample	F176-12G		3102	H6F22105.d			5
90		Sample	F176-13G		3103	H6F22106.d			5
91		ICS-A	ICSA2		1304	H6F22107.d			1
92		ICSB	ICSAB2		1305	H6F22108.d			1
93		CCV	CCV10		1206	H6F22109.d			1
94		CCB	CCB10		1102	H6F22110.d			1
95		Sample	F176-02M] ✓		3104	H6F22111.d			1
96		Sample	F176-02S		3105	H6F22112.d			1
97		Sample	F176-02A		3106	H6F22113.d			1
98		Sample	F176-02		3107	H6F22114.d			1
99		Sample	F176-02J		3108	H6F22115.d			5
100		Sample	F176-04		3109	H6F22116.d			1
101		Sample	F176-06		3110	H6F22117.d			1
102		CCV	CCV11		1206	H6F22118.d			1
103		CCB	CCB11		1102	H6F22119.d			1
104		Sample	F176-08		3111	H6F22120.d			1
105		Sample	F176-09		3112	H6F22121.d			1
106		Sample	F176-10		3201	H6F22122.d			1
107		Sample	F176-11		3202	H6F22123.d			1
108		Sample	F176-12		3203	H6F22124.d			1
109		Sample	F176-13		3204	H6F22125.d			1
110		ICS-A	ICSA3		1304	H6F22126.d			1
111		ICSB	ICSAB3		1305	H6F22127.d			1
112		CCV	CCV12		1206	H6F22128.d			1
113		CCB	CCB12		1102	H6F22129.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-06-26 09:06:44
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



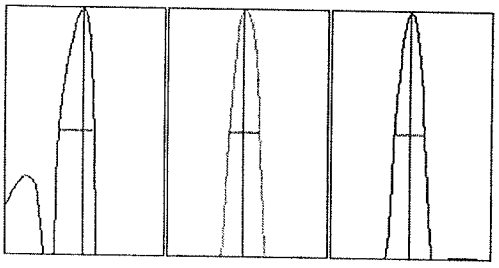
Mass	Range	Count	RSD%	Background
7	10000	7247	2.967	0.150
89	50000	18479	3.240	0.900
205	20000	13284	2.557	3.050

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.319 %
Doubly Charged	70 / 140 1.454 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	7126.74	7.00	0.65	0.77
89	18082.03	88.95	0.57	0.75
205	12905.61	205.00	0.56	0.75

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.08 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.2 V	Deflect	13.0 V
Extract 2	-175.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.03 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9997
Mass Offset	124	Axis Offset	-0.07

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.08	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.16E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	31.6	°C
Nebulizer Gas(DP)	6.16E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.59E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.99E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.21E+2	Pa
Analyzer Press	6.52E-5	Pa
IG HV	178	V
IG Emission	4.98	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.1	%
TMP Current	2.78	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.7	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.8	V
+U Voltage	8.8	V

Name	Value	Unit
-U Voltage	-14.5	V
V Voltage	42.1	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.8	V
-120V	-133.8	V
-720V	-738.2	V
Prefilter Bias	-5.01	V
Pickup Heater I	0.08	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2405	V
Pulse HV	1557	V
EM Gate	-36.2	V
Pulse Gate	341.8	V
EM Entrance	0.2	V
EM HV Gain	-1051.3	V
Inner Pole	-300.3	V
Outer Pole	20.1	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.6	V
Forward Power	1549	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.43	A
Drain I 2	10.96	A
Drain I 3	10.92	A
Drain I 4	10.21	A
Temp Sensor	2.8	V
Driver I	5.60	A

Name	Value	Unit
Igniter	0.1	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.61E-1	kPa
ORS AMFC Temp	31.4	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-175.3	V
Omega Bias	-90.1	V
Omega Lens	7.1	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.0	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	30.6	°C
Internal Temp	36.2	°C
+24V	23.6	V
Water Temp	18.8	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

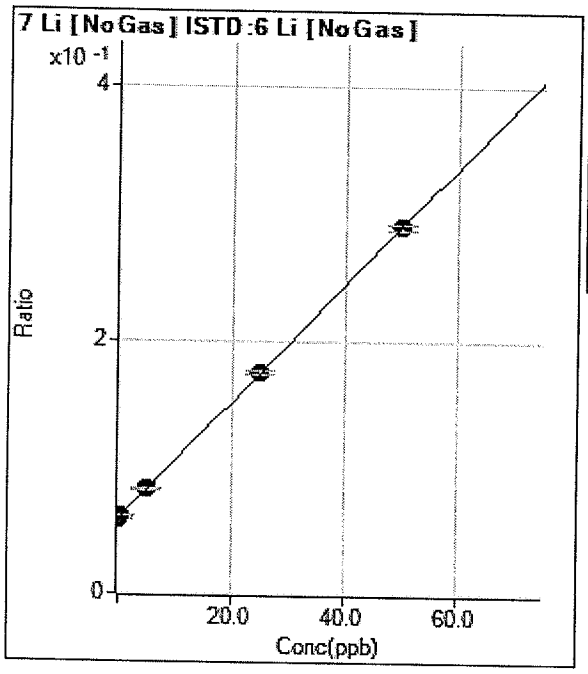
Performance Report History

Sensitivity

Calibration for H6F22129.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b\
Analysis File: IH6F22.batch.bin
DA Date-Time: 2020-06-26 16:08:30
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

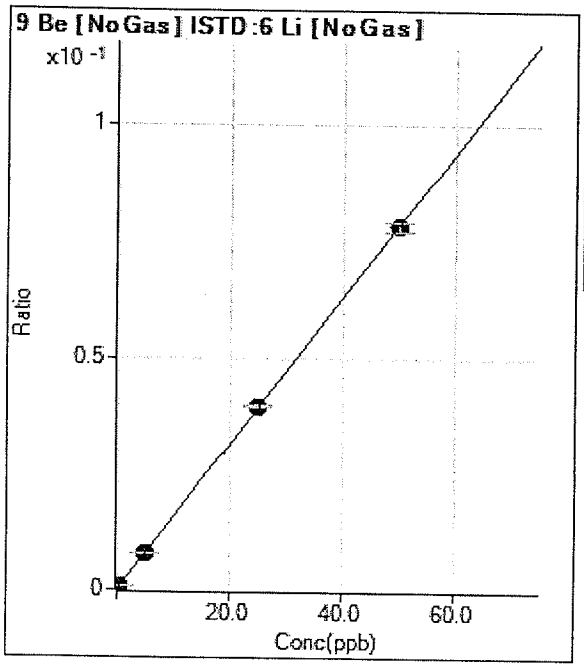
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6F22003.d	S0	2020-06-26 10:13:52
2	H6F22004.d	S1	2020-06-26 10:16:43
3	H6F22005.d	S2	2020-06-26 10:19:33
4	H6F22006.d	S3	2020-06-26 10:22:33
5	H6F22007.d	S4	2020-06-26 10:25:23



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107277.57	0.0585	P	1.9
2	☐	0.500	0.501	113456.89	0.0608	P	0.7
3	☐	5.000	5.122	152974.61	0.0822	P	1.0
4	☐	25.000	25.249	316906.47	0.1754	P	1.7
5	☐	50.000	49.863	522113.21	0.2893	P	1.9

y = 0.0046 * x + 0.0585
R = 1.0000
DL = 0.7082
BEC = 12.64

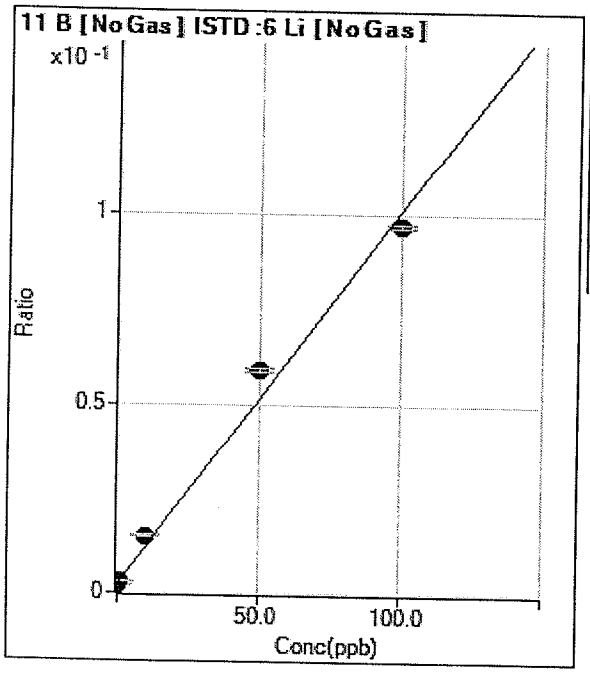
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37.78	0.0000	P	13.4
2	☐	0.500	0.488	1466.74	0.0008	P	2.0
3	☐	5.000	5.037	14749.95	0.0079	P	2.0
4	☐	25.000	25.238	71627.01	0.0396	P	1.0
5	☐	50.000	49.877	141322.42	0.0783	P	2.8

y = 0.0016 * x + 2.0598E-005
R = 1.0000
DL = 0.005266
BEC = 0.01312

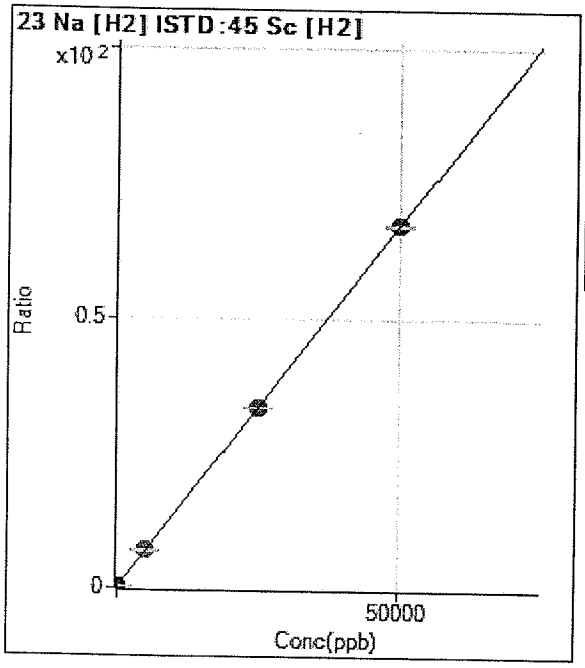
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3679.37	0.0020	P	2.6
2	☐	0.500	0.893	5391.04	0.0029	P	3.5
3	☐	10.000	13.189	28001.18	0.0150	P	1.7
4	☐	50.000	57.636	106612.07	0.0590	P	1.0
5	☐	100.000	95.861	174690.98	0.0968	P	1.2

y = 9.8882E-004 * x + 0.0020
R = 0.9951
DL = 0.1588
BEC = 2.029

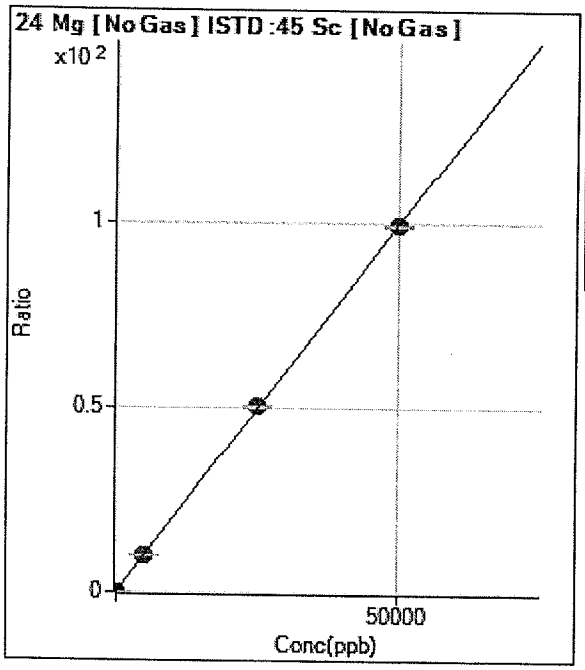
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400057.54	0.1247	P	1.0
2	☐	50.000	53.907	639662.90	0.1971	P	1.2
3	☐	5000.000	5102.978	22472592.67	6.9763	A	1.2
4	☐	25000.000	24875.339	108905344.00	33.5238	A	0.9
5	☐	50000.000	50052.029	215298154.67	67.3276	A	0.7

y = 0.0013 * x + 0.1247
R = 1.0000
DL = 2.659
BEC = 92.9

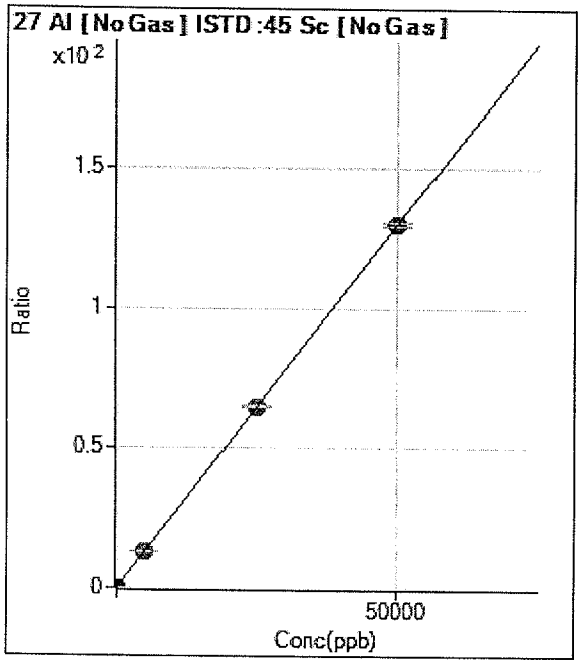
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27330.74	0.0052	P	2.9
2	☐	50.000	53.103	596830.38	0.1109	P	1.5
3	☐	5000.000	5116.253	54577372.00	10.1949	A	0.5
4	☐	25000.000	25290.926	266286757.33	50.3756	A	0.8
5	☐	50000.000	49842.908	525115914.67	99.2742	A	0.5

y = 0.0020 * x + 0.0052
R = 1.0000
DL = 0.2284
BEC = 2.603

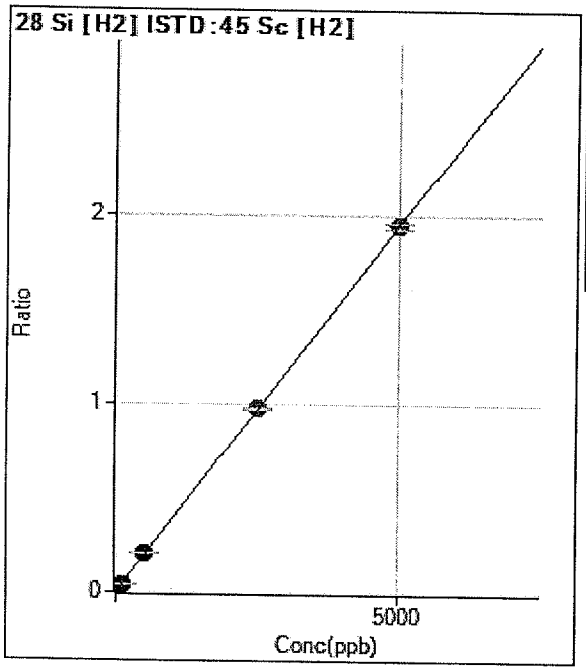
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9022.96	0.0017	P	7.7
2	☐	50.000	52.621	744479.13	0.1384	P	1.7
3	☐	5000.000	5051.799	70249423.96	13.1238	A	1.6
4	☐	25000.000	25004.448	343325328.22	64.9510	A	1.5
5	☐	50000.000	49992.594	686882496.43	129.8580	A	1.0

y = 0.0026 * x + 0.0017
R = 1.0000
DL = 0.152
BEC = 0.6589

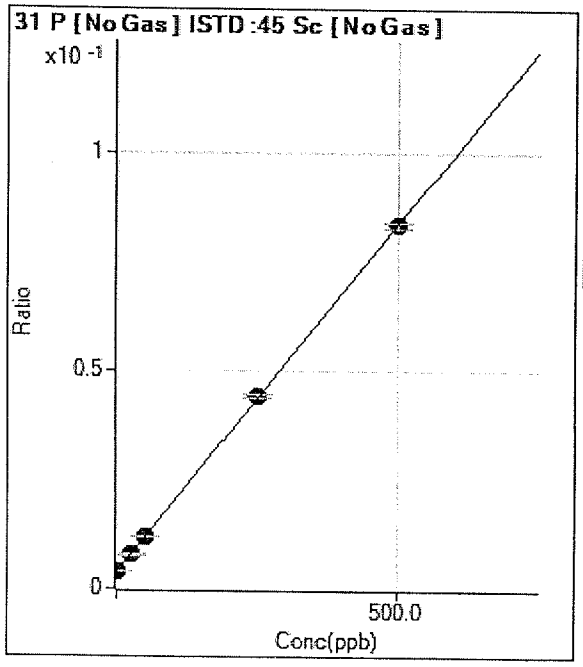
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3723.83	0.0012	P	1.3
2	☐	100.000	100.363	130494.54	0.0402	P	1.5
3	☐	500.000	521.164	656946.84	0.2040	P	1.9
4	☐	2500.000	2502.342	3166854.83	0.9748	A	0.7
5	☐	5000.000	4996.705	6220790.00	1.9454	A	1.6

y = 3.8911E-004 * x + 0.0012
R = 1.0000
DL = 0.1168
BEC = 2.983

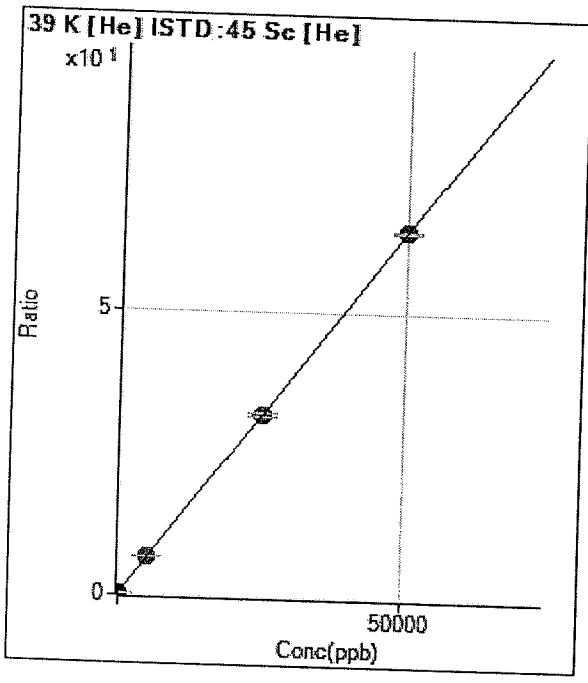
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21333.03	0.0040	P	1.3
2	☐	25.000	23.418	41848.23	0.0078	P	2.3
3	☐	50.000	50.624	64868.35	0.0121	P	0.6
4	☐	250.000	253.068	234646.94	0.0444	P	1.7
5	☐	500.000	498.483	441749.50	0.0835	P	1.7

y = 1.5942E-004 * x + 0.0040
R = 1.0000
DL = 0.9895
BEC = 25.38

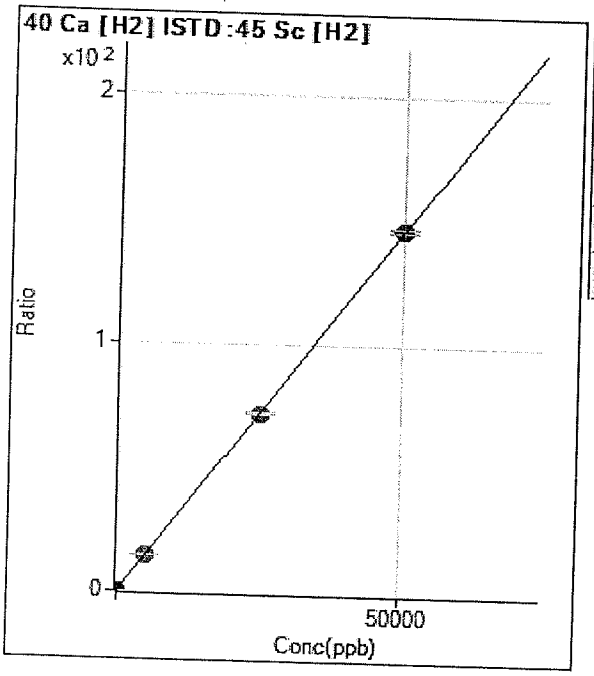
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	101182.78	0.1733	P	2.0
2	☐	50.000	49.715	143690.33	0.2367	P	2.0
3	☐	5000.000	5093.764	3981751.50	6.6671	A	0.1
4	☐	25000.000	24871.960	19119142.67	31.8814	A	1.2
5	☐	50000.000	50054.644	37651220.00	63.9857	A	0.5

y = 0.0013 * x + 0.1733
R = 1.0000
DL = 7.983
BEC = 135.9

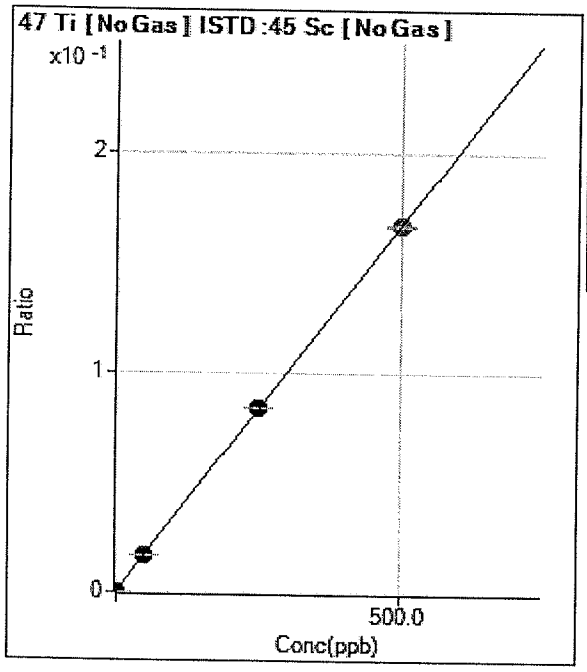
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	134898.41	0.0421	P	0.7
2	☐	50.000	61.007	714788.73	0.2203	P	1.1
3	☐	5000.000	5064.435	47787988.00	14.8355	A	1.5
4	☐	25000.000	24763.234	235123573.33	72.3768	A	0.6
5	☐	50000.000	50111.929	468210709.33	146.4218	A	1.1

y = 0.0029 * x + 0.0421
R = 1.0000
DL = 0.2895
BEC = 14.4

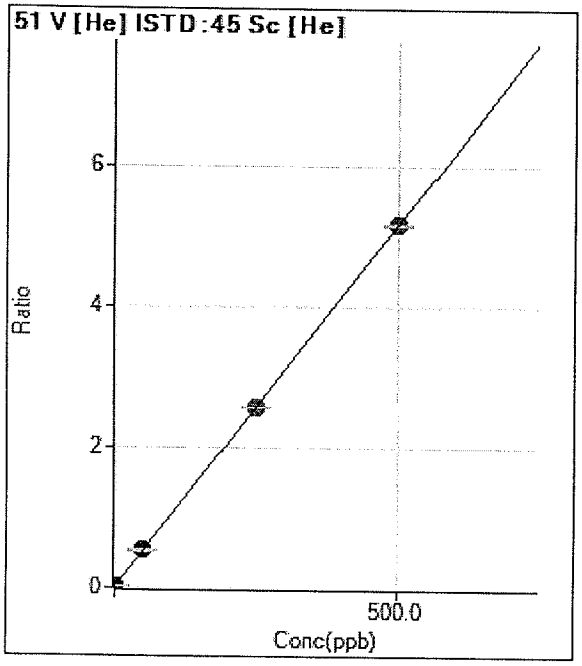
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	476.68	0.0001	P	4.3
2	☐	0.500	0.446	1288.06	0.0002	P	4.6
3	☐	50.000	49.667	89269.93	0.0167	P	0.3
4	☐	250.000	250.967	443433.34	0.0839	P	0.6
5	☐	500.000	499.550	882799.27	0.1669	M	0.7

y = 3.3391E-004 * x + 9.0394E-005
R = 1.0000
DL = 0.03462
BEC = 0.2707

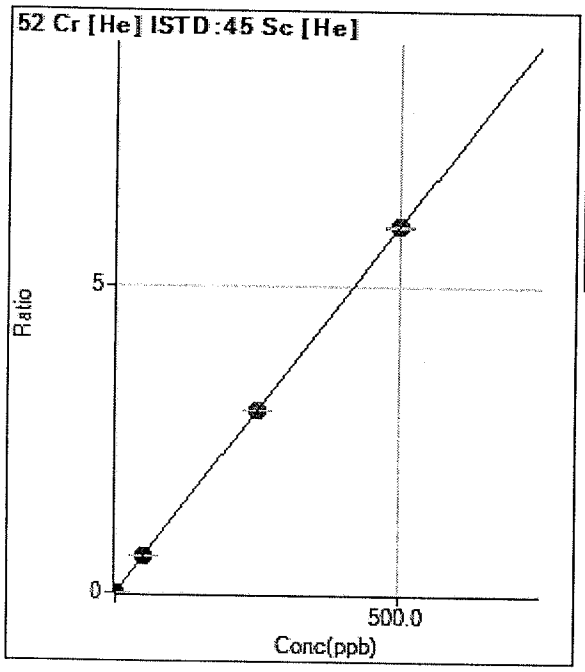
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6548.90	0.0112	P	1.0
2	☐	0.500	0.320	8816.16	0.0145	P	1.7
3	☐	50.000	50.997	320829.67	0.5372	P	1.8
4	☐	250.000	248.935	1546369.29	2.5787	A	0.1
5	☐	500.000	500.433	3043591.42	5.1726	A	0.7

y = 0.0103 * x + 0.0112
R = 1.0000
DL = 0.03223
BEC = 1.087

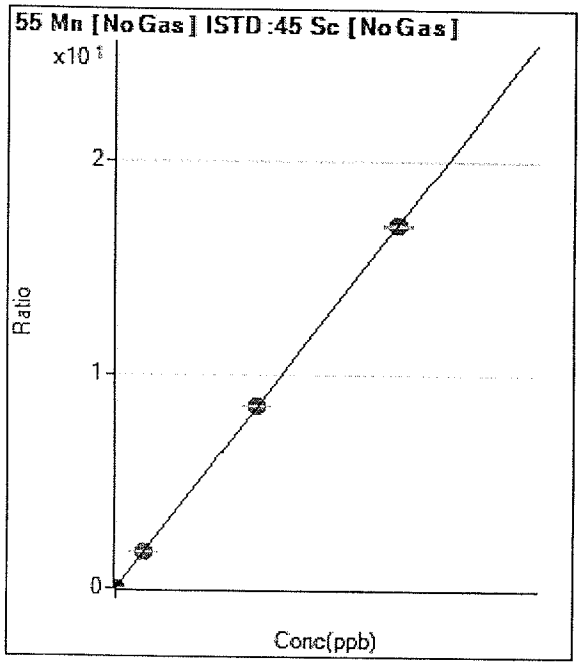
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1209.39	0.0021	P	3.1
2	☐	0.500	0.512	4964.90	0.0082	P	2.1
3	☐	50.000	51.387	367079.05	0.6146	P	0.6
4	☐	250.000	248.852	1780108.04	2.9685	A	0.7
5	☐	500.000	500.435	3511378.67	5.9675	A	0.8

y = 0.0119 * x + 0.0021
R = 1.0000
DL = 0.01616
BEC = 0.1737

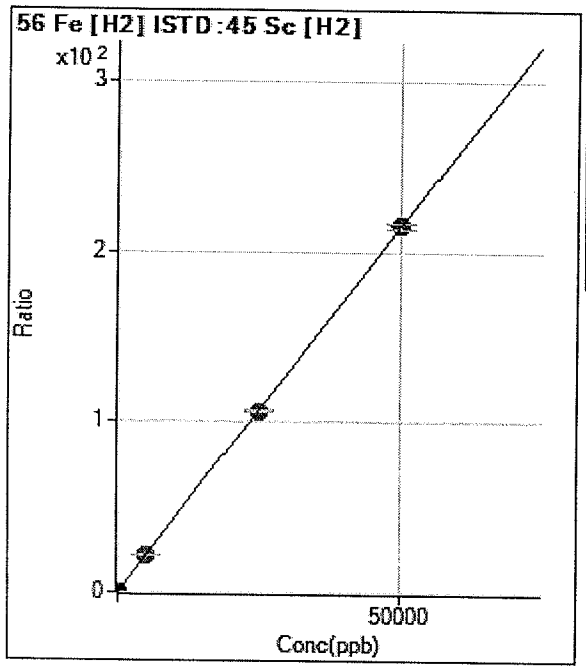
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9121.04	0.0017	P	2.3
2	☐	0.500	0.503	24661.53	0.0046	P	1.3
3	☐	300.000	304.827	9268185.67	1.7314	A	0.9
4	☐	1500.000	1507.791	45231848.00	8.5571	A	0.4
5	☐	3000.000	2995.622	89917986.67	16.9992	A	0.3

y = 0.0057 * x + 0.0017
R = 1.0000
DL = 0.02085
BEC = 0.3049

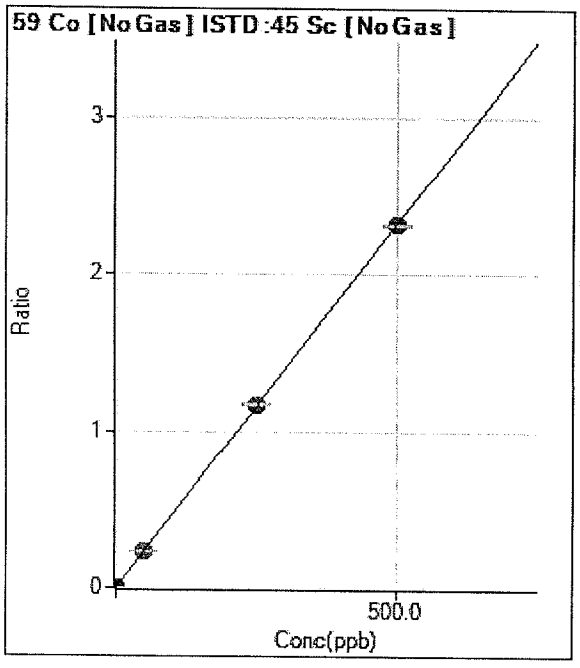
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9666.09	0.0030	P	3.2
2	☐	50.000	53.930	762463.85	0.2349	P	0.8
3	☐	5000.000	5117.117	70898853.33	22.0099	A	1.4
4	☐	25000.000	24789.662	346349685.33	106.6146	A	0.6
5	☐	50000.000	50093.453	688876117.33	215.4372	A	1.6

y = 0.0043 * x + 0.0030
R = 1.0000
DL = 0.06675
BEC = 0.7008

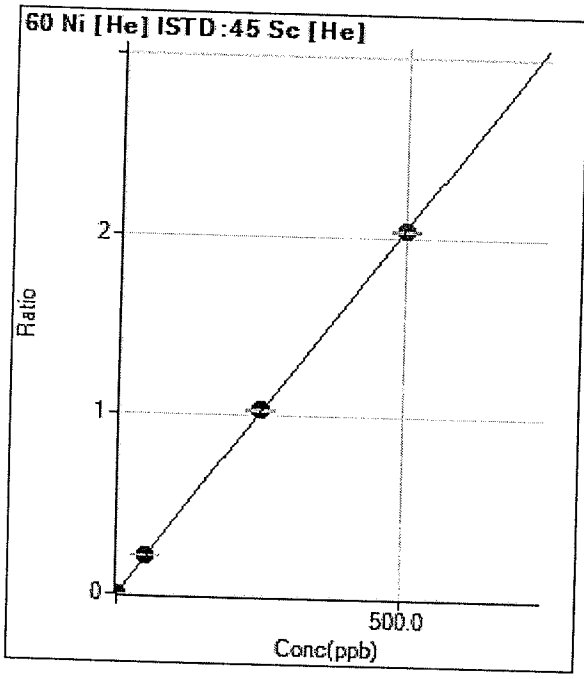
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	253.33	0.0000	P	11.5
2	☐	0.500	0.521	13263.78	0.0025	P	2.0
3	☐	50.000	51.155	1271541.08	0.2375	A	0.8
4	☐	250.000	252.367	6193089.50	1.1716	A	0.8
5	☐	500.000	498.701	12246239.67	2.3152	A	0.7

y = 0.0046 * x + 4.8025E-005
R = 1.0000
DL = 0.003584
BEC = 0.01034

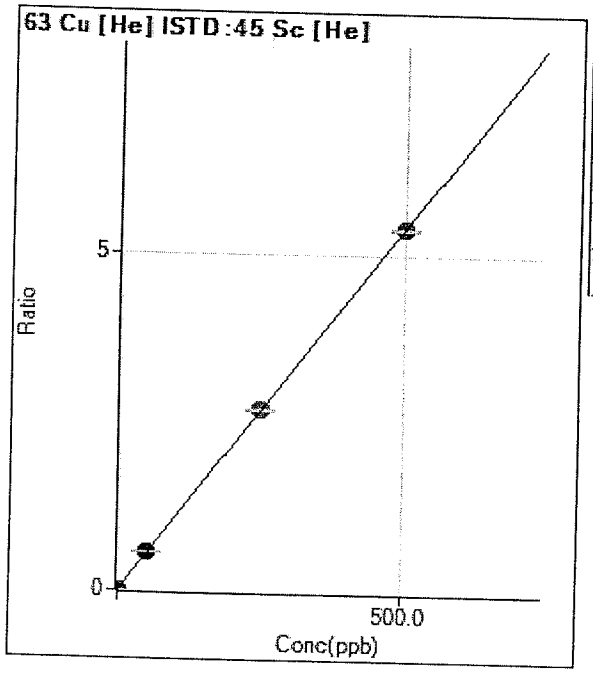
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	127.33	0.0002	P	12.9
2	☐	0.500	0.554	1509.42	0.0025	P	5.7
3	☐	50.000	52.342	128073.24	0.2144	P	0.5
4	☐	250.000	253.030	621163.21	1.0358	P	0.8
5	☐	500.000	498.251	1200083.54	2.0395	A	0.3

y = 0.0041 * x + 2.1811E-004
R = 1.0000
DL = 0.02061
BEC = 0.05329

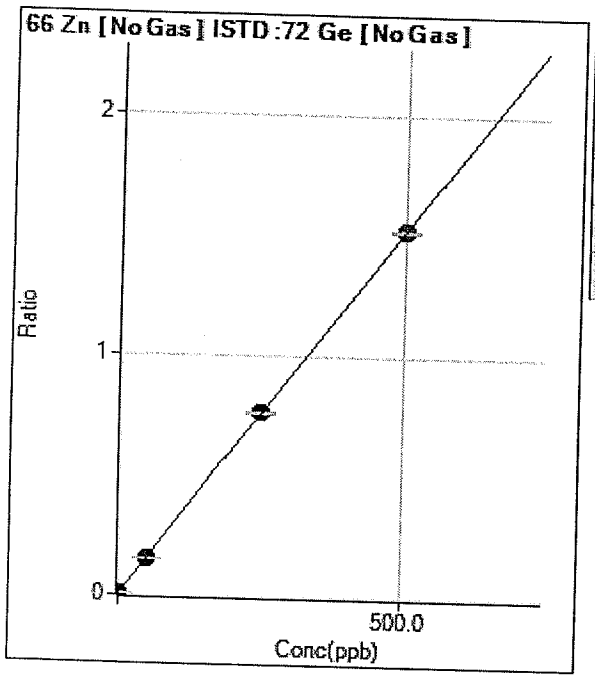
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2564.91	0.0044	P	1.1
2	☐	0.500	0.463	5698.53	0.0094	P	1.5
3	☐	50.000	53.055	344308.34	0.5765	P	0.2
4	☐	250.000	250.314	1621313.09	2.7037	A	0.5
5	☐	500.000	499.537	3172209.42	5.3912	A	0.7

y = 0.0108 * x + 0.0044
R = 1.0000
DL = 0.01313
BEC = 0.4074

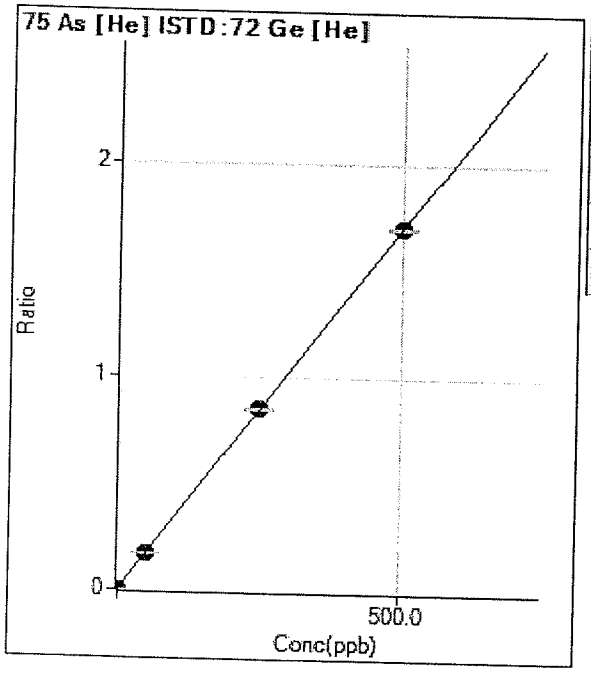
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2090.83	0.0016	P	2.3
2	☐	1.000	1.571	8820.86	0.0063	P	1.4
3	☐	50.000	49.527	209650.23	0.1520	P	0.5
4	☐	250.000	250.186	1025697.56	0.7614	P	0.9
5	☐	500.000	499.953	2034346.00	1.5199	A	0.9

y = 0.0030 * x + 0.0016
R = 1.0000
DL = 0.03577
BEC = 0.5181

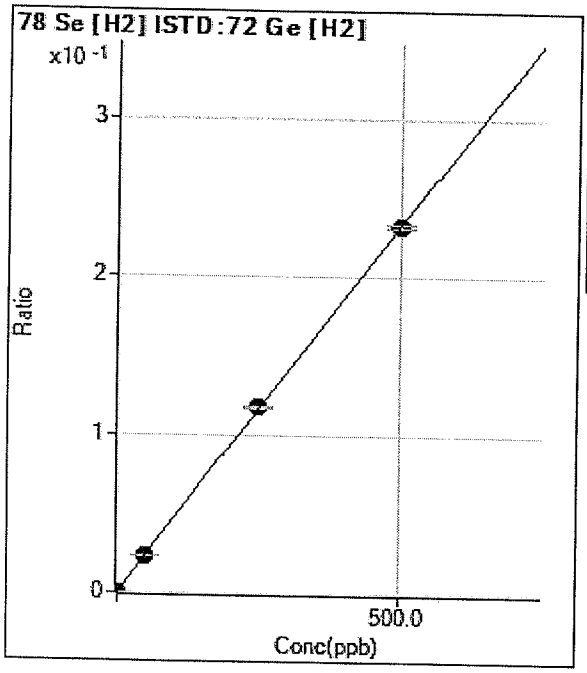
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	315.00	0.0009	P	6.9
2	☐	0.500	0.458	928.70	0.0024	P	6.0
3	☐	50.000	50.252	65680.76	0.1719	P	1.0
4	☐	250.000	250.385	321727.92	0.8531	P	0.8
5	☐	500.000	499.782	634083.98	1.7019	P	0.2

y = 0.0034 * x + 8.5435E-004
R = 1.0000
DL = 0.05231
BEC = 0.251

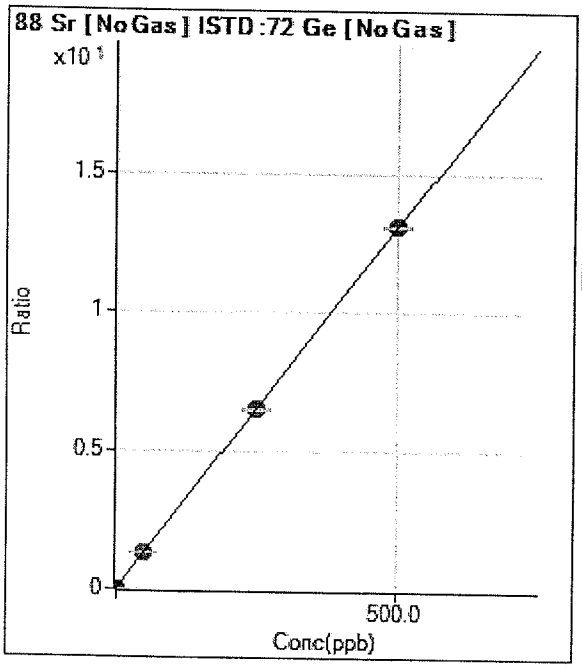
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19.00	0.0000	P	18.4
2	☐	0.500	0.522	246.33	0.0003	P	5.5
3	☐	50.000	51.091	22145.49	0.0238	P	0.5
4	☐	250.000	252.756	108207.87	0.1177	P	0.8
5	☐	500.000	498.513	213494.19	0.2321	P	1.2

y = 4.6553E-004 * x + 2.0993E-005
R = 1.0000
DL = 0.02489
BEC = 0.04509

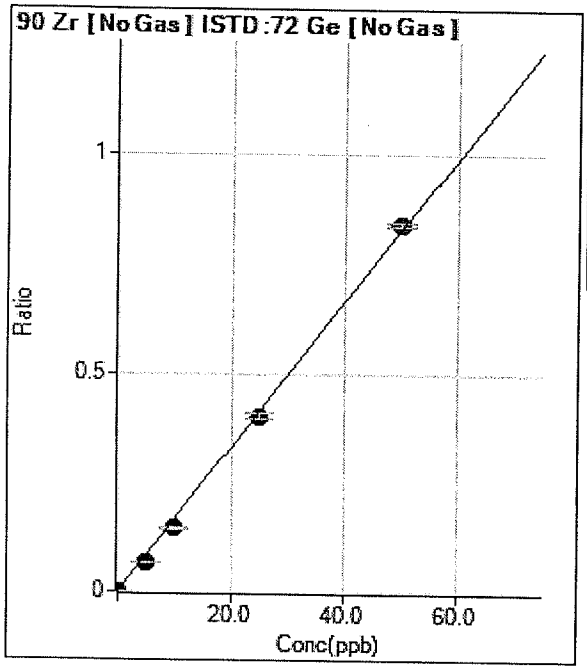
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0005	P	15.0
2	☐	0.500	0.493	18646.33	0.0134	P	2.1
3	☐	50.000	49.352	1778229.51	1.2891	A	0.9
4	☐	250.000	248.266	8733576.87	6.4829	A	0.7
5	☐	500.000	500.932	17507492.08	13.0801	A	0.8

y = 0.0261 * x + 5.3948E-004
R = 1.0000
DL = 0.009283
BEC = 0.02066

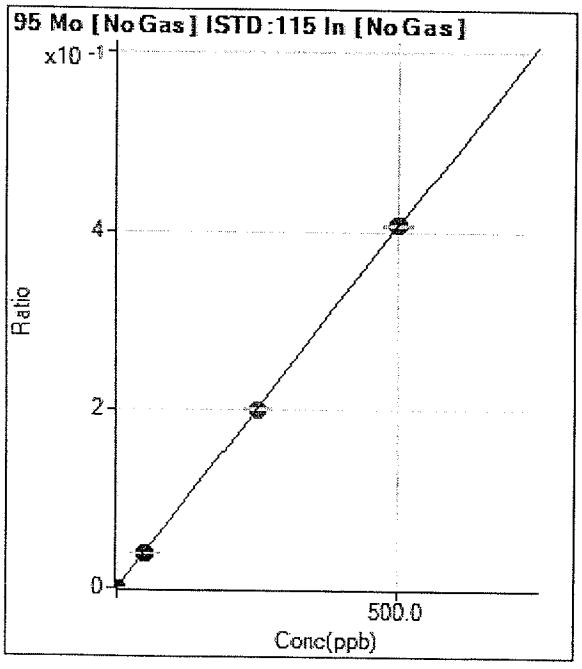
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.67	0.0001	P	11.0
2	☐	5.000	4.131	95227.52	0.0685	P	0.8
3	☐	10.000	8.773	200401.90	0.1453	P	1.5
4	☐	25.000	24.304	541877.09	0.4023	P	2.5
5	☐	50.000	50.680	1122528.42	0.8387	A	1.1

y = 0.0165 * x + 1.3288E-004
R = 0.9996
DL = 0.002656
BEC = 0.008031

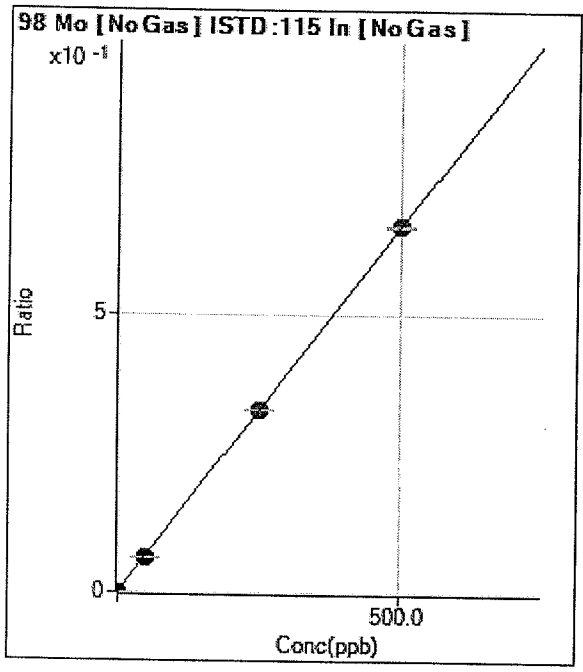
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54.44	0.0000	P	22.5
2	☐	0.500	0.514	3717.19	0.0004	P	3.3
3	☐	50.000	47.934	340781.02	0.0390	P	2.1
4	☐	250.000	248.063	1699527.09	0.2016	A	1.5
5	☐	500.000	501.175	3403505.07	0.4072	A	0.7

y = 8.1258E-004 * x + 6.2156E-006
R = 1.0000
DL = 0.005172
BEC = 0.007649

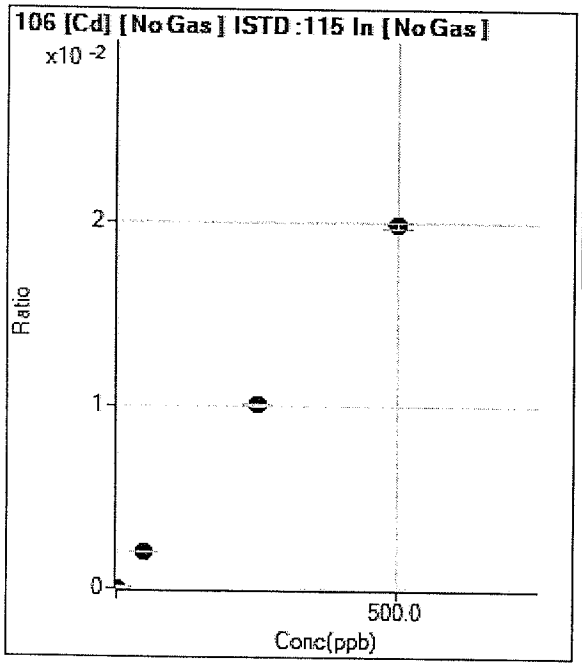
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	154.45	0.0000	P	16.7
2	☐	0.500	0.489	5797.94	0.0007	P	0.6
3	☐	50.000	47.672	548864.80	0.0627	P	2.8
4	☐	250.000	249.158	2764470.79	0.3279	A	0.3
5	☐	500.000	500.654	5505800.89	0.6588	A	0.5

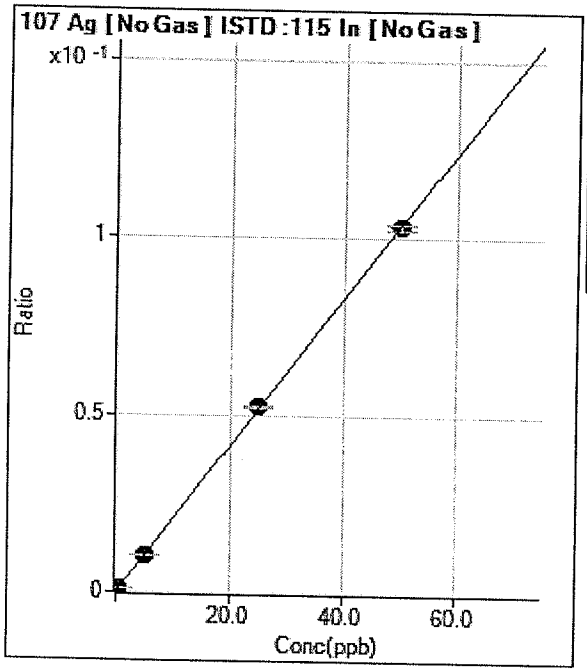
y = 0.0013 * x + 1.7659E-005
R = 1.0000
DL = 0.006737
BEC = 0.01342

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		6.67	0.0000	P	60.8
2	☐	0.500		455.01	0.0001	P	2.9
3	☐	50.000		17412.09	0.0020	P	1.6
4	☐	250.000		85086.33	0.0101	P	0.9
5	☐	500.000		165907.87	0.0199	P	1.6

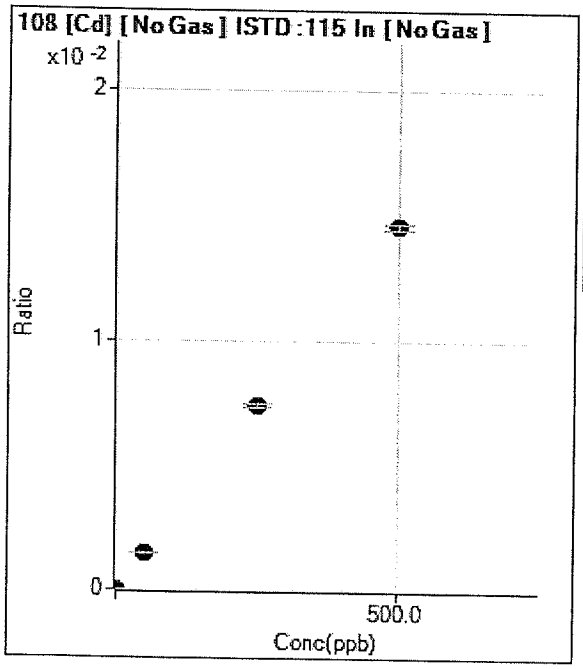
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0000	P	27.5
2	☐	0.500	0.520	9551.23	0.0011	P	1.8
3	☐	5.000	5.026	91123.22	0.0104	P	0.5
4	☐	25.000	25.287	441431.89	0.0524	P	1.3
5	☐	50.000	49.853	862475.51	0.1032	P	1.8

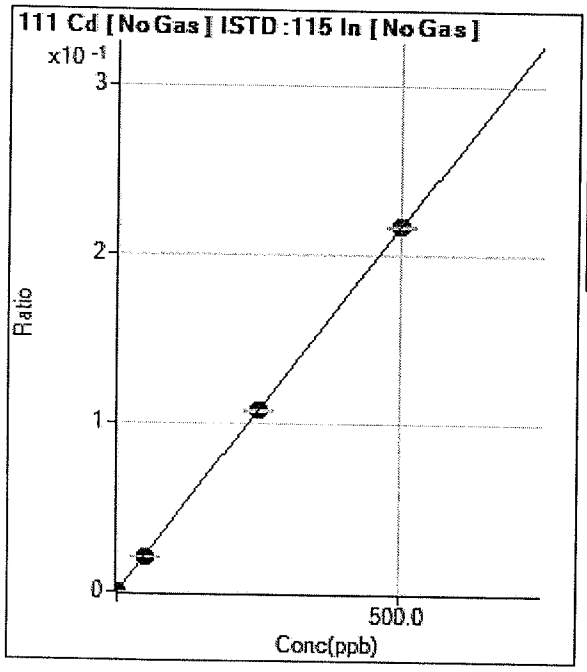
y = 0.0021 * x + 1.1798E-005
R = 1.0000
DL = 0.004705
BEC = 0.005699

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		7.00	0.0000	P	29.2
2	☐	0.500		226.33	0.0000	P	14.6
3	☐	50.000		12806.19	0.0015	P	1.1
4	☐	250.000		62574.71	0.0074	P	1.8
5	☐	500.000		121916.23	0.0146	P	1.4

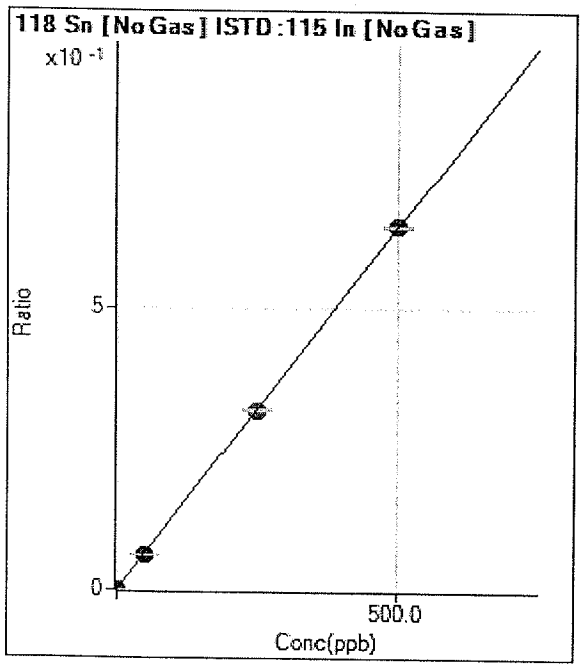
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.92	0.0000	P	20.7
2	☐	0.500	0.529	2047.91	0.0002	P	2.7
3	☐	50.000	48.667	184086.19	0.0210	P	0.4
4	☐	250.000	248.512	905752.50	0.1074	P	1.5
5	☐	500.000	500.877	1809577.17	0.2165	A	0.6

y = 4.3228E-004 * x + 4.6731E-006
R = 1.0000
DL = 0.0067
BEC = 0.01081

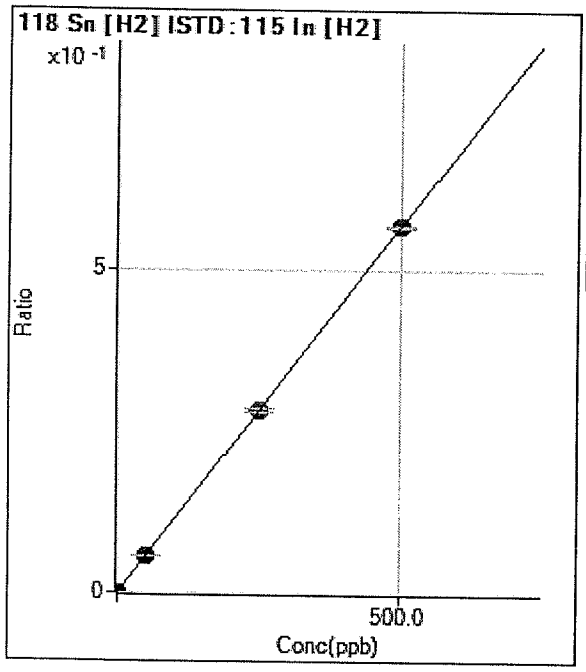
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1496.75	0.0002	P	4.2
2	☐	0.500	0.434	6409.35	0.0007	P	6.3
3	☐	50.000	47.633	539529.87	0.0617	P	0.6
4	☐	250.000	248.060	2701878.64	0.3205	A	0.7
5	☐	500.000	501.207	5409921.03	0.6473	A	0.3

y = 0.0013 * x + 1.7105E-004
R = 1.0000
DL = 0.01673
BEC = 0.1325

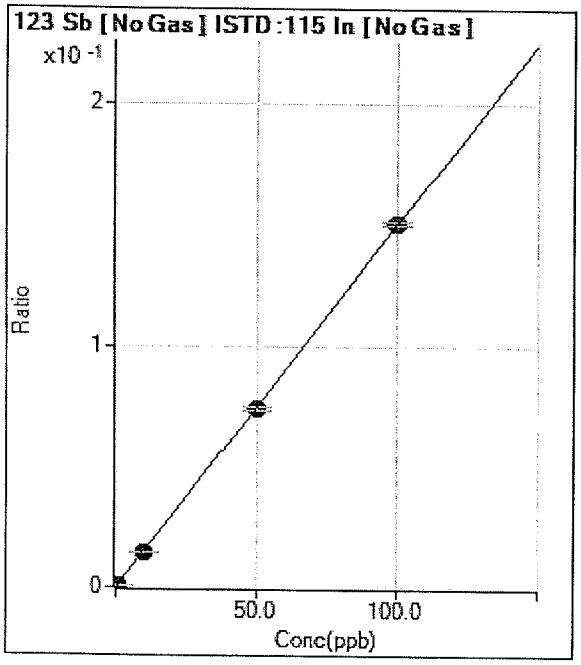
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1144.50	0.0002	P	5.3
2	☐	0.500	0.452	4809.77	0.0007	P	2.7
3	☐	50.000	50.071	402916.03	0.0571	P	0.5
4	☐	250.000	249.394	1955041.31	0.2839	A	1.3
5	☐	500.000	500.296	3888788.18	0.5694	A	0.6

y = 0.0011 * x + 1.6053E-004
R = 1.0000
DL = 0.0226
BEC = 0.1411

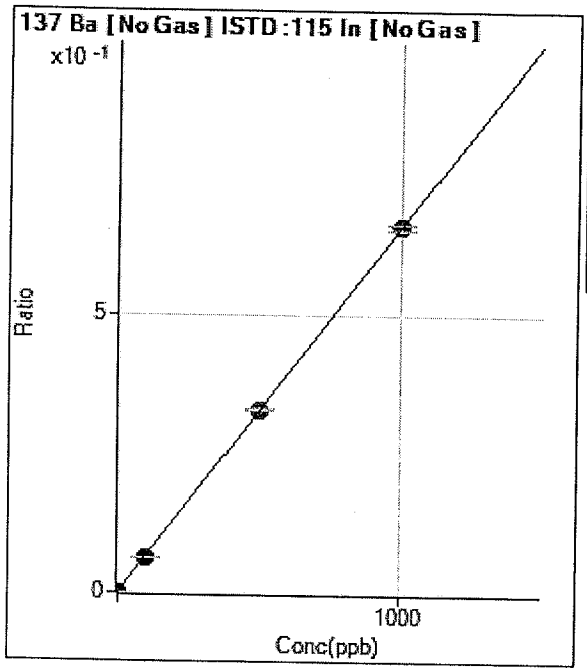
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	125.56	0.0000	P	28.2
2	☐	0.500	0.480	6439.37	0.0007	P	3.5
3	☐	10.000	9.649	126759.06	0.0145	P	0.7
4	☐	50.000	49.492	626080.69	0.0743	P	1.3
5	☐	100.000	100.289	1257398.32	0.1505	A	1.1

y = 0.0015 * x + 1.4346E-005
R = 1.0000
DL = 0.008084
BEC = 0.009563

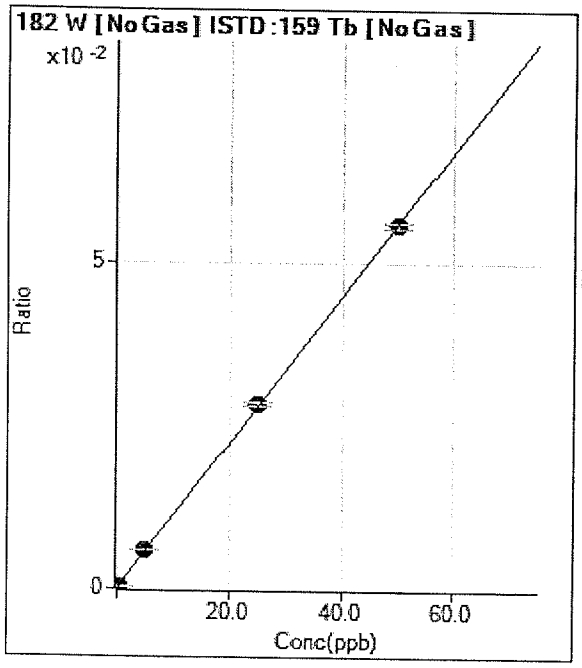
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0000	P	11.9
2	☐	0.500	0.549	3291.53	0.0004	P	2.5
3	☐	100.000	95.435	551137.46	0.0630	P	0.6
4	☐	500.000	500.377	2784517.04	0.3303	A	0.8
5	☐	1000.000	1000.268	5517116.03	0.6602	A	1.3

y = 6.6000E-004 * x + 1.2956E-005
R = 1.0000
DL = 0.007015
BEC = 0.01963

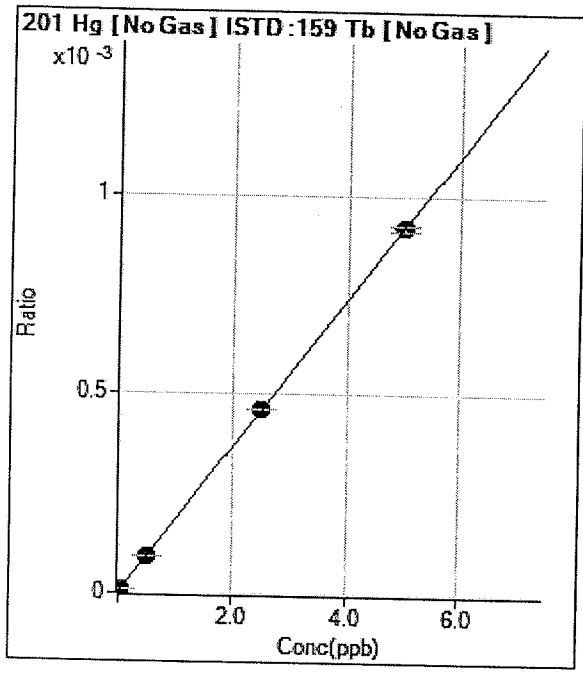
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0000	P	19.8
2	☐	0.500	0.256	3507.16	0.0003	P	5.9
3	☐	5.000	5.255	69426.84	0.0059	P	0.8
4	☐	25.000	25.328	331320.30	0.0284	P	1.3
5	☐	50.000	49.813	650361.67	0.0559	P	1.6

y = 0.0011 * x + 1.1033E-005
R = 0.9999
DL = 0.005828
BEC = 0.009828

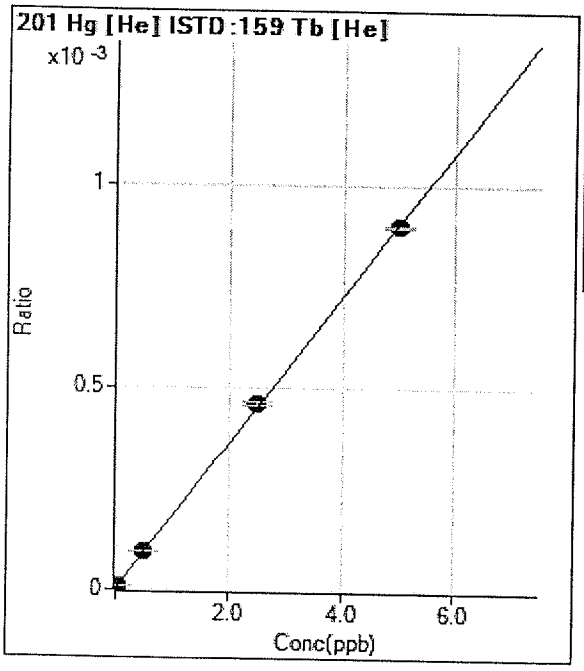
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.17	0.0000	P	22.3
2	☐	0.050	0.049	121.50	0.0000	P	4.7
3	☐	0.500	0.500	1095.05	0.0001	P	1.2
4	☐	2.500	2.507	5382.32	0.0005	P	0.5
5	☐	5.000	4.996	10693.39	0.0009	P	1.5

y = 1.8380E-004 * x + 1.2867E-006
R = 1.0000
DL = 0.004683
BEC = 0.007

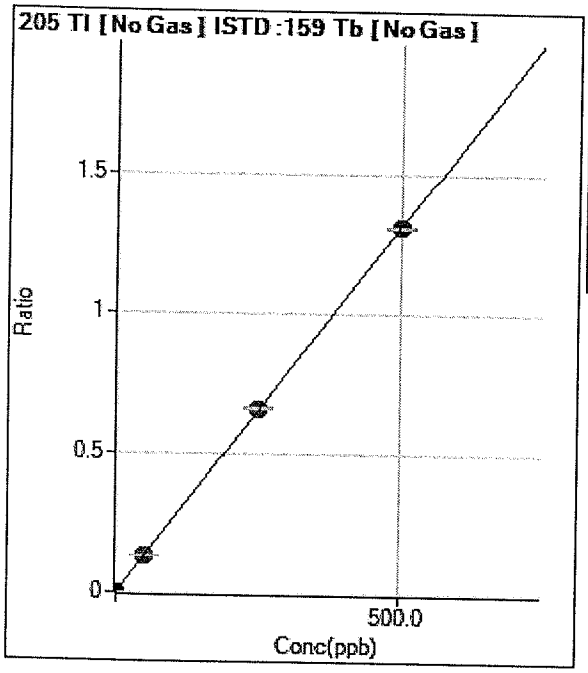
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9.17	0.0000	P	2.4
2	☐	0.050	0.051	70.17	0.0000	P	9.5
3	☐	0.500	0.518	620.02	0.0001	P	3.0
4	☐	2.500	2.558	3026.20	0.0005	P	2.5
5	☐	5.000	4.969	5931.24	0.0009	P	0.6

y = 1.8082E-004 * x + 1.3986E-006
R = 0.9999
DL = 0.0005626
BEC = 0.007735

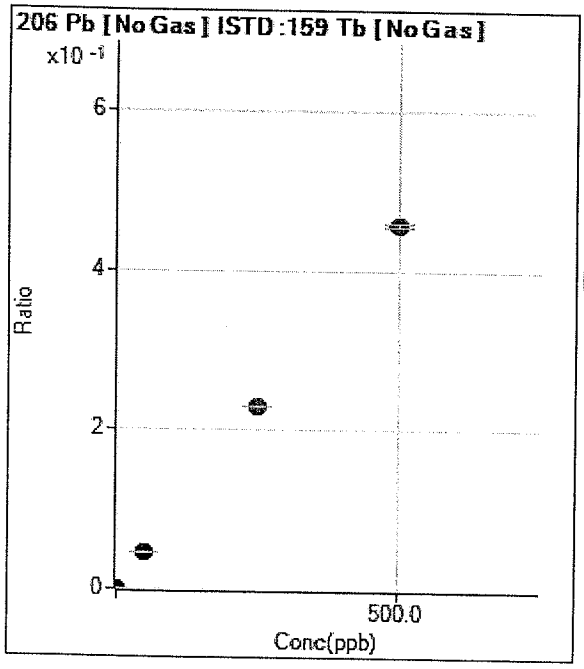
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	788.91	0.0001	P	18.0
2	☐	0.500	0.504	16396.33	0.0014	P	0.7
3	☐	50.000	51.330	1586570.70	0.1351	A	0.5
4	☐	250.000	251.899	7717109.42	0.6626	A	0.7
5	☐	500.000	498.918	15259868.28	1.3122	A	0.8

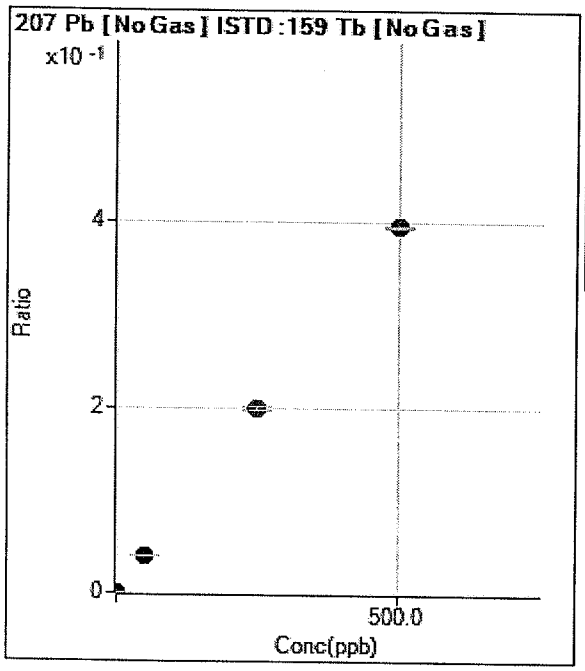
y = 0.0026 * x + 6.6948E-005
R = 1.0000
DL = 0.01372
BEC = 0.02546

Weight: <None>
Min Conc: 0



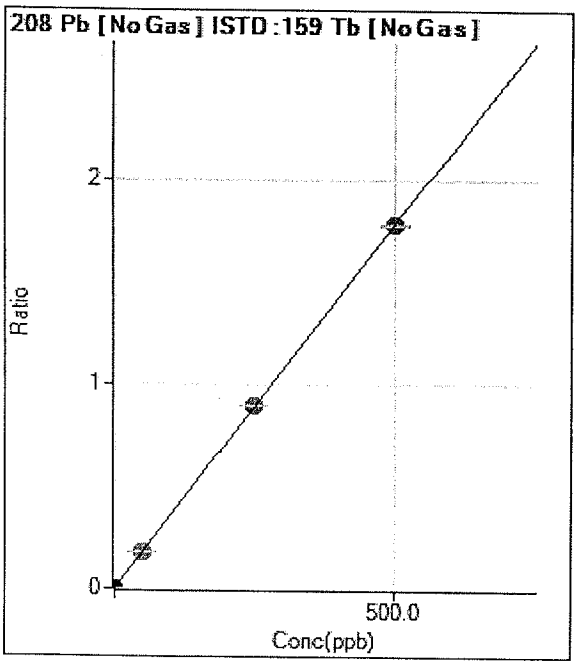
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		453.34	0.0000	P	9.6
2	☐	0.500		5634.62	0.0005	P	5.3
3	☐	50.000		537414.21	0.0457	P	0.1
4	☐	250.000		2673080.80	0.2295	A	0.2
5	☐	500.000		5304658.26	0.4562	A	1.2

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		333.34	0.0000	P	5.5
2	☐	0.500		5157.75	0.0004	P	3.8
3	☐	50.000		467035.70	0.0398	P	1.0
4	☐	250.000		2320627.67	0.1992	A	1.5
5	☐	500.000		4605425.87	0.3960	A	0.6

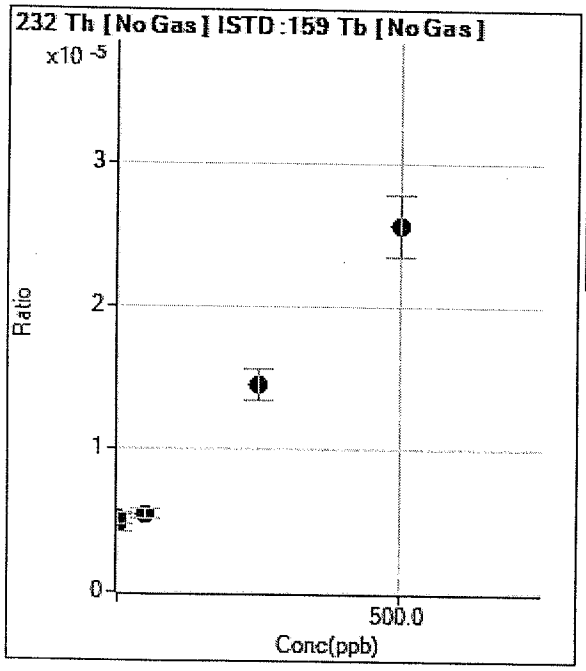
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1622.27	0.0001	P	1.9
2	☐	0.500	0.515	23213.01	0.0020	P	2.3
3	☐	50.000	50.861	2131938.06	0.1815	M	0.3
4	☐	250.000	251.830	10460288.95	0.8981	A	0.5
5	☐	500.000	498.999	20692463.98	1.7794	A	0.7

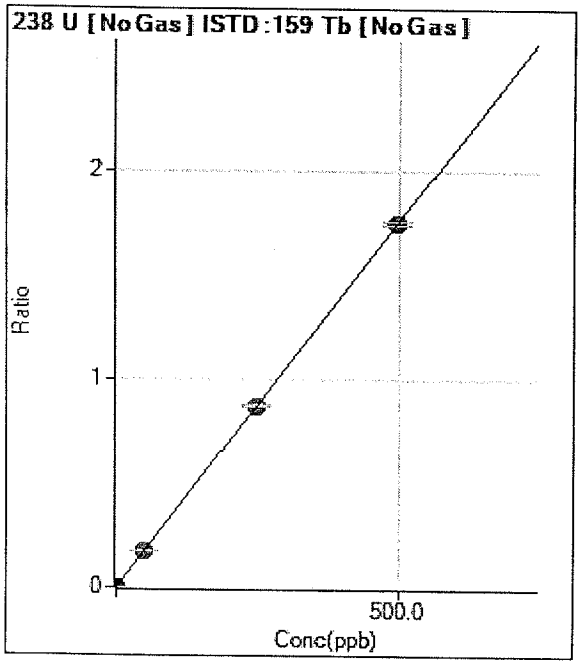
y = 0.0036 * x + 1.3783E-004
R = 1.0000
DL = 0.002261
BEC = 0.03865

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		56.66	0.0000	P	26.3
2	☐	0.500		61.11	0.0000	P	15.5
3	☐	50.000		64.45	0.0000	P	11.0
4	☐	250.000		168.89	0.0000	P	14.9
5	☐	500.000		297.78	0.0000	P	17.1

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	80.00	0.0000	P	14.5
2	☐	0.497	0.508	21090.35	0.0018	P	1.7
3	☐	49.700	50.218	2072481.44	0.1764	A	0.3
4	☐	248.300	248.356	10162585.43	0.8725	A	0.7
5	☐	497.000	496.920	20299674.75	1.7458	A	1.1

y = 0.0035 * x + 6.7970E-006
R = 1.0000
DL = 0.0008421
BEC = 0.001935

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq. Date-Time	2020-06-26 09:31:22
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

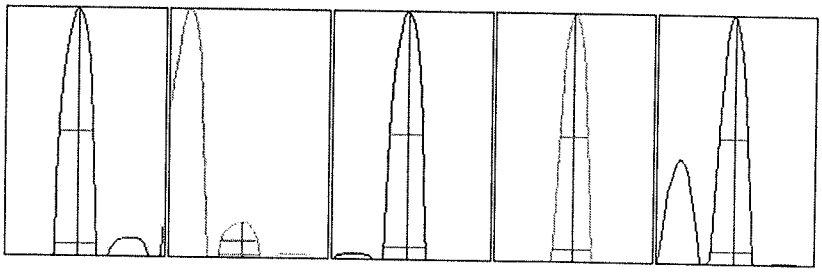
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1946	19463.90			0.768	5.000
24	10.00	10070	100699.33			0.573	5.000
59	10.00	15522	155224.77			0.426	5.000
115	10.00	21455	214546.44			0.691	5.000
208	10.00	11182	111819.27			1.348	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1948	1929	1944	1970	1940
24	10086	10019	10155	10077	10013
59	15527	15533	15434	15618	15501
115	21335	21322	21419	21517	21681
208	11242	11020	11083	11159	11407

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	3457.29	8.90	8.90 - 9.10	
24	16963.16	23.90	23.90 - 24.10	
59	26915.68	58.95	58.90 - 59.10	
115	41984.17	115.00	114.90 - 115.10	
208	21188.05	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.779	0.900	
24	0.65	0.786	0.900	
59	0.61	0.782	0.900	
115	0.53	0.729	0.900	
208	0.55	0.780	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.62 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.0 V	Deflect	13.2 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9997	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.07		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.3 mm		

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Calibration Standard Report

Sample Name	S0
File Name	H6F22003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:13:52
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	107277.57	1.3
Be	9	6	No Gas	37.78	13.5
B	11	6	No Gas	3679.37	2.7
Na	23	45	H2	400057.54	0.4
Mg	24	45	No Gas	27330.74	2.7
Al	27	45	No Gas	9022.96	7.4
Si	28	45	H2	3723.83	2.2
P	31	45	No Gas	21333.03	1.5
K	39	45	He	101182.78	2.8
Ca	40	45	H2	134898.41	1.0
Ti	47	45	No Gas	476.68	4.8
V	51	45	He	6548.90	1.7
Cr	52	45	He	1209.39	4.0
Mn	55	45	No Gas	9121.04	2.2
Fe	56	45	H2	9666.09	2.9
Co	59	45	No Gas	253.33	12.1
Ni	60	45	He	127.33	12.8
Cu	63	45	He	2564.91	0.3
Zn	66	72	No Gas	2090.83	2.3
As	75	72	He	315.00	7.3
Se	78	72	H2	19.00	18.2
Sr	88	72	No Gas	716.69	14.8
Zr	90	72	No Gas	176.67	11.8
Mo	95	115	No Gas	54.44	23.2
Ag	107	115	No Gas	103.33	28.1
Cd	111	115	No Gas	40.92	21.1
Sn	118	115	No Gas	1496.75	4.7
Sb	123	115	No Gas	125.56	28.4
Ba	137	115	No Gas	113.33	11.8
W	182	159	No Gas	130.00	20.4
Hg	201	159	He	9.17	3.1
Tl	205	159	No Gas	788.91	18.9
Pb	208	159	No Gas	1622.27	1.3
U	238	159	No Gas	80.00	14.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1833807.01	0.7	1866774.34	98.23	60	120	
Sc	45	No Gas	5272647.17	0.7	5256704	100.3	60	120	
Sc	45	H2	3207538.17	1.3	3216050	99.74	60	120	
Sc	45	He	583892.71	1.0	590136.5	98.94	60	120	
Ge	72	No Gas	1328832.25	0.8	1347600.04	98.61	60	120	
Go	72	H2	905288.73	0.3	912330.27	99.23	60	120	
Ge	72	He	368649.84	0.7	378247.59	97.46	60	120	
In	115	No Gas	8749257.65	0.8	8692051.13	100.66	60	120	
Tb	159	No Gas	11771515.92	0.9	11827603.42	99.53	60	120	
Tb	159	He	6553564.17	1.0	6692094.83	97.93	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6F22004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:16:43
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113456.89	0.7
Be	9	6	No Gas	1466.74	2.1
B	11	6	No Gas	5391.04	3.7
Na	23	45	H2	639662.90	0.8
Mg	24	45	No Gas	596830.38	0.2
Al	27	45	No Gas	744479.13	0.4
Si	28	45	H2	130494.54	0.9
P	31	45	No Gas	41848.23	1.7
K	39	45	He	143690.33	1.9
Ca	40	45	H2	714788.73	0.6
Ti	47	45	No Gas	1288.06	5.8
V	51	45	He	8816.16	1.8
Cr	52	45	He	4964.90	1.9
Mn	55	45	No Gas	24661.53	1.3
Fe	56	45	H2	762463.85	0.8
Co	59	45	No Gas	13263.78	2.1
Ni	60	45	He	1509.42	6.3
Cu	63	45	He	5698.53	2.0
Zn	66	72	No Gas	8820.86	0.5
As	75	72	He	928.70	5.9
Se	78	72	H2	246.33	4.8
Sr	88	72	No Gas	18646.33	2.6
Zr	90	72	No Gas	95227.52	0.9
Mo	95	115	No Gas	3717.19	2.2
Ag	107	115	No Gas	9551.23	2.3
Cd	111	115	No Gas	2047.91	1.7
Sn	118	115	No Gas	6409.35	5.0
Sb	123	115	No Gas	6439.37	3.0
Ba	137	115	No Gas	3291.53	3.3
W	182	159	No Gas	3507.16	5.4
Hg	201	159	He	70.17	9.1
Tl	205	159	No Gas	16396.33	2.2
Pb	208	159	No Gas	23213.01	0.7
U	238	159	No Gas	21090.35	1.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1865481.64	1.4	1866774.34	99.93	60	120	
Sc	45	No Gas	5380215.17	1.4	5256704	102.35	60	120	
Sc	45	H2	3245345.92	1.0	3216050	100.91	60	120	
Sc	45	He	607201.23	0.6	590136.5	102.89	60	120	
Ge	72	No Gas	1390492.63	0.9	1347600.04	103.18	60	120	
Ge	72	H2	933932.67	0.7	912330.27	102.37	60	120	
Ge	72	He	384894.49	0.2	378247.59	101.76	60	120	
In	115	No Gas	8770367.94	1.3	8692051.13	100.9	60	120	
Tb	159	No Gas	11764732.31	1.6	11827603.42	99.47	60	120	
Tb	159	He	6637449.67	0.4	6692094.83	99.18	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6F22005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:19:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	152974.61	0.4
Be	9	6	No Gas	14749.95	1.3
B	11	6	No Gas	28001.18	1.9
Na	23	45	H2	22472592.67	0.6
Mg	24	45	No Gas	54577372.00	1.0
Al	27	45	No Gas	70249423.96	0.4
Si	28	45	H2	656946.84	0.8
P	31	45	No Gas	64868.35	1.6
K	39	45	He	3981751.50	0.2
Ca	40	45	H2	47787988.00	0.4
Ti	47	45	No Gas	89269.93	1.5
V	51	45	He	320829.67	2.0
Cr	52	45	He	367079.05	0.8
Mn	55	45	No Gas	9268185.67	0.4
Fe	56	45	H2	70898853.33	0.4
Co	59	45	No Gas	1271541.08	0.5
Ni	60	45	He	128073.24	0.5
Cu	63	45	He	344308.34	0.2
Zn	66	72	No Gas	209650.23	0.5
As	75	72	He	65680.76	0.8
Se	78	72	H2	22145.49	0.9
Sr	88	72	No Gas	1778229.51	0.9
Zr	90	72	No Gas	200401.90	1.5
Mo	95	115	No Gas	340781.02	1.5
Ag	107	115	No Gas	91123.22	0.7
Cd	111	115	No Gas	184086.19	0.4
Sn	118	115	No Gas	539529.87	0.2
Sb	123	115	No Gas	126759.06	0.2
Ba	137	115	No Gas	551137.46	0.1
W	182	159	No Gas	69426.84	0.9
Hg	201	159	He	620.02	3.4
Tl	205	159	No Gas	1586570.70	0.7
Pb	208	159	No Gas	2131938.06	0.6
U	238	159	No Gas	2072481.44	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1860769.06	0.8	1866774.34	99.68	60	120	
Sc	45	No Gas	5353536.00	1.2	5256704	101.84	60	120	
Sc	45	H2	3221569.92	1.2	3216050	100.17	60	120	
Sc	45	He	597225.71	0.2	590136.5	101.2	60	120	
Ge	72	No Gas	1379402.33	0.0	1347600.04	102.36	60	120	
Ge	72	H2	930292.75	1.4	912330.27	101.97	60	120	
Ge	72	He	382113.18	0.5	378247.59	101.02	60	120	
In	115	No Gas	8748453.84	0.6	8692051.13	100.65	60	120	
Tb	159	No Gas	11746766.20	0.3	11827603.42	99.32	60	120	
Tb	159	He	6518821.83	0.4	6692094.83	97.41	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6F22006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:22:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	316906.47	1.5
Be	9	6	No Gas	71627.01	0.9
B	11	6	No Gas	106612.07	1.1
Na	23	45	H2	108905344.00	0.7
Mg	24	45	No Gas	266286757.33	1.2
Al	27	45	No Gas	343325328.22	1.5
Si	28	45	H2	3166854.83	0.2
P	31	45	No Gas	234646.94	1.7
K	39	45	He	19119142.67	1.6
Ca	40	45	H2	235123573.33	0.5
Ti	47	45	No Gas	443433.34	0.0
V	51	45	He	1546369.29	0.4
Cr	52	45	He	1780108.04	0.2
Mn	55	45	No Gas	45231848.00	0.2
Fe	56	45	H2	346349685.33	0.5
Co	59	45	No Gas	6193089.50	0.7
Ni	80	45	He	621163.21	0.9
Cu	63	45	He	1621313.09	0.5
Zn	66	72	No Gas	1025697.56	0.6
As	75	72	He	321727.92	0.4
Se	78	72	H2	108207.87	0.8
Sr	88	72	No Gas	8733576.87	0.6
Zr	90	72	No Gas	541877.09	2.2
Mo	95	115	No Gas	1699527.09	1.1
Ag	107	115	No Gas	441431.89	0.7
Cd	111	115	No Gas	905752.50	0.9
Sn	118	115	No Gas	2701878.64	0.1
Sb	123	115	No Gas	626080.69	0.7
Ba	137	115	No Gas	2784517.04	0.2
W	182	159	No Gas	331320.30	1.4
Hg	201	159	He	3026.20	1.4
Tl	205	159	No Gas	7717109.42	0.7
Pb	208	159	No Gas	10460288.95	0.5
U	238	159	No Gas	10162585.43	0.7

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1807021.82	0.2	1866774.34	96.8	60	120	
Sc	45	No Gas	5285953.83	0.6	5256704	100.56	60	120	
Sc	45	H2	3248700.92	0.9	3216050	101.02	60	120	
Sc	45	He	599675.08	0.5	590136.5	101.62	60	120	
Ge	72	No Gas	1347186.84	0.4	1347600.04	99.97	60	120	
Ge	72	H2	919451.56	0.1	912330.27	100.78	60	120	
Ge	72	He	377152.10	0.7	378247.59	99.71	60	120	
In	115	No Gas	8431557.94	0.6	8692051.13	97	60	120	
Tb	159	No Gas	11647431.76	0.1	11827603.42	98.48	60	120	
Tb	159	He	6524567.00	1.1	6692094.83	97.5	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6F22007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:25:23
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	522113.21	1.3
Be	9	6	No Gas	141322.42	1.8
B	11	6	No Gas	174690.98	1.1
Na	23	45	H2	215298154.67	0.8
Mg	24	45	No Gas	525115914.67	0.6
Al	27	45	No Gas	686882496.43	0.9
Si	28	45	H2	6220790.00	1.3
P	31	45	No Gas	441749.50	1.3
K	39	45	He	37651220.00	1.1
Ca	40	45	H2	468210709.33	0.8
Ti	47	45	No Gas	882799.27	0.8
V	51	45	He	3043591.42	0.4
Cr	52	45	He	3511378.67	0.8
Mn	55	45	No Gas	89917986.67	0.3
Fe	56	45	H2	688876117.33	0.9
Co	59	45	No Gas	12246239.67	0.5
Ni	60	45	He	1200083.54	0.6
Cu	63	45	He	3172209.42	0.4
Zn	66	72	No Gas	2034346.00	0.5
As	75	72	He	634083.98	1.4
Se	78	72	H2	213494.19	1.0
Sr	88	72	No Gas	17507492.08	0.8
Zr	90	72	No Gas	1122528.42	0.9
Mo	95	115	No Gas	3403505.07	0.6
Ag	107	115	No Gas	862475.51	0.6
Cd	111	115	No Gas	1809577.17	1.0
Sn	118	115	No Gas	5409921.03	0.9
Sb	123	115	No Gas	1257398.32	0.1
Ba	137	115	No Gas	5517116.03	0.5
W	182	159	No Gas	650361.67	0.3
Hg	201	159	He	5931.24	0.7
Tl	205	159	No Gas	15259868.28	1.4
Pb	208	159	No Gas	20692463.98	1.2
U	238	159	No Gas	20299674.75	0.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1804921.77	1.6	1866774.34	96.69	60	120	
Sc	45	No Gas	5289565.00	0.4	5256704	100.63	60	120	
Sc	45	H2	3197800.33	0.7	3216050	99.43	60	120	
Sc	45	He	588421.23	0.6	590136.5	99.71	60	120	
Ge	72	No Gas	1338488.71	0.3	1347600.04	99.32	60	120	
Ge	72	H2	919890.04	0.9	912330.27	100.83	60	120	
Ge	72	He	372561.70	1.2	378247.59	98.5	60	120	
In	115	No Gas	8357718.43	1.2	8692051.13	96.15	60	120	
Tb	159	No Gas	11629119.26	1.3	11827603.42	98.32	60	120	
Tb	159	He	6590832.17	0.6	6692094.83	98.49	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6F22008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:28:08
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.736	ppb	0.9	358762.89	30	99.12	90	110	
Be	9	6	No Gas	30.318	ppb	1.4	87088.92	30	101.06	90	110	
B	11	6	No Gas	34.353	ppb	1.4	65793.73	30	114.51	90	110	> +/- 10%
Na	23	45	H2	28820.585	ppb	0.6	125437029.33	30000	96.07	90	110	
Mg	24	45	No Gas	29084.919	ppb	0.8	304505877.33	30000	96.95	90	110	
Al	27	45	No Gas	29539.820	ppb	1.5	403294793.99	30000	98.47	90	110	
Si	28	45	H2	3225.330	ppb	0.4	4058938.17	3000	107.51	90	110	
P	31	45	No Gas	276.945	ppb	1.7	253303.21	300	92.32	90	110	
K	39	45	He	29477.359	ppb	0.3	22081847.33	30000	98.26	90	110	
Ca	40	45	H2	29356.214	ppb	1.0	277205365.33	30000	97.85	90	110	
Ti	47	45	No Gas	293.408	ppb	1.1	515484.43	300	97.8	90	110	
V	51	45	He	313.309	ppb	0.7	1896610.54	300	104.44	90	110	
Cr	52	45	He	313.274	ppb	0.7	2185556.58	300	104.42	90	110	
Mn	55	45	No Gas	1954.829	ppb	1.0	58316386.67	2000	97.74	90	110	
Fe	56	45	H2	29575.971	ppb	1.4	410980554.67	30000	98.59	90	110	
Co	59	45	No Gas	301.291	ppb	1.5	7352505.67	300	100.43	90	110	
Ni	60	45	He	317.535	ppb	0.1	760300.81	300	105.85	90	110	
Cu	63	45	He	309.944	ppb	1.0	1957464.25	300	103.31	90	110	
Zn	66	72	No Gas	289.061	ppb	2.1	1176040.92	300	96.35	90	110	
As	75	72	He	313.887	ppb	0.6	394956.29	300	104.63	90	110	
Se	78	72	H2	315.425	ppb	0.9	132973.74	300	105.14	90	110	
Sr	88	72	No Gas	307.647	ppb	1.2	10742358.74	300	102.55	90	110	
Zr	90	72	No Gas	27.589	ppb	1.1	610565.53	30	91.96	90	110	
Mo	95	115	No Gas	304.183	ppb	1.5	2059956.23	300	101.39	90	110	
Ag	107	115	No Gas	31.012	ppb	0.6	535050.69	30	103.37	90	110	
Cd	111	115	No Gas	311.300	ppb	1.4	1121536.20	300	103.77	90	110	
Sn	118	115	No Gas	307.583	ppb	0.5	3310964.80	300	102.53	90	110	
Sb	123	115	No Gas	58.921	ppb	0.8	736684.00	60	98.2	90	110	
Ba	137	115	No Gas	310.185	ppb	0.7	1706160.34	300	103.4	90	110	
W	182	159	No Gas	32.137	ppb	1.0	421841.17	30	107.12	90	110	
Hg	201	159	He	2.999	ppb	0.5	3558.67	3	99.97	90	110	
Tl	205	159	No Gas	304.059	ppb	2.2	9349810.46	300	101.35	90	110	
Pb	208	159	No Gas	307.021	ppb	1.2	12798195.58	300	102.34	90	110	
U	238	159	No Gas	305.688	ppb	1.3	12553883.39	300	101.9	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1828949.17	1.6	1866774.34	97.97	60	120	
Sc	45	No Gas	5256178.33	2.0	5256704	99.99	60	120	
Sc	45	H2	3231272.67	0.9	3216050	100.47	60	120	
Sc	45	He	584914.69	0.6	590136.5	99.12	60	120	
Ge	72	No Gas	1337087.17	1.4	1347600.04	99.22	60	120	
Ge	72	H2	905466.06	1.3	912330.27	99.25	60	120	
Ge	72	He	369396.60	0.5	378247.59	97.66	60	120	
In	115	No Gas	8333193.12	1.2	8692051.13	95.87	60	120	
Tb	159	No Gas	11689694.26	1.0	11827603.42	98.83	60	120	
Tb	159	He	6544758.33	0.7	6692094.83	97.8	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6F22009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:33:07
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	104858.54	0.4	
Be	9	6	No Gas	0.003	ppb	100.0	44.45	0.08	
B	11	6	No Gas	0.344	ppb	75.3	4232.87	4	
Na	23	45	H2	0.711	ppb	196.6	395594.45	40	
Mg	24	45	No Gas	0.323	ppb	72.1	30278.99	10	
Al	27	45	No Gas	0.654	ppb	37.1	17705.07	15	
Si	28	45	H2	0.771	ppb	17.2	4596.76	8	
P	31	45	No Gas	<0.000	ppb	N/A	20648.66	10	
K	39	45	He	0.703	ppb	272.1	101012.94	20	
Ca	40	45	H2	0.424	ppb	60.5	136289.07	25	
Ti	47	45	No Gas	0.014	ppb	843.2	495.35	0.5	
V	51	45	He	<0.000	ppb	N/A	5914.61	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1117.38	0.2	
Mn	55	45	No Gas	0.063	ppb	33.3	10860.32	0.2	
Fe	56	45	H2	0.637	ppb	8.2	18096.65	10	
Co	59	45	No Gas	0.007	ppb	46.4	410.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	108.67	0.2	
Cu	63	45	He	0.020	ppb	9.7	2670.26	0.4	
Zn	66	72	No Gas	0.008	ppb	124.4	2100.16	2	
As	75	72	He	<0.000	ppb	N/A	307.00	0.2	
Se	78	72	H2	0.050	ppb	13.1	39.67	0.2	
Sr	88	72	No Gas	0.018	ppb	146.3	1323.67	0.2	
Zr	90	72	No Gas	0.002	ppb	46.1	226.67	2	
Mo	95	115	No Gas	0.012	ppb	24.9	140.00	0.2	
Ag	107	115	No Gas	0.001	ppb	130.8	112.22	0.08	
Cd	111	115	No Gas	0.022	ppb	13.8	122.26	0.2	
Sn	118	115	No Gas	0.074	ppb	3.9	2317.99	0.2	
Sb	123	115	No Gas	0.001	ppb	127.7	137.78	0.4	
Ba	137	115	No Gas	0.013	ppb	4.4	185.56	0.2	
W	182	159	No Gas	0.007	ppb	54.2	226.67	0.3	
Hg	201	159	He	0.004	ppb	51.3	14.33	0.1	
Tl	205	159	No Gas	0.033	ppb	16.2	1821.25	0.1	
Pb	208	159	No Gas	0.031	ppb	11.4	2914.58	0.1	
U	238	159	No Gas	0.007	ppb	13.9	383.34	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1805900.20	1.4	1866774.34	96.74	60	120	
Sc	45	No Gas	5200317.33	1.6	5256704	98.93	60	120	
Sc	45	H2	3148112.17	2.3	3216050	97.89	60	120	
Sc	45	He	579918.98	1.0	590136.5	98.27	60	120	
Ge	72	No Gas	1315078.71	1.4	1347600.04	97.59	60	120	
Ge	72	H2	892639.04	1.3	912330.27	97.84	60	120	
Ge	72	He	369136.27	0.8	378247.59	97.59	60	120	
In	115	No Gas	8709759.51	1.0	8692051.13	100.2	60	120	
Tb	159	No Gas	11780840.64	1.4	11827603.42	99.6	60	120	
Tb	159	He	6721993.83	0.4	6692094.83	100.45	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2601
File Name	H6F22010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:35:43
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.882	ppb	21.5	112120.55	1	88.2	80	120	
Be	9	6	No Gas	0.984	ppb	4.8	2803.62	1	98.4	80	120	
B	11	6	No Gas	9.131	ppb	1.8	19769.45	10	91.31	80	120	
Na	23	45	H2	101.451	ppb	0.3	828278.92	100	101.45	80	120	
Mg	24	45	No Gas	99.949	ppb	1.4	1065124.68	100	99.95	80	120	
Al	27	45	No Gas	100.561	ppb	2.2	1371232.95	100	100.56	80	120	
Si	28	45	H2	100.043	ppb	0.6	127247.18	100	100.04	80	120	
P	31	45	No Gas	47.671	ppb	1.3	60727.72	50	95.34	80	120	
K	39	45	He	103.056	ppb	4.3	178444.80	100	103.06	80	120	
Ca	40	45	H2	103.977	ppb	0.5	1097548.50	100	103.98	80	120	
Ti	47	45	No Gas	0.993	ppb	4.6	2200.18	1	99.3	80	120	
V	51	45	He	0.895	ppb	2.4	11977.89	1	89.5	80	120	
Cr	52	45	He	1.068	ppb	0.9	8672.08	1	106.8	80	120	
Mn	55	45	No Gas	1.040	ppb	1.5	39790.41	1	104	80	120	
Fe	56	45	H2	104.624	ppb	1.3	1437664.25	100	104.62	80	120	
Co	59	45	No Gas	1.022	ppb	0.9	25003.59	1	102.2	80	120	
Ni	60	45	He	1.094	ppb	0.4	2750.94	1	109.4	80	120	
Cu	63	45	He	1.069	ppb	4.3	9327.20	1	106.9	80	120	
Zn	66	72	No Gas	10.040	ppb	1.1	43835.94	10	100.4	80	120	
As	75	72	He	0.964	ppb	2.4	1571.76	1	96.4	80	120	
Se	78	72	H2	1.061	ppb	3.9	476.68	1	106.1	80	120	
Sr	88	72	No Gas	1.991	ppb	0.5	71805.28	2	99.55	80	120	
Zr	90	72	No Gas	3.808	ppb	2.7	86334.70	5	76.16	80	120	> +/- 20%
Mo	95	115	No Gas	0.919	ppb	2.6	6520.49	1	91.9	80	120	
Ag	107	115	No Gas	1.039	ppb	2.7	18724.34	1	103.9	80	120	
Cd	111	115	No Gas	1.002	ppb	1.8	3789.94	1	100.2	80	120	
Sn	118	115	No Gas	0.944	ppb	0.4	12031.07	1	94.4	80	120	
Sb	123	115	No Gas	0.953	ppb	1.0	12493.75	1	95.3	80	120	
Ba	137	115	No Gas	1.049	ppb	1.8	6102.55	1	104.9	80	120	
W	182	159	No Gas	2.077	ppb	0.1	27393.00	2	103.85	80	120	
Hg	201	159	He	0.085	ppb	7.1	112.00	0.1	85	80	120	
Tl	205	159	No Gas	1.029	ppb	2.8	32407.56	1	102.9	80	120	
Pb	208	159	No Gas	1.036	ppb	0.5	44783.81	1	103.6	80	120	
U	238	159	No Gas	0.989	ppb	1.2	40679.65	1	98.9	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1791533.69	1.2	1866774.34	95.97	60	120	
Sc	45	No Gas	5214731.17	0.9	5256704	99.2	60	120	
Sc	45	H2	3174085.25	0.7	3216050	98.7	60	120	
Sc	45	He	585793.98	0.9	590136.5	99.26	60	120	
Ge	72	No Gas	1367003.67	1.1	1347600.04	101.44	60	120	
Ge	72	H2	925155.17	1.4	912330.27	101.41	60	120	
Ge	72	He	380000.60	0.1	370247.59	100.46	60	120	
In	115	No Gas	8655547.44	0.9	8692051.13	99.58	60	120	
Tb	159	No Gas	11690698.15	0.4	11827603.42	98.84	60	120	
Tb	159	He	6672892.67	0.4	6692094.83	99.71	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA1
File Name	H6F22012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:40:53
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.229	ppb	102.2	98983.75	2	-50	50	
Be	9	6	No Gas	0.000	ppb	5956.4	34.45	0.4	-50	50	
B	11	6	No Gas	9.754	ppb	4.9	19356.65	10	-50	50	> +/- 20%
Na	23	45	H2	94995.036	ppb	0.7	403774208.00	100000	80	120	
Mg	24	45	No Gas	93163.519	ppb	1.1	949078165.33	100000	80	120	
Al	27	45	No Gas	93877.409	ppb	1.4	1247176674.75	100000	80	120	
Si	28	45	H2	4.217	ppb	1.7	8861.50	50	-50	50	
P	31	45	No Gas	93807.222	ppb	0.8	76510472.00	100000	80	120	
K	39	45	He	98193.331	ppb	0.3	70832144.00	100000	80	120	
Ca	40	45	H2	97917.561	ppb	1.0	904676864.00	100000	80	120	
Ti	47	45	No Gas	2002.695	ppb	1.5	3421023.67	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	5651.17	1	-50	50	
Cr	52	45	He	0.274	ppb	3.6	3017.00	1	-50	50	
Mn	55	45	No Gas	0.248	ppb	3.5	16042.73	1	-50	50	
Fe	56	45	H2	98568.621	ppb	2.1	1340498432.00	100000	80	120	
Co	59	45	No Gas	0.356	ppb	2.2	8701.44	0.75	-50	50	
Ni	60	45	He	0.318	ppb	1.2	858.70	1	-50	50	
Cu	63	45	He	0.272	ppb	5.3	4138.63	2	-50	50	
Zn	66	72	No Gas	1.602	ppb	2.3	8395.26	20	-50	50	
As	75	72	He	0.073	ppb	12.8	396.68	1	-50	50	
Se	78	72	H2	0.218	ppb	15.8	107.67	1	-50	50	
Sr	88	72	No Gas	0.780	ppb	0.7	27251.05	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.115	ppb	10.0	2653.61	10	-50	50	
Mo	95	115	No Gas	1967.866	ppb	1.4	13021799.48	2000	80	120	
Ag	107	115	No Gas	0.010	ppb	22.9	272.23	0.4	-50	50	
Cd	111	115	No Gas	0.075	ppb	38.3	301.73	1	-50	50	
Sn	118	115	No Gas	0.359	ppb	4.9	5159.91	1	-50	50	
Ba	137	115	No Gas	0.408	ppb	4.4	2294.65	1	-50	50	
W	182	159	No Gas	0.186	ppb	0.6	2543.59	1	-50	50	
Hg	201	159	He	0.002	ppb	121.4	11.83	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	538.90	0.5	-50	50	
Pb	208	159	No Gas	0.081	ppb	1.8	4933.71	0.5	-50	50	
U	238	159	No Gas	0.000	ppb	11184.7	78.89	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1662265.44	2.6	1866774.34	89.04	60	120	
Sc	45	No Gas	5114177.17	1.8	5256704	97.29	60	120	
Sc	45	H2	3162619.00	0.9	3216050	98.34	60	120	
Sc	45	He	565041.46	1.1	590136.5	95.75	60	120	
Ge	72	No Gas	1303712.33	2.0	1347600.04	96.74	60	120	
Ge	72	H2	880464.38	0.4	912330.27	96.51	60	120	
Ge	72	He	359651.50	0.6	378247.59	95.08	60	120	
In	115	No Gas	8142481.56	2.0	8692051.13	93.68	60	120	
Tb	159	No Gas	11592594.26	2.3	11827603.42	98.01	60	120	
Tb	159	He	6539212.50	0.5	6692094.83	97.72	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB1
File Name	H6F22013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:43:30
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.581	ppb	1.3	245283.72	20	80	120	
Be	9	6	No Gas	19.924	ppb	2.9	51476.32	20	80	120	
B	11	6	No Gas	22.314	ppb	1.3	39590.13	20	80	120	
Na	23	45	H2	100251.981	ppb	0.3	426762048.00	100000	80	120	
Mg	24	45	No Gas	96321.885	ppb	2.1	990204416.00	100000	80	120	
Al	27	45	No Gas	97150.885	ppb	1.5	1302457607.26	100000	80	120	
Si	28	45	H2	222.687	ppb	1.1	278133.39	200	80	120	
P	31	45	No Gas	97155.920	ppb	2.1	79968762.67	100000	80	120	
K	39	45	He	102000.772	ppb	1.7	75100917.33	100000	80	120	
Ca	40	45	H2	103855.990	ppb	0.9	961069333.33	100000	80	120	
Ti	47	45	No Gas	2103.311	ppb	2.4	3625589.42	2000	80	120	
V	51	45	He	20.156	ppb	2.2	126368.57	20	80	120	
Cr	52	45	He	20.739	ppb	1.9	143783.99	20	80	120	
Mn	55	45	No Gas	19.625	ppb	1.7	583678.00	20	80	120	
Fe	56	45	H2	103753.587	ppb	1.1	1413312554.67	100000	80	120	
Co	59	45	No Gas	19.546	ppb	1.2	468578.96	20	80	120	
Ni	60	45	He	20.557	ppb	1.9	48652.57	20	80	120	
Cu	63	45	He	20.450	ppb	1.1	129732.00	20	80	120	
Zn	66	72	No Gas	21.132	ppb	1.1	87143.45	20	80	120	
As	75	72	He	20.030	ppb	1.7	25217.83	20	80	120	
Se	78	72	H2	21.602	ppb	1.3	8791.86	20	80	120	
Sr	88	72	No Gas	20.142	ppb	1.2	697726.22	20	80	120	
Zr	90	72	No Gas	8.549	ppb	2.2	187656.19	20	80	120	> +/- 20%
Mo	95	115	No Gas	2039.545	ppb	1.2	13696100.84	2000	80	120	
Ag	107	115	No Gas	18.948	ppb	0.8	324184.99	20	80	120	
Cd	111	115	No Gas	19.233	ppb	0.4	68740.38	20	80	120	
Sn	118	115	No Gas	19.785	ppb	0.4	212620.20	20	80	120	
Sb	123	115	No Gas	19.476	ppb	0.4	241566.22	20	80	120	
Ba	137	115	No Gas	20.078	ppb	0.7	109609.91	20	80	120	
W	182	159	No Gas	19.295	ppb	0.5	255168.37	20	80	120	
Hg	201	159	He	2.020	ppb	1.8	2431.07	2	80	120	
Tl	205	159	No Gas	18.766	ppb	2.6	581951.14	20	80	120	
Pb	208	159	No Gas	19.123	ppb	1.2	804395.74	20	80	120	
U	238	159	No Gas	19.160	ppb	1.1	792644.43	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1644718.44	1.9	1866774.34	88.1	60	120	
Sc	45	No Gas	5160537.00	1.4	5256704	98.17	60	120	
Sc	45	H2	3167616.00	1.1	3216050	98.49	60	120	
Sc	45	He	576853.04	1.4	590136.5	97.75	60	120	
Ge	72	No Gas	1325201.50	1.6	1347600.04	98.34	60	120	
Ge	72	H2	872513.64	1.6	912330.27	95.64	60	120	
Ge	72	He	365384.33	1.9	378247.59	96.6	60	120	
In	115	No Gas	8263891.15	2.8	8692051.13	95.07	60	120	
Tb	159	No Gas	11774390.08	2.1	11827603.42	99.55	60	120	
Tb	159	He	6630706.33	0.9	6692094.83	99.08	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6F22015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:48:43
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.333	ppb	1.4	296499.35	25	97.33	90	110	
Be	9	6	No Gas	24.763	ppb	1.6	67385.47	25	99.05	90	110	
B	11	6	No Gas	55.565	ppb	4.0	98684.24	50	111.13	90	110	> +/- 10%
Na	23	45	H2	24680.379	ppb	1.8	108926117.33	25000	98.72	90	110	
Mg	24	45	No Gas	24488.547	ppb	2.6	261271850.67	25000	97.95	90	110	
Al	27	45	No Gas	24272.939	ppb	2.6	337729468.30	25000	97.09	90	110	
Si	28	45	H2	2495.484	ppb	1.6	3183676.17	2500	99.82	90	110	
P	31	45	No Gas	240.427	ppb	2.4	226984.23	250	96.17	90	110	
K	39	45	He	25468.794	ppb	1.2	19559913.33	25000	101.88	90	110	
Ca	40	45	H2	24945.958	ppb	1.9	238762965.33	25000	99.78	90	110	
Ti	47	45	No Gas	242.650	ppb	1.5	434475.16	250	97.06	90	110	
V	51	45	He	253.745	ppb	0.8	1574934.92	250	101.5	90	110	
Cr	52	45	He	253.445	ppb	0.4	1811615.08	250	101.38	90	110	
Mn	55	45	No Gas	1508.127	ppb	1.7	45845438.67	1500	100.54	90	110	
Fe	56	45	H2	25353.954	ppb	0.7	357126848.00	25000	101.42	90	110	
Co	59	45	No Gas	251.343	ppb	1.6	6250206.67	250	100.54	90	110	
Ni	60	45	He	255.972	ppb	0.4	627923.52	250	102.39	90	110	
Cu	63	45	He	257.534	ppb	0.7	1666764.38	250	103.01	90	110	
Zn	66	72	No Gas	242.351	ppb	2.6	1018859.21	250	96.94	90	110	
As	75	72	He	251.901	ppb	0.9	324704.22	250	100.76	90	110	
Se	78	72	H2	253.763	ppb	1.9	110362.02	250	101.51	90	110	
Sr	88	72	No Gas	248.102	ppb	1.2	8947380.20	250	99.24	90	110	
Zr	90	72	No Gas	24.057	ppb	1.7	549936.45	25	96.23	90	110	
Mo	95	115	No Gas	246.965	ppb	1.3	1756909.24	250	98.79	90	110	
Ag	107	115	No Gas	24.017	ppb	1.5	435357.54	25	96.07	90	110	
Cd	111	115	No Gas	238.406	ppb	1.1	902260.13	250	95.36	90	110	
Sn	118	115	No Gas	244.628	ppb	1.2	2766612.18	250	97.85	90	110	
Sb	123	115	No Gas	47.239	ppb	1.0	620484.49	50	94.48	90	110	
Ba	137	115	No Gas	490.822	ppb	0.3	2835847.11	500	98.16	90	110	
W	182	159	No Gas	24.552	ppb	2.6	329941.78	25	98.21	90	110	
Hg	201	159	He	2.493	ppb	0.6	3023.37	2.5	99.72	90	110	
Tl	205	159	No Gas	250.219	ppb	2.6	7874936.07	250	100.09	90	110	
Pb	208	159	No Gas	254.057	ppb	0.9	10840452.45	250	101.62	90	110	
U	238	159	No Gas	246.796	ppb	1.3	10374103.75	250	98.72	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1732389.92	1.2	1866774.34	92.8	60	120	
Sc	45	No Gas	5356287.17	0.3	5256704	101.89	60	120	
Sc	45	H2	3275347.75	1.6	3216050	101.84	60	120	
Sc	45	He	599227.98	0.2	590136.5	101.54	60	120	
Ge	72	No Gas	1381000.29	1.5	1347600.04	102.48	60	120	
Ge	72	H2	934265.44	2.2	912330.27	102.4	60	120	
Ge	72	He	378353.57	0.8	378247.59	100.03	60	120	
In	115	No Gas	8753711.63	1.3	8692051.13	100.71	60	120	
Tb	159	No Gas	11964646.75	0.4	11827603.42	101.16	60	120	
Tb	159	He	6685128.00	0.2	6692094.83	99.9	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6F22016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:53:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98865.27	0.4	
Be	9	6	No Gas	0.004	ppb	213.7	46.67	0.08	
B	11	6	No Gas	0.151	ppb	142.2	3679.38	4	
Na	23	45	H2	8.037	ppb	1.1	432110.11	40	
Mg	24	45	No Gas	1.105	ppb	28.2	38064.79	10	
Al	27	45	No Gas	1.078	ppb	32.4	23240.09	15	
Si	28	45	H2	<0.000	ppb	N/A	3578.46	8	
P	31	45	No Gas	<0.000	ppb	N/A	19215.96	10	
K	39	45	He	0.916	ppb	192.6	101172.94	20	
Ca	40	45	H2	0.438	ppb	41.7	138180.55	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	372.67	0.5	
V	51	45	He	0.069	ppb	64.8	6912.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1075.38	0.2	
Mn	55	45	No Gas	0.062	ppb	26.9	10720.20	0.2	
Fe	56	45	H2	1.209	ppb	5.5	26189.74	10	
Co	59	45	No Gas	0.007	ppb	36.0	420.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	116.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1938.80	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2021.48	2	
As	75	72	He	0.011	ppb	198.7	328.33	0.2	
Se	78	72	H2	0.022	ppb	66.4	28.33	0.2	
Sr	88	72	No Gas	0.005	ppb	71.8	895.59	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	120.00	2	
Mo	95	115	No Gas	0.019	ppb	4.8	187.78	0.2	
Ag	107	115	No Gas	0.001	ppb	184.6	125.56	0.08	
Cd	111	115	No Gas	0.015	ppb	38.2	97.83	0.2	
Sn	118	115	No Gas	0.032	ppb	20.3	1855.69	0.2	
Sb	123	115	No Gas	0.003	ppb	34.5	170.00	0.4	
Ba	137	115	No Gas	0.021	ppb	36.4	235.56	0.2	
W	182	159	No Gas	0.009	ppb	38.6	250.00	0.3	
Hg	201	159	He	0.002	ppb	144.9	11.83	0.1	
Tl	205	159	No Gas	0.022	ppb	22.1	1478.97	0.1	
Pb	208	159	No Gas	0.019	ppb	38.8	2462.32	0.1	
U	238	159	No Gas	0.008	ppb	7.8	428.80	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1709238.89	1.9	1866774.34	91.56	60	120	
Sc	45	No Gas	5156921.00	1.0	5256704	98.1	60	120	
Sc	45	H2	3188394.83	0.3	3216050	99.14	60	120	
Sc	45	He	579926.92	2.5	590136.5	98.27	60	120	
Ge	72	No Gas	1323948.75	2.7	1347600.04	98.24	60	120	
Ge	72	H2	903765.81	0.8	912330.27	99.06	60	120	
Ge	72	He	368350.32	0.8	378247.59	97.38	60	120	
In	115	No Gas	8764699.40	1.9	8692051.13	100.84	60	120	
Tb	159	No Gas	11933850.36	1.7	11827603.42	100.9	60	120	
Tb	159	He	6692787.00	0.4	6692094.83	100.01	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6F22038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:01:06
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.562	ppb	4.2	316501.19	25	98.25	90	110	
Be	9	6	No Gas	24.188	ppb	3.8	69803.86	25	96.75	90	110	
B	11	6	No Gas	54.297	ppb	4.9	102311.98	50	108.59	90	110	
Na	23	45	H2	25083.498	ppb	0.2	104160565.33	25000	100.33	90	110	
Mg	24	45	No Gas	25103.597	ppb	0.9	254803077.33	25000	100.41	90	110	
Al	27	45	No Gas	24776.159	ppb	1.5	327953368.44	25000	99.1	90	110	
Si	28	45	H2	2476.830	ppb	0.7	2973254.92	2500	99.07	90	110	
P	31	45	No Gas	248.891	ppb	0.6	222811.77	250	99.56	90	110	
K	39	45	He	25004.613	ppb	0.1	18128189.33	25000	100.02	90	110	
Ca	40	45	H2	24937.720	ppb	0.2	224591669.33	25000	99.75	90	110	
Ti	47	45	No Gas	246.938	ppb	1.6	420642.49	250	98.78	90	110	
V	51	45	He	253.724	ppb	0.1	1486463.04	250	101.49	90	110	
Cr	52	45	He	254.111	ppb	0.7	1714420.00	250	101.64	90	110	
Mn	55	45	No Gas	1500.074	ppb	1.7	43382666.67	1500	100	90	110	
Fe	56	45	H2	24999.860	ppb	0.5	331302112.00	25000	100	90	110	
Co	59	45	No Gas	248.571	ppb	1.7	5880662.50	250	99.43	90	110	
Ni	60	45	He	258.846	ppb	0.9	599319.31	250	103.54	90	110	
Cu	63	45	He	255.991	ppb	1.0	1563762.29	250	102.4	90	110	
Zn	66	72	No Gas	245.198	ppb	0.8	978665.25	250	98.08	90	110	
As	75	72	He	249.146	ppb	1.0	309151.05	250	99.66	90	110	
Se	78	72	H2	257.167	ppb	0.1	105464.62	250	102.87	90	110	
Sr	88	72	No Gas	246.162	ppb	2.2	8430692.44	250	98.46	90	110	
Zr	90	72	No Gas	24.232	ppb	2.0	526028.29	25	96.93	90	110	
Mo	95	115	No Gas	243.747	ppb	2.7	1652614.93	250	97.5	90	110	
Ag	107	115	No Gas	24.541	ppb	1.7	423924.47	25	98.16	90	110	
Cd	111	115	No Gas	245.430	ppb	0.4	885187.66	250	98.17	90	110	
Sn	118	115	No Gas	246.765	ppb	0.8	2659738.44	250	98.71	90	110	
Sb	123	115	No Gas	49.324	ppb	1.4	617455.30	50	98.65	90	110	
Ba	137	115	No Gas	498.562	ppb	1.9	2745600.38	500	99.71	90	110	
W	182	159	No Gas	24.999	ppb	0.8	328062.25	25	100	90	110	
Hg	201	159	He	2.612	ppb	1.1	3079.71	2.5	104.48	90	110	
Tl	205	159	No Gas	249.970	ppb	1.6	7682628.86	250	99.99	90	110	
Pb	208	159	No Gas	252.361	ppb	0.7	10515277.62	250	100.94	90	110	
U	238	159	No Gas	247.299	ppb	1.5	10149999.32	250	98.92	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1838467.82	2.7	1866774.34	98.48	60	120	
Sc	45	No Gas	5095634.67	0.6	5256704	96.94	60	120	
Sc	45	H2	3081380.00	0.5	3216050	95.81	60	120	
Sc	45	He	565612.50	0.9	590136.5	95.84	60	120	
Ge	72	No Gas	1311457.67	0.9	1347600.04	97.32	60	120	
Ge	72	H2	880772.23	0.6	912330.27	96.54	60	120	
Ge	72	He	364211.76	0.6	378247.59	96.29	60	120	
In	115	No Gas	8343072.46	0.6	8692051.13	95.99	60	120	
Tb	159	No Gas	11684230.65	1.7	11827603.42	98.79	60	120	
Tb	159	He	6502300.50	0.4	6692094.83	97.16	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6F22039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:06:21
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103856.66	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	26.67	0.08	
B	11	6	No Gas	0.398	ppb	52.4	4295.11	4	
Na	23	45	H2	24.503	ppb	4.5	491623.30	40	
Mg	24	45	No Gas	0.474	ppb	40.9	31209.64	10	
Al	27	45	No Gas	0.377	ppb	40.8	13703.60	15	
Si	28	45	H2	<0.000	ppb	N/A	3276.39	8	
P	31	45	No Gas	2.074	ppb	20.0	22301.22	10	
K	39	45	He	5.050	ppb	58.7	102427.94	20	
Ca	40	45	H2	<0.000	ppb	N/A	128443.99	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	413.34	0.5	
V	51	45	He	0.105	ppb	12.0	7011.13	0.5	
Cr	52	45	He	<0.000	ppb	N/A	926.70	0.2	
Mn	55	45	No Gas	0.036	ppb	34.8	9868.23	0.2	
Fe	56	45	H2	0.338	ppb	12.0	13929.12	10	
Co	59	45	No Gas	0.004	ppb	70.6	346.00	0.15	
Ni	60	45	He	0.004	ppb	117.8	134.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1271.39	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1803.46	2	
As	75	72	He	<0.000	ppb	N/A	311.00	0.2	
Se	78	72	H2	0.014	ppb	122.2	24.33	0.2	
Sr	88	72	No Gas	0.001	ppb	344.7	727.80	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	133.33	2	
Mo	95	115	No Gas	0.003	ppb	28.7	77.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	96.66	0.08	
Cd	111	115	No Gas	0.008	ppb	19.7	70.60	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1064.49	0.2	
Sb	123	115	No Gas	0.001	ppb	68.9	137.78	0.4	
Ba	137	115	No Gas	0.007	ppb	47.4	151.11	0.2	
W	182	159	No Gas	0.001	ppb	427.9	146.67	0.3	
Hg	201	159	He	0.004	ppb	42.3	14.33	0.1	
Tl	205	159	No Gas	0.001	ppb	504.9	807.81	0.1	
Pb	208	159	No Gas	0.002	ppb	173.0	1693.39	0.1	
U	238	159	No Gas	0.005	ppb	11.4	271.12	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1790982.70	1.1	1866774.34	95.94	60	120	
Sc	45	No Gas	5095771.17	1.0	5256704	96.94	60	120	
Sc	45	H2	3119000.83	1.1	3216050	96.98	60	120	
Sc	45	He	569895.71	0.9	590136.5	96.57	60	120	
Ge	72	No Gas	1311844.79	0.7	1347600.04	97.35	60	120	
Ge	72	H2	884934.98	0.8	912330.27	97	60	120	
Ge	72	He	365335.43	0.4	378247.59	96.59	60	120	
In	115	No Gas	8653360.68	0.4	8692051.13	99.55	60	120	
Tb	159	No Gas	11733400.09	0.9	11827603.42	99.2	60	120	
Tb	159	He	6577945.17	0.7	6692094.83	98.29	60	120	

Blank Report

Sample Name	IMF029WB
File Name	H6F22040.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:08:56
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	107599.47	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	35.55	0.08	
B	11	6	No Gas	12.566	ppb	1.6	26718.71	4	>1/2LOQ
Na	23	45	H2	26.673	ppb	6.4	508701.04	40	
Mg	24	45	No Gas	0.880	ppb	9.1	36245.66	10	
Al	27	45	No Gas	1.809	ppb	2.9	33497.07	15	
Si	28	45	H2	1.155	ppb	8.1	5102.27	8	
P	31	45	No Gas	<0.000	ppb	N/A	21122.71	10	
K	39	45	He	1.687	ppb	241.8	102395.57	20	
Ca	40	45	H2	8.106	ppb	1.6	208306.46	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	446.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6124.70	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1144.72	0.2	
Mn	55	45	No Gas	0.052	ppb	21.8	10568.75	0.2	
Fe	56	45	H2	1.148	ppb	0.9	25197.20	10	
Co	59	45	No Gas	<0.000	ppb	N/A	243.33	0.15	
Ni	60	45	He	0.008	ppb	129.7	145.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1288.73	0.4	
Zn	66	72	No Gas	0.936	ppb	0.4	5986.65	2	
As	75	72	He	<0.000	ppb	N/A	276.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	18.33	0.2	
Sr	88	72	No Gas	0.017	ppb	3.6	1320.07	0.2	
Zr	90	72	No Gas	0.133	ppb	10.3	3153.72	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	48.89	0.2	
Ag	107	115	No Gas	0.064	ppb	3.6	1282.28	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	2.02	0.2	
Sn	118	115	No Gas	0.038	ppb	9.0	1956.81	0.2	
Sb	123	115	No Gas	0.002	ppb	89.3	158.89	0.4	
Ba	137	115	No Gas	0.032	ppb	25.0	303.34	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	110.00	0.3	
Hg	201	159	He	0.004	ppb	82.2	13.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	466.68	0.1	
Pb	208	159	No Gas	0.002	ppb	134.3	1717.83	0.1	
U	238	159	No Gas	0.000	ppb	1100.3	83.33	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1851300.42	2.0	1866774.34	99.17	60	120	
Sc	45	No Gas	5225422.83	0.8	5256704	99.4	60	120	
Sc	45	H2	3168823.83	0.9	3216050	98.53	60	120	
Sc	45	He	583822.69	1.1	590136.5	98.93	60	120	
Ge	72	No Gas	1355332.08	1.5	1347600.04	100.57	60	120	
Ge	72	H2	910981.90	1.8	912330.27	99.85	60	120	
Ge	72	He	378828.58	0.5	378247.59	100.15	60	120	
In	115	No Gas	8867356.39	1.1	8692051.13	102.02	60	120	
Tb	159	No Gas	11986562.02	2.0	11827603.42	101.34	60	120	
Tb	159	He	6686663.00	0.3	6692094.83	99.92	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF029WL
File Name	H6F22041.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:11:31
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.793	ppb	5.1	359658.70	30	102.64	85	115	
Be	9	6	No Gas	30.119	ppb	5.3	84545.79	30	100.4	83	121	
B	11	6	No Gas	40.933	ppb	4.9	75971.61	30	136.44	85	115	FAIL
Na	23	45	H2	3157.891	ppb	1.1	13432568.67	3000	105.26	85	117	
Mg	24	45	No Gas	3244.857	ppb	4.3	31964596.00	3000	108.16	83	118	
Al	27	45	No Gas	3188.232	ppb	3.5	40948121.89	3000	106.27	84	117	
Si	28	45	H2	1.305	ppb	8.3	5136.28	3000	0.04	85	115	FAIL
P	31	45	No Gas	1.292	ppb	114.4	21003.21	300	0.43	85	115	FAIL
K	39	45	He	3085.549	ppb	0.2	2375150.83	3000	102.85	87	115	
Ca	40	45	H2	3106.269	ppb	0.5	28054591.33	3000	103.54	87	118	
Ti	47	45	No Gas	31.517	ppb	5.7	52426.00	30	105.06	85	115	
V	51	45	He	30.988	ppb	0.4	191320.67	30	103.29	86	115	
Cr	52	45	He	31.573	ppb	0.1	218864.97	30	105.24	85	116	
Mn	55	45	No Gas	31.569	ppb	3.3	894199.85	30	105.23	87	115	
Fe	56	45	H2	3180.030	ppb	1.9	42095357.33	3000	106	87	118	
Co	59	45	No Gas	32.073	ppb	4.1	736118.10	30	106.91	86	115	
Ni	60	45	He	31.761	ppb	1.5	75299.81	30	105.87	85	117	
Cu	63	45	He	32.558	ppb	0.1	205585.86	30	108.53	85	118	
Zn	66	72	No Gas	62.973	ppb	4.9	246987.33	60	104.96	83	119	
As	75	72	He	30.263	ppb	1.6	38427.85	30	100.88	84	116	
Se	78	72	H2	31.079	ppb	0.7	12940.87	30	103.6	80	120	
Sr	88	72	No Gas	31.700	ppb	5.3	1060731.59	30	105.67	85	115	
Zr	90	72	No Gas	0.031	ppb	82.1	806.71	30	0.1	85	115	FAIL
Mo	95	115	No Gas	29.535	ppb	6.3	200253.87	30	98.45	85	115	
Ag	107	115	No Gas	30.969	ppb	5.5	535102.55	30	103.23	85	117	
Cd	111	115	No Gas	30.020	ppb	6.1	108308.02	30	100.07	87	115	
Sn	118	115	No Gas	30.082	ppb	5.4	325608.07	30	100.27	85	115	
Sb	123	115	No Gas	29.735	ppb	6.3	372247.40	30	99.12	85	117	
Ba	137	115	No Gas	29.428	ppb	6.0	162154.92	30	98.09	86	114	
W	182	159	No Gas	0.008	ppb	82.0	230.00	30	0.03	85	115	FAIL
Hg	201	159	He	0.002	ppb	112.8	11.50	2.5	0.08	82	119	FAIL
Tl	205	159	No Gas	31.406	ppb	5.6	941819.44	30	104.69	82	116	
Pb	208	159	No Gas	31.595	ppb	6.5	1284519.18	30	105.32	88	115	
U	238	159	No Gas	31.202	ppb	6.1	1248680.26	30	104.01	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1792319.36	7.7	1866774.34	96.01	60	120	
Sc	45	No Gas	4950680.17	6.2	5256704	94.18	60	120	
Sc	45	H2	3077732.42	1.0	3216050	95.7	60	120	
Sc	45	He	578333.12	1.0	590136.5	98	60	120	
Ge	72	No Gas	1283550.67	6.3	1347600.04	95.25	60	120	
Ge	72	H2	893132.46	0.2	912330.27	97.9	60	120	
Ge	72	He	370037.29	1.3	378247.59	97.83	60	120	
In	115	No Gas	8368917.44	7.7	8692051.13	96.28	60	120	
Tb	159	No Gas	11424453.43	7.3	11827603.42	96.59	60	120	
Tb	159	He	6531211.17	0.8	6692094.83	97.6	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF029WC
File Name	H6F22042.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:14:05
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.856	ppb	4.0	360923.52	30	99.52	85	115	
Be	9	6	No Gas	28.880	ppb	5.1	83204.60	30	96.27	83	121	
B	11	6	No Gas	38.758	ppb	4.8	73991.02	30	129.19	85	115	FAIL
Na	23	45	H2	3027.654	ppb	1.3	13043422.67	3000	100.92	85	117	
Mg	24	45	No Gas	3033.235	ppb	4.1	30814690.67	3000	101.11	83	118	
Al	27	45	No Gas	3036.583	ppb	3.9	40207941.90	3000	101.22	84	117	
Si	28	45	H2	1.012	ppb	8.8	4839.51	3000	0.03	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	20444.37	300	-0.07	85	115	FAIL
K	39	45	He	2999.704	ppb	1.3	2322004.58	3000	99.99	87	115	
Ca	40	45	H2	2991.363	ppb	0.3	27333292.00	3000	99.71	87	118	
Ti	47	45	No Gas	29.724	ppb	4.5	51046.67	30	99.08	85	115	
V	51	45	He	30.166	ppb	0.5	187237.98	30	100.55	86	115	
Cr	52	45	He	30.853	ppb	0.9	214830.23	30	102.84	85	116	
Mn	55	45	No Gas	30.196	ppb	3.4	882139.06	30	100.65	87	115	
Fe	56	45	H2	3080.210	ppb	0.2	41248762.67	3000	102.67	87	118	
Co	59	45	No Gas	30.721	ppb	3.5	727233.25	30	102.4	86	115	
Ni	60	45	He	31.076	ppb	1.3	74004.75	30	103.59	85	117	
Cu	63	45	He	31.843	ppb	1.2	201999.41	30	106.14	85	118	
Zn	66	72	No Gas	60.318	ppb	4.9	242393.32	60	100.53	83	119	
As	75	72	He	29.555	ppb	0.4	37835.52	30	98.52	84	116	
Se	78	72	H2	30.863	ppb	1.1	12954.55	30	102.88	80	120	
Sr	88	72	No Gas	30.117	ppb	4.9	1032340.27	30	100.39	85	115	
Zr	90	72	No Gas	0.016	ppb	125.2	520.06	30	0.05	85	115	FAIL
Mo	95	115	No Gas	28.820	ppb	3.0	199132.82	30	96.07	85	115	
Ag	107	115	No Gas	30.002	ppb	3.0	528054.08	30	100.01	85	117	
Cd	111	115	No Gas	29.368	ppb	2.5	107961.78	30	97.89	87	115	
Sn	118	115	No Gas	29.033	ppb	2.3	320094.93	30	96.78	85	115	
Sb	123	115	No Gas	28.768	ppb	2.3	366968.97	30	95.89	85	117	
Ba	137	115	No Gas	28.572	ppb	3.7	160395.81	30	95.24	86	114	
W	182	159	No Gas	0.005	ppb	35.4	196.67	30	0.02	85	115	FAIL
Hg	201	159	He	0.003	ppb	55.9	12.83	2.5	0.12	82	119	FAIL
Tl	205	159	No Gas	30.059	ppb	2.6	926589.58	30	100.2	82	116	
Pb	208	159	No Gas	30.259	ppb	2.4	1265141.84	30	100.86	88	115	
U	238	159	No Gas	29.586	ppb	1.9	1217306.13	30	98.62	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1835496.29	2.2	1866774.34	98.32	60	120	
Sc	45	No Gas	5098775.17	1.8	5256704	97	60	120	
Sc	45	H2	3113138.33	0.1	3216050	96.8	60	120	
Sc	45	He	580868.02	0.6	590136.5	98.43	60	120	
Ge	72	No Gas	1312855.21	2.7	1347600.04	97.42	60	120	
Ge	72	H2	900373.56	0.7	912330.27	98.69	60	120	
Ge	72	He	372959.99	1.1	378247.59	98.6	60	120	
In	115	No Gas	8501932.59	1.4	8692051.13	97.81	60	120	
Tb	159	No Gas	11712096.75	1.0	11827603.42	99.02	60	120	
Tb	159	He	6586956.50	1.0	6692094.83	98.43	60	120	

Sample Report

Sample Name	F154-06
File Name	H6F22043.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:16:41
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.555	16.555	ppb	3.0	237578.67	50	
Be	9	6	No Gas	0.019	0.019	ppb	24.6	87.78	50	
B	11	6	No Gas	68.221	68.221	ppb	3.0	122113.99	100	
Na	23	45	H2	44012.872	44012.872	ppb	0.4	184449125.33	50000	
Mg	24	45	No Gas	35803.770	35803.770	ppb	2.1	363960128.00	50000	
Al	27	45	No Gas	14.082	14.082	ppb	2.8	195391.46	50000	
Si	28	45	H2	8079.888	8079.888	ppb	0.7	9795764.00	5000	>LDR
P	31	45	No Gas	6.591	6.591	ppb	8.0	26009.64	500	
K	39	45	He	2163.036	2163.036	ppb	0.4	1662019.50	50000	
Ca	40	45	H2	106649.274	106649.274	ppb	1.9	970313642.67	50000	>LDR
Ti	47	45	No Gas	0.454	0.454	ppb	41.8	1236.11	500	
V	51	45	He	1.912	1.912	ppb	2.0	17541.87	500	
Cr	52	45	He	1.602	1.602	ppb	2.1	12003.25	500	
Mn	55	45	No Gas	2.099	2.099	ppb	2.6	69599.95	3000	
Fe	56	45	H2	62.958	62.958	ppb	1.2	852658.15	50000	
Co	59	45	No Gas	0.118	0.118	ppb	5.6	3047.01	500	
Ni	60	45	He	0.445	0.445	ppb	5.1	1156.72	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2460.89	500	
Zn	66	72	No Gas	3.660	3.660	ppb	2.4	16626.17	500	
As	75	72	He	0.685	0.685	ppb	2.7	1172.72	500	
Se	78	72	H2	0.840	0.840	ppb	6.4	367.34	500	
Sr	88	72	No Gas	798.716	798.716	ppb	3.3	27326091.69	500	>LDR
Zr	90	72	No Gas	0.012	0.012	ppb	6.0	440.01	50	
Mo	95	115	No Gas	0.471	0.471	ppb	2.0	3279.29	500	
Ag	107	115	No Gas	0.082	0.082	ppb	7.5	1524.54	50	
Cd	111	115	No Gas	0.004	0.004	ppb	170.5	53.61	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1101.16	500	
Sb	123	115	No Gas	0.060	0.060	ppb	1.7	881.14	100	
Ba	137	115	No Gas	41.906	41.906	ppb	1.9	233466.14	1000	
W	182	159	No Gas	0.011	0.011	ppb	8.2	276.67	50	
Hg	201	159	He	0.003	0.003	ppb	47.4	12.67	5	
Tl	205	159	No Gas	0.008	0.008	ppb	71.8	1032.27	500	
Pb	208	159	No Gas	0.013	0.013	ppb	28.0	2175.63	500	
U	238	159	No Gas	1.293	1.293	ppb	0.5	53382.65	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1758229.44	0.9	1866774.34	94.19	60	120	
Sc	45	No Gas	5103420.17	0.4	5256704	97.08	60	120	
Sc	45	H2	3114802.75	1.5	3216050	96.85	60	120	
Sc	45	He	567089.58	0.6	590136.5	96.09	60	120	
Ge	72	No Gas	1310540.58	1.0	1347600.04	97.25	60	120	
Ge	72	H2	891338.87	1.3	912330.27	97.7	60	120	
Ge	72	He	368122.94	1.1	378247.59	97.32	60	120	
In	115	No Gas	8437497.60	1.0	8692051.13	97.07	60	120	
Tb	159	No Gas	11737245.09	1.2	11827603.42	99.24	60	120	
Tb	159	He	6564318.17	0.4	6692094.83	98.09	60	120	

Sample Report

Sample Name	F154-01
File Name	H6F22044.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:19:16
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	17.787	17.787	ppb	2.4	245288.49	50	
Be	9	6	No Gas	0.006	0.006	ppb	23.2	51.11	50	
B	11	6	No Gas	110.777	110.777	ppb	4.6	194273.13	100	>LDR
Na	23	45	H2	72999.922	72999.922	ppb	0.7	308867178.67	50000	>LDR
Mg	24	45	No Gas	29262.289	29262.289	ppb	3.4	297849610.67	50000	
Al	27	45	No Gas	15.193	15.193	ppb	14.1	210436.21	50000	
Si	28	45	H2	8045.229	8045.229	ppb	0.9	9856288.67	5000	>LDR
P	31	45	No Gas	15.065	15.065	ppb	2.6	32946.34	500	
K	39	45	He	3495.289	3495.289	ppb	2.3	2634968.75	50000	
Ca	40	45	H2	93354.275	93354.275	ppb	0.6	858371520.00	50000	>LDR
Ti	47	45	No Gas	0.588	0.588	ppb	17.3	1466.09	500	
V	51	45	He	1.934	1.934	ppb	4.2	17737.46	500	
Cr	52	45	He	1.413	1.413	ppb	1.7	10767.56	500	
Mn	55	45	No Gas	1.502	1.502	ppb	3.2	52382.17	3000	
Fe	56	45	H2	22.253	22.253	ppb	0.2	310690.33	50000	
Co	59	45	No Gas	0.113	0.113	ppb	3.4	2923.65	500	
Ni	60	45	He	3.389	3.389	ppb	2.3	8019.69	500	
Cu	63	45	He	1.220	1.220	ppb	0.9	9988.33	500	
Zn	66	72	No Gas	15.870	15.870	ppb	2.3	65695.25	500	
As	75	72	He	0.878	0.878	ppb	2.5	1414.08	500	
Se	78	72	H2	0.576	0.576	ppb	6.9	262.00	500	
Sr	88	72	No Gas	703.029	703.029	ppb	2.8	24230475.70	500	>LDR
Zr	90	72	No Gas	0.125	0.125	ppb	88.1	2908.94	50	
Mo	95	115	No Gas	1.289	1.289	ppb	1.2	8882.96	500	
Ag	107	115	No Gas	0.146	0.146	ppb	2.5	2650.27	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	29.89	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1058.93	500	
Sb	123	115	No Gas	0.123	0.123	ppb	3.5	1671.22	100	
Ba	137	115	No Gas	47.375	47.375	ppb	1.5	263802.89	1000	
W	182	159	No Gas	0.022	0.022	ppb	35.3	416.68	50	
Hg	201	159	He	0.002	0.002	ppb	93.8	11.33	5	
Tl	205	159	No Gas	0.003	0.003	ppb	82.7	861.14	500	
Pb	208	159	No Gas	0.006	0.006	ppb	54.4	1856.73	500	
U	238	159	No Gas	1.412	1.412	ppb	2.4	57495.61	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1741650.20	1.0	1866774.34	93.3	60	120	
Sc	45	No Gas	5109929.33	0.3	5256704	97.21	60	120	
Sc	45	H2	3147341.75	0.6	3216050	97.86	60	120	
Sc	45	He	569292.96	1.1	590136.5	96.47	60	120	
Ge	72	No Gas	1319977.75	0.2	1347600.04	97.95	60	120	
Ge	72	H2	906619.10	0.1	912330.27	99.37	60	120	
Ge	72	He	368153.98	0.9	378247.59	97.33	60	120	
In	115	No Gas	8433138.28	0.5	8692051.13	97.02	60	120	
Tb	159	No Gas	11572928.71	0.3	11827603.42	97.85	60	120	
Tb	159	He	6523024.33	0.5	6692094.83	97.47	60	120	

Sample Report

Sample Name	F154-02M
File Name	H6F22045.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:21:53
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.134	46.134	ppb	2.3	480304.79	50	>LDR
Be	9	6	No Gas	29.207	29.207	ppb	2.2	80995.90	50	
B	11	6	No Gas	146.078	146.078	ppb	2.9	258631.64	100	>LDR
Na	23	45	H2	156679.514	156679.514	ppb	1.4	662782357.33	50000	>LDR
Mg	24	45	No Gas	68060.279	68060.279	ppb	2.0	692812565.33	50000	>LDR
Al	27	45	No Gas	2992.739	2992.739	ppb	1.7	39737257.74	50000	
Si	28	45	H2	7872.137	7872.137	ppb	1.9	9648588.00	5000	>LDR
P	31	45	No Gas	9.167	9.167	ppb	3.3	28146.49	500	
K	39	45	He	5857.744	5857.744	ppb	0.8	4359075.67	50000	
Ca	40	45	H2	188994.079	188994.079	ppb	0.7	1738474197.33	50000	>LDR
Ti	47	45	No Gas	30.002	30.002	ppb	2.4	51664.94	500	
V	51	45	He	33.930	33.930	ppb	1.1	206026.03	500	
Cr	52	45	He	32.836	32.836	ppb	1.1	224468.95	500	
Mn	55	45	No Gas	29.643	29.643	ppb	1.1	868491.31	3000	
Fe	56	45	H2	3076.991	3076.991	ppb	0.9	41677701.33	50000	
Co	59	45	No Gas	29.258	29.258	ppb	1.0	694426.56	500	
Ni	60	45	He	30.707	30.707	ppb	1.3	71819.74	500	
Cu	63	45	He	31.001	31.001	ppb	0.8	193217.43	500	
Zn	66	72	No Gas	57.782	57.782	ppb	1.1	232673.07	500	
As	75	72	He	31.766	31.766	ppb	0.7	39046.62	500	
Se	78	72	H2	31.363	31.363	ppb	1.4	12900.83	500	
Sr	88	72	No Gas	1330.842	1330.842	ppb	1.2	45665903.74	500	>LDR
Zr	90	72	No Gas	0.013	0.013	ppb	6.8	453.34	50	
Mo	95	115	No Gas	30.079	30.079	ppb	1.3	203144.38	500	
Ag	107	115	No Gas	28.847	28.847	ppb	0.7	496222.91	50	
Cd	111	115	No Gas	28.510	28.510	ppb	0.8	102435.07	500	
Sn	118	115	No Gas	28.448	28.448	ppb	1.6	306631.51	500	
Sb	123	115	No Gas	28.969	28.969	ppb	1.3	361205.06	100	
Ba	137	115	No Gas	112.924	112.924	ppb	1.3	619351.47	1000	
W	182	159	No Gas	0.011	0.011	ppb	45.9	266.67	50	
Hg	201	159	He	0.003	0.003	ppb	40.9	13.17	5	
Tl	205	159	No Gas	29.342	29.342	ppb	1.3	899421.49	500	
Pb	208	159	No Gas	29.110	29.110	ppb	0.7	1210280.49	500	
U	238	159	No Gas	31.772	31.772	ppb	1.4	1299800.37	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1765773.58	2.8	1866774.34	94.59	60	120	
Sc	45	No Gas	5110686.67	0.8	5256704	97.22	60	120	
Sc	45	H2	3148865.75	0.5	3216050	97.91	60	120	
Sc	45	He	570503.50	1.2	590136.5	96.67	60	120	
Ge	72	No Gas	1314112.58	1.0	1347600.04	97.52	60	120	
Ge	72	H2	882364.75	0.6	912330.27	96.72	60	120	
Ge	72	He	358316.86	0.2	378247.59	94.73	60	120	
In	115	No Gas	8308248.85	1.4	8692051.13	95.58	60	120	
Tb	159	No Gas	11644712.32	1.4	11827603.42	98.45	60	120	
Tb	159	He	6517526.50	1.0	6692094.83	97.39	60	120	

Sample Report

Sample Name	F154-02S
File Name	H6F22046.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:24:29
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.117	46.117	ppb	2.0	504065.02	50	>LDR
Be	9	6	No Gas	28.925	28.925	ppb	3.0	84184.41	50	
B	11	6	No Gas	144.567	144.567	ppb	4.3	268610.88	100	>LDR
Na	23	45	H2	154495.105	154495.105	ppb	2.0	666069824.00	50000	>LDR
Mg	24	45	No Gas	67550.256	67550.256	ppb	3.0	701362005.33	50000	>LDR
Al	27	45	No Gas	2980.143	2980.143	ppb	3.0	40362212.73	50000	
Si	28	45	H2	7668.249	7668.249	ppb	1.4	9579717.33	5000	>LDR
P	31	45	No Gas	9.306	9.306	ppb	3.8	28826.53	500	
K	39	45	He	5760.260	5760.260	ppb	1.4	4355009.33	50000	
Ca	40	45	H2	183305.338	183305.338	ppb	1.5	1718424234.67	50000	>LDR
Ti	47	45	No Gas	30.123	30.123	ppb	1.9	52906.34	500	
V	51	45	He	33.486	33.486	ppb	1.4	206598.22	500	
Cr	52	45	He	32.586	32.586	ppb	1.8	226250.62	500	
Mn	55	45	No Gas	29.530	29.530	ppb	2.3	882534.08	3000	
Fe	56	45	H2	3021.510	3021.510	ppb	1.3	41710806.67	50000	
Co	59	45	No Gas	29.569	29.569	ppb	2.0	715869.79	500	
Ni	60	45	He	30.298	30.298	ppb	2.4	71969.24	500	
Cu	63	45	He	30.769	30.769	ppb	1.0	194786.28	500	
Zn	66	72	No Gas	61.208	61.208	ppb	1.3	248175.20	500	
As	75	72	He	31.132	31.132	ppb	1.1	38935.62	500	
Se	78	72	H2	30.910	30.910	ppb	0.6	12894.49	500	
Sr	88	72	No Gas	1309.482	1309.482	ppb	1.8	45268157.09	500	>LDR
Zr	90	72	No Gas	0.011	0.011	ppb	38.0	426.68	50	
Mo	95	115	No Gas	29.948	29.948	ppb	1.9	203351.46	500	
Ag	107	115	No Gas	28.957	28.957	ppb	2.1	500866.63	50	
Cd	111	115	No Gas	28.671	28.671	ppb	0.7	103583.41	500	
Sn	118	115	No Gas	29.002	29.002	ppb	1.8	314267.64	500	
Sb	123	115	No Gas	29.556	29.556	ppb	1.3	370536.19	100	
Ba	137	115	No Gas	113.358	113.358	ppb	2.1	625138.99	1000	
W	182	159	No Gas	0.009	0.009	ppb	55.9	243.33	50	
Hg	201	159	He	0.003	0.003	ppb	103.7	12.33	5	
Tl	205	159	No Gas	29.670	29.670	ppb	0.5	908363.30	500	
Pb	208	159	No Gas	29.472	29.472	ppb	1.6	1223800.76	500	
U	238	159	No Gas	31.546	31.546	ppb	1.2	1289058.28	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1853510.97	0.9	1866774.34	99.29	60	120	
Sc	45	No Gas	5213420.17	0.8	5256704	99.18	60	120	
Sc	45	H2	3209463.83	1.3	3216050	99.8	60	120	
Sc	45	He	579415.02	0.8	590136.5	98.18	60	120	
Ge	72	No Gas	1323917.79	0.6	1347600.04	98.24	60	120	
Ge	72	H2	894786.23	0.2	912330.27	98.08	60	120	
Ge	72	He	364532.72	0.8	378247.59	96.37	60	120	
In	115	No Gas	8354850.83	0.7	8692051.13	96.12	60	120	
Tb	159	No Gas	11630924.81	0.5	11827603.42	98.34	60	120	
Tb	159	He	6488797.33	0.3	6692094.83	96.96	60	120	

Sample Report

Sample Name	F154-02A
File Name	H6F22047.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:27:06
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.689	46.689	ppb	1.4	526447.70	50	>LDR
Be	9	6	No Gas	29.787	29.787	ppb	1.8	89676.91	50	
B	11	6	No Gas	143.587	143.587	ppb	2.6	276046.13	100	>LDR
Na	23	45	H2	152735.576	152735.576	ppb	0.7	668376960.00	50000	>LDR
Mg	24	45	No Gas	67760.451	67760.451	ppb	1.3	712112469.33	50000	>LDR
Al	27	45	No Gas	3118.017	3118.017	ppb	0.4	42743077.70	50000	
Si	28	45	H2	7599.703	7599.703	ppb	1.4	9635535.00	5000	>LDR
P	31	45	No Gas	9.424	9.424	ppb	4.7	29272.11	500	
K	39	45	He	5714.706	5714.706	ppb	0.4	4373255.00	50000	
Ca	40	45	H2	181366.998	181366.998	ppb	0.7	1725758890.67	50000	>LDR
Ti	47	45	No Gas	30.547	30.547	ppb	0.7	54297.00	500	
V	51	45	He	34.062	34.062	ppb	1.0	212555.82	500	
Cr	52	45	He	32.940	32.940	ppb	1.5	231432.32	500	
Mn	55	45	No Gas	30.001	30.001	ppb	0.5	907286.79	3000	
Fe	56	45	H2	3085.805	3085.805	ppb	0.4	43236294.67	50000	
Co	59	45	No Gas	30.179	30.179	ppb	0.8	739494.73	500	
Ni	60	45	He	30.909	30.909	ppb	1.3	74299.66	500	
Cu	63	45	He	31.686	31.686	ppb	0.3	202917.07	500	
Zn	66	72	No Gas	60.974	60.974	ppb	0.9	249417.36	500	
As	75	72	He	31.825	31.825	ppb	1.0	39922.85	500	
Se	78	72	H2	31.595	31.595	ppb	1.6	13195.11	500	
Sr	88	72	No Gas	1301.372	1301.372	ppb	1.9	45383822.64	500	>LDR
Zr	90	72	No Gas	0.014	0.014	ppb	11.3	490.01	50	
Mo	95	115	No Gas	30.824	30.824	ppb	0.3	210378.39	500	
Ag	107	115	No Gas	28.779	28.779	ppb	0.7	500336.42	50	
Cd	111	115	No Gas	29.777	29.777	ppb	0.8	108127.95	500	
Sn	118	115	No Gas	29.587	29.587	ppb	0.4	322229.55	500	
Sb	123	115	No Gas	29.537	29.537	ppb	0.8	372189.84	100	
Ba	137	115	No Gas	113.138	113.138	ppb	0.5	627162.65	1000	
W	182	159	No Gas	0.029	0.029	ppb	16.1	516.68	50	
Hg	201	159	He	0.004	0.004	ppb	24.6	14.17	5	
Tl	205	159	No Gas	29.970	29.970	ppb	1.9	930309.44	500	
Pb	208	159	No Gas	29.873	29.873	ppb	1.6	1257829.13	500	
U	238	159	No Gas	31.776	31.776	ppb	0.4	1316799.04	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1916906.53	0.9	1866774.34	102.69	60	120	
Sc	45	No Gas	5276252.67	1.3	5256704	100.37	60	120	
Sc	45	H2	3257288.33	0.7	3216050	101.28	60	120	
Sc	45	He	586335.86	0.6	590136.5	99.36	60	120	
Ge	72	No Gas	1335559.29	0.3	1347600.04	99.11	60	120	
Ge	72	H2	895956.79	1.3	912330.27	98.21	60	120	
Ge	72	He	365668.82	0.9	378247.59	96.67	60	120	
In	115	No Gas	8397488.99	1.3	8692051.13	96.61	60	120	
Tb	159	No Gas	11795732.03	2.1	11827603.42	99.73	60	120	
Tb	159	He	6525636.83	0.2	6692094.83	97.51	60	120	

Sample Report

Sample Name	F154-02
File Name	H6F22048.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:29:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.800	16.800	ppb	2.1	267212.74	50	
Be	9	6	No Gas	0.022	0.022	ppb	36.5	107.78	50	
B	11	6	No Gas	112.563	112.563	ppb	2.4	222230.70	100	>LDR
Na	23	45	H2	151599.111	151599.111	ppb	1.2	669768661.33	50000	>LDR
Mg	24	45	No Gas	64714.404	64714.404	ppb	1.6	685829525.33	50000	>LDR
Al	27	45	No Gas	9.976	9.976	ppb	5.1	146894.82	50000	
Si	28	45	H2	7697.755	7697.755	ppb	0.7	9854252.67	5000	>LDR
P	31	45	No Gas	8.764	8.764	ppb	5.8	28954.16	500	
K	39	45	He	2728.252	2728.252	ppb	1.4	2129484.08	50000	
Ca	40	45	H2	178524.893	178524.893	ppb	0.8	1715038250.67	50000	>LDR
Ti	47	45	No Gas	0.350	0.350	ppb	8.1	1102.04	500	
V	51	45	He	2.538	2.538	ppb	2.9	21805.98	500	
Cr	52	45	He	1.830	1.830	ppb	1.5	13927.08	500	
Mn	55	45	No Gas	0.184	0.184	ppb	6.4	14769.97	3000	
Fe	56	45	H2	19.194	19.194	ppb	0.9	281370.21	50000	
Co	59	45	No Gas	0.162	0.162	ppb	3.4	4260.67	500	
Ni	60	45	He	0.823	0.823	ppb	3.7	2093.50	500	
Cu	63	45	He	0.490	0.490	ppb	5.3	5643.84	500	
Zn	66	72	No Gas	1.691	1.691	ppb	1.8	8967.63	500	
As	75	72	He	1.082	1.082	ppb	2.4	1681.77	500	
Se	78	72	H2	0.679	0.679	ppb	5.8	304.33	500	
Sr	88	72	No Gas	1276.845	1276.845	ppb	2.3	44563122.67	500	>LDR
Zr	90	72	No Gas	0.004	0.004	ppb	46.8	266.67	50	
Mo	95	115	No Gas	0.718	0.718	ppb	3.7	4995.38	500	
Ag	107	115	No Gas	0.113	0.113	ppb	5.0	2073.50	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	20.05	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	958.92	500	
Sb	123	115	No Gas	0.082	0.082	ppb	3.4	1163.39	100	
Ba	137	115	No Gas	80.909	80.909	ppb	1.1	452604.46	1000	
W	182	159	No Gas	0.011	0.011	ppb	36.8	276.67	50	
Hg	201	159	He	0.000	0.000	ppb	1385.0	9.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	541.12	500	
Pb	208	159	No Gas	0.007	0.007	ppb	60.8	1931.17	500	
U	238	159	No Gas	1.585	1.585	ppb	1.9	66049.69	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1960735.73	1.7	1866774.34	105.03	60	120	
Sc	45	No Gas	5320037.00	1.6	5256704	101.2	60	120	
Sc	45	H2	3288828.83	1.8	3216050	102.26	60	120	
Sc	45	He	583247.75	1.2	590136.5	98.83	60	120	
Ge	72	No Gas	1336621.17	0.1	1347600.04	99.19	60	120	
Ge	72	H2	902732.58	0.6	912330.27	98.95	60	120	
Ge	72	He	370592.13	0.4	378247.59	97.98	60	120	
In	115	No Gas	8472981.82	1.1	8692051.13	97.48	60	120	
Tb	159	No Gas	11851866.75	1.9	11827603.42	100.21	60	120	
Tb	159	He	6554698.00	0.6	6692094.83	97.95	60	120	

Sample Report

Sample Name	F154-02J
File Name	H6F22049.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:32:17
Sample Type	Sample
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.366	3.073	ppb	3.1	150300.90	50	
Be	9	6	No Gas	0.029	0.006	ppb	141.2	61.11	50	
B	11	6	No Gas	115.815	23.163	ppb	1.9	51484.24	100	
Na	23	45	H2	155265.267	31053.053	ppb	0.7	136333941.33	50000	
Mg	24	45	No Gas	65952.950	13190.590	ppb	3.7	141959621.33	50000	
Al	27	45	No Gas	11.980	2.396	ppb	1.1	42865.97	50000	
Si	28	45	H2	7800.411	1560.082	ppb	1.7	1982745.67	5000	
P	31	45	No Gas	3.381	0.676	ppb	28.2	22438.77	500	
K	39	45	He	2672.762	534.552	ppb	2.0	516136.05	50000	
Ca	40	45	H2	181340.661	36268.132	ppb	1.1	345514112.00	50000	
Ti	47	45	No Gas	0.129	0.026	ppb	83.8	534.68	500	
V	51	45	He	4.260	0.852	ppb	3.4	12079.31	500	
Cr	52	45	He	1.652	0.330	ppb	5.3	3629.15	500	
Mn	55	45	No Gas	0.121	0.024	ppb	30.8	10085.72	3000	
Fe	56	45	H2	20.563	4.113	ppb	3.1	67477.94	50000	
Co	59	45	No Gas	0.146	0.029	ppb	9.0	990.70	500	
Ni	60	45	He	0.836	0.167	ppb	21.0	544.68	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2230.85	500	
Zn	66	72	No Gas	2.864	0.573	ppb	0.8	4596.11	500	
As	75	72	He	1.102	0.220	ppb	15.1	610.01	500	
Se	78	72	H2	0.617	0.123	ppb	13.8	71.00	500	
Sr	88	72	No Gas	1239.461	247.892	ppb	1.5	8981280.75	500	
Zr	90	72	No Gas	0.004	0.001	ppb	133.2	203.33	50	
Mo	95	115	No Gas	0.690	0.138	ppb	12.3	1042.26	500	
Ag	107	115	No Gas	0.121	0.024	ppb	8.5	545.57	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	21.46	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	668.91	500	
Sb	123	115	No Gas	0.081	0.016	ppb	31.8	341.12	100	
Ba	137	115	No Gas	78.222	15.644	ppb	0.9	91026.33	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	113.33	50	
Hg	201	159	He	0.000	0.000	ppb	18159.3	9.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	461.12	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1401.15	500	
U	238	159	No Gas	1.546	0.309	ppb	3.1	12999.12	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2066525.53	1.9	1866774.34	110.7	60	120	
Sc	45	No Gas	5401978.17	0.5	5256704	102.76	60	120	
Sc	45	H2	3260285.17	1.0	3216050	101.38	60	120	
Sc	45	He	603888.77	0.8	590136.5	102.33	60	120	
Ge	72	No Gas	1387292.08	1.3	1347600.04	102.95	60	120	
Ge	72	H2	905282.77	0.2	912330.27	99.23	60	120	
Ge	72	He	380295.30	0.3	378247.59	100.54	60	120	
In	115	No Gas	8804998.39	0.7	8692051.13	101.3	60	120	
Tb	159	No Gas	11895235.36	0.3	11827603.42	100.57	60	120	
Tb	159	He	6654912.50	0.8	6692094.83	99.44	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV4
File Name	H6F22050.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:34:53
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.001	ppb	3.0	330802.97	25	96	90	110	
Be	9	6	No Gas	23.396	ppb	1.8	71677.47	25	93.58	90	110	
B	11	6	No Gas	54.212	ppb	3.5	108451.86	50	108.42	90	110	
Na	23	45	H2	24988.749	ppb	0.7	105500621.33	25000	99.95	90	110	
Mg	24	45	No Gas	25031.111	ppb	1.2	263730069.33	25000	100.12	90	110	
Al	27	45	No Gas	24761.174	ppb	1.9	340221114.93	25000	99.04	90	110	
Si	28	45	H2	2468.266	ppb	0.7	3012578.33	2500	98.73	90	110	
P	31	45	No Gas	243.202	ppb	1.1	226495.64	250	97.28	90	110	
K	39	45	He	25128.928	ppb	0.3	18866252.00	25000	100.52	90	110	
Ca	40	45	H2	24876.613	ppb	0.5	227781408.00	25000	99.51	90	110	
Ti	47	45	No Gas	240.540	ppb	1.7	425327.96	250	96.22	90	110	
V	51	45	He	250.656	ppb	0.3	1520841.00	250	100.26	90	110	
Cr	52	45	He	249.686	ppb	0.6	1744608.92	250	99.87	90	110	
Mn	55	45	No Gas	1476.139	ppb	2.9	44312382.67	1500	98.41	90	110	
Fe	56	45	H2	25362.308	ppb	1.0	341709440.00	25000	101.45	90	110	
Co	59	45	No Gas	245.398	ppb	2.9	6026241.00	250	98.16	90	110	
Ni	60	45	He	252.815	ppb	0.6	606225.86	250	101.13	90	110	
Cu	63	45	He	254.082	ppb	1.2	1607408.00	250	101.63	90	110	
Zn	66	72	No Gas	238.148	ppb	1.1	986191.17	250	95.26	90	110	
As	75	72	He	246.816	ppb	0.6	312816.38	250	98.73	90	110	
Se	78	72	H2	251.856	ppb	0.6	106033.09	250	100.74	90	110	
Sr	88	72	No Gas	244.205	ppb	2.5	8676632.44	250	97.68	90	110	
Zr	90	72	No Gas	23.875	ppb	2.8	537611.84	25	95.5	90	110	
Mo	95	115	No Gas	242.792	ppb	2.7	1693220.63	250	97.12	90	110	
Ag	107	115	No Gas	24.139	ppb	0.7	428911.62	25	96.56	90	110	
Cd	111	115	No Gas	241.489	ppb	1.2	895854.39	250	96.6	90	110	
Sn	118	115	No Gas	242.831	ppb	0.7	2692171.42	250	97.13	90	110	
Sb	123	115	No Gas	48.107	ppb	1.2	619411.11	50	96.21	90	110	
Ba	137	115	No Gas	491.236	ppb	1.6	2782252.53	500	98.25	90	110	
W	182	159	No Gas	24.794	ppb	1.8	332897.27	25	99.18	90	110	
Hg	201	159	He	2.530	ppb	0.5	3059.21	2.5	101.2	90	110	
Tl	205	159	No Gas	248.346	ppb	1.6	7810132.74	250	99.34	90	110	
Pb	208	159	No Gas	249.640	ppb	1.5	10643913.80	250	99.86	90	110	
U	238	159	No Gas	243.096	ppb	1.0	10210899.04	250	97.24	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1950867.72	1.8	1866774.34	104.5	60	120	
Sc	45	No Gas	5289688.67	0.5	5256704	100.63	60	120	
Sc	45	H2	3132903.67	0.9	3216050	97.41	60	120	
Sc	45	He	585744.36	0.5	590136.5	99.26	60	120	
Ge	72	No Gas	1360632.84	1.0	1347600.04	100.97	60	120	
Ge	72	H2	904163.63	0.8	912330.27	99.1	60	120	
Ge	72	He	371996.26	0.5	378247.59	98.35	60	120	
In	115	No Gas	8581506.86	0.9	8692051.13	98.73	60	120	
Tb	159	No Gas	11956029.80	1.5	11827603.42	101.09	60	120	
Tb	159	He	6667117.00	0.2	6692094.83	99.63	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB4
File Name	H6F22051.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:37:30
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag	
Li	7	6	No Gas	<0.000	ppb	N/A	110565.32	0.4		
Be	9	6	No Gas	0.021	ppb	62.3	102.22	0.08		
B	11	6	No Gas	0.928	ppb	29.2	5561.11	4		
Na	23	45	H2	44.833	ppb	5.0	584587.40	40	>LOD	LY 06|26|20
Mg	24	45	No Gas	8.601	ppb	50.9	116752.92	10		
Al	27	45	No Gas	7.422	ppb	54.9	109802.16	15		
Si	28	45	H2	0.478	ppb	10.5	4257.99	8		
P	31	45	No Gas	1.944	ppb	10.8	22828.73	10		
K	39	45	He	3.546	ppb	123.4	105161.48	20		
Ca	40	45	H2	2.929	ppb	14.9	159984.09	25		
Tl	47	45	No Gas	0.098	ppb	56.2	644.01	0.5		
V	51	45	He	<0.000	ppb	N/A	6330.13	0.5		
Cr	52	45	He	<0.000	ppb	N/A	1023.37	0.2		
Mn	55	45	No Gas	0.450	ppb	53.1	22416.35	0.2	>LOD	LY 06|26|20
Fe	56	45	H2	2.568	ppb	17.3	44391.64	10		
Co	59	45	No Gas	0.079	ppb	53.3	2164.20	0.15		
Ni	60	45	He	0.005	ppb	96.9	142.00	0.2		
Cu	63	45	He	<0.000	ppb	N/A	1342.74	0.4		
Zn	66	72	No Gas	0.014	ppb	326.9	2187.51	2		
As	75	72	He	0.013	ppb	155.3	336.00	0.2		
Se	78	72	H2	0.040	ppb	26.0	36.00	0.2		
Sr	88	72	No Gas	0.083	ppb	48.6	3661.68	0.2		
Zr	90	72	No Gas	0.005	ppb	127.1	290.00	2		
Mo	95	115	No Gas	0.078	ppb	39.3	617.80	0.2		
Ag	107	115	No Gas	0.006	ppb	49.8	217.78	0.08		
Cd	111	115	No Gas	0.099	ppb	40.4	420.53	0.2		
Sn	118	115	No Gas	0.036	ppb	127.3	1922.37	0.2		
Sb	123	115	No Gas	0.016	ppb	48.5	342.23	0.4		
Ba	137	115	No Gas	0.129	ppb	59.6	865.59	0.2		
W	182	159	No Gas	0.006	ppb	67.6	210.00	0.3		
Hg	201	159	He	0.005	ppb	24.2	15.67	0.1		
Tl	205	159	No Gas	0.127	ppb	35.9	4793.22	0.1	>LOD	LY 06|26|20
Pb	208	159	No Gas	0.080	ppb	51.7	5070.46	0.1		
U	238	159	No Gas	0.070	ppb	46.1	3011.55	0.05	>LOD	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1901221.10	0.8	1866774.34	101.85	60	120	
Sc	45	No Gas	5241281.67	1.7	5256704	99.71	60	120	
Sc	45	H2	3161572.58	1.3	3216050	98.31	60	120	
Sc	45	He	591614.79	1.1	590136.5	100.25	60	120	
Ge	72	No Gas	1354976.42	0.6	1347600.04	100.55	60	120	
Ge	72	H2	908907.38	1.3	912330.27	99.62	60	120	
Ge	72	He	374152.11	0.5	378247.59	98.92	60	120	
In	115	No Gas	8875668.89	1.6	8692051.13	102.11	60	120	
Tb	159	No Gas	11995315.91	1.0	11827603.42	101.42	60	120	
Tb	159	He	6687150.17	0.5	6692094.83	99.93	60	120	

Sample Report

Sample Name	F154-05
File Name	H6F22052.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:40:04
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.442	16.442	ppb	1.8	242240.06	50	
Be	9	6	No Gas	0.001	0.001	ppb	190.9	41.11	50	
B	11	6	No Gas	68.355	68.355	ppb	3.8	125217.77	100	
Na	23	45	H2	45316.167	45316.167	ppb	1.6	194341114.67	50000	>LDR
Mg	24	45	No Gas	36464.346	36464.346	ppb	3.6	383419648.00	50000	
Al	27	45	No Gas	13.933	13.933	ppb	2.3	200113.09	50000	
Si	28	45	H2	8332.670	8332.670	ppb	2.2	10338429.67	5000	>LDR
P	31	45	No Gas	7.156	7.156	ppb	2.2	27384.96	500	
K	39	45	He	2235.654	2235.654	ppb	1.8	1758490.21	50000	
Ca	40	45	H2	108825.750	108825.750	ppb	1.2	1013395008.00	50000	>LDR
Ti	47	45	No Gas	0.346	0.346	ppb	4.8	1086.71	500	
V	51	45	He	2.054	2.054	ppb	1.4	18842.93	500	
Cr	52	45	He	1.641	1.641	ppb	2.1	12583.11	500	
Mn	55	45	No Gas	2.238	2.238	ppb	2.1	76177.63	3000	
Fe	56	45	H2	68.632	68.632	ppb	1.6	950394.59	50000	
Co	59	45	No Gas	0.115	0.115	ppb	3.6	3068.35	500	
Ni	60	45	He	0.464	0.464	ppb	3.2	1231.39	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2487.56	500	
Zn	66	72	No Gas	2.796	2.796	ppb	3.9	13526.75	500	
As	75	72	He	0.685	0.685	ppb	2.7	1188.38	500	
Se	78	72	H2	0.776	0.776	ppb	4.6	345.00	500	
Sr	88	72	No Gas	815.219	815.219	ppb	4.4	28601164.98	500	>LDR
Zr	90	72	No Gas	0.012	0.012	ppb	8.3	450.01	50	
Mo	95	115	No Gas	0.472	0.472	ppb	5.7	3310.42	500	
Ag	107	115	No Gas	0.080	0.080	ppb	7.2	1502.31	50	
Cd	111	115	No Gas	0.002	0.002	ppb	308.1	48.06	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	958.92	500	
Sb	123	115	No Gas	0.053	0.053	ppb	8.9	797.80	100	
Ba	137	115	No Gas	42.278	42.278	ppb	3.6	237075.38	1000	
W	182	159	No Gas	0.012	0.012	ppb	36.6	283.34	50	
Hg	201	159	He	0.004	0.004	ppb	25.6	14.17	5	
Tl	205	159	No Gas	0.008	0.008	ppb	70.9	1038.93	500	
Pb	208	159	No Gas	0.009	0.009	ppb	26.1	1980.07	500	
U	238	159	No Gas	1.275	1.275	ppb	2.1	52800.24	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1799657.89	1.7	1866774.34	96.4	60	120	
Sc	45	No Gas	5279633.17	0.7	5256704	100.44	60	120	
Sc	45	H2	3187815.67	1.4	3216050	99.12	60	120	
Sc	45	He	581658.56	0.6	590136.5	98.56	60	120	
Ge	72	No Gas	1344099.17	1.3	1347600.04	99.74	60	120	
Ge	72	H2	902753.04	1.1	912330.27	98.95	60	120	
Ge	72	He	373093.98	0.8	378247.59	98.64	60	120	
In	115	No Gas	8494497.10	1.4	8692051.13	97.73	60	120	
Tb	159	No Gas	11766648.42	1.2	11827603.42	99.48	60	120	
Tb	159	He	6681958.83	0.4	6692094.83	99.85	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6F22061.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:03:27
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.777	ppb	1.9	324350.81	25	95.11	90	110	
Be	9	6	No Gas	23.332	ppb	2.0	70509.47	25	93.33	90	110	
B	11	6	No Gas	53.278	ppb	4.7	105198.84	50	106.56	90	110	
Na	23	45	H2	25250.404	ppb	0.5	106148493.33	25000	101	90	110	
Mg	24	45	No Gas	25281.733	ppb	2.2	263969322.67	25000	101.13	90	110	
Al	27	45	No Gas	24838.829	ppb	2.3	338216468.29	25000	99.36	90	110	
Si	28	45	H2	2511.098	ppb	1.2	3051645.42	2500	100.44	90	110	
P	31	45	No Gas	243.605	ppb	1.6	224782.66	250	97.44	90	110	
K	39	45	He	25533.268	ppb	0.3	19051371.33	25000	102.13	90	110	
Ca	40	45	H2	25103.867	ppb	0.4	228882688.00	25000	100.42	90	110	
Ti	47	45	No Gas	244.529	ppb	1.5	428471.96	250	97.81	90	110	
V	51	45	He	254.573	ppb	0.9	1535036.37	250	101.83	90	110	
Cr	52	45	He	252.796	ppb	0.8	1755542.46	250	101.12	90	110	
Mn	55	45	No Gas	1479.812	ppb	1.9	44022864.00	1500	98.65	90	110	
Fe	56	45	H2	25385.771	ppb	0.1	340581738.67	25000	101.54	90	110	
Co	59	45	No Gas	247.588	ppb	1.6	6025111.67	250	99.04	90	110	
Ni	60	45	He	251.917	ppb	1.1	600375.92	250	100.77	90	110	
Cu	63	45	He	253.743	ppb	0.6	1595516.50	250	101.5	90	110	
Zn	66	72	No Gas	237.610	ppb	1.9	982110.19	250	95.04	90	110	
As	75	72	He	248.425	ppb	0.5	314485.84	250	99.37	90	110	
Se	78	72	H2	249.473	ppb	0.7	105077.64	250	99.79	90	110	
Sr	88	72	No Gas	244.503	ppb	2.8	8670791.88	250	97.8	90	110	
Zr	90	72	No Gas	23.734	ppb	1.8	533493.85	25	94.94	90	110	
Mo	95	115	No Gas	245.303	ppb	2.1	1692482.12	250	98.12	90	110	
Ag	107	115	No Gas	24.414	ppb	1.0	429167.98	25	97.66	90	110	
Cd	111	115	No Gas	241.473	ppb	1.1	886202.68	250	96.59	90	110	
Sn	118	115	No Gas	246.633	ppb	1.1	2705228.99	250	98.65	90	110	
Sb	123	115	No Gas	48.622	ppb	0.7	619353.71	50	97.24	90	110	
Ba	137	115	No Gas	494.704	ppb	0.7	2772146.69	500	98.94	90	110	
W	182	159	No Gas	24.538	ppb	1.5	326646.89	25	98.15	90	110	
Hg	201	159	He	2.481	ppb	1.1	2957.02	2.5	99.24	90	110	
Tl	205	159	No Gas	248.038	ppb	0.8	7732714.14	250	99.22	90	110	
Pb	208	159	No Gas	250.404	ppb	0.5	10583843.11	250	100.16	90	110	
U	238	159	No Gas	241.413	ppb	0.8	10051410.71	250	96.57	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1924369.99	1.4	1866774.34	103.09	60	120	
Sc	45	No Gas	5241535.67	0.5	5256704	99.71	60	120	
Sc	45	H2	3119508.08	0.4	3216050	97	60	120	
Sc	45	He	582188.56	1.1	590136.5	98.65	60	120	
Ge	72	No Gas	1358146.25	0.9	1347600.04	100.78	60	120	
Ge	72	H2	904598.58	0.9	912330.27	99.15	60	120	
Ge	72	He	371560.37	0.5	378247.59	98.23	60	120	
In	115	No Gas	8490296.00	1.3	8692051.13	97.68	60	120	
Tb	159	No Gas	11851885.64	1.1	11827603.42	100.21	60	120	
Tb	159	He	6572046.67	0.8	6692094.83	98.21	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6F22062.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:09:15
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	105639.82	0.4	
Be	9	6	No Gas	0.005	ppb	49.7	51.11	0.08	
B	11	6	No Gas	0.912	ppb	16.3	5325.46	4	
Na	23	45	H2	25.254	ppb	7.9	513000.43	40	
Mg	24	45	No Gas	1.736	ppb	21.6	45836.58	10	
Al	27	45	No Gas	0.477	ppb	38.5	15639.01	15	
Si	28	45	H2	0.397	ppb	308.5	4244.78	8	
P	31	45	No Gas	1.346	ppb	24.6	22611.04	10	
K	39	45	He	4.423	ppb	76.4	106668.47	20	
Ca	40	45	H2	0.534	ppb	11.6	141080.56	25	
Ti	47	45	No Gas	0.021	ppb	65.1	517.34	0.5	
V	51	45	He	0.028	ppb	77.9	6856.39	0.5	
Cr	52	45	He	<0.000	ppb	N/A	872.69	0.2	
Mn	55	45	No Gas	0.056	ppb	12.6	10855.65	0.2	
Fe	56	45	H2	0.405	ppb	11.9	15387.33	10	
Co	59	45	No Gas	0.005	ppb	31.7	366.00	0.15	
Ni	60	45	He	<0.000	ppb	N/A	109.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	970.03	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1832.13	2	
As	75	72	He	0.008	ppb	137.4	327.67	0.2	
Se	78	72	H2	0.003	ppb	478.0	20.33	0.2	
Sr	88	72	No Gas	0.015	ppb	36.3	1278.95	0.2	
Zr	90	72	No Gas	0.003	ppb	143.8	256.67	2	
Mo	95	115	No Gas	0.006	ppb	25.4	97.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	95.56	0.08	
Cd	111	115	No Gas	0.009	ppb	21.6	73.87	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1185.61	0.2	
Sb	123	115	No Gas	0.004	ppb	49.2	176.67	0.4	
Ba	137	115	No Gas	0.009	ppb	44.8	168.89	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	80.00	0.3	
Hg	201	159	He	0.003	ppb	48.3	13.00	0.1	
Tl	205	159	No Gas	0.001	ppb	239.6	815.58	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	1404.48	0.1	
U	238	159	No Gas	0.006	ppb	24.8	314.45	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1830733.36	0.6	1866774.34	98.07	60	120	
Sc	45	No Gas	5307447.67	1.0	5256704	100.97	60	120	
Sc	45	H2	3234391.92	1.9	3216050	100.57	60	120	
Sc	45	He	596232.35	0.7	590136.5	101.03	60	120	
Ge	72	No Gas	1357898.12	1.0	1347600.04	100.76	60	120	
Ge	72	H2	914245.75	1.7	912330.27	100.21	60	120	
Ge	72	He	372399.99	0.5	378247.59	98.45	60	120	
In	115	No Gas	8811759.29	0.8	8692051.13	101.38	60	120	
Tb	159	No Gas	11708866.48	0.5	11827603.42	99	60	120	
Tb	159	He	6656900.50	0.7	6692094.83	99.47	60	120	

Sample Report

Sample Name	F154-01I
File Name	H6F22063.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:11:51
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.358	1.636	ppb	7.5	122307.32	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	32.22	50	
B	11	6	No Gas	113.793	11.379	ppb	3.0	24528.06	100	
Na	23	45	H2	75316.645	7531.664	ppb	1.3	33148318.67	50000	
Mg	24	45	No Gas	31060.029	3106.003	ppb	5.0	32610030.00	50000	
Al	27	45	No Gas	20.284	2.028	ppb	33.0	36481.25	50000	
Si	28	45	H2	7997.097	799.710	ppb	0.4	1011423.92	5000	
P	31	45	No Gas	1.052	0.105	ppb	1497.7	21388.46	500	
K	39	45	He	3498.158	349.816	ppb	2.1	374299.49	50000	
Ca	40	45	H2	94049.080	9404.908	ppb	1.5	89091869.33	50000	
Ti	47	45	No Gas	1.342	0.134	ppb	51.2	709.35	500	
V	51	45	He	2.838	0.284	ppb	6.7	8548.67	500	
Cr	52	45	He	0.903	0.090	ppb	14.2	1902.13	500	
Mn	55	45	No Gas	1.644	0.164	ppb	27.9	13999.84	3000	
Fe	56	45	H2	25.251	2.525	ppb	1.6	44923.23	50000	
Co	59	45	No Gas	0.100	0.010	ppb	13.0	498.68	500	
Ni	60	45	He	3.091	0.309	ppb	5.1	896.70	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2028.15	500	
Zn	66	72	No Gas	21.125	2.113	ppb	5.4	11016.47	500	
As	75	72	He	0.973	0.097	ppb	11.7	459.34	500	
Se	78	72	H2	0.584	0.058	ppb	10.4	45.00	500	
Sr	88	72	No Gas	711.762	71.176	ppb	2.9	2564462.82	500	
Zr	90	72	No Gas	0.089	0.009	ppb	117.1	380.01	50	
Mo	95	115	No Gas	1.310	0.131	ppb	2.0	1003.37	500	
Ag	107	115	No Gas	0.146	0.015	ppb	5.6	373.34	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	32.37	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1031.15	500	
Sb	123	115	No Gas	0.144	0.014	ppb	37.5	318.90	100	
Ba	137	115	No Gas	46.004	4.600	ppb	1.6	27140.52	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	96.67	50	
Hg	201	159	He	0.008	0.001	ppb	269.2	10.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	457.79	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1381.15	500	
U	238	159	No Gas	1.369	0.137	ppb	1.7	5798.05	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1851511.48	4.9	1866774.34	99.18	60	120	
Sc	45	No Gas	5277136.50	5.8	5256704	100.39	60	120	
Sc	45	H2	3238333.42	1.1	3216050	100.69	60	120	
Sc	45	He	604496.19	0.9	590136.5	102.43	60	120	
Ge	72	No Gas	1380618.96	4.2	1347600.04	102.45	60	120	
Ge	72	H2	933690.31	1.0	912330.27	102.34	60	120	
Ge	72	He	387484.92	0.4	378247.59	102.44	60	120	
In	115	No Gas	8903337.87	2.7	8692051.13	102.43	60	120	
Tb	159	No Gas	11886778.69	2.5	11827603.42	100.5	60	120	
Tb	159	He	6714575.50	0.8	6692094.83	100.34	60	120	

Sample Report

Sample Name	F154-02M
File Name	H6F22064.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:14:25
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.552	4.655	ppb	2.2	147561.75	50	
Be	9	6	No Gas	29.129	2.913	ppb	3.0	8467.00	50	
B	11	6	No Gas	146.601	14.660	ppb	5.1	30419.60	100	
Na	23	45	H2	160141.765	16014.176	ppb	1.7	70577082.67	50000	
Mg	24	45	No Gas	69115.203	6911.520	ppb	3.9	74101866.67	50000	
Al	27	45	No Gas	3035.710	303.571	ppb	3.4	4252654.42	50000	
Si	28	45	H2	7874.653	787.465	ppb	1.3	1003777.77	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20381.61	500	
K	39	45	He	5839.708	583.971	ppb	1.1	555586.44	50000	
Ca	40	45	H2	188025.514	18802.551	ppb	1.4	179384784.00	50000	
Ti	47	45	No Gas	30.741	3.074	ppb	3.6	6008.67	500	
V	51	45	He	35.850	3.585	ppb	0.2	29173.65	500	
Cr	52	45	He	32.663	3.266	ppb	0.6	24824.45	500	
Mn	55	45	No Gas	29.841	2.984	ppb	2.7	100425.62	3000	
Fe	56	45	H2	3132.102	313.210	ppb	0.3	4406166.17	50000	
Co	59	45	No Gas	30.285	3.029	ppb	2.7	75917.54	500	
Ni	60	45	He	31.495	3.149	ppb	3.5	7934.98	500	
Cu	63	45	He	29.747	2.975	ppb	1.2	22077.90	500	
Zn	66	72	No Gas	64.331	6.433	ppb	3.3	29417.20	500	
As	75	72	He	30.997	3.100	ppb	0.2	4383.05	500	
Se	78	72	H2	30.128	3.013	ppb	3.7	1320.73	500	
Sr	88	72	No Gas	1319.504	131.950	ppb	2.7	4801788.56	500	
Zr	90	72	No Gas	0.002	0.000	ppb	1477.3	190.00	50	
Mo	95	115	No Gas	29.237	2.924	ppb	3.8	20815.18	500	
Ag	107	115	No Gas	29.837	2.984	ppb	4.2	54070.39	50	
Cd	111	115	No Gas	28.843	2.884	ppb	3.6	10933.89	500	
Sn	118	115	No Gas	28.111	2.811	ppb	3.3	33206.34	500	
Sb	123	115	No Gas	28.667	2.867	ppb	2.7	37700.79	100	
Ba	137	115	No Gas	111.030	11.103	ppb	1.8	64152.29	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	83.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.50	5	
Tl	205	159	No Gas	29.803	2.980	ppb	3.4	92756.57	500	
Pb	208	159	No Gas	29.750	2.975	ppb	5.3	126042.07	500	
U	238	159	No Gas	30.512	3.051	ppb	3.3	125853.70	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1843246.63	0.9	1866774.34	98.74	60	120	
Sc	45	No Gas	5383426.00	2.9	5256704	102.41	60	120	
Sc	45	H2	3263767.50	0.8	3216050	101.48	60	120	
Sc	45	He	605374.39	0.3	590136.5	102.58	60	120	
Ge	72	No Gas	1393692.50	1.5	1347600.04	103.42	60	120	
Ge	72	H2	928039.40	2.0	912330.27	101.72	60	120	
Ge	72	He	384318.40	0.3	378247.59	101.6	60	120	
In	115	No Gas	8740346.13	2.1	8692051.13	100.56	60	120	
Tb	159	No Gas	11740227.04	2.9	11827603.42	99.26	60	120	
Tb	159	He	6657888.67	0.9	6692094.83	99.49	60	120	

Sample Report

Sample Name	F154-02S
File Name	H6F22065.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:17:00
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	45.449	4.545	ppb	4.9	148002.29	50	
Be	9	6	No Gas	29.428	2.943	ppb	2.7	8633.77	50	
B	11	6	No Gas	146.131	14.613	ppb	5.0	30617.78	100	
Na	23	45	H2	161708.927	16170.893	ppb	1.5	71157693.33	50000	
Mg	24	45	No Gas	69670.680	6967.068	ppb	2.7	74376613.33	50000	
Al	27	45	No Gas	3053.971	305.397	ppb	1.8	4259326.71	50000	
Si	28	45	H2	7900.012	790.001	ppb	1.1	1005505.75	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20032.44	500	
K	39	45	He	5966.806	596.681	ppb	1.1	560425.36	50000	
Ca	40	45	H2	190047.561	19004.756	ppb	1.5	181036629.33	50000	
Ti	47	45	No Gas	30.044	3.004	ppb	2.7	5859.25	500	
V	51	45	He	38.004	3.800	ppb	0.2	30249.97	500	
Cr	52	45	He	33.172	3.317	ppb	2.4	24970.05	500	
Mn	55	45	No Gas	30.266	3.027	ppb	2.0	101268.38	3000	
Fe	56	45	H2	3180.210	318.021	ppb	0.6	4467031.67	50000	
Co	59	45	No Gas	30.549	3.055	ppb	1.9	76242.73	500	
Ni	60	45	He	31.871	3.187	ppb	0.9	7958.33	500	
Cu	63	45	He	30.288	3.029	ppb	0.4	22234.79	500	
Zn	66	72	No Gas	66.162	6.616	ppb	2.1	30348.58	500	
As	75	72	He	31.059	3.106	ppb	0.5	4398.38	500	
Se	78	72	H2	31.412	3.141	ppb	0.4	1376.07	500	
Sr	88	72	No Gas	1302.903	130.290	ppb	1.7	4765509.95	500	
Zr	90	72	No Gas	0.005	0.000	ppb	442.4	196.67	50	
Mo	95	115	No Gas	29.589	2.959	ppb	1.7	21107.82	500	
Ag	107	115	No Gas	29.659	2.966	ppb	1.8	53863.89	50	
Cd	111	115	No Gas	28.847	2.885	ppb	1.7	10960.12	500	
Sn	118	115	No Gas	28.279	2.828	ppb	1.8	33469.29	500	
Sb	123	115	No Gas	28.796	2.880	ppb	2.4	37951.56	100	
Ba	137	115	No Gas	109.065	10.906	ppb	2.3	63144.15	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	73.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.67	5	
Tl	205	159	No Gas	29.386	2.939	ppb	3.5	92222.47	500	
Pb	208	159	No Gas	29.596	2.960	ppb	2.6	126491.85	500	
U	238	159	No Gas	30.227	3.023	ppb	2.9	125728.26	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1860701.02	0.3	1866774.34	99.67	60	120	
Sc	45	No Gas	5357843.33	1.2	5256704	101.92	60	120	
Sc	45	H2	3258962.83	1.0	3216050	101.33	60	120	
Sc	45	He	600056.69	0.2	590136.5	101.68	60	120	
Ge	72	No Gas	1400665.45	0.9	1347600.04	103.94	60	120	
Ge	72	H2	927689.40	1.9	912330.27	101.68	60	120	
Ge	72	He	384969.11	1.1	378247.59	101.78	60	120	
In	115	No Gas	8756314.98	0.1	8692051.13	100.74	60	120	
Tb	159	No Gas	11832295.64	1.0	11827603.42	100.04	60	120	
Tb	159	He	6655421.17	0.3	6692094.83	99.45	60	120	

Sample Report

Sample Name	F154-02A
File Name	H6F22066.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:19:35
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	318.701	31.870	ppb	2.1	383535.73	50	
Be	9	6	No Gas	301.551	30.155	ppb	1.9	88164.59	50	
B	11	6	No Gas	402.450	40.245	ppb	1.2	77818.20	100	
Na	23	45	H2	186679.768	18667.977	ppb	0.6	80196773.33	50000	
Mg	24	45	No Gas	95560.265	9556.027	ppb	2.5	101662290.67	50000	
Al	27	45	No Gas	30410.144	3041.014	ppb	2.2	42189156.87	50000	
Si	28	45	H2	7768.224	776.822	ppb	0.7	966071.38	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20615.29	500	
K	39	45	He	34252.879	3425.288	ppb	0.6	2681500.42	50000	
Ca	40	45	H2	213445.901	21344.590	ppb	1.2	198634197.33	50000	
Ti	47	45	No Gas	305.902	30.590	ppb	1.3	55030.09	500	
V	51	45	He	326.221	32.622	ppb	0.4	205348.22	500	
Cr	52	45	He	325.026	32.503	ppb	0.2	230063.22	500	
Mn	55	45	No Gas	310.270	31.027	ppb	3.3	949443.77	3000	
Fe	56	45	H2	31740.279	3174.028	ppb	0.9	43468112.00	50000	
Co	59	45	No Gas	311.522	31.152	ppb	2.0	772582.94	500	
Ni	60	45	He	319.094	31.909	ppb	1.3	77266.77	500	
Cu	63	45	He	324.746	32.475	ppb	0.1	209429.65	500	
Zn	66	72	No Gas	614.114	61.411	ppb	2.0	259605.28	500	
As	75	72	He	305.961	30.596	ppb	0.3	39604.24	500	
Se	78	72	H2	313.397	31.340	ppb	1.1	13458.71	500	
Sr	88	72	No Gas	1570.606	157.061	ppb	1.9	5661238.81	500	
Zr	90	72	No Gas	0.110	0.011	ppb	36.6	433.34	50	
Mo	95	115	No Gas	292.944	29.294	ppb	2.7	209080.50	500	
Ag	107	115	No Gas	290.190	29.019	ppb	1.7	527617.46	50	
Cd	111	115	No Gas	296.666	29.667	ppb	1.7	112658.05	500	
Sn	118	115	No Gas	292.507	29.251	ppb	1.1	333177.02	500	
Sb	123	115	No Gas	288.908	28.891	ppb	1.8	380721.23	100	
Ba	137	115	No Gas	374.803	37.480	ppb	0.9	217355.70	1000	
W	182	159	No Gas	0.047	0.005	ppb	24.0	193.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	7.67	5	
Tl	205	159	No Gas	304.297	30.430	ppb	2.0	951631.97	500	
Pb	208	159	No Gas	305.852	30.585	ppb	2.3	1297339.64	500	
U	238	159	No Gas	301.544	30.154	ppb	2.7	1258683.39	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1861588.74	1.5	1866774.34	99.72	60	120	
Sc	45	No Gas	5339895.67	1.1	5256704	101.58	60	120	
Sc	45	H2	3183865.08	0.9	3216050	99	60	120	
Sc	45	He	590634.21	0.1	590136.5	100.08	60	120	
Ge	72	No Gas	1380143.42	0.9	1347600.04	102.41	60	120	
Ge	72	H2	921132.96	0.4	912330.27	100.96	60	120	
Ge	72	He	377214.86	0.4	378247.59	99.73	60	120	
In	115	No Gas	8782504.65	0.9	8692051.13	101.04	60	120	
Tb	159	No Gas	11881565.08	0.6	11827603.42	100.46	60	120	
Tb	159	He	6636054.83	0.6	6692094.83	99.16	60	120	

Sample Report

Sample Name	F154-02I
File Name	H6F22067.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:22:10
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.154	1.515	ppb	11.0	121312.11	50	
Be	9	6	No Gas	0.218	0.022	ppb	65.4	101.11	50	
B	11	6	No Gas	118.108	11.811	ppb	2.3	25343.94	100	
Na	23	45	H2	152219.957	15221.996	ppb	0.2	66682670.67	50000	
Mg	24	45	No Gas	64188.548	6418.855	ppb	2.6	67971532.00	50000	
Al	27	45	No Gas	25.378	2.538	ppb	17.3	44077.36	50000	
Si	28	45	H2	7525.667	752.567	ppb	0.4	953392.02	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20234.05	500	
K	39	45	He	2732.000	273.200	ppb	3.1	311557.39	50000	
Ca	40	45	H2	179034.581	17903.458	ppb	0.2	169730432.00	50000	
Ti	47	45	No Gas	0.215	0.021	ppb	47.9	518.68	500	
V	51	45	He	5.557	0.556	ppb	1.7	10124.41	500	
Cr	52	45	He	1.545	0.154	ppb	3.6	2337.53	500	
Mn	55	45	No Gas	0.161	0.016	ppb	29.3	9677.43	3000	
Fe	56	45	H2	26.613	2.661	ppb	3.1	46891.58	50000	
Co	59	45	No Gas	0.263	0.026	ppb	10.0	904.03	500	
Ni	60	45	He	0.717	0.072	ppb	20.2	305.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1448.74	500	
Zn	66	72	No Gas	3.246	0.325	ppb	5.0	3533.13	500	
As	75	72	He	1.092	0.109	ppb	11.5	468.68	500	
Se	78	72	H2	0.763	0.076	ppb	29.6	52.33	500	
Sr	88	72	No Gas	1251.355	125.136	ppb	1.7	4511665.79	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	133.33	50	
Mo	95	115	No Gas	0.810	0.081	ppb	3.9	634.46	500	
Ag	107	115	No Gas	0.254	0.025	ppb	18.7	567.79	50	
Cd	111	115	No Gas	0.097	0.010	ppb	19.8	78.06	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1003.38	500	
Sb	123	115	No Gas	0.402	0.040	ppb	4.2	657.79	100	
Ba	137	115	No Gas	79.218	7.922	ppb	0.2	46151.76	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	76.67	50	
Hg	201	159	He	0.003	0.000	ppb	879.1	9.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	676.69	500	
Pb	208	159	No Gas	0.008	0.001	ppb	564.7	1655.61	500	
U	238	159	No Gas	1.658	0.166	ppb	3.8	6936.41	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1851652.94	1.4	1866774.34	99.19	60	120	
Sc	45	No Gas	5314550.67	1.4	5256704	101.1	60	120	
Sc	45	H2	3242902.75	0.2	3216050	100.83	60	120	
Sc	45	He	597407.98	1.0	590136.5	101.23	60	120	
Ge	72	No Gas	1380520.25	0.7	1347600.04	102.44	60	120	
Ge	72	H2	928587.06	2.1	912330.27	101.78	60	120	
Ge	72	He	382353.20	0.7	378247.59	101.09	60	120	
In	115	No Gas	8805366.93	0.6	8692051.13	101.3	60	120	
Tb	159	No Gas	11766978.42	0.9	11827603.42	99.49	60	120	
Tb	159	He	6691426.83	0.7	6692094.83	99.99	60	120	

Sample Report

Sample Name	F154-02J
File Name	H6F22068.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:24:45
Sample Type	Sample
Total Dilution	50.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	12.837	0.257	ppb	66.2	111427.08	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	35.55	50	
B	11	6	No Gas	126.151	2.523	ppb	1.5	8402.52	100	
Na	23	45	H2	154565.878	3091.318	ppb	0.3	13892672.33	50000	
Mg	24	45	No Gas	65289.749	1305.795	ppb	3.1	13884962.33	50000	
Al	27	45	No Gas	33.130	0.663	ppb	5.2	18288.71	50000	
Si	28	45	H2	7514.017	150.280	ppb	1.4	193777.21	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19281.37	500	
K	39	45	He	2927.857	58.557	ppb	7.0	149629.55	50000	
Ca	40	45	H2	180223.606	3604.472	ppb	1.2	34348404.00	50000	
Ti	47	45	No Gas	0.088	0.002	ppb	737.5	484.68	500	
V	51	45	He	17.643	0.353	ppb	7.4	8965.60	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	1165.38	500	
Mn	55	45	No Gas	<0.000	<0.000	ppb	N/A	9183.09	3000	
Fe	56	45	H2	31.543	0.631	ppb	7.5	18605.99	50000	
Co	59	45	No Gas	0.054	0.001	ppb	80.9	282.67	500	
Ni	60	45	He	0.182	0.004	ppb	94.8	140.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1002.71	500	
Zn	66	72	No Gas	9.630	0.193	ppb	16.1	2999.67	500	
As	75	72	He	1.785	0.036	ppb	55.7	374.01	500	
Se	78	72	H2	0.725	0.014	ppb	78.8	25.67	500	
Sr	88	72	No Gas	1234.966	24.699	ppb	2.0	896922.88	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	150.00	50	
Mo	95	115	No Gas	0.776	0.016	ppb	13.9	165.55	500	
Ag	107	115	No Gas	0.130	0.003	ppb	54.4	151.11	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	24.12	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	791.14	500	
Sb	123	115	No Gas	0.330	0.007	ppb	52.1	213.34	100	
Ba	137	115	No Gas	79.482	1.590	ppb	4.5	9330.02	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	6.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	247.78	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1157.80	500	
U	238	159	No Gas	1.609	0.032	ppb	5.2	1403.42	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1866779.10	0.7	1866774.34	100	60	120	
Sc	45	No Gas	5328646.33	0.8	5256704	101.37	60	120	
Sc	45	H2	3249562.33	1.0	3216050	101.04	60	120	
Sc	45	He	603558.98	0.3	590136.5	102.27	60	120	
Ge	72	No Gas	1389591.50	0.7	1347600.04	103.12	60	120	
Ge	72	H2	924742.92	0.6	912330.27	101.36	60	120	
Ge	72	He	383277.81	0.4	378247.59	101.33	60	120	
In	115	No Gas	8789498.94	2.0	8692051.13	101.12	60	120	
Tb	159	No Gas	11712835.09	0.6	11827603.42	99.03	60	120	
Tb	159	He	6651861.83	0.7	6692094.83	99.4	60	120	

Sample Report

Sample Name	F154-05I
File Name	H6F22069.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:27:20
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.046	1.605	ppb	9.7	123871.93	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	33.33	50	
B	11	6	No Gas	66.220	6.622	ppb	0.6	16072.53	100	
Na	23	45	H2	46264.646	4626.465	ppb	0.9	20329234.67	50000	
Mg	24	45	No Gas	37534.168	3753.417	ppb	2.2	39867649.33	50000	
Al	27	45	No Gas	18.293	1.829	ppb	6.1	34436.28	50000	
Si	28	45	H2	8232.882	823.288	ppb	0.3	1031556.38	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20035.12	500	
K	39	45	He	2270.514	227.051	ppb	0.3	274302.93	50000	
Ca	40	45	H2	109499.256	10949.926	ppb	0.5	102756546.67	50000	
Ti	47	45	No Gas	0.437	0.044	ppb	52.3	559.34	500	
V	51	45	He	4.814	0.481	ppb	4.8	9592.02	500	
Cr	52	45	He	1.272	0.127	ppb	4.4	2126.83	500	
Mn	55	45	No Gas	2.154	0.215	ppb	6.6	15731.71	3000	
Fe	56	45	H2	70.854	7.085	ppb	0.6	107436.72	50000	
Co	59	45	No Gas	0.096	0.010	ppb	13.1	493.34	500	
Ni	60	45	He	0.368	0.037	ppb	13.2	218.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1095.38	500	
Zn	66	72	No Gas	6.695	0.670	ppb	4.9	4994.92	500	
As	75	72	He	0.676	0.068	ppb	25.1	408.34	500	
Se	78	72	H2	0.913	0.091	ppb	8.7	58.00	500	
Sr	88	72	No Gas	804.782	80.478	ppb	2.9	2911179.81	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	130.00	50	
Mo	95	115	No Gas	0.453	0.045	ppb	4.2	380.01	500	
Ag	107	115	No Gas	0.065	0.007	ppb	3.9	223.34	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	23.84	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	852.25	500	
Sb	123	115	No Gas	0.072	0.007	ppb	29.8	222.22	100	
Ba	137	115	No Gas	41.350	4.135	ppb	1.4	24217.03	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	46.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	201.11	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1076.68	500	
U	238	159	No Gas	1.277	0.128	ppb	3.1	5382.30	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1878854.27	0.5	1866774.34	100.65	60	120	
Sc	45	No Gas	5329001.33	0.6	5256704	101.38	60	120	
Sc	45	H2	3208494.58	1.2	3216050	99.77	60	120	
Sc	45	He	592790.37	0.6	590136.5	100.45	60	120	
Ge	72	No Gas	1385076.41	0.8	1347600.04	102.78	60	120	
Ge	72	H2	913744.38	1.3	912330.27	100.15	60	120	
Ge	72	He	376611.57	0.2	378247.59	99.57	60	120	
In	115	No Gas	8831484.90	0.5	8692051.13	101.6	60	120	
Tb	159	No Gas	11820567.86	0.4	11827603.42	99.94	60	120	
Tb	159	He	6554341.67	0.3	6692094.83	97.94	60	120	

Sample Report

Sample Name	F154-06l
File Name	H6F22070.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:29:56
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.451	1.645	ppb	9.1	124009.23	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	37.78	50	
B	11	6	No Gas	66.845	6.685	ppb	1.4	16160.40	100	
Na	23	45	H2	44875.221	4487.522	ppb	1.4	19772386.00	50000	
Mg	24	45	No Gas	36722.114	3672.211	ppb	1.3	38957278.67	50000	
Al	27	45	No Gas	14.847	1.485	ppb	4.9	29638.22	50000	
Si	28	45	H2	8031.094	803.109	ppb	1.6	1008402.38	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20101.87	500	
K	39	45	He	2229.954	222.995	ppb	0.5	271796.66	50000	
Ca	40	45	H2	106701.240	10670.124	ppb	1.3	100344485.33	50000	
Ti	47	45	No Gas	0.182	0.018	ppb	188.1	513.34	500	
V	51	45	He	4.652	0.465	ppb	1.4	9512.63	500	
Cr	52	45	He	1.218	0.122	ppb	6.5	2092.83	500	
Mn	55	45	No Gas	1.843	0.184	ppb	2.1	14775.31	3000	
Fe	56	45	H2	62.140	6.214	ppb	1.7	95608.07	50000	
Co	59	45	No Gas	0.096	0.010	ppb	15.4	494.01	500	
Ni	60	45	He	0.304	0.030	ppb	10.7	203.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1092.71	500	
Zn	66	72	No Gas	7.131	0.713	ppb	3.3	5173.65	500	
As	75	72	He	0.830	0.083	ppb	30.6	433.01	500	
Se	78	72	H2	0.571	0.057	ppb	6.7	43.67	500	
Sr	88	72	No Gas	782.910	78.291	ppb	1.1	2829797.11	500	
Zr	90	72	No Gas	0.003	0.000	ppb	1308.7	190.00	50	
Mo	95	115	No Gas	0.400	0.040	ppb	15.7	340.01	500	
Ag	107	115	No Gas	0.052	0.005	ppb	44.3	197.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.00	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	680.02	500	
Sb	123	115	No Gas	0.075	0.008	ppb	14.9	225.56	100	
Ba	137	115	No Gas	41.511	4.151	ppb	1.1	24202.49	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	0.004	0.000	ppb	116.5	9.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	158.89	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1192.25	500	
U	238	159	No Gas	1.232	0.123	ppb	0.2	5181.10	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1875483.25	0.7	1866774.34	100.47	60	120	
Sc	45	No Gas	5322758.17	0.2	5256704	101.26	60	120	
Sc	45	H2	3215628.25	2.0	3216050	99.99	60	120	
Sc	45	He	594010.41	0.8	590136.5	100.66	60	120	
Ge	72	No Gas	1383817.71	1.2	1347600.04	102.69	60	120	
Ge	72	H2	917903.02	1.1	912330.27	100.61	60	120	
Ge	72	He	380750.61	0.4	378247.59	100.66	60	120	
In	115	No Gas	8792604.05	0.6	8692051.13	101.16	60	120	
Tb	159	No Gas	11789086.20	0.4	11827603.42	99.67	60	120	
Tb	159	He	6491749.67	0.6	6692094.83	97.01	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV6
File Name	H6F22071.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:32:32
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.046	ppb	4.7	316058.32	25	100.18	90	110	
Be	9	6	No Gas	24.445	ppb	4.3	69547.06	25	97.78	90	110	
B	11	6	No Gas	55.729	ppb	6.0	103420.24	50	111.46	90	110	> +/- 10%
Na	23	45	H2	25018.231	ppb	0.4	105120197.33	25000	100.07	90	110	
Mg	24	45	No Gas	25285.563	ppb	2.7	256930224.00	25000	101.14	90	110	
Al	27	45	No Gas	24923.569	ppb	2.9	330273275.08	25000	99.69	90	110	
Si	28	45	H2	2464.501	ppb	0.8	2993550.75	2500	98.58	90	110	
P	31	45	No Gas	250.287	ppb	3.2	224190.17	250	100.11	90	110	
K	39	45	He	25097.456	ppb	0.4	18611008.00	25000	100.39	90	110	
Ca	40	45	H2	24828.700	ppb	0.3	226256144.00	25000	99.31	90	110	
Ti	47	45	No Gas	247.999	ppb	2.3	422931.74	250	99.2	90	110	
V	51	45	He	252.192	ppb	0.8	1511294.05	250	100.88	90	110	
Cr	52	45	He	250.655	ppb	0.6	1729859.71	250	100.26	90	110	
Mn	55	45	No Gas	1502.931	ppb	3.5	43513373.33	1500	100.2	90	110	
Fe	56	45	H2	25037.191	ppb	1.1	335713717.33	25000	100.15	90	110	
Co	59	45	No Gas	251.239	ppb	3.0	5950085.50	250	100.5	90	110	
Ni	60	45	He	252.159	ppb	0.8	597212.67	250	100.86	90	110	
Cu	63	45	He	253.244	ppb	1.1	1582452.91	250	101.3	90	110	
Zn	66	72	No Gas	241.760	ppb	1.7	973781.58	250	96.7	90	110	
As	75	72	He	248.842	ppb	0.8	314130.92	250	99.54	90	110	
Se	78	72	H2	253.411	ppb	0.6	105336.65	250	101.36	90	110	
Sr	88	72	No Gas	247.130	ppb	3.1	8540721.60	250	98.85	90	110	
Zr	90	72	No Gas	24.213	ppb	2.0	530375.05	25	96.85	90	110	
Mo	95	115	No Gas	248.646	ppb	5.4	1675734.45	250	99.46	90	110	
Ag	107	115	No Gas	24.860	ppb	3.5	427055.72	25	99.44	90	110	
Cd	111	115	No Gas	246.778	ppb	3.6	885095.51	250	98.71	90	110	
Sn	118	115	No Gas	247.539	ppb	4.1	2652944.20	250	99.02	90	110	
Sb	123	115	No Gas	49.239	ppb	4.3	612838.62	50	98.48	90	110	
Ba	137	115	No Gas	502.815	ppb	5.2	2752570.58	500	100.56	90	110	
W	182	159	No Gas	25.074	ppb	2.4	324881.28	25	100.3	90	110	
Hg	201	159	He	2.528	ppb	1.5	2993.53	2.5	101.12	90	110	
Tl	205	159	No Gas	251.209	ppb	3.4	7622189.98	250	100.48	90	110	
Pb	208	159	No Gas	253.025	ppb	3.4	10409071.61	250	101.21	90	110	
U	238	159	No Gas	245.143	ppb	2.7	9935202.11	250	98.06	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1813083.13	3.4	1866774.34	97.12	60	120	
Sc	45	No Gas	5102439.33	1.4	5256704	97.07	60	120	
Sc	45	H2	3117902.17	0.8	3216050	96.95	60	120	
Sc	45	He	578543.67	0.4	590136.5	98.04	60	120	
Ge	72	No Gas	1323526.42	0.8	1347600.04	98.21	60	120	
Ge	72	H2	892737.46	0.9	912330.27	97.85	60	120	
Ge	72	He	370539.62	1.2	378247.59	97.96	60	120	
In	115	No Gas	8302415.06	3.1	8692051.13	95.52	60	120	
Tb	159	No Gas	11539940.10	2.0	11827603.42	97.57	60	120	
Tb	159	He	6529952.17	0.7	6692094.83	97.58	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB6
File Name	H6F22072.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq TIme	2020-06-26 13:35:09
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	106825.27	0.4	
Be	9	6	No Gas	0.013	ppb	69.7	77.78	0.08	
B	11	6	No Gas	0.913	ppb	40.8	5399.94	4	
Na	23	45	H2	14.111	ppb	10.2	458231.90	40	
Mg	24	45	No Gas	8.730	ppb	36.5	115761.07	10	
Al	27	45	No Gas	8.269	ppb	36.6	118855.31	15	
Si	28	45	H2	0.466	ppb	5.4	4280.66	8	
P	31	45	No Gas	2.114	ppb	37.0	22556.29	10	
K	39	45	He	3.585	ppb	136.0	105350.58	20	
Ca	40	45	H2	4.166	ppb	8.2	172986.37	25	
Ti	47	45	No Gas	0.108	ppb	47.2	650.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6339.47	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1090.71	0.2	
Mn	55	45	No Gas	0.528	ppb	31.2	24274.14	0.2	>LOD
Fe	56	45	H2	4.817	ppb	13.3	75768.49	10	
Co	59	45	No Gas	0.088	ppb	32.5	2347.55	0.15	
Ni	60	45	He	0.012	ppb	20.1	159.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1179.38	0.4	
Zn	66	72	No Gas	0.014	ppb	265.5	2134.84	2	
As	75	72	He	0.033	ppb	39.5	361.01	0.2	
Se	78	72	H2	0.069	ppb	10.2	47.67	0.2	
Sr	88	72	No Gas	0.083	ppb	34.7	3578.30	0.2	
Zr	90	72	No Gas	0.010	ppb	31.9	383.34	2	
Mo	95	115	No Gas	0.092	ppb	32.1	693.35	0.2	
Ag	107	115	No Gas	0.007	ppb	49.3	227.78	0.08	
Cd	111	115	No Gas	0.110	ppb	31.6	445.50	0.2	
Sn	118	115	No Gas	0.067	ppb	57.9	2209.08	0.2	
Sb	123	115	No Gas	0.022	ppb	26.1	401.12	0.4	
Ba	137	115	No Gas	0.148	ppb	37.5	944.48	0.2	
W	182	159	No Gas	0.008	ppb	38.5	236.67	0.3	
Hg	201	159	He	0.006	ppb	20.1	15.83	0.1	
Tl	205	159	No Gas	0.133	ppb	37.9	4806.55	0.1	>LOD
Pb	208	159	No Gas	0.094	ppb	25.6	5450.48	0.1	
U	238	159	No Gas	0.077	ppb	32.8	3191.57	0.05	>LOD

LY 06|26|20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1861706.77	3.5	1866774.34	99.73	60	120	
Sc	45	No Gas	5148218.00	2.2	5256704	97.94	60	120	
Sc	45	H2	3189619.42	1.3	3216050	99.18	60	120	
Sc	45	He	592413.37	0.7	590136.5	100.39	60	120	
Ge	72	No Gas	1321225.37	1.4	1347600.04	98.04	60	120	
Ge	72	H2	896966.54	0.7	912330.27	98.32	60	120	
Ge	72	He	372985.19	0.8	378247.59	98.61	60	120	
In	115	No Gas	8613712.37	4.6	8692051.13	99.1	60	120	
Tb	159	No Gas	11599602.87	3.5	11827603.42	98.07	60	120	
Tb	159	He	6583235.17	1.0	6692094.83	98.37	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2606
File Name	H6F22083.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 14:03:36
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.911	ppb	14.7	113391.67	1	91.1	80	120	
Be	9	6	No Gas	1.000	ppb	4.7	2873.63	1	100	80	120	
B	11	6	No Gas	8.945	ppb	4.4	19613.69	10	89.45	80	120	
Na	23	45	H2	104.452	ppb	2.0	835323.58	100	104.45	80	120	
Mg	24	45	No Gas	100.912	ppb	3.0	1071777.33	100	100.91	80	120	
Al	27	45	No Gas	99.757	ppb	2.5	1356013.88	100	99.76	80	120	
Si	28	45	H2	97.444	ppb	1.7	123192.51	100	97.44	80	120	
P	31	45	No Gas	47.937	ppb	2.3	60767.25	50	95.87	80	120	
K	39	45	He	103.120	ppb	9.5	176533.98	100	103.12	80	120	
Ca	40	45	H2	103.311	ppb	0.4	1083956.29	100	103.31	80	120	
Ti	47	45	No Gas	1.045	ppb	7.8	2282.86	1	104.5	80	120	
V	51	45	He	1.033	ppb	3.9	12669.18	1	103.3	80	120	
Cr	52	45	He	1.012	ppb	4.0	8189.78	1	101.2	80	120	
Mn	55	45	No Gas	1.036	ppb	3.4	39562.48	1	103.6	80	120	
Fe	56	45	H2	104.519	ppb	0.6	1426595.71	100	104.52	80	120	
Co	59	45	No Gas	1.010	ppb	2.6	24628.22	1	101	80	120	
Ni	60	45	He	1.077	ppb	0.8	2681.60	1	107.7	80	120	
Cu	63	45	He	0.844	ppb	6.9	7819.58	1	84.4	80	120	
Zn	66	72	No Gas	9.999	ppb	1.8	43044.15	10	99.99	80	120	
As	75	72	He	1.007	ppb	2.4	1588.09	1	100.7	80	120	
Se	78	72	H2	1.039	ppb	6.9	457.01	1	103.9	80	120	
Sr	88	72	No Gas	2.015	ppb	2.4	71630.02	2	100.75	80	120	
Zr	90	72	No Gas	3.877	ppb	4.9	86613.37	5	77.54	80	120	> +/- 20%
Mo	95	115	No Gas	0.956	ppb	3.8	6890.68	1	95.6	80	120	
Ag	107	115	No Gas	1.019	ppb	0.9	18655.37	1	101.9	80	120	
Cd	111	115	No Gas	1.005	ppb	1.2	3865.40	1	100.5	80	120	
Sn	118	115	No Gas	0.934	ppb	2.5	12113.37	1	93.4	80	120	
Sb	123	115	No Gas	0.954	ppb	2.4	12722.84	1	95.4	80	120	
Ba	137	115	No Gas	1.019	ppb	1.7	6030.29	1	101.9	80	120	
W	182	159	No Gas	2.062	ppb	1.8	27226.14	2	103.1	80	120	
Hg	201	159	He	0.075	ppb	10.8	98.00	0.1	75	80	120	> +/- 20%
Tl	205	159	No Gas	1.003	ppb	2.1	31660.08	1	100.3	80	120	
Pb	208	159	No Gas	1.011	ppb	1.8	43817.80	1	101.1	80	120	
U	238	159	No Gas	0.959	ppb	1.6	39530.26	1	95.9	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1808021.53	1.7	1866774.34	96.85	60	120	
Sc	45	No Gas	5199346.50	0.7	5256704	98.91	60	120	
Sc	45	H2	3152611.67	0.9	3216050	98.03	60	120	
Sc	45	He	579546.60	1.7	590136.5	98.21	60	120	
Ge	72	No Gas	1347698.96	0.6	1347600.04	100.01	60	120	
Ge	72	H2	905416.13	1.2	912330.27	99.24	60	120	
Ge	72	He	370734.43	1.7	378247.59	98.01	60	120	
In	115	No Gas	8798985.00	0.1	8692051.13	101.23	60	120	
Tb	159	No Gas	11705508.70	0.4	11827603.42	98.97	60	120	
Tb	159	He	6557762.33	1.3	6692094.83	97.99	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #SM5A-04-04-10

ALL SAMPLES PHS 2

Book #: EIM-081
Batch: IMF029W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.2 °C		93.1 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	↓ -06-26	0.15
MS	SAMPLE SPIKE SOLN AND VOL	AS LAS 4,2
Blank Soil (Bead)		
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1ML
pH Strip (0-14)	HC998032	N/A
Digestate Location	METALS	
Extract Location	N/A	
☑ Reagent Water ID:	SWIA-009-03-03	
☑ Thermometer ID:	192272442/E12	
☑ Pipette ID:	74276631	
☑ Pipette ID:	84278057 9	
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: CK/MC
Standard Added By: CK Witnessed By: NT
Extract Rcvd By: LY Checked By: MC

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF029W01	IMF029WB	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W02	IMF029WL	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W03	IMF029WC	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W04	F154-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W05	F154-02	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W06	F154-02M	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W07	F154-02S	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W08	F154-05	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W09	F154-06	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W10	F162-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W11	F162-02	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W12	F162-04	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W13	F162-05	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W14	F162-07	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W15	F162-08	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W16	F162-10	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W17	F162-11	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W18	F071-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL

CK
6/22/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/22/20 10:36

☑ Digestion Ended @ 6/22/20 13:27

Comments:

Prepared By: CKaing/MCande

Checked By: CK / MC

Date 6/22/20

SOP EMAX-6020 Rev. 13

MRL ID: _____

Analytes	True Values
	Water (µg/L)
Aluminum	100
Antimony	1.0
Arsenic	1.0
Barium	1.0
Beryllium	1.0
Boron	10
Cadmium	1.0
Calcium	100
Chromium	1.0
Cobalt	1.0
Copper	1.0
Iron	100
Lead	1.0
Magnesium	100
Manganese	1.0
Molybdenum	1.0
Nickel	1.0
Potassium	100
Selenium	1.0
Silver	1.0
Sodium	100
Strontium	2.0
Thallium	1.0
Tin	1.0
Titanium	1.0
Vanadium	1.0
Zinc	10
Lithium	1.0
Phosphorus	50
Zirconium	5.0

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of four(4) water samples were received on 06/18/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGF012WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGF012WL/HGF012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Mercury was within MS QC limits in F154-02M/F154-02S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F154
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGF012WB	1	NA	06/18/2016:35	06/18/2012:36	M47F011012	M47F011	20HGF012W	Method Blank
LCS1W	HGF012WL	1	NA	06/18/2016:37	06/18/2012:36	M47F011013	M47F011	20HGF012W	Lab Control Sample (LCS)
LCD1W	HGF012WC	1	NA	06/18/2016:40	06/18/2012:36	M47F011014	M47F011	20HGF012W	LCS Duplicate
MW20S-GW061720	F154-01	1	NA	06/18/2016:42	06/18/2012:36	M47F011015	M47F011	20HGF012W	Field Sample
MW02-GW061720	F154-02	1	NA	06/18/2016:46	06/18/2012:36	M47F011017	M47F011	20HGF012W	Field Sample
MW02-GW061720MS	F154-02M	1	NA	06/18/2016:51	06/18/2012:36	M47F011019	M47F011	20HGF012W	Matrix Spike Sample (MS)
MW02-GW061720MSD	F154-02S	1	NA	06/18/2016:53	06/18/2012:36	M47F011020	M47F011	20HGF012W	MS Duplicate (MSD)
MW20D-GW061720	F154-05	1	NA	06/18/2016:55	06/18/2012:36	M47F011021	M47F011	20HGF012W	Field Sample
FD04-GW061720	F154-06	1	NA	06/18/2017:02	06/18/2012:36	M47F011024	M47F011	20HGF012W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGF012WB	ND	1	NA	0.500	0.100	06/18/2016:35	06/18/2012:36	M47F011012	M47F011	20HGF012W	NA	NA
LCS1W	HGF012WL	2.50	1	NA	0.500	0.100	06/18/2016:37	06/18/2012:36	M47F011013	M47F011	20HGF012W	NA	NA
LCD1W	HGF012WC	2.42	1	NA	0.500	0.100	06/18/2016:40	06/18/2012:36	M47F011014	M47F011	20HGF012W	NA	NA
MW20S-GW061720	F154-01	ND	1	NA	0.500	0.100	06/18/2016:42	06/18/2012:36	M47F011015	M47F011	20HGF012W	06/17/2011:02	06/18/20
MW02-GW061720	F154-02	ND	1	NA	0.500	0.100	06/18/2016:46	06/18/2012:36	M47F011017	M47F011	20HGF012W	06/17/2011:35	06/18/20
MW02-GW061720MS	F154-02M	2.55	1	NA	0.500	0.100	06/18/2016:51	06/18/2012:36	M47F011019	M47F011	20HGF012W	06/17/2011:35	06/18/20
MW02-GW061720MSD	F154-02S	2.54	1	NA	0.500	0.100	06/18/2016:53	06/18/2012:36	M47F011020	M47F011	20HGF012W	06/17/2011:35	06/18/20
MW20D-GW061720	F154-05	ND	1	NA	0.500	0.100	06/18/2016:55	06/18/2012:36	M47F011021	M47F011	20HGF012W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06	ND	1	NA	0.500	0.100	06/18/2017:02	06/18/2012:36	M47F011024	M47F011	20HGF012W	06/17/2012:05	06/18/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGF012WB	HGF012WL	HGF012WC
LAB FILE ID	: M47F011012	M47F011013	M47F011014
DATE PREPARED	: 06/18/2012:36	06/18/2012:36	06/18/2012:36
DATE ANALYZED	: 06/18/2016:35	06/18/2016:37	06/18/2016:40
PREP BATCH	: 20HGF012W	20HGF012W	20HGF012W
CALIBRATION REF	: M47F011	M47F011	M47F011

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.50	100	2.50	2.42	97	3	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID	: F154-02	F154-02M	F154-02S
LAB FILE ID	: M47F011017	M47F011019	M47F011020
DATE PREPARED	: 06/18/2012:36	06/18/2012:36	06/18/2012:36
DATE ANALYZED	: 06/18/2016:46	06/18/2016:51	06/18/2016:53
PREP BATCH	: 20HGF012W	20HGF012W	20HGF012W
CALIBRATION REF	: M47F011	M47F011	M47F011

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.55	102	2.50	2.54	102	0	80-120	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 6/18/20 Start Time: 16:09

End Date: 6/18/20 End Time: 17:42

Comments:

QC OK

Book #: A47-121

Instrument No.: 47

Analytical Sequence/Batch: M47F011

Method File: HG1

Micropipette ID: ☑ 339342032

Micropipette ID: ☑ HG-03

Micropipette ID: ☑ 742781062

Micropipette ID: ☑ HG-06

Micropipette ID: ☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	BLANK NT 6/18/20
S2	SM38-19-19-0809
S3	↓
S4	↓
S5	↓
S6	↓
CCV	↓
ICV	SM38-19-19-10
LCS	↓
Analytical Spike	
	SM38-19-20-01 TV 3ug/L

Analyzed By: NT

Date: 6/18/20

Disposed By:

Date:

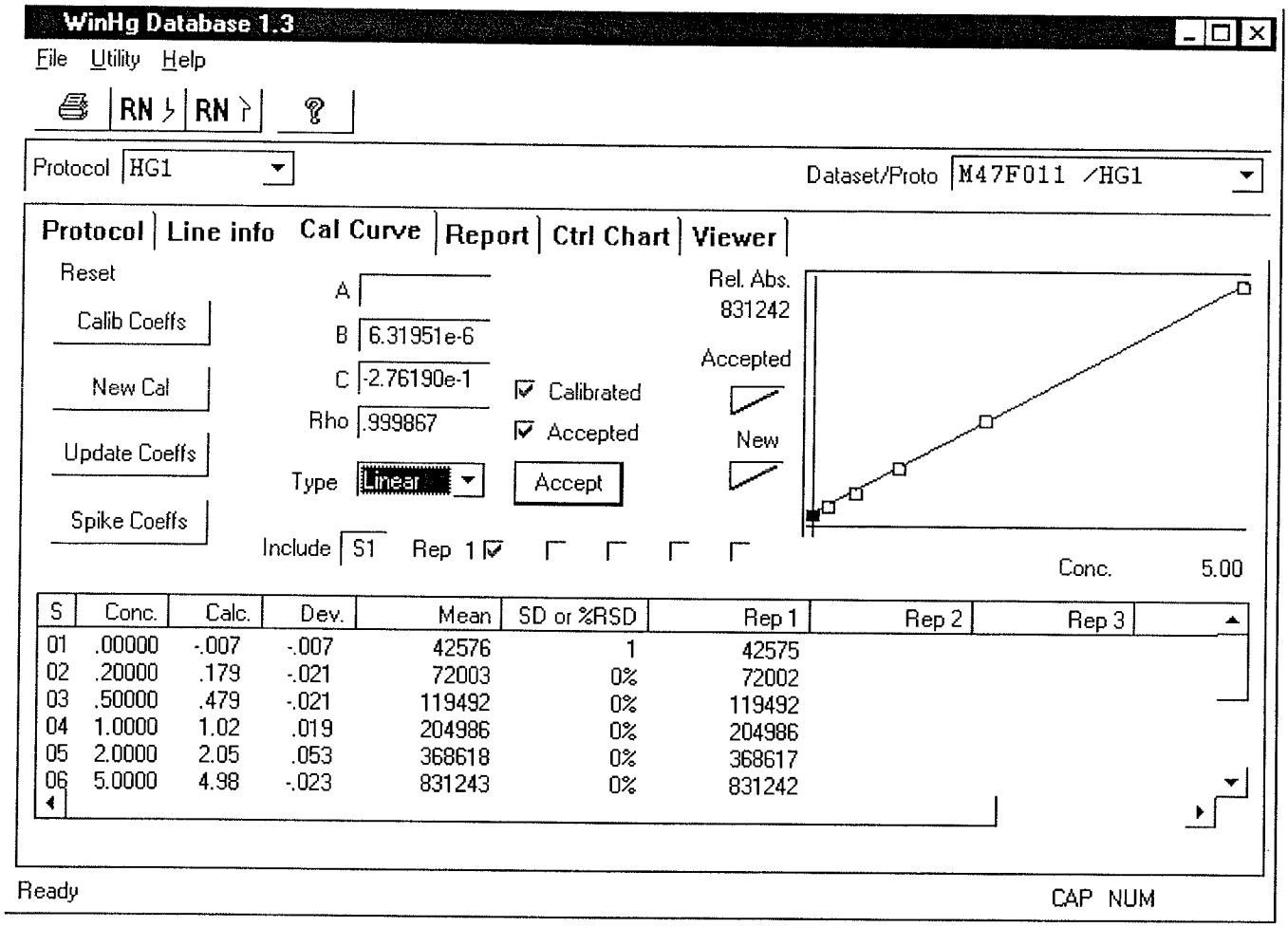
"M47F011"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47F011001	STD01REP1	0	42575		06/18/2016:09	1
M47F011002	STD02REP1	.2	72002		06/18/2016:12	1
M47F011003	STD03REP1	.5	119492		06/18/2016:14	1
M47F011004	STD04REP1	1	204986		06/18/2016:16	1
M47F011005	STD05REP1	2	368617		06/18/2016:19	1
M47F011006	STD06REP1	5	831242		06/18/2016:21	1
M47F011007	ICV	1.99	358418	0	06/18/2016:24	1
M47F011008	ICB	-.01	42152	0	06/18/2016:26	1
M47F011009	MRLF1801	.509	124256	0	06/18/2016:28	1
M47F011010	CCV1	2.04	366900	0	06/18/2016:31	1
M47F011011	CCB1	-.024	39948	0	06/18/2016:33	1
M47F011012	HGF012WB	-.009	42223	0	06/18/2016:35	1
M47F011013	HGF012WL	2.5	438821	0	06/18/2016:37	1
M47F011014	HGF012WC	2.42	426333	0	06/18/2016:40	1
M47F011015	F154-01	-.036	37988	0	06/18/2016:42	1
M47F011016	F154-02A	3.03	522626	0	06/18/2016:44	1
M47F011017	F154-02	-.047	36333	0	06/18/2016:46	1
M47F011018	F154-02J	.001	43845	0	06/18/2016:49	5
M47F011019	F154-02M	2.55	446805	0	06/18/2016:51	1
M47F011020	F154-02S	2.54	444957	0	06/18/2016:53	1
M47F011021	F154-05	-.032	38615	0	06/18/2016:55	1
M47F011022	CCV2	2.05	368753	0	06/18/2016:57	1
M47F011023	CCB2	-.02	40518	0	06/18/2016:59	1
M47F011024	F154-06	-.01	42132	0	06/18/2017:02	1
M47F011025	F136-01	-.027	39495	0	06/18/2017:04	1
M47F011026	F071-01	.024	47424	0	06/18/2017:06	1
M47F011027	F499-01	.068	54530	0	06/18/2017:09	1
M47F011028	F499-02	.088	57679	0	06/18/2017:11	1
M47F011029	F499-03	.735	160074	0	06/18/2017:13	1
M47F011030	TXF003SB	-.005	42957	0	06/18/2017:15	1
M47F011031	F103-02A	3.1	534374	0	06/18/2017:18	1
M47F011032	F103-02	-.018	40863	0	06/18/2017:20	1
M47F011033	F103-02J	-.037	37901	0	06/18/2017:22	5
M47F011034	CCV3	2.02	362590	0	06/18/2017:24	1
M47F011035	CCB3	-.023	39991	0	06/18/2017:27	1
M47F011036	F103-02M	2.49	438441	0	06/18/2017:29	1
M47F011037	F103-02S	2.53	444327	0	06/18/2017:31	1
M47F011038	F105-01	-.013	41639	0	06/18/2017:33	1
M47F011039	F105-02	-.018	40779	0	06/18/2017:35	1
M47F011040	F101-01	.032	48709	0	06/18/2017:38	1
M47F011041	CCV4	2.07	370629	0	06/18/2017:40	1
M47F011042	CCB4	.006	44597	0	06/18/2017:42	1
**********	**********	**********	**********	**********	**********	***
EMAXlfid	EMAXlsid	Xint	Yint	rrf	adatetime	DF
M47F011000		0	0	0	06/18/2017:42	1
M47F011001	BLANK	-.2766474	43765.1	.9998674	06/18/2017:42	1

M47F011

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLF1801	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGF012WB		1.0000	1.0000	
7	HGF012WL		1.0000	1.0000	
8	HGF012WC		1.0000	1.0000	
9	F154-01		1.0000	1.0000	
10	F154-02A		1.0000	1.0000	
11	F154-02		1.0000	1.0000	
12	F154-02J	5X	1.0000	1.0000	
13	F154-02M		1.0000	1.0000	
14	F154-02S		1.0000	1.0000	
15	F154-05		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F154-06		1.0000	1.0000	
19	F136-01		1.0000	1.0000	
20	F071-01		1.0000	1.0000	
21	F499-01		1.0000	1.0000	
22	F499-02		1.0000	1.0000	
23	F499-03		1.0000	1.0000	
24	TXF003SB	TCLP	1.0000	1.0000	
25	F103-02A	TCLP	1.0000	1.0000	
26	F103-02	TCLP	1.0000	1.0000	
27	F103-02J	5X TCLP	1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F103-02M	TCLP	1.0000	1.0000	
31	F103-02S	TCLP	1.0000	1.0000	
32	F105-01	TCLP	1.0000	1.0000	
33	F105-02	TCLP	1.0000	1.0000	
34	F101-01	TCLP	1.0000	1.0000	
35	CCV4		1.0000	1.0000	
36	CCB4		1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 6/18/20


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47F011 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.31951e-6
C -2.76190e-1
Rho .999867
Type Linear
Calibrated
Accepted
Accept
Include S1 Rep 1
Rel. Abs.
831242
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.007 -.007 42576 1 42575
02 .20000 .179 -.021 72003 0% 72002
03 .50000 .479 -.021 119492 0% 119492
04 1.0000 1.02 .019 204986 0% 204986
05 2.0000 2.05 .053 368618 0% 368617
06 5.0000 4.98 -.023 831243 0% 831242
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	16:09:45 18 Jun 20	HG		
Hg	.000	ppb	42575					
*** Standard: 2 Rep: 1				Seq: 2	16:12:06 18 Jun 20	HG		
Hg	.200	ppb	72002					
*** Standard: 3 Rep: 1				Seq: 3	16:14:16 18 Jun 20	HG		
Hg	.500	ppb	119492					
*** Standard: 4 Rep: 1				Seq: 4	16:16:39 18 Jun 20	HG		
Hg	1.00	ppb	204986					
*** Standard: 5 Rep: 1				Seq: 5	16:19:06 18 Jun 20	HG		
Hg	2.00	ppb	368617					
*** Standard: 6 Rep: 1				Seq: 6	16:21:16 18 Jun 20	HG		
Hg	5.00	ppb	831242					
*** Sample ID: ICV				Seq: 7	16:24:25 18 Jun 20	HG		
Hg	1.99	ppb	358418					
*** Sample ID: ICB				Seq: 8	16:26:38 18 Jun 20	HG		
Hg	-.010	ppb	42152					
*** Sample ID: MRLF1801				Seq: 9	16:28:47 18 Jun 20	HG		
Hg	.509	ppb	0.5 124256					
*** Sample ID: CCV1				Seq: 10	16:31:06 18 Jun 20	HG		
Hg	2.04	ppb	366900					
*** Sample ID: CCB1				Seq: 11	16:33:25 18 Jun 20	HG		
Hg	-.024	ppb	39948					
*** Sample ID: HGF012WB				Seq: 12	16:35:33 18 Jun 20	HG		
Hg	-.009	ppb	42223					
*** Sample ID: HGF012WL				Seq: 13	16:37:54 18 Jun 20	HG		
Hg	2.50	ppb	438821					
*** Sample ID: HGF012WC				Seq: 14	16:40:00 18 Jun 20	HG		
Hg	2.42	ppb	426333					
*** Sample ID: F154-01				Seq: 15	16:42:20 18 Jun 20	HG		
Hg	-.036	ppb	37988					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F154-02A				Seq: 16		16:44:39 18 Jun 20			HG
Hg	3.03	ppb	522626						
*** Sample ID: F154-02				Seq: 17		16:46:49 18 Jun 20			HG
Hg	-.047	ppb	36333						
*** Sample ID: F154-02J				Seq: 18		16:49:06 18 Jun 20			HG
			5X						
Hg	.001	ppb	43845						
*** Sample ID: F154-02M				Seq: 19		16:51:13 18 Jun 20			HG
Hg	2.55	ppb	446805						
*** Sample ID: F154-02S				Seq: 20		16:53:22 18 Jun 20			HG
Hg	2.54	ppb	444957						
*** Sample ID: F154-05				Seq: 21		16:55:30 18 Jun 20			HG
Hg	-.032	ppb	38615						
*** Sample ID: CCV2				Seq: 22		16:57:49 18 Jun 20			HG
Hg	2.05	ppb	368753						
*** Sample ID: CCB2				Seq: 23		16:59:57 18 Jun 20			HG
Hg	-.020	ppb	40518						
*** Sample ID: F154-06				Seq: 24		17:02:16 18 Jun 20			HG
Hg	-.010	ppb	42132						
*** Sample ID: F136-01				Seq: 25		17:04:39 18 Jun 20			HG
Hg	-.027	ppb	39495						
*** Sample ID: F071-01				Seq: 26		17:06:50 18 Jun 20			HG
Hg	.024	ppb	47424						
*** Sample ID: F499-01				Seq: 27		17:09:01 18 Jun 20			HG
Hg	.068	ppb	54530						
*** Sample ID: F499-02				Seq: 28		17:11:11 18 Jun 20			HG
Hg	.088	ppb	57679						
*** Sample ID: F499-03				Seq: 29		17:13:24 18 Jun 20			HG
Hg	.735	ppb	160074						
*** Sample ID: TXF003SB				Seq: 30		17:15:47 18 Jun 20			HG
			TCLP						
Hg	-.005	ppb	42957						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F103-02A				Seq: 31	17:18:15 18 Jun 20			HG
			TCLP					
Hg	3.10	ppb	534374					
*** Sample ID: F103-02				Seq: 32	17:20:23 18 Jun 20			HG
			TCLP					
Hg	-.018	ppb	40863					
*** Sample ID: F103-02J				Seq: 33	17:22:40 18 Jun 20			HG
			5X TCLP					
Hg	-.037	ppb	37901					
*** Sample ID: CCV3				Seq: 34	17:24:47 18 Jun 20			HG
Hg	2.02	ppb	362590					
*** Sample ID: CCB3				Seq: 35	17:27:00 18 Jun 20			HG
Hg	-.023	ppb	39991					
*** Sample ID: F103-02M				Seq: 36	17:29:08 18 Jun 20			HG
			TCLP					
Hg	2.49	ppb	438441					
*** Sample ID: F103-02S				Seq: 37	17:31:20 18 Jun 20			HG
			TCLP					
Hg	2.53	ppb	444327					
*** Sample ID: F105-01				Seq: 38	17:33:28 18 Jun 20			HG
			TCLP					
Hg	-.013	ppb	41639					
*** Sample ID: F105-02				Seq: 39	17:35:47 18 Jun 20			HG
			TCLP					
Hg	-.018	ppb	40779					
*** Sample ID: F101-01				Seq: 40	17:38:10 18 Jun 20			HG
			TCLP					
Hg	.032	ppb	48709					
*** Sample ID: CCV4				Seq: 41	17:40:16 18 Jun 20			HG
Hg	2.07	ppb	370629					
*** Sample ID: CCB4				Seq: 42	17:42:37 18 Jun 20			HG
Hg	.006	ppb	44597					

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28619010

Aqua Regia Prep. Vessel Lot#: N/A

Book #: E47-116

Batch No.: HGF012W

Matrix: Water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-19-09	50	0.2, 0.5, 1, 2, 5
CCV	↓	↓	2
ICV	SM3B-19-19-10		2
LCS/MS	↓	↓	2.5
Reagent	**ID / Lot #**		
HNO_3	SWA-009-02-08		
HCl	N/A		
H_2SO_4	SWA-08-24-05		
$KMnO_4$	SM5B-04-13-03		
$K_2S_2O_8$	SM5B-04-13-04		
$NH_2OH \cdot HCl \cdot NaCl$	SM5B-09-13-02		
$SnCl_2$	SM5B-04-14-03		
Silica Sand	N/A		
Reagent Water	RW1-19-003		
pH strip 0-14	HC004149		

Digestor ID/ Temp (°C): A / 95.4

Thermometer ID/LOC: 192062809 / A10

Thermometer ID/LOC: N/A

Pipette ID: HG-06, 74278106 2, HG03, 39934 2032

☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

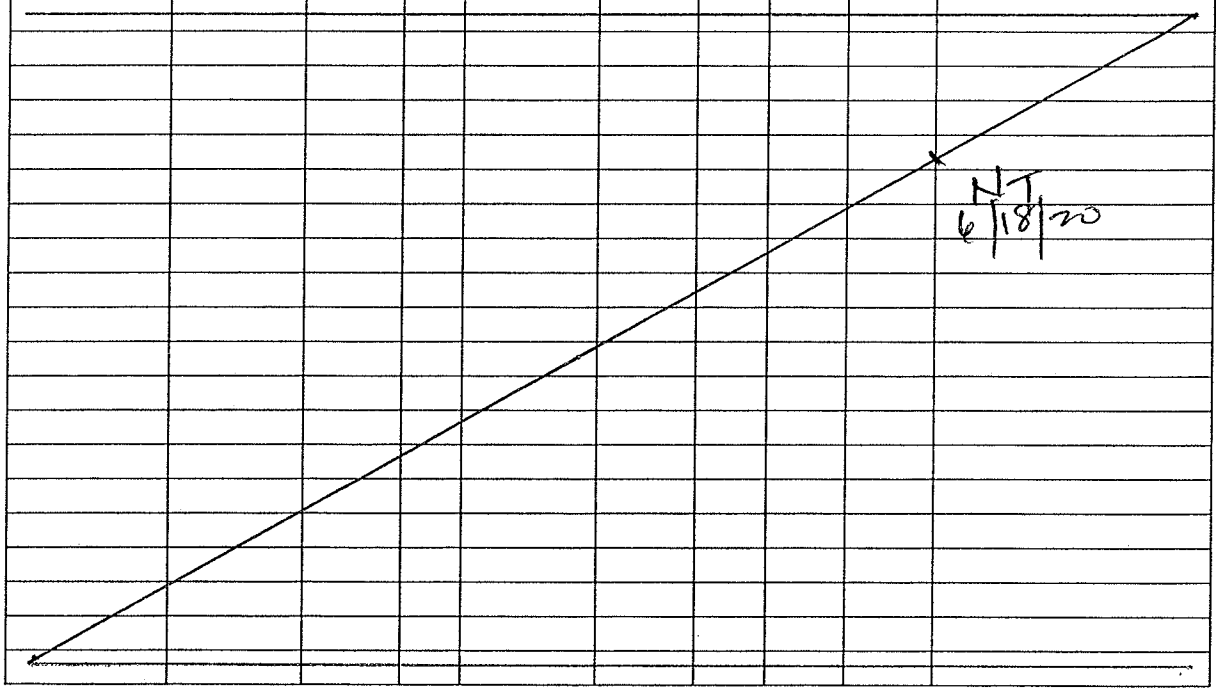
Prepared By: NT

Standard Added By: NT Witnessed By: MC

EMAX LABORATORIES

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGF012W01	HGF012WB	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W02	HGF012WL	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W03	HGF012WC	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W04	TXF003SB	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W05	F103-02	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W06	F103-02M	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W07	F103-02S	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W08	F105-01	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W09	F105-02	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W10	F101-01	5	ml	6/18/20 11:42	80	50	80	10	TCLP
20HGF012W11	F154-01	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W12	F154-02	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W13	F154-02M	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W14	F154-02S	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W15	F136-01	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W16	F071-01	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W17	F499-01	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W18	F499-02	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W19	F499-03	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W20	S-0/CCB/ICB	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W21	S-0.2	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W22	S-0.5	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W23	S-1	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W24	S-2/CCV	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W25	S-5	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W26	ICV	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W27	PS H2O	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W28	MRL-0.5	50	ml	6/18/20 11:42	80	50	80	1	
20HGF012W29	F154-05	50	ml	6/18/20 12:03	80	50	80	1	
20HGF012W30	F154-06	50	ml	6/18/20 12:04	80	50	80	1	



Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/18/20 12:36 Prepared By: NTan

☑ Digestion Ended @ 6/18/20 15:00 Checked By: NT

Comments: Date 6/18/20

SOP EMAX-7470 Rev. 8

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F154

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD E300.0
CHLORIDE

A total of four(4) water samples were received on 06/18/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Chloride was not detected in ICF010WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF010WL/ICF010WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Chloride was within MS QC limits in F154-02JM/F154-02JS. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD E300.0
SULFATE

A total of four(4) water samples were received on 06/18/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF010WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF010WL/ICF010WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following was noted: F154-02IM/F154-02IS - Percent recovery for Sulfate was not within MS/MSD QC limits. Presence of matrix interference was suspected. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : D7

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF010WB	ND	1	NA	0.2	0.05	06/19/2012:00	NA	AF12-03	AF12-01	ICF010W	NA	NA
LCS1W	ICF010WL	1.83	1	NA	0.2	0.05	06/19/2012:21	NA	AF12-04	AF12-01	ICF010W	NA	NA
LCD1W	ICF010WC	1.83	1	NA	0.2	0.05	06/19/2012:42	NA	AF12-05	AF12-01	ICF010W	NA	NA
MW02-GW061720	F154-02J	402	200	NA	40	10	06/19/2019:33	NA	AF12-20	AF12-18	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720MS	F154-02JM	784	200	NA	40	10	06/19/2019:53	NA	AF12-21	AF12-18	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720MSD	F154-02JS	785	200	NA	40	10	06/19/2020:14	NA	AF12-22	AF12-18	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02JD	403	200	NA	40	10	06/19/2020:35	NA	AF12-23	AF12-18	ICF010W	06/17/2011:35	06/18/20
MW20S-GW061720	F154-01J	115	40	NA	8	2	06/19/2021:58	NA	AF12-27	AF12-18	ICF010W	06/17/2011:02	06/18/20
MW20D-GW061720	F154-05J	126	40	NA	8	2	06/19/2022:40	NA	AF12-29	AF12-18	ICF010W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06J	123	40	NA	8	2	06/20/2000:03	NA	AF12-33	AF12-30	ICF010W	06/17/2012:05	06/18/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : D7

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF010WB	ND	1	NA	0.5	0.13	06/19/2012:00	NA	AF12-03	AF12-01	ICF010W	NA	NA
LCS1W	ICF010WL	4.86	1	NA	0.5	0.13	06/19/2012:21	NA	AF12-04	AF12-01	ICF010W	NA	NA
LCD1W	ICF010WC	4.83	1	NA	0.5	0.13	06/19/2012:42	NA	AF12-05	AF12-01	ICF010W	NA	NA
MW02-GW061720	F154-02I	101	10	NA	5	1.3	06/19/2017:26	NA	AF12-14	AF12-06	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720MS	F154-02IM	144	10	NA	5	1.3	06/19/2017:47	NA	AF12-15	AF12-06	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720MSD	F154-02IS	143	10	NA	5	1.3	06/19/2018:07	NA	AF12-16	AF12-06	ICF010W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02ID	101	10	NA	5	1.3	06/19/2018:30	NA	AF12-17	AF12-06	ICF010W	06/17/2011:35	06/18/20
MW20S-GW061720	F154-01I	89.7	10	NA	5	1.3	06/19/2021:37	NA	AF12-26	AF12-18	ICF010W	06/17/2011:02	06/18/20
MW20D-GW061720	F154-05I	96.6	10	NA	5	1.3	06/19/2022:19	NA	AF12-28	AF12-18	ICF010W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06I	134	10	NA	5	1.3	06/19/2023:42	NA	AF12-32	AF12-30	ICF010W	06/17/2012:05	06/18/20

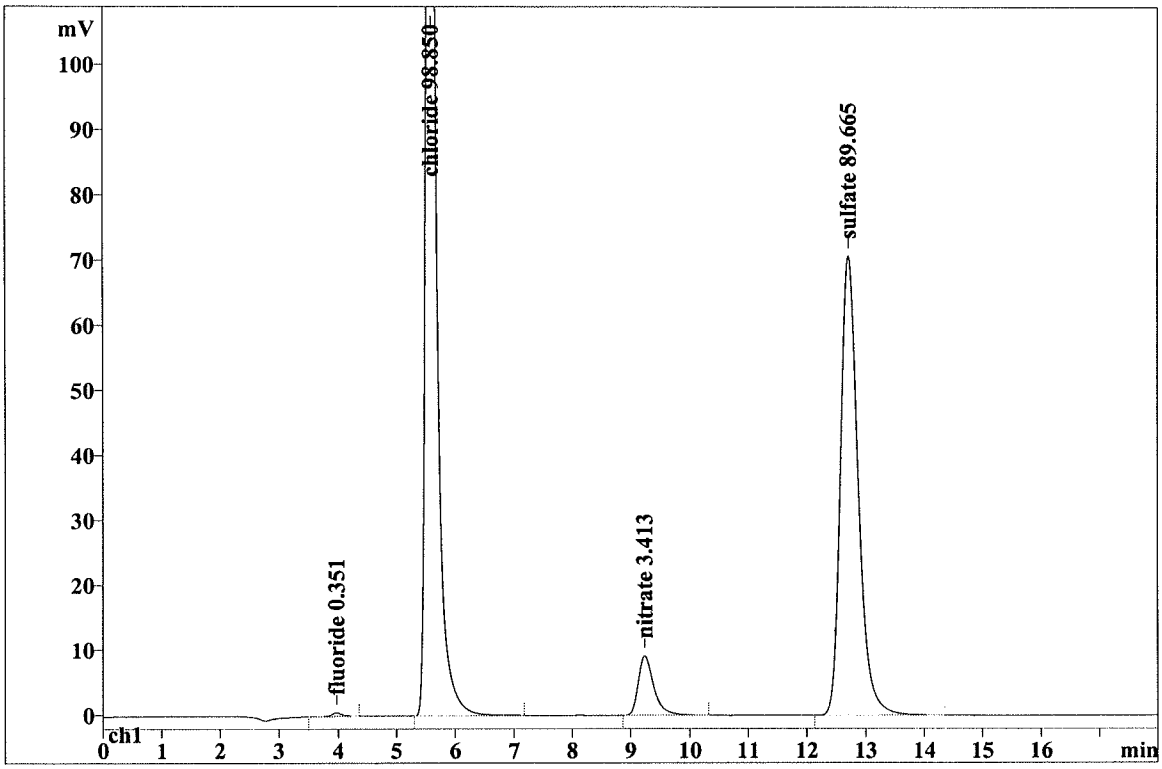
SAMPLE RESULTS

Report date: 6/23/2020 6:19:28 PM
Printed by: TWangc

Ident: AF12-26 F154-01I DF=10
Analysis from: 6/19/2020 9:37:50 PM
File: _2020-06-19_21-37.chw Last save: 6/19/2020 9:55:50 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92946

SAMPLE: METHOD300/9056/4110B
:
Vial number: 26
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	0.56	6.621	0.351	fluoride
2	5.58	191.19	2229.916	98.850	chloride
3	9.24	9.13	166.220	3.413	nitrate
4	12.71	70.64	1483.202	89.665	sulfate ✓
4	18.00	271.52	3885.959	192.278	

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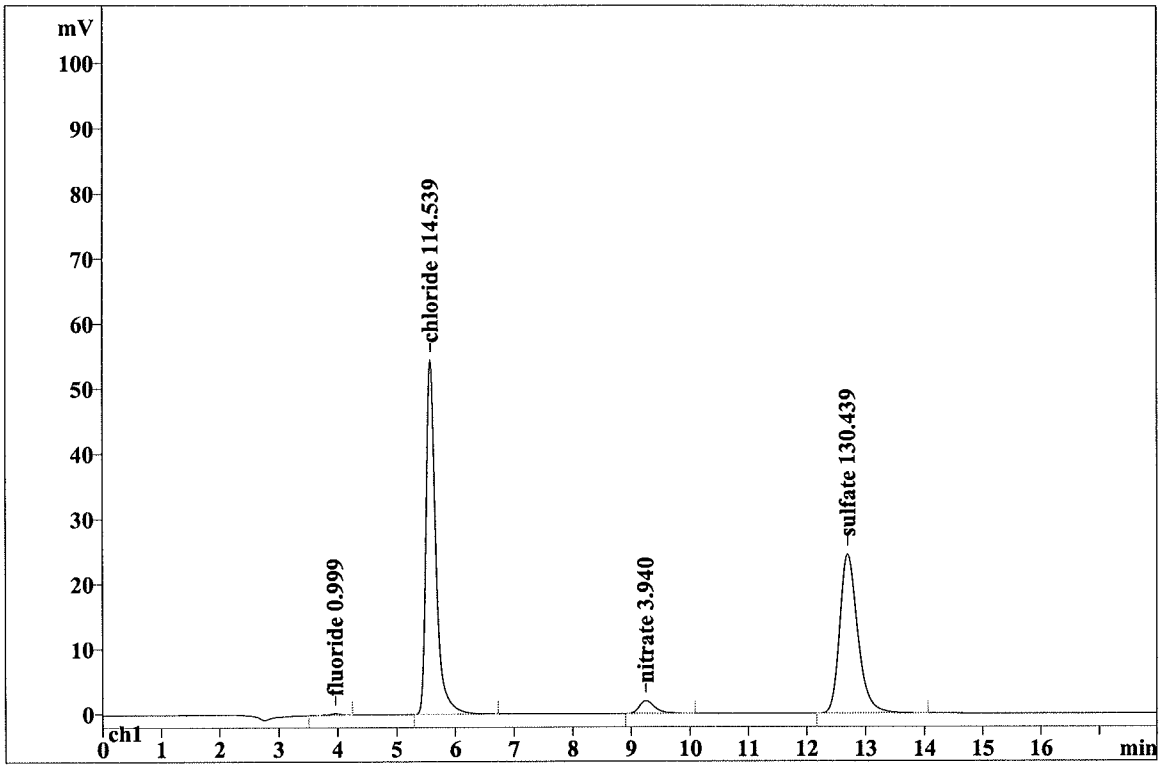
METROHM LTD

Report date: 6/23/2020 6:19:46 PM
Printed by: TWangc

Ident: AF12-27 F154-01J DF=40
Analysis from: 6/19/2020 9:58:39 PM
File: _2020-06-19_21-58.chw Last save: 6/19/2020 10:16:39 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92947

SAMPLE: METHOD300/9056/4110B
:
Vial number: 27
Volume: 1.0 µL
Dilution: 40.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	0.23	2.768	0.999	fluoride
2	5.58	54.53	631.054	114.539	chloride ✓
3	9.26	1.97	37.224	3.940	nitrate
4	12.70	24.52	523.282	130.439	sulfate
4	17.99	81.25	1194.329	249.916	

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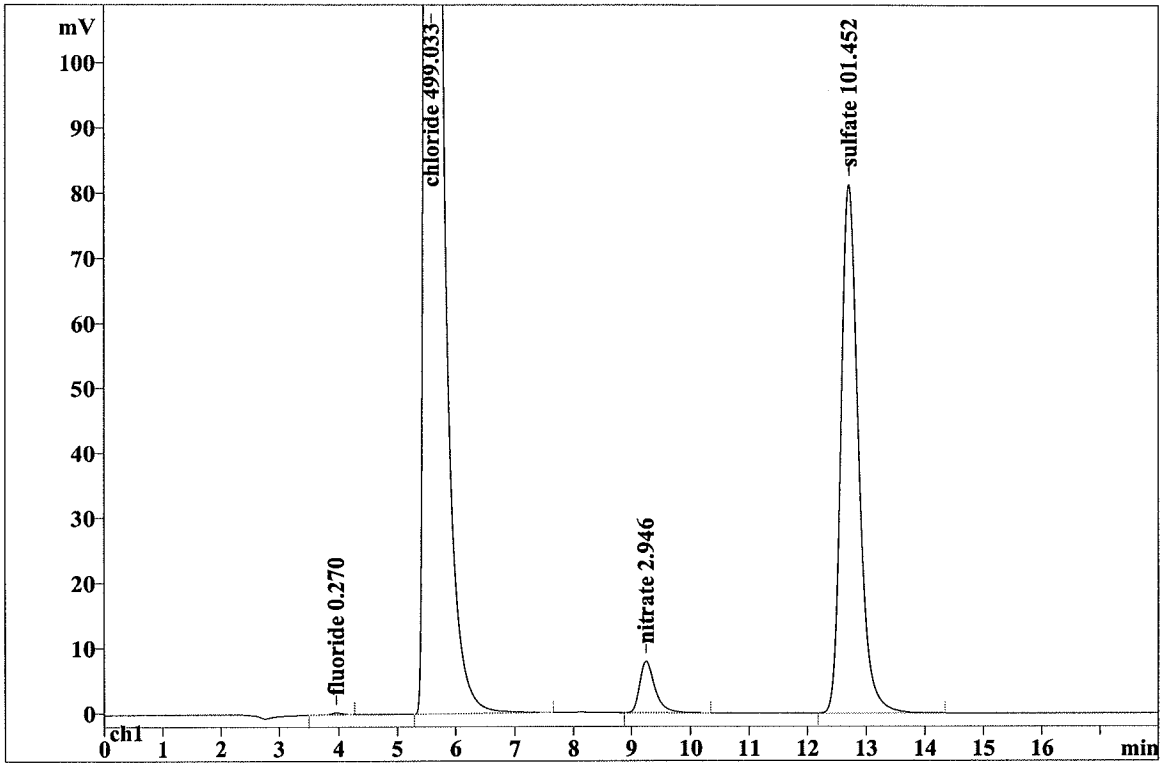
Report date: 6/23/2020 6:15:14 PM
Printed by: TWangc

Ident: AF12-14 F154-02I DF=10
Analysis from: 6/19/2020 5:26:19 PM
File: _2020-06-19_17-26.chw Last save: 6/19/2020 6:22:18 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92934

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	0.30	3.549	0.270	fluoride
2	5.58	946.94	11342.496	499.033	chloride
3	9.25	7.90	141.447	2.946	nitrate
4	12.71	81.46	1681.509	101.452	sulfate ✓
4	18.00	1036.60	13169.001	603.702	

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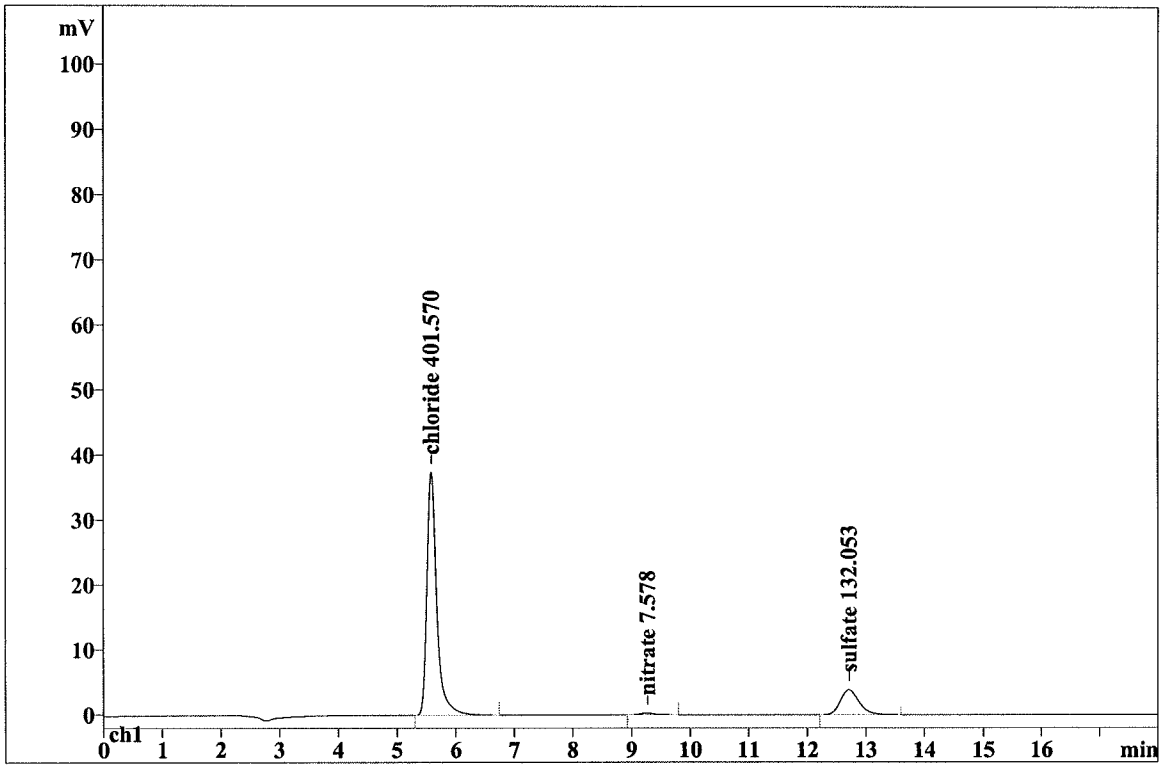
METROHM LTD

Report date: 6/23/2020 6:17:41 PM
Printed by: TWangc

Ident: AF12-20 F154-02J DF=200
Analysis from: 6/19/2020 7:33:05 PM
File: _2020-06-19_19-33.chw Last save: 6/19/2020 7:51:05 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92940

SAMPLE: METHOD300/9056/4110B
:
Vial number: 20
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	5.58	37.53	436.220	401.570	chloride ✓
2	9.27	0.27	5.021	7.578	nitrate
3	12.71	3.86	85.733	132.053	sulfate
3	18.00	41.66	526.974	541.201	

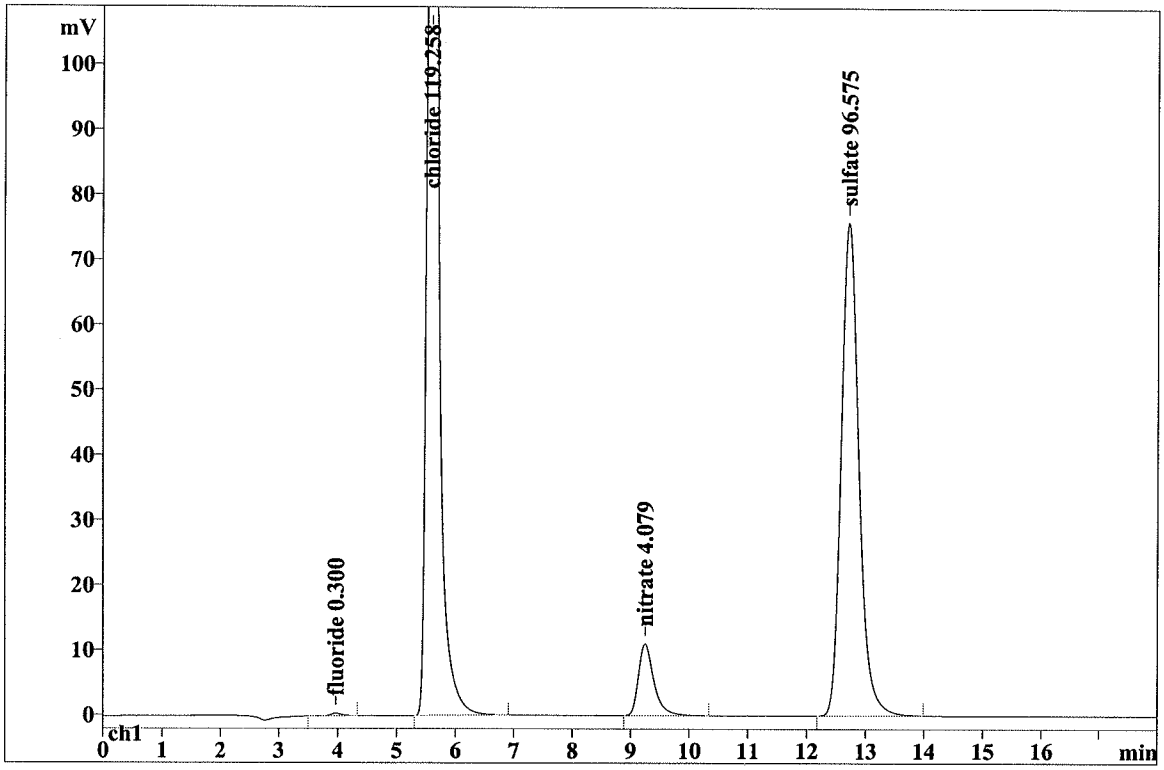
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 6:20:14 PM
Printed by: TWangc

Ident: AF12-28 F154-05I DF=10
Analysis from: 6/19/2020 10:19:26 PM
File: _2020-06-19_22-19.chw Last save: 6/19/2020 10:37:26 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92948

SAMPLE: METHOD300/9056/4110B
:
Vial number: 28
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	0.38	4.666	0.300	fluoride
2	5.58	229.69	2694.634	119.258	chloride
3	9.24	11.04	201.638	4.079	nitrate
4	12.71	75.93	1599.459	96.575	sulfate ✓
4	18.00	317.04	4500.397	220.212	

This report has been created by IC Net
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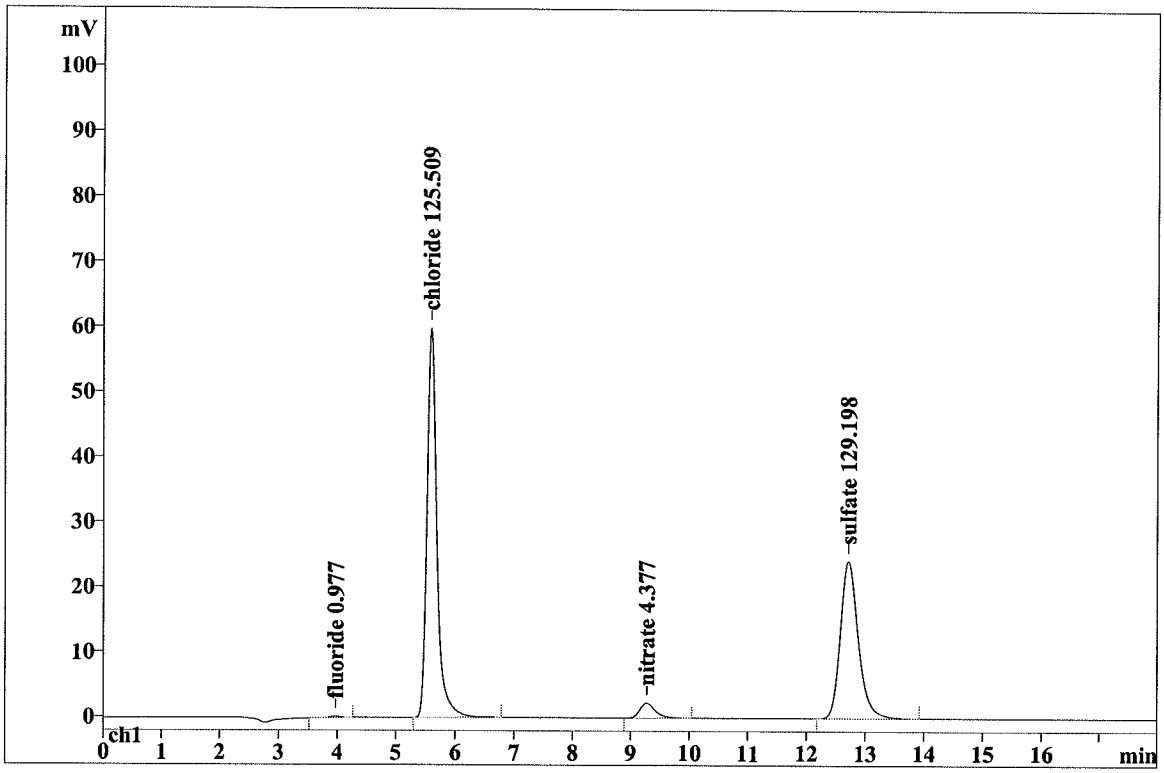
Report date: 6/23/2020 6:20:42 PM
Printed by: TWangc

Ident: AF12-29 F154-05J DF=40
Analysis from: 6/19/2020 10:40:14 PM
File: _2020-06-19_22-40.chw Last save: 6/19/2020 10:58:14 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92949

SAMPLE: METHOD300/9056/4110B
:
Vial number: 29
Volume: 1.0 µL
Dilution: 40.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	0.20	2.562	0.977	fluoride
2	5.59	59.86	693.503	125.509	chloride ✓
3	9.27	2.28	43.033	4.377	nitrate
4	12.71	24.23	518.065	129.198	sulfate
4	18.00	86.58	1257.162	260.061	

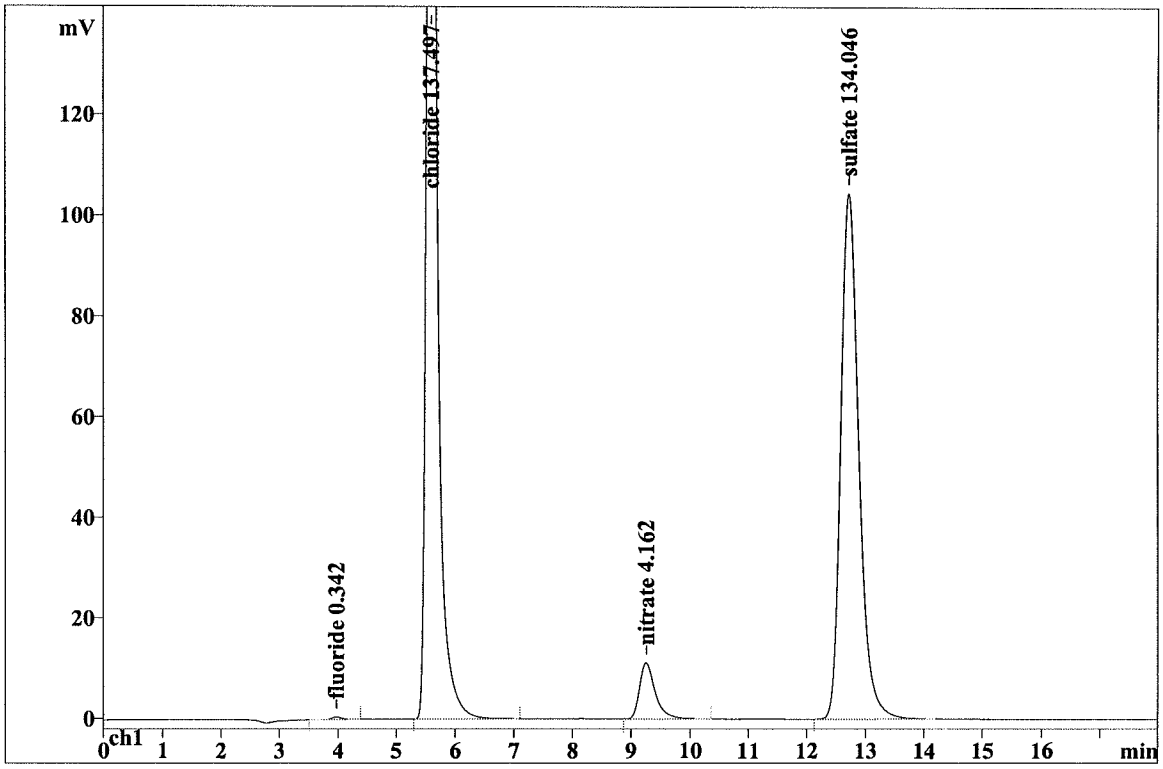
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 6:21:20 PM
Printed by: TWangc

Ident: AF12-32 F154-06I DF=10
Analysis from: 6/19/2020 11:42:36 PM
File: _2020-06-19_23-42.chw Last save: 6/20/2020 12:00:36 AM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92952

SAMPLE: METHOD300/9056/4110B
:
Vial number: 32
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	0.51	6.296	0.342	fluoride
2	5.59	261.80	3109.950	137.497	chloride
3	9.25	11.15	206.037	4.162	nitrate
4	12.72	104.49	2229.881	134.046	sulfate ✓
4	18.00	377.95	5552.164	276.047	

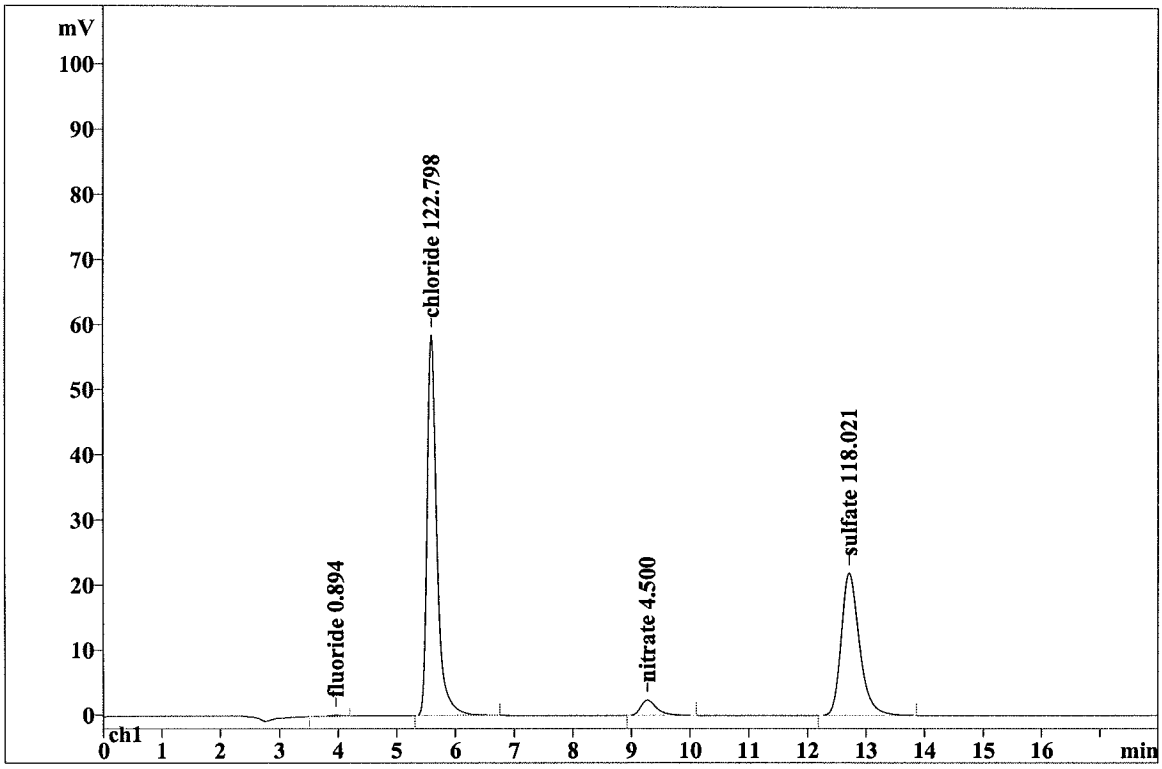
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 6:21:57 PM
Printed by: TWangc

Ident: AF12-33 F154-06J DF=40
Analysis from: 6/20/2020 12:03:23 AM
File: _2020-06-20_00-03.chw Last save: 6/20/2020 12:21:23 AM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92953

SAMPLE: METHOD300/9056/4110B
:
Vial number: 33
Volume: 1.0 µL
Dilution: 40.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	0.14	1.767	0.894	fluoride
2	5.59	58.49	678.069	122.798	chloride ✓
3	9.28	2.34	44.668	4.500	nitrate
4	12.72	21.87	471.054	118.021	sulfate
4	18.00	82.84	1195.558	246.213	

This report has been created by IC Net
METROHM LTD

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF010WB	ICF010WL	ICF010WC
LAB FILE ID :	AF12-03	AF12-04	AF12-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/19/2012:00	06/19/2012:21	06/19/2012:42
PREP BATCH :	ICF010W	ICF010W	ICF010W
CALIBRATION REF:	AF12-01	AF12-01	AF12-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.83	92	2	1.83	92	0	87-111	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX	: WATER	% MOISTURE:	NA
DILUTION FACTOR:	200	200	200
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID	: F154-02J	F154-02JM	F154-02JS
LAB FILE ID	: AF12-20	AF12-21	AF12-22
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 06/19/2019:33	06/19/2019:53	06/19/2020:14
PREP BATCH	: ICF010W	ICF010W	ICF010W
CALIBRATION REF:	AF12-18	AF12-18	AF12-18

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	SPIKE AMT (mg/L)	MSD RESULT (mg/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	402	400	784	96	400	785	96	0	87-111	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX	: WATER	
DILUTION FACTOR	: 200	200
SAMPLE ID	: MW02-GW061720	MW02-GW061720DUP
LAB SAMPLE ID	: F154-02J	F154-02JD
LAB FILE ID	: AF12-20	AF12-23
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/19/2019:33	06/19/2020:35
PREP BATCH	: ICF010W	ICF010W
CALIBRATION REF	: AF12-18	AF12-18

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Chloride	402	403	0	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF010WB	ICF010WL	ICF010WC
LAB FILE ID :	AF12-03	AF12-04	AF12-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/19/2012:00	06/19/2012:21	06/19/2012:42
PREP BATCH :	ICF010W	ICF010W	ICF010W
CALIBRATION REF:	AF12-01	AF12-01	AF12-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.86	97	5	4.83	97	1	87-112	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	10	10	10
SAMPLE ID :	MW02-GW061720	MW02-GW061720MS	MW02-GW061720MSD
LAB SAMPLE ID :	F154-02I	F154-02IM	F154-02IS
LAB FILE ID :	AF12-14	AF12-15	AF12-16
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/19/2017:26	06/19/2017:47	06/19/2018:07
PREP BATCH :	ICF010W	ICF010W	ICF010W
CALIBRATION REF:	AF12-06	AF12-06	AF12-06

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	SPIKE AMT (mg/L)	MSD RESULT (mg/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	101	50	144	86*	50	143	84*	1	87-112	20

* Out of MS QC limit.

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : E300.0

MATRIX	: WATER	
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW02-GW061720	MW02-GW061720DUP
LAB SAMPLE ID	: F154-02I	F154-02ID
LAB FILE ID	: AF12-14	AF12-17
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/19/2017:26	06/19/2018:30
PREP BATCH	: ICF010W	ICF010W
CALIBRATION REF	: AF12-06	AF12-06

ACCESSION:

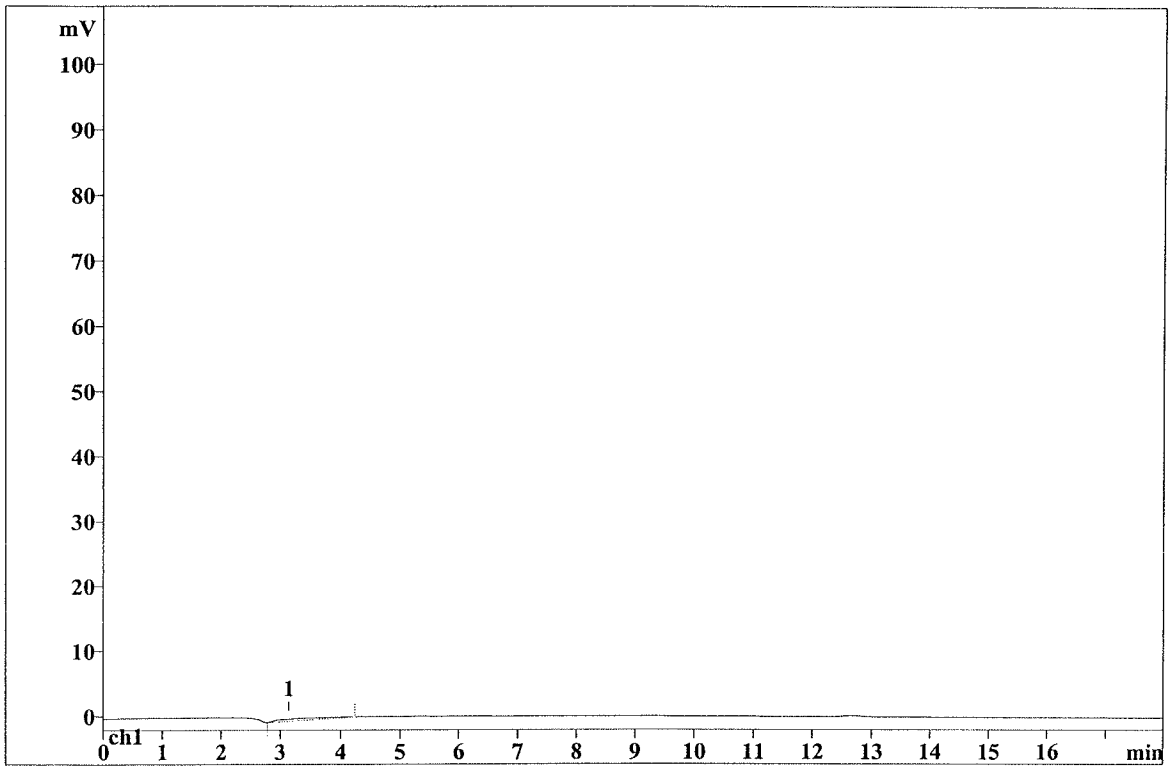
PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Sulfate	101	101	0	20

QC DATA

Report date: 6/24/2020 7:17:55 PM
Printed by: LDip

Ident: AF12-03 ICF010WB
Analysis from: 6/19/2020 12:00:54 PM
File: _2020-06-19_12-00.chw Last save: 6/24/2020 5:31:44 PM
Modified!
Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92923

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.16	0.34	19.087	0.000	

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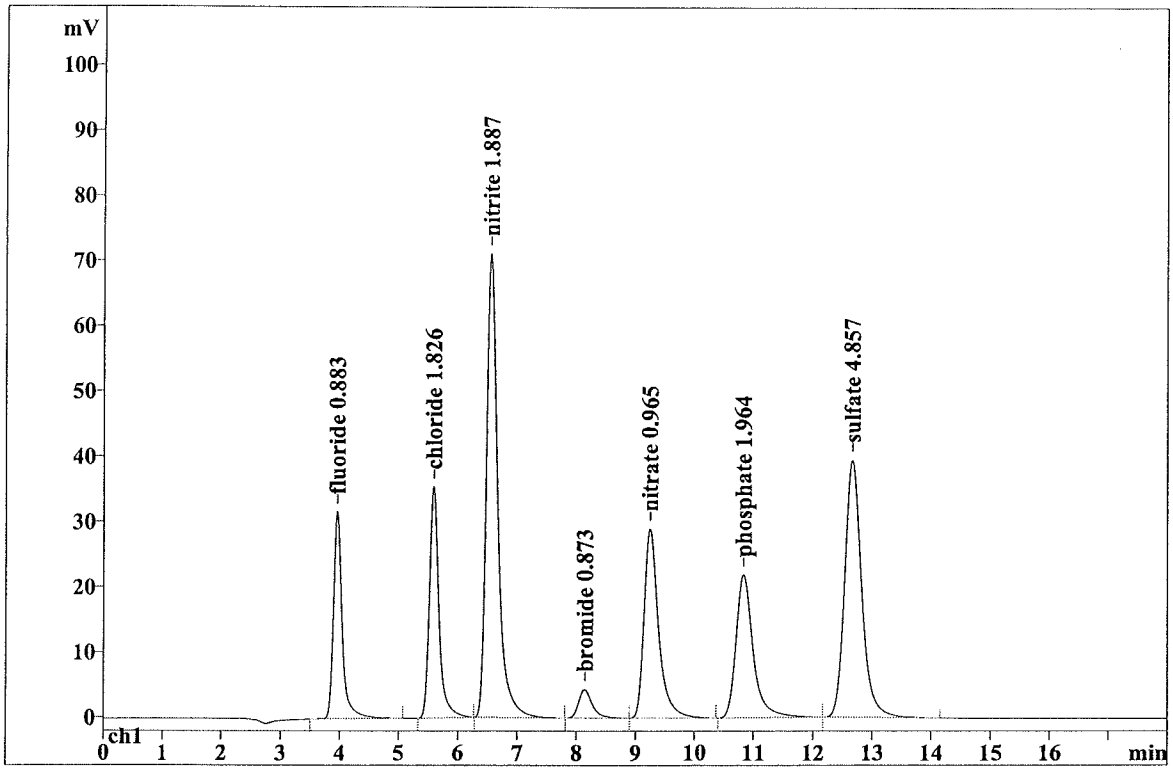
Report date: 6/23/2020 12:34:16 PM
Printed by: TWangc

Ident: AF12-04 ICF010WL
Analysis from: 6/19/2020 12:21:42 PM
File: _2020-06-19_12-21.chw Last save: 6/19/2020 12:39:42 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92924

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.77	329.651	0.883	fluoride
2	5.59	35.49	394.835	1.826	chloride
3	6.55	71.10	960.580	1.887	nitrite
4	8.14	4.37	69.479	0.873	bromide
5	9.24	29.01	497.439	0.965	nitrate
6	10.83	21.96	439.711	1.964	phosphate
7	12.66	39.42	791.843	4.857	sulfate
7	18.00	233.12	3483.538	13.255	

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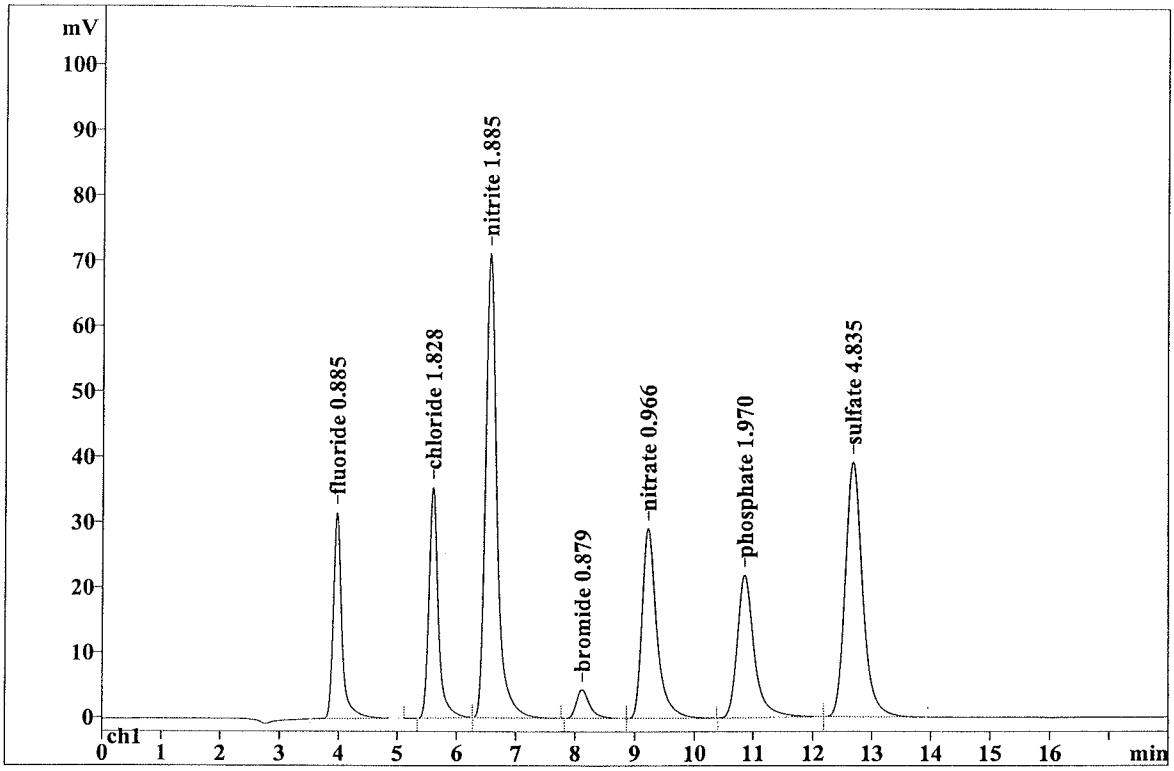
Report date: 6/23/2020 12:34:55 PM
Printed by: TWangc

Ident: AF12-05 ICF010WC
Analysis from: 6/19/2020 12:42:29 PM
File: _2020-06-19_12-42.chw Last save: 6/19/2020 1:00:29 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92925

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	31.70	330.224	0.885	fluoride
2	5.59	35.51	395.278	1.828	chloride
3	6.55	71.19	959.902	1.885	nitrite
4	8.12	4.41	70.053	0.879	bromide
5	9.22	29.22	497.940	0.966	nitrate
6	10.85	21.94	441.231	1.970	phosphate
7	12.68	39.15	788.083	4.835	sulfate
7	18.00	233.11	3482.711	13.248	

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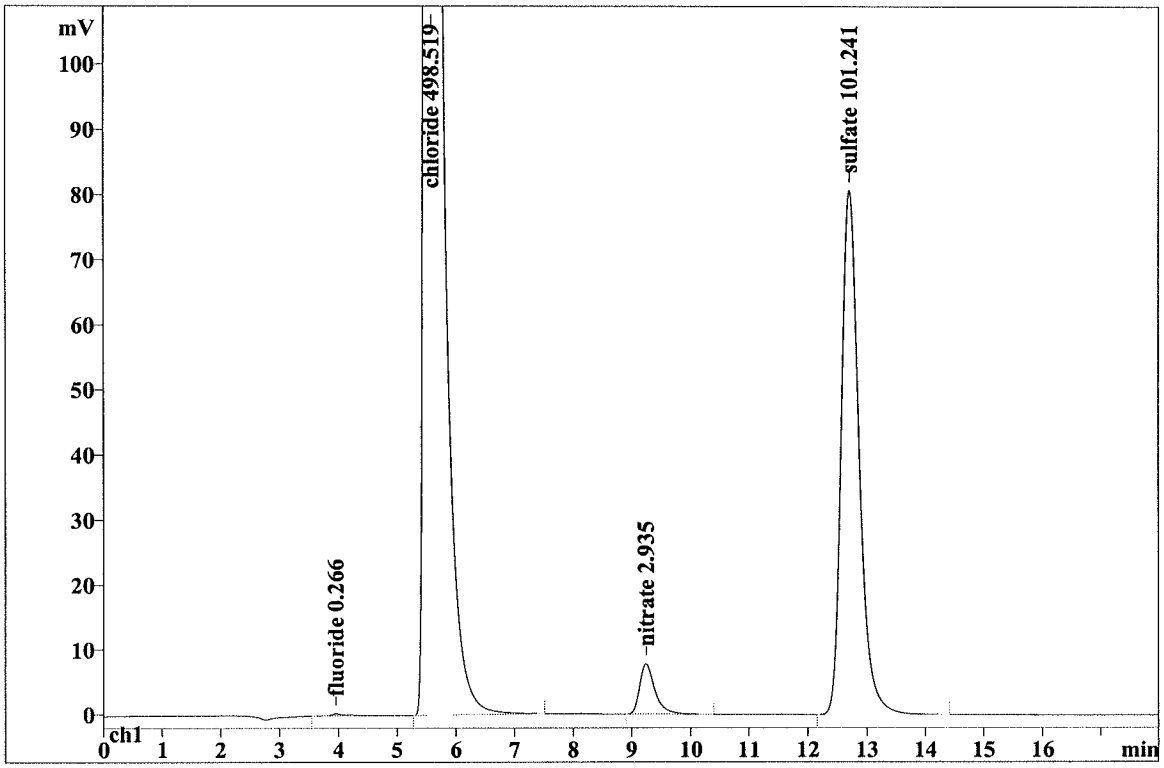
Report date: 6/23/2020 6:17:12 PM
Printed by: TWangc

Ident: AF12-17 F154-02ID DF=10
Analysis from: 6/19/2020 6:30:42 PM
File: _2020-06-19_18-30.chw Last save: 6/19/2020 6:48:43 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92937

SAMPLE: METHOD300/9056/4110B
:
Vial number: 17
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	0.30	3.378	0.266	fluoride
2	5.58	940.12	11330.790	498.519	chloride
3	9.24	7.81	140.821	2.935	nitrate
4	12.71	80.71	1677.952	101.241	sulfate ✓
4	18.00	1028.93	13152.940	602.960	

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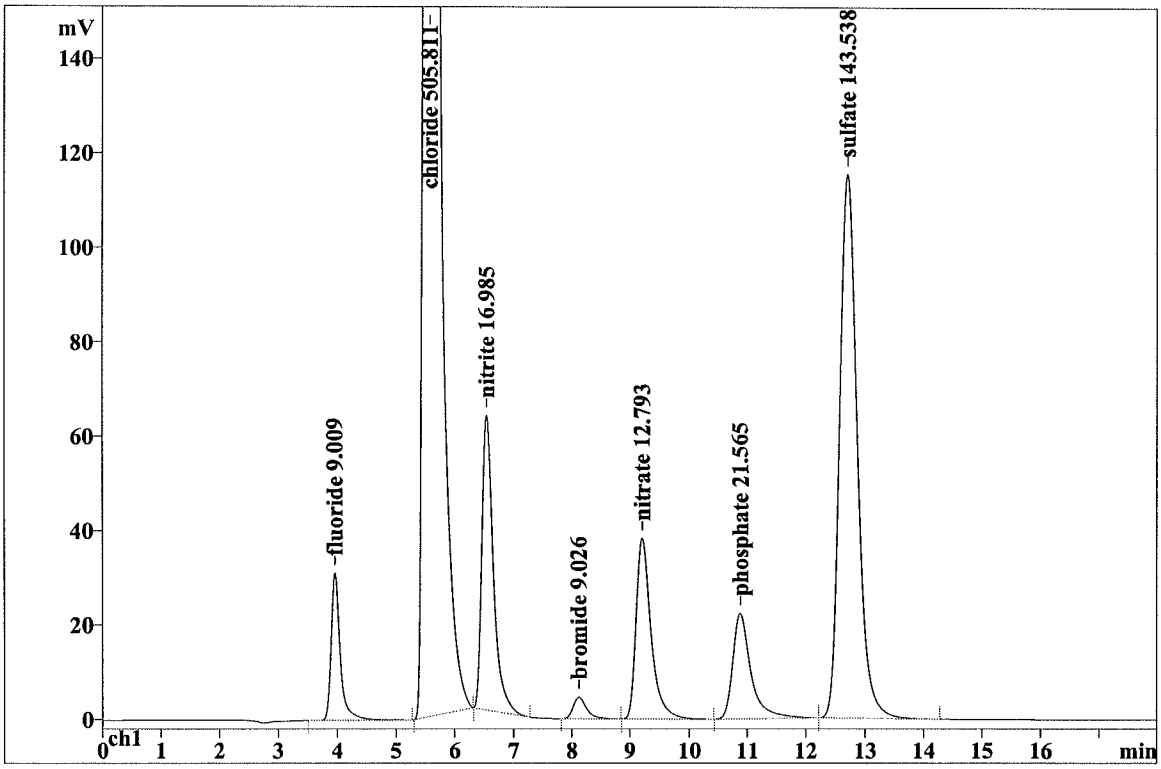
Report date: 6/23/2020 6:16:22 PM
Printed by: TWangc

Ident: AF12-15 F154-02IM DF=10
Analysis from: 6/19/2020 5:47:06 PM
File: _2020-06-19_17-47.chw Last save: 6/19/2020 6:22:15 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92935

SAMPLE: METHOD300/9056/4110B
:
Vial number: 15
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.22	336.346	9.009	fluoride
2	5.58	966.71	11496.856	505.811	chloride
3	6.55	62.44	862.801	16.985	nitrite
4	8.12	4.55	72.374	9.026	bromide
5	9.21	38.28	664.622	12.793	nitrate
6	10.88	22.35	486.568	21.565	phosphate
7	12.70	115.35	2389.563	143.538	sulfate ✓
7	18.00	1240.90	16309.130	718.727	

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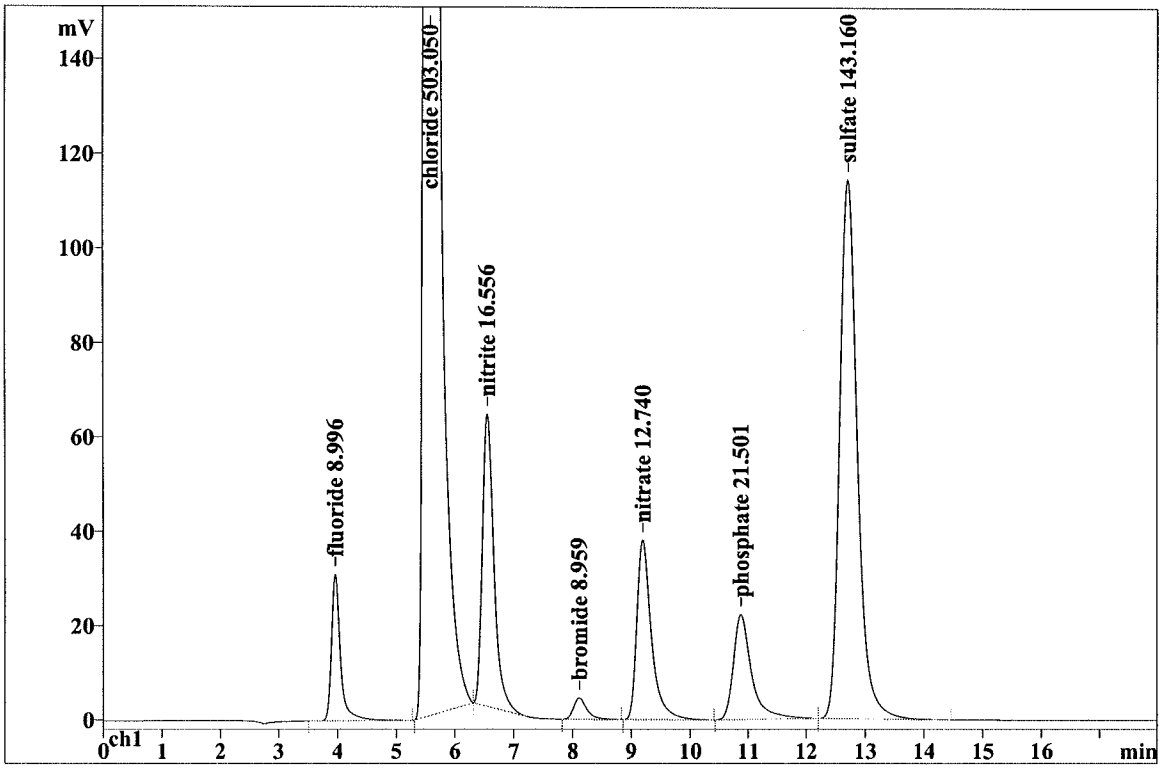
Report date: 6/23/2020 6:16:57 PM
Printed by: TWangc

Ident: AF12-16 F154-02IS DF=10
Analysis from: 6/19/2020 6:07:54 PM
File: _2020-06-19_18-07.chw Last save: 6/19/2020 6:25:54 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92936

SAMPLE: METHOD300/9056/4110B
:
Vial number: 16
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.11	335.850	8.996	fluoride
2	5.58	964.22	11433.985	503.050	chloride
3	6.55	61.95	840.470	16.556	nitrite
4	8.12	4.53	71.716	8.959	bromide
5	9.20	38.08	661.838	12.740	nitrate
6	10.88	22.30	485.018	21.501	phosphate
7	12.70	114.34	2383.217	143.160	sulfate ✓
7	17.99	1236.53	16212.093	714.964	

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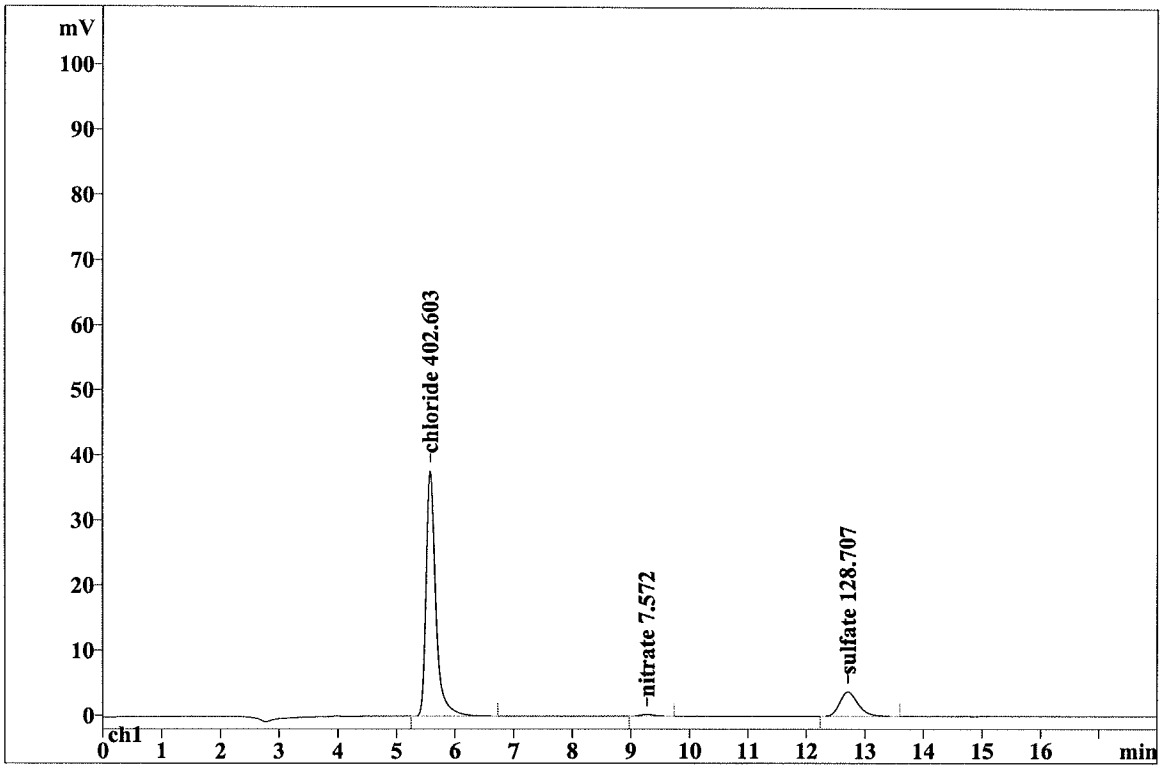
Report date: 6/23/2020 6:19:10 PM
Printed by: TWangc

Ident: AF12-23 F154-02JD DF=200
Analysis from: 6/19/2020 8:35:28 PM
File: _2020-06-19_20-35.chw Last save: 6/19/2020 8:53:28 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92943

SAMPLE: METHOD300/9056/4110B
:
Vial number: 23
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	5.58	37.72	437.396	402.603	chloride ✓
2	9.27	0.27	5.006	7.572	nitrate
3	12.71	3.74	82.919	128.707	sulfate
3	18.00	41.73	525.321	538.882	

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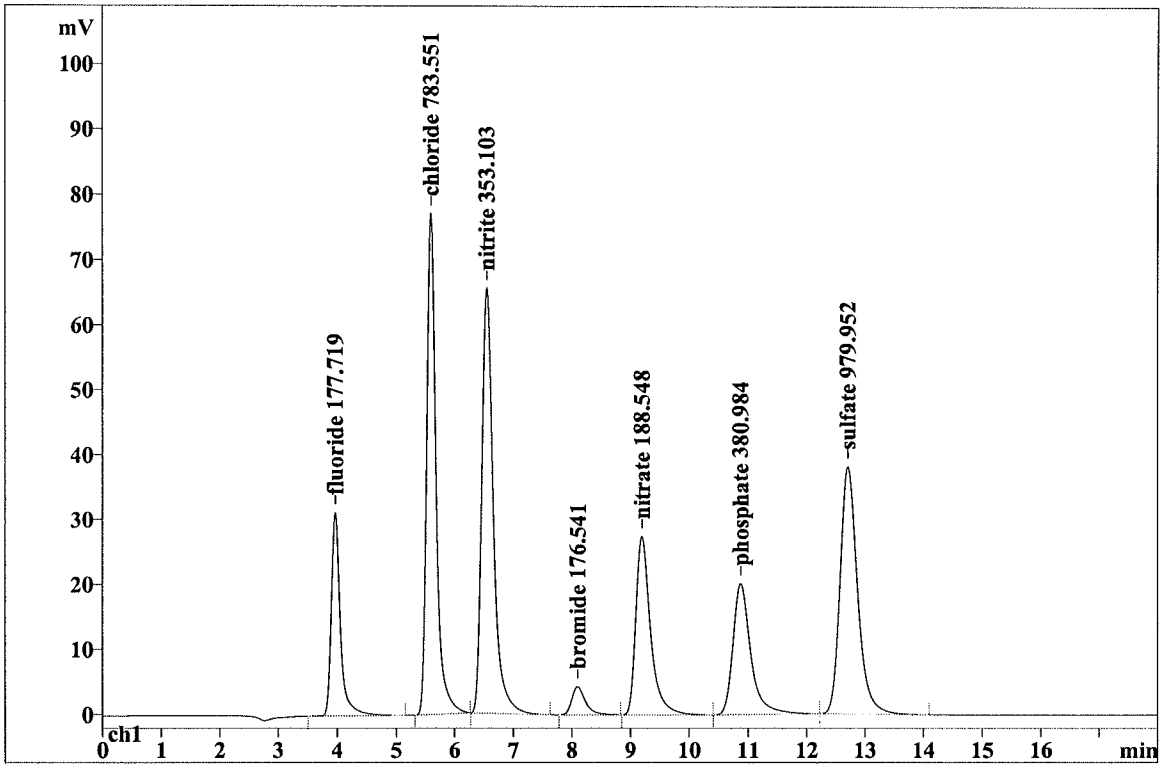
Report date: 6/23/2020 6:18:04 PM
Printed by: TWangc

Ident: AF12-21 F154-02JM DF=200
Analysis from: 6/19/2020 7:53:52 PM
File: _2020-06-19_19-53.chw Last save: 6/19/2020 8:11:52 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92941

SAMPLE: METHOD300/9056/4110B
:
Vial number: 21
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	31.35	331.655	177.719	fluoride
2	5.58	77.08	871.125	783.551	chloride ✓
3	6.54	65.50	897.621	353.103	nitrite
4	8.10	4.33	70.405	176.541	bromide
5	9.19	27.49	485.811	188.548	nitrate
6	10.87	20.20	425.411	380.984	phosphate
7	12.71	38.15	798.997	979.952	sulfate
7	18.00	264.09	3881.025	3040.399	

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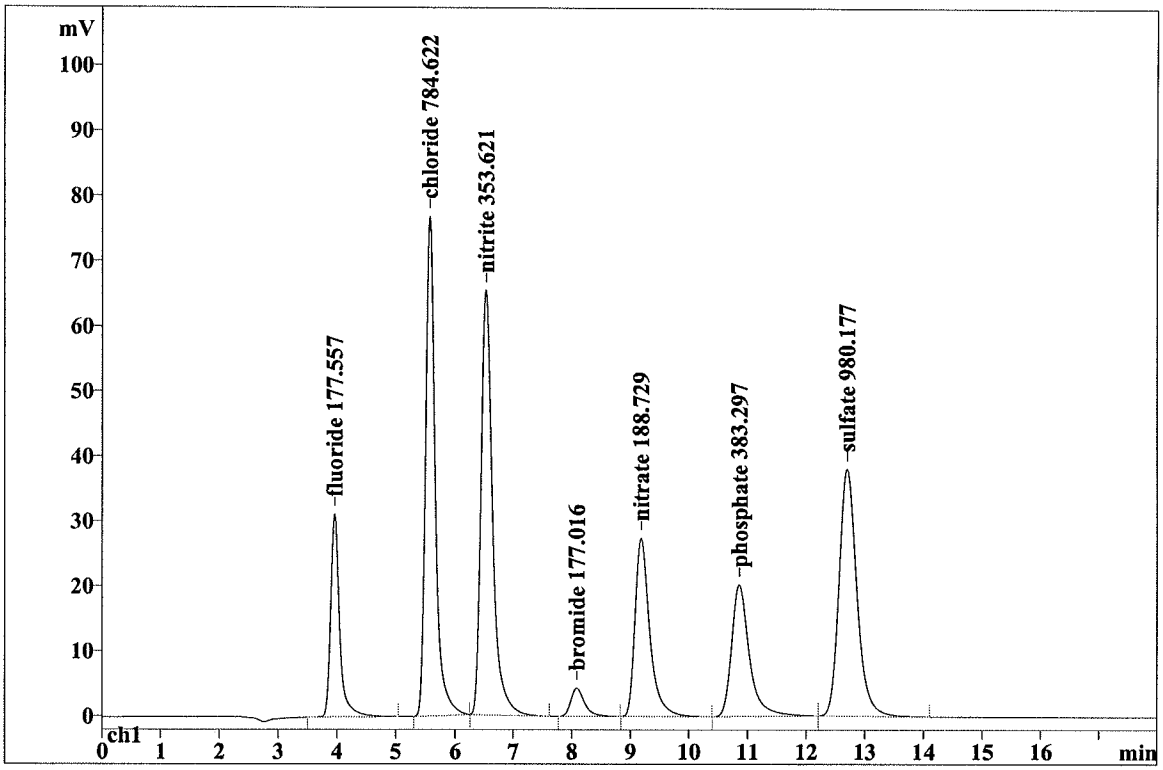
Report date: 6/23/2020 6:18:29 PM
Printed by: TWangc

Ident: AF12-22 F154-02JS DF=200
Analysis from: 6/19/2020 8:14:40 PM
File: _2020-06-19_20-14.chw Last save: 6/19/2020 8:32:41 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92942

SAMPLE: METHOD300/9056/4110B
:
Vial number: 22
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.26	331.347	177.557	fluoride
2	5.57	76.88	872.344	784.622	chloride ✓
3	6.53	65.36	898.967	353.621	nitrite
4	8.09	4.33	70.640	177.016	bromide
5	9.18	27.45	486.292	188.729	nitrate
6	10.86	20.30	428.223	383.297	phosphate
7	12.69	38.10	799.186	980.177	sulfate
7	18.00	263.68	3886.998	3045.019	

This report has been created by IC Net
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INITIAL CALIBRATIONS

IC Result Check FormVersion : F04/AF04(2020)

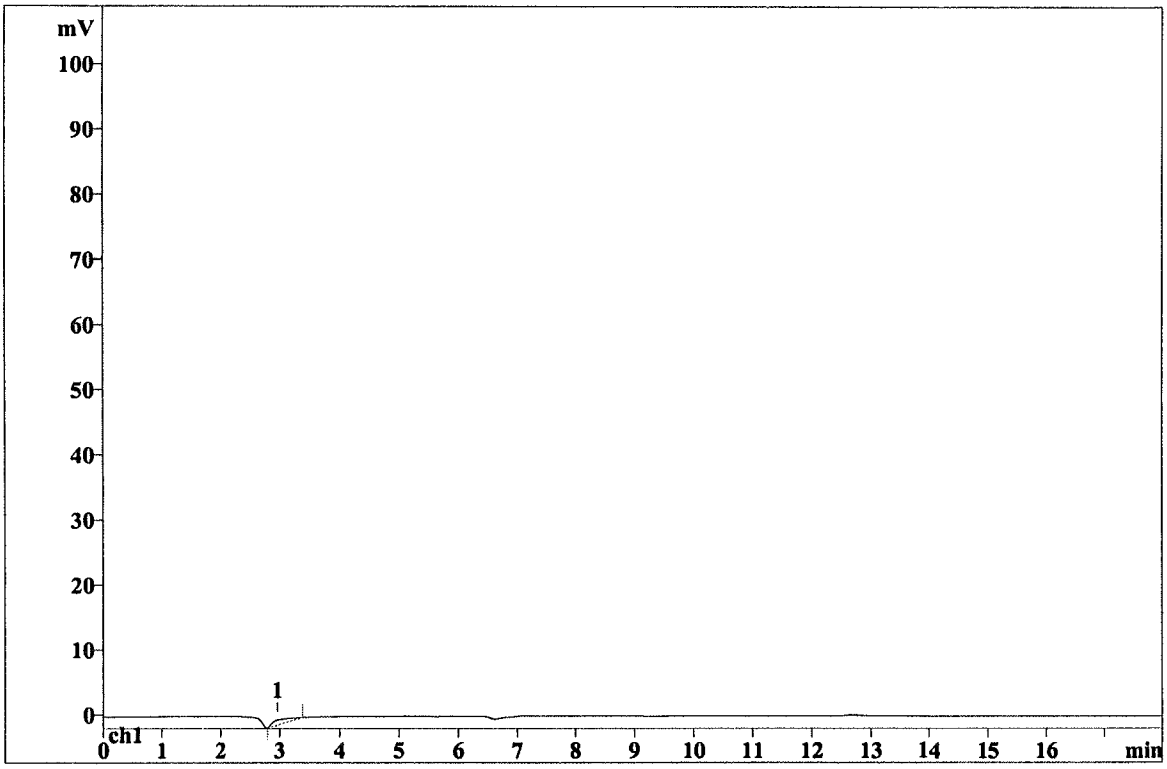
LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AF04-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-06-04_13-25	1
AF04-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-06-04_13-46	1
AF04-03	S1	OCFIBNPS	0	0.128826	0.0636611	0.0677606	0.210504	0.0681802	0.184871	0.200882	_2020-06-04_14-06	1
AF04-04	S2	OCFIBNPS	0	0.169895	0.109854	0.106233	0.250035	0.111854	0.221296	0.250284	_2020-06-04_14-27	1
AF04-05	S3	OCFIBNPS	0	0.255195	0.196923	0.203062	0.334459	0.200971	0.29423	0.330349	_2020-06-04_14-48	1
AF04-06	S4	OCFIBNPS	0	0.504434	0.476605	0.479171	0.578933	0.476456	0.53657	0.569189	_2020-06-04_15-09	1
AF04-07	S5	OCFIBNPS	0	0.950045	0.974756	0.977478	1.00289	0.977363	0.968187	0.995398	_2020-06-04_15-29	1
AF04-08	S6	OCFIBNPS	0	1.87377	1.98662	1.97846	1.86018	2.01518	1.85652	1.86021	_2020-06-04_15-50	1
AF04-09	S7	OCFIBNPS	0	4.89016	5.0722	5.06214	4.69052	5.37097	4.80226	4.70899	_2020-06-04_16-11	1
AF04-10	S8	OCFIBNPS	0	10.0777	9.96939	9.9757	9.70384	11.0712	9.86088	9.7322	_2020-06-04_16-31	1
AF04-11	S9	OCFIBNPS	0	20.6134	18.9578	19.0771	20.2187	22.6293	20.1252	20.2025	_2020-06-04_16-52	1
AF04-12	ICV	OCFIBNPS	0%*	96%	99.1%	100.2%	100.8%	103.1%	94.8%	97.5%	_2020-06-04_17-13	1
AF04-13	ICV1	OCFIBNPS	0%*	95.4%	97.6%	97%	100%	100.9%	96.8%	100.4%	_2020-06-04_17-34	1
AF04-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-06-04_17-55	1

Report date: 6/9/2020 3:59:49 PM
Printed by: LDip

Ident: AF04-02 S0
Analysis from: 6/4/2020 1:46:01 PM
File: _2020-06-04_13-46.chw Last save: 6/9/2020 3:51:29 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92740

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	2.95	0.74	15.094	0.000	

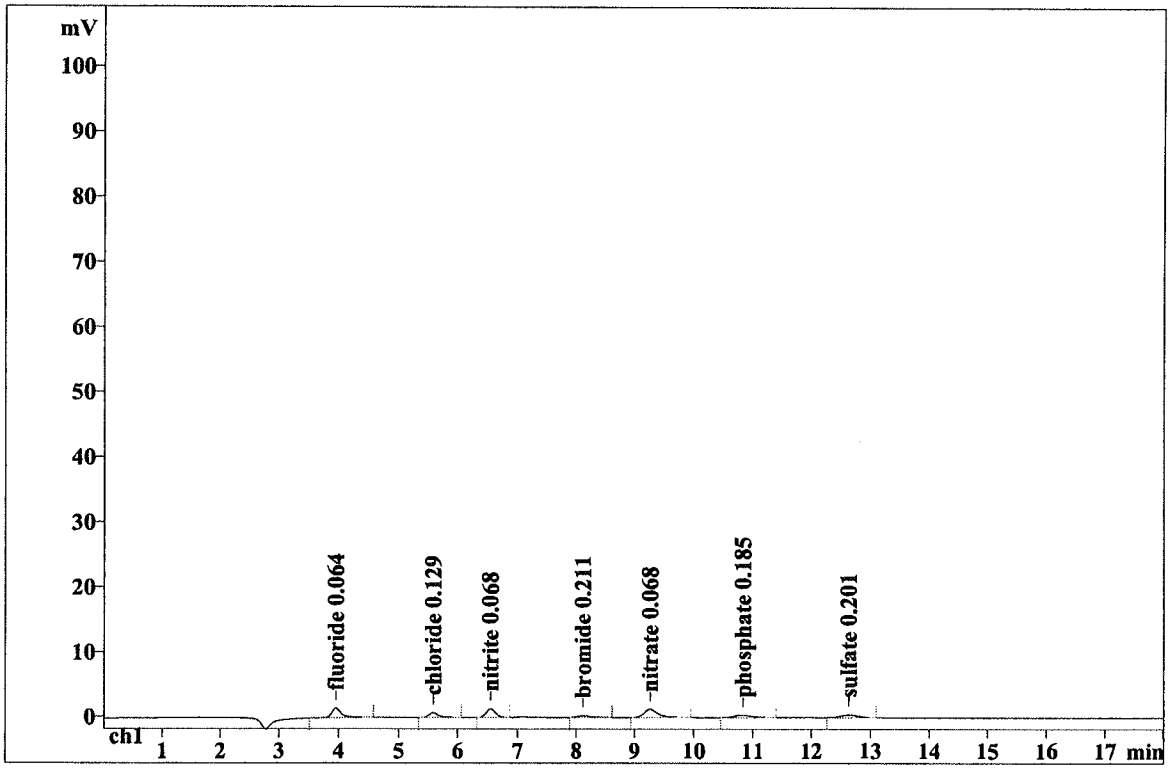
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:00:05 PM
Printed by: LDip

Ident: AF04-03 S1
Analysis from: 6/4/2020 2:06:46 PM
File: _2020-06-04_14-06.chw Last save: 6/9/2020 3:51:29 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92741

SAMPLE: METHOD 300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	1.52	17.501	0.064	fluoride
2	5.58	0.76	8.347	0.129	chloride
3	6.55	1.34	14.990	0.068	nitrite
4	8.12	0.26	3.850	0.211	bromide
5	9.27	1.27	21.116	0.068	nitrate
6	10.82	0.38	7.330	0.185	phosphate
7	12.63	0.44	8.446	0.201	sulfate
7	18.00	5.98	81.580	0.925	

This report has been created by IC Net
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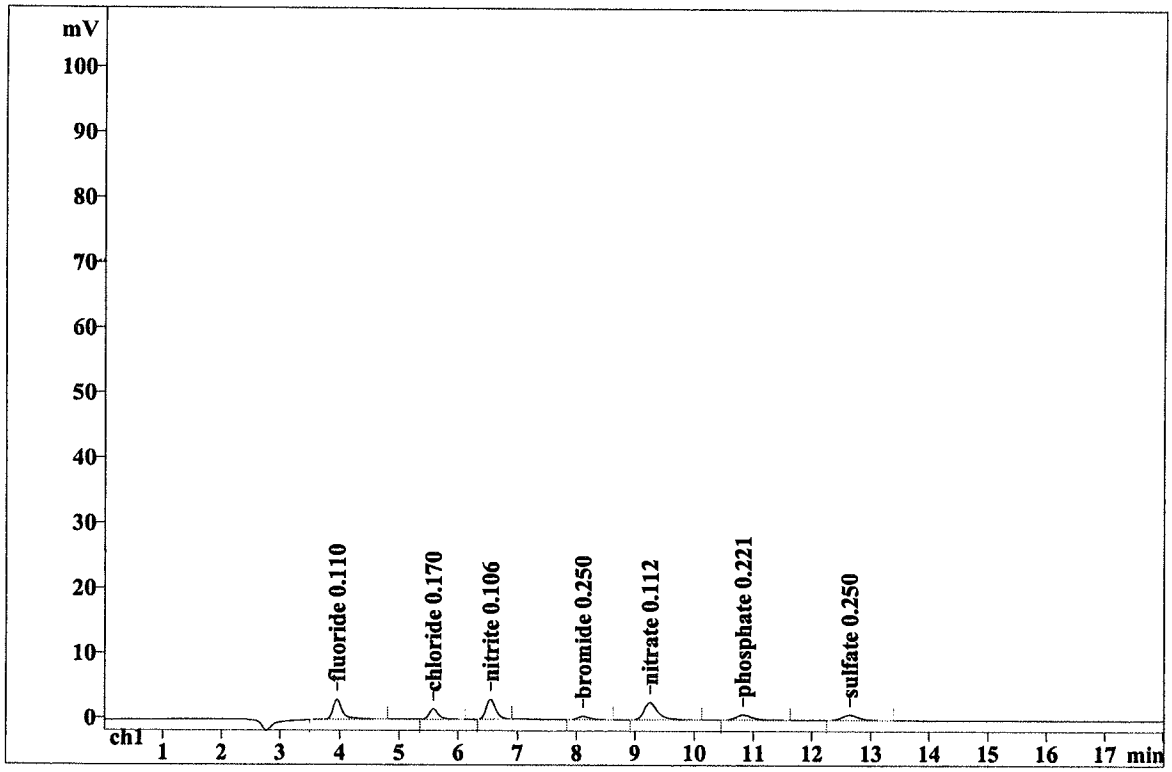
Report date: 6/9/2020 4:06:26 PM
Printed by: LDip

Ident: AF04-04 S2
Analysis from: 6/4/2020 2:27:31 PM
File: _2020-06-04_14-27.chw Last save: 6/9/2020 3:51:29 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92742

SAMPLE: METHOD 300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.95	3.09	35.093	0.110	fluoride
2	5.58	1.60	17.699	0.170	chloride
3	6.55	3.07	34.991	0.106	nitrite
4	8.12	0.52	7.764	0.250	bromide
5	9.25	2.66	44.322	0.112	nitrate
6	10.83	0.82	16.183	0.221	phosphate
7	12.65	0.83	16.757	0.250	sulfate
7	18.00	12.59	172.810	1.219	

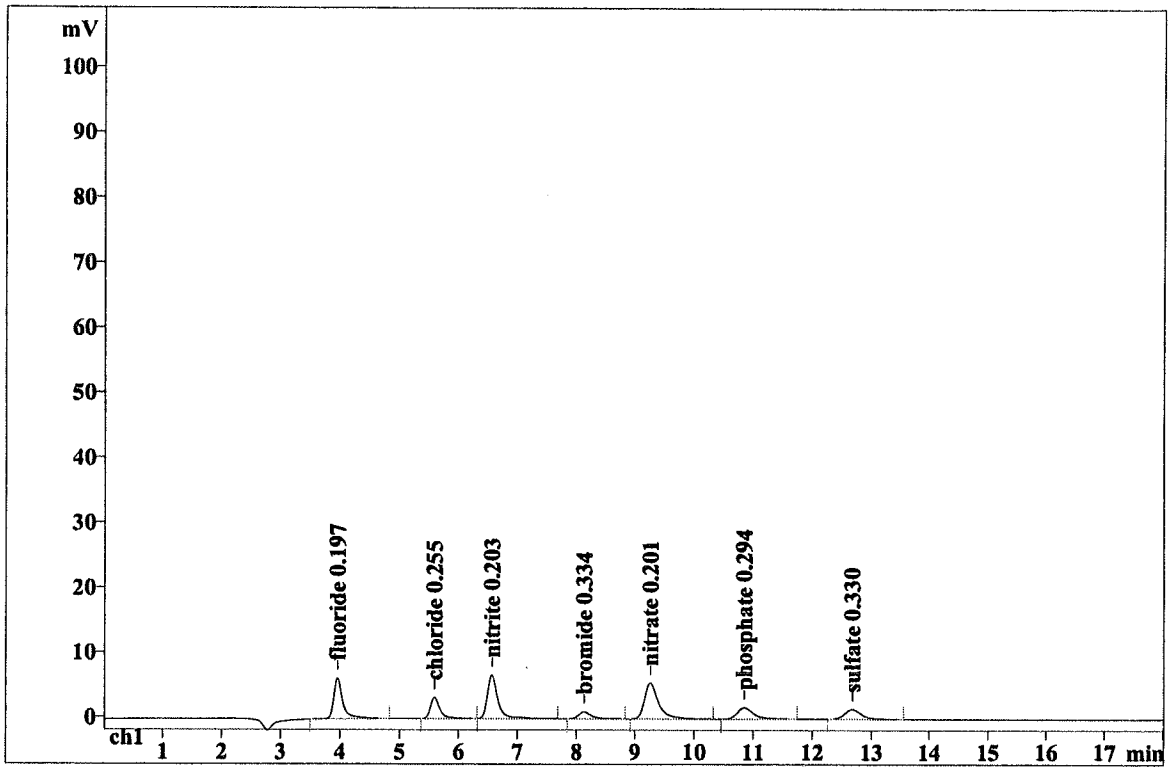
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:00:28 PM
Printed by: LDip

Ident: AF04-05 S3
Analysis from: 6/4/2020 2:48:16 PM
File: _2020-06-04_14-48.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92743

SAMPLE: METHOD 300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	6.28	68.250	0.197	fluoride
2	5.59	3.25	37.122	0.255	chloride
3	6.56	6.72	85.330	0.203	nitrite
4	8.13	1.06	16.123	0.334	bromide
5	9.26	5.51	91.674	0.201	nitrate
6	10.85	1.73	33.911	0.294	phosphate
7	12.68	1.50	30.228	0.330	sulfate
7	18.00	26.04	362.639	1.815	

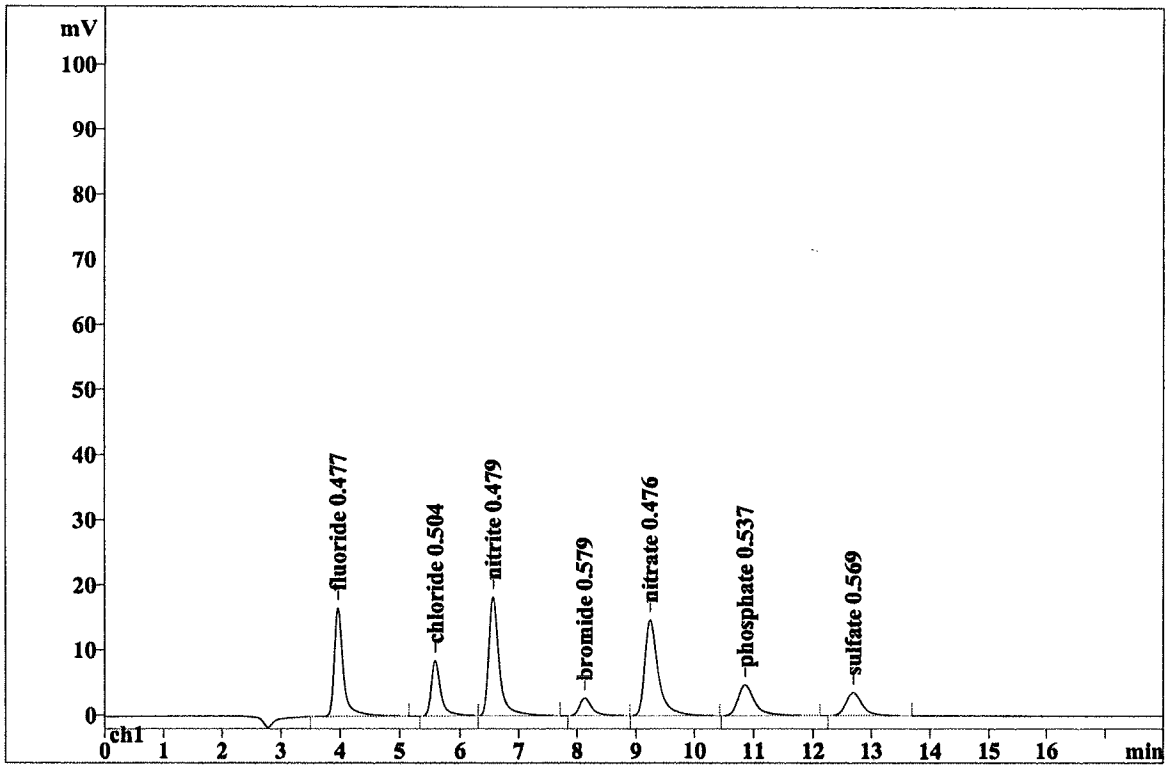
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:00:40 PM
Printed by: LDip

Ident: AF04-06 S4
Analysis from: 6/4/2020 3:09:00 PM
File: _2020-06-04_15-09.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92744

SAMPLE: METHOD 300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	16.64	174.760	0.477	fluoride
2	5.60	8.46	93.876	0.504	chloride
3	6.57	18.22	228.874	0.479	nitrite
4	8.13	2.71	40.328	0.579	bromide
5	9.24	14.67	238.053	0.476	nitrate
6	10.86	4.73	92.815	0.537	phosphate
7	12.69	3.55	70.411	0.569	sulfate
7	18.00	68.97	939.117	3.621	

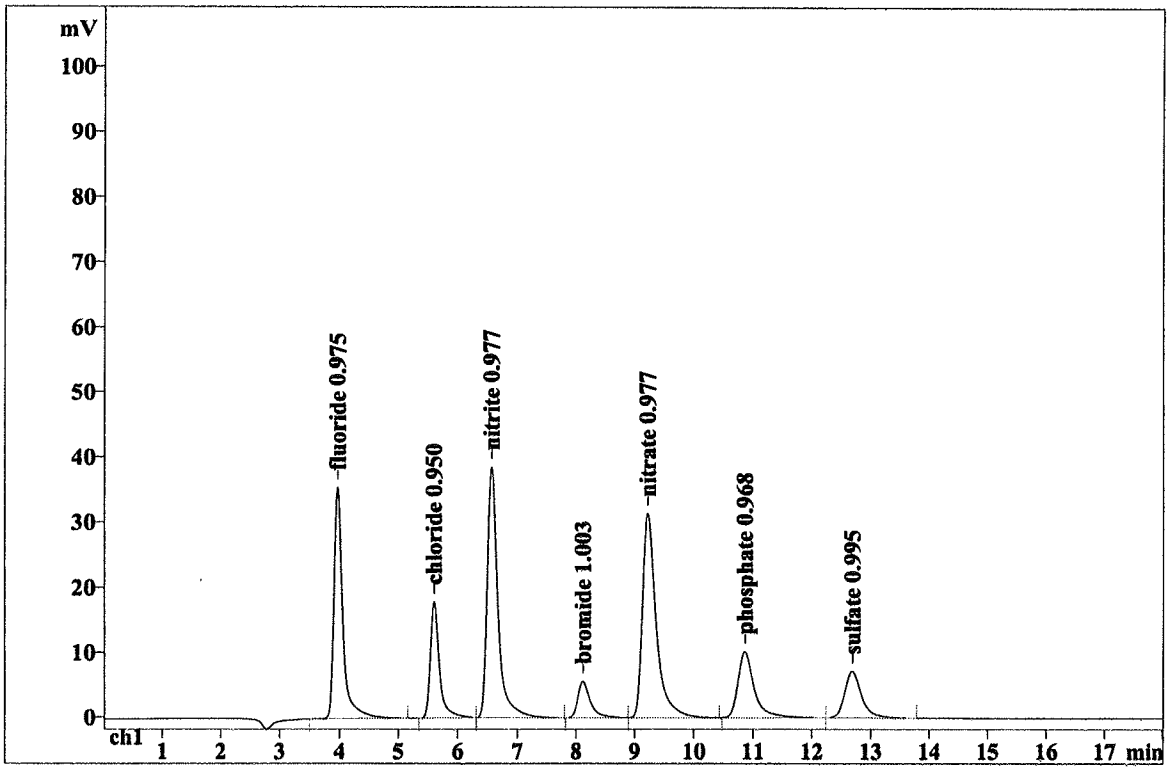
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:00:53 PM
Printed by: LDip

Ident: AF04-07 S5
Analysis from: 6/4/2020 3:29:45 PM
File: _2020-06-04_15-29.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92745

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	35.50	364.467	0.975	fluoride
2	5.60	17.90	195.347	0.950	chloride
3	6.56	38.52	487.934	0.977	nitrite
4	8.12	5.59	82.304	1.003	bromide
5	9.22	31.33	504.208	0.977	nitrate
6	10.86	10.17	197.725	0.968	phosphate
7	12.69	7.18	142.117	0.995	sulfate
7	18.00	146.19	1974.103	6.846	

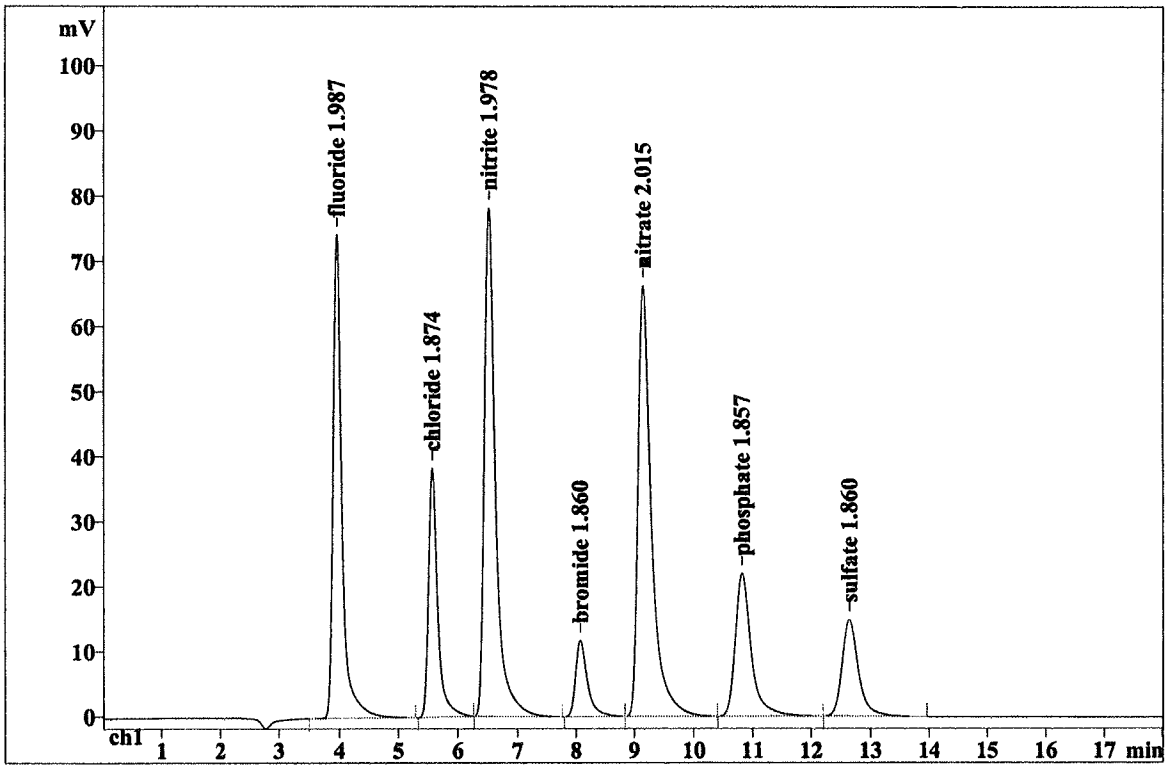
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:01:07 PM
Printed by: LDip

Ident: AF04-08 S6
Analysis from: 6/4/2020 3:50:30 PM
File: _2020-06-04_15-50.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92746

SAMPLE: METHOD 300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	74.34	749.807	1.987	fluoride
2	5.57	38.25	405.689	1.874	chloride
3	6.53	78.20	1008.325	1.978	nitrite
4	8.08	11.68	167.183	1.860	bromide
5	9.15	66.28	1055.648	2.015	nitrate
6	10.82	22.00	413.647	1.857	phosphate
7	12.64	14.85	287.615	1.860	sulfate
7	18.00	305.60	4087.915	13.431	

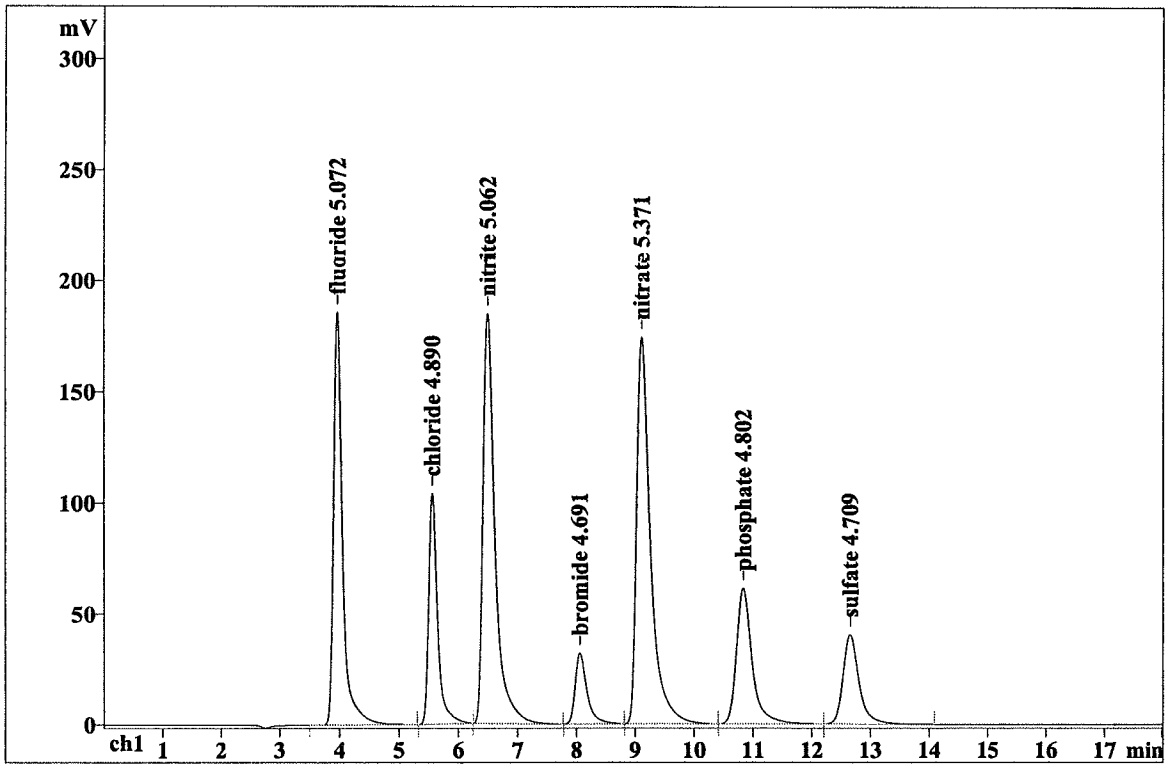
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:02:12 PM
Printed by: LDip

Ident: AF04-09 S7
Analysis from: 6/4/2020 4:11:15 PM
File: _2020-06-04_16-11.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92747

SAMPLE: METHOD 300/9056/4110B
: 5.0 PPM
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	185.89	1924.868	5.072	fluoride
2	5.57	103.95	1092.550	4.890	chloride
3	6.50	184.69	2611.471	5.062	nitrite
4	8.06	32.01	447.413	4.691	bromide
5	9.11	174.21	2838.745	5.371	nitrate
6	10.83	61.20	1129.651	4.802	phosphate
7	12.66	40.27	766.902	4.709	sulfate
7	18.00	782.23	10811.600	34.597	

This report has been created by IC Net
METROHM LTD

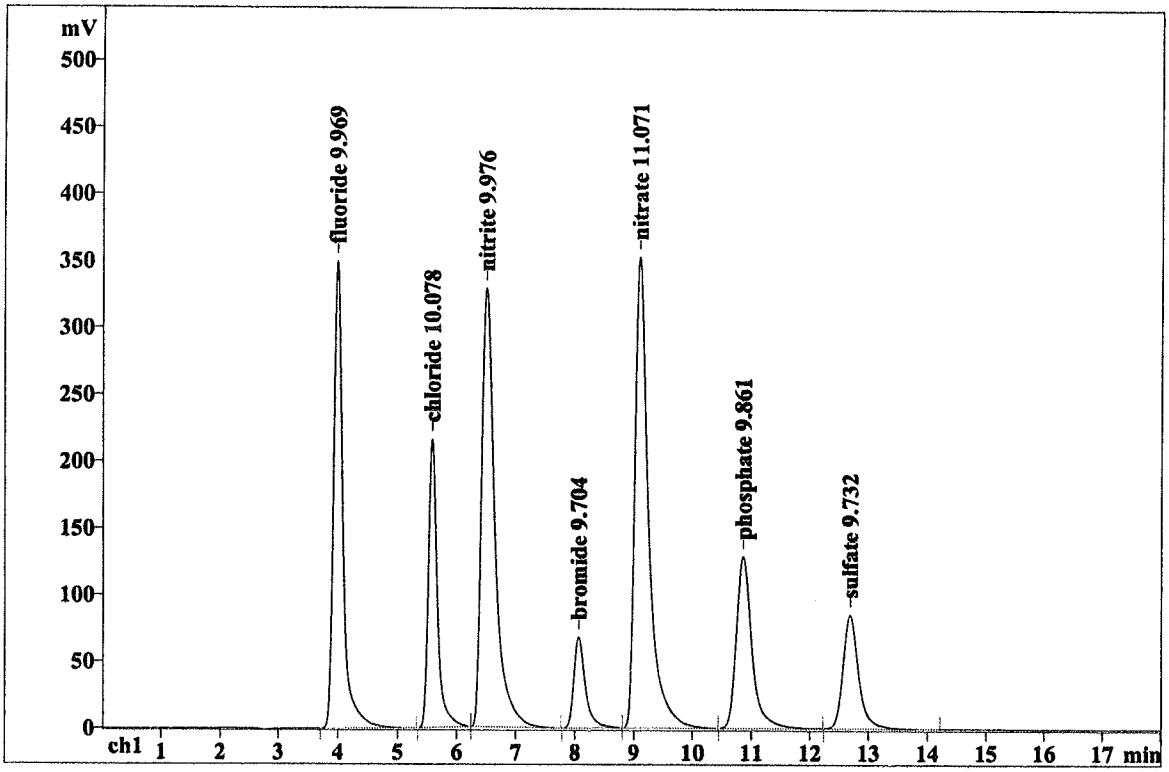
6/11/20

Report date: 6/9/2020 4:02:51 PM
Printed by: LDip

Ident: AF04-10 S8
Analysis from: 6/4/2020 4:31:59 PM
File: _2020-06-04_16-31.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92748

SAMPLE: METHOD 300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.99	349.77	3789.829	9.969	fluoride
2	5.58	216.06	2273.802	10.078	chloride
3	6.50	328.33	5165.936	9.976	nitrite
4	8.06	68.22	943.778	9.704	bromide
5	9.09	352.62	5867.525	11.071	nitrate
6	10.86	128.77	2359.219	9.861	phosphate
7	12.68	85.27	1612.020	9.732	sulfate
7	18.00	1529.04	22012.108	70.391	

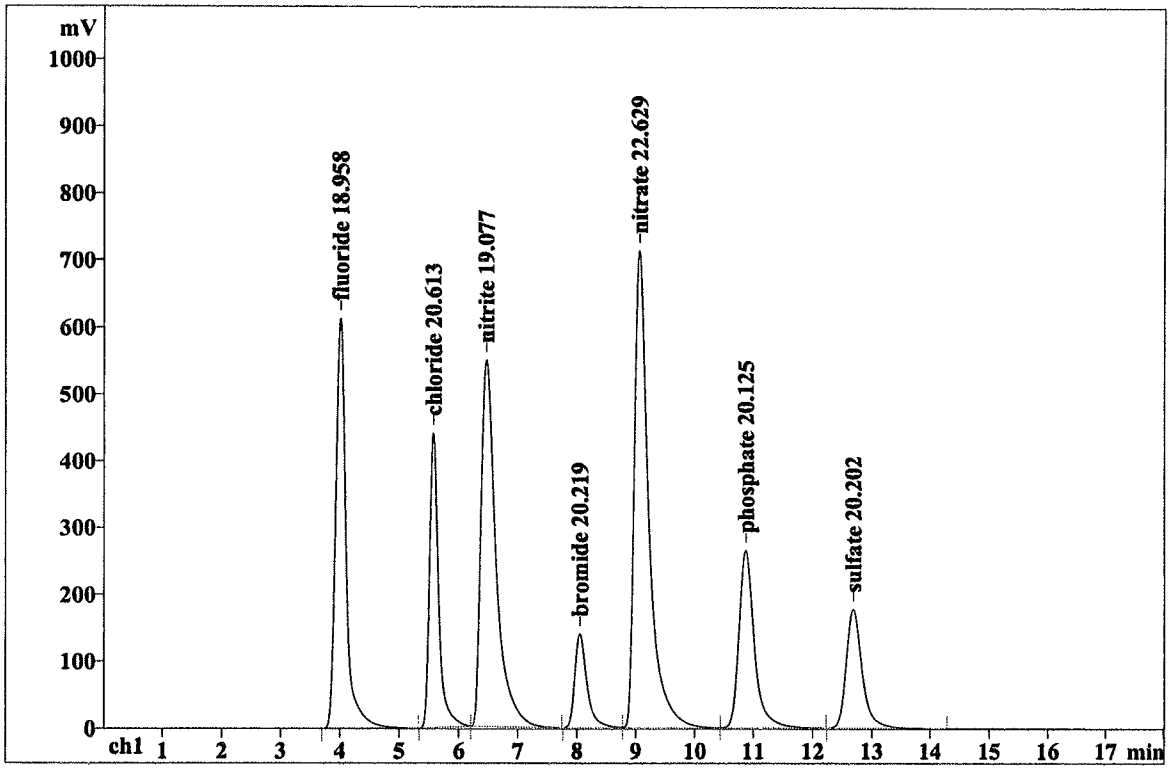
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:03:44 PM
Printed by: LDip

Ident: AF04-11 S9
Analysis from: 6/4/2020 4:52:44 PM
File: _2020-06-04_16-52.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92749

SAMPLE: METHOD 300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



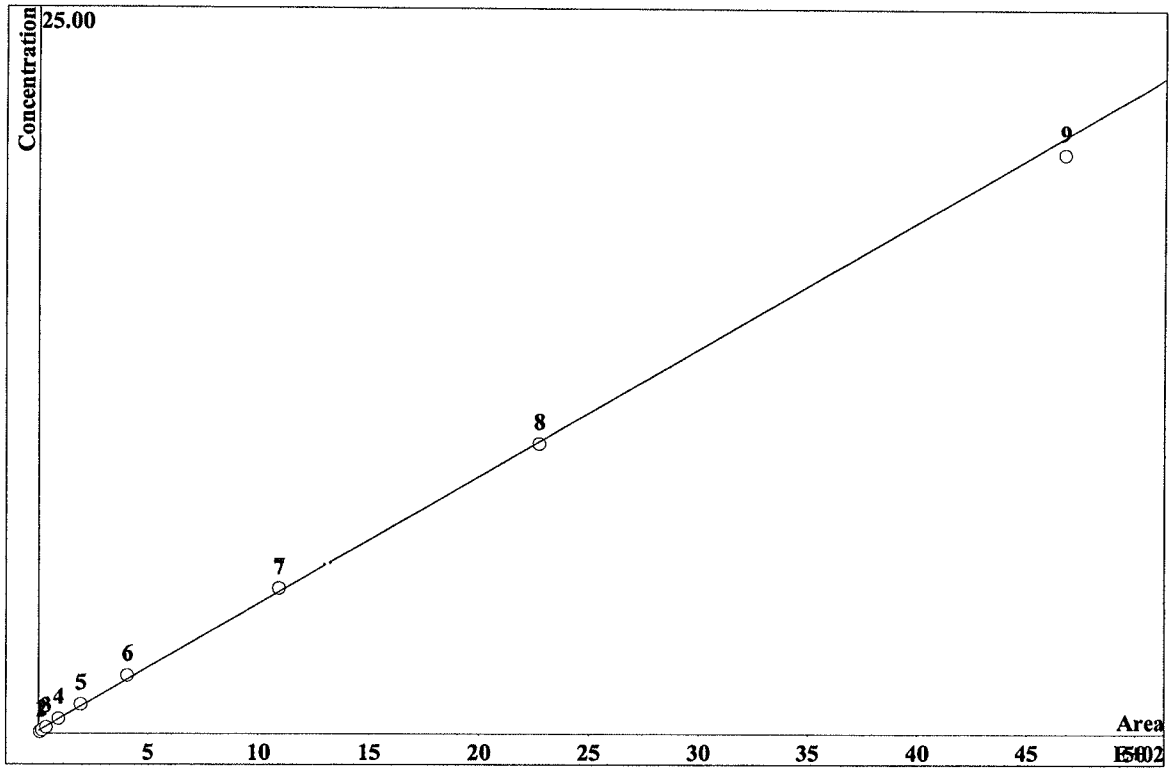
Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	4.01	613.63	7212.831	18.958	fluoride
2	5.57	441.25	4672.887	20.613	chloride
3	6.46	548.80	9897.595	19.077	nitrite
4	8.05	140.41	1984.842	20.219	bromide
5	9.05	713.37	12008.896	22.629	nitrate
6	10.87	265.49	4854.106	20.125	phosphate
7	12.69	178.05	3373.568	20.202	sulfate
7	18.00	2901.00	44004.724	141.824	

This report has been created by IC Net
METROHM LTD

CALIBRATION OF COMPONENT chloride

Method: ICD7-F04.mtw
Equation: Q = 0.00439155·A + 0.092171
RSD: 3.901 %
Correlation coefficient: 0.999705

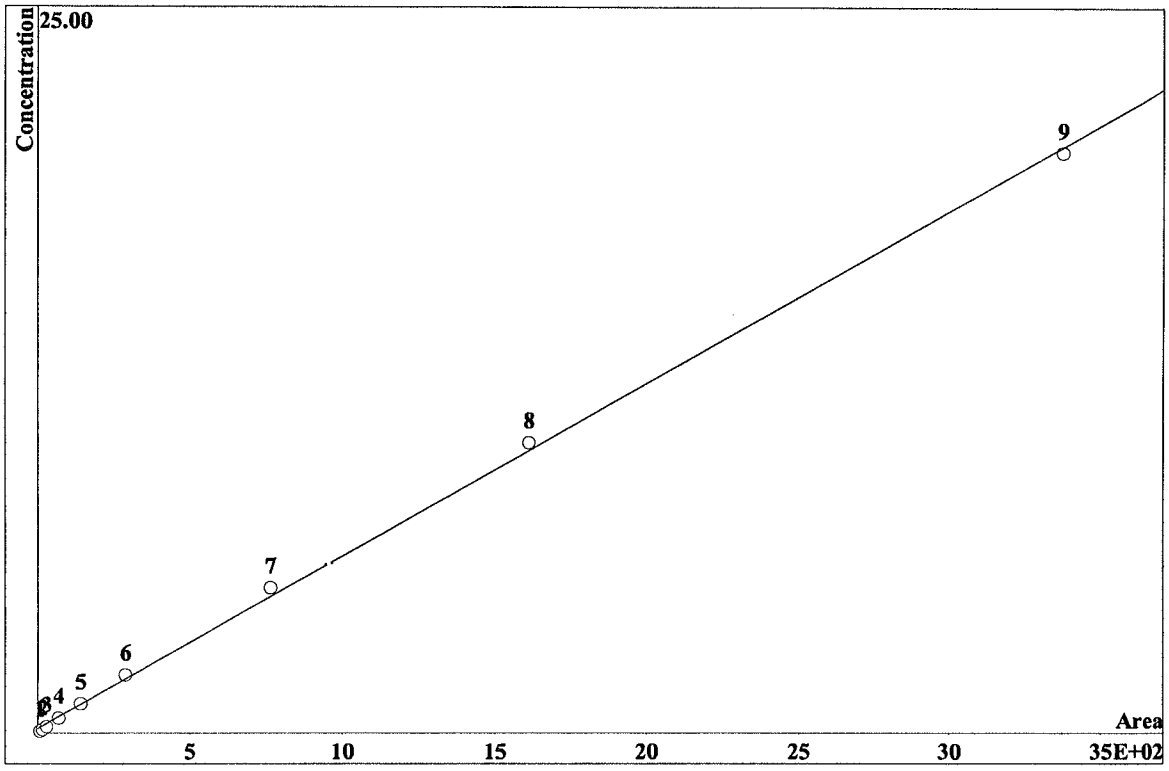


K3 = 0 K2 = 0 K1 = 0.00439155 K0 = 0.092171
Base: Area
Ref.channel: ch1
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.7624	8.347	0.05	1	5.58	Yes	_2020-06-04_1□
2	1.604	17.7	0.1	1	5.58	Yes	_2020-06-04_1□
3	3.251	37.12	0.2	1	5.58	Yes	_2020-06-04_1□
4	8.461	93.88	0.5	1	5.58	Yes	_2020-06-04_1□
5	17.9	195.3	1	1	5.58	Yes	_2020-06-04_1□
6	38.24	405.7	2	1	5.58	Yes	_2020-06-04_1□
7	104	1093	5	1	5.58	Yes	_2020-06-04_1□
8	216.1	2274	10	1	5.58	Yes	_2020-06-04_1
9	441.2	4673	20	1	5.58	No	_2020-06-04_1

CALIBRATION OF COMPONENT sulfate

Method: ICD7-F04.mtw
Equation: Q = 0.0059438·A + 0.150681
RSD: 4.667 %
Correlation coefficient: 0.999608



K3 = 0 K2 = 0 K1 = 0.0059438 K0 = 0.150681
Base: Area
Ref.channel: ch1
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.4425	8.446	0.05	1	12.67	Yes	_2020-06-04_1
2	0.8349	16.76	0.1	1	12.67	Yes	_2020-06-04_1
3	1.499	30.23	0.2	1	12.67	Yes	_2020-06-04_1
4	3.549	70.41	0.5	1	12.67	Yes	_2020-06-04_1
5	7.178	142.1	1	1	12.67	Yes	_2020-06-04_1
6	14.85	287.6	2	1	12.67	Yes	_2020-06-04_1
7	40.27	766.9	5	1	12.67	Yes	_2020-06-04_1
8	85.27	1612	10	1	12.67	Yes	_2020-06-04_1
9	178.1	3374	20	1	12.67	Yes	_2020-06-04_1

06/11/20

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : F04/AF04/(2020)

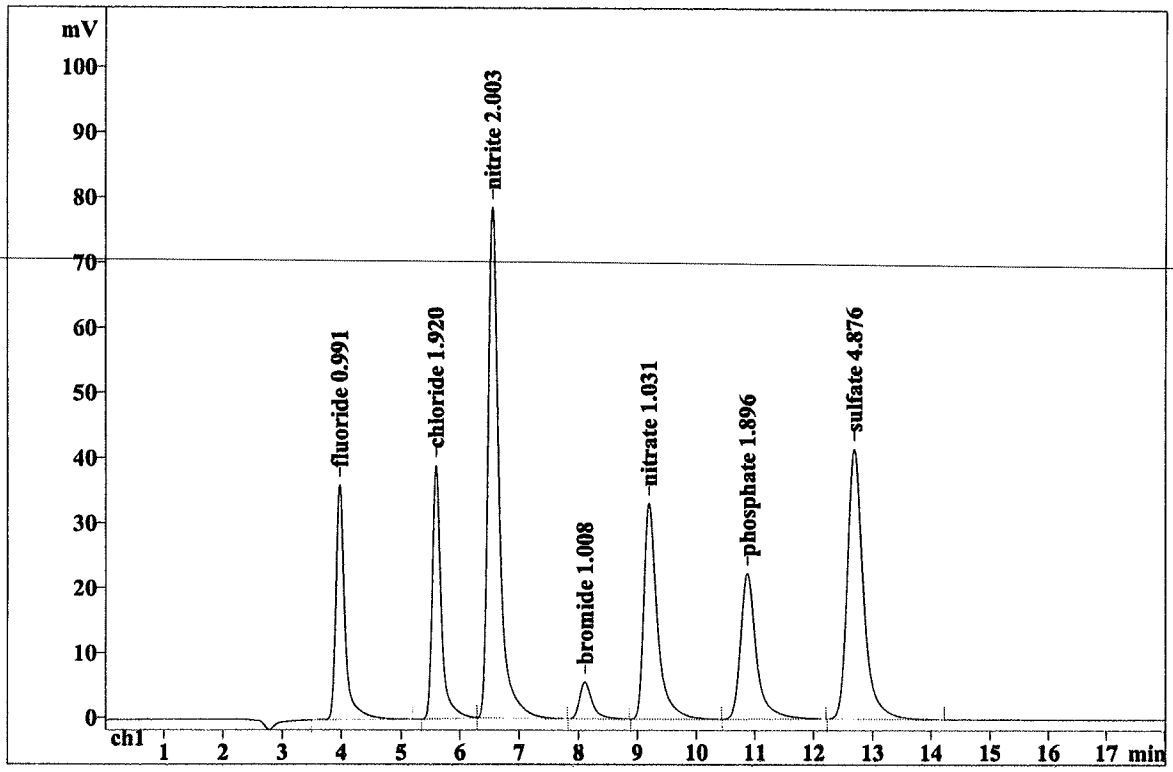
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AF04-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	2020-06-04_13-25	1
AF04-12	ICV	PINOFCBS	94.8%	100.2%	103.1%	0%*	99.1%	96%	100.8%	97.5%	2020-06-04_17-13	1
AF04-13	ICV1	PINOFCBS	96.8%	97%	100.9%	0%*	97.6%	95.4%	100%	100.4%	2020-06-04_17-34	1
AF04-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	2020-06-04_17-55	1

Report date: 6/9/2020 4:03:57 PM
Printed by: LDip

Ident: AF04-12 ICV
Analysis from: 6/4/2020 5:13:30 PM
File: _2020-06-04_17-13.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92750

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	36.14	370.503	0.991	fluoride
2	5.59	39.02	416.297	1.920	chloride
3	6.54	78.54	1021.193	2.003	nitrite
4	8.10	5.65	82.854	1.008	bromide
5	9.20	33.19	532.896	1.031	nitrate
6	10.87	22.47	423.188	1.896	phosphate
7	12.69	41.57	795.077	4.876	sulfate
7	18.00	256.58	3642.008	13.726	

This report has been created by IC Net
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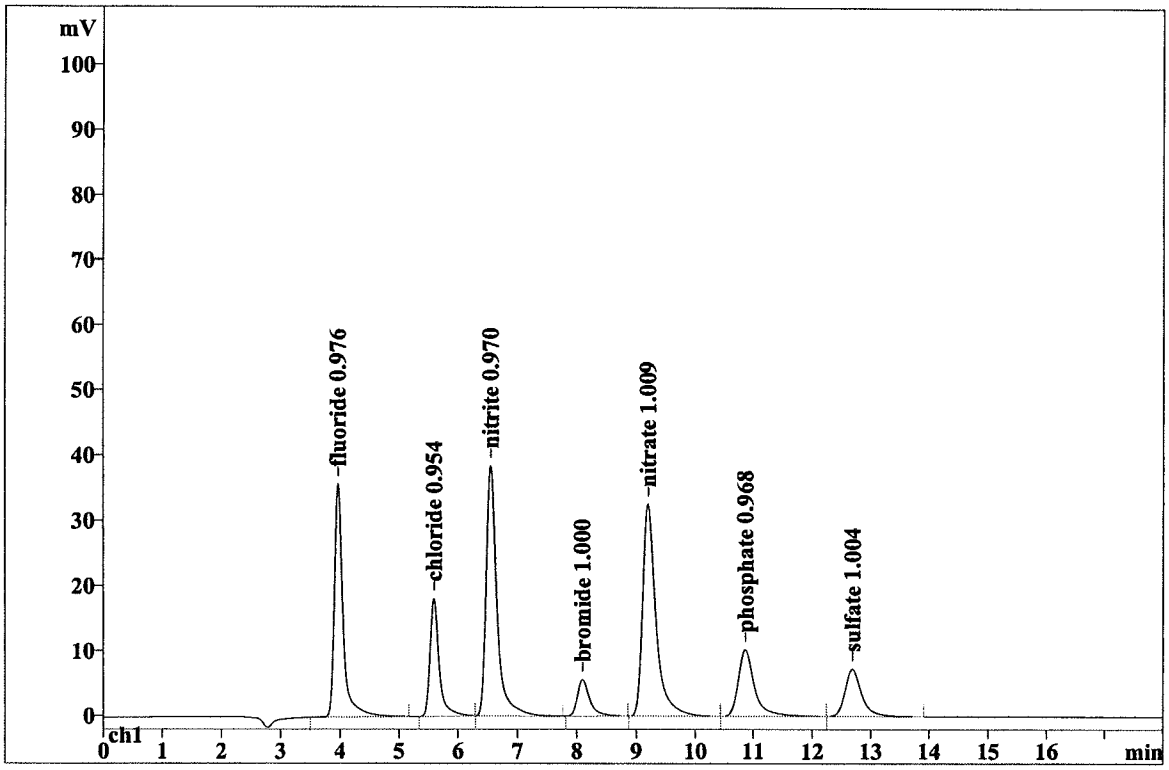
Report date: 6/9/2020 4:04:14 PM
Printed by: LDip

Ident: AF04-13 ICV1
Analysis from: 6/4/2020 5:34:15 PM
File: _2020-06-04_17-34.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92751

SAMPLE: METHOD 300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	35.76	364.949	0.976	fluoride
2	5.59	18.07	196.308	0.954	chloride
3	6.55	38.36	484.220	0.970	nitrite
4	8.10	5.60	82.025	1.000	bromide
5	9.19	32.49	521.161	1.009	nitrate
6	10.87	10.24	197.728	0.968	phosphate
7	12.69	7.25	143.640	1.004	sulfate
7	18.00	147.76	1990.032	6.883	

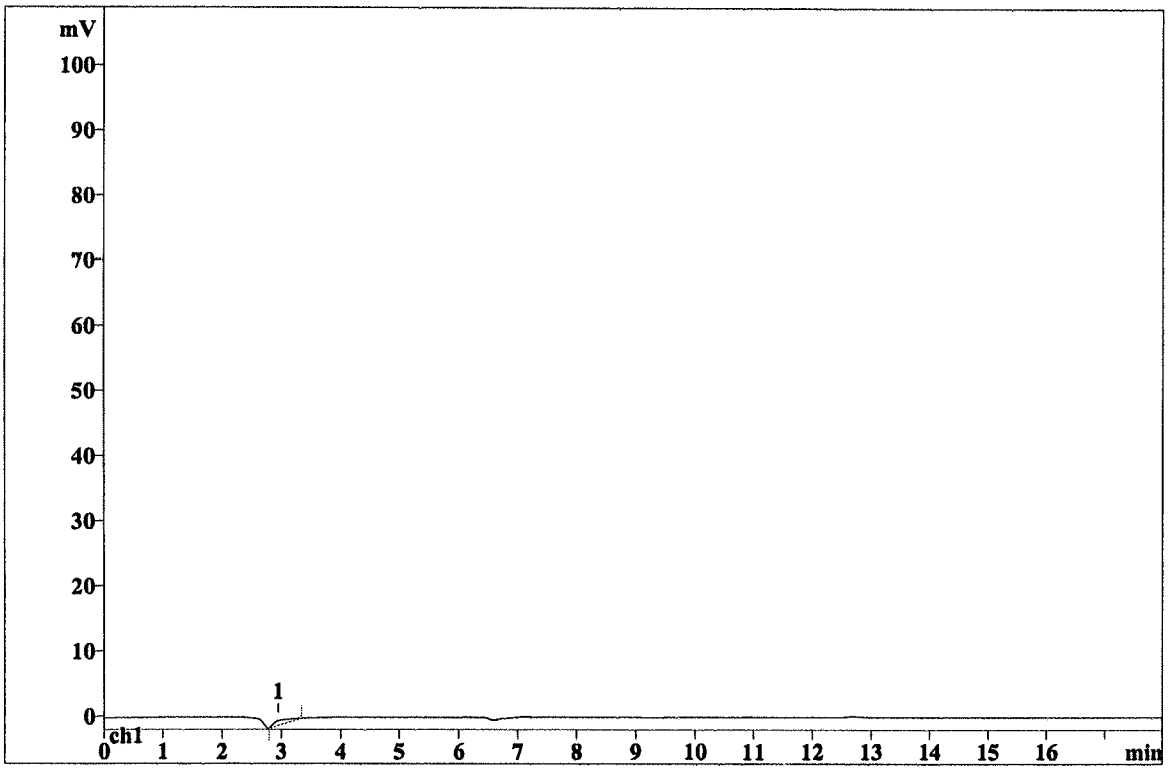
This report has been created by IC Net
METROHM LTD

Report date: 6/9/2020 4:04:32 PM
Printed by: LDip

Ident: AF04-14 ICB
Analysis from: 6/4/2020 5:55:00 PM
File: _2020-06-04_17-55.chw Last save: 6/9/2020 3:51:30 PM

Method: ICD7-F04.mtw Last save: 6/4/2020 3:06:16 PM
Run operator: LDip
Analysis number: 92752

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	2.94	0.70	13.227	0.000	

This report has been created by IC Net
METROHM LTD

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F154
Method : E300.0
ICAL Ref. : 20AF04
InstrumentID: D7
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF12-01	CCV26	91	06/19/2011:19
AF12-06	CCV28	91.3	06/19/2013:35
AF12-18	CCV30	91.6	06/19/2018:51
AF12-30	CCV32	90.8	06/19/2023:01
AF12-42	CCV34	91.7	06/20/2003:10

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F154
Method : E300.0
ICAL Ref. : 20AF04
InstrumentID: D7
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF12-01	CCV26	96.8	06/19/2011:19
AF12-06	CCV28	96.6	06/19/2013:35
AF12-18	CCV30	96.5	06/19/2018:51
AF12-30	CCV32	95.3	06/19/2023:01
AF12-42	CCV34	96.2	06/20/2003:10

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : F04/AF04(2020)

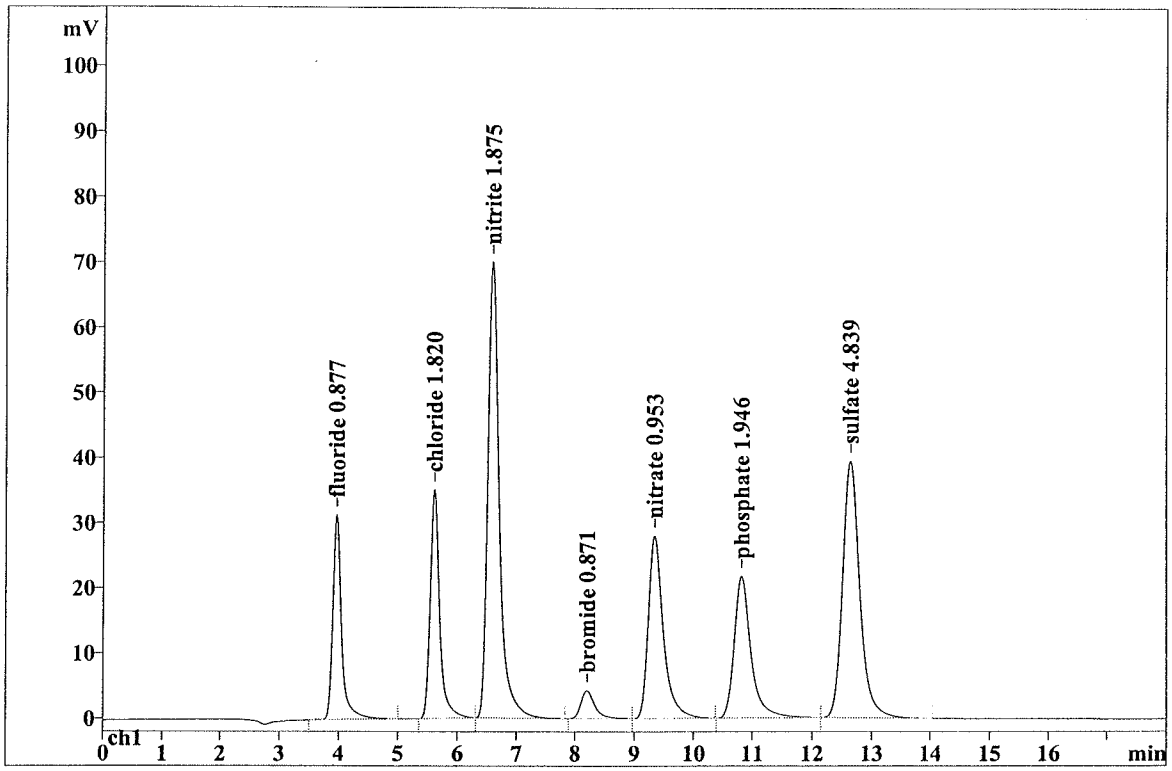
LFID	LSID	Selection	nitrate	chloride	fluoride	iodide	nitrite	bromide	phosphate	sulfate	RawNetID	DF
AF12-01	CCV26	NCFOIBPS	95.3%	91%	87.7%*	0%*	93.8%	87.1%*	97.3%	96.8%	_2020-06-19_11-19	1
AF12-02	CCB26	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-19_11-40	1
AF12-06	CCV28	NCFOIBPS	96%	91.3%	88.6%*	0%*	94.3%	87.4%*	97.1%	96.6%	_2020-06-19_13-35	1
AF12-07	CCB28	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-19_14-38	1
AF12-18	CCV30	NCFOIBPS	96.9%	91.6%	88.5%*	0%*	93.8%	87.6%*	99%	96.5%	_2020-06-19_18-51	1
AF12-19	CCB30	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-19_19-12	1
AF12-30	CCV32	NCFOIBPS	96.5%	90.8%	88.3%*	0%*	93.3%	87.1%*	97.4%	95.3%	_2020-06-19_23-01	1
AF12-31	CCB32	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-19_23-21	1
AF12-42	CCV34	NCFOIBPS	97.4%	91.7%	89.2%*	0%*	93.9%	87.8%*	97.4%	96.2%	_2020-06-20_03-10	1
AF12-43	CCB34	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-20_03-31	1
AF12-52	CCV36	NCFOIBPS	96.7%	90.9%	88.9%*	0%*	93.4%	87.2%*	94.7%	95.7%	_2020-06-20_06-38	1
AF12-53	CCB36	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-20_06-59	1

Report date: 6/23/2020 12:32:00 PM
Printed by: TWangc

Ident: AF12-01 CCV26
Analysis from: 6/19/2020 11:19:20 AM
File: _2020-06-19_11-19.chw Last save: 6/19/2020 1:31:18 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92921

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

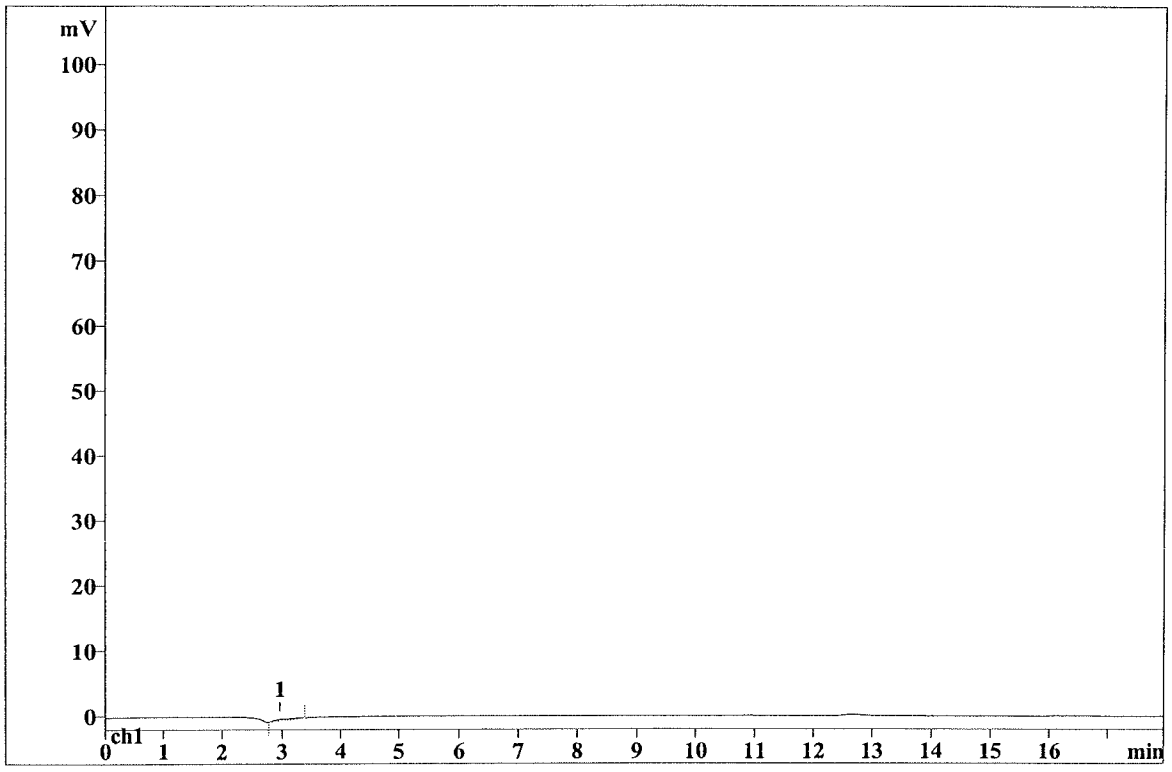
No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.40	327.377	0.877	fluoride
2	5.61	35.19	393.541	1.820	chloride
3	6.58	69.98	954.562	1.875	nitrite
4	8.20	4.27	69.230	0.871	bromide
5	9.34	28.03	491.047	0.953	nitrate
6	10.81	21.80	435.387	1.946	phosphate
7	12.64	39.44	788.714	4.839	sulfate
7	18.00	230.10	3459.857	13.181	

This report has been created by IC Net
METROHM LTD

Report date: 6/24/2020 7:17:45 PM
Printed by: LDip

Ident: AF12-02 CCB26
Analysis from: 6/19/2020 11:40:07 AM
File: _2020-06-19_11-40.chw Last save: 6/24/2020 5:33:57 PM
Modified!
Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92922

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	2.96	0.22	4.733	0.000	

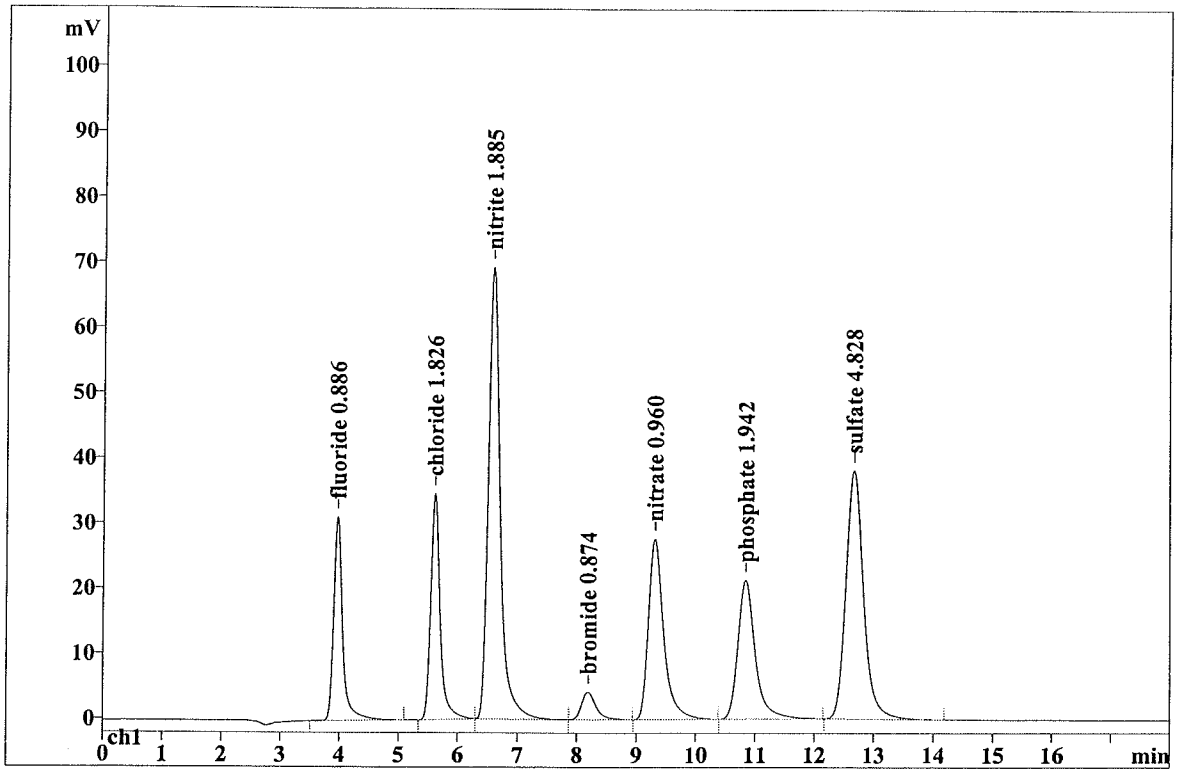
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:35:57 PM
Printed by: TWangc

Ident: AF12-06 CCV28
Analysis from: 6/19/2020 1:35:56 PM
File: _2020-06-19_13-35.chw Last save: 6/19/2020 1:53:56 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92926

SAMPLE: METHOD300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	31.27	330.671	0.886	fluoride
2	5.61	34.71	394.712	1.826	chloride
3	6.58	69.34	959.866	1.885	nitrite
4	8.19	4.22	69.518	0.874	bromide
5	9.31	27.74	494.966	0.960	nitrate
6	10.84	21.33	434.489	1.942	phosphate
7	12.66	38.23	786.850	4.828	sulfate
7	18.00	226.83	3471.072	13.200	

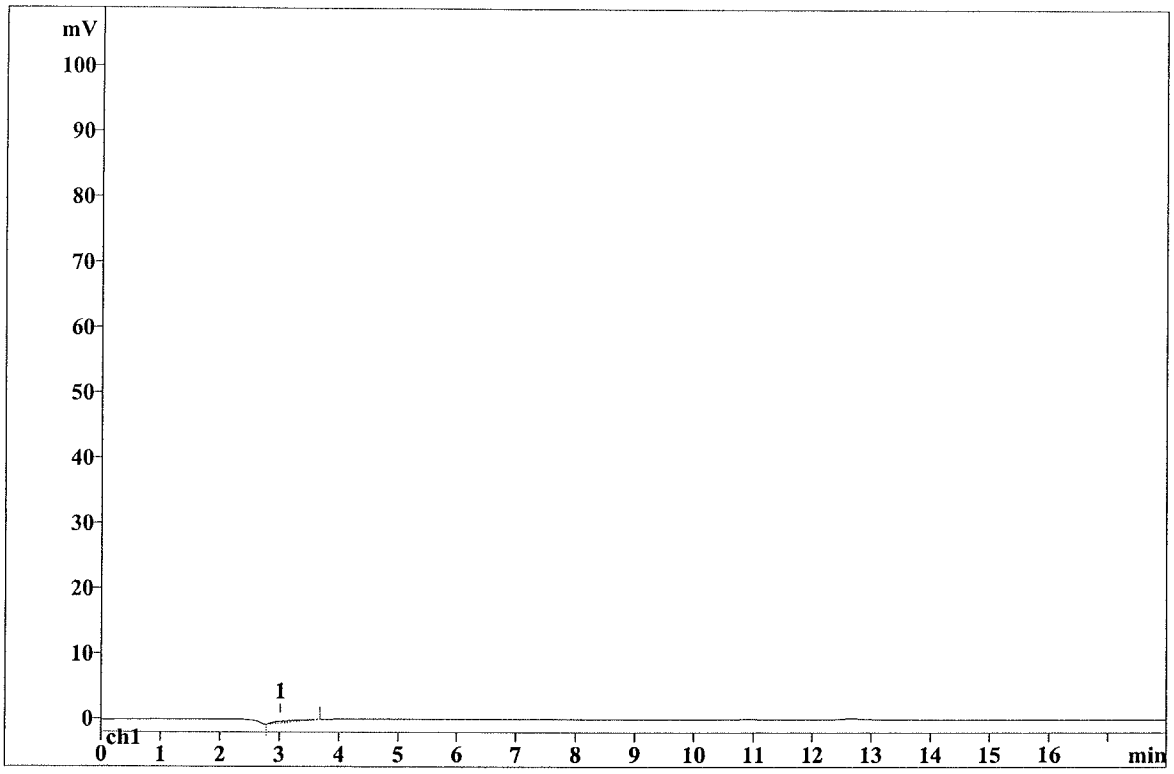
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:36:18 PM
Printed by: TWangc

Ident: AF12-07 CCB28
Analysis from: 6/19/2020 2:38:41 PM
File: _2020-06-19_14-38.chw Last save: 6/19/2020 3:24:33 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92927

SAMPLE: METHOD300/9056/4110B
:
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.01	0.27	9.218	0.000	

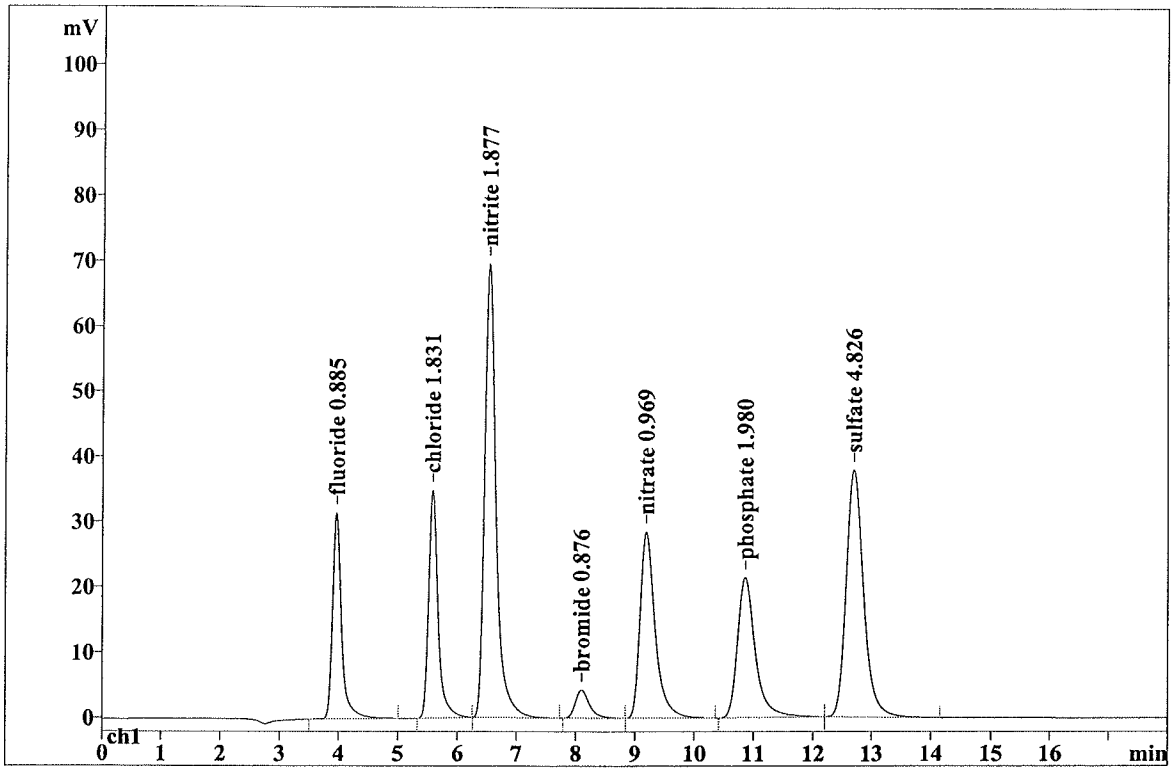
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:36:36 PM
Printed by: TWangc

Ident: AF12-18 CCV30
Analysis from: 6/19/2020 6:51:30 PM
File: _2020-06-19_18-51.chw Last save: 6/19/2020 7:09:30 PM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92938

SAMPLE: METHOD300/9056/4110B
:
Vial number: 18
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

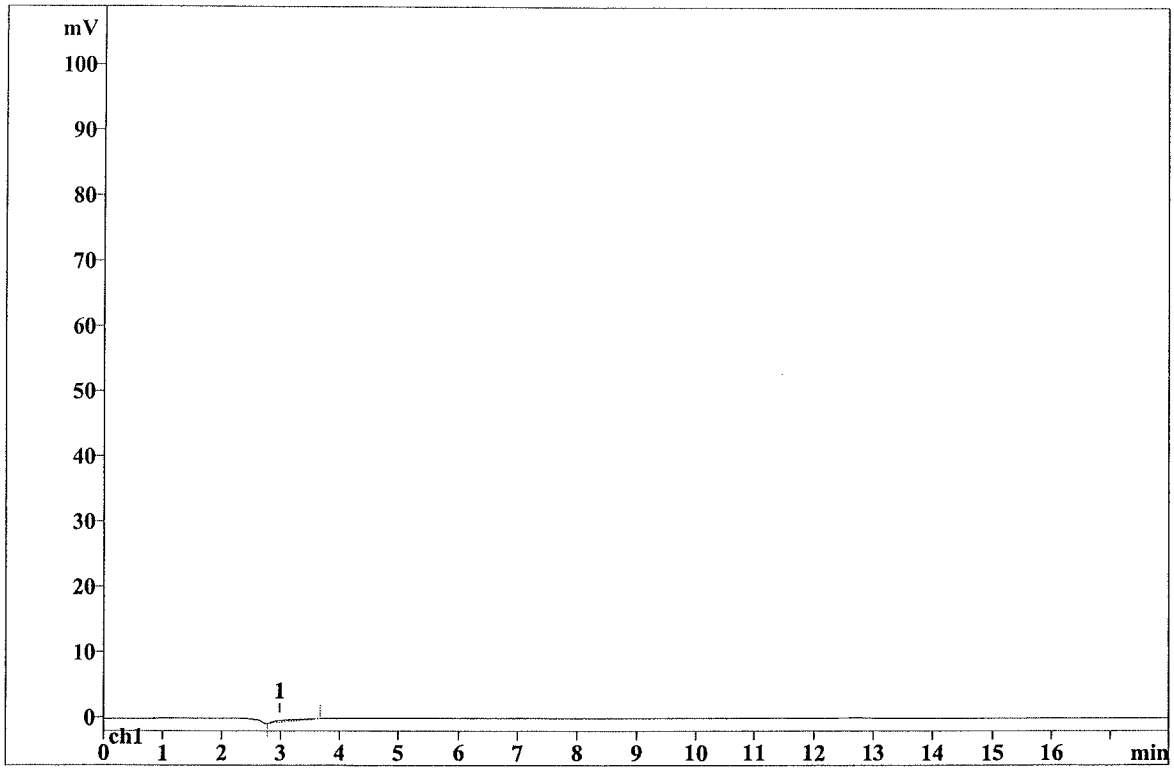
No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.96	31.53	330.348	0.885	fluoride
2	5.58	34.88	395.983	1.831	chloride
3	6.53	69.64	955.578	1.877	nitrite
4	8.10	4.31	69.764	0.876	bromide
5	9.19	28.50	499.846	0.969	nitrate
6	10.86	21.43	443.570	1.980	phosphate
7	12.70	37.90	786.530	4.826	sulfate
7	18.00	228.18	3481.619	13.244	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:38:08 PM
Printed by: TWangc

Ident: AF12-19 CCB30
Analysis from: 6/19/2020 7:12:17 PM
File: _2020-06-19_19-12.chw Last save: 6/19/2020 7:30:18 PM
Modified!
Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92939

SAMPLE: METHOD300/9056/4110B
:
Vial number: 19
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

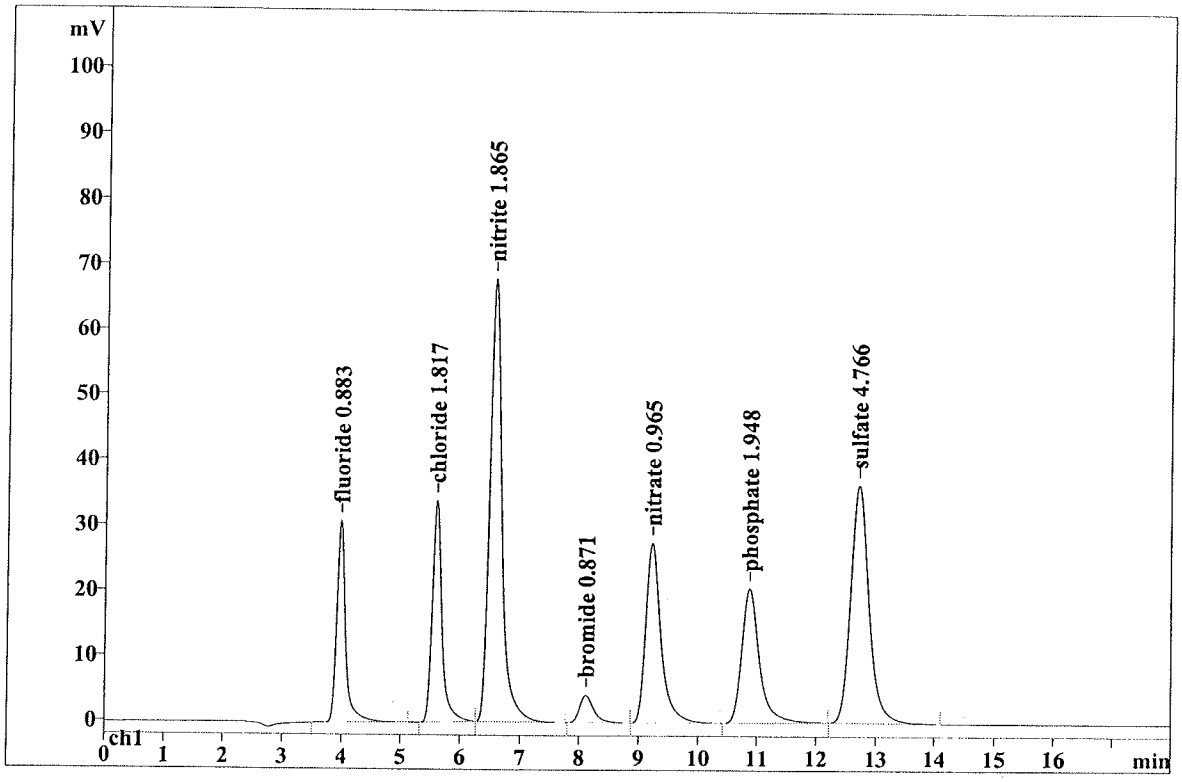


Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.00	0.28	9.469	0.000	

This report has been created by IC Net
METROHM LTD

Report date:	6/23/2020 12:38:56 PM	
Printed by:	TWangc	
Ident:	AF12-30 CCV32	
Analysis from:	6/19/2020 11:01:01 PM	
File:	_2020-06-19_23-01.chw	Last save: 6/19/2020 11:19:01 PM
Method:	ICD7-F04.mtw	Last save: 6/19/2020 10:33:01 AM
Run operator:	TWangc	
Analysis number:	92950	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	30	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

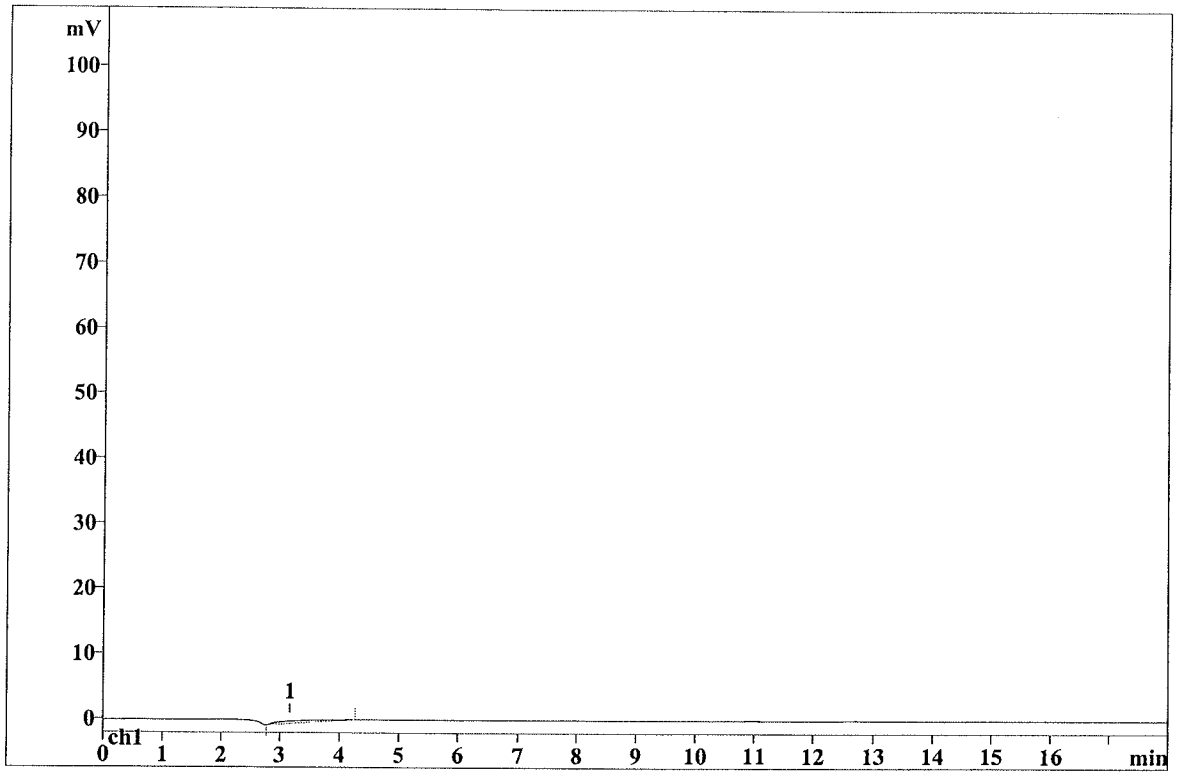
No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.97	30.91	329.423	0.883	fluoride
2	5.59	33.97	392.667	1.817	chloride
3	6.55	67.91	949.490	1.865	nitrite
4	8.11	4.18	69.294	0.871	bromide
5	9.21	27.56	497.521	0.965	nitrate
6	10.86	20.63	435.828	1.948	phosphate
7	12.70	36.47	776.524	4.766	sulfate
7	18.00	221.63	3450.746	13.115	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:39:21 PM
Printed by: TWangc

Ident: AF12-31 CCB32
Analysis from: 6/19/2020 11:21:49 PM
File: _2020-06-19_23-21.chw Last save: 6/19/2020 11:39:49 PM
Modified!
Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92951

SAMPLE: METHOD300/9056/4110B
:
Vial number: 31
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.17	0.37	21.778	0.000	

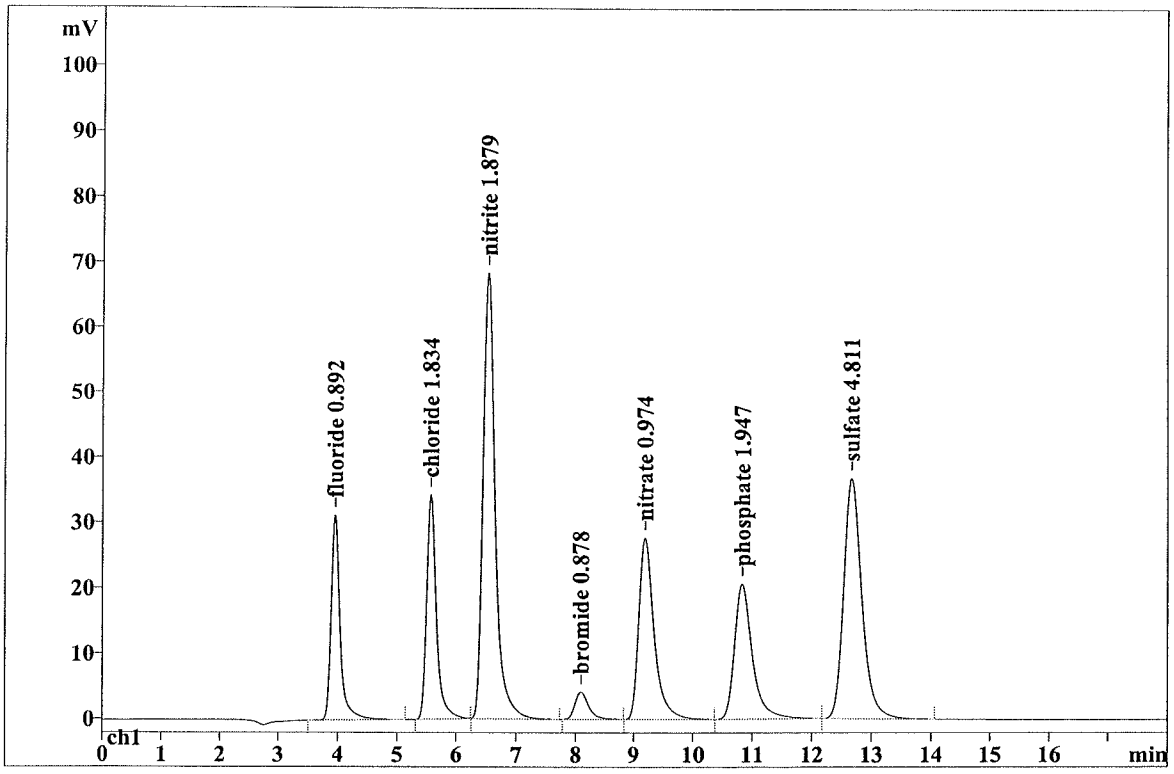
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:40:00 PM
Printed by: TWangc

Ident: AF12-42 CCV34
Analysis from: 6/20/2020 3:10:31 AM
File: _2020-06-20_03-10.chw Last save: 6/20/2020 3:28:31 AM

Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92962

SAMPLE: METHOD300/9056/4110B
:
Vial number: 42
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

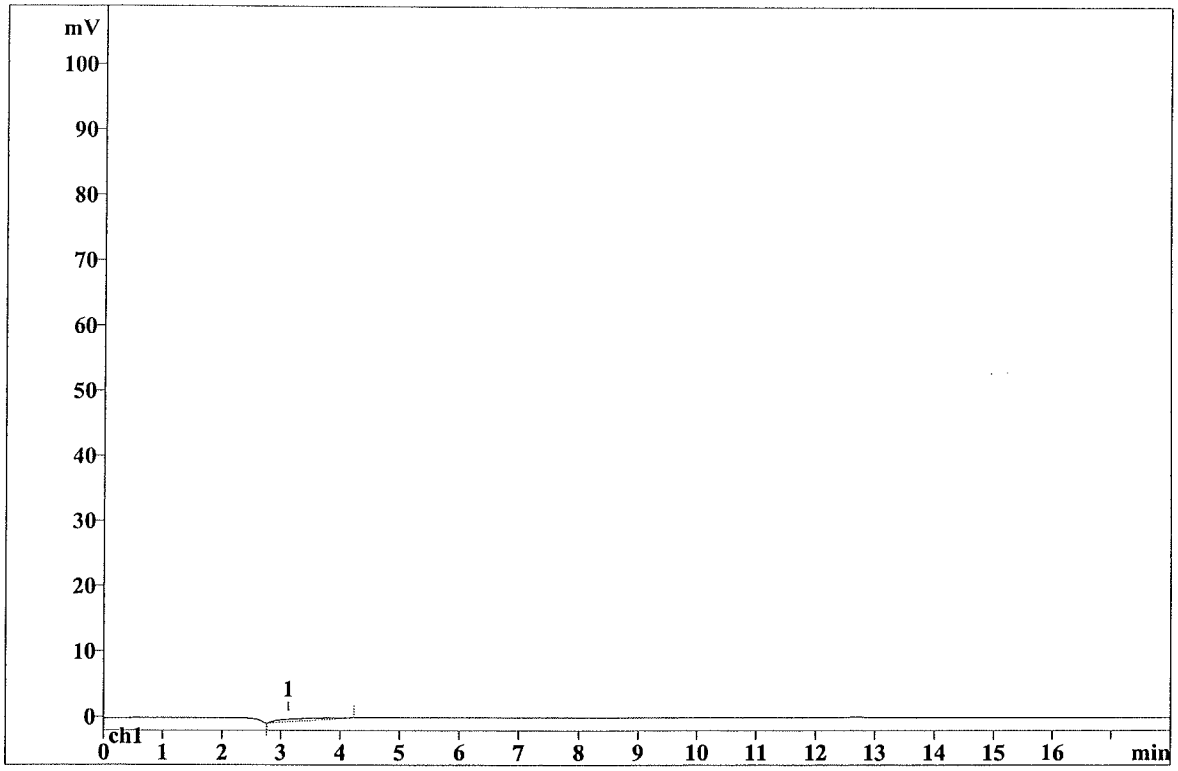
No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.95	31.35	332.817	0.892	fluoride
2	5.57	34.33	396.524	1.834	chloride
3	6.52	68.41	956.469	1.879	nitrite
4	8.09	4.22	69.941	0.878	bromide
5	9.19	27.71	502.173	0.974	nitrate
6	10.83	20.65	435.666	1.947	phosphate
7	12.67	36.80	784.084	4.811	sulfate
7	18.00	223.46	3477.674	13.214	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 12:40:23 PM
Printed by: TWangc

Ident: AF12-43 CCB34
Analysis from: 6/20/2020 3:31:18 AM
File: _2020-06-20_03-31.chw Last save: 6/20/2020 3:49:19 AM
Modified!
Method: ICD7-F04.mtw Last save: 6/19/2020 10:33:01 AM
Run operator: TWangc
Analysis number: 92963

SAMPLE: METHOD300/9056/4110B
:
Vial number: 43
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height mV	Area mV*sec	Conc. mg/L	Name
1	3.13	0.37	21.353	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	concentrations (ppm)
S1	0.05
S2	0.1
S3	0.2
S4	0.5
S5	1.0
S6	2.0
S7	5.0
S8	10.0
S9	20.0

	LINEARITY (ppm)
F	lo 6/4/20 5 — 10
Cl	10
NO_2	10
Br	20
NO_3	2
PO_4	20
SO_4	20

IC ELUENT PREPARATION — Expiration Date: 7/4/20

Std ID	Aliquot	Final Vol*
SP2-01-17-04	20 mL	2 L
SP2-01-18-01	20 mL	

IC REGENERANT PREPARATION — Expiration Date: ~~6/~~ lo 6/4/20 — 7/3/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SW1A-009-02-10

Book #: AD7-032
Instrument No.: D7
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AF04
Method File: ICD7-F04.mtw
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-12-50-03
ICV	SW3B-12-50-01
~~CCV~~ lo 6/4/20 ICV2	SW3B-13-01-01
LCS	—
MS	—

Filters Lot #:
0.45 µm: —
0.2 µm: —

Snap Seal Containers Lot #:
4 oz: 28619010
1.5 oz: —

Column: Metrosep A Supp 5-150

Flow Rate: 0.70 ml/min

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: lo

Date: 06/04/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-06-04_13-25.chw	ICD7-F04.mtw	AF04-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-04_13-46.chw	ICD7-F04.mtw	AF04-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-04_14-06.chw	ICD7-F04.mtw	AF04-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD 300/9056/4110B	0.05 PPM
2020-06-04_14-27.chw	ICD7-F04.mtw	AF04-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD 300/9056/4110B	0.1 PPM
2020-06-04_14-48.chw	ICD7-F04.mtw	AF04-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD 300/9056/4110B	0.2 PPM
2020-06-04_15-09.chw	ICD7-F04.mtw	AF04-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD 300/9056/4110B	0.5 PPM
2020-06-04_15-29.chw	ICD7-F04.mtw	AF04-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD 300/9056/4110B	1.0 PPM
2020-06-04_15-50.chw	ICD7-F04.mtw	AF04-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD 300/9056/4110B	2.0 PPM
2020-06-04_16-11.chw	ICD7-F04.mtw	AF04-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD 300/9056/4110B	5.0 PPM
2020-06-04_16-31.chw	ICD7-F04.mtw	AF04-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD 300/9056/4110B	10.0 PPM
2020-06-04_16-52.chw	ICD7-F04.mtw	AF04-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD 300/9056/4110B	20.0 PPM
2020-06-04_17-13.chw	ICD7-F04.mtw	AF04-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-04_17-34.chw	ICD7-F04.mtw	AF04-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	1.0 PPM
2020-06-04_17-55.chw	ICD7-F04.mtw	AF04-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	

FINAL TW
6/9/2020

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD7-032
Instrument No.:	D7
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF12
Method File:	ICD7 - F04.mtw
Analytical Batch:	ICF010W

SOP #	Rev. #
☑ EMAX-300.0	12
☐ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	—
ICV	—
CCV	SW3B-13—07-02
LCS	SW3B-13—07-03
MS	SCP refer to LCS parent ID

Filters Lot #:

0.45 µm: 00191103

~~0.2~~ 0.22 µm: 91478103 (6/18/20)

Snap Seal Containers Lot #:

4 oz:

1.5 oz: 22319008

Column: Metrosep A Supp 5-150

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 7/17/20

Std ID	Aliquot	Final Vol*
SP2-01-17-04	20 mL	2 L
SP2-01-18-01	20 mL	

IC REGENERANT PREPARATION Expiration Date: 7/18/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SW1A-009-03-04

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LD

Date: 6/19/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-06-19_11-19.chw	ICD7-F04.mtw	AF12-01 CCV26	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_11-40.chw	ICD7-F04.mtw	AF12-02 CCB26	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_12-00.chw	ICD7-F04.mtw	AF12-03 ICF010WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_12-21.chw	ICD7-F04.mtw	AF12-04 ICF010WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_12-42.chw	ICD7-F04.mtw	AF12-05 ICF010WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_13-35.chw	ICD7-F04.mtw	AF12-06 CCV28	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_14-38.chw	ICD7-F04.mtw	AF12-07 CCB28	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_15-03.chw	ICD7-F04.mtw	AF12-08 F154-02	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_15-24.chw	ICD7-F04.mtw	AF12-09 F154-01	9	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_15-48.chw	ICD7-F04.mtw	AF12-10 F170-04	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_16-09.chw	ICD7-F04.mtw	AF12-11 F170-03	11	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_16-30.chw	ICD7-F04.mtw	AF12-12 F170-06	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_16-50.chw	ICD7-F04.mtw	AF12-13 F170-05I DF=2	13	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	ODOR
2020-06-19_17-26.chw	ICD7-F04.mtw	AF12-14 F154-02I DF=10	14	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_17-47.chw	ICD7-F04.mtw	AF12-15 F154-02IM DF=10	15	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_18-07.chw	ICD7-F04.mtw	AF12-16 F154-02IS DF=10	16	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_18-30.chw	ICD7-F04.mtw	AF12-17 F154-02ID DF=10	17	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_18-51.chw	ICD7-F04.mtw	AF12-18 CCV30	18	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_19-12.chw	ICD7-F04.mtw	AF12-19 CCB30	19	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_19-33.chw	ICD7-F04.mtw	AF12-20 F154-02J DF=200	20	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_19-53.chw	ICD7-F04.mtw	AF12-21 F154-02JM DF=200	21	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_20-14.chw	ICD7-F04.mtw	AF12-22 F154-02JS DF=200	22	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_20-35.chw	ICD7-F04.mtw	AF12-23 F154-02JD DF=200	23	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_20-56.chw	ICD7-F04.mtw	AF12-24 F170-03I DF=10	24	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_21-17.chw	ICD7-F04.mtw	AF12-25 F170-05J DF=10	25	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	ODOR
2020-06-19_21-37.chw	ICD7-F04.mtw	AF12-26 F154-01I DF=10	26	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_21-58.chw	ICD7-F04.mtw	AF12-27 F154-01J DF=40	27	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_22-19.chw	ICD7-F04.mtw	AF12-28 F154-05I DF=10	28	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_22-40.chw	ICD7-F04.mtw	AF12-29 F154-05J DF=40	29	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_23-01.chw	ICD7-F04.mtw	AF12-30 CCV32	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_23-21.chw	ICD7-F04.mtw	AF12-31 CCB32	31	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-19_23-42.chw	ICD7-F04.mtw	AF12-32 F154-06I DF=10	32	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_00-03.chw	ICD7-F04.mtw	AF12-33 F154-06J DF=40	33	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_00-24.chw	ICD7-F04.mtw	AF12-34 F159-10I DF=40	34	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_00-44.chw	ICD7-F04.mtw	AF12-35 F159-10J DF=400	35	1.0	400.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_01-05.chw	ICD7-F04.mtw	AF12-36 F159-11I DF=200	36	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_01-26.chw	ICD7-F04.mtw	AF12-37 F159-11J DF=2000	37	1.0	2000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_01-47.chw	ICD7-F04.mtw	AF12-38 F159-12I DF=10	38	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	LIGHT YELLOW
2020-06-20_02-08.chw	ICD7-F04.mtw	AF12-39 F159-13I DF=40	39	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_02-28.chw	ICD7-F04.mtw	AF12-40 F159-13J DF=200	40	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_02-49.chw	ICD7-F04.mtw	AF12-41 F159-14I DF=200	41	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_03-10.chw	ICD7-F04.mtw	AF12-42 CCV34	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_03-31.chw	ICD7-F04.mtw	AF12-43 CCB34	43	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_03-52.chw	ICD7-F04.mtw	AF12-44 F159-14J DF=2000	44	1.0	2000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_04-12.chw	ICD7-F04.mtw	AF12-45 F159-15I DF=100	45	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_04-33.chw	ICD7-F04.mtw	AF12-46 F159-15J DF=2000	46	1.0	2000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_04-54.chw	ICD7-F04.mtw	AF12-47 F159-16I DF=40	47	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_05-15.chw	ICD7-F04.mtw	AF12-48 F159-17I DF=200	48	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_05-36.chw	ICD7-F04.mtw	AF12-49 F159-17J DF=2000	49	1.0	2000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_05-56.chw	ICD7-F04.mtw	AF12-50 F140-10I DF=10000	50	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_06-17.chw	ICD7-F04.mtw	AF12-51 F140-12I DF=10000	51	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-20_06-38.chw	ICD7-F04.mtw	AF12-52 CCV36	52	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-20_06-59.chw	ICD7-F04.mtw	AF12-53 CCB36	53	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL lo 6/24/20

RETENTION TIME WINDOW

TWENTY FOUR HOUR RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D7 (800 IC) IC column: METROSEP A SUPP 5
Column size: 150X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**3.97**	3.88	4.06	**0.090**
CHLORIDE	**5.58**	5.45	5.72	**0.135**
NITRITE	**6.53**	6.38	6.68	**0.151**
BROMIDE	**8.10**	7.86	8.33	**0.238**
NITRATE	**9.18**	8.91	9.45	**0.272**
PHOSPHATE	**10.84**	10.45	11.24	**0.393**
SULFATE	**12.67**	11.96	13.38	**0.708**

ICD7-F04.MTW

TWENTY-FOUR HOUR RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D7 (800IC)	IC column:	METROSEP A SUPP 5
		Column size:	150X4.0mm

Compound	Retention time Window	
FLUORIDE	(+/-)	0.090
CHLORIDE	(+/-)	0.135
NITRITE	(+/-)	0.151
BROMIDE	(+/-)	0.238
NITRATE	(+/-)	0.272
PHOSPHATE	(+/-)	0.393
SULFATE	(+/-)	0.537
IODIDE	(+/-)	0.708

AA
8/13/14

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SM2320B
TOTAL ALKALINITY

A total of four(4) water samples were received on 06/18/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF008WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF008WL/ALF008WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF008WB	ND	1	NA	5	5	06/22/2019:01	NA	20E5F0603	20E5F06	ALF008W	NA	NA
LCS1W	ALF008WL	73.8	1	NA	5	5	06/22/2019:08	NA	20E5F0604	20E5F06	ALF008W	NA	NA
LCD1W	ALF008WC	76.5	1	NA	5	5	06/22/2019:16	NA	20E5F0605	20E5F06	ALF008W	NA	NA
MW20S-GW061720	F154-01	285	1	NA	5	5	06/22/2021:17	NA	20E5F0619	20E5F06	ALF008W	06/17/2011:02	06/18/20
MW02-GW061720	F154-02	298	1	NA	5	5	06/22/2021:25	NA	20E5F0620	20E5F06	ALF008W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02D	298	1	NA	5	5	06/22/2021:32	NA	20E5F0621	20E5F06	ALF008W	06/17/2011:35	06/18/20
MW20D-GW061720	F154-05	242	1	NA	5	5	06/22/2021:39	NA	20E5F0622	20E5F06	ALF008W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06	252	1	NA	5	5	06/22/2021:49	NA	20E5F0623	20E5F06	ALF008W	06/17/2012:05	06/18/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALF008WB	ALF008WL	ALF008WC
LAB FILE ID :	20E5F0603	20E5F0604	20E5F0605
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/22/2019:01	06/22/2019:08	06/22/2019:16
PREP BATCH :	ALF008W	ALF008W	ALF008W
CALIBRATION REF:	20E5F06	20E5F06	20E5F06

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	73.8	97	75.8	76.5	101	4	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : METHOD SM2320B

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MW02-GW061720	MW02-GW061720DUP
LAB SAMPLE ID :	F154-02	F154-02D
LAB FILE ID :	20E5F0620	20E5F0621
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/22/2021:25	06/22/2021:32
PREP BATCH :	ALF008W	ALF008W
CALIBRATION REF:	20E5F062	20E5F062

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
ALKALINITY	298	298	0	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☑ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Comments: REAGENT WATER : RWI-19-003

Book#: AAL-042

Instrument No.: ☐ 53 ☐ 97 ☑ E5

Analytical Batch: 20ESF06

Analytical Sequence: ALF008

SOP #	Rev. #
☑ EMAX-2320B	5
☐ EMAX-	

STANDARDS ID	Conc. (mg/L)
0.02N HCL SWRI-02-20-03	0.0199N
LCS SWI-02-05-02	75.8
MS/MSD NA	NA
ICV NA	NA

pH Buffer	ID
pH 4	SWI-02-05-21
pH 7	SWI-02-05-22
pH 10	SWI-02-05-23
pH 8.0 (Check)	SWI-02-05-19
pH Strip	HC998032

Analyzed By: TK / LD

Date: 06/22/20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1164 **Analytical Batch#** 20E5F06

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F06	06/22/20	6:49 PM	7.94 ✓	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F06	06/22/20	6:54 PM	8.70	1.40	1.82	-1.00	55.65	72.56	.00	33.81	38.75	
3	ALF008WB	20E5F06	06/22/20	7:01 PM	6.62	.00	.07	.11	.00	.82 ✓	.82	.00	.00	
4	ALF008WL	20E5F06	06/22/20	7:08 PM	9.06	1.19	1.86	-1.00	47.22	73.85 ✓	.00	53.25	20.60	
5	ALF008WC	20E5F06	06/22/20	7:16 PM	9.09	1.26	1.92	-1.00	50.02	76.55 ✓	.00	53.06	23.49	
6	F140-01	20E5F06	06/22/20	7:24 PM	7.55	.00	9.35	-1.00	.00	372.32	372.32	.00	.00	
7	F140-02	20E5F06	06/22/20	7:34 PM	7.59	.00	9.41	-1.00	.00	374.35	374.35	.00	.00	
8	F140-04	20E5F06	06/22/20	7:44 PM	7.69	.00	14.33	-1.00	.00	570.48	570.48	.00	.00	
9	F140-05	20E5F06	06/22/20	7:51 PM	7.24	.00	4.21	-1.00	.00	167.68	167.68	.00	.00	
10	F140-06	20E5F06	06/22/20	8:03 PM	7.74	.00	14.87	-1.00	.00	591.88	591.88	.00	.00	
11	F140-07	20E5F06	06/22/20	8:16 PM	7.78	.00	18.22	-1.00	.00	725.25	725.25	.00	.00	
12	F140-08	20E5F06	06/22/20	8:23 PM	7.35	.00	4.09	-1.00	.00	162.69	162.69	.00	.00	
13	F140-09	20E5F06	06/22/20	8:31 PM	7.76	.00	7.86	-1.00	.00	312.70	312.70	.00	.00	
14	F140-10	20E5F06	06/22/20	8:38 PM	7.22	.00	4.32	-1.00	.00	171.82	171.82	.00	.00	
15	F140-11	20E5F06	06/22/20	8:46 PM	8.50	.11	5.43	-1.00	4.19	215.96	207.58	8.38	.00	
16	F140-12	20E5F06	06/22/20	8:53 PM	6.88	.00	3.31	-1.00	.00	131.82	131.82	.00	.00	
17	F140-13	20E5F06	06/22/20	9:00 PM	8.05	.00	4.70	-1.00	.00	187.16	187.16	.00	.00	
18	F140-14	20E5F06	06/22/20	9:08 PM	7.59	.00	9.07	-1.00	.00	361.01	361.01	.00	.00	

Analyzed by: LP/TK Reviewed by: TK Date: 06/23/20

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Run Number 1164 **Analytical Batch#** **20E5F06**

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F154-01	20E5F06	06/22/20	9:17 PM	7.69	.00	7.17	-1.00	.00	285.36	285.36	.00	.00	
20	F154-02	20E5F06	06/22/20	9:25 PM	7.50	.00	7.49	-1.00	.00	297.93	297.93	.00	.00	
21	F154-02D	20E5F06	06/22/20	9:32 PM	7.49	.00	7.50	-1.00	.00	298.37	298.37	.00	.00	
22	F154-05	20E5F06	06/22/20	9:39 PM	7.71	.00	6.08	-1.00	.00	241.86	241.86	.00	.00	
23	F154-06	20E5F06	06/22/20	9:49 PM	7.72	.00	6.33	-1.00	.00	251.76	251.76	.00	.00	
24	RINSE	20E5F06	06/22/20	9:55 PM	6.59	.00	.07	.12	.00	1.18	1.18	.00	.00	

Analyzed by: LD/TK Reviewed by: TK Date: 06/23/20

PC-TitratION PLUS by Man-Tech Associates, Inc. pH AND ALKALINITY IN-RUN REPORT.SRW

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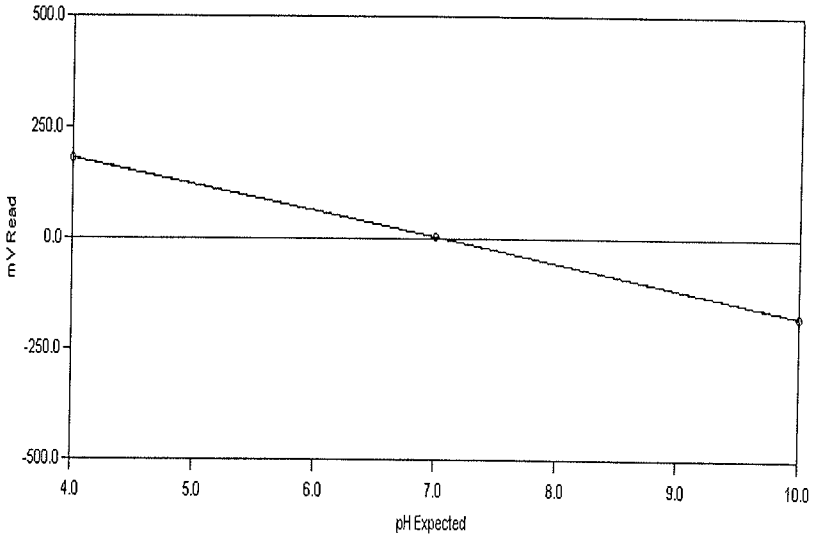
PC-TitratION PLUS
Calibration Report

Calibration Record # 822



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/22/2020
Channel	1	Time	6:46 PM
Probe Type	pH	Temperature	299.27 K 26.12 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.345	CorrCoeff	1.0000
Intercept	2.193	Equation: Y = (-59.345) X + (2.193)	

Calibration Validity **True** Operator

	Result	Minimum	Maximum
Slope	-59.345	-65.00	-53.00
Intercept	2.193	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	180.29
	7.00	2.07
	10.00	-175.78

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PC-Titrate For Windows

Running List Report

Order Number - 20E5F06

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF008WB	6	.00	25.00
5	PH-ALK	ALF008WL	7	.00	25.00
6	PH-ALK	ALF008WC	8	.00	25.00
7	PH-ALK	F140-01	9	.00	25.00
8	PH-ALK	F140-02	10	.00	25.00
9	PH-ALK	F140-04	11	.00	25.00
10	PH-ALK	F140-05	12	.00	25.00
11	PH-ALK	F140-06	13	.00	25.00
12	PH-ALK	F140-07	14	.00	25.00
13	PH-ALK	F140-08	15	.00	25.00
14	PH-ALK	F140-09	16	.00	25.00
15	PH-ALK	F140-10	17	.00	25.00
16	PH-ALK	F140-11	18	.00	25.00
17	PH-ALK	F140-12	19	.00	25.00
18	PH-ALK	F140-13	20	.00	25.00
19	PH-ALK	F140-14	21	.00	25.00
20	PH-ALK	F154-01	22	.00	25.00
21	PH-ALK	F154-02	23	.00	25.00
22	PH-ALK	F154-02D	24	.00	25.00
23	PH-ALK	F154-05	25	.00	25.00
24	PH-ALK	F154-06	26	.00	25.00
25	PH-ALK	RINSE	27	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW
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CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of four(4) water samples were received on 06/18/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF006WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF006WL. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF006WB	ND	1	NA	10	10	06/22/2015:56	NA	20TDF00601	20TDF006	TDF006W	NA	NA
LCS1W	TDF006WL	945	1	NA	10	10	06/22/2015:56	NA	20TDF00602	20TDF006	TDF006W	NA	NA
MW20S-GW061720	F154-01	599	1	NA	10	10	06/22/2015:56	NA	20TDF00621	20TDF006	TDF006W	06/17/2011:02	06/18/20
MW02-GW061720	F154-02	1320	1	NA	10	10	06/22/2015:56	NA	20TDF00622	20TDF006	TDF006W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02D	1360	1	NA	10	10	06/22/2015:56	NA	20TDF00623	20TDF006	TDF006W	06/17/2011:35	06/18/20
MW20D-GW061720	F154-05	666	1	NA	10	10	06/22/2015:56	NA	20TDF00624	20TDF006	TDF006W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06	652	1	NA	10	10	06/22/2015:56	NA	20TDF00625	20TDF006	TDF006W	06/17/2012:05	06/18/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	TDF006WB	TDF006WL
LAB FILE ID :	20TDF00601	20TDF00602
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/22/2015:56	06/22/2015:56
PREP BATCH :	TDF006W	TDF006W
CALIBRATION REF:	20TDF006	20TDF006

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	945	94	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR	1	1
SAMPLE ID	MW02-GW061720	MW02-GW061720DUP
LAB SAMPLE ID	F154-02	F154-02D
LAB FILE ID	20TDF00622	20TDF00623
DATE PREPARED	NA	NA
DATE ANALYZED	06/22/2015:56	06/22/2015:56
PREP BATCH	TDF006W	TDF006W
CALIBRATION REF	20TDF006	20TDF006

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Total Dissolved Solids	1320	1360	3	20

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF0006

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF00601	TDF006WB	100	B	90.5997	90.5996	6/23/20 12:35	90.5999	6/23/20 16:12			0.3	0.2	2	ND
20TDF00602	TDF006WL	20	L	20.96812	20.98703	6/23/20 12:35	20.98702	6/23/20 16:12			0.01	18.9	945	945
20TDF00603	F149-01	10	1	20.80414	20.84268	6/23/20 12:35	20.84279	6/23/20 16:12			0.11	38.65	3865	3870
20TDF00604	F149-03	2	2	21.64031	21.69225	6/23/20 12:35	21.69227	6/23/20 16:13			0.02	51.96	25980	26000
20TDF00605	F149-03D	2	3	21.09024	21.14215	6/23/20 12:36	21.14191	6/23/20 16:13			0.24	51.67	25835	25800
20TDF00606	F149-04	20	4	21.65326	21.71651	6/23/20 12:36	21.7186	6/23/20 16:13			0.09	65.34	3267	3270
20TDF00607	F149-04D	20	5	21.91686	21.98244	6/23/20 12:36	21.98254	6/23/20 16:13			0.1	65.68	3284	3280
20TDF00608	F149-05	2	6	20.93224	20.98346	6/23/20 12:36	20.98327	6/23/20 16:13			0.19	51.03	25515	25500
20TDF00609	F149-06	20	7	21.12643	21.16491	6/23/20 12:36	21.16488	6/23/20 16:14			0.03	38.45	1922.5	1920
20TDF00610	F149-07	10	8	21.98983	22.16484	6/23/20 12:37	22.1645	6/23/20 16:14			0.34	174.67	17467	17500
20TDF00611	F149-08	10	9	20.92128	21.10253	6/23/20 12:37	21.10284	6/23/20 16:14			0.31	181.56	18156	18200
20TDF00612	F149-09	20	10	21.03911	21.07943	6/23/20 12:37	21.07962	6/23/20 16:14			0.19	40.51	2025.5	2030
20TDF00613	F149-10	20	11	20.95308	20.99316	6/23/20 12:37	20.993	6/23/20 16:15			0.16	39.92	1996	2000
20TDF00614	F149-11	5	12	20.86074	20.98047	6/23/20 12:37	20.98049	6/23/20 16:15			0.02	119.75	23950	24000
20TDF00615	F149-12	20	13	21.54407	21.58998	6/23/20 12:38	21.58972	6/23/20 16:15			0.26	45.65	2282.5	2280
20TDF00616	F149-13	20	14	21.86891	21.91192	6/23/20 12:39	21.91187	6/23/20 16:15			0.05	42.96	2148	2150
20TDF00617	F149-14	20	15	21.70641	21.73093	6/23/20 12:39	21.73105	6/23/20 16:16			0.12	24.64	1232	1230
20TDF00618	F149-15	10	16	21.64563	21.72263	6/23/20 12:39	21.7228	6/23/20 16:16			0.17	77.17	7717	7720
20TDF00619	F149-16	10	17	21.19372	21.2486	6/23/20 12:40	21.24888	6/23/20 16:16			0.28	55.16	5516	5520
20TDF00620	F149-17	2	18	21.5493	21.61164	6/23/20 12:40	21.61157	6/23/20 16:16			0.07	62.27	31135	31100
20TDF00621	F154-01	100	19	86.3872	86.447	6/23/20 12:40	86.4471	6/23/20 16:16			0.1	59.9	599	599
20TDF00622	F154-02	20	20	21.19402	21.22062	6/23/20 12:40	21.22037	6/23/20 16:17			0.25	26.35	1317.5	1320
20TDF00623	F154-02D	20	21	21.69922	21.7262	6/23/20 12:41	21.72642	6/23/20 16:17			0.22	27.2	1360	1360
20TDF00624	F154-05	100	22	86.5436	86.61	6/23/20 12:41	86.6102	6/23/20 16:17			0.2	66.6	666	666
20TDF00625	F154-06	100	23	87.1848	87.2501	6/23/20 12:41	87.25	6/23/20 16:17			0.1	65.2	652	652

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/22/20 15:56	PASSED
5	4.9997	6/22/20 15:56	PASSED
100	99.9990	6/22/20 15:56	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/22/20 16:02	PASSED
5	4.9997	6/22/20 16:03	PASSED
100	99.9992	6/22/20 16:03	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/23/20 12:34	PASSED
5	4.9998	6/23/20 12:34	PASSED
100	99.9997	6/23/20 12:34	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1002	6/23/20 16:18	PASSED
5	4.9997	6/23/20 16:18	PASSED
100	100.0001	6/23/20 16:19	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-19-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF006WB	2	ND	MB Passed
TDF006WL	945	1000	%R=95
#N/A	#N/A	#N/A	#N/A
F149-04D	3284	3267	%D=1
F154-02D	1360	1317.5	%D=3

Oven Drying Thermometer ID: 3078

Evaporating			
☑ Start	6/22/2020 16:21	Temp	90 °C
☑ End	6/23/2020 9:14	Temp	90 °C
1st Drying			
☑ Start	6/23/20 10:44	Temp	180 °C
☑ End	6/23/20 11:45	Temp	180 °C
2nd Drying			
☑ Start	6/23/20 14:21	Temp	180 °C
☑ End	6/23/20 15:22	Temp	180 °C
Final Drying			
☐ Start		Temp	°C
☐ End		Temp	°C

Notes:

SOP

Analyzedby: YAquin

Checked by: TK

☑ EMAX-2540C Rev. 9

Date: 06/26/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 642780221

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of four(4) water samples were received on 06/18/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAF006WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAF006WL/NAF006WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) MS was analyzed. Percent recovery for Nitrogen, Nitrate-Nitrite was within MS QC limits in F154-02IM. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAF006WB	ND	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00610	20NAF006	NAF006W	NA	NA
LCS1W	NAF006WL	0.470	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00611	20NAF006	NAF006W	NA	NA
LCD1W	NAF006WC	0.469	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00612	20NAF006	NAF006W	NA	NA
MW20S-GW061720	F154-01I	2.55	5	NA	0.25	0.05	06/26/2015:40	NA	20NAF00613	20NAF006	NAF006W	06/17/2011:02	06/18/20
MW02-GW061720	F154-02I	2.40	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00614	20NAF006	NAF006W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02ID	2.25	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00615	20NAF006	NAF006W	06/17/2011:35	06/18/20
MW02-GW061720MS	F154-02IM	4.95	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00616	20NAF006	NAF006W	06/17/2011:35	06/18/20
MW20D-GW061720	F154-05I	3.25	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00617	20NAF006	NAF006W	06/17/2011:40	06/18/20
FD04-GW061720	F154-06I	3.40	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00618	20NAF006	NAF006W	06/17/2012:05	06/18/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAF006WB	NAF006WL	NAF006WC
LAB FILE ID	: 20NAF00610	20NAF00611	20NAF00612
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 06/26/2015:40	06/26/2015:40	06/26/2015:40
PREP BATCH	: NAF006W	NAF006W	NAF006W
CALIBRATION REF	: 20NAF006	20NAF006	20NAF006

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.470	94	0.500	0.469	94	0	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SM4500-NO3E

MATRIX	: WATER	% Moisture: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW02-GW061720	MW02-GW061720MS
LAB SAMPLE ID	: F154-02I	F154-02IM
LAB FILE ID	: 20NAF00614	20NAF00616
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/26/2015:41	06/26/2015:41
PREP BATCH	: NAF006W	NAF006W
CALIBRATION REF	: 20NAF006	20NAF006

ACCESSION:

PARAMETER	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	2.40	2.50	4.95	102	75-125

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F154
METHOD : SM4500-NO3E

MATRIX	: WATER	
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW02-GW061720	MW02-GW061720DUP
LAB SAMPLE ID	: F154-02I	F154-02ID
LAB FILE ID	: 20NAF00614	20NAF00615
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/26/2015:41	06/26/2015:41
PREP BATCH	: NAF006W	NAF006W
CALIBRATION REF	: 20NAF006	20NAF006

ACCESSION:

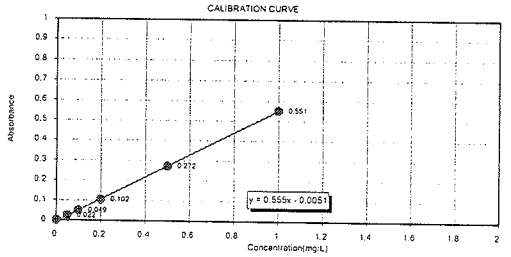
PARAMETER	PSResult (mg/L)	DUPResult (mg/L)	RPD (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	2.40	2.25	6	10

PS: Parent Sample DUP: Sample Duplicate

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAF00601	S0	0	543NM	0	6/26/20 14:58	0.009229633	ND
20NAF00602	S1	0.05	543NM	0.022	6/26/20 14:58	0.048869883	98
20NAF00603	S2	0.1	543NM	0.049	6/26/20 14:58	0.09751928	98
20NAF00604	S3	0.2	543NM	0.102	6/26/20 14:59	0.193016244	97
20NAF00605	S4	0.5	543NM	0.272	6/26/20 14:59	0.499327262	100
20NAF00606	S5	1	543NM	0.551	6/26/20 14:59	1.002037698	100
20NAF00607	NO2-N Std Check	0.5	543NM	0.251	6/26/20 14:59	0.461488842	92
20NAF00608	ICV	0.5	543NM	0.284	6/26/20 14:59	0.520949217	104
20NAF00609	ICB	0	543NM	0.003	6/26/20 14:59	0.014635122	ND
20NAF00620	CCV1	0.5	543NM	0.269	6/26/20 15:41	0.493921774	99
20NAF00621	CCB1	0	543NM	0	6/26/20 15:42	0.009229633	ND
20NAF00631	CCV2	0.5	543NM	0.257	6/26/20 16:22	0.47229982	94
20NAF00632	CCB2	0	543NM	0	6/26/20 16:22	0.009229633	ND

Reduction Time	Coloring Time
6/26/20 14:12	6/26/20 14:13
6/26/20 14:15	6/26/20 14:16
6/26/20 14:19	6/26/20 14:20
6/26/20 14:22	6/26/20 14:23
6/26/20 14:26	6/26/20 14:27
6/26/20 14:30	6/26/20 14:31
NA	6/26/20 14:31
6/26/20 14:33	6/26/20 14:34
6/26/20 14:39	6/26/20 14:40

InstrumentID: H9



$$FC = [(A * CF) - Y] * DF$$

CF= 1.801829518 Y= -0.00923 r= 0.999900

DL Water(mg/L) 0.01 DL Soil(mg/Kg) 0.1

LOD Water(mg/L) 0.02 LOD Soil(mg/Kg) 0.2

LOQ Water(mg/L) 0.05 LOQ Soil(mg/Kg) 0.5

SOP

☑ EMAX-4500-NO3E Rev. 5

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-15-09	ICAL CCV (mg/L)	10	06/26/20
SW2B-30-15-10	ICV LCS MS Std (mg/L)	10	06/26/20
SW2B-30-16-01	NO2 CHK	10	06/26/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-56-45-03	NH4Cl-EDTA Soln	**	12/22/20
SWP1-54-14-03	HCl	1N	01/14/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	6/26/20 14:03
S1	0.1	20	6/26/20 14:03
S2	0.2	20	6/26/20 14:03
S3	0.4	20	6/26/20 14:03
S4	1	20	6/26/20 14:03
S5	2	20	6/26/20 14:03
ICV	1	20	6/26/20 14:03
CCV	1	20	6/26/20 14:03
NO2 CHK	1	20	6/26/20 14:03
LCS EV	1	20	6/26/20 14:03
MS EV	1	20	6/26/20 14:03

MicropipetteID: 842750082 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-56

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAF00610	NAF006WB	ND	ND	MB Passed
20NAF00611	NAF006WL	0.470	0.5	%R=94
20NAF00612	NAF006WC	0.469	0.5	%R=94

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAF00614	F154-02I	2.40		
20NAF00616	F154-02IM	4.95	2.5	%R=102

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAF00614	F154-02I	2.40		6
20NAF00615	F154-02ID	2.25	2.40	

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.01	6/26/20 10:03
SW1-02-05-11	7.01	7	6/26/20 10:04
SW1-02-05-12	10.02	10.02	6/26/20 10:05
SW1-02-05-08	Check Std (7.96)	7.98	6/26/20 10:06

Reviewed by: VD

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAF00610	NAF006WB	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 15:40	0	1		0.00923	1		VDuran	5.96	8.52	6/26/20 14:42	6/26/20 14:43
20NAF00611	NAF006WL	0.47		mg/L	20	ml	NA	20	543NM	0.256 A	6/26/20 15:40	0	1		0.470498	1		VDuran	5.96	8.52	6/26/20 14:46	6/26/20 14:47
20NAF00612	NAF006WC	0.469		mg/L	20	ml	NA	20	543NM	0.255 A	6/26/20 15:40	0	1		0.468696	1		VDuran	5.96	8.52	6/26/20 14:49	6/26/20 14:50
20NAF00613	F154-01I	2.551		mg/L	20	ml	NA	20	543NM	0.278 A	6/26/20 15:40	0	5		2.550691	5		VDuran	1.43	8.5	6/26/20 14:53	6/26/20 14:54
20NAF00614	F154-02I	2.398		mg/L	20	ml	NA	20	543NM	0.261 A	6/26/20 15:41	0	5		2.397536	5		VDuran	1.38	8.55	6/26/20 14:56	6/26/20 14:57
20NAF00615	F154-02ID	2.253		mg/L	20	ml	NA	20	543NM	0.245 A	6/26/20 15:41	0	5		2.253389	5		VDuran	1.38	8.55	6/26/20 15:00	6/26/20 15:01
20NAF00616	F154-02IM	4.947		mg/L	20	ml	NA	20	543NM	0.544 A	6/26/20 15:41	0	5		4.947124	5		VDuran	1.38	8.55	6/26/20 15:03	6/26/20 15:04
20NAF00617	F154-05I	3.253		mg/L	20	ml	NA	20	543NM	0.356 A	6/26/20 15:41	0	5		3.253405	5		VDuran	1.38	8.47	6/26/20 15:07	6/26/20 15:08
20NAF00618	F154-06I	3.398		mg/L	20	ml	NA	20	543NM	0.372 A	6/26/20 15:41	0	5		3.397551	5		VDuran	1.43	8.55	6/26/20 15:10	6/26/20 15:11
20NAF00619	F155-01I	3.776		mg/L	20	ml	NA	20	543NM	0.414 A	6/26/20 15:41	0	5		3.775935	5		VDuran	1.37	8.55	6/26/20 15:13	6/26/20 15:14
20NAF00620	CCV1	0.494		mg/L	20	ml	NA	20	543NM	0.269 A	6/26/20 15:41	0	1		0.493922	1		VDuran			6/26/20 15:18	6/26/20 15:19
20NAF00621	CCB1	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 15:42	0	1		0.00923	1		VDuran			6/26/20 15:21	6/26/20 15:22
20NAF00622	F155-02I	3.524		mg/L	20	ml	NA	20	543NM	0.386 A	6/26/20 16:21	0	5		3.523679	5		VDuran	1.32	8.48	6/26/20 15:24	6/26/20 15:25
20NAF00623	F164-01I	8.273		mg/L	20	ml	NA	20	543NM	0.454 A	6/26/20 16:21	0	10		8.272602	10		VDuran	1.38	8.55	6/26/20 15:28	6/26/20 15:29
20NAF00624	F421-01	0.177		mg/L	20	ml	NA	20	543NM	0.093 A	6/26/20 16:21	0	1		0.1768	1		VDuran	1.33	8.54	6/26/20 15:31	6/26/20 15:32
20NAF00625	F421-02	0.0705		mg/L	20	ml	NA	20	543NM	0.034 A	6/26/20 16:22	0	1		0.070492	1		VDuran	1.24	8.51	6/26/20 15:35	6/26/20 15:36
20NAF00626	F422-01	0.0579		mg/L	20	ml	NA	20	543NM	0.027 A	6/26/20 16:22	0	1		0.057879	1		VDuran	1.2	8.52	6/26/20 15:38	6/26/20 15:39
20NAF00627	F457-01	0.0543		mg/L	20	ml	NA	20	543NM	0.025 A	6/26/20 16:22	0	1		0.054275	1		VDuran	1.21	8.55	6/26/20 15:42	6/26/20 15:43
20NAF00628	F458-01	0.0615		mg/L	20	ml	NA	20	543NM	0.029 A	6/26/20 16:22	0	1		0.061483	1		VDuran	1.47	8.52	6/26/20 15:45	6/26/20 15:46
20NAF00629	F459-01	0.0525		mg/L	20	ml	NA	20	543NM	0.024 A	6/26/20 16:22	0	1		0.052474	1		VDuran	1.37	8.46	6/26/20 15:49	6/26/20 15:50
20NAF00630	F460-01	0.0543		mg/L	20	ml	NA	20	543NM	0.025 A	6/26/20 16:22	0	1		0.054275	1		VDuran	1.31	8.5	6/26/20 15:52	6/26/20 15:53
20NAF00631	CCV2	0.472		mg/L	20	ml	NA	20	543NM	0.257 A	6/26/20 16:22	0	1		0.4723	1		VDuran			6/26/20 15:55	6/26/20 15:56
20NAF00632	CCB2	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 16:22	0	1		0.00923	1		VDuran			6/26/20 16:00	6/26/20 16:01

Reviewed by: VD 6/26/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F154

METHOD SW9060
TOC

A total of four(4) water samples were received on 06/18/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. TCG001WB and TCG002WB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. TCG001WL/TCG001WC and TCG002WL/TCG002WC were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Total Organic Carbon was within MS QC limits in F154-02M/F154-02S. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F154

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG001WB	ND	1	NA	1.00	0.250	07/08/2016:53	NA	TCG002-05	TCG002-02	TCG001W	NA	NA
LCS1W	TCG001WL	24.1	1	NA	1.00	0.250	07/08/2017:09	NA	TCG002-06	TCG002-02	TCG001W	NA	NA
LCD1W	TCG001WC	24.2	1	NA	1.00	0.250	07/08/2017:25	NA	TCG002-07	TCG002-02	TCG001W	NA	NA
LCS2W	TCG001WX	24.2	1	NA	1.00	0.250	07/08/2017:41	NA	TCG002-08	TCG002-02	TCG001W	NA	NA
LCD2W	TCG001WY	24.2	1	NA	1.00	0.250	07/08/2017:57	NA	TCG002-09	TCG002-02	TCG001W	NA	NA
MW20S-GW061720	F154-01	2.11	1	NA	1.00	0.250	07/08/2018:42	NA	TCG002-12	TCG002-02	TCG001W	06/17/2011:02	06/18/20
MW20D-GW061720	F154-05	0.405J	1	NA	1.00	0.250	07/08/2018:57	NA	TCG002-13	TCG002-02	TCG001W	06/17/2011:40	06/18/20
MBLK2W	TCG002WB	ND	1	NA	1.00	0.250	07/09/2014:03	NA	TCG003-05	TCG003-02	TCG002W	NA	NA
LCS3W	TCG002WL	24.6	1	NA	1.00	0.250	07/09/2014:19	NA	TCG003-06	TCG003-02	TCG002W	NA	NA
LCD3W	TCG002WC	24.6	1	NA	1.00	0.250	07/09/2014:36	NA	TCG003-07	TCG003-02	TCG002W	NA	NA
MW02-GW061720	F154-02	0.524J	1	NA	1.00	0.250	07/09/2015:06	NA	TCG003-09	TCG003-02	TCG002W	06/17/2011:35	06/18/20
MW02-GW061720DUP	F154-02D	0.486J	1	NA	1.00	0.250	07/09/2015:21	NA	TCG003-10	TCG003-02	TCG002W	06/17/2011:35	06/18/20
MW02-GW061720MS	F154-02M	23.1	1	NA	1.00	0.250	07/09/2015:37	NA	TCG003-11	TCG003-02	TCG002W	06/17/2011:35	06/18/20
MW02-GW061720MSD	F154-02S	23.4	1	NA	1.00	0.250	07/09/2015:53	NA	TCG003-12	TCG003-02	TCG002W	06/17/2011:35	06/18/20
FD04-GW061720	F154-06	0.446J	1	NA	1.00	0.250	07/09/2016:08	NA	TCG003-13	TCG003-02	TCG002W	06/17/2012:05	06/18/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW9060

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: TCG001WB TCG001WL TCG001WC
LAB FILE ID: TCG002-05 TCG002-06 TCG002-07
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA
DATE ANALYZED: 07/08/2016:53 07/08/2017:09 07/08/2017:25 DATE RECEIVED: NA
PREP. BATCH: TCG001W TCG001W TCG001W
CALIB. REF: TCG002-02 TCG002-02 TCG002-02

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.1	96	25	24.2	97	1	80-120	20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK2W				
LAB SAMP ID:	TCG002WB	TCG002WL	TCG002WC		
LAB FILE ID:	TCG003-05	TCG003-06	TCG003-07		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/09/2014:03	07/09/2014:19	07/09/2014:36	DATE RECEIVED:	NA
PREP. BATCH:	TCG002W	TCG002W	TCG002W		
CALIB. REF:	TCG003-02	TCG003-02	TCG003-02		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.6	98	25	24.6	98	0	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW9060

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MW02-GW061720
EMAX SAMP ID: F154-02 F154-02D
LAB FILE ID: TCG003-09 TCG003-10
DATE EXTRACTED: NA NA DATE COLLECTED: 06/17/20 11:35
DATE ANALYZED: 07/09/2015:06 07/09/2015:21 DATE RECEIVED: 06/18/20
PREP. BATCH: TCG002W TCG002W
CALIB. REF: TCG003-02 TCG003-02

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Total Organic Carbon	0.524J	0.486J	NA	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F154
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW02-GW061720				
LAB SAMP ID:	F154-02	F154-02M	F154-02S		
LAB FILE ID:	TCG003-09	TCG003-11	TCG003-12		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	06/17/20 11:35
DATE ANALYZED:	07/09/2015:06	07/09/2015:37	07/09/2015:53	DATE RECEIVED:	06/18/20
PREP. BATCH:	TCG002W	TCG002W	TCG002W		
CALIB. REF:	TCG003-02	TCG003-02	TCG003-02		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	0.524J	25	23.1	91	25	23.4	92	1	80-120	20

	Date	Time
Start	07/08/20	12:21
End	07/08/20	19:41

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☐ Sample was filtered. Filter ID:

Comments: TCG001W: F155
F154
Rerun samples after CCB1. Instrument error.

Reagent Water ID #: RW1-19-003

pH Strips Lot #: HC995032

2 M HCl SWP1-50-35-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☑ 439350020

Micropipette ID: ☑ 539360056

Micropipette ID: ☑ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG001

Method File: TCG002

Analytical Batch: TCG001W

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RW1-19-003	0
S1	SWTB-01-18-03	1
S2	↓	5
S3		10
S4		40
S5		80
S6	—	—
ICV/LCS	SWTB-01-18-05	25
CCV	SWTB-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WZ

Date: 07/08/20

	Type	Analysis	Sample Name	Sample ID	Dilution	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG002-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG002-02	1.000	NPOC:25.29 mg/L	
3	Unknown	NPOC	ICB	TCG002-03	1.000	NPOC:0.06258 mg	
4	Unknown	NPOC	HCO3/CO3	TCG002-04	1.000	NPOC:0.07252 mg	
5	Unknown	NPOC	TCG001WB	TCG002-05	1.000	NPOC:0.06301 mg	
6	Unknown	NPOC	TCG001WL	TCG002-06	1.000	NPOC:24.10 mg/L	
7	Unknown	NPOC	TCG001WC	TCG002-07	1.000	NPOC:24.23 mg/L	
8	Unknown	NPOC	TCG001WX	TCG002-08	1.000	NPOC:24.24 mg/L	
9	Unknown	NPOC	TCG001WY	TCG002-09	1.000	NPOC:24.15 mg/L	
10	Unknown	NPOC	F155-01	TCG002-10	1.000	NPOC:0.5521 mg/	PH<2
11	Unknown	NPOC	F155-02	TCG002-11	1.000	NPOC:0.5205 mg/	PH<2
12	Unknown	NPOC	F154-01	TCG002-12	1.000	NPOC:2.108 mg/L	PH<2
13	Unknown	NPOC	F154-05	TCG002-13	1.000	NPOC:0.4052 mg/	PH<2
14	Control	NPOC	CCV1	TCG002-14	1.000	NPOC:25.26 mg/L	
15	Unknown	NPOC	CCB1	TCG002-15	1.000	NPOC:0.3509 mg/	
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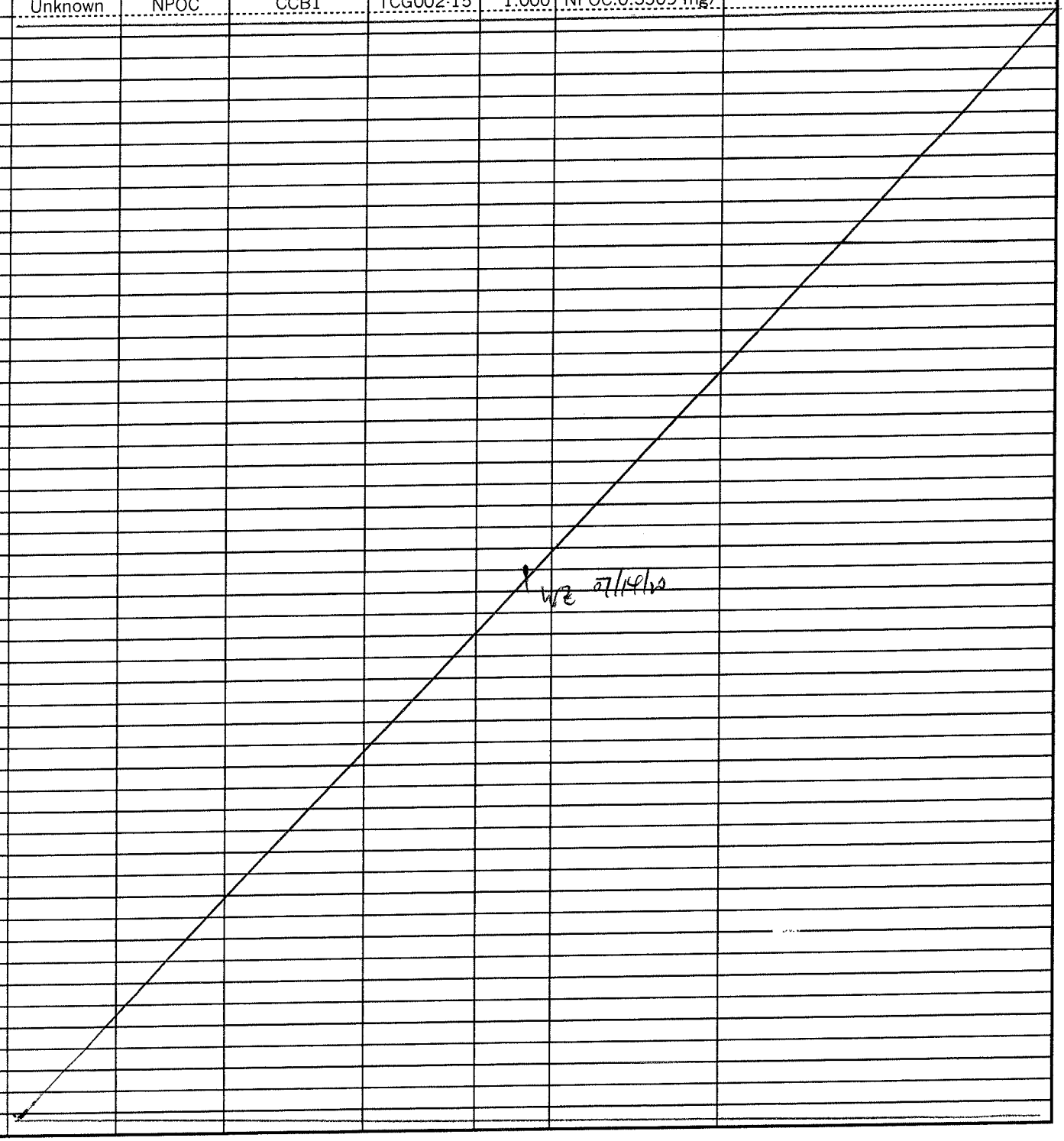


Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

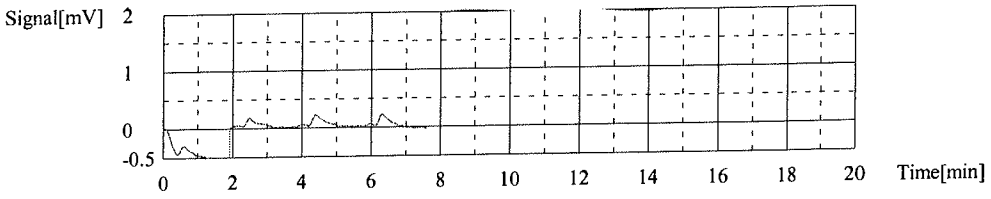
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG002-01
Cal. Curve:	TCG002.2020_07_08_12_13_06.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.2306	50uL	1	*******		07/08/20 12:21:29 PM
2	0.1897	50uL	1	*******		07/08/20 12:23:34 PM
3	0.2948	50uL	1	*******		07/08/20 12:25:38 PM
4	0.4008	50uL	1	*******		07/08/20 12:27:43 PM

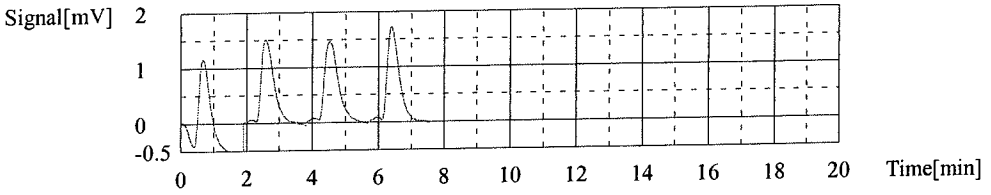
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 0.2790



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.737	50uL	1	*******		07/08/20 12:36:28 PM
2	3.853	50uL	1	*******		07/08/20 12:38:33 PM
3	4.080	50uL	1	*******		07/08/20 12:40:37 PM
4	4.150	50uL	1	*******		07/08/20 12:42:42 PM

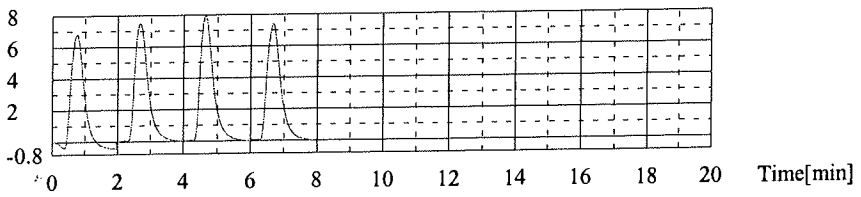
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 3.955



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.24	50uL	1	*******		07/08/20 12:51:25 PM
2	20.98	50uL	1	*******		07/08/20 12:53:35 PM
3	21.12	50uL	1	*******		07/08/20 12:55:43 PM
4	20.98	50uL	1	*******		07/08/20 12:57:55 PM

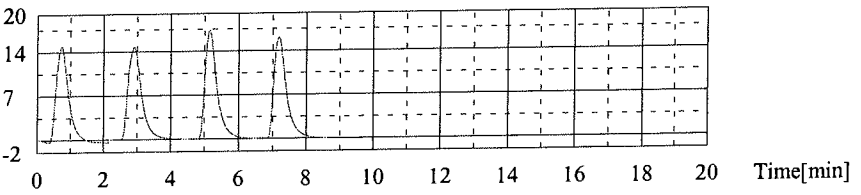
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.83



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	40.82	50uL	1	*******		07/08/20 01:06:57 PM
2	42.00	50uL	1	*******		07/08/20 01:09:26 PM
3	42.42	50uL	1	*******		07/08/20 01:11:37 PM
4	42.07	50uL	1	*******		07/08/20 01:13:57 PM

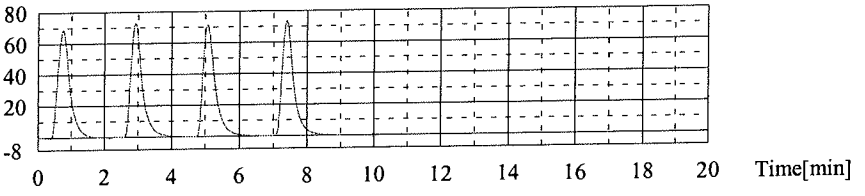
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 41.83



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	177.7	50uL	1	*******		07/08/20 01:22:58 PM
2	175.5	50uL	1	*******		07/08/20 01:25:19 PM
3	176.3	50uL	1	*******		07/08/20 01:27:47 PM
4	177.6	50uL	1	*******		07/08/20 01:30:18 PM

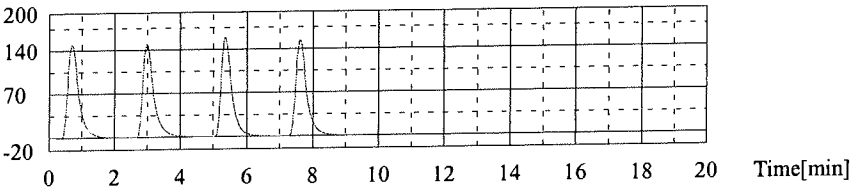
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 176.8



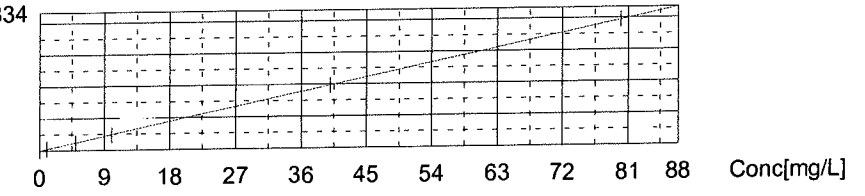
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	358.8	50uL	1	*******		07/08/20 01:39:31 PM
2	353.9	50uL	1	*******		07/08/20 01:42:04 PM
3	350.9	50uL	1	*******		07/08/20 01:44:28 PM
4	354.4	50uL	1	*******		07/08/20 01:46:57 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 354.5



Slope: 4.441
Intercept 0.000
r^2 0.999954



Control Sample

Sample Name: ICV
Sample ID: TCG002-02
Method: TCG002.tpl
Chk. Result Control value: 25.29 / Control exceeds range!

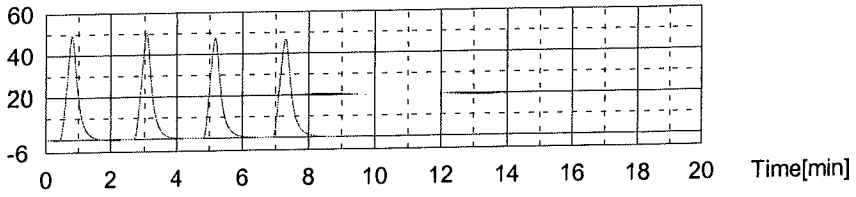
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.29 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.2	25.49mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 01:56:15 PM
2	112.3	25.29mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 01:58:34 PM
3	110.8	24.95mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 02:00:51 PM
4	112.9	25.42mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 02:03:19 PM

Mean Area 112.3
Mean Conc. 25.29mg/L



Sample

Sample Name: ICB
Sample ID: TCG002-03
Origin: TCG002.cal
Chk. Result

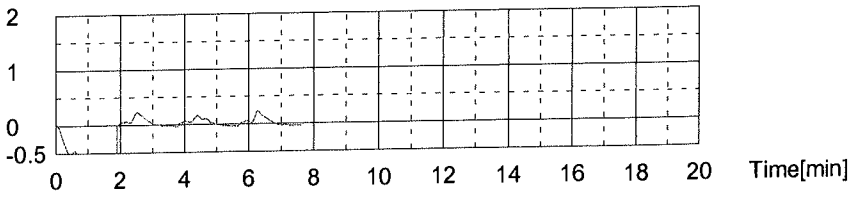
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06258 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.000	0.000mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:17:11 PM
2	0.4314	0.09713mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:19:15 PM
3	0.2664	0.05998mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:21:20 PM
4	0.4140	0.09322mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:23:24 PM

Mean Area 0.2780
Mean Conc. 0.06258mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG002-04
Origin: TCG002.cal
Chk. Result

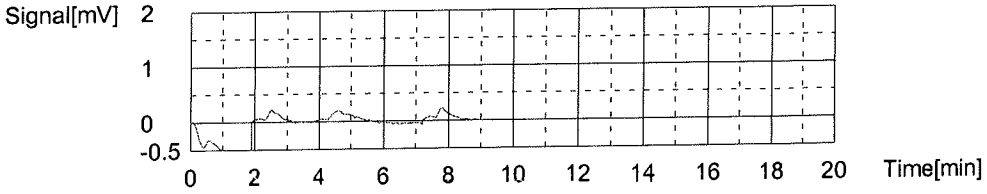
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.07252 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2099	0.04726mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:32:02 PM
2	0.3578	0.08056mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:34:06 PM
3	0.3786	0.08525mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:36:10 PM
4	0.3420	0.07700mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:38:15 PM

Mean Area 0.3221
Mean Conc. 0.07252mg/L



Sample

Sample Name: TCG001WB
Sample ID: TCG002-05
Origin: TCG002.cal
Chk. Result

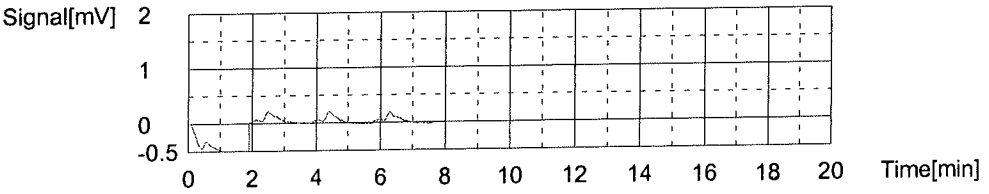
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06301 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.1716	0.03864mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:46:50 PM
2	0.3146	0.07084mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:48:54 PM
3	0.3256	0.07331mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:50:59 PM
4	0.3076	0.06926mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:53:03 PM

Mean Area 0.2798
Mean Conc. 0.06301mg/L



Sample

Sample Name: TCG001WL
Sample ID: TCG002-06
Origin: TCG002.cal
Chk. Result

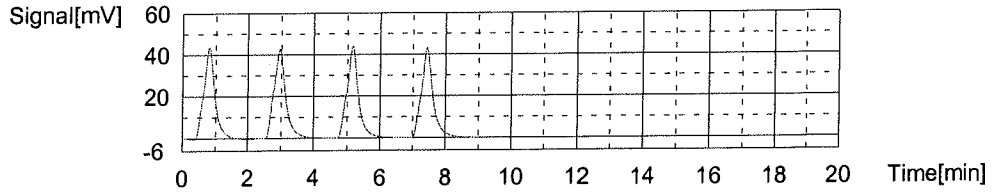
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.10 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.7	24.02mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:02:00 PM
2	106.6	24.00mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:04:22 PM
3	107.3	24.16mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:06:48 PM
4	107.5	24.20mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:09:16 PM

Mean Area 107.0
Mean Conc. 24.10mg/L



Sample

Sample Name: TCG001WC
Sample ID: TCG002-07
Origin: TCG002.cal
Chk. Result

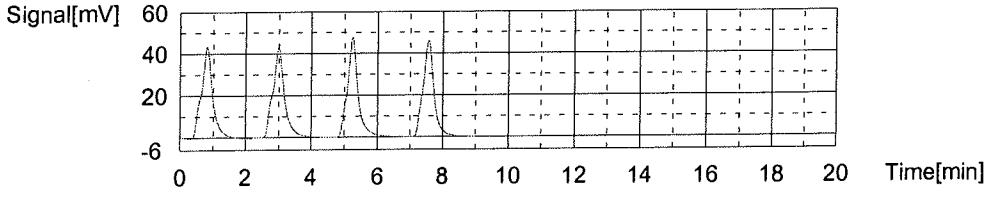
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.23 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.5	23.98mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:18:09 PM
2	107.1	24.11mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:20:35 PM
3	108.3	24.38mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:23:03 PM
4	108.6	24.45mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:25:27 PM

Mean Area 107.6
Mean Conc. 24.23mg/L



Sample

Sample Name: TCG001WX
Sample ID: TCG002-08
Origin: TCG002.cal
Chk. Result

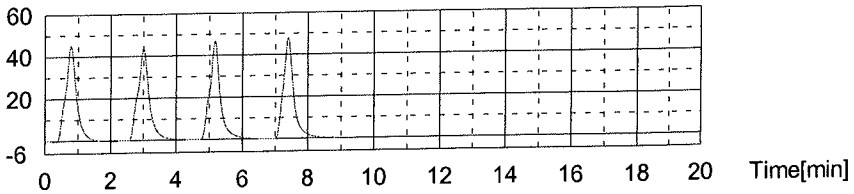
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.24 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.1	24.11mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:34:26 PM
2	106.7	24.02mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:36:47 PM
3	108.2	24.36mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:39:12 PM
4	108.7	24.47mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:41:36 PM

Mean Area 107.7
Mean Conc. 24.24mg/L



Sample

Sample Name: TCG001WY
Sample ID: TCG002-09
Origin: TCG002.cal
Chk. Result

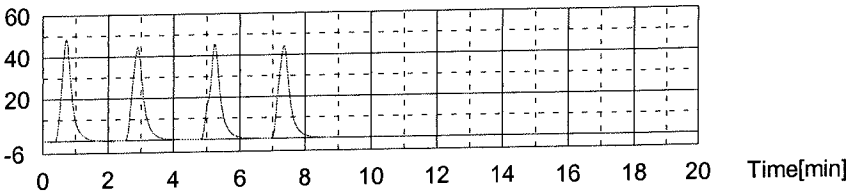
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.15 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.3	23.93mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:50:38 PM
2	106.5	23.98mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:53:06 PM
3	107.7	24.25mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:55:25 PM
4	108.6	24.45mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:57:44 PM

Mean Area 107.3
Mean Conc. 24.15mg/L



Sample

Sample Name: F155-01
Sample ID: TCG002-10
Origin: TCG002.cal
Chk. Result

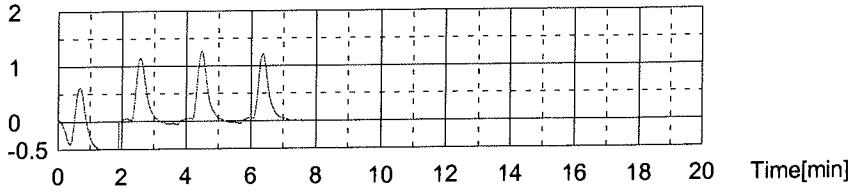
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5521 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.282	0.5138mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:06:30 PM
2	2.446	0.5507mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:08:35 PM
3	2.635	0.5933mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:10:39 PM
4	2.446	0.5507mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:12:43 PM

Mean Area 2.452
Mean Conc. 0.5521mg/L



Sample

Sample Name: F155-02
Sample ID: TCG002-11
Origin: TCG002.cal
Chk. Result

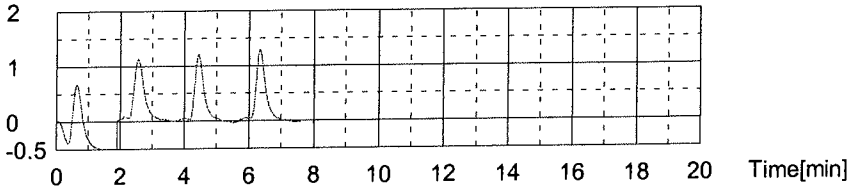
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5205 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.976	0.4449mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:21:29 PM
2	2.459	0.5537mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:23:34 PM
3	2.393	0.5388mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:25:38 PM
4	2.418	0.5444mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:27:43 PM

Mean Area 2.312
Mean Conc. 0.5205mg/L



Sample

Sample Name: F154-01
Sample ID: TCG002-12
Origin: TCG002.cal
Chk. Result

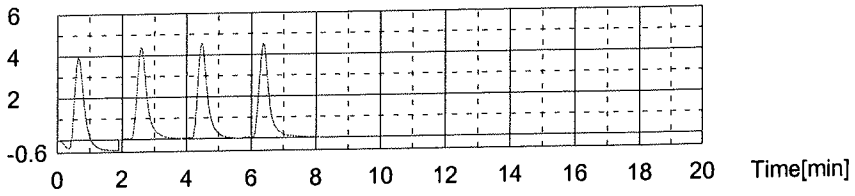
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.108 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.985	2.023mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:36:28 PM
2	9.349	2.105mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:38:32 PM
3	9.508	2.141mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:40:37 PM
4	9.610	2.164mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:42:41 PM

Mean Area 9.363
Mean Conc. 2.108mg/L



Sample

Sample Name: F154-05
Sample ID: TCG002-13
Origin: TCG002.cal
Chk. Result

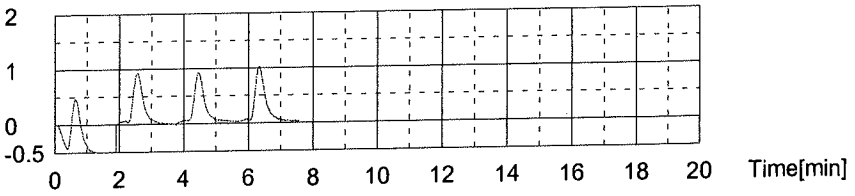
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4052 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.678	0.3778mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:51:27 PM
2	1.815	0.4087mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:53:31 PM
3	1.720	0.3873mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:55:36 PM
4	1.985	0.4469mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:57:40 PM

Mean Area 1.800
Mean Conc. 0.4052mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG002-14
Method: TCG002.tpl
Chk. Result Control value: 25.26 / Control exceeds range!

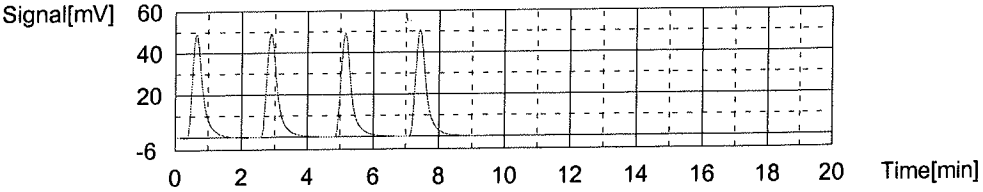
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.26 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.8	25.17mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:06:45 PM
2	111.4	25.08mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:09:11 PM
3	112.2	25.26mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:11:39 PM
4	113.3	25.51mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:14:05 PM

Mean Area 112.2
Mean Conc. 25.26mg/L



Sample

Sample Name: CCB1
Sample ID: TCG002-15
Origin: TCG002.cal
Chk. Result

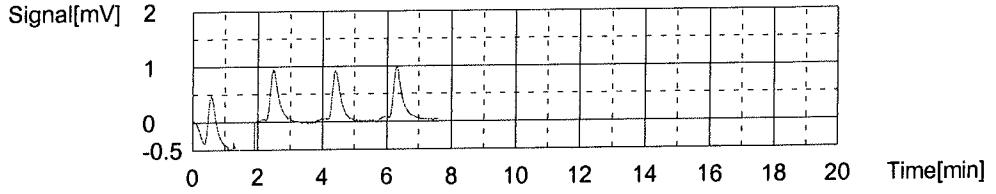
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3509 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.403	0.3159mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:35:37 PM
2	1.597	0.3596mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:37:41 PM
3	1.511	0.3402mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:39:46 PM
4	1.723	0.3879mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:41:50 PM

Mean Area 1.559
Mean Conc. 0.3509mg/L



ANALYSIS RUN LOG
for
TOC

	Date	Time
Start	07/09/20	11:23
End	07/09/20	22:24

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☐ Sample was filtered. Filter ID:

Comments:

TCG002W : 20F164
20F154
20F160
20F170

Reagent Water ID #: RWI-19-003

pH Strips Lot #: HC998032

2 M HCl SVPI-50-35-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☑ 439350020

Micropipette ID: ☑ 539360056

Micropipette ID: ☑ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG003

Method File: TCG003

Analytical Batch: ~~TCG002W~~ WT 7/9/20 TCG002W

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RWI-19-003	0
S1	SW7B-01-18-03	1
S2	↓	5
S3		10
S4		40
S5		50
S6	—	—
ICV/LCS	SW7B-01-18-05	25
CCV	SW7B-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WT

Date: 7/9/20

	Type	Analysis	Sample Name	Sample ID	Dilution	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG003-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG003-02	1.000	NPOC:24.88 mg/L	
3	Unknown	NPOC	ICB	TCG003-03	1.000	NPOC:0.2118 mg/	
4	Unknown	NPOC	HCO3/CO3	TCG003-04	1.000	NPOC:0.1567 mg/	
5	Unknown	NPOC	TCG002WB	TCG003-05	1.000	NPOC:0.1948 mg/	
6	Unknown	NPOC	TCG002WL	TCG003-06	1.000	NPOC:24.58 mg/L	
7	Unknown	NPOC	TCG002WC	TCG003-07	1.000	NPOC:24.56 mg/L	
8	Unknown	NPOC	F164-01	TCG003-08	1.000	NPOC:1.068 mg/L	PH<2
9	Unknown	NPOC	F154-02	TCG003-09	1.000	NPOC:0.5243 mg/	PH<2
10	Unknown	NPOC	F154-02D	TCG003-10	1.000	NPOC:0.4863 mg/	PH<2
11	Unknown	NPOC	F154-02M	TCG003-11	1.000	NPOC:23.15 mg/L	PH<2
12	Unknown	NPOC	F154-02S	TCG003-12	1.000	NPOC:23.42 mg/L	PH<2
13	Unknown	NPOC	F154-06	TCG003-13	1.000	NPOC:0.4463 mg/	PH<2
14	Control	NPOC	CCV1	TCG003-14	1.000	NPOC:24.18 mg/L	
15	Unknown	NPOC	CCB1	TCG003-15	1.000	NPOC:0.3062 mg/	
16	Unknown	NPOC	F160-01	TCG003-16	1.000	NPOC:1.214 mg/L	PH<2
17	Unknown	NPOC	F160-01D	TCG003-17	1.000	NPOC:1.224 mg/L	PH<2
18	Unknown	NPOC	F160-01M	TCG003-18	1.000	NPOC:24.47 mg/L	PH<2
19	Unknown	NPOC	F160-01S	TCG003-19	1.000	NPOC:24.55 mg/L	PH<2
20	Unknown	NPOC	F160-02	TCG003-20	1.000	NPOC:1.529 mg/L	PH<2
21	Unknown	NPOC	F160-04	TCG003-21	1.000	NPOC:22.56 mg/L	PH<2
22	Unknown	NPOC	F160-06	TCG003-22	1.000	NPOC:0.4672 mg/	PH<2
23	Unknown	NPOC	F160-07	TCG003-23	1.000	NPOC:0.4601 mg/	PH<2
24	Unknown	NPOC	F160-08	TCG003-24	1.000	NPOC:1.644 mg/L	PH<2
25	Unknown	NPOC	F160-09	TCG003-25	1.000	NPOC:1.669 mg/L	PH<2
26	Control	NPOC	CCV2	TCG003-26	1.000	NPOC:24.57 mg/L	
27	Unknown	NPOC	CCB2	TCG003-27	1.000	NPOC:0.3199 mg/	
28	Unknown	NPOC	F160-10	TCG003-28	1.000	NPOC:1.214 mg/L	PH<2
29	Unknown	NPOC	F160-11I	TCG003-29	3.000	NPOC:2.313 mg/L	DF=3; ODOR; PH<2
30	Unknown	NPOC	F170-02I	TCG003-30	3.000	NPOC:11.23 mg/L	DF=3; ODOR; PH<2
31	Unknown	NPOC	F170-03	TCG003-31	1.000	NPOC:1.743 mg/L	PH<2
32	Unknown	NPOC	F170-04	TCG003-32	1.000	NPOC:0.4291 mg/	PH<2
33	Unknown	NPOC	F170-05I	TCG003-33	3.000	NPOC:4.547 mg/L	DF=3; ODOR; PH<2
34	Unknown	NPOC	F170-06	TCG003-34	1.000	NPOC:0.4112 mg/	PH<2
35	Control	NPOC	CCV3	TCG003-35	1.000	NPOC:24.52 mg/L	
36	Unknown	NPOC	CCB3	TCG003-36	1.000	NPOC:0.2855 mg/	
37							
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lw2 7/15/20

Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

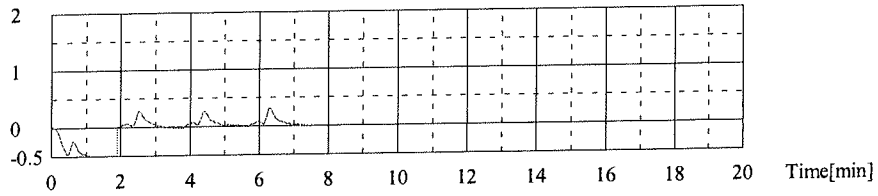
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG003-01
Cal. Curve:	TCG003.2020_07_09_11_15_23.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.2767	50uL	1	*******		07/09/20 11:23:53 AM
2	0.4181	50uL	1	*******		07/09/20 11:25:57 AM
3	0.3740	50uL	1	*******		07/09/20 11:28:01 AM
4	0.4612	50uL	1	*******		07/09/20 11:30:05 AM

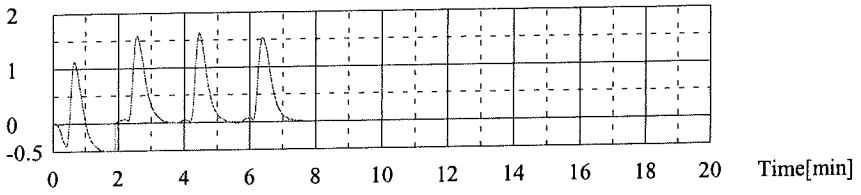
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 0.3825



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.706	50uL	1	*******		07/09/20 11:38:50 AM
2	3.987	50uL	1	*******		07/09/20 11:40:54 AM
3	3.946	50uL	1	*******		07/09/20 11:42:58 AM
4	3.978	50uL	1	*******		07/09/20 11:45:02 AM

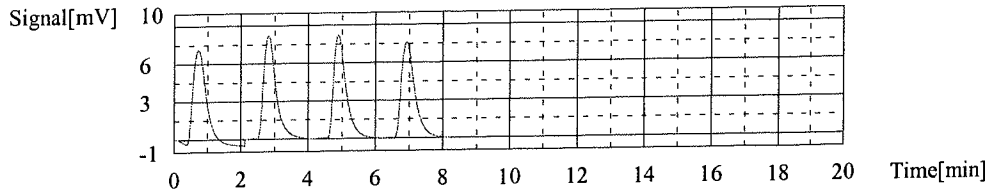
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 3.904



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	21.00	50uL	1	*******		07/09/20 11:54:00 AM
2	21.35	50uL	1	*******		07/09/20 11:56:15 AM
3	21.30	50uL	1	*******		07/09/20 11:58:25 AM
4	21.56	50uL	1	*******		07/09/20 12:00:39 PM

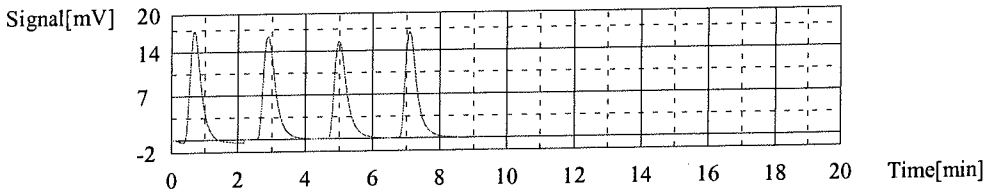
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 21.30



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	42.40	50uL	1	*******		07/09/20 12:09:37 PM
2	43.06	50uL	1	*******		07/09/20 12:11:54 PM
3	41.85	50uL	1	*******		07/09/20 12:14:11 PM
4	42.24	50uL	1	*******		07/09/20 12:16:32 PM

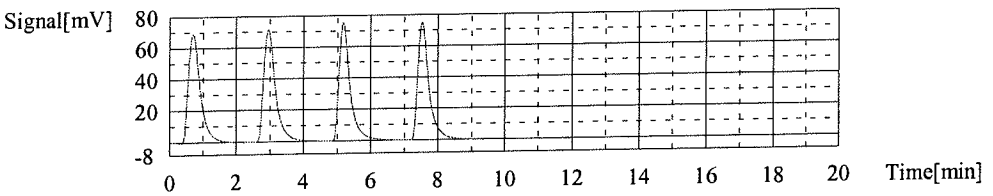
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 42.39



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	175.3	50uL	1	*******		07/09/20 12:25:41 PM
2	178.3	50uL	1	*******		07/09/20 12:28:06 PM
3	176.1	50uL	1	*******		07/09/20 12:30:38 PM
4	178.2	50uL	1	*******		07/09/20 12:33:00 PM

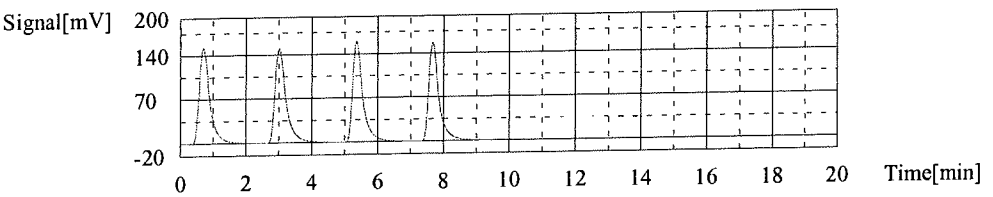
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 177.0



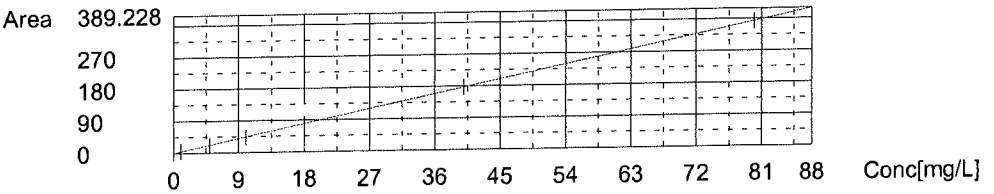
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	354.1	50uL	1	*******		07/09/20 12:42:02 PM
2	356.1	50uL	1	*******		07/09/20 12:44:33 PM
3	352.0	50uL	1	*******		07/09/20 12:47:02 PM
4	350.3	50uL	1	*******		07/09/20 12:49:39 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 353.1



Slope: 4.423
Intercept 0.000
r^2 0.999970



Control Sample

Sample Name: ICV
Sample ID: TCG003-02
Method: TCG003.tpl
Chk. Result Control value: 24.88 / Control exceeds range!

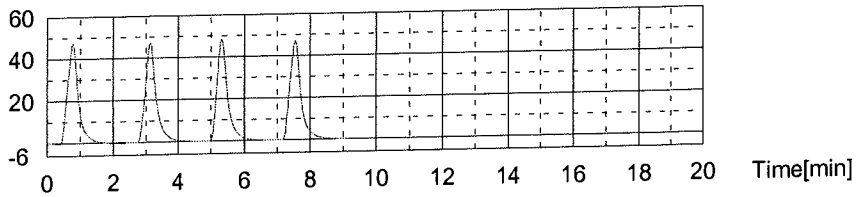
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.88 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.0	25.10mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 12:58:57 PM
2	110.4	24.96mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:01:21 PM
3	108.6	24.55mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:03:43 PM
4	110.1	24.89mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:06:10 PM

Mean Area 110.0
Mean Conc. 24.88mg/L



Sample

Sample Name: ICB
Sample ID: TCG003-03
Origin: TCG003.cal
Chk. Result

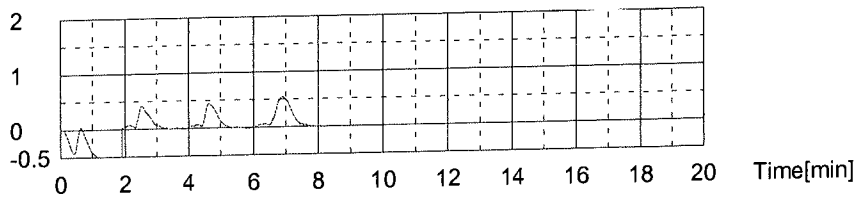
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2118 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9377	0.2120mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:14:50 PM
2	0.9725	0.2199mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:16:54 PM
3	0.8478	0.1917mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:18:57 PM
4	0.9894	0.2237mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:21:01 PM

Mean Area 0.9368
Mean Conc. 0.2118mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG003-04
Origin: TCG003.cal
Chk. Result

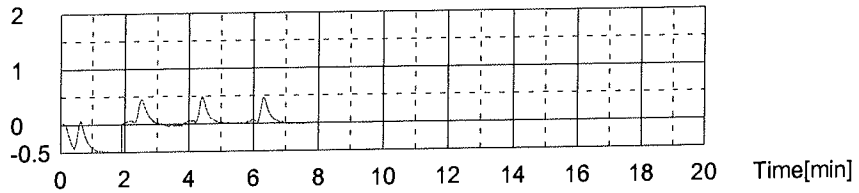
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1567 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7371	0.1666mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:42:33 PM
2	0.6755	0.1527mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:44:37 PM
3	0.6955	0.1572mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:46:41 PM
4	0.6647	0.1503mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:48:45 PM

Mean Area 0.6932
Mean Conc. 0.1567mg/L



Sample

Sample Name: TCG002WB
Sample ID: TCG003-05
Origin: TCG003.cal
Chk. Result

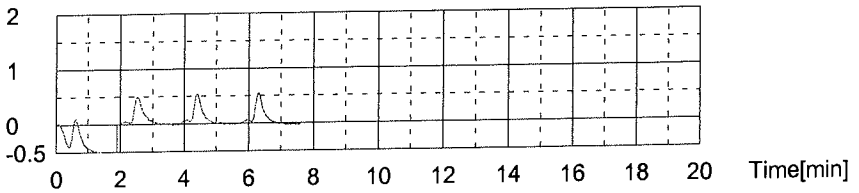
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1948 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8111	0.1834mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:57:31 PM
2	1.022	0.2311mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 01:59:35 PM
3	0.8028	0.1815mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:01:39 PM
4	0.8102	0.1832mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:03:43 PM

Mean Area 0.8615
Mean Conc. 0.1948mg/L



Sample

Sample Name: TCG002WL
Sample ID: TCG003-06
Origin: TCG003.cal
Chk. Result

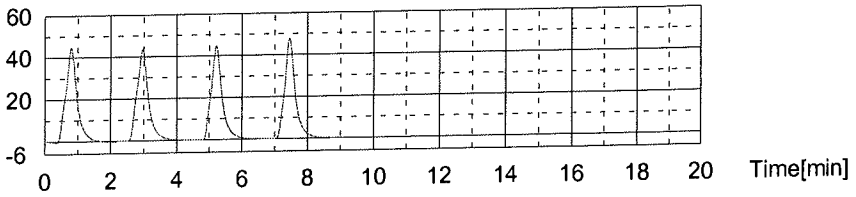
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.58 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.6	24.55mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:12:45 PM
2	108.8	24.60mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:15:11 PM
3	107.7	24.35mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:17:34 PM
4	109.7	24.80mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:19:57 PM

Mean Area 108.7
Mean Conc. 24.58mg/L



Sample

Sample Name: TCG002WC
Sample ID: TCG003-07
Origin: TCG003.cal
Chk. Result

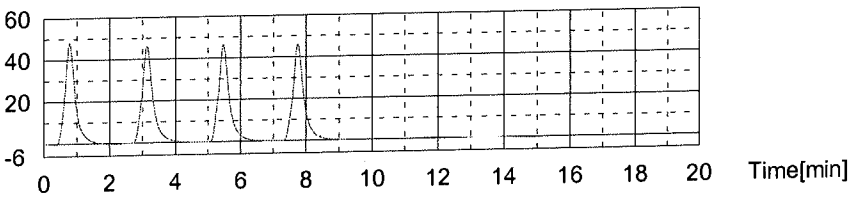
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.56 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.4	24.51mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:28:58 PM
2	109.4	24.73mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:31:30 PM
3	108.7	24.58mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:33:54 PM
4	108.0	24.42mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:36:22 PM

Mean Area 108.6
Mean Conc. 24.56mg/L



Sample

Sample Name: F164-01
Sample ID: TCG003-08
Origin: TCG003.cal
Chk. Result

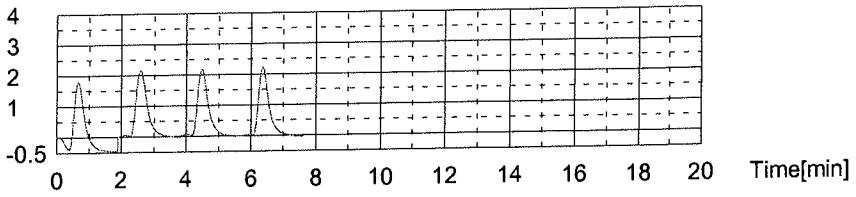
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.068 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.567	1.033mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:45:07 PM
2	4.737	1.071mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:47:11 PM
3	4.726	1.068mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:49:15 PM
4	4.865	1.100mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:51:20 PM

Mean Area 4.724
Mean Conc. 1.068mg/L



Sample

Sample Name: F154-02
Sample ID: TCG003-09
Origin: TCG003.cal
Chk. Result

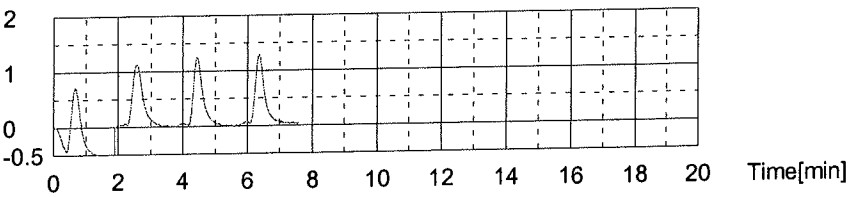
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5243 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.178	0.4924mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 02:59:54 PM
2	2.247	0.5080mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:01:58 PM
3	2.341	0.5293mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:04:02 PM
4	2.510	0.5675mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:06:07 PM

Mean Area 2.319
Mean Conc. 0.5243mg/L



Sample

Sample Name: F154-02D
Sample ID: TCG003-10
Origin: TCG003.cal
Chk. Result

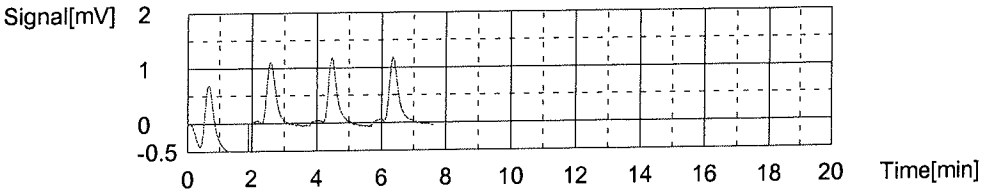
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4863 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.155	0.4872mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:14:52 PM
2	2.113	0.4777mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:16:56 PM
3	2.165	0.4895mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:19:00 PM
4	2.171	0.4908mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:21:04 PM

Mean Area 2.151
Mean Conc. 0.4863mg/L



Sample

Sample Name: F154-02M
Sample ID: TCG003-11
Origin: TCG003.cal
Chk. Result

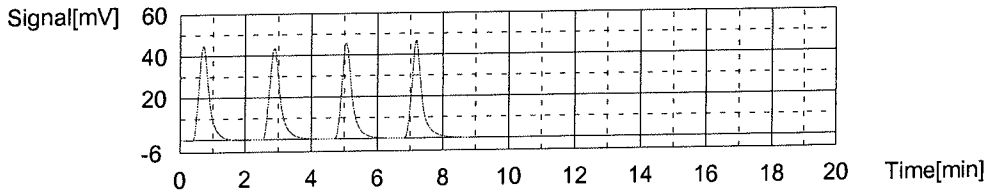
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.15 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.6	23.20mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:30:05 PM
2	102.4	23.15mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:32:27 PM
3	102.2	23.11mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:34:44 PM
4	102.3	23.13mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:37:13 PM

Mean Area 102.4
Mean Conc. 23.15mg/L



Sample

Sample Name: F154-02S
Sample ID: TCG003-12
Origin: TCG003.cal
Chk. Result

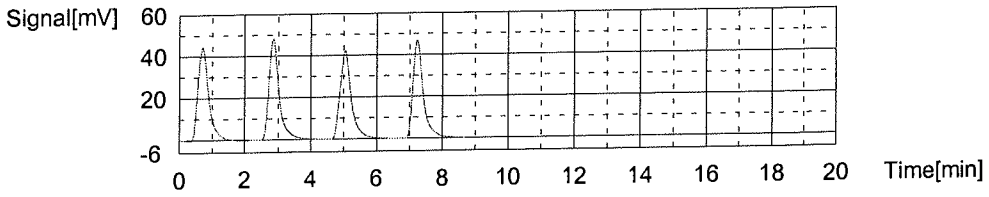
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.42 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.8	23.47mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:46:13 PM
2	103.5	23.40mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:48:31 PM
3	103.4	23.38mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:50:56 PM
4	103.7	23.45mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 03:53:14 PM

Mean Area 103.6
Mean Conc. 23.42mg/L



Sample

Sample Name: F154-06
Sample ID: TCG003-13
Origin: TCG003.cal
Chk. Result

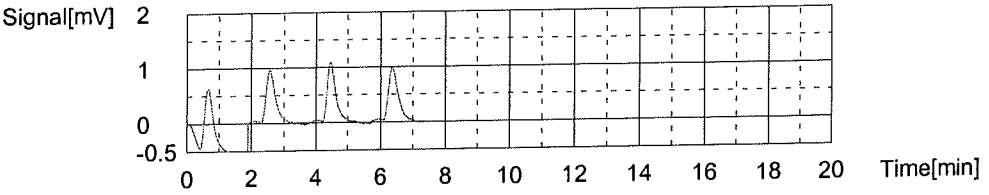
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4463 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.070	0.4680mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:02:00 PM
2	1.896	0.4287mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:04:04 PM
3	1.929	0.4361mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:06:08 PM
4	2.001	0.4524mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:08:12 PM

Mean Area 1.974
Mean Conc. 0.4463mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG003-14
Method: TCG003.tpl
Chk. Result Control value: 24.18 / Control exceeds range!

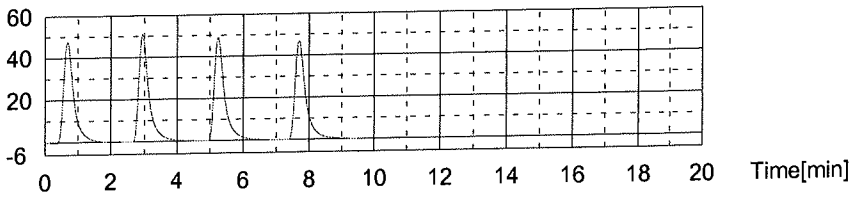
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.18 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.7	24.12mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:17:22 PM
2	108.2	24.46mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:19:49 PM
3	106.0	23.97mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:22:24 PM
4	106.9	24.17mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:25:02 PM

Mean Area 106.9
Mean Conc. 24.18mg/L



Sample

Sample Name: CCB1
Sample ID: TCG003-15
Origin: TCG003.cal
Chk. Result

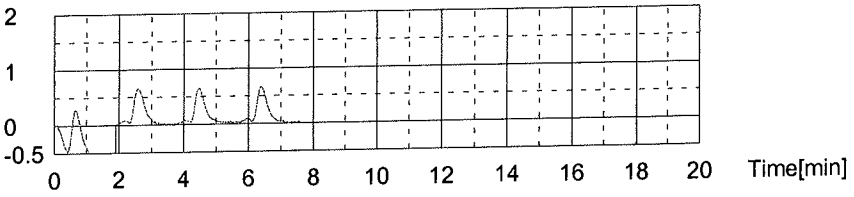
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3062 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.513	0.3421mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:31:49 PM
2	1.263	0.2855mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:33:53 PM
3	1.238	0.2799mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:35:57 PM
4	1.403	0.3172mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 04:38:01 PM

Mean Area 1.354
Mean Conc. 0.3062mg/L



Sample

Sample Name: F160-01
Sample ID: TCG003-16
Origin: TCG003.cal
Chk. Result

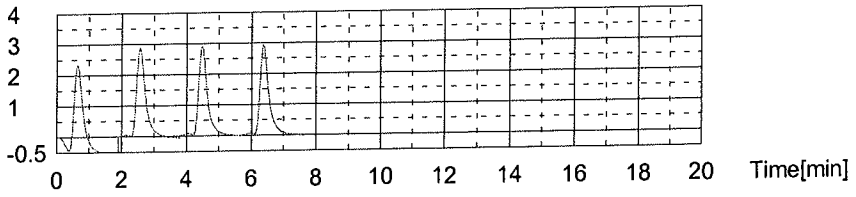
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.214 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.129	1.160mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:01:45 PM
2	5.231	1.183mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:03:49 PM
3	5.479	1.239mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:05:53 PM
4	5.647	1.277mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:07:57 PM

Mean Area 5.371
Mean Conc. 1.214mg/L



Sample

Sample Name: F160-01D
Sample ID: TCG003-17
Origin: TCG003.cal
Chk. Result

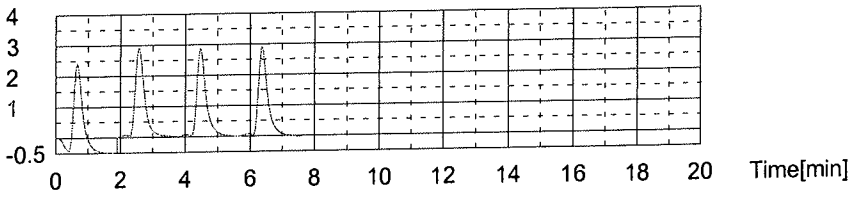
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.224 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.286	1.195mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:16:43 PM
2	5.452	1.233mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:18:47 PM
3	5.437	1.229mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:20:51 PM
4	5.477	1.238mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:22:55 PM

Mean Area 5.413
Mean Conc. 1.224mg/L



Sample

Sample Name: F160-01M
Sample ID: TCG003-18
Origin: TCG003.cal
Chk. Result

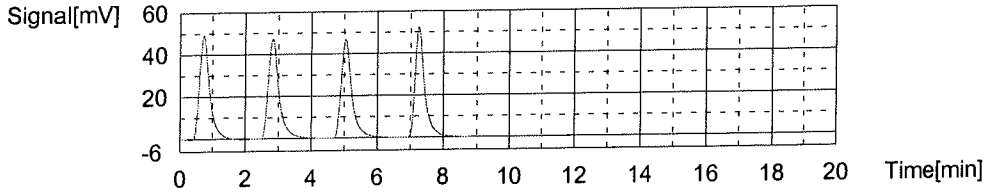
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.47 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.0	24.64mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:31:52 PM
2	108.0	24.42mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:34:14 PM
3	108.0	24.42mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:36:38 PM
4	107.9	24.39mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:39:01 PM

Mean Area 108.2
Mean Conc. 24.47mg/L



Sample

Sample Name: F160-01S
Sample ID: TCG003-19
Origin: TCG003.cal
Chk. Result

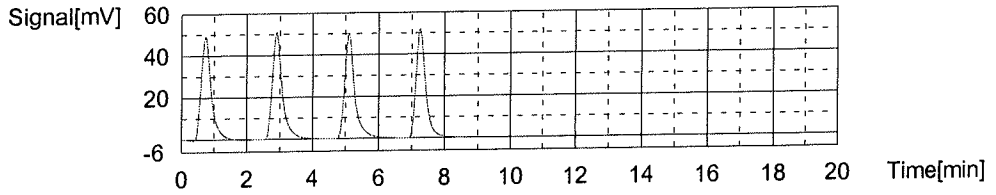
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.55 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.2	24.69mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:48:02 PM
2	109.1	24.67mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:50:24 PM
3	107.9	24.39mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:52:44 PM
4	108.1	24.44mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 05:54:59 PM

Mean Area 108.6
Mean Conc. 24.55mg/L



Sample

Sample Name: F160-02
Sample ID: TCG003-20
Origin: TCG003.cal
Chk. Result

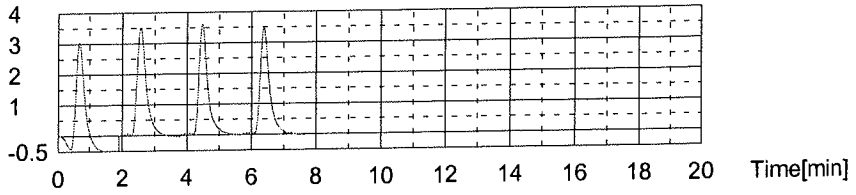
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.529 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.724	1.520mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:03:45 PM
2	6.941	1.569mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:05:49 PM
3	6.682	1.511mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:07:53 PM
4	6.709	1.517mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:09:57 PM

Mean Area 6.764
Mean Conc. 1.529mg/L



Sample

Sample Name: F160-04
Sample ID: TCG003-21
Origin: TCG003.cal
Chk. Result

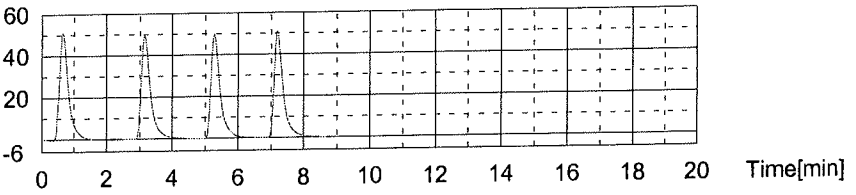
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:22.56 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	101.3	22.90mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:18:48 PM
2	99.22	22.43mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:21:05 PM
3	99.12	22.41mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:23:10 PM
4	99.45	22.48mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:25:26 PM

Mean Area 99.77
Mean Conc. 22.56mg/L



Sample

Sample Name: F160-06
Sample ID: TCG003-22
Origin: TCG003.cal
Chk. Result

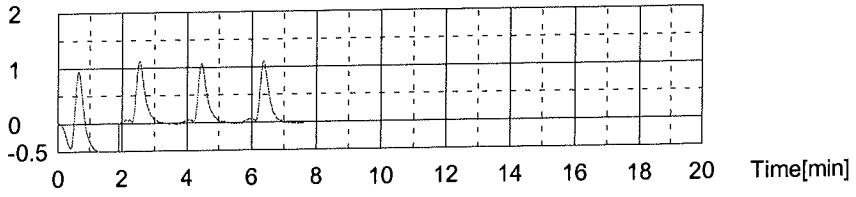
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4672 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.509	0.5673mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:34:12 PM
2	1.919	0.4339mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:36:15 PM
3	1.941	0.4388mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:38:20 PM
4	1.897	0.4289mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:40:23 PM

Mean Area 2.067
Mean Conc. 0.4672mg/L



Sample

Sample Name: F160-07
Sample ID: TCG003-23
Origin: TCG003.cal
Chk. Result

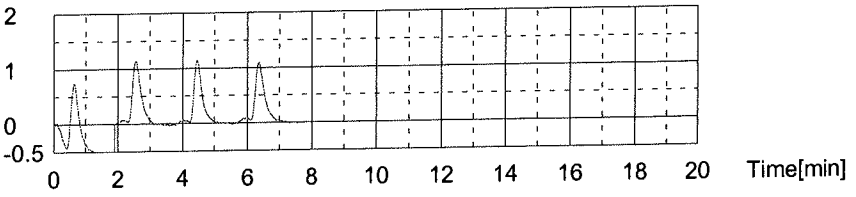
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4601 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.044	0.4621mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:49:09 PM
2	2.009	0.4542mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:51:13 PM
3	2.128	0.4811mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:53:17 PM
4	1.960	0.4431mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 06:55:21 PM

Mean Area 2.035
Mean Conc. 0.4601mg/L



Sample

Sample Name: F160-08
Sample ID: TCG003-24
Origin: TCG003.cal
Chk. Result

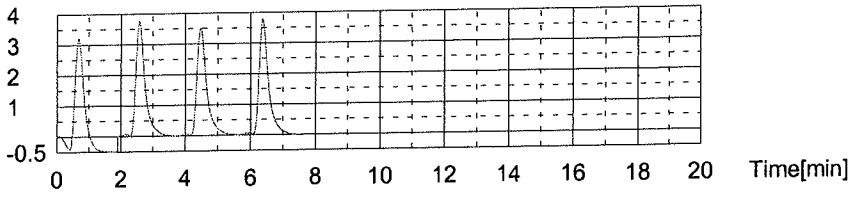
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.644 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.221	1.633mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:04:07 PM
2	7.451	1.685mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:06:11 PM
3	7.064	1.597mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:08:15 PM
4	7.351	1.662mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:10:19 PM

Mean Area 7.272
Mean Conc. 1.644mg/L



Sample

Sample Name: F160-09
Sample ID: TCG003-25
Origin: TCG003.cal
Chk. Result

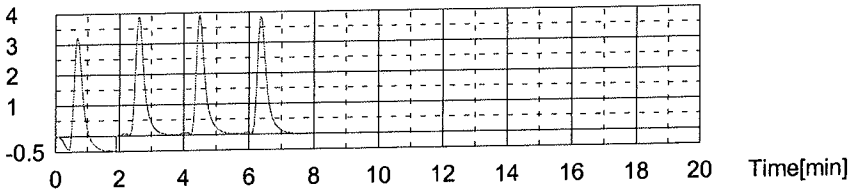
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.669 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.287	1.648mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:19:05 PM
2	7.376	1.668mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:21:09 PM
3	7.386	1.670mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:23:13 PM
4	7.486	1.692mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:25:17 PM

Mean Area 7.384
Mean Conc. 1.669mg/L



Control Sample

Sample Name: CCV2
Sample ID: TCG003-26
Method: TCG003.tpl
Chk. Result: Control value: 24.57 / Control exceeds range!

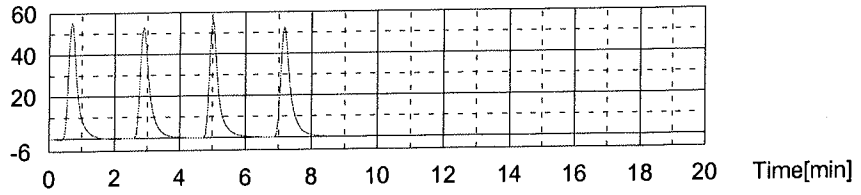
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.57 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.3	24.71mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:34:21 PM
2	109.0	24.64mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:36:39 PM
3	107.3	24.26mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:38:58 PM
4	109.1	24.67mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:41:20 PM

Mean Area 108.7
Mean Conc. 24.57mg/L



Sample

Sample Name: CCB2
Sample ID: TCG003-27
Origin: TCG003.cal
Chk. Result

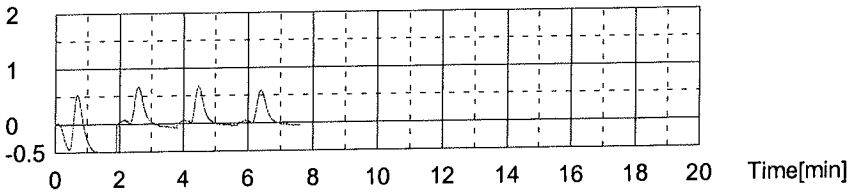
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3199 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.951	0.4411mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:47:52 PM
2	1.234	0.2790mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:49:56 PM
3	1.329	0.3005mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:52:00 PM
4	1.145	0.2589mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 07:54:04 PM

Mean Area 1.415
Mean Conc. 0.3199mg/L



Sample

Sample Name: F160-10
Sample ID: TCG003-28
Origin: TCG003.cal
Chk. Result

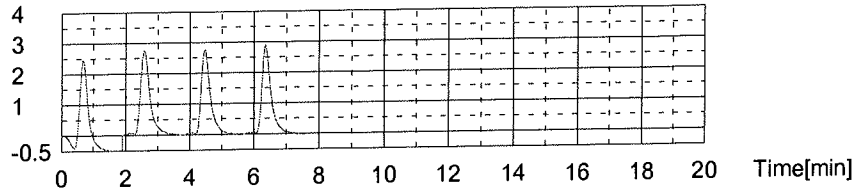
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.214 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.272	1.192mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:17:43 PM
2	5.316	1.202mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:19:47 PM
3	5.378	1.216mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:21:51 PM
4	5.519	1.248mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:23:55 PM

Mean Area 5.371
Mean Conc. 1.214mg/L



Sample

Sample Name: F160-11l
Sample ID: TCG003-29
Origin: TCG003.cal
Chk. Result

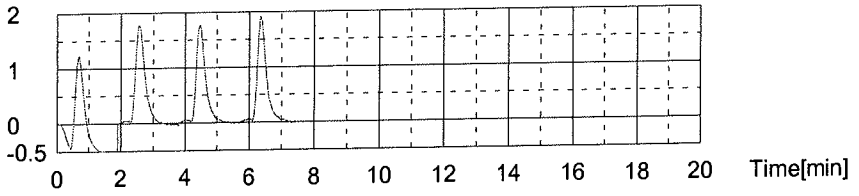
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:2.313 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.277	2.223mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:32:41 PM
2	3.491	2.368mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:34:45 PM
3	3.386	2.297mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:36:49 PM
4	3.485	2.364mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:38:53 PM

Mean Area 3.410
Mean Conc. 2.313mg/L



Sample

Sample Name: F170-02l
Sample ID: TCG003-30
Origin: TCG003.cal
Chk. Result

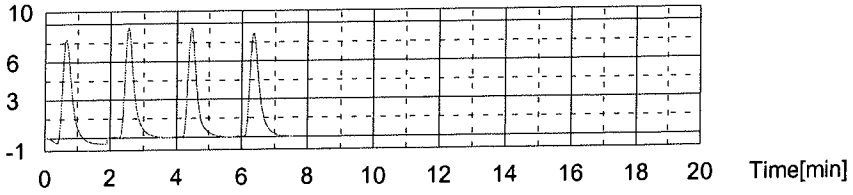
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:11.23 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.88	11.45mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:47:34 PM
2	16.49	11.18mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:49:38 PM
3	16.47	11.17mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:51:42 PM
4	16.36	11.10mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 08:53:46 PM

Mean Area 16.55
Mean Conc. 11.23mg/L



Sample

Sample Name: F170-03
Sample ID: TCG003-31
Origin: TCG003.cal
Chk. Result

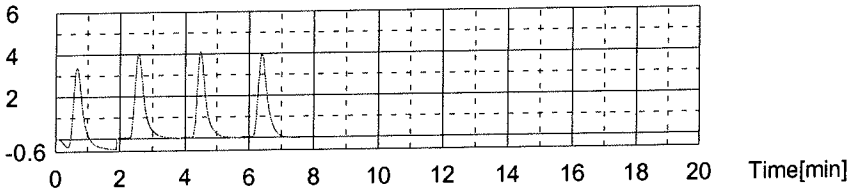
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.743 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.625	1.724mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:02:32 PM
2	7.797	1.763mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:04:36 PM
3	7.695	1.740mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:06:40 PM
4	7.719	1.745mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:08:44 PM

Mean Area 7.709
Mean Conc. 1.743mg/L



Sample

Sample Name: F170-04
Sample ID: TCG003-32
Origin: TCG003.cal
Chk. Result

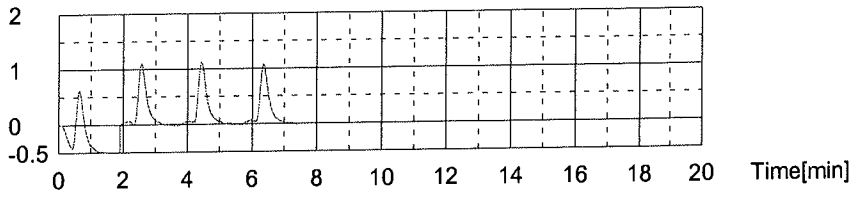
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4291 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.734	0.3920mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:17:30 PM
2	1.859	0.4203mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:19:34 PM
3	1.947	0.4402mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:21:38 PM
4	2.052	0.4639mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:23:42 PM

Mean Area 1.898
Mean Conc. 0.4291mg/L



Sample

Sample Name: F170-05I
Sample ID: TCG003-33
Origin: TCG003.cal
Chk. Result

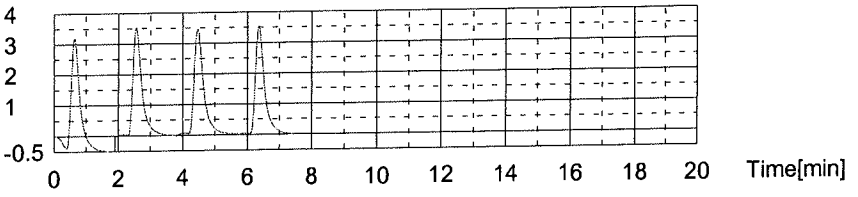
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:4.547 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.549	4.442mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:32:23 PM
2	6.724	4.561mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:34:27 PM
3	6.775	4.595mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:36:31 PM
4	6.768	4.591mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:38:35 PM

Mean Area 6.704
Mean Conc. 4.547mg/L



Sample

Sample Name: F170-06
Sample ID: TCG003-34
Origin: TCG003.cal
Chk. Result

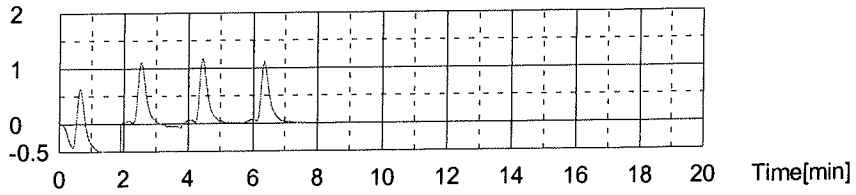
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4112 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.632	0.3690mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:47:21 PM
2	1.902	0.4300mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:49:25 PM
3	1.906	0.4309mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:51:29 PM
4	1.835	0.4149mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 09:53:33 PM

Mean Area 1.819
Mean Conc. 0.4112mg/L



Control Sample

Sample Name: CCV3
Sample ID: TCG003-35
Method: TCG003.tpl
Chk. Result Control value: 24.52 / Control exceeds range!

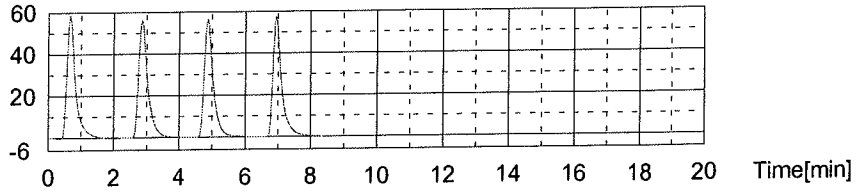
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.52 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.9	24.62mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:02:26 PM
2	108.3	24.49mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:04:36 PM
3	108.2	24.46mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:06:52 PM
4	108.5	24.53mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:09:08 PM

Mean Area 108.5
Mean Conc. 24.52mg/L



Sample

Sample Name: CCB3
Sample ID: TCG003-36
Origin: TCG003.cal
Chk. Result

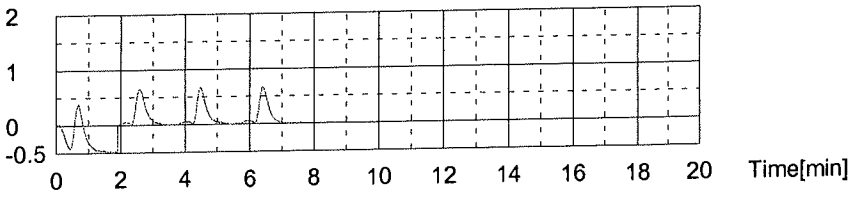
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2855 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.479	0.3344mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:15:40 PM
2	1.217	0.2751mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:17:44 PM
3	1.125	0.2543mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:19:48 PM
4	1.231	0.2783mg/L	50uL	1		TCG003.2020_07_09_11_15_23.cal	07/09/20 10:21:52 PM

Mean Area 1.263
Mean Conc. 0.2855mg/L



EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-24-2020
EMAX Batch No.: 20F155

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/18/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW18-GW061620	F155-01	06/16/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW19-GW061620	F155-02	06/16/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB01-GW061720	F155-03	06/17/20	WATER	VOCS BY 8260C

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F155
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700 South 1600E PCE Plume
COORDINATOR: Chene Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270D SIM; Gases MEE / RSK-175; Metals + Mercury / 6020A + 7470A; Chloride + Sulfate / 300; Nitrate + Nitrite / SM 4500; Alkalinity + TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ 14 days
- ☐ 21 days

LAB	SAMPLE ID: CLIENT	SAMPLING: LOCATION	DATE	TIME	CONTAINER: NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
* 1	MW18-GW061620		6/16/20	1508	13			GW		X X X X X X X X	
* 2	MW19-GW061620		6/16/20	1728	13			GW		X X X X X X X X	
* 3	TB01-GW061720		6/17/20	1500	2			GW		X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
2	2.0	

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gemma Rat	6/17/20	1900	6/18/2020 @ 9:00

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 20F155
☑ Fedex ☐ UPS ☐ GSO ☐ Others	3739 7191 2010	Recipient Rosie Carrillo
☐ EMAX Courier ☐ Client Delivery		Date 06/18/2020 Time 0900

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☑ Other plastic bag		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 20 °C	☑ Cooler 2 20 °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 19238146 4	*B - S/N*	*C - S/N* 20029175 6	*D S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1,2	3,4-6,8,10,12,14-26	D10		R1

6/18/20

Rs 6/18/20

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: HNO3 bottles read Metals only on labels. Metals + Hg

Rs 6/18/20

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Jenessa Nakagawa **Date** 06/18/2020 6/18/20

SRF _____ **Date** 6/18/20

PM _____ **Date** 6/18/20

ORIGIN ID:BTFA (406) 241-3259
CDM SMITH

555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 17JUN20
ACTWGT: 58.05 LB
CAD: 8993645/SSFL2110
DIMS: 25x12x13 IN

BILL THIRD PARTY

Part # 156297-[illegible] REV 07 EXP 07/20

TO EMAX LABORATORIES
ATTN: SAMPLE RECEIVING
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889
INV:
PO:

REF: 238824-6495-F3048-05.SAMPL

DEPT:

FedEx Express

J201120042401uv

2 of 4
MPS# 0263 3939 7181 2020
Mstr# 3939 7181 2010 0201

W1 HHRA

THU - 18 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US LAX

2.0

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F155

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of three(3) water samples were received on 06/18/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VOF3F16B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VOF3F16L/VOF3F16C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F155
Instrument ID : F3

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VOF3F16B	1	NA	06/19/2011:38	06/19/2011:38	RFR356	RDR007	VOF3F16	Method Blank
LCS1W	VOF3F16L	1	NA	06/19/2010:11	06/19/2010:11	RFR353	RDR007	VOF3F16	Lab Control Sample (LCS)
LCD1W	VOF3F16C	1	NA	06/19/2010:39	06/19/2010:39	RFR354	RDR007	VOF3F16	LCS Duplicate
TB01-GW061720	F155-03	1	NA	06/19/2013:35	06/19/2013:35	RFR360	RDR007	VOF3F16	Field Sample
MW19-GW061620	F155-02	1	NA	06/19/2014:33	06/19/2014:33	RFR362	RDR007	VOF3F16	Field Sample
MW18-GW061620	F155-01	1	NA	06/19/2015:02	06/19/2015:02	RFR363	RDR007	VOF3F16	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/16/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/19/20 15:02
Sample ID:	MW18-GW061620	Date Analyzed:	06/19/20 15:02
Lab Samp ID:	F155-01	Dilution Factor:	1
Lab File ID:	RFR363	Matrix	: WATER
Ext Btch ID:	VOF3F16	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.75J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.21J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.28J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.9	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.25J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	70	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.48J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	11.1	10.00	111	70-130
TOLUENE-D8	10.3	10.00	103	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR363.D Vial: 13
Acq On : 19 Jun 2020 3:02 pm Operator: ENguye/ODinh
Sample : 20F155-01 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 8:46 2020 Quant Results File: VOF3D02.RES

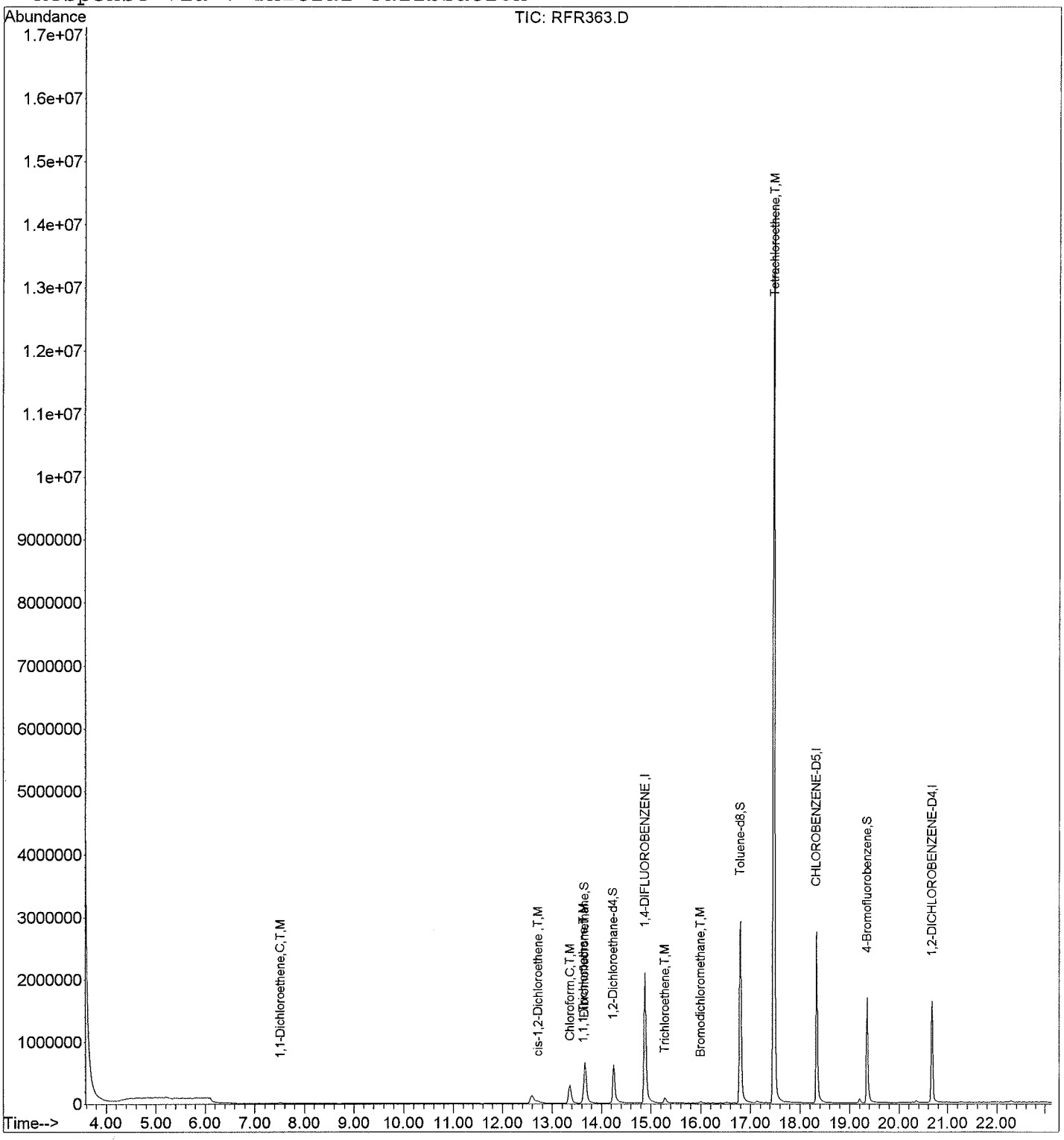
Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

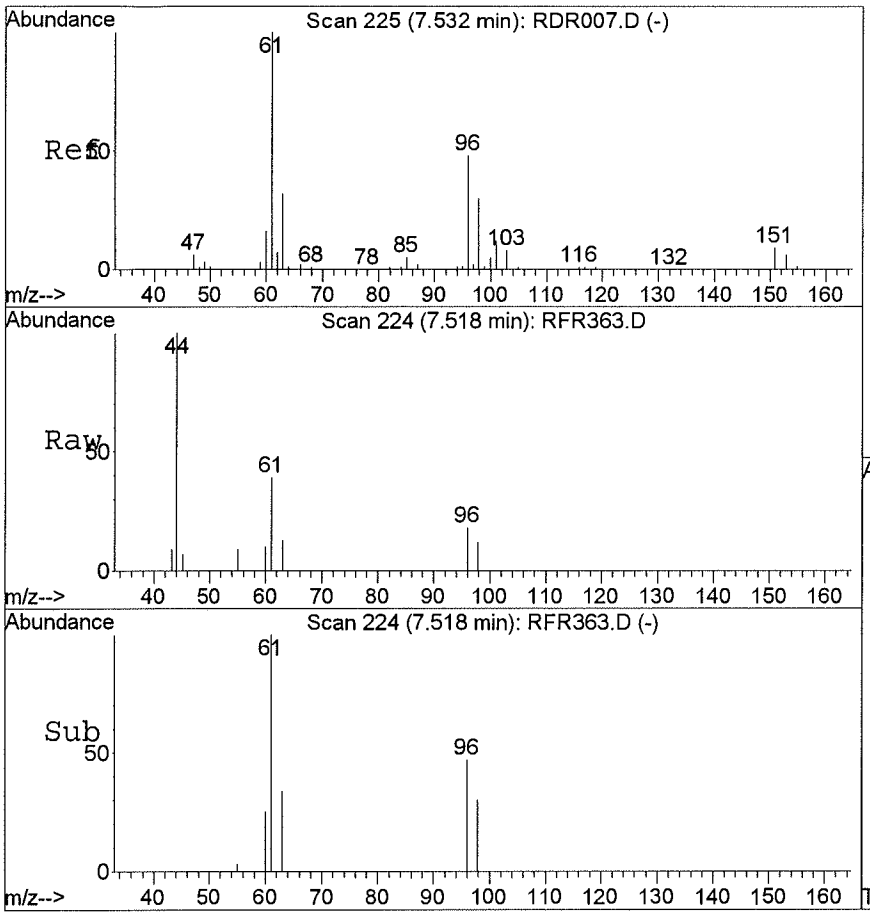
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2325361	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1762945	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	558383	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	858086	10.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.20%		
40) 1,2-Dichloroethane-d4	14.24	65	708819	10.46	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.60%		
55) Toluene-d8	16.80	98	2502489	10.25	ug/l	0.01
Spiked Amount 10.000			Recovery =	102.50%		
75) 4-Bromofluorobenzene	19.36	95	775166	11.08	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.80%		
Target Compounds						Qvalue
13) 1,1-Dichloroethene	7.52	61	35983	0.21	ug/l	95
28) cis-1,2-Dichloroethene	12.72	96	23796	0.25	ug/l	81
33) Chloroform	13.36	83	459064	2.91	ug/l	97
35) 1,1,1-Trichloroethane	13.63	97	75797	0.75	ug/l	96
45) Trichloroethene	15.28	130	41657	0.48	ug/l	92
50) Bromodichloromethane	16.00	83	26399	0.28	ug/l	89
60) Tetrachloroethene	17.48	164	4233377	70.43	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFR363.D VOF3D02.M Mon Jun 22 08:46:53 2020 Page 1

Data File : C:\HPCHEM\1\DATA\20F19\RFR363.D Vial: 13
Acq On : 19 Jun 2020 3:02 pm Operator: ENguye/ODinh
Sample : 20F155-01 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 8:46 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

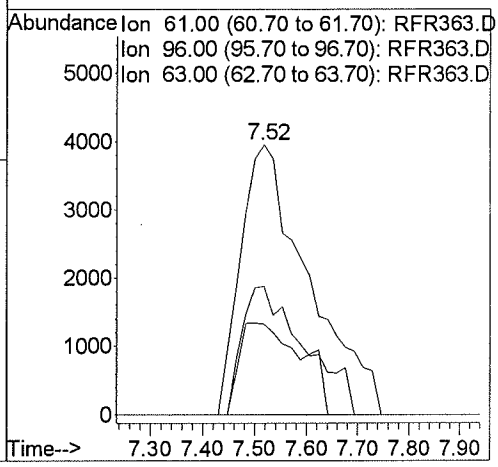


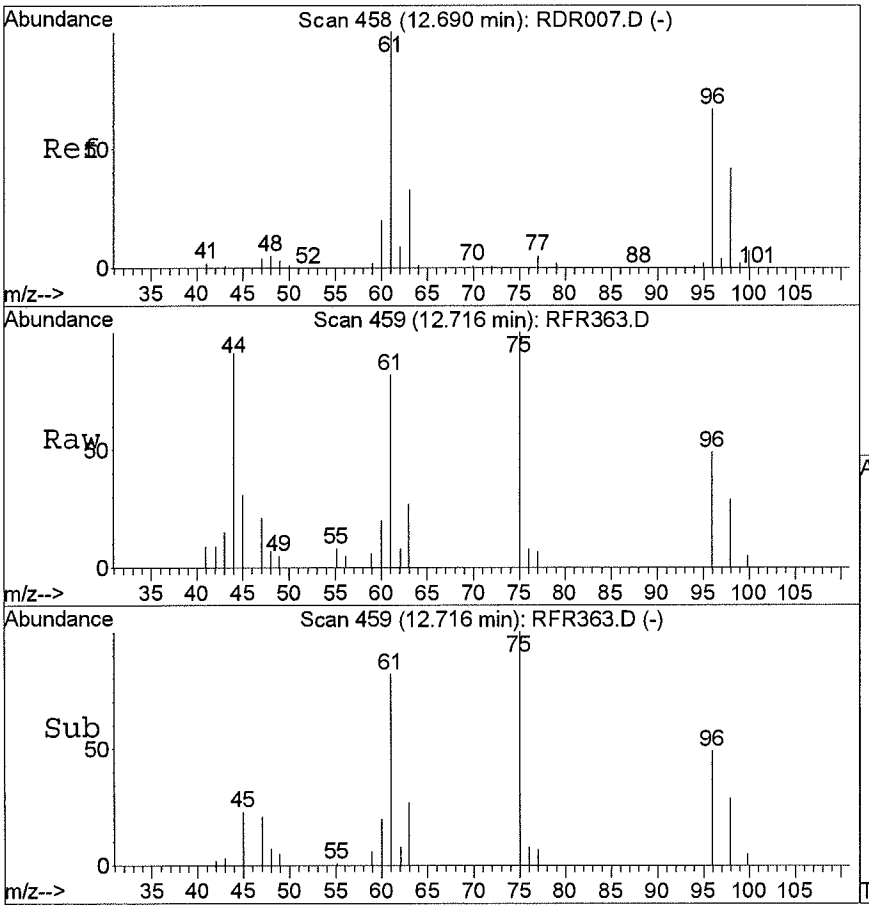


#13
1,1-Dichloroethene
Concen: 0.21 ug/l
RT: 7.52 min Scan# 224
Delta R.T. -0.01 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion: 61 Resp: 35983

Ion	Ratio	Lower	Upper
61	100		
96	43.9	18.2	78.2
63	30.9	2.4	62.4

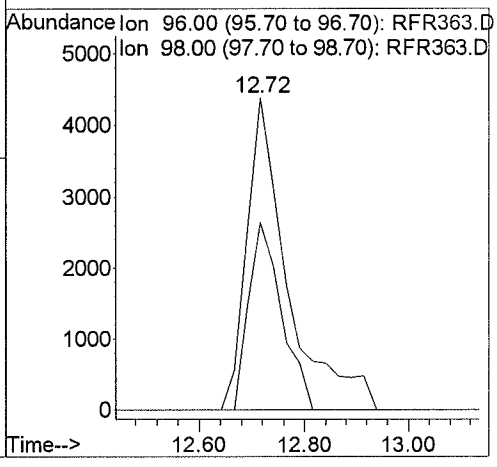


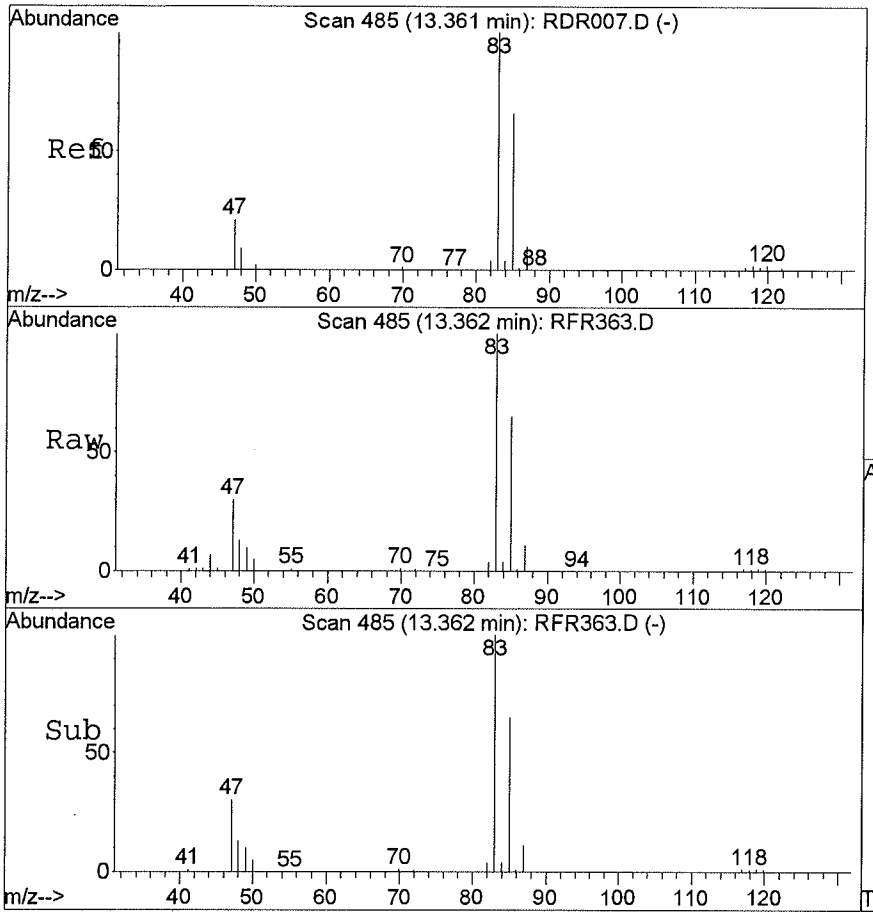


#28
cis-1,2-Dichloroethene
Concen: 0.25 ug/l
RT: 12.72 min Scan# 459
Delta R.T. 0.03 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion: 96 Resp: 23796

Ion	Ratio	Lower	Upper
96	100		
98	48.5	33.2	93.2

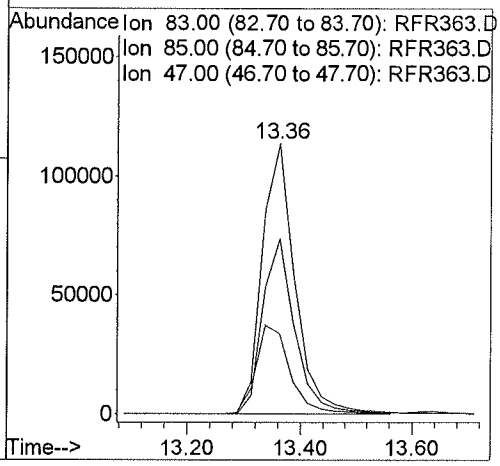


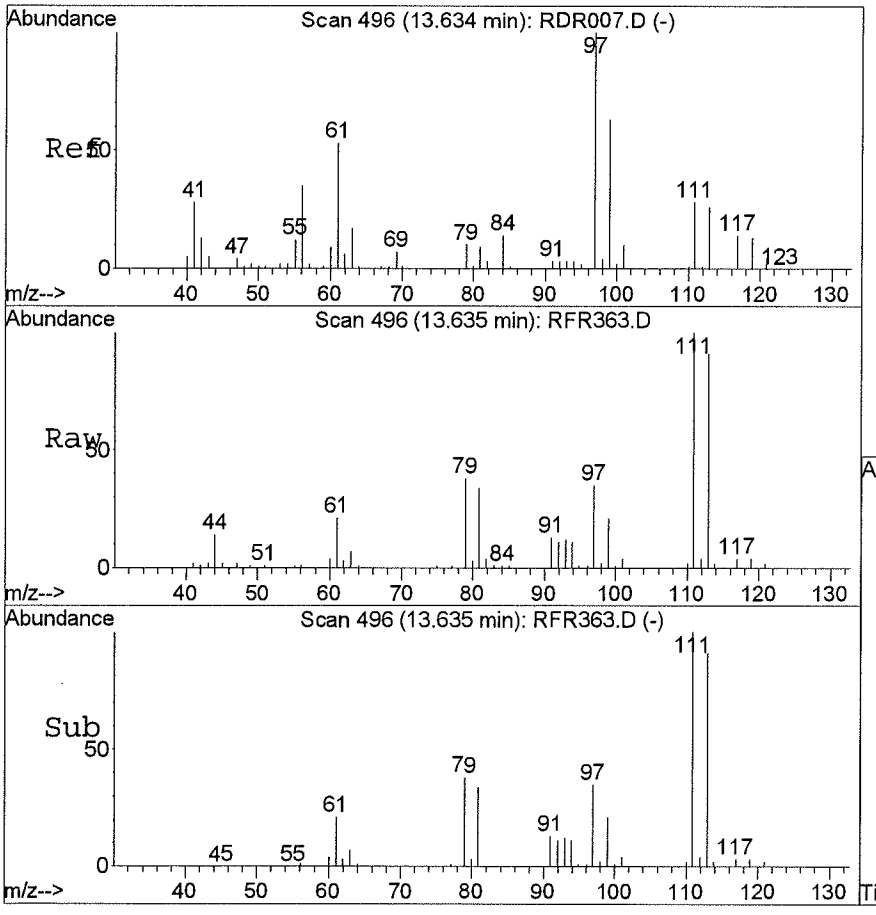


#33
Chloroform
Concen: 2.91 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion: 83 Resp: 459064

Ion	Ratio	Lower	Upper
83	100		
85	63.9	35.0	95.0
47	34.5	1.2	61.2

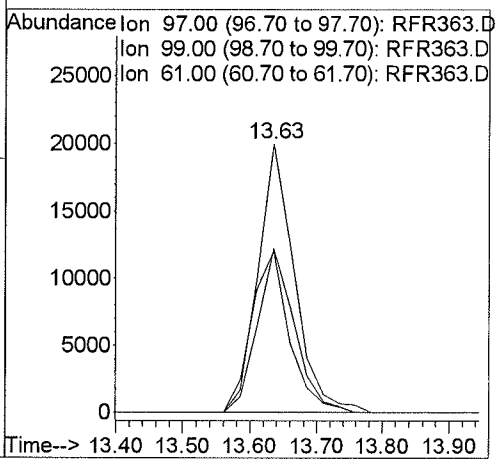


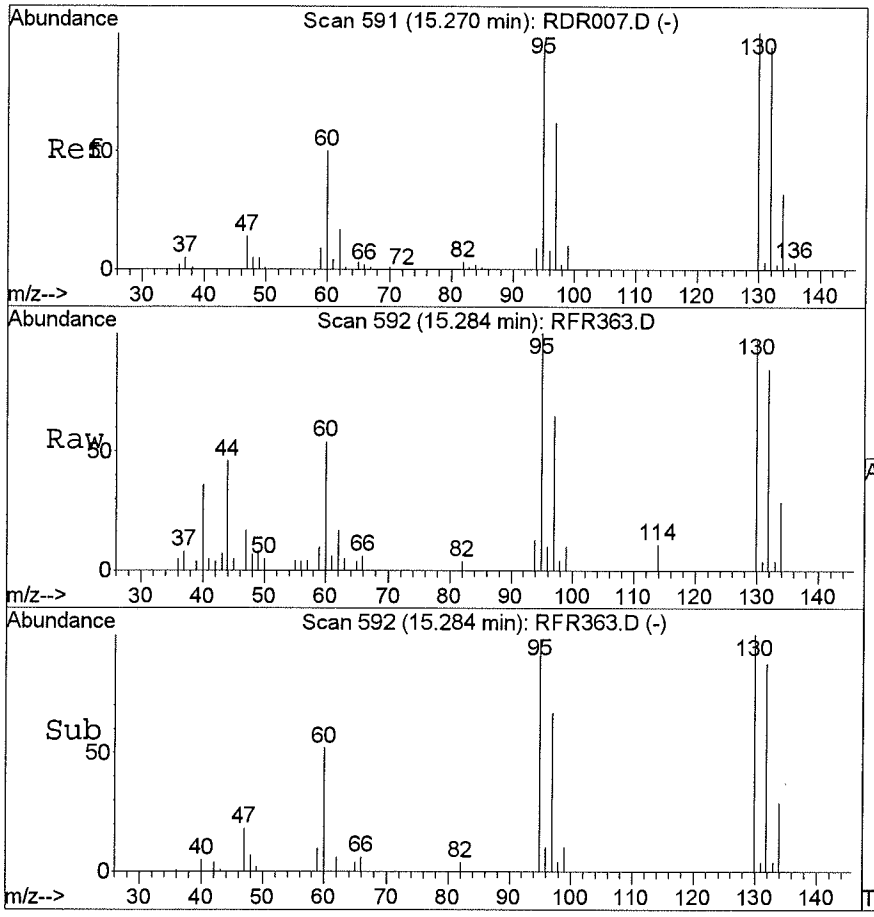


#35
1,1,1-Trichloroethane
Concen: 0.75 ug/l
RT: 13.63 min Scan# 496
Delta R.T. 0.00 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion: 97 Resp: 75797

Ion	Ratio	Lower	Upper
97	100		
99	62.5	34.3	94.3
61	62.6	27.7	87.7

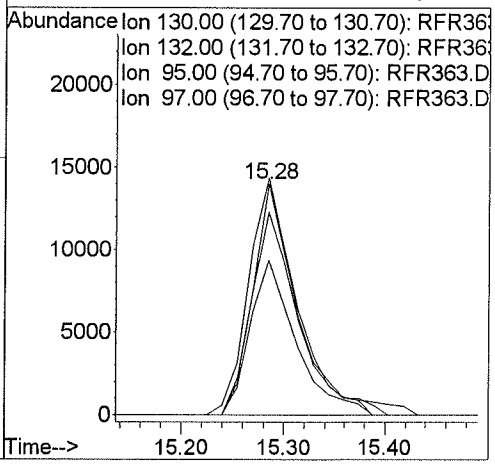


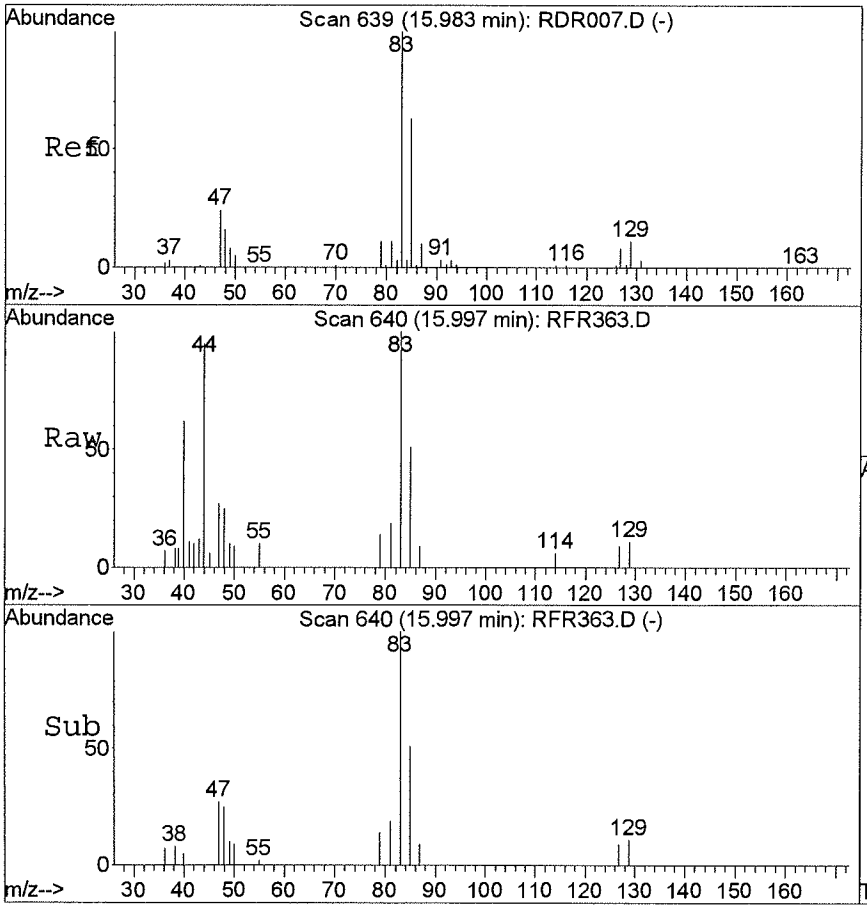


#45
Trichloroethene
Concen: 0.48 ug/l
RT: 15.28 min Scan# 592
Delta R.T. 0.01 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion:130 Resp: 41657

Ion	Ratio	Lower	Upper
130	100		
132	94.3	64.1	124.1
95	115.8	70.1	130.1
97	70.3	34.4	94.4

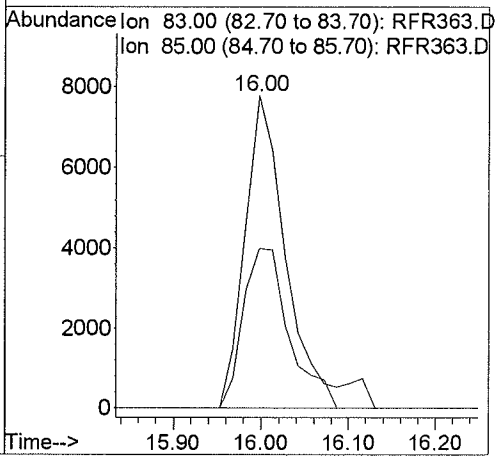


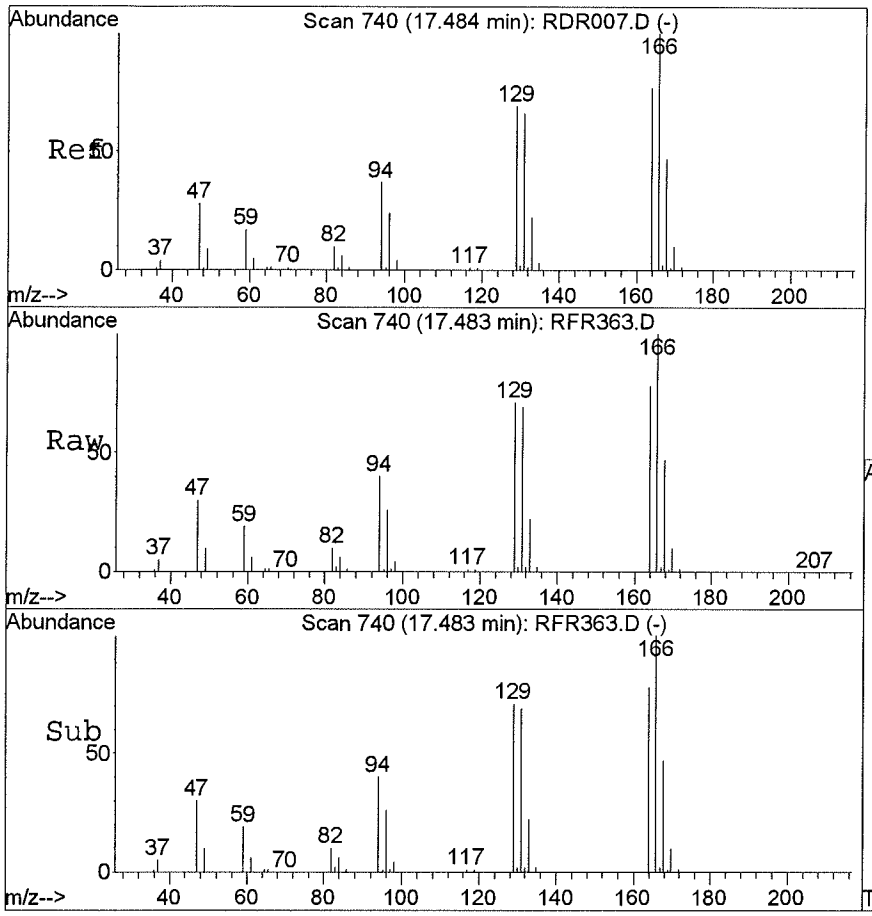


#50
Bromodichloromethane
Concen: 0.28 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.01 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion: 83 Resp: 26399

Ion	Ratio	Lower	Upper
83	100		
85	55.1	33.6	93.6

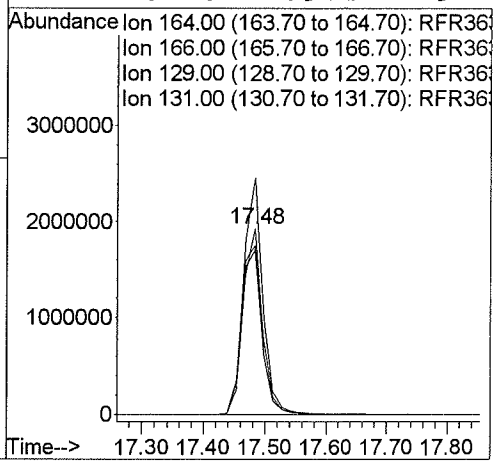




#60
Tetrachloroethene
Concen: 70.43 ug/l
RT: 17.48 min Scan# 740
Delta R.T. -0.00 min
Lab File: RFR363.D
Acq: 19 Jun 2020 3:02 pm

Tgt Ion:164 Resp: 4233377

Ion	Ratio	Lower	Upper
164	100		
166	127.1	97.7	157.7
129	97.4	64.5	124.5
131	93.9	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/16/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/19/20 14:33
Sample ID	: MW19-GW061620	Date Analyzed:	06/19/20 14:33
Lab Samp ID	: F155-02	Dilution Factor:	1
Lab File ID	: RFR362	Matrix	: WATER
Ext Btch ID	: VOF3F16	% Moisture	: NA
Calib. Ref.	: RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.66J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.24J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.22J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.4	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.29J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	64	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.50J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	11.2	10.00	112	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR362.D Vial: 12
Acq On : 19 Jun 2020 2:33 pm Operator: ENguye/ODinh
Sample : 20F155-02 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 8:41 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

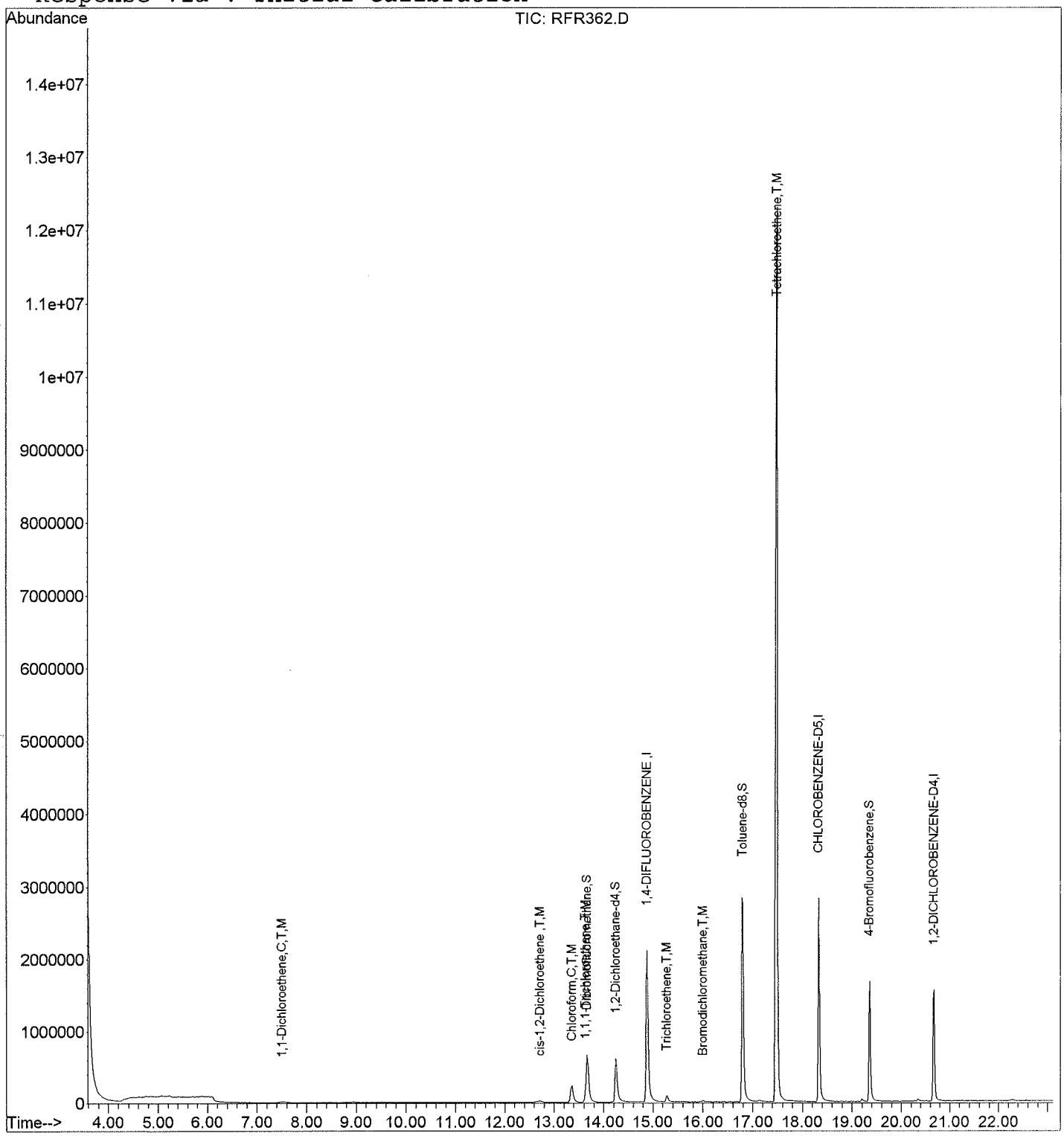
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2324530	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1714546	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	534028	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	843359	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
40) 1,2-Dichloroethane-d4	14.24	65	691689	10.21	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.10%		
55) Toluene-d8	16.80	98	2416393	10.18	ug/l	0.02
Spiked Amount 10.000			Recovery =	101.80%		
75) 4-Bromofluorobenzene	19.36	95	747363	11.17	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.70%		
Target Compounds						Qvalue
13) 1,1-Dichloroethene	7.50	61	40399	0.24	ug/l	97
28) cis-1,2-Dichloroethene	12.72	96	27237	0.29	ug/l	82
33) Chloroform	13.36	83	372658	2.36	ug/l	97
35) 1,1,1-Trichloroethane	13.63	97	67087	0.66	ug/l	96
45) Trichloroethene	15.28	130	43331	0.50	ug/l	92
50) Bromodichloromethane	16.00	83	21162	0.22	ug/l	95
60) Tetrachloroethene	17.48	164	3749609	64.15	ug/l	97

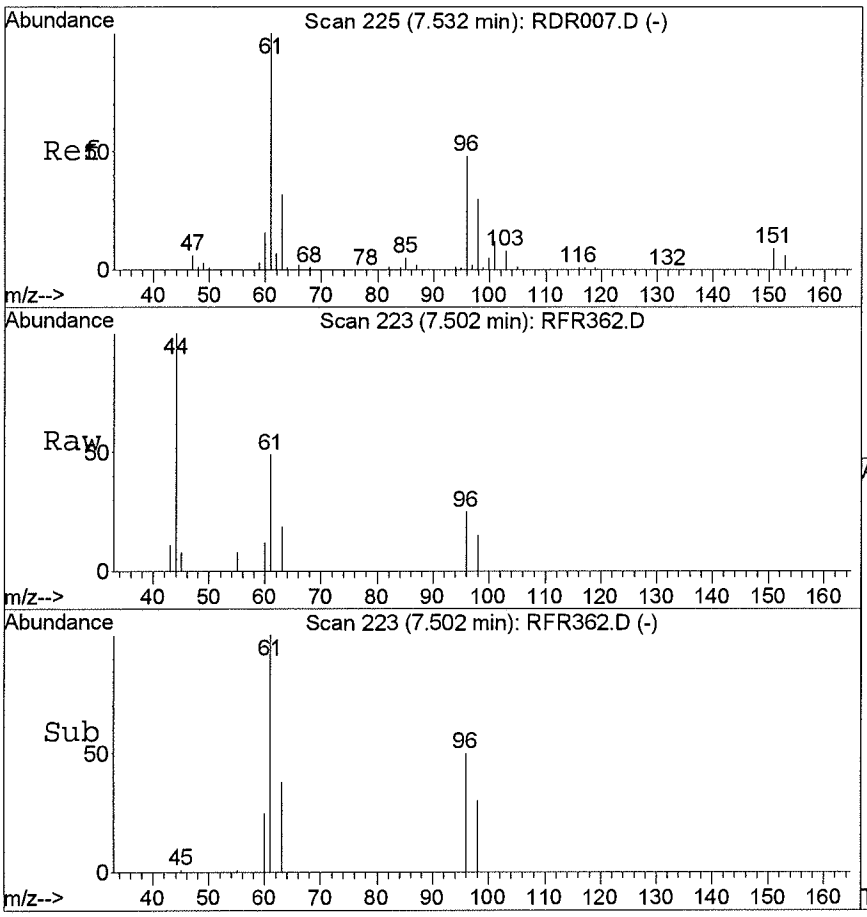
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR362.D Vial: 12
Acq On : 19 Jun 2020 2:33 pm Operator: ENguye/ODinh
Sample : 20F155-02 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 8:41 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

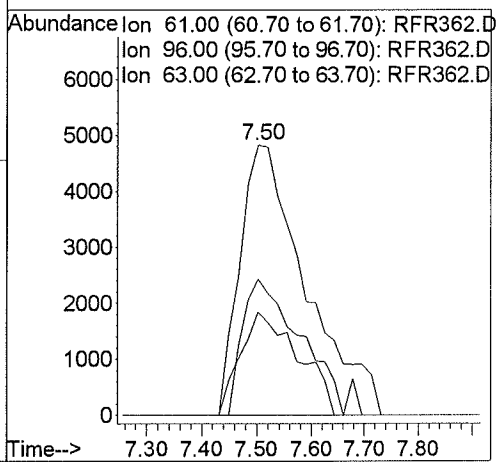


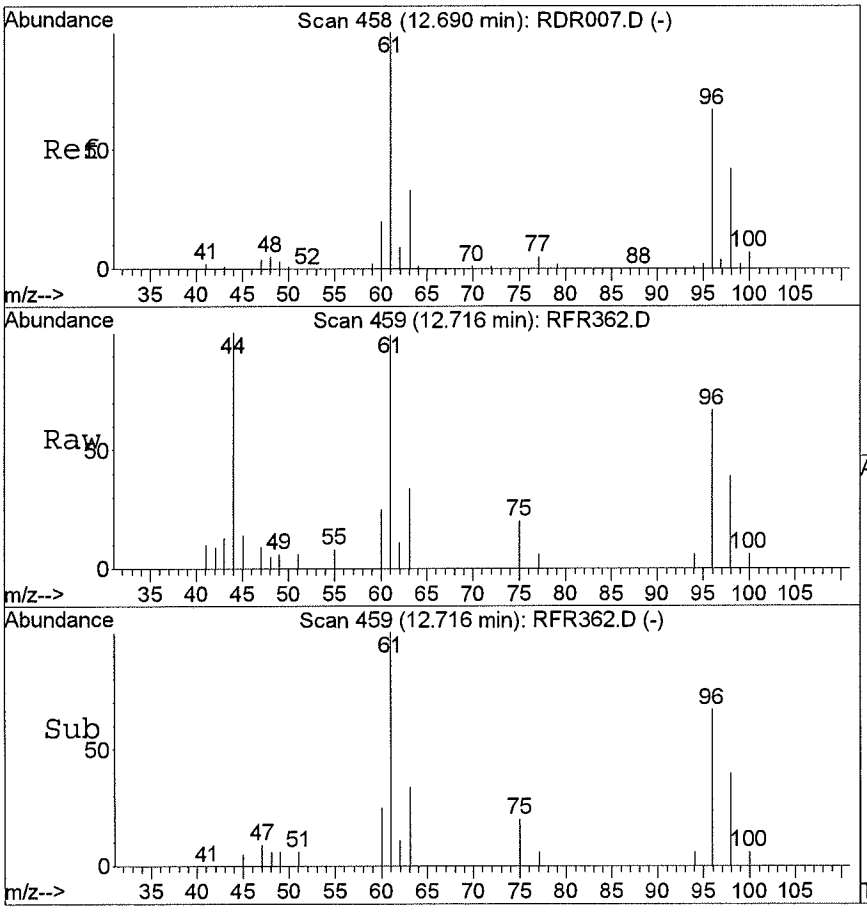


#13
1,1-Dichloroethene
Concen: 0.24 ug/l
RT: 7.50 min Scan# 223
Delta R.T. -0.03 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion: 61 Resp: 40399

Ion	Ratio	Lower	Upper
61	100		
96	45.9	18.2	78.2
63	33.7	2.4	62.4

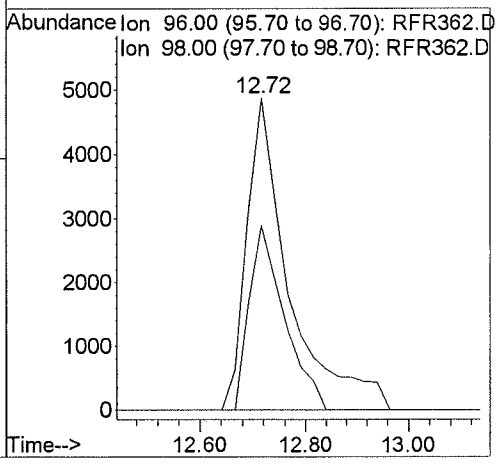


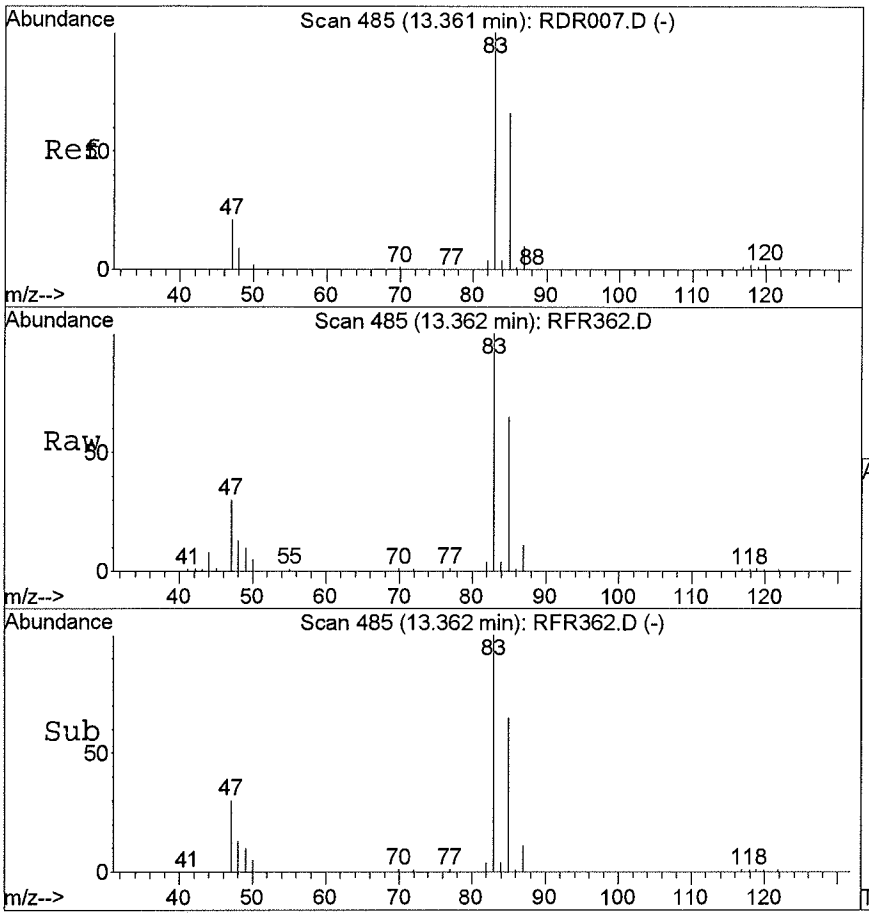


#28
cis-1,2-Dichloroethene
Concen: 0.29 ug/l
RT: 12.72 min Scan# 459
Delta R.T. 0.03 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion: 96 Resp: 27237

Ion	Ratio	Lower	Upper
96	100		
98	49.2	33.2	93.2

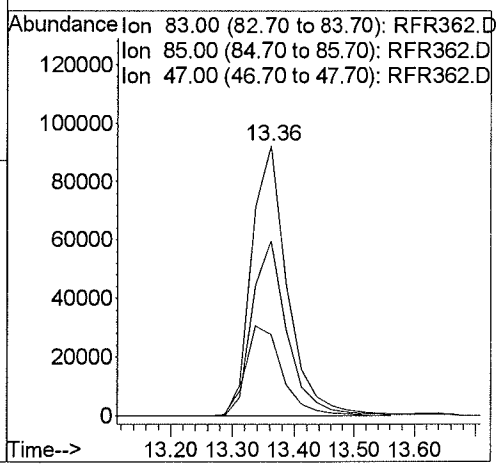


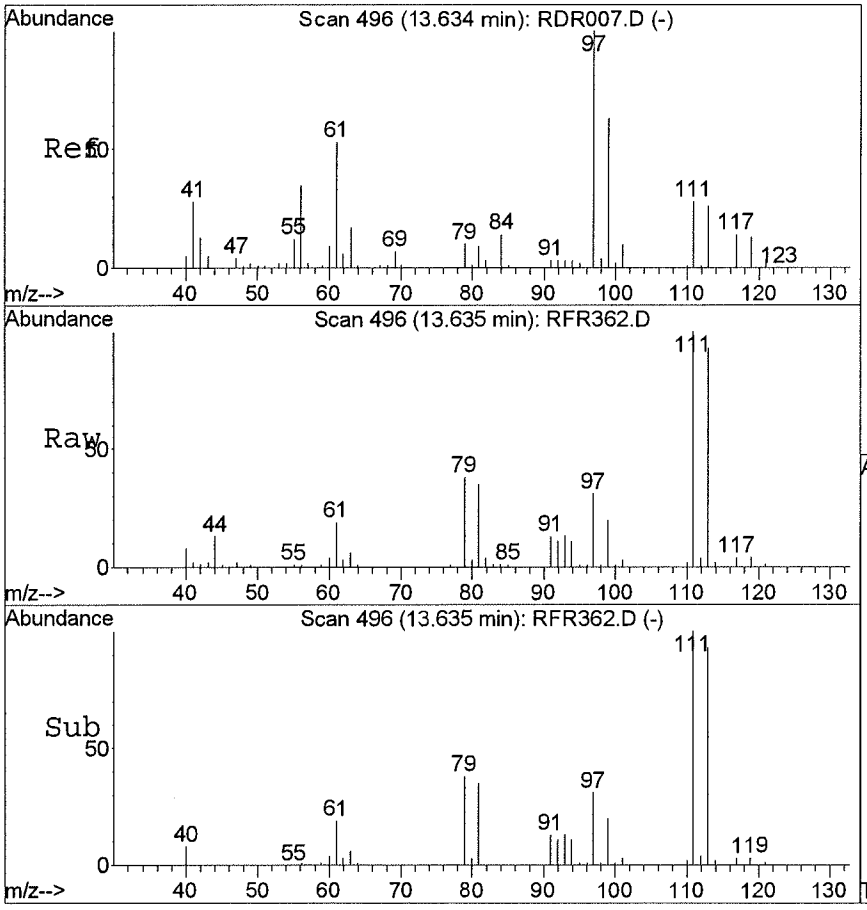


#33
Chloroform
Concen: 2.36 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion: 83 Resp: 372658

Ion	Ratio	Lower	Upper
83	100		
85	64.0	35.0	95.0
47	34.6	1.2	61.2

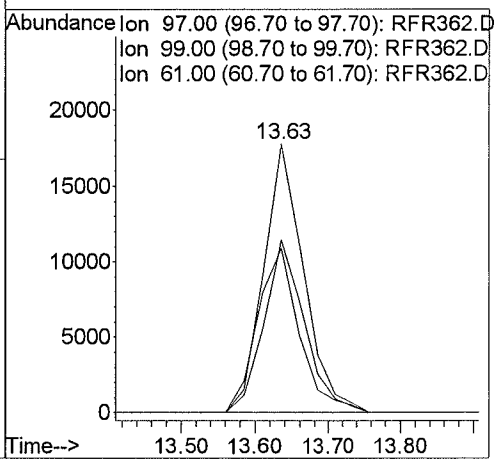


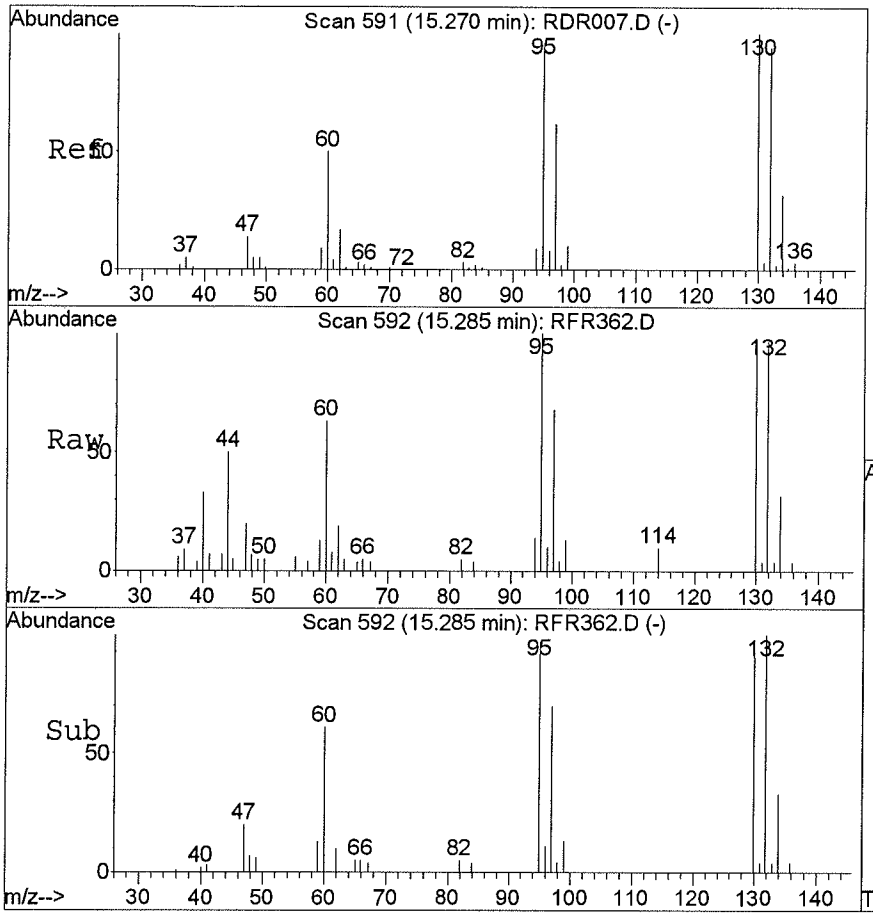


#35
1,1,1-Trichloroethane
Concen: 0.66 ug/l
RT: 13.63 min Scan# 496
Delta R.T. 0.00 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion: 97 Resp: 67087

Ion	Ratio	Lower	Upper
97	100		
99	65.0	34.3	94.3
61	63.9	27.7	87.7

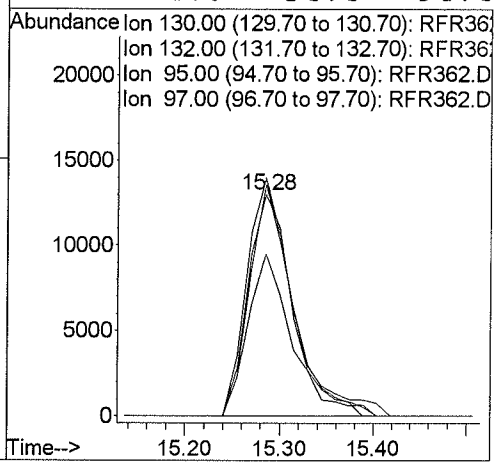


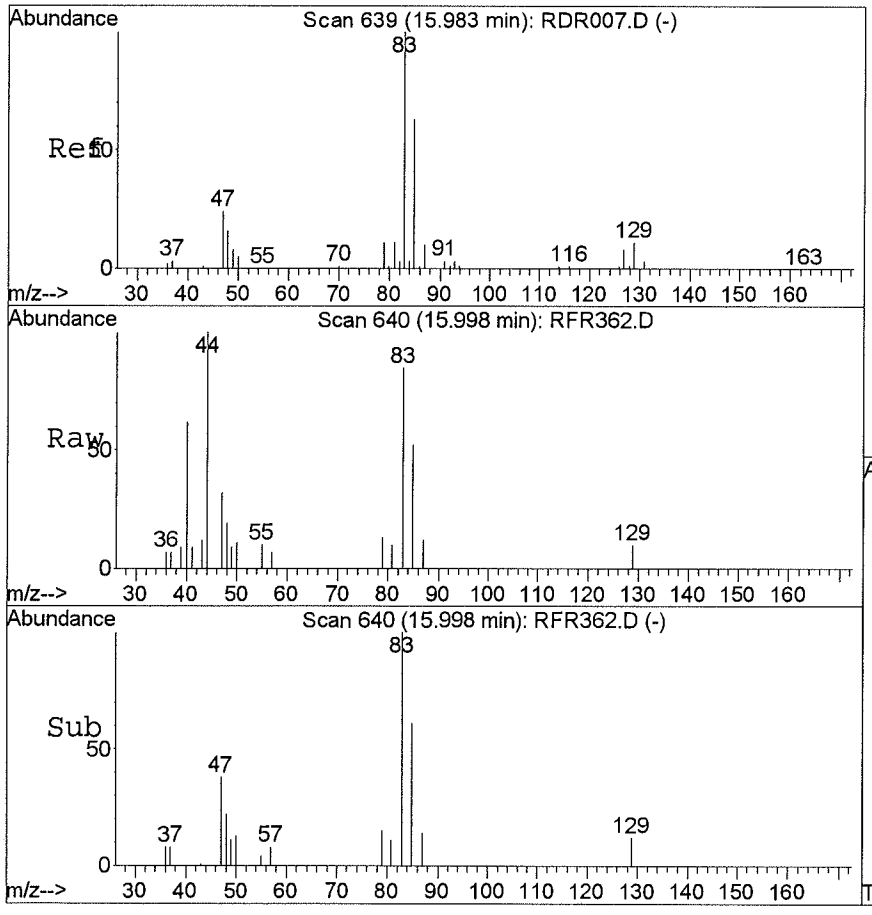


#45
Trichloroethene
Concen: 0.50 ug/l
RT: 15.28 min Scan# 592
Delta R.T. 0.02 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion:130 Resp: 43331

Ion	Ratio	Lower	Upper
130	100		
132	98.0	64.1	124.1
95	110.2	70.1	130.1
97	72.0	34.4	94.4

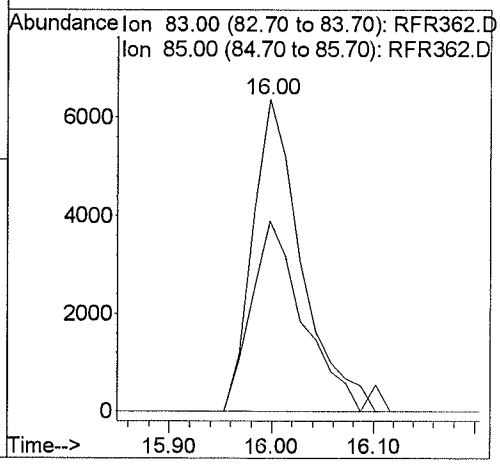


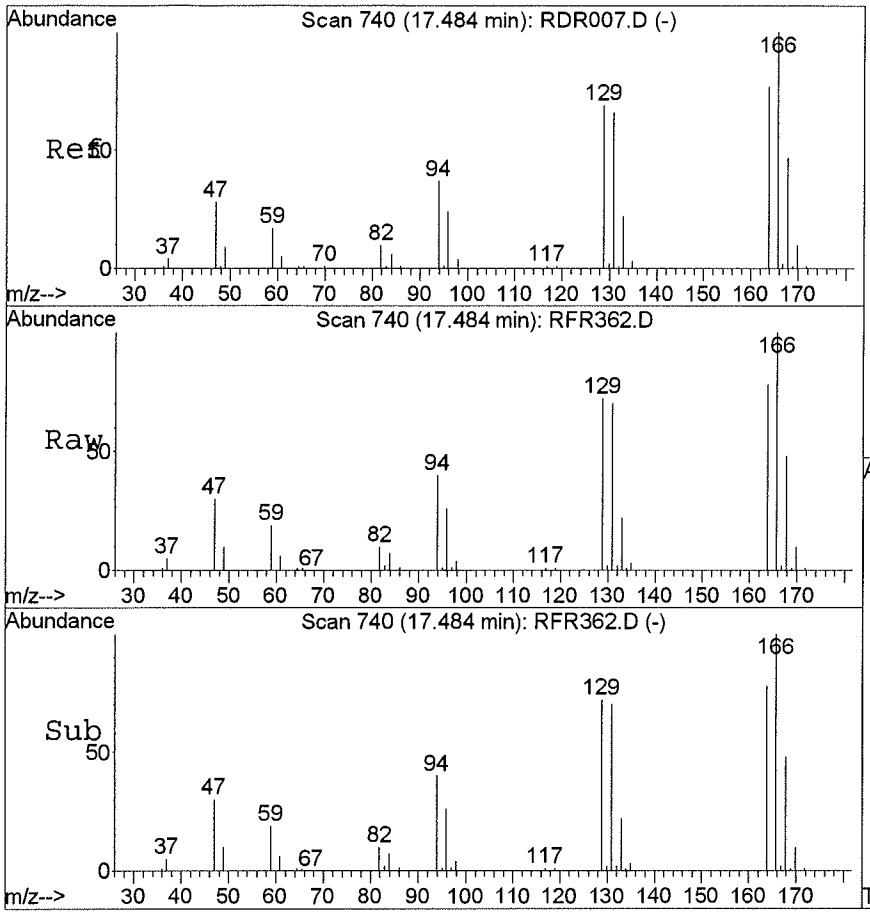


#50
Bromodichloromethane
Concen: 0.22 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.02 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion: 83 Resp: 21162

Ion	Ratio	Lower	Upper
83	100		
85	67.2	33.6	93.6

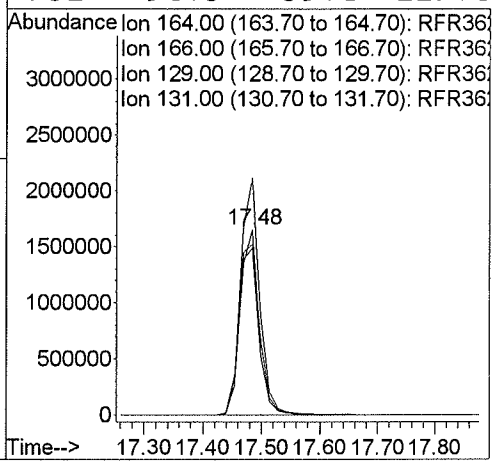




#60
Tetrachloroethene
Concen: 64.15 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR362.D
Acq: 19 Jun 2020 2:33 pm

Tgt Ion:164 Resp: 3749609

Ion	Ratio	Lower	Upper
164	100		
166	127.6	97.7	157.7
129	97.9	64.5	124.5
131	94.5	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/19/20 13:35
Sample ID:	TB01-GW061720	Date Analyzed:	06/19/20 13:35
Lab Samp ID:	F155-03	Dilution Factor:	1
Lab File ID:	RFR360	Matrix :	WATER
Ext Btch ID:	VOF3F16	% Moisture :	NA
Calib. Ref.:	RDR007	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-130
BROMOFLUOROBENZENE	10.9	10.00	109	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR360.D Vial: 10
Acq On : 19 Jun 2020 1:35 pm Operator: ENguye/ODinh
Sample : 20F155-03 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 8:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2224274	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1666550	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	529083	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	816721	10.37	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.70%		
40) 1,2-Dichloroethane-d4	14.25	65	675733	10.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.20%		
55) Toluene-d8	16.79	98	2335688	10.12	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.20%		
75) 4-Bromofluorobenzene	19.36	95	722073	10.89	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.90%		

Target Compounds Qvalue

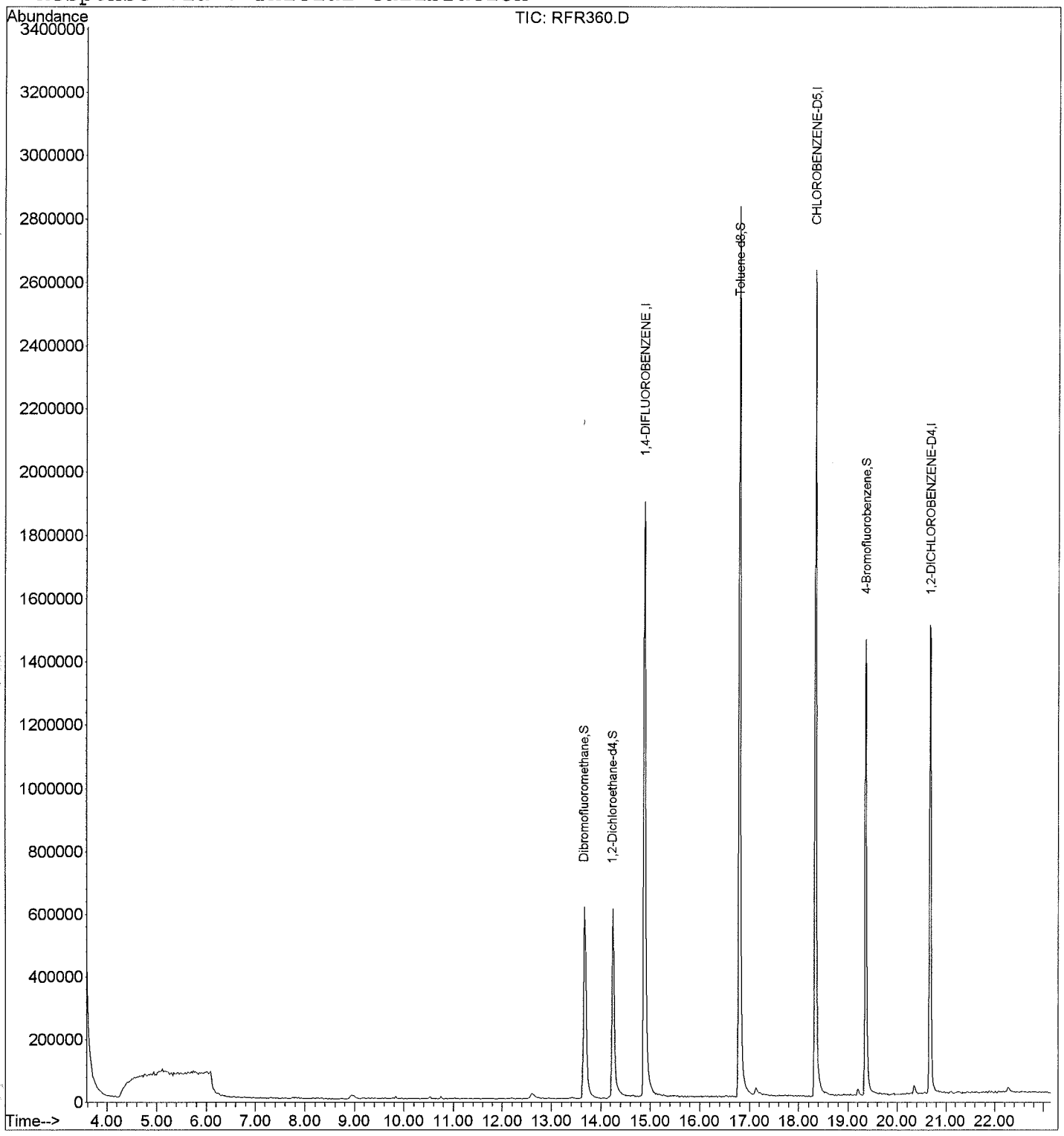
(#) = qualifier out of range (m) = manual integration
RFR360.D VOF3D02.M Mon Jun 22 08:37:04 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR360.D
Acq On : 19 Jun 2020 1:35 pm
Sample : 20F155-03 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 22 8:33 2020

Vial: 10
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F155	Date Extracted: 06/19/20 11:38
Sample ID: MBLK1W	Date Analyzed: 06/19/20 11:38
Lab Samp ID: VOF3F16B	Dilution Factor: 1
Lab File ID: RFR356	Matrix : WATER
Ext Btch ID: VOF3F16	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.9	10.00	109	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	9.86	10.00	98.6	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F155
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VOF3F16B VOF3F16L VOF3F16C
LAB FILE ID: RFR356 RFR353 RFR354
DATE EXTRACTED: 06/19/2011:38 06/19/2010:11 06/19/2010:39 DATE COLLECTED: NA
DATE ANALYZED: 06/19/2011:38 06/19/2010:11 06/19/2010:39 DATE RECEIVED: 06/19/20
PREP. BATCH: VOF3F16 VOF3F16 VOF3F16
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	11.6	116	10.0	11.4	114	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	11.0	110	10.0	11.3	113	3	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.7	107	10.0	10.4	104	3	80-119	20
1,1-Dichloroethane	ND	10.0	11.5	115	10.0	11.4	114	1	77-125	20
1,1-Dichloroethene	ND	10.0	11.2	112	10.0	11.2	112	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.70	97	10.0	9.68	97	0	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.79	98	10.0	9.85	99	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	11.1	111	10.0	11.6	116	4	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.2	102	10.0	10.3	103	0	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.7	107	10.0	10.4	104	2	80-119	20
1,2-Dichloroethane	ND	10.0	10.8	108	10.0	10.8	108	0	73-128	20
1,2-Dichloropropane	ND	10.0	11.3	113	10.0	11.4	114	1	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	11.4	114	10.0	11.6	116	2	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.7	107	10.0	11.2	112	4	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.6	106	10.0	10.4	104	2	79-118	20
2-Butanone	ND	50.0	45.2	90	50.0	45.7	91	1	56-143	20
2-Hexanone	ND	50.0	46.4	93	50.0	48.1	96	4	57-139	20
Acetone	ND	50.0	45.9	92	50.0	48.2	96	5	39-160	20
Benzene	ND	10.0	11.2	112	10.0	11.1	111	1	79-120	20
Bromochloromethane	ND	10.0	10.3	103	10.0	10.0	100	3	78-120	20
Bromodichloromethane	ND	10.0	11.6	116	10.0	11.7	117	1	79-125	20
Bromoform	ND	10.0	11.7	117	10.0	11.7	117	0	66-130	20
Bromomethane	ND	10.0	9.60	96	10.0	10.1	101	5	53-141	20
Carbon Disulfide	ND	10.0	11.6	116	10.0	12.1	121	4	64-133	20
Carbon Tetrachloride	ND	10.0	12.2	122	10.0	12.0	120	1	72-136	20
Chlorobenzene	ND	10.0	11.1	111	10.0	11.1	111	0	82-118	20
Chloroethane	ND	10.0	10.7	107	10.0	11.3	113	6	60-138	20
Chloroform	ND	10.0	10.9	109	10.0	10.8	108	1	79-124	20
Chloromethane	ND	10.0	12.3	123	10.0	12.8	128	4	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.3	103	10.0	10.5	105	2	78-123	20
Dibromochloromethane	ND	10.0	11.3	113	10.0	10.9	109	3	74-126	20
Dichlorodifluoromethane	ND	10.0	10.5	105	10.0	11.1	111	5	32-152	20
Ethylbenzene	ND	10.0	11.6	116	10.0	11.0	110	5	79-121	20
Isopropylbenzene	ND	10.0	12.2	122	10.0	12.1	121	1	72-131	20
m,p-Xylene	ND	20.0	22.1	111	20.0	21.6	108	3	80-121	20
4-Methyl-2-Pentanone	ND	50.0	48.2	96	50.0	52.2	104	8	67-130	20
Methylene Chloride	ND	10.0	11.9	119	10.0	11.8	118	1	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.62	86	10.0	8.98	90	4	71-124	20
o-Xylene	ND	10.0	10.6	106	10.0	11.0	110	4	78-122	20
Styrene	ND	10.0	11.2	112	10.0	11.6	116	3	78-123	20
Tetrachloroethene	ND	10.0	11.3	113	10.0	11.1	111	1	74-129	20
Toluene	ND	10.0	11.6	116	10.0	11.2	112	3	80-121	20
Trans-1,2-DCE	ND	10.0	11.3	113	10.0	10.9	109	3	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.3	113	10.0	11.7	117	4	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	11.7	117	10.0	11.4	114	3	73-127	20
TCE	ND	10.0	10.8	108	10.0	10.6	106	2	79-123	20
Trichlorofluoromethane	ND	10.0	11.1	111	10.0	11.8	118	6	65-141	20
Vinyl Chloride	ND	10.0	12.0	120	10.0	12.6	126	5	58-137	20
1,2-Dibromoethane	ND	10.0	11.2	112	10.0	11.4	114	1	77-121	20
Vinyl Acetate	ND	10.0	10.6	106	10.0	11.1	111	4	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.99	90	10.0	9.44	94	5	70-136	20
Methyl Acetate	ND	10.0	8.03	80	10.0	7.86	79	2	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	9.93	99	10.0	9.86	99	70-130
Bromofluorobenzene	10.0	11.0	110	10.0	10.6	106	70-130
Toluene-d8	10.0	10.5	105	10.0	10.2	102	70-130
Dibromofluoromethane	10.0	9.88	99	10.0	10.0	100	70-130

QC DATA

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR356.D Vial: 6
Acq On : 19 Jun 2020 11:38 am Operator: ENguye/ODinh
Sample : VOF3F16B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2188807	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1657717	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	521869	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	764382	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
40) 1,2-Dichloroethane-d4	14.24	65	652687	10.23	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.30%		
55) Toluene-d8	16.79	98	2316020	10.09	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.90%		
75) 4-Bromofluorobenzene	19.36	95	712433	10.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.00%		

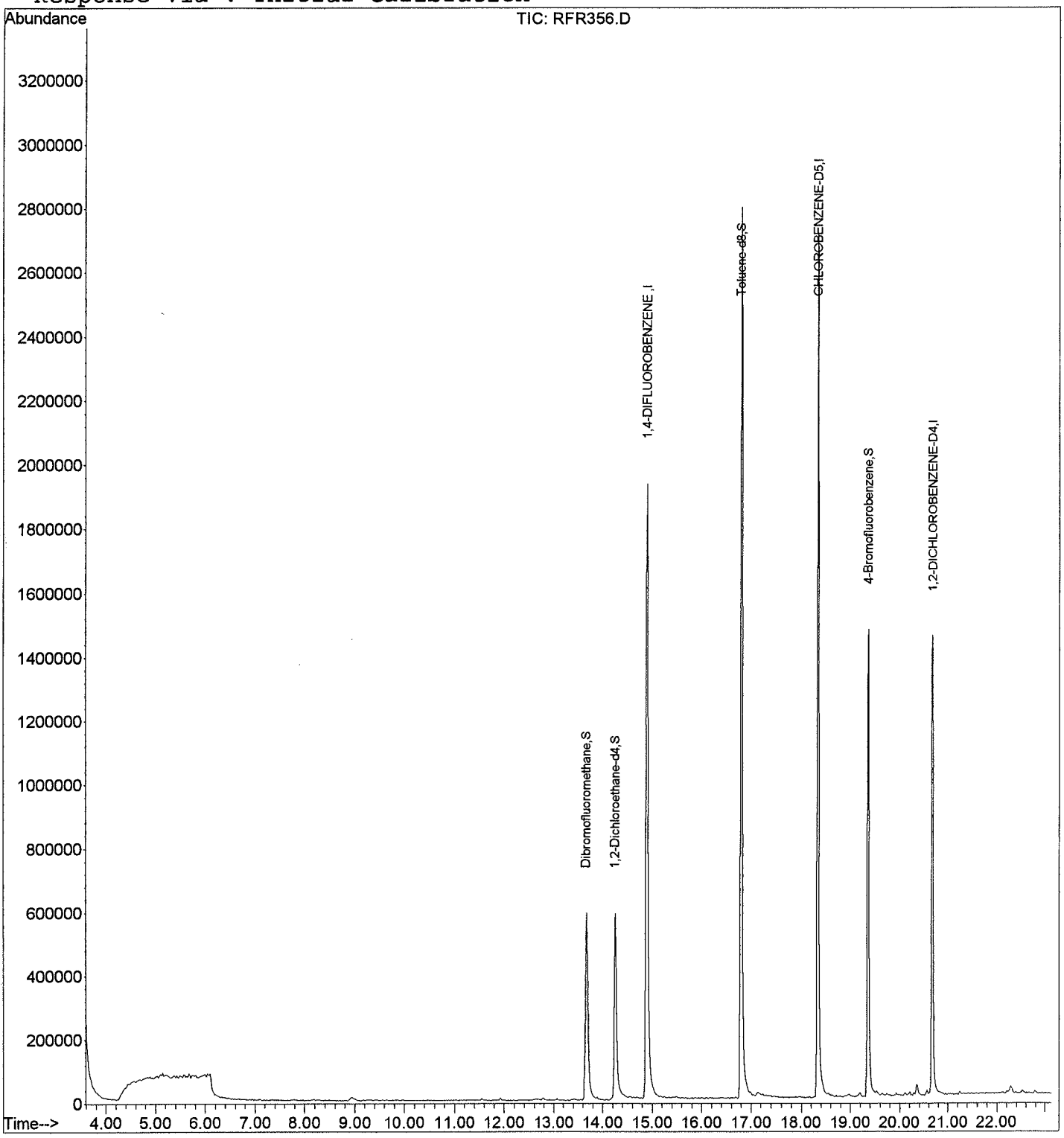
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR356.D VOF3D02.M Mon Jun 22 12:55:22 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR356.D Vial: 6
Acq On : 19 Jun 2020 11:38 am Operator: ENguye/ODinh
Sample : VOF3F16B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR353.D Vial: 3
Acq On : 19 Jun 2020 10:11 am Operator: ENguye/ODinh
Sample : VOF3F16L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1956219	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1402831	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	462701	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	684536	9.88	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.80%			
40) 1,2-Dichloroethane-d4	14.25	65	566167	9.93	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.30%			
55) Toluene-d8	16.79	98	2040606	10.51	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.10%			
75) 4-Bromofluorobenzene	19.34	95	636580	10.98	ug/l	-0.01
Spiked Amount 10.000			Recovery = 109.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	721254	10.52	ug/l	98
4) Chloromethane	4.27	50	1650302	12.28	ug/l	99
6) Vinyl chloride	4.54	62	1282419	12.00	ug/l	100
7) Bromomethane	5.35	94	720953	9.60	ug/l	99
8) Chloroethane	5.58	64	595671	10.72	ug/l	96
9) Dichlorofluoromethane	6.07	67	1972298	11.99	ug/l	100
10) Trichlorofluoromethane	6.16	101	1030509	11.09	ug/l	100
11) Acrolein	7.31	56	218854	35.63	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.49	151	386325	8.99	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1604612	11.21	ug/l	98
14) Acetone	7.71	43	469723	45.92	ug/l	99
15) Iodomethane	7.96	142	1281285	10.81	ug/l	99
16) Methyl acetate	8.61	43	226779	8.03	ug/l	99
17) Carbon disulfide	8.14	76	2959645	11.65	ug/l	100
18) Methylene chloride	8.91	49	1624263	11.92	ug/l	96
19) tert-Butyl alcohol	9.29	59	666830	225.23	ug/l	96
20) tert-Butyl methyl ether (M	9.61	73	1004487	8.62	ug/l	100
21) trans-1,2-Dichloroethene	9.71	96	850571	11.28	ug/l	99
22) Acrylonitrile	9.76	53	488528	44.84	ug/l	99
23) Isopropyl ether (DIPE)	11.17	45	3241860	10.65	ug/l	98
24) 1,1-Dichloroethane	11.10	63	1871752	11.53	ug/l	99
25) Vinyl acetate	11.27	43	1099521	10.61	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1778313	8.70	ug/l	97
27) 2,2-Dichloropropane	12.62	77	846901	12.12	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	816503	10.33	ug/l	100
29) 2-Butanone	12.74	72	133439	45.21	ug/l	99
30) 2-Butanol	13.31	45	10579	3.80	ug/l	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR353.D Vial: 3
Acq On : 19 Jun 2020 10:11 am Operator: ENguye/ODinh
Sample : VOF3F16L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31) Bromochloromethane	13.21	130	385910	10.32 ug/l	100
33) Chloroform	13.34	83	1452070	10.93 ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	986454	11.56 ug/l	97
36) Cyclohexane	13.68	84	638138	6.41 ug/l	99
37) 1,1-Dichloropropene	13.93	110	407583	11.28 ug/l	100
38) Carbon tetrachloride	13.91	119	883121	12.22 ug/l	99
42) Benzene	14.29	78	3118549	11.20 ug/l	99
43) 1,2-Dichloroethane	14.36	62	714260	10.84 ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	207499	8.75 ug/l	100
45) Trichloroethene	15.27	130	785118	10.79 ug/l	98
46) Methylcyclohexane	15.48	83	857242	7.49 ug/l	98
47) 1,2-Dichloropropane	15.60	63	894256	11.28 ug/l	100
48) 1,4-Dioxane	15.79	88	39079	199.69 ug/l	94
49) Dibromomethane	15.79	93	307756	10.23 ug/l	94
50) Bromodichloromethane	15.97	83	932769	11.61 ug/l	99
51) 2-Chloroethyl vinyl ether	16.33	63	83378	6.00 ug/l	97
52) cis-1,3-Dichloropropene	16.50	75	1072758	11.29 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1613086	48.24 ug/l	98
56) Toluene	16.88	91	2797485	11.56 ug/l	99
57) Ethyl methacrylate	17.16	69	482810	11.21 ug/l	94
58) trans-1,3-Dichloropropene	17.14	75	807587	11.70 ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	352071	10.70 ug/l	98
60) Tetrachloroethene	17.48	164	539058	11.27 ug/l	98
61) 2-Hexanone	17.56	43	1084286	46.43 ug/l	97
62) 1,3-Dichloropropane	17.53	76	682210	11.04 ug/l	99
63) Dibromochloromethane	17.80	129	487074	11.30 ug/l	100
64) 1,2-Dibromoethane	17.93	107	356348	11.20 ug/l	98
65) 1-Chlorohexane	18.26	91	1069272	11.04 ug/l	99
66) Chlorobenzene	18.36	112	1548541	11.13 ug/l	100
67) Ethylbenzene	18.41	91	3088110	11.56 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	521935	11.33 ug/l	99
69) m-Xylene & p-Xylene	18.51	91	4478370	22.13 ug/l	100
70) o-Xylene	18.88	91	2087065	10.56 ug/l	100
71) Styrene	18.90	104	1538930	11.20 ug/l	99
73) Bromoform	19.13	173	206056	11.70 ug/l	100
74) Isopropylbenzene	19.16	105	2692322	12.18 ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.45	83	390227	11.02 ug/l	99
77) trans-1,4-Dichloro-2-buten	19.49	53	127808	12.55 ug/l	94
78) n-Propylbenzene	19.51	91	3607648	12.27 ug/l	99
79) 1,2,3-Trichloropropane	19.51	110	76409	11.11 ug/l	87
80) Bromobenzene	19.51	156	549978	11.29 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR353.D
Acq On : 19 Jun 2020 10:11 am
Sample : VOF3F16L
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020

Vial: 3
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1954815	11.37	ug/l		100
82)	2-Chlorotoluene	19.64	91	2063724	11.75	ug/l		98
83)	4-Chlorotoluene	19.71	91	1884356	12.11	ug/l		99
84)	tert-Butylbenzene	19.92	134	426784	11.86	ug/l	#	50
85)	1,2,4-Trimethylbenzene	19.95	105	1836285	11.13	ug/l		99
86)	sec-Butylbenzene	20.10	105	2763260	11.80	ug/l		99
87)	p-Isopropyltoluene	20.19	119	2100995	11.26	ug/l		99
88)	1,3-Dichlorobenzene	20.28	146	937730	10.73	ug/l		97
89)	1,2,3-Trimethylbenzene	20.34	105	1565127	10.20	ug/l		99
90)	1,4-Dichlorobenzene	20.35	146	943519	10.55	ug/l		98
92)	n-Butylbenzene	20.55	91	2232602	10.93	ug/l		100
93)	1,2-Dichlorobenzene	20.69	146	776536	10.68	ug/l		99
94)	1,2-Dibromo-3-chloropropan	21.41	157	41919	10.23	ug/l		98
95)	1,2,4-Trichlorobenzene	22.20	180	419454	9.79	ug/l		99
96)	Hexachlorobutadiene	22.28	225	283195	10.60	ug/l		99
97)	Naphthalene	22.51	128	576773	9.44	ug/l		98
98)	1,2,3-Trichlorobenzene	22.79	180	323343	9.70	ug/l		100

(#) = qualifier out of range (m) = manual integration

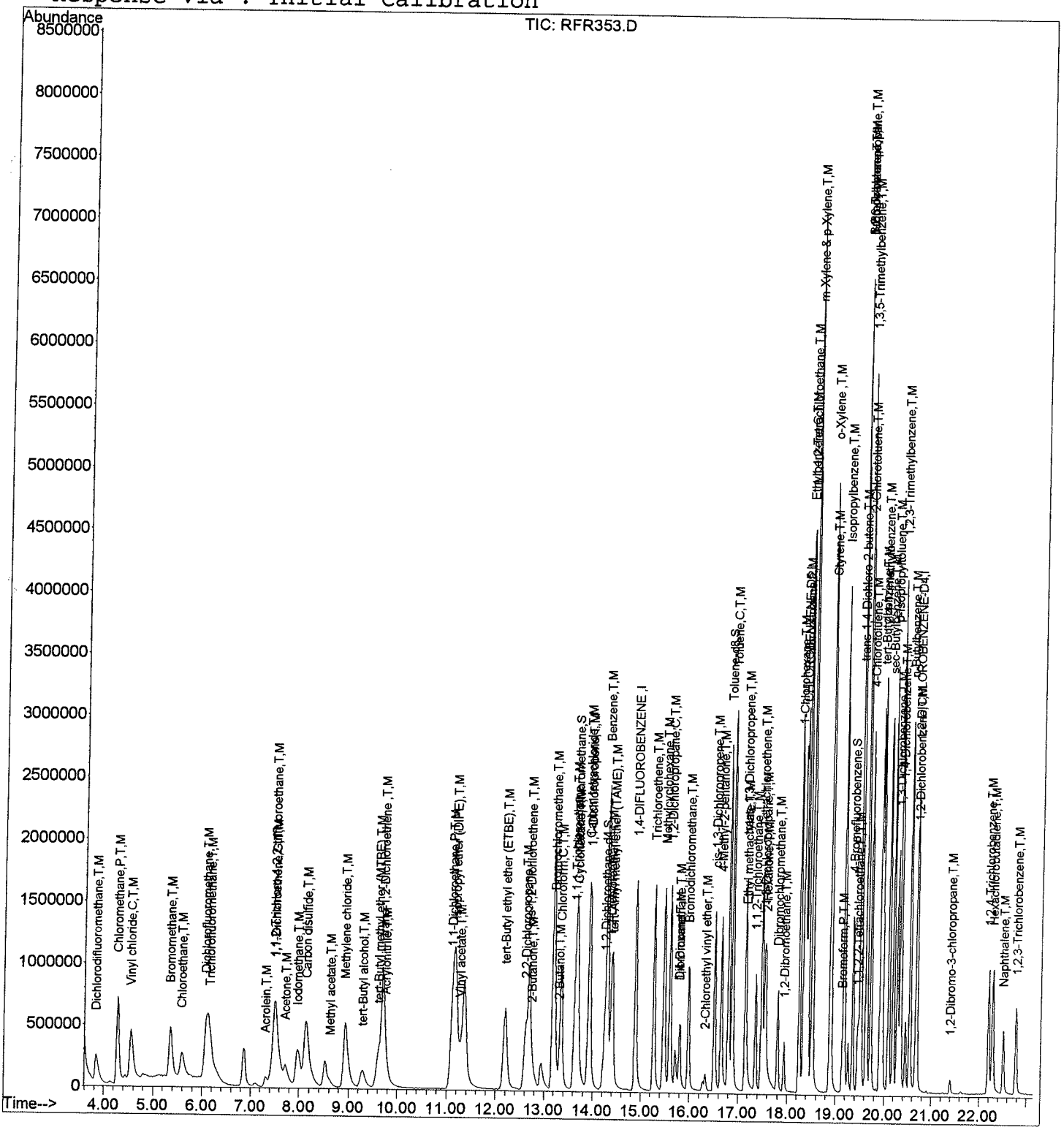
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR353.D
Acq On : 19 Jun 2020 10:11 am
Sample : VOF3F16L
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jun 22 12:55 2020

Vial: 3
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR354.D Vial: 4
Acq On : 19 Jun 2020 10:39 am Operator: ENguye/ODinh
Sample : VOF3F16C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:56 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1951518	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1462623	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	477829	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	694099	10.04	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.40%		
40) 1,2-Dichloroethane-d4	14.24	65	561177	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
55) Toluene-d8	16.80	98	2060081	10.17	ug/l	0.01
Spiked Amount 10.000			Recovery =	101.70%		
75) 4-Bromofluorobenzene	19.36	95	636984	10.64	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.40%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	760146	11.11	ug/l	98
4) Chloromethane	4.27	50	1713106	12.78	ug/l	99
6) Vinyl chloride	4.54	62	1344757	12.62	ug/l	100
7) Bromomethane	5.35	94	753456	10.06	ug/l	100
8) Chloroethane	5.58	64	627932	11.33	ug/l	97
9) Dichlorofluoromethane	6.07	67	2024294	12.33	ug/l	100
10) Trichlorofluoromethane	6.16	101	1094596	11.81	ug/l	99
11) Acrolein	7.31	56	223871	36.53	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.49	151	404541	9.44	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1601189	11.21	ug/l	97
14) Acetone	7.71	43	492330	48.24	ug/l	100
15) Iodomethane	7.98	142	1276040	10.79	ug/l	99
16) Methyl acetate	8.60	43	221389	7.86	ug/l	98
17) Carbon disulfide	8.14	76	3070813	12.11	ug/l	100
18) Methylene chloride	8.91	49	1598027	11.76	ug/l	98
19) tert-Butyl alcohol	9.29	59	703332	238.13	ug/l	97
20) tert-Butyl methyl ether (M	9.61	73	1043499	8.98	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	821090	10.92	ug/l	99
22) Acrylonitrile	9.76	53	495655	45.60	ug/l	99
23) Isopropyl ether (DIPE)	11.18	45	3255910	10.72	ug/l	98
24) 1,1-Dichloroethane	11.10	63	1843519	11.38	ug/l	99
25) Vinyl acetate	11.27	43	1150519	11.09	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1783330	8.74	ug/l	98
27) 2,2-Dichloropropane	12.62	77	832198	11.94	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	827305	10.49	ug/l	99
29) 2-Butanone	12.74	72	134444	45.66	ug/l	97
30) 2-Butanol	13.19	45	972	0.35	ug/l #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR354.D Vial: 4
Acq On : 19 Jun 2020 10:39 am Operator: ENguye/ODinh
Sample : VOF3F16C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:56 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	374558	10.04	ug/l	99
33)	Chloroform	13.34	83	1438038	10.85	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	968708	11.38	ug/l	98
36)	Cyclohexane	13.68	84	647315	6.52	ug/l	99
37)	1,1-Dichloropropene	13.93	110	392368	10.88	ug/l	99
38)	Carbon tetrachloride	13.91	119	868563	12.05	ug/l	100
42)	Benzene	14.29	78	3090700	11.12	ug/l	99
43)	1,2-Dichloroethane	14.36	62	711540	10.83	ug/l	100
44)	tert-Amyl methyl ether (TA	14.41	87	206060	8.71	ug/l	97
45)	Trichloroethene	15.27	130	766709	10.57	ug/l	96
46)	Methylcyclohexane	15.48	83	836455	7.32	ug/l	98
47)	1,2-Dichloropropane	15.60	63	900651	11.39	ug/l	100
48)	1,4-Dioxane	15.79	88	43813	224.42	ug/l	88
49)	Dibromomethane	15.79	93	316091	10.53	ug/l	97
50)	Bromodichloromethane	15.98	83	936538	11.68	ug/l	100
51)	2-Chloroethyl vinyl ether	16.32	63	93555	6.75	ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	1108395	11.69	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1741474	52.20	ug/l	97
56)	Toluene	16.87	91	2820861	11.18	ug/l	99
57)	Ethyl methacrylate	17.16	69	506104	11.27	ug/l	97
58)	trans-1,3-Dichloropropene	17.14	75	817539	11.36	ug/l	100
59)	1,1,2-Trichloroethane	17.35	97	355434	10.36	ug/l	96
60)	Tetrachloroethene	17.48	164	555372	11.14	ug/l	97
61)	2-Hexanone	17.56	43	1171371	48.11	ug/l	98
62)	1,3-Dichloropropane	17.53	76	727371	11.29	ug/l	99
63)	Dibromochloromethane	17.79	129	491272	10.93	ug/l	99
64)	1,2-Dibromoethane	17.93	107	376833	11.36	ug/l	98
65)	1-Chlorohexane	18.26	91	1103377	10.93	ug/l	99
66)	Chlorobenzene	18.36	112	1608466	11.09	ug/l	100
67)	Ethylbenzene	18.40	91	3076298	11.05	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	540696	11.25	ug/l	100
69)	m-Xylene & p-Xylene	18.51	91	4551726	21.57	ug/l	100
70)	o-Xylene	18.88	91	2264015	10.99	ug/l	100
71)	Styrene	18.89	104	1656976	11.57	ug/l	99
73)	Bromoform	19.15	173	212718	11.69	ug/l	99
74)	Isopropylbenzene	19.16	105	2751581	12.05	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	414519	11.33	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.49	53	124886	11.87	ug/l	99
78)	n-Propylbenzene	19.50	91	3637191	11.98	ug/l	100
79)	1,2,3-Trichloropropane	19.52	110	80071	11.27	ug/l	93
80)	Bromobenzene	19.52	156	556351	11.06	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F19\RFR354.D Vial: 4
Acq On : 19 Jun 2020 10:39 am Operator: ENguye/ODinh
Sample : VOF3F16C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:56 2020 Quant Results File: VOF3D02.RES

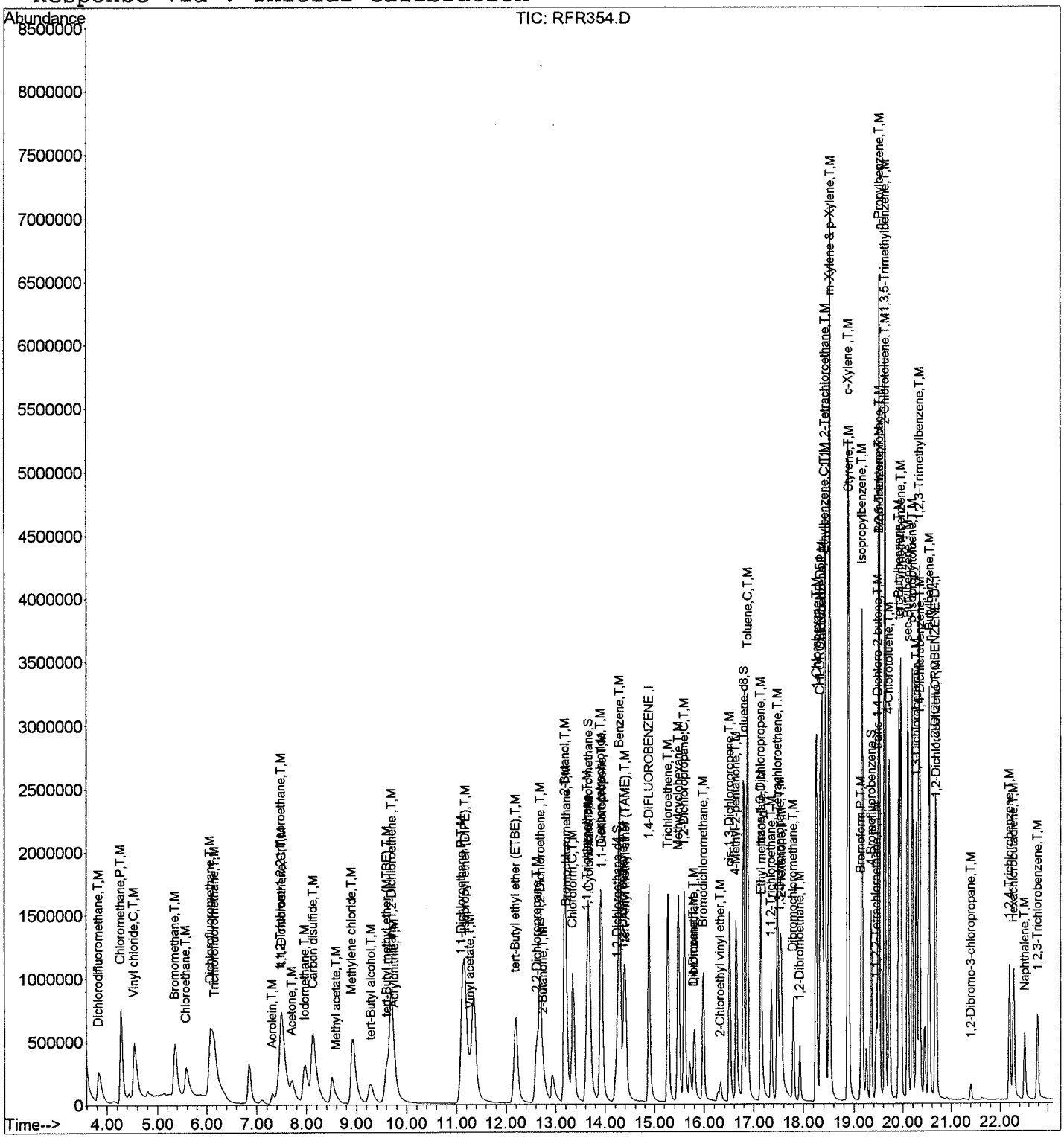
Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2064297	11.62	ug/l	100
82)	2-Chlorotoluene	19.64	91	2118295	11.68	ug/l	100
83)	4-Chlorotoluene	19.71	91	1845333	11.48	ug/l	99
84)	tert-Butylbenzene	19.92	134	444300	11.96	ug/l	99
85)	1,2,4-Trimethylbenzene	19.95	105	1971085	11.56	ug/l	99
86)	sec-Butylbenzene	20.10	105	2784814	11.52	ug/l	99
87)	p-Isopropyltoluene	20.19	119	2086374	10.83	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	1006943	11.16	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	1618232	10.22	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	958058	10.38	ug/l	97
92)	n-Butylbenzene	20.54	91	2268679	10.76	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	784415	10.45	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	43455	10.26	ug/l	96
95)	1,2,4-Trichlorobenzene	22.19	180	436073	9.85	ug/l	99
96)	Hexachlorobutadiene	22.28	225	278980	10.11	ug/l	99
97)	Naphthalene	22.52	128	625385	9.92	ug/l	99
98)	1,2,3-Trichlorobenzene	22.79	180	333092	9.68	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F19\RFR354.D Vial: 4
Acq On : 19 Jun 2020 10:39 am Operator: ENguye/ODinh
Sample : VOF3F16C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:56 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RDR001
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm

Contract: ICAL
SAS No.: SDG No.: ICAL
BFB Injection Date : 04/02/20
BFB Injection Time : 16:01
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.44
75	30.0 - 60.0% of mass 95	50.24
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.69
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	72.41
175	5.0 - 9.0% of mass 174	6.02(8.3)1
176	95.0 - 101.0% of mass 174	71.36(98.5)1
177	5.0 - 9.0% of mass 176	5.18(7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VOF3D021	RDR002	04/02/20	16:47
2	VSTD0.5	VOF3D022	RDR003	04/02/20	17:16
3	VSTD01	VOF3D023	RDR004	04/02/20	17:46
4	VSTD02	VOF3D024	RDR005	04/02/20	18:15
5	VSTD05	VOF3D025	RDR006	04/02/20	18:44
6	VSTD010	VOF3D026	RDR007	04/02/20	19:14
7	VSTD020	VOF3D027	RDR008	04/02/20	19:43
8	VSTD050	VOF3D029	RDR010	04/02/20	20:41
9	VSTD100	VOF3D0210	RDR011	04/02/20	21:11

SC 4/22/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	0.175	0.165	0.197	0.220	0.222	0.242	0.231	0.184	0.186	0.202	13.37	3.7589
	3	Dichlorodifluoromethane	0.310	0.307	0.373	0.391	0.358	0.388	0.379	0.298	------	0.350	11.16	3.8425
	4	Chloromethane	0.705	0.660	0.714	0.733	0.668	0.719	0.703	0.595	------	0.687	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	0.331	0.302	0.343	0.389	0.375	0.400	0.401	0.322	0.329	0.355	10.42	4.7880
	6	Vinyl chloride	0.500	0.474	0.575	0.599	0.575	0.595	0.605	0.491	0.501	0.546	9.75	4.5528
	7	Bromomethane	0.382	0.360	0.383	0.401	0.380	0.412	0.411	0.343	------	0.384	6.23	5.3574
	8	Chloroethane	0.284	0.261	0.295	0.314	0.286	0.297	0.284	0.252	------	0.284	6.98	5.6044
	9	Dichlorofluoromethane	0.933	0.867	0.884	0.928	0.817	0.878	0.794	0.726	0.743	0.841	8.97	6.0816
	10	Trichlorofluoromethane	0.411	0.403	0.501	0.519	0.513	0.509	0.506	0.437	------	0.475	10.30	6.1711
5	11	Acrolein	------	------	------	0.037	0.034	0.030	0.029	0.029	0.030	0.031	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.222	0.216	0.225	0.246	0.224	0.227	0.217	0.199	0.201	0.220	6.46	7.4752
	13	1,1-Dichloroethene	0.759	0.717	0.776	0.820	0.719	0.769	0.722	0.651	0.655	0.732	7.60	7.5281
5	14	Acetone	------	------	------	0.062	0.058	0.048	0.048	0.048	0.049	0.052	12.14	7.7175
	15	Iodomethane	0.598	0.604	0.601	0.666	0.586	0.584	0.585	0.624	0.605	0.606	4.28	8.0221
	16	Methyl acetate	------	------	------	0.163	0.136	0.143	0.151	0.139	0.134	0.144	7.47	8.5966
	17	Carbon disulfide	1.076	1.118	1.366	1.418	1.351	1.483	1.432	1.260	1.188	1.299	11.19	8.1455
	18	Methylene chloride	0.692	0.700	0.726	0.790	0.701	0.701	0.690	0.657	0.613	0.697	6.84	8.9727
25	19	tert-Butyl alcohol	0.017	0.016	0.015	0.016	0.016	0.013	0.014	0.014	0.015	0.015	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	0.711	0.631	0.604	0.658	0.596	0.529	0.530	0.551	0.548	0.595	10.55	9.6218
	21	trans-1,2-Dichloroethene	0.386	0.383	0.392	0.431	0.385	0.384	0.374	0.376	0.358	0.385	5.12	9.7045
5	22	Acrylonitrile	------	------	0.050	0.059	0.058	0.053	0.055	0.057	0.059	0.056	6.20	9.7634
	23	Isopropyl ether (DIPE)	1.509	1.497	1.572	1.765	1.677	1.548	1.519	1.495	1.426	1.556	6.67	11.1810
	24	1,1-Dichloroethane	0.846	0.802	0.873	0.920	0.841	0.838	0.805	0.791	0.753	0.830	5.89	11.1175
	25	Vinyl acetate	------	------	------	0.357	0.467	0.507	0.609	0.542	------	0.496	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	1.223	1.133	1.187	1.038	0.939	0.961	0.941	0.943	1.045	11.38	12.1937
	27	2,2-Dichloropropane	0.399	0.380	0.388	0.379	0.338	0.315	0.302	------	------	0.357	10.74	12.6159
	28	cis-1,2-Dichloroethene	0.407	0.411	0.428	0.440	0.406	0.387	0.381	0.389	0.386	0.404	5.04	12.6905
5	29	2-Butanone	------	------	------	0.015	0.017	0.015	0.014	0.015	0.015	0.015	5.59	12.7443
25	30	2-Butanol	------	------	0.011	0.016	0.016	0.014	0.015	0.014	0.014	0.014	13.24	13.1447
	31	Bromochloromethane	0.182	0.190	0.194	0.213	0.197	0.178	0.184	0.189	0.193	0.191	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	0.682	0.669	0.696	0.751	0.693	0.657	0.662	0.659	0.646	0.679	4.65	13.3528
	34	Dibromofluoromethane	------	0.317	0.346	0.375	0.361	0.366	0.371	0.342	------	0.354	5.79	13.6698
	35	1,1,1-Trichloroethane	0.426	0.452	0.475	0.487	0.438	0.438	0.430	0.401	0.379	0.436	7.71	13.6343
	36	Cyclohexane	0.506	0.466	0.534	0.552	0.518	0.515	0.529	0.448	------	0.509	6.86	13.6839
	37	1,1-Dichloropropene	0.162	0.181	0.185	0.198	0.198	0.192	0.183	0.185	0.179	0.185	6.05	13.9379
	38	Carbon tetrachloride	0.337	0.349	0.381	0.392	0.392	0.373	0.369	0.370	0.361	0.369	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	0.230	0.287	0.274	0.296	0.307	0.285	0.333	0.315	0.297	0.292	9.98	14.2526
	41	2,2,4-Trimethylpentane	1.403	1.362	1.487	1.742	1.666	1.777	1.733	1.412	------	1.573	11.03	14.3132
	42	Benzene	------	1.366	1.479	1.543	1.432	1.375	1.343	1.427	------	1.424	4.94	14.2933
	43	1,2-Dichloroethane	0.318	0.330	0.352	0.387	0.368	0.318	0.325	0.325	0.307	0.337	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	0.112	0.112	0.124	0.136	0.135	0.113	0.119	0.121	0.119	0.121	7.52	14.4078
	45	Trichloroethene	0.327	0.358	0.369	0.400	0.387	0.366	0.366	0.388	0.385	0.372	5.85	15.2746
	46	Methylcyclohexane	------	0.499	0.583	0.586	0.622	0.605	0.617	------	------	0.585	7.70	15.4780
	47	1,2-Dichloropropane	0.387	0.383	0.434	0.441	0.416	0.406	0.391	0.395	0.392	0.405	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	------	0.001	7.92	15.7868
	49	Dibromomethane	------	0.145	0.149	0.169	0.160	0.144	0.149	0.149	0.166	0.154	6.25	15.7991
	50	Bromodichloromethane	0.407	0.382	0.424	0.445	0.428	0.391	0.412	0.401	0.407	0.411	4.67	15.9796
	51	2-Chloroethyl vinyl ether	------	------	0.062	0.073	0.075	0.067	0.072	0.077	------	0.071	8.10	16.3223
	52	cis-1,3-Dichloropropene	0.463	0.437	0.489	0.521	0.515	0.483	0.478	0.488	0.496	0.486	5.25	16.5146
5	53	4-Methyl-2-pentanone	------	0.146	0.165	0.172	0.197	0.169	0.174	0.176	0.169	0.171	8.26	16.6479
	54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
	55	Toluene-d8	------	1.231	1.295	1.454	1.446	1.432	1.414	1.421	------	1.385	6.24	16.7961
	56	Toluene	1.631	1.707	1.744	1.882	1.788	1.693	1.567	1.785	------	1.725	5.72	16.8783
	57	Ethyl methacrylate	------	0.272	0.284	0.332	0.343	0.298	0.284	0.324	0.321	0.307	8.48	17.1680
	58	trans-1,3-Dichloropropene	0.448	0.460	0.475	0.550	0.535	0.498	0.453	0.515	0.494	0.492	7.37	17.1502

SU
4/22/20

59	1,1,2-Trichloroethane	0.205	0.230	0.241	0.271	0.251	0.224	0.209	0.236	0.242	0.235	8.71	17.3583
60	Tetrachloroethene	0.306	0.334	0.342	0.366	0.347	0.338	0.311	0.355	0.370	0.341	6.42	17.4870
5 61	2-Hexanone	0.180	0.172	0.159	0.182	0.183	0.159	0.143	0.161	0.159	0.166	8.10	17.5910
62	1,3-Dichloropropane	0.398	0.428	0.446	0.486	0.476	0.435	0.402	0.443	0.450	0.440	6.69	17.5399
63	Dibromochloromethane	0.269	0.285	0.298	0.332	0.327	0.304	0.289	0.320	0.340	0.307	7.81	17.8024
64	1,2-Dibromoethane	0.199	0.203	0.219	0.259	0.247	0.220	0.218	0.233	0.244	0.227	8.99	17.9361
65	1-Chlorohexane	0.707	0.714	0.673	0.714	0.727	0.694	0.608	0.695	0.682	0.690	5.12	18.2564
66	Chlorobenzene	0.940	0.964	1.005	1.092	1.007	1.015	0.933	1.047	0.918	0.991	5.79	18.3621
67	Ethylbenzene	1.800	1.920	1.966	2.125	1.959	1.928	1.785	1.746	------	1.904	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	0.288	0.319	0.328	0.371	0.336	0.338	0.301	0.346	------	0.329	7.94	18.4274
2 69	m-Xylene & p-Xylene	1.446	1.406	1.449	1.635	1.408	1.412	1.344	------	------	1.443	6.36	18.5134
70	o-Xylene	1.356	1.389	1.399	1.568	1.434	1.468	1.323	1.330	------	1.408	5.79	18.8825
71	Styrene	0.921	0.923	0.953	1.142	1.051	1.055	0.924	0.989	0.856	0.980	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	0.275	0.340	0.396	0.418	0.389	0.369	0.411	0.448	0.381	14.10	19.1406
74	Isopropylbenzene	4.524	4.937	4.839	5.023	5.017	5.178	4.577	4.131	------	4.778	7.21	19.1685
75	4-Bromofluorobenzene	1.200	1.231	1.159	1.281	1.297	1.351	1.282	1.222	------	1.253	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	0.746	0.729	0.822	0.858	0.841	0.733	0.675	0.721	------	0.766	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	0.238	0.217	0.237	0.245	0.214	0.204	0.199	0.206	0.220	7.97	19.4861
78	n-Propylbenzene	5.850	6.629	6.237	6.731	6.660	6.451	5.929	------	------	6.355	5.63	19.5090
79	1,2,3-Trichloropropane	------	0.159	0.142	0.174	0.170	0.139	0.134	0.132	0.138	0.149	11.08	19.5121
80	Bromobenzene	0.935	1.083	0.999	1.148	1.134	1.055	0.995	1.035	1.092	1.053	6.57	19.5162
81	1,3,5-Trimethylbenzene	3.697	3.883	3.670	3.846	3.837	3.858	3.405	3.544	------	3.717	4.64	19.6255
82	2-Chlorotoluene	3.704	4.003	3.715	4.036	3.935	3.918	3.462	3.596	------	3.796	5.46	19.6403
83	4-Chlorotoluene	3.294	3.481	3.352	3.595	3.397	3.444	3.093	3.257	------	3.364	4.56	19.7220
84	tert-Butylbenzene	0.740	0.847	0.765	0.761	0.829	0.794	0.690	0.798	0.775	0.778	6.04	19.9223
85	1,2,4-Trimethylbenzene	3.488	3.757	3.655	3.717	3.644	3.532	3.156	3.587	------	3.567	5.28	19.9579
86	sec-Butylbenzene	5.021	5.448	5.124	5.215	5.019	5.353	4.703	4.598	------	5.060	5.83	20.1010
87	p-Isopropyltoluene	4.207	4.425	3.906	4.135	4.017	4.078	3.624	3.857	------	4.031	6.01	20.1901
88	1,3-Dichlorobenzene	1.914	1.849	1.796	2.034	2.003	1.877	1.675	1.899	1.954	1.889	5.77	20.2790
89	1,2,3-Trimethylbenzene	3.143	3.491	3.459	3.469	3.291	3.307	3.053	3.308	------	3.315	4.76	20.3387
90	1,4-Dichlorobenzene	1.805	1.999	1.923	2.074	1.861	1.967	1.758	1.987	2.017	1.932	5.41	20.3533
91	Benzyl Chloride	1.029	1.050	0.914	1.045	1.085	0.958	0.897	0.992	1.031	1.000	6.47	20.4507
92	n-Butylbenzene	4.394	4.739	4.335	4.497	4.475	4.558	4.071	4.243	------	4.414	4.62	20.5468
93	1,2-Dichlorobenzene	1.521	1.571	1.583	1.652	1.601	1.491	1.498	1.561	1.664	1.571	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	0.081	0.089	0.096	0.087	0.083	0.096	------	0.089	7.42	21.4067
95	1,2,4-Trichlorobenzene	0.902	0.852	0.860	0.947	0.961	0.934	0.863	0.983	1.032	0.926	6.69	22.1991
96	Hexachlorobutadiene	0.549	0.591	0.550	0.576	0.614	0.627	0.535	0.586	0.568	0.577	5.32	22.2850
97	Naphthalene	1.303	1.349	1.173	1.378	1.411	1.283	1.211	1.311	1.459	1.320	6.93	22.5161
98	1,2,3-Trichlorobenzene	0.656	0.654	0.699	0.741	0.781	0.749	0.663	0.761	0.779	0.720	7.34	22.7869

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.4 Max_%RSD : 18.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
25	Vinyl acetate	-0.04163	0.56891	0.9974

SM
4/22/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	87	82	98	109	110	120	114	91	92	11.6	13.37	3.7589
	3	Dichlorodifluoromethane	89	88	107	112	102	111	108	85	------	9.8	11.16	3.8425
	4	Chloromethane	103	96	104	107	97	105	102	87	------	5	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	93	85	97	110	106	113	113	91	93	9.2	10.42	4.7880
	6	Vinyl chloride	92	87	105	110	105	109	111	90	92	8.9	9.75	4.5528
	7	Bromomethane	99	94	100	104	99	107	107	89	------	4.7	6.23	5.3574
	8	Chloroethane	100	92	104	111	101	105	100	89	------	4.9	6.98	5.6044
	9	Dichlorofluoromethane	111	103	105	110	97	104	94	86	88	7.5	8.97	6.0816
	10	Trichlorofluoromethane	87	85	105	109	108	107	107	92	------	9.1	10.30	6.1711
5	11	Acrolein	------	------	------	119	110	97	94	94	97	8.1	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	101	98	102	112	102	103	99	90	91	4.6	6.46	7.4752
	13	1,1-Dichloroethene	104	98	106	112	98	105	99	89	89	6	7.60	7.5281
5	14	Acetone	------	------	------	119	112	92	92	92	94	9.9	12.14	7.7175
	15	Iodomethane	99	100	99	110	97	96	97	103	100	2.9	4.28	8.0221
	16	Methyl acetate	------	------	------	113	94	99	105	97	93	5.8	7.47	8.5966
	17	Carbon disulfide	83	86	105	109	104	114	110	97	91	9.5	11.19	8.1455
	18	Methylene chloride	99	100	104	113	101	101	99	94	88	4.3	6.84	8.9727
25	19	tert-Butyl alcohol	113	107	100	107	107	87	93	93	100	6.7	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	119	106	102	111	100	89	89	93	92	8.3	10.55	9.6218
	21	trans-1,2-Dichloroethene	100	99	102	112	100	100	97	98	93	3	5.12	9.7045
5	22	Acrylonitrile	------	------	89	105	104	95	98	102	105	4.8	6.20	9.7634
	23	Isopropyl ether (DIPE)	97	96	101	113	108	99	98	96	92	4.9	6.67	11.1810
	24	1,1-Dichloroethane	102	97	105	111	101	101	97	95	91	4.5	5.89	11.1175
	25	Vinyl acetate	------	------	------	99	97	96	111	97	------	4.4	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	117	108	114	99	90	92	90	90	9.7	11.38	12.1937
	27	2,2-Dichloropropane	112	106	109	106	95	88	85	------	------	9.4	10.74	12.6159
	28	cis-1,2-Dichloroethene	101	102	106	109	100	96	94	96	96	4	5.04	12.6905
5	29	2-Butanone	------	------	------	100	113	100	93	100	100	3.3	5.59	12.7443
25	30	2-Butanol	------	------	79	114	114	100	107	100	100	8.2	13.24	13.1447
	31	Bromochloromethane	95	99	102	112	103	93	96	99	101	3.8	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	100	99	103	111	102	97	97	97	95	3.4	4.65	13.3528
	34	Dibromofluoromethane	------	90	98	106	102	103	105	97	------	4.6	5.79	13.6698
	35	1,1,1-Trichloroethane	98	104	109	112	100	100	99	92	87	5.6	7.71	13.6343
	36	Cyclohexane	99	92	105	108	102	101	104	88	------	5.2	6.86	13.6839
	37	1,1-Dichloropropene	88	98	100	107	107	104	99	100	97	4.1	6.05	13.9379
	38	Carbon tetrachloride	91	95	103	106	106	101	100	100	98	3.7	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	79	98	94	101	105	98	114	108	102	6.8	9.98	14.2526
	41	2,2,4-Trimethylpentane	89	87	95	111	106	113	110	90	------	10	11.03	14.3132
	42	Benzene	------	96	104	108	101	97	94	100	------	3.7	4.94	14.2933
	43	1,2-Dichloroethane	94	98	104	115	109	94	96	96	91	6.4	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	93	93	102	112	112	93	98	100	98	5.7	7.52	14.4078
	45	Trichloroethene	88	96	99	108	104	98	98	104	103	4.4	5.85	15.2746
	46	Methylcyclohexane	------	85	100	100	106	103	105	------	------	5.1	7.70	15.4780
	47	1,2-Dichloropropane	96	95	107	109	103	100	97	98	97	4.2	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	100	100	100	100	100	------	0	7.92	15.7868

For 8260C
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49	Dibromomethane	------	94	97	110	104	94	97	97	108	5.4	6.25	15.7991
50	Bromodichloromethane	99	93	103	108	104	95	100	98	99	3.6	4.67	15.9796
51	2-Chloroethyl vinyl ether	------	------	87	103	106	94	101	108	------	6.1	8.10	16.3223
52	cis-1,3-Dichloropropene	95	90	101	107	106	99	98	100	102	3.7	5.25	16.5146
5 53	4-Methyl-2-pentanone	------	85	96	101	115	99	102	103	99	5.1	8.26	16.6479
54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
55	Toluene-d8	------	89	94	105	104	103	102	103	------	5	6.24	16.7961
56	Toluene	95	99	101	109	104	98	91	103	------	4.4	5.72	16.8783
57	Ethyl methacrylate	------	89	93	108	112	97	93	106	105	7.4	8.48	17.1680
58	trans-1,3-Dichloropropene	91	93	97	112	109	101	92	105	100	6	7.37	17.1502
59	1,1,2-Trichloroethane	87	98	103	115	107	95	89	100	103	6.5	8.71	17.3583
60	Tetrachloroethene	90	98	100	107	102	99	91	104	109	4.9	6.42	17.4870
5 61	2-Hexanone	108	104	96	110	110	96	86	97	96	6.8	8.10	17.5910
62	1,3-Dichloropropane	90	97	101	110	108	99	91	101	102	5	6.69	17.5399
63	Dibromochloromethane	88	93	97	108	107	99	94	104	111	6.6	7.81	17.8024
64	1,2-Dibromoethane	88	89	96	114	109	97	96	103	107	7.4	8.99	17.9361
65	1-Chlorohexane	102	103	98	103	105	101	88	101	99	3.5	5.12	18.2564
66	Chlorobenzene	95	97	101	110	102	102	94	106	93	4.7	5.79	18.3621
67	Ethylbenzene	95	101	103	112	103	101	94	92	------	5	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	88	97	100	113	102	103	91	105	------	5.9	7.94	18.4274
2 69	m-Xylene & p-Xylene	100	97	100	113	98	98	93	------	------	4	6.36	18.5134
70	o-Xylene	96	99	99	111	102	104	94	94	------	4.3	5.79	18.8825
71	Styrene	94	94	97	117	107	108	94	101	87	7.3	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	72	89	104	110	102	97	108	118	10.4	14.10	19.1406
74	Isopropylbenzene	95	103	101	105	105	108	96	86	------	5.8	7.21	19.1685
75	4-Bromofluorobenzene	96	98	92	102	104	108	102	98	------	4	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	97	95	107	112	110	96	88	94	------	7.3	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	108	99	108	111	97	93	90	94	6.8	7.97	19.4861
78	n-Propylbenzene	92	104	98	106	105	102	93	------	------	4.7	5.63	19.5090
79	1,2,3-Trichloropropane	------	107	95	117	114	93	90	89	93	9.7	11.08	19.5121
80	Bromobenzene	89	103	95	109	108	100	94	98	104	5.2	6.57	19.5162
81	1,3,5-Trimethylbenzene	99	104	99	103	103	104	92	95	------	3.7	4.64	19.6255
82	2-Chlorotoluene	98	105	98	106	104	103	91	95	------	4.7	5.46	19.6403
83	4-Chlorotoluene	98	103	100	107	101	102	92	97	------	3.4	4.56	19.7220
84	tert-Butylbenzene	95	109	98	98	107	102	89	103	100	4.5	6.04	19.9223
85	1,2,4-Trimethylbenzene	98	105	102	104	102	99	88	101	------	3.7	5.28	19.9579
86	sec-Butylbenzene	99	108	101	103	99	106	93	91	------	4.4	5.83	20.1010
87	p-Isopropyltoluene	104	110	97	103	100	101	90	96	------	4.5	6.01	20.1901
88	1,3-Dichlorobenzene	101	98	95	108	106	99	89	101	103	4.2	5.77	20.2790
89	1,2,3-Trimethylbenzene	95	105	104	105	99	100	92	100	------	3.6	4.76	20.3387
90	1,4-Dichlorobenzene	93	103	100	107	96	102	91	103	104	4.4	5.41	20.3533
91	Benzyl Chloride	103	105	91	104	108	96	90	99	103	5.3	6.47	20.4507
92	n-Butylbenzene	100	107	98	102	101	103	92	96	------	3.5	4.62	20.5468
93	1,2-Dichlorobenzene	97	100	101	105	102	95	95	99	106	3	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	91	100	108	98	93	108	------	5.6	7.42	21.4067
95	1,2,4-Trichlorobenzene	97	92	93	102	104	101	93	106	111	5.4	6.69	22.1991
96	Hexachlorobutadiene	95	102	95	100	106	109	93	102	98	4.2	5.32	22.2850
97	Naphthalene	99	102	89	104	107	97	92	99	111	5.4	6.93	22.5161
98	1,2,3-Trichlorobenzene	91	91	97	103	108	104	92	106	108	6.5	7.34	22.7869

For 8260C
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Compound List Report F3

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
Total Cpnds : 98

K#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	14.88	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	3.76	0.252	A	1	A	B
3	T	Dichlorodifluoromethane	85	3.85	0.258	A	1	A	B
4	T	Chloromethane	50	4.29	0.288	A	1	A	B
5	T	2-Chloro-1,1,1-trifluoroethane	118	4.80	0.322	A	2	A	B
6	T	Vinyl chloride	62	4.55	0.306	A	1	A	B
7	T	Bromomethane	94	5.36	0.360	A	1	A	B
8	T	Chloroethane	64	5.61	0.377	A	1	A	B
9	T	Dichlorofluoromethane	67	6.09	0.409	A	1	A	B
10	T	Trichlorofluoromethane	101	6.17	0.415	A	1	A	B
11	T	Acrolein	56	7.32	0.492	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	7.48	0.503	A	1	A	B
13	T	1,1-Dichloroethene	61	7.53	0.506	A	2	A	B
14	T	Acetone	43	7.73	0.519	A	1	A	B
15	T	Iodomethane	142	8.03	0.539	A	1	A	B
16	T	Methyl acetate	43	8.59	0.577	A	1	A	B
17	T	Carbon disulfide	76	8.15	0.548	A	1	A	B
18	T	Methylene chloride	49	9.00	0.604	A	2	A	B
19	T	tert-Butyl alcohol	59	9.29	0.624	A	1	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	9.61	0.646	A	1	A	B
21	T	trans-1,2-Dichloroethene	96	9.71	0.652	A	1	A	B
22	T	Acrylonitrile	53	9.76	0.656	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	11.18	0.751	A	1	A	B
24	T	1,1-Dichloroethane	63	11.13	0.748	A	2	A	B
25	T	Vinyl acetate	43	11.27	0.757	L	1	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	12.19	0.819	A	1	A	B
27	T	2,2-Dichloropropane	77	12.62	0.848	A	2	A	B
28	T	cis-1,2-Dichloroethene	96	12.69	0.853	A	1	A	B
29	T	2-Butanone	72	12.74	0.856	A	1	A	B
30	T	2-Butanol	45	13.14	0.883	A	1	A	B
31	T	Bromochloromethane	130	13.21	0.888	A	1	A	B
32	T	Tetrahydrofuran	71	13.26	0.891	A	1	A	B
33	T	Chloroform	83	13.36	0.898	A	2	A	B
34	S	Dibromofluoromethane	111	13.66	0.918	A	1	A	B
35	T	1,1,1-Trichloroethane	97	13.63	0.916	A	2	A	B
36	T	Cyclohexane	84	13.68	0.919	A	1	A	B
37	T	1,1-Dichloropropene	110	13.93	0.936	A	1	A	B
38	T	Carbon tetrachloride	119	13.91	0.934	A	1	A	B
39	T	tert-Amyl alcohol	59	14.33	0.963	A	1	A	B
40	S	1,2-Dichloroethane-d4	65	14.24	0.957	A	1	A	B
41	T	2,2,4-Trimethylpentane	57	14.32	0.962	A	1	A	B
42	T	Benzene	78	14.29	0.960	A	2	A	B
43	T	1,2-Dichloroethane	62	14.36	0.965	A	1	A	B
44	T	tert-Amyl methyl ether (TAME)	87	14.41	0.968	A	1	A	B
45	T	Trichloroethene	130	15.27	1.026	A	3	A	B
46	T	Methylcyclohexane	83	15.48	1.040	A	2	A	B
47	T	1,2-Dichloropropane	63	15.60	1.048	A	1	A	B
48	T	1,4-Dioxane	88	15.79	1.061	A	1	A	B
49	T	Dibromomethane	93	15.79	1.061	A	2	A	B
50	T	Bromodichloromethane	83	15.98	1.074	A	1	A	B
51	T	2-Chloroethyl vinyl ether	63	16.31	1.096	A	1	A	B
52	T	cis-1,3-Dichloropropene	75	16.50	1.109	A	2	A	B
53	T	4-Methyl-2-pentanone	43	16.64	1.118	A	3	A	B

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4	I	CHLOROBENZENE-D5	117	18.33	1.000	A	2	A	B
5	S	Toluene-d8	98	16.79	0.916	A	1	A	B
6	T	Toluene	91	16.87	0.921	A	1	A	B
7	T	Ethyl methacrylate	69	17.16	0.936	A	1	A	B
8	T	trans-1,3-Dichloropropene	75	17.14	0.935	A	1	A	B
9	T	1,1,2-Trichloroethane	97	17.35	0.946	A	2	A	B
0	T	Tetrachloroethene	164	17.48	0.954	A	3	A	B
1	T	2-Hexanone	43	17.56	0.958	A	1	A	B
2	T	1,3-Dichloropropane	76	17.53	0.956	A	1	A	B
3	T	Dibromochloromethane	129	17.80	0.971	A	1	A	B
4	T	1,2-Dibromoethane	107	17.93	0.978	A	1	A	B
5	T	1-Chlorohexane	91	18.26	0.996	A	1	A	B
6	P,M	Chlorobenzene	112	18.36	1.002	A	1	A	B
7	T	Ethylbenzene	91	18.42	1.005	A	1	A	B
8	T	1,1,1,2-Tetrachloroethane	131	18.42	1.005	A	1	A	B
9	T	m-Xylene & p-Xylene	91	18.51	1.010	A	1	A	B
0	T	o-Xylene	91	18.88	1.030	A	1	A	B
1	T	Styrene	104	18.90	1.031	A	2	A	B
2	I	1,2-DICHLOROBENZENE-D4	152	20.68	1.000	A	1	A	B
3	T	Bromoform	173	19.13	0.925	A	2	A	B
4	T	Isopropylbenzene	105	19.16	0.927	A	3	A	B
5	S	4-Bromofluorobenzene	95	19.36	0.936	A	2	A	B
6	T	1,1,2,2-Tetrachloroethane	83	19.46	0.941	A	1	A	B
7	T	trans-1,4-Dichloro-2-butene	53	19.47	0.942	A	1	A	B
8	T	n-Propylbenzene	91	19.50	0.943	A	2	A	B
9	T	1,2,3-Trichloropropane	110	19.52	0.944	A	1	A	B
0	T	Bromobenzene	156	19.52	0.944	A	1	A	B
1	T	1,3,5-Trimethylbenzene	105	19.62	0.949	A	2	A	B
2	T	2-Chlorotoluene	91	19.64	0.950	A	1	A	B
3	T	4-Chlorotoluene	91	19.71	0.953	A	1	A	B
4	T	tert-Butylbenzene	134	19.92	0.963	A	1	A	B
5	T	1,2,4-Trimethylbenzene	105	19.95	0.965	A	1	A	B
6	T	sec-Butylbenzene	105	20.10	0.972	A	1	A	B
7	T	p-Isopropyltoluene	119	20.19	0.976	A	2	A	B
3	T	1,3-Dichlorobenzene	146	20.28	0.981	A	2	A	B
9	T	1,2,3-Trimethylbenzene	105	20.34	0.983	A	2	A	B
0	T	1,4-Dichlorobenzene	146	20.35	0.984	A	2	A	B
	T	Benzyl Chloride	91	20.44	0.989	A	3	A	B
2	T	n-Butylbenzene	91	20.54	0.994	A	2	A	B
3	T	1,2-Dichlorobenzene	146	20.69	1.001	A	1	A	B
4	T	1,2-Dibromo-3-chloropropane	157	21.41	1.035	A	1	A	B
5	T	1,2,4-Trichlorobenzene	180	22.19	1.073	A	2	A	B
6	T	Hexachlorobutadiene	225	22.28	1.078	A	2	A	B
7	T	Naphthalene	128	22.51	1.088	A	1	A	B
8	T	1,2,3-Trichlorobenzene	180	22.79	1.102	A	2	A	B

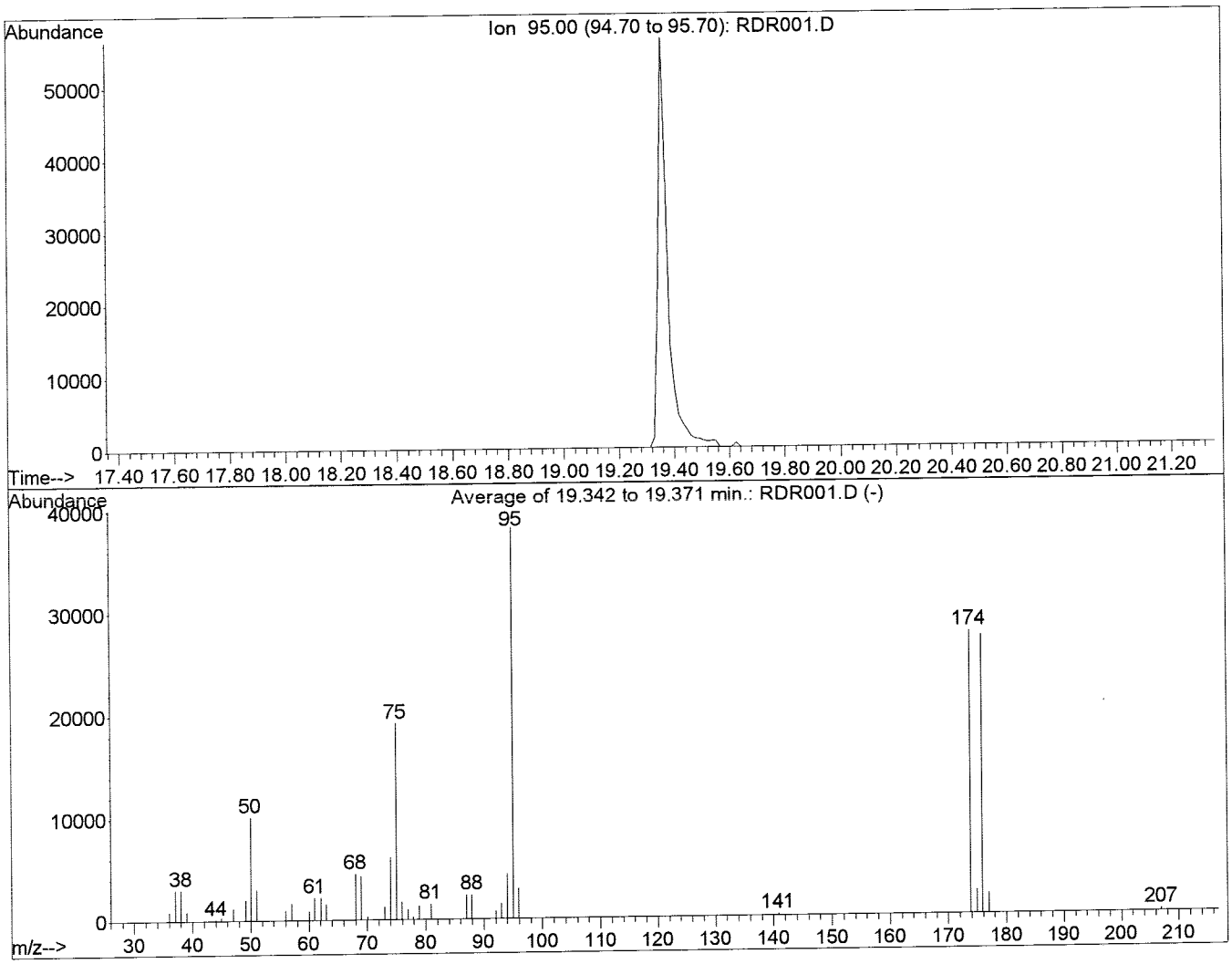
al A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
Qual = number of qualifiers
A/H = Area or Height
D R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VOF3D02.M Thu Apr 16 17:33:18 2020

SW 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR001.D
Acq On : 2 Apr 2020 4:01 pm
Sample : BFBF3D01
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.4	10107	PASS
75	95	30	60	50.2	19203	PASS
95	95	100	100	100.0	38219	PASS
96	95	5	9	7.7	2940	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.4	27673	PASS
175	174	5	9	8.3	2302	PASS
176	174	95	101	98.5	27271	PASS
177	176	5	9	7.3	1980	PASS

RDR001.D VOF3D02.M Mon Apr 06 13:02:52 2020

SV 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2298716	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.35	117	1901409	10.00 ug/l	0.01
72) 1,2-DICHLOROBENZENE-D4	20.68	152	649361	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.68	111	20119	0.25 ug/l	0.03
Spiked Amount 10.000			Recovery =	2.50%	
40) 1,2-Dichloroethane-d4	14.29	65	15842	0.24 ug/l	0.04
Spiked Amount 10.000			Recovery =	2.40%	
55) Toluene-d8	16.83	98	60959	0.23 ug/l	0.04
Spiked Amount 10.000			Recovery =	2.30%	
75) 4-Bromofluorobenzene	19.37	95	23380	0.29 ug/l	0.01
Spiked Amount 10.000			Recovery =	2.90%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	12072	0.26 ug/l	98
3) Dichlorodifluoromethane	3.85	85	21390	0.27 ug/l	95
4) Chloromethane	4.29	50	48596	0.31 ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	22801	0.28 ug/l	88
6) Vinyl chloride	4.55	62	34513	0.27 ug/l	92
7) Bromomethane	5.36	94	26333	0.30 ug/l	93
8) Chloroethane	5.59	64	19583	0.30 ug/l	97
9) Dichlorofluoromethane	6.09	67	64314	0.33 ug/l	69
10) Trichlorofluoromethane	6.17	101	28370	0.26 ug/l	97
11) Acrolein	7.34	56	13334	1.85 ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	7.46	151	15275	0.30 ug/l	95
13) 1,1-Dichloroethene	7.53	61	52366	0.31 ug/l	100
14) Acetone	7.76	43	28400	2.36 ug/l	86
15) Iodomethane	8.03	142	41265	0.30 ug/l	97
17) Carbon disulfide	8.17	76	74229	0.25 ug/l	100
18) Methylene chloride	8.98	49	47729	0.30 ug/l	97
19) tert-Butyl alcohol	9.31	59	29519	8.48 ug/l	98
20) tert-Butyl methyl ether (M	9.64	73	49053	0.36 ug/l	84
21) trans-1,2-Dichloroethene	9.71	96	26634	0.30 ug/l	98
23) Isopropyl ether (DIPE)	11.20	45	104056	0.29 ug/l	100
24) 1,1-Dichloroethane	11.13	63	58340	0.31 ug/l	98
26) tert-Butyl ethyl ether (ET	12.22	59	98267	0.41 ug/l	100
27) 2,2-Dichloropropane	12.62	77	27524	0.34 ug/l	90
28) cis-1,2-Dichloroethene	12.72	96	28096	0.30 ug/l	94
31) Bromochloromethane	13.24	130	12550	0.29 ug/l	99
33) Chloroform	13.36	83	47042	0.30 ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	29348	0.29 ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
36)	Cyclohexane	13.68	84	34906	0.30 ug/l	86
37)	1,1-Dichloropropene	13.96	110	11149	0.26 ug/l	88
38)	Carbon tetrachloride	13.93	119	23254	0.27 ug/l	96
41)	2,2,4-Trimethylpentane	14.32	57	96746	0.27 ug/l	99
42)	Benzene	14.32	78	99592	0.30 ug/l	99
43)	1,2-Dichloroethane	14.41	62	21940	0.28 ug/l	98
44)	tert-Amyl methyl ether (TA	14.42	87	7720	0.28 ug/l	90
45)	Trichloroethene	15.30	130	22530	0.26 ug/l	93
46)	Methylcyclohexane	15.49	83	35217	0.26 ug/l	91
47)	1,2-Dichloropropane	15.63	63	26709	0.29 ug/l	97
50)	Bromodichloromethane	16.00	83	28053	0.30 ug/l	100
52)	cis-1,3-Dichloropropene	16.55	75	31960	0.29 ug/l	95
53)	4-Methyl-2-pentanone	16.70	43	48287	1.23 ug/l	91
56)	Toluene	16.89	91	93025	0.28 ug/l	97
57)	Ethyl methacrylate	17.25	69	15771	0.27 ug/l	84
58)	trans-1,3-Dichloropropene	17.19	75	25576	0.27 ug/l	79
59)	1,1,2-Trichloroethane	17.38	97	11702	0.26 ug/l	96
60)	Tetrachloroethene	17.50	164	17462	0.27 ug/l	93
61)	2-Hexanone	17.74	43	51309	1.62 ug/l	86
62)	1,3-Dichloropropane	17.56	76	22690	0.27 ug/l	91
63)	Dibromochloromethane	17.83	129	15366	0.26 ug/l	92
64)	1,2-Dibromoethane	17.96	107	11326	0.26 ug/l	96
65)	1-Chlorohexane	18.27	91	40336	0.31 ug/l	87
66)	Chlorobenzene	18.37	112	53638	0.28 ug/l	98
67)	Ethylbenzene	18.43	91	102687	0.28 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.43	131	16440	0.26 ug/l	87
69)	m-Xylene & p-Xylene	18.52	91	164960	0.60 ug/l	95
70)	o-Xylene	18.89	91	77337	0.29 ug/l	96
71)	Styrene	18.92	104	52535	0.28 ug/l	95
73)	Bromoform	19.16	173	6321	0.26 ug/l	95
74)	Isopropylbenzene	19.18	105	88125	0.28 ug/l	98
76)	1,1,2,2-Tetrachloroethane	19.47	83	14525	0.29 ug/l	86
77)	trans-1,4-Dichloro-2-buten	19.52	53	2921	0.20 ug/l	70
78)	n-Propylbenzene	19.52	91	113968	0.28 ug/l	99
79)	1,2,3-Trichloropropane	19.53	110	1997	0.21 ug/l	61
80)	Bromobenzene	19.53	156	18222	0.27 ug/l	99
81)	1,3,5-Trimethylbenzene	19.64	105	72014	0.30 ug/l	97
82)	2-Chlorotoluene	19.65	91	72163	0.29 ug/l	99
83)	4-Chlorotoluene	19.74	91	64170	0.29 ug/l	96
84)	tert-Butylbenzene	19.94	134	14408	0.29 ug/l	98
85)	1,2,4-Trimethylbenzene	19.98	105	67941	0.29 ug/l	100

(#) = qualifier out of range (m) = manual integration
RDR002.D VOF3D02.M Thu Apr 16 17:32:17 2020 SU 4/24/20 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
86)	sec-Butylbenzene	20.11	105	97819	0.30	ug/l	99
87)	p-Isopropyltoluene	20.20	119	81949	0.31	ug/l	98
88)	1,3-Dichlorobenzene	20.29	146	37293	0.30	ug/l	96
89)	1,2,3-Trimethylbenzene	20.35	105	61229	0.28	ug/l	97
90)	1,4-Dichlorobenzene	20.37	146	35161	0.28	ug/l	91
91)	Benzyl Chloride	20.47	91	20054	0.31	ug/l	97
92)	n-Butylbenzene	20.56	91	85604	0.30	ug/l	96
93)	1,2-Dichlorobenzene	20.71	146	29632	0.29	ug/l	95
95)	1,2,4-Trichlorobenzene	22.21	180	17570	0.29	ug/l	98
96)	Hexachlorobutadiene	22.30	225	10701	0.29	ug/l	80
97)	Naphthalene	22.54	128	25390	0.30	ug/l	95
98)	1,2,3-Trichlorobenzene	22.80	180	12775	0.27	ug/l	98

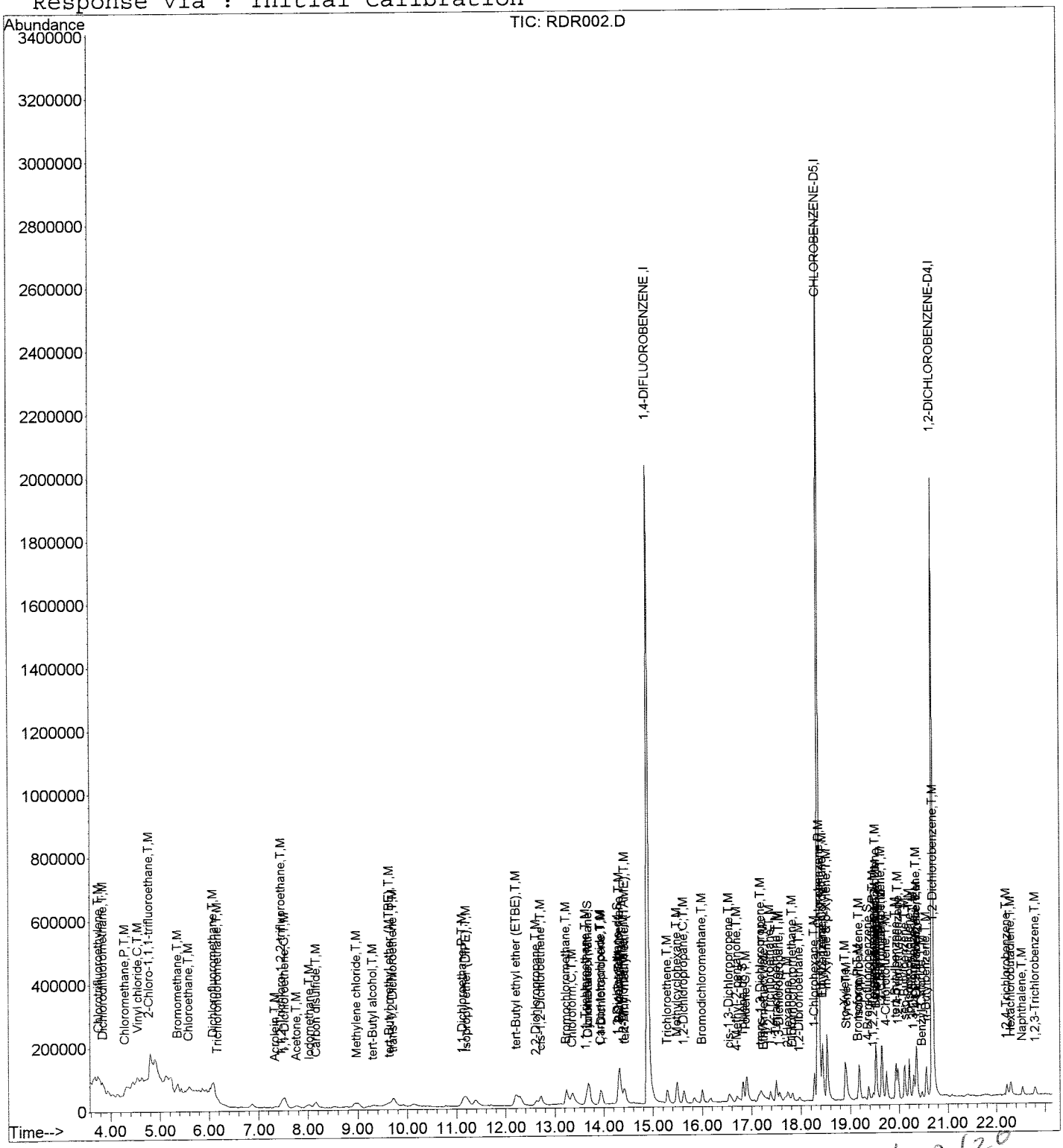
(#) = qualifier out of range (m) = manual integration SA 4/24/20
RDR002.D VOF3D02.M Thu Apr 16 17:32:17 2020 Page 3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Su 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2253751	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1733328	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	581543	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	35702	0.45	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.50%		
40) 1,2-Dichloroethane-d4	14.27	65	32358	0.49	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.90%		
55) Toluene-d8	16.82	98	106648	0.44	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.40%		
75) 4-Bromofluorobenzene	19.36	95	35807	0.49	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	18571	0.41	ug/l	99
3) Dichlorodifluoromethane	3.84	85	34544	0.44	ug/l	92
4) Chloromethane	4.29	50	74323	0.48	ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	34075	0.43	ug/l	89
6) Vinyl chloride	4.55	62	53371	0.43	ug/l	94
7) Bromomethane	5.36	94	40563	0.47	ug/l	99
8) Chloroethane	5.61	64	29449	0.46	ug/l	98
9) Dichlorofluoromethane	6.09	67	97710	0.52	ug/l	79
10) Trichlorofluoromethane	6.17	101	45426	0.42	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	24358	0.49	ug/l	97
13) 1,1-Dichloroethene	7.53	61	80771	0.49	ug/l	100
14) Acetone	7.74	43	38513	3.27	ug/l	86
15) Iodomethane	8.04	142	68007	0.50	ug/l	99
17) Carbon disulfide	8.15	76	126024	0.43	ug/l	100
18) Methylene chloride	8.98	49	78847	0.50	ug/l	95
19) tert-Butyl alcohol	9.31	59	45037	13.20	ug/l	81
20) tert-Butyl methyl ether (M	9.63	73	71118	0.53	ug/l	95
21) trans-1,2-Dichloroethene	9.73	96	43209	0.50	ug/l	100
22) Acrylonitrile	9.88	53	24620	1.96	ug/l	93
23) Isopropyl ether (DIPE)	11.20	45	168710	0.48	ug/l	100
24) 1,1-Dichloroethane	11.13	63	90367	0.48	ug/l	97
26) tert-Butyl ethyl ether (ET	12.19	59	137773	0.58	ug/l	99
27) 2,2-Dichloropropane	12.62	77	42773	0.53	ug/l	94
28) cis-1,2-Dichloroethene	12.71	96	46334	0.51	ug/l	96
30) 2-Butanol	13.26	45	22244	6.93	ug/l	90
31) Bromochloromethane	13.24	130	21378	0.50	ug/l	99
33) Chloroform	13.36	83	75369	0.49	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:21 2020 SK 4/22/20 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35)	1,1,1-Trichloroethane	13.63	97	50931	0.52	ug/l	98
36)	Cyclohexane	13.68	84	52538	0.46	ug/l	96
37)	1,1-Dichloropropene	13.96	110	20371	0.49	ug/l	96
38)	Carbon tetrachloride	13.93	119	39345	0.47	ug/l	98
41)	2,2,4-Trimethylpentane	14.30	57	153510	0.43	ug/l	98
42)	Benzene	14.30	78	153883	0.48	ug/l	98
43)	1,2-Dichloroethane	14.39	62	37179	0.49	ug/l	94
44)	tert-Amyl methyl ether (TA	14.42	87	12602	0.46	ug/l	94
45)	Trichloroethene	15.29	130	40307	0.48	ug/l	97
46)	Methylcyclohexane	15.48	83	56253	0.43	ug/l	84
47)	1,2-Dichloropropane	15.61	63	43195	0.47	ug/l	99
49)	Dibromomethane	15.82	93	16286	0.47	ug/l	94
50)	Bromodichloromethane	15.98	83	43085	0.47	ug/l	99
52)	cis-1,3-Dichloropropene	16.53	75	49224	0.45	ug/l	88
53)	4-Methyl-2-pentanone	16.68	43	82213	2.13	ug/l	95
56)	Toluene	16.89	91	147943	0.49	ug/l	99
57)	Ethyl methacrylate	17.23	69	23605	0.44	ug/l	97
58)	trans-1,3-Dichloropropene	17.17	75	39857	0.47	ug/l	93
59)	1,1,2-Trichloroethane	17.37	97	19938	0.49	ug/l	94
60)	Tetrachloroethene	17.50	164	28978	0.49	ug/l	97
61)	2-Hexanone	17.66	43	74474	2.58	ug/l	92
62)	1,3-Dichloropropane	17.56	76	37126	0.49	ug/l	98
63)	Dibromochloromethane	17.81	129	24733	0.46	ug/l	95
64)	1,2-Dibromoethane	17.95	107	17584	0.45	ug/l	98
65)	1-Chlorohexane	18.26	91	61916	0.52	ug/l	95
66)	Chlorobenzene	18.36	112	83583	0.49	ug/l	100
67)	Ethylbenzene	18.42	91	166391	0.50	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.44	131	27684	0.49	ug/l	92
69)	m-Xylene & p-Xylene	18.52	91	243672	0.97	ug/l	98
70)	o-Xylene	18.88	91	120352	0.49	ug/l	100
71)	Styrene	18.91	104	79991	0.47	ug/l	98
73)	Bromoform	19.15	173	7990	0.36	ug/l	79
74)	Isopropylbenzene	19.18	105	143566	0.52	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	21184	0.48	ug/l	92
77)	trans-1,4-Dichloro-2-buten	19.51	53	6926	0.54	ug/l	73
78)	n-Propylbenzene	19.52	91	192741	0.52	ug/l	100
79)	1,2,3-Trichloropropane	19.52	110	4616	0.53	ug/l	70
80)	Bromobenzene	19.52	156	31503	0.51	ug/l	92
81)	1,3,5-Trimethylbenzene	19.62	105	112901	0.52	ug/l	99
82)	2-Chlorotoluene	19.64	91	116393	0.53	ug/l	99
83)	4-Chlorotoluene	19.73	91	101216	0.52	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D
Acq On : 2 Apr 2020 5:16 pm
Sample : VOF3D022
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 3
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84) tert-Butylbenzene	19.92	134	24617	0.54 ug/l	83
85) 1,2,4-Trimethylbenzene	19.97	105	109229	0.53 ug/l	98
86) sec-Butylbenzene	20.10	105	158425	0.54 ug/l	99
87) p-Isopropyltoluene	20.19	119	128655	0.55 ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	53755	0.49 ug/l	98
89) 1,2,3-Trimethylbenzene	20.34	105	101496	0.53 ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	58125	0.52 ug/l	98
91) Benzyl Chloride	20.46	91	30520	0.52 ug/l	93
92) n-Butylbenzene	20.55	91	137810	0.54 ug/l	96
93) 1,2-Dichlorobenzene	20.69	146	45688	0.50 ug/l	91
94) 1,2-Dibromo-3-chloropropan	21.42	157	1717	0.33 ug/l	99
95) 1,2,4-Trichlorobenzene	22.21	180	24774	0.46 ug/l	94
96) Hexachlorobutadiene	22.28	225	17178	0.51 ug/l	97
97) Naphthalene	22.52	128	39224	0.51 ug/l	98
98) 1,2,3-Trichlorobenzene	22.79	180	19020	0.45 ug/l	96

SA 4/22/20

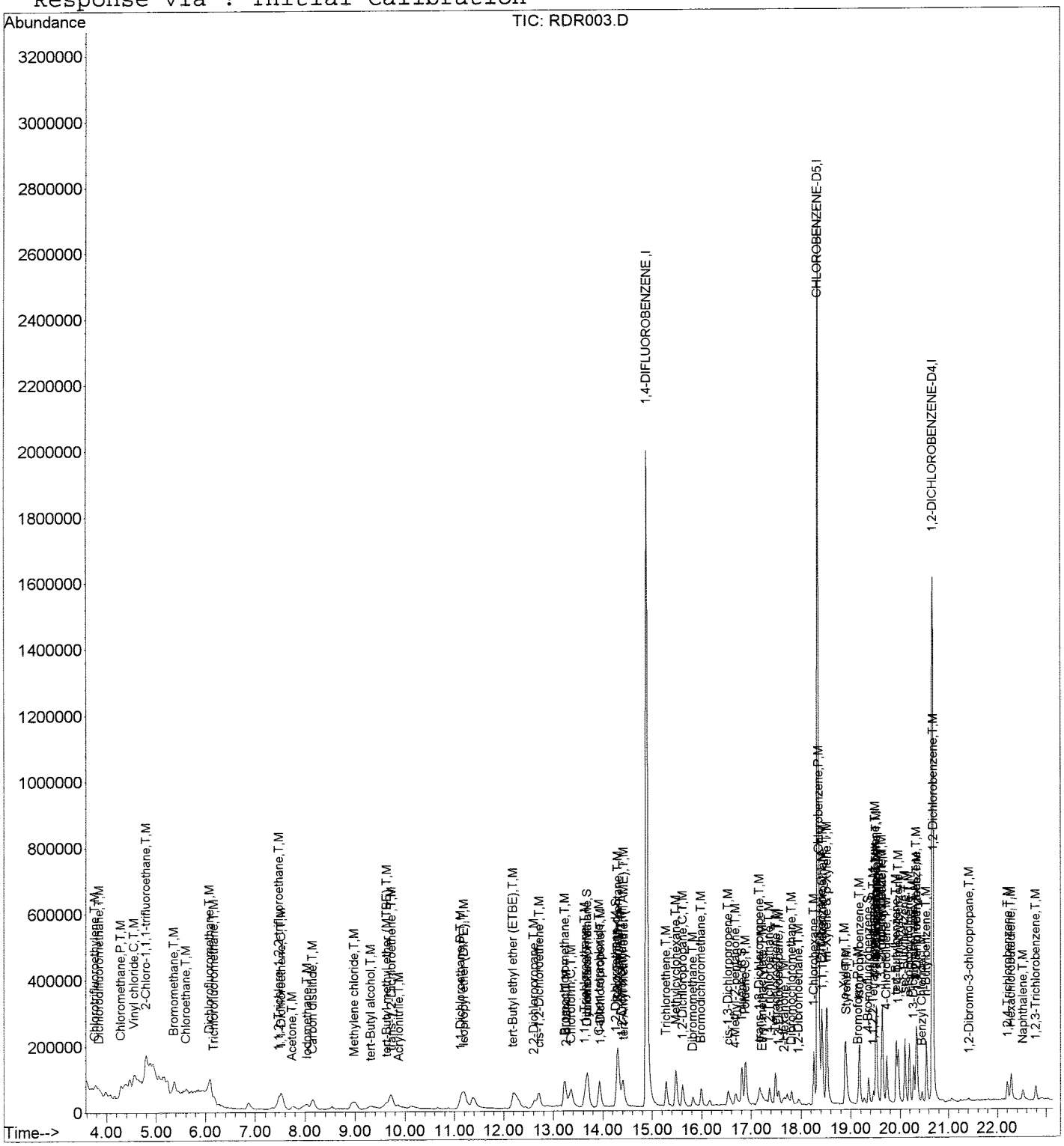
(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:22 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D
Acq On : 2 Apr 2020 5:16 pm
Sample : VOF3D022
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 3
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2169726	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1735707	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	588690	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	75178	0.98	ug/l	0.03
Spiked Amount 10.000			Recovery =	9.80%		
40) 1,2-Dichloroethane-d4	14.26	65	59462	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
55) Toluene-d8	16.80	98	224740	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
75) 4-Bromofluorobenzene	19.36	95	68218	0.92	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.20%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	42705	0.97	ug/l	96
3) Dichlorodifluoromethane	3.84	85	80903	1.06	ug/l	97
4) Chloromethane	4.29	50	154823	1.04	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	74512	0.97	ug/l	95
6) Vinyl chloride	4.55	62	124867	1.05	ug/l	97
7) Bromomethane	5.36	94	83152	1.00	ug/l	97
8) Chloroethane	5.61	64	63990	1.04	ug/l	99
9) Dichlorofluoromethane	6.08	67	191814	1.05	ug/l	93
10) Trichlorofluoromethane	6.17	101	108662	1.05	ug/l	96
11) Acrolein	7.34	56	42600	6.25	ug/l	86
12) 1,1,2-Trichloro-1,2,2-trif	7.50	151	48834	1.02	ug/l	99
13) 1,1-Dichloroethene	7.53	61	168399	1.06	ug/l	99
14) Acetone	7.76	43	58922	5.19	ug/l	98
15) Iodomethane	8.02	142	130400	0.99	ug/l	100
16) Methyl acetate	8.66	43	14933	0.48	ug/l	94
17) Carbon disulfide	8.15	76	296376	1.05	ug/l	98
18) Methylene chloride	8.92	49	157447	1.04	ug/l	99
19) tert-Butyl alcohol	9.31	59	82087	25.00	ug/l	95
20) tert-Butyl methyl ether (M	9.64	73	130992	1.01	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	84964	1.02	ug/l	100
22) Acrylonitrile	9.83	53	53937	4.46	ug/l	94
23) Isopropyl ether (DIPE)	11.20	45	341006	1.01	ug/l	99
24) 1,1-Dichloroethane	11.13	63	189312	1.05	ug/l	99
25) Vinyl acetate	11.40	43	45383	1.10	ug/l	96
26) tert-Butyl ethyl ether (ET	12.19	59	245915	1.08	ug/l	98
27) 2,2-Dichloropropane	12.62	77	84179	1.09	ug/l	95
28) cis-1,2-Dichloroethene	12.69	96	92838	1.06	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30) 2-Butanol	13.21	45	57846	18.72	ug/l	93
31) Bromochloromethane	13.21	130	42186	1.02	ug/l	100
33) Chloroform	13.36	83	150906	1.02	ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	103067	1.09	ug/l	99
36) Cyclohexane	13.68	84	115790	1.05	ug/l	99
37) 1,1-Dichloropropene	13.93	110	40038	1.00	ug/l	99
38) Carbon tetrachloride	13.93	119	82623	1.03	ug/l	100
41) 2,2,4-Trimethylpentane	14.30	57	322724	0.95	ug/l	99
42) Benzene	14.30	78	320915	1.04	ug/l	98
43) 1,2-Dichloroethane	14.39	62	76406	1.05	ug/l	98
44) tert-Amyl methyl ether (TA	14.41	87	26925	1.02	ug/l	99
45) Trichloroethene	15.28	130	80066	0.99	ug/l	97
46) Methylcyclohexane	15.48	83	126436	1.00	ug/l	94
47) 1,2-Dichloropropane	15.61	63	94256	1.07	ug/l	98
48) 1,4-Dioxane	15.83	88	3613	16.65	ug/l	85
49) Dibromomethane	15.81	93	32398	0.97	ug/l	99
50) Bromodichloromethane	15.98	83	92088	1.03	ug/l	98
51) 2-Chloroethyl vinyl ether	16.35	63	13386	0.87	ug/l	72
52) cis-1,3-Dichloropropene	16.52	75	106137	1.01	ug/l	95
53) 4-Methyl-2-pentanone	16.67	43	178757	4.82	ug/l	94
56) Toluene	16.87	91	302771	1.01	ug/l	100
57) Ethyl methacrylate	17.20	69	49213	0.92	ug/l	97
58) trans-1,3-Dichloropropene	17.16	75	82460	0.97	ug/l	97
59) 1,1,2-Trichloroethane	17.37	97	41917	1.03	ug/l	98
60) Tetrachloroethene	17.48	164	59372	1.00	ug/l	97
61) 2-Hexanone	17.60	43	138270	4.79	ug/l	94
62) 1,3-Dichloropropane	17.54	76	77422	1.01	ug/l	99
63) Dibromochloromethane	17.81	129	51679	0.97	ug/l	99
64) 1,2-Dibromoethane	17.94	107	38092	0.97	ug/l	97
65) 1-Chlorohexane	18.26	91	116850	0.97	ug/l	98
66) Chlorobenzene	18.36	112	174428	1.01	ug/l	99
67) Ethylbenzene	18.42	91	341233	1.03	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.44	131	56921	1.00	ug/l	99
69) m-Xylene & p-Xylene	18.51	91	502861	2.01	ug/l	99
70) o-Xylene	18.88	91	242873	0.99	ug/l	97
71) Styrene	18.91	104	165454	0.97	ug/l	99
73) Bromoform	19.15	173	19990	0.89	ug/l	96
74) Isopropylbenzene	19.18	105	284874	1.01	ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	48415	1.07	ug/l	98
77) trans-1,4-Dichloro-2-buten	19.51	53	12764	0.98	ug/l	88
78) n-Propylbenzene	19.51	91	367180	0.98	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D Vial: 4
Acq On : 2 Apr 2020 5:46 pm Operator: RMinam
Sample : VOF3D023 Inst : F3
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	1,2,3-Trichloropropane	19.52	110	8379	0.96	ug/l	84
80)	Bromobenzene	19.52	156	58838	0.95	ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	216034	0.99	ug/l	99
82)	2-Chlorotoluene	19.64	91	218692	0.98	ug/l	99
83)	4-Chlorotoluene	19.73	91	197331	1.00	ug/l	100
84)	tert-Butylbenzene	19.92	134	45023	0.98	ug/l	98
85)	1,2,4-Trimethylbenzene	19.97	105	215140	1.02	ug/l	98
86)	sec-Butylbenzene	20.10	105	301672	1.01	ug/l	96
87)	p-Isopropyltoluene	20.19	119	229967	0.97	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	105731	0.95	ug/l	96
89)	1,2,3-Trimethylbenzene	20.34	105	203626	1.04	ug/l	96
90)	1,4-Dichlorobenzene	20.35	146	113207	1.00	ug/l	98
91)	Benzyl Chloride	20.46	91	53791	0.91	ug/l	96
92)	n-Butylbenzene	20.55	91	255194	0.98	ug/l	98
93)	1,2-Dichlorobenzene	20.69	146	93163	1.01	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	4748	0.91	ug/l	99
95)	1,2,4-Trichlorobenzene	22.21	180	50651	0.93	ug/l	98
96)	Hexachlorobutadiene	22.28	225	32354	0.95	ug/l	98
97)	Naphthalene	22.52	128	69056	0.89	ug/l	97
98)	1,2,3-Trichlorobenzene	22.79	180	41146	0.97	ug/l	95

Su 4/22/20

(#) = qualifier out of range (m) = manual integration

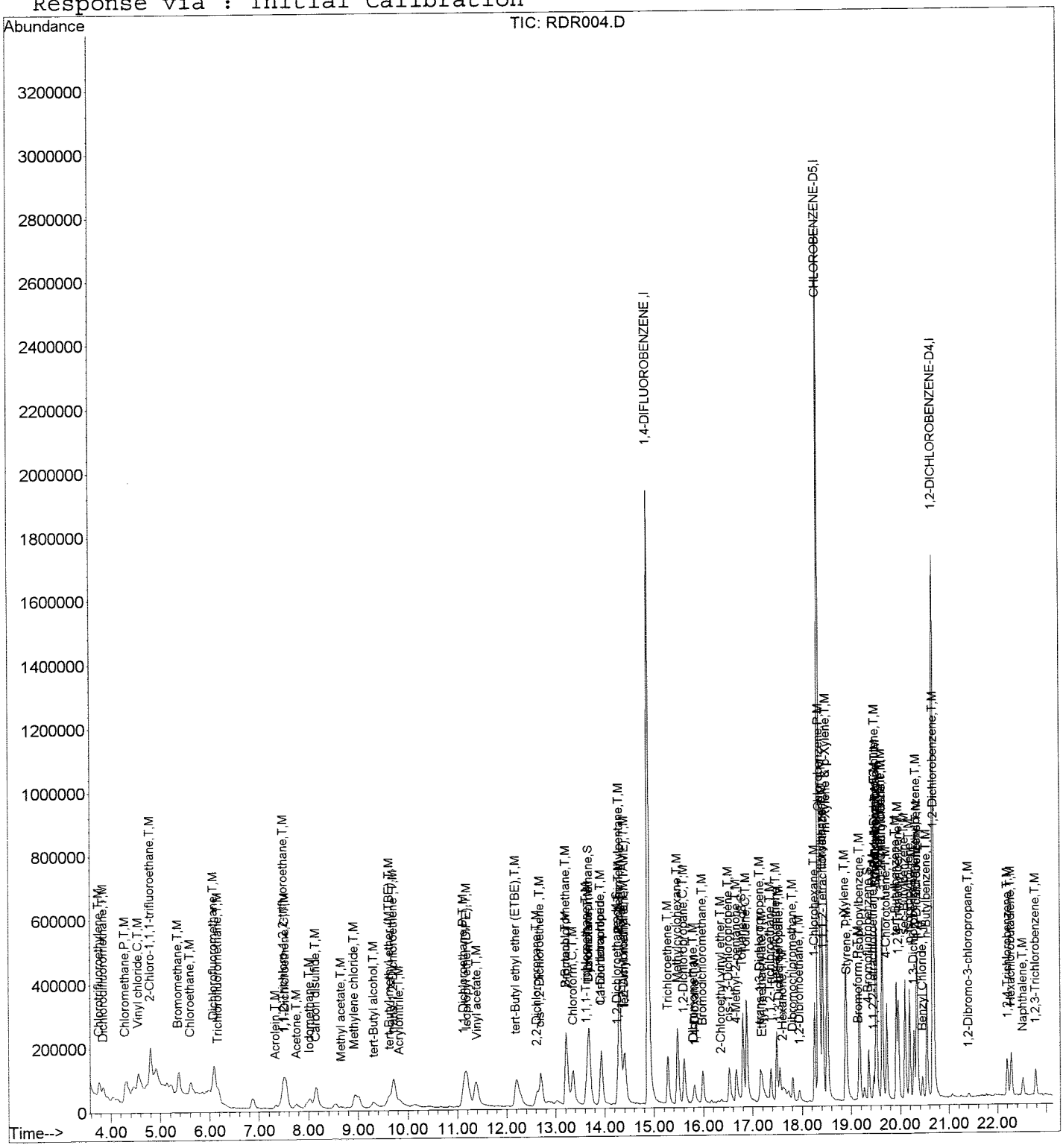
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D Vial: 5
Acq On : 2 Apr 2020 6:15 pm Operator: RMinam
Sample : VOF3D024 Inst : F3
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2079658	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1598101	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	591493	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	156092	2.12	ug/l	0.03
Spiked Amount 10.000			Recovery =	21.20%		
40) 1,2-Dichloroethane-d4	14.24	65	122970	2.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.30%		
55) Toluene-d8	16.80	98	464750	2.10	ug/l	0.01
Spiked Amount 10.000			Recovery =	21.00%		
75) 4-Bromofluorobenzene	19.36	95	151526	2.04	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.40%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	91312	2.17	ug/l	98
3) Dichlorodifluoromethane	3.84	85	162686	2.23	ug/l	97
4) Chloromethane	4.29	50	304853	2.13	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	161834	2.19	ug/l	96
6) Vinyl chloride	4.55	62	248984	2.19	ug/l	99
7) Bromomethane	5.36	94	166615	2.09	ug/l	98
8) Chloroethane	5.61	64	130681	2.21	ug/l	98
9) Dichlorofluoromethane	6.08	67	386182	2.21	ug/l	95
10) Trichlorofluoromethane	6.17	101	215714	2.18	ug/l	99
11) Acrolein	7.32	56	76970	11.79	ug/l	90
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	102199	2.24	ug/l	98
13) 1,1-Dichloroethene	7.53	61	341160	2.24	ug/l	100
14) Acetone	7.74	43	129316	11.89	ug/l	93
15) Iodomethane	8.01	142	277069	2.20	ug/l	99
16) Methyl acetate	8.64	43	67606	2.25	ug/l	87
17) Carbon disulfide	8.15	76	589707	2.18	ug/l	100
18) Methylene chloride	8.98	49	328496	2.27	ug/l	99
19) tert-Butyl alcohol	9.29	59	169134	53.74	ug/l	93
20) tert-Butyl methyl ether (M	9.64	73	273692	2.21	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	179185	2.24	ug/l	99
22) Acrylonitrile	9.79	53	121779	10.51	ug/l	93
23) Isopropyl ether (DIPE)	11.18	45	733965	2.27	ug/l	99
24) 1,1-Dichloroethane	11.13	63	382453	2.22	ug/l	100
25) Vinyl acetate	11.32	43	148338	1.99	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	493545	2.27	ug/l	98
27) 2,2-Dichloropropane	12.62	77	157455	2.12	ug/l	97
28) cis-1,2-Dichloroethene	12.69	96	183151	2.18	ug/l	98

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:30 2020 Page 1

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.82	72	30937	9.86 ug/l	69
30) 2-Butanol	13.19	45	164096	55.40 ug/l	89
31) Bromochloromethane	13.21	130	88764	2.23 ug/l	99
33) Chloroform	13.36	83	312318	2.21 ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	202547	2.23 ug/l	99
36) Cyclohexane	13.68	84	229731	2.17 ug/l	100
37) 1,1-Dichloropropene	13.93	110	82530	2.15 ug/l	99
38) Carbon tetrachloride	13.91	119	162969	2.12 ug/l	99
41) 2,2,4-Trimethylpentane	14.30	57	724349	2.21 ug/l	99
42) Benzene	14.29	78	641972	2.17 ug/l	99
43) 1,2-Dichloroethane	14.38	62	161059	2.30 ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	56363	2.24 ug/l	96
45) Trichloroethene	15.27	130	166548	2.15 ug/l	98
46) Methylcyclohexane	15.48	83	243573	2.00 ug/l	96
47) 1,2-Dichloropropane	15.60	63	183361	2.18 ug/l	99
48) 1,4-Dioxane	15.80	88	7220	34.70 ug/l	72
49) Dibromomethane	15.80	93	70141	2.19 ug/l	98
50) Bromodichloromethane	15.98	83	185058	2.17 ug/l	99
51) 2-Chloroethyl vinyl ether	16.34	63	30415	2.06 ug/l	92
52) cis-1,3-Dichloropropene	16.52	75	216775	2.15 ug/l	99
53) 4-Methyl-2-pentanone	16.65	43	357713	10.06 ug/l	99
56) Toluene	16.87	91	601609	2.18 ug/l	99
57) Ethyl methacrylate	17.17	69	106043	2.16 ug/l	99
58) trans-1,3-Dichloropropene	17.16	75	175849	2.24 ug/l	99
59) 1,1,2-Trichloroethane	17.36	97	86599	2.31 ug/l	99
60) Tetrachloroethene	17.48	164	116852	2.14 ug/l	99
61) 2-Hexanone	17.57	43	290598	10.92 ug/l	95
62) 1,3-Dichloropropane	17.54	76	155387	2.21 ug/l	100
63) Dibromochloromethane	17.80	129	106260	2.16 ug/l	100
64) 1,2-Dibromoethane	17.93	107	82669	2.28 ug/l	97
65) 1-Chlorohexane	18.26	91	228141	2.07 ug/l	100
66) Chlorobenzene	18.36	112	349057	2.20 ug/l	99
67) Ethylbenzene	18.42	91	679155	2.23 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.43	131	118731	2.26 ug/l	99
69) m-Xylene & p-Xylene	18.51	91	1045474	4.53 ug/l	100
70) o-Xylene	18.88	91	501229	2.23 ug/l	98
71) Styrene	18.89	104	365066	2.33 ug/l	100
73) Bromoform	19.15	173	46800	2.08 ug/l	99
74) Isopropylbenzene	19.16	105	594160	2.10 ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	101480	2.24 ug/l	99
77) trans-1,4-Dichloro-2-buten	19.49	53	28041	2.15 ug/l	91

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020

SV 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78)	n-Propylbenzene	19.50	91	796249	2.12 ug/l	99
79)	1,2,3-Trichloropropane	19.52	110	20578	2.34 ug/l	87
80)	Bromobenzene	19.52	156	135809	2.18 ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	454985	2.07 ug/l	99
82)	2-Chlorotoluene	19.64	91	477481	2.13 ug/l	99
83)	4-Chlorotoluene	19.73	91	425279	2.14 ug/l	99
84)	tert-Butylbenzene	19.92	134	90043	1.96 ug/l	100
85)	1,2,4-Trimethylbenzene	19.95	105	439709	2.08 ug/l	99
86)	sec-Butylbenzene	20.10	105	616892	2.06 ug/l	98
87)	p-Isopropyltoluene	20.19	119	489141	2.05 ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	240610	2.15 ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	410392	2.09 ug/l	97
90)	1,4-Dichlorobenzene	20.35	146	245312	2.15 ug/l	97
91)	Benzyl Chloride	20.46	91	123591	2.09 ug/l	97
92)	n-Butylbenzene	20.54	91	531977	2.04 ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	195472	2.10 ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	10490	2.00 ug/l	95
95)	1,2,4-Trichlorobenzene	22.19	180	112067	2.05 ug/l	99
96)	Hexachlorobutadiene	22.28	225	68180	2.00 ug/l	95
97)	Naphthalene	22.52	128	163016	2.09 ug/l	98
98)	1,2,3-Trichlorobenzene	22.79	180	87704	2.06 ug/l	98

Su 4/24/20

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020

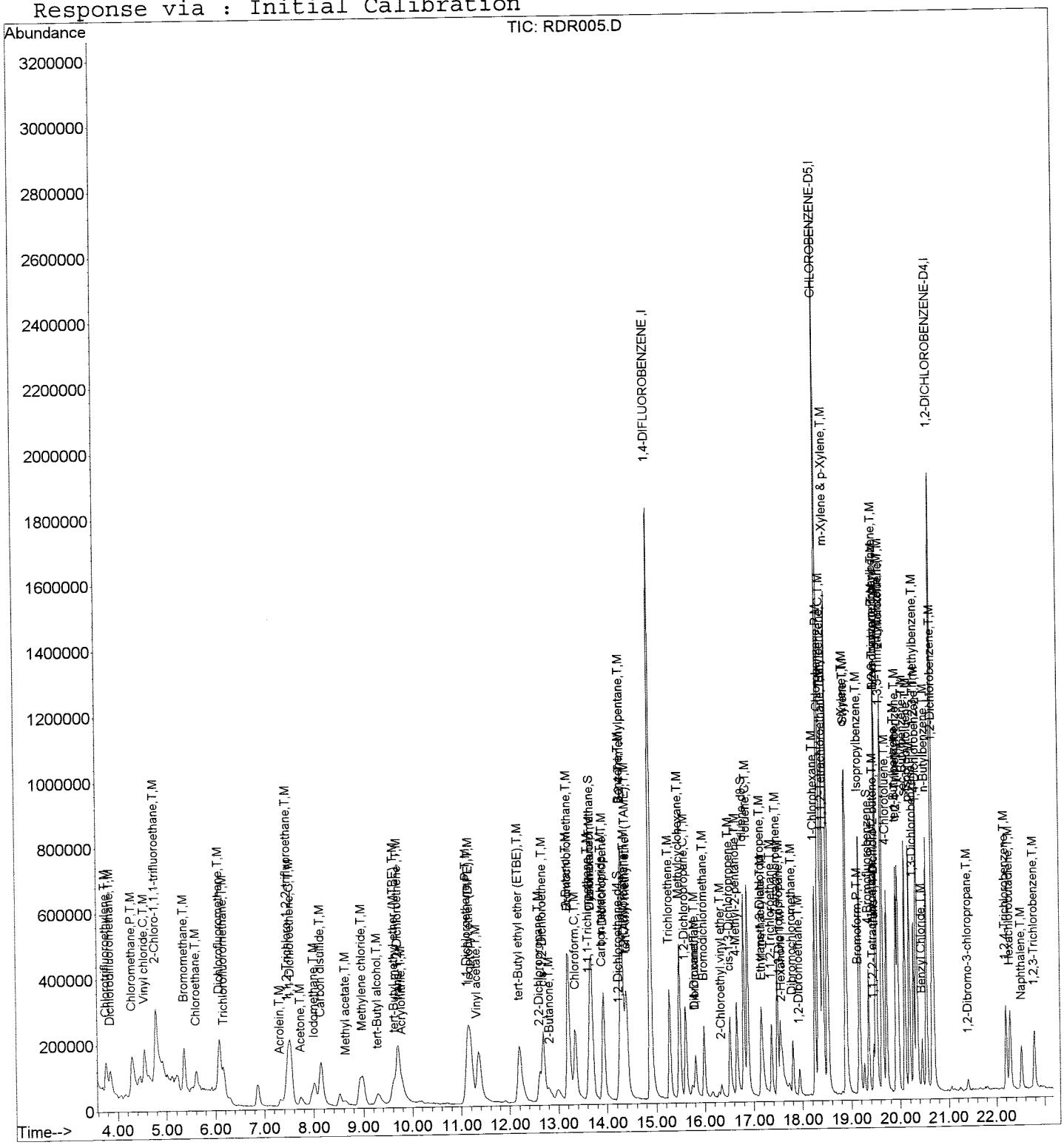
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Sng 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2269548	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1732127	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	585067	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	409582	5.10 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.00%	
40) 1,2-Dichloroethane-d4	14.24	65	348607	5.27 ug/l	0.00
Spiked Amount 10.000			Recovery =	52.70%	
55) Toluene-d8	16.80	98	1252485	5.22 ug/l	0.02
Spiked Amount 10.000			Recovery =	52.20%	
75) 4-Bromofluorobenzene	19.36	95	379351	5.17 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	252123	5.49 ug/l	100
3) Dichlorodifluoromethane	3.85	85	406098	5.11 ug/l	100
4) Chloromethane	4.29	50	758113	4.86 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	425925	5.29 ug/l	99
6) Vinyl chloride	4.56	62	653016	5.27 ug/l	100
7) Bromomethane	5.37	94	431203	4.95 ug/l	100
8) Chloroethane	5.61	64	324333	5.03 ug/l	99
9) Dichlorofluoromethane	6.09	67	926567	4.85 ug/l	100
10) Trichlorofluoromethane	6.18	101	581955	5.40 ug/l	99
11) Acrolein	7.31	56	191106	26.82 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	253894	5.09 ug/l	99
13) 1,1-Dichloroethene	7.54	61	815585	4.91 ug/l	100
14) Acetone	7.71	43	331807	27.96 ug/l	99
15) Iodomethane	8.03	142	664633	4.83 ug/l	99
16) Methyl acetate	8.61	43	154667	4.72 ug/l	98
17) Carbon disulfide	8.14	76	1532701	5.20 ug/l	100
18) Methylene chloride	8.98	49	795019	5.03 ug/l	99
19) tert-Butyl alcohol	9.29	59	442682	128.88 ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	676502	5.01 ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	437410	5.00 ug/l	99
22) Acrylonitrile	9.76	53	327566	25.91 ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	1903093	5.39 ug/l	98
24) 1,1-Dichloroethane	11.12	63	954580	5.07 ug/l	100
25) Vinyl acetate	11.30	43	530095	4.84 ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	1178276	4.97 ug/l	99
27) 2,2-Dichloropropane	12.62	77	383661	4.73 ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	460245	5.02 ug/l	100

(#) = qualifier out of range (m) = manual integration
RDR006.D VOF3D02.M Thu Apr 16 17:32:37 2020

4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.76	72	93923	27.43 ug/l	99
30) 2-Butanol	13.14	45	465054	143.87 ug/l	98
31) Bromochloromethane	13.21	130	223912	5.16 ug/l	99
33) Chloroform	13.36	83	786309	5.10 ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	497132	5.02 ug/l	97
36) Cyclohexane	13.68	84	588069	5.09 ug/l	98
37) 1,1-Dichloropropene	13.93	110	224888	5.36 ug/l	99
38) Carbon tetrachloride	13.93	119	444394	5.30 ug/l	98
41) 2,2,4-Trimethylpentane	14.32	57	1890595	5.30 ug/l	99
42) Benzene	14.29	78	1625036	5.03 ug/l	100
43) 1,2-Dichloroethane	14.38	62	418098	5.47 ug/l	97
44) tert-Amyl methyl ether (TA	14.41	87	153376	5.58 ug/l	97
45) Trichloroethene	15.27	130	438964	5.20 ug/l	98
46) Methylcyclohexane	15.48	83	705381	5.31 ug/l	99
47) 1,2-Dichloropropane	15.60	63	472393	5.14 ug/l	100
48) 1,4-Dioxane	15.79	88	24145	106.35 ug/l	93
49) Dibromomethane	15.81	93	181898	5.21 ug/l	98
50) Bromodichloromethane	15.98	83	485177	5.20 ug/l	100
51) 2-Chloroethyl vinyl ether	16.33	63	84872	5.27 ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	584691	5.30 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1118199	28.82 ug/l	99
56) Toluene	16.88	91	1548698	5.18 ug/l	100
57) Ethyl methacrylate	17.16	69	296758	5.58 ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	462972	5.43 ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	217348	5.35 ug/l	100
60) Tetrachloroethene	17.48	164	300179	5.08 ug/l	98
61) 2-Hexanone	17.56	43	792214	27.47 ug/l	98
62) 1,3-Dichloropropane	17.54	76	412312	5.40 ug/l	99
63) Dibromochloromethane	17.80	129	283435	5.33 ug/l	97
64) 1,2-Dibromoethane	17.93	107	214054	5.45 ug/l	100
65) 1-Chlorohexane	18.26	91	629576	5.26 ug/l	100
66) Chlorobenzene	18.36	112	872273	5.08 ug/l	100
67) Ethylbenzene	18.41	91	1696705	5.15 ug/l	99
68) 1,1,1,2-Tetrachloroethane	18.42	131	291106	5.12 ug/l	98
69) m-Xylene & p-Xylene	18.51	91	2438200	9.76 ug/l	99
70) o-Xylene	18.88	91	1242264	5.09 ug/l	98
71) Styrene	18.90	104	910546	5.37 ug/l	99
73) Bromoform	19.15	173	122298	5.49 ug/l	98
74) Isopropylbenzene	19.16	105	1467552	5.25 ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	246106	5.49 ug/l	98
77) trans-1,4-Dichloro-2-buten	19.49	53	71676	5.56 ug/l	99

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78) n-Propylbenzene	19.51	91	1948312	5.24	ug/l	99
79) 1,2,3-Trichloropropane	19.51	110	49731	5.72	ug/l	86
80) Bromobenzene	19.52	156	331681	5.38	ug/l	97
81) 1,3,5-Trimethylbenzene	19.62	105	1122358	5.16	ug/l	99
82) 2-Chlorotoluene	19.64	91	1151043	5.18	ug/l	100
83) 4-Chlorotoluene	19.71	91	993608	5.05	ug/l	100
84) tert-Butylbenzene	19.92	134	242610	5.33	ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1066132	5.11	ug/l	100
86) sec-Butylbenzene	20.10	105	1468360	4.96	ug/l	99
87) p-Isopropyltoluene	20.19	119	1175142	4.98	ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	586001	5.30	ug/l	96
89) 1,2,3-Trimethylbenzene	20.34	105	962751	4.96	ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	544286	4.81	ug/l	96
91) Benzyl Chloride	20.46	91	317415	5.43	ug/l	99
92) n-Butylbenzene	20.55	91	1309167	5.07	ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	468214	5.09	ug/l	99
94) 1,2-Dibromo-3-chloropropan	21.41	157	28146	5.43	ug/l	98
95) 1,2,4-Trichlorobenzene	22.19	180	281122	5.19	ug/l	99
96) Hexachlorobutadiene	22.28	225	179571	5.32	ug/l	97
97) Naphthalene	22.52	128	412667	5.34	ug/l	99
98) 1,2,3-Trichlorobenzene	22.79	180	228545	5.42	ug/l	99

SCM 4/22/20

(#) = qualifier out of range (m) = manual integration

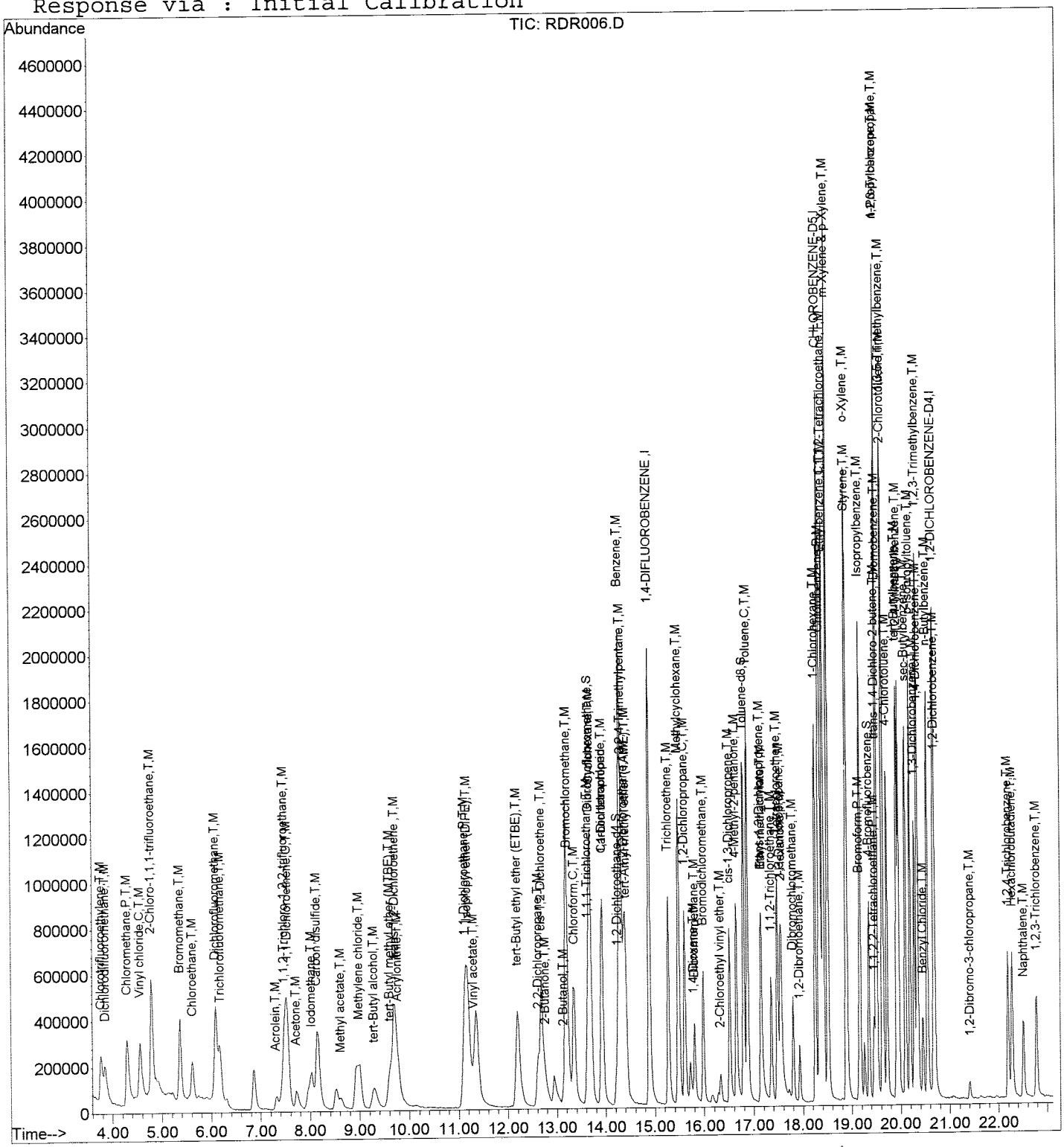
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2165754	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1703394	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	566102	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	792396	10.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.30%		
40) 1,2-Dichloroethane-d4	14.24	65	616662	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.70%		
55) Toluene-d8	16.79	98	2438755	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%		
75) 4-Bromofluorobenzene	19.36	95	764976	10.79	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	523722	11.95	ug/l	100
3) Dichlorodifluoromethane	3.85	85	839521	11.06	ug/l	100
4) Chloromethane	4.29	50	1556176	10.46	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	866029	11.27	ug/l	100
6) Vinyl chloride	4.55	62	1287803	10.89	ug/l	100
7) Bromomethane	5.36	94	891656	10.72	ug/l	100
8) Chloroethane	5.61	64	643518	10.46	ug/l	100
9) Dichlorofluoromethane	6.09	67	1901230	10.44	ug/l	100
10) Trichlorofluoromethane	6.17	101	1102298	10.72	ug/l	100
11) Acrolein	7.32	56	327662	48.18	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	492686	10.36	ug/l	100
13) 1,1-Dichloroethene	7.53	61	1664559	10.50	ug/l	100
14) Acetone	7.73	43	522304	46.12	ug/l	100
15) Iodomethane	8.03	142	1264125	9.63	ug/l	100
16) Methyl acetate	8.59	43	309510	9.90	ug/l	100
17) Carbon disulfide	8.15	76	3211738	11.42	ug/l	100
18) Methylene chloride	9.00	49	1517590	10.06	ug/l	100
19) tert-Butyl alcohol	9.29	59	696160	212.39	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1146553	8.89	ug/l	100
21) trans-1,2-Dichloroethene	9.71	96	831569	9.96	ug/l	100
22) Acrylonitrile	9.76	53	570150	47.27	ug/l	100
23) Isopropyl ether (DIPE)	11.18	45	3352056	9.94	ug/l	100
24) 1,1-Dichloroethane	11.13	63	1814166	10.10	ug/l	100
25) Vinyl acetate	11.27	43	1098671	9.65	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	2033135	8.98	ug/l	100
27) 2,2-Dichloropropane	12.62	77	682250	8.82	ug/l	100
28) cis-1,2-Dichloroethene	12.69	96	839009	9.59	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29) 2-Butanone	12.74	72	157636	48.25	ug/l	100
30) 2-Butanol	13.14	45	732972	237.63	ug/l	100
31) Bromochloromethane	13.21	130	386133	9.32	ug/l	100
33) Chloroform	13.36	83	1422826	9.67	ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	949420	10.05	ug/l	100
36) Cyclohexane	13.68	84	1114527	10.12	ug/l	100
37) 1,1-Dichloropropene	13.93	110	415107	10.38	ug/l	100
38) Carbon tetrachloride	13.91	119	807848	10.10	ug/l	100
41) 2,2,4-Trimethylpentane	14.32	57	3847593	11.30	ug/l	100
42) Benzene	14.29	78	2977972	9.66	ug/l	100
43) 1,2-Dichloroethane	14.36	62	688570	9.44	ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	243896	9.29	ug/l	100
45) Trichloroethene	15.27	130	793653	9.86	ug/l	100
46) Methylcyclohexane	15.48	83	1310550	10.34	ug/l	100
47) 1,2-Dichloropropane	15.60	63	879701	10.02	ug/l	100
48) 1,4-Dioxane	15.79	88	43128	199.06	ug/l	100
49) Dibromomethane	15.79	93	311891	9.36	ug/l	100
50) Bromodichloromethane	15.98	83	847204	9.52	ug/l	100
51) 2-Chloroethyl vinyl ether	16.31	63	144603	9.40	ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	1046916	9.95	ug/l	100
53) 4-Methyl-2-pentanone	16.64	43	1828274	49.38	ug/l	100
56) Toluene	16.87	91	2883096	9.81	ug/l	100
57) Ethyl methacrylate	17.16	69	507697	9.70	ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	847606	10.11	ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	382072	9.56	ug/l	100
60) Tetrachloroethene	17.48	164	575978	9.92	ug/l	100
61) 2-Hexanone	17.56	43	1352770	47.71	ug/l	100
62) 1,3-Dichloropropane	17.53	76	741498	9.88	ug/l	100
63) Dibromochloromethane	17.80	129	518460	9.91	ug/l	100
64) 1,2-Dibromoethane	17.93	107	375199	9.71	ug/l	100
65) 1-Chlorohexane	18.26	91	1182938	10.06	ug/l	100
66) Chlorobenzene	18.36	112	1729725	10.24	ug/l	100
67) Ethylbenzene	18.42	91	3284767	10.13	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	575664	10.29	ug/l	100
69) m-Xylene & p-Xylene	18.51	91	4809194	19.57	ug/l	100
70) o-Xylene	18.88	91	2500715	10.42	ug/l	100
71) Styrene	18.90	104	1797912	10.78	ug/l	100
73) Bromoform	19.13	173	220358	10.22	ug/l	100
74) Isopropylbenzene	19.16	105	2931013	10.84	ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	414973	9.57	ug/l	100
77) trans-1,4-Dichloro-2-buten	19.47	53	121424	9.74	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78) n-Propylbenzene	19.50	91	3652186	10.15 ug/l	100
79) 1,2,3-Trichloropropane	19.52	110	78970	9.38 ug/l	100
80) Bromobenzene	19.52	156	597373	10.02 ug/l	100
81) 1,3,5-Trimethylbenzene	19.62	105	2184073	10.38 ug/l	100
82) 2-Chlorotoluene	19.64	91	2217816	10.32 ug/l	100
83) 4-Chlorotoluene	19.71	91	1949864	10.24 ug/l	100
84) tert-Butylbenzene	19.92	134	449382	10.21 ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1999628	9.90 ug/l	100
86) sec-Butylbenzene	20.10	105	3030392	10.58 ug/l	100
87) p-Isopropyltoluene	20.19	119	2308422	10.12 ug/l	100
88) 1,3-Dichlorobenzene	20.28	146	1062525	9.94 ug/l	100
89) 1,2,3-Trimethylbenzene	20.34	105	1872199	9.98 ug/l	100
90) 1,4-Dichlorobenzene	20.35	146	1113696	10.18 ug/l	100
91) Benzyl Chloride	20.44	91	542066	9.58 ug/l	100
92) n-Butylbenzene	20.54	91	2580233	10.33 ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	843896	9.49 ug/l	100
94) 1,2-Dibromo-3-chloropropan	21.41	157	49298	9.83 ug/l	100
95) 1,2,4-Trichlorobenzene	22.19	180	528898	10.09 ug/l	100
96) Hexachlorobutadiene	22.28	225	355146	10.87 ug/l	100
97) Naphthalene	22.51	128	726534	9.72 ug/l	100
98) 1,2,3-Trichlorobenzene	22.79	180	423816	10.39 ug/l	100

(#) = qualifier out of range (m) = manual integration

SM 4/22/20

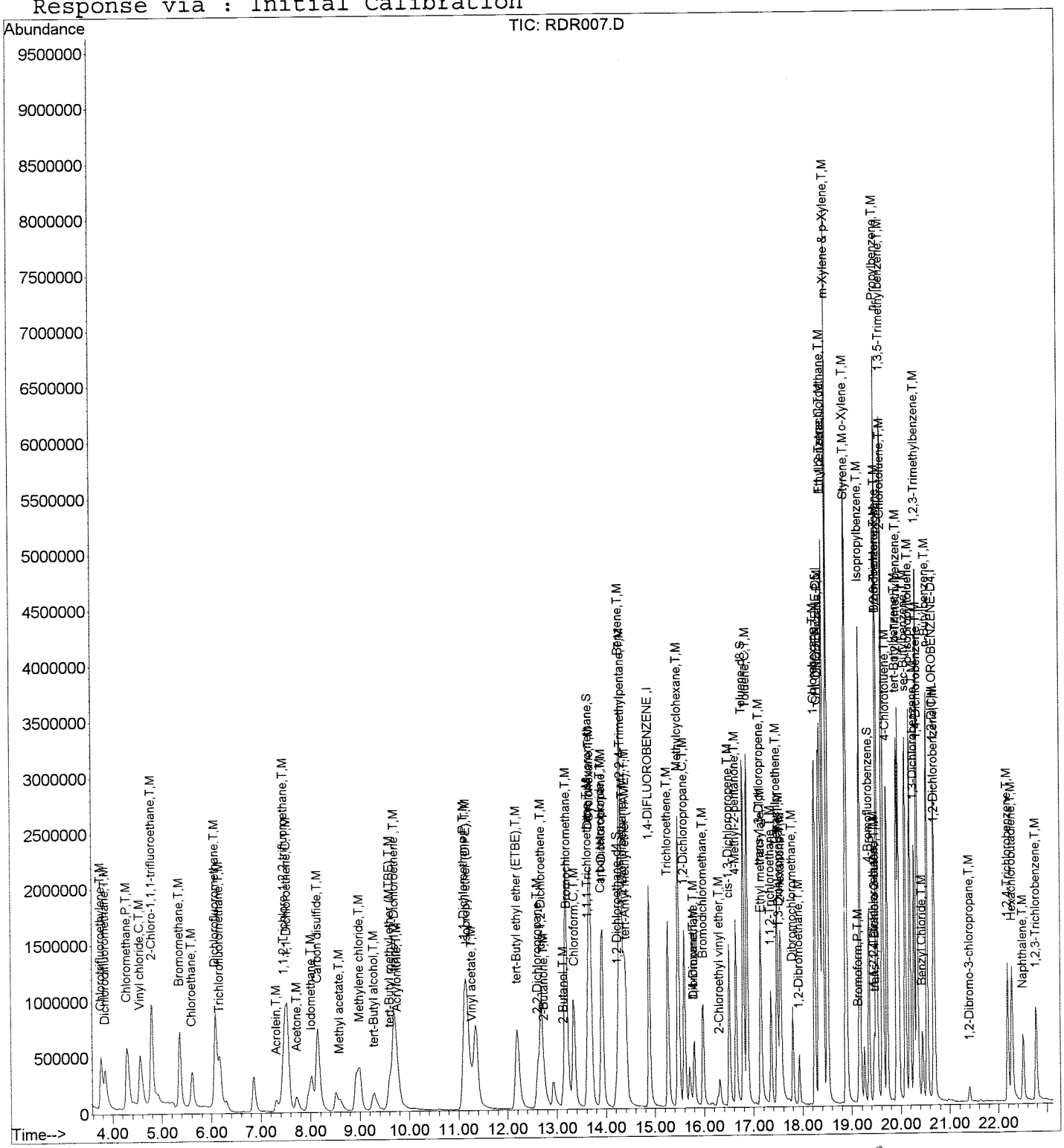
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2063384	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1723015	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	597413	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	1532375	20.97 ug/l	0.00
Spiked Amount 10.000			Recovery =	209.70%	
40) 1,2-Dichloroethane-d4	14.24	65	1374809	22.85 ug/l	0.00
Spiked Amount 10.000			Recovery =	228.50%	
55) Toluene-d8	16.79	98	4871167	20.42 ug/l	0.00
Spiked Amount 10.000			Recovery =	204.20%	
75) 4-Bromofluorobenzene	19.34	95	1531997	20.47 ug/l	-0.01
Spiked Amount 10.000			Recovery =	204.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	952227	22.81 ug/l	99
3) Dichlorodifluoromethane	3.83	85	1565858	21.65 ug/l	99
4) Chloromethane	4.29	50	2903113	20.48 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	1653168	22.59 ug/l	99
6) Vinyl chloride	4.56	62	2495321	22.15 ug/l	99
7) Bromomethane	5.35	94	1695025	21.40 ug/l	99
8) Chloroethane	5.60	64	1170504	19.97 ug/l	99
9) Dichlorofluoromethane	6.07	67	3275647	18.88 ug/l	100
10) Trichlorofluoromethane	6.16	101	2087791	21.31 ug/l	100
11) Acrolein	7.31	56	591336	91.27 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	897092	19.80 ug/l	99
13) 1,1-Dichloroethene	7.52	61	2980007	19.73 ug/l	100
14) Acetone	7.71	43	992226	91.96 ug/l	100
15) Iodomethane	8.01	142	2415162	19.32 ug/l	100
16) Methyl acetate	8.58	43	624623	20.97 ug/l	100
17) Carbon disulfide	8.14	76	5909977	22.05 ug/l	100
18) Methylene chloride	8.98	49	2848193	19.82 ug/l	99
19) tert-Butyl alcohol	9.26	59	1448642	463.88 ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	2186492	17.80 ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	1542047	19.39 ug/l	100
22) Acrylonitrile	9.74	53	1133648	98.65 ug/l	96
23) Isopropyl ether (DIPE)	11.15	45	6268612	19.52 ug/l	100
24) 1,1-Dichloroethane	11.10	63	3322744	19.41 ug/l	99
25) Vinyl acetate	11.25	43	2513419	22.14 ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	3964564	18.38 ug/l	99
27) 2,2-Dichloropropane	12.62	77	1247181	16.92 ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	1572251	18.86 ug/l	99

(#) = qualifier out of range (m) = manual integration

SV 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	290435	93.30	ug/l	100
30)	2-Butanol	13.11	45	1569596	534.10	ug/l	98
31)	Bromochloromethane	13.21	130	758313	19.22	ug/l	100
33)	Chloroform	13.34	83	2732803	19.49	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	1774054	19.71	ug/l	100
36)	Cyclohexane	13.68	84	2183036	20.80	ug/l	99
37)	1,1-Dichloropropene	13.93	110	754942	19.81	ug/l	97
38)	Carbon tetrachloride	13.91	119	1524378	20.00	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	7149846	22.03	ug/l	100
42)	Benzene	14.29	78	5543561	18.87	ug/l	99
43)	1,2-Dichloroethane	14.36	62	1343260	19.33	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	493145	19.72	ug/l	98
45)	Trichloroethene	15.27	130	1512359	19.71	ug/l	99
46)	Methylcyclohexane	15.48	83	2548070	21.10	ug/l	100
47)	1,2-Dichloropropane	15.60	63	1614957	19.32	ug/l	99
48)	1,4-Dioxane	15.78	88	83935	406.63	ug/l	98
49)	Dibromomethane	15.79	93	614229	19.36	ug/l	99
50)	Bromodichloromethane	15.97	83	1698756	20.04	ug/l	99
51)	2-Chloroethyl vinyl ether	16.31	63	298129	20.35	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1973692	19.69	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	3595056	101.92	ug/l	99
56)	Toluene	16.87	91	5398259	18.17	ug/l	100
57)	Ethyl methacrylate	17.14	69	977124	18.47	ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	1561757	18.42	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	720786	17.84	ug/l	98
60)	Tetrachloroethene	17.48	164	1071431	18.24	ug/l	99
61)	2-Hexanone	17.54	43	2464977	85.94	ug/l	100
62)	1,3-Dichloropropane	17.53	76	1385565	18.26	ug/l	100
63)	Dibromochloromethane	17.80	129	994322	18.79	ug/l	100
64)	1,2-Dibromoethane	17.93	107	749904	19.18	ug/l	98
65)	1-Chlorohexane	18.24	91	2093768	17.60	ug/l	100
66)	Chlorobenzene	18.36	112	3214803	18.82	ug/l	100
67)	Ethylbenzene	18.41	91	6149847	18.75	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	1037090	18.32	ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	9262242	37.26	ug/l	99
70)	o-Xylene	18.88	91	4559377	18.79	ug/l	100
71)	Styrene	18.90	104	3184034	18.87	ug/l	99
73)	Bromoform	19.13	173	441272	19.40	ug/l	98
74)	Isopropylbenzene	19.16	105	5468315	19.16	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.45	83	807023	17.64	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	243884	18.54	ug/l	99

(#) = qualifier out of range (m) = manual integration

4/02/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D Vial: 8
Acq On : 2 Apr 2020 7:43 pm Operator: RMinam
Sample : VOF3D027 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.51	91	7084414	18.66	ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	160594	18.08	ug/l	91
80)	Bromobenzene	19.51	156	1189233	18.90	ug/l	99
81)	1,3,5-Trimethylbenzene	19.62	105	4068116	18.32	ug/l	99
82)	2-Chlorotoluene	19.64	91	4136953	18.24	ug/l	100
83)	4-Chlorotoluene	19.71	91	3695415	18.39	ug/l	100
84)	tert-Butylbenzene	19.92	134	824766	17.75	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	3771128	17.70	ug/l	99
86)	sec-Butylbenzene	20.10	105	5619156	18.59	ug/l	100
87)	p-Isopropyltoluene	20.19	119	4329955	17.98	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	2001918	17.74	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	3647746	18.42	ug/l	100
90)	1,4-Dichlorobenzene	20.35	146	2100844	18.20	ug/l	98
91)	Benzyl Chloride	20.44	91	1071202	17.93	ug/l	99
92)	n-Butylbenzene	20.55	91	4864345	18.45	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	1790236	19.07	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	98846	18.68	ug/l	100
95)	1,2,4-Trichlorobenzene	22.19	180	1030551	18.63	ug/l	99
96)	Hexachlorobutadiene	22.28	225	638808	18.52	ug/l	98
97)	Naphthalene	22.51	128	1446991	18.35	ug/l	99
98)	1,2,3-Trichlorobenzene	22.77	180	792111	18.41	ug/l	100

SU 4/22/20

(#) = qualifier out of range (m) = manual integration
RDR008.D VOF3D02.M Thu Apr 16 17:32:49 2020 Page 3

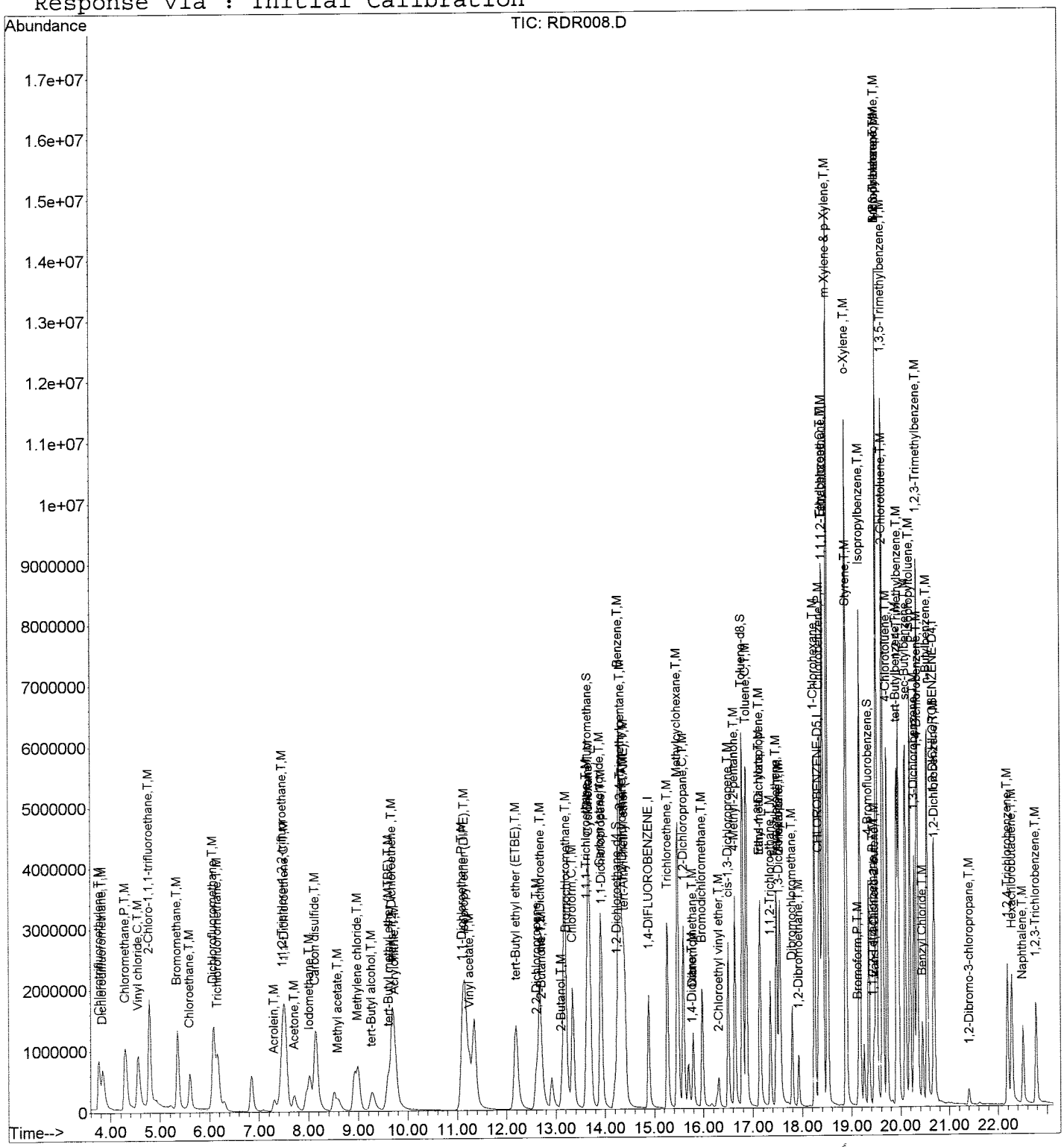
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D Vial: 10
Acq On : 2 Apr 2020 8:41 pm Operator: RMinam
Sample : VOF3D029 Inst : F3
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2201167	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1649481	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	595666	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	3763680	48.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	482.90%		
40) 1,2-Dichloroethane-d4	14.24	65	3467360	54.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	540.30%		
55) Toluene-d8	16.78	98	11723209	51.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	513.30%		
75) 4-Bromofluorobenzene	19.34	95	3639415	48.76	ug/l	-0.02
Spiked Amount 10.000			Recovery =	487.60%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	2020415	45.37	ug/l	100
3) Dichlorodifluoromethane	3.83	85	3282920	42.55	ug/l	98
4) Chloromethane	4.29	50	6552468	43.33	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	3543708	45.39	ug/l	97
6) Vinyl chloride	4.56	62	5405019	44.97	ug/l	100
7) Bromomethane	5.33	94	3779429	44.72	ug/l	99
8) Chloroethane	5.60	64	2771670	44.32	ug/l	98
9) Dichlorofluoromethane	6.07	67	7992501	43.17	ug/l	100
10) Trichlorofluoromethane	6.16	101	4811488	46.03	ug/l	100
11) Acrolein	7.29	56	1606058	232.37	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	2186009	45.23	ug/l	99
13) 1,1-Dichloroethene	7.52	61	7166691	44.48	ug/l	97
14) Acetone	7.70	43	2627026	228.23	ug/l	97
15) Iodomethane	8.01	142	6867035	51.49	ug/l	97
16) Methyl acetate	8.58	43	1531683	48.20	ug/l	95
17) Carbon disulfide	8.14	76	13865961	48.49	ug/l	100
18) Methylene chloride	8.97	49	7235673	47.19	ug/l	94
19) tert-Butyl alcohol	9.29	59	3981948	1195.28	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	6067702	46.30	ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	4136691	48.76	ug/l	99
22) Acrylonitrile	9.74	53	3147947	256.77	ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	16459056	48.04	ug/l	98
24) 1,1-Dichloroethane	11.10	63	8706237	47.67	ug/l	99
25) Vinyl acetate	11.25	43	5967485	48.39	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	10355123	45.00	ug/l	99
27) 2,2-Dichloropropane	12.62	77	2904329	36.94	ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	4276966	48.10	ug/l	100

(#) = qualifier out of range (m) = manual integration

SM 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	832697	250.75	ug/l	98
30)	2-Butanol	13.11	45	3835105	1223.32	ug/l	96
31)	Bromochloromethane	13.21	130	2076279	49.33	ug/l	99
33)	Chloroform	13.34	83	7252531	48.50	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	4410708	45.94	ug/l	99
36)	Cyclohexane	13.68	84	4934197	44.08	ug/l	99
37)	1,1-Dichloropropene	13.93	110	2039912	50.17	ug/l	97
38)	Carbon tetrachloride	13.91	119	4072503	50.09	ug/l	98
41)	2,2,4-Trimethylpentane	14.32	57	15539520	44.89	ug/l	99
42)	Benzene	14.29	78	15709096	50.13	ug/l	98
43)	1,2-Dichloroethane	14.36	62	3580472	48.30	ug/l	100
44)	tert-Amyl methyl ether (TA	14.41	87	1337059	50.12	ug/l	98
45)	Trichloroethene	15.27	130	4272411	52.20	ug/l	98
46)	Methylcyclohexane	15.48	83	5770059	44.79	ug/l	96
47)	1,2-Dichloropropane	15.60	63	4350813	48.78	ug/l	99
48)	1,4-Dioxane	15.77	88	232766	1057.06	ug/l	98
49)	Dibromomethane	15.79	93	1642350	48.51	ug/l	97
50)	Bromodichloromethane	15.97	83	4418326	48.86	ug/l	99
51)	2-Chloroethyl vinyl ether	16.29	63	851209	54.47	ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	5370532	50.24	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	9689792	257.51	ug/l	98
56)	Toluene	16.87	91	14720005	51.75	ug/l	98
57)	Ethyl methacrylate	17.14	69	2670729	52.72	ug/l	95
58)	trans-1,3-Dichloropropene	17.13	75	4251432	52.38	ug/l	98
59)	1,1,2-Trichloroethane	17.35	97	1948996	50.38	ug/l	100
60)	Tetrachloroethene	17.48	164	2925471	52.02	ug/l	99
61)	2-Hexanone	17.54	43	6654938	242.36	ug/l	97
62)	1,3-Dichloropropane	17.53	76	3650895	50.25	ug/l	100
63)	Dibromochloromethane	17.80	129	2639963	52.10	ug/l	100
64)	1,2-Dibromoethane	17.93	107	1921917	51.35	ug/l	99
65)	1-Chlorohexane	18.26	91	5729017	50.30	ug/l	99
66)	Chlorobenzene	18.36	112	8636502	52.81	ug/l	100
67)	Ethylbenzene	18.40	91	14397005	45.85	ug/l	93
68)	1,1,1,2-Tetrachloroethane	18.42	131	2853722	52.66	ug/l	99
70)	o-Xylene	18.88	91	10967059	47.21	ug/l	99
71)	Styrene	18.89	104	8157497	50.49	ug/l	98
73)	Bromoform	19.13	173	1224233	53.99	ug/l	99
74)	Isopropylbenzene	19.16	105	12302184	43.22	ug/l	95
76)	1,1,2,2-Tetrachloroethane	19.44	83	2146145	47.06	ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.47	53	593948	45.29	ug/l	97
78)	n-Propylbenzene	19.50	91	14228791	37.59	ug/l	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	1,2,3-Trichloropropane	19.50	110	393805	44.46	ug/l	88
80)	Bromobenzene	19.50	156	3083885	49.16	ug/l	100
81)	1,3,5-Trimethylbenzene	19.62	105	10554149	47.66	ug/l	99
82)	2-Chlorotoluene	19.64	91	10708900	47.36	ug/l	98
83)	4-Chlorotoluene	19.71	91	9699694	48.41	ug/l	98
84)	tert-Butylbenzene	19.92	134	2377980	51.34	ug/l	96
85)	1,2,4-Trimethylbenzene	19.95	105	10683536	50.28	ug/l	100
86)	sec-Butylbenzene	20.10	105	13693583	45.43	ug/l	95
87)	p-Isopropyltoluene	20.19	119	11486106	47.84	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	5654380	50.25	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	9852368	49.89	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	5919399	51.43	ug/l	97
91)	Benzyl Chloride	20.44	91	2954054	49.60	ug/l	99
92)	n-Butylbenzene	20.54	91	12636476	48.06	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	4650409	49.68	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	286605	54.31	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	2927932	53.08	ug/l	99
96)	Hexachlorobutadiene	22.28	225	1745136	50.74	ug/l	96
97)	Naphthalene	22.51	128	3905828	49.68	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	2267325	52.84	ug/l	100

SG 4/22/20

(#) = qualifier out of range (m) = manual integration

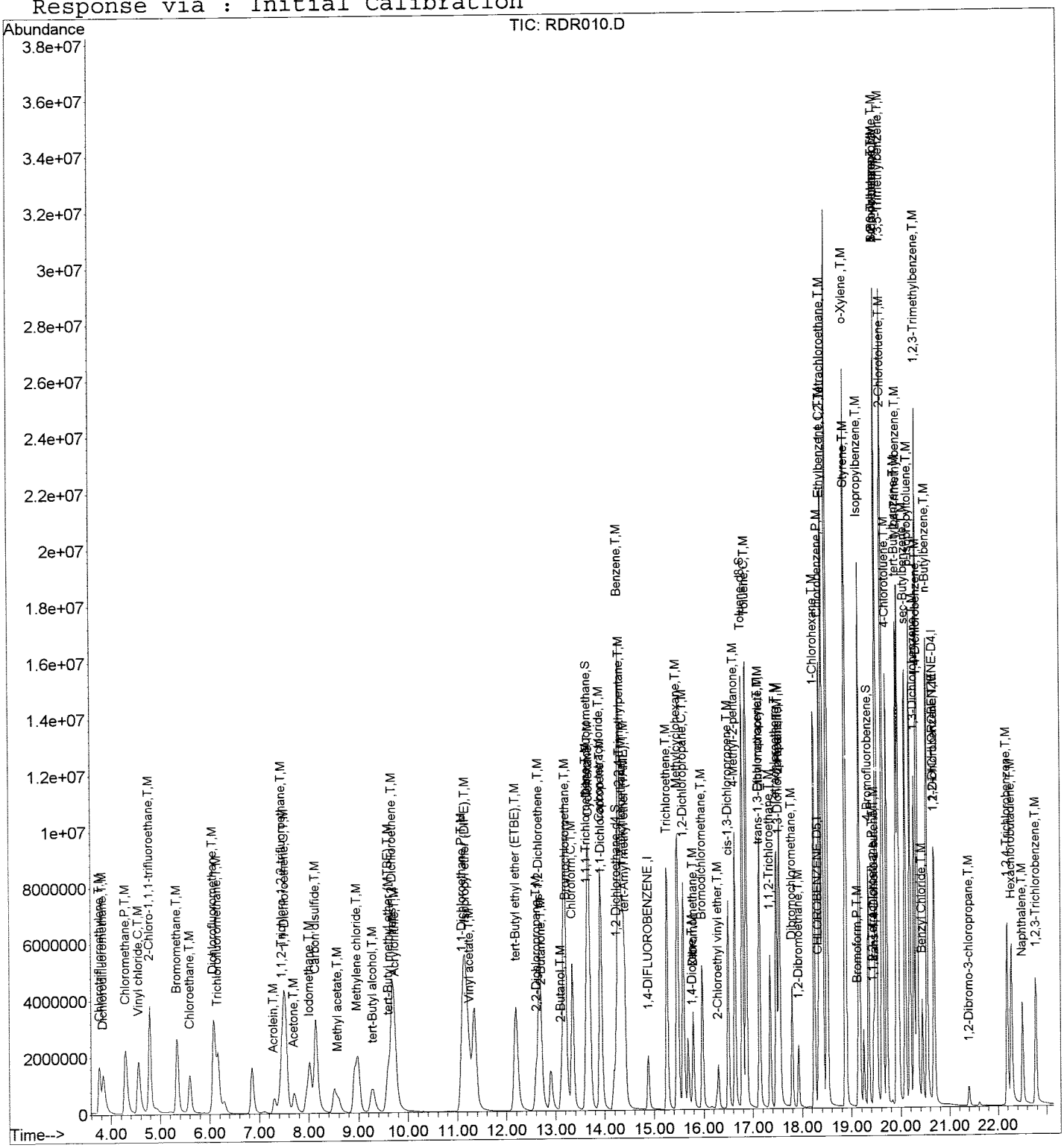
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2110802	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1617324	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	584160	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	6635181	88.77 ug/l	0.00
Spiked Amount 10.000				Recovery = 887.70%	
40) 1,2-Dichloroethane-d4	14.23	65	6270930	101.91 ug/l	-0.02
Spiked Amount 10.000				Recovery = 1019.10%	
55) Toluene-d8	16.78	98	17474129	78.03 ug/l	0.00
Spiked Amount 10.000				Recovery = 780.30%	
75) 4-Bromofluorobenzene	19.34	95	6574044	89.82 ug/l	-0.02
Spiked Amount 10.000				Recovery = 898.20%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	3929628	92.03 ug/l	100
3) Dichlorodifluoromethane	3.83	85	6233367	84.25 ug/l	99
4) Chloromethane	4.29	50	12079946	83.30 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	6945857	92.77 ug/l	96
6) Vinyl chloride	4.55	62	10570032	91.70 ug/l	100
7) Bromomethane	5.31	94	5406218	66.71 ug/l	100
8) Chloroethane	5.58	64	4731020	78.89 ug/l	99
9) Dichlorofluoromethane	6.07	67	15682906	88.34 ug/l	100
10) Trichlorofluoromethane	6.16	101	9248248	92.27 ug/l	100
11) Acrolein	7.31	56	3124342	471.39 ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	4234724	91.36 ug/l	98
13) 1,1-Dichloroethene	7.52	61	13826626	89.48 ug/l	96
14) Acetone	7.71	43	5174728	468.82 ug/l	98
15) Iodomethane	8.01	142	12777083	99.91 ug/l	97
16) Methyl acetate	8.58	43	2827358	92.78 ug/l	94
17) Carbon disulfide	8.14	76	25067392	91.42 ug/l	100
18) Methylene chloride	8.96	49	12940927	88.01 ug/l	92
19) tert-Butyl alcohol	9.29	59	7772874	2433.10 ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	11563581	92.01 ug/l	97
21) trans-1,2-Dichloroethene	9.69	96	7546971	92.77 ug/l	99
22) Acrylonitrile	9.73	53	6233790	530.25 ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	30092972	91.60 ug/l	97
24) 1,1-Dichloroethane	11.10	63	15892280	90.74 ug/l	99
25) Vinyl acetate	11.23	43	10868655	91.24 ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	19897746	90.16 ug/l	100
27) 2,2-Dichloropropane	12.62	77	5034549	66.77 ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	8151108	95.60 ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:06 2020 Page 1

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	1617399	507.90	ug/l	99
30)	2-Butanol	13.11	45	7477122	2487.15	ug/l	95
31)	Bromochloromethane	13.21	130	4084146	101.18	ug/l	99
33)	Chloroform	13.34	83	13641218	95.12	ug/l	98
35)	1,1,1-Trichloroethane	13.63	97	7994012	86.83	ug/l	97
36)	Cyclohexane	13.68	84	8099640	75.45	ug/l	99
37)	1,1-Dichloropropene	13.93	110	3778597	96.91	ug/l	96
38)	Carbon tetrachloride	13.91	119	7628403	97.84	ug/l	98
41)	2,2,4-Trimethylpentane	14.32	57	26049523	78.47	ug/l	100
43)	1,2-Dichloroethane	14.36	62	6469803	91.01	ug/l	100
44)	tert-Amyl methyl ether (TA	14.39	87	2501890	97.81	ug/l	98
45)	Trichloroethene	15.25	130	8121847	103.48	ug/l	97
46)	Methylcyclohexane	15.48	83	9710338	78.60	ug/l	95
47)	1,2-Dichloropropane	15.60	63	8266177	96.65	ug/l	98
48)	1,4-Dioxane	15.77	88	533217	2525.17	ug/l	95
49)	Dibromomethane	15.79	93	3493763	107.62	ug/l	96
50)	Bromodichloromethane	15.97	83	8591352	99.08	ug/l	100
51)	2-Chloroethyl vinyl ether	16.29	63	1805721	120.50	ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	10460819	102.04	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	17799741	493.29	ug/l	92
57)	Ethyl methacrylate	17.14	69	5194473	104.58	ug/l	92
58)	trans-1,3-Dichloropropene	17.13	75	7993009	100.44	ug/l	97
59)	1,1,2-Trichloroethane	17.35	97	3919599	103.34	ug/l	99
60)	Tetrachloroethene	17.48	164	5982101	108.49	ug/l	98
61)	2-Hexanone	17.54	43	12866214	477.87	ug/l	95
62)	1,3-Dichloropropane	17.53	76	7274835	102.12	ug/l	100
63)	Dibromochloromethane	17.79	129	5491688	110.53	ug/l	100
64)	1,2-Dibromoethane	17.93	107	3953415	107.73	ug/l	99
65)	1-Chlorohexane	18.26	91	11035250	98.81	ug/l	99
66)	Chlorobenzene	18.36	112	14850913	92.62	ug/l	89
68)	1,1,1,2-Tetrachloroethane	18.43	131	6069383	114.23	ug/l	98
70)	o-Xylene	18.88	91	16047397	70.45	ug/l	75
71)	Styrene	18.89	104	13848286	87.42	ug/l	90
73)	Bromoform	19.13	173	2616586	117.66	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	4285249	95.82	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.47	53	1204276	93.64	ug/l	96
79)	1,2,3-Trichloropropane	19.50	110	808263	93.05	ug/l	91
80)	Bromobenzene	19.50	156	6376144	103.65	ug/l	100
84)	tert-Butylbenzene	19.92	134	4524934	99.61	ug/l	92
86)	sec-Butylbenzene	20.10	105	18013806	60.94	ug/l	71
88)	1,3-Dichlorobenzene	20.28	146	11412673	103.43	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
89) 1,2,3-Trimethylbenzene	20.34	105	15615969	80.64 ug/l	85
90) 1,4-Dichlorobenzene	20.35	146	11779631	104.36 ug/l	96
91) Benzyl Chloride	20.44	91	6021210	103.08 ug/l	99
93) 1,2-Dichlorobenzene	20.69	146	9719365	105.89 ug/l	99
94) 1,2-Dibromo-3-chloropropan	21.41	157	614193	118.67 ug/l	99
95) 1,2,4-Trichlorobenzene	22.19	180	6029494	111.46 ug/l	99
96) Hexachlorobutadiene	22.28	225	3320468	98.45 ug/l	97
97) Naphthalene	22.51	128	8525265	110.57 ug/l	100
98) 1,2,3-Trichlorobenzene	22.77	180	4550493	108.14 ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:07 2020

4/22/20

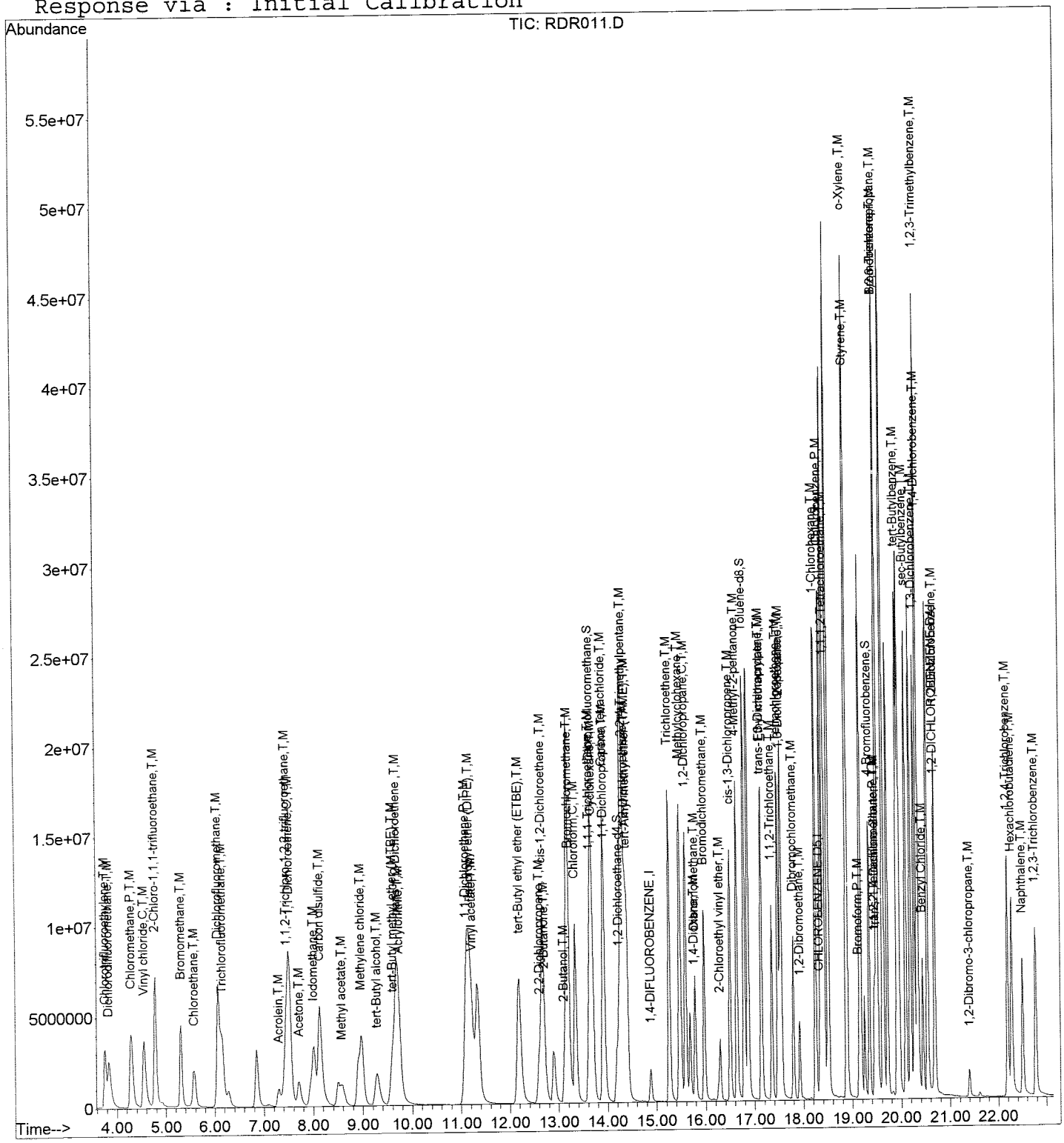
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: RDR019 BFB Injection Date : 04/06/20
Instrument ID: F3 BFB Injection Time : 10:37
GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.41
75	30.0 - 60.0% of mass 95	48.18
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.07
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	68.92
175	5.0 - 9.0% of mass 174	5.24(7.6)1
176	95.0 - 101.0% of mass 174	67.96(98.6)1
177	5.0 - 9.0% of mass 176	4.44(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	IVOF3D0202	RDR020	04/06/20	11:22

SW 4/22/20

FORM V VOA OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F3
IC Beginning DateTime :04/02/20 16:47
Spike Amount :10 PPB
CC/CV File :RDR020
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
IC Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02
Date_Time :04/06/20 11:22

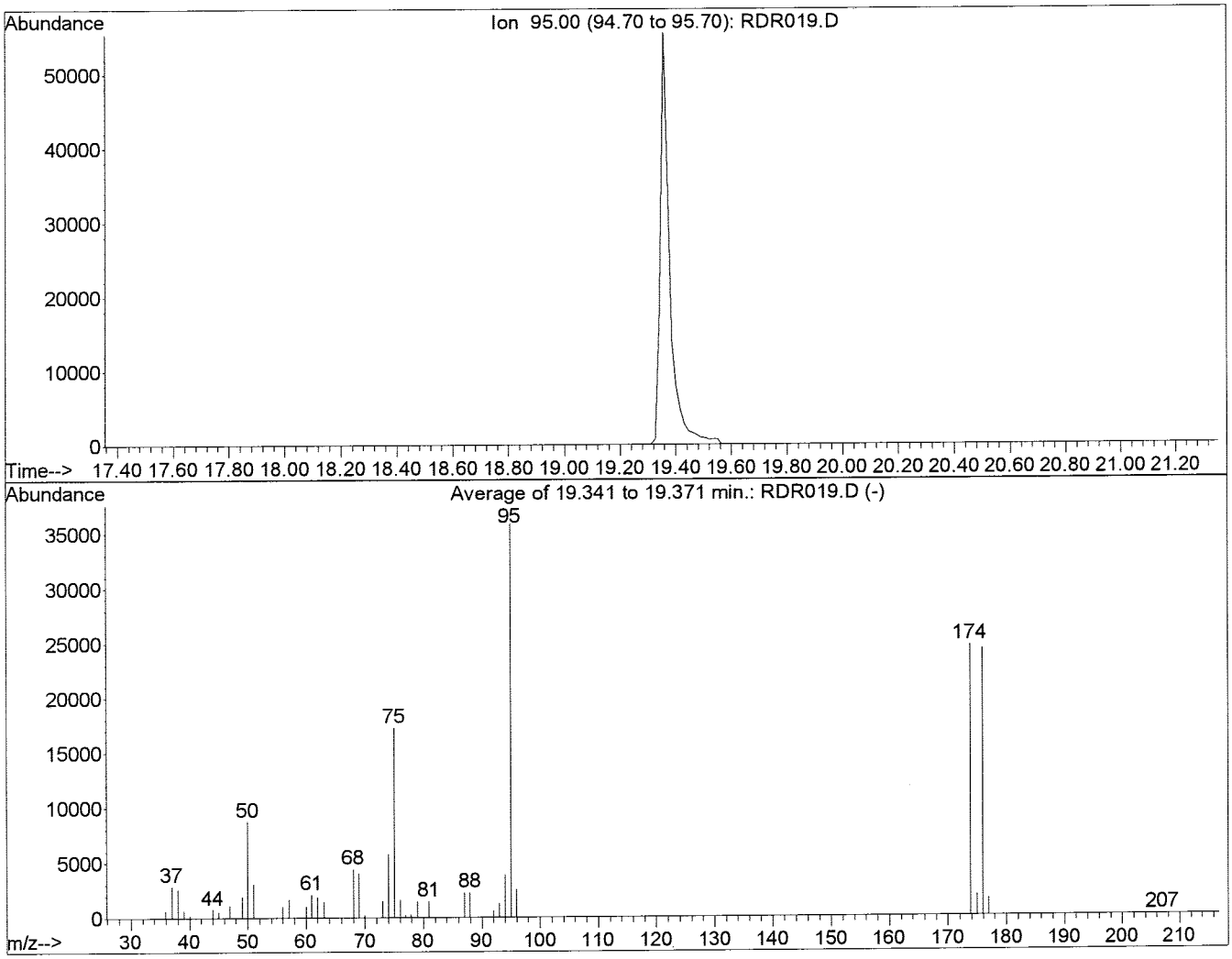
M	IDX	Parameters	CC_Con	CC% D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	% RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	2184009	1	1	14.884	14.883	0				
	2	Chlorotrifluoroethylene	9.856	-1.4	435479	0.199	0.202	3.756	3.759	13.37				
	3	Dichlorodifluoromethane	10.860	8.6	831345	0.381	0.350	3.844	3.842	11.16				
	4	Chloromethane	10.237	2.4	1536000	0.703	0.687	4.285	4.288	6.49				
	5	2-Chloro-1,1,1-trifluoroethane	9.925	-0.7	768887	0.352	0.355	4.779	4.788	10.42				
	6	Vinyl chloride	10.090	0.9	1203406	0.551	0.546	4.550	4.553	9.75				
	7	Bromomethane	8.409	-15.9	705143	0.323	0.384	5.344	5.357	6.23				
	8	Chloroethane	8.795	-12.1	545697	0.250	0.284	5.608	5.604	6.98				
	9	Dichlorofluoromethane	9.705	-2.9	1782782	0.816	0.841	6.085	6.082	8.97				
	10	Trichlorofluoromethane	10.353	3.5	1073710	0.492	0.475	6.173	6.171	10.30				
5	11	Acrolein	49.987	-0.0	342800	0.031	0.031	7.302	7.309	10.43				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.260	-7.4	444090	0.203	0.220	7.478	7.475	6.46				
	13	1,1-Dichloroethene	9.234	-7.7	1476332	0.676	0.732	7.531	7.528	7.60				
5	14	Acetone	43.453	-13.1	496254	0.045	0.052	7.708	7.718	12.14				
	15	Iodomethane	10.924	9.2	1445521	0.662	0.606	8.025	8.022	4.28				
	16	Methyl acetate	9.114	-8.9	287361	0.132	0.144	8.590	8.597	7.47				
	17	Carbon disulfide	10.630	6.3	3016056	1.381	1.299	8.149	8.146	11.19				
	18	Methylene chloride	9.806	-1.9	1491898	0.683	0.697	8.978	8.973	6.84				
25	19	tert-Butyl alcohol	234.770	-6.1	776017	0.014	0.015	9.287	9.293	8.47				
	20	tert-Butyl methyl ether (MTBE)	9.061	-9.4	1178251	0.539	0.595	9.610	9.622	10.55				
	21	trans-1,2-Dichloroethene	10.325	3.2	869017	0.398	0.385	9.709	9.705	5.12				
5	22	Acrylonitrile	48.333	-3.3	587928	0.054	0.056	9.759	9.763	6.20				
	23	Isopropyl ether (DIPE)	9.647	-3.5	3279197	1.501	1.556	11.174	11.181	6.67				
	24	1,1-Dichloroethane	10.061	0.6	1823359	0.835	0.830	11.125	11.118	5.89				
	25	Vinyl acetate	9.619	-3.8	1104226	0.506	0.496	11.274	11.280	18.92	-0.0416	0.5689		0.9974
	26	tert-Butyl ethyl ether (ETBE)	8.915	-10.9	2035624	0.932	1.045	12.193	12.194	11.38				
	27	2,2-Dichloropropane	9.117	-8.8	711282	0.326	0.357	12.615	12.616	10.74				
	28	cis-1,2-Dichloroethene	9.606	-3.9	847440	0.388	0.404	12.689	12.691	5.04				
5	29	2-Butanone	49.316	-1.4	162493	0.015	0.015	12.739	12.744	5.59				
25	30	2-Butanol	258.394	3.4	803750	0.015	0.014	13.137	13.145	13.24				
	31	Bromochloromethane	10.089	0.9	421340	0.193	0.191	13.211	13.218	5.43				
	32	Tetrahydrofuran												
	33	Chloroform	9.817	-1.8	1456634	0.667	0.679	13.335	13.353	4.65				
	34	Dibromofluoromethane	10.500	5.0	812064	0.372	0.354	13.658	13.670	5.79				
	35	1,1,1-Trichloroethane	10.319	3.2	982955	0.450	0.436	13.633	13.634	7.71				
	36	Cyclohexane	10.031	0.3	1114175	0.510	0.509	13.683	13.684	6.86				
	37	1,1-Dichloropropene	9.854	-1.5	397533	0.182	0.185	13.931	13.938	6.05				
	38	Carbon tetrachloride	10.491	4.9	846356	0.388	0.369	13.906	13.918	4.93				
5	39	tert-Amyl alcohol												
	40	1,2-Dichloroethane-d4	9.861	-1.4	627875	0.287	0.292	14.245	14.253	9.98				
	41	2,2,4-Trimethylpentane	10.403	4.0	3573267	1.636	1.573	14.319	14.313	11.03				
	42	Benzene	10.195	1.9	3169225	1.451	1.424	14.289	14.293	4.94				
	43	1,2-Dichloroethane	9.997	-0.0	735324	0.337	0.337	14.364	14.378	7.93				
	44	tert-Amyl methyl ether (TAME)	9.751	-2.5	258083	0.118	0.121	14.408	14.408	7.52				
	45	Trichloroethene	10.495	5.0	852319	0.390	0.372	15.270	15.275	5.85				
	46	Methylcyclohexane	10.942	9.4	1398629	0.640	0.585	15.478	15.478	7.70				
	47	1,2-Dichloropropane	10.040	0.4	888491	0.407	0.405	15.597	15.603	5.18				
20	48	1,4-Dioxane	221.829	10.9	48466	0.001	0.001	15.790	15.787	7.92				
	49	Dibromomethane	10.069	0.7	338226	0.155	0.154	15.790	15.799	6.25				
	50	Bromodichloromethane	10.624	6.2	953228	0.436	0.411	15.983	15.980	4.67				
	51	2-Chloroethyl vinyl ether	10.498	5.0	162767	0.075	0.071	16.310	16.322	8.10				
	52	cis-1,3-Dichloropropene	10.791	7.9	1144601	0.524	0.486	16.503	16.515	5.25				
5	53	4-Methyl-2-pentanone	51.025	2.1	1905019	0.174	0.171	16.637	16.648	8.26				
	54	CHLOROBENZENE-D5	10.000	0	1590689	1	1	18.331	18.332	0				
	55	Toluene-d8	10.943	9.4	2410226	1.515	1.385	16.786	16.796	6.24				
	56	Toluene	10.739	7.4	2945920	1.852	1.725	16.875	16.878	5.72				
	57	Ethyl methacrylate	11.175	11.8	545953	0.343	0.307	17.157	17.168	8.48				
	58	trans-1,3-Dichloropropene	10.965	9.6	858219	0.540	0.492	17.142	17.150	7.37				
	59	1,1,2-Trichloroethane	10.345	3.5	385947	0.243	0.235	17.350	17.358	8.71				
	60	Tetrachloroethene	11.093	10.9	601599	0.378	0.341	17.484	17.487	6.42				
5	61	2-Hexanone	48.845	-2.3	1293445	0.163	0.166	17.558	17.591	8.10				
	62	1,3-Dichloropropane	10.809	8.1	757342	0.476	0.440	17.529	17.540	6.69				
	63	Dibromochloromethane	11.130	11.3	543900	0.342	0.307	17.796	17.802	7.81				
	64	1,2-Dibromoethane	11.104	11.0	400755	0.252	0.227	17.930	17.936	8.99				
	65	1-Chlorohexane	10.489	4.9	1152116	0.724	0.690	18.257	18.256	5.12				
	66	Chlorobenzene	10.896	9.0	1718392	1.080	0.991	18.361	18.362	5.79				
	67	Ethylbenzene	10.687	6.9	3236047	2.034	1.904	18.405	18.416	6.48				
	68	1,1,1,2-Tetrachloroethane	11.091	10.9	579586	0.364	0.329	18.420	18.427	7.94				
2	69	m-Xylene & p-Xylene	20.966	4.8	4811490	1.512	1.443	18.509	18.513	6.36				
	70	o-Xylene	10.233	2.3	2292655	1.441	1.408	18.881	18.882	5.79				
	71	Styrene	10.976	9.8	1710105	1.075	0.980	18.896	18.902	9.07				
	72	1,2-DICHLOROBENZENE-D4	10.000	0	570957	1	1	20.679	20.678	0				
	73	Bromoform	11.629	16.3	252763	0.443	0.381	19.133	19.141	14.10				
	74	Isopropylbenzene	10.201	2.0	2782776	4.874	4.778	19.163	19.169	7.21				
	75	4-Bromofluorobenzene	10.872	8.7	777769	1.362	1.253	19.341	19.354	4.89				
	76	1,1,2,2-Tetrachloroethane	10.178	1.8	444905	0.779	0.766	19.460	19.458	8.62				
	77	trans-1,4-Dichloro-2-butene	11.128	11.3	139875	0.245	0.220	19.490	19.486	7.97				
	78	n-Propylbenzene	10.552	5.5	3828902	6.706	6.355	19.505	19.509	5.63				
	79	1,2,3-Trichloropropane	10.405	4.0	88331	0.155	0.149	19.505	19.512	11.08				
	80	Bromobenzene	10.558	5.6	634782	1.112	1.053	19.520	19.516	6.37				
	81	1,3,5-Trimethylbenzene	10.085	0.9	2140533	3.749	3.717	19.624	19.625	4.64				
	82	2-Chlorotoluene	10.157	1.6	2201391	3.856	3.796	19.639	19.640	5.46				
	83	4-Chlorotoluene	10.519	5.2	2020459	3.539	3.364	19.713	19.722	4.56				
	84	tert-Butylbenzene	10.610	6.1	471082	0.825	0.778	19.921	19.952	6.04				
	85	1,2,4-Trimethylbenzene	10.189	1.9	2075018	3.634	3.567	19.951	19.958	5.28				
	86	sec-Butylbenzene	10.135	1.3	2928107	5.128	5.060	20.099	20.101	5.83				
	87	p-Isopropyltoluene	10.913	9.1	2511639	4.399	4.031	20.188	20.190	6.01				
	88	1,3-Dichlorobenzene	11.491	14.9	1239348	2.171	1.889	20.278	20.279	5.77				
	89	1,2,3-Trimethylbenzene	9.849	-1.5	1864114	3.265	3.315	20.337	20.339	4.76				
	90	1,4-Dichlorobenzene	10.362	3.6	1143160	2.002	1.932	20.352	20.353	5.41				
	91	Benzyl Chloride	10.688	6.9	610193	1.069	1.000	20.441	20.451	6.47				
	92	n-Butylbenzene	9.623	-3.8	2425121	4.247	4.414	20.545	20.547	4.62				
	93	1,2-Dichlorobenzene	10.368	3.7	930159	1.629	1.571	20.694	20.695	3.93				
	94	1,2-Dibromo-3-chloropropane	10.536	5.4	53297	0.093	0.089	21.407	21.407	7.42				
	95	1,2,4-Trichlorobenzene	10.150	1.5	536658	0.940	0.926	22.194	22.199	6.66				
	96	Hexachlorobutadiene	10.407	4.1	343062	0.601	0.577	22.284	22.285	5.32				
	97	Naphthalene	9.451	-5.5	712284	1.248	1.320	22.521	22.516	6.93				
	98	1,2,3-Trichlorobenzene	10.308	3.1	423964	0.743	0.720	22.789	22.787	7.34				

Spike Amount = Nominal Amount * M

Sm 4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR019.D
Acq On : 6 Apr 2020 10:37 am
Sample : BFBF3D02
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.4	8746	PASS
75	95	30	60	48.2	17264	PASS
95	95	100	100	100.0	35829	PASS
96	95	5	9	7.1	2535	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.9	24694	PASS
175	174	5	9	7.6	1879	PASS
176	174	95	101	98.6	24350	PASS
177	176	5	9	6.5	1592	PASS

RDR019.D VOF3D02.M Mon Apr 06 14:55:58 2020

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	10.000	9.856	1.4	83	0.00
3	T,M	Dichlorodifluoromethane	10.000	10.860	-8.6	99	0.00
4	P,T,M	Chloromethane	10.000	10.237	-2.4	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	9.925	0.7	89	-0.02
6	C,T,M	Vinyl chloride	10.000	10.090	-0.9	93	0.00
7	T,M	Bromomethane	10.000	8.409	15.9	79	-0.02
8	T,M	Chloroethane	10.000	8.795	12.1	85	0.00
9	T,M	Dichlorofluoromethane	10.000	9.705	2.9	94	0.00
0	T,M	Trichlorofluoromethane	10.000	10.353	-3.5	97	0.00
1	T,M	Acrolein	50.000	49.987	0.0	105	-0.02
2	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.260	7.4	90	0.00
3	C,T,M	1,1-Dichloroethene	10.000	9.234	7.7	89	0.00
4	T,M	Acetone	50.000	43.453	13.1	95	-0.02
5	T,M	Iodomethane	10.000	10.924	-9.2	114	0.00
6	T,M	Methyl acetate	10.000	9.114	8.9	93	0.00
7	T,M	Carbon disulfide	10.000	10.630	-6.3	94	0.00
8	T,M	Methylene chloride	10.000	9.806	1.9	98	-0.02
9	T,M	tert-Butyl alcohol	250.000	234.770	6.1	111	0.00
0	T,M	tert-Butyl methyl ether (MT	10.000	9.061	9.4	103	0.00
1	T,M	trans-1,2-Dichloroethene	10.000	10.324	-3.2	105	0.00
2	T,M	Acrylonitrile	50.000	48.333	3.3	103	0.00
3	T,M	Isopropyl ether (DIPE)	10.000	9.647	3.5	98	0.00
4	P,T,M	1,1-Dichloroethane	10.000	10.061	-0.6	101	0.00
5	T,M	Vinyl acetate	10.000	9.619	3.8	101	0.00
6	T,M	tert-Butyl ethyl ether (ETB	10.000	8.915	10.9	100	0.00
7	T,M	2,2-Dichloropropane	10.000	9.117	8.8	104	0.00
8	T,M	cis-1,2-Dichloroethene	10.000	9.606	3.9	101	0.00
9	T,M	2-Butanone	50.000	49.316	1.4	103	0.00
0	T,M	2-Butanol	250.000	258.394	-3.4	110	0.00
1	T,M	Bromochloromethane	10.000	10.089	-0.9	109	0.00
2	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
3	C,T,M	Chloroform	10.000	9.817	1.8	102	-0.03
4	S	Dibromofluoromethane	10.000	10.500	-5.0	102	0.00
5	T,M	1,1,1-Trichloroethane	10.000	10.319	-3.2	104	0.00
6	T,M	Cyclohexane	10.000	10.031	-0.3	100	0.00
7	T,M	1,1-Dichloropropene	10.000	9.854	1.5	96	0.00
8	T,M	Carbon tetrachloride	10.000	10.491	-4.9	105	0.00
9	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-0.01
0	S	1,2-Dichloroethane-d4	10.000	9.861	1.4	102	0.00
1	T,M	2,2,4-Trimethylpentane	10.000	10.404	-4.0	93	0.00

(#) = Out of Range

SM 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
2	T,M	Benzene	10.000	10.195	-2.0	106	0.00
3	T,M	1,2-Dichloroethane	10.000	9.997	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	10.000	9.751	2.5	106	0.00
5	T,M	Trichloroethene	10.000	10.495	-4.9	107	0.00
6	T,M	Methylcyclohexane	10.000	10.942	-9.4	107	0.00
7	C,T,M	1,2-Dichloropropane	10.000	10.040	-0.4	101	0.00
8	T,M	1,4-Dioxane	200.000	221.828	-10.9	112	0.00
9	T,M	Dibromomethane	10.000	10.070	-0.7	108	0.00
0	T,M	Bromodichloromethane	10.000	10.624	-6.2	113	0.00
1	T,M	2-Chloroethyl vinyl ether	10.000	10.498	-5.0	113	0.00
2	T,M	cis-1,3-Dichloropropene	10.000	10.791	-7.9	109	0.00
3	T,M	4-Methyl-2-pentanone	50.000	51.025	-2.0	104	0.00
4	I	CHLOROBENZENE-D5	10.000	10.000	0.0	93	0.00
5	S	Toluene-d8	10.000	10.943	-9.4	99	0.00
6	C,T,M	Toluene	10.000	10.739	-7.4	102	0.00
7	T,M	Ethyl methacrylate	10.000	11.175	-11.8	108	0.00
8	T,M	trans-1,3-Dichloropropene	10.000	10.965	-9.6	101	0.00
9	T,M	1,1,2-Trichloroethane	10.000	10.345	-3.5	101	0.00
0	T,M	Tetrachloroethene	10.000	11.093	-10.9	104	0.00
1	T,M	2-Hexanone	50.000	48.845	2.3	96	0.00
2	T,M	1,3-Dichloropropane	10.000	10.809	-8.1	102	0.00
3	T,M	Dibromochloromethane	10.000	11.130	-11.3	105	0.00
4	T,M	1,2-Dibromoethane	10.000	11.104	-11.0	107	0.00
5	T,M	1-Chlorohexane	10.000	10.489	-4.9	97	0.00
6	P,M	Chlorobenzene	10.000	10.896	-9.0	99	0.00
7	C,T,M	Ethylbenzene	10.000	10.687	-6.9	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	10.000	11.091	-10.9	101	0.00
9	T,M	m-Xylene & p-Xylene	20.000	20.966	-4.8	100	0.00
0	T,M	o-Xylene	10.000	10.234	-2.3	92	0.00
1	T,M	Styrene	10.000	10.976	-9.8	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	101	0.00
3	P,T,M	Bromoform	10.000	11.629	-16.3	115	0.00
4	T,M	Isopropylbenzene	10.000	10.201	-2.0	95	0.00
5	S	4-Bromofluorobenzene	10.000	10.872	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.178	-1.8	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	10.000	11.128	-11.3	115	0.02
8	T,M	n-Propylbenzene	10.000	10.552	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	10.000	10.405	-4.0	112	-0.01
0	T,M	Bromobenzene	10.000	10.558	-5.6	106	0.00

(#) = Out of Range

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T,M	1,3,5-Trimethylbenzene	10.000	10.085	-0.9	98	0.00
2	T,M	2-Chlorotoluene	10.000	10.157	-1.6	99	0.00
3	T,M	4-Chlorotoluene	10.000	10.519	-5.2	104	0.00
4	T,M	tert-Butylbenzene	10.000	10.610	-6.1	105	0.00
5	T,M	1,2,4-Trimethylbenzene	10.000	10.189	-1.9	104	0.00
6	T,M	sec-Butylbenzene	10.000	10.135	-1.3	97	0.00
7	T,M	p-Isopropyltoluene	10.000	10.913	-9.1	109	0.00
8	T,M	1,3-Dichlorobenzene	10.000	11.491	-14.9	117	0.00
9	T,M	1,2,3-Trimethylbenzene	10.000	9.849	1.5	100	0.00
0	T,M	1,4-Dichlorobenzene	10.000	10.362	-3.6	103	0.00
1	T,M	Benzyl Chloride	10.000	10.688	-6.9	113	0.00
2	T,M	n-Butylbenzene	10.000	9.623	3.8	94	0.00
3	T,M	1,2-Dichlorobenzene	10.000	10.368	-3.7	110	0.00
4	T,M	1,2-Dibromo-3-chloropropane	10.000	10.536	-5.4	108	0.00
5	T,M	1,2,4-Trichlorobenzene	10.000	10.150	-1.5	101	0.00
6	T,M	Hexachlorobutadiene	10.000	10.407	-4.1	97	0.00
7	T,M	Naphthalene	10.000	9.452	5.5	98	0.02
8	T,M	1,2,3-Trichlorobenzene	10.000	10.308	-3.1	100	0.00

SA 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.199	1.5	83	0.00
3	T,M	Dichlorodifluoromethane	0.350	0.381	-8.9	99	0.00
4	P,T,M	Chloromethane	0.687	0.703	-2.3	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.352	0.8	89	-0.02
6	C,T,M	Vinyl chloride	0.546	0.551	-0.9	93	0.00
7	T,M	Bromomethane	0.384	0.323	15.9	79	-0.02
8	T,M	Chloroethane	0.284	0.250	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.841	0.816	3.0	94	0.00
10	T,M	Trichlorofluoromethane	0.475	0.492	-3.6	97	0.00
11	T,M	Acrolein	0.031	0.031	0.0	105	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.203	7.7	90	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.676	7.7	89	0.00
14	T,M	Acetone	0.052	0.045	13.5	95	-0.02
15	T,M	Iodomethane	0.606	0.662	-9.2	114	0.00
16	T,M	Methyl acetate	0.144	0.132	8.3	93	0.00
17	T,M	Carbon disulfide	1.299	1.381	-6.3	94	0.00
18	T,M	Methylene chloride	0.697	0.683	2.0	98	-0.02
19	T,M	tert-Butyl alcohol	0.015	0.014	6.7	111	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.539	9.4	103	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.398	-3.4	105	0.00
22	T,M	Acrylonitrile	0.056	0.054	3.6	103	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.501	3.5	98	0.00
24	P,T,M	1,1-Dichloroethane	0.830	0.835	-0.6	101	0.00
25	T,M	Vinyl acetate	0.496	0.506	-2.0	101	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.932	10.8	100	0.00
27	T,M	2,2-Dichloropropane	0.357	0.326	8.7	104	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.388	4.0	101	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	103	0.00
30	T,M	2-Butanol	0.014	0.015	-7.1	110	0.00
31	T,M	Bromochloromethane	0.191	0.193	-1.0	109	0.00
32	T,M	Tetrahydrofuran	0.000	0.017	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.667	1.8	102	-0.03
34	S	Dibromofluoromethane	0.354	0.372	-5.1	102	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.450	-3.2	104	0.00
36	T,M	Cyclohexane	0.509	0.510	-0.2	100	0.00
37	T,M	1,1-Dichloropropene	0.185	0.182	1.6	96	0.00
38	T,M	Carbon tetrachloride	0.369	0.388	-5.1	105	0.00
39	T,M	tert-Amyl alcohol	0.000	0.010	0.0	0#	-0.01
40	S	1,2-Dichloroethane-d4	0.292	0.287	1.7	102	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	1.636	-4.0	93	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
2	T,M	Benzene	1.424	1.451	-1.9	106	0.00
3	T,M	1,2-Dichloroethane	0.337	0.337	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	0.121	0.118	2.5	106	0.00
5	T,M	Trichloroethene	0.372	0.390	-4.8	107	0.00
6	T,M	Methylcyclohexane	0.585	0.640	-9.4	107	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.407	-0.5	101	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	112	0.00
9	T,M	Dibromomethane	0.154	0.155	-0.6	108	0.00
0	T,M	Bromodichloromethane	0.411	0.436	-6.1	113	0.00
1	T,M	2-Chloroethyl vinyl ether	0.071	0.075	-5.6	113	0.00
2	T,M	cis-1,3-Dichloropropene	0.486	0.524	-7.8	109	0.00
3	T,M	4-Methyl-2-pentanone	0.171	0.174	-1.8	104	0.00
4	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	0.00
5	S	Toluene-d8	1.385	1.515	-9.4	99	0.00
6	C,T,M	Toluene	1.725	1.852	-7.4	102	0.00
7	T,M	Ethyl methacrylate	0.307	0.343	-11.7	108	0.00
8	T,M	trans-1,3-Dichloropropene	0.492	0.540	-9.8	101	0.00
9	T,M	1,1,2-Trichloroethane	0.235	0.243	-3.4	101	0.00
0	T,M	Tetrachloroethene	0.341	0.378	-10.9	104	0.00
1	T,M	2-Hexanone	0.166	0.163	1.8	96	0.00
2	T,M	1,3-Dichloropropane	0.440	0.476	-8.2	102	0.00
3	T,M	Dibromochloromethane	0.307	0.342	-11.4	105	0.00
4	T,M	1,2-Dibromoethane	0.227	0.252	-11.0	107	0.00
5	T,M	1-Chlorohexane	0.690	0.724	-4.9	97	0.00
6	P,M	Chlorobenzene	0.991	1.080	-9.0	99	0.00
7	C,T,M	Ethylbenzene	1.904	2.034	-6.8	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	0.329	0.364	-10.6	101	0.00
9	T,M	m-Xylene & p-Xylene	1.443	1.512	-4.8	100	0.00
0	T,M	o-Xylene	1.408	1.441	-2.3	92	0.00
1	T,M	Styrene	0.980	1.075	-9.7	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	101	0.00
3	P,T,M	Bromoform	0.381	0.443	-16.3	115	0.00
4	T,M	Isopropylbenzene	4.778	4.874	-2.0	95	0.00
5	S	4-Bromofluorobenzene	1.253	1.362	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.779	-1.7	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	0.220	0.245	-11.4	115	0.02
8	T,M	n-Propylbenzene	6.355	6.706	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	0.149	0.155	-4.0	112	-0.01
0	T,M	Bromobenzene	1.053	1.112	-5.6	106	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.749	-0.9	98	0.00
82	T,M	2-Chlorotoluene	3.796	3.856	-1.6	99	0.00
83	T,M	4-Chlorotoluene	3.364	3.539	-5.2	104	0.00
84	T,M	tert-Butylbenzene	0.778	0.825	-6.0	105	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.634	-1.9	104	0.00
86	T,M	sec-Butylbenzene	5.060	5.128	-1.3	97	0.00
87	T,M	p-Isopropyltoluene	4.031	4.399	-9.1	109	0.00
88	T,M	1,3-Dichlorobenzene	1.889	2.171	-14.9	117	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.265	1.5	100	0.00
90	T,M	1,4-Dichlorobenzene	1.932	2.002	-3.6	103	0.00
91	T,M	Benzyl Chloride	1.000	1.069	-6.9	113	0.00
92	T,M	n-Butylbenzene	4.414	4.247	3.8	94	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.629	-3.7	110	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.093	-4.5	108	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.940	-1.5	101	0.00
96	T,M	Hexachlorobutadiene	0.577	0.601	-4.2	97	0.00
97	T,M	Naphthalene	1.320	1.248	5.5	98	0.02
98	T,M	1,2,3-Trichlorobenzene	0.720	0.743	-3.2	100	0.00

SM 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2184009	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1590689	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	570957	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	812064	10.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%		
40) 1,2-Dichloroethane-d4	14.24	65	627875	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
55) Toluene-d8	16.79	98	2410226	10.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.40%		
75) 4-Bromofluorobenzene	19.34	95	777769	10.87	ug/l	-0.01
Spiked Amount 10.000			Recovery =	108.70%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	435479	9.86	ug/l	100
3) Dichlorodifluoromethane	3.84	85	831345	10.86	ug/l	100
4) Chloromethane	4.29	50	1536000	10.24	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	768887	9.93	ug/l	99
6) Vinyl chloride	4.55	62	1203406	10.09	ug/l	100
7) Bromomethane	5.34	94	705143	8.41	ug/l	99
8) Chloroethane	5.61	64	545697	8.79	ug/l	99
9) Dichlorofluoromethane	6.08	67	1782782	9.71	ug/l	100
10) Trichlorofluoromethane	6.17	101	1073710	10.35	ug/l	100
11) Acrolein	7.30	56	342800	49.99	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	444090	9.26	ug/l	99
13) 1,1-Dichloroethene	7.53	61	1476332	9.23	ug/l	99
14) Acetone	7.71	43	496254	43.45	ug/l	95
15) Iodomethane	8.03	142	1445521	10.92	ug/l	99
16) Methyl acetate	8.59	43	287361	9.11	ug/l	97
17) Carbon disulfide	8.15	76	3016056	10.63	ug/l	100
18) Methylene chloride	8.98	49	1491898	9.81	ug/l	98
19) tert-Butyl alcohol	9.29	59	776017	234.77	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1178251	9.06	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	869017	10.32	ug/l	99
22) Acrylonitrile	9.76	53	587928	48.33	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	3279197	9.65	ug/l	100
24) 1,1-Dichloroethane	11.12	63	1823359	10.06	ug/l	99
25) Vinyl acetate	11.27	43	1104226	9.62	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	2035624	8.92	ug/l	99
27) 2,2-Dichloropropane	12.61	77	711282	9.12	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	847440	9.61	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR020.D VOF3D02.M Thu Apr 16 17:33:46 2020 SW 4/24/20 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.74	72	162493	49.32	ug/l	100
30)	2-Butanol	13.14	45	803750	258.39	ug/l	97
31)	Bromochloromethane	13.21	130	421340	10.09	ug/l	99
33)	Chloroform	13.34	83	1456634	9.82	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	982955	10.32	ug/l	99
36)	Cyclohexane	13.68	84	1114175	10.03	ug/l	98
37)	1,1-Dichloropropene	13.93	110	397553	9.85	ug/l	99
38)	Carbon tetrachloride	13.91	119	846356	10.49	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	3573267	10.40	ug/l	100
42)	Benzene	14.29	78	3169925	10.19	ug/l	100
43)	1,2-Dichloroethane	14.36	62	735324	10.00	ug/l	98
44)	tert-Amyl methyl ether (TA	14.41	87	258083	9.75	ug/l	99
45)	Trichloroethene	15.27	130	852319	10.50	ug/l	99
46)	Methylcyclohexane	15.48	83	1398629	10.94	ug/l	99
47)	1,2-Dichloropropane	15.60	63	888491	10.04	ug/l	99
48)	1,4-Dioxane	15.79	88	48466	221.83	ug/l	100
49)	Dibromomethane	15.79	93	338226	10.07	ug/l	100
50)	Bromodichloromethane	15.98	83	953228	10.62	ug/l	100
51)	2-Chloroethyl vinyl ether	16.31	63	162767	10.50	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1144601	10.79	ug/l	100
53)	4-Methyl-2-pentanone	16.64	43	1905019	51.03	ug/l	99
56)	Toluene	16.87	91	2945920	10.74	ug/l	100
57)	Ethyl methacrylate	17.16	69	545953	11.18	ug/l	96
58)	trans-1,3-Dichloropropene	17.14	75	858219	10.96	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	385947	10.35	ug/l	98
60)	Tetrachloroethene	17.48	164	601599	11.09	ug/l	99
61)	2-Hexanone	17.56	43	1293445	48.84	ug/l	99
62)	1,3-Dichloropropane	17.53	76	757342	10.81	ug/l	100
63)	Dibromochloromethane	17.80	129	543900	11.13	ug/l	99
64)	1,2-Dibromoethane	17.93	107	400755	11.10	ug/l	100
65)	1-Chlorohexane	18.26	91	1152116	10.49	ug/l	100
66)	Chlorobenzene	18.36	112	1718392	10.90	ug/l	100
67)	Ethylbenzene	18.41	91	3236047	10.69	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	579586	11.09	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	4811490	20.97	ug/l	100
70)	o-Xylene	18.88	91	2292655	10.23	ug/l	99
71)	Styrene	18.90	104	1710105	10.98	ug/l	98
73)	Bromoform	19.13	173	252763	11.63	ug/l	99
74)	Isopropylbenzene	19.16	105	2782776	10.20	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.46	83	444905	10.18	ug/l	98
77)	trans-1,4-Dichloro-2-buten	19.49	53	139875	11.13	ug/l	97

(#) = qualifier out of range (m) = manual integration

4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.50	91	3828902	10.55	ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	88331	10.40	ug/l	82
80)	Bromobenzene	19.52	156	634782	10.56	ug/l	100
81)	1,3,5-Trimethylbenzene	19.62	105	2140533	10.09	ug/l	99
82)	2-Chlorotoluene	19.64	91	2201391	10.16	ug/l	99
83)	4-Chlorotoluene	19.71	91	2020459	10.52	ug/l	100
84)	tert-Butylbenzene	19.92	134	471082	10.61	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	2075018	10.19	ug/l	100
86)	sec-Butylbenzene	20.10	105	2928107	10.13	ug/l	99
87)	p-Isopropyltoluene	20.19	119	2511639	10.91	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	1239348	11.49	ug/l	95
89)	1,2,3-Trimethylbenzene	20.34	105	1864114	9.85	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	1143160	10.36	ug/l	97
91)	Benzyl Chloride	20.44	91	610193	10.69	ug/l	99
92)	n-Butylbenzene	20.55	91	2425121	9.62	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	930159	10.37	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	53297	10.54	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	536658	10.15	ug/l	98
96)	Hexachlorobutadiene	22.28	225	343062	10.41	ug/l	97
97)	Naphthalene	22.52	128	712284	9.45	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	423964	10.31	ug/l	99

4/22/20
SA

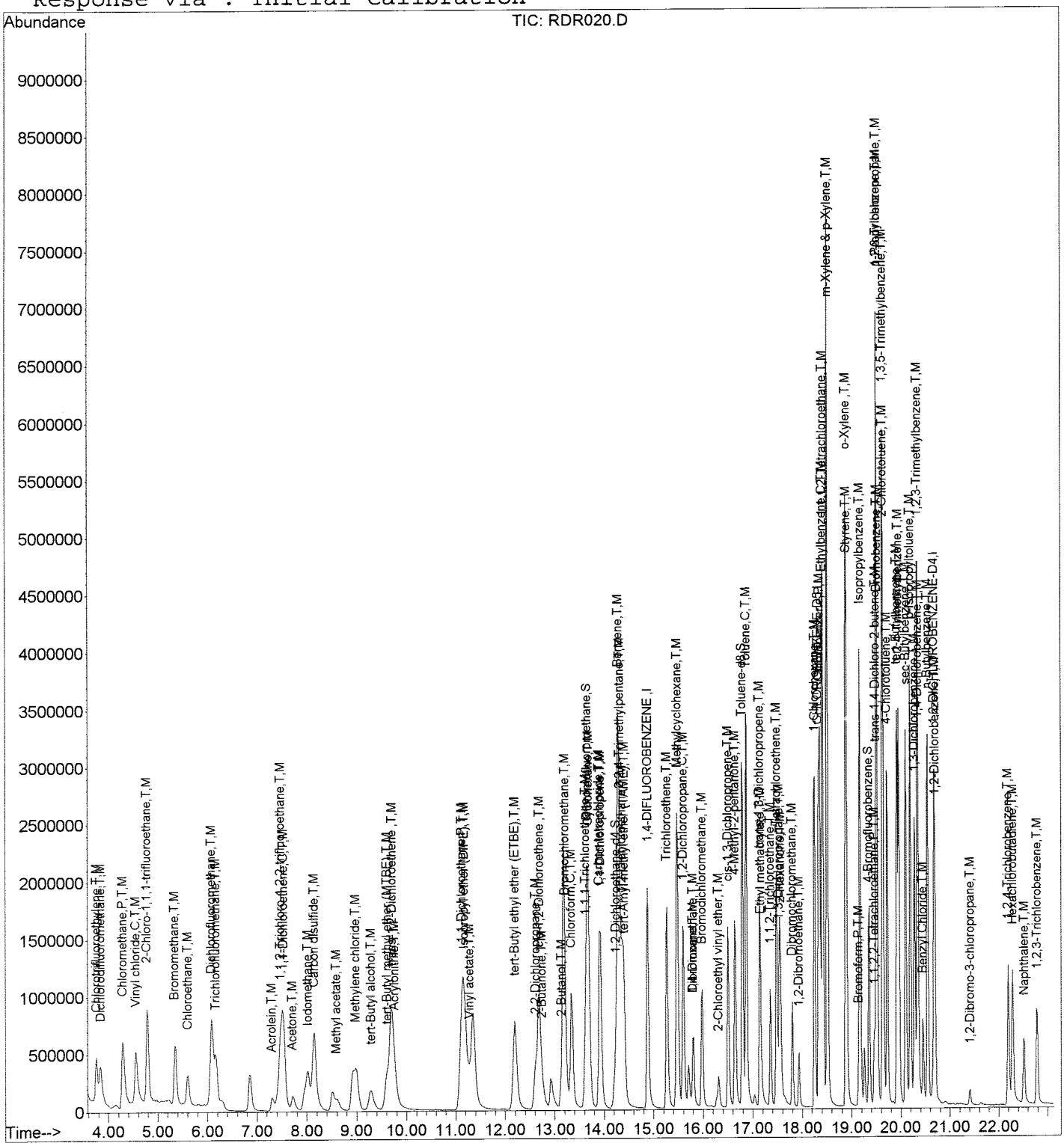
(#) = qualifier out of range (m) = manual integration
RDR020.D VOF3D02.M Thu Apr 16 17:33:46 2020 Page 3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SA 4/24/20

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F155
Lab File ID: RFR351 BFB Injection Date : 06/19/20
Instrument ID: F3 BFB Injection Time : 09:05
GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.69
75	30.0 - 60.0% of mass 95	52.36
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.63
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	62.33
175	5.0 - 9.0% of mass 174	4.61(7.4)1
176	95.0 - 101.0% of mass 174	62.24(99.9)1
177	5.0 - 9.0% of mass 176	4.27(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVOF3D0232	RFR352	06/19/20	09:34
2	MBLK1W	VOF3F16B	RFR356	06/19/20	11:38
3	LCS1W	VOF3F16L	RFR353	06/19/20	10:11
4	LCD1W	VOF3F16C	RFR354	06/19/20	10:39
5	TB01-GW061720	F155-03	RFR360	06/19/20	13:35
6	MW19-GW061620	F155-02	RFR362	06/19/20	14:33
7	MW18-GW061620	F155-01	RFR363	06/19/20	15:02

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDR007
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

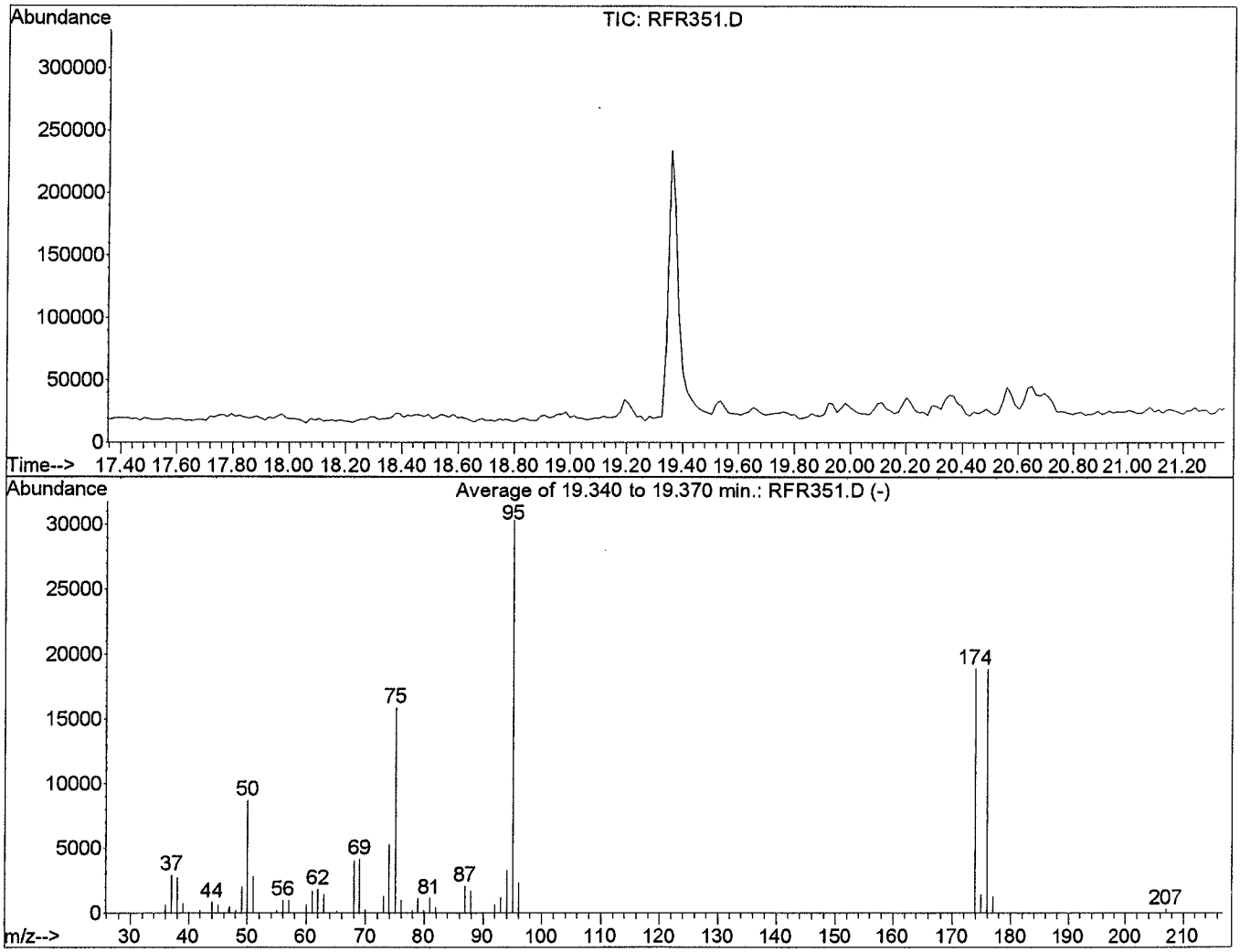
Project: VA SALT LAKE CITY
SDG No: 20F155
Date Analyzed: 04/02/2020
Time Analyzed: 19:14
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2165754	14.88	1703394	18.33	566102	20.68
	UPPER LIMIT	4331508	15.05	3406788	18.50	1132204	20.85
	LOWER LIMIT	1082877	14.71	851697	18.16	283051	20.51
	SAMPLE ID						
1	VSTD010	1945965	14.88	1472198	18.33	483234	20.68
2	MBLK1W	2188807	14.88	1657717	18.33	521869	20.68
3	LCS1W	1956219	14.88	1402831	18.33	462701	20.68
4	LCD1W	1951518	14.88	1462623	18.33	477829	20.68
5	TB01-GW061720	2224274	14.88	1666550	18.33	529083	20.68
6	MW19-GW061620	2324530	14.88	1714546	18.33	534028	20.68
7	MW18-GW061620	2325361	14.88	1762945	18.33	558383	20.68

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : C:\HPCHEM\1\DATA\20F19\RFR351.D
Acq On : 19 Jun 2020 9:05 am
Sample : BFBF3F16
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ENguye/ODi
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 862

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	28.7	8694	PASS
75	95	30	60	52.4	15864	PASS
95	95	100	100	100.0	30299	PASS
96	95	5	9	7.6	2313	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	62.3	18887	PASS
175	174	5	9	7.4	1397	PASS
176	174	95	101	99.9	18859	PASS
177	176	5	9	6.9	1294	PASS

RFR351.D VOF3D02.M Mon Jun 22 12:51:40 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D
Acq On : 19 Jun 2020 9:34 am
Sample : CVOF3D0232
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	90	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-3.76#
3	T,M	Dichlorodifluoromethane	10.000	10.470	-4.7	85	-0.02
4	P,T,M	Chloromethane	10.000	10.548	-5.5	91	-0.02
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-4.80#
6	C,T,M	Vinyl chloride	10.000	11.305	-13.0	93	0.00
7	T,M	Bromomethane	10.000	9.104	9.0	76	-0.02
8	T,M	Chloroethane	10.000	11.930	-19.3	102	-0.02
9	T,M	Dichlorofluoromethane	10.000	10.415	-4.1	90	0.00
10	T,M	Trichlorofluoromethane	10.000	10.430	-4.3	87	-0.01
11	T,M	Acrolein	50.000	43.669	12.7	81	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.377	16.2	73	0.00
13	C,T,M	1,1-Dichloroethene	10.000	10.209	-2.1	87	-0.03
14	T,M	Acetone	50.000	56.704	-13.4	110	-0.02
15	T,M	Iodomethane	10.000	8.808	11.9	82	-0.05
16	T,M	Methyl acetate	10.000	10.462	-4.6	95	0.00
17	T,M	Carbon disulfide	10.000	9.912	0.9	78	-0.02
18	T,M	Methylene chloride	10.000	10.997	-10.0	98	-0.07
19	T,M	tert-Butyl alcohol	250.000	216.582	13.4	92	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	9.024	9.8	91	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.725	2.8	88	0.00
22	T,M	Acrylonitrile	50.000	54.823	-9.6	104	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	10.559	-5.6	95	0.00
24	P,T,M	1,1-Dichloroethane	10.000	10.436	-4.4	93	0.00
25	T,M	Vinyl acetate	10.000	9.993	0.1	93	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	8.723	12.8	87	0.00
27	T,M	2,2-Dichloropropane	10.000	10.539	-5.4	107	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.426	5.7	88	0.00
29	T,M	2-Butanone	50.000	50.493	-1.0	94	0.00
30	T,M	2-Butanol	250.000	234.236	6.3	89	0.00
31	T,M	Bromochloromethane	10.000	8.866	11.3	85	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.997	0.0	93	-0.03
34	S	Dibromofluoromethane	10.000	10.028	-0.3	87	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.301	-3.0	92	0.00
36	T,M	Cyclohexane	10.000	9.408	5.9	84	0.00
37	T,M	1,1-Dichloropropene	10.000	9.689	3.1	84	0.00
38	T,M	Carbon tetrachloride	10.000	10.886	-8.9	97	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-0.10
40	S	1,2-Dichloroethane-d4	10.000	10.407	-4.1	96	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	0.080	99.2#	1	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D
Acq On : 19 Jun 2020 9:34 am
Sample : CVOF3D0232
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.530	4.7	89	0.00
43	T,M	1,2-Dichloroethane	10.000	10.000	0.0	95	0.00
44	T,M	tert-Amyl methyl ether (TAM	10.000	8.546	14.5	83	0.00
45	T,M	Trichloroethene	10.000	9.230	7.7	84	0.00
46	T,M	Methylcyclohexane	10.000	9.378	6.2	81	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.988	0.1	90	0.00
48	T,M	1,4-Dioxane	200.000	195.017	2.5	88	0.00
49	T,M	Dibromomethane	10.000	9.317	6.8	89	0.00
50	T,M	Bromodichloromethane	10.000	10.234	-2.3	97	-0.01
51	T,M	2-Chloroethyl vinyl ether	10.000	5.668	43.3#	54	0.02
52	T,M	cis-1,3-Dichloropropene	10.000	9.884	1.2	89	0.00
53	T,M	4-Methyl-2-pentanone	50.000	54.251	-8.5	99	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	0.00
55	S	Toluene-d8	10.000	10.107	-1.1	84	0.00
56	C,T,M	Toluene	10.000	9.609	3.9	85	0.00
57	T,M	Ethyl methacrylate	10.000	9.393	6.1	84	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	10.046	-0.5	86	0.00
59	T,M	1,1,2-Trichloroethane	10.000	9.518	4.8	86	0.00
60	T,M	Tetrachloroethene	10.000	9.469	5.3	83	0.00
61	T,M	2-Hexanone	50.000	51.178	-2.4	93	0.00
62	T,M	1,3-Dichloropropane	10.000	9.939	0.6	87	0.00
63	T,M	Dibromochloromethane	10.000	9.945	0.5	87	0.00
64	T,M	1,2-Dibromoethane	10.000	9.621	3.8	86	0.00
65	T,M	1-Chlorohexane	10.000	9.256	7.4	80	0.00
66	P,M	Chlorobenzene	10.000	9.701	3.0	82	0.00
67	C,T,M	Ethylbenzene	10.000	9.899	1.0	84	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	9.825	1.8	83	0.00
69	T,M	m-Xylene & p-Xylene	20.000	18.829	5.9	83	0.00
70	T,M	o-Xylene	10.000	9.665	3.4	80	0.00
71	T,M	Styrene	10.000	9.755	2.4	78	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00
73	P,T,M	Bromoform	10.000	10.046	-0.5	84	0.00
74	T,M	Isopropylbenzene	10.000	10.267	-2.7	81	0.00
75	S	4-Bromofluorobenzene	10.000	10.626	-6.3	84	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.296	-3.0	92	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	10.553	-5.5	92	0.00
78	T,M	n-Propylbenzene	10.000	10.442	-4.4	88	0.00
79	T,M	1,2,3-Trichloropropane	10.000	9.719	2.8	88	-0.01
80	T,M	Bromobenzene	10.000	9.763	2.4	83	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.947	0.5	82	0.00
82	T,M	2-Chlorotoluene	10.000	10.203	-2.0	84	0.00
83	T,M	4-Chlorotoluene	10.000	9.932	0.7	83	0.00
84	T,M	tert-Butylbenzene	10.000	9.834	1.7	82	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.638	3.6	83	0.00
86	T,M	sec-Butylbenzene	10.000	10.075	-0.7	81	0.00
87	T,M	p-Isopropyltoluene	10.000	9.751	2.5	82	0.00
88	T,M	1,3-Dichlorobenzene	10.000	9.540	4.6	82	0.00
89	T,M	1,2,3-Trimethylbenzene	10.000	9.927	0.7	85	0.00
90	T,M	1,4-Dichlorobenzene	10.000	9.205	7.9	77	0.00
91	T,M	Benzyl Chloride	10.000	0.000	100.0#	0	-20.44#
92	T,M	n-Butylbenzene	10.000	9.695	3.0	80	0.00
93	T,M	1,2-Dichlorobenzene	10.000	9.421	5.8	85	0.00
94	T,M	1,2-Dibromo-3-chloropropane	10.000	8.942	10.6	78	0.00
95	T,M	1,2,4-Trichlorobenzene	10.000	8.548	14.5	72	0.00
96	T,M	Hexachlorobutadiene	10.000	8.974	10.3	70	0.00
97	T,M	Naphthalene	10.000	8.089	19.1	71	0.00
98	T,M	1,2,3-Trichlorobenzene	10.000	8.572	14.3	70	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	90	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.000	100.0#	0#	-3.76#
3	T,M	Dichlorodifluoromethane	0.350	0.367	-4.9	85	-0.02
4	P,T,M	Chloromethane	0.687	0.725	-5.5	91	-0.02
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.000	100.0#	0#	-4.80#
6	C,T,M	Vinyl chloride	0.546	0.617	-13.0	93	0.00
7	T,M	Bromomethane	0.384	0.350	8.9	76	-0.02
8	T,M	Chloroethane	0.284	0.339	-19.4	102	-0.02
9	T,M	Dichlorofluoromethane	0.841	0.876	-4.2	90	0.00
10	T,M	Trichlorofluoromethane	0.475	0.495	-4.2	87	-0.01
11	T,M	Acrolein	0.031	0.027	12.9	81	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.184	16.4	73	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.747	-2.0	87	-0.03
14	T,M	Acetone	0.052	0.059	-13.5	110	-0.02
15	T,M	Iodomethane	0.606	0.534	11.9	82	-0.05
16	T,M	Methyl acetate	0.144	0.151	-4.9	95	0.00
17	T,M	Carbon disulfide	1.299	1.288	0.8	78	-0.02
18	T,M	Methylene chloride	0.697	0.766	-9.9	98	-0.07
19	T,M	tert-Butyl alcohol	0.015	0.013	13.3	92	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.537	9.7	91	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.375	2.6	88	0.00
22	T,M	Acrylonitrile	0.056	0.061	-8.9	104	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.643	-5.6	95	0.00
24	P,T,M	1,1-Dichloroethane	0.830	0.866	-4.3	93	0.00
25	T,M	Vinyl acetate	0.496	0.527	-6.3	93	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.912	12.7	87	0.00
27	T,M	2,2-Dichloropropane	0.357	0.376	-5.3	107	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.381	5.7	88	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	94	0.00
30	T,M	2-Butanol	0.014	0.013	7.1	89	0.00
31	T,M	Bromochloromethane	0.191	0.170	11.0	85	0.00
32	T,M	Tetrahydrofuran	0.000	0.014	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.679	0.0	93	-0.03
34	S	Dibromofluoromethane	0.354	0.355	-0.3	87	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.449	-3.0	92	0.00
36	T,M	Cyclohexane	0.509	0.478	6.1	84	0.00
37	T,M	1,1-Dichloropropene	0.185	0.179	3.2	84	0.00
38	T,M	Carbon tetrachloride	0.369	0.402	-8.9	97	0.00
39	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-0.10
40	S	1,2-Dichloroethane-d4	0.292	0.303	-3.8	96	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	0.013	99.2#	1#	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.424	1.357	4.7	89	0.00
43	T,M	1,2-Dichloroethane	0.337	0.337	0.0	95	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.121	0.104	14.0	83	0.00
45	T,M	Trichloroethene	0.372	0.343	7.8	84	0.00
46	T,M	Methylcyclohexane	0.585	0.549	6.2	81	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.405	0.0	90	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	88	0.00
49	T,M	Dibromomethane	0.154	0.143	7.1	89	0.00
50	T,M	Bromodichloromethane	0.411	0.420	-2.2	97	-0.01
51	T,M	2-Chloroethyl vinyl ether	0.071	0.040	43.7#	54	0.02
52	T,M	cis-1,3-Dichloropropene	0.486	0.480	1.2	89	0.00
53	T,M	4-Methyl-2-pentanone	0.171	0.185	-8.2	99	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	0.00
55	S	Toluene-d8	1.385	1.399	-1.0	84	0.00
56	C,T,M	Toluene	1.725	1.657	3.9	85	0.00
57	T,M	Ethyl methacrylate	0.307	0.288	6.2	84	0.00
58	T,M	trans-1,3-Dichloropropene	0.492	0.494	-0.4	86	0.00
59	T,M	1,1,2-Trichloroethane	0.235	0.223	5.1	86	0.00
60	T,M	Tetrachloroethene	0.341	0.323	5.3	83	0.00
61	T,M	2-Hexanone	0.166	0.170	-2.4	93	0.00
62	T,M	1,3-Dichloropropane	0.440	0.438	0.5	87	0.00
63	T,M	Dibromochloromethane	0.307	0.305	0.7	87	0.00
64	T,M	1,2-Dibromoethane	0.227	0.218	4.0	86	0.00
65	T,M	1-Chlorohexane	0.690	0.639	7.4	80	0.00
66	P,M	Chlorobenzene	0.991	0.962	2.9	82	0.00
67	C,T,M	Ethylbenzene	1.904	1.884	1.1	84	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.329	0.323	1.8	83	0.00
69	T,M	m-Xylene & p-Xylene	1.443	1.358	5.9	83	0.00
70	T,M	o-Xylene	1.408	1.361	3.3	80	0.00
71	T,M	Styrene	0.980	0.956	2.4	78	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	85	0.00
73	P,T,M	Bromoform	0.381	0.382	-0.3	84	0.00
74	T,M	Isopropylbenzene	4.778	4.906	-2.7	81	0.00
75	S	4-Bromofluorobenzene	1.253	1.331	-6.2	84	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.788	-2.9	92	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.220	0.232	-5.5	92	0.00
78	T,M	n-Propylbenzene	6.355	6.636	-4.4	88	0.00
79	T,M	1,2,3-Trichloropropane	0.149	0.145	2.7	88	-0.01
80	T,M	Bromobenzene	1.053	1.028	2.4	83	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D
Acq On : 19 Jun 2020 9:34 am
Sample : CVOF3D0232
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.698	0.5	82	0.00
82	T,M	2-Chlorotoluene	3.796	3.873	-2.0	84	0.00
83	T,M	4-Chlorotoluene	3.364	3.341	0.7	83	0.00
84	T,M	tert-Butylbenzene	0.778	0.765	1.7	82	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.438	3.6	83	0.00
86	T,M	sec-Butylbenzene	5.060	5.098	-0.8	81	0.00
87	T,M	p-Isopropyltoluene	4.031	3.931	2.5	82	0.00
88	T,M	1,3-Dichlorobenzene	1.889	1.802	4.6	82	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.291	0.7	85	0.00
90	T,M	1,4-Dichlorobenzene	1.932	1.779	7.9	77	0.00
91	T,M	Benzyl Chloride	1.000	0.000	100.0#	0#	-20.44#
92	T,M	n-Butylbenzene	4.414	4.280	3.0	80	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.480	5.8	85	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.079	11.2	78	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.792	14.5	72	0.00
96	T,M	Hexachlorobutadiene	0.577	0.518	10.2	70	0.00
97	T,M	Naphthalene	1.320	1.068	19.1	71	0.00
98	T,M	1,2,3-Trichlorobenzene	0.720	0.618	14.2	70	0.00

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:51 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1945965	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1472198	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	483234	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	691004	10.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.30%		
40) 1,2-Dichloroethane-d4	14.25	65	590416	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.10%		
55) Toluene-d8	16.79	98	2060254	10.11	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.10%		
75) 4-Bromofluorobenzene	19.34	95	643376	10.63	ug/l	-0.01
Spiked Amount 10.000			Recovery =	106.30%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	714113	10.47	ug/l	98
4) Chloromethane	4.27	50	1410227	10.55	ug/l	100
6) Vinyl chloride	4.55	62	1201389	11.31	ug/l	100
7) Bromomethane	5.35	94	680171	9.10	ug/l	100
8) Chloroethane	5.59	64	659564	11.93	ug/l	96
9) Dichlorofluoromethane	6.09	67	1704536	10.41	ug/l	99
10) Trichlorofluoromethane	6.16	101	963775	10.43	ug/l	100
11) Acrolein	7.30	56	266831	43.67	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	357970	8.38	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1454218	10.21	ug/l	97
14) Acetone	7.71	43	577011	56.70	ug/l	100
15) Iodomethane	7.97	142	1038452	8.81	ug/l	98
16) Methyl acetate	8.59	43	293929	10.46	ug/l	99
17) Carbon disulfide	8.13	76	2505761	9.91	ug/l	100
18) Methylene chloride	8.93	49	1490679	11.00	ug/l	97
19) tert-Butyl alcohol	9.29	59	637870	216.58	ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	1045553	9.02	ug/l	100
21) trans-1,2-Dichloroethene	9.71	96	729362	9.73	ug/l	99
22) Acrylonitrile	9.76	53	594180	54.82	ug/l	99
23) Isopropyl ether (DIPE)	11.17	45	3197955	10.56	ug/l	97
24) 1,1-Dichloroethane	11.13	63	1685042	10.44	ug/l	99
25) Vinyl acetate	11.27	43	1025237	9.99	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	1774655	8.72	ug/l	97
27) 2,2-Dichloropropane	12.62	77	732628	10.54	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	740935	9.43	ug/l	100
29) 2-Butanone	12.74	72	148236	50.49	ug/l	99
30) 2-Butanol	13.14	45	649191	234.24	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:51 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	329940	8.87	ug/l	100
33)	Chloroform	13.34	83	1321698	10.00	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	874254	10.30	ug/l	98
36)	Cyclohexane	13.68	84	931041	9.41	ug/l	98
37)	1,1-Dichloropropene	13.93	110	348310	9.69	ug/l	100
38)	Carbon tetrachloride	13.91	119	782450	10.89	ug/l	98
42)	Benzene	14.29	78	2640235	9.53	ug/l	98
43)	1,2-Dichloroethane	14.36	62	655373	10.00	ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	201532	8.55	ug/l	100
45)	Trichloroethene	15.27	130	667896	9.23	ug/l	97
46)	Methylcyclohexane	15.48	83	1068090	9.38	ug/l	96
47)	1,2-Dichloropropane	15.60	63	787496	9.99	ug/l	100
48)	1,4-Dioxane	15.79	88	37964	195.02	ug/l	92
49)	Dibromomethane	15.79	93	278838	9.32	ug/l	96
50)	Bromodichloromethane	15.97	83	818146	10.23	ug/l	100
51)	2-Chloroethyl vinyl ether	16.33	63	78298	5.67	ug/l	95
52)	cis-1,3-Dichloropropene	16.50	75	934102	9.88	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1804712	54.25	ug/l	98
56)	Toluene	16.88	91	2439537	9.61	ug/l	99
57)	Ethyl methacrylate	17.16	69	424672	9.39	ug/l	93
58)	trans-1,3-Dichloropropene	17.14	75	727719	10.05	ug/l	100
59)	1,1,2-Trichloroethane	17.35	97	328631	9.52	ug/l	96
60)	Tetrachloroethene	17.48	164	475245	9.47	ug/l	97
61)	2-Hexanone	17.56	43	1254279	51.18	ug/l	98
62)	1,3-Dichloropropane	17.53	76	644531	9.94	ug/l	99
63)	Dibromochloromethane	17.80	129	449756	9.94	ug/l	99
64)	1,2-Dibromoethane	17.93	107	321360	9.62	ug/l	98
65)	1-Chlorohexane	18.26	91	940892	9.26	ug/l	99
66)	Chlorobenzene	18.36	112	1415942	9.70	ug/l	99
67)	Ethylbenzene	18.41	91	2774071	9.90	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	475160	9.82	ug/l	100
69)	m-Xylene & p-Xylene	18.51	91	3999270	18.83	ug/l	100
70)	o-Xylene	18.88	91	2003891	9.66	ug/l	100
71)	Styrene	18.90	104	1406720	9.76	ug/l	99
73)	Bromoform	19.13	173	184806	10.05	ug/l	99
74)	Isopropylbenzene	19.16	105	2370625	10.27	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.45	83	380920	10.30	ug/l	100
77)	trans-1,4-Dichloro-2-buten	19.48	53	112267	10.55	ug/l	98
78)	n-Propylbenzene	19.51	91	3206877	10.44	ug/l	100
79)	1,2,3-Trichloropropane	19.51	110	69835	9.72	ug/l	89
80)	Bromobenzene	19.51	156	496804	9.76	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D Vial: 2
Acq On : 19 Jun 2020 9:34 am Operator: ENguye/ODinh
Sample : CVOF3D0232 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 22 12:51 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1786819	9.95	ug/l	99
82)	2-Chlorotoluene	19.64	91	1871590	10.20	ug/l	100
83)	4-Chlorotoluene	19.71	91	1614631	9.93	ug/l	100
84)	tert-Butylbenzene	19.92	134	369538	9.83	ug/l	95
85)	1,2,4-Trimethylbenzene	19.95	105	1661330	9.64	ug/l	100
86)	sec-Butylbenzene	20.10	105	2463560	10.07	ug/l	100
87)	p-Isopropyltoluene	20.19	119	1899387	9.75	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	870866	9.54	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	1590229	9.93	ug/l	100
90)	1,4-Dichlorobenzene	20.35	146	859548	9.21	ug/l	97
92)	n-Butylbenzene	20.55	91	2068075	9.70	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	715387	9.42	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	38283	8.94	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	382553	8.55	ug/l	99
96)	Hexachlorobutadiene	22.28	225	250367	8.97	ug/l	97
97)	Naphthalene	22.51	128	515971	8.09	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	298404	8.57	ug/l	99

(#) = qualifier out of range (m) = manual integration

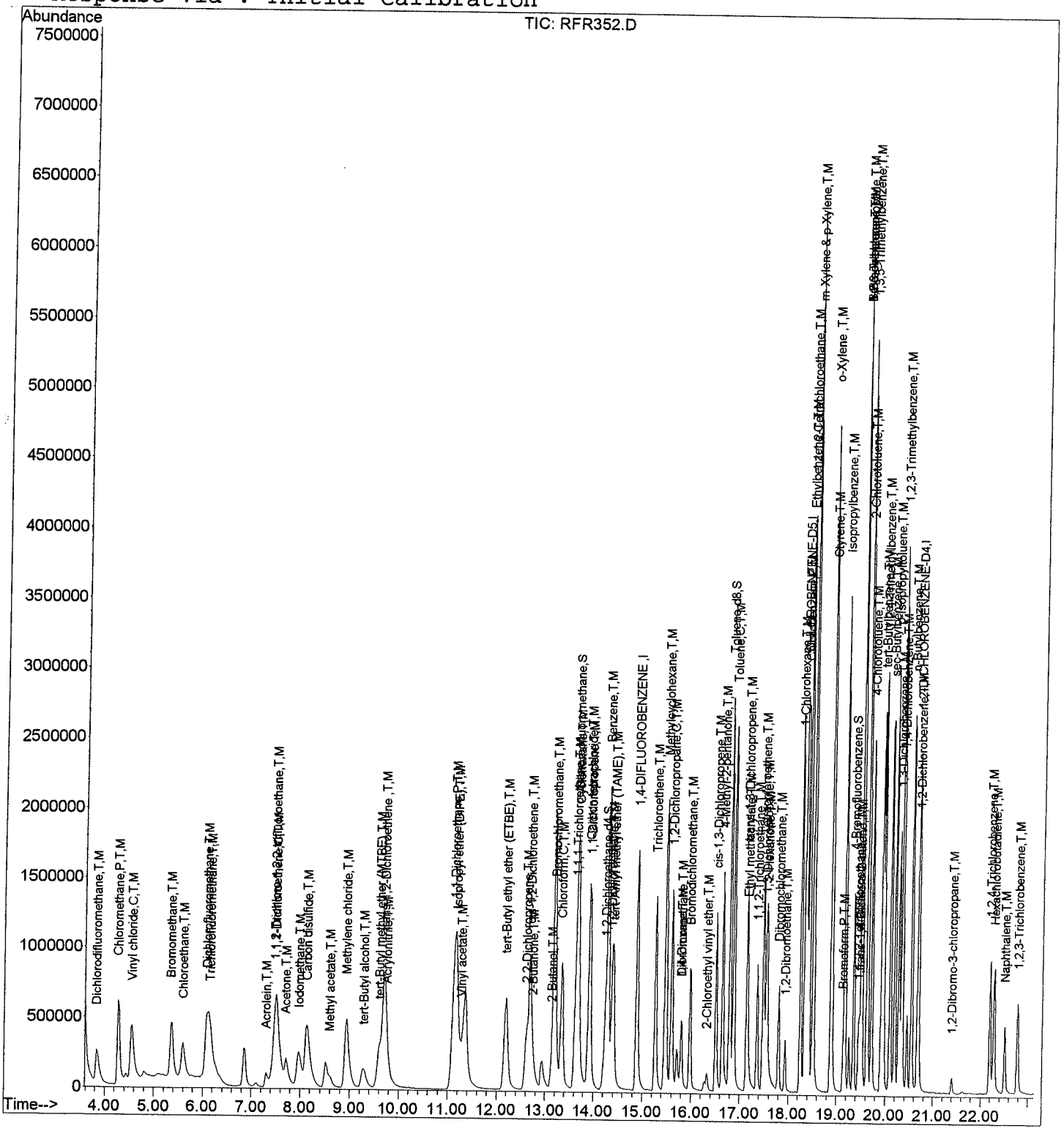
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F19\RFR352.D
Acq On : 19 Jun 2020 9:34 am
Sample : CVOF3D0232
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jun 22 12:51 2020

Vial: 2
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



ANALYTICAL LOG(S)

ANALYSIS LOG FOR VOLATILES

SOP ☑EMAX-8260 Rev.No. 10 ☑EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/02/20 ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: AF3-021

BATCH VOF3D026

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount A/B (µl)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR001	BFB3D01 Std 4/2/20 ✓		N/A	N/A	N/A		16:01
02		002	VOF3D020Ø1 ✓	0.03/0.15					0.3/1.5/7.5 ppb
03		003	2 ✓	0.05/0.25					0.5/2.5/12.5
04		004	3 ✓	0.1/0.5					1/5/25
05		005	4 ✓	0.2/1					2/10/50
06		006	5 ✓	0.5/2.5					5/25/125
07		007	6 ✓	1/5					10/50/250
08		008	7 ✓	2/10					20/100/500
09		009	8 x	3/15					30/150/750 bias high
10		010	9 ✓	5/25					50/250/1250
11		011	10 ✓	10/50					100/500/2500
12		012	RINSE						
13		013	↓						
14		014	IVOF3D0201 x						gas low
15		015	RINSE						
16		016	LOD1 x						0.2/4 ppb
17		017	2 ✓						0.4/4
18		018	3						0.8/4 00:37
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									Rm 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 224TMP+TAA	SV1-33-97-03	*	
DCC CS_2	-97-02	*	
DCC 4ADD	↓ -98-03	*	
DCC gas	SV1-34-07-01	*	
DCC 8260	-08-03	*	
DCC KET-AA	↓ -08-02	*	
BFB	SV1-33-34-01	1	50/250/1250/125
IS/SURR. IS	SV1-34-06-01	5	
IS/SURR. SS	SV1-33-98-01	*	
ICV/LCS CS_2	↓ -94-01	1	
ICV/LCS gas	SV1-34-10-03	1	
ICV/LCS KET	↓ -11-01	5	
ICV/LCS TAA	-02-02	5	
ICV/LCS 8260	SV1-33-62-01	5	
ICV/LCS 3ADD	-50-01	5	
ICV/LCS 224TMP	↓ -16-02	5	
ICV/LCS 2-But	-39-01	90 12.5 Rm 4/14/20	500
Data File Folder	20D04		

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		-04-06
Methanol		↓ -04-13
$NaHSO_4$		MSV-02-01-07-2
Reagent Water	RWS-19-001	↓ -4
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments: A: gas, CS_2, SS, 224TMP+TAA, 4ADD
B: 8260, KET-AA

☐ Refer to sample weight log

Analyzed By: Rm

Date Disposed: 04/03/20 Disposed By: Rm

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/06/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH IVOF3D0202

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR019	BFBF3D02		N/A	N/A	N/A		10:37
02		↓ 020	IVOF3D0202		↓	↓	↓		10/50/250 ppm 11:22
03									
04									
05									
06									
07									
08									
09									
10									
11									
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28									
29									
30									RM 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC			
BFB	SV1-33-34-01	1	
IS/SURR.	↓ -98-01 SV1-34-06-01	1 5	
ICV/LCS	↓ -10-03 SV1-33-74-01	1 1	
ICV/LCS	-62-01 -50-01	5 5	50/250/1250
ICV/LCS	RM 4/14/20 ↓ -16-02 ~~SV1-34-10-03~~	5	
ICV/LCS	SV1-34 -11-01 ↓ -02-02	5 5	
Data File Folder	SV1-33-34-01 20D06	12.5	500

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		↓ -04-06
Methanol		MSV-02-01-07-2
$NaHSO_4$		↓ -4
Reagent Water	RWS-19-001	MSV-01-04-13
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: RM

Date Disposed: 04/07/20 Disposed By: RM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/19/20 ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: AF3-021

BATCH

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RFR351	BFBF3F16						09:05
02		52	CVOF3DD232						
03		53	VOF3F16L						
04		54	↓ C						
05		55	RINSE						
06		56	VOF3F16B	25mL					
07		57	PV-003-02-15		1.0	7	✓		
08		58	TB			7	✓		
09		59	20F161-01			7	✓		
10		60	20F155-03			✓	✓		
11		61	20F160-03			✓	✓		
12		62	20F155-02			✓	✓		
13		63	↓ 01			✓	✓		
14		64	20F160-06			✓	✓		
15		65	08			✓	✓		
16		66	09			✓	✓		
17		67	11			✓	✓		
18		68	01			✓	✓		
19		69	01M			✓	✓		
20		70	↓ 01S			✓	✓		
21		71	EVOF3DD232						18:54
22		72	A						
23		73	↓ B						
24		74	RINSE						
25		75							
26		76							
27		77							
28									
29									
30									

6/22/20 EN

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	4/2/20
ICAL ID	VOF3DD2

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SV1-33-98-03	1	
DCC	34-25-01	1	
DCC	34-28-01	1	
DCC	34-30=03 34-21=01	5 5	
BFB	33-82-03	1	50/250
IS/SURR.	34-40-01	5	
ICV/LCS	33-74-02	1	
ICV/LCS	34-09-02	1	
ICV/LCS	34-11-01	5	
ICV/LCS	34-20-01 33-49-03	5 5	
Data File Folder	20F19		

	LOT #	Syringe Lot #
pH strip	AC998032	MSV-01-04-08
Chlorine strip	2979	~~02-02~~ 6/22/20 EN
Methanol		↓ 02-01-08-5
$NaHSO_4$		
Reagent Water	RW5-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: EN/SD

Date Disposed: 6/22/20 Disposed By: EN

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F155

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of two(2) water samples were received on 06/18/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF060) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF016WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF016WL/SVF016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F155
Instrument ID : F0

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF016WB	1	NA	06/19/2010:56	06/18/2012:30	RFF061	RFF005	20SVF016W	Method Blank
LCS1W	SVF016WL	1	NA	06/19/2011:10	06/18/2012:30	RFF062	RFF005	20SVF016W	Lab Control Sample (LCS)
LCD1W	SVF016WC	1	NA	06/19/2011:29	06/18/2012:30	RFF063	RFF005	20SVF016W	LCS Duplicate
MW18-GW061620	20F155-01	1	NA	06/19/2014:02	06/18/2012:30	RFF071	RFF005	20SVF016W	Field Sample
MW19-GW061620	20F155-02	1	NA	06/19/2014:21	06/18/2012:30	RFF072	RFF005	20SVF016W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/16/20 15:08
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/18/20 12:30
Sample ID	: MW18-GW061620	Date Analyzed:	06/19/20 14:02
Lab Samp ID:	20F155-01	Dilution Factor:	1
Lab File ID:	RFF071	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	36.8	40.8	90	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 980ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

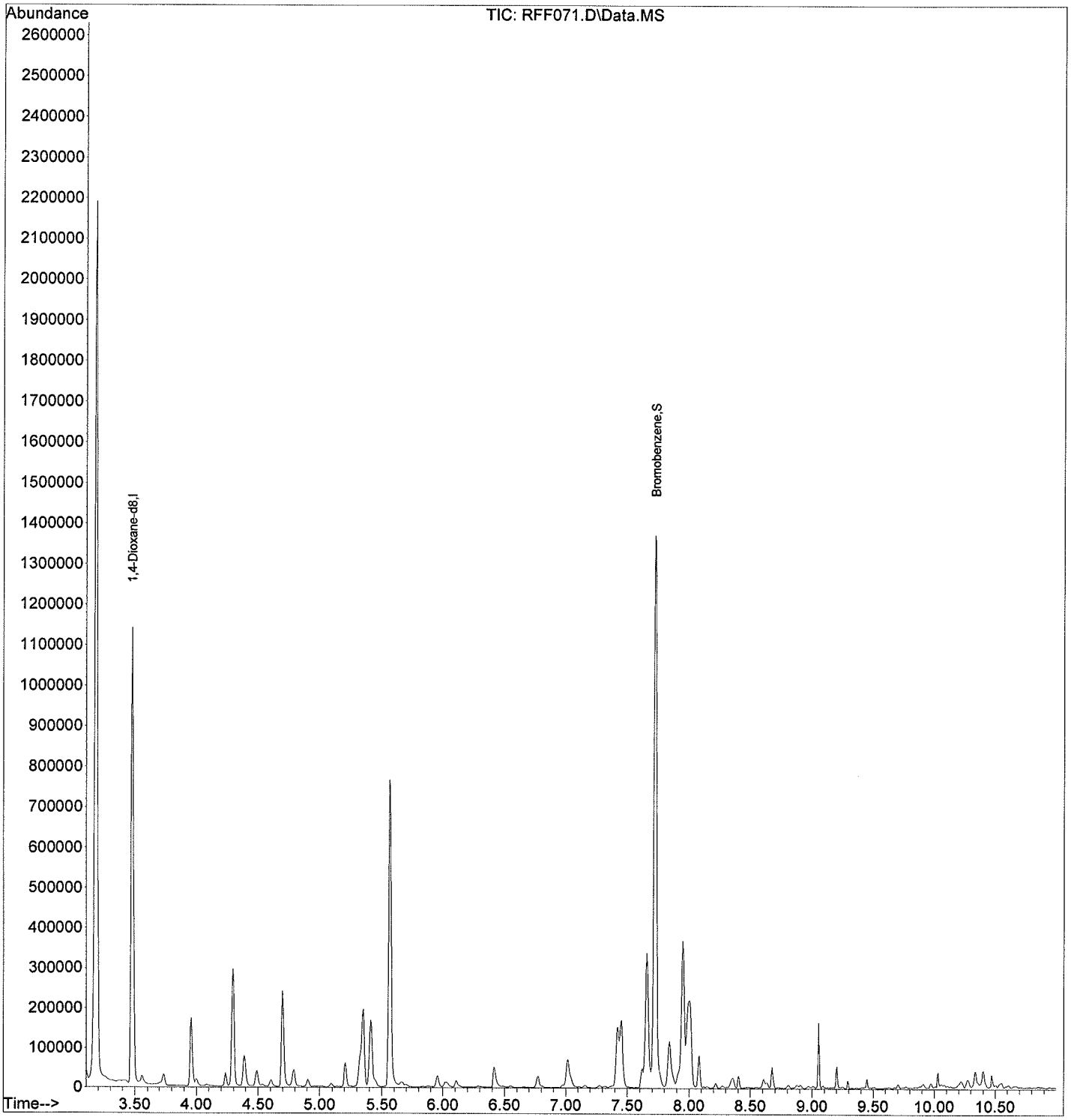
Data File : C:\msdchem\1\DATA\20F19\RFF071.D Vial: 14
Acq On : 19 Jun 2020 14:02 Operator: RMinam
Sample : 20F155-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:32:11 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	170971	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	258793	18.02	ppm	0.00
Spiked Amount 20.000			Recovery =	90.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF071.D Vial: 14
Acq On : 19 Jun 2020 14:02 Operator: RMinam
Sample : 20F155-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:32:11 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/16/20 17:28
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/18/20 12:30
Sample ID	: MW19-GW061620	Date Analyzed:	06/19/20 14:21
Lab Samp ID:	20F155-02	Dilution Factor:	1
Lab File ID:	RFF072	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	22.0	41.2	53	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 970ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

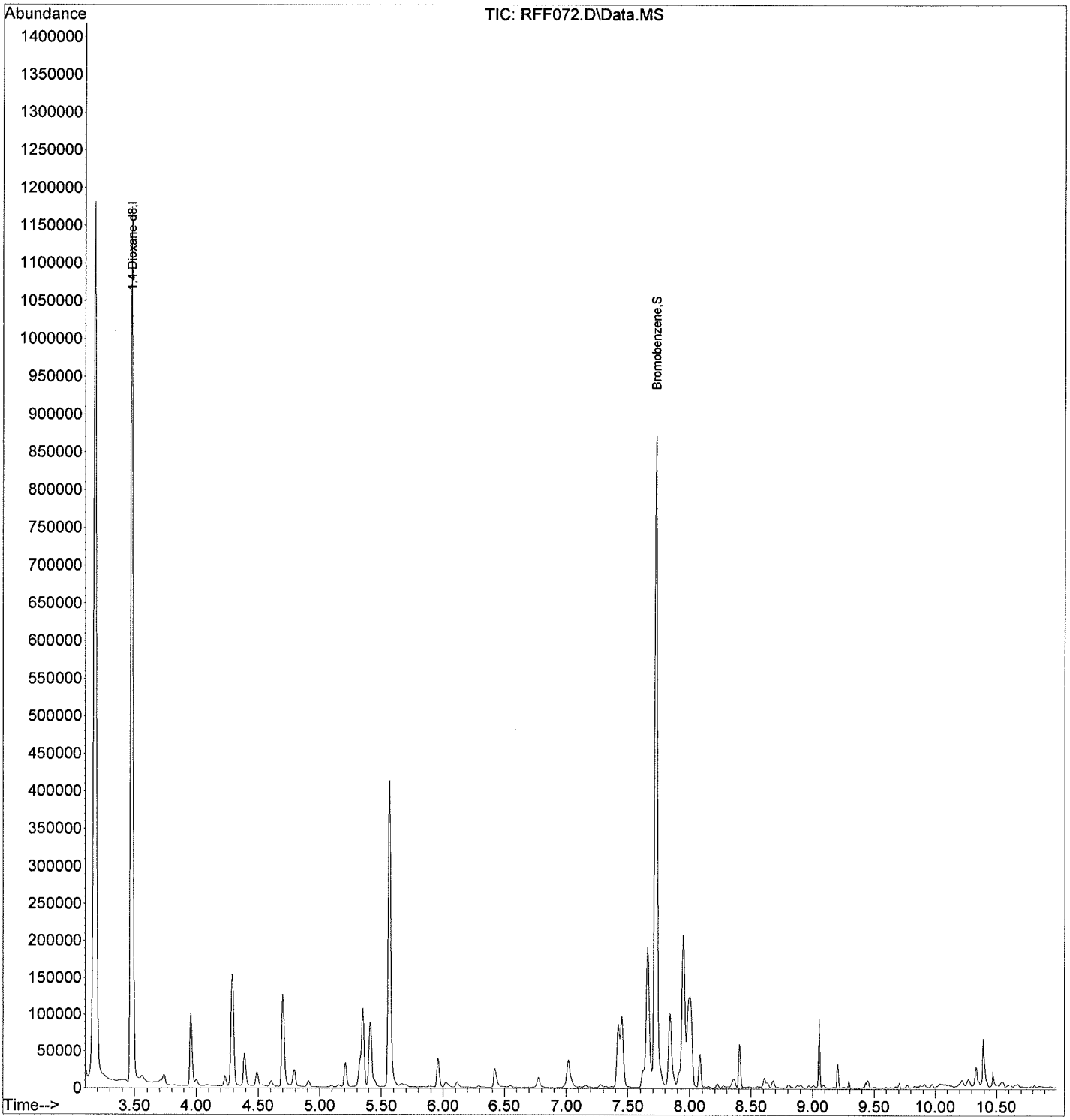
Data File : C:\msdchem\1\DATA\20F19\RFF072.D Vial: 15
Acq On : 19 Jun 2020 14:21 Operator: RMinam
Sample : 20F155-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:41:23 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	178572	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	159865	10.66	ppm	0.00
Spiked Amount 20.000			Recovery =	53.30%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF072.D Vial: 15
Acq On : 19 Jun 2020 14:21 Operator: RMinam
Sample : 20F155-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 14:41:23 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 12:30
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
Batch No.	: 20F155	Date Extracted:	06/18/20 12:30
Sample ID	: MBLK1W	Date Analyzed:	06/19/20 10:56
Lab Samp ID:	SVF016WB	Dilution Factor:	1
Lab File ID:	RFF061	Matrix:	WATER
Ext Btch ID:	20SVF016W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	42.2	40.0	106	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF016WB	SVF016WL	SVF016WC
LAB FILE ID	: RFF061	RFF062	RFF063
DATE PREPARED	: 06/18/20 12:30	06/18/20 12:30	06/18/20 12:30
DATE ANALYZED	: 06/19/20 10:56	06/19/20 11:10	06/19/20 11:29
PREP BATCH	: 20SVF016W	20SVF016W	20SVF016W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	31.8	80	40.0	33.6	84	6	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	36.0	90	40.0	37.9	95	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

QC DATA

Quantitation Report (QT Reviewed)

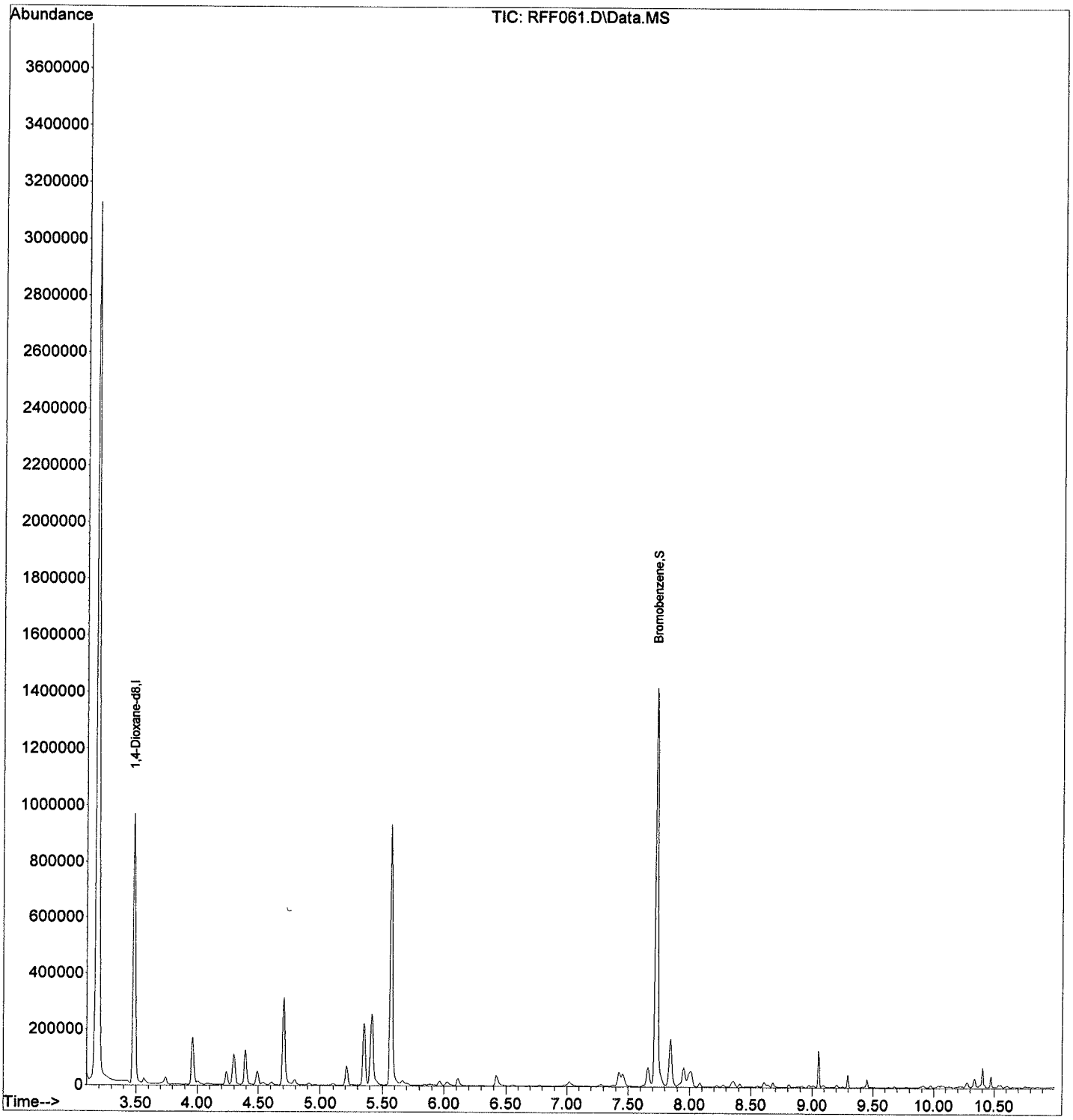
Data File : C:\msdchem\1\DATA\20F19\RFF061.D Vial: 4
Acq On : 19 Jun 2020 10:56 Operator: RMinam
Sample : SVF016WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 11:26:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.483	96	146501	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	7.724	77	259919	21.12	ppm	0.00
Spiked Amount 20.000			Recovery =	105.60%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF061.D Vial: 4
Acq On : 19 Jun 2020 10:56 Operator: RMinam
Sample : SVF016WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 11:26:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

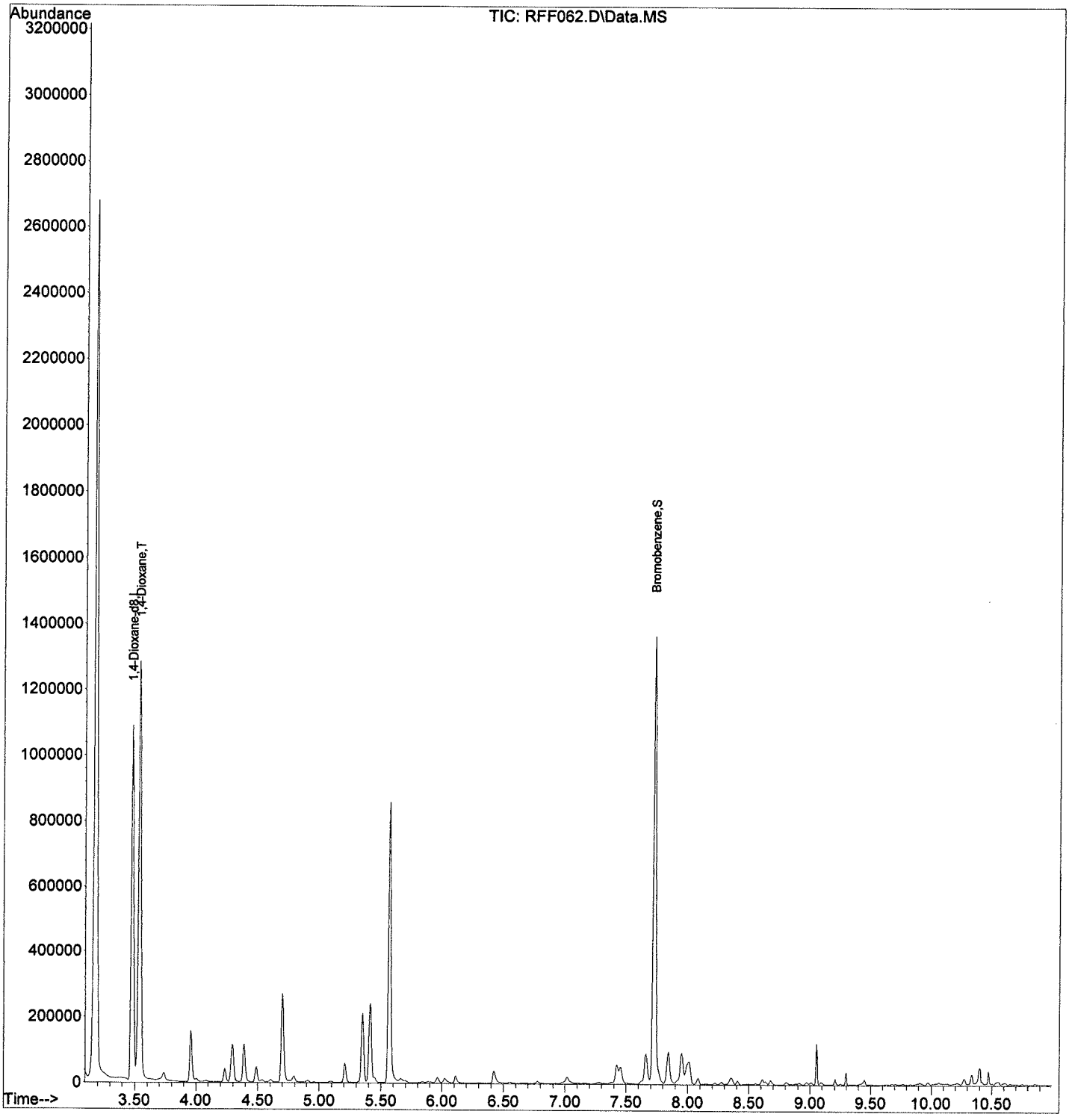
Data File : C:\msdchem\1\DATA\20F19\RFF062.D Vial: 5
Acq On : 19 Jun 2020 11:10 Operator: RMinam
Sample : SVF016WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	163805	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	247645	18.00	ppm	0.00
Spiked Amount 20.000			Recovery =	90.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	179701	15.90	ppm	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF062.D Vial: 5
Acq On : 19 Jun 2020 11:10 Operator: RMinam
Sample : SVF016WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF063.D
Acq On : 19 Jun 2020 11:29
Sample : SVF016WC
Misc : F0
Integrator: RTE
Quant Time: Jun 19 12:26:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

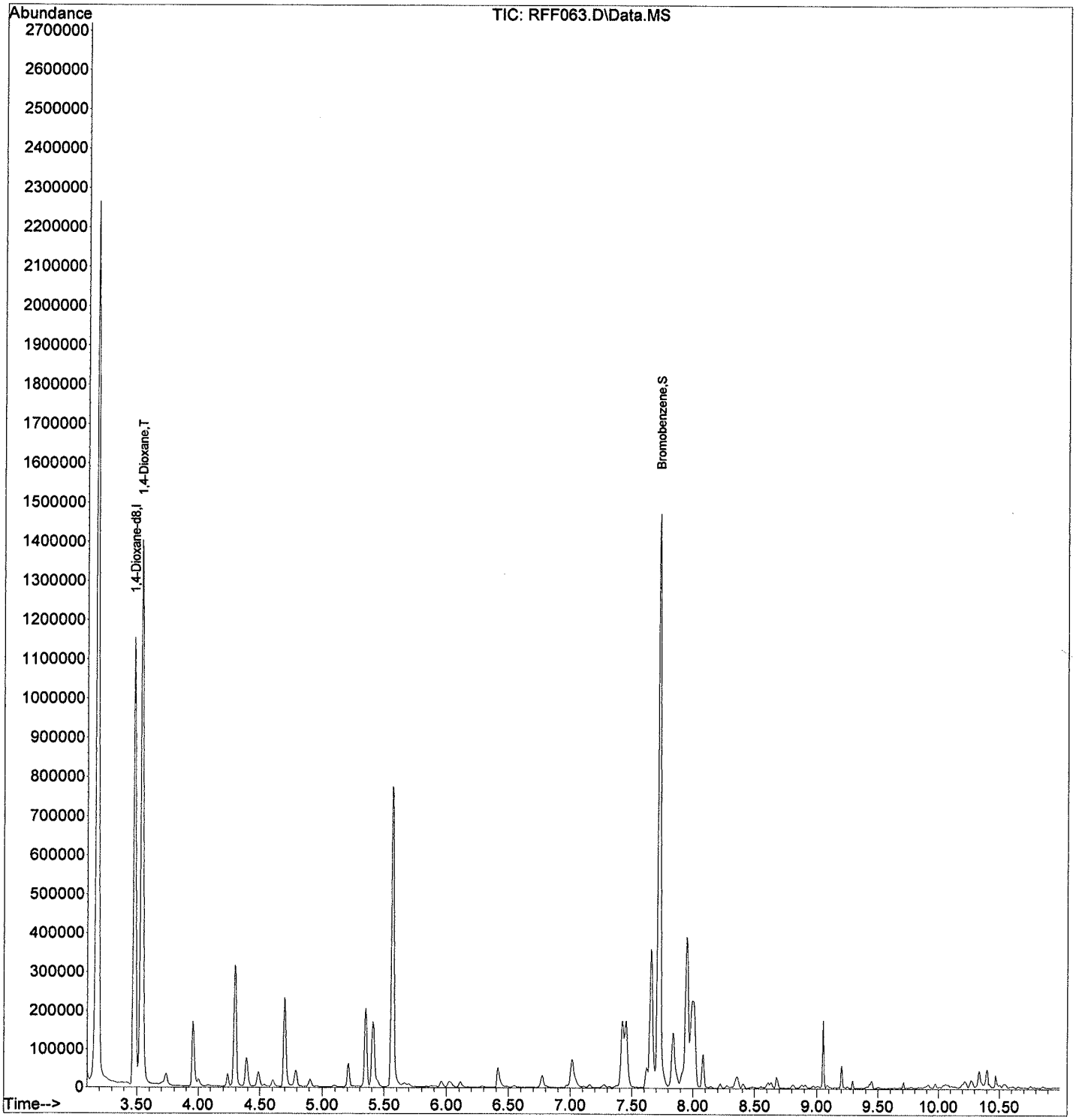
Vial: 6
Operator: RMinam
Inst : DSQ
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	171903	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	273737	18.95	ppm	0.00
Spiked Amount 20.000			Recovery = 94.75%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	199529	16.82	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF063.D Vial: 6
Acq On : 19 Jun 2020 11:29 Operator: RMinam
Sample : SVF016WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 12:26:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

MW 6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM

Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15

IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1

SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

MW 6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

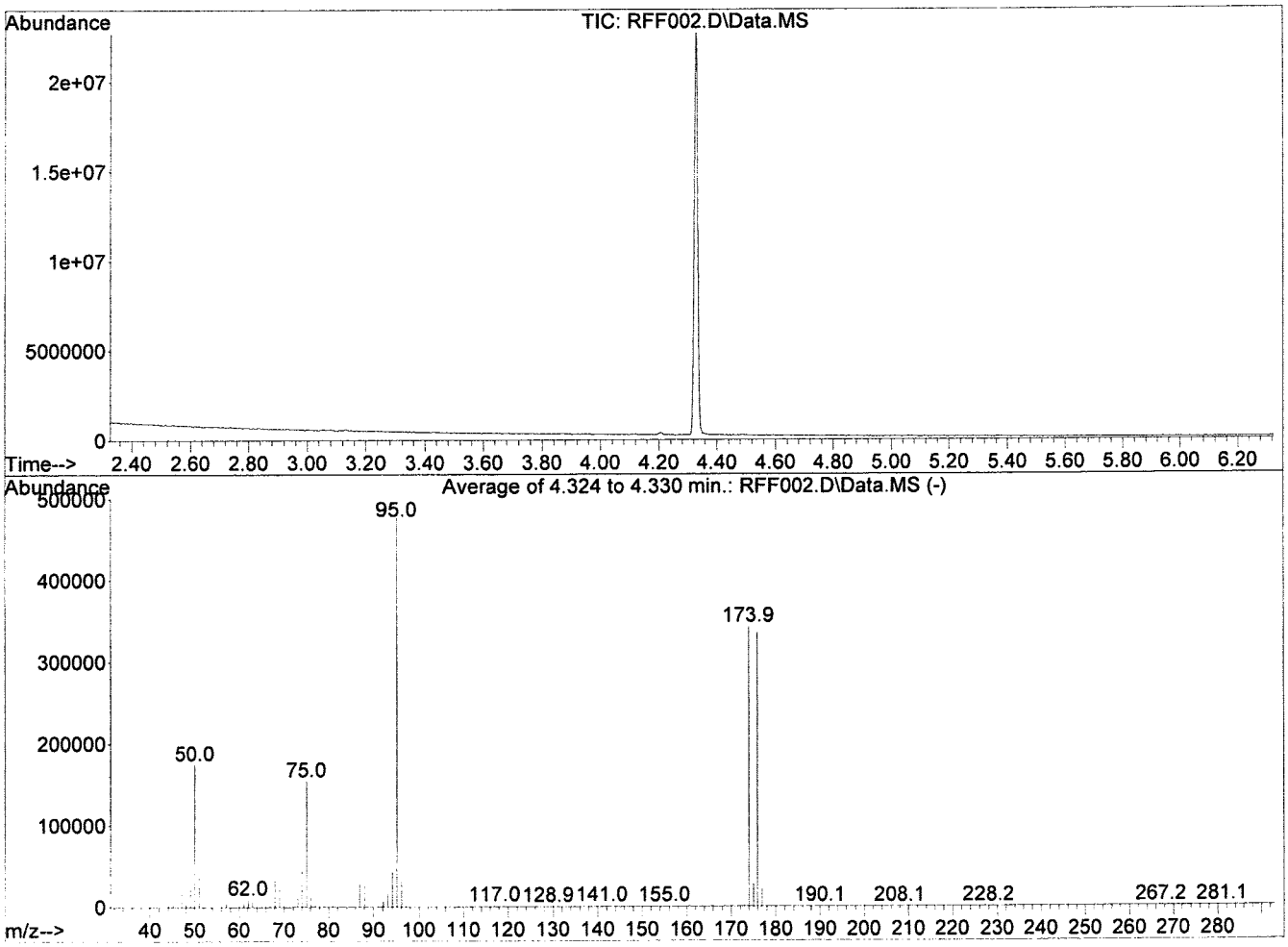
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

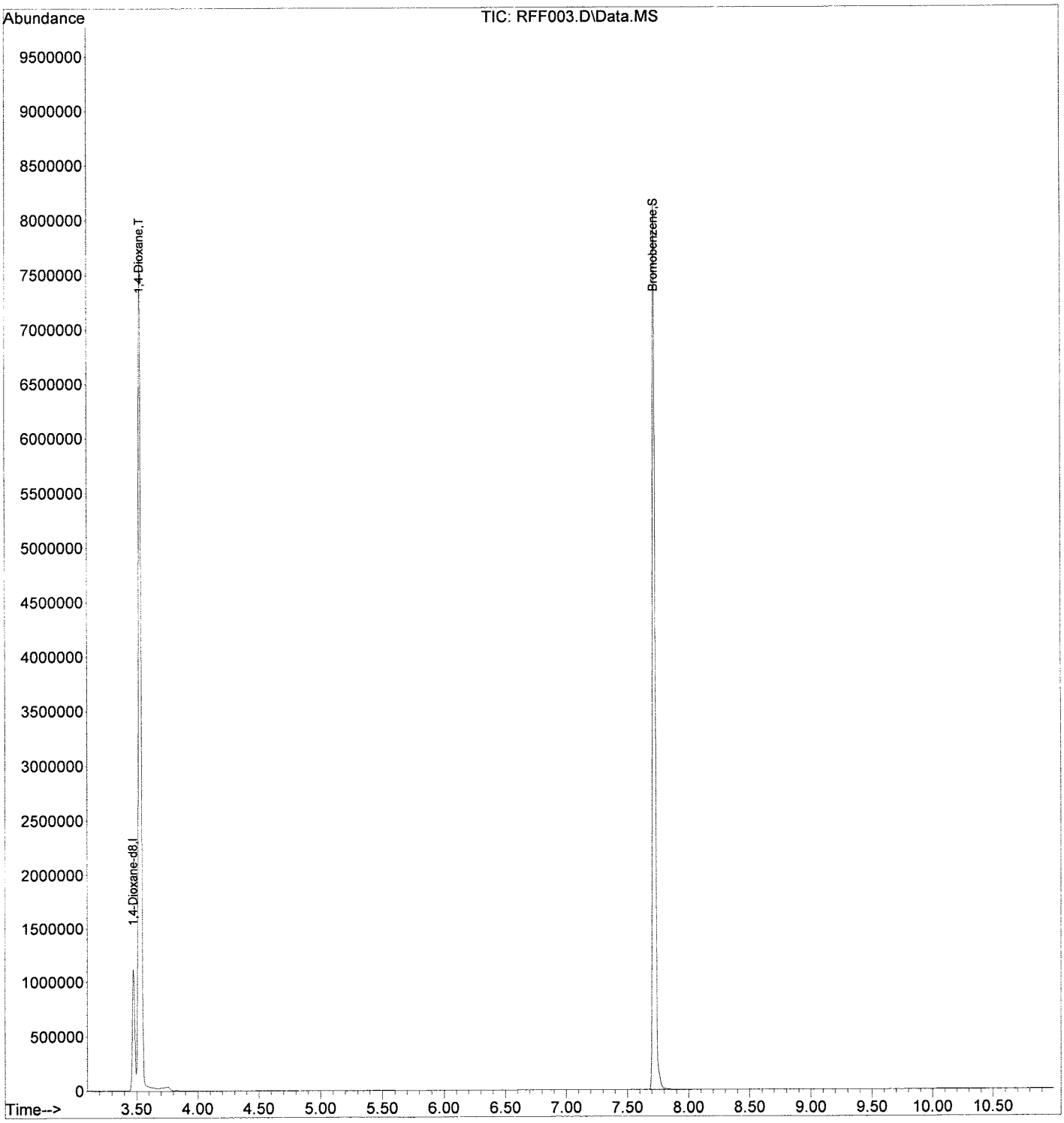
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

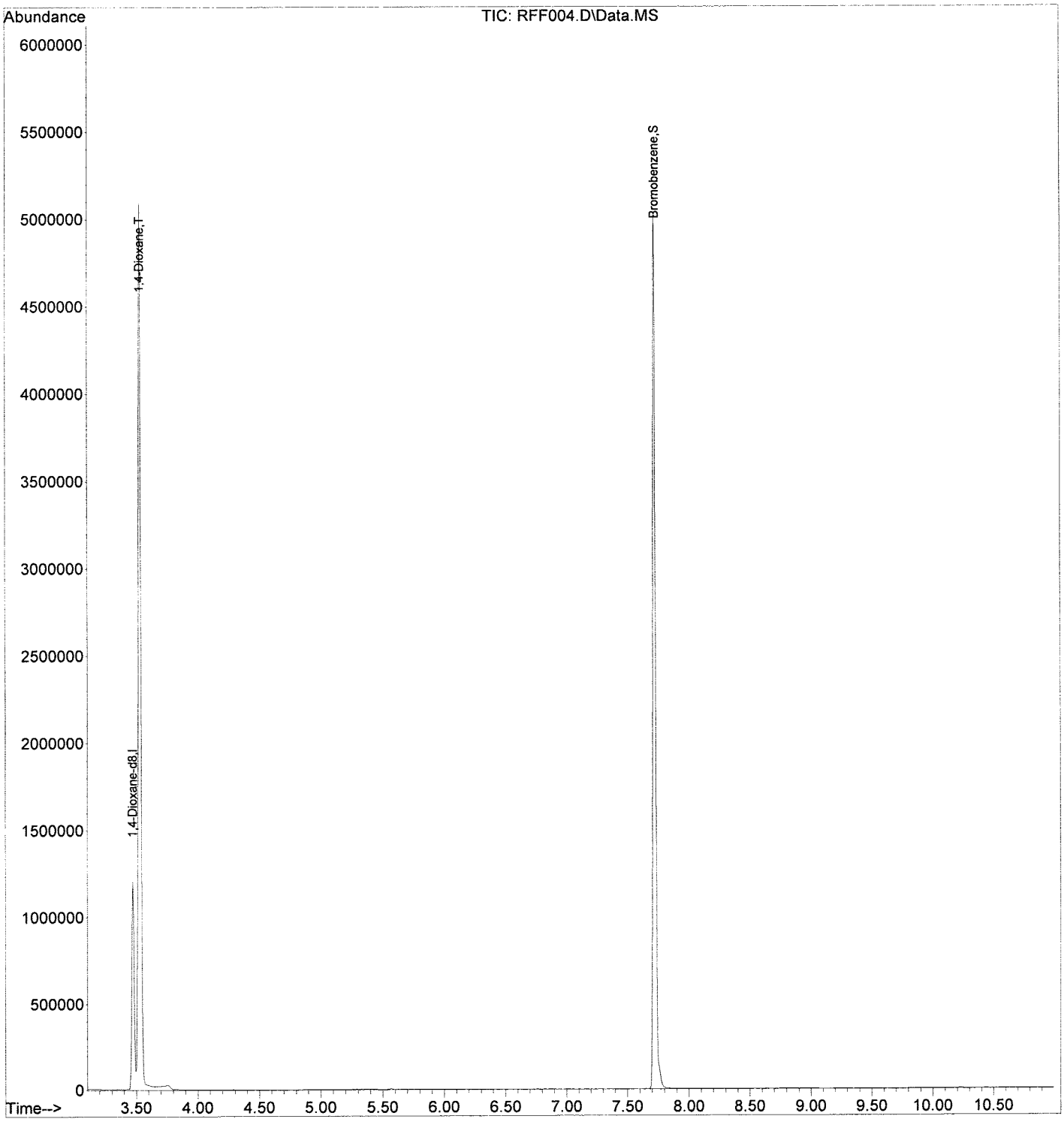
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

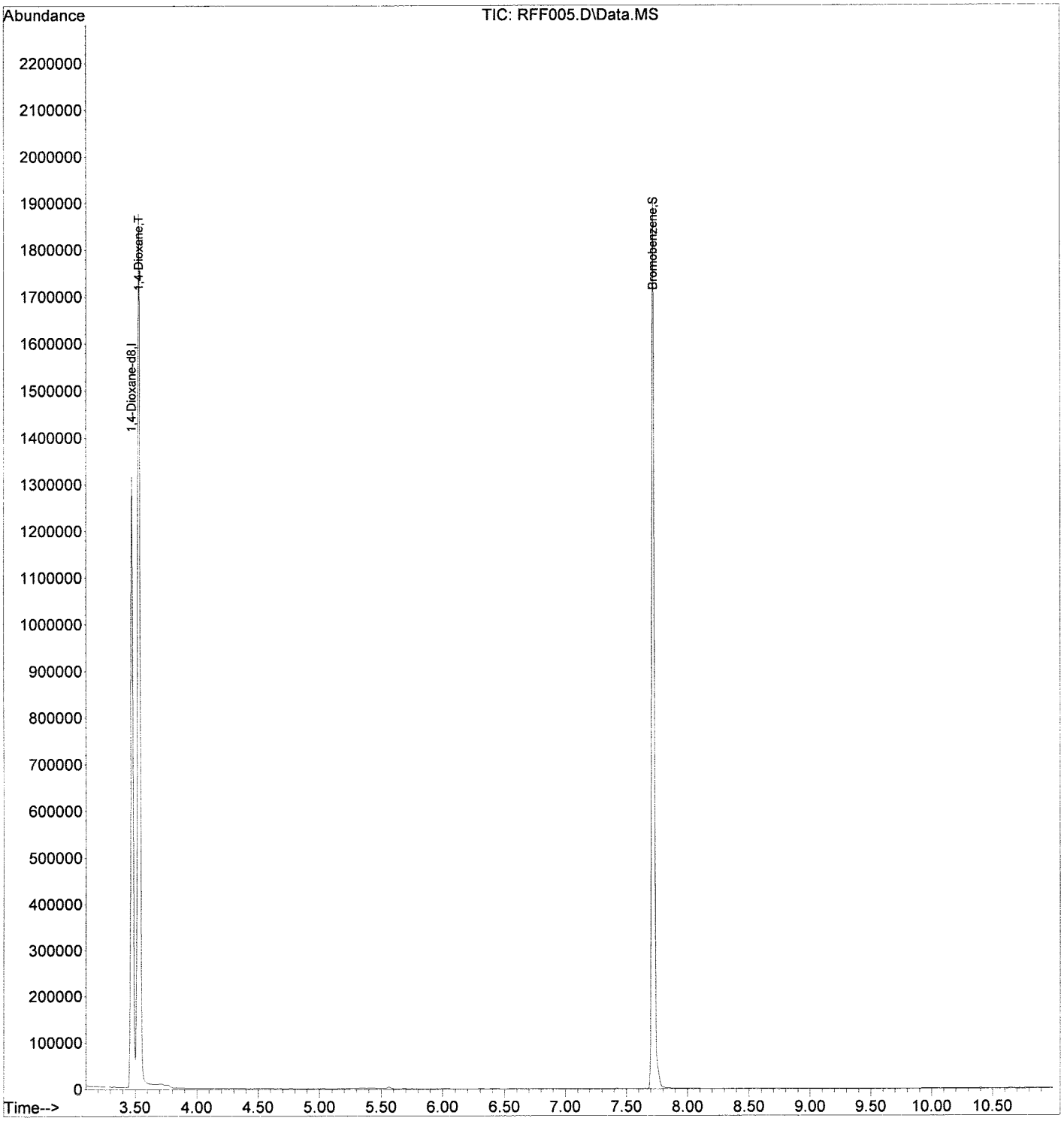
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

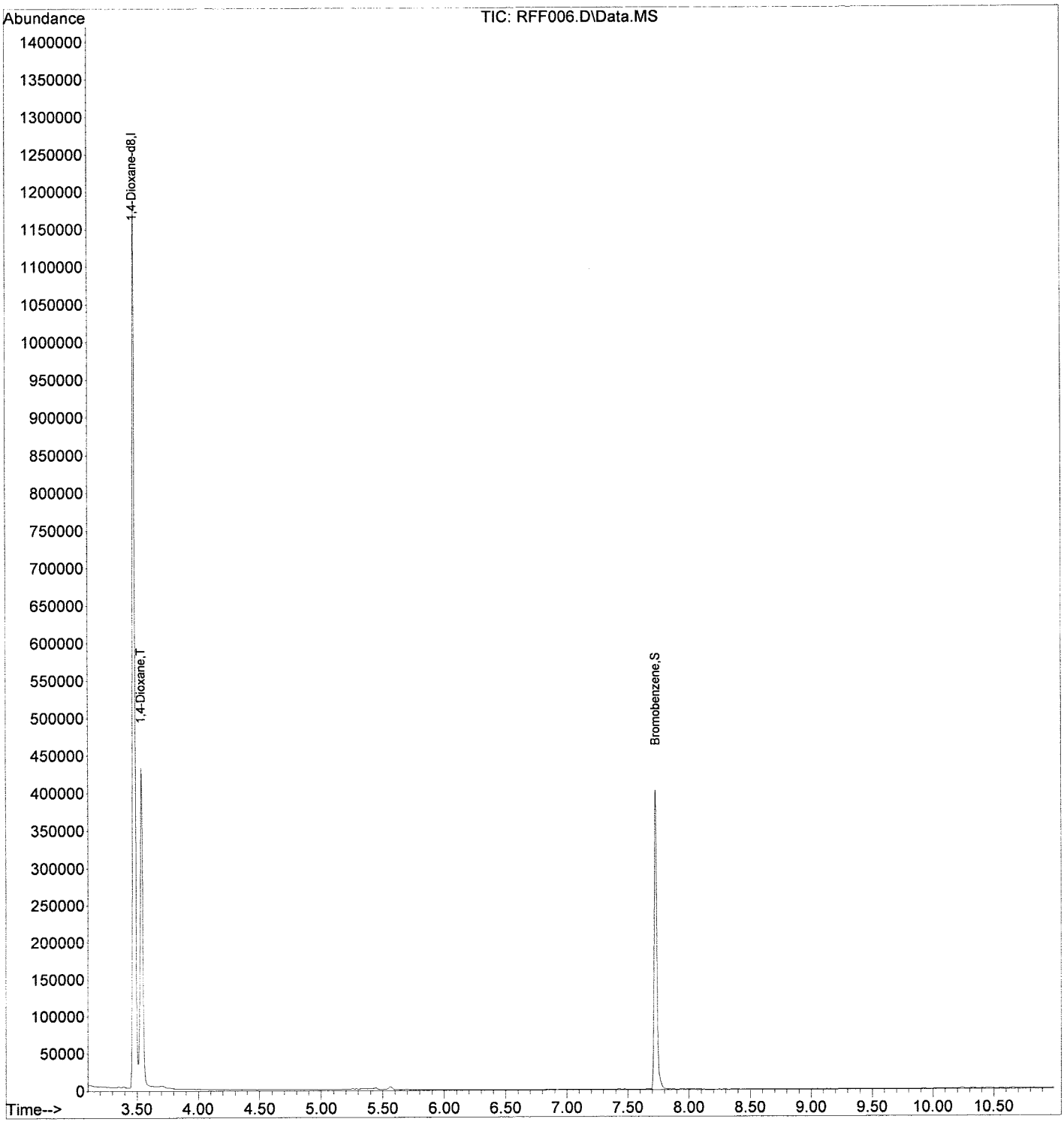
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

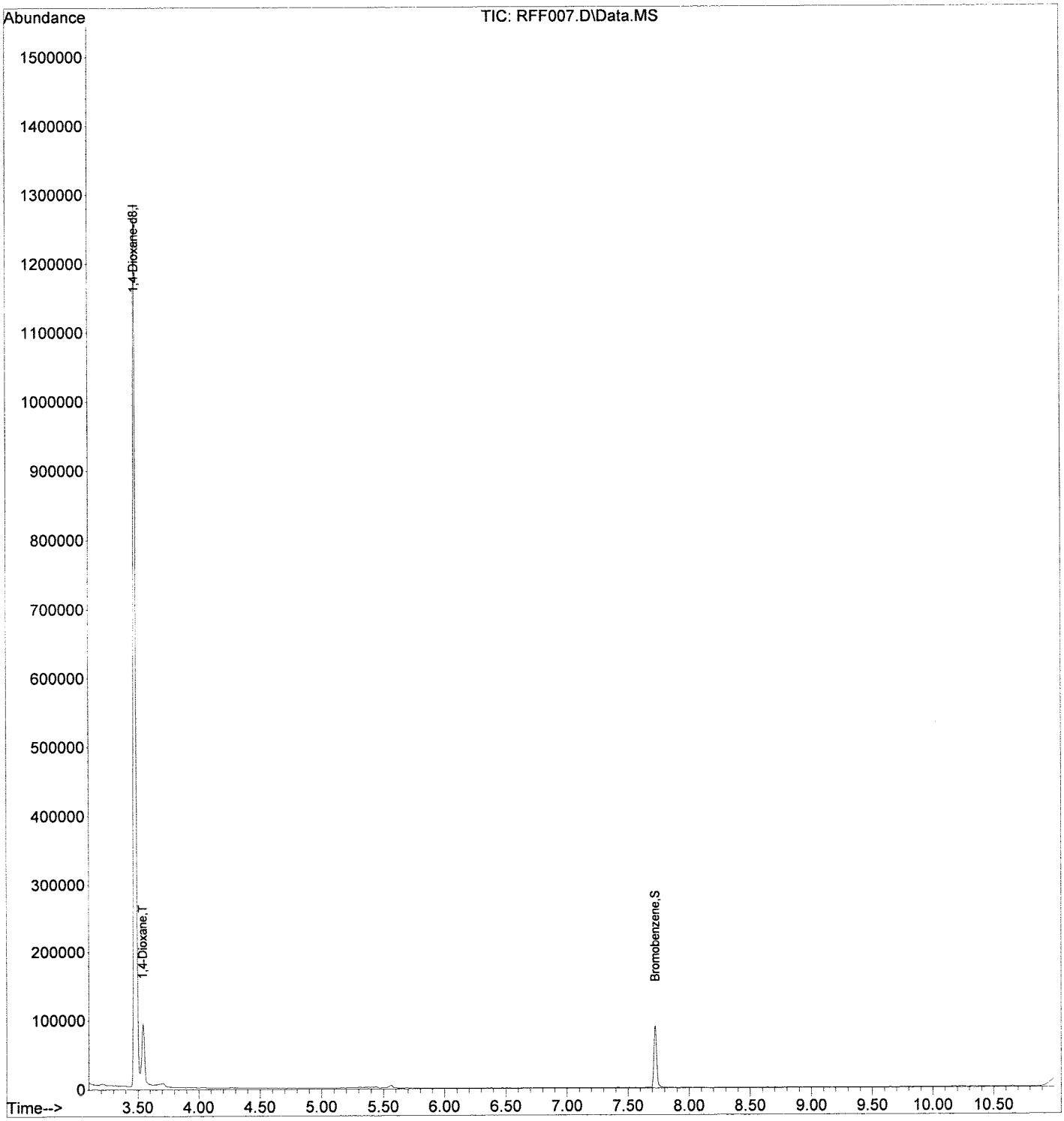
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

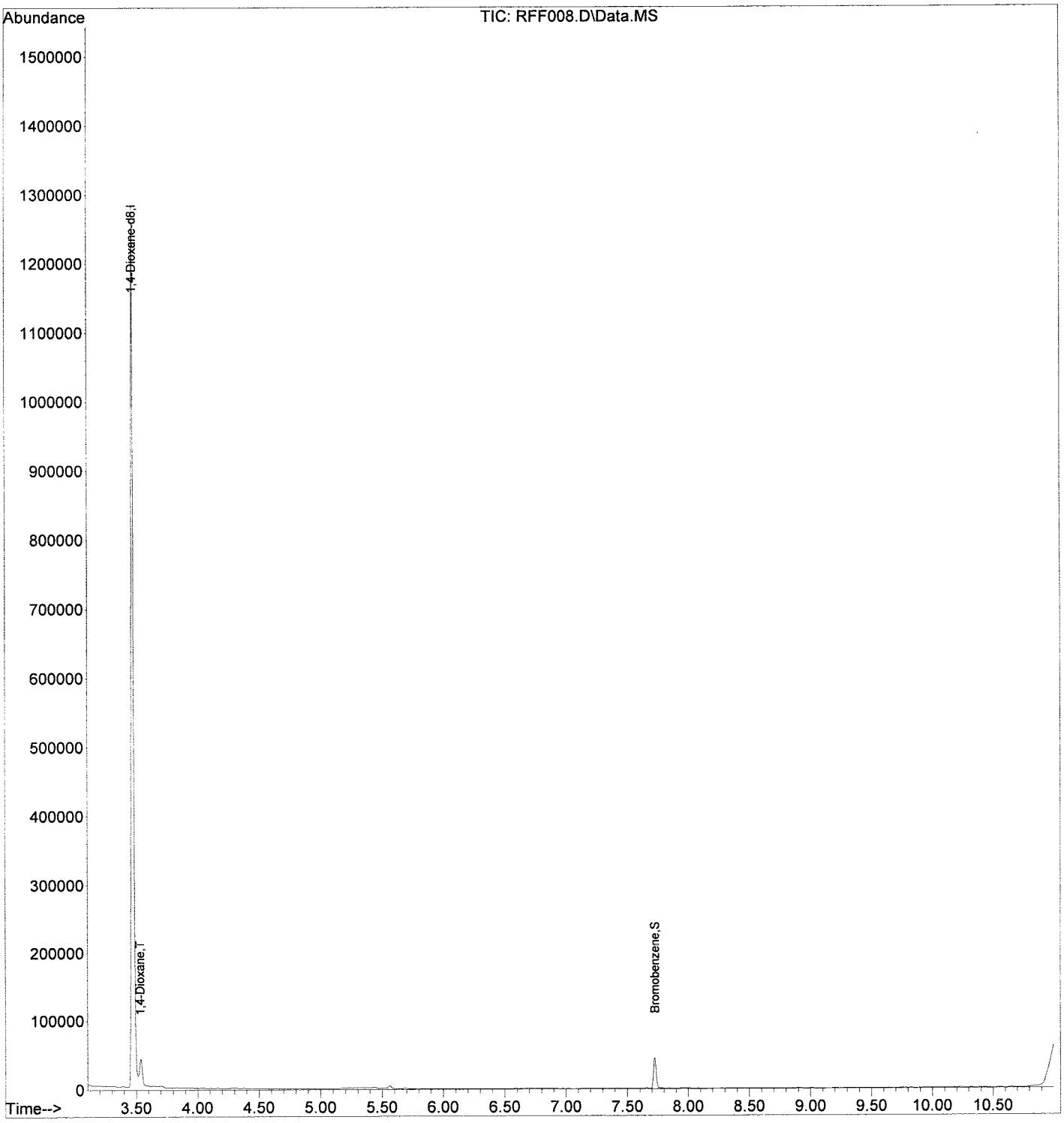
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

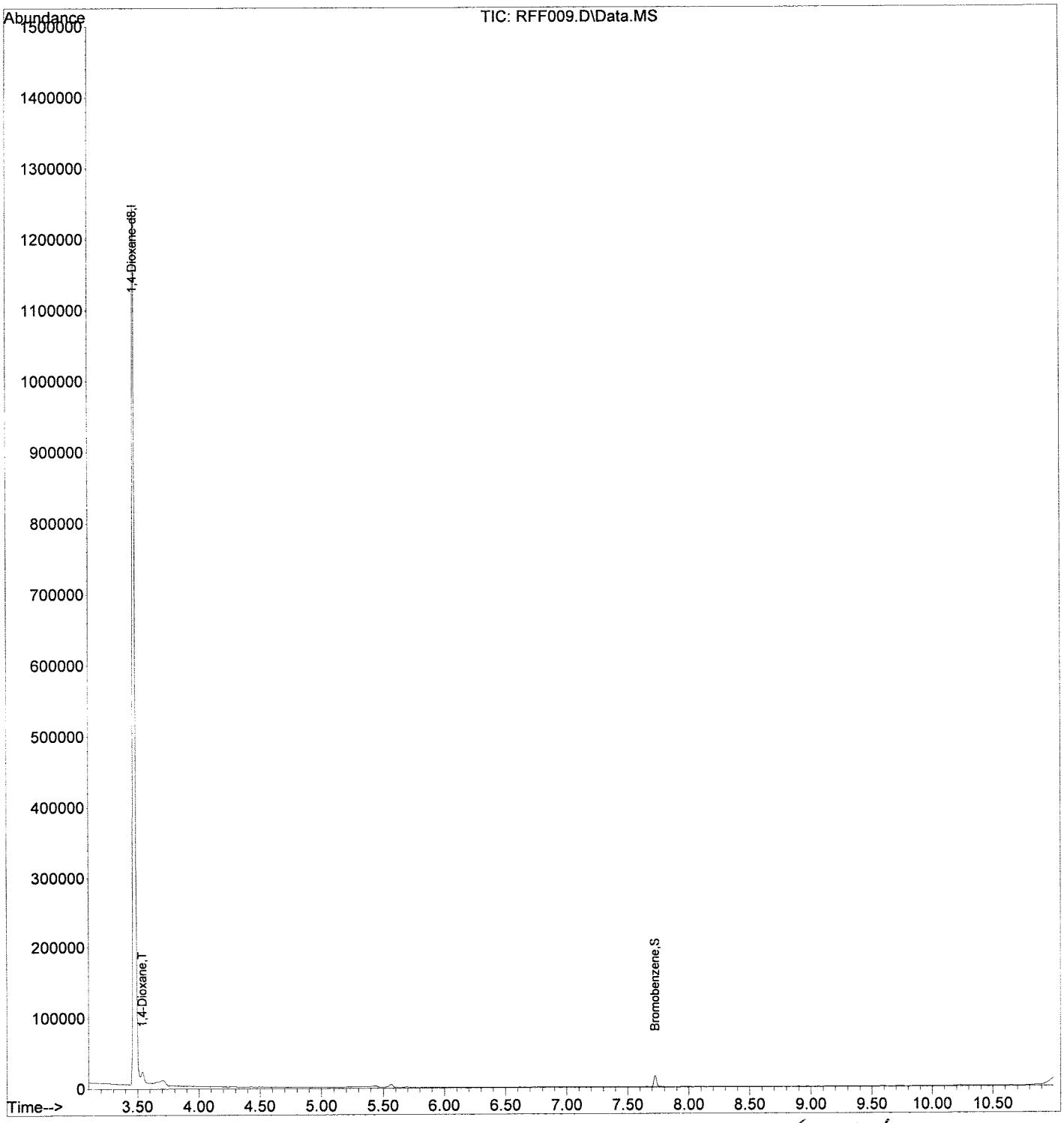
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

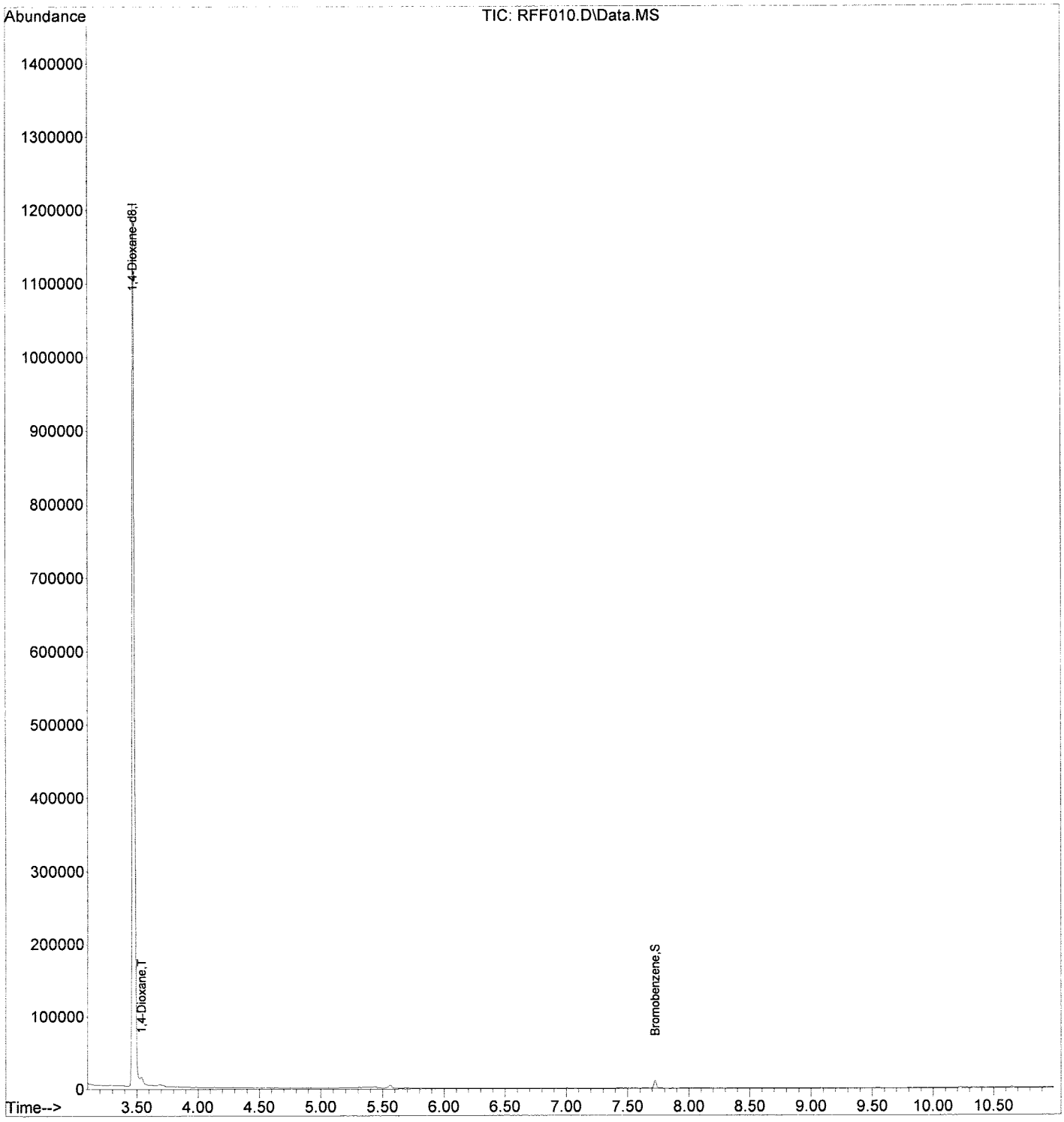
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

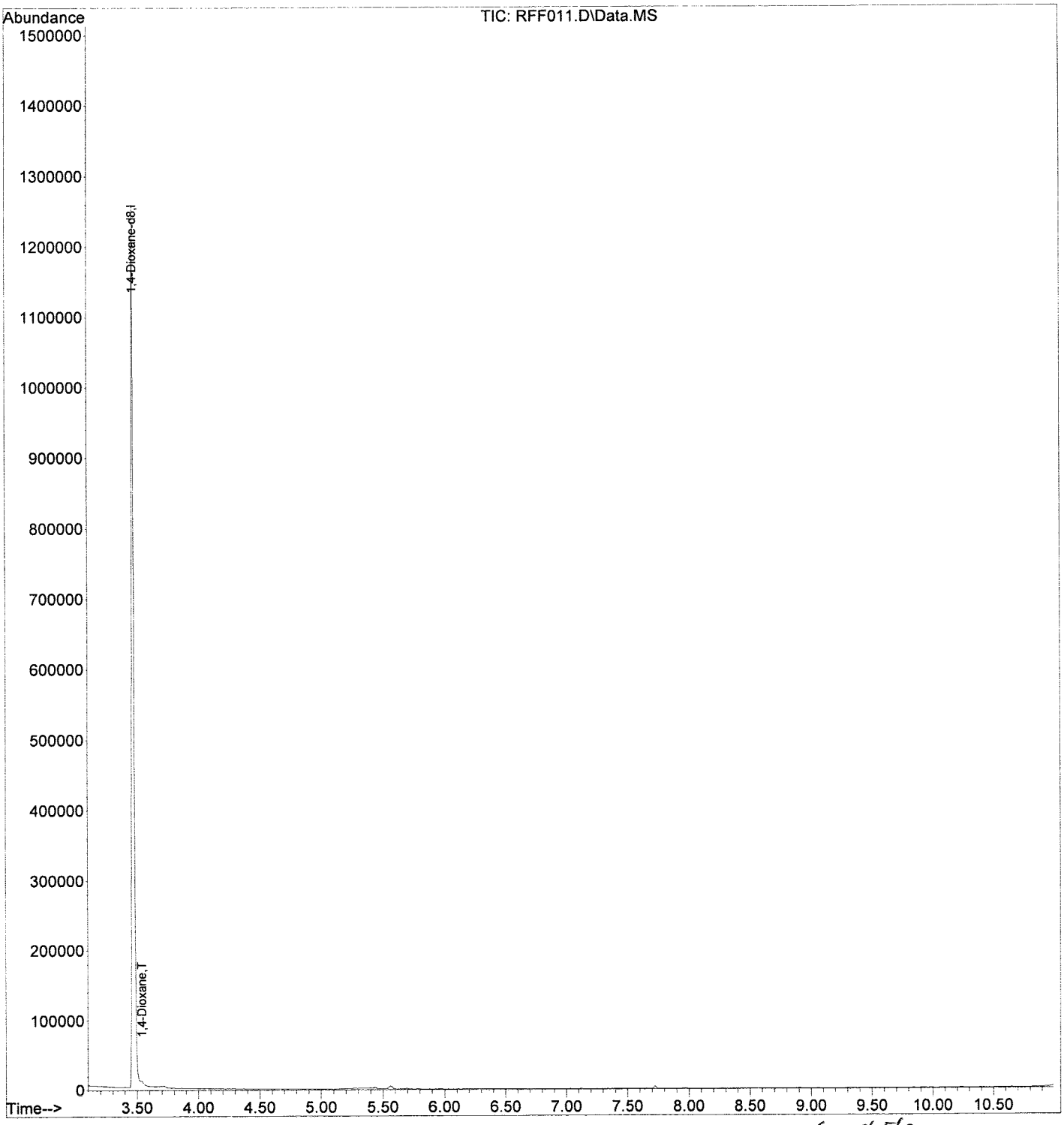
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

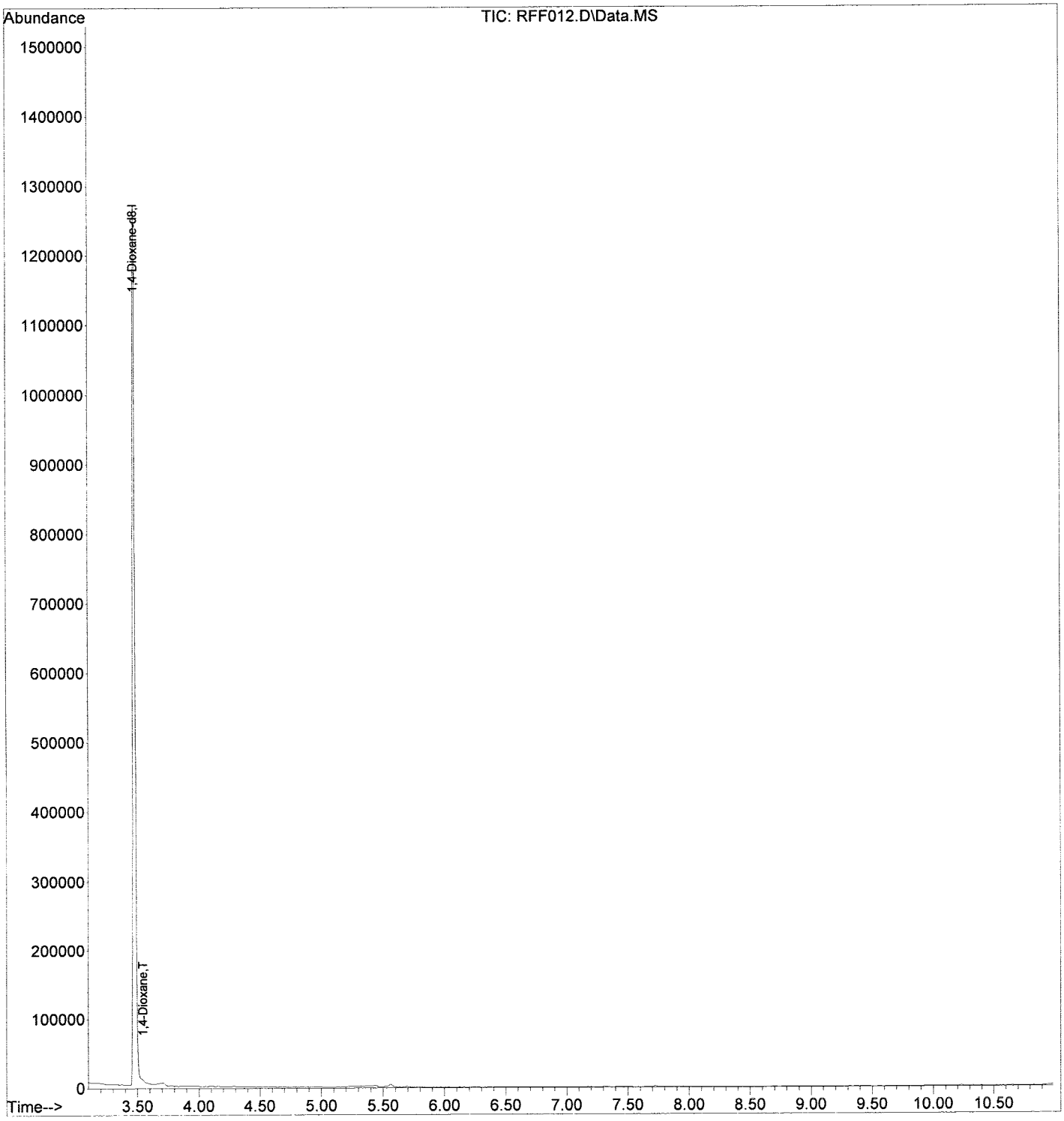
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



6/15/20

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

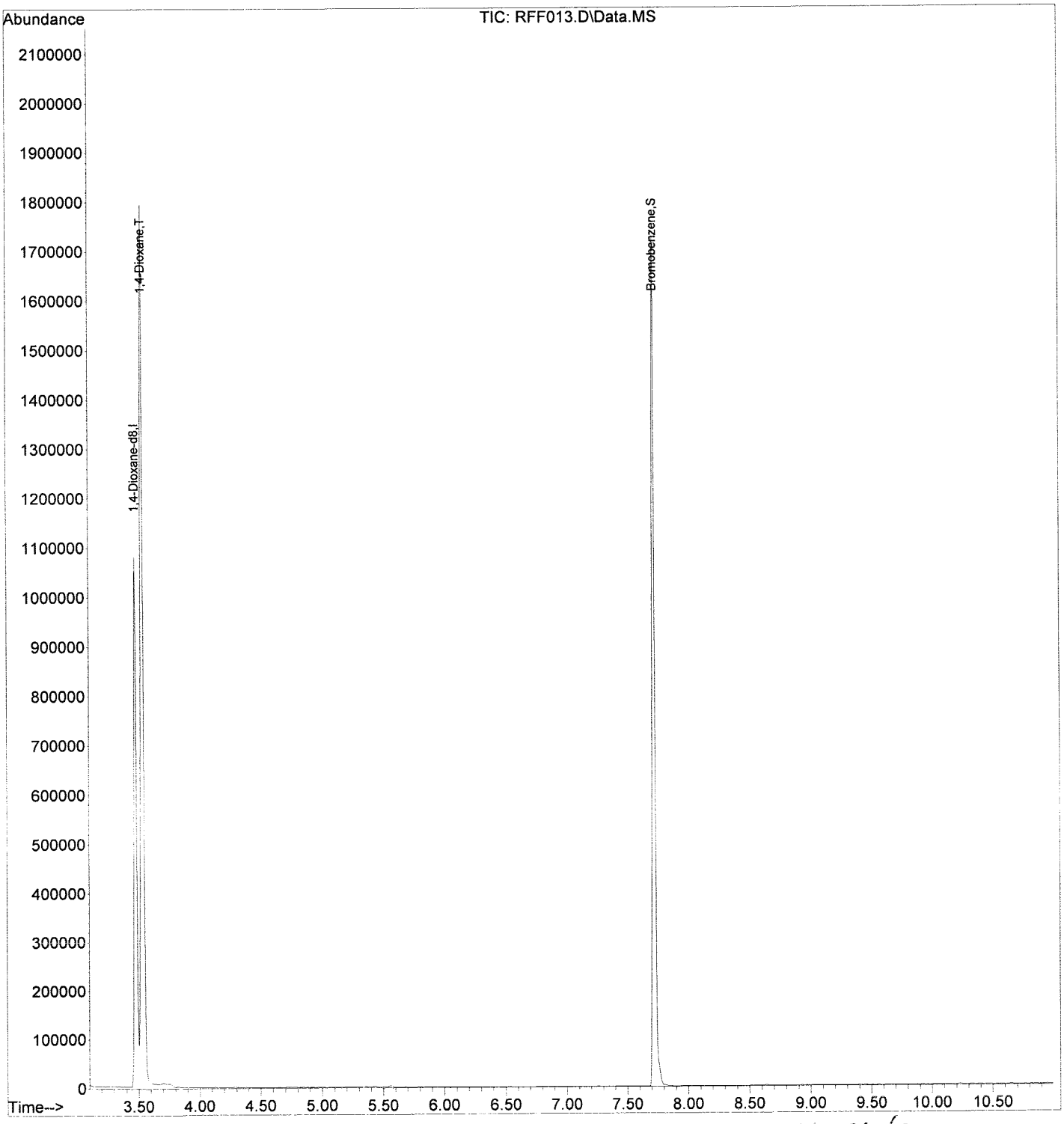
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery =	107.70%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F155

Lab File ID: RFF059 DFTPP Injection Date: 06/19/20

Instrument ID: F0 DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	37.486
75	30 - 60% of mass 95	35.266
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.600
173	Less than 2% of mass 174	0.118(.16)1
174	50 - 100% of mass 95	73.485
175	5 - 9% of mass 174	5.715(7.78)1
176	95 - 101% % of mass 174	71.945(97.9)1
177	5 - 9% % of mass 176	4.659(6.48)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G09	RFF060	06/19/20	10:36
2	MBLK1W	SVF016WB	RFF061	06/19/20	10:56
3	LCS1W	SVF016WL	RFF062	06/19/20	11:10
4	LCD1W	SVF016WC	RFF063	06/19/20	11:29
5	MW18-GW061620	20F155-01	RFF071	06/19/20	14:02
6	MW19-GW061620	20F155-02	RFF072	06/19/20	14:21

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F155

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	193433	3.48
2	MBLK1W	146501	3.48
3	LCS1W	163805	3.48
4	LCD1W	171903	3.48
5	MW18-GW061620	170971	3.48
6	MW19-GW061620	178572	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF060
IC File :RFF005

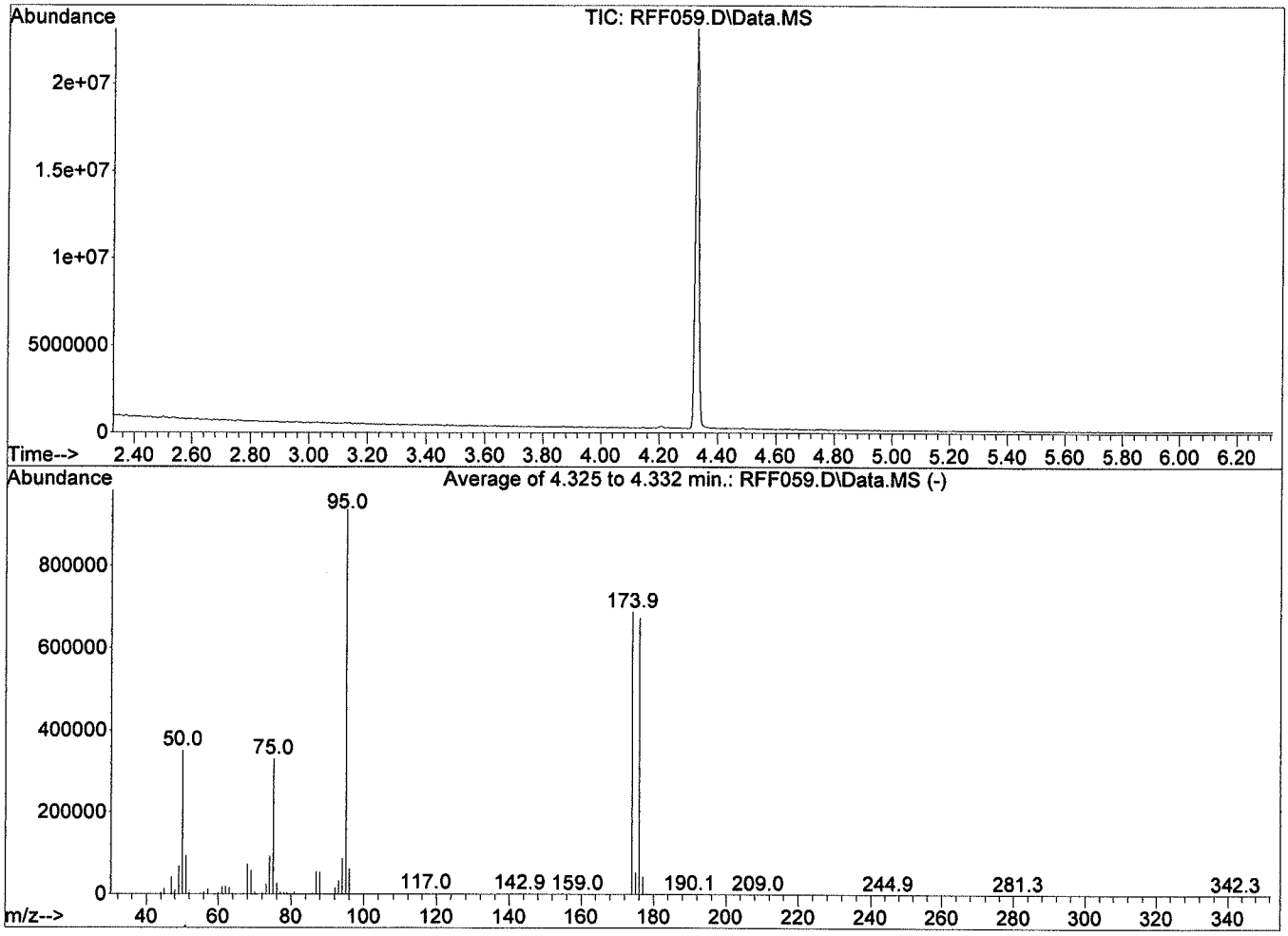
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/19/20 10:36

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	193433	1	1	3.477	3.472	0				
2	1,4-Dioxane	20.266	1.3	270517	1.399	1.380	3.534	3.536	9.42				
3	Bromobenzene	20.224	1.1	328665	1.699	1.680	7.725	7.724	2.58				

Data Path : C:\msdchem\1\DATA\20F19\
Data File : RFF059.D
Acq On : 19 Jun 2020 10:18
Operator : RMinam
Sample : BFBF0F03G09
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 634

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	37.5	351001	PASS
75	95	30	60	35.3	330216	PASS
95	95	100	100	100.0	936363	PASS
96	95	5	9	6.6	61801	PASS
173	174	0.00	2	0.2	1106	PASS
174	95	50	100	73.5	688085	PASS
175	174	5	9	7.8	53509	PASS
176	174	95	101	97.9	673664	PASS
177	176	5	9	6.5	43624	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	97	0.00
2	T	1,4-Dioxane	20.000	20.266	-1.3	101	0.00
3	S	Bromobenzene	20.000	20.224	-1.1	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	97	0.00
2	T	1,4-Dioxane	1.380	1.399	-1.4	101	0.00
3	S	Bromobenzene	1.680	1.699	-1.1	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

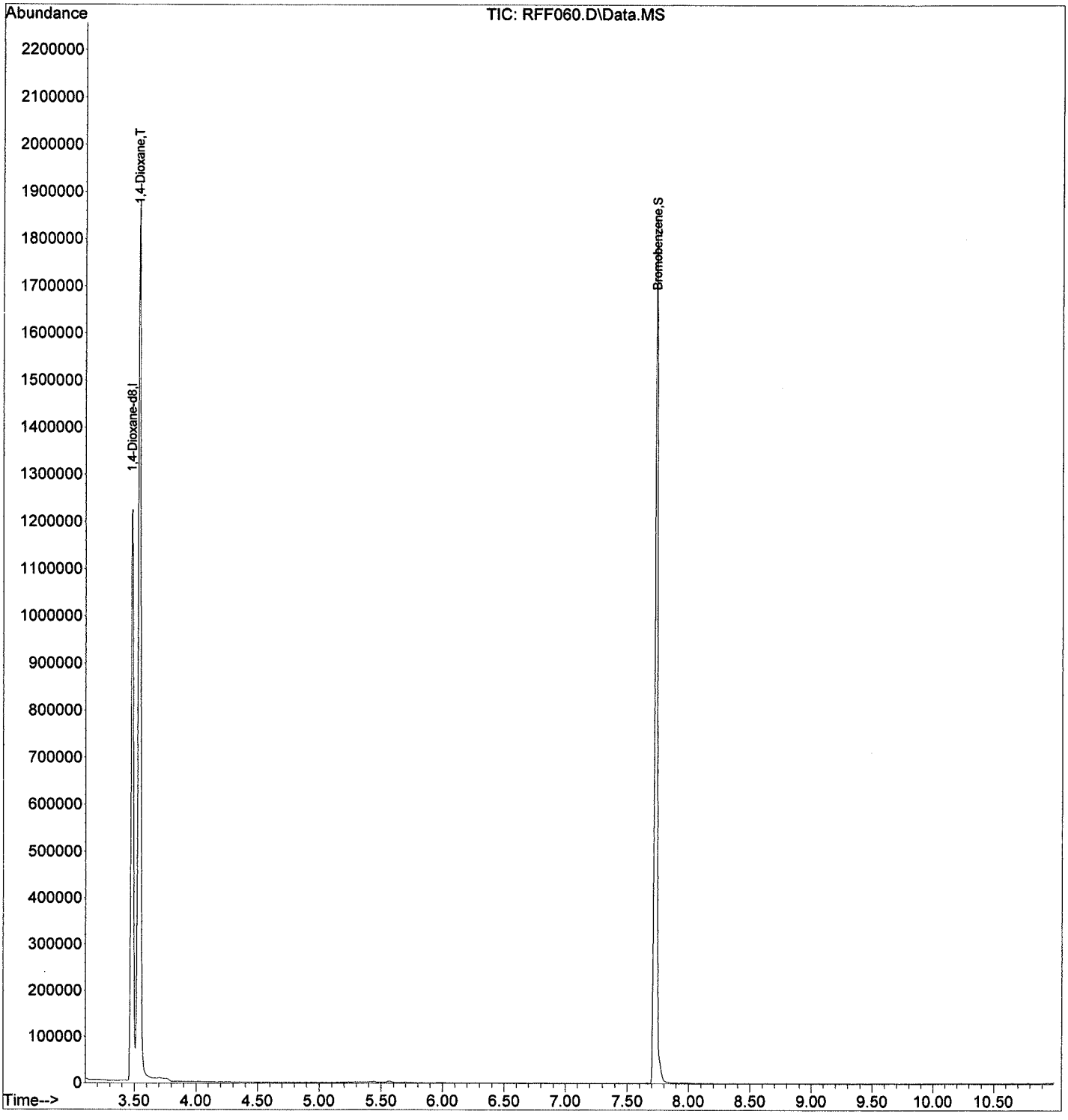
Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	193433	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	328665	20.22	ppm	0.00
Spiked Amount 20.000			Recovery =	101.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270517	20.27	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F19\RFF060.D Vial: 3
Acq On : 19 Jun 2020 10:36 Operator: RMinam
Sample : CSVF0F03G09 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 19 10:56:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F03G3

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 (LG, em 6/5/20)	1			
↓	002	BFBF0F0301 (LG)				
	003	SVF0F03G1				100 ppm
	004	2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	↓ 10				0.05
↓	↓ 013	ISVF0F03G1				ICV

RM 06/04/20

Instrument No:	F0

INITIAL CALIBRATION REFERENCE

Date	SVF0F03G 5
ICAL ID	06/03/20

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	0.05 - 100
BFB	↓ -09-02	50
ICV	↓ -09-03	20

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F03

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/19/20 10:18 End Date/Time: 06/19/20 14:44 Book #: AF0-007

ANALYTICAL BATCH: CVSF0F03G09

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF058	IBF0F03G09				
	059	BFBF0F03G09				
	060	CSVF0F03G09				
SVF016W	061	SVF016WB	1X		X	
	062	↓ L				
	063	↓ C				
	064	20F145-01				
	065	20F154-01				
	066	-02				
	067	-02M				
	068	-02S				
	069	-05				
	070	-06				
	071	20F155-01				
	072	↓ -02	↓		↓	
	073	ESVF0F03G10				

RM 06/19/20

	Instrument No:	F0
INITIAL CALIBRATION REFERENCE		
Date	06/03/20	
ICAL ID	SVF0F03G	
Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	20
BFB	↓ -09-02	50
Solvent	ID	
CH_2Cl_2	59340	
DATA FILE	20F19	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOF0		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: 06/19/20

Disposed By: RM

This page is checked during data review.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF016W
Matrix: WATER
Micropipette ID: 1000 µl : PE00-03
Micropipette ID: 100 µl : PE97C-03
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS/1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SWB-006-21-01
H_2SO_4	
NaOH	SPIB-12-92-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-009-02-07
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	17031561

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF016-MB			2
-WL			2
-WC			2
F145-01			2
F154-01			2
-02			2
-02M			3
-02S			3
-05			3
-06			3
F155-01			3
-02			3

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output.
		> 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1		
2	35	35
3	35	35
4		
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: HW
Standard Added By: HW
Extract Received By: RM 06/19/20
Disposed By:
Witnessed By: ER
Checked By:
Location: SE01-10
Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF016W01	SVF016WB	1000	ml	6/18/20 12:38	2	1000	2	1	
20SVF016W02	SVF016WL	1000	ml	6/18/20 12:38	2	1000	2	1	1,4-Dioxane
20SVF016W03	SVF016WC	1000	ml	6/18/20 12:38	2	1000	2	1	1,4-Dioxane
20SVF016W04	F145-01	920	ml	6/18/20 12:39	2	1000	2	1.09	
20SVF016W05	F154-01	950	ml	6/18/20 12:39	2	1000	2	1.05	Light yellow
20SVF016W06	F154-02	970	ml	6/18/20 12:39	2	1000	2	1.03	
20SVF016W07	F154-02M	970	ml	6/18/20 12:39	2	1000	2	1.03	1,4-Dioxane
20SVF016W08	F154-02S	960	ml	6/18/20 12:39	2	1000	2	1.04	1,4-Dioxane
20SVF016W09	F154-05	1000	ml	6/18/20 12:39	2	1000	2	1	
20SVF016W10	F154-06	1060	ml	6/18/20 12:39	2	1000	2	0.94	
20SVF016W11	F155-01	980	ml	6/18/20 12:39	2	1000	2	1.02	
20SVF016W12	F155-02	970	ml	6/18/20 12:39	2	1000	2	1.03	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/18/20 12:30 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: HWang

☑ Extraction Ended @ 6/19/20 6:30 ☑ pHAdj(≥11) @ 6/18/20 12:30 Vial Cal Ref.: VC-19-020 Checked By:

Comments: volume entered after extraction started, pH=7 for all samples, chlorine not detected Date 6/19/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F155

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD RSK-175
DISSOLVED GASES

A total of two(2) water samples were received on 06/18/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF012WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF012WL/DGF012WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F155
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF012WB	1	NA	06/18/2009:38	06/18/2009:00	BF18003A	BF18002A	DGF012W	Method Blank
LCS1W	DGF012WL	1	NA	06/18/2009:51	06/18/2009:00	BF18004A	BF18002A	DGF012W	Lab Control Sample (LCS)
LCD1W	DGF012WC	1	NA	06/18/2010:04	06/18/2009:00	BF18005A	BF18002A	DGF012W	LCS Duplicate
MW18-GW061620	F155-01	1	NA	06/18/2013:14	06/18/2009:00	BF18017A	BF18009A	DGF012W	Field Sample
MW19-GW061620	F155-02	1	NA	06/18/2013:27	06/18/2009:00	BF18018A	BF18009A	DGF012W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/16/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F155	Date Extracted: 06/18/20 09:00
Sample ID: MW18-GW061620	Date Analyzed: 06/18/20 13:14
Lab Samp ID: F155-01	Dilution Factor: 1
Lab File ID: BF18017A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

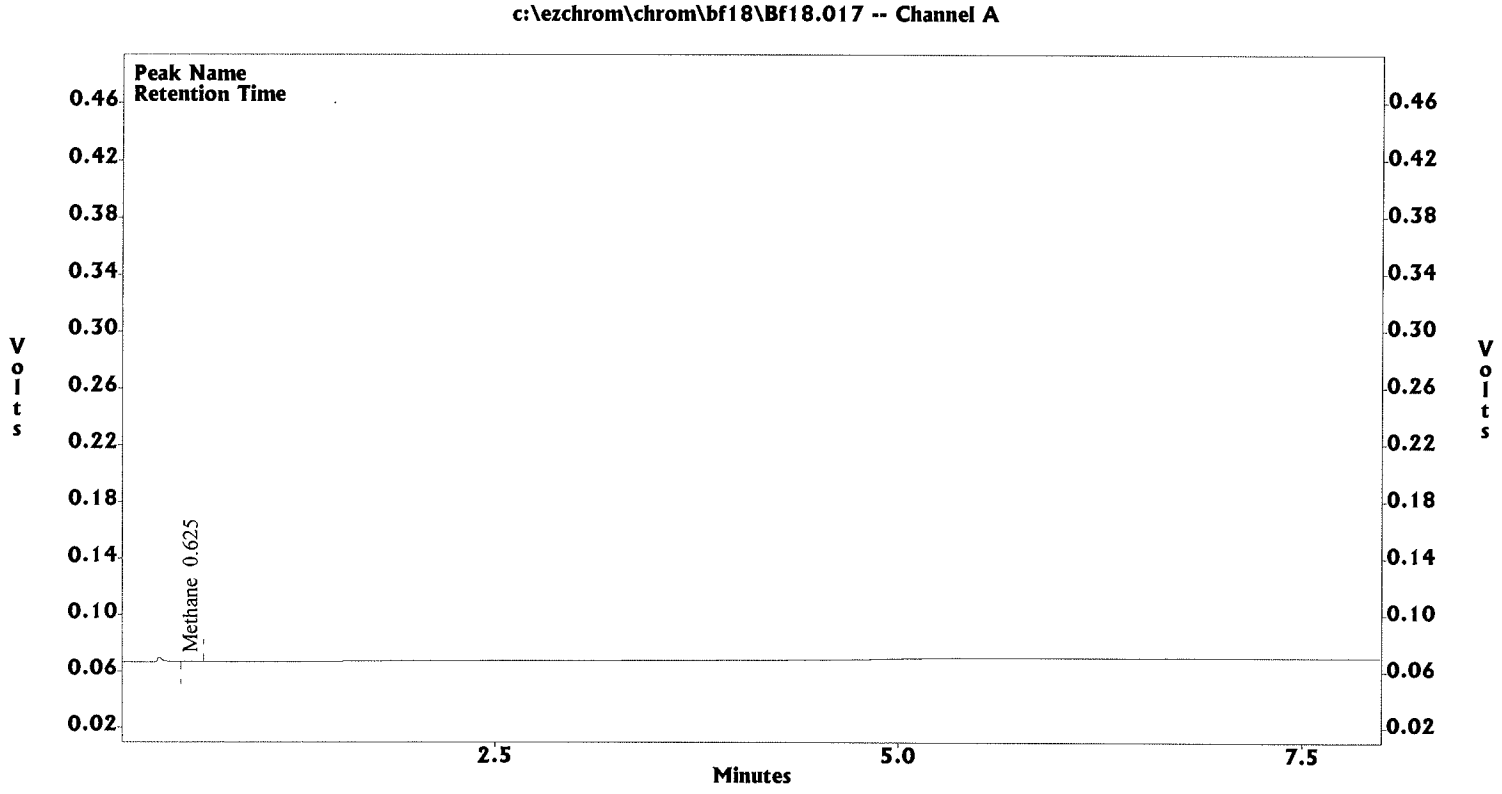
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.017
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F155-01
Acquired : Jun 18, 2020 13:14:00
Printed : Jun 18, 2020 13:22:02
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1269	13975.2	0.091
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/16/20
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F155	Date Extracted: 06/18/20 09:00
Sample ID: MW19-GW061620	Date Analyzed: 06/18/20 13:27
Lab Samp ID: F155-02	Dilution Factor: 1
Lab File ID: BF18018A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18009A	Instrument ID : GCT072

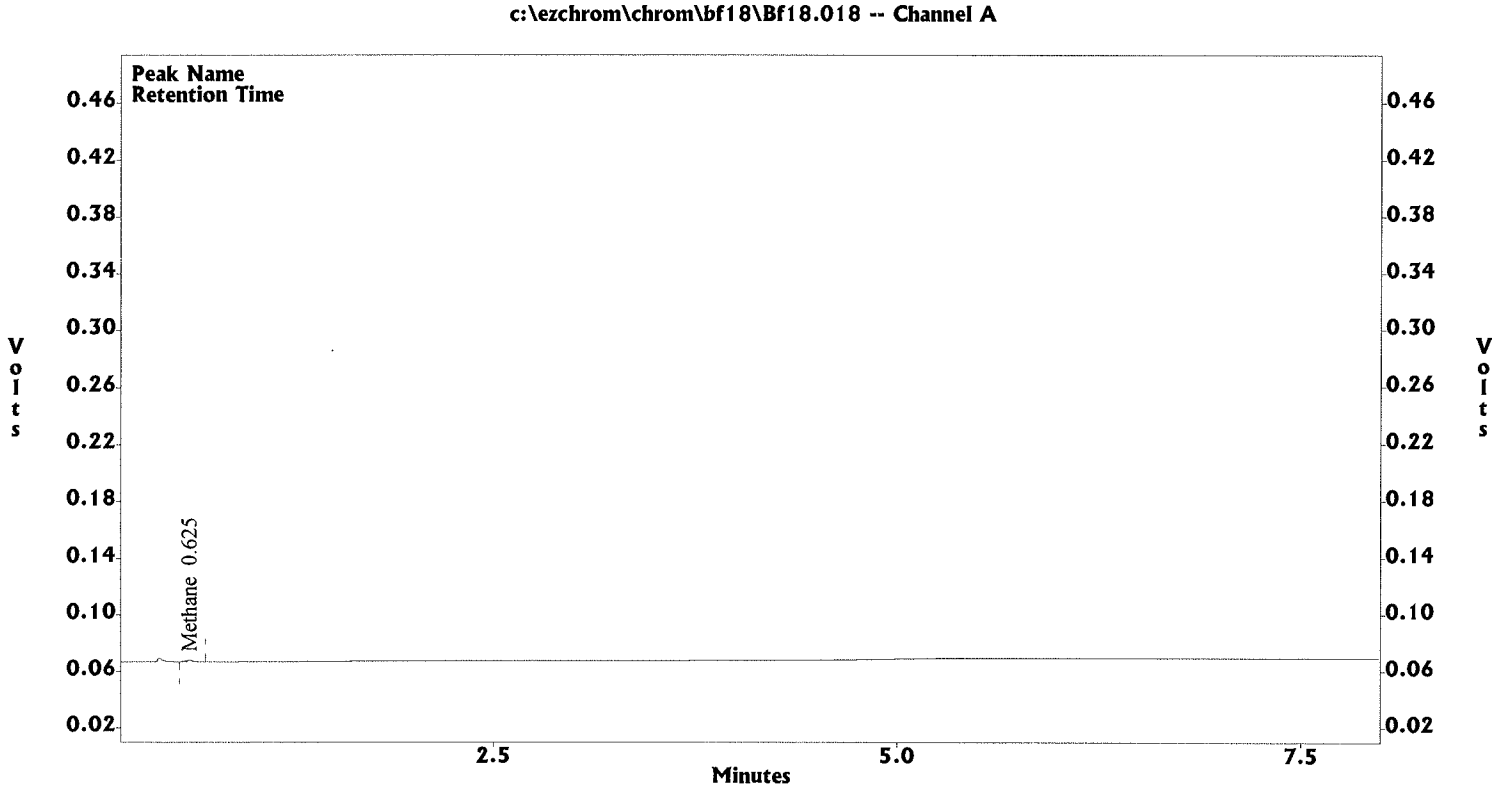
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.18J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.018
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F155-02
Acquired : Jun 18, 2020 13:27:27
Printed : Jun 18, 2020 13:35:28
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	2482	13975.2	0.178
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/18/20
Batch No. : 20F155	Date Extracted: 06/18/20 09:00
Sample ID: MBLK1W	Date Analyzed: 06/18/20 09:38
Lab Samp ID: DGF012WB	Dilution Factor: 1
Lab File ID: BF18003A	Matrix : WATER
Ext Btch ID: DGF012W	% Moisture : NA
Calib. Ref.: BF18002A	Instrument ID : GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F155
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF012WB	DGF012WL	DGF012WC		
LAB FILE ID:	BF18003A	BF18004A	BF18005A		
DATE EXTRACTED:	06/18/2009:00	06/18/2009:00	06/18/2009:00	DATE COLLECTED:	NA
DATE ANALYZED:	06/18/2009:38	06/18/2009:51	06/18/2010:04	DATE RECEIVED:	06/18/20
PREP. BATCH:	DGF012W	DGF012W	DGF012W		
CALIB. REF:	BF18002A	BF18002A	BF18002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	24.4	96	25.5	22.8	89	7	70-140	30
Ethene	ND	23.8	22.4	94	23.8	21.1	89	6	70-140	30
Methane	ND	13.6	13.5	99	13.6	12.7	93	6	70-130	30

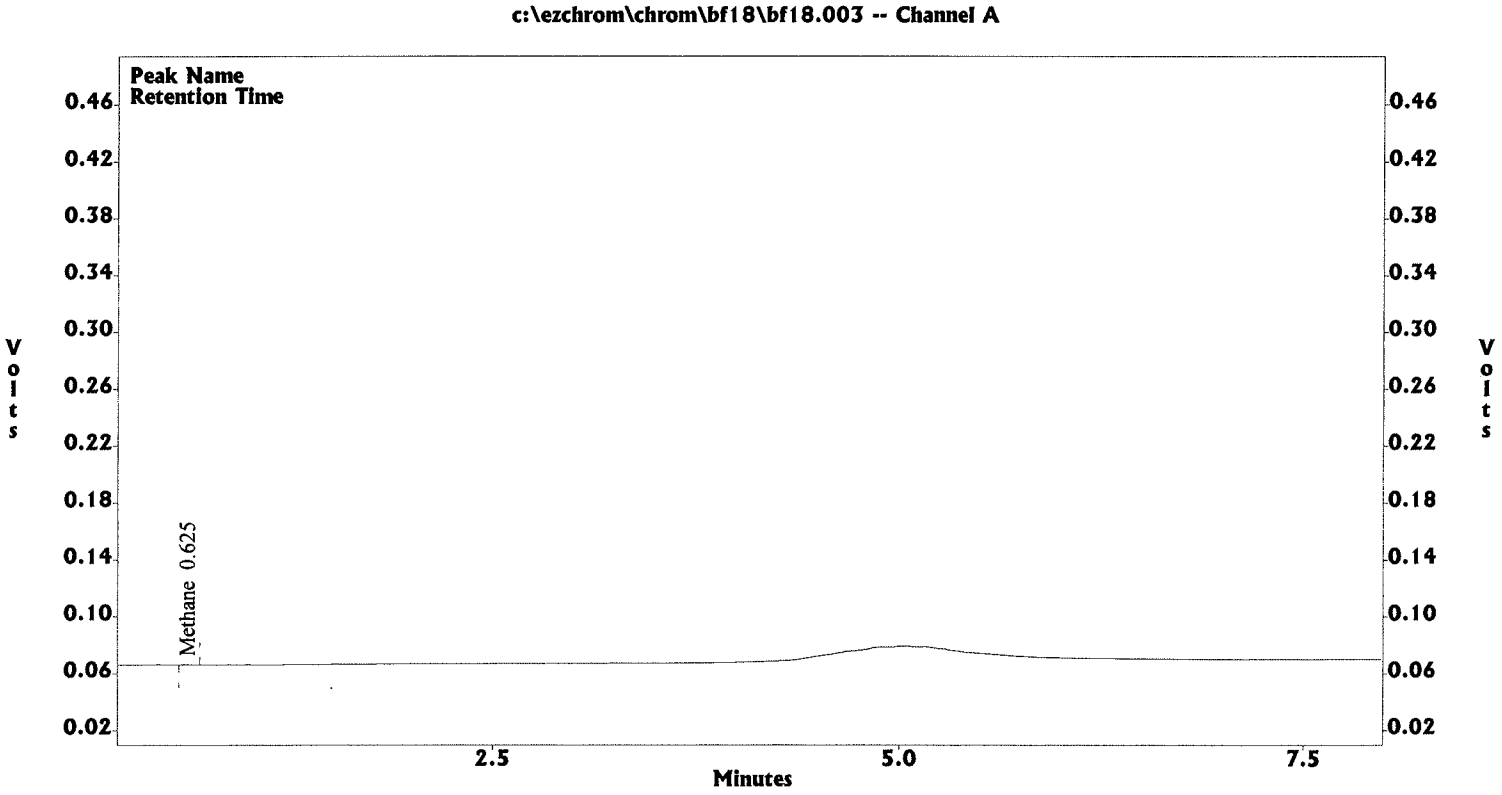
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\bf18.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DGF012WB
Acquired : Jun 18, 2020 09:38:03
Printed : Jun 18, 2020 09:53:52
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	618	13975.2	0.044
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.517	0	0.0	0.000
--	Ethane	2.967	0	0.0	0.000
--	Propane	5.408	0	0.0	0.000

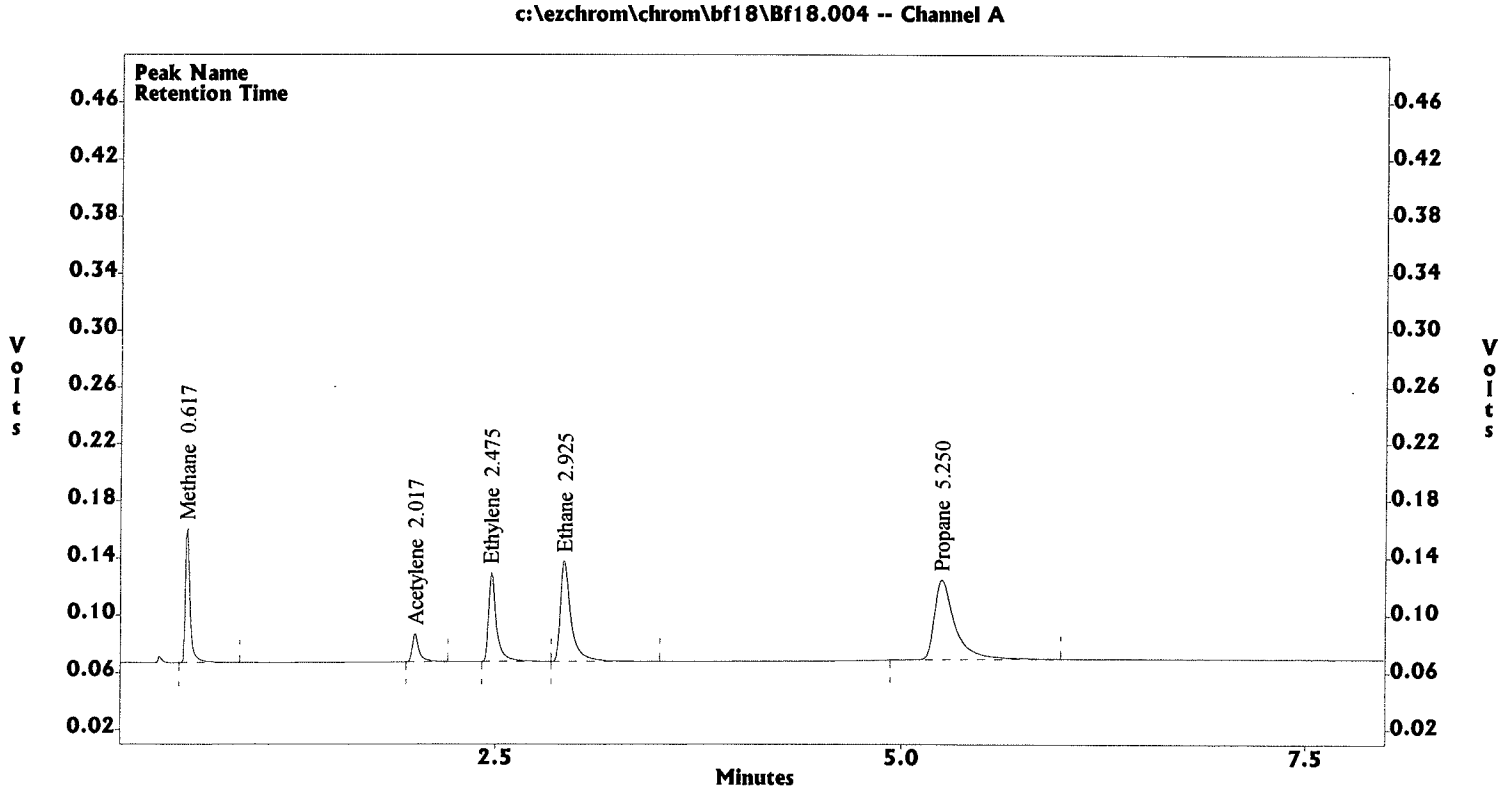


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.004
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF012WL
Acquired : Jun 18, 2020 09:51:55
Printed : Jun 18, 2020 09:59:56
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	188208	13975.2	13.467
2	Acetylene	2.017	54942	2483.4	22.124
3	Ethylene	2.475	212761	9519.0	22.351
4	Ethane	2.925	320077	13110.4	24.414
5	Propane	5.250	490289	13914.6	35.235

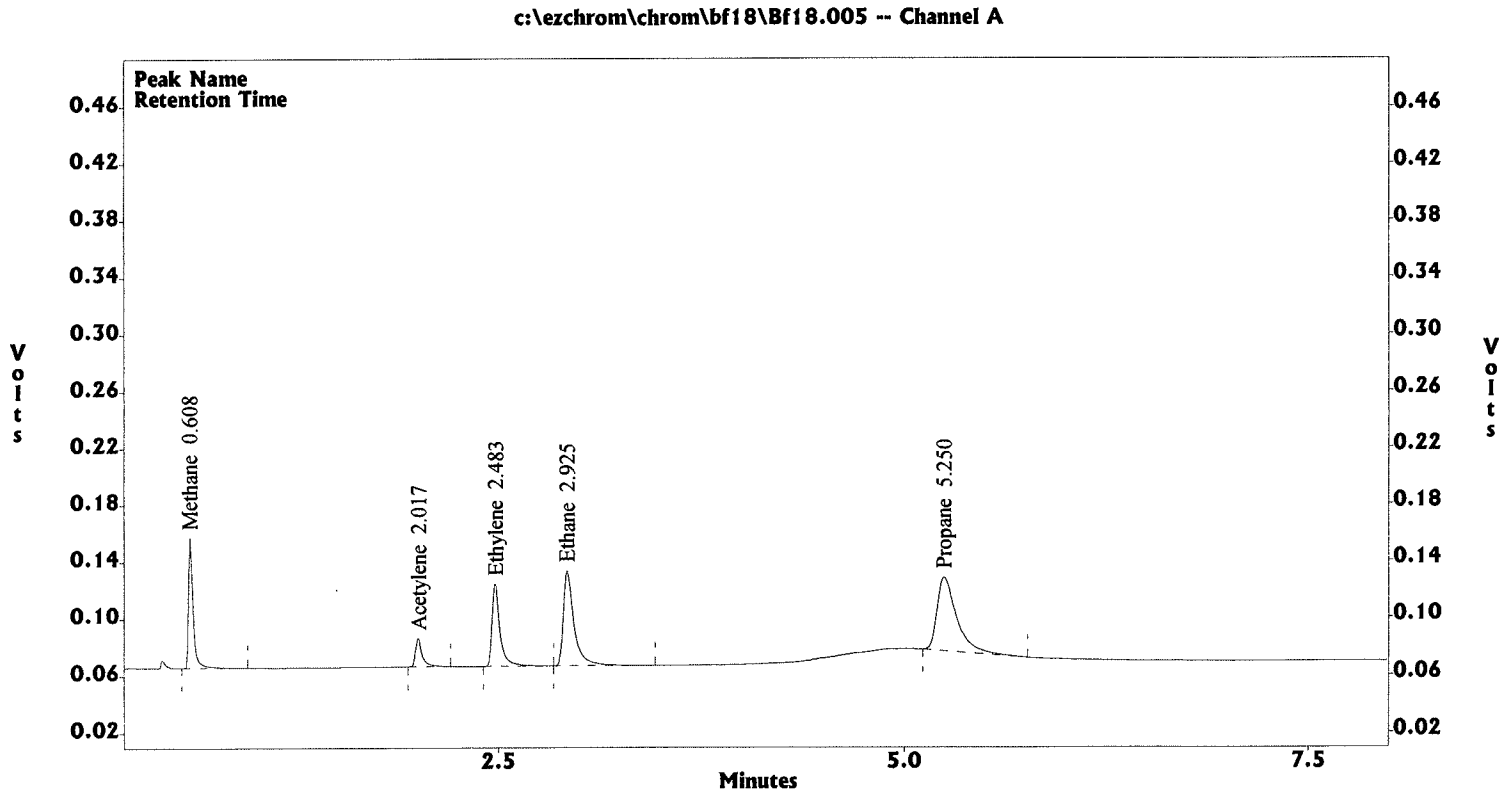


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.005
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF012WC
Acquired : Jun 18, 2020 10:04:27
Printed : Jun 18, 2020 10:12:29
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	177898	13975.2	12.730
2	Acetylene	2.017	55165	2483.4	22.214
3	Ethylene	2.483	200933	9519.0	21.109
4	Ethane	2.925	299333	13110.4	22.832
5	Propane	5.250	431111	13914.6	30.983



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

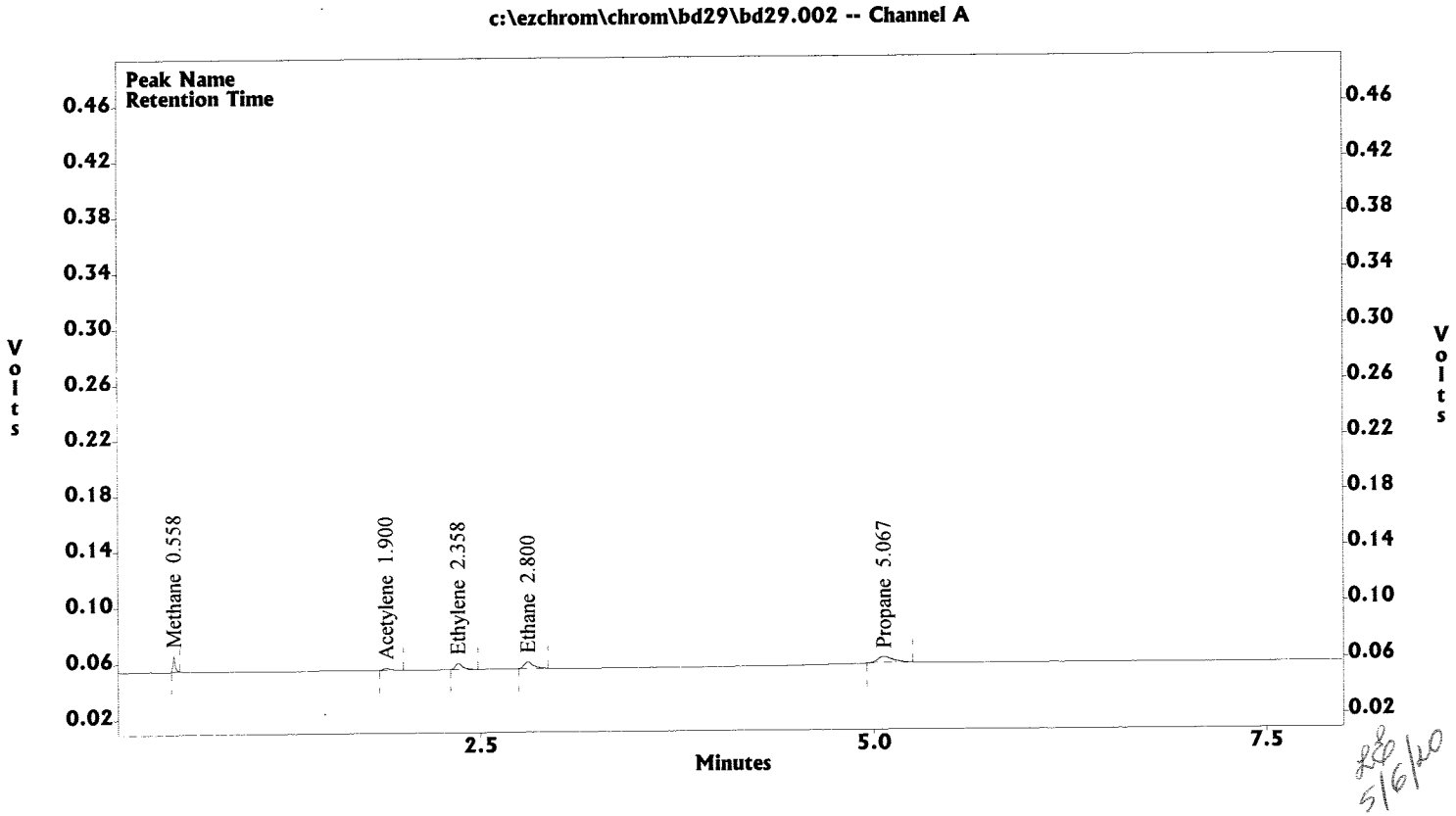
RR 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



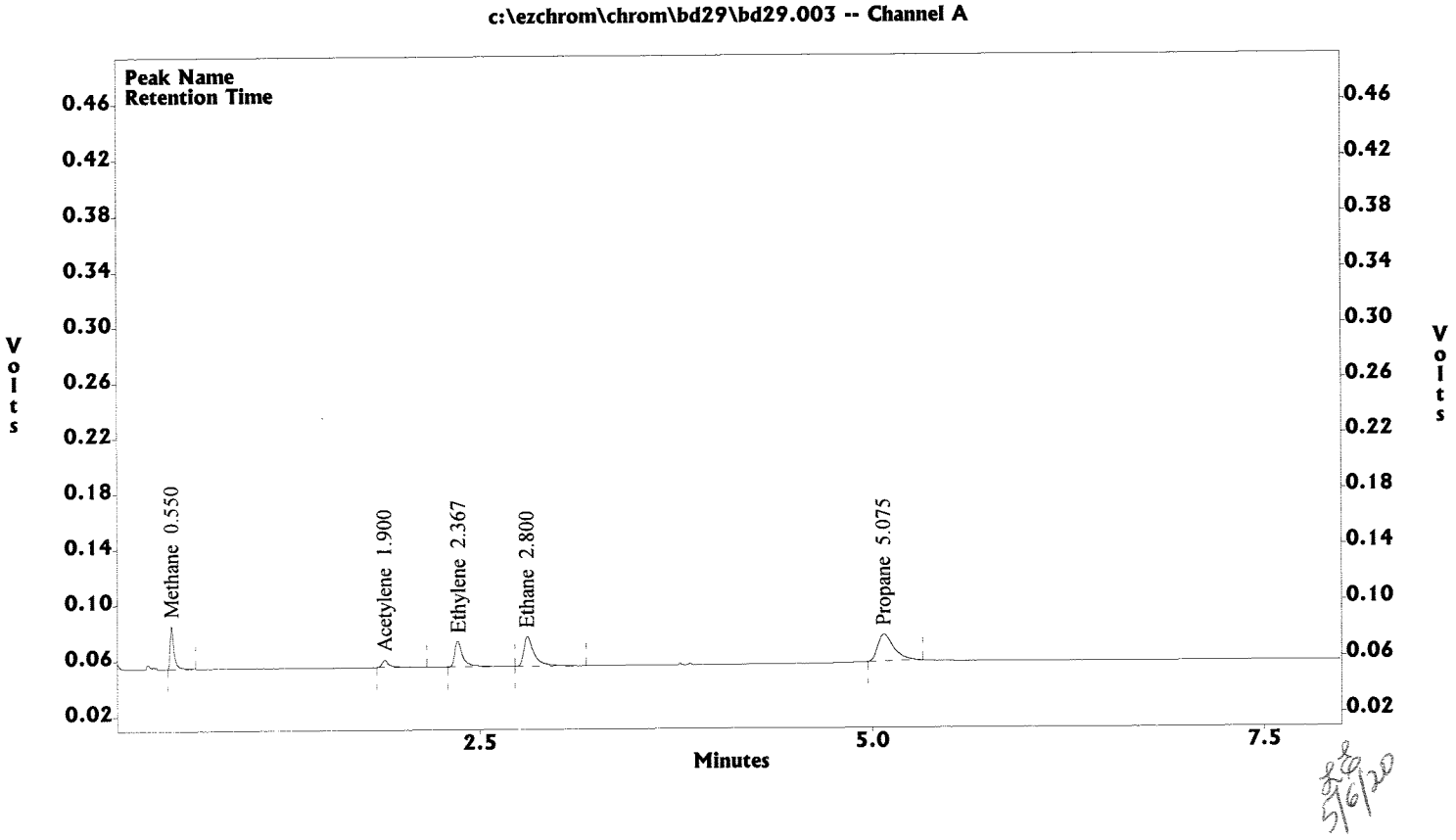
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

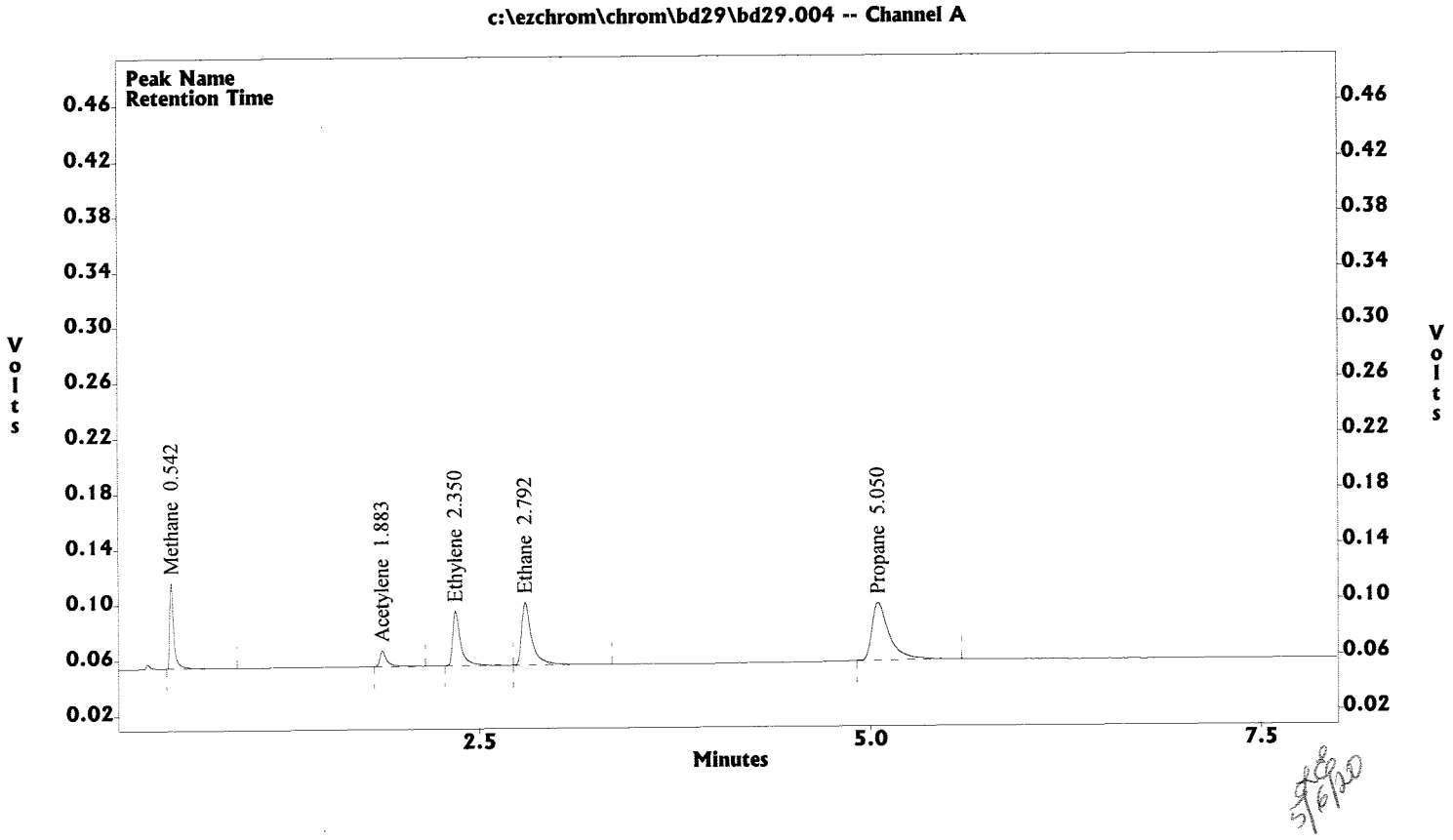


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



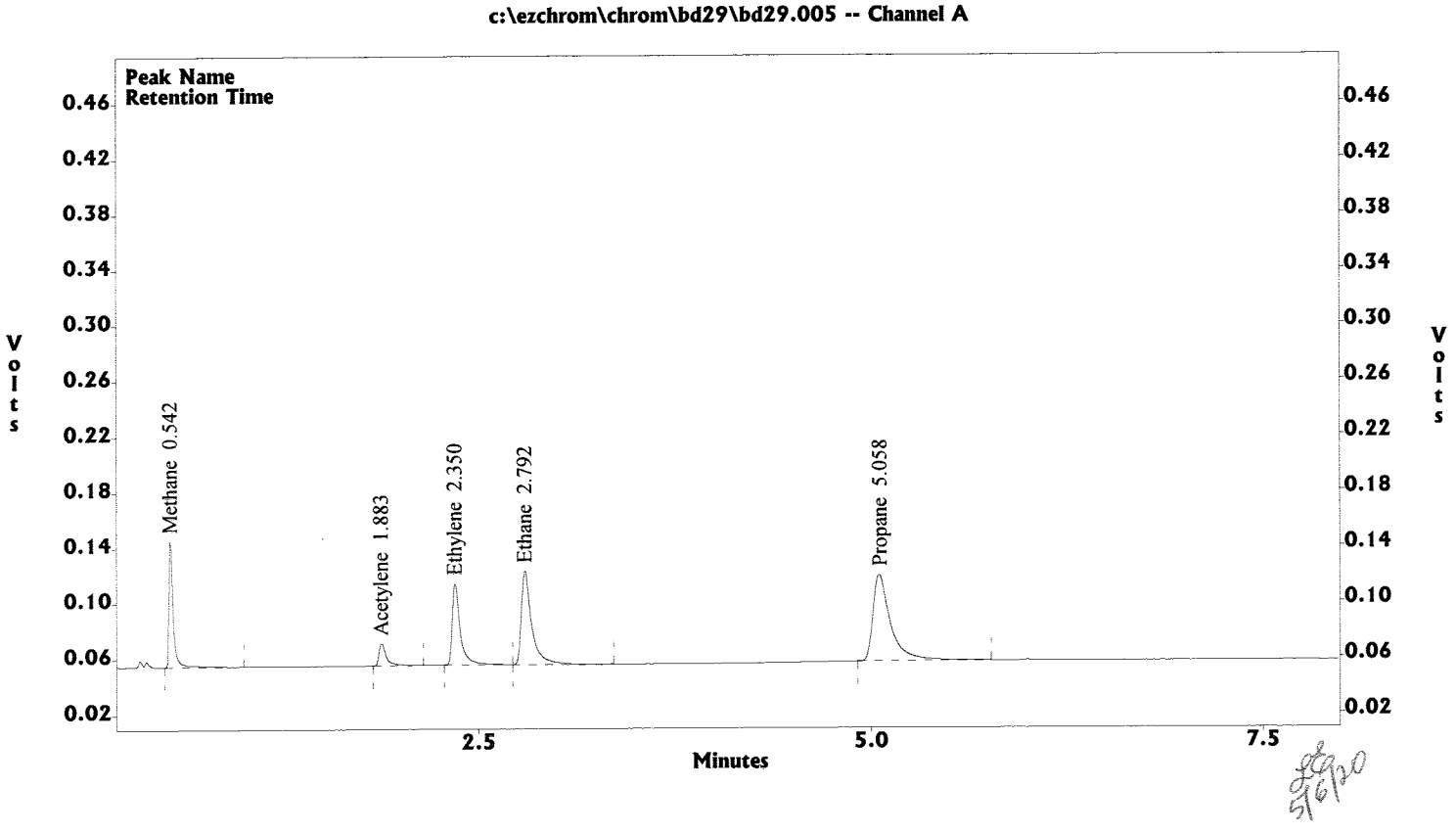
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

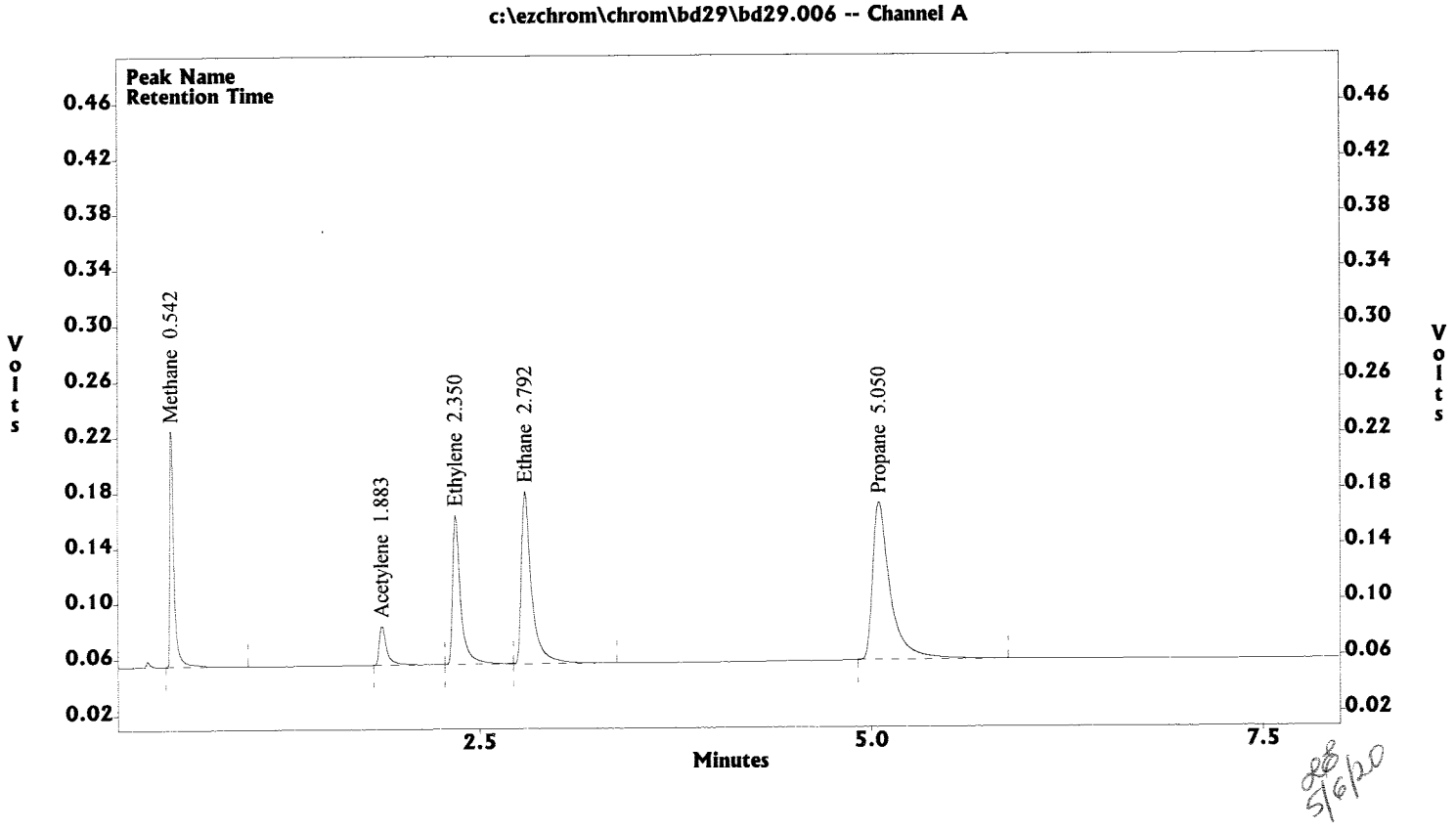


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



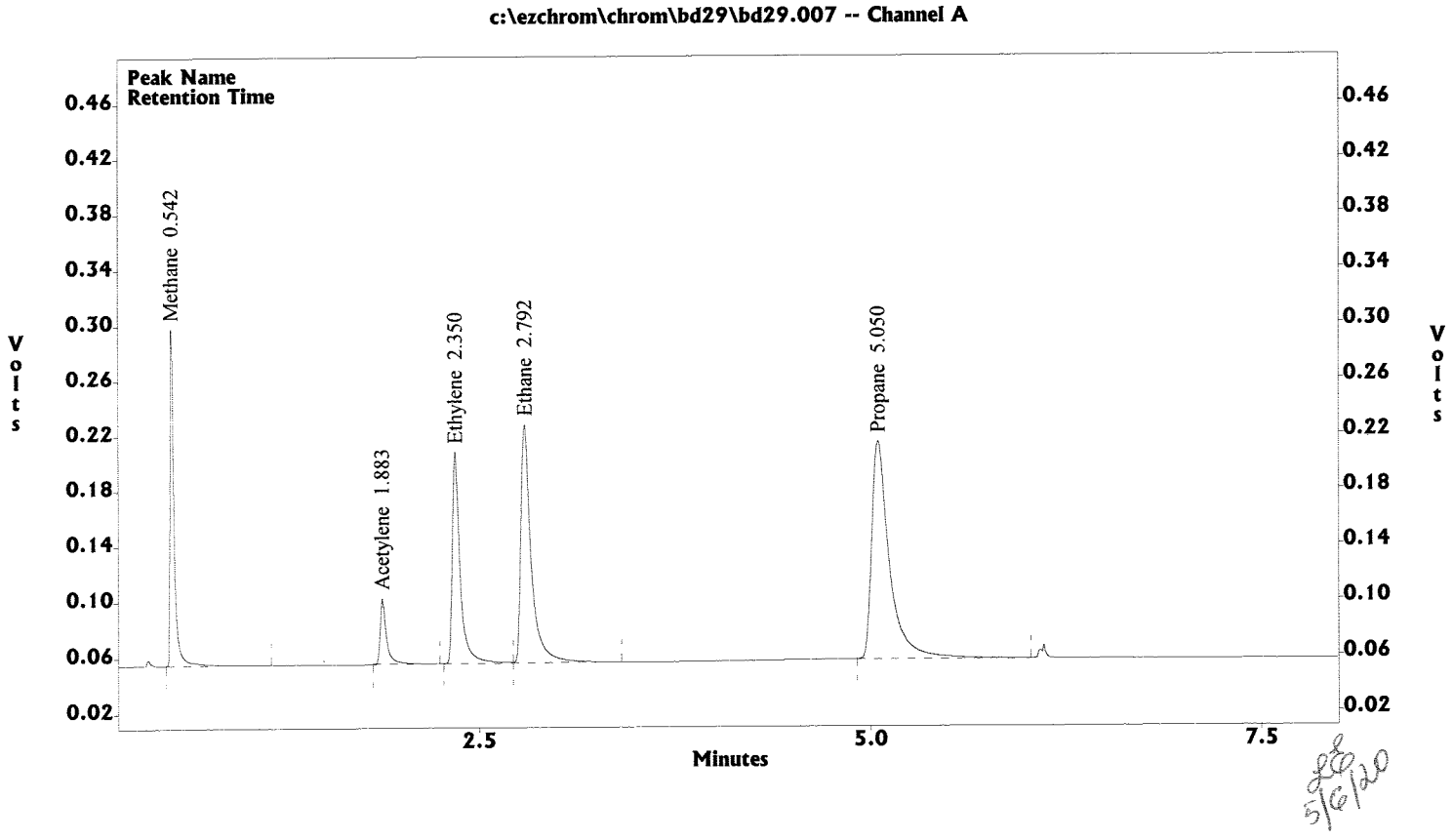
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

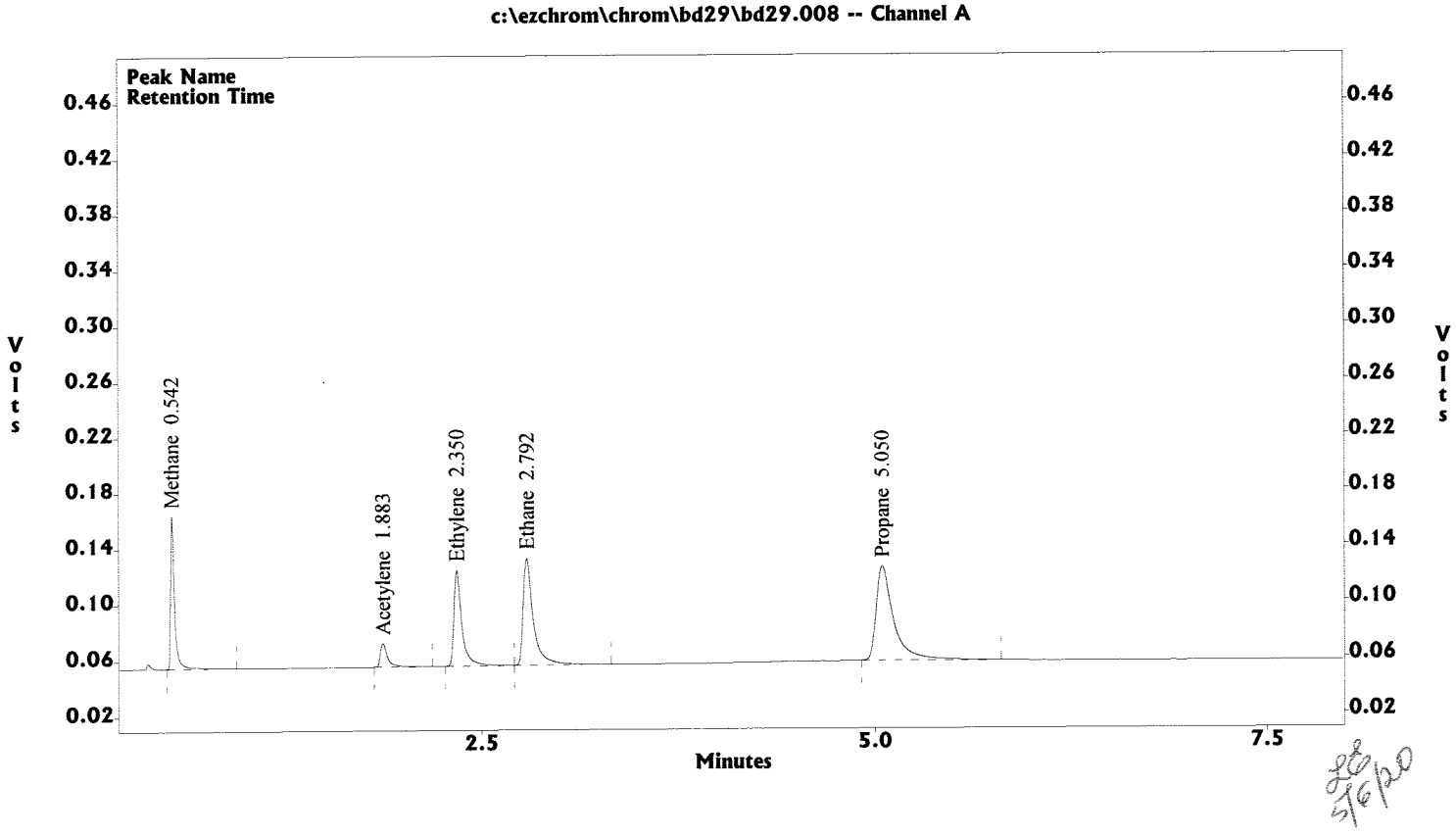
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18002A 06/18/2020 09:25
CONC UNIT : ppb

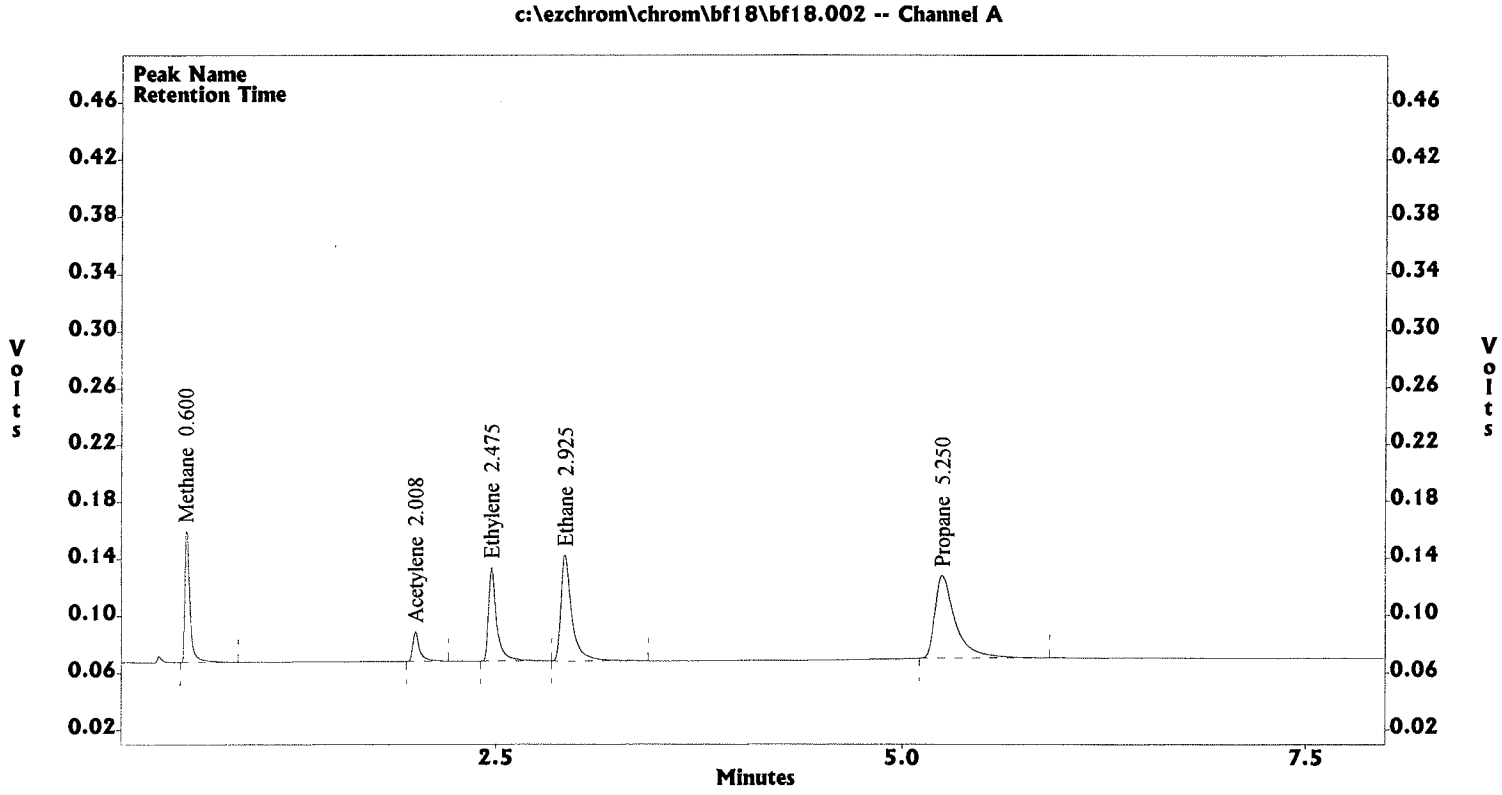
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	198520	14.20	4		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	225566	23.70	-0		15
Ethane	2.925	2.887	2.963	25.5	13110.4	336642	25.68	1		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\bf18.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : CDG72D29115
Acquired : Jun 18, 2020 09:25:32
Printed : Jun 18, 2020 09:35:06
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	198520	13975.2	14.205
2	Acetylene	2.008	59280	2483.4	23.871
3	Ethylene	2.475	225566	9519.0	23.697
4	Ethane	2.925	336642	13110.4	25.677
5	Propane	5.250	503576	13914.6	36.190



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18009A 06/18/2020 11:19
CONC UNIT : ppb

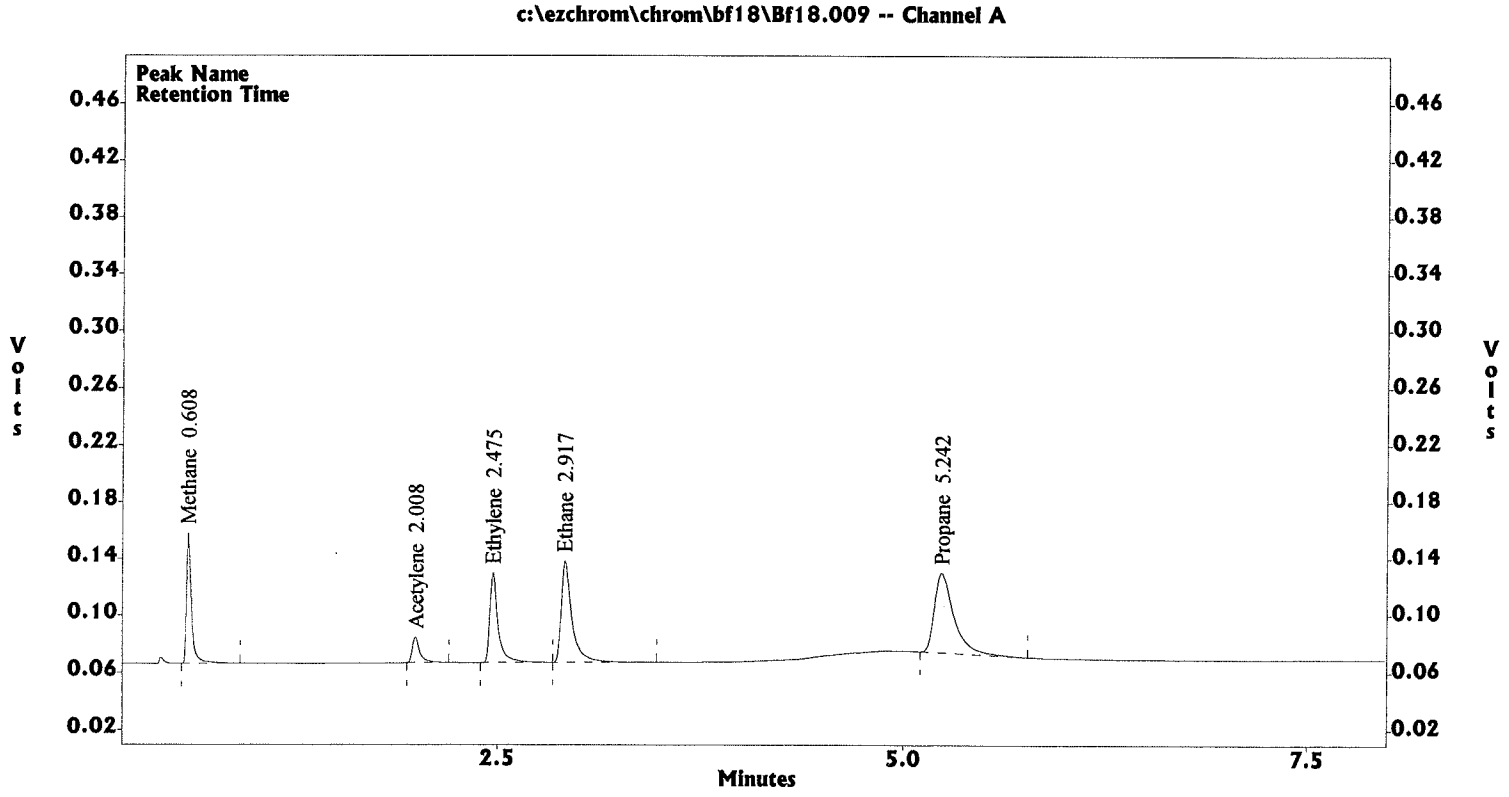
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	192089	13.74	1		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	218952	23.00	-3		15
Ethane	2.917	2.879	2.955	25.5	13110.4	324390	24.74	-3		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.009
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29116
Acquired : Jun 18, 2020 11:19:05
Printed : Jun 18, 2020 11:27:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	192089	13975.2	13.745
2	Acetylene	2.008	57893	2483.4	23.312
3	Ethylene	2.475	218952	9519.0	23.002
4	Ethane	2.917	324390	13110.4	24.743
5	Propane	5.242	466888	13914.6	33.554



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF18019A 06/18/2020 14:02
CONC UNIT : ppb

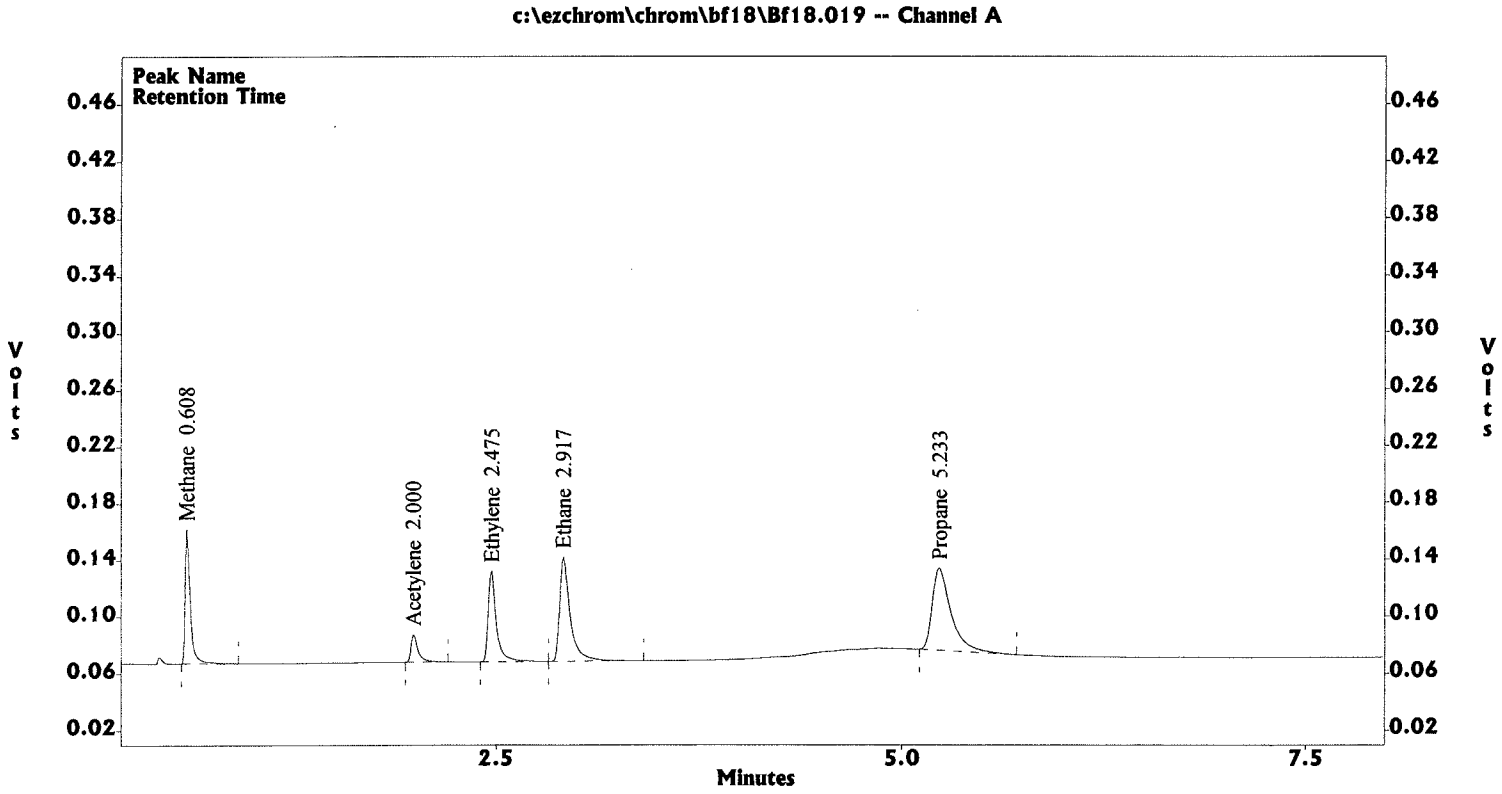
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	198250	14.19	4		15
Ethylene	2.475	2.437	2.513	23.8	9519.0	220096	23.12	-3		15
Ethane	2.917	2.879	2.955	25.5	13110.4	329305	25.12	-1		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf18\Bf18.019
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29117
Acquired : Jun 18, 2020 14:02:00
Printed : Jun 18, 2020 14:10:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	198250	13975.2	14.186
2	Acetylene	2.000	56694	2483.4	22.829
3	Ethylene	2.475	220096	9519.0	23.122
4	Ethane	2.917	329305	13110.4	25.118
5	Propane	5.233	473488	13914.6	34.028



ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019
Instrument No.: 72
Analytical Sequence: BD29
Method File: DG72D29
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	SSSB-18-22-01	10 7500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS
Date: 4/29/20
Disposed By:
Date Disposed:

Batch: bd29.seq

1	IB72D2901	dg72d29.met	BD29.001	0	500uL	1
2	DG72D2901	dg72d29.met	BD29.002	1	500uL	1
3	DG72D2902	dg72d29.met	BD29.003	2	500uL	1
4	DG72D2903	dg72d29.met	BD29.004	3	500uL	1
5	DG72D2904	dg72d29.met	BD29.005	4	500uL	1
6	DG72D2905	dg72d29.met	BD29.006	5	500uL	1
7	DG72D2906	dg72d29.met	BD29.007	6	500uL	1
8	IDG72D29001	dg72d29.met	BD29.008	0	500uL	1

FINAL

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF012W : F123, F154, F155

Book #: A72-019

Instrument No.: 72

Analytical Sequence: BF18

Method File: DG72D29

Analytical Batch: CDG72D29115

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-32-02	200
Temperature (°C)	21	
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC

Date: 6/18/20

Disposed By:

Date Disposed:

Batch: bf18.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F1801	dg72d29.met	BF18.001	500uL	1	
2	CDG72D29115	dg72d29.met	BF18.002	500uL	1	
3	DGF012WB	dg72d29.met	BF18.003	500uL	1	
4	DGF012WL	dg72d29.met	BF18.004	500uL	1	
5	DGF012WC	dg72d29.met	BF18.005	500uL	1	
6	F123-01	dg72d29.met	BF18.006	500uL	1	
7	F123-02	dg72d29.met	BF18.007	500uL	1	
8	F123-03	dg72d29.met	BF18.008	500uL	1	
9	CDG72D29116	dg72d29.met	BF18.009	500uL	1	
10	F154-01	dg72d29.met	BF18.010	500uL	1	
11	F154-02	dg72d29.met	BF18.011	500uL	1	
12	F154-02M	dg72d29.met	BF18.012	500uL	1	
13	F154-02S	dg72d29.met	BF18.013	500uL	1	
14	F154-05	dg72d29.met	BF18.014	500uL	1	
15	F154-06	dg72d29.met	BF18.015	500uL	1	
16	ESS T.BAG TEST	dg72d29.met	BF18.016	500uL	1	BATCH # 28190909
17	F155-01	dg72d29.met	BF18.017	500uL	1	
18	F155-02	dg72d29.met	BF18.018	500uL	1	
19	CDG72D29117	dg72d29.met	BF18.019	500uL	1	

FINAL

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F155

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SW6020A
METALS BY ICP-MS

A total of two(2) water samples were received on 06/18/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Calcium(41.4J <1/2 LOQ) was detected at trace level in IMF035WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF035WL/IMF035WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F155
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMF035WB	1	NA	6/26/22010:56	06/25/2011:06	H6F22017	H6F22015	IMF035W	Method Blank
LCS1W	IMF035WL	1	NA	6/26/22010:58	06/25/2011:06	H6F22018	H6F22015	IMF035W	Lab Control Sample (LCS)
LCD1W	IMF035WC	1	NA	6/26/22011:01	06/25/2011:06	H6F22019	H6F22015	IMF035W	LCS Duplicate
MW18-GW061620	F155-01	1	NA	6/26/22011:40	06/25/2011:06	H6F22032	H6F22026	IMF035W	Field Sample
MW19-GW061620	F155-02	1	NA	6/26/22011:43	06/25/2011:06	H6F22033	H6F22026	IMF035W	Field Sample
MW18-GW061620	F155-01I	10	NA	6/26/22011:46	06/25/2011:06	H6F22034	H6F22026	IMF035W	Diluted Sample
MW19-GW061620	F155-02I	10	NA	6/26/22011:48	06/25/2011:06	H6F22035	H6F22026	IMF035W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 15:08
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW18-GW061620	Date Analyzed:	6/26/220 11:40
Lab Samp ID:	F155-01	Dilution Factor:	1
Lab File ID:	H6F22032	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	56.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.699J	1.00	0.125
Barium	97.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.09	1.00	0.100
Cobalt	0.195J	1.00	0.100
Copper	ND	2.00	0.500
Iron	152	100	25.0
Lead	ND	1.00	0.0500
Manganese	7.47	1.00	0.250
Nickel	0.385J	1.00	0.250
Potassium	3300	100	25.0
Selenium	0.935J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.84	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW18-GW061620	Date Analyzed:	6/26/220 11:46
Lab Samp ID:	F155-01I	Dilution Factor:	10
Lab File ID:	H6F22034	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	180000	1000	250
Magnesium	73100	1000	250
Sodium	100000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 15:08
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW18-GW061620	Date Analyzed:	6/26/220 11:40
Lab Samp ID:	F155-01	Dilution Factor:	1
Lab File ID:	H6F22032	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	56.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.699J	1.00	0.125
Barium	97.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	175000E	100	25.0
Chromium	1.09	1.00	0.100
Cobalt	0.195J	1.00	0.100
Copper	ND	2.00	0.500
Iron	152	100	25.0
Lead	ND	1.00	0.0500
Magnesium	69400E	100	25.0
Manganese	7.47	1.00	0.250
Nickel	0.385J	1.00	0.250
Potassium	3300	100	25.0
Selenium	0.935J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	94100E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.84	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 15:08
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW18-GW061620	Date Analyzed:	6/26/220 11:46
Lab Samp ID:	F155-01I	Dilution Factor:	10
Lab File ID:	H6F22034	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	94.0	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	180000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	73100	1000	250
Manganese	7.28J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	3320	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	100000	1000	250
Thallium	ND	10.0	1.00
Vanadium	8.40J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 17:28
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW19-GW061620	Date Analyzed:	6/26/220 11:43
Lab Samp ID:	F155-02	Dilution Factor:	1
Lab File ID:	H6F22033	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	56.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.812J	1.00	0.125
Barium	76.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	3.21	1.00	0.100
Cobalt	0.218J	1.00	0.100
Copper	ND	2.00	0.500
Iron	398	100	25.0
Lead	ND	1.00	0.0500
Manganese	10.2	1.00	0.250
Nickel	1.67	1.00	0.250
Potassium	3230	100	25.0
Selenium	0.868J	1.00	0.150
Silver	0.207J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250
Zinc	8.68J	20.0	5.00

Sample ID:	MW19-GW061620	Date Analyzed:	6/26/220 11:48
Lab Samp ID:	F155-02I	Dilution Factor:	10
Lab File ID:	H6F22035	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	165000	1000	250
Magnesium	63200	1000	250
Sodium	89500	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 17:28
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW19-GW061620	Date Analyzed:	6/26/220 11:43
Lab Samp ID:	F155-02	Dilution Factor:	1
Lab File ID:	H6F22033	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	56.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.812J	1.00	0.125
Barium	76.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	164000E	100	25.0
Chromium	3.21	1.00	0.100
Cobalt	0.218J	1.00	0.100
Copper	ND	2.00	0.500
Iron	398	100	25.0
Lead	ND	1.00	0.0500
Magnesium	60400E	100	25.0
Manganese	10.2	1.00	0.250
Nickel	1.67	1.00	0.250
Potassium	3230	100	25.0
Selenium	0.868J	1.00	0.150
Silver	0.207J	1.00	0.100
Sodium	87300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250
Zinc	8.68J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/16/20 17:28
Project	: VA SALT LAKE CITY	Date Received:	06/18/20
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MW19-GW061620	Date Analyzed:	6/26/220 11:48
Lab Samp ID:	F155-02I	Dilution Factor:	10
Lab File ID:	H6F22035	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22026	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	76.8	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	165000	1000	250
Chromium	2.89J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	402J	1000	250
Lead	ND	10.0	0.500
Magnesium	63200	1000	250
Manganese	10.6	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	3280	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	89500	1000	250
Thallium	ND	10.0	1.00
Vanadium	8.80J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F155	Date Extracted:	06/25/20 11:06
Sample ID:	MBLK1W	Date Analyzed:	6/26/220 10:56
Lab Samp ID:	IMF035WB	Dilution Factor:	1
Lab File ID:	H6F22017	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6F22015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	41.4J	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Sodium	ND	100	25.0
Thallium	ND	1.00	0.100
Vanadium	ND	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF035WB	IMF035WL	IMF035WC
LAB FILE ID	: H6F22017	H6F22018	H6F22019
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 6/26/220 10:56	6/26/220 10:58	6/26/220 11:01
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6F22015	H6F22015	H6F22015

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	3020	101	3000	3010	100	0	80-120	20
Antimony	ND	30	28.1	94	30	29.5	98	5	80-120	20
Arsenic	ND	30	30.0	100	30	31.3	104	4	80-120	20
Barium	ND	30	28.2	94	30	29.3	98	4	80-120	20
Beryllium	ND	30	29.4	98	30	30.4	101	3	80-120	20
Cadmium	ND	30	28.9	96	30	29.9	100	3	80-120	20
Calcium	41.4J	3000	3160	105	3000	3270	109	3	80-120	20
Chromium	ND	30	31.2	104	30	32.0	107	3	80-120	20
Cobalt	ND	30	30.7	102	30	31.4	105	2	80-120	20
Copper	ND	30	33.3	111	30	32.9	110	1	80-120	20
Iron	ND	3000	3180	106	3000	3130	104	2	80-120	20
Lead	ND	30	29.9	100	30	30.7	102	3	80-120	20
Magnesium	ND	3000	3010	100	3000	3040	101	1	80-120	20
Manganese	ND	30	31.7	106	30	32.7	109	3	80-120	20
Nickel	ND	30	32.5	108	30	32.3	108	1	80-120	20
Potassium	ND	3000	3130	104	3000	3100	103	1	80-120	20
Selenium	ND	30	31.0	103	30	31.4	105	1	80-120	20
Silver	ND	30	29.8	99	30	31.2	104	5	80-120	20
Sodium	ND	3000	3150	105	3000	3050	102	3	80-120	20
Thallium	ND	30	30.0	100	30	30.6	102	2	80-120	20
Vanadium	ND	30	30.7	102	30	31.3	104	2	80-120	20
Zinc	ND	60	63.6	106	60	62.3	104	2	80-120	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 06|26|20 10:13

End Date: 06|26|20 16:06

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

See analytical sequence

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	IH6F22
Analytical Sequence:	H6F22
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (CAL)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	66-02	Post-Spike 4	↓
ICSAB	67-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 06|26|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F155
Method : METHOD SW6020A
Sequence : IH6F22
InstrumentID: H6

Lab Samp ID :		ICV				ICSA1			ICSAB1		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6F22008				H6F22012			H6F22013		
DateAnalyed :		6/26/22010:28				6/26/22010:40			6/26/22010:43		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.74	30	0.9	99	0.22934	0	>0	19.581	20	98
Beryllium	T	30.32	30	1.4	101						
						0.000039500	0	<0.10	19.924	20	100
Boron		34.35	30	1.4	115*	9.7536	0	>5.0	22.314	20	112
Sodium	T	28820	30000	0.6	96	94995	100000	95	100250	100000	100
Magnesium	T	29080	30000	0.8	97	93164	100000	93	96322	100000	96
Aluminum	T	29540	30000	1.5	98	93877	100000	94	97151	100000	97
Silicon		3225	3000	0.4	108	4.2173	0	<20	222.69	200	111
Phosphorus		276.9	300	1.7	92	93807	100000	94	97156	100000	97
Potassium	T	29480	30000	0.3	98	98193	100000	98	102000	100000	102
Calcium	T	29360	30000	1	98	97918	100000	98	103860	100000	104
Titanium		293.4	300	1.1	98	2002.7	2000	100	2103.3	2000	105
Vanadium	T	313.3	300	0.7	104	0.11769	0	<0.25	20.156	20	101
Chromium	T	313.3	300	0.7	104	0.27424	0	>0.1	20.739	20	104
Manganese	T	1955	2000	1	98	0.24806	0	<0.25	19.625	20	98
Iron	T	29580	30000	1.4	99	98569	100000	99	103750	100000	104
Cobalt	T	301.3	300	1.5	100	0.35623	0	>0.1	19.546	20	98
Nickel	T	317.5	300	0.1	106	0.31803	0	>0.25	20.557	20	103
Copper	T	309.9	300	1	103	0.27185	0	<0.50	20.450	20	102
Zinc	T	289.1	300	2.1	96	1.6019	0	<5	21.132	20	106
Arsenic	T	313.9	300	0.6	105	0.073077	0	<0.125	20.030	20	100
Selenium	T	315.4	300	0.9	105	0.21767	0	>0.15	21.602	20	108
Strontium		307.6	300	1.2	103	0.77987	0	<1.0	20.142	20	101
Zirconium		27.59	30	1.1	92	0.11514	0	<2.0	8.5487	20	43*
Molybdenum		304.2	300	1.5	101	1967.9	2000	98	2039.5	2000	102
Silver	T	31.01	30	0.6	103	0.010431	0	<0.1	18.948	20	95
Cadmium	T	311.3	300	1.4	104	0.074785	0	<0.1	19.233	20	96
Tin		307.6	300	0.5	103	0.35856	0	>0.2	19.785	20	99
Antimony	T	58.92	60	0.8	98	0.14623	0	<0.25	19.476	20	97
Barium	T	310.2	300	0.7	103	0.40752	0	>0.25	20.078	20	100
Tungsten		32.14	30	1	107	0.18560	0	<1.0	19.295	20	96
Mercury		2.922	3	1.1	97	0.0041308	0	<0.1	1.9416	2	97
Thallium	T	304.1	300	2.2	101	0.0077403	0	<0.1	18.766	20	94
Lead	T	307.0	300	1.2	102	0.080727	0	>0.05	19.123	20	96
Uranium		305.7	300	1.3	102						
						0.0000052400	0	<0.1	19.160	20	96

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F155
Method : METHOD SW6020A
Sequence : IH6F22
Instrument ID: H6

CCV SampleID			CCV1			CCV2			CCV3		
CCV DataFileID			H6F22015			H6F22026			H6F22038		
CCV DateTime			6/26/220 10:48			6/26/220 11:19			6/26/220 12:01		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.3	97	1.4	23.8	95	1.9	24.6	98	4.2
Beryllium	T	25	24.8	99	1.6	24.1	97	3.2	24.2	97	3.8
Boron		50	55.6	111*	4	55.2	110	4.9	54.3	109	4.9
Sodium	T	25000	24700	99	1.8	24700	99	1.6	25100	100	0.2
Magnesium	T	25000	24500	98	2.6	24500	98	1.9	25100	100	0.9
Aluminum	T	25000	24300	97	2.6	24500	98	1.8	24800	99	1.5
Silicon		2500	2500	100	1.6	2460	98	0.8	2480	99	0.7
Phosphorus		250	240	96	2.4	238	95	2	249	100	0.6
Potassium	T	25000	25500	102	1.2	25300	101	0.7	25000	100	0.1
Calcium	T	25000	24900	100	1.9	24800	99	0.8	24900	100	0.2
Titanium		250	243	97	1.5	244	98	2.4	247	99	1.6
Vanadium	T	250	254	101	0.8	257	103	0.2	254	101	0.1
Chromium	T	250	253	101	0.4	258	103	0.5	254	102	0.7
Manganese	T	1500	1510	101	1.7	1520	101	1.8	1500	100	1.7
Iron	T	25000	25400	101	0.7	25300	101	0.6	25000	100	0.5
Cobalt	T	250	251	101	1.6	251	100	2.4	249	99	1.7
Nickel	T	250	256	102	0.4	260	104	0.4	259	104	0.9
Copper	T	250	258	103	0.7	262	105	1.1	256	102	1
Zinc	T	250	242	97	2.6	237	95	2.8	245	98	0.8
Arsenic	T	250	252	101	0.9	250	100	0.5	249	100	1
Selenium	T	250	254	102	1.9	255	102	2.1	257	103	0.1
Strontium		250	248	99	1.2	248	99	1.6	246	98	2.2
Zirconium		25	24.1	96	1.7	23.9	96	1.5	24.2	97	2
Molybdenum		250	247	99	1.3	241	96	0.2	244	98	2.7
Silver	T	25	24.0	96	1.5	24.0	96	1	24.5	98	1.7
Cadmium	T	250	238	95	1.1	238	95	1.1	245	98	0.4
Tin		250	245	98	1.2	246	99	0.6	247	99	0.8
Antimony	T	50	47.2	94	1	47.8	96	0.2	49.3	99	1.4
Barium	T	500	491	98	0.3	493	99	0.6	499	100	1.9
Tungsten		25	24.6	98	2.6	24.2	97	1.8	25.0	100	0.8
Mercury		2.5	2.40	96	0.8	2.42	97	0.8	2.49	99	1.2
Thallium	T	250	250	100	2.6	248	99	1.9	250	100	1.6
Lead	T	250	254	102	0.9	250	100	1.3	252	101	0.7
Uranium		250	247	99	1.3	248	99	0.1	247	99	1.5

| Unit: ug/L
| T: Target analyte
|%Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F155
Method : SW6020A
Sequence : IH6F22
Instrument ID: H6

		CB SampleID	CB DataFileID	CB DateTime	CCB1	CCB1	CCB2	CCB2	CCB3	CCB3
		: ICB	: H6F22009	: 6/26/22010:33	H6F22016	6/26/22010:53	H6F22027	6/26/22011:27	H6F22039	6/26/22012:06
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.09	>0	0.1	>0	0.09	>0	0.1	>0
Beryllium	T	0.10	0.003	<0.10	0.004	<0.10	0.005	<0.10	0.004	<0.10
Boron		5.0	0.3	<5.0	0.2	<5.0	0.5	<5.0	0.4	<5.0
Sodium	T	25	0.7	<25	8	<25	30	>25	20	<25
Magnesium	T	25	0.3	<25	1	<25	0.7	<25	0.5	<25
Aluminum	T	25	0.7	<25	1	<25	0.1	<25	0.4	<25
Silicon		20	0.8	<20	0.10	<20	0.2	<20	0.3	<20
Phosphorus		25	0.5	<25	2	<25	0.8	<25	2	<25
Potassium	T	25	0.7	<25	0.9	<25	2	<25	5	<25
Calcium	T	25	0.4	<25	0.4	<25	0.4	<25	0.3	<25
Titanium		0.5	0.01	<0.5	0.05	<0.5	0.08	<0.5	0.03	<0.5
Vanadium	T	0.25	0.10	<0.25	0.07	<0.25	0.3	>0.25	0.1	<0.25
Chromium	T	0.1	0.01	<0.1	0.02	<0.1	0.03	<0.1	0.04	<0.1
Manganese	T	0.25	0.06	<0.25	0.06	<0.25	0.009	<0.25	0.04	<0.25
Iron	T	25	0.6	<25	1	<25	0.02	<25	0.3	<25
Cobalt	T	0.1	0.007	<0.1	0.007	<0.1	0.002	<0.1	0.004	<0.1
Nickel	T	0.25	0.007	<0.25	0.004	<0.25	0.009	<0.25	0.004	<0.25
Copper	T	0.50	0.02	<0.50	0.10	<0.50	0.2	<0.50	0.2	<0.50
Zinc	T	5	0.008	<5	0.02	<5	0.07	<5	0.07	<5
Arsenic	T	0.125	0.007	<0.125	0.01	<0.125	0.02	<0.125	0.0009	<0.125
Selenium	T	0.15	0.05	<0.15	0.02	<0.15	0.004	<0.15	0.01	<0.15
Strontium		1.0	0.02	<1.0	0.005	<1.0	0.003	<1.0	0.0006	<1.0
Zirconium		2.0	0.002	<2.0	0.003	<2.0	0.003	<2.0	0.002	<2.0
Molybdenum		0.5	0.01	<0.5	0.02	<0.5	0.002	<0.5	0.003	<0.5
Silver	T	0.1	0.0005	<0.1	0.001	<0.1	0.001	<0.1	0.0003	<0.1
Cadmium	T	0.1	0.02	<0.1	0.02	<0.1	0.003	<0.1	0.008	<0.1
Tin		0.2	0.07	<0.2	0.03	<0.2	0.05	<0.2	0.04	<0.2
Antimony	T	0.25	0.0010	<0.25	0.003	<0.25	0.002	<0.25	0.001	<0.25
Barium	T	0.25	0.01	<0.25	0.02	<0.25	0.001	<0.25	0.007	<0.25
Tungsten		1.0	0.007	<1.0	0.009	<1.0	0.01	<1.0	0.001	<1.0
Mercury		0.1	0.004	<0.1	0.003	<0.1	0.001	<0.1	0.003	<0.1
Thallium	T	0.1	0.03	<0.1	0.02	<0.1	0.01	<0.1	0.0007	<0.1
Lead	T	0.05	0.03	<0.05	0.02	<0.05	0.006	<0.05	0.002	<0.05
Uranium		0.1	0.007	<0.1	0.008	<0.1	0.0001	<0.1	0.005	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6F22001.d		1	
2		CalBlk	BLANK		1101	H6F22002.d		1	
3		CalStd	S0		1102	H6F22003.d		1	
4		CalStd	S1		1104	H6F22004.d		2	
5		CalStd	S2		1105	H6F22005.d		3	
6		CalStd	S3		1106	H6F22006.d		4	
7		CalStd	S4		1107	H6F22007.d		5	
8		ICV	ICV		1204	H6F22008.d			1
9		ICB	ICB		1102	H6F22009.d			1
10		LLCCV	MRLF2601 ✓	1/100/10 ppb	1306	H6F22010.d			1
11		LLCCV2	MRLF2602	0.4/40/4 ppb	1307	H6F22011.d			1
12		ICS-A	ICSA1		1304	H6F22012.d			1
13		ICSB	ICSAB1		1305	H6F22013.d			1
14		Sample	MRLF2603	500 ppb CAT	1207	H6F22014.d			1
15		CCV	CCV1		1206	H6F22015.d			1
16		CCB	CCB1		1102	H6F22016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF035WB		2101	H6F22017.d			1
2		LCSW	IMF035WL		2102	H6F22018.d			1
3		LCSW	IMF035WC		2103	H6F22019.d			1
4		Sample	F170-04		2104	H6F22020.d			1
5		Sample	F170-06		2105	H6F22021.d			1
6		Sample	F170-02 Ca↑		2106	H6F22022.d			1
7		Sample	F170-03 Ca↑		2107	H6F22023.d			1
8		Sample	F170-05 Na Ca↑		2108	H6F22024.d			1
9		Sample	F164-01		2109	H6F22025.d			1
10		CCV	CCV2		1206	H6F22026.d			1
11		CCB	CCB2		1102	H6F22027.d			1
12		Sample	F170-06 ✓	UNDIG	3101	H6F22028.d			1
13		Sample	F170-02I		2110	H6F22029.d			10
14		Sample	F170-03I		2111	H6F22030.d			10
15		Sample	F170-05I		2112	H6F22031.d			10
16		Sample	F155-01 Na mg Ca↑		2201	H6F22032.d			1
17		Sample	F155-02 Na mg Ca↑		2202	H6F22033.d			1
18		Sample	F155-01I		2203	H6F22034.d			10
19		Sample	F155-02I		2204	H6F22035.d			10
20		LLCCV	MRLF2604	1/100/10 ppb Na V↑	1306	H6F22036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		LLCCV2	MRLF2605	0.4/40/4 ppb Na V ↑	1307	H6F22037.d			1
22		CCV	CCV3		1206	H6F22038.d			1
23		CCB	CCB3		1102	H6F22039.d			1
24		Blank	IMF029WB		2205	H6F22040.d			1
25		LCSW	IMF029WL		2206	H6F22041.d			1
26		LCSW	IMF029WC		2207	H6F22042.d			1
27		Sample	F154-06 Ca ↑		2208	H6F22043.d			1
28		Sample	F154-01 Na Ca ↑		2209	H6F22044.d			1
29		Sample	F154-02M Na Mg Ca ↑		2210	H6F22045.d			1
30		Sample	F154-02S		2211	H6F22046.d			1
31		Sample	F154-02A		2212	H6F22047.d			1
32		Sample	F154-02		2301	H6F22048.d			1
33		Sample	F154-02J		2302	H6F22049.d			5
34		CCV	CCV4		1206	H6F22050.d			1
35		CCB	CCB4		1102	H6F22051.d			1
36		Sample	F154-05 Na Ca ↑		2303	H6F22052.d			1
37		Sample	F162-01 Na Mg Ca ↑		2304	H6F22053.d			1
38		Sample	F162-02 Na Mg Ca ↑		2305	H6F22054.d			1
39		Sample	F162-04 Ca ↑		2306	H6F22055.d			1
40		Sample	F162-05 Na Mg Ca ↑		2307	H6F22056.d			1
41		Sample	F162-07 Na Mg Ca ↑		2308	H6F22057.d			1
42		Sample	F162-08 Mg Ca ↑		2309	H6F22058.d			1
43		Sample	F162-10 Ca ↑		2310	H6F22059.d			1
44		Sample	F162-11 Na Ca ↑		2311	H6F22060.d			1
45		CCV	CCV5		1206	H6F22061.d			1
46		CCB	CCB5		1102	H6F22062.d			1
47		Sample	F154-01I		2312	H6F22063.d			10
48		Sample	F154-02M		2401	H6F22064.d			10
49		Sample	F154-02S		2402	H6F22065.d			10
50		Sample	F154-02A		2403	H6F22066.d			10
51		Sample	F154-02I		2404	H6F22067.d			10
52		Sample	F154-02J		2405	H6F22068.d			50
53		Sample	F154-05I		2406	H6F22069.d			10
54		Sample	F154-06I		3101	H6F22070.d			10
55		CCV	CCV6		1206	H6F22071.d			1
56		CCB	CCB6		1102	H6F22072.d			1
57		Sample	F162-01I		2407	H6F22073.d			10
58		Sample	F162-02I		2408	H6F22074.d			10
59		Sample	F162-04I		2409	H6F22075.d			10
60		Sample	F162-05I		2410	H6F22076.d			10
61		Sample	F162-07I		2411	H6F22077.d			10
62		Sample	F162-08I		2412	H6F22078.d			10
63		Sample	F162-10I		2501	H6F22079.d			10
64		Sample	F162-11I		2502	H6F22080.d			10
65		CCV	CCV7		1206	H6F22081.d			1
66		CCB	CCB7		1102	H6F22082.d			1
67		LLCCV	MRLF2606 ✓	1/100/10 ppb	1306	H6F22083.d			1
68		LLCCV2	MRLF2607	0.4/40/4 ppb	1307	H6F22084.d			1
69		Blank	IMF013SB		3201	H6F22085.d			1
70		LCSS	IMF013SL		3202	H6F22086.d			1
71		LCSS	IMF013SC		3203	H6F22087.d			1
72		Sample	F106-24		3204	H6F22088.d			1

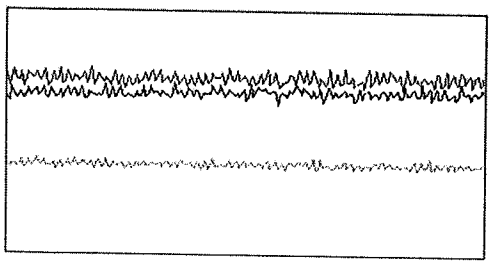
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	F107-10		3205	H6F22089.d			1
74		CCV	CCV8		1206	H6F22090.d			1
75		CCB	CCB8		1102	H6F22091.d			1
76		Sample	F176-02M		2503	H6F22092.d			5
77		Sample	F176-02S		2504	H6F22093.d			5
78		Sample	F176-02A		2505	H6F22094.d			5
79		Sample	F176-02G		2506	H6F22095.d			5
80		Sample	F176-02J		2507	H6F22096.d			25
81		Sample	F176-04G		2508	H6F22097.d			5
82		Sample	F176-06G		2509	H6F22098.d			5
83		CCV	CCV9		1206	H6F22099.d			1
84		CCB	CCB9		1102	H6F22100.d			1
85		Sample	F176-08G		2510	H6F22101.d			5
86		Sample	F176-09G		2511	H6F22102.d			5
87		Sample	F176-10G		2512	H6F22103.d			5
88		Sample	F176-11G		3101	H6F22104.d			5
89		Sample	F176-12G		3102	H6F22105.d			5
90		Sample	F176-13G		3103	H6F22106.d			5
91		ICS-A	ICSA2		1304	H6F22107.d			1
92		ICSB	ICSAB2		1305	H6F22108.d			1
93		CCV	CCV10		1206	H6F22109.d			1
94		CCB	CCB10		1102	H6F22110.d			1
95		Sample	F176-02M		3104	H6F22111.d			1
96		Sample	F176-02S		3105	H6F22112.d			1
97		Sample	F176-02A		3106	H6F22113.d			1
98		Sample	F176-02		3107	H6F22114.d			1
99		Sample	F176-02J		3108	H6F22115.d			5
100		Sample	F176-04		3109	H6F22116.d			1
101		Sample	F176-06		3110	H6F22117.d			1
102		CCV	CCV11		1206	H6F22118.d			1
103		CCB	CCB11		1102	H6F22119.d			1
104		Sample	F176-08		3111	H6F22120.d			1
105		Sample	F176-09		3112	H6F22121.d			1
106		Sample	F176-10		3201	H6F22122.d			1
107		Sample	F176-11		3202	H6F22123.d			1
108		Sample	F176-12		3203	H6F22124.d			1
109		Sample	F176-13		3204	H6F22125.d			1
110		ICS-A	ICSA3		1304	H6F22126.d			1
111		ICSB	ICSAB3		1305	H6F22127.d			1
112		CCV	CCV12		1206	H6F22128.d			1
113		CCB	CCB12		1102	H6F22129.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-06-26 09:06:44
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



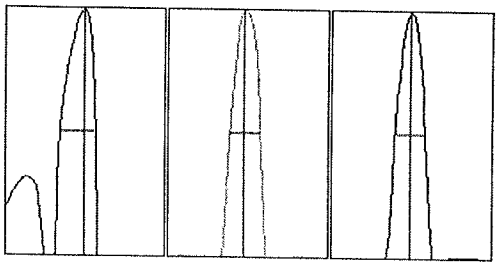
Mass	Range	Count	RSD%	Background
7	10000	7247	2.967	0.150
89	50000	18479	3.240	0.900
205	20000	13284	2.557	3.050

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.319 %
Doubly Charged	70 / 140 1.454 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	7126.74	7.00	0.65	0.77
89	18082.03	88.95	0.57	0.75
205	12905.61	205.00	0.56	0.75

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.08 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.2 V	Deflect	13.0 V
Extract 2	-175.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.03 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9997		
Mass Offset	124	Axis Offset	-0.07		

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.08	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.16E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	31.6	°C
Nebulizer Gas(DP)	6.16E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.59E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.99E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.21E+2	Pa
Analyzer Press	6.52E-5	Pa
IG HV	178	V
IG Emission	4.98	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.1	%
TMP Current	2.78	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.7	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.8	V
+U Voltage	8.8	V

Name	Value	Unit
-U Voltage	-14.5	V
V Voltage	42.1	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.8	V
-120V	-133.8	V
-720V	-738.2	V
Prefilter Bias	-5.01	V
Pickup Heater I	0.08	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2405	V
Pulse HV	1557	V
EM Gate	-36.2	V
Pulse Gate	341.8	V
EM Entrance	0.2	V
EM HV Gain	-1051.3	V
Inner Pole	-300.3	V
Outer Pole	20.1	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.6	V
Forward Power	1549	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.43	A
Drain I 2	10.96	A
Drain I 3	10.92	A
Drain I 4	10.21	A
Temp Sensor	2.8	V
Driver I	5.60	A

Name	Value	Unit
Igniter	0.1	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.61E-1	kPa
ORS AMFC Temp	31.4	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-175.3	V
Omega Bias	-90.1	V
Omega Lens	7.1	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.0	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	30.6	°C
Internal Temp	36.2	°C
+24V	23.6	V
Water Temp	18.8	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

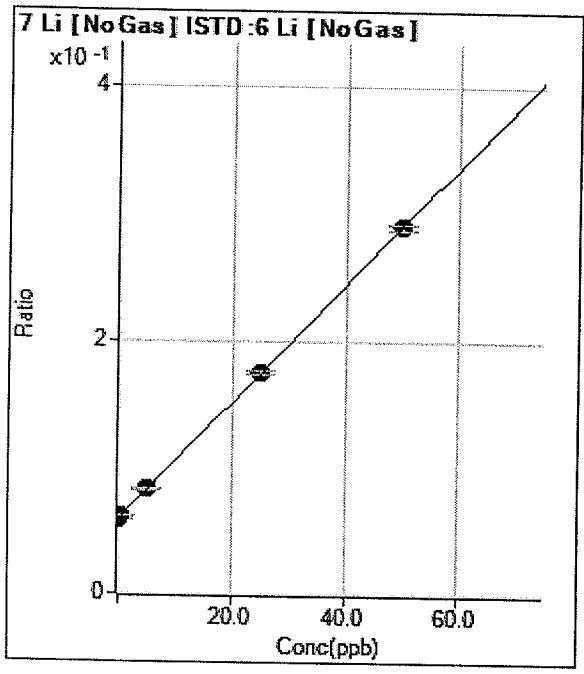
Performance Report History

Sensitivity

Calibration for H6F22129.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b\
Analysis File:	IH6F22.batch.bin
DA Date-Time:	2020-06-26 16:08:30
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

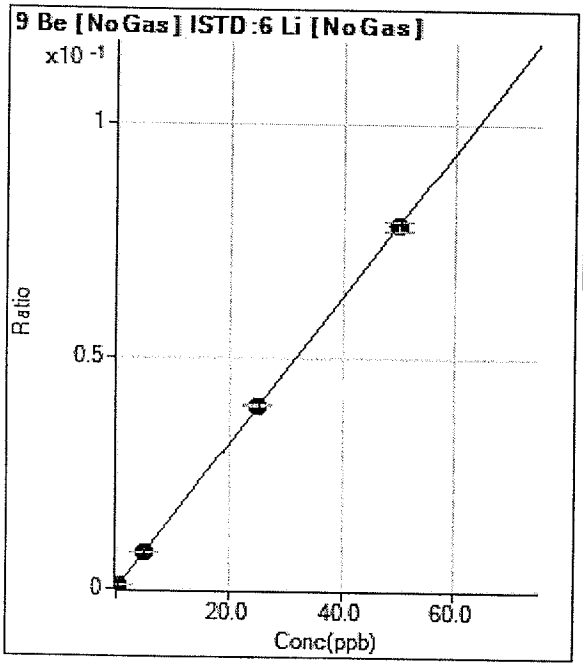
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6F22003.d	S0	2020-06-26 10:13:52
2	H6F22004.d	S1	2020-06-26 10:16:43
3	H6F22005.d	S2	2020-06-26 10:19:33
4	H6F22006.d	S3	2020-06-26 10:22:33
5	H6F22007.d	S4	2020-06-26 10:25:23



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107277.57	0.0585	P	1.9
2	☐	0.500	0.501	113456.89	0.0608	P	0.7
3	☐	5.000	5.122	152974.61	0.0822	P	1.0
4	☐	25.000	25.249	316906.47	0.1754	P	1.7
5	☐	50.000	49.863	522113.21	0.2893	P	1.9

y = 0.0046 * x + 0.0585
R = 1.0000
DL = 0.7082
BEC = 12.64

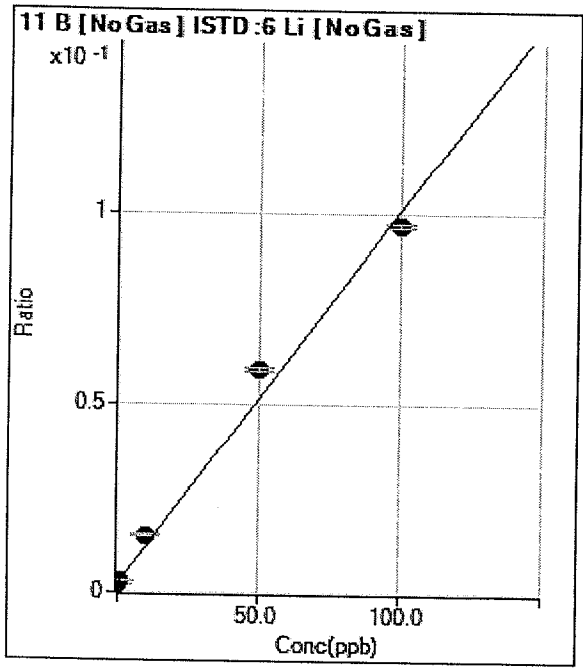
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37.78	0.0000	P	13.4
2	☐	0.500	0.488	1466.74	0.0008	P	2.0
3	☐	5.000	5.037	14749.95	0.0079	P	2.0
4	☐	25.000	25.238	71627.01	0.0396	P	1.0
5	☐	50.000	49.877	141322.42	0.0783	P	2.8

y = 0.0016 * x + 2.0598E-005
R = 1.0000
DL = 0.005266
BEC = 0.01312

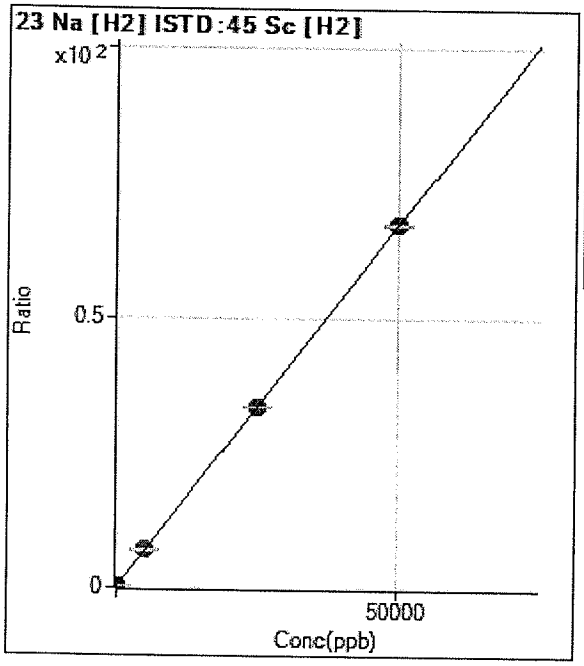
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3679.37	0.0020	P	2.6
2	☐	0.500	0.893	5391.04	0.0029	P	3.5
3	☐	10.000	13.189	28001.18	0.0150	P	1.7
4	☐	50.000	57.636	106612.07	0.0590	P	1.0
5	☐	100.000	95.861	174690.98	0.0968	P	1.2

y = 9.8882E-004 * x + 0.0020
R = 0.9951
DL = 0.1588
BEC = 2.029

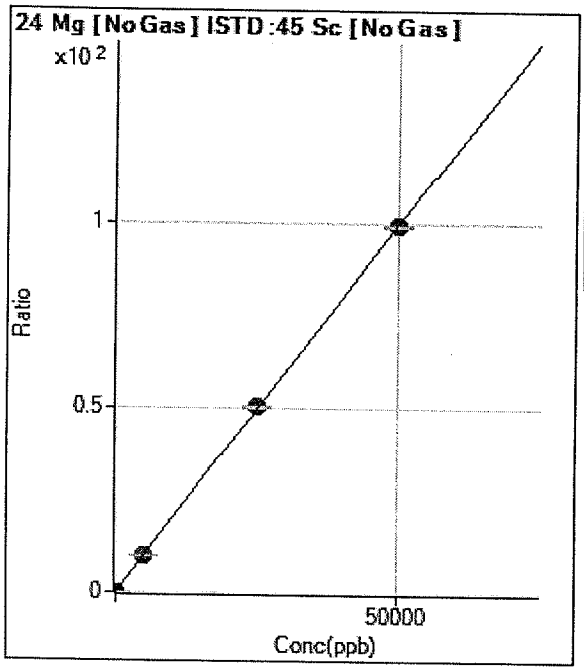
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400057.54	0.1247	P	1.0
2	☐	50.000	53.907	639662.90	0.1971	P	1.2
3	☐	5000.000	5102.978	22472592.67	6.9763	A	1.2
4	☐	25000.000	24875.339	108905344.00	33.5238	A	0.9
5	☐	50000.000	50052.029	215298154.67	67.3276	A	0.7

y = 0.0013 * x + 0.1247
R = 1.0000
DL = 2.659
BEC = 92.9

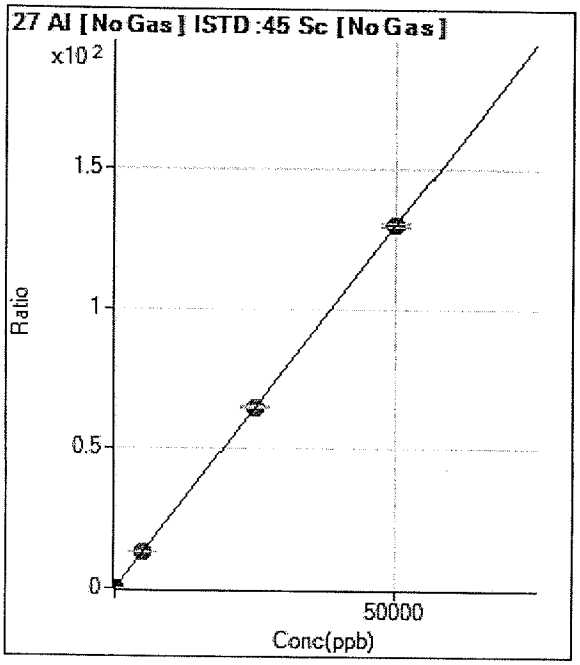
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27330.74	0.0052	P	2.9
2	☐	50.000	53.103	596830.38	0.1109	P	1.5
3	☐	5000.000	5116.253	54577372.00	10.1949	A	0.5
4	☐	25000.000	25290.926	266286757.33	50.3756	A	0.8
5	☐	50000.000	49842.908	525115914.67	99.2742	A	0.5

y = 0.0020 * x + 0.0052
R = 1.0000
DL = 0.2284
BEC = 2.603

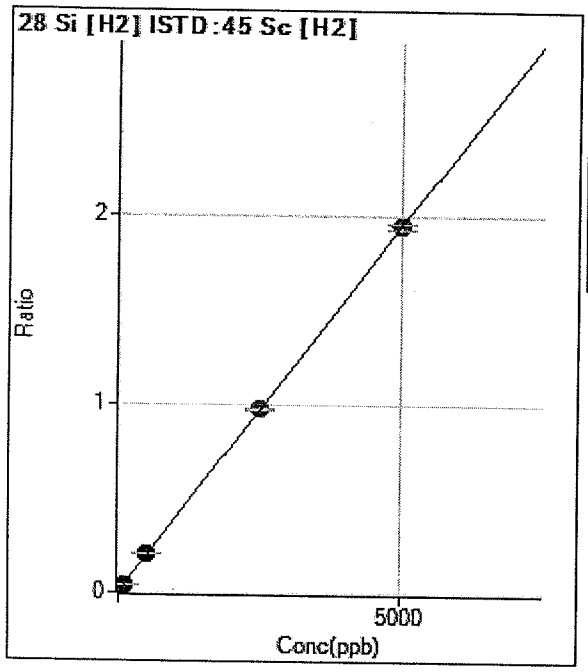
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9022.96	0.0017	P	7.7
2	☐	50.000	52.621	744479.13	0.1384	P	1.7
3	☐	5000.000	5051.799	70249423.96	13.1238	A	1.6
4	☐	25000.000	25004.448	343325328.22	64.9510	A	1.5
5	☐	50000.000	49992.594	686882496.43	129.8580	A	1.0

y = 0.0026 * x + 0.0017
R = 1.0000
DL = 0.152
BEC = 0.6589

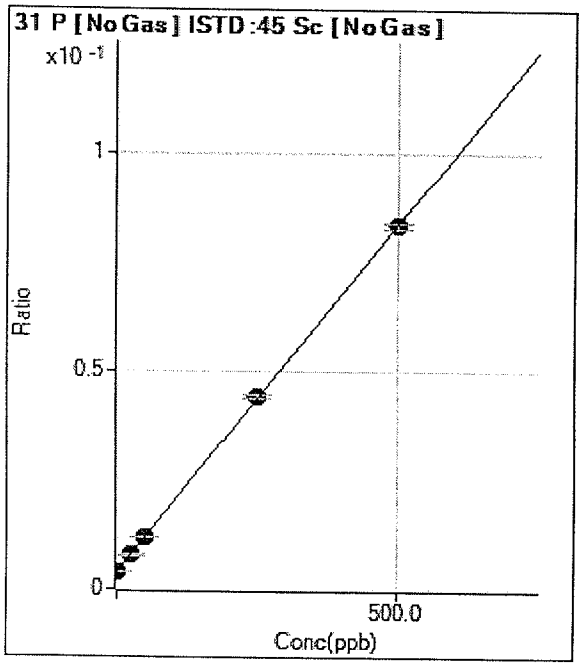
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3723.83	0.0012	P	1.3
2	☐	100.000	100.363	130494.54	0.0402	P	1.5
3	☐	500.000	521.164	656946.84	0.2040	P	1.9
4	☐	2500.000	2502.342	3166854.83	0.9748	A	0.7
5	☐	5000.000	4996.705	6220790.00	1.9454	A	1.6

y = 3.8911E-004 * x + 0.0012
R = 1.0000
DL = 0.1168
BEC = 2.983

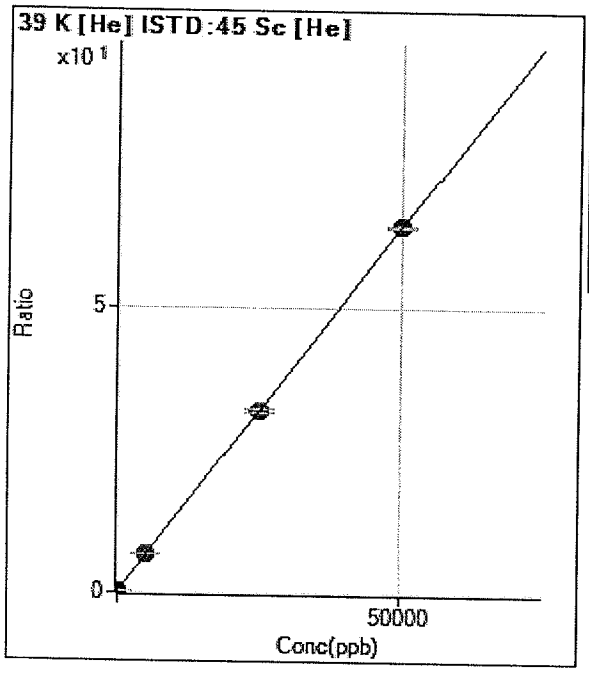
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21333.03	0.0040	P	1.3
2	☐	25.000	23.418	41848.23	0.0078	P	2.3
3	☐	50.000	50.624	64868.35	0.0121	P	0.6
4	☐	250.000	253.068	234646.94	0.0444	P	1.7
5	☐	500.000	498.483	441749.50	0.0835	P	1.7

y = 1.5942E-004 * x + 0.0040
R = 1.0000
DL = 0.9895
BEC = 25.38

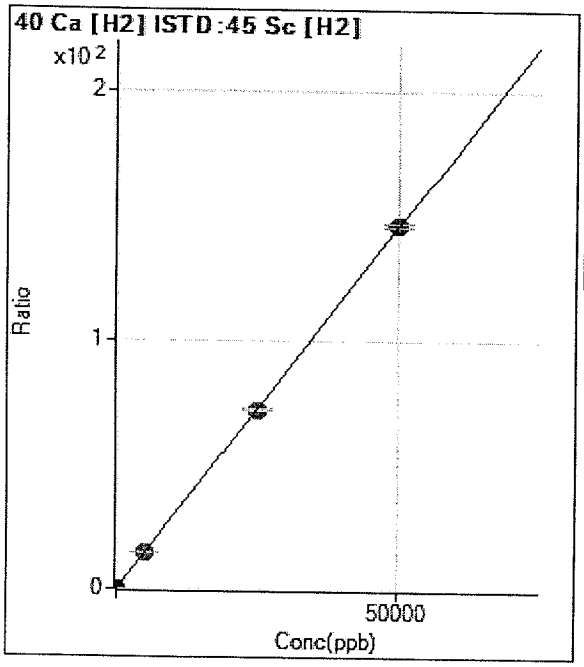
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	101182.78	0.1733	P	2.0
2	☐	50.000	49.715	143690.33	0.2367	P	2.0
3	☐	5000.000	5093.764	3981751.50	6.6671	A	0.1
4	☐	25000.000	24871.960	19119142.67	31.8814	A	1.2
5	☐	50000.000	50054.644	37651220.00	63.9857	A	0.5

y = 0.0013 * x + 0.1733
R = 1.0000
DL = 7.983
BEC = 135.9

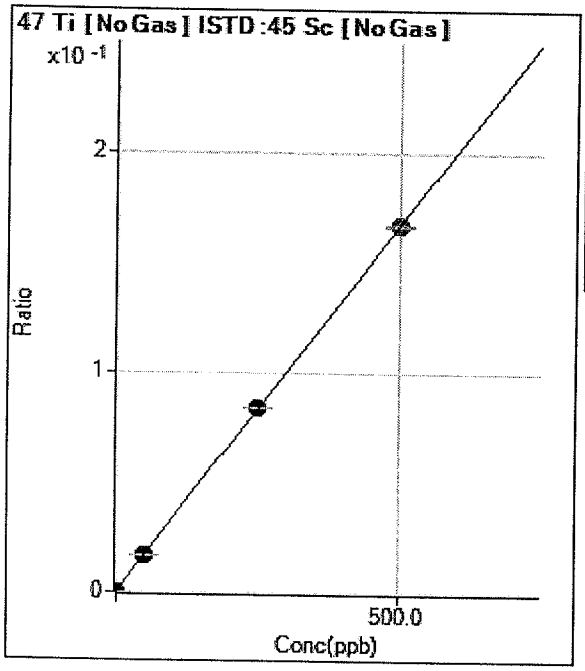
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	134898.41	0.0421	P	0.7
2	☐	50.000	61.007	714788.73	0.2203	P	1.1
3	☐	5000.000	5064.435	47787988.00	14.8355	A	1.5
4	☐	25000.000	24763.234	235123573.33	72.3768	A	0.6
5	☐	50000.000	50111.929	468210709.33	146.4218	A	1.1

y = 0.0029 * x + 0.0421
R = 1.0000
DL = 0.2895
BEC = 14.4

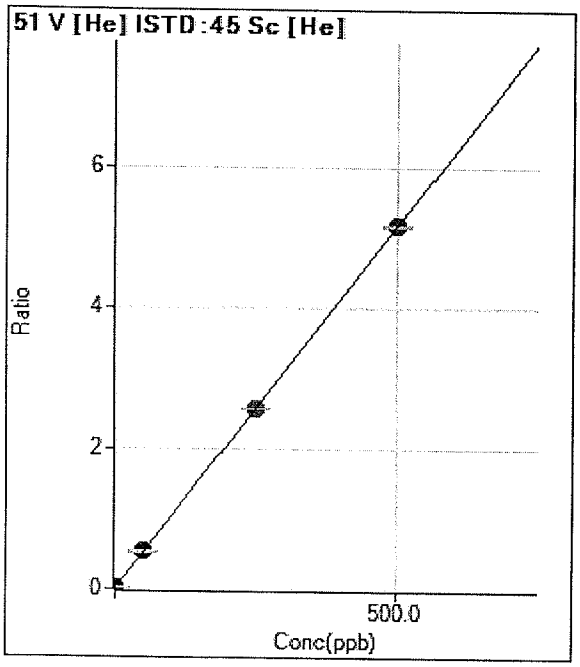
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	476.68	0.0001	P	4.3
2	☐	0.500	0.446	1288.06	0.0002	P	4.6
3	☐	50.000	49.667	89269.93	0.0167	P	0.3
4	☐	250.000	250.967	443433.34	0.0839	P	0.6
5	☐	500.000	499.550	882799.27	0.1669	M	0.7

y = 3.3391E-004 * x + 9.0394E-005
R = 1.0000
DL = 0.03462
BEC = 0.2707

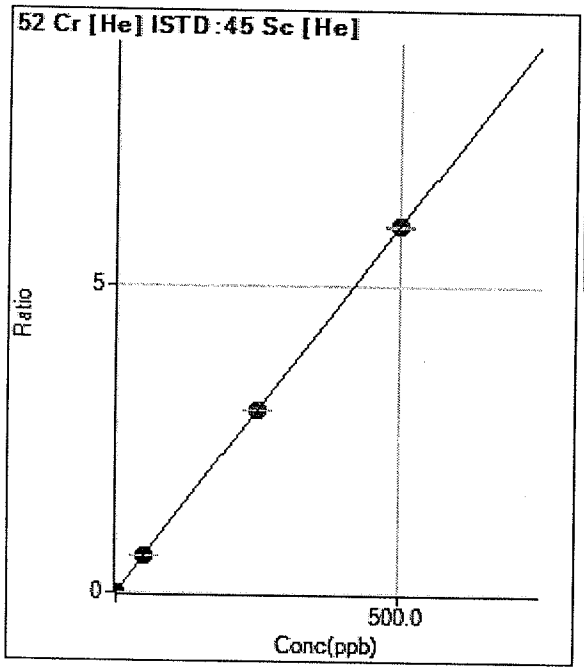
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6548.90	0.0112	P	1.0
2	☐	0.500	0.320	8816.16	0.0145	P	1.7
3	☐	50.000	50.997	320829.67	0.5372	P	1.8
4	☐	250.000	248.935	1546369.29	2.5787	A	0.1
5	☐	500.000	500.433	3043591.42	5.1726	A	0.7

y = 0.0103 * x + 0.0112
R = 1.0000
DL = 0.03223
BEC = 1.087

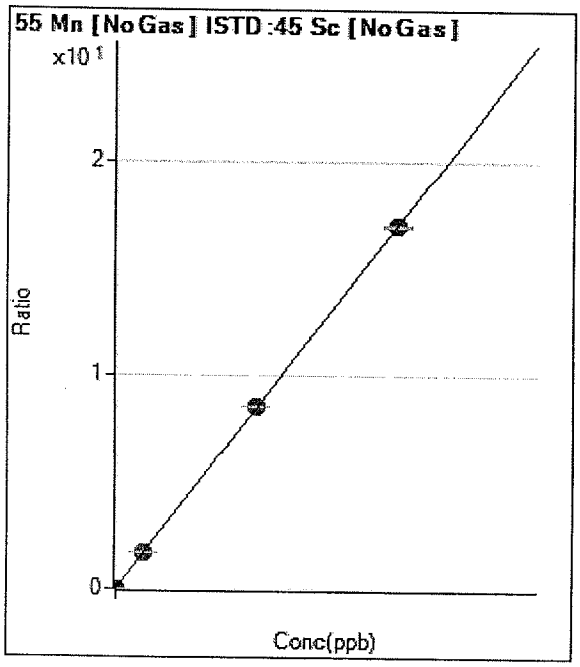
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1209.39	0.0021	P	3.1
2	☐	0.500	0.512	4964.90	0.0082	P	2.1
3	☐	50.000	51.387	367079.05	0.6146	P	0.6
4	☐	250.000	248.852	1780108.04	2.9685	A	0.7
5	☐	500.000	500.435	3511378.67	5.9675	A	0.8

y = 0.0119 * x + 0.0021
R = 1.0000
DL = 0.01616
BEC = 0.1737

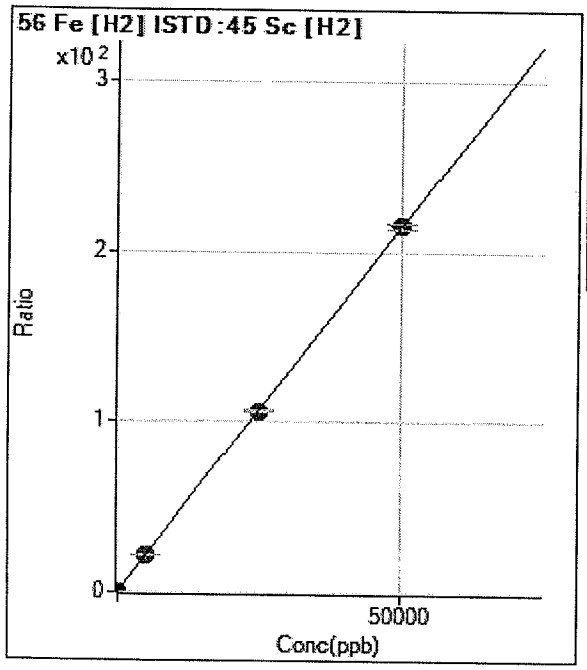
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9121.04	0.0017	P	2.3
2	☐	0.500	0.503	24661.53	0.0046	P	1.3
3	☐	300.000	304.827	9268185.67	1.7314	A	0.9
4	☐	1500.000	1507.791	45231848.00	8.5571	A	0.4
5	☐	3000.000	2995.622	89917986.67	16.9992	A	0.3

y = 0.0057 * x + 0.0017
R = 1.0000
DL = 0.02085
BEC = 0.3049

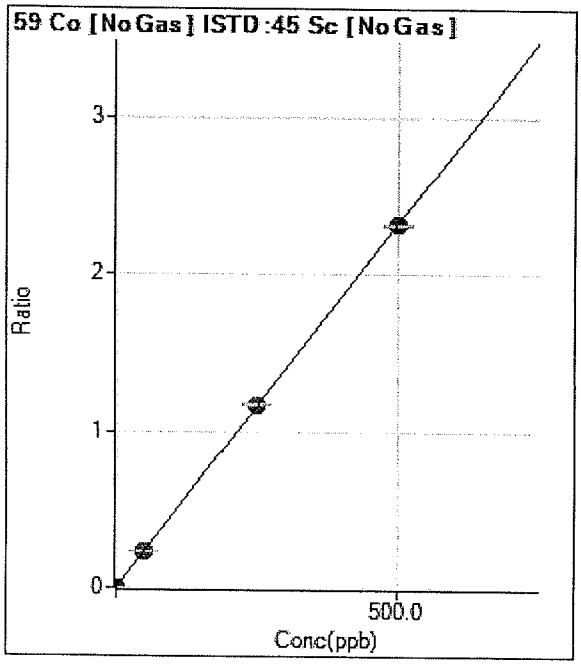
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9666.09	0.0030	P	3.2
2	☐	50.000	53.930	762463.85	0.2349	P	0.8
3	☐	5000.000	5117.117	70898853.33	22.0099	A	1.4
4	☐	25000.000	24789.662	346349685.33	106.6146	A	0.6
5	☐	50000.000	50093.453	688876117.33	215.4372	A	1.6

y = 0.0043 * x + 0.0030
R = 1.0000
DL = 0.06675
BEC = 0.7008

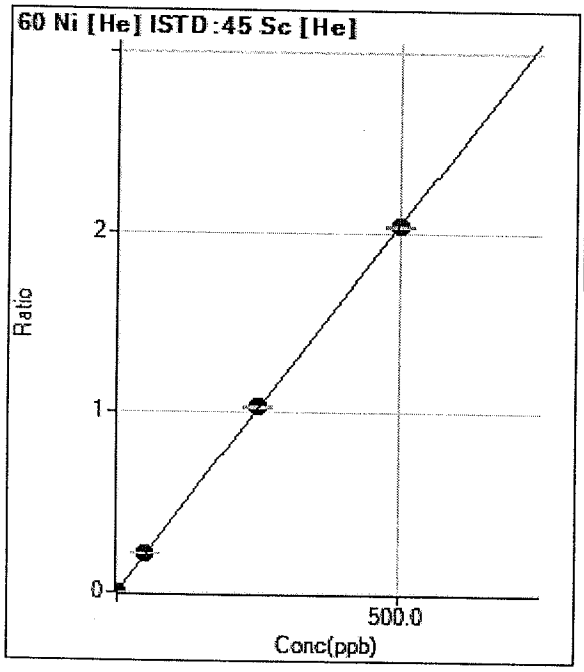
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	253.33	0.0000	P	11.5
2	☐	0.500	0.521	13263.78	0.0025	P	2.0
3	☐	50.000	51.155	1271541.08	0.2375	A	0.8
4	☐	250.000	252.367	6193089.50	1.1716	A	0.8
5	☐	500.000	498.701	12246239.67	2.3152	A	0.7

y = 0.0046 * x + 4.8025E-005
R = 1.0000
DL = 0.003584
BEC = 0.01034

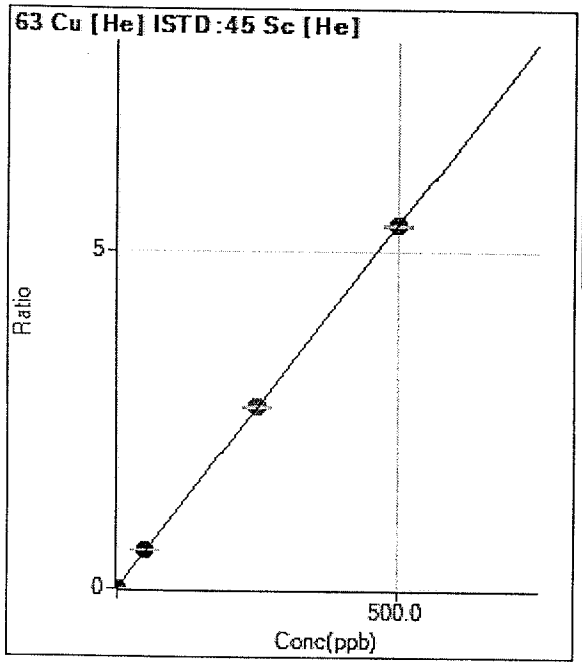
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	127.33	0.0002	P	12.9
2	☐	0.500	0.554	1509.42	0.0025	P	5.7
3	☐	50.000	52.342	128073.24	0.2144	P	0.5
4	☐	250.000	253.030	621163.21	1.0358	P	0.8
5	☐	500.000	498.251	1200083.54	2.0395	A	0.3

y = 0.0041 * x + 2.1811E-004
R = 1.0000
DL = 0.02061
BEC = 0.05329

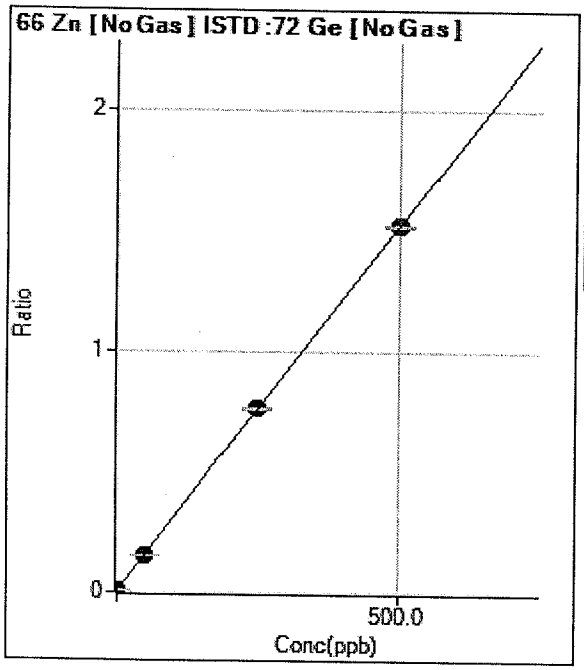
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2564.91	0.0044	P	1.1
2	☐	0.500	0.463	5698.53	0.0094	P	1.5
3	☐	50.000	53.055	344308.34	0.5765	P	0.2
4	☐	250.000	250.314	1621313.09	2.7037	A	0.5
5	☐	500.000	499.537	3172209.42	5.3912	A	0.7

y = 0.0108 * x + 0.0044
R = 1.0000
DL = 0.01313
BEC = 0.4074

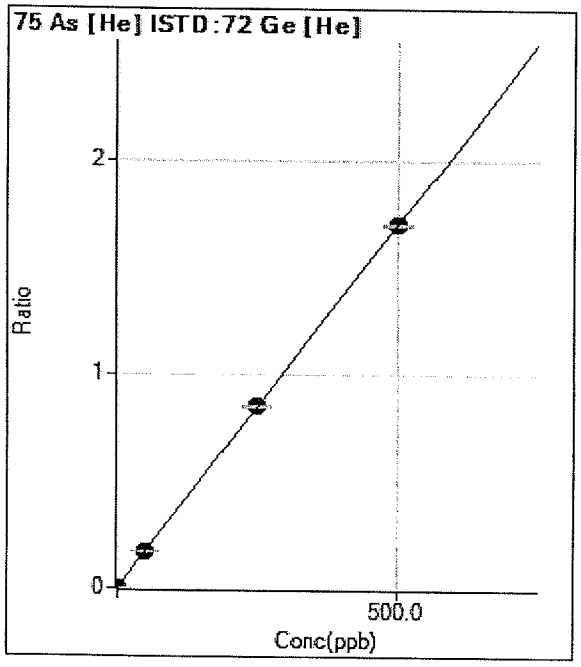
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2090.83	0.0016	P	2.3
2	☐	1.000	1.571	8820.86	0.0063	P	1.4
3	☐	50.000	49.527	209650.23	0.1520	P	0.5
4	☐	250.000	250.186	1025697.56	0.7614	P	0.9
5	☐	500.000	499.953	2034346.00	1.5199	A	0.9

y = 0.0030 * x + 0.0016
R = 1.0000
DL = 0.03577
BEC = 0.5181

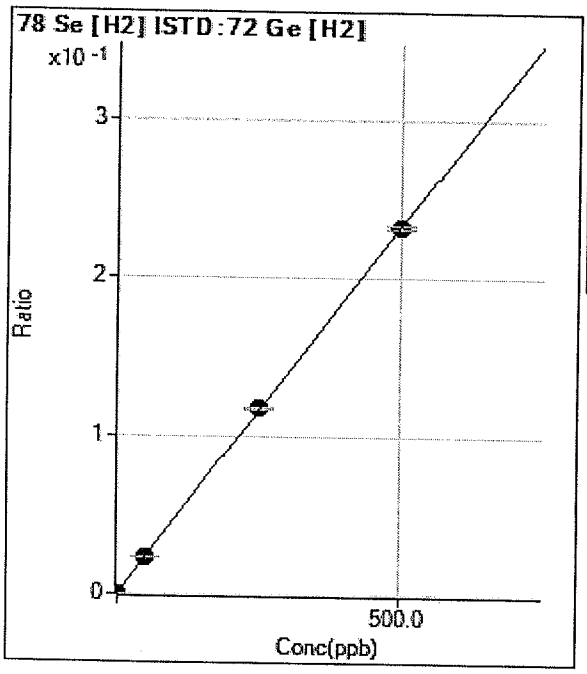
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	315.00	0.0009	P	6.9
2	☐	0.500	0.458	928.70	0.0024	P	6.0
3	☐	50.000	50.252	65680.76	0.1719	P	1.0
4	☐	250.000	250.385	321727.92	0.8531	P	0.8
5	☐	500.000	499.782	634083.98	1.7019	P	0.2

y = 0.0034 * x + 8.5435E-004
R = 1.0000
DL = 0.05231
BEC = 0.251

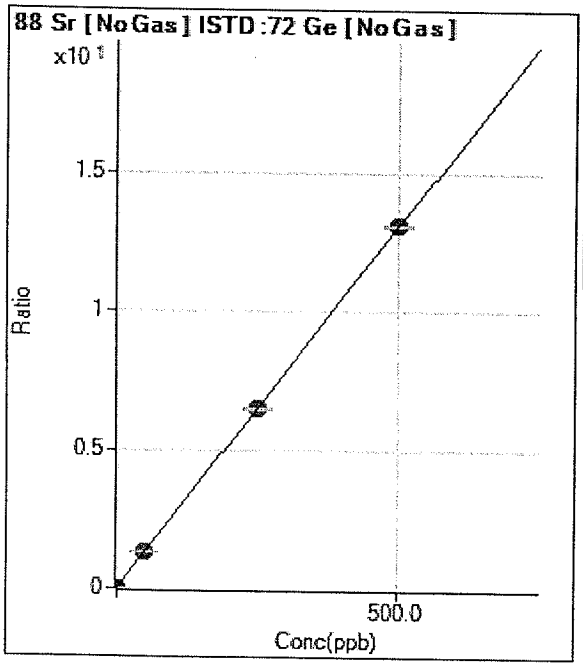
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19.00	0.0000	P	18.4
2	☐	0.500	0.522	246.33	0.0003	P	5.5
3	☐	50.000	51.091	22145.49	0.0238	P	0.5
4	☐	250.000	252.756	108207.87	0.1177	P	0.8
5	☐	500.000	498.513	213494.19	0.2321	P	1.2

y = 4.6553E-004 * x + 2.0993E-005
R = 1.0000
DL = 0.02489
BEC = 0.04509

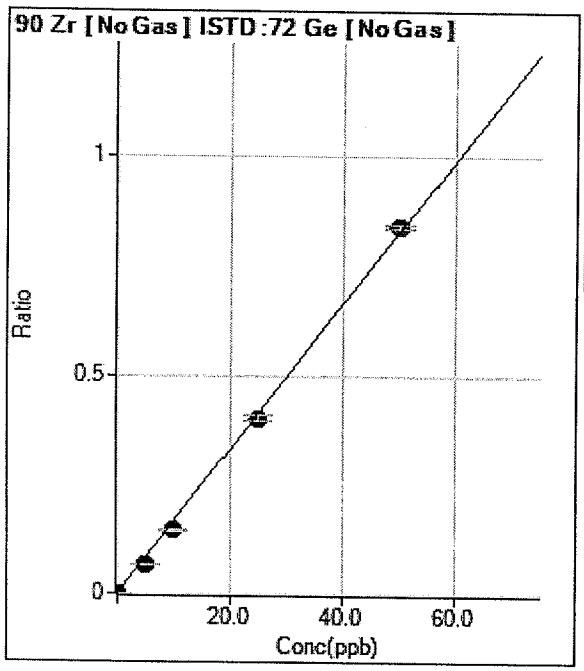
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0005	P	15.0
2	☐	0.500	0.493	18646.33	0.0134	P	2.1
3	☐	50.000	49.352	1778229.51	1.2891	A	0.9
4	☐	250.000	248.266	8733576.87	6.4829	A	0.7
5	☐	500.000	500.932	17507492.08	13.0801	A	0.8

y = 0.0261 * x + 5.3948E-004
R = 1.0000
DL = 0.009283
BEC = 0.02066

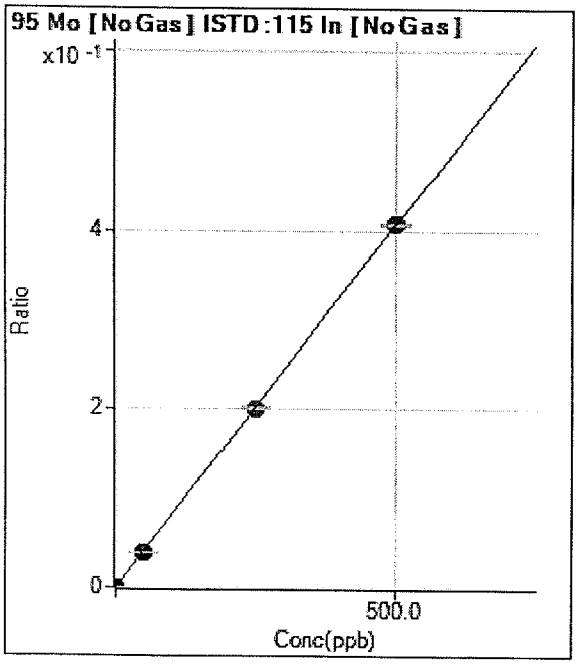
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.67	0.0001	P	11.0
2	☐	5.000	4.131	95227.52	0.0685	P	0.8
3	☐	10.000	8.773	200401.90	0.1453	P	1.5
4	☐	25.000	24.304	541877.09	0.4023	P	2.5
5	☐	50.000	50.680	1122528.42	0.8387	A	1.1

y = 0.0165 * x + 1.3288E-004
R = 0.9996
DL = 0.002656
BEC = 0.008031

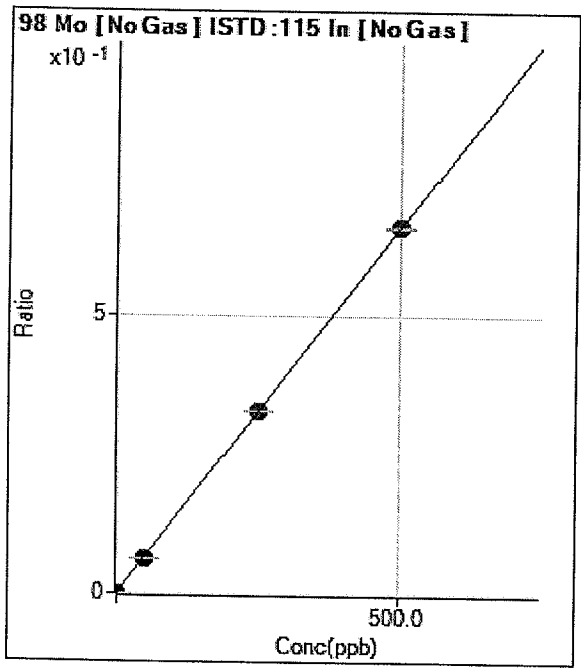
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54.44	0.0000	P	22.5
2	☐	0.500	0.514	3717.19	0.0004	P	3.3
3	☐	50.000	47.934	340781.02	0.0390	P	2.1
4	☐	250.000	248.063	1699527.09	0.2016	A	1.5
5	☐	500.000	501.175	3403505.07	0.4072	A	0.7

y = 8.1258E-004 * x + 6.2156E-006
R = 1.0000
DL = 0.005172
BEC = 0.007649

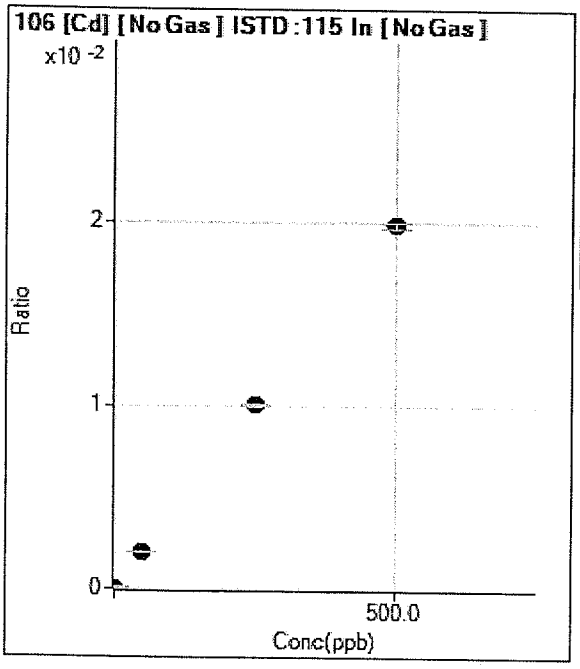
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	154.45	0.0000	P	16.7
2	☐	0.500	0.489	5797.94	0.0007	P	0.6
3	☐	50.000	47.672	548864.80	0.0627	P	2.8
4	☐	250.000	249.158	2764470.79	0.3279	A	0.3
5	☐	500.000	500.654	5505800.89	0.6588	A	0.5

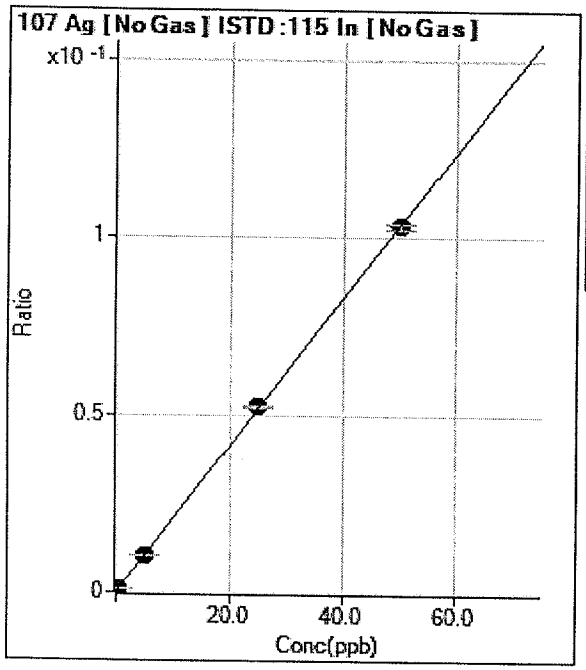
y = 0.0013 * x + 1.7659E-005
R = 1.0000
DL = 0.006737
BEC = 0.01342

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		6.67	0.0000	P	60.8
2	☐	0.500		455.01	0.0001	P	2.9
3	☐	50.000		17412.09	0.0020	P	1.6
4	☐	250.000		85086.33	0.0101	P	0.9
5	☐	500.000		165907.87	0.0199	P	1.6

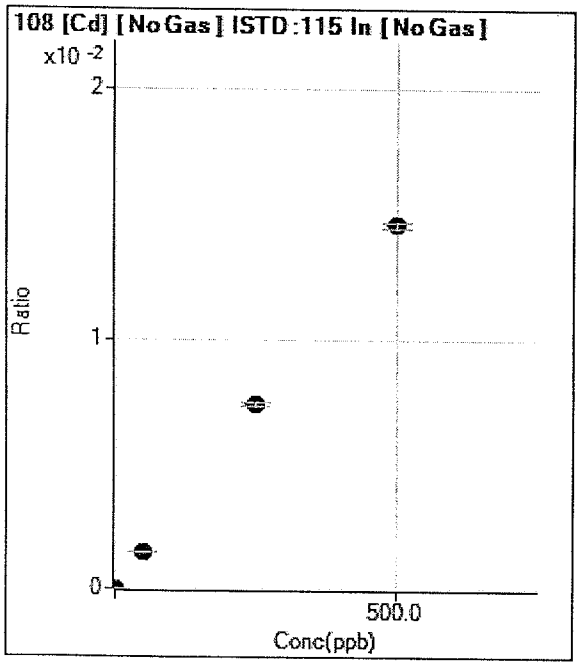
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0000	P	27.5
2	☐	0.500	0.520	9551.23	0.0011	P	1.8
3	☐	5.000	5.026	91123.22	0.0104	P	0.5
4	☐	25.000	25.287	441431.89	0.0524	P	1.3
5	☐	50.000	49.853	862475.51	0.1032	P	1.8

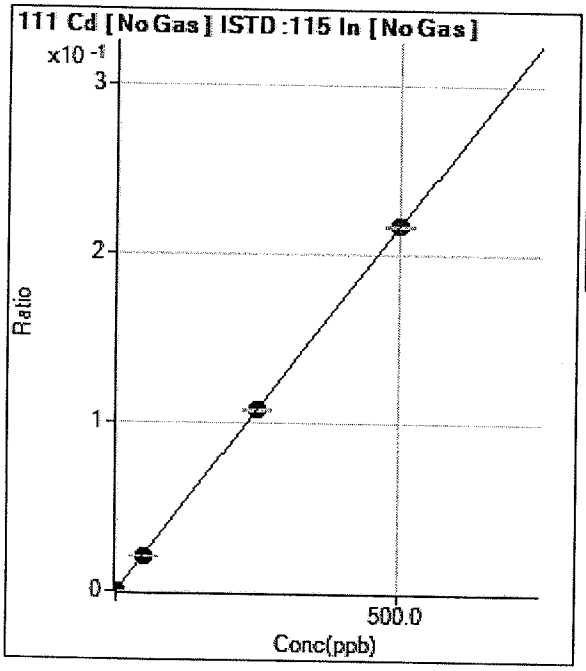
y = 0.0021 * x + 1.1798E-005
R = 1.0000
DL = 0.004705
BEC = 0.005699

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		7.00	0.0000	P	29.2
2	☐	0.500		226.33	0.0000	P	14.6
3	☐	50.000		12806.19	0.0015	P	1.1
4	☐	250.000		62574.71	0.0074	P	1.8
5	☐	500.000		121916.23	0.0146	P	1.4

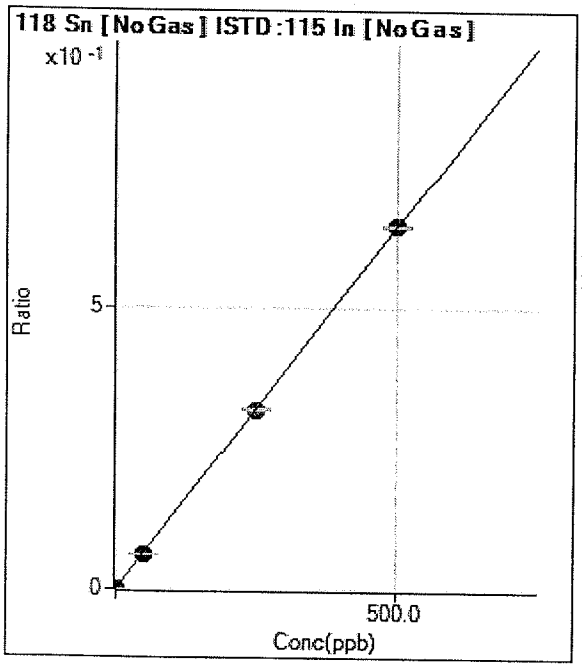
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.92	0.0000	P	20.7
2	☐	0.500	0.529	2047.91	0.0002	P	2.7
3	☐	50.000	48.667	184086.19	0.0210	P	0.4
4	☐	250.000	248.512	905752.50	0.1074	P	1.5
5	☐	500.000	500.877	1809577.17	0.2165	A	0.6

y = 4.3228E-004 * x + 4.6731E-006
R = 1.0000
DL = 0.0067
BEC = 0.01081

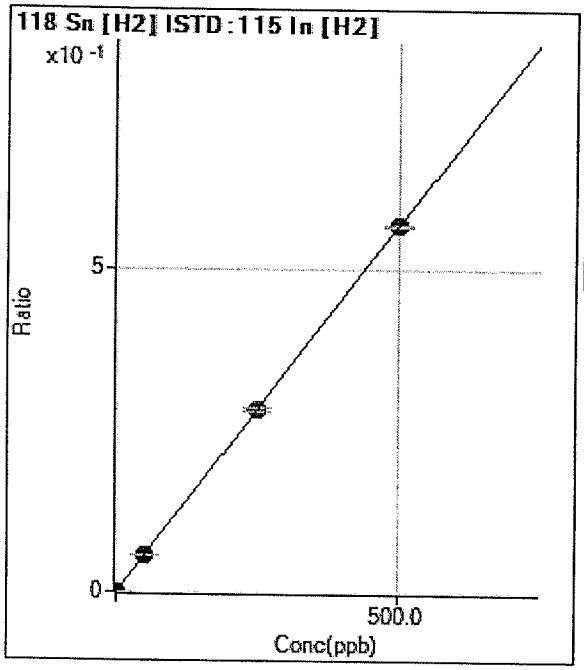
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1496.75	0.0002	P	4.2
2	☐	0.500	0.434	6409.35	0.0007	P	6.3
3	☐	50.000	47.633	539529.87	0.0617	P	0.6
4	☐	250.000	248.060	2701878.64	0.3205	A	0.7
5	☐	500.000	501.207	5409921.03	0.6473	A	0.3

y = 0.0013 * x + 1.7105E-004
R = 1.0000
DL = 0.01673
BEC = 0.1325

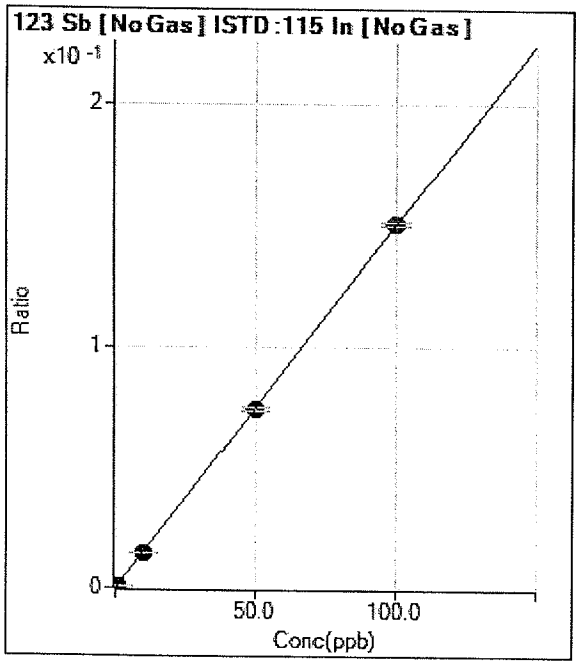
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1144.50	0.0002	P	5.3
2	☐	0.500	0.452	4809.77	0.0007	P	2.7
3	☐	50.000	50.071	402916.03	0.0571	P	0.5
4	☐	250.000	249.394	1955041.31	0.2839	A	1.3
5	☐	500.000	500.296	3888788.18	0.5694	A	0.6

y = 0.0011 * x + 1.6053E-004
R = 1.0000
DL = 0.0226
BEC = 0.1411

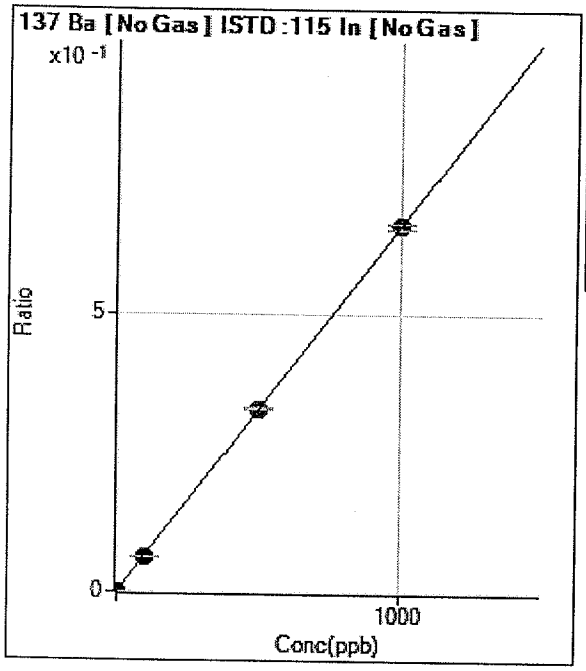
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	125.56	0.0000	P	28.2
2	☐	0.500	0.480	6439.37	0.0007	P	3.5
3	☐	10.000	9.649	126759.06	0.0145	P	0.7
4	☐	50.000	49.492	626080.69	0.0743	P	1.3
5	☐	100.000	100.289	1257398.32	0.1505	A	1.1

y = 0.0015 * x + 1.4346E-005
R = 1.0000
DL = 0.008084
BEC = 0.009563

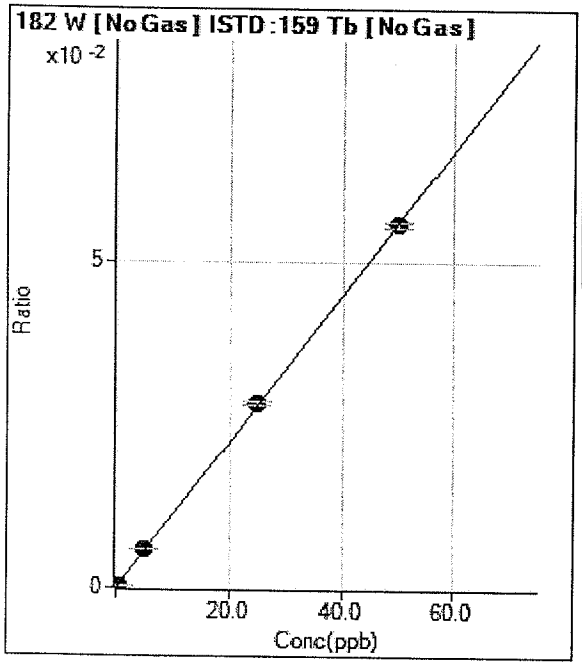
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0000	P	11.9
2	☐	0.500	0.549	3291.53	0.0004	P	2.5
3	☐	100.000	95.435	551137.46	0.0630	P	0.6
4	☐	500.000	500.377	2784517.04	0.3303	A	0.8
5	☐	1000.000	1000.268	5517116.03	0.6602	A	1.3

y = 6.6000E-004 * x + 1.2956E-005
R = 1.0000
DL = 0.007015
BEC = 0.01963

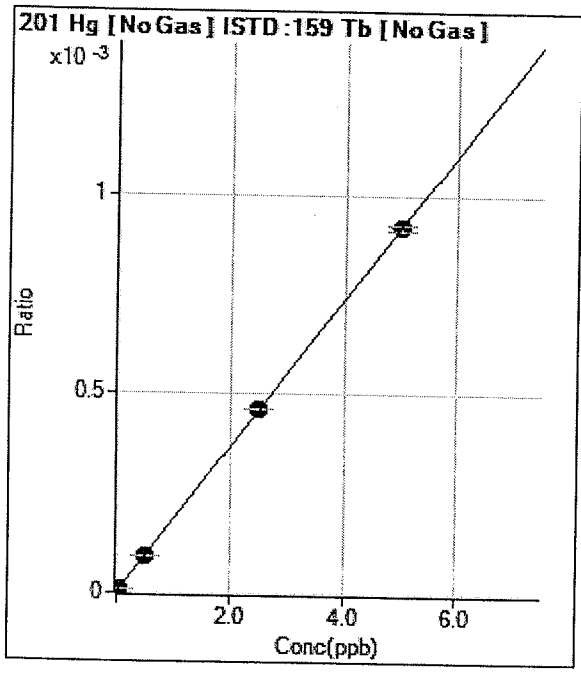
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0000	P	19.8
2	☐	0.500	0.256	3507.16	0.0003	P	5.9
3	☐	5.000	5.255	69426.84	0.0059	P	0.8
4	☐	25.000	25.328	331320.30	0.0284	P	1.3
5	☐	50.000	49.813	650361.67	0.0559	P	1.6

y = 0.0011 * x + 1.1033E-005
R = 0.9999
DL = 0.005828
BEC = 0.009828

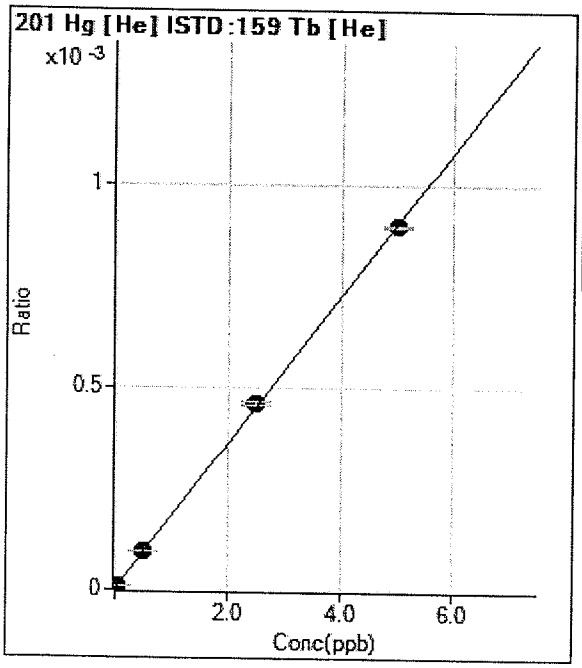
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.17	0.0000	P	22.3
2	☐	0.050	0.049	121.50	0.0000	P	4.7
3	☐	0.500	0.500	1095.05	0.0001	P	1.2
4	☐	2.500	2.507	5382.32	0.0005	P	0.5
5	☐	5.000	4.996	10693.39	0.0009	P	1.5

y = 1.8380E-004 * x + 1.2867E-006
R = 1.0000
DL = 0.004683
BEC = 0.007

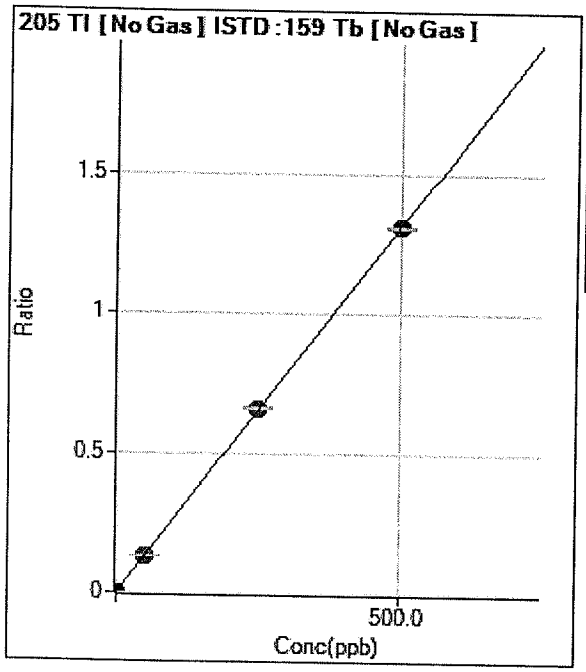
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9.17	0.0000	P	2.4
2	☐	0.050	0.051	70.17	0.0000	P	9.5
3	☐	0.500	0.518	620.02	0.0001	P	3.0
4	☐	2.500	2.558	3026.20	0.0005	P	2.5
5	☐	5.000	4.969	5931.24	0.0009	P	0.6

y = 1.8082E-004 * x + 1.3986E-006
R = 0.9999
DL = 0.0005626
BEC = 0.007735

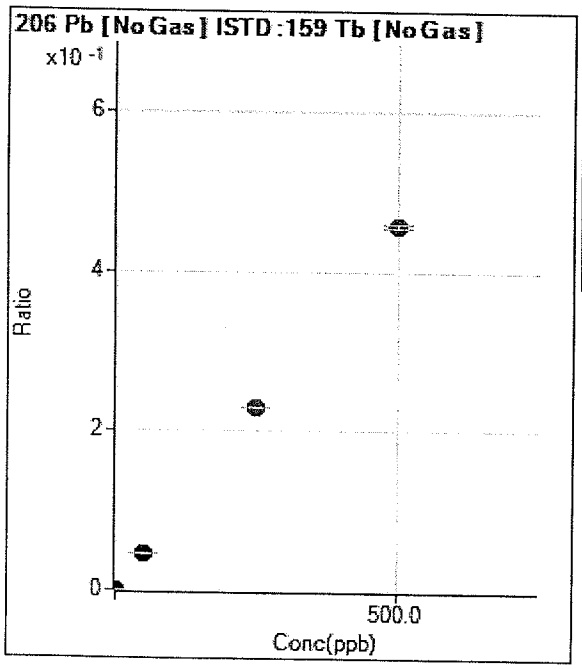
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	788.91	0.0001	P	18.0
2	☐	0.500	0.504	16396.33	0.0014	P	0.7
3	☐	50.000	51.330	1586570.70	0.1351	A	0.5
4	☐	250.000	251.899	7717109.42	0.6626	A	0.7
5	☐	500.000	498.918	15259868.28	1.3122	A	0.8

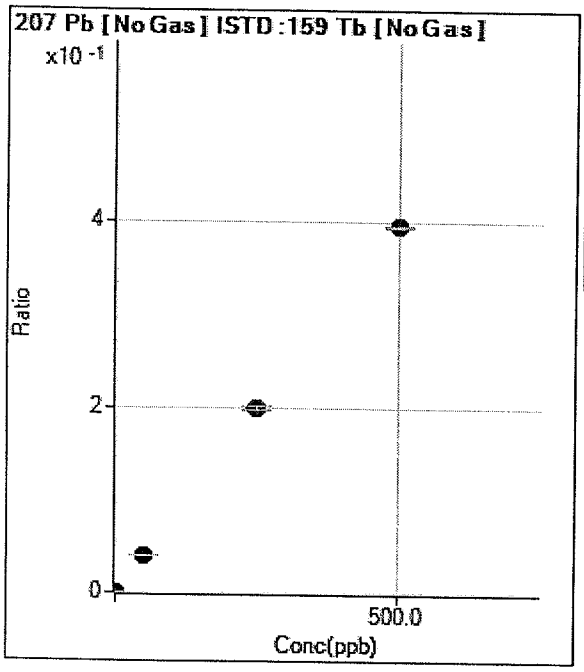
y = 0.0026 * x + 6.6948E-005
R = 1.0000
DL = 0.01372
BEC = 0.02546

Weight: <None>
Min Conc: 0



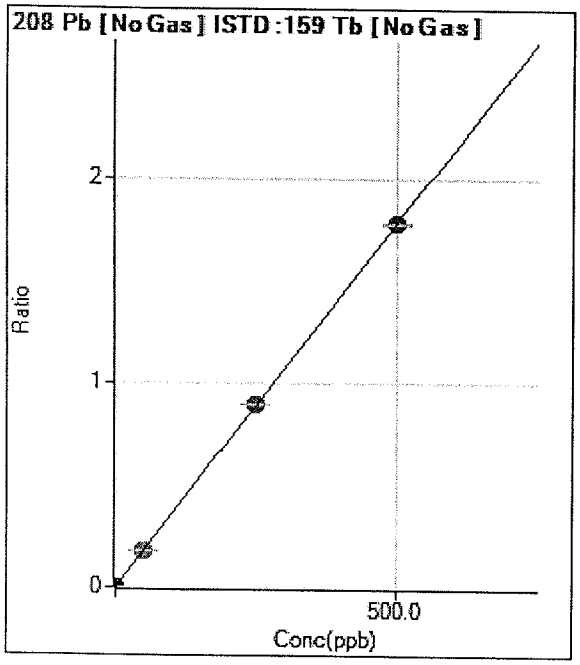
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		453.34	0.0000	P	9.6
2	☐	0.500		5634.62	0.0005	P	5.3
3	☐	50.000		537414.21	0.0457	P	0.1
4	☐	250.000		2673080.80	0.2295	A	0.2
5	☐	500.000		5304658.26	0.4562	A	1.2

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		333.34	0.0000	P	5.5
2	☐	0.500		5157.75	0.0004	P	3.8
3	☐	50.000		467035.70	0.0398	P	1.0
4	☐	250.000		2320627.67	0.1992	A	1.5
5	☐	500.000		4605425.87	0.3960	A	0.6

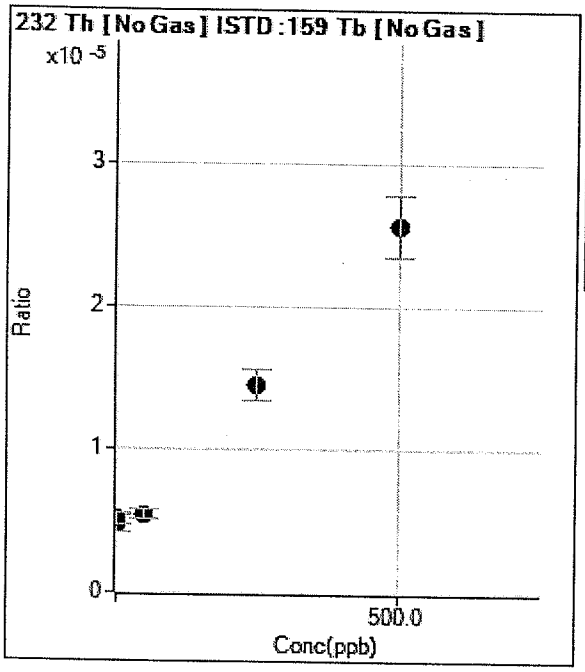
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1622.27	0.0001	P	1.9
2	☐	0.500	0.515	23213.01	0.0020	P	2.3
3	☐	50.000	50.861	2131938.06	0.1815	M	0.3
4	☐	250.000	251.830	10460288.95	0.8981	A	0.5
5	☐	500.000	498.999	20692463.98	1.7794	A	0.7

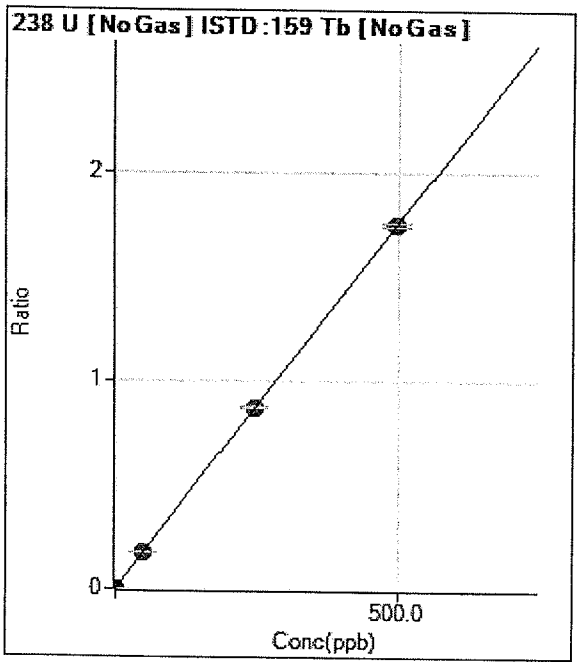
y = 0.0036 * x + 1.3783E-004
R = 1.0000
DL = 0.002261
BEC = 0.03865

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		56.66	0.0000	P	26.3
2	☐	0.500		61.11	0.0000	P	15.5
3	☐	50.000		64.45	0.0000	P	11.0
4	☐	250.000		168.89	0.0000	P	14.9
5	☐	500.000		297.78	0.0000	P	17.1

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	80.00	0.0000	P	14.5
2	☐	0.497	0.508	21090.35	0.0018	P	1.7
3	☐	49.700	50.218	2072481.44	0.1764	A	0.3
4	☐	248.300	248.356	10162585.43	0.8725	A	0.7
5	☐	497.000	496.920	20299674.75	1.7458	A	1.1

y = 0.0035 * x + 6.7970E-006
R = 1.0000
DL = 0.0008421
BEC = 0.001935

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq. Date-Time	2020-06-26 09:31:22
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

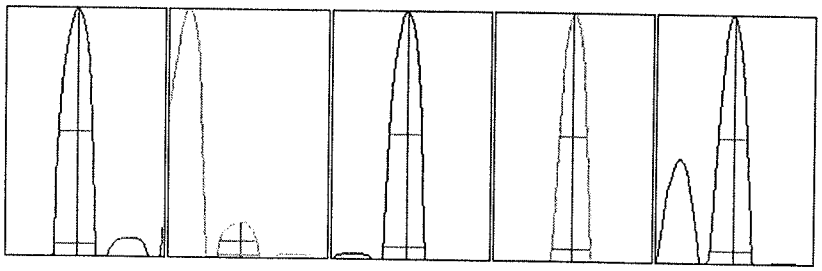
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1946	19463.90			0.768	5.000
24	10.00	10070	100699.33			0.573	5.000
59	10.00	15522	155224.77			0.426	5.000
115	10.00	21455	214546.44			0.691	5.000
208	10.00	11182	111819.27			1.348	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1948	1929	1944	1970	1940
24	10086	10019	10155	10077	10013
59	15527	15533	15434	15618	15501
115	21335	21322	21419	21517	21681
208	11242	11020	11083	11159	11407

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	3457.29	8.90	8.90 - 9.10	
24	16963.16	23.90	23.90 - 24.10	
59	26915.68	58.95	58.90 - 59.10	
115	41984.17	115.00	114.90 - 115.10	
208	21188.05	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.779	0.900	
24	0.65	0.786	0.900	
59	0.61	0.782	0.900	
115	0.53	0.729	0.900	
208	0.55	0.780	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.62 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.0 V	Deflect	13.2 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9997	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.07		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.3 mm		

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Calibration Standard Report

Sample Name	S0
File Name	H6F22003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:13:52
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	107277.57	1.3
Be	9	6	No Gas	37.78	13.5
B	11	6	No Gas	3679.37	2.7
Na	23	45	H2	400057.54	0.4
Mg	24	45	No Gas	27330.74	2.7
Al	27	45	No Gas	9022.96	7.4
Si	28	45	H2	3723.83	2.2
P	31	45	No Gas	21333.03	1.5
K	39	45	He	101182.78	2.8
Ca	40	45	H2	134898.41	1.0
Ti	47	45	No Gas	476.68	4.8
V	51	45	He	6548.90	1.7
Cr	52	45	He	1209.39	4.0
Mn	55	45	No Gas	9121.04	2.2
Fe	56	45	H2	9666.09	2.9
Co	59	45	No Gas	253.33	12.1
Ni	60	45	He	127.33	12.8
Cu	63	45	He	2564.91	0.3
Zn	66	72	No Gas	2090.83	2.3
As	75	72	He	315.00	7.3
Se	78	72	H2	19.00	18.2
Sr	88	72	No Gas	716.69	14.8
Zr	90	72	No Gas	176.67	11.8
Mo	95	115	No Gas	54.44	23.2
Ag	107	115	No Gas	103.33	28.1
Cd	111	115	No Gas	40.92	21.1
Sn	118	115	No Gas	1496.75	4.7
Sb	123	115	No Gas	126.56	28.4
Ba	137	115	No Gas	113.33	11.8
W	182	159	No Gas	130.00	20.4
Hg	201	159	He	9.17	3.1
Tl	205	159	No Gas	788.91	18.9
Pb	208	159	No Gas	1622.27	1.3
U	238	159	No Gas	80.00	14.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1833807.01	0.7	1866774.34	98.23	60	120	
Sc	45	No Gas	5272647.17	0.7	5256704	100.3	60	120	
Sc	45	H2	3207538.17	1.3	3216050	99.74	60	120	
Sc	45	He	583892.71	1.0	590136.5	98.94	60	120	
Ge	72	No Gas	1328832.25	0.8	1347600.04	98.61	60	120	
Go	72	H2	905288.73	0.3	912330.27	99.23	60	120	
Ge	72	He	368649.84	0.7	378247.59	97.46	60	120	
In	115	No Gas	8749257.65	0.8	8692051.13	100.66	60	120	
Tb	159	No Gas	11771515.92	0.9	11827603.42	99.53	60	120	
Tb	159	He	6553564.17	1.0	6692094.83	97.93	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6F22004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:16:43
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fail	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113456.89	0.7
Be	9	6	No Gas	1466.74	2.1
B	11	6	No Gas	5391.04	3.7
Na	23	45	H2	639662.90	0.8
Mg	24	45	No Gas	596830.38	0.2
Al	27	45	No Gas	744479.13	0.4
Si	28	45	H2	130494.54	0.9
P	31	45	No Gas	41848.23	1.7
K	39	45	He	143690.33	1.9
Ca	40	45	H2	714788.73	0.6
Ti	47	45	No Gas	1288.06	5.8
V	51	45	He	8816.16	1.8
Cr	52	45	He	4964.90	1.9
Mn	55	45	No Gas	24661.53	1.3
Fe	56	45	H2	762463.85	0.8
Co	59	45	No Gas	13263.78	2.1
Ni	60	45	He	1509.42	6.3
Cu	63	45	He	5698.53	2.0
Zn	66	72	No Gas	8820.86	0.5
As	75	72	He	928.70	5.9
Se	78	72	H2	246.33	4.8
Sr	88	72	No Gas	18646.33	2.6
Zr	90	72	No Gas	95227.52	0.9
Mo	95	115	No Gas	3717.19	2.2
Ag	107	115	No Gas	9551.23	2.3
Cd	111	115	No Gas	2047.91	1.7
Sn	118	115	No Gas	6409.35	5.0
Sb	123	115	No Gas	6439.37	3.0
Ba	137	115	No Gas	3291.53	3.3
W	182	159	No Gas	3507.16	5.4
Hg	201	159	He	70.17	9.1
Tl	205	159	No Gas	16396.33	2.2
Pb	208	159	No Gas	23213.01	0.7
U	238	159	No Gas	21090.35	1.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1865481.64	1.4	1866774.34	99.93	60	120	
Sc	45	No Gas	5380215.17	1.4	5256704	102.35	60	120	
Sc	45	H2	3245345.92	1.0	3216050	100.91	60	120	
Sc	45	He	607201.23	0.6	590136.5	102.89	60	120	
Ge	72	No Gas	1390492.63	0.9	1347600.04	103.18	60	120	
Ge	72	H2	933932.67	0.7	912330.27	102.37	60	120	
Ge	72	He	384894.49	0.2	378247.59	101.76	60	120	
In	115	No Gas	8770387.94	1.3	8692051.13	100.9	60	120	
Tb	159	No Gas	11764732.31	1.6	11827603.42	99.47	60	120	
Tb	159	He	6637449.67	0.4	6692094.83	99.18	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6F22005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:19:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	152974.61	0.4
Be	9	6	No Gas	14749.95	1.3
B	11	6	No Gas	28001.18	1.9
Na	23	45	H2	22472592.67	0.6
Mg	24	45	No Gas	54577372.00	1.0
Al	27	45	No Gas	70249423.96	0.4
Si	28	45	H2	656946.84	0.8
P	31	45	No Gas	64868.35	1.6
K	39	45	He	3981751.50	0.2
Ca	40	45	H2	47787988.00	0.4
Ti	47	45	No Gas	89269.93	1.5
V	51	45	He	320829.67	2.0
Cr	52	45	He	367079.05	0.8
Mn	55	45	No Gas	9268185.67	0.4
Fe	56	45	H2	70898853.33	0.4
Co	59	45	No Gas	1271541.08	0.5
Ni	60	45	He	128073.24	0.5
Cu	63	45	He	344308.34	0.2
Zn	66	72	No Gas	209650.23	0.5
As	75	72	He	65680.76	0.8
Se	78	72	H2	22145.49	0.9
Sr	88	72	No Gas	1778229.51	0.9
Zr	90	72	No Gas	200401.90	1.5
Mo	95	115	No Gas	340781.02	1.5
Ag	107	115	No Gas	91123.22	0.7
Cd	111	115	No Gas	184086.19	0.4
Sn	118	115	No Gas	539529.87	0.2
Sb	123	115	No Gas	126759.06	0.2
Ba	137	115	No Gas	551137.46	0.1
W	182	159	No Gas	69426.84	0.9
Hg	201	159	He	620.02	3.4
Tl	205	159	No Gas	1586570.70	0.7
Pb	208	159	No Gas	2131938.06	0.6
U	238	159	No Gas	2072481.44	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1860769.06	0.8	1866774.34	99.68	60	120	
Sc	45	No Gas	5353536.00	1.2	5256704	101.84	60	120	
Sc	45	H2	3221569.92	1.2	3216050	100.17	60	120	
Sc	45	He	597225.71	0.2	590136.5	101.2	60	120	
Ge	72	No Gas	1379402.33	0.0	1347600.04	102.36	60	120	
Ge	72	H2	930292.75	1.4	912330.27	101.97	60	120	
Ge	72	He	382113.18	0.5	378247.59	101.02	60	120	
In	115	No Gas	8748453.84	0.6	8692051.13	100.65	60	120	
Tb	159	No Gas	11746766.20	0.3	11827603.42	99.32	60	120	
Tb	159	He	6518821.83	0.4	6692094.83	97.41	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6F22006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:22:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	316906.47	1.5
Be	9	6	No Gas	71627.01	0.9
B	11	6	No Gas	106612.07	1.1
Na	23	45	H2	108905344.00	0.7
Mg	24	45	No Gas	266286757.33	1.2
Al	27	45	No Gas	343325328.22	1.5
Si	28	45	H2	3166854.83	0.2
P	31	45	No Gas	234646.94	1.7
K	39	45	He	19119142.67	1.6
Ca	40	45	H2	235123573.33	0.5
Tl	47	45	No Gas	443433.34	0.0
V	51	45	He	1546369.29	0.4
Cr	52	45	He	1780108.04	0.2
Mn	55	45	No Gas	45231848.00	0.2
Fe	56	45	H2	346349685.33	0.5
Co	59	45	No Gas	6193089.50	0.7
Ni	60	45	He	621163.21	0.9
Cu	63	45	He	1621313.09	0.5
Zn	66	72	No Gas	1025697.56	0.6
As	75	72	He	321727.92	0.4
Se	78	72	H2	108207.87	0.8
Sr	88	72	No Gas	8733576.87	0.6
Zr	90	72	No Gas	541877.09	2.2
Mo	95	115	No Gas	1699527.09	1.1
Ag	107	115	No Gas	441431.89	0.7
Cd	111	115	No Gas	905752.50	0.9
Sn	118	115	No Gas	2701878.64	0.1
Sb	123	115	No Gas	626080.69	0.7
Ba	137	115	No Gas	2784517.04	0.2
W	182	159	No Gas	331320.30	1.4
Hg	201	159	He	3026.20	1.4
Tl	205	159	No Gas	7717109.42	0.7
Pb	208	159	No Gas	10460288.95	0.5
U	238	159	No Gas	10162585.43	0.7

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1807021.82	0.2	1866774.34	96.8	60	120	
Sc	45	No Gas	5285953.83	0.6	5256704	100.56	60	120	
Sc	45	H2	3248700.92	0.9	3216050	101.02	60	120	
Sc	45	He	599675.08	0.5	590136.5	101.62	60	120	
Ge	72	No Gas	1347186.84	0.4	1347600.04	99.97	60	120	
Ge	72	H2	919451.56	0.1	912330.27	100.78	60	120	
Ge	72	He	377152.10	0.7	378247.59	99.71	60	120	
In	115	No Gas	8431557.94	0.6	8692051.13	97	60	120	
Tb	159	No Gas	11647431.76	0.1	11827603.42	98.48	60	120	
Tb	159	He	6524567.00	1.1	6692094.83	97.5	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6F22007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:25:23
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	522113.21	1.3
Be	9	6	No Gas	141322.42	1.8
B	11	6	No Gas	174690.98	1.1
Na	23	45	H2	215298154.67	0.8
Mg	24	45	No Gas	525115914.67	0.6
Al	27	45	No Gas	686882496.43	0.9
Si	28	45	H2	6220790.00	1.3
P	31	45	No Gas	441749.50	1.3
K	39	45	He	37651220.00	1.1
Ca	40	45	H2	468210709.33	0.8
Ti	47	45	No Gas	882799.27	0.8
V	51	45	He	3043591.42	0.4
Cr	52	45	He	3511378.67	0.8
Mn	55	45	No Gas	89917986.67	0.3
Fe	56	45	H2	688876117.33	0.9
Co	59	45	No Gas	12246239.67	0.5
Ni	60	45	He	1200083.54	0.6
Cu	63	45	He	3172209.42	0.4
Zn	66	72	No Gas	2034346.00	0.5
As	75	72	He	634083.98	1.4
Se	78	72	H2	213494.19	1.0
Sr	88	72	No Gas	17507492.08	0.8
Zr	90	72	No Gas	1122528.42	0.9
Mo	95	115	No Gas	3403505.07	0.6
Ag	107	115	No Gas	862475.51	0.6
Cd	111	115	No Gas	1809577.17	1.0
Sn	118	115	No Gas	5409921.03	0.9
Sb	123	115	No Gas	1257398.32	0.1
Ba	137	115	No Gas	5517116.03	0.5
W	182	159	No Gas	650361.67	0.3
Hg	201	159	He	5931.24	0.7
Tl	205	159	No Gas	15259868.28	1.4
Pb	208	159	No Gas	20692463.98	1.2
U	238	159	No Gas	20299674.75	0.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1804921.77	1.6	1866774.34	96.69	60	120	
Sc	45	No Gas	5289565.00	0.4	5256704	100.63	60	120	
Sc	45	H2	3197800.33	0.7	3216050	99.43	60	120	
Sc	45	He	588421.23	0.6	590136.5	99.71	60	120	
Ge	72	No Gas	1338488.71	0.3	1347600.04	99.32	60	120	
Ge	72	H2	919890.04	0.9	912330.27	100.83	60	120	
Ge	72	He	372561.70	1.2	378247.59	98.5	60	120	
In	115	No Gas	8357718.43	1.2	8692051.13	96.15	60	120	
Tb	159	No Gas	11629119.26	1.3	11827603.42	98.32	60	120	
Tb	159	He	6590832.17	0.6	6692094.83	98.49	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6F22008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:28:08
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.736	ppb	0.9	358762.89	30	99.12	90	110	
Be	9	6	No Gas	30.318	ppb	1.4	87088.92	30	101.06	90	110	
B	11	6	No Gas	34.353	ppb	1.4	65793.73	30	114.51	90	110	> +/- 10%
Na	23	45	H2	28820.585	ppb	0.6	125437029.33	30000	96.07	90	110	
Mg	24	45	No Gas	29084.919	ppb	0.8	304505877.33	30000	96.95	90	110	
Al	27	45	No Gas	29539.820	ppb	1.5	403294793.99	30000	98.47	90	110	
Si	28	45	H2	3225.330	ppb	0.4	4058938.17	3000	107.51	90	110	
P	31	45	No Gas	276.945	ppb	1.7	253303.21	300	92.32	90	110	
K	39	45	He	29477.359	ppb	0.3	22081847.33	30000	98.26	90	110	
Ca	40	45	H2	29356.214	ppb	1.0	277205365.33	30000	97.85	90	110	
Ti	47	45	No Gas	293.408	ppb	1.1	515484.43	300	97.8	90	110	
V	51	45	He	313.309	ppb	0.7	1896610.54	300	104.44	90	110	
Cr	52	45	He	313.274	ppb	0.7	2185556.58	300	104.42	90	110	
Mn	55	45	No Gas	1954.829	ppb	1.0	58316386.67	2000	97.74	90	110	
Fe	56	45	H2	29575.971	ppb	1.4	410980554.67	30000	98.59	90	110	
Co	59	45	No Gas	301.291	ppb	1.5	7352505.67	300	100.43	90	110	
Ni	60	45	He	317.535	ppb	0.1	760300.81	300	105.85	90	110	
Cu	63	45	He	309.944	ppb	1.0	1957464.25	300	103.31	90	110	
Zn	66	72	No Gas	289.061	ppb	2.1	1176040.92	300	96.35	90	110	
As	75	72	He	313.887	ppb	0.6	394956.29	300	104.63	90	110	
Se	78	72	H2	315.425	ppb	0.9	132973.74	300	105.14	90	110	
Sr	88	72	No Gas	307.647	ppb	1.2	10742358.74	300	102.55	90	110	
Zr	90	72	No Gas	27.589	ppb	1.1	610565.53	30	91.96	90	110	
Mo	95	115	No Gas	304.183	ppb	1.5	2059956.23	300	101.39	90	110	
Ag	107	115	No Gas	31.012	ppb	0.6	535050.69	30	103.37	90	110	
Cd	111	115	No Gas	311.300	ppb	1.4	1121536.20	300	103.77	90	110	
Sn	118	115	No Gas	307.583	ppb	0.5	3310964.80	300	102.53	90	110	
Sb	123	115	No Gas	58.921	ppb	0.8	736684.00	60	98.2	90	110	
Ba	137	115	No Gas	310.185	ppb	0.7	1706169.34	300	103.4	90	110	
W	182	159	No Gas	32.137	ppb	1.0	421841.17	30	107.12	90	110	
Hg	201	159	He	2.999	ppb	0.5	3558.67	3	99.97	90	110	
Tl	205	159	No Gas	304.059	ppb	2.2	9349810.46	300	101.35	90	110	
Pb	208	159	No Gas	307.021	ppb	1.2	12798195.58	300	102.34	90	110	
U	238	159	No Gas	305.688	ppb	1.3	12553883.39	300	101.9	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1828949.17	1.6	1866774.34	97.97	60	120	
Sc	45	No Gas	5256178.33	2.0	5256704	99.99	60	120	
Sc	45	H2	3231272.67	0.9	3216050	100.47	60	120	
Sc	45	He	584914.69	0.6	590136.5	99.12	60	120	
Ge	72	No Gas	1337087.17	1.4	1347600.04	99.22	60	120	
Ge	72	H2	905466.06	1.3	912330.27	99.25	60	120	
Ge	72	He	369396.60	0.5	378247.59	97.66	60	120	
In	115	No Gas	8333193.12	1.2	8692051.13	95.87	60	120	
Tb	159	No Gas	11689694.26	1.0	11827603.42	98.83	60	120	
Tb	159	He	6544758.33	0.7	6692094.83	97.8	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6F22009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:33:07
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	104858.54	0.4	
Be	9	6	No Gas	0.003	ppb	100.0	44.45	0.08	
B	11	6	No Gas	0.344	ppb	75.3	4232.87	4	
Na	23	45	H2	0.711	ppb	196.6	395594.45	40	
Mg	24	45	No Gas	0.323	ppb	72.1	30278.99	10	
Al	27	45	No Gas	0.654	ppb	37.1	17705.07	15	
Si	28	45	H2	0.771	ppb	17.2	4596.76	8	
P	31	45	No Gas	<0.000	ppb	N/A	20648.66	10	
K	39	45	He	0.703	ppb	272.1	101012.94	20	
Ca	40	45	H2	0.424	ppb	60.5	136289.07	25	
Ti	47	45	No Gas	0.014	ppb	843.2	495.35	0.5	
V	51	45	He	<0.000	ppb	N/A	5914.61	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1117.38	0.2	
Mn	55	45	No Gas	0.063	ppb	33.3	10860.32	0.2	
Fe	56	45	H2	0.637	ppb	8.2	18096.65	10	
Co	59	45	No Gas	0.007	ppb	46.4	410.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	108.67	0.2	
Cu	63	45	He	0.020	ppb	9.7	2670.26	0.4	
Zn	66	72	No Gas	0.008	ppb	124.4	2100.16	2	
As	75	72	He	<0.000	ppb	N/A	307.00	0.2	
Se	78	72	H2	0.050	ppb	13.1	39.67	0.2	
Sr	88	72	No Gas	0.018	ppb	146.3	1323.67	0.2	
Zr	90	72	No Gas	0.002	ppb	46.1	226.67	2	
Mo	95	115	No Gas	0.012	ppb	24.9	140.00	0.2	
Ag	107	115	No Gas	0.001	ppb	130.8	112.22	0.08	
Cd	111	115	No Gas	0.022	ppb	13.8	122.26	0.2	
Sn	118	115	No Gas	0.074	ppb	3.9	2317.99	0.2	
Sb	123	115	No Gas	0.001	ppb	127.7	137.78	0.4	
Ba	137	115	No Gas	0.013	ppb	4.4	185.56	0.2	
W	182	159	No Gas	0.007	ppb	54.2	226.67	0.3	
Hg	201	159	He	0.004	ppb	51.3	14.33	0.1	
Tl	205	159	No Gas	0.033	ppb	16.2	1821.25	0.1	
Pb	208	159	No Gas	0.031	ppb	11.4	2914.58	0.1	
U	238	159	No Gas	0.007	ppb	13.9	383.34	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1805900.20	1.4	1866774.34	96.74	60	120	
Sc	45	No Gas	5200317.33	1.6	5256704	98.93	60	120	
Sc	45	H2	3148112.17	2.3	3216050	97.89	60	120	
Sc	45	He	579918.98	1.0	590136.5	98.27	60	120	
Ge	72	No Gas	1315078.71	1.4	1347600.04	97.59	60	120	
Ge	72	H2	892639.04	1.3	912330.27	97.84	60	120	
Ge	72	He	369136.27	0.8	378247.59	97.59	60	120	
In	115	No Gas	8709759.51	1.0	8692051.13	100.2	60	120	
Tb	159	No Gas	11780840.64	1.4	11827603.42	99.6	60	120	
Tb	159	He	6721993.83	0.4	6692094.83	100.45	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2601
File Name	H6F22010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:35:43
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.882	ppb	21.5	112120.55	1	88.2	80	120	
Be	9	6	No Gas	0.984	ppb	4.8	2803.62	1	98.4	80	120	
B	11	6	No Gas	9.131	ppb	1.8	19769.45	10	91.31	80	120	
Na	23	45	H2	101.451	ppb	0.3	828278.92	100	101.45	80	120	
Mg	24	45	No Gas	99.949	ppb	1.4	1065124.68	100	99.95	80	120	
Al	27	45	No Gas	100.561	ppb	2.2	1371232.95	100	100.56	80	120	
Si	28	45	H2	100.043	ppb	0.6	127247.18	100	100.04	80	120	
P	31	45	No Gas	47.671	ppb	1.3	60727.72	50	95.34	80	120	
K	39	45	He	103.056	ppb	4.3	178444.80	100	103.06	80	120	
Ca	40	45	H2	103.977	ppb	0.5	1097548.50	100	103.98	80	120	
Ti	47	45	No Gas	0.993	ppb	4.6	2200.18	1	99.3	80	120	
V	51	45	He	0.895	ppb	2.4	11977.89	1	89.5	80	120	
Cr	52	45	He	1.068	ppb	0.9	8672.08	1	106.8	80	120	
Mn	55	45	No Gas	1.040	ppb	1.5	39790.41	1	104	80	120	
Fe	56	45	H2	104.624	ppb	1.3	1437664.25	100	104.62	80	120	
Co	59	45	No Gas	1.022	ppb	0.9	25003.59	1	102.2	80	120	
Ni	60	45	He	1.094	ppb	0.4	2750.94	1	109.4	80	120	
Cu	63	45	He	1.069	ppb	4.3	9327.20	1	106.9	80	120	
Zn	66	72	No Gas	10.040	ppb	1.1	43835.94	10	100.4	80	120	
As	75	72	He	0.964	ppb	2.4	1571.76	1	96.4	80	120	
Se	78	72	H2	1.061	ppb	3.9	476.68	1	106.1	80	120	
Sr	88	72	No Gas	1.991	ppb	0.5	71805.28	2	99.55	80	120	
Zr	90	72	No Gas	3.808	ppb	2.7	86334.70	5	76.16	80	120	> +/- 20%
Mo	95	115	No Gas	0.919	ppb	2.6	6520.49	1	91.9	80	120	
Ag	107	115	No Gas	1.039	ppb	2.7	18724.34	1	103.9	80	120	
Cd	111	115	No Gas	1.002	ppb	1.8	3789.94	1	100.2	80	120	
Sn	118	115	No Gas	0.944	ppb	0.4	12031.07	1	94.4	80	120	
Sb	123	115	No Gas	0.953	ppb	1.0	12493.75	1	95.3	80	120	
Ba	137	115	No Gas	1.049	ppb	1.8	6102.55	1	104.9	80	120	
W	182	159	No Gas	2.077	ppb	0.1	27393.00	2	103.85	80	120	
Hg	201	159	He	0.085	ppb	7.1	112.00	0.1	85	80	120	
Tl	205	159	No Gas	1.029	ppb	2.8	32407.56	1	102.9	80	120	
Pb	208	159	No Gas	1.036	ppb	0.5	44783.81	1	103.6	80	120	
U	238	159	No Gas	0.989	ppb	1.2	40679.65	1	98.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1791533.69	1.2	1866774.34	95.97	60	120	
Sc	45	No Gas	5214731.17	0.9	5256704	99.2	60	120	
Sc	45	H2	3174085.25	0.7	3216050	98.7	60	120	
Sc	45	He	585793.98	0.9	590136.5	99.26	60	120	
Ge	72	No Gas	1367003.67	1.1	1347600.04	101.44	60	120	
Ge	72	H2	925155.17	1.4	912330.27	101.41	60	120	
Ge	72	He	380000.60	0.1	378247.59	100.46	60	120	
In	115	No Gas	8655547.44	0.9	8692051.13	99.58	60	120	
Tb	159	No Gas	11690698.15	0.4	11827603.42	98.84	60	120	
Tb	159	He	6672892.67	0.4	6692094.83	99.71	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2602
File Name	H6F22011.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:38:18
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.130	ppb	61.5	106836.73	0.4	32.5	80	120	> +/- 20%
Be	9	6	No Gas	0.357	ppb	3.7	1051.15	0.4	89.25	80	120	
B	11	6	No Gas	4.122	ppb	4.5	10989.85	0.4	1030.5	80	120	> +/- 20%
Na	23	45	H2	41.011	ppb	1.5	578482.06	40	102.53	80	120	
Mg	24	45	No Gas	40.223	ppb	0.3	445381.29	40	100.56	80	120	
Al	27	45	No Gas	39.468	ppb	1.6	544151.87	40	98.67	80	120	
K	39	45	He	39.412	ppb	7.3	132581.05	40	98.53	80	120	
Ca	40	45	H2	42.759	ppb	0.3	537180.31	40	106.9	80	120	
Ti	47	45	No Gas	0.336	ppb	8.7	1058.71	0.4	84	80	120	
V	51	45	He	0.144	ppb	22.3	7534.74	0.4	36	80	120	> +/- 20%
Cr	52	45	He	0.378	ppb	3.1	3903.89	0.4	94.5	80	120	
Mn	55	45	No Gas	0.395	ppb	3.7	20727.69	0.4	98.75	80	120	
Fe	56	45	H2	40.900	ppb	0.1	575632.27	40	102.25	80	120	
Co	59	45	No Gas	0.401	ppb	1.2	9971.65	0.4	100.25	80	120	
Ni	60	45	He	0.433	ppb	4.9	1181.39	0.4	108.25	80	120	
Cu	63	45	He	0.389	ppb	3.2	5096.29	0.4	97.25	80	120	
Zn	66	72	No Gas	4.250	ppb	0.9	19437.90	4	106.25	80	120	
As	75	72	He	0.345	ppb	5.9	766.02	0.4	86.25	80	120	
Se	78	72	H2	0.410	ppb	6.0	195.33	0.4	102.5	80	120	
Sr	88	72	No Gas	0.414	ppb	2.3	15223.09	0.4	103.5	80	120	
Mo	95	115	No Gas	0.366	ppb	5.2	2641.38	0.4	91.5	80	120	
Ag	107	115	No Gas	0.385	ppb	2.3	7016.32	0.4	96.25	80	120	
Cd	111	115	No Gas	0.378	ppb	0.5	1461.15	0.4	94.5	80	120	
Sn	118	115	No Gas	0.317	ppb	3.4	5044.30	0.4	79.25	80	120	> +/- 20%
Sb	123	115	No Gas	0.381	ppb	4.8	5083.22	0.4	95.25	80	120	
Ba	137	115	No Gas	0.450	ppb	4.8	2690.28	0.4	112.5	80	120	
Tl	205	159	No Gas	0.391	ppb	1.2	12814.36	0.4	97.75	80	120	
Pb	208	159	No Gas	0.402	ppb	4.1	18398.72	0.4	100.5	80	120	
U	238	159	No Gas	0.376	ppb	1.7	15528.73	0.4	94	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1807564.66	1.7	1866774.34	96.83	60	120	
Sc	45	No Gas	5221700.83	2.3	5256704	99.33	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	3217451.33	0.7	3216050	100.04	60	120	
Sc	45	He	593138.56	0.4	590136.5	100.51	60	120	
Ge	72	No Gas	1342355.91	2.1	1347600.04	99.61	60	120	
Ge	72	H2	921973.17	1.3	912330.27	101.06	60	120	
Ge	72	He	377615.12	0.9	378247.59	99.83	60	120	
In	115	No Gas	8686605.89	1.8	8692051.13	99.94	60	120	
Tb	159	No Gas	11703388.98	1.7	11827603.42	98.95	60	120	
Tb	159	He	6585924.50	1.3	6692094.83	98.41	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA1
File Name	H6F22012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:40:53
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.229	ppb	102.2	98983.75	2	-50	50	
Be	9	6	No Gas	0.000	ppb	5956.4	34.45	0.4	-50	50	
B	11	6	No Gas	9.754	ppb	4.9	19356.65	10	-50	50	> +/- 20%
Na	23	45	H2	94995.036	ppb	0.7	403774208.00	100000	80	120	
Mg	24	45	No Gas	93163.519	ppb	1.1	949078165.33	100000	80	120	
Al	27	45	No Gas	93877.409	ppb	1.4	1247176674.75	100000	80	120	
Si	28	45	H2	4.217	ppb	1.7	8861.50	50	-50	50	
P	31	45	No Gas	93807.222	ppb	0.8	76510472.00	100000	80	120	
K	39	45	He	98193.331	ppb	0.3	70832144.00	100000	80	120	
Ca	40	45	H2	97917.561	ppb	1.0	904676864.00	100000	80	120	
Ti	47	45	No Gas	2002.695	ppb	1.5	3421023.67	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	5651.17	1	-50	50	
Cr	52	45	He	0.274	ppb	3.6	3017.00	1	-50	50	
Mn	55	45	No Gas	0.248	ppb	3.5	16042.73	1	-50	50	
Fe	56	45	H2	98568.621	ppb	2.1	1340498432.00	100000	80	120	
Co	59	45	No Gas	0.356	ppb	2.2	8701.44	0.75	-50	50	
Ni	60	45	He	0.318	ppb	1.2	858.70	1	-50	50	
Cu	63	45	He	0.272	ppb	5.3	4138.63	2	-50	50	
Zn	66	72	No Gas	1.602	ppb	2.3	8395.26	20	-50	50	
As	75	72	He	0.073	ppb	12.8	396.68	1	-50	50	
Se	78	72	H2	0.218	ppb	15.8	107.67	1	-50	50	
Sr	88	72	No Gas	0.780	ppb	0.7	27251.05	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.115	ppb	10.0	2653.61	10	-50	50	
Mo	95	115	No Gas	1967.866	ppb	1.4	13021799.48	2000	80	120	
Ag	107	115	No Gas	0.010	ppb	22.9	272.23	0.4	-50	50	
Cd	111	115	No Gas	0.075	ppb	38.3	301.73	1	-50	50	
Sn	118	115	No Gas	0.359	ppb	4.9	5159.91	1	50	50	
Ba	137	115	No Gas	0.408	ppb	4.4	2294.65	1	-50	50	
W	182	159	No Gas	0.186	ppb	0.6	2543.59	1	-50	50	
Hg	201	159	He	0.002	ppb	121.4	11.83	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	538.90	0.5	-50	50	
Pb	208	159	No Gas	0.081	ppb	1.8	4933.71	0.5	-50	50	
U	238	159	No Gas	0.000	ppb	11184.7	78.89	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1662265.44	2.6	1866774.34	89.04	60	120	
Sc	45	No Gas	5114177.17	1.8	5256704	97.29	60	120	
Sc	45	H2	3162619.00	0.9	3216050	98.34	60	120	
Sc	45	He	565041.46	1.1	590136.5	95.75	60	120	
Ge	72	No Gas	1303712.33	2.0	1347600.04	96.74	60	120	
Ge	72	H2	880464.38	0.4	912330.27	96.51	60	120	
Ge	72	He	359651.50	0.6	378247.59	95.08	60	120	
In	115	No Gas	8142481.56	2.0	8692051.13	93.68	60	120	
Tb	159	No Gas	11592594.26	2.3	11827603.42	98.01	60	120	
Tb	159	He	6539212.50	0.5	6692094.83	97.72	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB1
File Name	H6F22013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:43:30
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.581	ppb	1.3	245283.72	20	80	120	
Be	9	6	No Gas	19.924	ppb	2.9	51476.32	20	80	120	
B	11	6	No Gas	22.314	ppb	1.3	39590.13	20	80	120	
Na	23	45	H2	100251.981	ppb	0.3	426762048.00	100000	80	120	
Mg	24	45	No Gas	96321.885	ppb	2.1	990204416.00	100000	80	120	
Al	27	45	No Gas	97150.885	ppb	1.5	1302457607.26	100000	80	120	
Si	28	45	H2	222.687	ppb	1.1	278133.39	200	80	120	
P	31	45	No Gas	97155.920	ppb	2.1	79968762.67	100000	80	120	
K	39	45	He	102000.772	ppb	1.7	75100917.33	100000	80	120	
Ca	40	45	H2	103855.990	ppb	0.9	961069333.33	100000	80	120	
Ti	47	45	No Gas	2103.311	ppb	2.4	3625589.42	2000	80	120	
V	51	45	He	20.156	ppb	2.2	126368.57	20	80	120	
Cr	52	45	He	20.739	ppb	1.9	143783.99	20	80	120	
Mn	55	45	No Gas	19.625	ppb	1.7	583678.00	20	80	120	
Fe	56	45	H2	103753.587	ppb	1.1	1413312554.67	100000	80	120	
Co	59	45	No Gas	19.546	ppb	1.2	468578.96	20	80	120	
Ni	60	45	He	20.557	ppb	1.9	48652.57	20	80	120	
Cu	63	45	He	20.450	ppb	1.1	129732.00	20	80	120	
Zn	66	72	No Gas	21.132	ppb	1.1	87143.45	20	80	120	
As	75	72	He	20.030	ppb	1.7	25217.83	20	80	120	
Se	78	72	H2	21.602	ppb	1.3	8791.86	20	80	120	
Sr	88	72	No Gas	20.142	ppb	1.2	697726.22	20	80	120	
Zr	90	72	No Gas	8.549	ppb	2.2	187656.19	20	80	120	> +/- 20%
Mo	95	115	No Gas	2039.545	ppb	1.2	13696100.84	2000	80	120	
Ag	107	115	No Gas	18.948	ppb	0.8	324184.99	20	80	120	
Cd	111	115	No Gas	19.233	ppb	0.4	68740.38	20	80	120	
Sn	118	115	No Gas	19.785	ppb	0.4	212620.20	20	80	120	
Sb	123	115	No Gas	19.476	ppb	0.4	241566.22	20	80	120	
Ba	137	115	No Gas	20.078	ppb	0.7	109609.91	20	80	120	
W	182	159	No Gas	19.295	ppb	0.5	255168.37	20	80	120	
Hg	201	159	He	2.020	ppb	1.8	2431.07	2	80	120	
Tl	205	159	No Gas	18.766	ppb	2.6	581951.14	20	80	120	
Pb	208	159	No Gas	19.123	ppb	1.2	804395.74	20	80	120	
U	238	159	No Gas	19.160	ppb	1.1	792644.43	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1644718.44	1.9	1866774.34	88.1	60	120	
Sc	45	No Gas	5160537.00	1.4	5256704	98.17	60	120	
Sc	45	H2	3167616.00	1.1	3216050	98.49	60	120	
Sc	45	He	576853.04	1.4	590136.5	97.75	60	120	
Ge	72	No Gas	1325201.50	1.6	1347600.04	98.34	60	120	
Ge	72	H2	872513.64	1.6	912330.27	95.64	60	120	
Ge	72	He	365384.33	1.9	378247.59	96.6	60	120	
In	115	No Gas	8263891.15	2.8	8692051.13	95.07	60	120	
Tb	159	No Gas	11774390.08	2.1	11827603.42	99.55	60	120	
Tb	159	He	6630706.33	0.9	6692094.83	99.08	60	120	

Sample Report

Sample Name	MRLF2603
File Name	H6F22014.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:46:08
Sample Type	Sample
Total Dilution	1.0000
Comment	500 ppb CAT
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	<0.000	<0.000	ppb	N/A	100094.87	50	
Be	9	6	No Gas	0.049	0.049	ppb	24.0	166.67	50	
B	11	6	No Gas	0.984	0.984	ppb	17.7	5133.17	100	
Na	23	45	H2	569.958	569.958	ppb	3.6	2892724.83	50000	
Mg	24	45	No Gas	582.481	582.481	ppb	4.5	6171247.83	50000	
Al	27	45	No Gas	581.199	581.199	ppb	3.3	8005690.29	50000	
Si	28	45	H2	4.786	4.786	ppb	3.0	9828.81	5000	
P	31	45	No Gas	62.822	62.822	ppb	30.1	74278.69	500	
K	39	45	He	567.494	567.494	ppb	1.4	529125.70	50000	
Ca	40	45	H2	595.937	595.937	ppb	2.9	5794915.50	50000	
Ti	47	45	No Gas	1.635	1.635	ppb	22.6	3362.42	500	
V	51	45	He	0.186	0.186	ppb	6.4	7749.52	500	
Cr	52	45	He	0.251	0.251	ppb	2.5	2988.99	500	
Mn	55	45	No Gas	1.760	1.760	ppb	2.0	62092.56	3000	
Fe	56	45	H2	589.327	589.327	ppb	3.6	8247094.67	50000	
Co	59	45	No Gas	0.284	0.284	ppb	3.5	7229.92	500	
Ni	60	45	He	0.325	0.325	ppb	4.1	913.36	500	
Cu	63	45	He	0.221	0.221	ppb	7.9	3996.59	500	
Zn	66	72	No Gas	2.098	2.098	ppb	2.5	10990.46	500	
As	75	72	He	0.244	0.244	ppb	2.8	637.35	500	
Se	78	72	H2	0.282	0.282	ppb	8.2	141.00	500	
Sr	88	72	No Gas	0.303	0.303	ppb	3.0	11693.99	500	
Zr	90	72	No Gas	0.033	0.033	ppb	9.4	933.37	50	
Mo	95	115	No Gas	1.620	1.620	ppb	21.9	11743.14	500	
Ag	107	115	No Gas	0.041	0.041	ppb	6.7	856.70	50	
Cd	111	115	No Gas	0.267	0.267	ppb	3.1	1065.71	500	
Sn	118	115	No Gas	0.250	0.250	ppb	4.4	4389.62	500	
Sb	123	115	No Gas	0.071	0.071	ppb	6.0	1074.49	100	
Ba	137	115	No Gas	0.604	0.604	ppb	2.6	3654.96	1000	
W	182	159	No Gas	0.056	0.056	ppb	33.8	886.70	50	
Hg	201	159	He	0.012	0.012	ppb	12.7	24.33	5	
Tl	205	159	No Gas	0.272	0.272	ppb	1.9	9416.89	500	
Pb	208	159	No Gas	0.284	0.284	ppb	2.4	13827.50	500	
U	238	159	No Gas	0.261	0.261	ppb	1.5	11090.58	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1723663.47	1.2	1866774.34	92.33	60	120	
Sc	45	No Gas	5299494.00	2.3	5256704	100.81	60	120	
Sc	45	H2	3252115.67	2.8	3216050	101.12	60	120	
Sc	45	He	590032.87	0.5	590136.5	99.98	60	120	
Ge	72	No Gas	1383019.25	1.6	1347600.04	102.63	60	120	
Ge	72	H2	926477.81	2.6	912330.27	101.55	60	120	
Ge	72	He	378635.56	0.5	378247.59	100.1	60	120	
In	115	No Gas	8887195.25	0.8	8692051.13	102.25	60	120	
Tb	159	No Gas	12017889.25	1.0	11827603.42	101.61	60	120	
Tb	159	He	6705922.00	0.8	6692094.83	100.21	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6F22015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:48:43
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.333	ppb	1.4	296499.35	25	97.33	90	110	
Be	9	6	No Gas	24.763	ppb	1.6	67385.47	25	99.05	90	110	
B	11	6	No Gas	55.565	ppb	4.0	98684.24	50	111.13	90	110	> +/- 10%
Na	23	45	H2	24680.379	ppb	1.8	108926117.33	25000	98.72	90	110	
Mg	24	45	No Gas	24488.547	ppb	2.6	261271850.67	25000	97.95	90	110	
Al	27	45	No Gas	24272.939	ppb	2.6	337729468.30	25000	97.09	90	110	
Si	28	45	H2	2495.484	ppb	1.6	3183676.17	2500	99.82	90	110	
P	31	45	No Gas	240.427	ppb	2.4	226984.23	250	96.17	90	110	
K	39	45	He	25468.794	ppb	1.2	19559913.33	25000	101.88	90	110	
Ca	40	45	H2	24945.958	ppb	1.9	238762965.33	25000	99.78	90	110	
Ti	47	45	No Gas	242.650	ppb	1.5	434475.16	250	97.06	90	110	
V	51	45	He	253.745	ppb	0.8	1574934.92	250	101.5	90	110	
Cr	52	45	He	253.445	ppb	0.4	1811615.08	250	101.38	90	110	
Mn	55	45	No Gas	1508.127	ppb	1.7	45845438.67	1500	100.54	90	110	
Fe	56	45	H2	25353.954	ppb	0.7	357126848.00	25000	101.42	90	110	
Co	59	45	No Gas	251.343	ppb	1.6	6250206.67	250	100.54	90	110	
Ni	60	45	He	255.972	ppb	0.4	627923.52	250	102.39	90	110	
Cu	63	45	He	257.534	ppb	0.7	1666764.38	250	103.01	90	110	
Zn	66	72	No Gas	242.351	ppb	2.6	1018859.21	250	96.94	90	110	
As	75	72	He	251.901	ppb	0.9	324704.22	250	100.76	90	110	
Se	78	72	H2	253.763	ppb	1.9	110362.02	250	101.51	90	110	
Sr	88	72	No Gas	248.102	ppb	1.2	8947380.20	250	99.24	90	110	
Zr	90	72	No Gas	24.057	ppb	1.7	549936.45	25	96.23	90	110	
Mo	95	115	No Gas	246.965	ppb	1.3	1756909.24	250	98.79	90	110	
Ag	107	115	No Gas	24.017	ppb	1.5	435357.54	25	96.07	90	110	
Cd	111	115	No Gas	238.406	ppb	1.1	902260.13	250	95.36	90	110	
Sn	118	115	No Gas	244.628	ppb	1.2	2766612.18	250	97.85	90	110	
Sb	123	115	No Gas	47.239	ppb	1.0	620484.49	50	94.48	90	110	
Ba	137	115	No Gas	490.822	ppb	0.3	2835847.11	500	98.16	90	110	
W	182	159	No Gas	24.552	ppb	2.6	329941.78	25	98.21	90	110	
Hg	201	159	He	2.493	ppb	0.6	3023.37	2.5	99.72	90	110	
Tl	205	159	No Gas	250.219	ppb	2.6	7874936.07	250	100.09	90	110	
Pb	208	159	No Gas	254.057	ppb	0.9	10840452.45	250	101.62	90	110	
U	238	159	No Gas	246.796	ppb	1.3	10374103.75	250	98.72	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1732389.92	1.2	1866774.34	92.8	60	120	
Sc	45	No Gas	5356287.17	0.3	5256704	101.89	60	120	
Sc	45	H2	3275347.75	1.6	3216050	101.84	60	120	
Sc	45	He	599227.98	0.2	590136.5	101.54	60	120	
Ge	72	No Gas	1381000.29	1.5	1347600.04	102.48	60	120	
Ge	72	H2	934265.44	2.2	912330.27	102.4	60	120	
Ge	72	He	378353.57	0.8	378247.59	100.03	60	120	
In	115	No Gas	8753711.63	1.3	8692051.13	100.71	60	120	
Tb	159	No Gas	11964646.75	0.4	11827603.42	101.16	60	120	
Tb	159	He	6685128.00	0.2	6692094.83	99.9	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6F22016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:53:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98865.27	0.4	
Be	9	6	No Gas	0.004	ppb	213.7	46.67	0.08	
B	11	6	No Gas	0.151	ppb	142.2	3679.38	4	
Na	23	45	H2	8.037	ppb	1.1	432110.11	40	
Mg	24	45	No Gas	1.105	ppb	28.2	38064.79	10	
Al	27	45	No Gas	1.078	ppb	32.4	23240.09	15	
Si	28	45	H2	<0.000	ppb	N/A	3578.46	8	
P	31	45	No Gas	<0.000	ppb	N/A	19215.96	10	
K	39	45	He	0.916	ppb	192.6	101172.94	20	
Ca	40	45	H2	0.438	ppb	41.7	138180.55	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	372.67	0.5	
V	51	45	He	0.069	ppb	64.8	6912.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1075.38	0.2	
Mn	55	45	No Gas	0.062	ppb	26.9	10720.20	0.2	
Fe	56	45	H2	1.209	ppb	5.5	26189.74	10	
Co	59	45	No Gas	0.007	ppb	36.0	420.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	116.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1938.80	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2021.48	2	
As	75	72	He	0.011	ppb	198.7	328.33	0.2	
Se	78	72	H2	0.022	ppb	66.4	28.33	0.2	
Sr	88	72	No Gas	0.005	ppb	71.8	895.59	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	120.00	2	
Mo	95	115	No Gas	0.019	ppb	4.8	187.78	0.2	
Ag	107	115	No Gas	0.001	ppb	184.6	125.56	0.08	
Cd	111	115	No Gas	0.015	ppb	38.2	97.83	0.2	
Sn	118	115	No Gas	0.032	ppb	20.3	1856.60	0.2	
Sb	123	115	No Gas	0.003	ppb	34.5	170.00	0.4	
Ba	137	115	No Gas	0.021	ppb	36.4	235.56	0.2	
W	182	159	No Gas	0.009	ppb	38.6	250.00	0.3	
Hg	201	159	He	0.002	ppb	144.9	11.83	0.1	
Tl	205	159	No Gas	0.022	ppb	22.1	1478.97	0.1	
Pb	208	159	No Gas	0.019	ppb	38.8	2462.32	0.1	
U	238	159	No Gas	0.008	ppb	7.8	428.90	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1709238.89	1.9	1866774.34	91.56	60	120	
Sc	45	No Gas	5156921.00	1.0	5256704	98.1	60	120	
Sc	45	H2	3188394.83	0.3	3216050	99.14	60	120	
Sc	45	He	579926.92	2.5	590136.5	98.27	60	120	
Ge	72	No Gas	1323948.75	2.7	1347600.04	98.24	60	120	
Ge	72	H2	903765.81	0.8	912330.27	99.06	60	120	
Ge	72	He	368350.32	0.8	378247.59	97.38	60	120	
In	115	No Gas	8764699.40	1.9	8692051.13	100.84	60	120	
Tb	159	No Gas	11933850.36	1.7	11827603.42	100.9	60	120	
Tb	159	He	6692787.00	0.4	6692094.83	100.01	60	120	

Blank Report

Sample Name	IMF035WB
File Name	H6F22017.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:56:20
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	101775.96	0.4	
Be	9	6	No Gas	0.002	ppb	272.3	41.11	0.08	
B	11	6	No Gas	11.681	ppb	4.2	23802.36	4	>1/2LOQ
Na	23	45	H2	20.144	ppb	16.4	491643.68	40	
Mg	24	45	No Gas	3.794	ppb	2.7	67455.85	10	
Al	27	45	No Gas	1.857	ppb	5.6	34609.86	15	
Si	28	45	H2	0.985	ppb	18.0	5000.23	8	
P	31	45	No Gas	<0.000	ppb	N/A	19266.70	10	
K	39	45	He	2.368	ppb	201.0	104473.72	20	
Ca	40	45	H2	41.428	ppb	4.3	528184.98	25	>1/2LOQ LY 06|26|20
Ti	47	45	No Gas	<0.000	ppb	N/A	424.01	0.5	
V	51	45	He	<0.000	ppb	N/A	5172.31	0.5	
Cr	52	45	He	0.003	ppb	514.5	1250.06	0.2	
Mn	55	45	No Gas	0.060	ppb	2.8	10968.39	0.2	
Fe	56	45	H2	1.899	ppb	4.7	36209.84	10	
Co	59	45	No Gas	0.001	ppb	152.1	270.67	0.15	
Ni	60	45	He	0.064	ppb	26.1	285.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1960.14	0.4	
Zn	66	72	No Gas	1.849	ppb	2.1	9827.56	2	
As	75	72	He	<0.000	ppb	N/A	244.67	0.2	
Se	78	72	H2	<0.000	ppb	N/A	18.33	0.2	
Sr	88	72	No Gas	0.083	ppb	0.8	3701.62	0.2	
Zr	90	72	No Gas	0.008	ppb	31.2	356.67	2	
Mo	95	115	No Gas	0.010	ppb	19.3	131.11	0.2	
Ag	107	115	No Gas	0.064	ppb	6.8	1298.95	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	21.30	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	946.70	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	111.11	0.4	
Ba	137	115	No Gas	0.025	ppb	25.9	262.23	0.2	
W	182	159	No Gas	0.003	ppb	47.3	170.00	0.3	
Hg	201	159	He	0.003	ppb	100.5	12.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	667.79	0.1	
Pb	208	159	No Gas	0.025	ppb	13.9	2717.90	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	68.89	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1756076.13	1.9	1866774.34	94.07	60	120	
Sc	45	No Gas	5295528.83	1.3	5256704	100.74	60	120	
Sc	45	H2	3241198.92	3.3	3216050	100.78	60	120	
Sc	45	He	592802.84	1.3	590136.5	100.45	60	120	
Ge	72	No Gas	1367536.25	1.7	1347600.04	101.48	60	120	
Ge	72	H2	937028.73	3.1	912330.27	102.71	60	120	
Ge	72	He	380378.46	1.2	378247.59	100.56	60	120	
In	115	No Gas	8994461.44	0.9	8692051.13	103.48	60	120	
Tb	159	No Gas	12022156.74	0.6	11827603.42	101.64	60	120	
Tb	159	He	6745631.67	1.4	6692094.83	100.8	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WL
File Name	H6F22018.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:58:55
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.839	ppb	1.8	339523.66	30	96.13	85	115	
Be	9	6	No Gas	29.353	ppb	0.9	81518.00	30	97.84	83	121	
B	11	6	No Gas	39.744	ppb	2.2	73051.79	30	132.48	85	115	FAIL
Na	23	45	H2	3154.519	ppb	1.3	14167763.00	3000	105.15	85	117	
Mg	24	45	No Gas	3012.719	ppb	2.2	31802959.33	3000	100.42	83	118	
Al	27	45	No Gas	3022.636	ppb	3.0	41589638.55	3000	100.75	84	117	
Si	28	45	H2	1.277	ppb	6.0	5387.05	3000	0.04	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	19284.70	300	-0.84	85	115	FAIL
K	39	45	He	3131.649	ppb	1.3	2481053.67	3000	104.39	87	115	
Ca	40	45	H2	3159.707	ppb	0.6	30128560.67	3000	105.32	87	118	
Ti	47	45	No Gas	29.499	ppb	2.7	52641.43	30	98.33	85	115	
V	51	45	He	30.710	ppb	1.1	195328.38	30	102.37	86	115	
Cr	52	45	He	31.172	ppb	1.3	222549.06	30	103.91	85	116	
Mn	55	45	No Gas	31.733	ppb	1.8	962621.31	30	105.78	87	115	
Fe	56	45	H2	3175.317	ppb	1.2	44383074.67	3000	105.84	87	118	
Co	59	45	No Gas	30.735	ppb	2.6	755851.31	30	102.45	86	115	
Ni	60	45	He	32.546	ppb	1.0	79468.01	30	108.49	85	117	
Cu	63	45	He	33.271	ppb	2.0	216299.87	30	110.9	85	118	
Zn	66	72	No Gas	63.631	ppb	2.1	268448.12	60	106.05	83	119	
As	75	72	He	30.024	ppb	1.1	39648.36	30	100.08	84	116	
Se	78	72	H2	31.011	ppb	0.1	13558.14	30	103.37	80	120	
Sr	88	72	No Gas	29.731	ppb	2.8	1070474.99	30	99.1	85	115	
Zr	90	72	No Gas	0.025	ppb	29.4	753.36	30	0.08	85	115	FAIL
Mo	95	115	No Gas	28.074	ppb	0.9	203370.47	30	93.58	85	115	
Ag	107	115	No Gas	29.761	ppb	1.8	549173.78	30	99.2	85	117	
Cd	111	115	No Gas	28.888	ppb	1.8	111333.45	30	96.29	87	115	
Sn	118	115	No Gas	28.637	ppb	1.7	331070.66	30	95.46	85	115	
Sb	123	115	No Gas	28.094	ppb	1.1	375745.92	30	93.65	85	117	
Ba	137	115	No Gas	28.184	ppb	1.5	165899.01	30	93.95	86	114	
W	182	159	No Gas	0.007	ppb	32.6	223.33	30	0.02	85	115	FAIL
Hg	201	159	He	0.001	ppb	128.9	10.50	2.5	0.04	82	119	FAIL
Tl	205	159	No Gas	29.989	ppb	0.9	943505.86	30	99.96	82	116	
Pb	208	159	No Gas	29.875	ppb	0.6	1274748.00	30	99.58	88	115	
U	238	159	No Gas	29.586	ppb	1.3	1242290.40	30	98.62	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1768217.21	1.3	1866774.34	94.72	60	120	
Sc	45	No Gas	5294927.67	1.1	5256704	100.73	60	120	
Sc	45	H2	3249461.50	0.4	3216050	101.04	60	120	
Sc	45	He	595630.38	0.7	590136.5	100.93	60	120	
Ge	72	No Gas	1377755.00	1.0	1347600.04	102.24	60	120	
Ge	72	H2	937791.73	0.4	912330.27	102.79	60	120	
Ge	72	He	384791.27	1.1	378247.59	101.73	60	120	
In	115	No Gas	8911919.46	1.5	8692051.13	102.53	60	120	
Tb	159	No Gas	11951896.47	1.1	11827603.42	101.05	60	120	
Tb	159	He	6701444.83	0.6	6692094.83	100.14	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WC
File Name	H6F22019.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 11:01:30
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.216	ppb	1.1	343969.20	30	100.72	85	115	
Be	9	6	No Gas	30.445	ppb	1.9	82911.41	30	101.48	83	121	
B	11	6	No Gas	41.107	ppb	2.3	73963.31	30	137.02	85	115	FAIL
Na	23	45	H2	3052.279	ppb	1.3	13704938.00	3000	101.74	85	117	
Mg	24	45	No Gas	3040.676	ppb	1.8	31743020.00	3000	101.36	83	118	
Al	27	45	No Gas	3008.175	ppb	1.3	40932097.73	3000	100.27	84	117	
Si	28	45	H2	1.187	ppb	14.3	5265.00	3000	0.04	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	20001.06	300	-0.47	85	115	FAIL
K	39	45	He	3101.054	ppb	0.9	2467106.67	3000	103.37	87	115	
Ca	40	45	H2	3270.469	ppb	0.3	31143951.33	3000	109.02	87	118	
Ti	47	45	No Gas	30.164	ppb	3.0	53228.37	30	100.55	85	115	
V	51	45	He	31.280	ppb	0.2	199589.27	30	104.27	86	115	
Cr	52	45	He	31.976	ppb	1.3	229111.85	30	106.59	85	116	
Mn	55	45	No Gas	32.712	ppb	1.8	981157.04	30	109.04	87	115	
Fe	56	45	H2	3132.195	ppb	1.5	43726302.67	3000	104.41	87	118	
Co	59	45	No Gas	31.385	ppb	1.6	763265.31	30	104.62	86	115	
Ni	60	45	He	32.274	ppb	0.7	79103.88	30	107.58	85	117	
Cu	63	45	He	32.868	ppb	1.0	214643.05	30	109.63	85	118	
Zn	66	72	No Gas	62.293	ppb	4.3	258367.17	60	103.82	83	119	
As	75	72	He	31.266	ppb	0.4	40749.65	30	104.22	84	116	
Se	78	72	H2	31.435	ppb	1.1	13572.16	30	104.78	80	120	
Sr	88	72	No Gas	30.818	ppb	4.2	1090535.06	30	102.73	85	115	
Zr	90	72	No Gas	0.014	ppb	9.6	490.01	30	0.05	85	115	FAIL
Mo	95	115	No Gas	29.312	ppb	2.7	206093.27	30	97.71	85	115	
Ag	107	115	No Gas	31.207	ppb	2.7	558941.63	30	104.02	85	117	
Cd	111	115	No Gas	29.926	ppb	2.0	111953.49	30	99.75	87	115	
Sn	118	115	No Gas	29.721	ppb	1.7	333455.44	30	99.07	85	115	
Sb	123	115	No Gas	29.477	ppb	2.2	382662.50	30	98.26	85	117	
Ba	137	115	No Gas	29.300	ppb	1.5	167408.29	30	97.67	86	114	
W	182	159	No Gas	0.007	ppb	44.6	226.67	30	0.02	85	115	FAIL
Hg	201	159	He	0.003	ppb	44.7	12.83	2.5	0.12	82	119	FAIL
Tl	205	159	No Gas	30.639	ppb	3.4	951510.73	30	102.13	82	116	
Pb	208	159	No Gas	30.748	ppb	2.2	1295300.02	30	102.49	88	115	
U	238	159	No Gas	30.206	ppb	0.9	1252345.78	30	100.69	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1733894.96	1.8	1866774.34	92.88	60	120	
Sc	45	No Gas	5236810.83	1.1	5256704	99.62	60	120	
Sc	45	H2	3245756.42	1.4	3216050	100.92	60	120	
Sc	45	He	597875.33	1.1	590136.5	101.31	60	120	
Ge	72	No Gas	1354994.12	1.8	1347600.04	100.55	60	120	
Ge	72	H2	926107.42	0.3	912330.27	101.51	60	120	
Ge	72	He	379875.76	0.4	378247.59	100.43	60	120	
In	115	No Gas	8652004.09	1.4	8692051.13	99.54	60	120	
Tb	159	No Gas	11801848.42	1.8	11827603.42	99.78	60	120	
Tb	159	He	6643698.17	0.8	6692094.83	99.28	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV2
File Name	H6F22026.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 11:19:39
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.810	ppb	1.9	296558.37	25	95.24	90	110	
Be	9	6	No Gas	24.133	ppb	3.2	66623.02	25	96.53	90	110	
B	11	6	No Gas	55.170	ppb	4.9	99416.33	50	110.34	90	110	> +/- 10%
Na	23	45	H2	24680.376	ppb	1.6	103916597.33	25000	98.72	90	110	
Mg	24	45	No Gas	24527.718	ppb	1.9	248796325.33	25000	98.11	90	110	
Al	27	45	No Gas	24504.809	ppb	1.8	324166975.17	25000	98.02	90	110	
Si	28	45	H2	2456.896	ppb	0.8	2990427.67	2500	98.28	90	110	
P	31	45	No Gas	237.985	ppb	2.0	213819.52	250	95.19	90	110	
K	39	45	He	25261.778	ppb	0.7	18283659.33	25000	101.05	90	110	
Ca	40	45	H2	24765.198	ppb	0.8	226141450.67	25000	99.06	90	110	
Ti	47	45	No Gas	243.828	ppb	2.4	415073.82	250	97.53	90	110	
V	51	45	He	257.216	ppb	0.2	1504399.92	250	102.89	90	110	
Cr	52	45	He	257.861	ppb	0.5	1736942.87	250	103.14	90	110	
Mn	55	45	No Gas	1521.265	ppb	1.8	43967133.33	1500	101.42	90	110	
Fe	56	45	H2	25284.869	ppb	0.6	339750538.67	25000	101.14	90	110	
Co	59	45	No Gas	250.911	ppb	2.4	5932177.33	250	100.36	90	110	
Ni	60	45	He	259.804	ppb	0.4	600592.52	250	103.92	90	110	
Cu	63	45	He	262.115	ppb	1.1	1598547.67	250	104.85	90	110	
Zn	66	72	No Gas	236.856	ppb	2.8	957732.56	250	94.74	90	110	
As	75	72	He	250.487	ppb	0.5	309697.37	250	100.19	90	110	
Se	78	72	H2	254.514	ppb	2.1	105715.58	250	101.81	90	110	
Sr	88	72	No Gas	248.288	ppb	1.6	8613677.43	250	99.32	90	110	
Zr	90	72	No Gas	23.885	ppb	1.5	525208.89	25	95.54	90	110	
Mo	95	115	No Gas	240.958	ppb	0.2	1671912.92	250	96.38	90	110	
Ag	107	115	No Gas	23.994	ppb	1.0	424210.09	25	95.98	90	110	
Cd	111	115	No Gas	238.463	ppb	1.1	880202.90	250	95.39	90	110	
Sn	118	115	No Gas	246.435	ppb	0.6	2718417.67	250	98.57	90	110	
Sb	123	115	No Gas	47.794	ppb	0.2	612334.14	50	95.59	90	110	
Ba	137	115	No Gas	492.817	ppb	0.6	2777202.18	500	98.56	90	110	
W	182	159	No Gas	24.247	ppb	1.8	327468.95	25	96.99	90	110	
Hg	201	159	He	2.553	ppb	3.3	3075.04	2.5	102.12	90	110	
Tl	205	159	No Gas	248.501	ppb	1.9	7859999.41	250	99.4	90	110	
Pb	208	159	No Gas	250.408	ppb	1.3	10738346.65	250	100.16	90	110	
U	238	159	No Gas	247.696	ppb	0.1	10463197.64	250	99.08	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1757785.22	0.5	1866774.34	94.16	60	120	
Sc	45	No Gas	5092317.67	0.7	5256704	96.87	60	120	
Sc	45	H2	3124344.25	0.5	3216050	97.15	60	120	
Sc	45	He	564691.23	0.4	590136.5	95.69	60	120	
Ge	72	No Gas	1328628.87	0.8	1347600.04	98.59	60	120	
Ge	72	H2	892307.96	1.9	912330.27	97.81	60	120	
Ge	72	He	362894.79	0.4	378247.59	95.94	60	120	
In	115	No Gas	8538587.48	1.4	8692051.13	98.23	60	120	
Tb	159	No Gas	12024027.02	1.3	11827603.42	101.66	60	120	
Tb	159	He	6640498.67	0.4	6692094.83	99.23	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB2
File Name	H6F22027.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 11:27:57
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	100411.57	0.4	
Be	9	6	No Gas	0.005	ppb	156.3	50.00	0.08	
B	11	6	No Gas	0.505	ppb	40.2	4329.56	4	
Na	23	45	H2	33.933	ppb	2.2	529372.02	40	
Mg	24	45	No Gas	0.740	ppb	17.9	34113.06	10	
Al	27	45	No Gas	<0.000	ppb	N/A	7245.29	15	
Si	28	45	H2	<0.000	ppb	N/A	3324.40	8	
P	31	45	No Gas	0.756	ppb	100.0	21354.41	10	
K	39	45	He	2.394	ppb	150.5	102069.92	20	
Ca	40	45	H2	<0.000	ppb	N/A	127274.51	25	
Tl	47	45	No Gas	<0.000	ppb	N/A	334.00	0.5	
V	51	45	He	0.320	ppb	1.8	8403.91	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1001.37	0.2	
Mn	55	45	No Gas	0.009	ppb	96.2	9125.04	0.2	
Fe	56	45	H2	0.023	ppb	18.1	9672.09	10	
Co	59	45	No Gas	<0.000	ppb	N/A	195.33	0.15	
Ni	60	45	He	<0.000	ppb	N/A	106.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1408.07	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1770.12	2	
As	75	72	He	0.024	ppb	66.9	344.34	0.2	
Se	78	72	H2	<0.000	ppb	N/A	17.00	0.2	
Sr	88	72	No Gas	<0.000	ppb	N/A	612.24	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	106.67	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	43.33	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	83.33	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	31.23	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	922.25	0.2	
Sb	123	115	No Gas	0.002	ppb	35.1	146.67	0.4	
Ba	137	115	No Gas	<0.000	ppb	N/A	104.45	0.2	
W	182	159	No Gas	0.010	ppb	35.4	266.67	0.3	
Hg	201	159	He	0.001	ppb	329.7	10.33	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	468.90	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	1396.70	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	74.44	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1728630.29	1.5	1866774.34	92.6	60	120	
Sc	45	No Gas	5126339.33	1.5	5256704	97.52	60	120	
Sc	45	H2	3108661.83	0.9	3216050	96.66	60	120	
Sc	45	He	578880.40	0.4	590136.5	98.09	60	120	
Ge	72	No Gas	1314605.25	1.5	1347600.04	97.55	60	120	
Ge	72	H2	886844.86	0.9	912330.27	97.21	60	120	
Ge	72	He	367428.06	0.2	378247.59	97.14	60	120	
In	115	No Gas	8685117.12	1.8	8692051.13	99.92	60	120	
Tb	159	No Gas	11873827.31	1.0	11827603.42	100.39	60	120	
Tb	159	He	6626804.33	0.0	6692094.83	99.02	60	120	

Sample Report

Sample Name	F155-01
File Name	H6F22032.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 11:40:55
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	33.766	33.766	ppb	3.7	352555.51	50	
Be	9	6	No Gas	0.002	0.002	ppb	471.8	37.78	50	
B	11	6	No Gas	103.924	103.924	ppb	5.4	171910.09	100	>LDR
Na	23	45	H2	94117.846	94117.846	ppb	0.6	398895242.67	50000	>LDR
Mg	24	45	No Gas	69404.847	69404.847	ppb	3.6	683601109.33	50000	>LDR
Al	27	45	No Gas	56.622	56.622	ppb	2.9	735861.45	50000	
Si	28	45	H2	8782.632	8782.632	ppb	0.4	10780177.67	5000	>LDR
P	31	45	No Gas	10.455	10.455	ppb	8.8	28250.69	500	
K	39	45	He	3299.445	3299.445	ppb	0.2	2471159.25	50000	
Ca	40	45	H2	174621.065	174621.065	ppb	0.3	1608606592.00	50000	>LDR
Ti	47	45	No Gas	0.459	0.459	ppb	5.7	1205.39	500	
V	51	45	He	1.838	1.838	ppb	2.4	17025.89	500	
Cr	52	45	He	1.093	1.093	ppb	1.2	8518.65	500	
Mn	55	45	No Gas	7.473	7.473	ppb	2.8	218268.07	3000	
Fe	56	45	H2	151.645	151.645	ppb	0.5	2066044.04	50000	
Co	59	45	No Gas	0.195	0.195	ppb	5.0	4722.82	500	
Ni	60	45	He	0.385	0.385	ppb	7.9	1011.37	500	
Cu	63	45	He	0.094	0.094	ppb	15.1	3051.68	500	
Zn	66	72	No Gas	2.141	2.141	ppb	3.8	10333.94	500	
As	75	72	He	0.699	0.699	ppb	2.7	1182.05	500	
Se	78	72	H2	0.935	0.935	ppb	2.8	409.01	500	
Sr	88	72	No Gas	1268.487	1268.487	ppb	2.1	42378444.98	500	>LDR
Zr	90	72	No Gas	0.023	0.023	ppb	44.8	653.35	50	
Mo	95	115	No Gas	0.288	0.288	ppb	1.9	1973.48	500	
Ag	107	115	No Gas	0.070	0.070	ppb	3.4	1292.29	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-4.10	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	730.02	500	
Sb	123	115	No Gas	0.046	0.046	ppb	5.1	685.57	100	
Ba	137	115	No Gas	97.762	97.762	ppb	1.3	529779.58	1000	
W	182	159	No Gas	0.015	0.015	ppb	29.8	326.67	50	
Hg	201	159	He	0.004	0.004	ppb	48.3	14.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	357.78	500	
Pb	208	159	No Gas	0.016	0.016	ppb	19.5	2234.52	500	
U	238	159	No Gas	2.122	2.122	ppb	2.3	85931.29	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1641594.15	1.4	1866774.34	87.94	60	120	
Sc	45	No Gas	4946817.17	2.1	5256704	94.1	60	120	
Sc	45	H2	3153421.58	0.7	3216050	98.05	60	120	
Sc	45	He	564247.00	0.5	590136.5	95.61	60	120	
Ge	72	No Gas	1279433.62	0.9	1347600.04	94.94	60	120	
Ge	72	H2	896053.58	0.2	912330.27	98.22	60	120	
Ge	72	He	365573.53	1.3	378247.59	96.65	60	120	
In	115	No Gas	8209357.72	0.9	8692051.13	94.45	60	120	
Tb	159	No Gas	11515912.88	1.4	11827603.42	97.36	60	120	
Tb	159	He	6557981.83	0.5	6692094.83	98	60	120	

Sample Report

Sample Name	F155-02
File Name	H6F22033.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 11:43:31
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	27.453	27.453	ppb	2.8	336806.87	50	
Be	9	6	No Gas	0.002	0.002	ppb	147.8	43.33	50	
B	11	6	No Gas	85.010	85.010	ppb	3.4	156197.00	100	
Na	23	45	H2	87297.152	87297.152	ppb	0.4	372695872.00	50000	>LDR
Mg	24	45	No Gas	60421.168	60421.168	ppb	1.9	620690922.67	50000	>LDR
Al	27	45	No Gas	56.587	56.587	ppb	1.5	766903.40	50000	
Si	28	45	H2	8886.205	8886.205	ppb	1.4	10986004.67	5000	>LDR
P	31	45	No Gas	15.865	15.865	ppb	0.4	33908.65	500	
K	39	45	He	3226.519	3226.519	ppb	1.0	2458847.08	50000	
Ca	40	45	H2	164294.733	164294.733	ppb	0.9	1524447445.33	50000	>LDR
Ti	47	45	No Gas	0.793	0.793	ppb	10.5	1832.80	500	
V	51	45	He	2.171	2.171	ppb	0.8	19279.53	500	
Cr	52	45	He	3.208	3.208	ppb	0.6	23124.81	500	
Mn	55	45	No Gas	10.221	10.221	ppb	0.8	308005.59	3000	
Fe	56	45	H2	397.837	397.837	ppb	0.8	5444051.83	50000	
Co	59	45	No Gas	0.218	0.218	ppb	3.1	5469.10	500	
Ni	60	45	He	1.667	1.667	ppb	2.0	4038.60	500	
Cu	63	45	He	0.191	0.191	ppb	5.3	3698.50	500	
Zn	66	72	No Gas	8.685	8.685	ppb	1.5	37069.22	500	
As	75	72	He	0.812	0.812	ppb	5.5	1310.73	500	
Se	78	72	H2	0.868	0.868	ppb	13.4	373.67	500	
Sr	88	72	No Gas	1179.834	1179.834	ppb	0.5	40856783.93	500	>LDR
Zr	90	72	No Gas	0.050	0.050	ppb	6.8	1266.73	50	
Mo	95	115	No Gas	0.786	0.786	ppb	1.2	5457.79	500	
Ag	107	115	No Gas	0.207	0.207	ppb	3.5	3730.53	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	22.07	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	997.82	500	
Sb	123	115	No Gas	0.058	0.058	ppb	3.5	851.14	100	
Ba	137	115	No Gas	76.318	76.318	ppb	0.9	426220.46	1000	
W	182	159	No Gas	0.018	0.018	ppb	11.9	363.34	50	
Hg	201	159	He	0.002	0.002	ppb	135.4	11.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	397.78	500	
Pb	208	159	No Gas	0.048	0.048	ppb	5.2	3636.88	500	
U	238	159	No Gas	1.802	1.802	ppb	1.8	74622.97	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1814908.50	0.2	1866774.34	97.22	60	120	
Sc	45	No Gas	5156993.83	1.1	5256704	98.1	60	120	
Sc	45	H2	3176379.17	0.9	3216050	98.77	60	120	
Sc	45	He	573589.90	0.7	590136.5	97.2	60	120	
Ge	72	No Gas	1326188.08	1.2	1347600.04	98.41	60	120	
Ge	72	H2	879972.50	1.0	912330.27	96.45	60	120	
Ge	72	He	362147.64	0.4	378247.59	95.74	60	120	
In	115	No Gas	8459165.64	1.0	8692051.13	97.32	60	120	
Tb	159	No Gas	11775169.53	1.4	11827603.42	99.56	60	120	
Tb	159	He	6479816.67	0.2	6692094.83	96.83	60	120	

Sample Report

Sample Name	F155-01I
File Name	H6F22034.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 11:46:07
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	30.796	3.080	ppb	1.2	141892.54	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	24.44	50	
B	11	6	No Gas	107.931	10.793	ppb	3.1	24727.29	100	
Na	23	45	H2	100319.144	10031.914	ppb	1.5	43411022.67	50000	
Mg	24	45	No Gas	73056.380	7305.638	ppb	1.5	77876984.00	50000	
Al	27	45	No Gas	60.543	6.054	ppb	3.1	93266.19	50000	
Si	28	45	H2	9142.874	914.287	ppb	1.1	1139805.83	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	21258.25	500	
K	39	45	He	3316.493	331.649	ppb	1.4	357616.64	50000	
Ca	40	45	H2	179719.266	17971.927	ppb	2.0	167759072.00	50000	
Ti	47	45	No Gas	<0.000	<0.000	ppb	N/A	416.01	500	
V	51	45	He	8.400	0.840	ppb	3.8	11926.52	500	
Cr	52	45	He	0.758	0.076	ppb	14.0	1784.79	500	
Mn	55	45	No Gas	7.283	0.728	ppb	1.0	31359.89	3000	
Fe	56	45	H2	159.507	15.951	ppb	1.6	228676.59	50000	
Co	59	45	No Gas	0.174	0.017	ppb	11.4	688.68	500	
Ni	60	45	He	0.415	0.041	ppb	13.0	232.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1490.75	500	
Zn	66	72	No Gas	4.649	0.465	ppb	4.0	4126.63	500	
As	75	72	He	0.988	0.099	ppb	29.6	450.34	500	
Se	78	72	H2	0.821	0.082	ppb	20.6	54.67	500	
Sr	88	72	No Gas	1248.682	124.868	ppb	1.7	4507667.87	500	
Zr	90	72	No Gas	0.025	0.002	ppb	63.3	240.00	50	
Mo	95	115	No Gas	0.219	0.022	ppb	54.4	208.89	500	
Ag	107	115	No Gas	0.076	0.008	ppb	18.3	240.00	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	16.71	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	617.79	500	
Sb	123	115	No Gas	0.040	0.004	ppb	24.9	176.67	100	
Ba	137	115	No Gas	94.016	9.402	ppb	2.0	54109.05	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	83.33	50	
Hg	201	159	He	0.005	0.001	ppb	598.0	9.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	196.67	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1361.14	500	
U	238	159	No Gas	2.047	0.205	ppb	1.1	8644.17	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1950146.00	0.6	1866774.34	104.47	60	120	
Sc	45	No Gas	5349731.00	1.2	5256704	101.77	60	120	
Sc	45	H2	3193924.42	2.1	3216050	99.31	60	120	
Sc	45	He	599946.46	0.1	590136.5	101.66	60	120	
Ge	72	No Gas	1382301.50	0.3	1347600.04	102.58	60	120	
Ge	72	H2	924531.40	1.3	912330.27	101.34	60	120	
Ge	72	He	378256.03	1.4	378247.59	100	60	120	
In	115	No Gas	8701823.10	0.7	8692051.13	100.11	60	120	
Tb	159	No Gas	11910104.53	0.2	11827603.42	100.7	60	120	
Tb	159	He	6591584.83	1.5	6692094.83	98.5	60	120	

Sample Report

Sample Name	F155-02I
File Name	H6F22035.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 11:48:42
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	26.239	2.624	ppb	6.2	139966.95	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	25.55	50	
B	11	6	No Gas	85.017	8.502	ppb	2.6	20628.47	100	
Na	23	45	H2	89527.018	8952.702	ppb	1.3	39474753.33	50000	
Mg	24	45	No Gas	63174.674	6317.467	ppb	2.5	66888924.00	50000	
Al	27	45	No Gas	60.369	6.037	ppb	3.7	92406.86	50000	
Si	28	45	H2	8817.851	881.785	ppb	1.8	1118917.21	5000	
P	31	45	No Gas	6.933	0.693	ppb	49.6	22084.86	500	
K	39	45	He	3284.248	328.425	ppb	3.0	355236.91	50000	
Ca	40	45	H2	165163.910	16516.391	ppb	1.5	156941306.67	50000	
Ti	47	45	No Gas	<0.000	<0.000	ppb	N/A	474.01	500	
V	51	45	He	8.796	0.880	ppb	0.1	12175.41	500	
Cr	52	45	He	2.888	0.289	ppb	3.2	3308.40	500	
Mn	55	45	No Gas	10.637	1.064	ppb	1.8	41263.48	3000	
Fe	56	45	H2	401.954	40.195	ppb	0.9	571660.56	50000	
Co	59	45	No Gas	0.191	0.019	ppb	5.6	726.02	500	
Ni	60	45	He	1.926	0.193	ppb	6.0	604.01	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1617.43	500	
Zn	66	72	No Gas	13.415	1.341	ppb	2.8	7871.62	500	
As	75	72	He	0.967	0.097	ppb	11.5	455.34	500	
Se	78	72	H2	0.701	0.070	ppb	11.1	49.67	500	
Sr	88	72	No Gas	1162.517	116.252	ppb	1.4	4232863.44	500	
Zr	90	72	No Gas	0.031	0.003	ppb	54.0	256.67	50	
Mo	95	115	No Gas	0.859	0.086	ppb	4.1	662.24	500	
Ag	107	115	No Gas	0.234	0.023	ppb	12.4	525.57	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.06	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	621.13	500	
Sb	123	115	No Gas	0.046	0.005	ppb	23.7	185.55	100	
Ba	137	115	No Gas	76.821	7.682	ppb	1.6	44302.01	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	110.00	50	
Hg	201	159	He	0.010	0.001	ppb	35.5	10.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	168.89	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1421.15	500	
U	238	159	No Gas	1.780	0.178	ppb	3.2	7465.61	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1981136.03	1.5	1866774.34	106.13	60	120	
Sc	45	No Gas	5313637.67	0.8	5256704	101.08	60	120	
Sc	45	H2	3250470.58	1.0	3216050	101.07	60	120	
Sc	45	He	600134.08	0.5	590136.5	101.69	60	120	
Ge	72	No Gas	1394062.58	1.5	1347600.04	103.45	60	120	
Ge	72	H2	927116.29	1.8	912330.27	101.62	60	120	
Ge	72	He	384676.38	0.5	378247.59	101.7	60	120	
In	115	No Gas	8715125.83	0.5	8692051.13	100.27	60	120	
Tb	159	No Gas	11809558.97	0.6	11827603.42	99.85	60	120	
Tb	159	He	6684277.83	1.1	6692094.83	99.88	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6F22038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:01:06
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.562	ppb	4.2	316501.19	25	98.25	90	110	
Be	9	6	No Gas	24.188	ppb	3.8	69803.86	25	96.75	90	110	
B	11	6	No Gas	54.297	ppb	4.9	102311.98	50	108.59	90	110	
Na	23	45	H2	25083.498	ppb	0.2	104160565.33	25000	100.33	90	110	
Mg	24	45	No Gas	25103.597	ppb	0.9	254803077.33	25000	100.41	90	110	
Al	27	45	No Gas	24776.159	ppb	1.5	327953368.44	25000	99.1	90	110	
Si	28	45	H2	2476.830	ppb	0.7	2973254.92	2500	99.07	90	110	
P	31	45	No Gas	248.891	ppb	0.6	222811.77	250	99.56	90	110	
K	39	45	He	25004.613	ppb	0.1	18128189.33	25000	100.02	90	110	
Ca	40	45	H2	24937.720	ppb	0.2	224591669.33	25000	99.75	90	110	
Ti	47	45	No Gas	246.938	ppb	1.6	420642.49	250	98.78	90	110	
V	51	45	He	253.724	ppb	0.1	1486463.04	250	101.49	90	110	
Cr	52	45	He	254.111	ppb	0.7	1714420.00	250	101.64	90	110	
Mn	55	45	No Gas	1500.074	ppb	1.7	43382666.67	1500	100	90	110	
Fe	56	45	H2	24999.860	ppb	0.5	331302112.00	25000	100	90	110	
Co	59	45	No Gas	248.571	ppb	1.7	5880662.50	250	99.43	90	110	
Ni	60	45	He	258.846	ppb	0.9	599319.31	250	103.54	90	110	
Cu	63	45	He	255.991	ppb	1.0	1563762.29	250	102.4	90	110	
Zn	66	72	No Gas	245.198	ppb	0.8	978665.25	250	98.08	90	110	
As	75	72	He	249.146	ppb	1.0	309151.05	250	99.66	90	110	
Se	78	72	H2	257.167	ppb	0.1	105464.62	250	102.87	90	110	
Sr	88	72	No Gas	246.162	ppb	2.2	8430692.44	250	98.46	90	110	
Zr	90	72	No Gas	24.232	ppb	2.0	526028.29	25	96.93	90	110	
Mo	95	115	No Gas	243.747	ppb	2.7	1652614.93	250	97.5	90	110	
Ag	107	115	No Gas	24.541	ppb	1.7	423924.47	25	98.16	90	110	
Cd	111	115	No Gas	245.430	ppb	0.4	885187.66	250	98.17	90	110	
Sn	118	115	No Gas	246.765	ppb	0.8	2659738.44	250	98.71	90	110	
Sb	123	115	No Gas	49.324	ppb	1.4	617455.30	50	98.65	90	110	
Ba	137	115	No Gas	498.562	ppb	1.9	2745600.38	500	99.71	90	110	
W	182	159	No Gas	24.999	ppb	0.8	328062.25	25	100	90	110	
Hg	201	159	He	2.612	ppb	1.1	3079.71	2.5	104.48	90	110	
Tl	205	159	No Gas	249.970	ppb	1.6	7682628.86	250	99.99	90	110	
Pb	208	159	No Gas	252.361	ppb	0.7	10515277.62	250	100.94	90	110	
U	238	159	No Gas	247.299	ppb	1.5	10149999.32	250	98.92	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1838467.82	2.7	1866774.34	98.48	60	120	
Sc	45	No Gas	5095634.67	0.6	5256704	96.94	60	120	
Sc	45	H2	3081380.00	0.5	3216050	95.81	60	120	
Sc	45	He	565612.50	0.9	590136.5	95.84	60	120	
Ge	72	No Gas	1311457.67	0.9	1347600.04	97.32	60	120	
Ge	72	H2	880772.23	0.6	912330.27	96.54	60	120	
Ge	72	He	364211.76	0.6	378247.59	96.29	60	120	
In	115	No Gas	8343072.46	0.6	8692051.13	95.99	60	120	
Tb	159	No Gas	11684230.65	1.7	11827603.42	98.79	60	120	
Tb	159	He	6502300.50	0.4	6692094.83	97.16	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6F22039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:06:21
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103856.66	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	26.67	0.08	
B	11	6	No Gas	0.398	ppb	52.4	4295.11	4	
Na	23	45	H2	24.503	ppb	4.5	491623.30	40	
Mg	24	45	No Gas	0.474	ppb	40.9	31209.64	10	
Al	27	45	No Gas	0.377	ppb	40.8	13703.60	15	
Si	28	45	H2	<0.000	ppb	N/A	3276.39	8	
P	31	45	No Gas	2.074	ppb	20.0	22301.22	10	
K	39	45	He	5.050	ppb	58.7	102427.94	20	
Ca	40	45	H2	<0.000	ppb	N/A	128443.99	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	413.34	0.5	
V	51	45	He	0.105	ppb	12.0	7011.13	0.5	
Cr	52	45	He	<0.000	ppb	N/A	926.70	0.2	
Mn	55	45	No Gas	0.036	ppb	34.8	9868.23	0.2	
Fe	56	45	H2	0.338	ppb	12.0	13929.12	10	
Co	59	45	No Gas	0.004	ppb	70.6	346.00	0.15	
Ni	60	45	He	0.004	ppb	117.8	134.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1271.39	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1803.46	2	
As	75	72	He	<0.000	ppb	N/A	311.00	0.2	
Se	78	72	H2	0.014	ppb	122.2	24.33	0.2	
Sr	88	72	No Gas	0.001	ppb	344.7	727.80	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	133.33	2	
Mo	95	115	No Gas	0.003	ppb	28.7	77.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	96.66	0.08	
Cd	111	115	No Gas	0.008	ppb	19.7	70.60	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1064.49	0.2	
Sb	123	115	No Gas	0.001	ppb	68.9	137.78	0.4	
Ba	137	115	No Gas	0.007	ppb	47.4	151.11	0.2	
W	182	159	No Gas	0.001	ppb	427.9	146.67	0.3	
Hg	201	159	He	0.004	ppb	42.3	14.33	0.1	
Tl	205	159	No Gas	0.001	ppb	504.9	807.81	0.1	
Pb	208	159	No Gas	0.002	ppb	173.0	1693.39	0.1	
U	238	159	No Gas	0.005	ppb	11.4	271.12	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1790982.70	1.1	1866774.34	95.94	60	120	
Sc	45	No Gas	5095771.17	1.0	5256704	96.94	60	120	
Sc	45	H2	3119000.83	1.1	3216050	96.98	60	120	
Sc	45	He	569895.71	0.9	590136.5	96.57	60	120	
Ge	72	No Gas	1311844.79	0.7	1347600.04	97.35	60	120	
Ge	72	H2	884934.98	0.8	912330.27	97	60	120	
Ge	72	He	365335.43	0.4	378247.59	96.59	60	120	
In	115	No Gas	8653360.68	0.4	8692051.13	99.55	60	120	
Tb	159	No Gas	11733400.09	0.9	11827603.42	99.2	60	120	
Tb	159	He	6577945.17	0.7	6692094.83	98.29	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2606
File Name	H6F22083.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 14:03:36
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.911	ppb	14.7	113391.67	1	91.1	80	120	
Be	9	6	No Gas	1.000	ppb	4.7	2873.63	1	100	80	120	
B	11	6	No Gas	8.945	ppb	4.4	19613.69	10	89.45	80	120	
Na	23	45	H2	104.452	ppb	2.0	835323.58	100	104.45	80	120	
Mg	24	45	No Gas	100.912	ppb	3.0	1071777.33	100	100.91	80	120	
Al	27	45	No Gas	99.757	ppb	2.5	1356013.88	100	99.76	80	120	
Si	28	45	H2	97.444	ppb	1.7	123192.51	100	97.44	80	120	
P	31	45	No Gas	47.937	ppb	2.3	60767.25	50	95.87	80	120	
K	39	45	He	103.120	ppb	9.5	176533.98	100	103.12	80	120	
Ca	40	45	H2	103.311	ppb	0.4	1083956.29	100	103.31	80	120	
Ti	47	45	No Gas	1.045	ppb	7.8	2262.86	1	104.5	80	120	
V	51	45	He	1.033	ppb	3.9	12669.18	1	103.3	80	120	
Cr	52	45	He	1.012	ppb	4.0	8189.78	1	101.2	80	120	
Mn	55	45	No Gas	1.036	ppb	3.4	39562.48	1	103.6	80	120	
Fe	56	45	H2	104.519	ppb	0.6	1426595.71	100	104.52	80	120	
Co	59	45	No Gas	1.010	ppb	2.6	24628.22	1	101	80	120	
Ni	60	45	He	1.077	ppb	0.8	2681.60	1	107.7	80	120	
Cu	63	45	He	0.844	ppb	6.9	7819.58	1	84.4	80	120	
Zn	66	72	No Gas	9.999	ppb	1.8	43044.15	10	99.99	80	120	
As	75	72	He	1.007	ppb	2.4	1588.09	1	100.7	80	120	
Se	78	72	H2	1.039	ppb	6.9	457.01	1	103.9	80	120	
Sr	88	72	No Gas	2.015	ppb	2.4	71630.02	2	100.75	80	120	
Zr	90	72	No Gas	3.877	ppb	4.9	86613.37	5	77.54	80	120	> +/- 20%
Mo	95	115	No Gas	0.956	ppb	3.8	6890.68	1	95.6	80	120	
Ag	107	115	No Gas	1.019	ppb	0.9	18655.37	1	101.9	80	120	
Cd	111	115	No Gas	1.005	ppb	1.2	3865.40	1	100.5	80	120	
Sn	118	115	No Gas	0.934	ppb	2.5	12113.37	1	93.4	80	120	
Sb	123	115	No Gas	0.954	ppb	2.4	12722.84	1	95.4	80	120	
Ba	137	115	No Gas	1.019	ppb	1.7	6030.29	1	101.9	80	120	
W	182	159	No Gas	2.062	ppb	1.8	27226.14	2	103.1	80	120	
Hg	201	159	He	0.075	ppb	10.8	98.00	0.1	75	80	120	> +/- 20%
Tl	205	159	No Gas	1.003	ppb	2.1	31660.08	1	100.3	80	120	
Pb	208	159	No Gas	1.011	ppb	1.8	43817.80	1	101.1	80	120	
U	238	159	No Gas	0.959	ppb	1.6	39530.26	1	95.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1808021.53	1.7	1866774.34	96.85	60	120	
Sc	45	No Gas	5199346.50	0.7	5256704	98.91	60	120	
Sc	45	H2	3152611.67	0.9	3216050	98.03	60	120	
Sc	45	He	579546.60	1.7	590136.5	98.21	60	120	
Ge	72	No Gas	1347698.96	0.6	1347600.04	100.01	60	120	
Ge	72	H2	905416.13	1.2	912330.27	99.24	60	120	
Ge	72	He	370734.43	1.7	378247.59	98.01	60	120	
In	115	No Gas	8798985.00	0.1	8692051.13	101.23	60	120	
Tb	159	No Gas	11705508.70	0.4	11827603.42	98.97	60	120	
Tb	159	He	6557762.33	1.3	6692094.83	97.99	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2607
File Name	H6F22084.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 14:06:12
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.232	ppb	7.1	107657.97	0.4	58	80	120	> +/- 20%
Be	9	6	No Gas	0.381	ppb	6.7	1116.71	0.4	95.25	80	120	
B	11	6	No Gas	4.197	ppb	3.8	11118.84	0.4	1049.25	80	120	> +/- 20%
Na	23	45	H2	46.619	ppb	1.6	591178.08	40	116.55	80	120	
Mg	24	45	No Gas	40.702	ppb	2.8	449439.14	40	101.76	80	120	
Al	27	45	No Gas	39.367	ppb	2.3	541855.09	40	98.42	80	120	
K	39	45	He	40.584	ppb	8.2	132785.48	40	101.46	80	120	
Ca	40	45	H2	42.428	ppb	0.6	523848.87	40	106.07	80	120	
Ti	47	45	No Gas	0.376	ppb	5.8	1126.05	0.4	94	80	120	
V	51	45	He	0.263	ppb	8.4	8219.80	0.4	65.75	80	120	> +/- 20%
Cr	52	45	He	0.345	ppb	2.4	3649.16	0.4	86.25	80	120	
Mn	55	45	No Gas	0.392	ppb	3.1	20617.52	0.4	98	80	120	
Fe	56	45	H2	40.485	ppb	1.0	558984.38	40	101.21	80	120	
Co	59	45	No Gas	0.395	ppb	2.2	9804.86	0.4	98.75	80	120	
Ni	60	45	He	0.372	ppb	10.6	1026.71	0.4	93	80	120	
Cu	63	45	He	0.200	ppb	6.3	3867.89	0.4	50	80	120	> +/- 20%
Zn	66	72	No Gas	4.193	ppb	2.7	18913.83	4	104.82	80	120	
As	75	72	He	0.339	ppb	3.4	742.35	0.4	84.75	80	120	
Se	78	72	H2	0.420	ppb	7.2	195.00	0.4	105	80	120	
Sr	88	72	No Gas	0.420	ppb	3.0	15194.18	0.4	105	80	120	
Mo	95	115	No Gas	0.376	ppb	11.6	2625.82	0.4	94	80	120	
Ag	107	115	No Gas	0.396	ppb	8.0	7007.42	0.4	99	80	120	
Cd	111	115	No Gas	0.371	ppb	5.9	1392.67	0.4	92.75	80	120	
Sn	118	115	No Gas	0.323	ppb	7.7	4956.50	0.4	80.75	80	120	
Sb	123	115	No Gas	0.376	ppb	6.7	4875.35	0.4	94	80	120	
Ba	137	115	No Gas	0.476	ppb	7.1	2758.07	0.4	119	80	120	
Tl	205	159	No Gas	0.382	ppb	6.2	12241.56	0.4	95.5	80	120	
Pb	208	159	No Gas	0.394	ppb	5.7	17646.01	0.4	98.5	80	120	
U	238	159	No Gas	0.380	ppb	5.7	15348.28	0.4	95	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1806904.14	2.8	1866774.34	96.79	60	120	
Sc	45	No Gas	5212296.17	1.9	5256704	99.16	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	3155853.42	0.1	3216050	98.13	60	120	
Sc	45	He	590132.65	0.7	590136.5	100	60	120	
Ge	72	No Gas	1322324.96	1.7	1347600.04	98.12	60	120	
Ge	72	H2	901088.79	1.7	912330.27	98.77	60	120	
Ge	72	He	369518.01	0.8	378247.59	97.69	60	120	
In	115	No Gas	8449223.42	4.3	8692051.13	97.21	60	120	
Tb	159	No Gas	11449481.21	4.3	11827603.42	96.8	60	120	
Tb	159	He	6489624.00	0.8	6692094.83	96.97	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SM5A-04-04-10

ALL SAMPLES PH<2

Book #: EIM-081
Batch: IMF035W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.3 °C		93.9 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	-06-26	0.15
MS	SAME SPIKE SOLN AND VOL AS LCS 1,2	
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWA-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1
pH Strip (0-14)	HC998032	N/A
Digestate Location	METALS	
Extract Location	N/A	
☐ Reagent Water ID: SWA-08-25-05		
☑ Thermometer ID: 192272442/E15		
☑ Pipette ID: 742766331		
☐ Pipette ID:		
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: CK/MC
Standard Added By: CK Witnessed By: MC
Extract Rcvd By: LM Checked By: MC

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF035W01	IMF035WB	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W02	IMF035WL	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W03	IMF035WC	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W04	F183-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W05	F183-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W06	F183-03	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W07	F183-05	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W08	F183-06	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W09	F183-07	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W10	F183-08	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W11	F183-08M	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W12	F183-08S	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W13	F183-12	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W14	F183-13	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W15	F183-14	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W16	F183-15	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W17	F183-16	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W18	F155-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W19	F155-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W20	F164-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W21	F170-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W22	F170-03	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W23	F170-04	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W24	F170-05	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W25	F170-06	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED

OK

6/25/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/25/20 11:06 Prepared By: Ckaing/Mcande

☑ Digestion Ended @ 6/25/20 13:23 Checked By: MC

Comments: Date

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of two(2) water samples were received on 06/18/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGF014WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGF014WL/HGF014WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F155
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGF014WB	1	NA	06/19/2015:29	06/19/2010:39	M47F012012	M47F012	20HGF014W	Method Blank
LCS1W	HGF014WL	1	NA	06/19/2015:32	06/19/2010:39	M47F012013	M47F012	20HGF014W	Lab Control Sample (LCS)
LCD1W	HGF014WC	1	NA	06/19/2015:34	06/19/2010:39	M47F012014	M47F012	20HGF014W	LCS Duplicate
MW18-GW061620	F155-01	1	NA	06/19/2016:16	06/19/2010:39	M47F012033	M47F012	20HGF014W	Field Sample
MW19-GW061620	F155-02	1	NA	06/19/2016:23	06/19/2010:39	M47F012036	M47F012	20HGF014W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155
Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGF014WB	ND	1	NA	0.500	0.100	06/19/2015:29	06/19/2010:39	M47F012012	M47F012	20HGF014W	NA	NA
LCS1W	HGF014WL	2.44	1	NA	0.500	0.100	06/19/2015:32	06/19/2010:39	M47F012013	M47F012	20HGF014W	NA	NA
LCD1W	HGF014WC	2.36	1	NA	0.500	0.100	06/19/2015:34	06/19/2010:39	M47F012014	M47F012	20HGF014W	NA	NA
MW18-GW061620	F155-01	ND	1	NA	0.500	0.100	06/19/2016:16	06/19/2010:39	M47F012033	M47F012	20HGF014W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02	ND	1	NA	0.500	0.100	06/19/2016:23	06/19/2010:39	M47F012036	M47F012	20HGF014W	06/16/2017:28	06/18/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGF014WB	HGF014WL	HGF014WC
LAB FILE ID	: M47F012012	M47F012013	M47F012014
DATE PREPARED	: 06/19/2010:39	06/19/2010:39	06/19/2010:39
DATE ANALYZED	: 06/19/2015:29	06/19/2015:32	06/19/2015:34
PREP BATCH	: 20HGF014W	20HGF014W	20HGF014W
CALIBRATION REF	: M47F012	M47F012	M47F012

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.44	98	2.50	2.36	94	3	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 6/19/20 Start Time: 15:01

End Date: 6/19/20 End Time: 17:32

Comments:

QC OK

Book #: A47-121

Instrument No.: 47

Analytical Sequence/Batch: M47F012

Method File: HG1

Micropipette ID: ☑ 339342032

Micropipette ID: ☑ HG-03

Micropipette ID: ☑ 742781062

Micropipette ID: ☑ HG-06

Micropipette ID: ☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-19-20-02
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-19-20-03
LCS	
Analytical Spike	
	SM3B-19-20-04 TV 3ug/L

Analyzed By: HT

Date: 6/19/20

Disposed By:

Date:

"M47F012"

EMAX1fid	EMAX1sid	conc	Raw_resp	rsd/rf	adatetime	DF
M47F012001	STD01REP1	0	63598		06/19/2015:01	1
M47F012002	STD02REP1	.2	87714		06/19/2015:04	1
M47F012003	STD03REP1	.5	139294		06/19/2015:06	1
M47F012004	STD04REP1	1	214005		06/19/2015:08	1
M47F012005	STD05REP1	2	370377		06/19/2015:11	1
M47F012006	STD06REP1	5	822047		06/19/2015:13	1
M47F012007	ICV	1.97	361819	0	06/19/2015:18	1
M47F012008	ICB	.002	62247	0	06/19/2015:21	1
M47F012009	MRLF1901	.52	141238	0	06/19/2015:23	1
M47F012010?	CCV1	2.03	370483	0	06/19/2015:25	1
M47F012011?	CCB1	-.008	60873	0	06/19/2015:27	1
M47F012012?	HGF014WB	.006	62981	0	06/19/2015:29	1
M47F012013?	HGF014WL	2.44	434003	0	06/19/2015:32	1
M47F012014?	HGF014WC	2.36	421940	0	06/19/2015:34	1
M47F012015?	F142-01	-.045	55088	0	06/19/2015:36	1
M47F012016?	F142-02A	2.88	500778	0	06/19/2015:38	1
M47F012017?	F142-02	-.04	55964	0	06/19/2015:41	1
M47F012018?	F142-02J	.014	64075	0	06/19/2015:43	5
M47F012019?	F142-02M	2.31	413760	0	06/19/2015:45	1
M47F012020?	F142-02S	2.35	419921	0	06/19/2015:47	1
M47F012021?	F142-03	-.023	58461	0	06/19/2015:49	1
M47F012022?	CCV2	2.07	376910	0	06/19/2015:52	1
M47F012023?	CCB2	-.001	61789	0	06/19/2015:54	1
M47F012024?	F142-04	-.039	56102	0	06/19/2015:56	1
M47F012025?	F142-05	-.019	59104	0	06/19/2015:59	1
M47F012026?	F142-06	-.042	55691	0	06/19/2016:01	1
M47F012027?	F142-07	-.089	48489	0	06/19/2016:03	1
M47F012028?	F142-08	-.057	53387	0	06/19/2016:05	1
M47F012029?	F142-09	-.055	53640	0	06/19/2016:08	1
M47F012030?	F142-10	.006	63003	0	06/19/2016:10	1
M47F012031?	F151-01	-.028	57698	0	06/19/2016:12	1
M47F012032?	F151-02	-.06	52951	0	06/19/2016:14	1
M47F012033?	F155-01	-.037	56359	0	06/19/2016:16	1
M47F012034?	CCV3	2.01	368354	0	06/19/2016:19	1
M47F012035?	CCB3	-.002	61641	0	06/19/2016:21	1
M47F012036?	F155-02	-.031	57290	0	06/19/2016:23	1
M47F012037?	HGF013WB	.044	68779	0	06/19/2016:26	1
M47F012038?	HGF013WL	2.39	425252	0	06/19/2016:28	1
M47F012039?	HGF013WC	2.4	426832	0	06/19/2016:30	1
M47F012040?	TXF004SB	-.006	61176	0	06/19/2016:32	1
M47F012041?	F461-02	-.028	57744	0	06/19/2016:34	1
M47F012042?	F488-01A	2.99	516612	0	06/19/2016:36	1
M47F012043?	F488-01	-.008	60812	0	06/19/2016:39	1
M47F012044?	F488-01J	.012	63819	0	06/19/2016:41	5
M47F012045?	F488-01M	2.39	425760	0	06/19/2016:43	1
M47F012046?	CCV4	2.04	372807	0	06/19/2016:46	1
M47F012047?	CCB4	.017	64675	0	06/19/2016:48	1
M47F012048?	F488-01S	2.52	445161	0	06/19/2016:51	1
M47F012049?	WTF006SB	-.027	57880	0	06/19/2016:53	1
M47F012050?	F492-01	-.063	52458	0	06/19/2016:56	1
M47F012051?	F492-02	-.126	42802	0	06/19/2016:58	1
M47F012052?	F492-03	-.105	46006	0	06/19/2017:00	1
M47F012053?	F492-04	-.038	56166	0	06/19/2017:02	1
M47F012054?	F492-05	-.032	57075	0	06/19/2017:05	1
M47F012055?	F492-06	-.028	57788	0	06/19/2017:07	1
M47F012056?	F492-07	-.078	50064	0	06/19/2017:09	1
M47F012057?	F492-08	-.063	52445	0	06/19/2017:11	1
M47F012058?	CCV5	2.02	369469	0	06/19/2017:13	1
M47F012059?	CCB5	.003	62415	0	06/19/2017:16	1
M47F012060?	F492-09A	2.88	500128	0	06/19/2017:18	1
M47F012061?	F492-09	-.083	49401	0	06/19/2017:20	1
M47F012062?	F492-09J	-.007	60948	0	06/19/2017:22	5
M47F012063?	F492-09M	.413	124893	0	06/19/2017:24	1
M47F012064?	F492-09S	.399	122823	0	06/19/2017:27	1
M47F012065	CCV6	1.95	358886	0	06/19/2017:29	1
M47F012066	CCB6	.005	62739	0	06/19/2017:32	1
**********	**********	**********	**********	**********	**********	***
EMAX1fid	EMAX1sid	Xint	Yint	rrf	adatetime	DF
M47F012000		0	0	0	06/19/2017:32	1
M47F012001	BLANK	-.4074081	62038.58	.9999477	06/19/2017:32	1

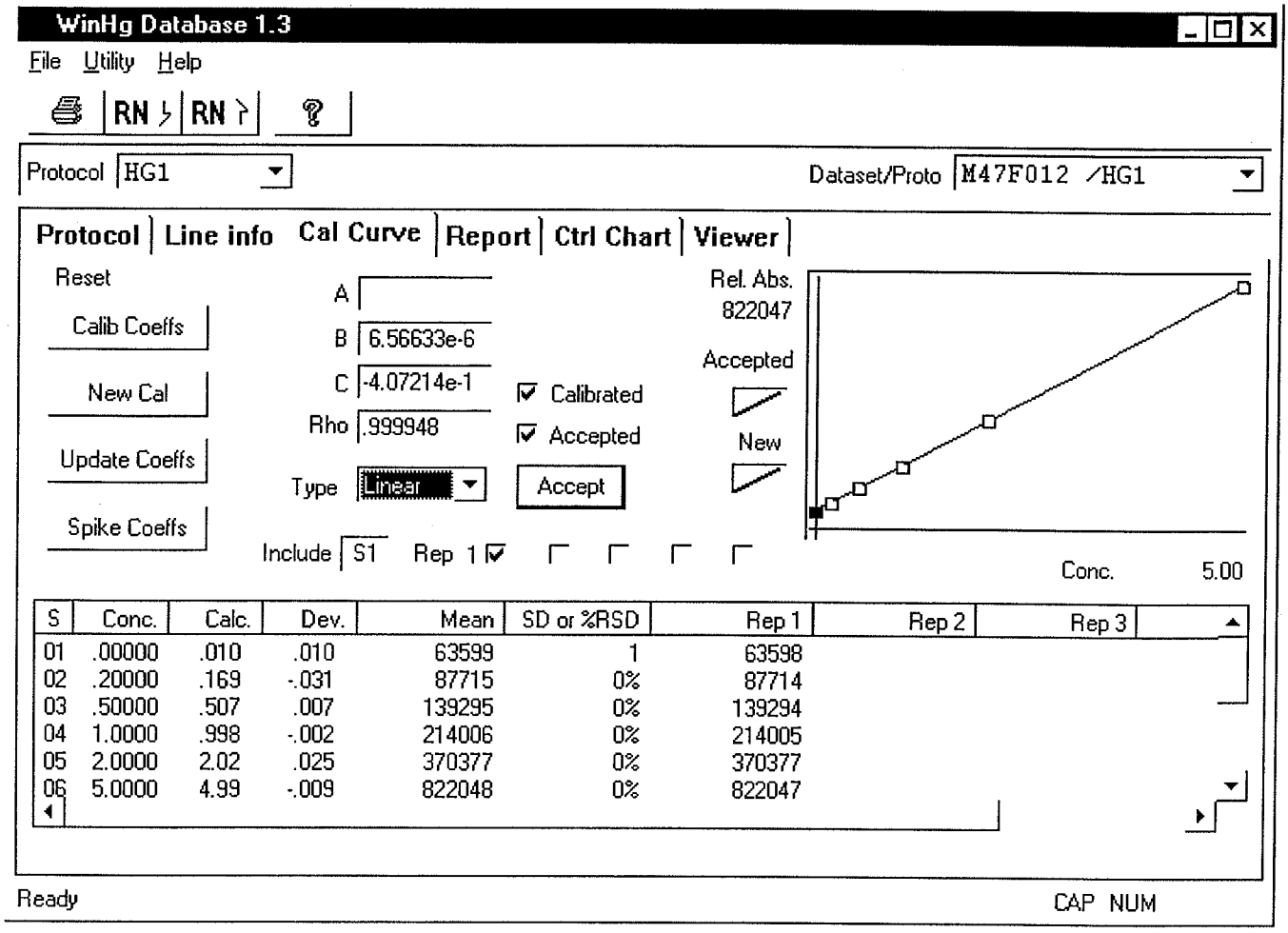
M47F012

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLF1901	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGF014WB		1.0000	1.0000	
7	HGF014WL		1.0000	1.0000	
8	HGF014WC		1.0000	1.0000	
9	F142-01		1.0000	1.0000	
10	F142-02A		1.0000	1.0000	
11	F142-02		1.0000	1.0000	
12	F142-02J	5X	1.0000	1.0000	
13	F142-02M		1.0000	1.0000	
14	F142-02S		1.0000	1.0000	
15	F142-03		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F142-04		1.0000	1.0000	
19	F142-05		1.0000	1.0000	
20	F142-06		1.0000	1.0000	
21	F142-07		1.0000	1.0000	
22	F142-08		1.0000	1.0000	
23	F142-09		1.0000	1.0000	
24	F142-10		1.0000	1.0000	
25	F151-01		1.0000	1.0000	
26	F151-02		1.0000	1.0000	
27	F155-01		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F155-02		1.0000	1.0000	
31	HGF013WB		1.0000	1.0000	
32	HGF013WL		1.0000	1.0000	
33	HGF013WC		1.0000	1.0000	
34	TXF004SB	TCLP	1.0000	1.0000	
35	F461-02	TCLP	1.0000	1.0000	
36	F488-01A	TCLP	1.0000	1.0000	
37	F488-01	TCLP	1.0000	1.0000	
38	F488-01J	5X TCLP	1.0000	1.0000	
39	F488-01M	TCLP	1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	F488-01S	TCLP	1.0000	1.0000	
43	WTF006SB	STLC	1.0000	1.0000	
44	F492-01	STLC	1.0000	1.0000	

NT 6/19/20

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	F492-02	STLC	1.0000	1.0000	
2	F492-03	STLC	1.0000	1.0000	
3	F492-04	STLC	1.0000	1.0000	
4	F492-05	STLC	1.0000	1.0000	
5	F492-06	STLC	1.0000	1.0000	
6	F492-07	STLC	1.0000	1.0000	
7	F492-08	STLC	1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	F492-09A	STLC	1.0000	1.0000	
11	F492-09	STLC	1.0000	1.0000	
12	F492-09J	5X STLC	1.0000	1.0000	
13	F492-09M	STLC	1.0000	1.0000	
14	F492-09S	STLC	1.0000	1.0000	
15	CCV6		1.0000	1.0000	
16	CCB6		1.0000	1.0000	
17			1.0000	1.0000	
18			1.0000	1.0000	
19			1.0000	1.0000	
20			1.0000	1.0000	
21			1.0000	1.0000	
22			1.0000	1.0000	
23			1.0000	1.0000	
24			1.0000	1.0000	
25			1.0000	1.0000	
26			1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 6/19/20


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47F012 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.56633e-6
C -4.07214e-1
Rho .999948
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
822047
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 .010 .010 63599 1 63598
02 .20000 .169 -.031 87715 0% 87714
03 .50000 .507 .007 139295 0% 139294
04 1.0000 .998 -.002 214006 0% 214005
05 2.0000 2.02 .025 370377 0% 370377
06 5.0000 4.99 -.009 822048 0% 822047
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1		15:01:50 19 Jun 20			HG
Hg	.000	ppb	63598						
*** Standard: 2 Rep: 1				Seq: 2		15:04:06 19 Jun 20			HG
Hg	.200	ppb	87714						
*** Standard: 3 Rep: 1				Seq: 3		15:06:33 19 Jun 20			HG
Hg	.500	ppb	139294						
*** Standard: 4 Rep: 1				Seq: 4		15:08:51 19 Jun 20			HG
Hg	1.00	ppb	214005						
*** Standard: 5 Rep: 1				Seq: 5		15:11:09 19 Jun 20			HG
Hg	2.00	ppb	370377						
*** Standard: 6 Rep: 1				Seq: 6		15:13:16 19 Jun 20			HG
Hg	5.00	ppb	822047						
*** Sample ID: ICV				Seq: 7		15:18:48 19 Jun 20			HG
Hg	1.97	ppb	361819						
*** Sample ID: ICB				Seq: 8		15:21:07 19 Jun 20			HG
Hg	.002	ppb	62247						
*** Sample ID: MRLF1901				Seq: 9		15:23:12 19 Jun 20			HG
Hg	.520	ppb	0.5 141238						
*** Sample ID: CCV1				Seq: 10		15:25:19 19 Jun 20			HG
Hg	2.03	ppb	370483						
*** Sample ID: CCB1				Seq: 11		15:27:41 19 Jun 20			HG
Hg	-.008	ppb	60873						
*** Sample ID: HGF014WB				Seq: 12		15:29:49 19 Jun 20			HG
Hg	.006	ppb	62981						
*** Sample ID: HGF014WL				Seq: 13		15:32:06 19 Jun 20			HG
Hg	2.44	ppb	434003						
*** Sample ID: HGF014WC				Seq: 14		15:34:13 19 Jun 20			HG
Hg	2.36	ppb	421940						
*** Sample ID: F142-01				Seq: 15		15:36:30 19 Jun 20			HG
Hg	-.045	ppb	55088						

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F142-02A				Seq: 16	15:38:41 19 Jun 20				HG
Hg	2.88	ppb	500778						
*** Sample ID: F142-02				Seq: 17	15:41:00 19 Jun 20				HG
Hg	-.040	ppb	55964						
*** Sample ID: F142-02J				Seq: 18	15:43:16 19 Jun 20				HG
			5X						
Hg	.014	ppb	64075						
*** Sample ID: F142-02M				Seq: 19	15:45:27 19 Jun 20				HG
Hg	2.31	ppb	413760						
*** Sample ID: F142-02S				Seq: 20	15:47:34 19 Jun 20				HG
Hg	2.35	ppb	419921						
*** Sample ID: F142-03				Seq: 21	15:49:50 19 Jun 20				HG
Hg	-.023	ppb	58461						
*** Sample ID: CCV2				Seq: 22	15:52:01 19 Jun 20				HG
Hg	2.07	ppb	376910						
*** Sample ID: CCB2				Seq: 23	15:54:40 19 Jun 20				HG
Hg	-.001	ppb	61789						
*** Sample ID: F142-04				Seq: 24	15:56:51 19 Jun 20				HG
Hg	-.039	ppb	56102						
*** Sample ID: F142-05				Seq: 25	15:59:00 19 Jun 20				HG
Hg	-.019	ppb	59104						
*** Sample ID: F142-06				Seq: 26	16:01:17 19 Jun 20				HG
Hg	-.042	ppb	55691						
*** Sample ID: F142-07				Seq: 27	16:03:28 19 Jun 20				HG
Hg	-.089	ppb	48489						
*** Sample ID: F142-08				Seq: 28	16:05:40 19 Jun 20				HG
Hg	-.057	ppb	53387						
*** Sample ID: F142-09				Seq: 29	16:08:23 19 Jun 20				HG
Hg	-.055	ppb	53640						
*** Sample ID: F142-10				Seq: 30	16:10:29 19 Jun 20				HG
Hg	.006	ppb	63003						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F151-01				Seq: 31	16:12:37 19 Jun 20		HG	
Hg	-.028	ppb	57698					
*** Sample ID: F151-02				Seq: 32	16:14:48 19 Jun 20		HG	
Hg	-.060	ppb	52951					
*** Sample ID: F155-01				Seq: 33	16:16:58 19 Jun 20		HG	
Hg	-.037	ppb	56359					
*** Sample ID: CCV3				Seq: 34	16:19:05 19 Jun 20		HG	
Hg	2.01	ppb	368354					
*** Sample ID: CCB3				Seq: 35	16:21:14 19 Jun 20		HG	
Hg	-.002	ppb	61641					
*** Sample ID: F155-02				Seq: 36	16:23:21 19 Jun 20		HG	
Hg	-.031	ppb	57290					
*** Sample ID: HGF013WB				Seq: 37	16:26:02 19 Jun 20		HG	
Hg	.044	ppb	68779					
*** Sample ID: HGF013WL				Seq: 38	16:28:20 19 Jun 20		HG	
Hg	2.39	ppb	425252					
*** Sample ID: HGF013WC				Seq: 39	16:30:32 19 Jun 20		HG	
Hg	2.40	ppb	426832					
*** Sample ID: TXF004SB			TCLP	Seq: 40	16:32:39 19 Jun 20		HG	
Hg	-.006	ppb	61176					
*** Sample ID: F461-02			TCLP	Seq: 41	16:34:47 19 Jun 20		HG	
Hg	-.028	ppb	57744					
*** Sample ID: F488-01A			TCLP	Seq: 42	16:36:53 19 Jun 20		HG	
Hg	2.99	ppb	516612					
*** Sample ID: F488-01			TCLP	Seq: 43	16:39:04 19 Jun 20		HG	
Hg	-.008	ppb	60812					
*** Sample ID: F488-01J			5X TCLP	Seq: 44	16:41:22 19 Jun 20		HG	
Hg	.012	ppb	63819					
*** Sample ID: F488-01M			TCLP	Seq: 45	16:43:40 19 Jun 20		HG	
Hg	2.39	ppb	425760					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	16:46:18 19 Jun 20			HG
Hg	2.04	ppb	372807					
*** Sample ID: CCB4				Seq: 47	16:48:55 19 Jun 20			HG
Hg	.017	ppb	64675					
*** Sample ID: F488-01S				Seq: 48	16:51:23 19 Jun 20			HG
			TCLP					
Hg	2.52	ppb	445161					
*** Sample ID: WTF006SB				Seq: 49	16:53:53 19 Jun 20			HG
			STLC					
Hg	-.027	ppb	57880					
*** Sample ID: F492-01				Seq: 50	16:56:25 19 Jun 20			HG
			STLC					
Hg	-.063	ppb	52458					
*** Sample ID: F492-02				Seq: 51	16:58:34 19 Jun 20			HG
			STLC					
Hg	-.126	ppb	42802					
*** Sample ID: F492-03				Seq: 52	17:00:44 19 Jun 20			HG
			STLC					
Hg	-.105	ppb	46006					
*** Sample ID: F492-04				Seq: 53	17:02:53 19 Jun 20			HG
			STLC					
Hg	-.038	ppb	56166					
*** Sample ID: F492-05				Seq: 54	17:05:03 19 Jun 20			HG
			STLC					
Hg	-.032	ppb	57075					
*** Sample ID: F492-06				Seq: 55	17:07:22 19 Jun 20			HG
			STLC					
Hg	-.028	ppb	57788					
*** Sample ID: F492-07				Seq: 56	17:09:29 19 Jun 20			HG
			STLC					
Hg	-.078	ppb	50064					
*** Sample ID: F492-08				Seq: 57	17:11:38 19 Jun 20			HG
			STLC					
Hg	-.063	ppb	52445					
*** Sample ID: CCV5				Seq: 58	17:13:47 19 Jun 20			HG
Hg	2.02	ppb	369469					
*** Sample ID: CCB5				Seq: 59	17:16:07 19 Jun 20			HG
Hg	.003	ppb	62415					
*** Sample ID: F492-09A				Seq: 60	17:18:18 19 Jun 20			HG
			STLC					
Hg	2.88	ppb	500128					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F492-09				Seq: 61	17:20:26 19 Jun 20				HG
			STLC						
Hg	-.083	ppb	49401						
*** Sample ID: F492-09J				Seq: 62	17:22:35 19 Jun 20				HG
			5X STLC						
Hg	-.007	ppb	60948						
*** Sample ID: F492-09M				Seq: 63	17:24:46 19 Jun 20				HG
			STLC						
Hg	.413	ppb	124893						
*** Sample ID: F492-09S				Seq: 64	17:27:44 19 Jun 20				HG
			STLC						
Hg	.399	ppb	122823						
*** Sample ID: CCV6				Seq: 65	17:29:55 19 Jun 20				HG
Hg	1.95	ppb	358886						
*** Sample ID: CCB6				Seq: 66	17:32:04 19 Jun 20				HG
Hg	.005	ppb	62739						

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28119010

Aqua Regia Prep. Vessel Lot#: N/A

Samples pH <2

ICAL on HGF013W

Maximum amount of KMnO4 was added

Book #: E47-116

Batch No.: HGF014W

Matrix: Water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-20-02	50	0.2, 0.5, 1, 2, 5
CCV	↓	↓	2
ICV	SM3B-19-20-03	↓	2
LCS/MS	↓	↓	2.5
Reagent	**ID / Lot #**		
HNO_3	SW1A-009-02-08		
HCl	N/A		
H_2SO_4	SW1A-08-24-05		
$KMnO_4$	SM5B-04-B-03		
$K_2S_2O_8$	SM5B-04-B-04		
$NH_2OH \cdot HCl \cdot NaCl$	SM5B-04-B-02		
$SnCl_2$	SM5B-04-14-03		
Silica Sand	N/A		
Reagent Water	RW1-19-003		
pH strip 0-14	HC004149		

Digestor ID/ Temp (°C): B / 95.3

Thermometer ID/LOC: 192272438 / B9

Thermometer ID/LOC: N/A

Pipette ID: HG-06, 7427B1062, HG-03, 3393420

☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

Prepared By: NT

Standard Added By: NT Witnessed By: MC

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGF014W01	HGF014WB	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W02	HGF014WL	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W03	HGF014WC	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W04	F142-01	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W05	F142-02	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W06	F142-02M	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W07	F142-02S	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W08	F142-03	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W09	F142-04	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W10	F142-05	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W11	F142-06	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W12	F142-07	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W13	F142-08	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W14	F142-09	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W15	F142-10	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W16	F151-01	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W17	F151-02	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W18	F155-01	50	ml	6/19/20 9:20	80	50	80	1	
20HGF014W19	F155-02	50	ml	6/19/20 9:20	80	50	80	1	

NT 6/19/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/19/20 10:39 Prepared By: NTan

☑ Digestion Ended @ 6/19/20 13:15 Checked By: NT

Comments: Date 6/19/20

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F155

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD E300.0
CHLORIDE

A total of two(2) water samples were received on 06/18/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Chloride was not detected in ICF029WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF029WL/ICF029WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD E300.0
SULFATE

A total of two(2) water samples were received on 06/18/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF029WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF029WL/ICF029WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF029WB	ND	1	NA	0.2	0.05	06/22/2011:11	NA	AF27-03	AF27-01	ICF029W	NA	NA
LCS1W	ICF029WL	1.94	1	NA	0.2	0.05	06/22/2011:28	NA	AF27-04	AF27-01	ICF029W	NA	NA
LCD1W	ICF029WC	1.94	1	NA	0.2	0.05	06/22/2011:45	NA	AF27-05	AF27-01	ICF029W	NA	NA
MW18-GW061620	F155-01J	358	200	NA	40	10	06/22/2019:51	NA	AF27-21	AF27-18	ICF029W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02J	311	200	NA	40	10	06/22/2020:26	NA	AF27-23	AF27-18	ICF029W	06/16/2017:28	06/18/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF029WB	ND	1	NA	0.5	0.13	06/22/2011:11	NA	AF27-03	AF27-01	ICF029W	NA	NA
LCS1W	ICF029WL	4.63	1	NA	0.5	0.13	06/22/2011:28	NA	AF27-04	AF27-01	ICF029W	NA	NA
LCD1W	ICF029WC	4.66	1	NA	0.5	0.13	06/22/2011:45	NA	AF27-05	AF27-01	ICF029W	NA	NA
MW18-GW061620	F155-01I	106	20	NA	10	2.6	06/22/2019:34	NA	AF27-20	AF27-18	ICF029W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02I	103	20	NA	10	2.6	06/22/2020:08	NA	AF27-22	AF27-18	ICF029W	06/16/2017:28	06/18/20

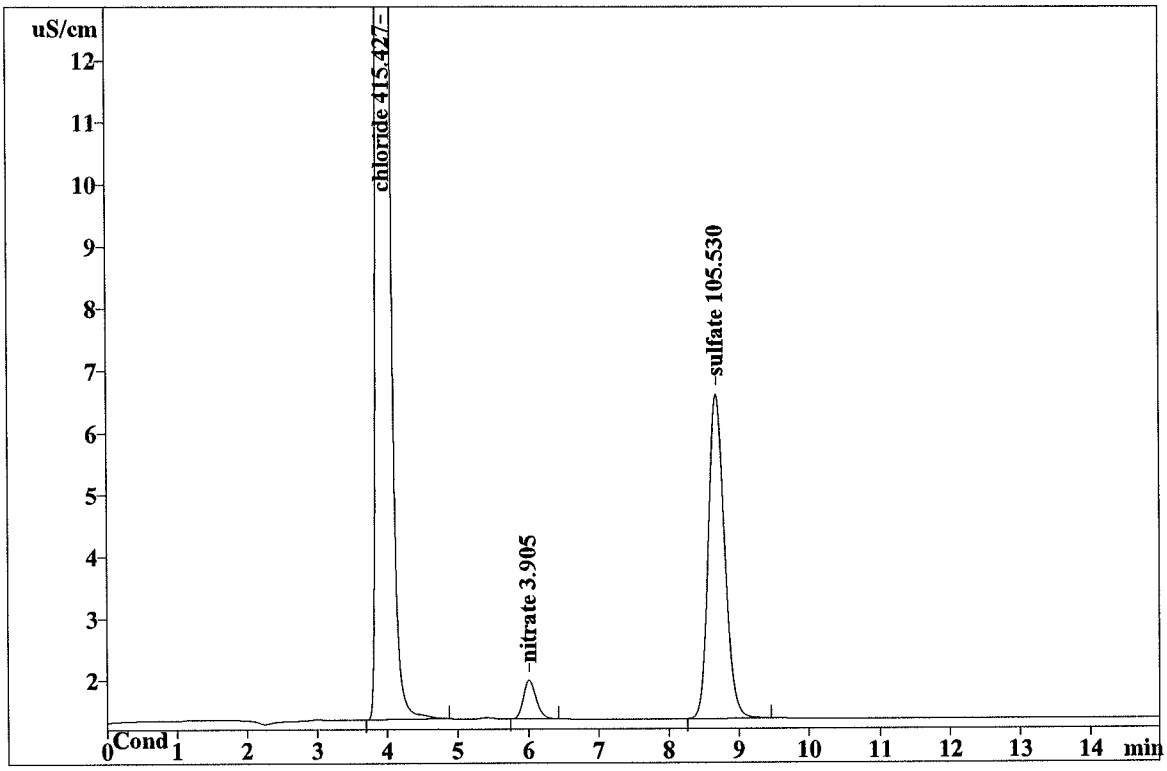
SAMPLE RESULTS

Report date: 6/23/2020 3:30:34 PM
Printed by: TWangc

Ident: AF27-20 F155-01I DF=20
Analysis from: 6/22/2020 7:34:49 PM
File: _2020-06-22_19-34.chw Last save: 6/23/2020 11:43:06 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159275

SAMPLE: METHOD300/9056/4110B
:
Vial number: 20
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	47.84	440.635	415.427	chloride
2	6.01	0.63	7.884	3.905	nitrate
3	8.68	5.25	84.647	105.530	sulfate ✓
3	15.00	53.71	533.166	524.862	

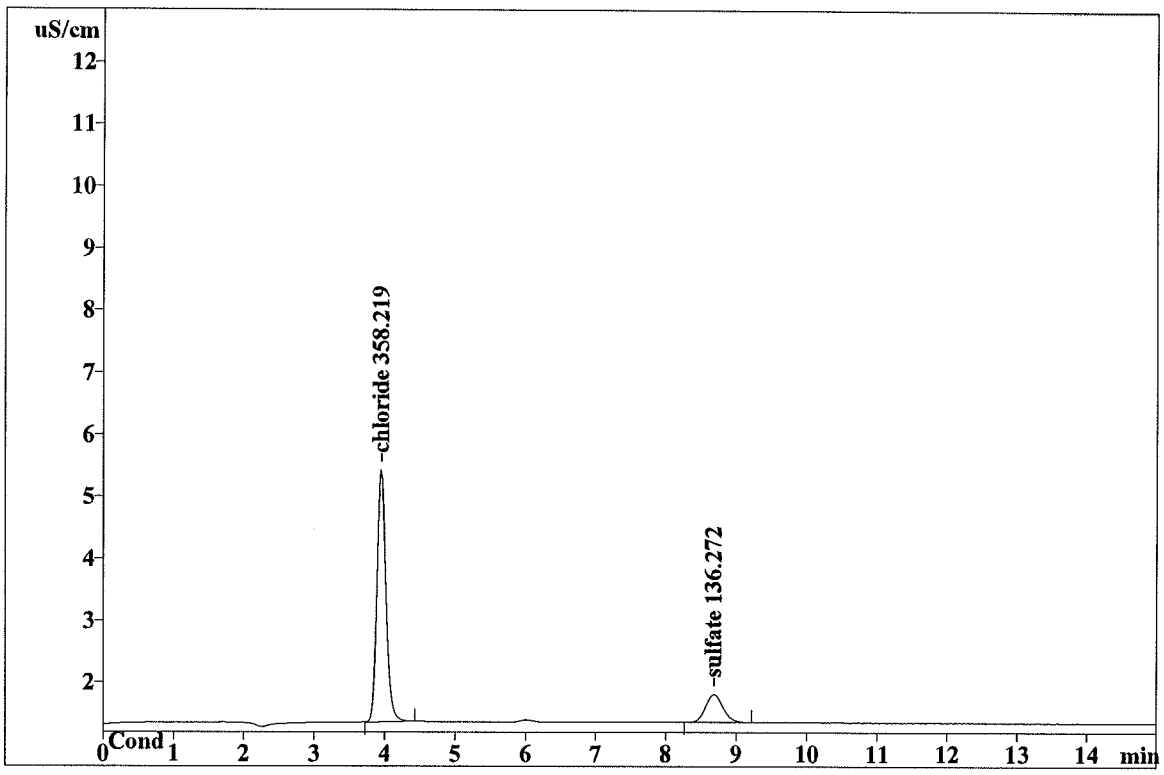
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:31:33 PM
Printed by: TWangc

Ident: AF27-21 F155-01J DF=200
Analysis from: 6/22/2020 7:51:54 PM
File: _2020-06-22_19-51.chw Last save: 6/23/2020 11:43:35 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159276

SAMPLE: METHOD300/9056/4110B
:
Vial number: 21
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.94	4.06	36.225	358.219	chloride ✓
2	8.68	0.45	7.755	136.272	sulfate
2	15.00	4.51	43.980	494.491	

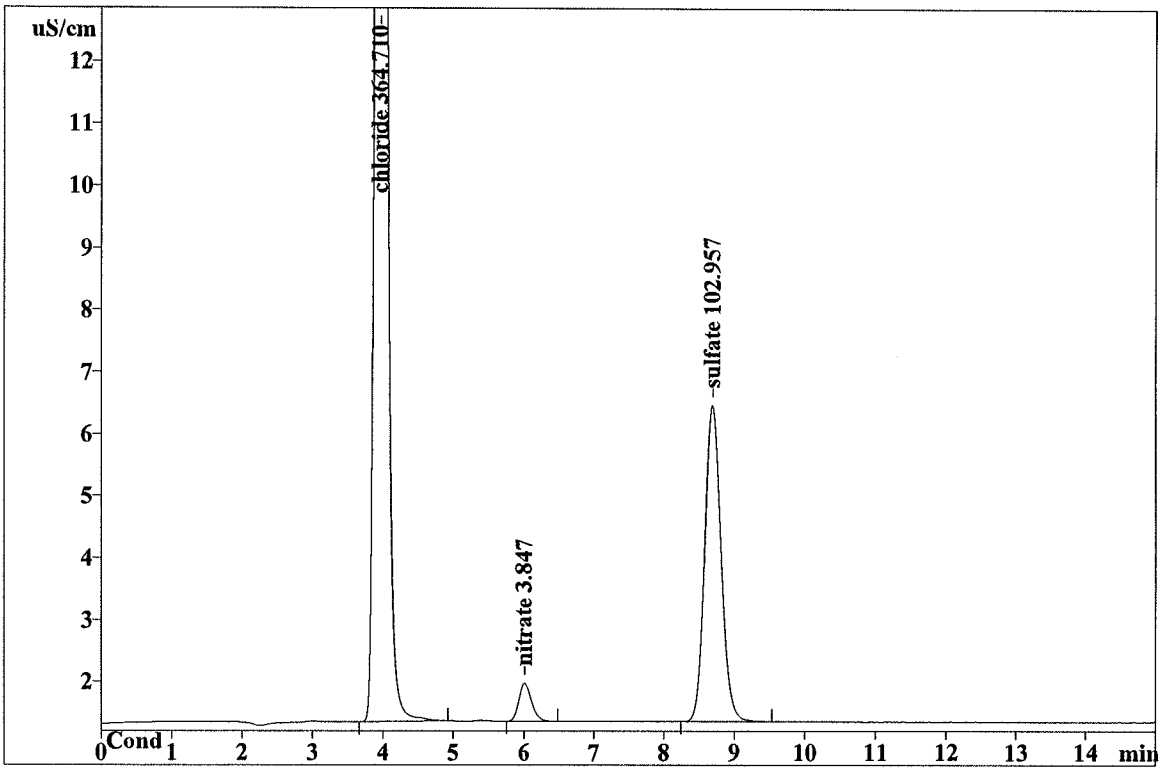
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:34:01 PM
Printed by: TWangc

Ident: AF27-22 F155-02I DF=20
Analysis from: 6/22/2020 8:08:59 PM
File: _2020-06-22_20-08.chw Last save: 6/23/2020 11:44:08 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159277

SAMPLE: METHOD300/9056/4110B
:
Vial number: 22
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	42.07	386.605	364.710	chloride
2	6.01	0.61	7.730	3.847	nitrate
3	8.69	5.11	82.494	102.957	sulfate ✓
3	15.00	47.79	476.828	471.514	

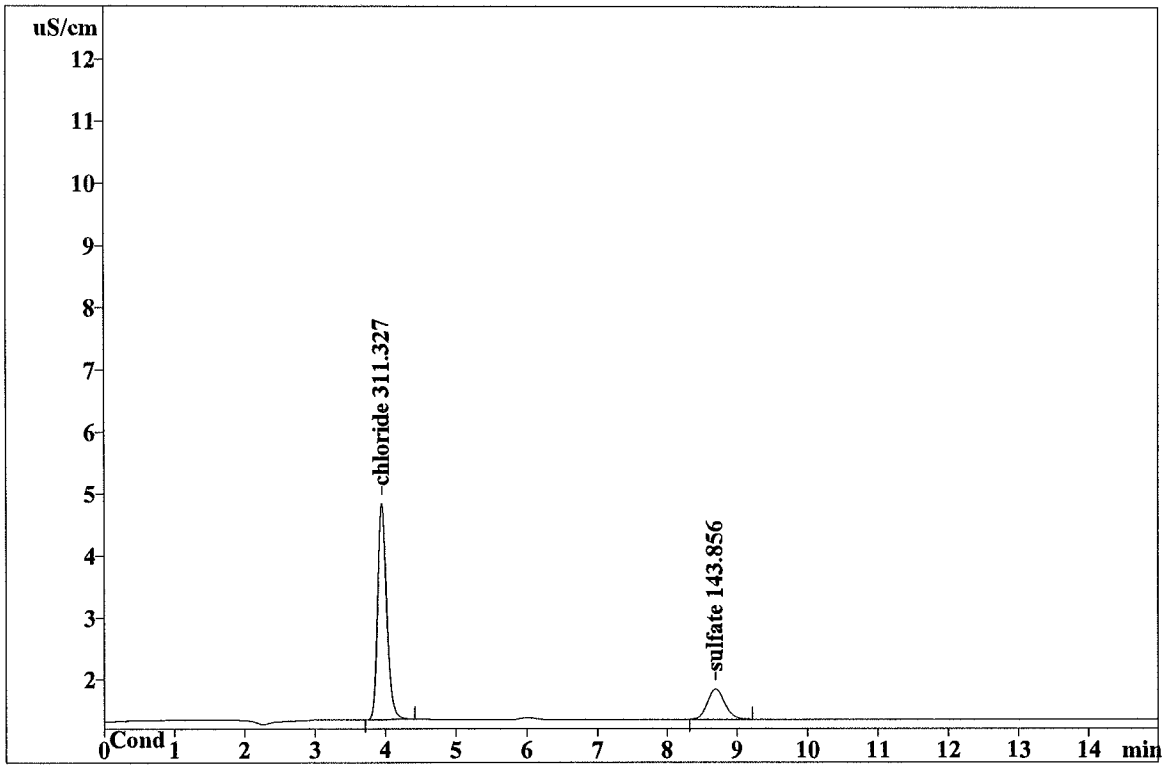
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:32:18 PM
Printed by: TWangc

Ident: AF27-23 F155-02J DF=200
Analysis from: 6/22/2020 8:26:03 PM
File: _2020-06-22_20-26.chw Last save: 6/23/2020 11:46:14 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159278

SAMPLE: METHOD300/9056/4110B
:
Vial number: 23
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	3.50	31.229	311.327	chloride ✓
2	8.69	0.49	8.390	143.856	sulfate
2	15.00	3.99	39.619	455.183	

This report has been created by IC Net
METROHM LTD

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF029WB	ICF029WL	ICF029WC
LAB FILE ID :	AF27-03	AF27-04	AF27-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/22/2011:11	06/22/2011:28	06/22/2011:45
PREP BATCH :	ICF029W	ICF029W	ICF029W
CALIBRATION REF:	AF27-01	AF27-01	AF27-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.94	97	2	1.94	97	0	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF029WB	ICF029WL	ICF029WC
LAB FILE ID :	AF27-03	AF27-04	AF27-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/22/2011:11	06/22/2011:28	06/22/2011:45
PREP BATCH :	ICF029W	ICF029W	ICF029W
CALIBRATION REF:	AF27-01	AF27-01	AF27-01

ACCESSION:

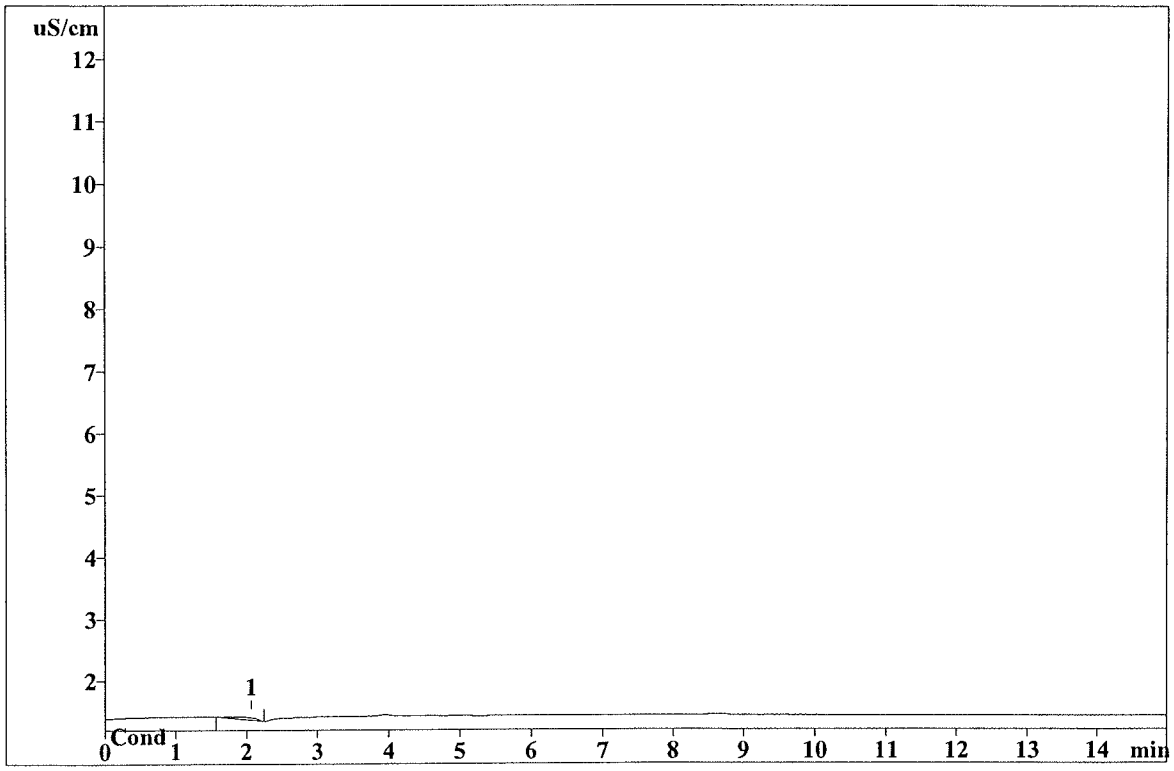
PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.63	93	5	4.66	93	1	87-112	20

QC DATA

Report date: 6/23/2020 10:44:35 AM
Printed by: TWangc

Ident: AF27-03 ICF029WB
Analysis from: 6/22/2020 11:11:48 AM
File: _2020-06-22_11-11.chw Last save: 6/22/2020 11:26:46 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159251

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.05	0.04	1.019	0.000	

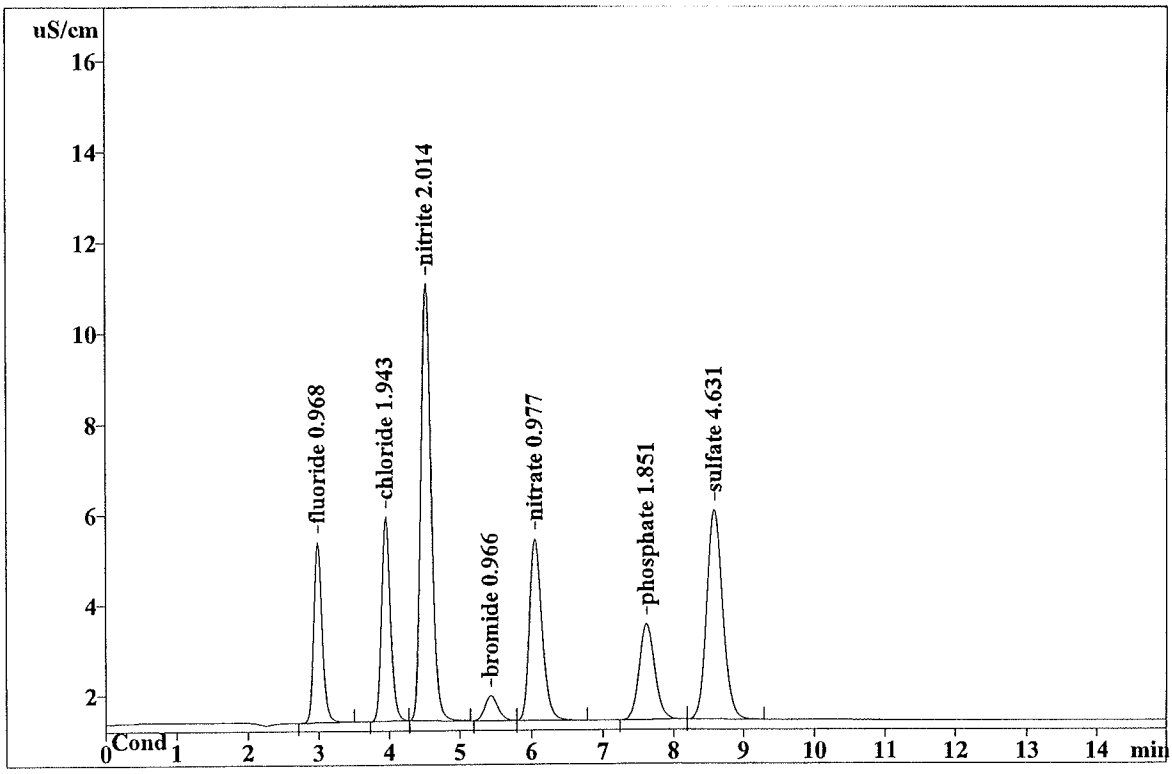
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:44:55 AM
Printed by: TWangc

Ident: AF27-04 ICF029WL
Analysis from: 6/22/2020 11:28:53 AM
File: _2020-06-22_11-28.chw Last save: 6/22/2020 11:43:50 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159252

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	4.00	33.640	0.968	fluoride
2	3.95	4.51	39.464	1.943	chloride
3	4.51	9.66	97.866	2.014	nitrite
4	5.43	0.55	6.855	0.966	bromide
5	6.05	4.02	49.322	0.977	nitrate
6	7.62	2.12	32.401	1.851	phosphate
7	8.58	4.64	73.843	4.631	sulfate
7	15.00	29.51	333.391	13.350	

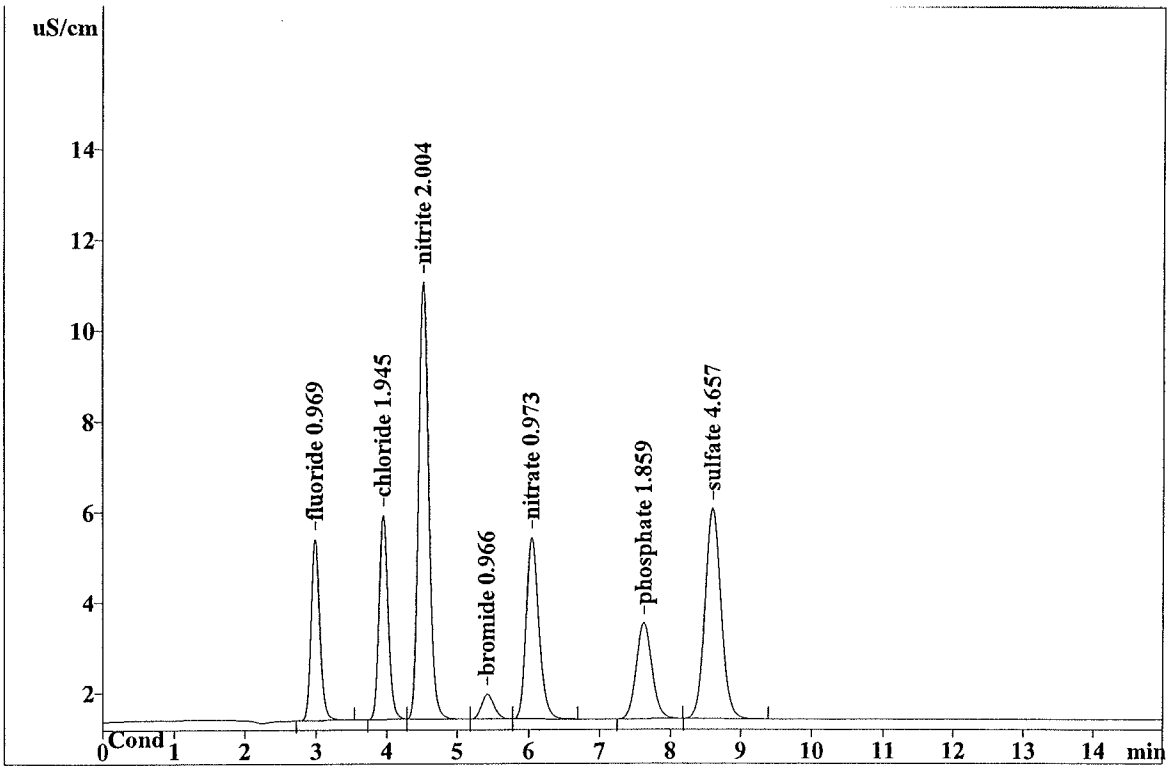
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:45:56 AM
Printed by: TWangc

Ident: AF27-05 ICF029WC
Analysis from: 6/22/2020 11:45:58 AM
File: _2020-06-22_11-45.chw Last save: 6/22/2020 12:09:21 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159253

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	4.02	33.679	0.969	fluoride
2	3.95	4.53	39.501	1.945	chloride
3	4.51	9.65	97.370	2.004	nitrite
4	5.42	0.55	6.856	0.966	bromide
5	6.05	4.02	49.130	0.973	nitrate
6	7.62	2.13	32.562	1.859	phosphate
7	8.59	4.65	74.275	4.657	sulfate
7	15.00	29.55	333.373	13.374	

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INITIAL CALIBRATION(S)

IC Result Check FormVersion : B24/AB25(2020)

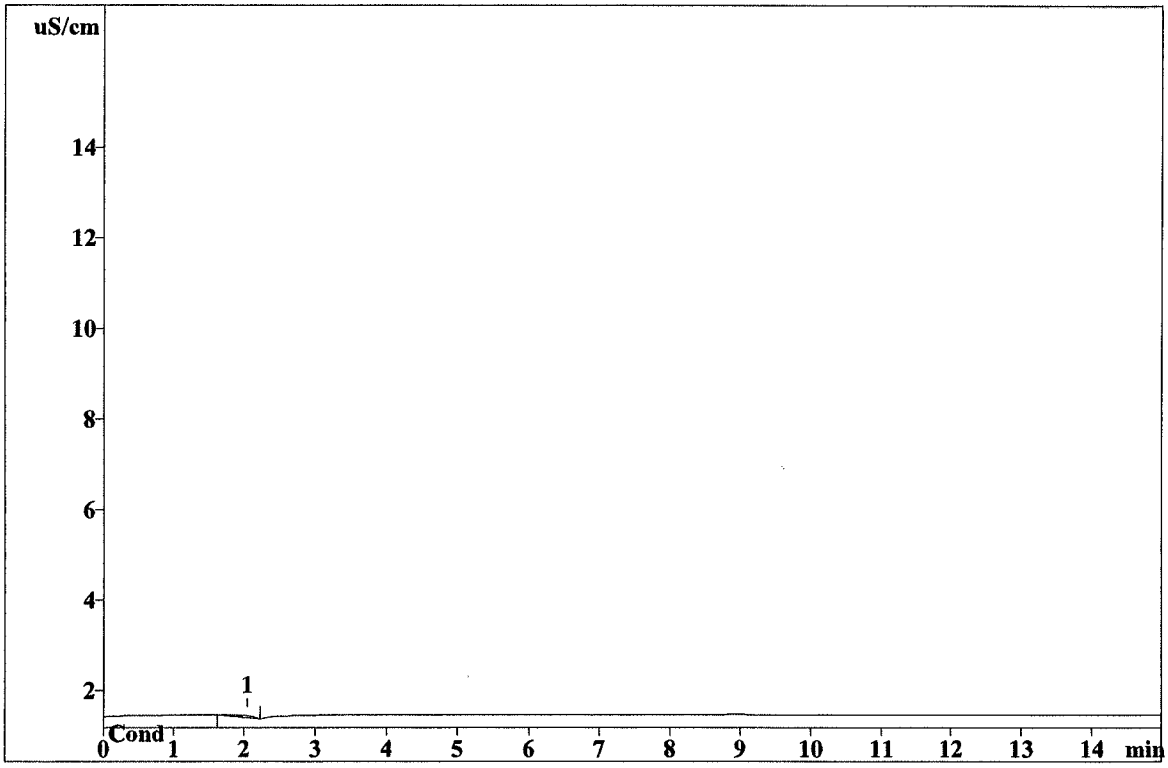
LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AB25-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-47	1
AB25-03	S1	OCFIBNPS	0	0.130932	0.0736569	0.0777071	0.262476	0.0835989	0.194145	0.268643	_2020-02-24_21-04	1
AB25-04	S2	OCFIBNPS	0	0.164605	0.106859	0.111126	0.294912	0.119582	0.213056	0.302238	_2020-02-24_21-21	1
AB25-05	S3	OCFIBNPS	0	0.23743	0.182756	0.194941	0.367787	0.19938	0.278602	0.370165	_2020-02-24_21-39	1
AB25-06	S4	OCFIBNPS	0	0.479227	0.467048	0.463725	0.590591	0.467839	0.473997	0.59173	_2020-02-24_21-56	1
AB25-07	S5	OCFIBNPS	0	0.907337	0.953599	0.917912	0.969488	0.952213	0.838299	0.964092	_2020-02-24_22-13	1
AB25-08	S6	OCFIBNPS	0	1.8697	1.99933	1.99949	1.79754	2.02739	1.75229	1.79408	_2020-02-24_22-30	1
AB25-09	S7	OCFIBNPS	0	5.06077	5.12498	5.1581	4.61476	5.46023	5.09961	4.62219	_2020-02-24_22-47	1
AB25-10	S8	OCFIBNPS	0	10.5296	9.94178	9.92699	9.72349	11.2469	11.2045	9.69729	_2020-02-24_23-04	1
AB25-11	S9	OCFIBNPS	0	21.5568	18.5889	21.4357	20.229	22.8079	23.7145	20.2396	_2020-02-24_23-21	1
AB25-12	ICV	OCFIBNPS	0%*	95.1%	96.9%	100.8%	97.7%	98.3%	91.5%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	OCFIBNPS	0%*	91.8%	98.3%	95.5%	98.1%	97%	88.2%*	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:19:29 PM
Printed by: LDip

Ident: AB25-02 S0
Analysis from: 2/24/2020 8:47:50 PM
File: _2020-02-24_20-47.chw Last save: 2/25/2020 12:15:05 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155970

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.891	0.000	

This report has been created by IC Net
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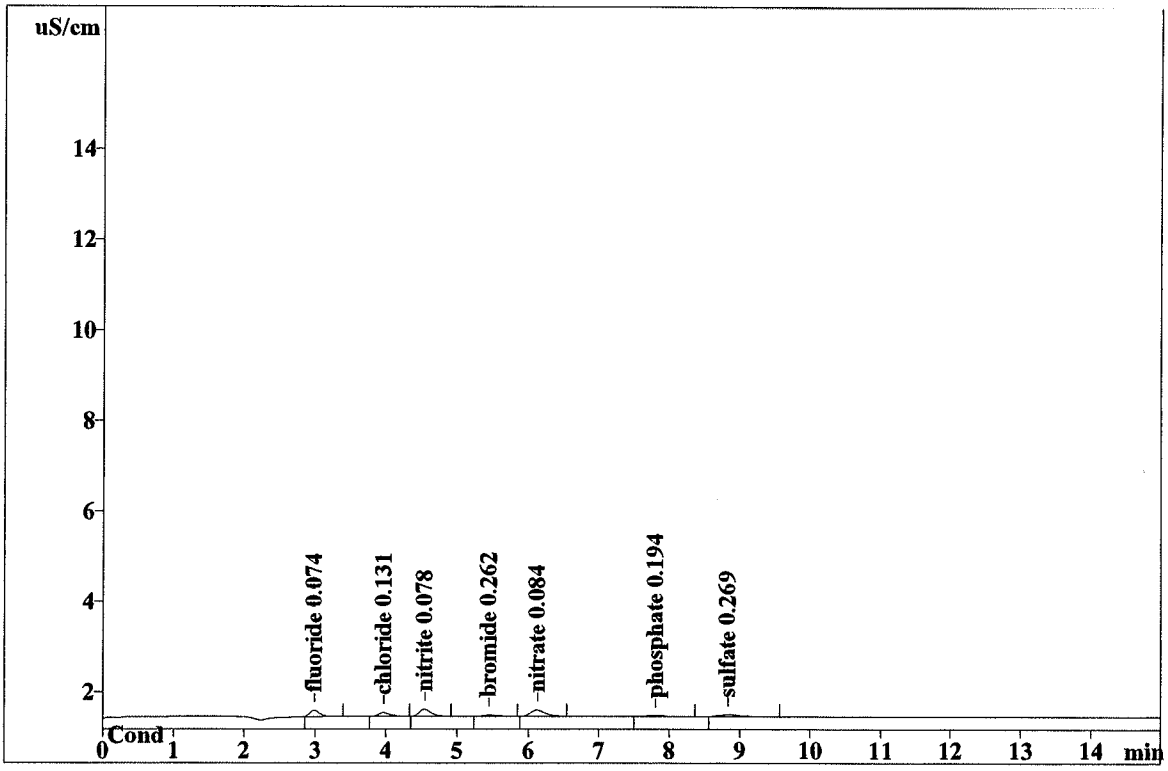
Report date: 2/25/2020 12:20:02 PM
Printed by: LDip

Ident: AB25-03 S1
Analysis from: 2/24/2020 9:04:55 PM
File: _2020-02-24_21-04.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155971

SAMPLE: METHOD300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.14	1.336	0.074	fluoride
2	3.96	0.08	0.852	0.131	chloride
3	4.54	0.16	1.770	0.078	nitrite
4	5.45	0.03	0.395	0.262	bromide
5	6.12	0.14	1.964	0.084	nitrate
6	7.79	0.02	0.341	0.194	phosphate
7	8.84	0.04	0.849	0.269	sulfate
7	15.00	0.60	7.507	1.091	

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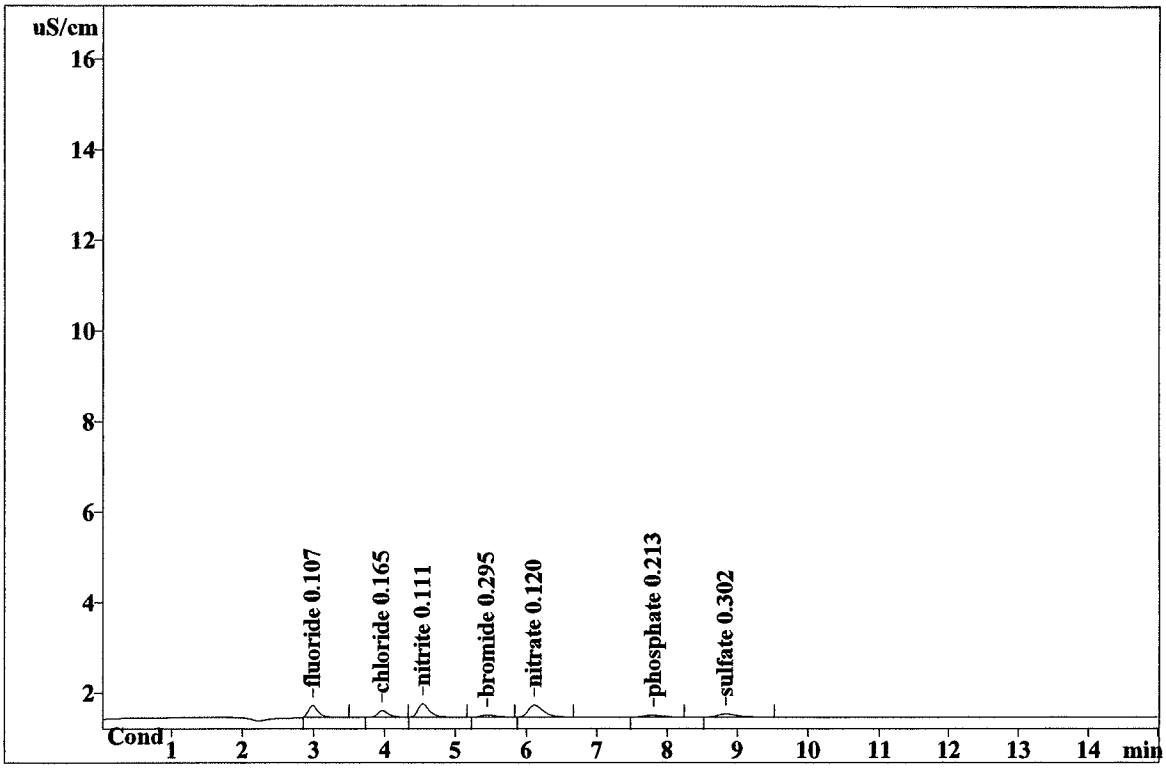
2/26/20

Report date: 2/25/2020 12:20:17 PM
Printed by: LDip

Ident: AB25-04 S2
Analysis from: 2/24/2020 9:21:59 PM
File: _2020-02-24_21-21.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155972

SAMPLE: METHOD300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.26	2.535	0.107	fluoride
2	3.96	0.15	1.570	0.165	chloride
3	4.54	0.29	3.428	0.111	nitrite
4	5.45	0.05	0.692	0.295	bromide
5	6.12	0.26	3.872	0.120	nitrate
6	7.79	0.04	0.707	0.213	phosphate
7	8.84	0.07	1.412	0.302	sulfate
7	15.00	1.13	14.215	1.312	

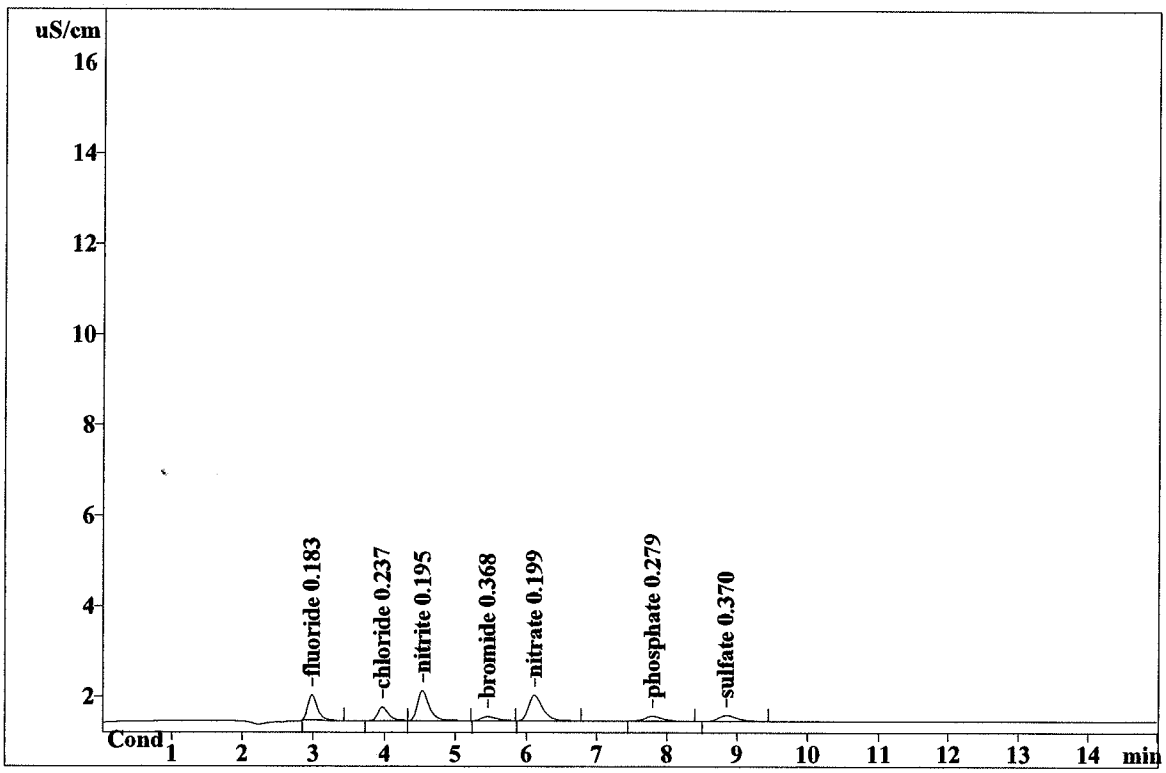
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:25 PM
Printed by: LDip

Ident: AB25-05 S3
Analysis from: 2/24/2020 9:39:04 PM
File: _2020-02-24_21-39.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155973

SAMPLE: METHOD300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

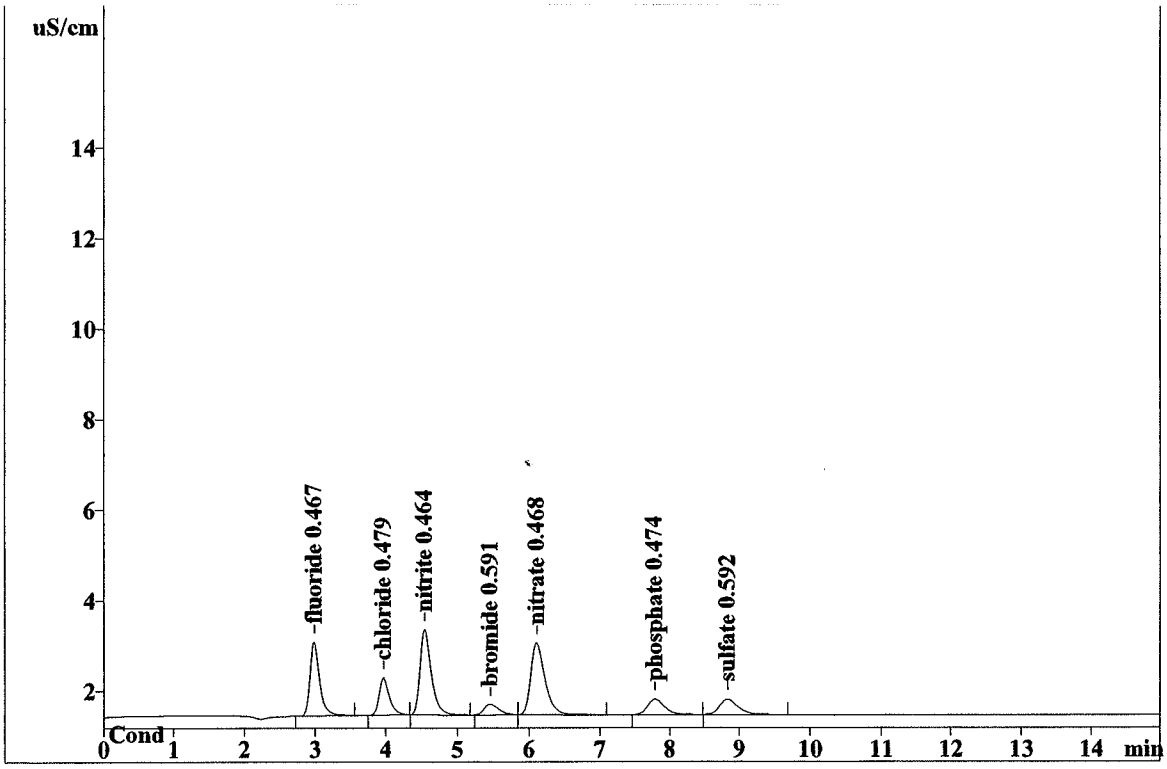
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.56	5.276	0.183	fluoride
2	3.97	0.30	3.121	0.237	chloride
3	4.54	0.67	7.587	0.195	nitrite
4	5.45	0.09	1.361	0.368	bromide
5	6.12	0.56	8.103	0.199	nitrate
6	7.80	0.11	1.975	0.279	phosphate
7	8.85	0.13	2.548	0.370	sulfate
7	15.00	2.43	29.971	1.831	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:38 PM
Printed by: LDip

Ident: AB25-06 S4
Analysis from: 2/24/2020 9:56:09 PM
File: _2020-02-24_21-56.chw Last save: 2/25/2020 12:15:06 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155974

SAMPLE: METHOD300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	1.64	15.542	0.467	fluoride
2	3.97	0.82	8.273	0.479	chloride
3	4.54	1.89	20.923	0.464	nitrite
4	5.45	0.24	3.406	0.591	bromide
5	6.11	1.59	22.337	0.468	nitrate
6	7.79	0.34	5.757	0.474	phosphate
7	8.83	0.34	6.256	0.592	sulfate
7	15.00	6.86	82.494	3.534	

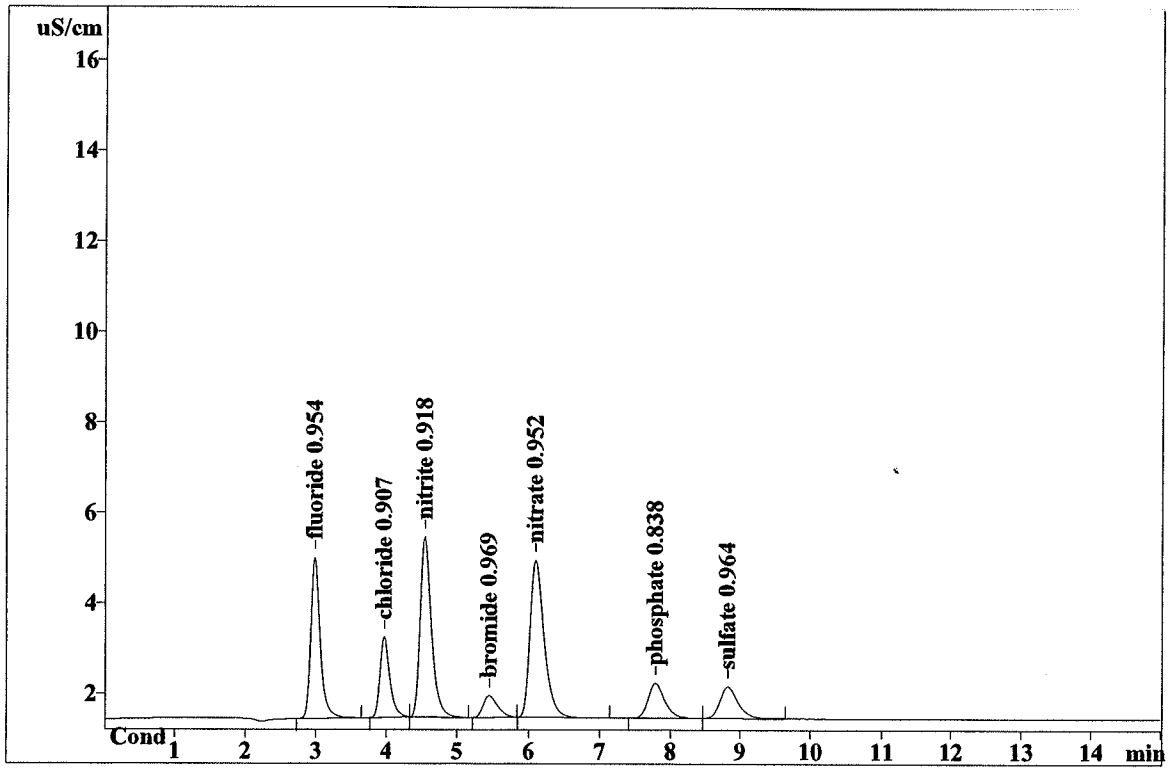
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:46 PM
Printed by: LDip

Ident: AB25-07 S5
Analysis from: 2/24/2020 10:13:14 PM
File: _2020-02-24_22-13.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155975

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.55	33.112	0.954	fluoride
2	3.96	1.78	17.395	0.907	chloride
3	4.54	3.97	43.459	0.918	nitrite
4	5.44	0.48	6.884	0.969	bromide
5	6.10	3.47	48.019	0.952	nitrate
6	7.78	0.78	12.807	0.838	phosphate
7	8.82	0.70	12.486	0.964	sulfate
7	15.00	14.72	174.163	6.503	

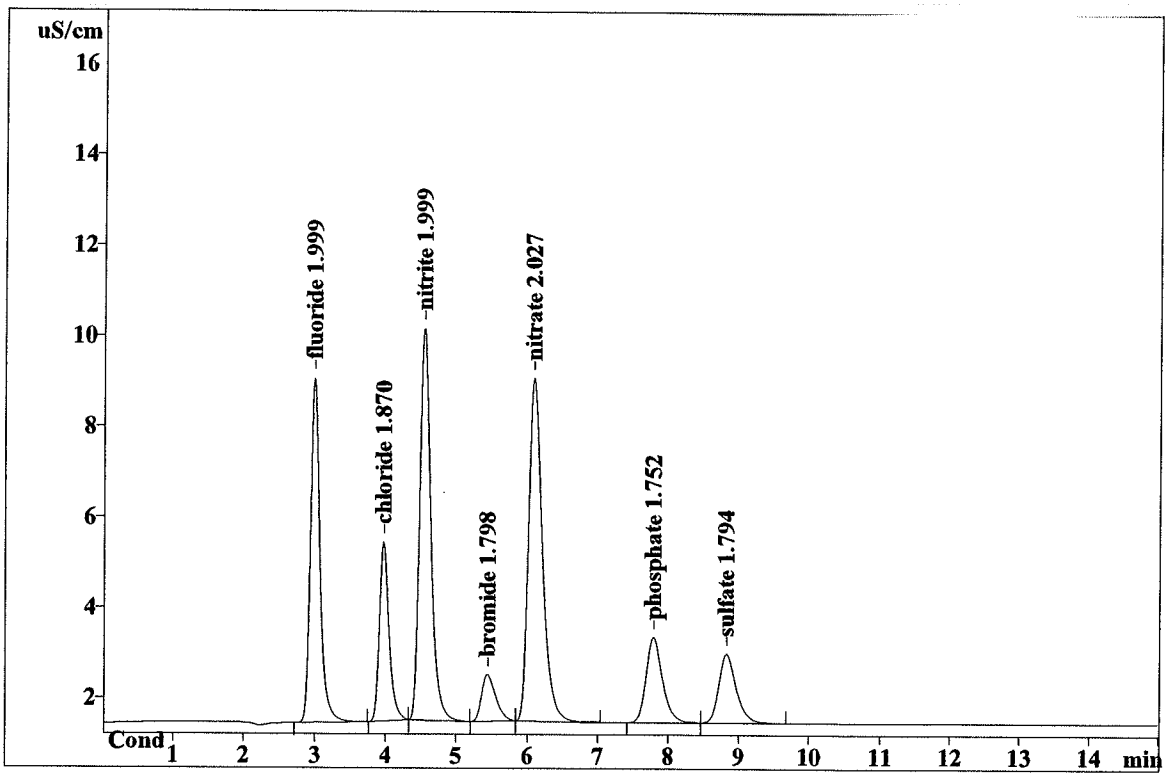
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:51 PM
Printed by: LDip

Ident: AB25-08 S6
Analysis from: 2/24/2020 10:30:19 PM
File: _2020-02-24_22-30.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155976

SAMPLE: METHOD300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	7.62	70.876	1.999	fluoride
2	3.96	3.97	37.900	1.870	chloride
3	4.54	8.67	97.125	1.999	nitrite
4	5.44	1.03	14.483	1.798	bromide
5	6.09	7.58	105.026	2.027	nitrate
6	7.78	1.88	30.496	1.752	phosphate
7	8.82	1.52	26.375	1.794	sulfate
7	15.00	32.27	382.281	13.240	

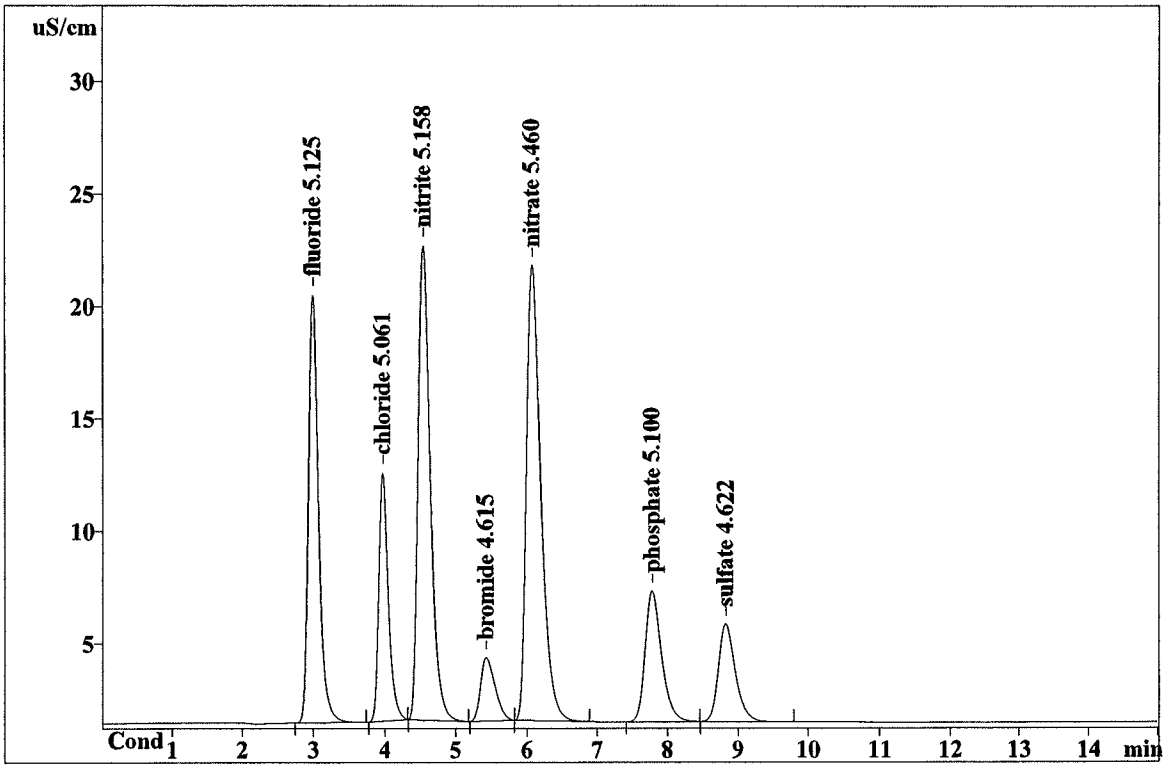
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:59 PM
Printed by: LDip

Ident: AB25-09 S7
Analysis from: 2/24/2020 10:47:23 PM
File: _2020-02-24_22-47.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155977

SAMPLE: METHOD300/9056/4110B
: 5.0 PPM
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	19.07	183.749	5.125	fluoride
2	3.96	11.09	105.892	5.061	chloride
3	4.54	21.13	253.850	5.158	nitrite
4	5.43	2.84	40.339	4.615	bromide
5	6.07	20.29	287.039	5.460	nitrate
6	7.78	5.85	95.279	5.100	phosphate
7	8.82	4.37	73.698	4.622	sulfate
7	15.00	84.64	1039.846	35.141	

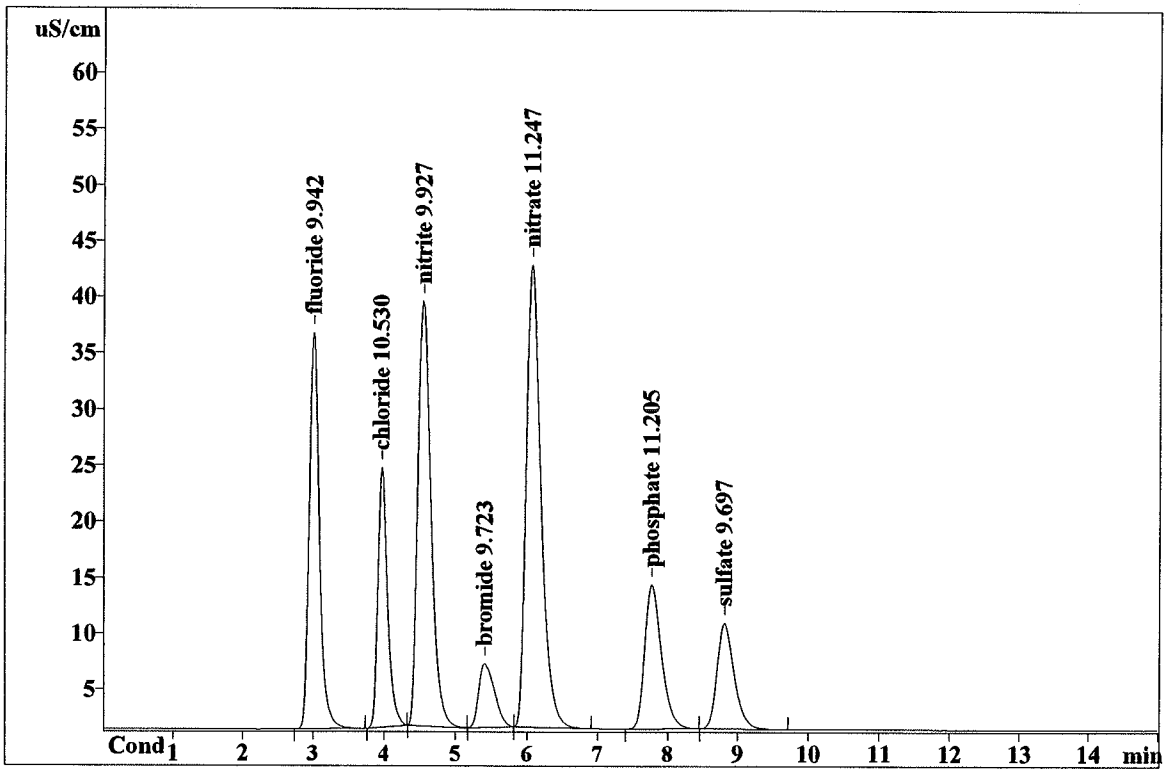
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:07 PM
Printed by: LDip

Ident: AB25-10 S8
Analysis from: 2/24/2020 11:04:28 PM
File: _2020-02-24_23-04.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155978

SAMPLE: METHOD300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	35.35	357.692	9.942	fluoride
2	3.96	23.13	222.415	10.530	chloride
3	4.54	37.88	490.473	9.927	nitrite
4	5.41	5.69	87.226	9.723	bromide
5	6.06	41.27	593.856	11.247	nitrate
6	7.77	12.84	213.432	11.205	phosphate
7	8.81	9.41	158.621	9.697	sulfate
7	15.00	165.57	2123.716	72.271	

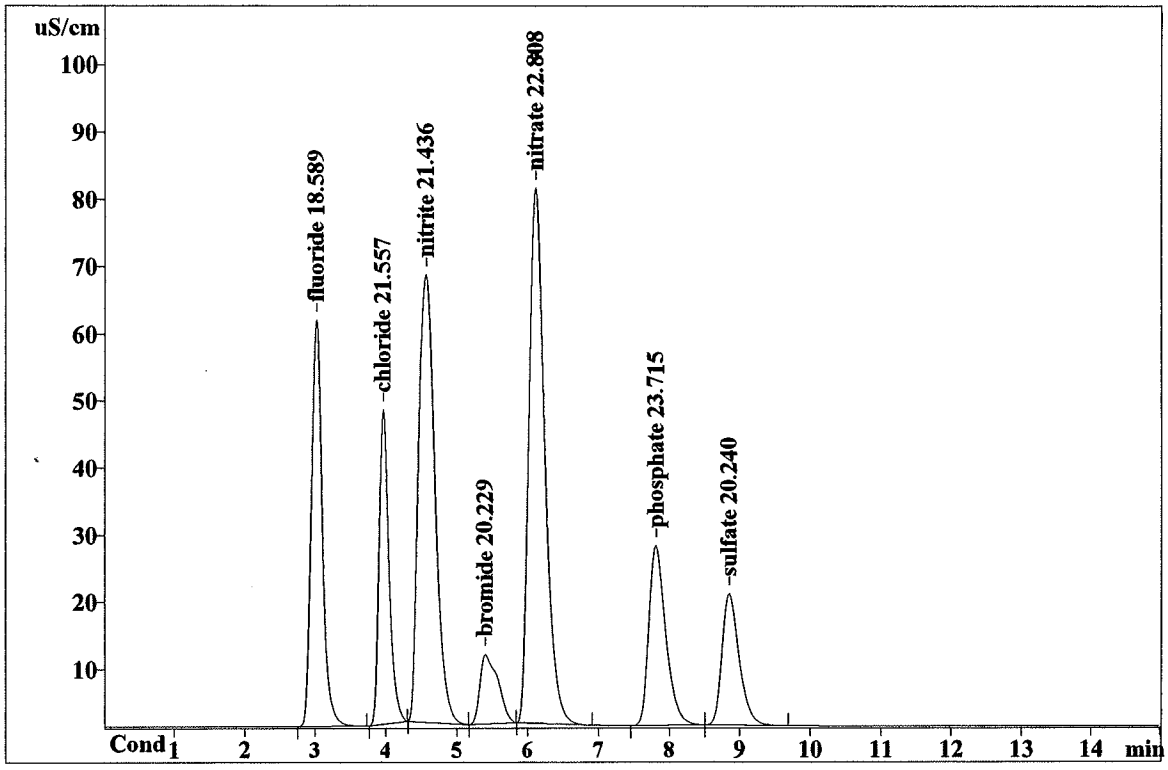
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:13 PM
Printed by: LDip

Ident: AB25-11 S9
Analysis from: 2/24/2020 11:21:33 PM
File: _2020-02-24_23-21.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155979

SAMPLE: METHOD300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	60.60	669.957	18.589	fluoride
2	3.96	46.92	457.371	21.557	chloride
3	4.55	66.71	1061.515	21.436	nitrite
4	5.40	10.32	183.643	20.229	bromide
5	6.11	79.75	1206.835	22.808	nitrate
6	7.80	26.69	455.548	23.715	phosphate
7	8.85	19.55	335.027	20.240	sulfate
7	15.00	310.55	4369.897	148.572	

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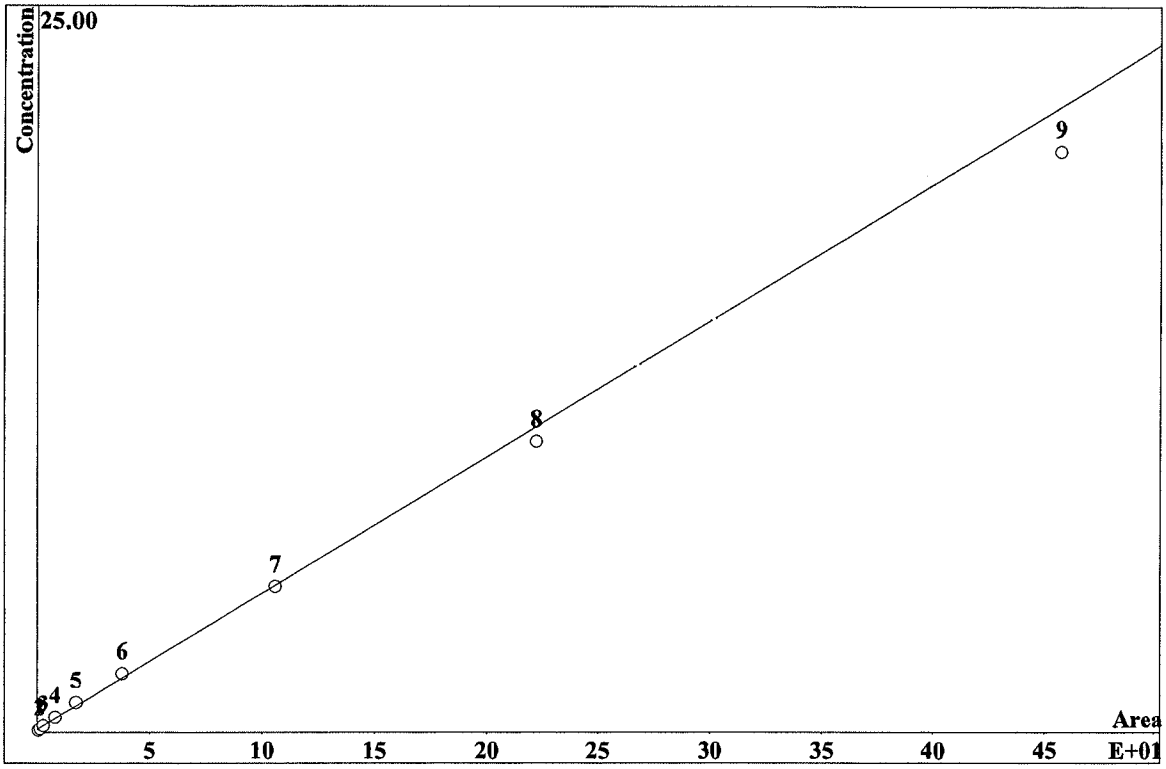
CALIBRATION OF COMPONENT chloride

Method: ICD0-B24.mtw
Equation: Q = 0.0469332·A + 0.0909434
RSD: 7.233 %
Correlation coefficient: 0.998906

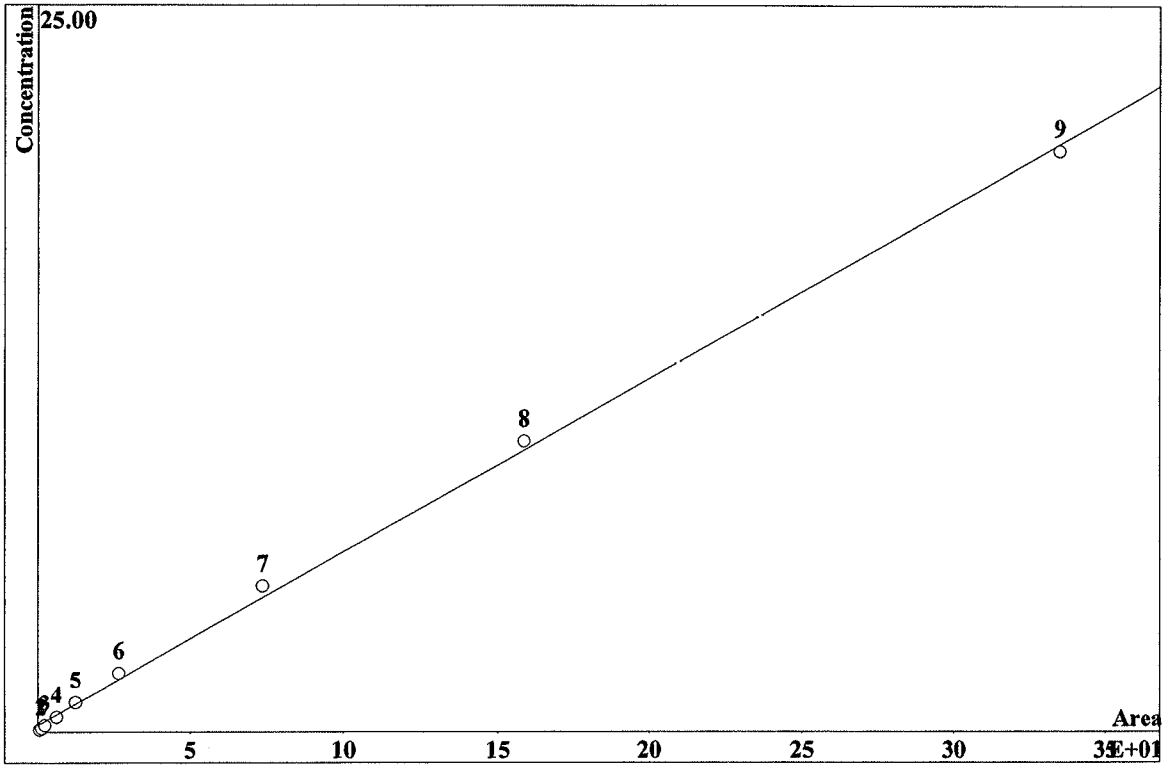


K3 = 0 K2 = 0 K1 = 0.0469332 K0 = 0.0909434
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.08183	0.852	0.05	1	3.96	Yes	_2020-02-24_2□
2	0.1492	1.57	0.1	1	3.96	Yes	_2020-02-24_2□
3	0.3042	3.121	0.2	1	3.96	Yes	_2020-02-24_2□
4	0.8241	8.273	0.5	1	3.96	Yes	_2020-02-24_2□
5	1.778	17.39	1	1	3.96	Yes	_2020-02-24_2□
6	3.966	37.9	2	1	3.96	Yes	_2020-02-24_2□
7	11.09	105.9	5	1	3.96	Yes	_2020-02-24_2□
8	23.13	222.4	10	1	3.96	No	_2020-02-24_2
9	46.92	457.4	20	1	3.96	No	_2020-02-24_2

CALIBRATION OF COMPONENT sulfate

Method: ICD0-B24.mtw
Equation: Q = 0.0597613·A + 0.217884
RSD: 5.948 %
Correlation coefficient: 0.999363



K3 = 0 K2 = 0 K1 = 0.0597613 K0 = 0.217884
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.04145	0.8494	0.05	1	8.83	Yes	_2020-02-24_2□
2	0.07188	1.412	0.1	1	8.83	Yes	_2020-02-24_2□
3	0.1354	2.548	0.2	1	8.83	Yes	_2020-02-24_2□
4	0.3422	6.256	0.5	1	8.83	Yes	_2020-02-24_2□
5	0.6991	12.49	1	1	8.83	Yes	_2020-02-24_2□
6	1.523	26.37	2	1	8.83	Yes	_2020-02-24_2□
7	4.368	73.7	5	1	8.83	Yes	_2020-02-24_2□
8	9.407	158.6	10	1	8.83	Yes	_2020-02-24_2
9	19.55	335	20	1	8.83	Yes	_2020-02-24_2

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : B24/AB25(2020)

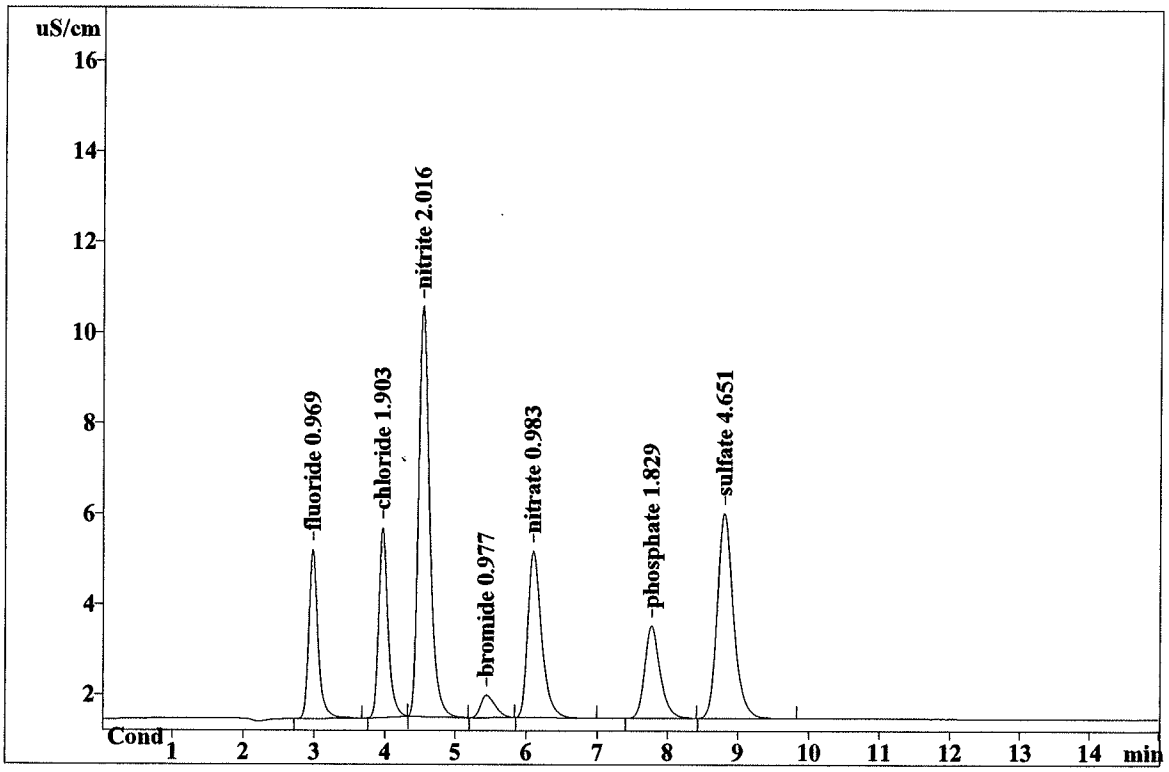
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AB25-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-12	ICV	PINOFCBS	91.5%	100.8%	98.3%	0%*	96.9%	95.1%	97.7%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	PINOFCBS	88.2%*	95.5%	97%	0%*	98.3%	91.8%	98.1%	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:21:18 PM
Printed by: LDip

Ident: AB25-12 ICV
Analysis from: 2/24/2020 11:38:38 PM
File: _2020-02-24_23-38.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155980

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	3.75	33.675	0.969	fluoride
2	3.96	4.21	38.609	1.903	chloride
3	4.53	9.07	97.933	2.016	nitrite
4	5.44	0.50	6.951	0.977	bromide
5	6.10	3.69	49.671	0.983	nitrate
6	7.76	2.05	31.988	1.829	phosphate
7	8.80	4.54	74.179	4.651	sulfate
7	15.00	27.80	333.006	13.328	

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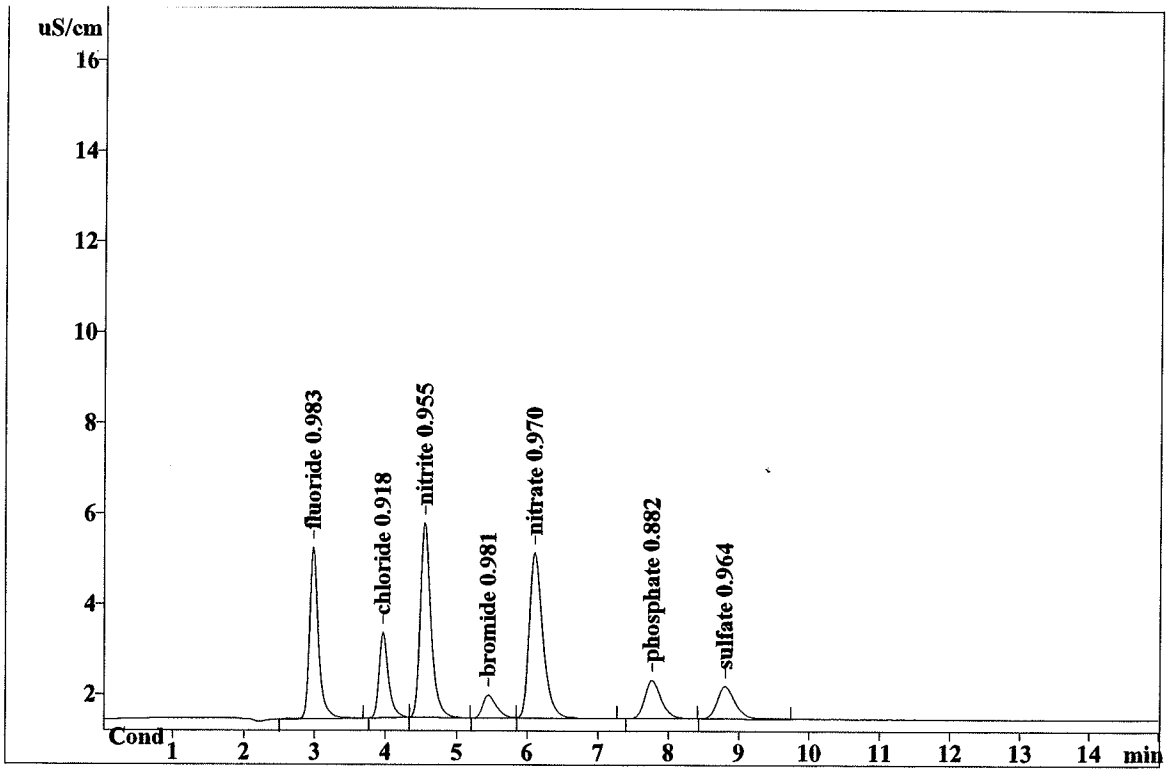
Report date: 2/25/2020 12:21:23 PM
Printed by: LDip

Ident: AB25-13 ICV1
Analysis from: 2/24/2020 11:55:43 PM
File: _2020-02-24_23-55.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155981

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.79	34.158	0.983	fluoride
2	3.96	1.88	17.616	0.918	chloride
3	4.54	4.31	45.313	0.955	nitrite
4	5.45	0.51	6.985	0.981	bromide
5	6.10	3.65	48.958	0.970	nitrate
6	7.77	0.85	13.652	0.882	phosphate
7	8.80	0.72	12.482	0.964	sulfate
7	15.00	15.70	179.164	6.652	

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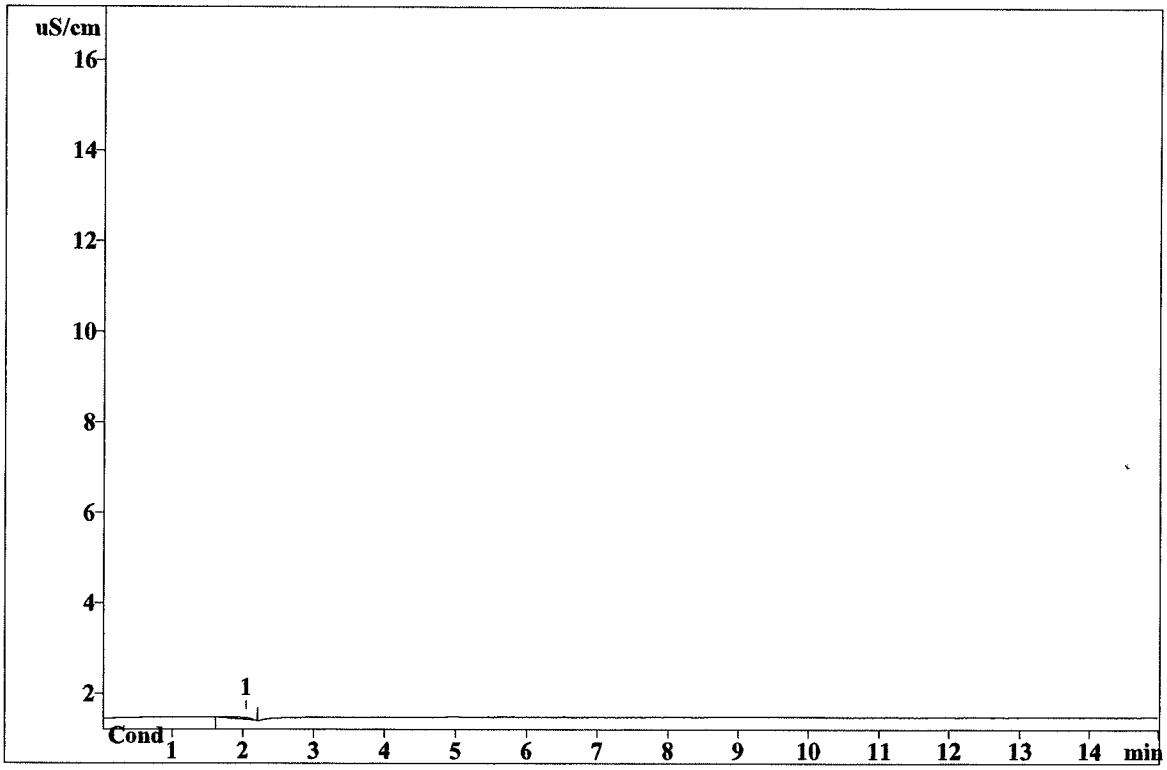
Report date: 2/25/2020 12:21:29 PM
Printed by: LDip

Ident: AB25-14 ICB
Analysis from: 2/25/2020 12:12:47 AM
File: _2020-02-25_00-12.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155982

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.898	0.000	

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DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F155
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF27-01	CCV723	96.9	06/22/2010:37
AF27-06	CCV725	96.7	06/22/2012:10
AF27-18	CCV727	94.8	06/22/2018:59
AF27-30	CCV729	95.6	06/22/2022:25

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F155
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF27-01	CCV723	93.4	06/22/2010:37
AF27-06	CCV725	92.7	06/22/2012:10
AF27-18	CCV727	91.9	06/22/2018:59
AF27-30	CCV729	93.6	06/22/2022:25

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : B24/AB25(2020)

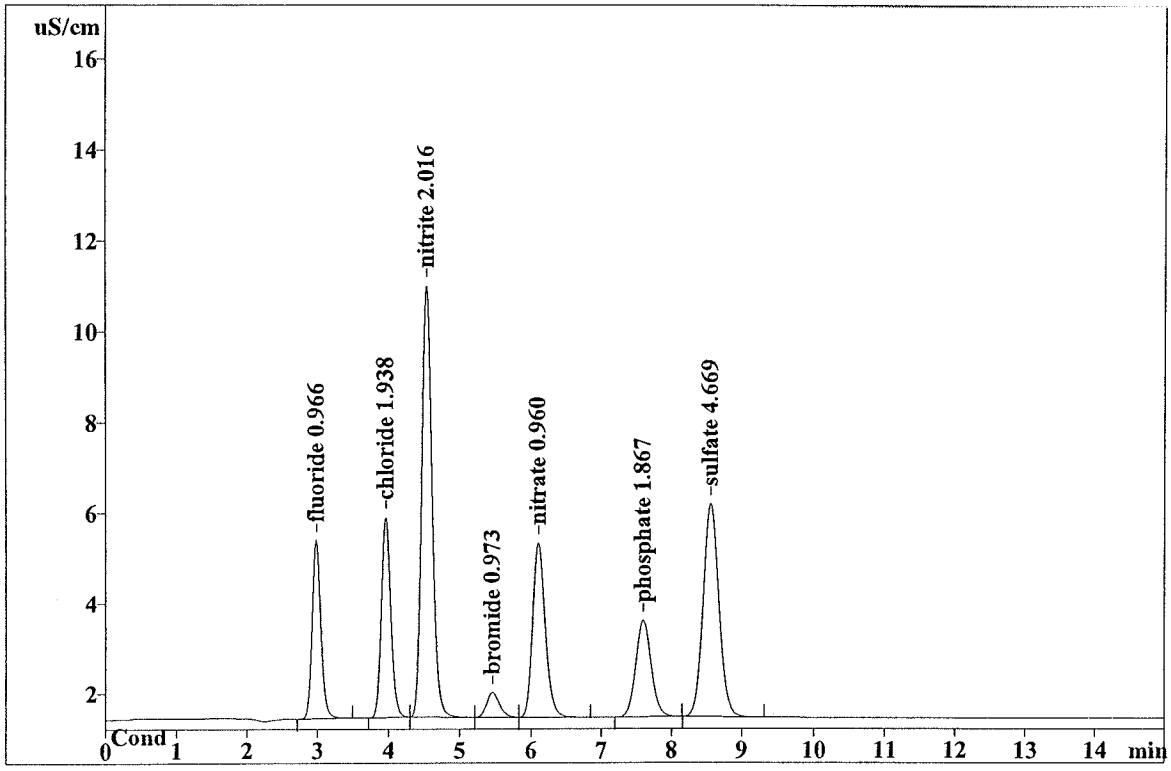
LFID	LSID	Selection	nitrate	chloride	fluoride	iodide	nitrite	bromide	phosphate	sulfate	RawNetID	DF
AF27-01	CCV723	NCFOIBPS	96%	96.9%	96.6%	0%*	100.8%	97.3%	93.3%	93.4%	_2020-06-22_10-37	1
AF27-02	CCB723	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_10-54	1
AF27-06	CCV725	NCFOIBPS	95%	96.7%	96.7%	0%*	100.4%	96.8%	92.4%	92.7%	_2020-06-22_12-10	1
AF27-07	CCB725	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_13-06	1
AF27-18	CCV727	NCFOIBPS	93.1%	94.8%	95.8%	0%*	100.9%	95.2%	91.6%	91.9%	_2020-06-22_18-59	1
AF27-19	CCB727	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_19-16	1
AF27-30	CCV729	NCFOIBPS	93.6%	95.6%	97%	0%*	101.4%	95.7%	92.6%	93.6%	_2020-06-22_22-25	1
AF27-31	CCB729	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_22-42	1
AF27-42	CCV731	NCFOIBPS	94%	96.5%	97%	0%*	102%	96.5%	93.5%	93.7%	_2020-06-23_01-50	1
AF27-43	CCB731	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-23_02-07	1
AF27-52	CCV733	NCFOIBPS	94%	95.5%	96.7%	0%*	101.3%	96.2%	91.4%	92.9%	_2020-06-23_04-41	1
AF27-53	CCB733	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-23_04-58	1

Report date: 6/23/2020 10:41:16 AM
Printed by: TWangc

Ident: AF27-01 CCV723
Analysis from: 6/22/2020 10:37:38 AM
File: _2020-06-22_10-37.chw Last save: 6/22/2020 10:52:35 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159249

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.95	33.569	0.966	fluoride
2	3.96	4.44	39.355	1.938	chloride
3	4.53	9.54	97.966	2.016	nitrite
4	5.47	0.55	6.920	0.973	bromide
5	6.10	3.87	48.414	0.960	nitrate
6	7.59	2.14	32.707	1.867	phosphate
7	8.55	4.71	74.483	4.669	sulfate
7	15.00	29.19	333.414	13.389	

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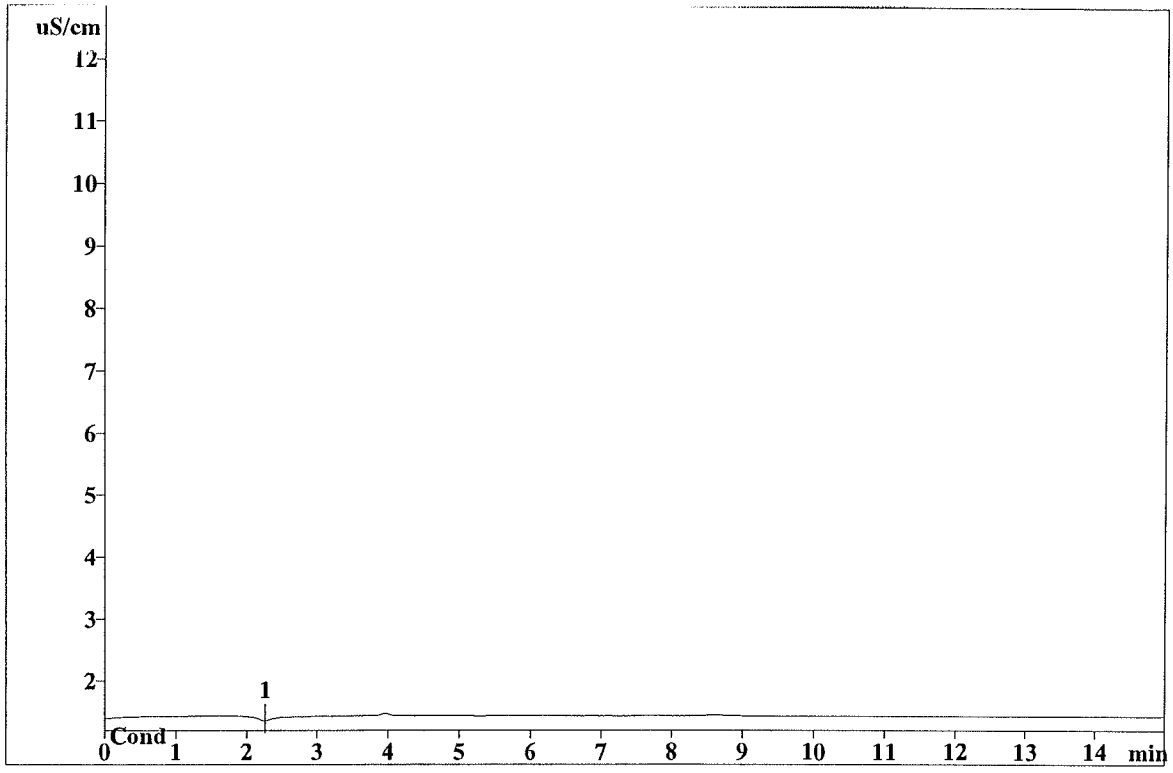
Report date: 6/23/2020 10:43:28 AM
Printed by: TWangc

Ident: AF27-02 CCB723
Analysis from: 6/22/2020 10:54:43 AM
File: _2020-06-22_10-54.chw Last save: 6/22/2020 11:09:40 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159250

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

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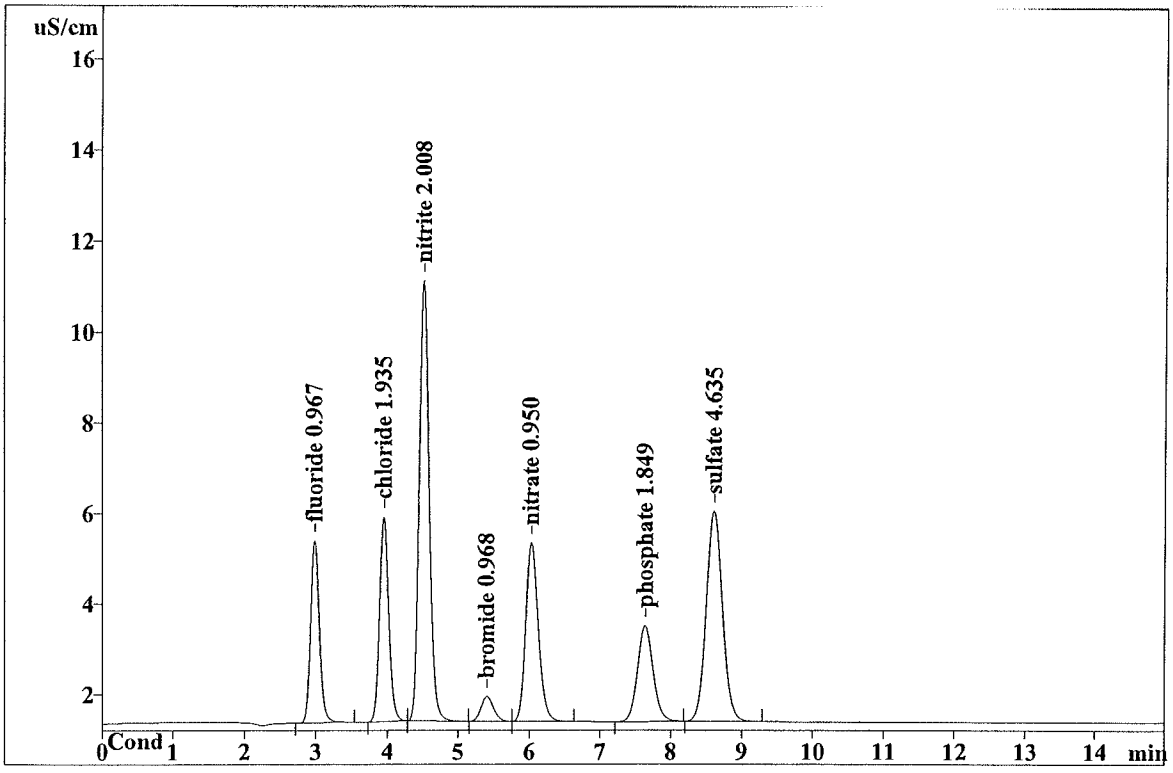
Report date: 6/23/2020 10:46:13 AM
Printed by: TWangc

Ident: AF27-06 CCV725
Analysis from: 6/22/2020 12:10:14 PM
File: _2020-06-22_12-10.chw Last save: 6/22/2020 1:03:24 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159254

SAMPLE: METHOD300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

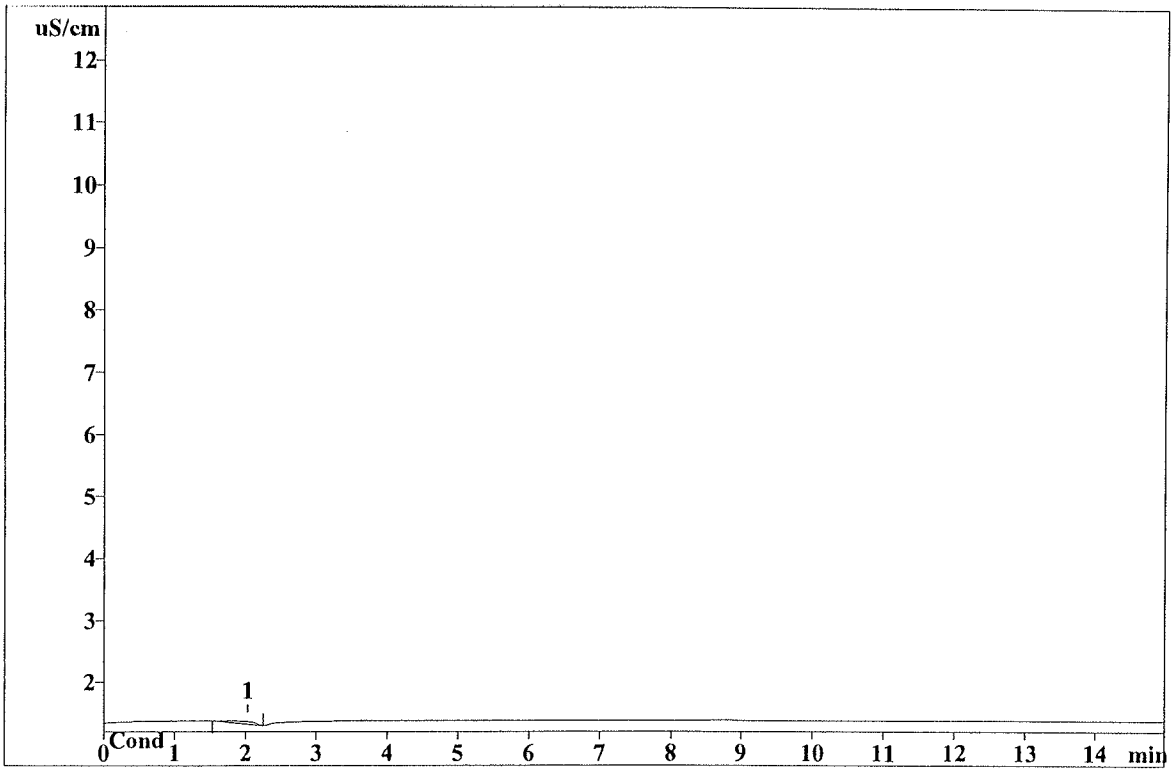
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	4.03	33.605	0.967	fluoride
2	3.94	4.53	39.288	1.935	chloride
3	4.51	9.71	97.556	2.008	nitrite
4	5.41	0.55	6.871	0.968	bromide
5	6.03	3.94	47.916	0.950	nitrate
6	7.63	2.11	32.361	1.849	phosphate
7	8.60	4.64	73.914	4.635	sulfate
7	15.00	29.52	331.510	13.312	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:47:05 AM
Printed by: TWangc

Ident: AF27-07 CCB725
Analysis from: 6/22/2020 1:06:43 PM
File: _2020-06-22_13-06.chw Last save: 6/22/2020 1:21:40 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159257

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 7
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.01	0.04	1.145	0.000	

This report has been created by IC Net
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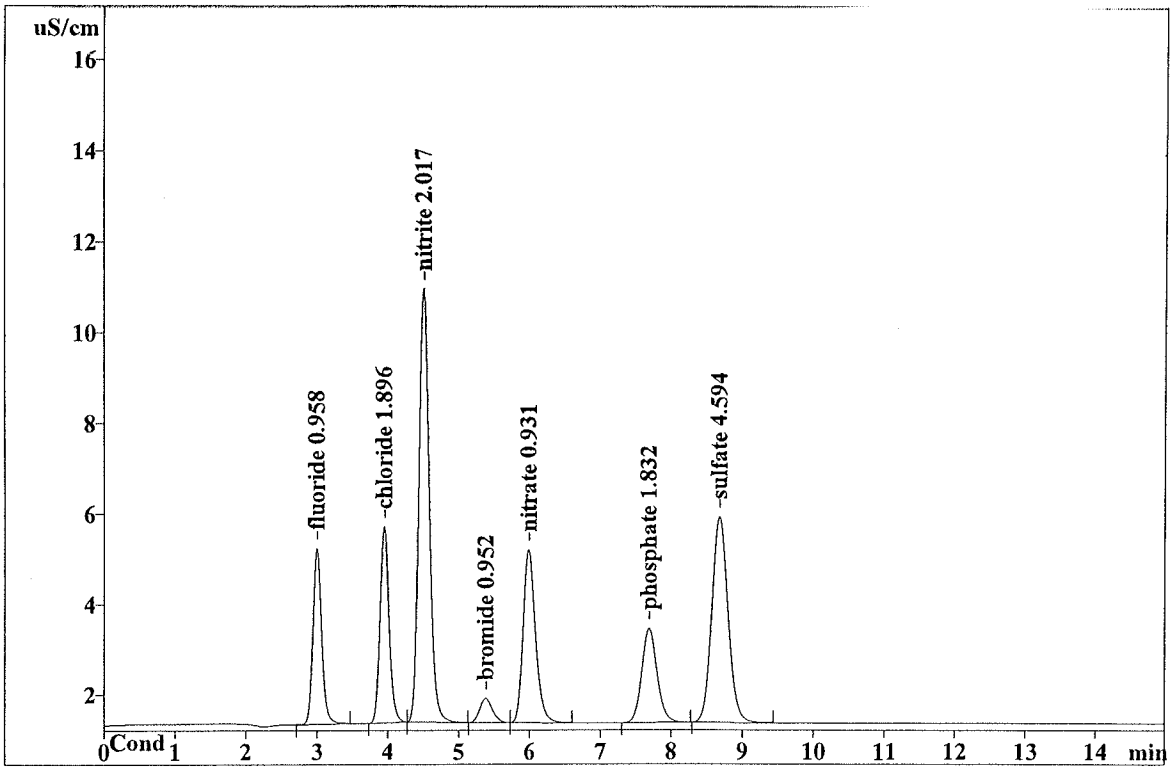
Report date: 6/23/2020 10:47:30 AM
Printed by: TWangc

Ident: AF27-18 CCV727
Analysis from: 6/22/2020 6:59:36 PM
File: _2020-06-22_18-59.chw Last save: 6/22/2020 7:14:33 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159273

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 18
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.89	33.279	0.958	fluoride
2	3.94	4.34	38.468	1.896	chloride
3	4.50	9.57	98.019	2.017	nitrite
4	5.38	0.54	6.725	0.952	bromide
5	5.98	3.83	46.891	0.931	nitrate
6	7.68	2.09	32.048	1.832	phosphate
7	8.67	4.56	73.223	4.594	sulfate
7	15.00	28.81	328.652	13.181	

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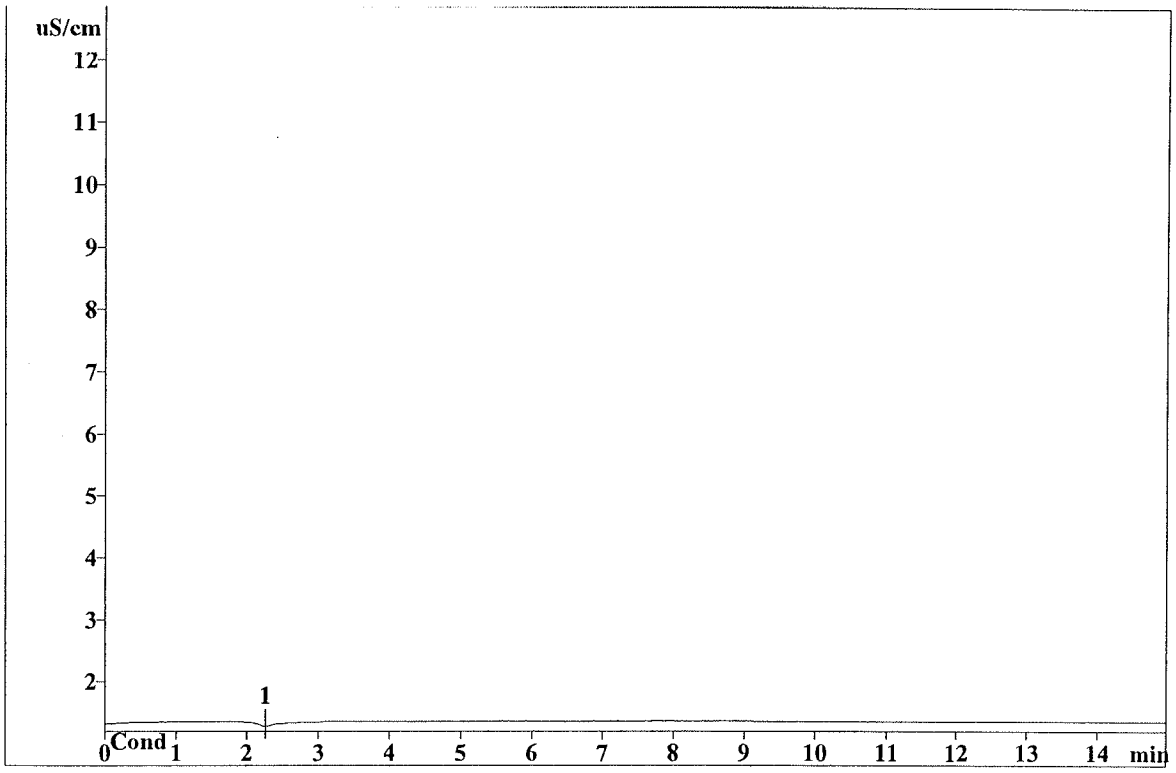
Report date: 6/23/2020 10:48:23 AM
Printed by: TWangc

Ident: AF27-19 CCB727
Analysis from: 6/22/2020 7:16:41 PM
File: _2020-06-22_19-16.chw Last save: 6/22/2020 7:31:38 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159274

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 19
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

This report has been created by IC Net
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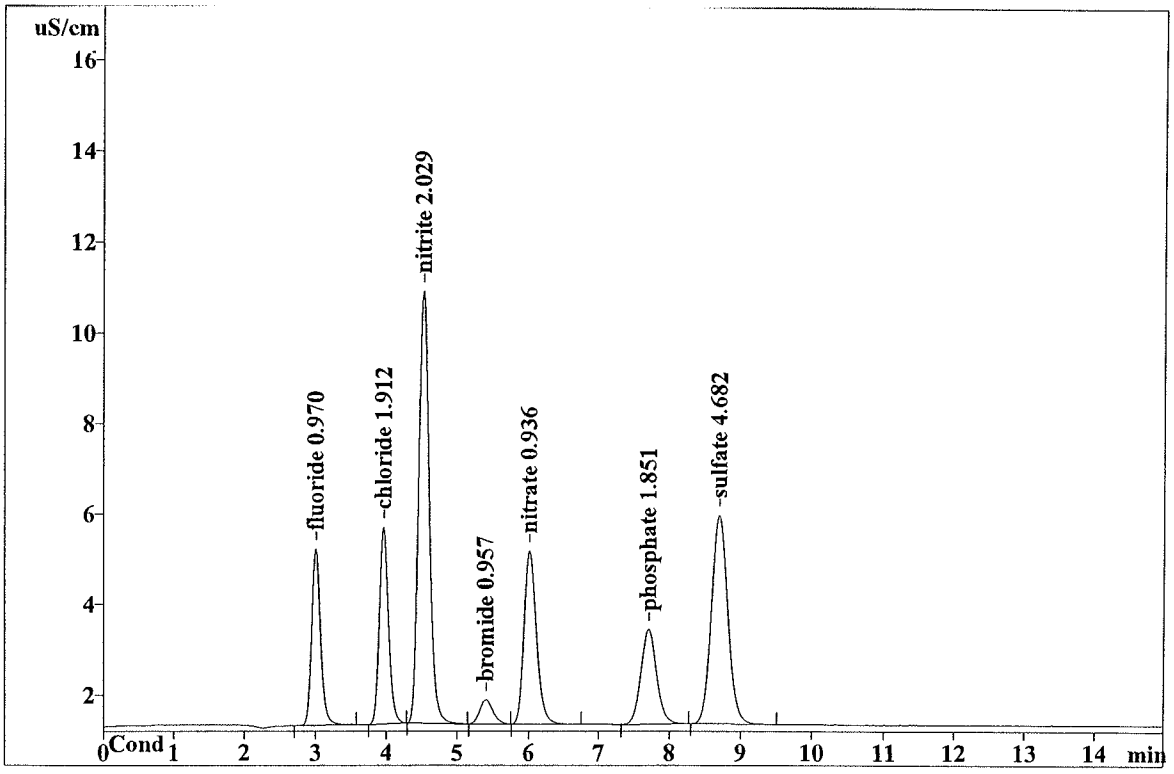
Report date: 6/23/2020 10:48:54 AM
Printed by: TWangc

Ident: AF27-30 CCV729
Analysis from: 6/22/2020 10:25:35 PM
File: _2020-06-22_22-25.chw Last save: 6/22/2020 10:40:32 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159285

SAMPLE: METHOD300/9056/4110B
:
Vial number: 30
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

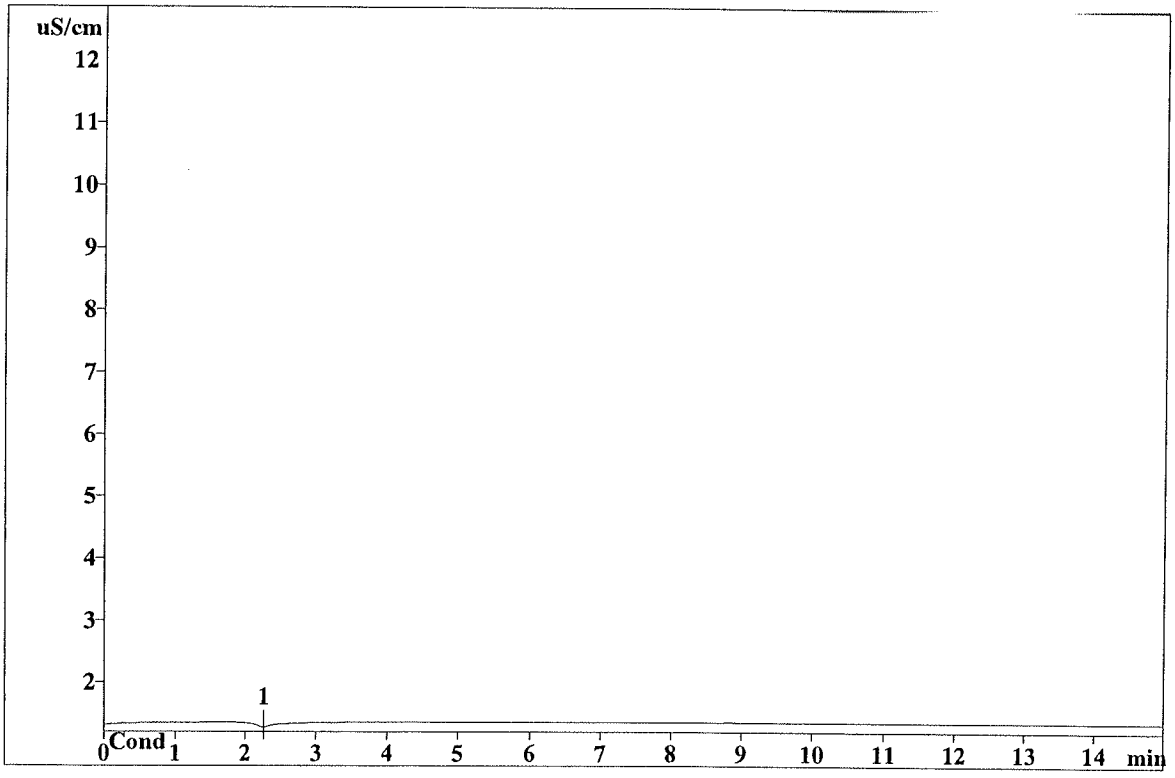
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.89	33.703	0.970	fluoride
2	3.96	4.35	38.808	1.912	chloride
3	4.51	9.55	98.580	2.029	nitrite
4	5.40	0.53	6.767	0.957	bromide
5	6.01	3.82	47.154	0.936	nitrate
6	7.70	2.09	32.411	1.851	phosphate
7	8.69	4.60	74.698	4.682	sulfate
7	15.00	28.82	332.121	13.337	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:49:59 AM
Printed by: TWangc

Ident: AF27-31 CCB729
Analysis from: 6/22/2020 10:42:40 PM
File: _2020-06-22_22-42.chw Last save: 6/22/2020 10:57:37 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159286

SAMPLE: METHOD300/9056/4110B
:
Vial number: 31
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	-0.000	0.000	

This report has been created by IC Net
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ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	Concentrations (ppm)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (ppm)
F	10
Cl	5
NO_2	10
Br	20
NO_3	2
PO_4	5
SO_4	20

Book #: AD0-067
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AB25
Method File: ICD0 - B24. mtw
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-11-42-03
ICV	SW3B-11-42-01
~~CCV~~ ICV1	SW3B-11-43-01
LCS	—
MS	—

Filters Lot #:
0.45 µm:
0.2 µm:

Snap Seal Containers Lot #:
4 oz: 04119002
1.5 oz:

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION — Expiration Date: 03/20/20

Std ID	Aliquot	Final Vol*
SP2-01-07-01	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 03/21/20

Std ID	Aliquot	Final Vol*
SP2-01-22-02	100 mL	1 L

* Reagent Water ID: SWIA-08-21-09

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LO
Date: 2/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-02-24_20-30.chw	ICD0-B24.mtw	AB25-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_20-47.chw	ICD0-B24.mtw	AB25-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_21-04.chw	ICD0-B24.mtw	AB25-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD300/9056/4110B	0.05 PPM
_2020-02-24_21-21.chw	ICD0-B24.mtw	AB25-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD300/9056/4110B	0.1 PPM
_2020-02-24_21-39.chw	ICD0-B24.mtw	AB25-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD300/9056/4110B	0.2 PPM
_2020-02-24_21-56.chw	ICD0-B24.mtw	AB25-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD300/9056/4110B	0.5 PPM
_2020-02-24_22-13.chw	ICD0-B24.mtw	AB25-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD300/9056/4110B	1.0 PPM
_2020-02-24_22-30.chw	ICD0-B24.mtw	AB25-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD300/9056/4110B	2.0 PPM
_2020-02-24_22-47.chw	ICD0-B24.mtw	AB25-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD300/9056/4110B	5.0 PPM
_2020-02-24_23-04.chw	ICD0-B24.mtw	AB25-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD300/9056/4110B	10.0 PPM
_2020-02-24_23-21.chw	ICD0-B24.mtw	AB25-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD300/9056/4110B	20.0 PPM
_2020-02-24_23-38.chw	ICD0-B24.mtw	AB25-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_23-55.chw	ICD0-B24.mtw	AB25-13 ICVI	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1.0 PPM
_2020-02-25_00-12.chw	ICD0-B24.mtw	AB25-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL 02/25/20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF27
Method File:	ICDO-B2H.mtW
Analytical Batch:	ICF029W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	–
ICV	–
CCV	SW3B-13-08-01
LCS	SW3B-13-08-02
MS	SCP refer to LCS Parent ID

Filters Lot #:
0.45 µm: 00191103
~~0.2 µm~~ 0.22 µm: 91478103 TW 6/22/20

Snap Seal Containers Lot #:
4 oz:
1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 7/18/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 7/19/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SWA-009-03-04

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: TW

Date: 6/22/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-06-22_10-37.chw	ICD0-B24.mtw	AF27-01 CCV723	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_10-54.chw	ICD0-B24.mtw	AF27-02 CCB723	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-11.chw	ICD0-B24.mtw	AF27-03 ICF029WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-28.chw	ICD0-B24.mtw	AF27-04 ICF029WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-45.chw	ICD0-B24.mtw	AF27-05 ICF029WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_12-10.chw	ICD0-B24.mtw	AF27-06 CCV725	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_13-06.chw	ICD0-B24.mtw	AF27-07 CCB725	7	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_14-28.chw	ICD0-B24.mtw	AF27-08 F167-07I DF=100	8	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_14-45.chw	ICD0-B24.mtw	AF27-09 F167-04I DF=10000	9	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_15-02.chw	ICD0-B24.mtw	AF27-10 F164-01	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_15-19.chw	ICD0-B24.mtw	AF27-11 F155-01	11	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_15-36.chw	ICD0-B24.mtw	AF27-12 F155-02	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_16-04.chw	ICD0-B24.mtw	AF27-13 F167-04J DF=20000	13	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-21.chw	ICD0-B24.mtw	AF27-14 F167-04JM DF=2000	14	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-38.chw	ICD0-B24.mtw	AF27-15 F167-04JS DF=20000	15	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-55.chw	ICD0-B24.mtw	AF27-16 F167-04JD DF=2000	16	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_17-12.chw	ICD0-B24.mtw	AF27-17 F162-05I DF=20	17	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_18-59.chw	ICD0-B24.mtw	AF27-18 CCV727	18	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_19-16.chw	ICD0-B24.mtw	AF27-19 CCB727	19	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_19-34.chw	ICD0-B24.mtw	AF27-20 F155-01I DF=20	20	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_19-51.chw	ICD0-B24.mtw	AF27-21 F155-01J DF=200	21	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-08.chw	ICD0-B24.mtw	AF27-22 F155-02I DF=20	22	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-26.chw	ICD0-B24.mtw	AF27-23 F155-02J DF=200	23	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-43.chw	ICD0-B24.mtw	AF27-24 F162-01I DF=20	24	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-00.chw	ICD0-B24.mtw	AF27-25 F162-01J DF=200	25	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-17.chw	ICD0-B24.mtw	AF27-26 F164-01I DF=40	26	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-34.chw	ICD0-B24.mtw	AF27-27 F164-01ID DF=40	27	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-51.chw	ICD0-B24.mtw	AF27-28 F164-01IM DF=40	28	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-08.chw	ICD0-B24.mtw	AF27-29 F164-01IS DF=40	29	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-25.chw	ICD0-B24.mtw	AF27-30 CCV729	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-42.chw	ICD0-B24.mtw	AF27-31 CCB729	31	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-59.chw	ICD0-B24.mtw	AF27-32 F162-02I DF=20	32	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-16.chw	ICD0-B24.mtw	AF27-33 F162-02J DF=200	33	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-33.chw	ICD0-B24.mtw	AF27-34 F162-04I DF=20	34	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-50.chw	ICD0-B24.mtw	AF27-35 F162-04J DF=200	35	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-08.chw	ICD0-B24.mtw	AF27-36 F162-05J DF=200	36	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-25.chw	ICD0-B24.mtw	AF27-37 F162-07I DF=20	37	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-42.chw	ICD0-B24.mtw	AF27-38 F164-01J DF=2	38	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-59.chw	ICD0-B24.mtw	AF27-39 F164-01JD DF=2	39	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-16.chw	ICD0-B24.mtw	AF27-40 F164-01JM DF=2	40	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-33.chw	ICD0-B24.mtw	AF27-41 F164-01JS DF=2	41	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-50.chw	ICD0-B24.mtw	AF27-42 CCV731	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-07.chw	ICD0-B24.mtw	AF27-43 CCB731	43	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-24.chw	ICD0-B24.mtw	AF27-44 F162-07J DF=200	44	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-41.chw	ICD0-B24.mtw	AF27-45 F162-08I DF=20	45	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-58.chw	ICD0-B24.mtw	AF27-46 F162-08J DF=200	46	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-15.chw	ICD0-B24.mtw	AF27-47 F162-10I DF=20	47	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-32.chw	ICD0-B24.mtw	AF27-48 F162-10J DF=200	48	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-50.chw	ICD0-B24.mtw	AF27-49 F162-11I DF=20	49	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-07.chw	ICD0-B24.mtw	AF27-50 F162-11J DF=200	50	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-24.chw	ICD0-B24.mtw	AF27-51 F167-03I DF=200	51	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-41.chw	ICD0-B24.mtw	AF27-52 CCV733	52	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-58.chw	ICD0-B24.mtw	AF27-53 CCB733	53	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL lo 6/23/20

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D0 (761 IC) IC column: METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**2.99**	2.90	3.08	**0.090**
CHLORIDE	**3.96**	3.86	4.07	**0.104**
NITRITE	**4.54**	4.38	4.70	**0.159**
BROMIDE	**5.44**	5.11	5.76	**0.329**
NITRATE	**6.10**	5.68	6.52	**0.420**
PHOSPHATE	**7.79**	7.26	8.31	**0.528**
SULFATE	**8.83**	8.03	9.63	**0.797**

ICD0-B24.mtw

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column: Column size:	METROSEP A SUPP 5 100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
06/05/14

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SM2320B
TOTAL ALKALINITY

A total of two(2) water samples were received on 06/18/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF009WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF009WL/ALF009WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF009WB	ND	1	NA	5	5	06/23/2018:11	NA	20E5F0703	20E5F07	ALF009W	NA	NA
LCS1W	ALF009WL	80.5	1	NA	5	5	06/23/2018:17	NA	20E5F0704	20E5F07	ALF009W	NA	NA
LCD1W	ALF009WC	77.1	1	NA	5	5	06/23/2018:22	NA	20E5F0705	20E5F07	ALF009W	NA	NA
MW18-GW061620	F155-01	279	1	NA	5	5	06/23/2021:18	NA	20E5F0724	20E5F07	ALF009W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02	261	1	NA	5	5	06/23/2021:26	NA	20E5F0725	20E5F07	ALF009W	06/16/2017:28	06/18/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	ALF009WB	ALF009WL	ALF009WC
LAB FILE ID	20E5F0703	20E5F0704	20E5F0705
DATE EXTRACTED	NA	NA	NA
DATE ANALYZED	06/23/2018:11	06/23/2018:17	06/23/2018:22
PREP BATCH	ALF009W	ALF009W	ALF009W
CALIBRATION REF:	20E5F07	20E5F07	20E5F07

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	80.5	106	75.8	77.1	102	4	80-120	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☑ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Comments: REAGENT WATER: RWI-19-003

Book#: AAL-042

Instrument No.: ☐ 53 ☐ 97 ☑ E5

Analytical Batch: 20E5F07

Analytical Sequence: ALF009 / ALF011

SOP #	Rev. #
☑ EMAX-2320B	5
☐ EMAX-	

STANDARDS ID	Conc. (mg/L)
0.02N HCL SWRI-02-20-03	0.0199 N
LCS SWI-02-05-02	75.8
MS/MSD NA	NA
ICV NA	NA

pH Buffer	ID
pH 4	SWI-02-05-21
pH 7	SWI-02-05-22
pH 10	SWI-02-05-23
pH 8.0 (Check)	SWI-02-05-19
pH Strip	HC998032

Analyzed By: LO / TK

Date: 6/23/20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1165 **Analytical Batch#** 20E5F07

Seg. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F07	06/23/20	6:01 PM	7.94	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F07	06/23/20	6:07 PM	7.60	.00	1.49	-1.00	.00	59.50	59.50	.00	.00	
3	ALF009WB	20E5F07	06/23/20	6:11 PM	6.37	.00	.10	.14	.00	2.24	2.24	.00	.00	
4	ALF009WL	20E5F07	06/23/20	6:17 PM	9.06	1.17	2.02	-1.00	46.68	80.54	.00	67.72	12.82	
5	ALF009WC	20E5F07	06/23/20	6:22 PM	9.09	1.26	1.94	-1.00	50.22	77.11	.00	53.79	23.33	
6	F149-01	20E5F07	06/23/20	6:33 PM	7.77	.00	18.39	-1.00	.00	731.74	731.74	.00	.00	
7	F149-03	20E5F07	06/23/20	6:41 PM	6.99	.00	3.93	-1.00	.00	156.24	156.24	.00	.00	
8	F149-03D	20E5F07	06/23/20	6:48 PM	6.99	.00	3.69	-1.00	.00	146.76	146.76	.00	.00	
9	F149-04	20E5F07	06/23/20	7:00 PM	7.55	.00	18.85	-1.00	.00	750.38	750.38	.00	.00	
10	F149-04D	20E5F07	06/23/20	7:12 PM	7.58	.00	18.49	-1.00	.00	735.79	735.79	.00	.00	
11	F149-05	20E5F07	06/23/20	7:18 PM	7.21	.00	3.62	-1.00	.00	144.17	144.17	.00	.00	
12	F149-06	20E5F07	06/23/20	7:29 PM	7.58	.00	11.13	-1.00	.00	442.89	442.89	.00	.00	
13	F149-07	20E5F07	06/23/20	7:36 PM	7.13	.00	5.38	-1.00	.00	214.29	214.29	.00	.00	
14	F149-08	20E5F07	06/23/20	7:43 PM	7.28	.00	5.59	-1.00	.00	222.39	222.39	.00	.00	
15	F149-09	20E5F07	06/23/20	7:54 PM	7.89	.00	11.69	-1.00	.00	465.31	465.31	.00	.00	
16	F149-10	20E5F07	06/23/20	8:03 PM	7.89	.00	11.39	-1.00	.00	453.16	453.16	.00	.00	
17	F149-11	20E5F07	06/23/20	8:11 PM	7.05	.00	4.91	-1.00	.00	195.57	195.57	.00	.00	
18	F149-12	20E5F07	06/23/20	8:21 PM	7.69	.00	15.75	-1.00	.00	626.72	626.72	.00	.00	

Analyzed by: LD TK Reviewed by: TK Date: 06/24/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

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Run Number 1165 **Analytical Batch#** 20E5F07

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F149-13	20E5F07	06/23/20	8:33 PM	7.79	.00	16.04	-1.00	.00	638.40	638.40	.00	.00	
20	F149-14	20E5F07	06/23/20	8:41 PM	7.49	.00	7.87	-1.00	.00	313.08	313.08	.00	.00	
21	F149-15	20E5F07	06/23/20	8:53 PM	7.53	.00	15.12	-1.00	.00	601.82	601.82	.00	.00	
22	F149-16	20E5F07	06/23/20	9:03 PM	7.54	.00	14.68	-1.00	.00	584.26	584.26	.00	.00	
23	F149-17	20E5F07	06/23/20	9:11 PM	6.98	.00	4.64	-1.00	.00	184.48	184.48	.00	.00	
24	F155-01	20E5F07	06/23/20	9:18 PM	7.41	.00	7.00	-1.00	.00	278.68	278.68	.00	.00	
25	F155-02	20E5F07	06/23/20	9:26 PM	7.42	.00	6.55	-1.00	.00	260.52	260.52	.00	.00	
26	RINSE	20E5F07	06/23/20	9:33 PM	6.49	.00	.08	.12	.00	1.44	1.44	.00	.00	
27	ALF011WB	20E5F07	06/23/20	9:39 PM	6.14	.00	.06	.11	.00	.81	.81	.00	.00	
28	ALF011WL	20E5F07	06/23/20	9:46 PM	9.06	1.19	1.90	-1.00	47.47	75.56	.00	56.17	19.39	
29	ALF011WC	20E5F07	06/23/20	9:54 PM	9.07	1.22	1.92	-1.00	48.67	76.57	.00	55.78	20.78	
30	F159-01	20E5F07	06/23/20	10:03 PM	7.73	.00	6.60	-1.00	.00	262.87	262.87	.00	.00	
31	F159-02	20E5F07	06/23/20	10:10 PM	7.27	.00	5.05	-1.00	.00	200.96	200.96	.00	.00	
32	F159-04	20E5F07	06/23/20	10:16 PM	7.16	.00	3.76	-1.00	.00	149.72	149.72	.00	.00	
33	F159-05	20E5F07	06/23/20	10:23 PM	7.16	.00	3.82	-1.00	.00	152.15	152.15	.00	.00	
34	F159-06	20E5F07	06/23/20	10:30 PM	6.91	.00	6.53	-1.00	.00	259.71	259.71	.00	.00	
35	F159-07	20E5F07	06/23/20	10:39 PM	6.95	.00	5.55	-1.00	.00	220.75	220.75	.00	.00	
36	F159-08	20E5F07	06/23/20	10:48 PM	7.67	.00	12.19	-1.00	.00	485.10	485.10	.00	.00	
37	F159-09	20E5F07	06/23/20	10:55 PM	7.14	.00	3.40	-1.00	.00	135.47	135.47	.00	.00	
38	F159-10	20E5F07	06/23/20	11:07 PM	7.85	.00	17.19	-1.00	.00	684.07	684.07	.00	.00	

Analyzed by: LD / TK

Reviewed by: TK Date: 06/24/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

REPORT ID: 20F155

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Run Number 1165 **Analytical Batch#** 20E5F07

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
39	F159-11	20E5F07	06/23/20	11:14 PM	7.30	.00	4.28	-1.00	.00	170.23	170.23	.00	.00	
40	F159-12	20E5F07	06/23/20	11:25 PM	7.14	.00	11.55	-1.00	.00	459.50	459.50	.00	.00	
41	F159-13	20E5F07	06/23/20	11:36 PM	7.63	.00	18.81	-1.00	.00	748.79	748.79	.00	.00	
42	F159-14	20E5F07	06/23/20	11:43 PM	7.12	.00	3.89	-1.00	.00	154.68	154.68	.00	.00	
43	F159-15	20E5F07	06/23/20	11:52 PM	7.15	.00	8.69	-1.00	.00	345.82	345.82	.00	.00	
44	F159-16	20E5F07	06/24/20	12:00 AM	7.59	.00	5.82	-1.00	.00	231.53	231.53	.00	.00	
45	F159-17	20E5F07	06/24/20	12:06 AM	6.90	.00	5.11	-1.00	.00	203.49	203.49	.00	.00	
46	F164-01	20E5F07	06/24/20	12:13 AM	8.07	.00	4.69	-1.00	.00	186.57	186.57	.00	.00	
47	RINSE	20E5F07	06/24/20	12:20 AM	7.40	.00	.14	.19	.00	3.77	3.77	.00	.00	

Analyzed by: LO / TK Reviewed by: TK Date: 06/24/20

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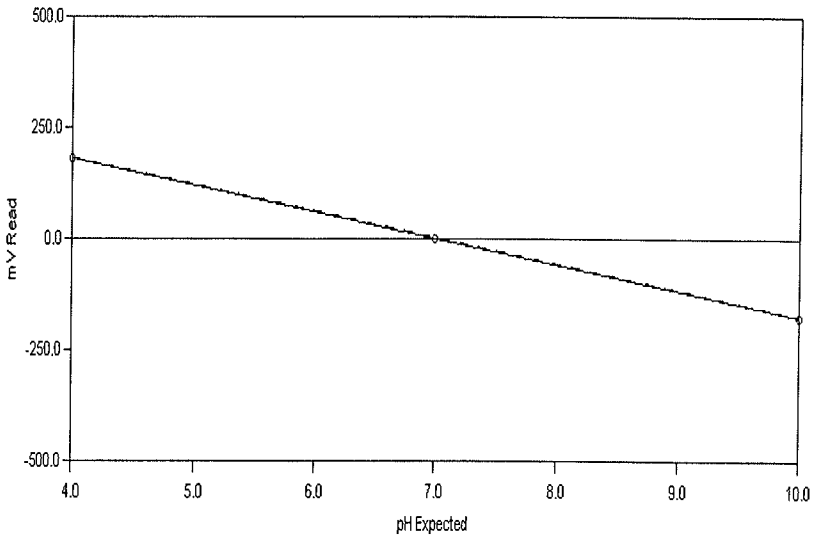
PC-TitratION PLUS
Calibration Report

Calibration Record # 823



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/23/2020
Channel	1	Time	5:59 PM
Probe Type	pH	Temperature	299.36 K 26.21 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.405	CorrCoeff	1.0000
Intercept	2.113	Equation: Y = (-59.405) X + (2.113)	

Calibration Validity **True** Operator

	Result	Minimum	Maximum
Slope	-59.405	-65.00	-53.00
Intercept	2.113	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	180.41
	7.00	1.95
	10.00	-176.02

CALRPRT.SRW
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PC-Titrate For Windows

Running List Report

Order Number - 20E5F07

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF009WB	6	.00	25.00
5	PH-ALK	ALF009WL	7	.00	25.00
6	PH-ALK	ALF009WC	8	.00	25.00
7	PH-ALK	F149-01	9	.00	25.00
8	PH-ALK	F149-03	10	.00	25.00
9	PH-ALK	F149-03D	11	.00	25.00
10	PH-ALK	F149-04	12	.00	25.00
11	PH-ALK	F149-04D	13	.00	25.00
12	PH-ALK	F149-05	14	.00	25.00
13	PH-ALK	F149-06	15	.00	25.00
14	PH-ALK	F149-07	16	.00	25.00
15	PH-ALK	F149-08	17	.00	25.00
16	PH-ALK	F149-09	18	.00	25.00
17	PH-ALK	F149-10	19	.00	25.00
18	PH-ALK	F149-11	20	.00	25.00
19	PH-ALK	F149-12	21	.00	25.00
20	PH-ALK	F149-13	22	.00	25.00
21	PH-ALK	F149-14	23	.00	25.00
22	PH-ALK	F149-15	24	.00	25.00
23	PH-ALK	F149-16	25	.00	25.00
24	PH-ALK	F149-17	26	.00	25.00
25	PH-ALK	F155-01	27	.00	25.00
26	PH-ALK	F155-02	28	.00	25.00
27	PH-ALK	RINSE	29	.00	25.00
28	PH-ALK	ALF011WB	30	.00	25.00
29	PH-ALK	ALF011WL	31	.00	25.00
30	PH-ALK	ALF011WC	32	.00	25.00
31	PH-ALK	F159-01	33	.00	25.00
32	PH-ALK	F159-02	34	.00	25.00
33	PH-ALK	F159-04	35	.00	25.00
34	PH-ALK	F159-05	36	.00	25.00
35	PH-ALK	F159-06	37	.00	25.00
36	PH-ALK	F159-07	38	.00	25.00
37	PH-ALK	F159-08	39	.00	25.00
38	PH-ALK	F159-09	40	.00	25.00
39	PH-ALK	F159-10	41	.00	25.00
40	PH-ALK	F159-11	42	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW

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Running List Report

Order Number - 20E5F07

	Schedule	Sample Id	Vial	Weight	Volume
41	PH-ALK	F159-12	43	.00	25.00
42	PH-ALK	F159-13	44	.00	25.00
43	PH-ALK	F159-14	45	.00	25.00
44	PH-ALK	F159-15	46	.00	25.00
45	PH-ALK	F159-16	47	.00	25.00
46	PH-ALK	F159-17	48	.00	25.00
47	PH-ALK	F164-01	49	.00	25.00
48	PH-ALK	RINSE	50	.00	25.00

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CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of two(2) water samples were received on 06/18/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF007WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF007WL. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF007WB	ND	1	NA	10	10	06/23/2015:55	NA	20TDF00701	20TDF007	TDF007W	NA	NA
LCS1W	TDF007WL	992	1	NA	10	10	06/23/2015:55	NA	20TDF00702	20TDF007	TDF007W	NA	NA
MW18-GW061620	F155-01	1120	1	NA	10	10	06/23/2015:55	NA	20TDF00703	20TDF007	TDF007W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02	1020	1	NA	10	10	06/23/2015:55	NA	20TDF00704	20TDF007	TDF007W	06/16/2017:28	06/18/20
MW19-GW061620DUP	F155-02D	1010	1	NA	10	10	06/23/2015:55	NA	20TDF00705	20TDF007	TDF007W	06/16/2017:28	06/18/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	TDF007WB	TDF007WL
LAB FILE ID :	20TDF00701	20TDF00702
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/23/2015:55	06/23/2015:55
PREP BATCH :	TDF007W	TDF007W
CALIBRATION REF:	20TDF007	20TDF007

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	992	99	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MW19-GW061620	MW19-GW061620DUP
LAB SAMPLE ID :	F155-02	F155-02D
LAB FILE ID :	20TDF00704	20TDF00705
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/23/2015:55	06/23/2015:55
PREP BATCH :	TDF007W	TDF007W
CALIBRATION REF:	20TDF007	20TDF007

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Total Dissolved Solids	1020	1010	1	20

EMAX LABORATORIES, INC.

SPECIFIC CONDUCTIVITY ANALYSIS LOG

SOP: Analytical Batch: **TDECF007** Book #: Page:

Data File Name	Lab Sample ID	Sample Amount (ml)	Final Volume (ml)	DF	Conductivity µS/cm	Analysis Date mm:dd:yy	Analysis Time hh:mm:ss	Result µS/cm
TDECF00701	CCV	20	20	1	1408	06/23/20	11:50:40	100%
TDECF00702	F155-01	20	20	1	1355	06/23/20	11:52:53	1360
TDECF00703	F155-02	20	20	1	1181	06/23/20	11:53:29	1180
TDECF00704	F155-02D	20	20	1	1186	06/23/20	11:54:14	1190
TDECF00705	F159-01	20	20	1	1070	06/23/20	11:55:02	1070
TDECF00706	F159-02	20	20	1	1079	06/23/20	11:55:53	1080
TDECF00707	F159-04	20	20	1	33000	06/23/20	11:56:32	33000
TDECF00708	F159-05	20	20	1	31000	06/23/20	11:57:14	31000
TDECF00709	F159-06	20	20	1	1010	06/23/20	11:57:49	1010
TDECF00710	F159-07	20	20	1	556	06/23/20	11:58:31	556
TDECF00711	F159-08	20	20	1	2100	06/23/20	11:59:31	2100
TDECF00712	F159-09	20	20	1	30000	06/23/20	12:00:06	30000
TDECF00713	F159-10	20	20	1	5200	06/23/20	12:00:46	5200
TDECF00714	F159-10D	20	20	1	5300	06/23/20	12:01:26	5300
TDECF00715	F162-01	20	20	1	1200	06/23/20	12:02:09	1200
TDECF00716	F162-02	20	20	1	1300	06/23/20	12:02:52	1300
TDECF00717	F162-04	20	20	1	804	06/23/20	12:03:33	804
TDECF00718	F162-05	20	20	1	1466	06/23/20	12:05:49	1470
TDECF00719	F162-07	20	20	1	1362	06/23/20	12:06:36	1360
TDECF00720	F162-08	20	20	1	872	06/23/20	12:07:18	872
TDECF00721	F162-10	20	20	1	706	06/23/20	12:07:58	706
TDECF00722	F162-11	20	20	1	804	06/23/20	12:13:16	804
TDECF00723	F164-01	20	20	1	522	06/23/20	12:13:47	522
Comments:								

INSTRUMENT NUMBER		D4
CALIBRATION		
Calibration Temperature	25 °C	
☑ Verified Cell Constant (K)	1.00 S/cm	
ICAL Range	100-10000 µS/cm	
ICAL Standard	ID	µS/cm
1	SW1-02-04-15	98.7
2	SW1-02-04-16	998
3	SW1-02-04-17	10001
4	SW1-02-04-18	100033
CCV/LCS StdID/Value(µS/cm)	SW1-02-04-19	1408
DETECTION LIMIT		
MDL:	2	µS/cm
RL:	2	µS/cm
SAMPLE DUPLICATE		
LAB SAMPLE ID	RESULT	RPD
QCLIMIT	5	%

Analyzed By: YAquin

Reviewed By:

Date:

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF0007

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF00701	TDF007WB	100	B	91.3252	91.3256	6/24/20 12:43	91.3256	6/24/20 16:08			0	0.4	4	ND
20TDF00702	TDF007WL	20	L	21.37465	21.39423	6/24/20 12:43	21.39449	6/24/20 16:09			0.26	19.84	992	992
20TDF00703	F155-01	20	1	21.06002	21.08269	6/24/20 12:43	21.08247	6/24/20 16:09			0.22	22.45	1122.5	1120
20TDF00704	F155-02	20	2	21.68362	21.70426	6/24/20 12:43	21.70407	6/24/20 16:09			0.19	20.45	1022.5	1020
20TDF00705	F155-02D	20	3	21.33222	21.35289	6/24/20 12:44	21.3525	6/24/20 16:09			0.39	20.28	1014	1010
20TDF00706	F159-01	20	4	21.34053	21.35565	6/24/20 12:44	21.35578	6/24/20 16:09			0.13	15.25	762.5	762
20TDF00707	F159-02	20	5	21.34275	21.35714	6/24/20 12:44	21.35707	6/24/20 16:10			0.07	14.32	716	716
20TDF00708	F159-04	2	6	21.35226	21.42397	6/24/20 12:44	21.42362	6/24/20 16:15			0.35	71.36	35680	35700
20TDF00709	F159-05	2	7	21.40939	21.48163	6/24/20 12:44	21.48131	6/24/20 16:16			0.32	71.92	35960	36000
20TDF00710	F159-06	20	8	21.49475	21.51136	6/24/20 12:45	21.51149	6/24/20 16:16			0.13	16.74	837	837
20TDF00711	F159-07	100	9	87.7233	87.7764	6/24/20 12:45	87.7763	6/24/20 16:16			0.1	53	530	530
20TDF00712	F159-08	20	10	21.40869	21.44286	6/24/20 12:45	21.44305	6/24/20 16:17			0.19	34.36	1718	1720
20TDF00713	F159-09	2	11	21.28109	21.35022	6/24/20 12:45	21.35018	6/24/20 16:17			0.04	69.09	34545	34500
20TDF00714	F159-10	10	12	21.37856	21.42004	6/24/20 12:46	21.42042	6/24/20 16:17			0.38	41.86	4186	4190
20TDF00715	F159-10D	10	13	21.4007	21.44136	6/24/20 12:46	21.44158	6/24/20 16:17			0.22	40.88	4088	4090
20TDF00716	F162-01	20	14	21.49106	21.5098	6/24/20 12:46	21.50974	6/24/20 16:18			0.06	18.68	934	934
20TDF00717	F162-02	20	15	21.41219	21.43383	6/24/20 12:46	21.43388	6/24/20 16:18			0.05	21.69	1084.5	1080
20TDF00718	F162-04	50	16	42.73548	42.76936	6/24/20 12:46	42.76948	6/24/20 16:18			0.12	34	680	680
20TDF00719	F162-05	20	17	21.41848	21.44371	6/24/20 12:47	21.44388	6/24/20 16:18			0.17	25.4	1270	1270
20TDF00720	F162-07	20	18	21.13161	21.15424	6/24/20 12:47	21.15396	6/24/20 16:18			0.28	22.35	1117.5	1120
20TDF00721	F162-08	50	19	43.41324	43.44936	6/24/20 12:47	43.44979	6/24/20 16:19			0.43	36.55	731	731
20TDF00722	F162-10	100	20	84.6207	84.6888	6/24/20 12:47	84.6884	6/24/20 16:19			0.4	67.7	677	677
20TDF00723	F162-11	50	21	43.7608	43.79489	6/24/20 12:48	43.79533	6/24/20 16:19			0.44	34.53	690.6	691
20TDF00724	F164-01	100	22	90.9287	90.9691	6/24/20 12:48	90.9694	6/24/20 16:20			0.3	40.7	407	407

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/23/20 15:54	PASSED
5	4.9996	6/23/20 15:55	PASSED
100	99.9994	6/23/20 15:55	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/23/20 16:02	PASSED
5	4.9997	6/23/20 16:02	PASSED
100	99.9995	6/23/20 16:02	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 12:41	PASSED
5	4.9996	6/24/20 12:42	PASSED
100	99.9995	6/24/20 12:42	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/24/20 16:20	PASSED
5	4.9998	6/24/20 16:20	PASSED
100	99.9998	6/24/20 16:21	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-18-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF007WB	4	ND	MB Passed
TDF007WL	992	1000	%R=99
#N/A	#N/A	#N/A	#N/A
F155-02D	1014	1022.5	%D=1
F159-10D	4088	4186	%D=2

Oven Drying Thermometer ID: 3078

Evaporating			
☑ Start	6/23/2020 16:20	Temp	90 °C
☑ End	6/24/2020 9:54	Temp	90 °C
1st Drying			
☑ Start	6/24/20 10:51	Temp	180 °C
☑ End	6/24/20 11:52	Temp	180 °C
2nd Drying			
☑ Start	6/24/20 14:19	Temp	180 °C
☑ End	6/24/20 15:19	Temp	180 °C
Final Drying			
☐ Start		Temp	°C
☐ End		Temp	°C

Notes:

SOP

Analyzedby: YAquin

Checked by: TK

☑ EMAX-2540C Rev. 9

Date: 06/26/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 642780221

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of two(2) water samples were received on 06/18/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAF006WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAF006WL/NAF006WC were within LCS limits. Refer to LCS summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAF006WB	ND	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00610	20NAF006	NAF006W	NA	NA
LCS1W	NAF006WL	0.470	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00611	20NAF006	NAF006W	NA	NA
LCD1W	NAF006WC	0.469	1	NA	0.05	0.01	06/26/2015:40	NA	20NAF00612	20NAF006	NAF006W	NA	NA
MW18-GW061620	F155-01I	3.78	5	NA	0.25	0.05	06/26/2015:41	NA	20NAF00619	20NAF006	NAF006W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02I	3.52	5	NA	0.25	0.05	06/26/2016:21	NA	20NAF00622	20NAF006	NAF006W	06/16/2017:28	06/18/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F155
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAF006WB	NAF006WL	NAF006WC
LAB FILE ID	: 20NAF00610	20NAF00611	20NAF00612
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 06/26/2015:40	06/26/2015:40	06/26/2015:40
PREP BATCH	: NAF006W	NAF006W	NAF006W
CALIBRATION REF	: 20NAF006	20NAF006	20NAF006

ACCESSION:

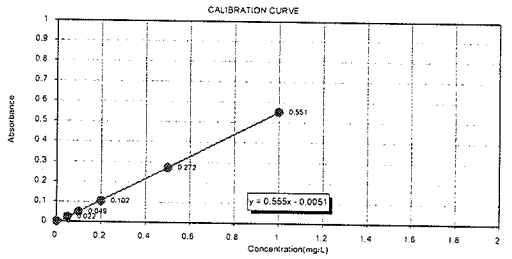
PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.470	94	0.500	0.469	94	0	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAF00601	S0	0	543NM	0	6/26/20 14:58	0.009229633	ND
20NAF00602	S1	0.05	543NM	0.022	6/26/20 14:58	0.048869883	98
20NAF00603	S2	0.1	543NM	0.049	6/26/20 14:58	0.09751928	98
20NAF00604	S3	0.2	543NM	0.102	6/26/20 14:59	0.193016244	97
20NAF00605	S4	0.5	543NM	0.272	6/26/20 14:59	0.499327262	100
20NAF00606	S5	1	543NM	0.551	6/26/20 14:59	1.002037698	100
20NAF00607	NO2-N Std Check	0.5	543NM	0.251	6/26/20 14:59	0.461488842	92
20NAF00608	ICV	0.5	543NM	0.284	6/26/20 14:59	0.520949217	104
20NAF00609	ICB	0	543NM	0.003	6/26/20 14:59	0.014635122	ND
20NAF00620	CCV1	0.5	543NM	0.269	6/26/20 15:41	0.493921774	99
20NAF00621	CCB1	0	543NM	0	6/26/20 15:42	0.009229633	ND
20NAF00631	CCV2	0.5	543NM	0.257	6/26/20 16:22	0.47229982	94
20NAF00632	CCB2	0	543NM	0	6/26/20 16:22	0.009229633	ND

Reduction Time	Coloring Time
6/26/20 14:12	6/26/20 14:13
6/26/20 14:15	6/26/20 14:16
6/26/20 14:19	6/26/20 14:20
6/26/20 14:22	6/26/20 14:23
6/26/20 14:26	6/26/20 14:27
6/26/20 14:30	6/26/20 14:31
NA	6/26/20 14:31
6/26/20 14:33	6/26/20 14:34
6/26/20 14:39	6/26/20 14:40

InstrumentID: H9



$$FC = [(A * CF) - Y] * DF$$

CF= 1.801829518 Y= -0.00923 r= 0.999900

DL Water(mg/L) 0.01 DL Soil(mg/Kg) 0.1

LOD Water(mg/L) 0.02 LOD Soil(mg/Kg) 0.2

LOQ Water(mg/L) 0.05 LOQ Soil(mg/Kg) 0.5

SOP

☑ EMAX-4500-NO3E Rev. 5

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAF00610	NAF006WB	ND	ND	MB Passed
20NAF00611	NAF006WL	0.470	0.5	%R=94
20NAF00612	NAF006WC	0.469	0.5	%R=94

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAF00614	F154-02I	2.40		
20NAF00616	F154-02IM	4.95	2.5	%R=102

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAF00614	F154-02I	2.40		6
20NAF00615	F154-02ID	2.25	2.40	

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

Reviewed by: VD 04/26/20

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-15-09	ICAL CCV (mg/L)	10	06/26/20
SW2B-30-15-10	ICV LCS MS Std (mg/L)	10	06/26/20
SW2B-30-16-01	NO2 CHK	10	06/26/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-56-45-03	NH4Cl-EDTA Soln	**	12/22/20
SWP1-54-14-03	HCl	1N	01/14/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	6/26/20 14:03
S1	0.1	20	6/26/20 14:03
S2	0.2	20	6/26/20 14:03
S3	0.4	20	6/26/20 14:03
S4	1	20	6/26/20 14:03
S5	2	20	6/26/20 14:03
ICV	1	20	6/26/20 14:03
CCV	1	20	6/26/20 14:03
NO2 CHK	1	20	6/26/20 14:03
LCS EV	1	20	6/26/20 14:03
MS EV	1	20	6/26/20 14:03

MicropipetteID: 842750382 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-56

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.01	6/26/20 10:03
SW1-02-05-11	7.01	7	6/26/20 10:04
SW1-02-05-12	10.02	10.02	6/26/20 10:05
SW1-02-05-08	Check Std (7.96)	7.98	6/26/20 10:06

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAF00610	NAF006WB	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 15:40	0	1		0.00923	1		VDuran	5.96	8.52	6/26/20 14:42	6/26/20 14:43
20NAF00611	NAF006WL	0.47		mg/L	20	ml	NA	20	543NM	0.256 A	6/26/20 15:40	0	1		0.470498	1		VDuran	5.96	8.52	6/26/20 14:46	6/26/20 14:47
20NAF00612	NAF006WC	0.469		mg/L	20	ml	NA	20	543NM	0.255 A	6/26/20 15:40	0	1		0.468696	1		VDuran	5.96	8.52	6/26/20 14:49	6/26/20 14:50
20NAF00613	F154-01I	2.551		mg/L	20	ml	NA	20	543NM	0.278 A	6/26/20 15:40	0	5		2.550691	5		VDuran	1.43	8.5	6/26/20 14:53	6/26/20 14:54
20NAF00614	F154-02I	2.398		mg/L	20	ml	NA	20	543NM	0.261 A	6/26/20 15:41	0	5		2.397536	5		VDuran	1.38	8.55	6/26/20 14:56	6/26/20 14:57
20NAF00615	F154-02ID	2.253		mg/L	20	ml	NA	20	543NM	0.245 A	6/26/20 15:41	0	5		2.253389	5		VDuran	1.38	8.55	6/26/20 15:00	6/26/20 15:01
20NAF00616	F154-02IM	4.947		mg/L	20	ml	NA	20	543NM	0.544 A	6/26/20 15:41	0	5		4.947124	5		VDuran	1.38	8.55	6/26/20 15:03	6/26/20 15:04
20NAF00617	F154-05I	3.253		mg/L	20	ml	NA	20	543NM	0.356 A	6/26/20 15:41	0	5		3.253405	5		VDuran	1.38	8.47	6/26/20 15:07	6/26/20 15:08
20NAF00618	F154-06I	3.398		mg/L	20	ml	NA	20	543NM	0.372 A	6/26/20 15:41	0	5		3.397551	5		VDuran	1.43	8.55	6/26/20 15:10	6/26/20 15:11
20NAF00619	F155-01I	3.776		mg/L	20	ml	NA	20	543NM	0.414 A	6/26/20 15:41	0	5		3.775935	5		VDuran	1.37	8.55	6/26/20 15:13	6/26/20 15:14
20NAF00620	CCV1	0.494		mg/L	20	ml	NA	20	543NM	0.269 A	6/26/20 15:41	0	1		0.493922	1		VDuran			6/26/20 15:18	6/26/20 15:19
20NAF00621	CCB1	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 15:42	0	1		0.00923	1		VDuran			6/26/20 15:21	6/26/20 15:22
20NAF00622	F155-02I	3.524		mg/L	20	ml	NA	20	543NM	0.386 A	6/26/20 16:21	0	5		3.523679	5		VDuran	1.32	8.48	6/26/20 15:24	6/26/20 15:25
20NAF00623	F164-01I	8.273		mg/L	20	ml	NA	20	543NM	0.454 A	6/26/20 16:21	0	10		8.272602	10		VDuran	1.38	8.55	6/26/20 15:28	6/26/20 15:29
20NAF00624	F421-01	0.177		mg/L	20	ml	NA	20	543NM	0.093 A	6/26/20 16:21	0	1		0.1768	1		VDuran	1.33	8.54	6/26/20 15:31	6/26/20 15:32
20NAF00625	F421-02	0.0705		mg/L	20	ml	NA	20	543NM	0.034 A	6/26/20 16:22	0	1		0.070492	1		VDuran	1.24	8.51	6/26/20 15:35	6/26/20 15:36
20NAF00626	F422-01	0.0579		mg/L	20	ml	NA	20	543NM	0.027 A	6/26/20 16:22	0	1		0.057879	1		VDuran	1.2	8.52	6/26/20 15:38	6/26/20 15:39
20NAF00627	F457-01	0.0543		mg/L	20	ml	NA	20	543NM	0.025 A	6/26/20 16:22	0	1		0.054275	1		VDuran	1.21	8.55	6/26/20 15:42	6/26/20 15:43
20NAF00628	F458-01	0.0615		mg/L	20	ml	NA	20	543NM	0.029 A	6/26/20 16:22	0	1		0.061483	1		VDuran	1.47	8.52	6/26/20 15:45	6/26/20 15:46
20NAF00629	F459-01	0.0525		mg/L	20	ml	NA	20	543NM	0.024 A	6/26/20 16:22	0	1		0.052474	1		VDuran	1.37	8.46	6/26/20 15:49	6/26/20 15:50
20NAF00630	F460-01	0.0543		mg/L	20	ml	NA	20	543NM	0.025 A	6/26/20 16:22	0	1		0.054275	1		VDuran	1.31	8.5	6/26/20 15:52	6/26/20 15:53
20NAF00631	CCV2	0.472		mg/L	20	ml	NA	20	543NM	0.257 A	6/26/20 16:22	0	1		0.4723	1		VDuran			6/26/20 15:55	6/26/20 15:56
20NAF00632	CCB2	ND		mg/L	20	ml	NA	20	543NM	0 A	6/26/20 16:22	0	1		0.00923	1		VDuran			6/26/20 16:00	6/26/20 16:01

Reviewed by: VD 06/26/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F155

METHOD SW9060
TOC

A total of two(2) water samples were received on 06/18/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Organic Carbon was not detected in TCG001WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. TCG001WL/TCG001WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F155

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG001WB	ND	1	NA	1.00	0.250	07/08/2016:53	NA	TCG002-05	TCG002-02	TCG001W	NA	NA
LCS1W	TCG001WL	24.1	1	NA	1.00	0.250	07/08/2017:09	NA	TCG002-06	TCG002-02	TCG001W	NA	NA
LCD1W	TCG001WC	24.2	1	NA	1.00	0.250	07/08/2017:25	NA	TCG002-07	TCG002-02	TCG001W	NA	NA
LCS2W	TCG001WX	24.2	1	NA	1.00	0.250	07/08/2017:41	NA	TCG002-08	TCG002-02	TCG001W	NA	NA
LCD2W	TCG001WY	24.2	1	NA	1.00	0.250	07/08/2017:57	NA	TCG002-09	TCG002-02	TCG001W	NA	NA
MW18-GW061620	F155-01	0.552J	1	NA	1.00	0.250	07/08/2018:12	NA	TCG002-10	TCG002-02	TCG001W	06/16/2015:08	06/18/20
MW19-GW061620	F155-02	0.521J	1	NA	1.00	0.250	07/08/2018:27	NA	TCG002-11	TCG002-02	TCG001W	06/16/2017:28	06/18/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F155
METHOD: SW9060

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: TCG001WB TCG001WL TCG001WC
LAB FILE ID: TCG002-05 TCG002-06 TCG002-07
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA
DATE ANALYZED: 07/08/2016:53 07/08/2017:09 07/08/2017:25 DATE RECEIVED: NA
PREP. BATCH: TCG001W TCG001W TCG001W
CALIB. REF: TCG002-02 TCG002-02 TCG002-02

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.1	96	25	24.2	97	1	80-120	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
TOC

	Date	Time
Start	07/08/20	12:21
End	07/08/20	19:41

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☐ Sample was filtered. Filter ID:

Comments: TCG00/W: F155
F154
Rerun samples after CCB1. Instrument error.

Reagent Water ID #: RW1-19-003

pH Strips Lot #: HC995032

2 M HCl SWP1-SO-35-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☑ 439350020

Micropipette ID: ☑ 539360056

Micropipette ID: ☑ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG007

Method File: TCG002

Analytical Batch: TCG00/W

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RW1-19-003	0
S1	SW7B-01-18-03	1
S2	↓	5
S3		10
S4		40
S5		80
S6	—	—
ICV/LCS	SW7B-01-18-05	25
CCV	SW7B-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WZ

Date: 07/08/20

	Type	Analysis	Sample Name	Sample ID	Dilution	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG002-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG002-02	1.000	NPOC:25.29 mg/L	
3	Unknown	NPOC	ICB	TCG002-03	1.000	NPOC:0.06258 mg	
4	Unknown	NPOC	HCO3/CO3	TCG002-04	1.000	NPOC:0.07252 mg	
5	Unknown	NPOC	TCG001WB	TCG002-05	1.000	NPOC:0.06301 mg	
6	Unknown	NPOC	TCG001WL	TCG002-06	1.000	NPOC:24.10 mg/L	
7	Unknown	NPOC	TCG001WC	TCG002-07	1.000	NPOC:24.23 mg/L	
8	Unknown	NPOC	TCG001WX	TCG002-08	1.000	NPOC:24.24 mg/L	
9	Unknown	NPOC	TCG001WY	TCG002-09	1.000	NPOC:24.15 mg/L	
10	Unknown	NPOC	F155-01	TCG002-10	1.000	NPOC:0.5521 mg/	PH<2
11	Unknown	NPOC	F155-02	TCG002-11	1.000	NPOC:0.5205 mg/	PH<2
12	Unknown	NPOC	F154-01	TCG002-12	1.000	NPOC:2.108 mg/L	PH<2
13	Unknown	NPOC	F154-05	TCG002-13	1.000	NPOC:0.4052 mg/	PH<2
14	Control	NPOC	CCV1	TCG002-14	1.000	NPOC:25.26 mg/L	
15	Unknown	NPOC	CCB1	TCG002-15	1.000	NPOC:0.3509 mg/	
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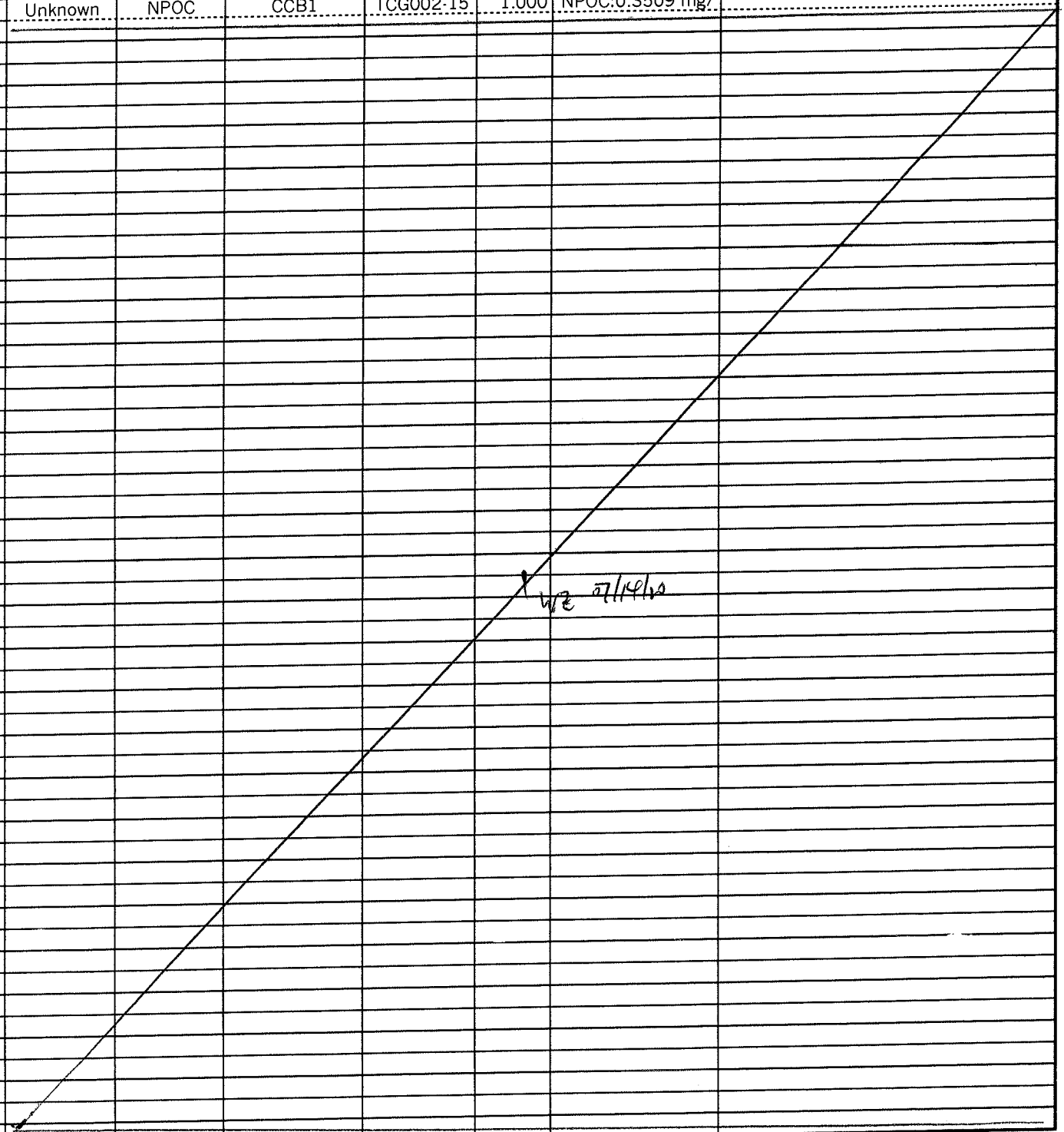


Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

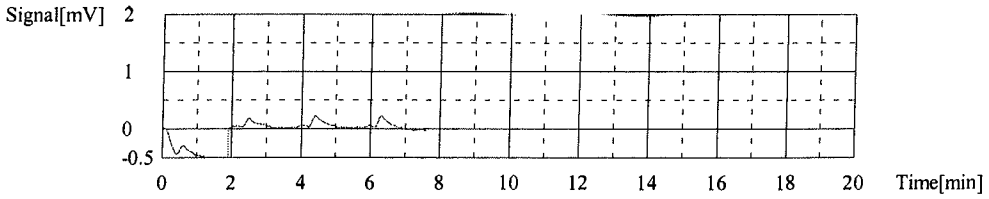
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG002-01
Cal. Curve:	TCG002.2020_07_08_12_13_06.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.2306	50uL	1	*******		07/08/20 12:21:29 PM
2	0.1897	50uL	1	*******		07/08/20 12:23:34 PM
3	0.2948	50uL	1	*******		07/08/20 12:25:38 PM
4	0.4008	50uL	1	*******		07/08/20 12:27:43 PM

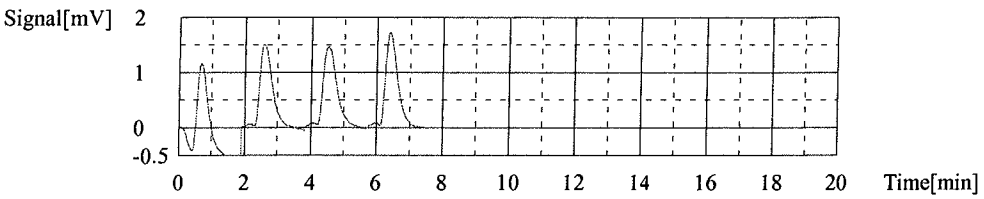
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 0.2790



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.737	50uL	1	*******		07/08/20 12:36:28 PM
2	3.853	50uL	1	*******		07/08/20 12:38:33 PM
3	4.080	50uL	1	*******		07/08/20 12:40:37 PM
4	4.150	50uL	1	*******		07/08/20 12:42:42 PM

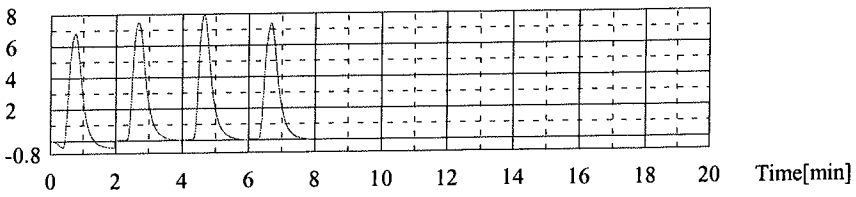
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 3.955



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.24	50uL	1	*******		07/08/20 12:51:25 PM
2	20.98	50uL	1	*******		07/08/20 12:53:35 PM
3	21.12	50uL	1	*******		07/08/20 12:55:43 PM
4	20.98	50uL	1	*******		07/08/20 12:57:55 PM

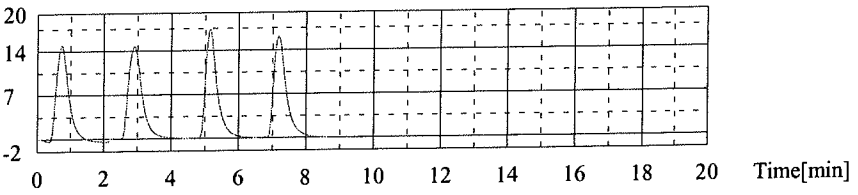
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.83



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	40.82	50uL	1	*******		07/08/20 01:06:57 PM
2	42.00	50uL	1	*******		07/08/20 01:09:26 PM
3	42.42	50uL	1	*******		07/08/20 01:11:37 PM
4	42.07	50uL	1	*******		07/08/20 01:13:57 PM

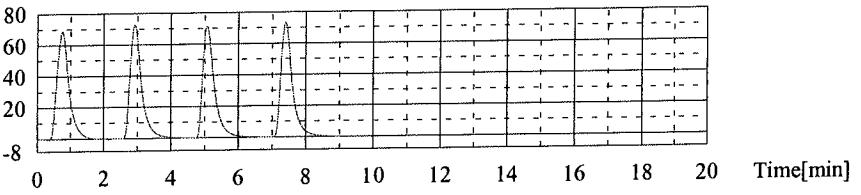
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 41.83



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	177.7	50uL	1	*******		07/08/20 01:22:58 PM
2	175.5	50uL	1	*******		07/08/20 01:25:19 PM
3	176.3	50uL	1	*******		07/08/20 01:27:47 PM
4	177.6	50uL	1	*******		07/08/20 01:30:18 PM

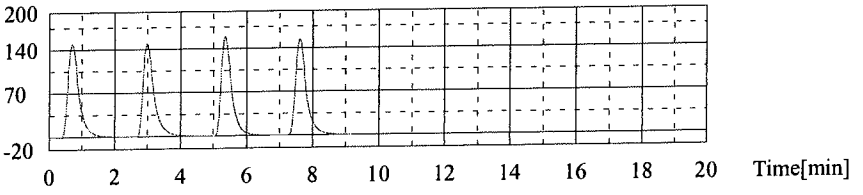
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 176.8



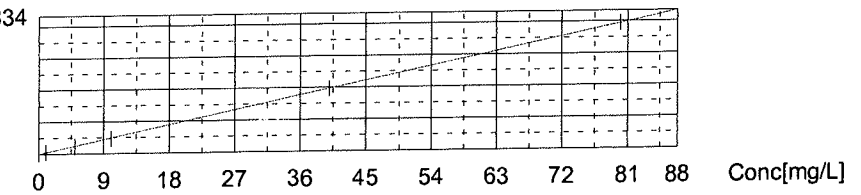
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	358.8	50uL	1	*******		07/08/20 01:39:31 PM
2	353.9	50uL	1	*******		07/08/20 01:42:04 PM
3	350.9	50uL	1	*******		07/08/20 01:44:28 PM
4	354.4	50uL	1	*******		07/08/20 01:46:57 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 354.5



Slope: 4.441
Intercept 0.000
r^2 0.999954



Control Sample

Sample Name: ICV
Sample ID: TCG002-02
Method: TCG002.tpl
Chk. Result Control value: 25.29 / Control exceeds range!

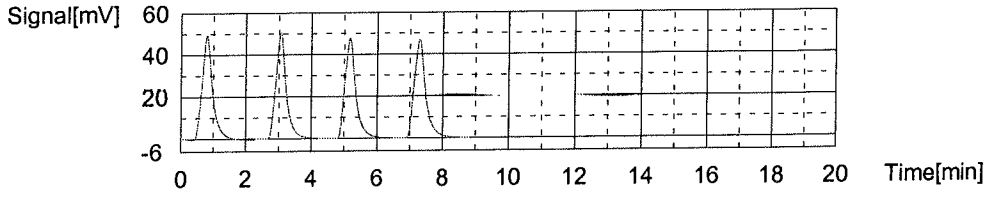
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.29 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	113.2	25.49mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 01:56:15 PM
2	112.3	25.29mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 01:58:34 PM
3	110.8	24.95mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 02:00:51 PM
4	112.9	25.42mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 02:03:19 PM

Mean Area 112.3
Mean Conc. 25.29mg/L



Sample

Sample Name: ICB
Sample ID: TCG002-03
Origin: TCG002.cal
Chk. Result

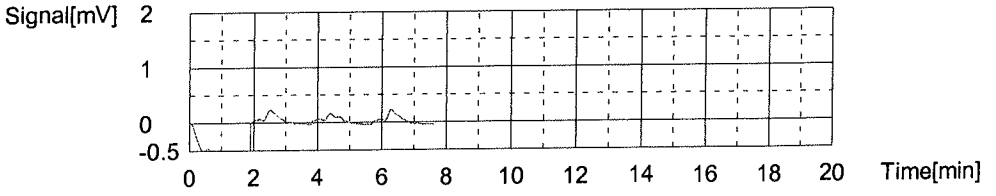
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06258 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.000	0.000mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:17:11 PM
2	0.4314	0.09713mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:19:15 PM
3	0.2664	0.05998mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:21:20 PM
4	0.4140	0.09322mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:23:24 PM

Mean Area 0.2780
Mean Conc. 0.06258mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG002-04
Origin: TCG002.cal
Chk. Result

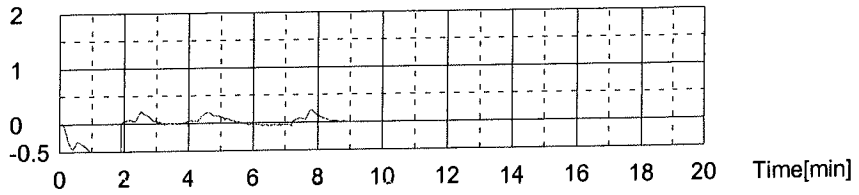
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.07252 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2099	0.04726mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:32:02 PM
2	0.3578	0.08056mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:34:06 PM
3	0.3786	0.08525mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:36:10 PM
4	0.3420	0.07700mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:38:15 PM

Mean Area 0.3221
Mean Conc. 0.07252mg/L



Sample

Sample Name: TCG001WB
Sample ID: TCG002-05
Origin: TCG002.cal
Chk. Result

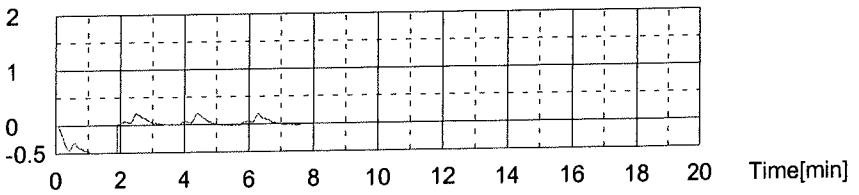
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06301 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.1716	0.03864mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:46:50 PM
2	0.3146	0.07084mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:48:54 PM
3	0.3256	0.07331mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:50:59 PM
4	0.3076	0.06926mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 04:53:03 PM

Mean Area 0.2798
Mean Conc. 0.06301mg/L



Sample

Sample Name: TCG001WL
Sample ID: TCG002-06
Origin: TCG002.cal
Chk. Result

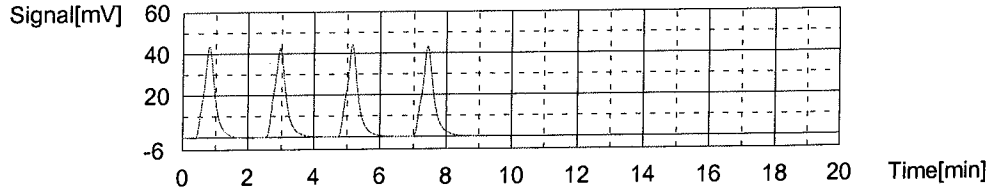
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.10 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.7	24.02mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:02:00 PM
2	106.6	24.00mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:04:22 PM
3	107.3	24.16mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:06:48 PM
4	107.5	24.20mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:09:16 PM

Mean Area 107.0
Mean Conc. 24.10mg/L



Sample

Sample Name: TCG001WC
Sample ID: TCG002-07
Origin: TCG002.cal
Chk. Result

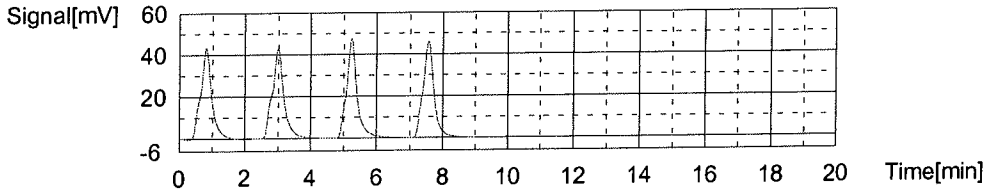
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.23 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.5	23.98mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:18:09 PM
2	107.1	24.11mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:20:35 PM
3	108.3	24.38mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:23:03 PM
4	108.6	24.45mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:25:27 PM

Mean Area 107.6
Mean Conc. 24.23mg/L



Sample

Sample Name: TCG001WX
Sample ID: TCG002-08
Origin: TCG002.cal
Chk. Result

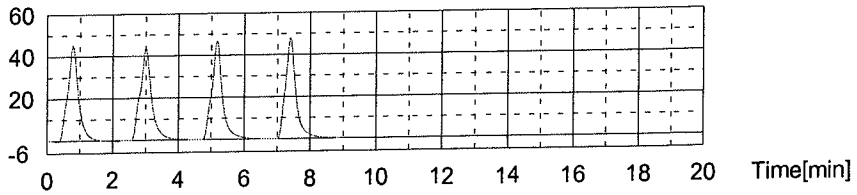
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.24 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.1	24.11mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:34:26 PM
2	106.7	24.02mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:36:47 PM
3	108.2	24.36mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:39:12 PM
4	108.7	24.47mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:41:36 PM

Mean Area 107.7
Mean Conc. 24.24mg/L



Sample

Sample Name: TCG001WY
Sample ID: TCG002-09
Origin: TCG002.cal
Chk. Result

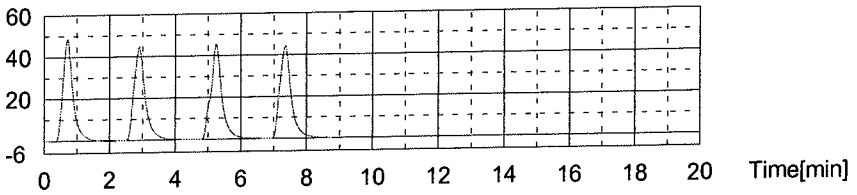
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.15 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.3	23.93mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:50:38 PM
2	106.5	23.98mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:53:06 PM
3	107.7	24.25mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:55:25 PM
4	108.6	24.45mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 05:57:44 PM

Mean Area 107.3
Mean Conc. 24.15mg/L



Sample

Sample Name: F155-01
Sample ID: TCG002-10
Origin: TCG002.cal
Chk. Result

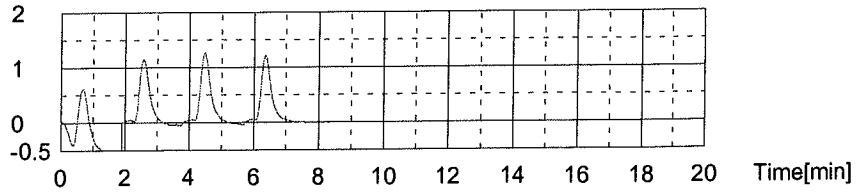
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5521 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.282	0.5138mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:06:30 PM
2	2.446	0.5507mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:08:35 PM
3	2.635	0.5933mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:10:39 PM
4	2.446	0.5507mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:12:43 PM

Mean Area 2.452
Mean Conc. 0.5521mg/L



Sample

Sample Name: F155-02
Sample ID: TCG002-11
Origin: TCG002.cal
Chk. Result

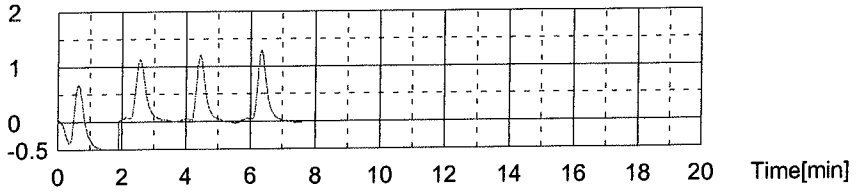
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5205 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.976	0.4449mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:21:29 PM
2	2.459	0.5537mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:23:34 PM
3	2.393	0.5388mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:25:38 PM
4	2.418	0.5444mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:27:43 PM

Mean Area 2.312
Mean Conc. 0.5205mg/L



Sample

Sample Name: F154-01
Sample ID: TCG002-12
Origin: TCG002.cal
Chk. Result

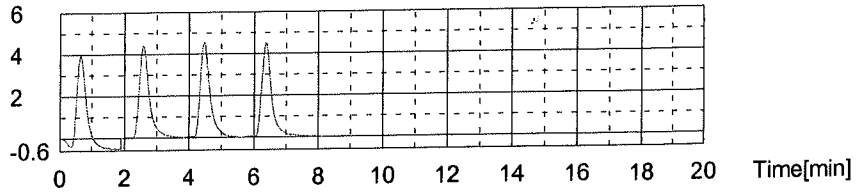
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.108 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.985	2.023mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:36:28 PM
2	9.349	2.105mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:38:32 PM
3	9.508	2.141mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:40:37 PM
4	9.610	2.164mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:42:41 PM

Mean Area 9.363
Mean Conc. 2.108mg/L



Sample

Sample Name: F154-05
Sample ID: TCG002-13
Origin: TCG002.cal
Chk. Result

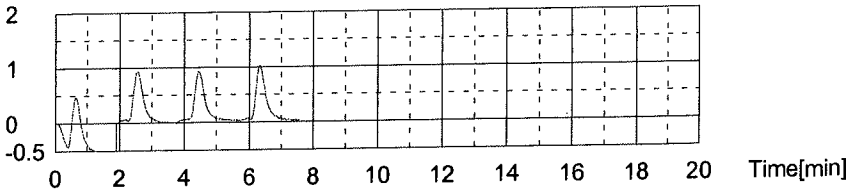
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC;0.4052 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.678	0.3778mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:51:27 PM
2	1.815	0.4087mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:53:31 PM
3	1.720	0.3873mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:55:36 PM
4	1.985	0.4469mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 06:57:40 PM

Mean Area 1.800
Mean Conc. 0.4052mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG002-14
Method: TCG002.tpl
Chk. Result Control value: 25.26 / Control exceeds range!

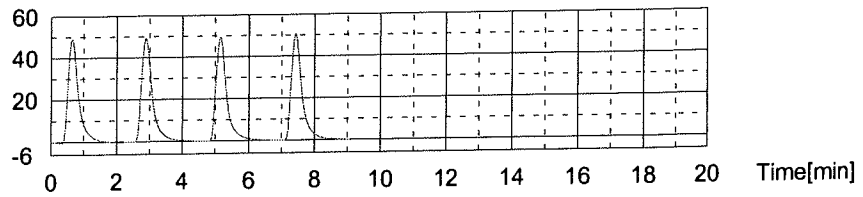
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.26 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.8	25.17mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:06:45 PM
2	111.4	25.08mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:09:11 PM
3	112.2	25.26mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:11:39 PM
4	113.3	25.51mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:14:05 PM

Mean Area 112.2
Mean Conc. 25.26mg/L



Sample

Sample Name: CCB1
Sample ID: TCG002-15
Origin: TCG002.cal
Chk. Result

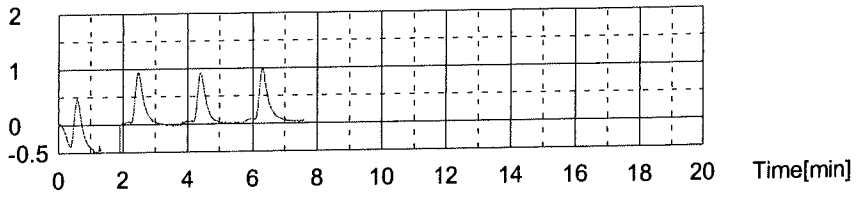
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3509 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.403	0.3159mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:35:37 PM
2	1.597	0.3596mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:37:41 PM
3	1.511	0.3402mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:39:46 PM
4	1.723	0.3879mg/L	50uL	1		TCG002.2020_07_08_12_13_06.cal	07/08/20 07:41:50 PM

Mean Area 1.559
Mean Conc. 0.3509mg/L



EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-30-2020
EMAX Batch No.: 20F162

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/19/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW22-GW061720	F162-01	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW21-GW061820	F162-02	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB05-GW061820	F162-03	06/18/20	WATER	VOCS BY 8260C
MW01D-GW061720	F162-04	06/17/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW13S-GW061820	F162-05	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
TB06-GW061820	F162-06	06/18/20	WATER	VOCS BY 8260C
MW03RA-GW061820	F162-07	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW03RB-GW061820	F162-08	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB07-GW061820	F162-09	06/18/20	WATER	VOCS BY 8260C
MW03RC-GW061820	F162-10	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW03RD-GW061820	F162-11	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB08-GW061820	F162-12	06/18/20	WATER	VOCS BY 8260C

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F162
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/ Mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

21 day TAT

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW22-GW061820		6/17/20	1525	13			GW		X X X X X X X X	
2	MW21-GW061820		6/18/20	1115	13			GW		X X X X X X X X	
3	TB05-GW061820		6/18/20	1600	3			GW		X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.8	
4	3.2	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Raman Singh	6/18/20	1700	6/19/2020 @ 9:20

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F162
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9R
- ☒ 21 days

21DAY TAT

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
4 1	MW01D-GW061720		6/17/20	1625	13				GW	X X X X X X X X	
5 2	MW13S-GW061820		6/18/20	1325	13				GW	X X X X X X X X	
6 3	TB06-GW061820		6/18/20	1605	3				GW	X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.8	
4	3.2	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Raman Singh	6/18/20	1700	6/19/2020 9:00

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F162
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; colorimet / 300 Sulfate; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ — QR
- ☒ 21 days

21 Day TAT

LAB	SAMPLE ID CLIENT	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
7 1	MW03RA-GW061820		6/18/20	1540	13					X X X X X X X X	
8 2	MW03RB-GW061820		6/18/20	1505	13					X X X X X X X X	
9 3	TB07-GW061820		6/18/20	1610	3					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.8	
4	3.2	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL — RECEIVED BY
Summer Ott	6/18/20	1700	6/19/2020 9:00

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE
EMAX CONTROL NO. 20F162
PROJECT CODE:

CLIENT CDM Smith
PROJECT 700S 1600E PCE Plume
COORDINATOR Cherie Zakowski
TEL 720-264-1109 FAX EMAIL zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Suite 500
Denver, CO 80201
EMAX PM Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste	SL=Sludge	SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes	PP=Pure Products	ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases: MEE / RSK-175; Metals: Manganese / 6020A / 7470; Chloride / Sulfate / 300; Nitrate / Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~
- ☒ 21 days ER

21 Day TAT

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
10 1	MW03RC-GW061820		6/18/20	1325	13			GW		VOCs, 1,4-Dioxane, Gases, Metals, Chloride, Nitrate, Alkalinity, TOC	
11 2	MW03RD-GW061820		6/18/20	1235	13			GW		VOCs, 1,4-Dioxane, Gases, Metals, Chloride, Nitrate, Alkalinity, TOC	
12 3	TB08-GW061820		6/18/20	1615	3			GW		VOCs	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.8	
4	3.2	

SAMPLER
COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Zhi	6/18/20	1700	6/19/2020 @ 9:20

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Type of Delivery	Airbill / Tracking Number	ECN 20F162
☑ Fedex ☐ UPS ☐ GSO ☐ Others	394011446086 / 394011446064	Recipient Rosie Carrillo
☐ EMAX Courier ☐ Client Delivery	394011446075 / 394011446053	Date 6/19/2020 Time 9:00

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: Corrections are not initialed, dated.

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal (Front/back)	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 2.3 °C	☑ Cooler 2 2.7 °C	☑ Cooler 3 2.8 °C	☑ Cooler 4 3.2 °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 192381464	*B - S/N* _____	*C - S/N* 200291756	*D - S/N* 140252067	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-12		D14	Cont's Preserv. Per Label/sticker.	R1
1,2,4,5,7,8,10,11	07,020,036,049,065, 078,094,107	D2	Label reads; Metals w/ HNO3 only	Analyze Metals + Hg
2	14-16	D6		R1
4	41	D22	*Cont Matched by date and time.	R1

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in label
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in COC
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	label is Faded, info. not visible.*
D23	
D24	

☐ **Continue to next page.**

Code	Description-Sample Management
R1	Proceed as indicated in ☑ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	
R9	
R10	
R11	
R12	

REVIEWS:

Sample Labeling Date 6/19/2020 6/19/20

SRF Date 6/19/20

PM Date 6/19/20

cooler 1 (6) 2.3

ORIGIN ID:BTFA (406) 241-3259
CDM SMITH
ATTN: SAMPLE RECIEVING
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 18JUN20
ACTWGT: 56.75 LB
CAD: 6993845/SSFE2110
DIMS: 24x14x14 IN

BILL THIRD PARTY

Part # 156267-649 REV9 EXP 07/20

TO ATTN: SAMPLE RECEIVING
EMAX LABORATORIES INC
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889
INV:
PO:

REF: 238824649SF3048-05.SAMPL

DEPT:

FedEx Express

J2011200424O1uv

4 of 4
MPS# 0263 3940 1144 6686
Mstr# 3940 1144 6653 0201

W1 HHRA

FRI - 19 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US LAX

140252067

ORIGIN ID:BTFA (406) 241-3259
CDM SMITH
ATTN: SAMPLE RECIEVING
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 18JUN20
ACTWGT: 57.70 LB
CAD: 6993845/SSFE2110
DIMS: 24x14x14 IN

BILL THIRD PARTY

TO **ATTN: SAMPLE RECEIVING**
EMAX LABORATORIES INC
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889
INV:
PO:
REF: 238B246495F3048-05.5AMPL
DEPT:

Part # 158297-455 REV2 EXP 07/20

FedEx Express

J201120042401uv

2 of 4
MPS# 0263 3940 1144 6664
Mstr# 3940 1144 6653

0201

W1 HHRA

FRI - 19 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US **LAX**

cooler D 2.7
2

ORIGIN ID:BTFA (406) 241-3259
CDM SMITH
ATTN: SAMPLE RECIEVING
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 18JUN20
ACTWGT: 57.65 LB
CAD: 6993845/SSFE2110
DIMS: 24x14x14 IN

BILL THIRD PARTY

Part # 156297-435 RRD Rev. Date 08Jun2020 EXP 07/20

TO ATTN: SAMPLE RECEIVING
EMAX LABORATORIES INC
1835 W 205TH ST

TORRANCE CA 90501
(310) 618-8889
INV:
PO:
REF: 2388246495F3048-05.SAMPL
DEPT:

FedEx Express

J2011200424010un

3 of 4
MPS# 0263 3940 1144 6675
Mstr# 3940 1144 6653 0201

W1 HHRA

FRI - 19 JUN 8:00A
FIRST OVERNIGHT
DSR AHS
90501
CA-US LAX

D

Coolers 3

2.8

All sealed

Cooler 4

3.2

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F162

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of twelve(12) water samples were received on 06/19/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. VOF3F17B and VOF3F18B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. VOF3F17L/VOF3F17C and VOF3F18L/VOF3F18C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F162
Instrument ID : F3

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VOF3F17B	1	NA	06/22/2010:41	06/22/2010:41	RFR383	RDR007	VOF3F17	Method Blank
LCS1W	VOF3F17L	1	NA	06/22/2009:13	06/22/2009:13	RFR380	RDR007	VOF3F17	Lab Control Sample (LCS)
LCD1W	VOF3F17C	1	NA	06/22/2009:42	06/22/2009:42	RFR381	RDR007	VOF3F17	LCS Duplicate
TB05-GW061820	F162-03	1	NA	06/22/2011:10	06/22/2011:10	RFR384	RDR007	VOF3F17	Field Sample
TB06-GW061820	F162-06	1	NA	06/22/2011:40	06/22/2011:40	RFR385	RDR007	VOF3F17	Field Sample
TB07-GW061820	F162-09	1	NA	06/22/2012:09	06/22/2012:09	RFR386	RDR007	VOF3F17	Field Sample
TB08-GW061820	F162-12	1	NA	06/22/2012:38	06/22/2012:38	RFR387	RDR007	VOF3F17	Field Sample
MW22-GW061720	F162-01	1	NA	06/22/2013:07	06/22/2013:07	RFR388	RDR007	VOF3F17	Field Sample
MW21-GW061820	F162-02	1	NA	06/22/2013:36	06/22/2013:36	RFR389	RDR007	VOF3F17	Field Sample
MW01D-GW061720	F162-04	1	NA	06/22/2014:05	06/22/2014:05	RFR390	RDR007	VOF3F17	Field Sample
MW13S-GW061820	F162-05	1	NA	06/22/2014:34	06/22/2014:34	RFR391	RDR007	VOF3F17	Field Sample
MW03RA-GW061820	F162-07	1	NA	06/22/2015:03	06/22/2015:03	RFR392	RDR007	VOF3F17	Field Sample
MW03RB-GW061820	F162-08	1	NA	06/22/2015:32	06/22/2015:32	RFR393	RDR007	VOF3F17	Field Sample
MW03RC-GW061820	F162-10	1	NA	06/22/2016:00	06/22/2016:00	RFR394	RDR007	VOF3F17	Field Sample
MW03RD-GW061820	F162-11	1	NA	06/22/2016:29	06/22/2016:29	RFR395	RDR007	VOF3F17	Field Sample
MBLK2W	VOF3F18B	1	NA	06/23/2017:07	06/23/2017:07	RFR410	RDR007	VOF3F18	Method Blank
LCS2W	VOF3F18L	1	NA	06/23/2015:40	06/23/2015:40	RFR407	RDR007	VOF3F18	Lab Control Sample (LCS)
LCD2W	VOF3F18C	1	NA	06/23/2016:09	06/23/2016:09	RFR408	RDR007	VOF3F18	LCS Duplicate
MW03RB-GW061820DL	F162-08I	25	NA	06/23/2019:04	06/23/2019:04	RFR414	RDR007	VOF3F18	Diluted Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 13:07
Sample ID:	MW22-GW061720	Date Analyzed:	06/22/20 13:07
Lab Samp ID:	F162-01	Dilution Factor:	1
Lab File ID:	RFR388	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.34J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.2	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	2.9	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.92	10.00	99.2	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR388.D Vial: 11
Acq On : 22 Jun 2020 1:07 pm Operator: ENguye/ODinh
Sample : 20F162-01 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:58 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2505155	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1868491	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	635560	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	910713	10.27	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.70%		
40) 1,2-Dichloroethane-d4	14.24	65	724594	9.92	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.20%		
55) Toluene-d8	16.80	98	2639367	10.20	ug/l	0.01
Spiked Amount 10.000			Recovery =	102.00%		
75) 4-Bromofluorobenzene	19.36	95	844100	10.60	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.00%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	379091	2.23	ug/l	99
50) Bromodichloromethane	16.00	83	34996	0.34	ug/l	97
60) Tetrachloroethene	17.48	164	186019	2.92	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFR388.D VOF3D02.M Tue Jun 23 09:59:12 2020 Page 1

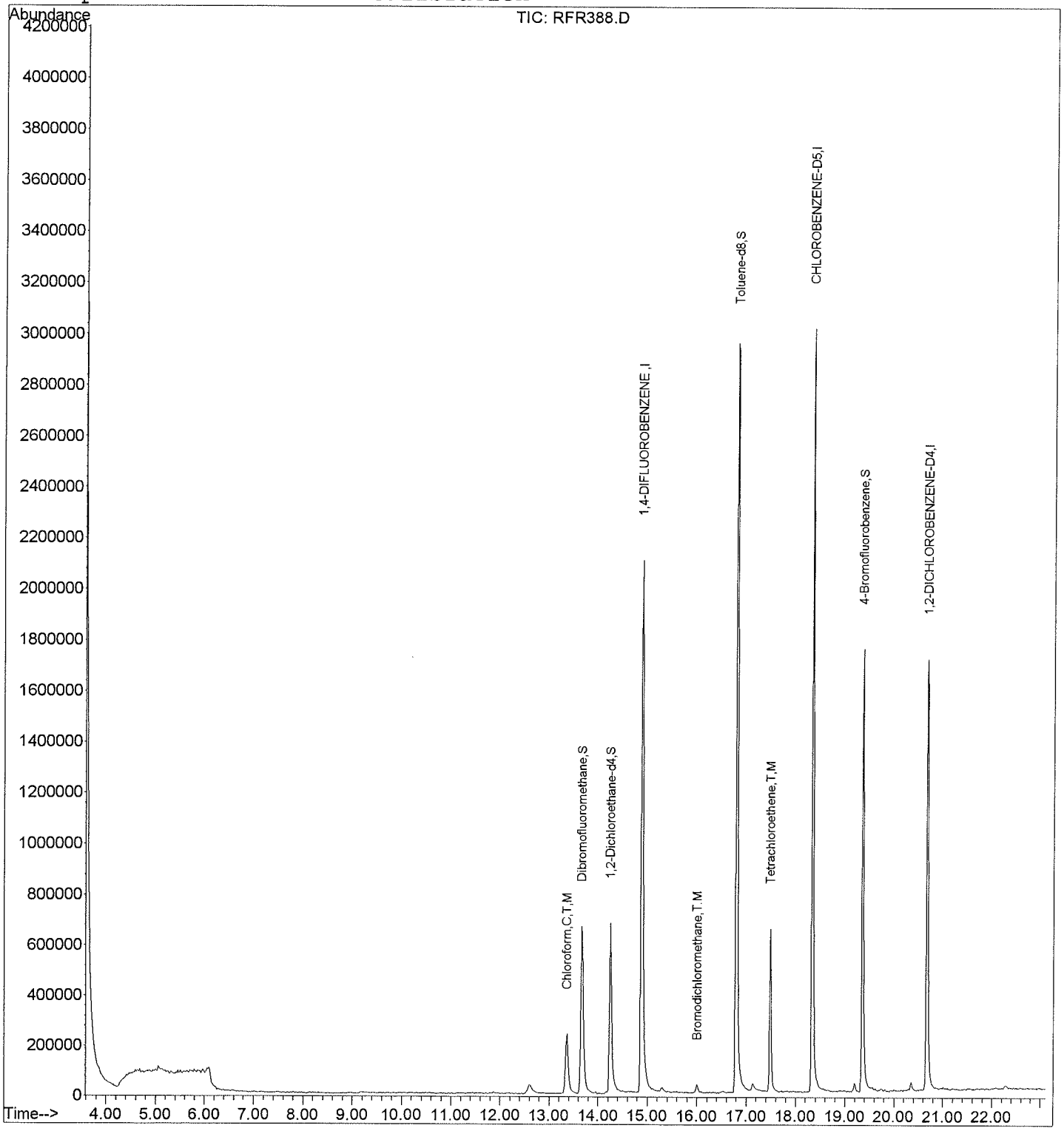
Quantitation Report

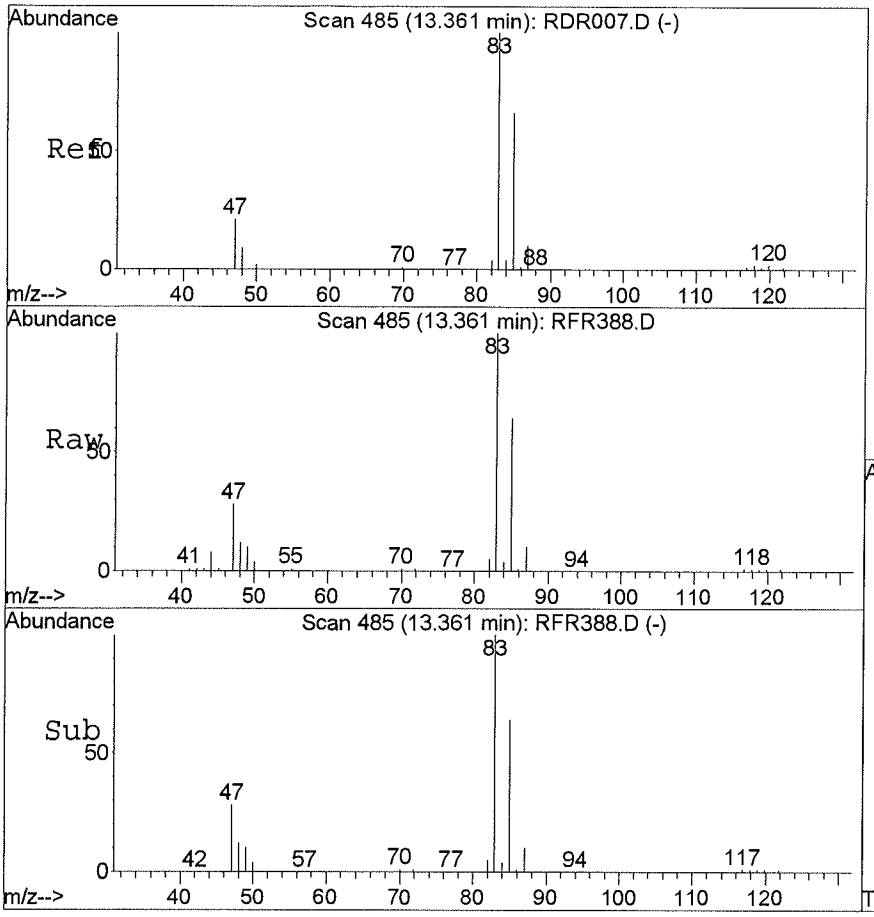
Data File : C:\HPCHEM\1\DATA\20F22\RFR388.D
Acq On : 22 Jun 2020 1:07 pm
Sample : 20F162-01 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 9:58 2020

Vial: 11
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

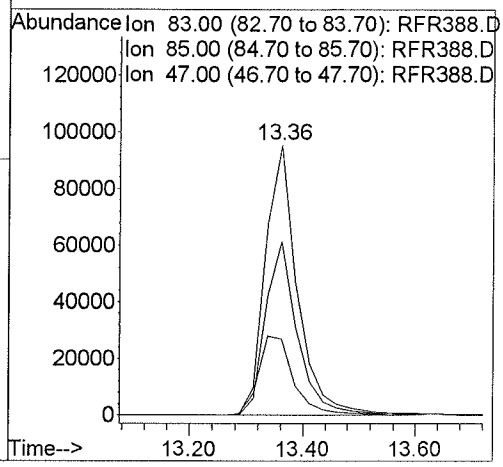


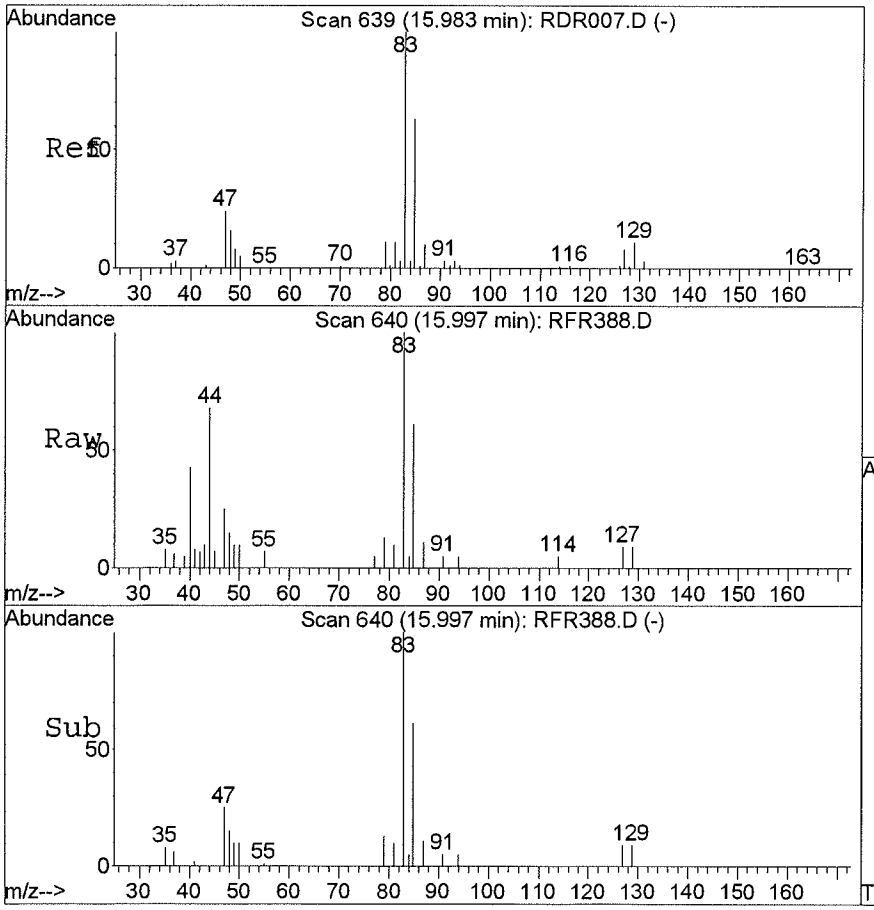


#33
Chloroform
Concen: 2.23 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR388.D
Acq: 22 Jun 2020 1:07 pm

Tgt Ion: 83 Resp: 379091

Ion	Ratio	Lower	Upper
83	100		
85	64.3	35.0	95.0
47	32.3	1.2	61.2

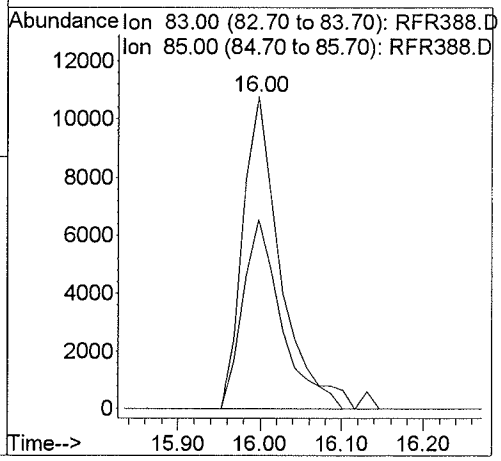


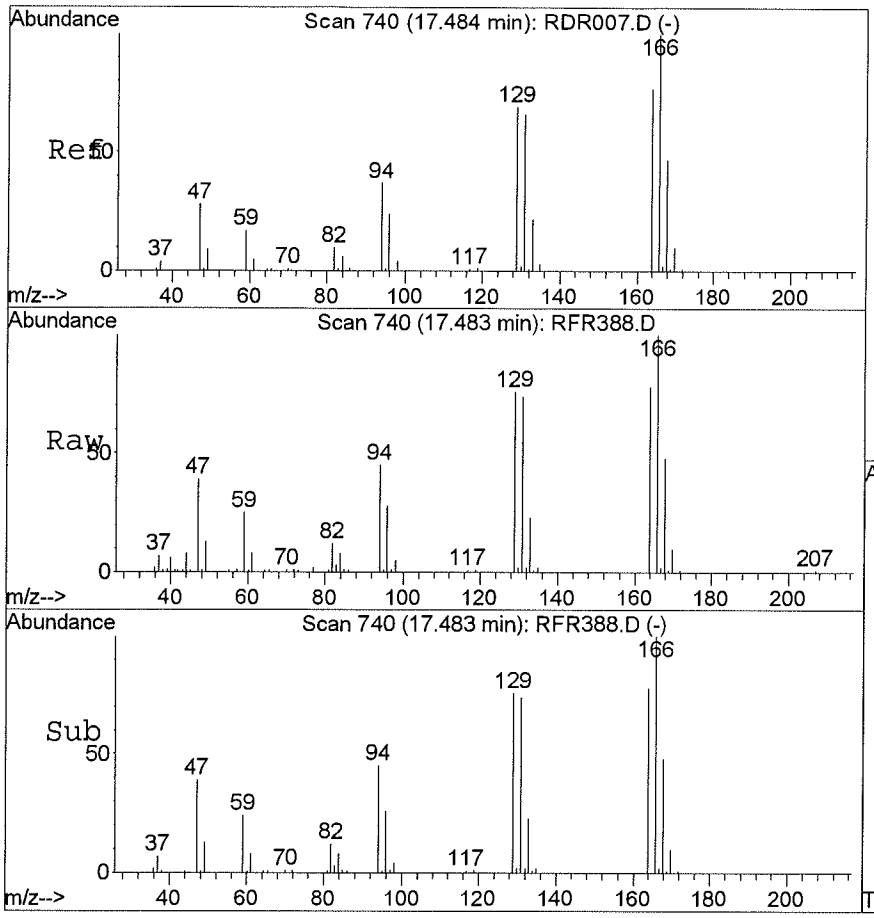


#50
Bromodichloromethane
Concen: 0.34 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.01 min
Lab File: RFR388.D
Acq: 22 Jun 2020 1:07 pm

Tgt Ion: 83 Resp: 34996

Ion	Ratio	Lower	Upper
83	100		
85	61.5	33.6	93.6

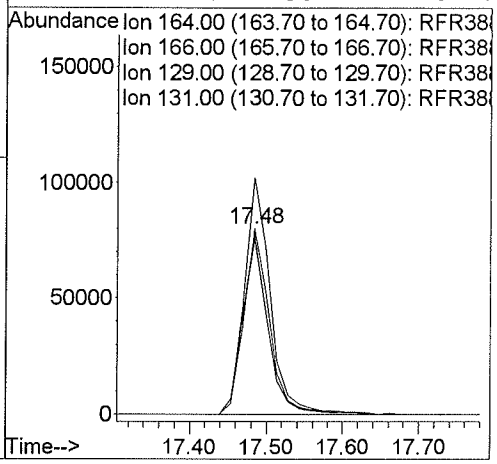




#60
Tetrachloroethene
Concen: 2.92 ug/l
RT: 17.48 min Scan# 740
Delta R.T. -0.00 min
Lab File: RFR388.D
Acq: 22 Jun 2020 1:07 pm

Tgt Ion:164 Resp: 186019

Ion	Ratio	Lower	Upper
164	100		
166	129.2	97.7	157.7
129	96.7	64.5	124.5
131	94.0	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 13:36
Sample ID: MW21-GW061820	Date Analyzed: 06/22/20 13:36
Lab Samp ID: F162-02	Dilution Factor: 1
Lab File ID: RFR389	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.9	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	2.0	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.91	10.00	99.1	70-130
BROMOFLUOROBENZENE	10.4	10.00	104	70-130
TOLUENE-D8	10.3	10.00	103	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR389.D Vial: 12
Acq On : 22 Jun 2020 1:36 pm Operator: ENguye/ODinh
Sample : 20F162-02 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:03 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

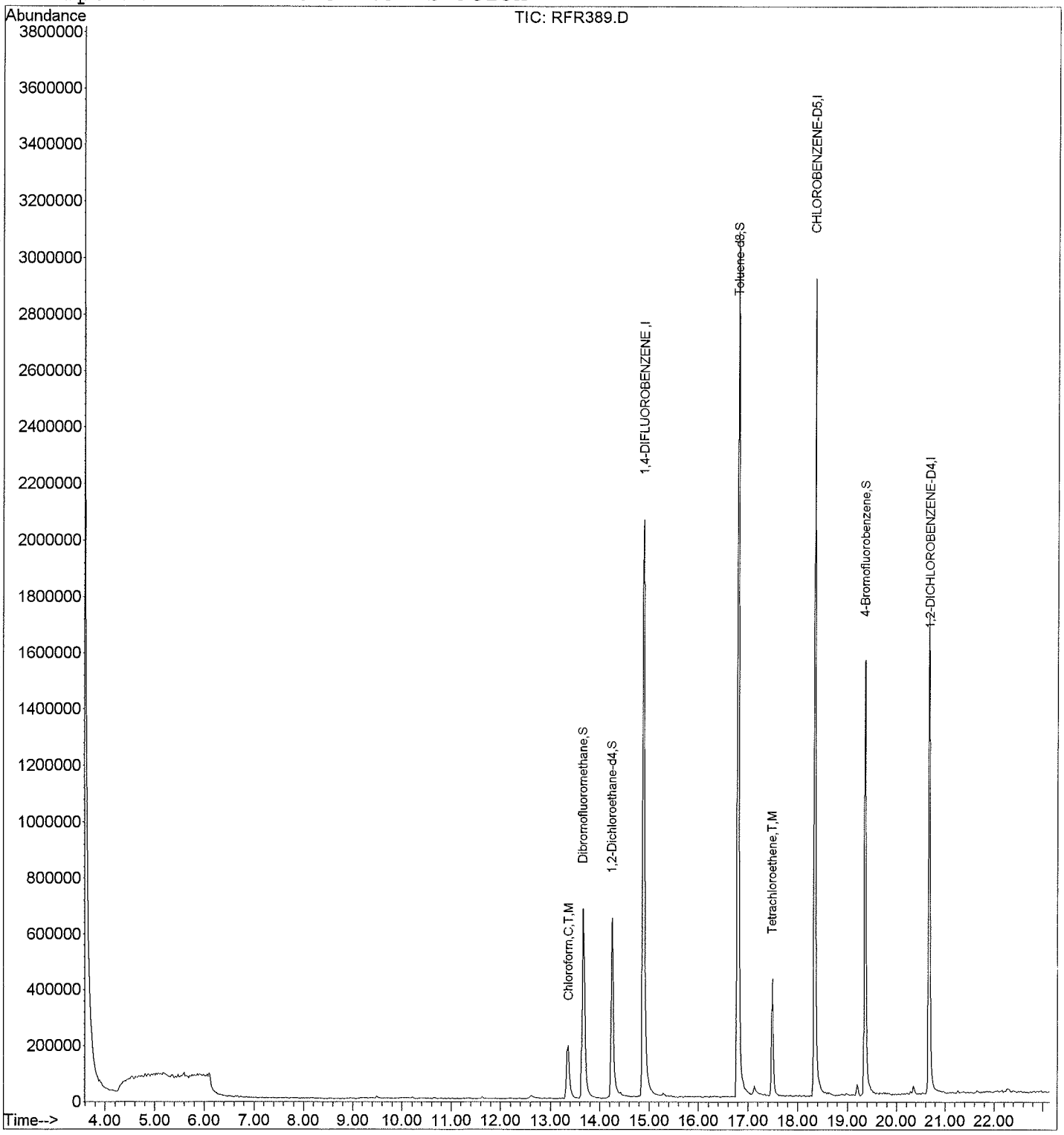
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2451115	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1865725	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	625399	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	893004	10.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.90%		
40) 1,2-Dichloroethane-d4	14.25	65	708071	9.91	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.10%		
55) Toluene-d8	16.79	98	2671547	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%		
75) 4-Bromofluorobenzene	19.34	95	817087	10.43	ug/l	-0.01
Spiked Amount 10.000			Recovery =	104.30%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	317632	1.91	ug/l	98
60) Tetrachloroethene	17.48	164	127814	2.01	ug/l	98

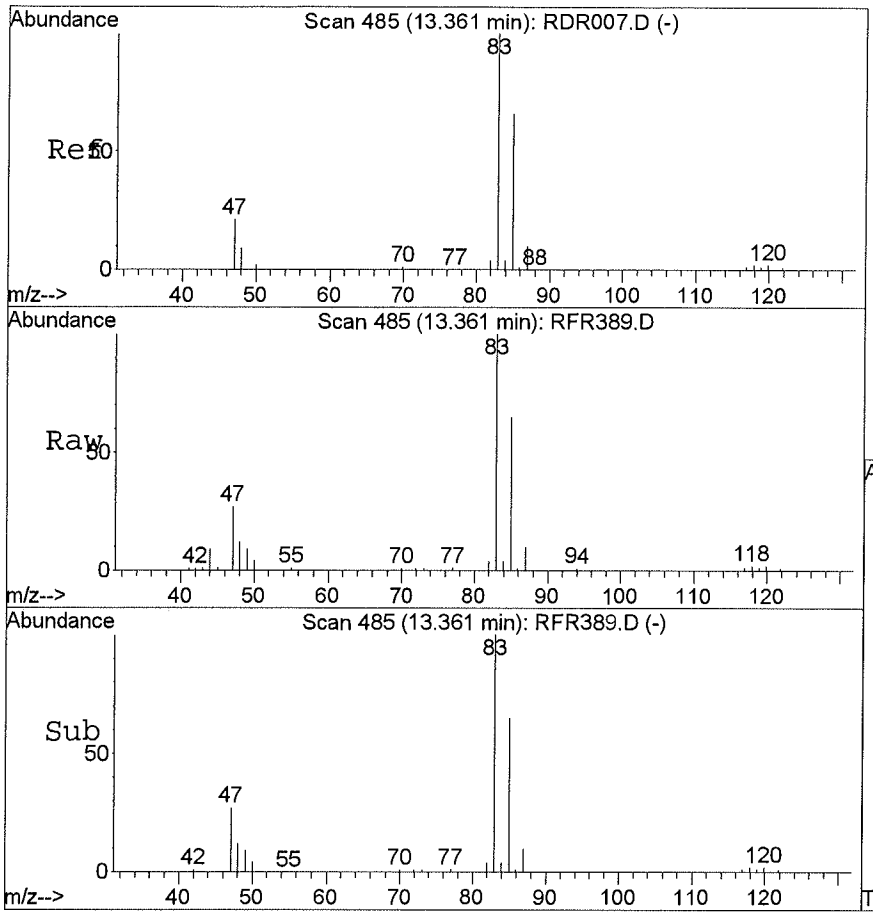
(#) = qualifier out of range (m) = manual integration
RFR389.D VOF3D02.M Tue Jun 23 10:04:35 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR389.D Vial: 12
Acq On : 22 Jun 2020 1:36 pm Operator: ENguye/ODinh
Sample : 20F162-02 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:03 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

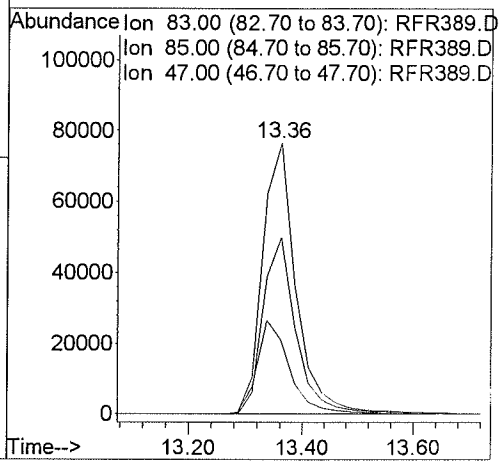


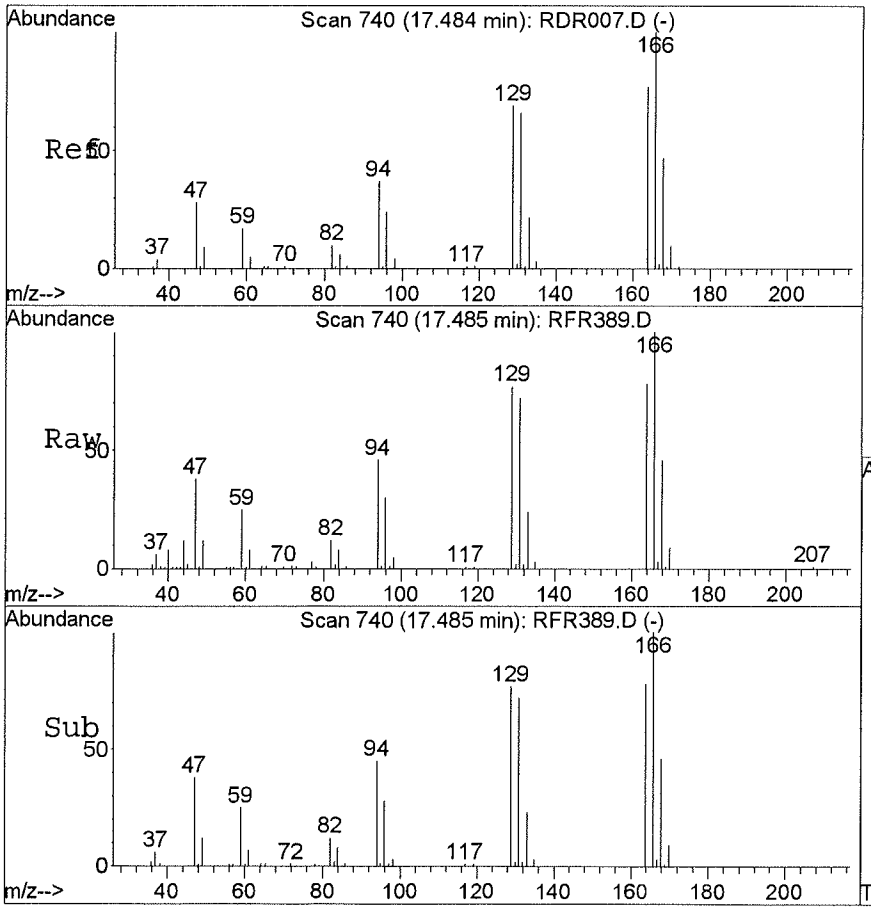


#33
Chloroform
Concen: 1.91 ug/l
RT: 13.36 min Scan# 485
Delta R.T. -0.00 min
Lab File: RFR389.D
Acq: 22 Jun 2020 1:36 pm

Tgt Ion: 83 Resp: 317632

Ion	Ratio	Lower	Upper
83	100		
85	64.9	35.0	95.0
47	34.0	1.2	61.2

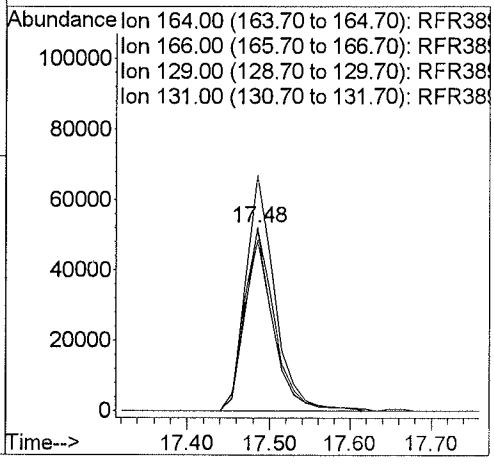




#60
Tetrachloroethene
Concen: 2.01 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR389.D
Acq: 22 Jun 2020 1:36 pm

Tgt Ion:164 Resp: 127814

Ion	Ratio	Lower	Upper
164	100		
166	127.7	97.7	157.7
129	98.1	64.5	124.5
131	93.8	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 11:10
Sample ID:	TB05-GW061820	Date Analyzed:	06/22/20 11:10
Lab Samp ID:	F162-03	Dilution Factor:	1
Lab File ID:	RFR384	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.41	10.00	94.1	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	9.57	10.00	95.7	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR384.D Vial: 7
Acq On : 22 Jun 2020 11:10 am Operator: ENguye/ODinh
Sample : 20F162-03 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:50 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2709899	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1974959	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	632309	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	918320	9.57	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.70%			
40) 1,2-Dichloroethane-d4	14.25	65	743464	9.41	ug/l	0.00
Spiked Amount 10.000			Recovery = 94.10%			
55) Toluene-d8	16.79	98	2739721	10.02	ug/l	0.00
Spiked Amount 10.000			Recovery = 100.20%			
75) 4-Bromofluorobenzene	19.34	95	838874	10.59	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.90%			

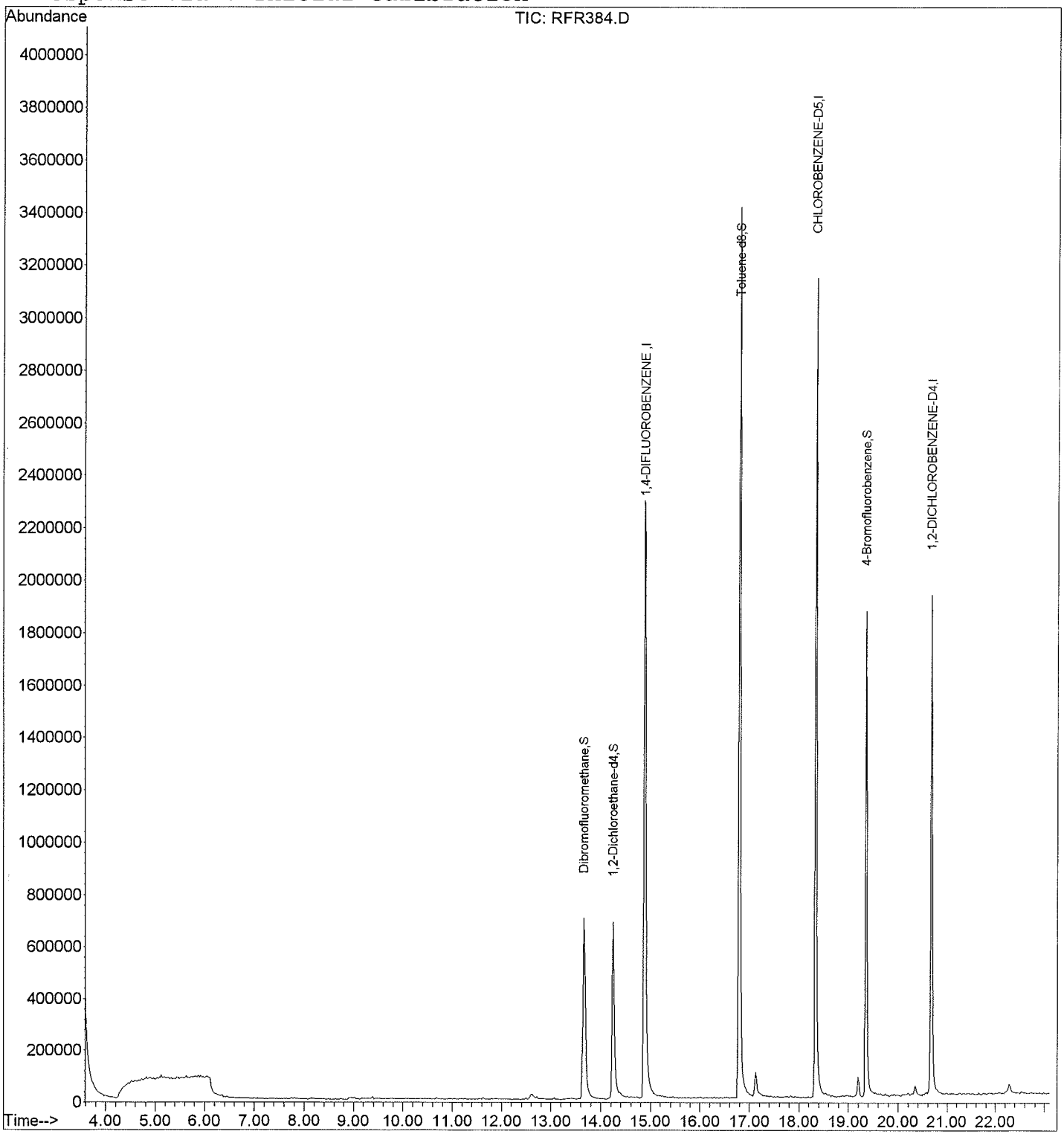
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration
RFR384.D VOF3D02.M Tue Jun 23 09:50:26 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR384.D Vial: 7
Acq On : 22 Jun 2020 11:10 am Operator: ENguye/ODinh
Sample : 20F162-03 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:50 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 14:05
Sample ID:	MW01D-GW061720	Date Analyzed:	06/22/20 14:05
Lab Samp ID:	F162-04	Dilution Factor:	1
Lab File ID:	RFR390	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	0.17J	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.72	10.00	97.2	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.1	10.00	101	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR390.D Vial: 13
Acq On : 22 Jun 2020 2:05 pm Operator: ENguye/ODinh
Sample : 20F162-04 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:45 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

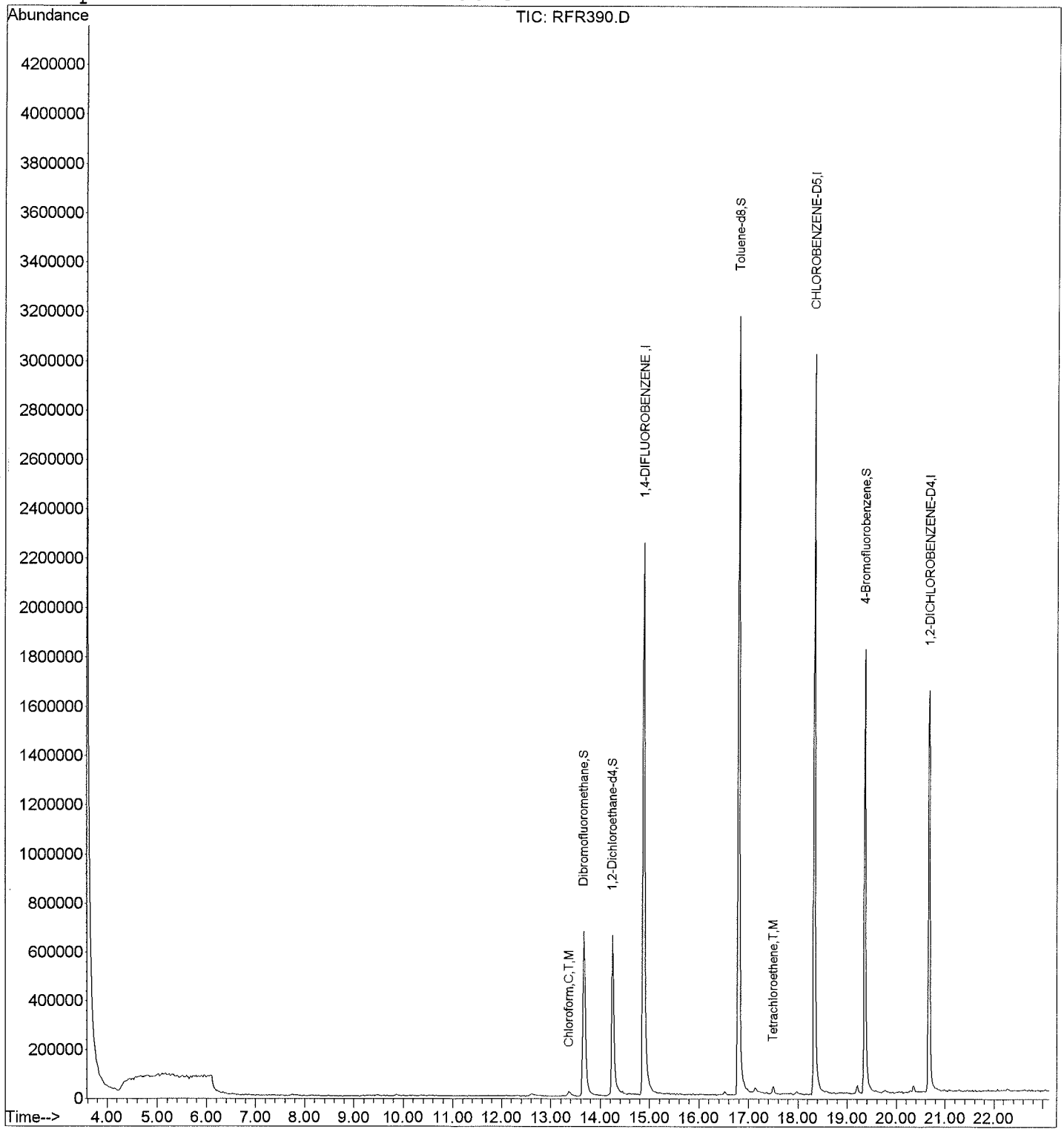
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2553529	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1912764	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	626483	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	912849	10.10	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.00%		
40) 1,2-Dichloroethane-d4	14.24	65	723569	9.72	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.20%		
55) Toluene-d8	16.79	98	2683938	10.13	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.30%		
75) 4-Bromofluorobenzene	19.36	95	847514	10.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.00%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	29552	0.17	ug/l	97
60) Tetrachloroethene	17.50	164	9470	0.15	ug/l	96

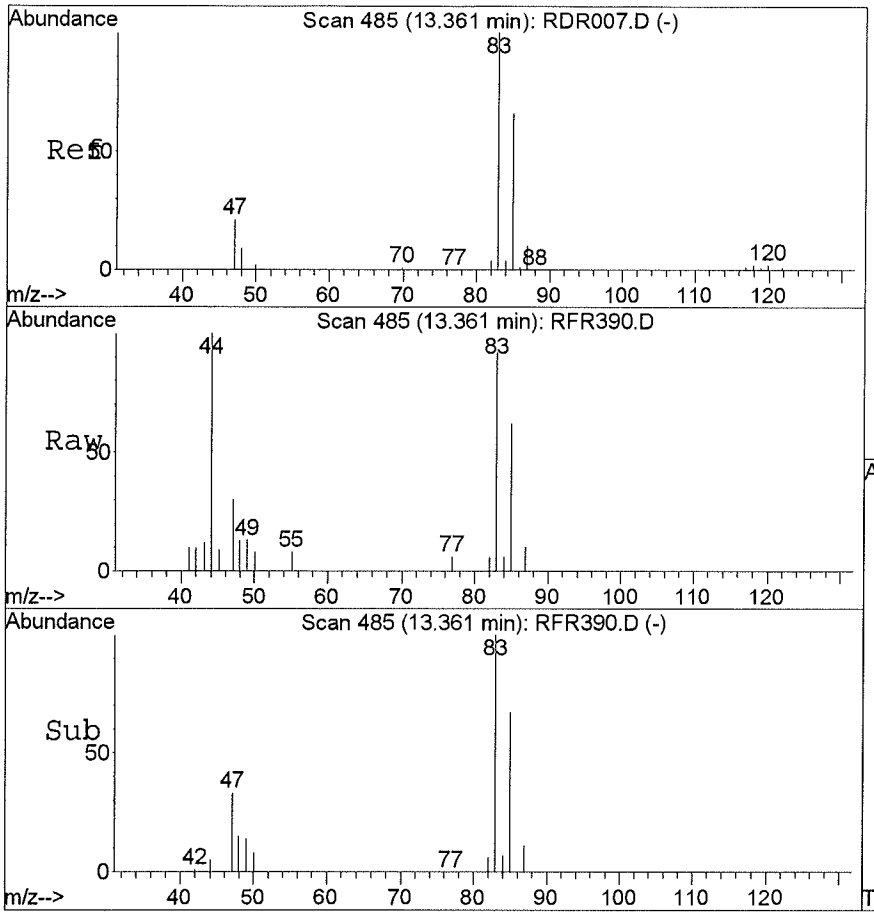
(#) = qualifier out of range (m) = manual integration
RFR390.D VOF3D02.M Tue Jun 23 10:46:55 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR390.D Vial: 13
Acq On : 22 Jun 2020 2:05 pm Operator: ENguye/ODinh
Sample : 20F162-04 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:45 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

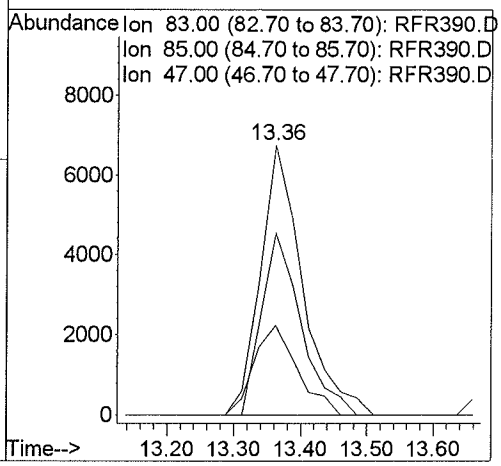


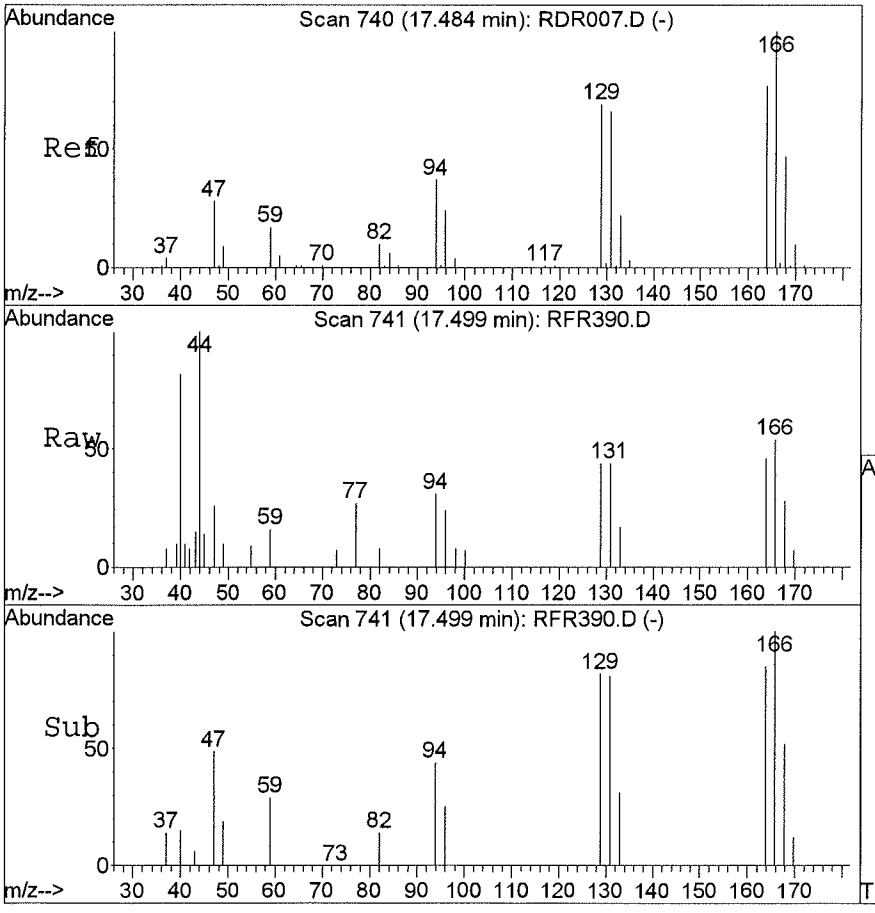


#33
Chloroform
Concen: 0.17 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR390.D
Acq: 22 Jun 2020 2:05 pm

Tgt Ion: 83 Resp: 29552

Ion	Ratio	Lower	Upper
83	100		
85	63.6	35.0	95.0
47	34.4	1.2	61.2

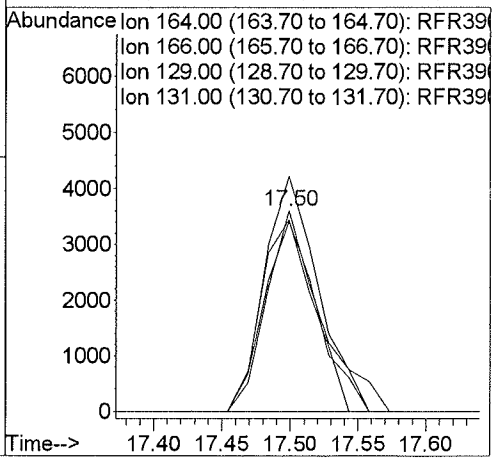




#60
Tetrachloroethene
Concen: 0.15 ug/l
RT: 17.50 min Scan# 741
Delta R.T. 0.02 min
Lab File: RFR390.D
Acq: 22 Jun 2020 2:05 pm

Tgt Ion:164 Resp: 9470

Ion	Ratio	Lower	Upper
164	100		
166	127.5	97.7	157.7
129	97.4	64.5	124.5
131	98.6	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 14:34
Sample ID: MW13S-GW061820	Date Analyzed: 06/22/20 14:34
Lab Samp ID: F162-05	Dilution Factor: 1
Lab File ID: RFR391	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.15J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	0.14J	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	0.70J	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.18J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	23	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.88J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-130
BROMOFLUOROBENZENE	10.2	10.00	102	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR391.D Vial: 14
Acq On : 22 Jun 2020 2:34 pm Operator: ENguye/ODinh
Sample : 20F162-05 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:53 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

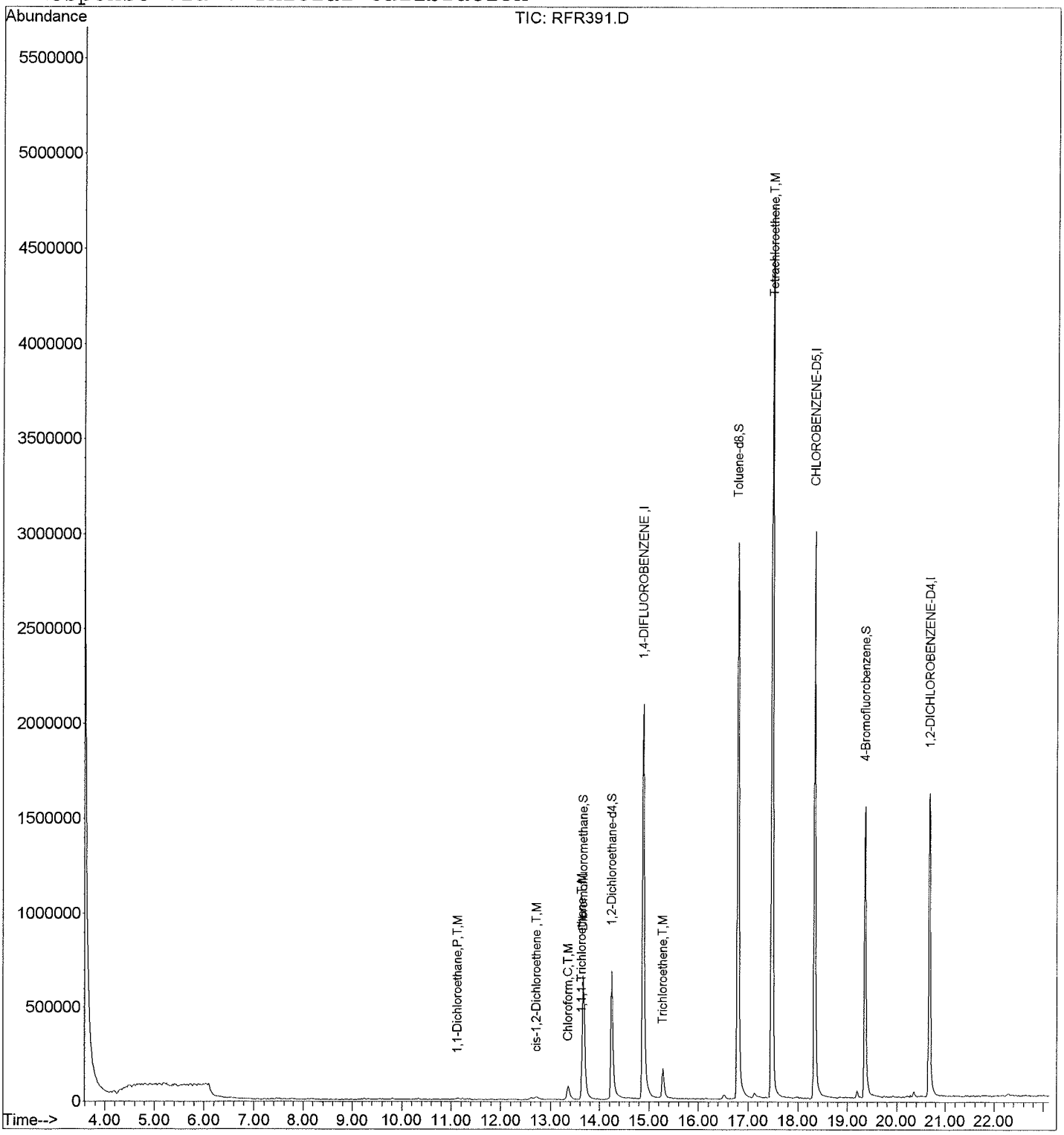
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2411513	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1815117	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	602979	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	881921	10.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.30%		
40) 1,2-Dichloroethane-d4	14.24	65	724191	10.30	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.00%		
55) Toluene-d8	16.79	98	2551715	10.15	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.50%		
75) 4-Bromofluorobenzene	19.36	95	770295	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.00%		
Target Compounds						Qvalue
24) 1,1-Dichloroethane	11.13	63	28025	0.14	ug/l	91
28) cis-1,2-Dichloroethene	12.72	96	17463	0.18	ug/l	88
33) Chloroform	13.36	83	114313	0.70	ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	15880	0.15	ug/l	96
45) Trichloroethene	15.28	130	79041	0.88	ug/l	95
60) Tetrachloroethene	17.48	164	1452827	23.48	ug/l	98

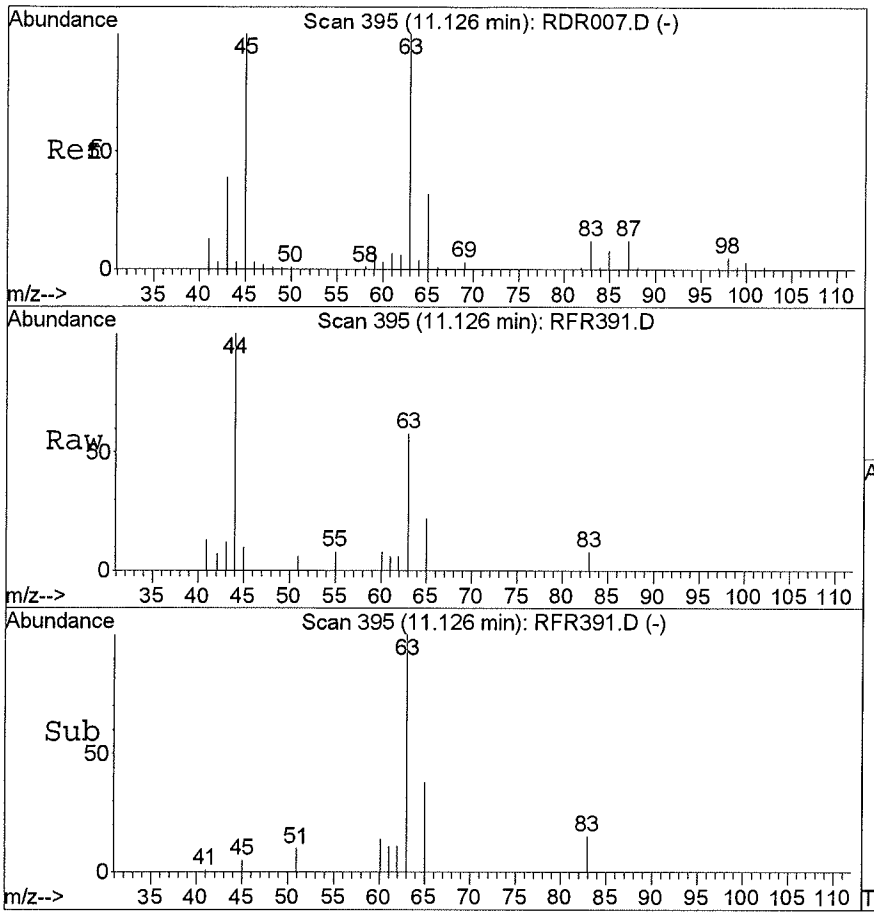
(#) = qualifier out of range (m) = manual integration
RFR391.D VOF3D02.M Tue Jun 23 10:53:46 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR391.D Vial: 14
Acq On : 22 Jun 2020 2:34 pm Operator: ENguye/ODinh
Sample : 20F162-05 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:53 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

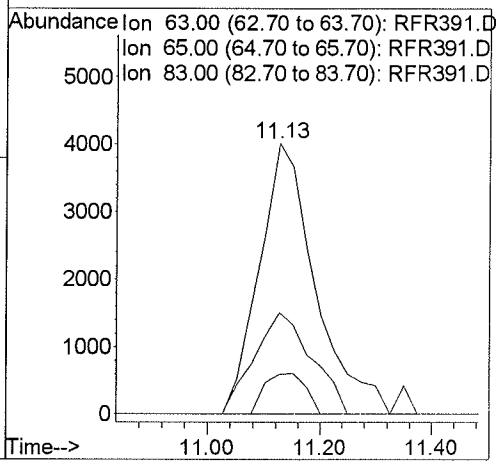


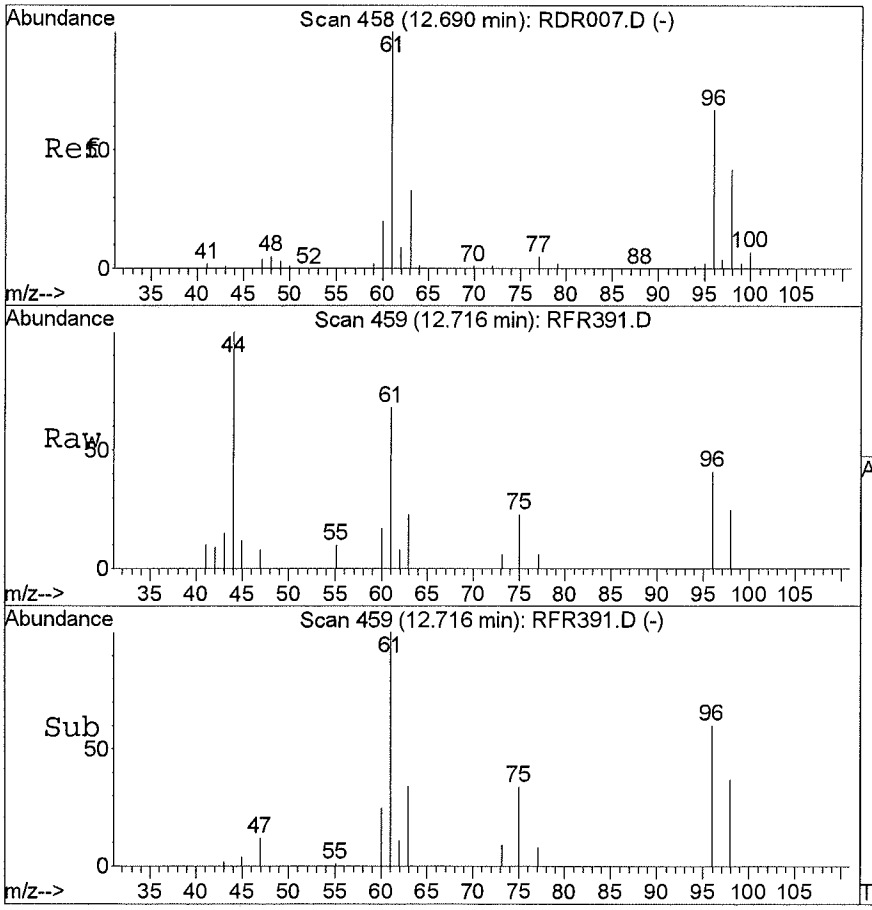


#24
1,1-Dichloroethane
Concen: 0.14 ug/l
RT: 11.13 min Scan# 395
Delta R.T. 0.00 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion: 63 Resp: 28025

Ion	Ratio	Lower	Upper
63	100		
65	38.5	2.1	62.1
83	11.0	0.0	41.6

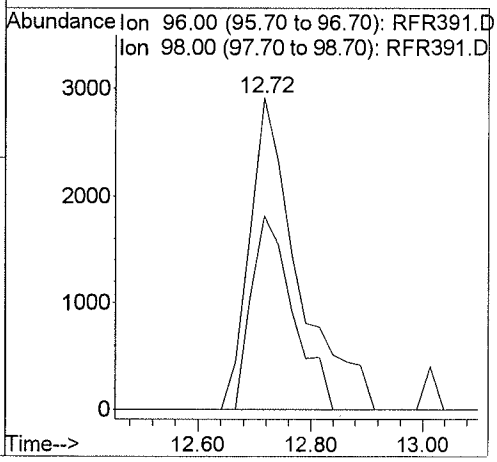


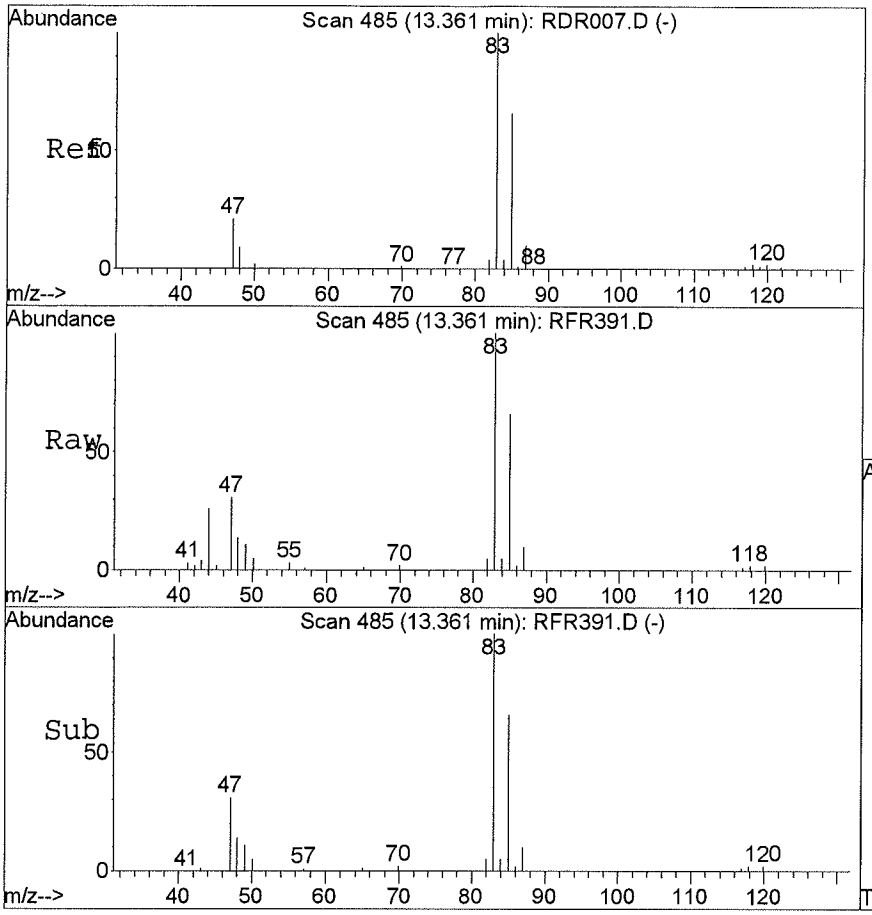


#28
cis-1,2-Dichloroethene
Concen: 0.18 ug/l
RT: 12.72 min Scan# 459
Delta R.T. 0.03 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion: 96 Resp: 17463

Ion	Ratio	Lower	Upper
96	100		
98	53.6	33.2	93.2

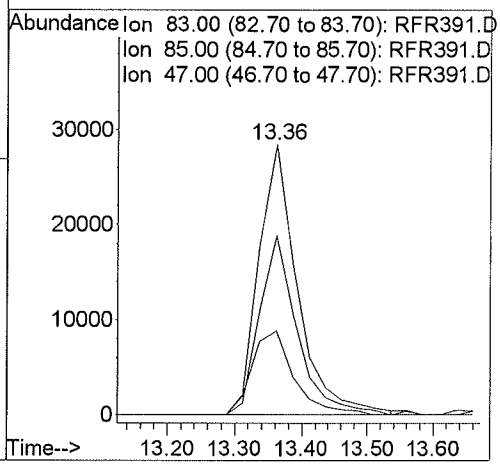


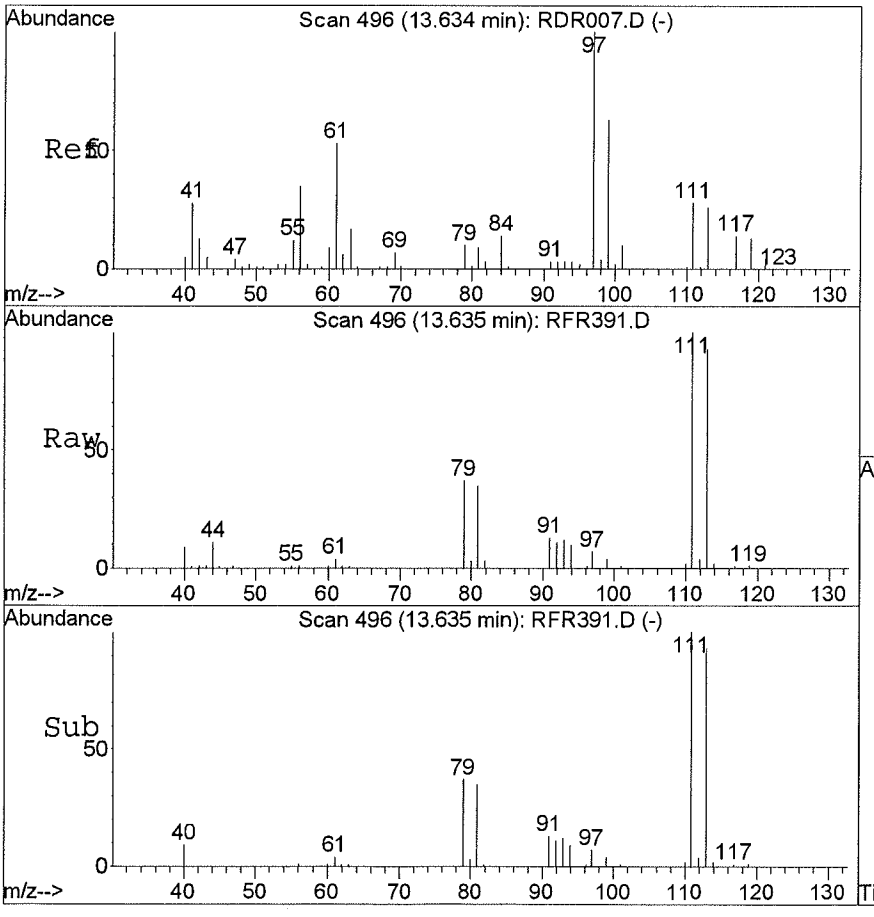


#33
Chloroform
Concen: 0.70 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion: 83 Resp: 114313

Ion	Ratio	Lower	Upper
83	100		
85	64.6	35.0	95.0
47	33.9	1.2	61.2

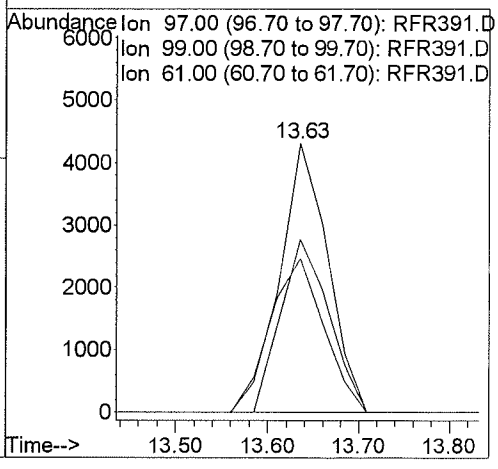


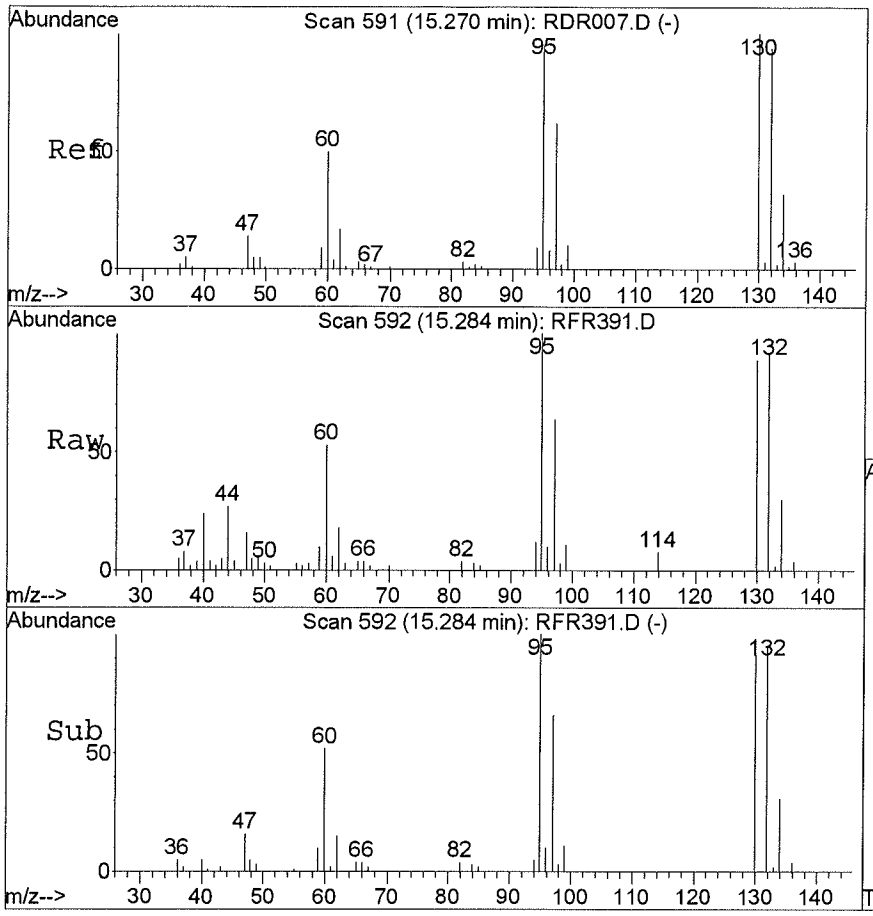


#35
1,1,1-Trichloroethane
Concen: 0.15 ug/l
RT: 13.63 min Scan# 496
Delta R.T. 0.00 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion: 97 Resp: 15880

Ion	Ratio	Lower	Upper
97	100		
99	64.4	34.3	94.3
61	63.6	27.7	87.7

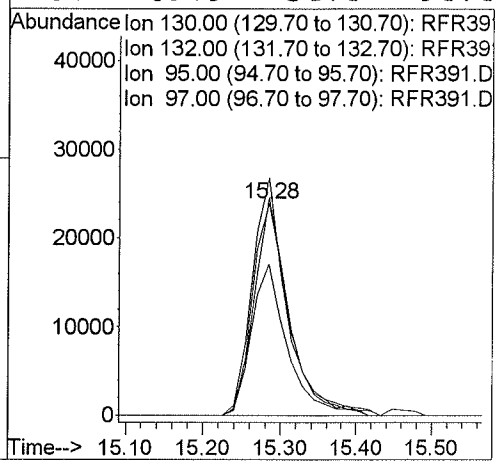


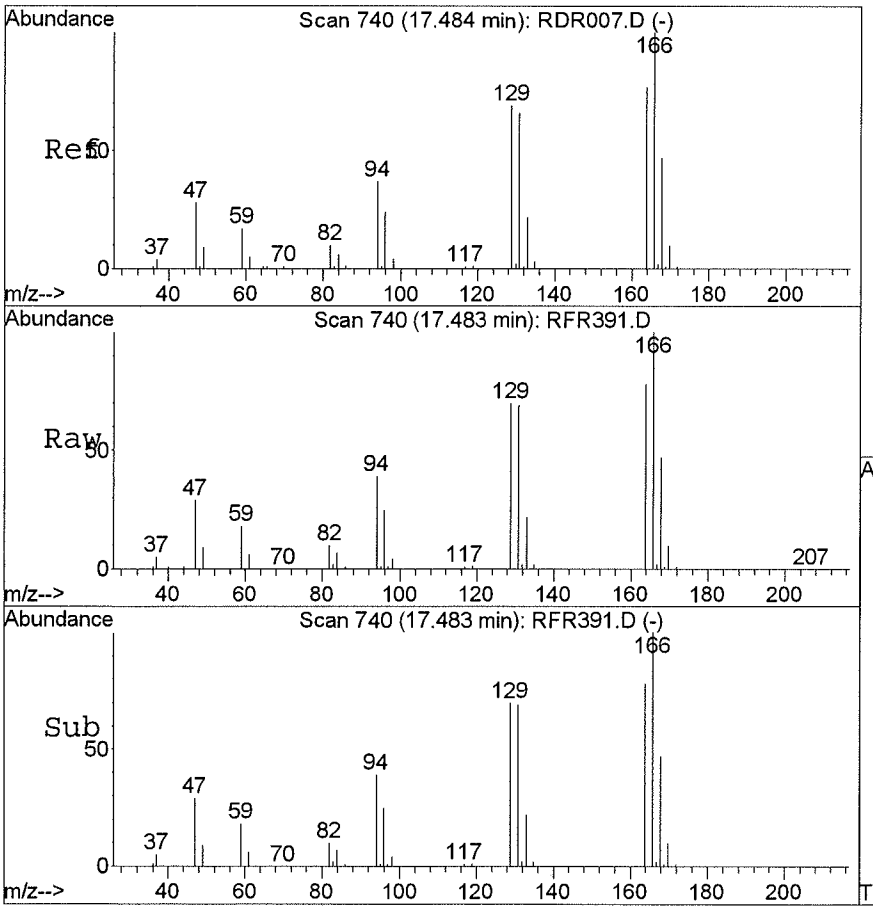


#45
Trichloroethene
Concen: 0.88 ug/l
RT: 15.28 min Scan# 592
Delta R.T. 0.01 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion:130 Resp: 79041

Ion	Ratio	Lower	Upper
130	100		
132	95.6	64.1	124.1
95	107.1	70.1	130.1
97	69.9	34.4	94.4

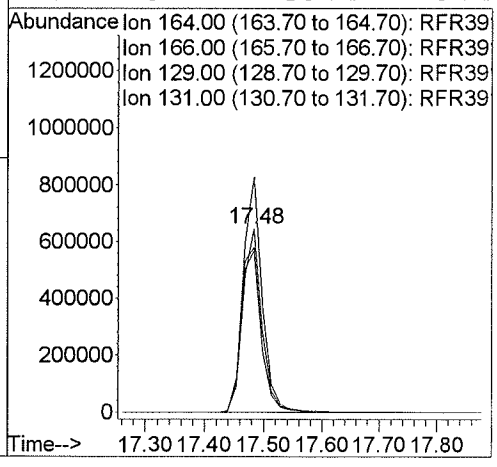




#60
Tetrachloroethene
Concen: 23.48 ug/l
RT: 17.48 min Scan# 740
Delta R.T. -0.00 min
Lab File: RFR391.D
Acq: 22 Jun 2020 2:34 pm

Tgt Ion:164 Resp: 1452827

Ion	Ratio	Lower	Upper
164	100		
166	127.3	97.7	157.7
129	95.8	64.5	124.5
131	92.5	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 11:40
Sample ID:	TB06-GW061820	Date Analyzed:	06/22/20 11:40
Lab Samp ID:	F162-06	Dilution Factor:	1
Lab File ID:	RFR385	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.39	10.00	93.9	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	10.4	10.00	104	70-130
DIBROMOFLUOROMETHANE	9.96	10.00	99.6	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR385.D Vial: 8
Acq On : 22 Jun 2020 11:40 am Operator: ENguye/ODinh
Sample : 20F162-06 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:53 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.87	114	2522266	10.00	ug/l	-0.01
54) CHLOROBENZENE-D5	18.33	117	1851221	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	625287	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	889911	9.96	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.60%			
40) 1,2-Dichloroethane-d4	14.25	65	690175	9.39	ug/l	0.00
Spiked Amount 10.000			Recovery = 93.90%			
55) Toluene-d8	16.79	98	2661650	10.38	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.80%			
75) 4-Bromofluorobenzene	19.34	95	830565	10.60	ug/l	-0.01
Spiked Amount 10.000			Recovery = 106.00%			

Target Compounds Qvalue

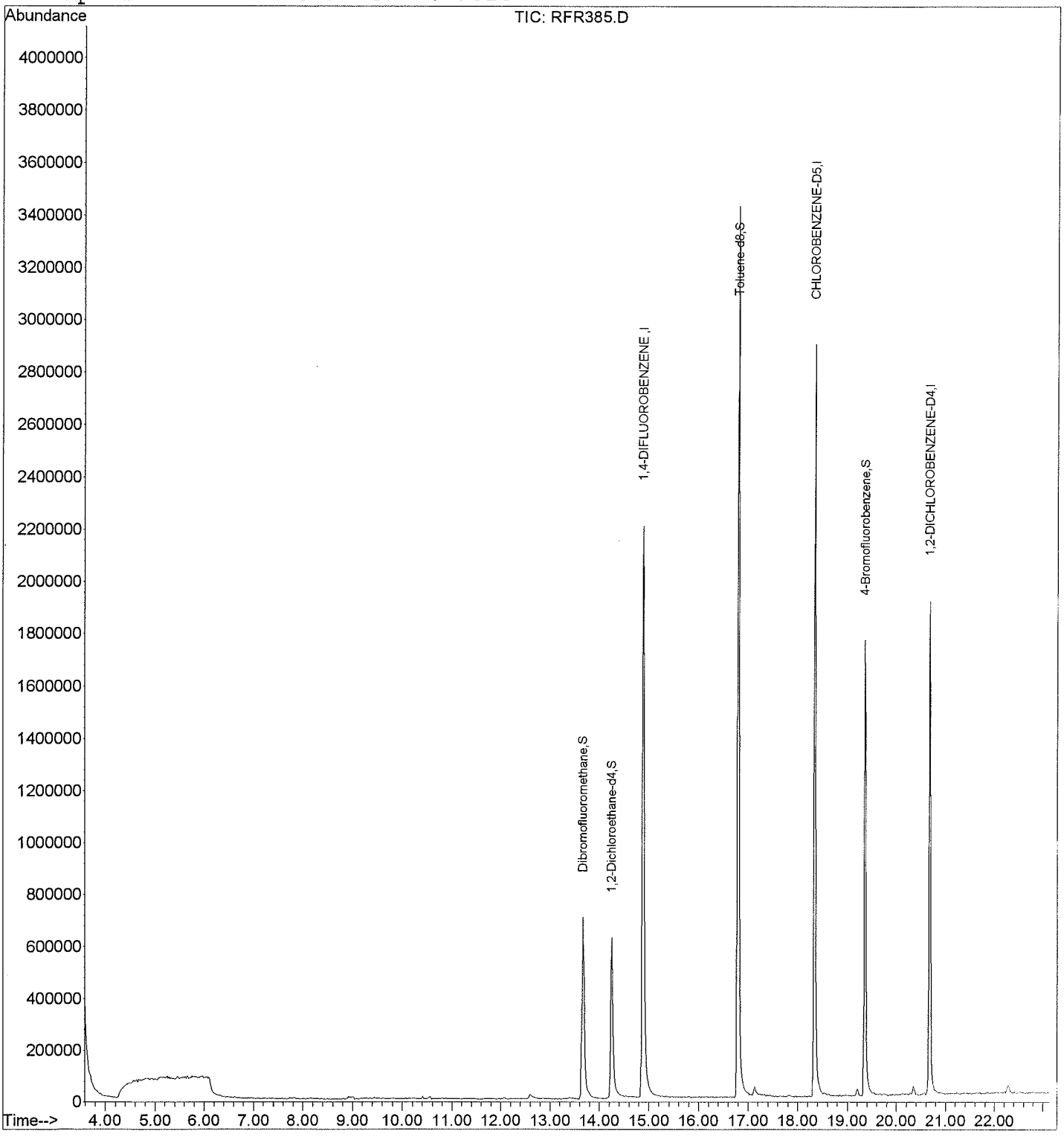
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR385.D
Acq On : 22 Jun 2020 11:40 am
Sample : 20F162-06 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 9:53 2020

Vial: 8
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 15:03
Sample ID: MW03RA-GW061820	Date Analyzed: 06/22/20 15:03
Lab Samp ID: F162-07	Dilution Factor: 1
Lab File ID: RFR392	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.12J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.54J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	5.1	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	30	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.19J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.80	10.00	98.0	70-130
BROMOFLUOROBENZENE	11.2	10.00	112	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR392.D Vial: 15
Acq On : 22 Jun 2020 3:03 pm Operator: ENguye/ODinh
Sample : 20F162-07 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 10:52 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2446573	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1843989	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	579125	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	891383	10.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.90%		
40) 1,2-Dichloroethane-d4	14.24	65	698642	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.00%		
55) Toluene-d8	16.80	98	2599369	10.18	ug/l	0.02
Spiked Amount 10.000			Recovery =	101.80%		
75) 4-Bromofluorobenzene	19.36	95	812091	11.19	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.90%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	853239	5.13	ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	12952	0.12	ug/l	94
45) Trichloroethene	15.29	130	17186	0.19	ug/l	94
50) Bromodichloromethane	15.98	83	54317	0.54	ug/l	92
60) Tetrachloroethene	17.48	164	1893989	30.13	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFR392.D VOF3D02.M Tue Jun 23 10:53:08 2020 Page 1

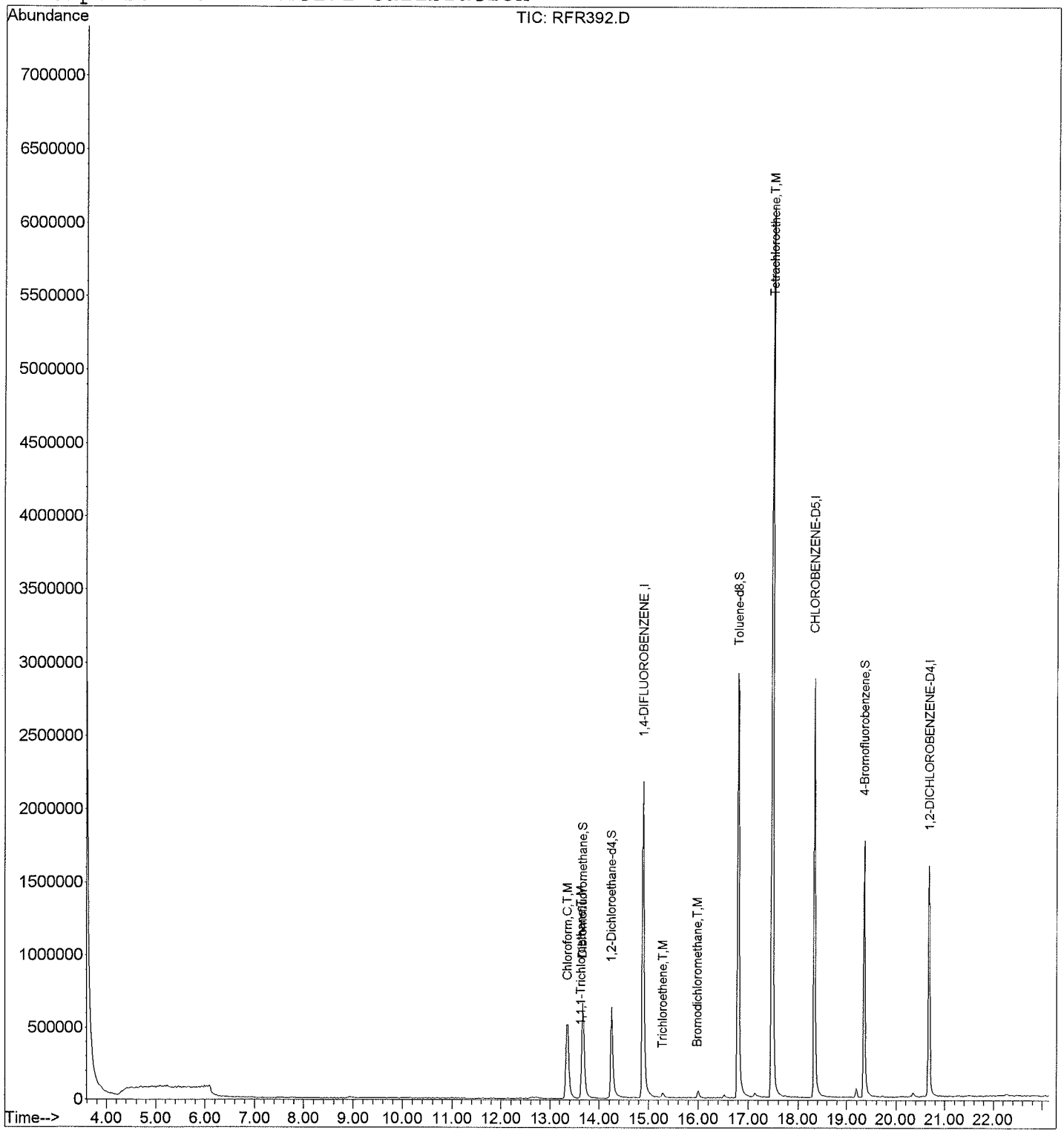
Quantitation Report

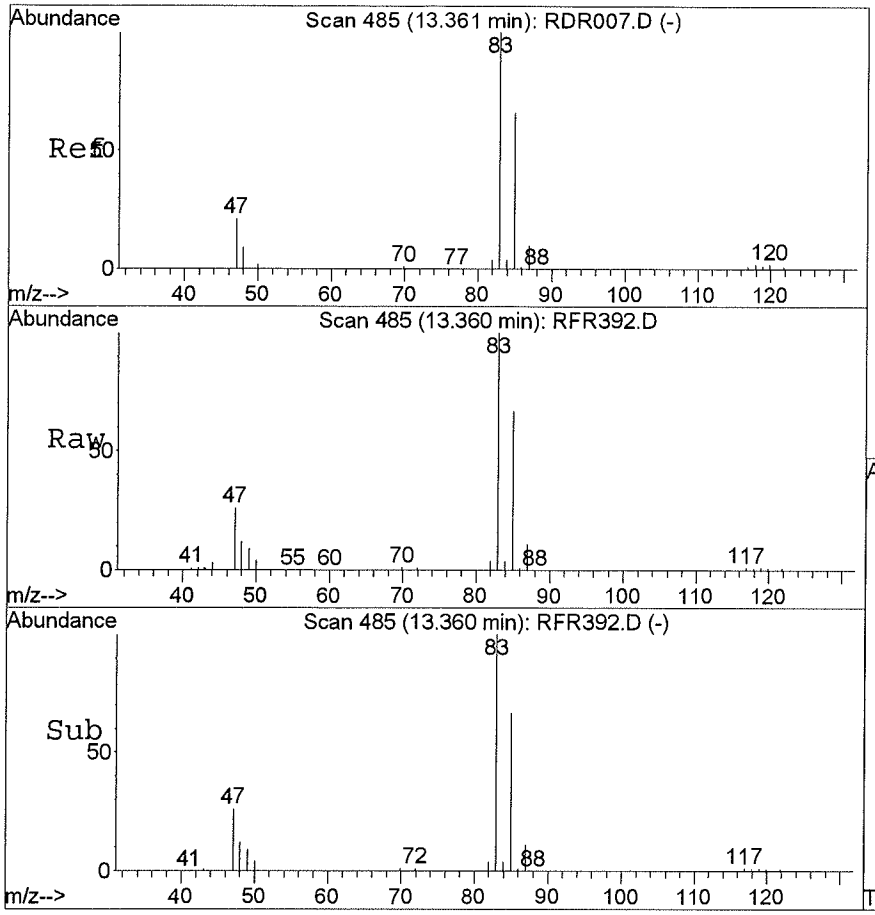
Data File : C:\HPCHEM\1\DATA\20F22\RFR392.D
Acq On : 22 Jun 2020 3:03 pm
Sample : 20F162-07 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 10:52 2020

Vial: 15
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

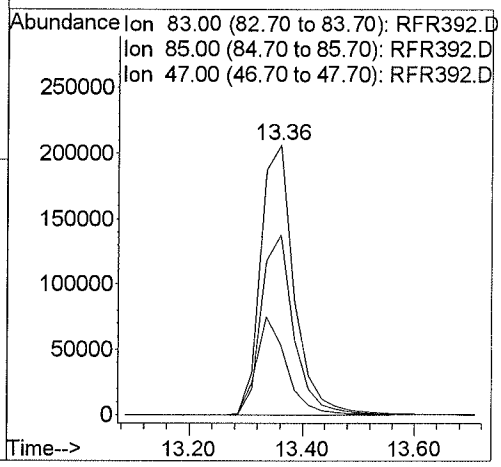


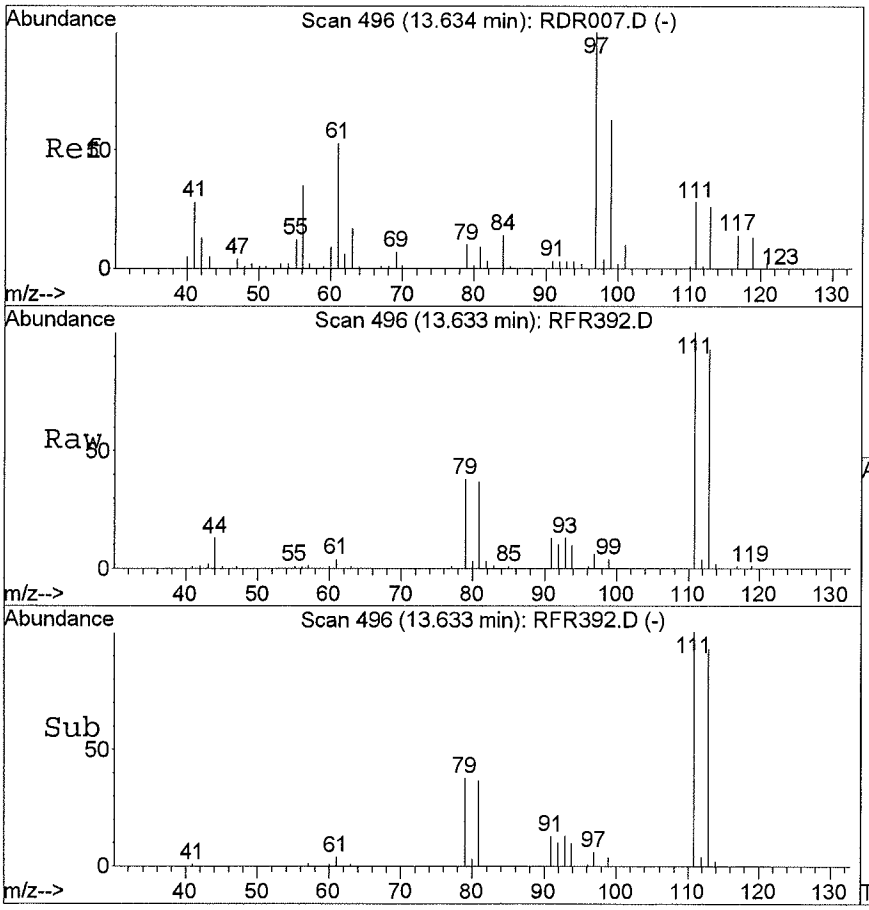


#33
Chloroform
Concen: 5.13 ug/l
RT: 13.36 min Scan# 485
Delta R.T. -0.00 min
Lab File: RFR392.D
Acq: 22 Jun 2020 3:03 pm

Tgt Ion: 83 Resp: 853239

Ion	Ratio	Lower	Upper
83	100		
85	65.1	35.0	95.0
47	33.3	1.2	61.2

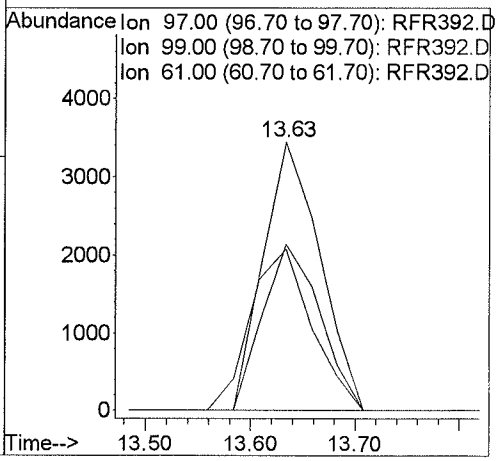


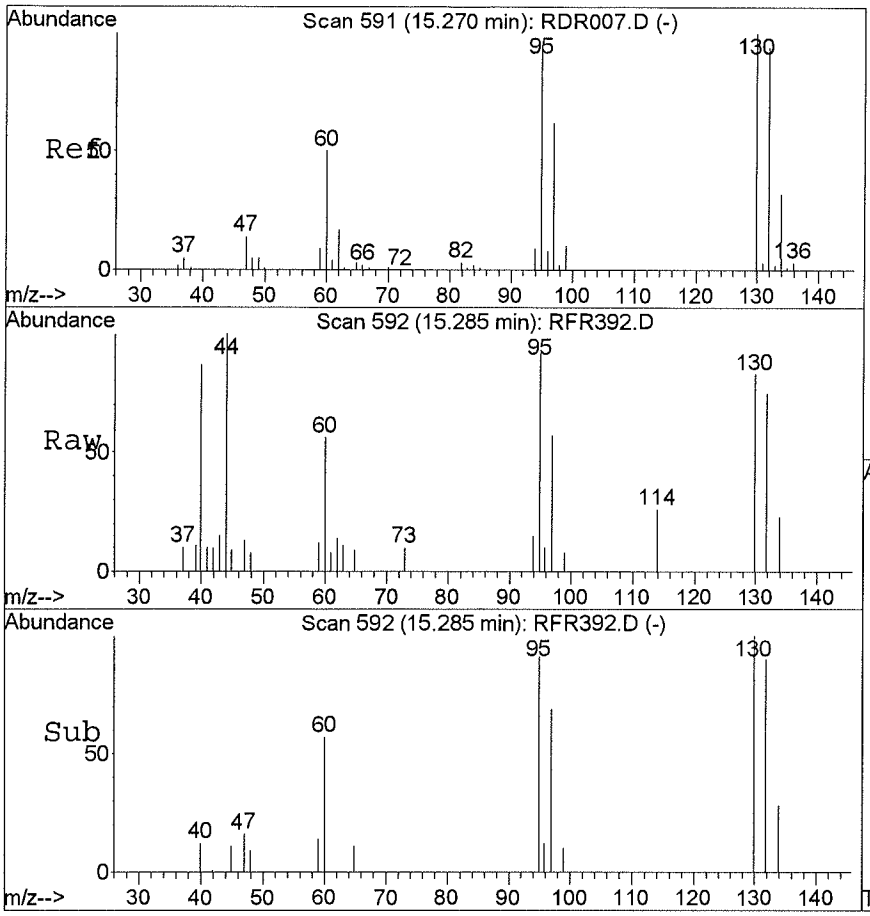


#35
1,1,1-Trichloroethane
Concen: 0.12 ug/l
RT: 13.63 min Scan# 496
Delta R.T. -0.00 min
Lab File: RFR392.D
Acq: 22 Jun 2020 3:03 pm

Tgt Ion: 97 Resp: 12952

Ion	Ratio	Lower	Upper
97	100		
99	62.7	34.3	94.3
61	65.4	27.7	87.7

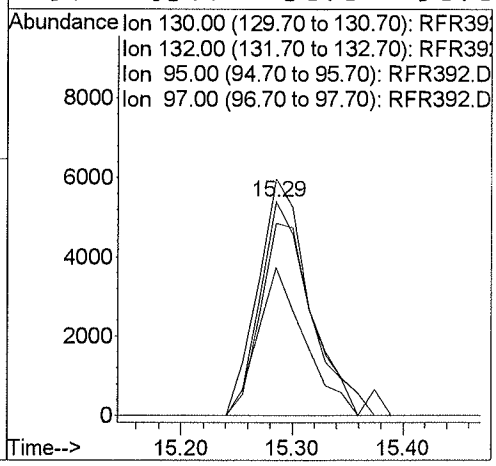


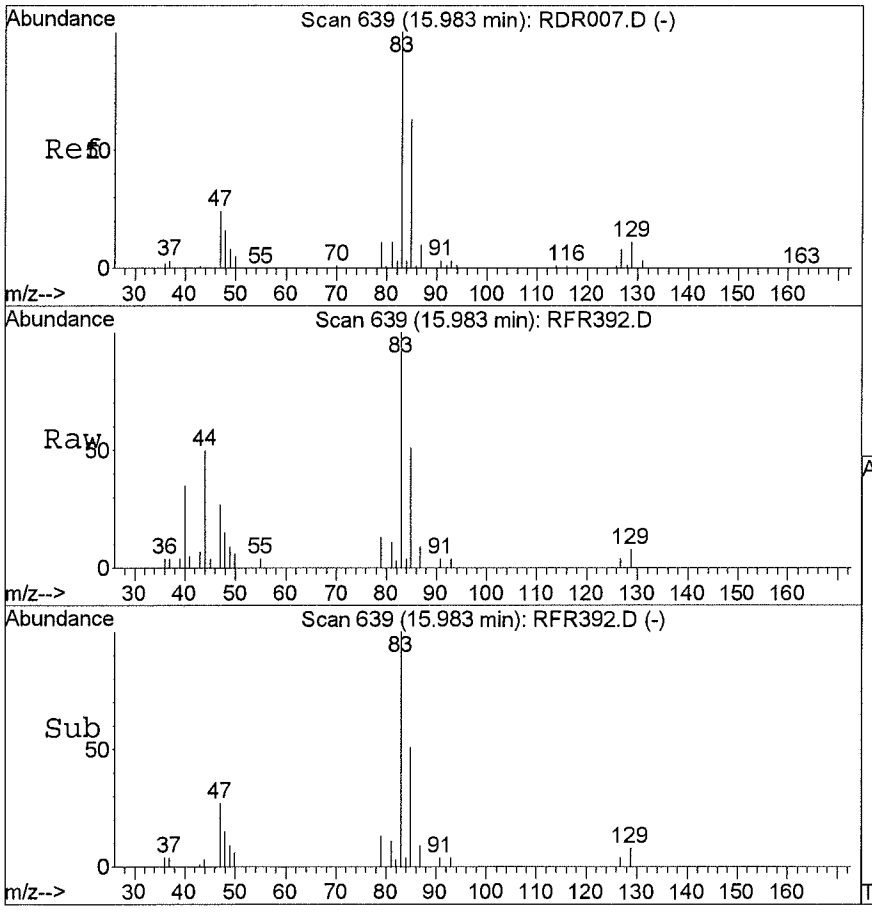


#45
Trichloroethene
Concen: 0.19 ug/l
RT: 15.29 min Scan# 592
Delta R.T. 0.02 min
Lab File: RFR392.D
Acq: 22 Jun 2020 3:03 pm

Tgt Ion:130 Resp: 17186

Ion	Ratio	Lower	Upper
130	100		
132	96.0	64.1	124.1
95	112.3	70.1	130.1
97	63.7	34.4	94.4

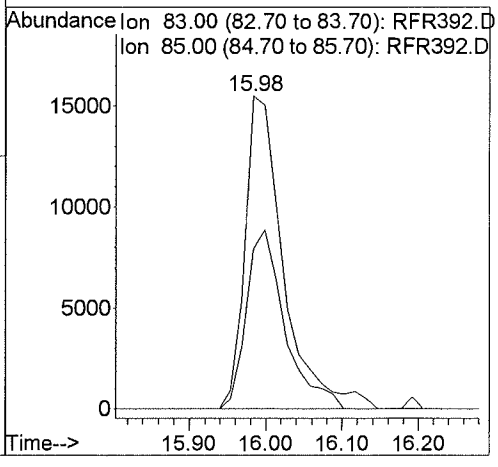


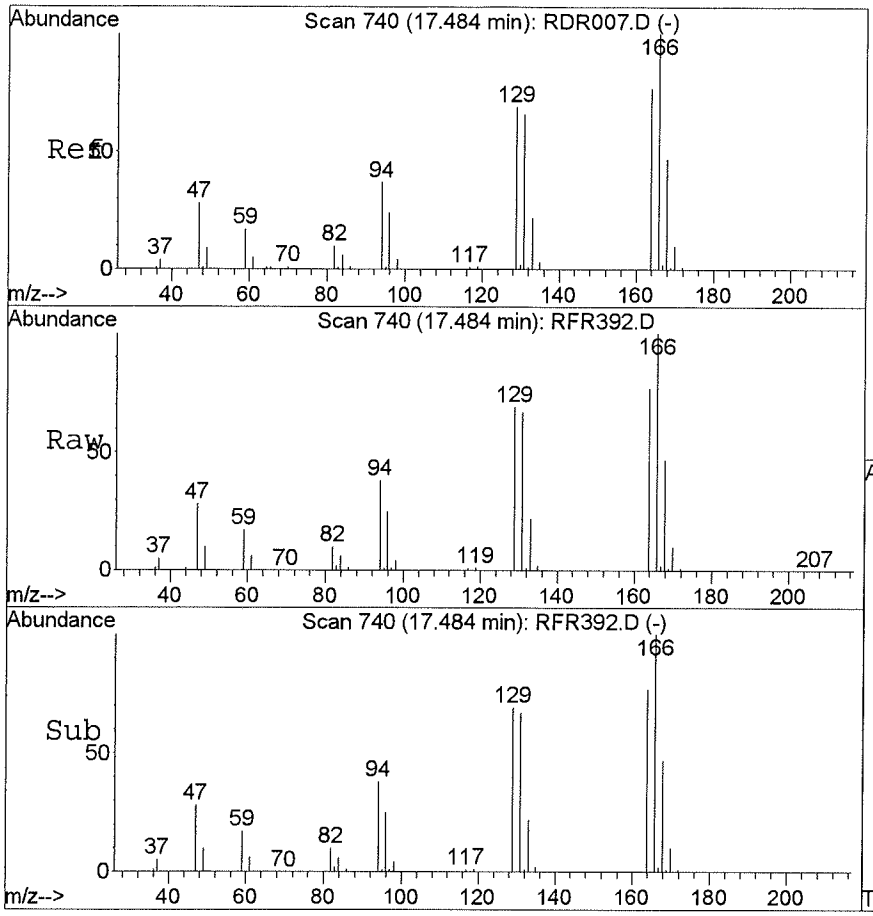


#50
Bromodichloromethane
Concen: 0.54 ug/l
RT: 15.98 min Scan# 639
Delta R.T. 0.00 min
Lab File: RFR392.D
Acq: 22 Jun 2020 3:03 pm

Tgt Ion: 83 Resp: 54317

Ion	Ratio	Lower	Upper
83	100		
85	57.3	33.6	93.6

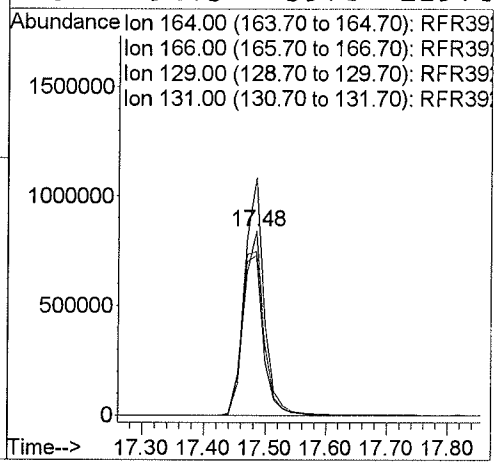




#60
Tetrachloroethene
Concen: 30.13 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR392.D
Acq: 22 Jun 2020 3:03 pm

Tgt Ion:164 Resp: 1893989

Ion	Ratio	Lower	Upper
164	100		
166	127.4	97.7	157.7
129	98.2	64.5	124.5
131	94.5	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 15:32 # 06/23/20 19:04
Sample ID: MW03RB-GW061820	Date Analyzed: 06/22/20 15:32 # 06/23/20 19:04
Lab Samp ID: F162-08 #F162-08I	Dilution Factor: 1 # 25
Lab File ID: RFR393 #RFR414	Matrix : WATER
Ext Btch ID: VOF3F17 #VOF3F18	% Moisture : NA
Calib. Ref.: RDR007 #RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.15J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.14J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.48J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	3.4	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	1.3	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
# TETRACHLOROETHENE	210	25	3.8
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	1.8	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.87	10.00	98.7	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	9.91	10.00	99.1	70-130
# 1,2-DICHLOROETHANE-D4	267	250.0	107	70-130
# BROMOFLUOROBENZENE	242	250.0	96.9	70-130
# TOLUENE-D8	234	250.0	93.5	70-130
# DIBROMOFLUOROMETHANE	257	250.0	103	70-130

Members of the Associated File

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 15:32
Sample ID	: MW03RB-GW061820	Date Analyzed:	06/22/20 15:32
Lab Samp ID	: F162-08	Dilution Factor:	1
Lab File ID	: RFR393	Matrix	: WATER
Ext Btch ID	: VOF3F17	% Moisture	: NA
Calib. Ref.	: RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.15J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.14J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.48J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	3.4	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	1.3	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	190E	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	1.8	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.87	10.00	98.7	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	9.91	10.00	99.1	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR393.D Vial: 16
Acq On : 22 Jun 2020 3:32 pm Operator: ENguye/ODinh
Sample : 20F162-08 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 11:01 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

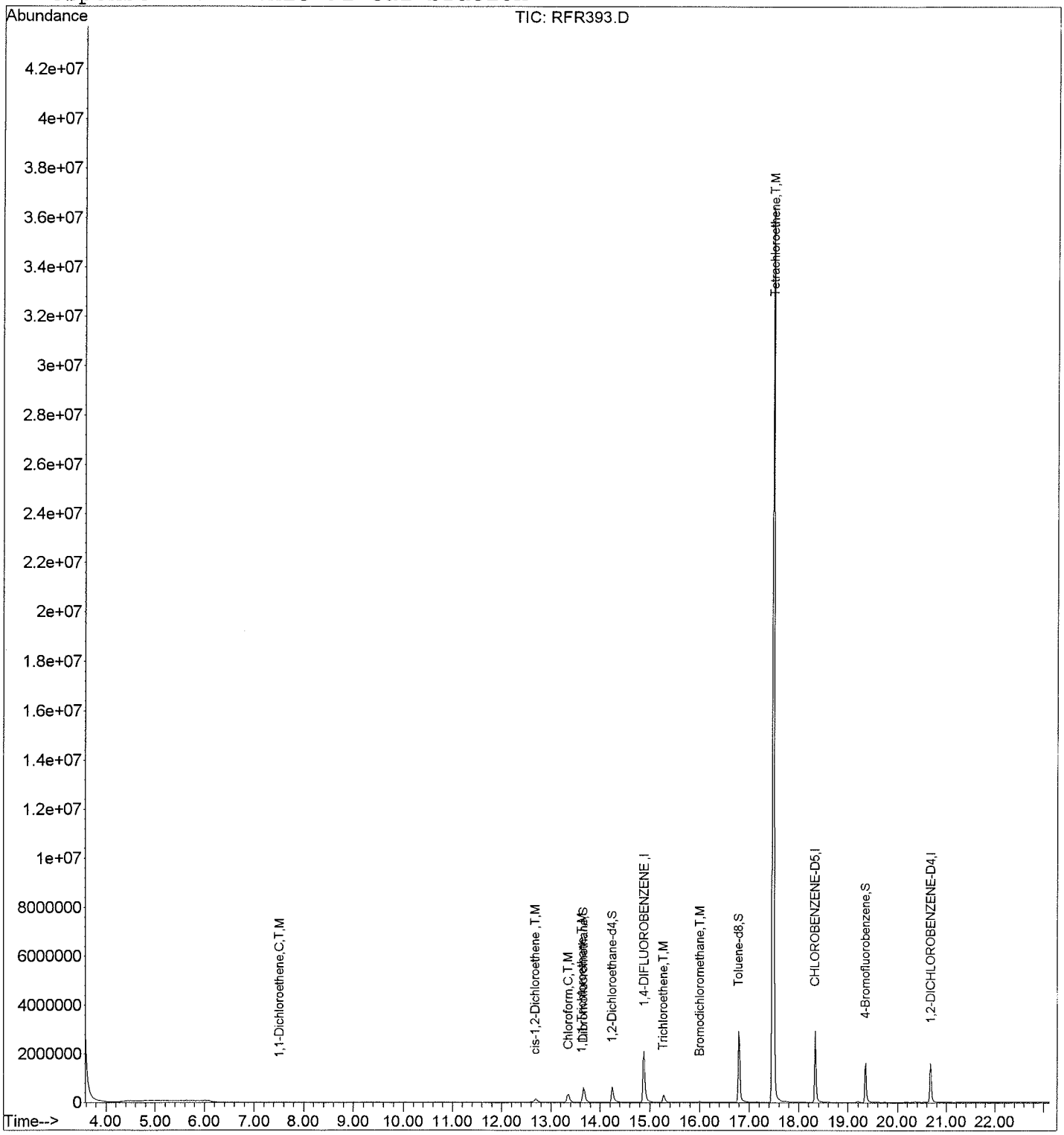
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2356948	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1791244	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	572312	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	827457	9.91	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.10%		
40) 1,2-Dichloroethane-d4	14.25	65	678095	9.87	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.70%		
55) Toluene-d8	16.79	98	2482913	10.01	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.10%		
75) 4-Bromofluorobenzene	19.36	95	788566	11.00	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.00%		
Target Compounds						Qvalue
13) 1,1-Dichloroethene	7.52	61	24639	0.14	ug/l	93
28) cis-1,2-Dichloroethene	12.69	96	121638	1.28	ug/l	99
33) Chloroform	13.36	83	548952	3.43	ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	14926	0.15	ug/l	92
45) Trichloroethene	15.27	130	154222	1.76	ug/l	97
50) Bromodichloromethane	16.00	83	46066	0.48	ug/l	99
60) Tetrachloroethene	17.48	164	11648981	190.75	ug/l E	98

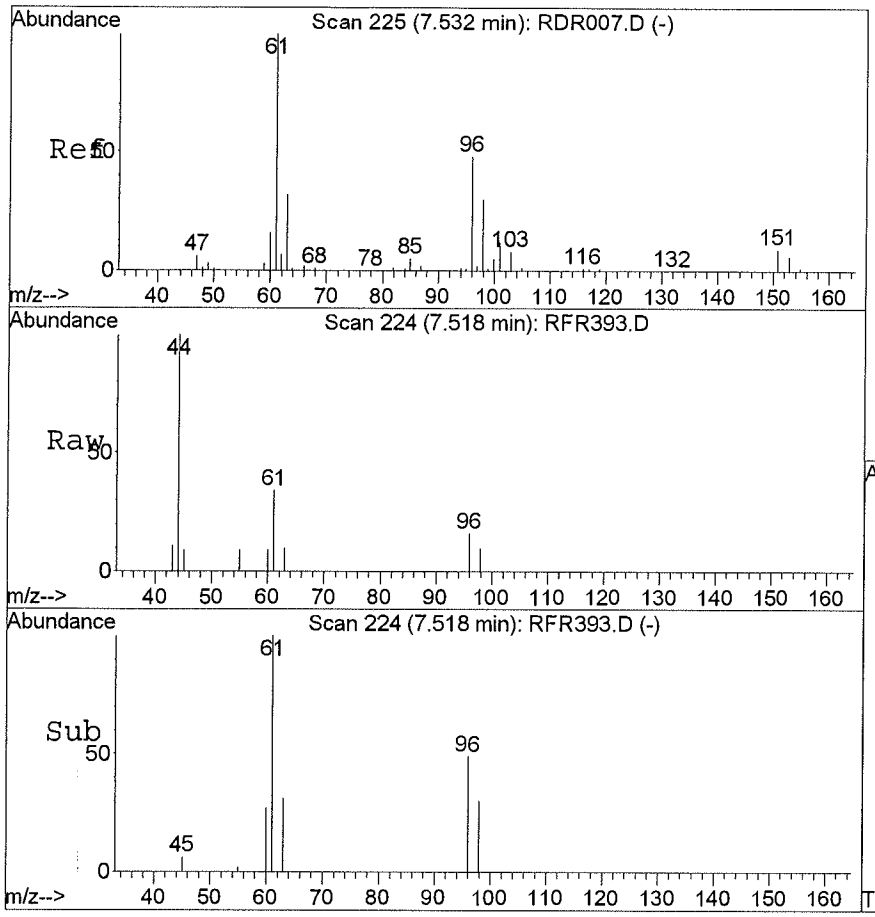
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR393.D Vial: 16
Acq On : 22 Jun 2020 3:32 pm Operator: ENguye/ODinh
Sample : 20F162-08 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 11:01 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

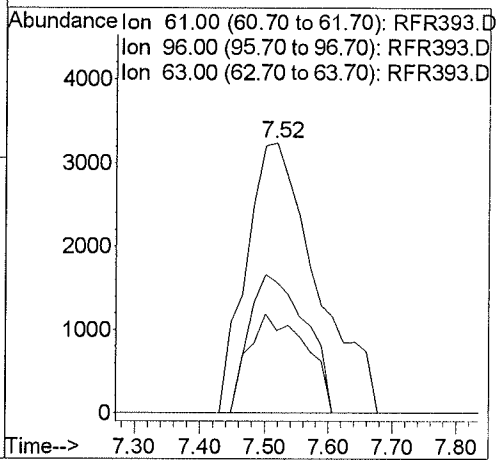


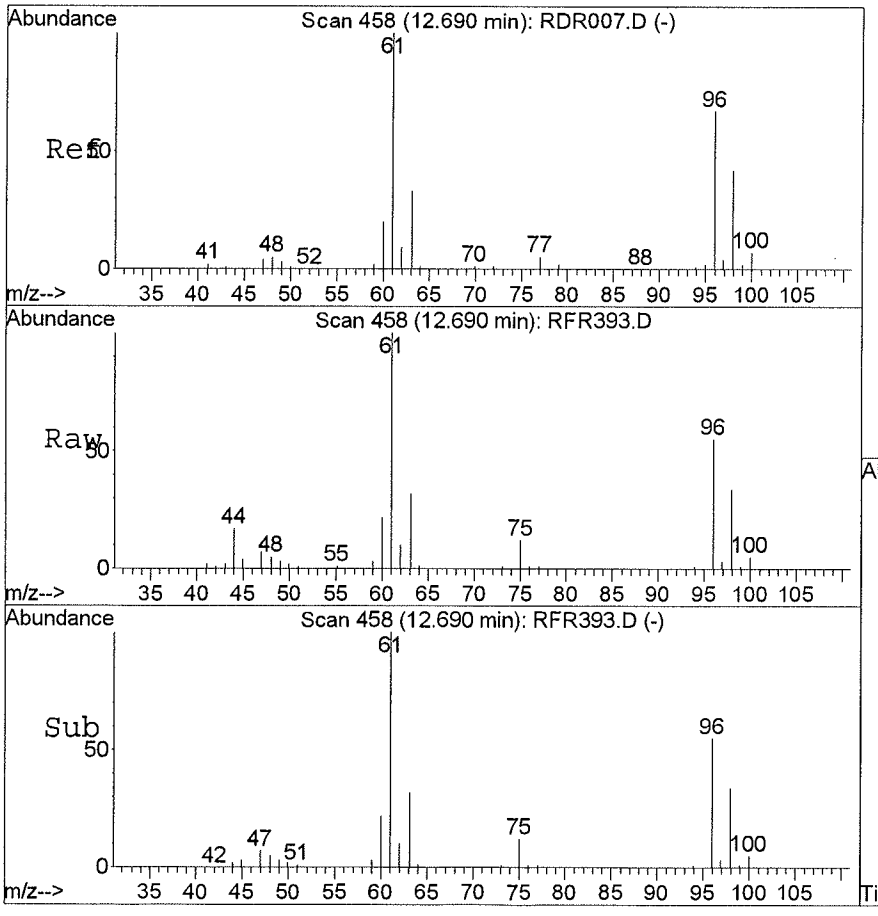


#13
1,1-Dichloroethene
Concen: 0.14 ug/l
RT: 7.52 min Scan# 224
Delta R.T. -0.01 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion: 61 Resp: 24639

Ion	Ratio	Lower	Upper
61	100		
96	41.5	18.2	78.2
63	30.2	2.4	62.4

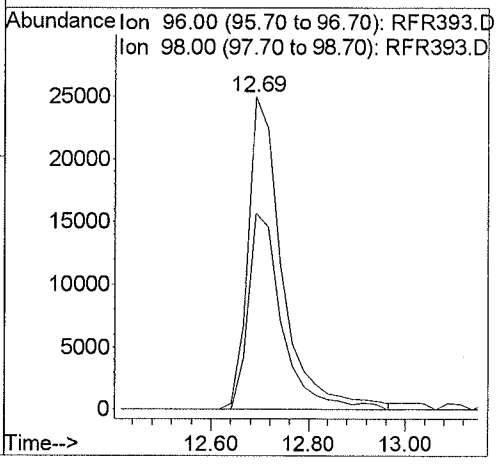


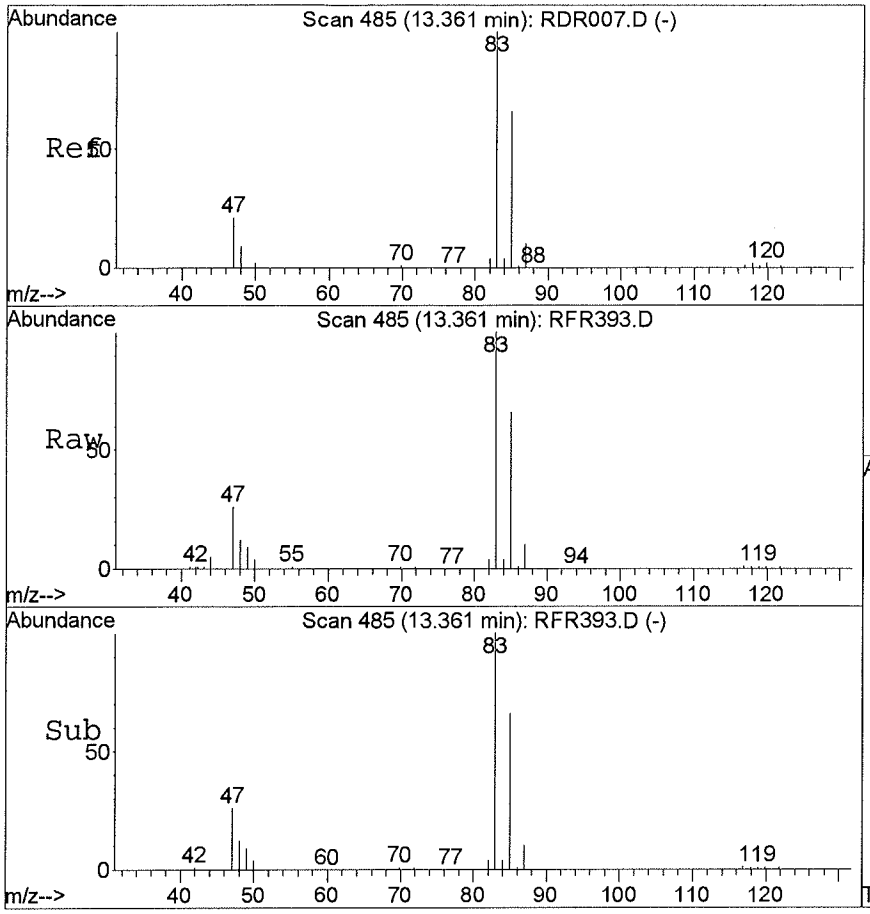


#28
cis-1,2-Dichloroethene
Concen: 1.28 ug/l
RT: 12.69 min Scan# 458
Delta R.T. -0.00 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion: 96 Resp: 121638

Ion	Ratio	Lower	Upper
96	100		
98	62.2	33.2	93.2

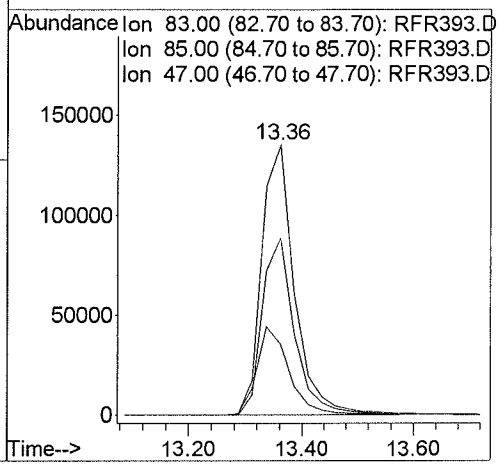


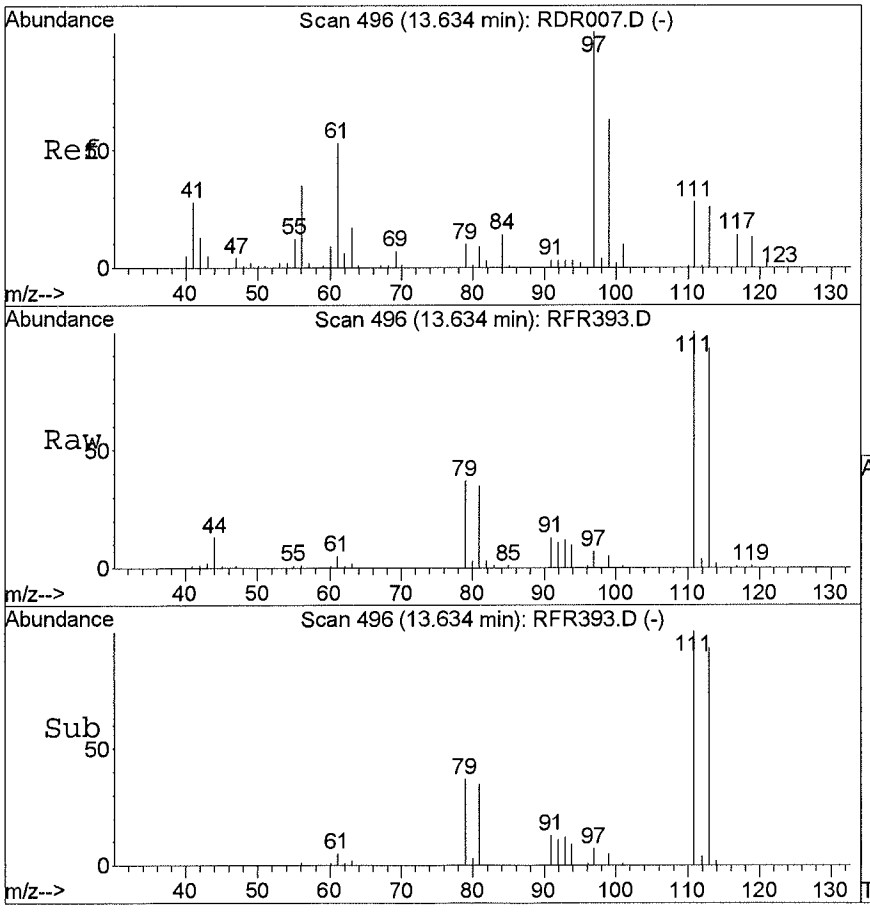


#33
Chloroform
Concen: 3.43 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion: 83 Resp: 548952

Ion	Ratio	Lower	Upper
83	100		
85	65.0	35.0	95.0
47	32.6	1.2	61.2

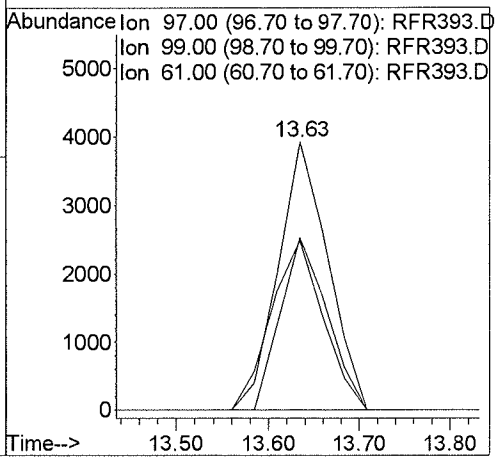


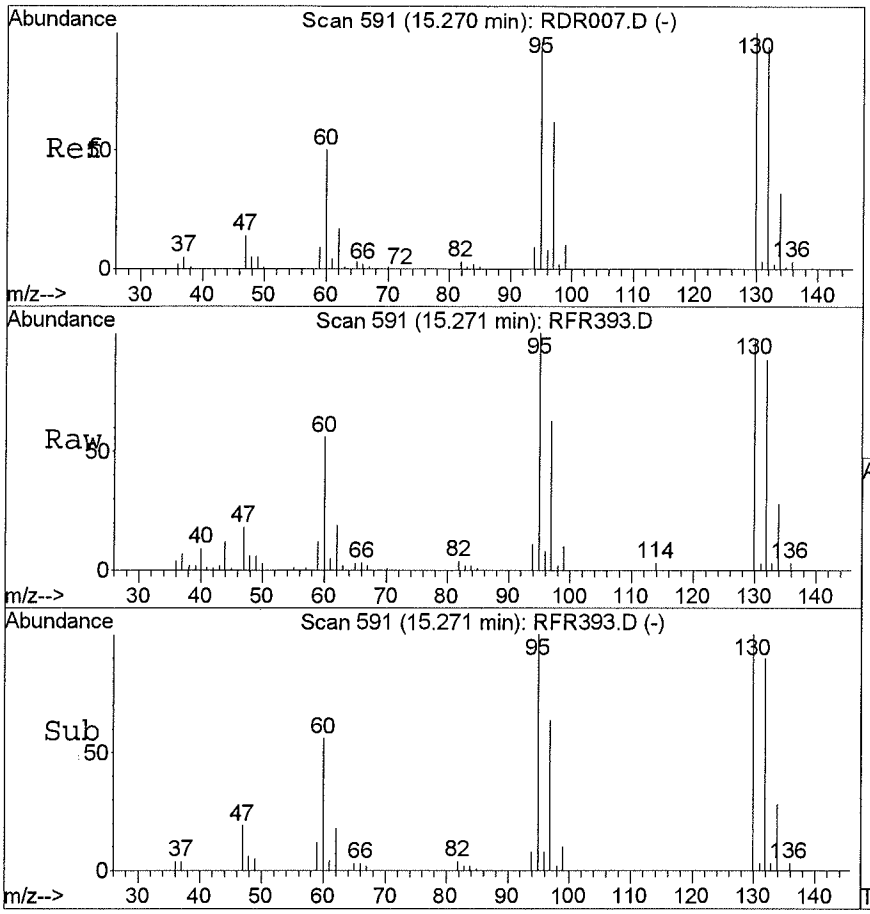


#35
1,1,1-Trichloroethane
Concen: 0.15 ug/l
RT: 13.63 min Scan# 496
Delta R.T. 0.00 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion: 97 Resp: 14926

Ion	Ratio	Lower	Upper
97	100		
99	60.7	34.3	94.3
61	66.6	27.7	87.7

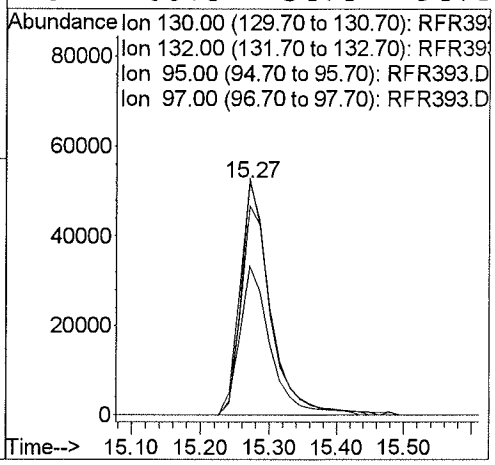


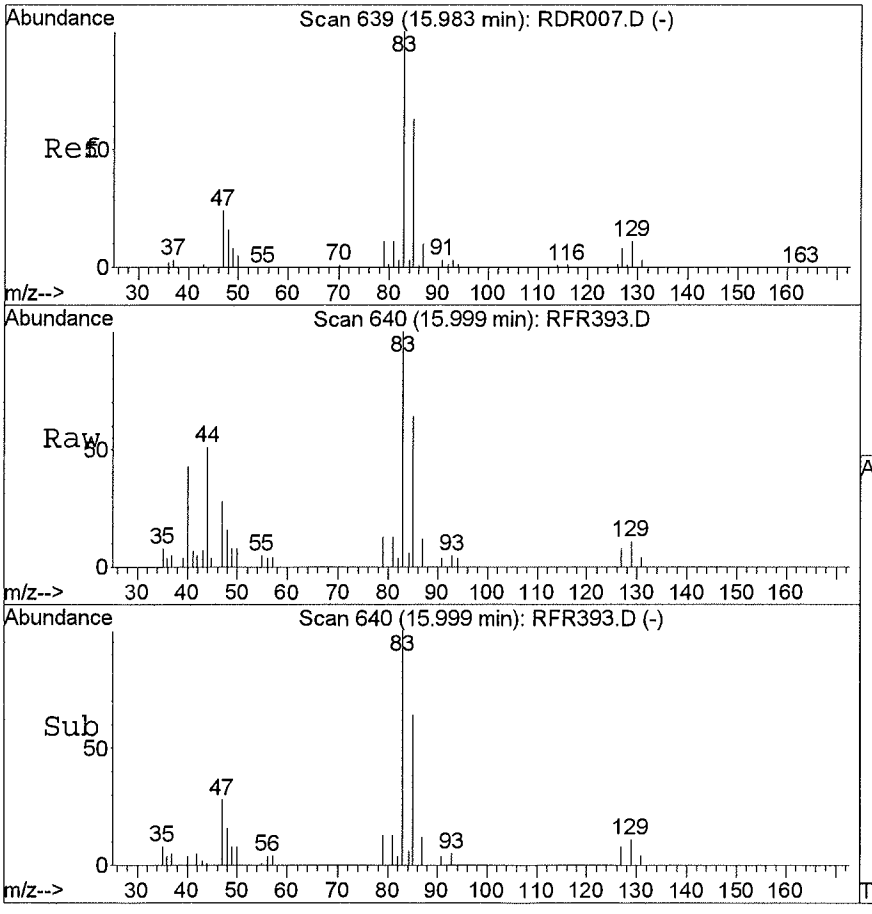


#45
Trichloroethene
Concen: 1.76 ug/l
RT: 15.27 min Scan# 591
Delta R.T. 0.00 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion:130 Resp: 154222

Ion	Ratio	Lower	Upper
130	100		
132	95.8	64.1	124.1
95	104.4	70.1	130.1
97	66.8	34.4	94.4

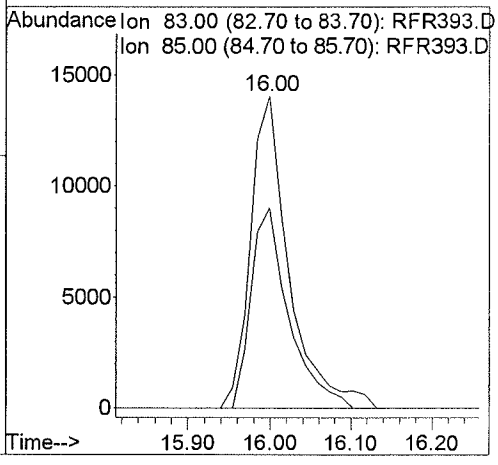


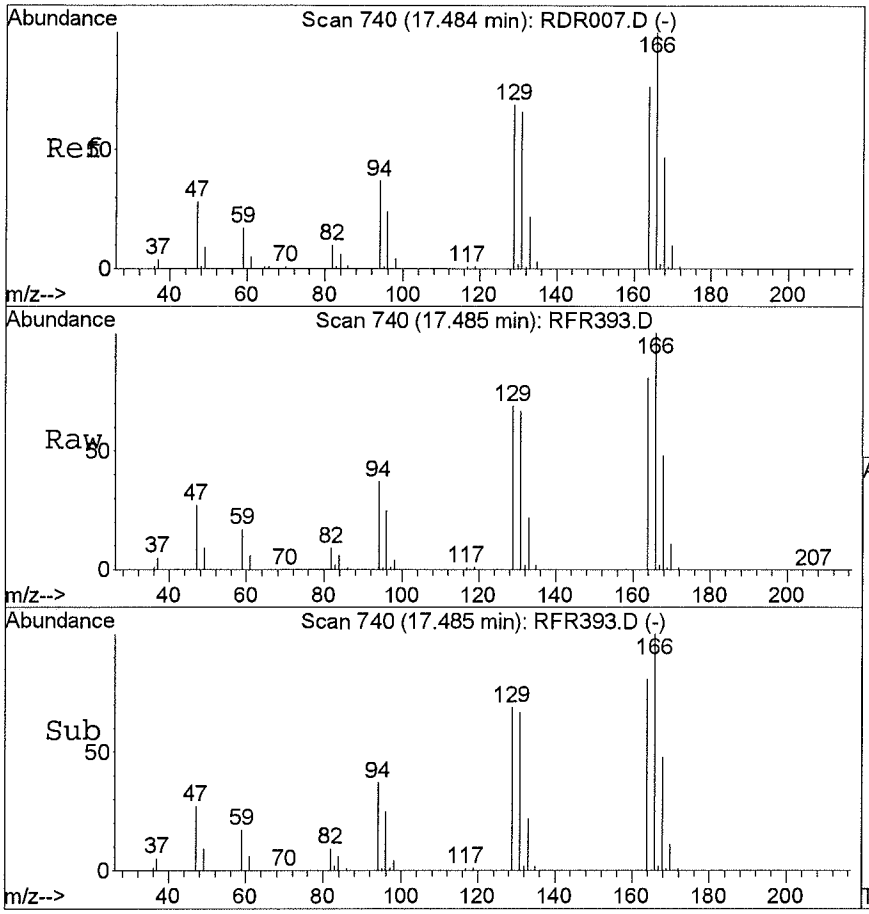


#50
Bromodichloromethane
Concen: 0.48 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.02 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion: 83 Resp: 46066

Ion	Ratio	Lower	Upper
83	100		
85	63.1	33.6	93.6

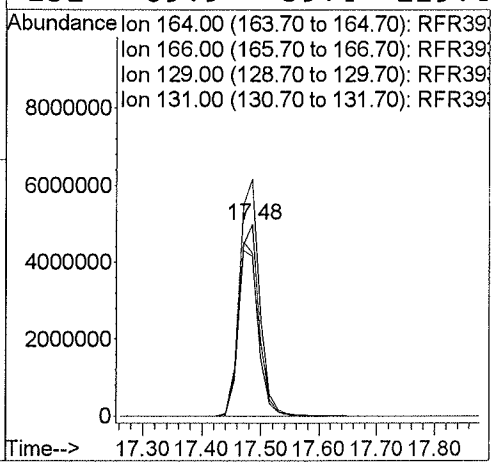




#60
Tetrachloroethene
Concen: 190.75 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR393.D
Acq: 22 Jun 2020 3:32 pm

Tgt Ion:164 Resp:11648981

Ion	Ratio	Lower	Upper
164	100		
166	124.8	97.7	157.7
129	93.2	64.5	124.5
131	89.9	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/23/20 19:04
Sample ID	: MW03RB-GW061820DL	Date Analyzed:	06/23/20 19:04
Lab Samp ID	: F162-08I	Dilution Factor:	25
Lab File ID	: RFR414	Matrix	: WATER
Ext Btch ID	: VOF3F18	% Moisture	: NA
Calib. Ref.	: RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	25	2.5
1,1,2,2-TETRACHLOROETHANE	ND	25	2.8
1,1,2-TRICHLOROETHANE	ND	25	2.5
1,1-DICHLOROETHANE	ND	25	2.5
1,1-DICHLOROETHENE	ND	25	2.5
1,2,3-TRICHLOROBENZENE	ND	25	3.8
1,2,4-TRICHLOROBENZENE	ND	25	3.8
1,2,4-TRIMETHYLBENZENE	ND	25	2.7
1,2-DIBROMO-3-CHLOROPROPANE	ND	50	6.2
1,2-DICHLOROBENZENE	ND	25	2.5
1,2-DICHLOROETHANE	ND	25	2.5
1,2-DICHLOROPROPANE	ND	25	2.5
1,3,5-TRIMETHYLBENZENE	ND	25	3.1
1,3-DICHLOROBENZENE	ND	25	2.7
1,4-DICHLOROBENZENE	ND	25	2.5
2-BUTANONE	ND	500	62
2-HEXANONE	ND	500	62
ACETONE	ND	500	62
BENZENE	ND	25	2.5
BROMOCHLOROMETHANE	ND	25	2.8
BROMODICHLOROMETHANE	ND	25	2.5
BROMOFORM	ND	25	3.8
BROMOMETHANE	ND	25	4.1
CARBON DISULFIDE	ND	25	6.2
CARBON TETRACHLORIDE	ND	25	2.5
CHLOROBENZENE	ND	25	2.5
CHLOROETHANE	ND	25	6.7
CHLOROFORM	4.2J	25	2.5
CHLOROMETHANE	ND	25	3.8
CIS-1,2-DICHLOROETHYLENE	ND	25	2.5
DIBROMOCHLOROMETHANE	ND	25	2.5
DICHLORODIFLUOROMETHANE	ND	25	3.8
ETHYLBENZENE	ND	25	2.5
ISOPROPYLBENZENE	ND	25	2.5
M,P-XYLENE	ND	50	5.3
4-METHYL-2-PENTANONE	ND	500	62
METHYLENE CHLORIDE	ND	50	12
TERT-BUTYL METHYL ETHER	ND	25	3.3
O-XYLENE	ND	25	2.5
STYRENE	ND	25	6.2
TETRACHLOROETHENE	210	25	3.8
TOLUENE	ND	25	2.5
TRANS-1,2-DCE	ND	25	2.5
CIS-1,3-DICHLOROPROPENE	ND	25	2.5
TRANS-1,3-DICHLOROPROPENE	ND	25	2.8
TCE	ND	25	2.5
TRICHLOROFLUOROMETHANE	ND	25	3.8
VINYL CHLORIDE	ND	25	2.9
1,2-DIBROMOETHANE	ND	25	2.6
VINYL ACETATE	ND	50	6.2
TRICHLOROTRIFLUOROETHANE	ND	25	3.8
METHYL ACETATE	ND	50	6.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	267	250.0	107	70-130
BROMOFLUOROBENZENE	242	250.0	96.9	70-130
TOLUENE-D8	234	250.0	93.5	70-130
DIBROMOFLUOROMETHANE	257	250.0	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR414.D Vial: 10
Acq On : 23 Jun 2020 7:04 pm Operator: ENguye/ODinh
Sample : 20F162-08I 1ml Inst : F3
Misc : DF = 25 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 9:18 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1425772	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1148058	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	404095	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	518129	10.26	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.60%		
40) 1,2-Dichloroethane-d4	14.24	65	444232	10.69	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.90%		
55) Toluene-d8	16.80	98	1485609	9.35	ug/l	0.02
Spiked Amount 10.000			Recovery =	93.50%		
75) 4-Bromofluorobenzene	19.36	95	490681	9.69	ug/l	0.00
Spiked Amount 10.000			Recovery =	96.90%		
Target Compounds						Qvalue
33) Chloroform	13.36	83	16196	0.17	ug/l	94
60) Tetrachloroethene	17.48	164	331919	8.48	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFR414.D VOF3D02.M Wed Jun 24 09:18:24 2020 Page 1

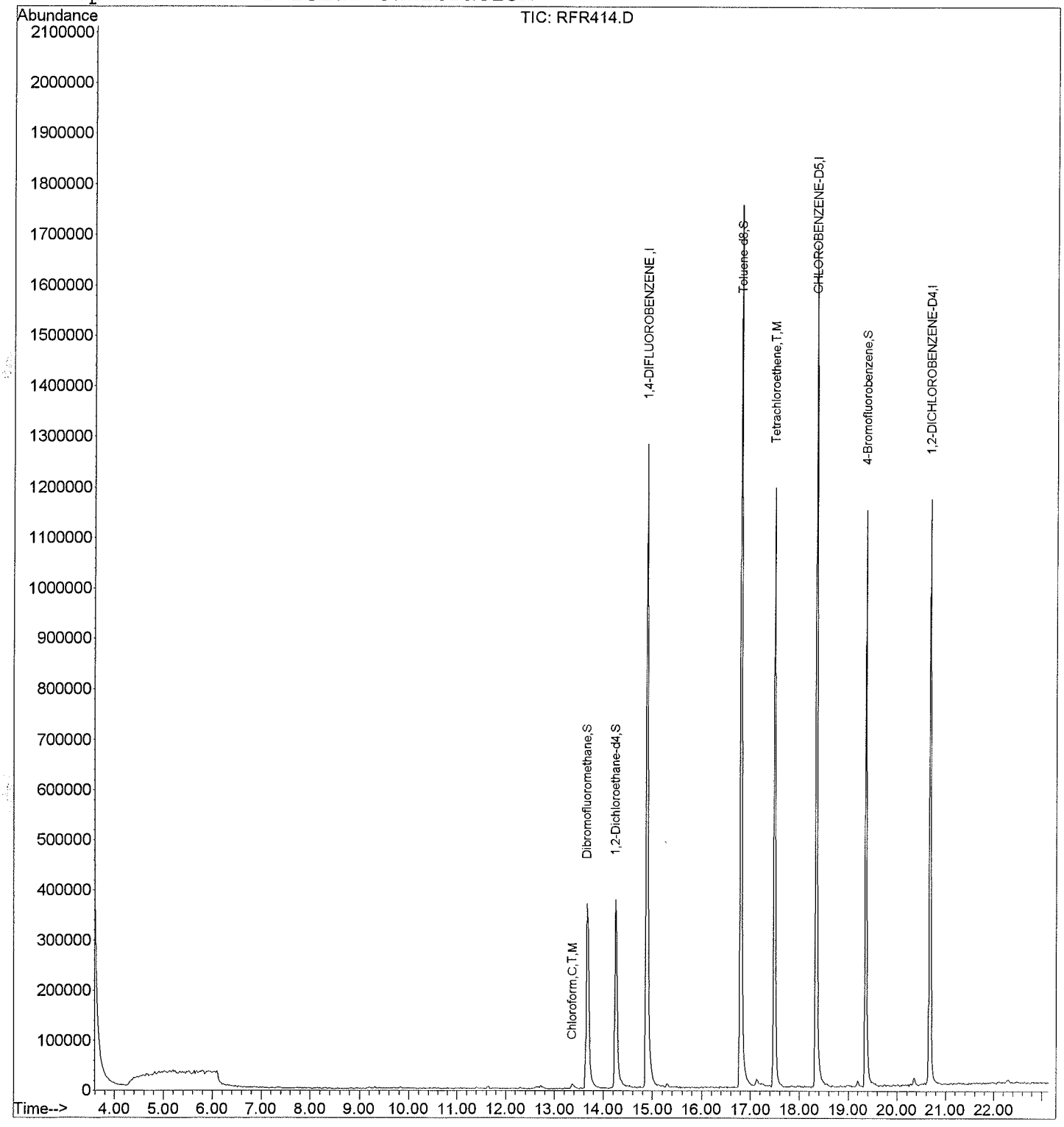
Quantitation Report

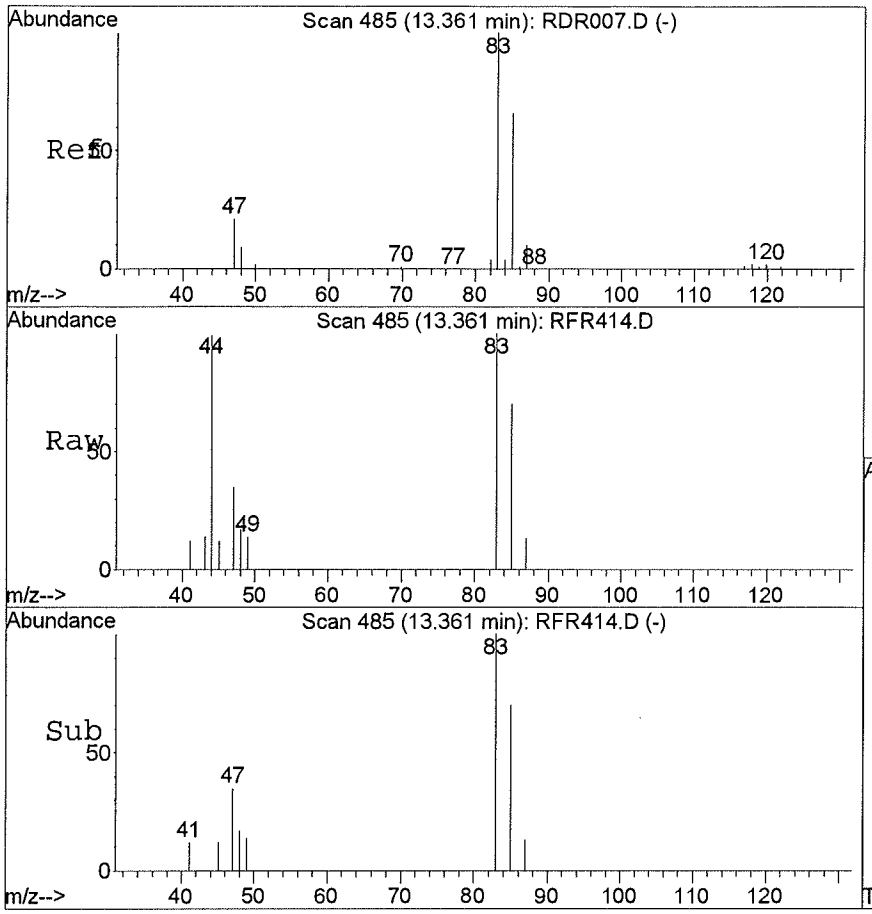
Data File : C:\HPCHEM\1\DATA\20F23\RFR414.D
Acq On : 23 Jun 2020 7:04 pm
Sample : 20F162-08I 1ml
Misc : DF = 25
MS Integration Params: RTE.P
Quant Time: Jun 24 9:18 2020

Vial: 10
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

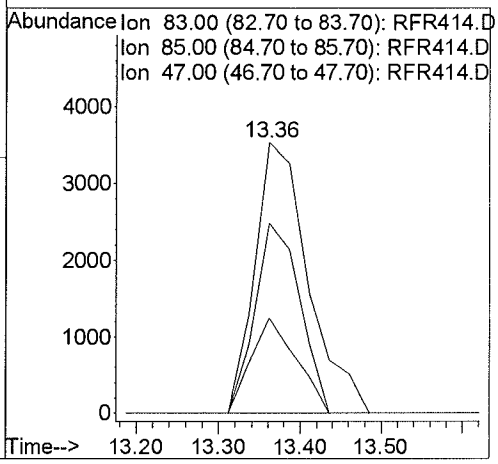


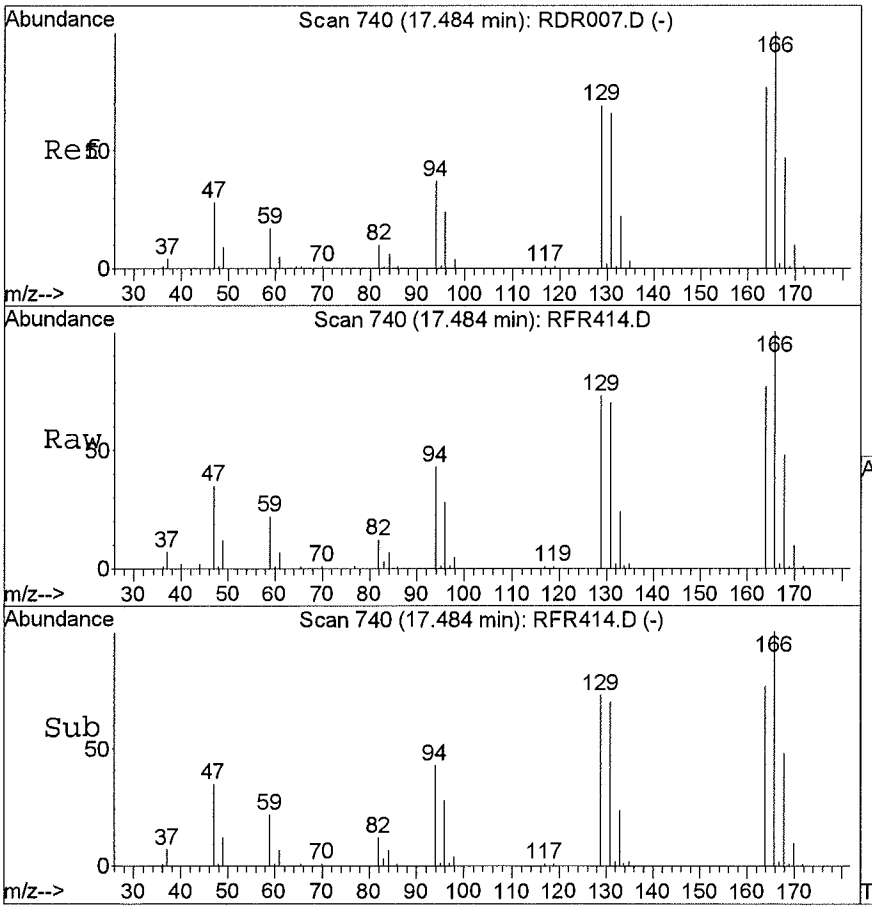


#33
Chloroform
Concen: 0.17 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR414.D
Acq: 23 Jun 2020 7:04 pm

Tgt Ion: 83 Resp: 16196

Ion	Ratio	Lower	Upper
83	100		
85	59.2	35.0	95.0
47	29.8	1.2	61.2

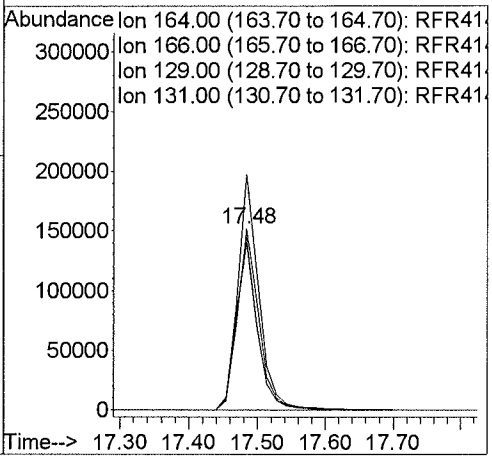




#60
Tetrachloroethene
Concen: 8.48 ug/l
RT: 17.48 min Scan# 740
Delta R.T. -0.00 min
Lab File: RFR414.D
Acq: 23 Jun 2020 7:04 pm

Tgt Ion:164 Resp: 331919

Ion	Ratio	Lower	Upper
164	100		
166	128.4	97.7	157.7
129	93.9	64.5	124.5
131	91.0	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 12:09
Sample ID: TB07-GW061820	Date Analyzed: 06/22/20 12:09
Lab Samp ID: F162-09	Dilution Factor: 1
Lab File ID: RFR386	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.68	10.00	96.8	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	9.88	10.00	98.8	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR386.D Vial: 9
Acq On : 22 Jun 2020 12:09 pm Operator: ENguye/ODinh
Sample : 20F162-09 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:55 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2515408	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1866769	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	626876	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	879896	9.88	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.80%		
40) 1,2-Dichloroethane-d4	14.25	65	709667	9.68	ug/l	0.00
Spiked Amount 10.000			Recovery =	96.80%		
55) Toluene-d8	16.79	98	2624432	10.15	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.50%		
75) 4-Bromofluorobenzene	19.34	95	847408	10.79	ug/l	-0.01
Spiked Amount 10.000			Recovery =	107.90%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR386.D VOF3D02.M Tue Jun 23 09:55:30 2020 Page 1

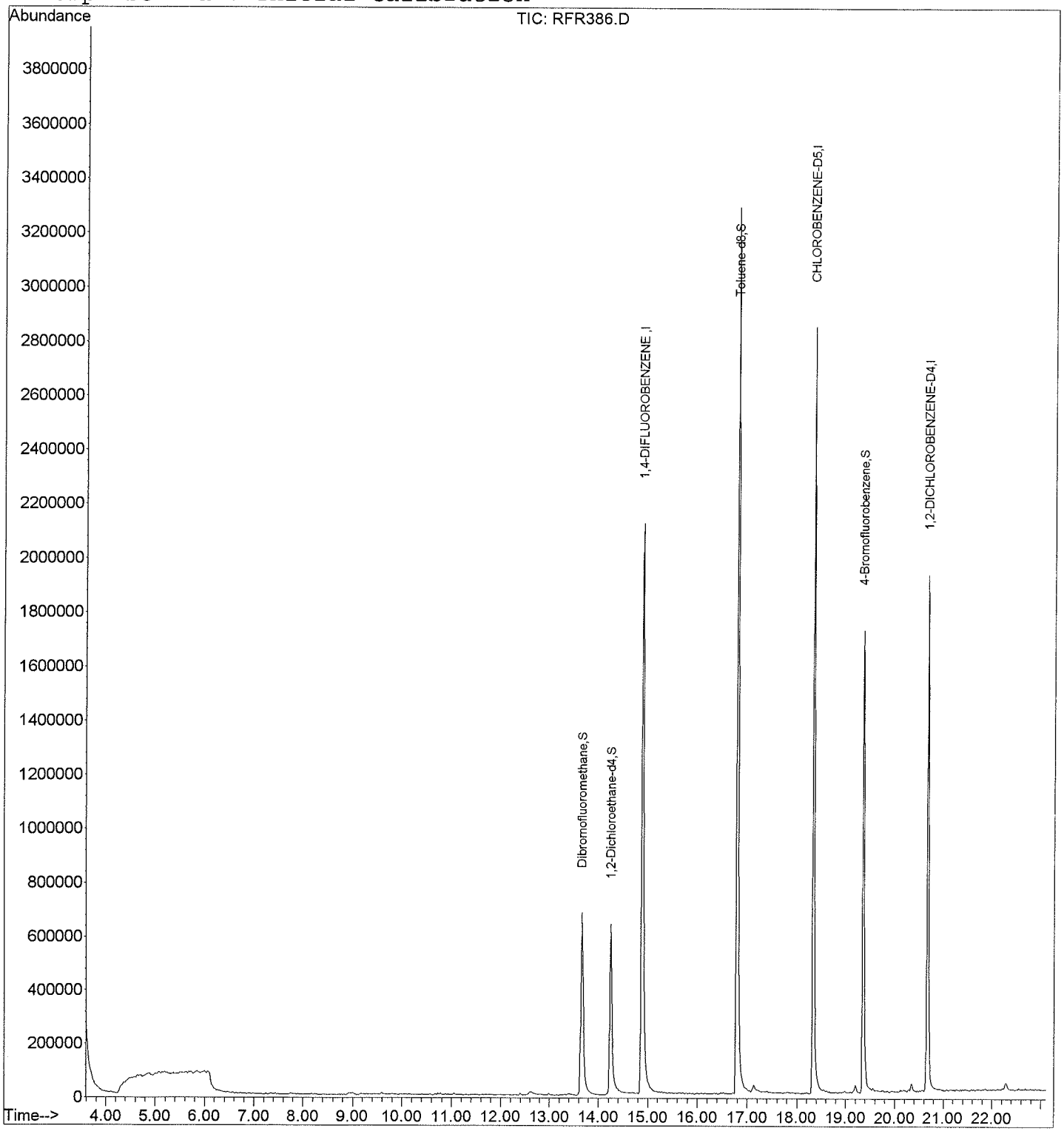
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR386.D
Acq On : 22 Jun 2020 12:09 pm
Sample : 20F162-09 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 9:55 2020

Vial: 9
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 16:00
Sample ID: MW03RC-GW061820	Date Analyzed: 06/22/20 16:00
Lab Samp ID: F162-10	Dilution Factor: 1
Lab File ID: RFR394	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.19J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.4	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	6.4	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR394.D Vial: 17
Acq On : 22 Jun 2020 4:00 pm Operator: ENguye/ODinh
Sample : 20F162-10 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 11:03 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2305725	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1805569	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	561156	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	839507	10.28	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.80%			
40) 1,2-Dichloroethane-d4	14.24	65	710142	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.60%			
55) Toluene-d8	16.79	98	2510335	10.04	ug/l	0.00
Spiked Amount 10.000			Recovery = 100.40%			
75) 4-Bromofluorobenzene	19.36	95	753581	10.72	ug/l	0.00
Spiked Amount 10.000			Recovery = 107.20%			
Target Compounds						Qvalue
33) Chloroform	13.36	83	218128	1.39	ug/l	98
50) Bromodichloromethane	16.00	83	18331	0.19	ug/l	96
60) Tetrachloroethene	17.48	164	396830	6.45	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFR394.D VOF3D02.M Tue Jun 23 11:03:20 2020 Page 1

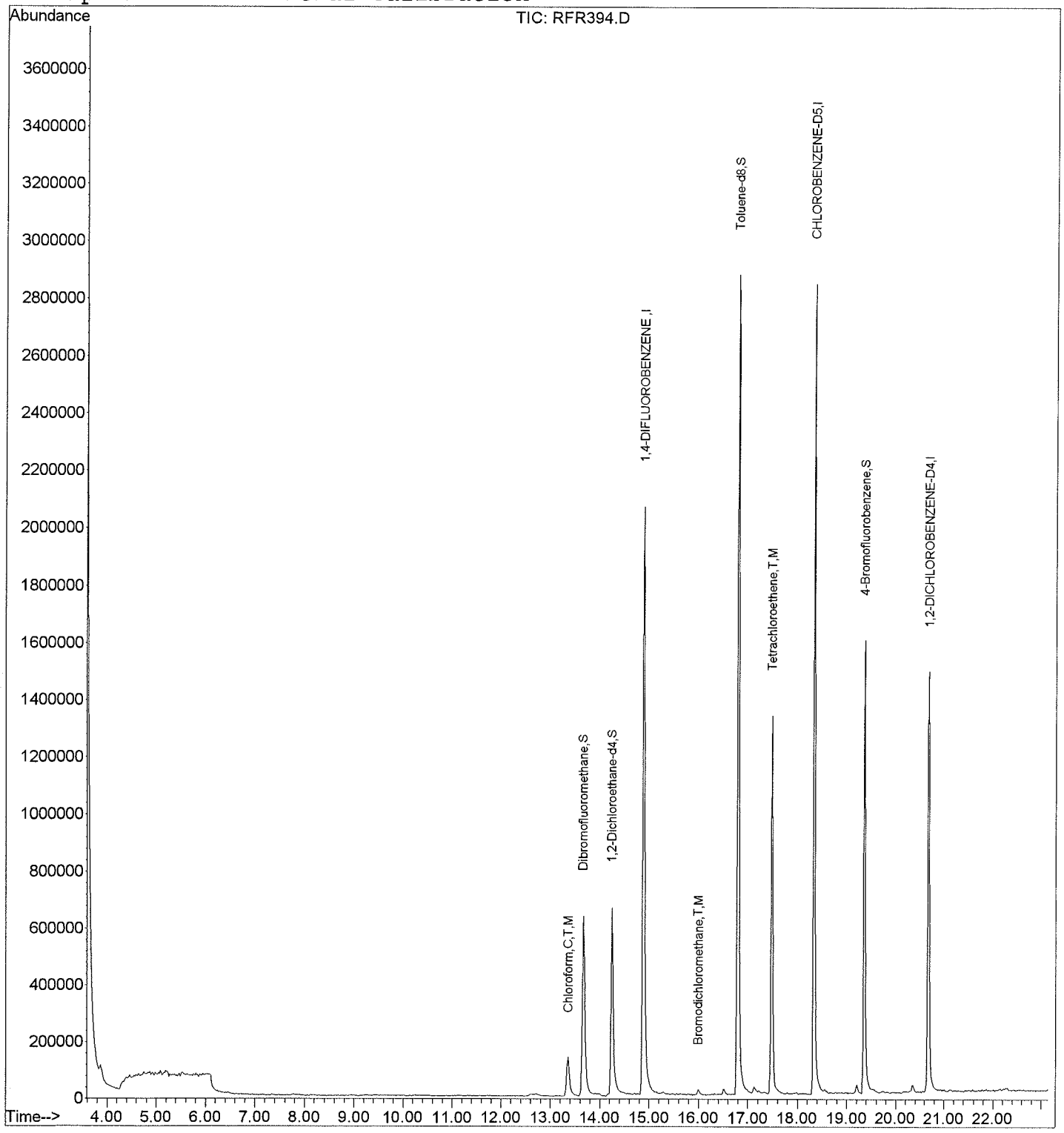
Quantitation Report

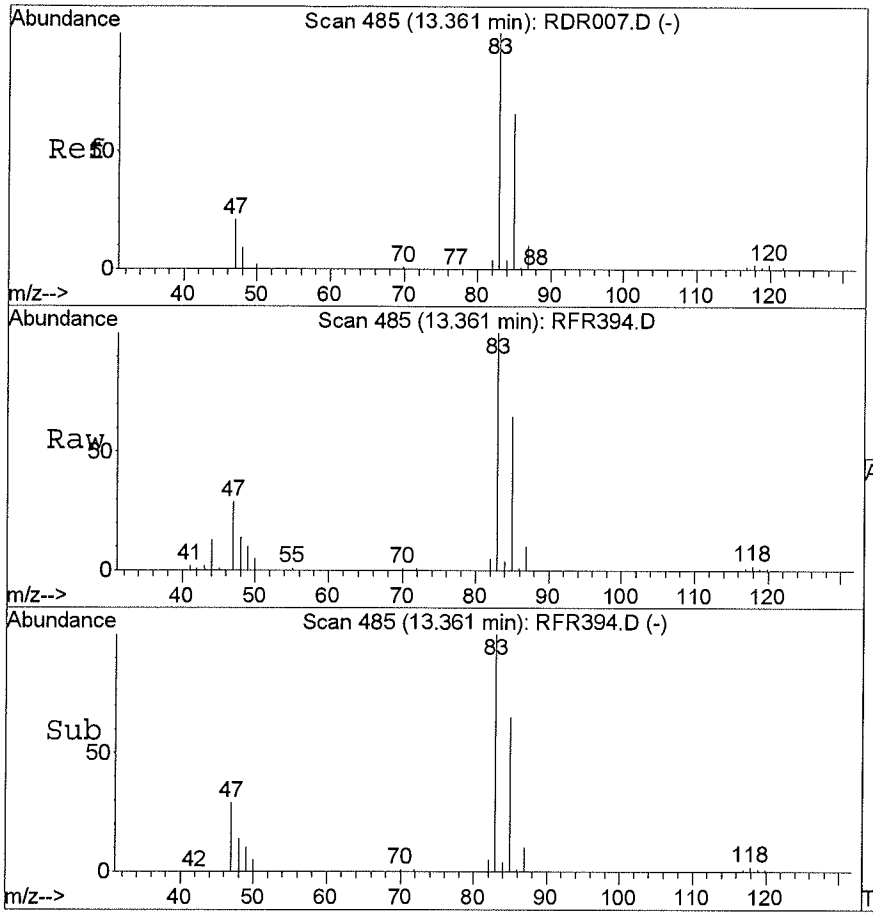
Data File : C:\HPCHEM\1\DATA\20F22\RFR394.D
Acq On : 22 Jun 2020 4:00 pm
Sample : 20F162-10 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 11:03 2020

Vial: 17
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

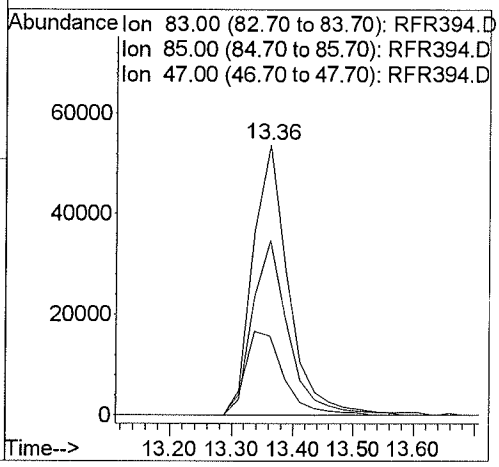


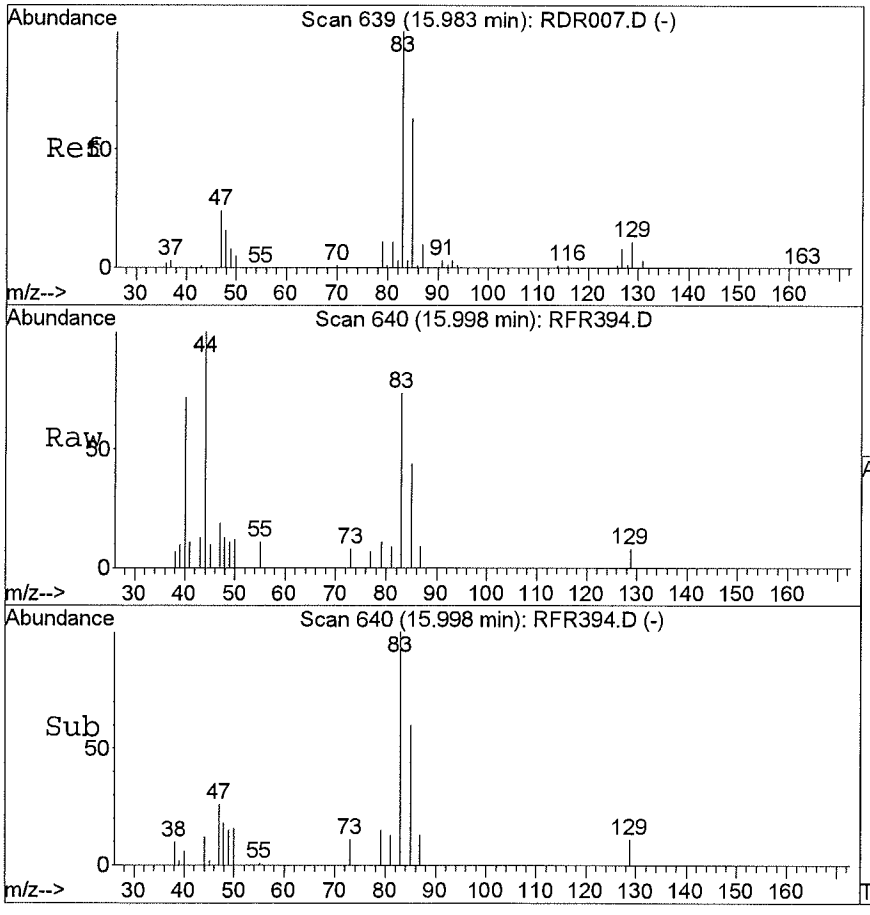


#33
Chloroform
Concen: 1.39 ug/l
RT: 13.36 min Scan# 485
Delta R.T. 0.00 min
Lab File: RFR394.D
Acq: 22 Jun 2020 4:00 pm

Tgt Ion: 83 Resp: 218128

Ion	Ratio	Lower	Upper
83	100		
85	65.4	35.0	95.0
47	33.9	1.2	61.2

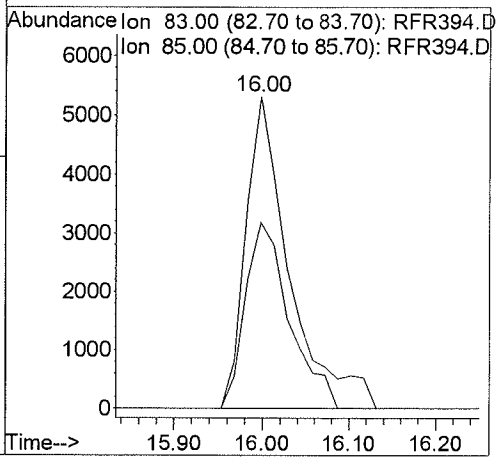


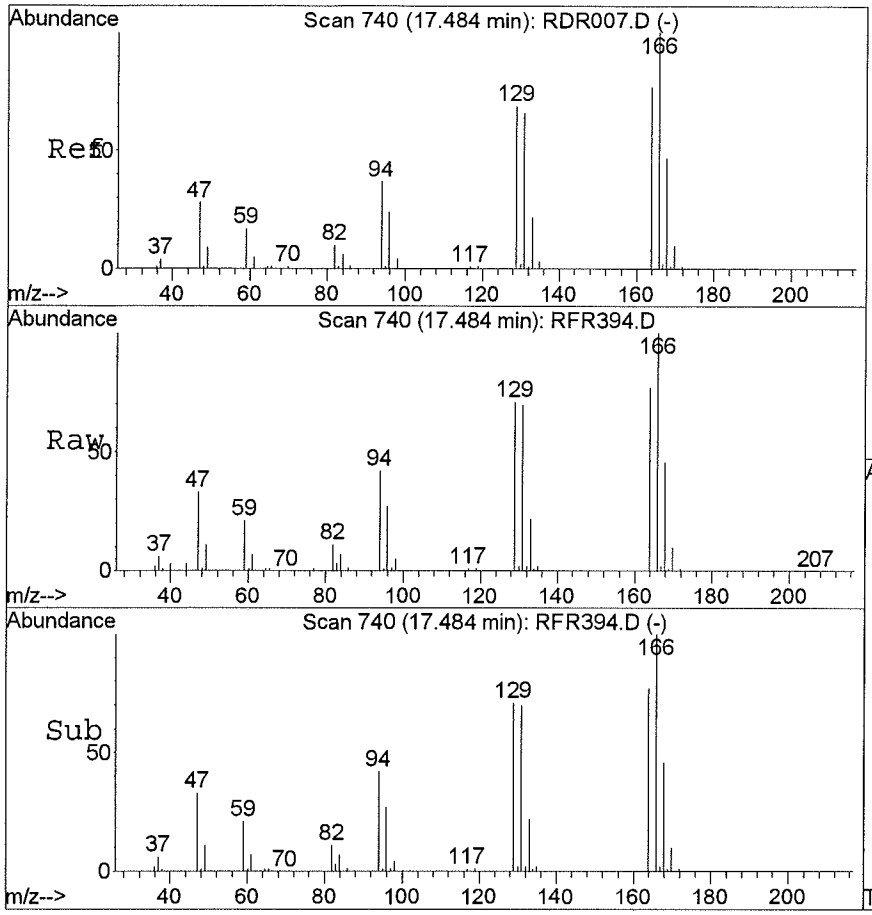


#50
Bromodichloromethane
Concen: 0.19 ug/l
RT: 16.00 min Scan# 640
Delta R.T. 0.01 min
Lab File: RFR394.D
Acq: 22 Jun 2020 4:00 pm

Tgt Ion: 83 Resp: 18331

Ion	Ratio	Lower	Upper
83	100		
85	60.5	33.6	93.6

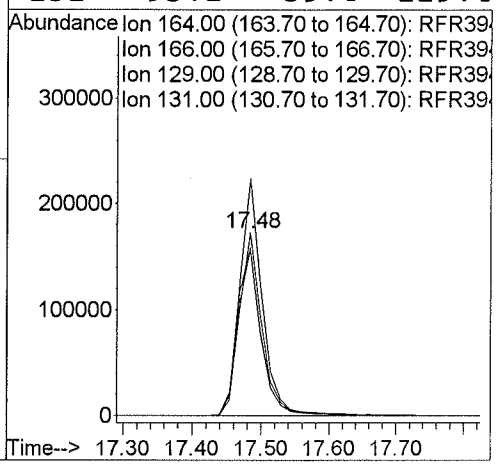




#60
Tetrachloroethene
Concen: 6.45 ug/l
RT: 17.48 min Scan# 740
Delta R.T. 0.00 min
Lab File: RFR394.D
Acq: 22 Jun 2020 4:00 pm

Tgt Ion:164 Resp: 396830

Ion	Ratio	Lower	Upper
164	100		
166	129.1	97.7	157.7
129	97.6	64.5	124.5
131	93.1	59.4	119.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 16:29
Sample ID:	MW03RD-GW061820	Date Analyzed:	06/22/20 16:29
Lab Samp ID:	F162-11	Dilution Factor:	1
Lab File ID:	RFR395	Matrix	: WATER
Ext Btch ID:	VOF3F17	% Moisture	: NA
Calib. Ref.:	RDR007	Instrument ID	: F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	0.11J	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.96	10.00	99.6	70-130
BROMOFLUOROBENZENE	11.2	10.00	112	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR395.D Vial: 18
Acq On : 22 Jun 2020 4:29 pm Operator: ENguye/ODinh
Sample : 20F162-11 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 11:05 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

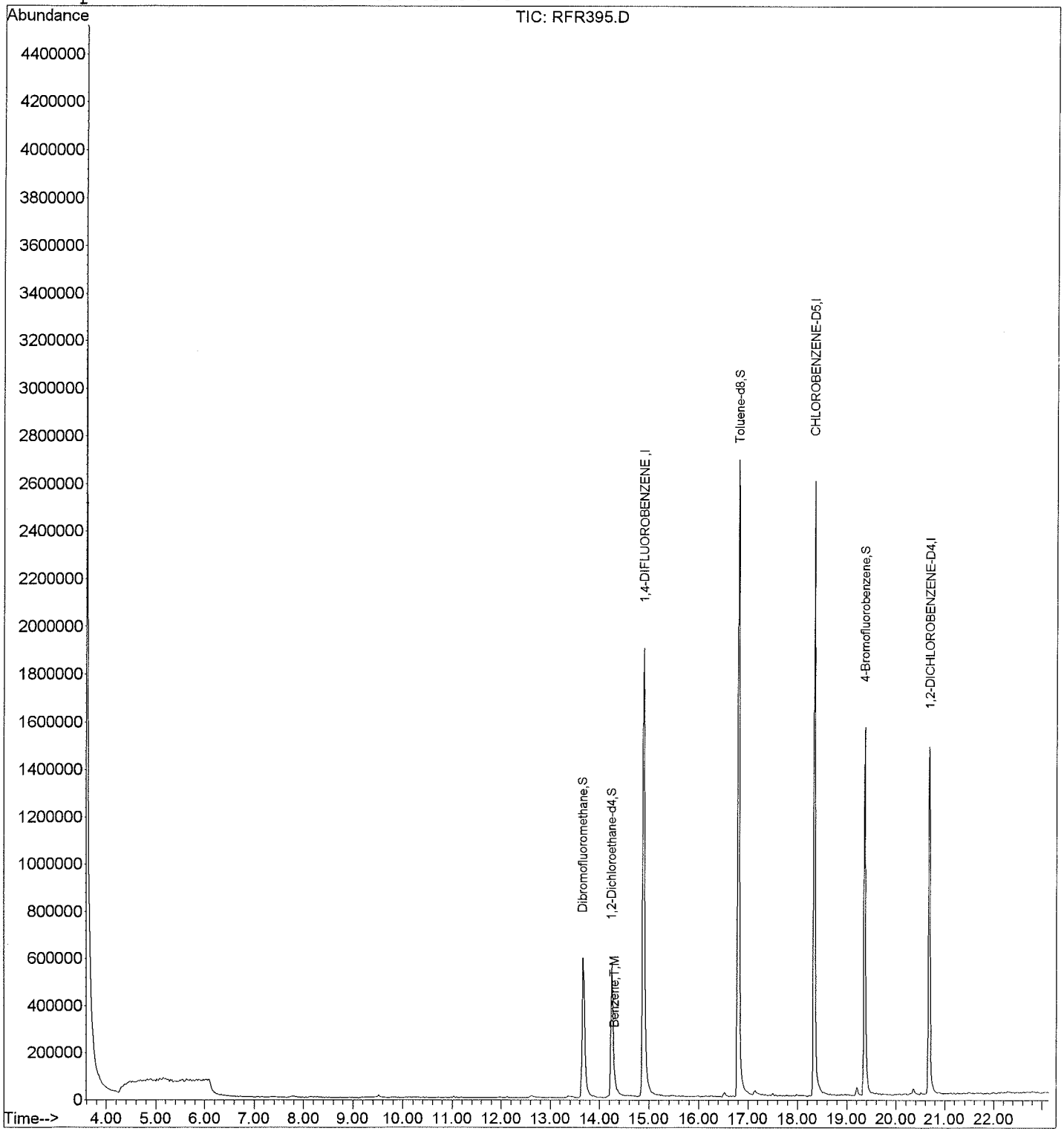
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2219347	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1675661	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	548212	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	821235	10.45	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.50%			
40) 1,2-Dichloroethane-d4	14.25	65	644647	9.96	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.60%			
55) Toluene-d8	16.80	98	2376129	10.24	ug/l	0.02
Spiked Amount 10.000			Recovery = 102.40%			
75) 4-Bromofluorobenzene	19.36	95	767383	11.17	ug/l	0.00
Spiked Amount 10.000			Recovery = 111.70%			
Target Compounds						Qvalue
42) Benzene	14.31	78	33883	0.11	ug/l	80

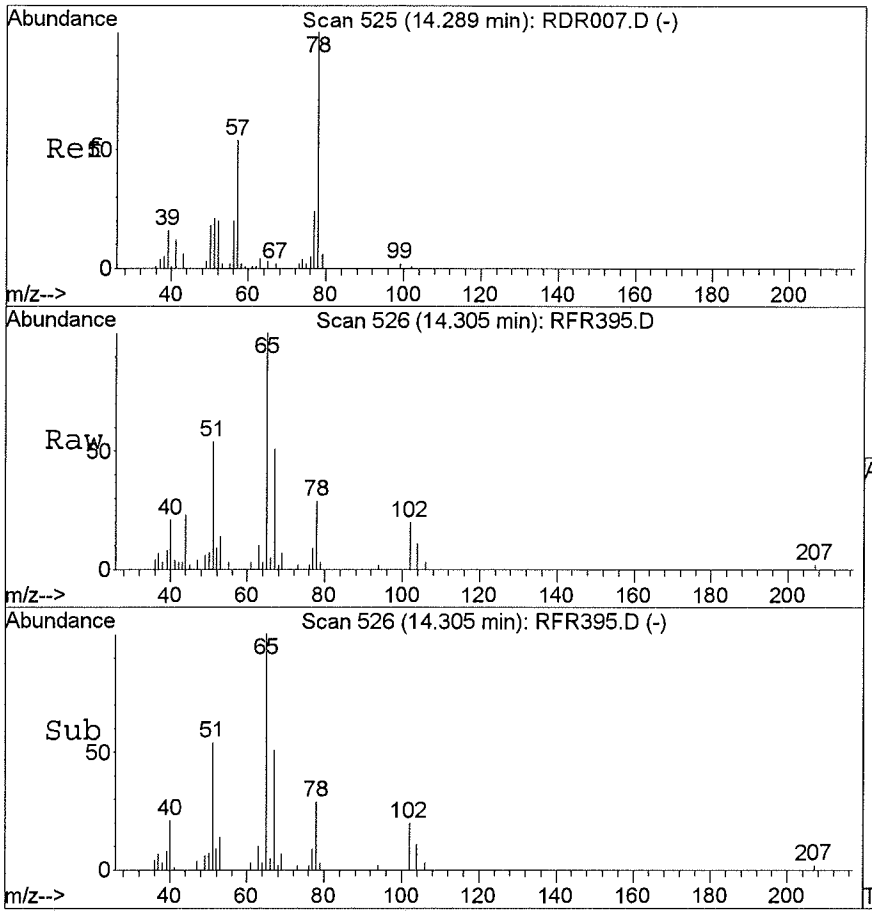
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR395.D Vial: 18
Acq On : 22 Jun 2020 4:29 pm Operator: ENguye/ODinh
Sample : 20F162-11 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 11:05 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration

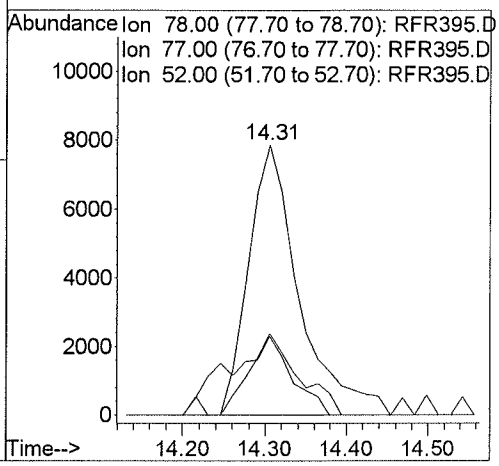




#42
Benzene
Concen: 0.11 ug/l
RT: 14.31 min Scan# 526
Delta R.T. 0.02 min
Lab File: RFR395.D
Acq: 22 Jun 2020 4:29 pm

Tgt Ion: 78 Resp: 33883

Ion	Ratio	Lower	Upper
78	100		
77	29.3	0.0	54.4
52	35.9	0.0	50.6



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 12:38
Sample ID: TB08-GW061820	Date Analyzed: 06/22/20 12:38
Lab Samp ID: F162-12	Dilution Factor: 1
Lab File ID: RFR387	Matrix : WATER
Ext Btch ID: VOF3F17	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.64	10.00	96.4	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	9.92	10.00	99.2	70-130

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR387.D
Acq On : 22 Jun 2020 12:38 pm
Sample : 20F162-12 25ml
Misc : DF = 1
MS Integration Params: RTE.P
Quant Time: Jun 23 9:57 2020

Vial: 10
Operator: ENguye/ODinh
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

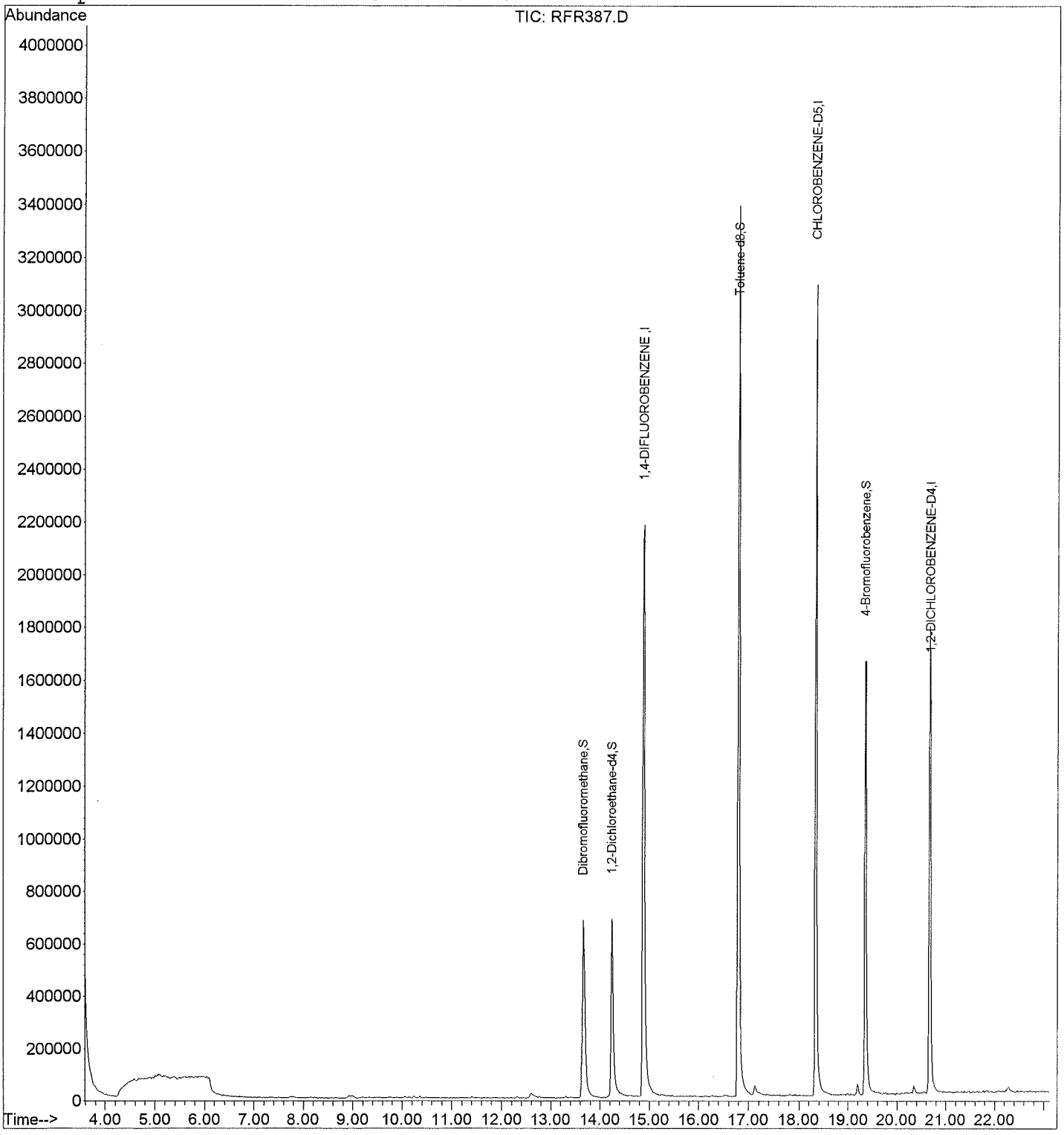
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2578216	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1935481	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	640618	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	905883	9.92	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.20%			
40) 1,2-Dichloroethane-d4	14.25	65	724358	9.64	ug/l	0.00
Spiked Amount 10.000			Recovery = 96.40%			
55) Toluene-d8	16.79	98	2725330	10.17	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.70%			
75) 4-Bromofluorobenzene	19.34	95	849834	10.59	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.90%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR387.D Vial: 10
Acq On : 22 Jun 2020 12:38 pm Operator: ENguye/ODinh
Sample : 20F162-12 25ml Inst : F3
Misc : DF = 1 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:57 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/22/20
Batch No.	: 20F162	Date Extracted:	06/22/20 10:41
Sample ID:	MBLK1W	Date Analyzed:	06/22/20 10:41
Lab Samp ID:	VOF3F17B	Dilution Factor:	1
Lab File ID:	RFR383	Matrix :	WATER
Ext Btch ID:	VOF3F17	% Moisture :	NA
Calib. Ref.:	RDR007	Instrument ID :	F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.71	10.00	97.1	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.93	10.00	99.3	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VOF3F17B VOF3F17L VOF3F17C
LAB FILE ID: RFR383 RFR380 RFR381
DATE EXTRACTED: 06/22/2010:41 06/22/2009:13 06/22/2009:42 DATE COLLECTED: NA
DATE ANALYZED: 06/22/2010:41 06/22/2009:13 06/22/2009:42 DATE RECEIVED: 06/22/20
PREP. BATCH: VOF3F17 VOF3F17 VOF3F17
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.5	105	10.0	10.1	101	3	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.3	103	10.0	10.4	104	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	9.96	100	10.0	10.2	102	2	80-119	20
1,1-Dichloroethane	ND	10.0	10.1	101	10.0	10.5	105	3	77-125	20
1,1-Dichloroethene	ND	10.0	9.83	98	10.0	9.85	98	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.17	92	10.0	9.60	96	5	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.26	93	10.0	9.40	94	2	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	10.0	100	10.0	10.4	104	3	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.1	101	10.0	10.5	105	4	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.79	98	10.0	10.1	101	3	80-119	20
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	9.95	99	4	73-128	20
1,2-Dichloropropane	ND	10.0	10.5	105	10.0	10.2	102	2	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.3	103	10.0	10.1	101	1	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.90	99	10.0	10.3	103	4	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.94	99	10.0	9.72	97	2	79-118	20
2-Butanone	ND	50.0	43.6	87	50.0	44.9	90	3	56-143	20
2-Hexanone	ND	50.0	40.3	81	50.0	42.9	86	6	57-139	20
Acetone	ND	50.0	40.9	82	50.0	41.9	84	3	39-160	20
Benzene	ND	10.0	10.4	104	10.0	10.4	104	0	79-120	20
Bromochloromethane	ND	10.0	9.78	98	10.0	9.92	99	1	78-120	20
Bromodichloromethane	ND	10.0	10.8	108	10.0	10.8	108	0	79-125	20
Bromoform	ND	10.0	11.5	115	10.0	11.3	113	2	66-130	20
Bromomethane	ND	10.0	8.67	87	10.0	8.54	85	2	53-141	20
Carbon Disulfide	ND	10.0	10.9	109	10.0	10.8	108	1	64-133	20
Carbon Tetrachloride	ND	10.0	11.2	112	10.0	10.9	109	2	72-136	20
Chlorobenzene	ND	10.0	10.0	100	10.0	10.5	105	5	82-118	20
Chloroethane	ND	10.0	9.08	91	10.0	9.00	90	1	60-138	20
Chloroform	ND	10.0	10.3	103	10.0	9.81	98	5	79-124	20
Chloromethane	ND	10.0	10.9	109	10.0	10.7	107	2	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	9.95	100	10.0	9.71	97	3	78-123	20
Dibromochloromethane	ND	10.0	10.8	108	10.0	11.2	112	4	74-126	20
Dichlorodifluoromethane	ND	10.0	9.32	93	10.0	9.06	91	3	32-152	20
Ethylbenzene	ND	10.0	10.1	101	10.0	10.6	106	5	79-121	20
Isopropylbenzene	ND	10.0	10.7	107	10.0	10.6	106	1	72-131	20
m,p-Xylene	ND	20.0	20.0	100	20.0	20.3	102	2	80-121	20
4-Methyl-2-Pentanone	ND	50.0	45.4	91	50.0	46.5	93	2	67-130	20
Methylene Chloride	ND	10.0	9.96	100	10.0	10.1	101	1	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.12	81	10.0	8.44	84	4	71-124	20
o-Xylene	ND	10.0	9.87	99	10.0	10.2	102	3	78-122	20
Styrene	ND	10.0	10.1	101	10.0	10.8	108	7	78-123	20
Tetrachloroethene	ND	10.0	10.9	109	10.0	10.8	108	1	74-129	20
Toluene	ND	10.0	10.0	100	10.0	10.3	103	3	80-121	20
Trans-1,2-DCE	ND	10.0	10.3	103	10.0	10.3	103	0	75-124	20
cis-1,3-Dichloropropene	ND	10.0	10.9	109	10.0	10.8	108	0	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.6	106	10.0	10.4	104	1	73-127	20
TCE	ND	10.0	10.6	106	10.0	10.3	103	3	79-123	20
Trichlorofluoromethane	ND	10.0	10.4	104	10.0	10.3	103	1	65-141	20
Vinyl Chloride	ND	10.0	10.2	102	10.0	10.2	102	0	58-137	20
1,2-Dibromoethane	ND	10.0	10.5	105	10.0	11.0	110	4	77-121	20
Vinyl Acetate	ND	10.0	9.15	92	10.0	9.47	95	3	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.13	91	10.0	9.14	91	0	70-136	20
Methyl Acetate	ND	10.0	6.94	69	10.0	6.99	70	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.9	109	10.0	10.8	108	70-130
Bromofluorobenzene	10.0	10.3	103	10.0	10.4	104	70-130
Toluene-d8	10.0	9.54	95	10.0	10.3	103	70-130
Dibromofluoromethane	10.0	9.79	98	10.0	9.47	95	70-130

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F162	Date Extracted: 06/23/20 17:07
Sample ID: MBLK2W	Date Analyzed: 06/23/20 17:07
Lab Samp ID: VOF3F18B	Dilution Factor: 1
Lab File ID: RFR410	Matrix : WATER
Ext Btch ID: VOF3F18	% Moisture : NA
Calib. Ref.: RDR007	Instrument ID : F3

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.77	10.00	97.7	70-130
BROMOFLUOROBENZENE	10.1	10.00	101	70-130
TOLUENE-D8	9.89	10.00	98.9	70-130
DIBROMOFLUOROMETHANE	9.92	10.00	99.2	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK2W
LAB SAMP ID: VOF3F18B VOF3F18L VOF3F18C
LAB FILE ID: RFR410 RFR407 RFR408
DATE EXTRACTED: 06/23/2017:07 06/23/2015:40 06/23/2016:09 DATE COLLECTED: NA
DATE ANALYZED: 06/23/2017:07 06/23/2015:40 06/23/2016:09 DATE RECEIVED: 06/23/20
PREP. BATCH: VOF3F18 VOF3F18 VOF3F18
CALIB. REF: RDR007 RDR007 RDR007

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	11.1	111	10.0	11.2	112	1	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.2	102	10.0	10.2	102	0	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.1	101	10.0	10.4	104	3	80-119	20
1,1-Dichloroethane	ND	10.0	10.3	103	10.0	10.3	103	0	77-125	20
1,1-Dichloroethene	ND	10.0	10.0	100	10.0	9.80	98	2	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.82	98	10.0	10.1	101	3	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	10.0	100	10.0	9.94	99	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	9.98	100	10.0	10.7	107	7	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.6	106	10.0	11.4	114	7	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.3	103	10.0	10.3	103	1	80-119	20
1,2-Dichloroethane	ND	10.0	10.9	109	10.0	10.4	104	5	73-128	20
1,2-Dichloropropane	ND	10.0	10.3	103	10.0	10.2	102	1	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.1	101	10.0	9.95	99	2	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.5	105	10.0	10.6	106	1	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.1	101	10.0	10.4	104	2	79-118	20
2-Butanone	ND	50.0	52.4	105	50.0	52.2	104	0	56-143	20
2-Hexanone	ND	50.0	47.0	94	50.0	45.1	90	4	57-139	20
Acetone	ND	50.0	49.5	99	50.0	48.8	98	1	39-160	20
Benzene	ND	10.0	10.6	106	10.0	10.5	105	1	79-120	20
Bromochloromethane	ND	10.0	10.6	106	10.0	10.5	105	1	78-120	20
Bromodichloromethane	ND	10.0	11.1	111	10.0	11.2	112	1	79-125	20
Bromoform	ND	10.0	11.9	119	10.0	12.0	120	0	66-130	20
Bromomethane	ND	10.0	8.34	83	10.0	7.89	79	6	53-141	20
Carbon Disulfide	ND	10.0	10.6	106	10.0	11.0	110	4	64-133	20
Carbon Tetrachloride	ND	10.0	11.8	118	10.0	11.8	118	0	72-136	20
Chlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	1	82-118	20
Chloroethane	ND	10.0	8.17	82	10.0	8.30	83	2	60-138	20
Chloroform	ND	10.0	10.2	102	10.0	10.3	103	1	79-124	20
Chloromethane	ND	10.0	10.0	100	10.0	9.47	95	6	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.2	102	10.0	9.95	99	2	78-123	20
Dibromochloromethane	ND	10.0	11.6	116	10.0	11.1	111	5	74-126	20
Dichlorodifluoromethane	ND	10.0	10.5	105	10.0	10.2	102	2	32-152	20
Ethylbenzene	ND	10.0	10.7	107	10.0	9.77	98	9	79-121	20
Isopropylbenzene	ND	10.0	10.5	105	10.0	10.2	102	3	72-131	20
m,p-Xylene	ND	20.0	21.0	105	20.0	20.1	100	5	80-121	20
4-Methyl-2-Pentanone	ND	50.0	52.4	105	50.0	50.6	101	3	67-130	20
Methylene Chloride	ND	10.0	9.98	100	10.0	9.78	98	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.81	88	10.0	8.87	89	1	71-124	20
o-Xylene	ND	10.0	10.9	109	10.0	10.4	104	5	78-122	20
Styrene	ND	10.0	11.2	112	10.0	10.9	109	3	78-123	20
Tetrachloroethene	ND	10.0	11.7	117	10.0	11.1	111	6	74-129	20
Toluene	ND	10.0	10.3	103	10.0	10.0	100	3	80-121	20
Trans-1,2-DCE	ND	10.0	10.2	102	10.0	10.4	104	2	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.0	110	10.0	11.3	113	2	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	11.1	111	10.0	10.6	106	5	73-127	20
TCE	ND	10.0	10.6	106	10.0	10.4	104	1	79-123	20
Trichlorofluoromethane	ND	10.0	11.5	115	10.0	11.2	112	3	65-141	20
Vinyl Chloride	ND	10.0	9.27	93	10.0	8.99	90	3	58-137	20
1,2-Dibromoethane	ND	10.0	10.7	107	10.0	10.9	109	2	77-121	20
Vinyl Acetate	ND	10.0	10.2	102	10.0	9.99	100	2	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.89	99	10.0	9.72	97	2	70-136	20
Methyl Acetate	ND	10.0	8.78	88	10.0	8.58	86	2	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.4	104	10.0	10.7	107	70-130
Bromofluorobenzene	10.0	10.4	104	10.0	10.6	106	70-130
Toluene-d8	10.0	9.90	99	10.0	10.2	102	70-130
Dibromofluoromethane	10.0	10.2	102	10.0	10.2	102	70-130

QC DATA

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR383.D Vial: 6
Acq On : 22 Jun 2020 10:41 am Operator: ENguye/ODinh
Sample : VOF3F17B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:41 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

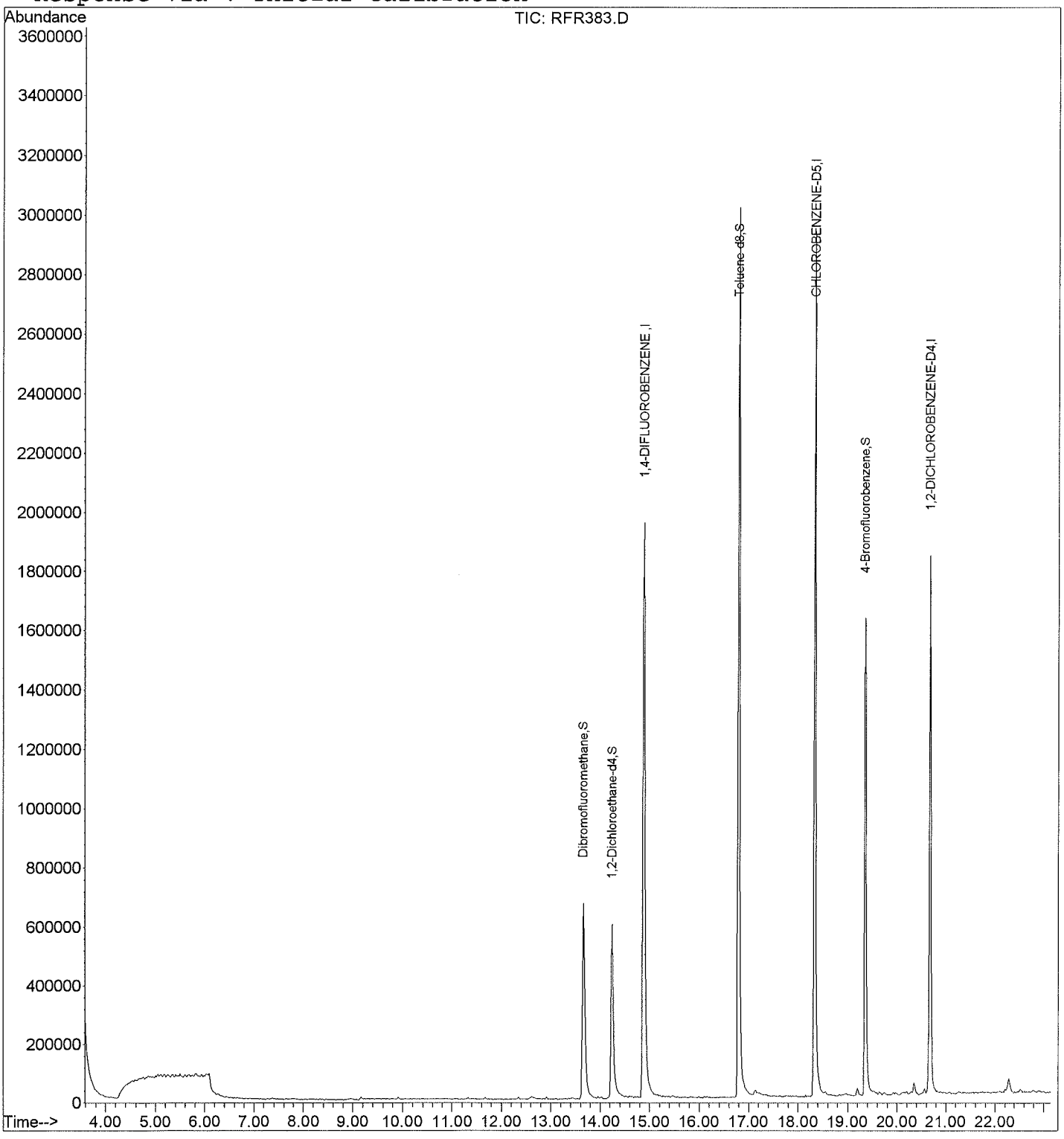
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2390129	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1820053	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	607210	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	862643	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.90%			
40) 1,2-Dichloroethane-d4	14.24	65	676658	9.71	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.10%			
55) Toluene-d8	16.78	98	2502358	9.93	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.30%			
75) 4-Bromofluorobenzene	19.34	95	816059	10.73	ug/l	-0.02
Spiked Amount 10.000			Recovery = 107.30%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
RFR383.D VOF3D02.M Tue Jun 23 11:17:54 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR383.D Vial: 6
Acq On : 22 Jun 2020 10:41 am Operator: ENguye/ODinh
Sample : VOF3F17B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:41 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2571371	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1927330	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	642529	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	891801	9.79	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.90%		
40) 1,2-Dichloroethane-d4	14.24	65	819765	10.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.40%		
55) Toluene-d8	16.79	98	2546169	9.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	95.40%		
75) 4-Bromofluorobenzene	19.34	95	826501	10.27	ug/l	-0.01
Spiked Amount 10.000			Recovery =	102.70%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	840103	9.32	ug/l	100
4) Chloromethane	4.29	50	1923202	10.89	ug/l	99
6) Vinyl chloride	4.54	62	1434678	10.22	ug/l	99
7) Bromomethane	5.35	94	856307	8.67	ug/l	99
8) Chloroethane	5.60	64	663154	9.08	ug/l	98
9) Dichlorofluoromethane	6.07	67	2375046	10.98	ug/l	99
10) Trichlorofluoromethane	6.16	101	1265756	10.37	ug/l	99
11) Acrolein	7.31	56	165928	20.55	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	515521	9.13	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1850864	9.83	ug/l	99
14) Acetone	7.71	43	549284	40.85	ug/l	96
15) Iodomethane	7.96	142	1541966	9.90	ug/l	99
16) Methyl acetate	8.60	43	257463	6.94	ug/l	93
17) Carbon disulfide	8.14	76	3652294	10.93	ug/l	100
18) Methylene chloride	8.93	49	1783824	9.96	ug/l	97
19) tert-Butyl alcohol	9.26	59	873815	224.53	ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	1243398	8.12	ug/l	97
21) trans-1,2-Dichloroethene	9.69	96	1021625	10.31	ug/l	98
22) Acrylonitrile	9.76	53	583722	40.76	ug/l	99
23) Isopropyl ether (DIPE)	11.15	45	3624908	9.06	ug/l	98
24) 1,1-Dichloroethane	11.10	63	2156910	10.11	ug/l	99
25) Vinyl acetate	11.28	43	1231937	9.15	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	2102696	7.82	ug/l	100
27) 2,2-Dichloropropane	12.62	77	969343	10.55	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	1033983	9.95	ug/l	99
29) 2-Butanone	12.74	72	169027	43.57	ug/l	96
30) 2-Butanol	13.26	45	9591	2.62	ug/l	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	480880	9.78	ug/l	99
33)	Chloroform	13.34	83	1799337	10.30	ug/l	100
35)	1,1,1-Trichloroethane	13.63	97	1177968	10.50	ug/l	99
36)	Cyclohexane	13.68	84	759169	5.81	ug/l	99
37)	1,1-Dichloropropene	13.93	110	505646	10.65	ug/l	98
38)	Carbon tetrachloride	13.91	119	1064704	11.21	ug/l	98
42)	Benzene	14.29	78	3810014	10.41	ug/l	99
43)	1,2-Dichloroethane	14.36	62	898489	10.37	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	264419	8.49	ug/l	99
45)	Trichloroethene	15.27	130	1015697	10.62	ug/l	99
46)	Methylcyclohexane	15.48	83	1042177	6.92	ug/l	97
47)	1,2-Dichloropropane	15.60	63	1090621	10.47	ug/l	99
48)	1,4-Dioxane	15.79	88	54782	212.96	ug/l	91
49)	Dibromomethane	15.79	93	399835	10.11	ug/l	98
50)	Bromodichloromethane	15.97	83	1142078	10.81	ug/l	99
51)	2-Chloroethyl vinyl ether	16.32	63	108780	5.96	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1356489	10.86	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1995584	45.40	ug/l	99
56)	Toluene	16.86	91	3338133	10.04	ug/l	100
57)	Ethyl methacrylate	17.16	69	626628	10.59	ug/l	97
58)	trans-1,3-Dichloropropene	17.14	75	1002372	10.57	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	450332	9.96	ug/l	98
60)	Tetrachloroethene	17.48	164	713380	10.86	ug/l	99
61)	2-Hexanone	17.56	43	1294408	40.34	ug/l	97
62)	1,3-Dichloropropane	17.53	76	908866	10.71	ug/l	100
63)	Dibromochloromethane	17.80	129	636518	10.75	ug/l	99
64)	1,2-Dibromoethane	17.93	107	461265	10.55	ug/l	100
65)	1-Chlorohexane	18.24	91	1333625	10.02	ug/l	100
66)	Chlorobenzene	18.36	112	1914099	10.02	ug/l	100
67)	Ethylbenzene	18.41	91	3704133	10.10	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	651714	10.29	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	5564961	20.01	ug/l	100
70)	o-Xylene	18.88	91	2679849	9.87	ug/l	100
71)	Styrene	18.90	104	1904545	10.09	ug/l	100
73)	Bromoform	19.13	173	281644	11.51	ug/l	99
74)	Isopropylbenzene	19.16	105	3278978	10.68	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.45	83	506009	10.29	ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.47	53	130890	9.25	ug/l	99
78)	n-Propylbenzene	19.50	91	4254952	10.42	ug/l	100
79)	1,2,3-Trichloropropane	19.50	110	94039	9.84	ug/l	83
80)	Bromobenzene	19.50	156	675375	9.98	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

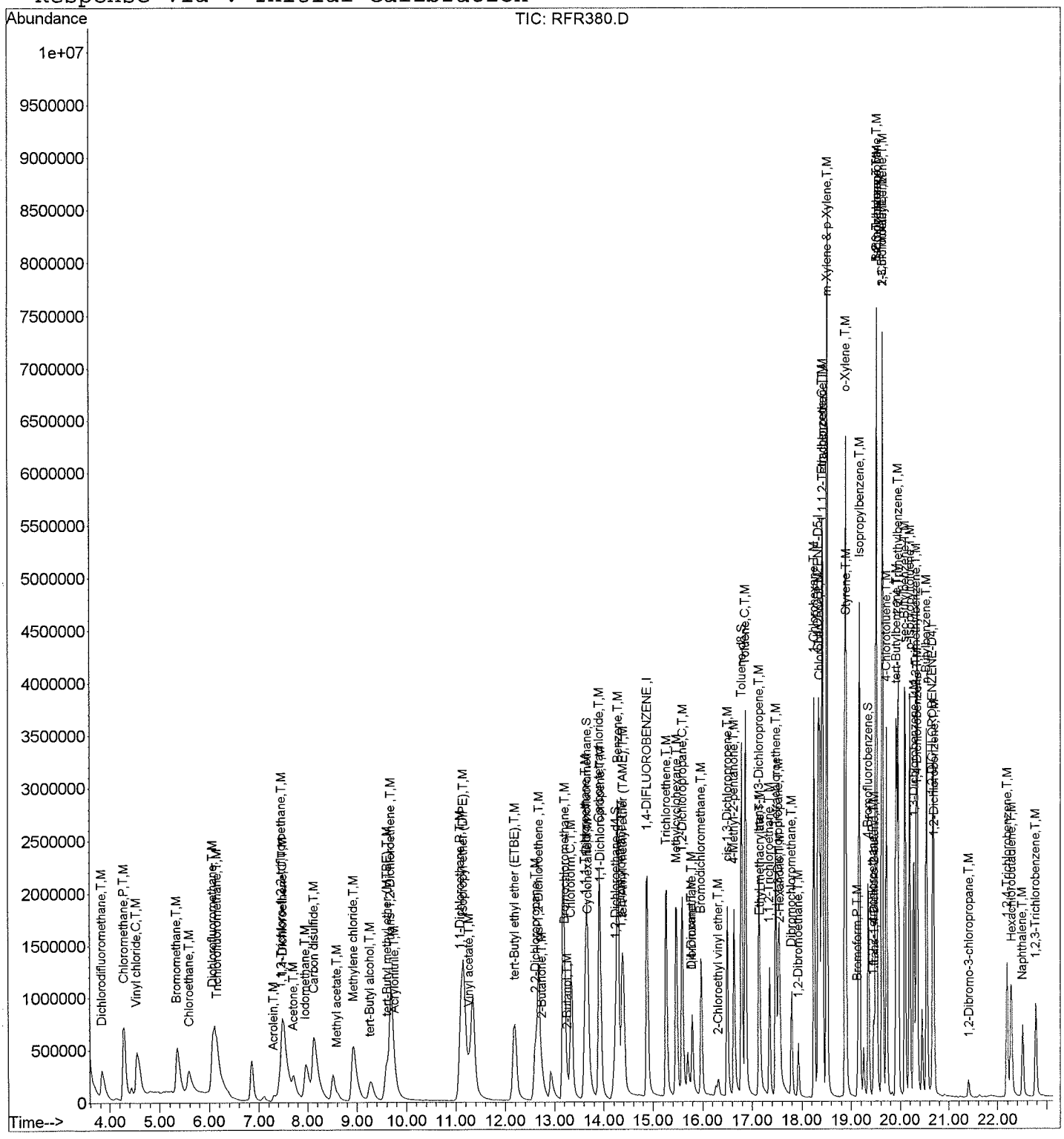
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2449032	10.25	ug/l	99
82)	2-Chlorotoluene	19.62	91	2516831	10.32	ug/l	100
83)	4-Chlorotoluene	19.71	91	2204947	10.20	ug/l	99
84)	tert-Butylbenzene	19.92	134	537076	10.75	ug/l	95
85)	1,2,4-Trimethylbenzene	19.95	105	2299715	10.03	ug/l	98
86)	sec-Butylbenzene	20.08	105	3395222	10.44	ug/l	100
87)	p-Isopropyltoluene	20.19	119	2536998	9.80	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	1201581	9.90	ug/l	97
89)	1,2,3-Trimethylbenzene	20.32	105	1910642	8.97	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	1233647	9.94	ug/l	97
92)	n-Butylbenzene	20.53	91	2741720	9.67	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	988021	9.79	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	57658	10.13	ug/l	97
95)	1,2,4-Trichlorobenzene	22.19	180	550989	9.26	ug/l	97
96)	Hexachlorobutadiene	22.28	225	338538	9.13	ug/l	99
97)	Naphthalene	22.51	128	775034	9.14	ug/l	100
98)	1,2,3-Trichlorobenzene	22.77	180	424260	9.17	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR380.D Vial: 3
Acq On : 22 Jun 2020 9:13 am Operator: ENguye/ODinh
Sample : VOF3F17L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2467608	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1827658	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.66	152	630684	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	827503	9.47	ug/l	0.00
Spiked Amount 10.000			Recovery =	94.70%		
40) 1,2-Dichloroethane-d4	14.25	65	777418	10.81	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.10%		
55) Toluene-d8	16.79	98	2594967	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
75) 4-Bromofluorobenzene	19.34	95	824340	10.43	ug/l	-0.01
Spiked Amount 10.000			Recovery =	104.30%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	783658	9.06	ug/l	99
4) Chloromethane	4.27	50	1807148	10.66	ug/l	100
6) Vinyl chloride	4.54	62	1379527	10.24	ug/l	99
7) Bromomethane	5.35	94	808878	8.54	ug/l	100
8) Chloroethane	5.60	64	630688	9.00	ug/l	98
9) Dichlorofluoromethane	6.07	67	2277305	10.97	ug/l	100
10) Trichlorofluoromethane	6.16	101	1203766	10.27	ug/l	99
11) Acrolein	7.31	56	175572	22.66	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	495152	9.14	ug/l	100
13) 1,1-Dichloroethene	7.50	61	1778745	9.85	ug/l	99
14) Acetone	7.71	43	540919	41.92	ug/l	97
15) Iodomethane	7.96	142	1541127	10.31	ug/l	99
16) Methyl acetate	8.60	43	248869	6.99	ug/l	95
17) Carbon disulfide	8.14	76	3470570	10.83	ug/l	99
18) Methylene chloride	8.93	49	1737590	10.11	ug/l	96
19) tert-Butyl alcohol	9.29	59	855923	229.18	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	1240028	8.44	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	978342	10.29	ug/l	99
22) Acrylonitrile	9.76	53	578632	42.10	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	3550858	9.25	ug/l	98
24) 1,1-Dichloroethane	11.10	63	2143198	10.47	ug/l	99
25) Vinyl acetate	11.27	43	1226395	9.47	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	1990404	7.72	ug/l	100
27) 2,2-Dichloropropane	12.62	77	905699	10.27	ug/l	100
28) cis-1,2-Dichloroethene	12.69	96	967708	9.71	ug/l	100
29) 2-Butanone	12.74	72	167241	44.92	ug/l	99
30) 2-Butanol	13.16	45	538	0.15	ug/l #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	468099	9.92	ug/l	99
33)	Chloroform	13.34	83	1645483	9.81	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	1092214	10.15	ug/l	98
36)	Cyclohexane	13.68	84	697330	5.56	ug/l	100
37)	1,1-Dichloropropene	13.93	110	469929	10.31	ug/l	98
38)	Carbon tetrachloride	13.91	119	996603	10.93	ug/l	98
42)	Benzene	14.29	78	3656363	10.41	ug/l	99
43)	1,2-Dichloroethane	14.36	62	826660	9.95	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	249446	8.34	ug/l	97
45)	Trichloroethene	15.27	130	942032	10.27	ug/l	98
46)	Methylcyclohexane	15.48	83	952072	6.59	ug/l	98
47)	1,2-Dichloropropane	15.60	63	1023559	10.24	ug/l	100
48)	1,4-Dioxane	15.79	88	55531	224.95	ug/l	99
49)	Dibromomethane	15.79	93	385592	10.16	ug/l	99
50)	Bromodichloromethane	15.97	83	1099428	10.85	ug/l	99
51)	2-Chloroethyl vinyl ether	16.33	63	105101	6.00	ug/l	97
52)	cis-1,3-Dichloropropene	16.50	75	1297241	10.82	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1962709	46.53	ug/l	99
56)	Toluene	16.86	91	3261364	10.35	ug/l	100
57)	Ethyl methacrylate	17.14	69	600361	10.70	ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	939275	10.44	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	437091	10.20	ug/l	98
60)	Tetrachloroethene	17.47	164	672812	10.80	ug/l	98
61)	2-Hexanone	17.56	43	1306433	42.94	ug/l	97
62)	1,3-Dichloropropane	17.53	76	855099	10.62	ug/l	98
63)	Dibromochloromethane	17.80	129	626791	11.16	ug/l	99
64)	1,2-Dibromoethane	17.93	107	456289	11.00	ug/l	99
65)	1-Chlorohexane	18.24	91	1293632	10.25	ug/l	100
66)	Chlorobenzene	18.36	112	1901331	10.49	ug/l	99
67)	Ethylbenzene	18.41	91	3691632	10.61	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	648774	10.81	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	5361202	20.33	ug/l	100
70)	o-Xylene	18.88	91	2628864	10.21	ug/l	99
71)	Styrene	18.90	104	1934475	10.81	ug/l	99
73)	Bromoform	19.13	173	272110	11.33	ug/l	99
74)	Isopropylbenzene	19.16	105	3202373	10.63	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.45	83	504520	10.45	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	135864	9.78	ug/l	100
78)	n-Propylbenzene	19.51	91	4197908	10.47	ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	95218	10.15	ug/l	87
80)	Bromobenzene	19.51	156	678132	10.21	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

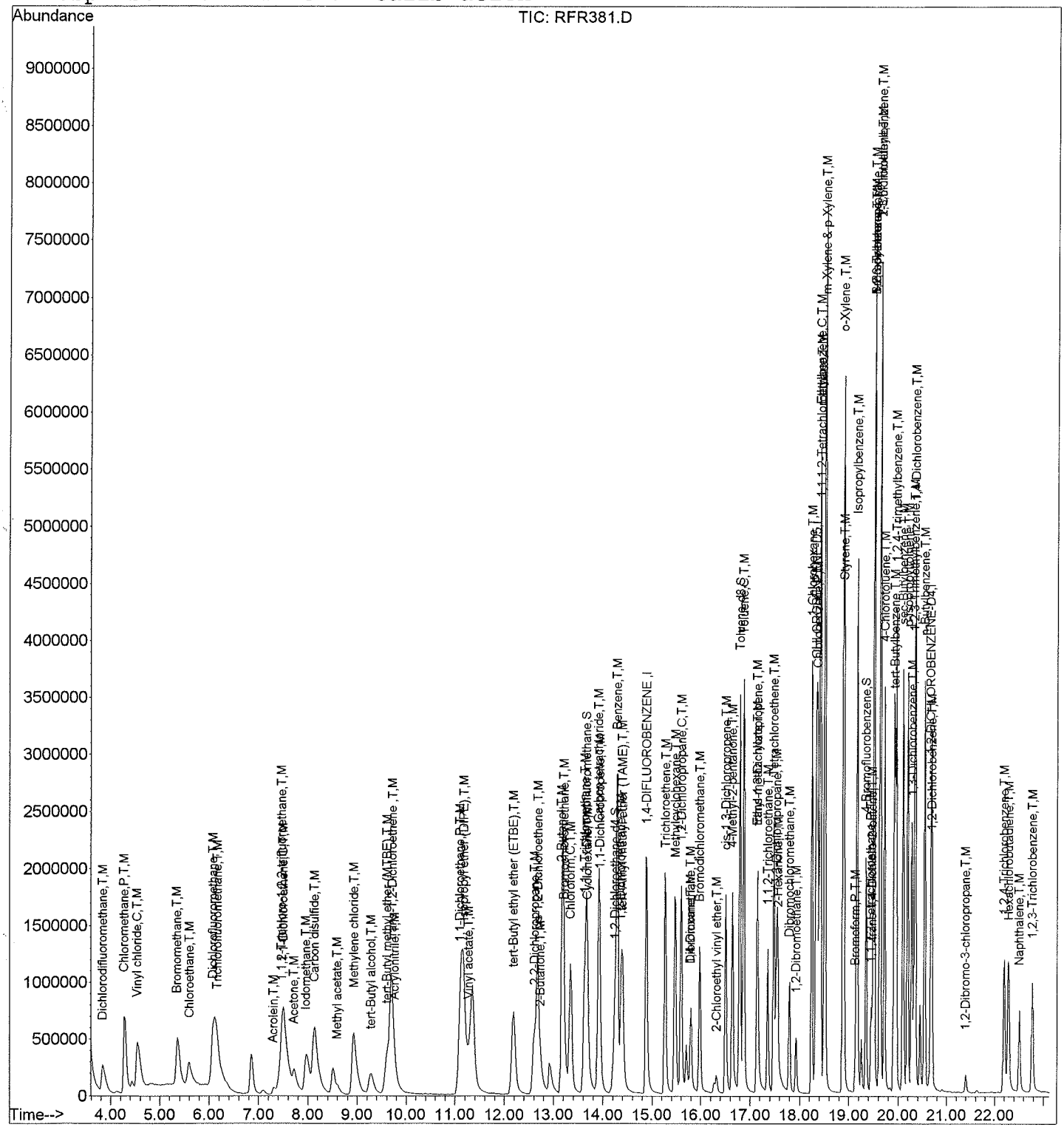
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2375760	10.13	ug/l	98
82)	2-Chlorotoluene	19.62	91	2440666	10.19	ug/l	100
83)	4-Chlorotoluene	19.71	91	2197556	10.36	ug/l	99
84)	tert-Butylbenzene	19.92	134	498865	10.17	ug/l	93
85)	1,2,4-Trimethylbenzene	19.95	105	2329516	10.36	ug/l	97
86)	sec-Butylbenzene	20.08	105	3199288	10.02	ug/l	99
87)	p-Isopropyltoluene	20.19	119	2536409	9.98	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	1224615	10.28	ug/l	97
89)	1,2,3-Trimethylbenzene	20.32	105	1907481	9.12	ug/l	99
90)	1,4-Dichlorobenzene	20.34	146	1184698	9.72	ug/l	97
92)	n-Butylbenzene	20.53	91	2587048	9.29	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	998989	10.08	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.39	157	58762	10.52	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	549097	9.40	ug/l	99
96)	Hexachlorobutadiene	22.28	225	343377	9.43	ug/l	98
97)	Naphthalene	22.51	128	789749	9.49	ug/l	100
98)	1,2,3-Trichlorobenzene	22.77	180	436037	9.60	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR381.D Vial: 4
Acq On : 22 Jun 2020 9:42 am Operator: ENguye/ODinh
Sample : VOF3F17C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:42 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR410.D Vial: 6
Acq On : 23 Jun 2020 5:07 pm Operator: ENguye/ODinh
Sample : VOF3F18B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1660288	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1302550	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	441384	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	583317	9.92	ug/l	0.03
Spiked Amount 10.000			Recovery =	99.20%		
40) 1,2-Dichloroethane-d4	14.25	65	473010	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.70%		
55) Toluene-d8	16.80	98	1784345	9.89	ug/l	0.02
Spiked Amount 10.000			Recovery =	98.90%		
75) 4-Bromofluorobenzene	19.36	95	560714	10.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.40%		

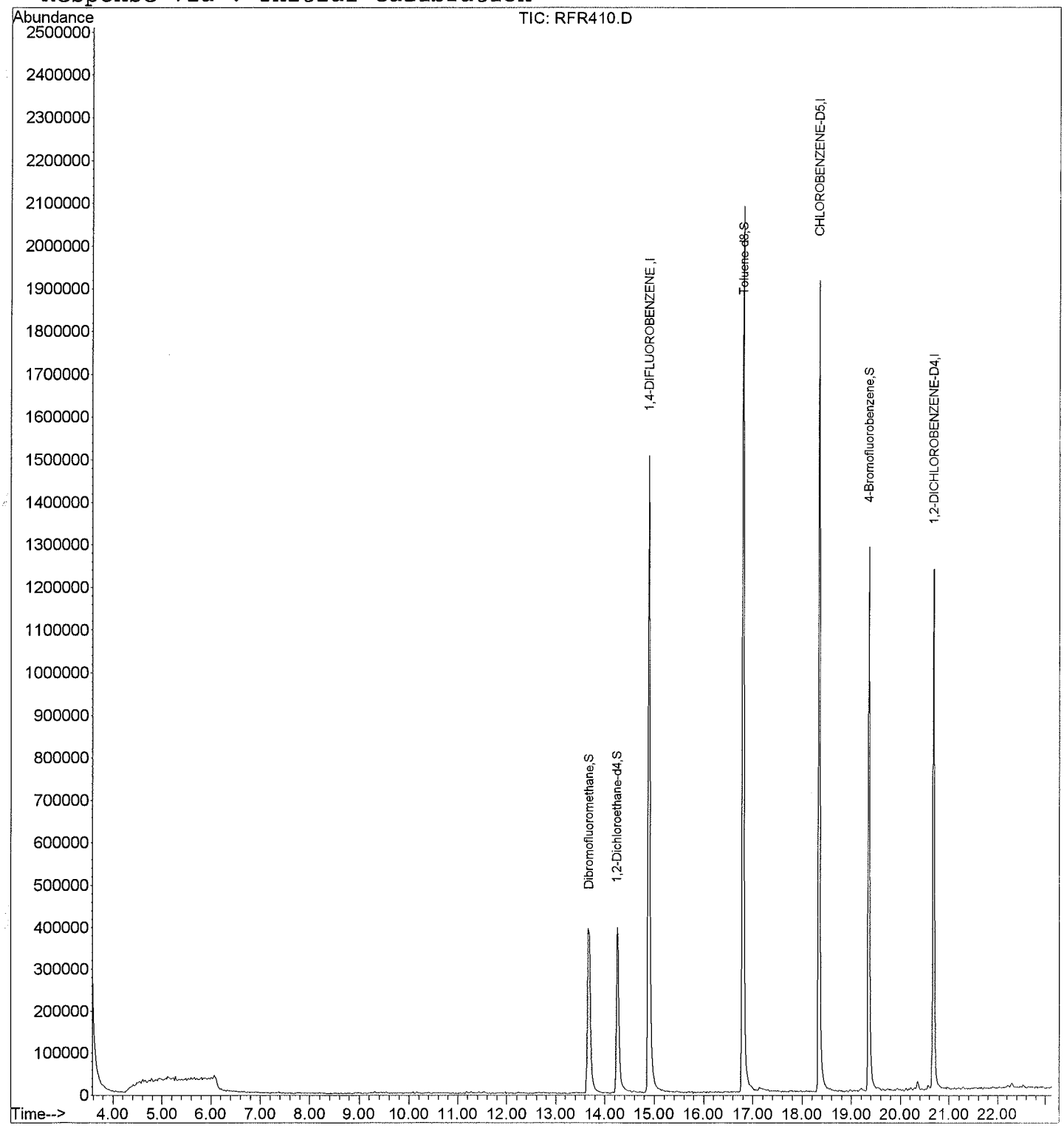
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFR410.D VOF3D02.M Wed Jun 24 14:38:43 2020 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR410.D Vial: 6
Acq On : 23 Jun 2020 5:07 pm Operator: ENguye/ODinh
Sample : VOF3F18B Inst : F3
Misc : BLANK Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR407.D Vial: 3
Acq On : 23 Jun 2020 3:40 pm Operator: ENguye/ODinh
Sample : VOF3F18L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1535298	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1182199	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	416195	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	555647	10.22	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.20%		
40) 1,2-Dichloroethane-d4	14.24	65	465850	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.10%		
55) Toluene-d8	16.80	98	1620577	9.90	ug/l	0.02
Spiked Amount 10.000			Recovery =	99.00%		
75) 4-Bromofluorobenzene	19.36	95	539923	10.35	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.50%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.85	85	564592	10.49	ug/l	98
4) Chloromethane	4.27	50	1059848	10.05	ug/l	99
6) Vinyl chloride	4.55	62	777353	9.27	ug/l	99
7) Bromomethane	5.36	94	491578	8.34	ug/l	99
8) Chloroethane	5.59	64	356484	8.17	ug/l	96
9) Dichlorofluoromethane	6.09	67	1363613	10.56	ug/l	100
10) Trichlorofluoromethane	6.16	101	836112	11.47	ug/l	99
11) Acrolein	7.30	56	175256	36.35	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	333377	9.89	ug/l	100
13) 1,1-Dichloroethene	7.51	61	1127349	10.03	ug/l	99
14) Acetone	7.73	43	397161	49.47	ug/l	99
15) Iodomethane	7.97	142	1046814	11.25	ug/l	98
16) Methyl acetate	8.61	43	194662	8.78	ug/l	97
17) Carbon disulfide	8.13	76	2112068	10.59	ug/l	100
18) Methylene chloride	8.93	49	1067781	9.98	ug/l	94
19) tert-Butyl alcohol	9.29	59	549122	236.32	ug/l	99
20) tert-Butyl methyl ether (M	9.63	73	805017	8.81	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	603295	10.20	ug/l	99
22) Acrylonitrile	9.76	53	407632	47.67	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	2153265	9.01	ug/l	96
24) 1,1-Dichloroethane	11.12	63	1312944	10.31	ug/l	99
25) Vinyl acetate	11.27	43	825978	10.19	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1245486	7.76	ug/l	99
27) 2,2-Dichloropropane	12.62	77	626625	11.43	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	631811	10.19	ug/l	100
29) 2-Butanone	12.74	72	121424	52.42	ug/l	94
30) 2-Butanol	13.26	45	5292	2.42	ug/l #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR407.D Vial: 3
Acq On : 23 Jun 2020 3:40 pm Operator: ENguye/ODinh
Sample : VOF3F18L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	311395	10.61	ug/l	98
33)	Chloroform	13.36	83	1059620	10.16	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	741785	11.08	ug/l	98
36)	Cyclohexane	13.68	84	863678	11.06	ug/l	99
37)	1,1-Dichloropropene	13.93	110	292805	10.32	ug/l	100
38)	Carbon tetrachloride	13.93	119	669267	11.80	ug/l	99
42)	Benzene	14.29	78	2312855	10.58	ug/l	99
43)	1,2-Dichloroethane	14.38	62	565767	10.94	ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	161362	8.67	ug/l	98
45)	Trichloroethene	15.27	130	602443	10.55	ug/l	98
46)	Methylcyclohexane	15.48	83	1118077	12.44	ug/l	96
47)	1,2-Dichloropropane	15.60	63	639163	10.27	ug/l	95
48)	1,4-Dioxane	15.79	88	34242	222.95	ug/l	93
49)	Dibromomethane	15.81	93	247380	10.48	ug/l	99
50)	Bromodichloromethane	15.98	83	697970	11.07	ug/l	99
51)	2-Chloroethyl vinyl ether	16.33	63	60919	5.59	ug/l	97
52)	cis-1,3-Dichloropropene	16.50	75	820868	11.01	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1373972	52.35	ug/l	97
56)	Toluene	16.87	91	2103031	10.32	ug/l	100
57)	Ethyl methacrylate	17.16	69	403838	11.12	ug/l	94
58)	trans-1,3-Dichloropropene	17.14	75	645315	11.09	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	280517	10.12	ug/l	97
60)	Tetrachloroethene	17.48	164	472922	11.73	ug/l	99
61)	2-Hexanone	17.56	43	925406	47.02	ug/l	97
62)	1,3-Dichloropropane	17.54	76	571936	10.98	ug/l	99
63)	Dibromochloromethane	17.80	129	420596	11.58	ug/l	99
64)	1,2-Dibromoethane	17.93	107	288253	10.75	ug/l	97
65)	1-Chlorohexane	18.26	91	820093	10.05	ug/l	99
66)	Chlorobenzene	18.36	112	1235659	10.54	ug/l	100
67)	Ethylbenzene	18.42	91	2417491	10.74	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.44	131	428622	11.04	ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	3589121	21.04	ug/l	99
70)	o-Xylene	18.88	91	1814744	10.90	ug/l	99
71)	Styrene	18.90	104	1296104	11.19	ug/l	99
73)	Bromoform	19.15	173	189285	11.95	ug/l	99
74)	Isopropylbenzene	19.16	105	2084743	10.48	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	326050	10.23	ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.49	53	92650	10.11	ug/l	97
78)	n-Propylbenzene	19.51	91	2695300	10.19	ug/l	100
79)	1,2,3-Trichloropropane	19.51	110	61219	9.89	ug/l	96
80)	Bromobenzene	19.52	156	445680	10.17	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F23\RFR407.D Vial: 3
Acq On : 23 Jun 2020 3:40 pm Operator: ENguye/ODinh
Sample : VOF3F18L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

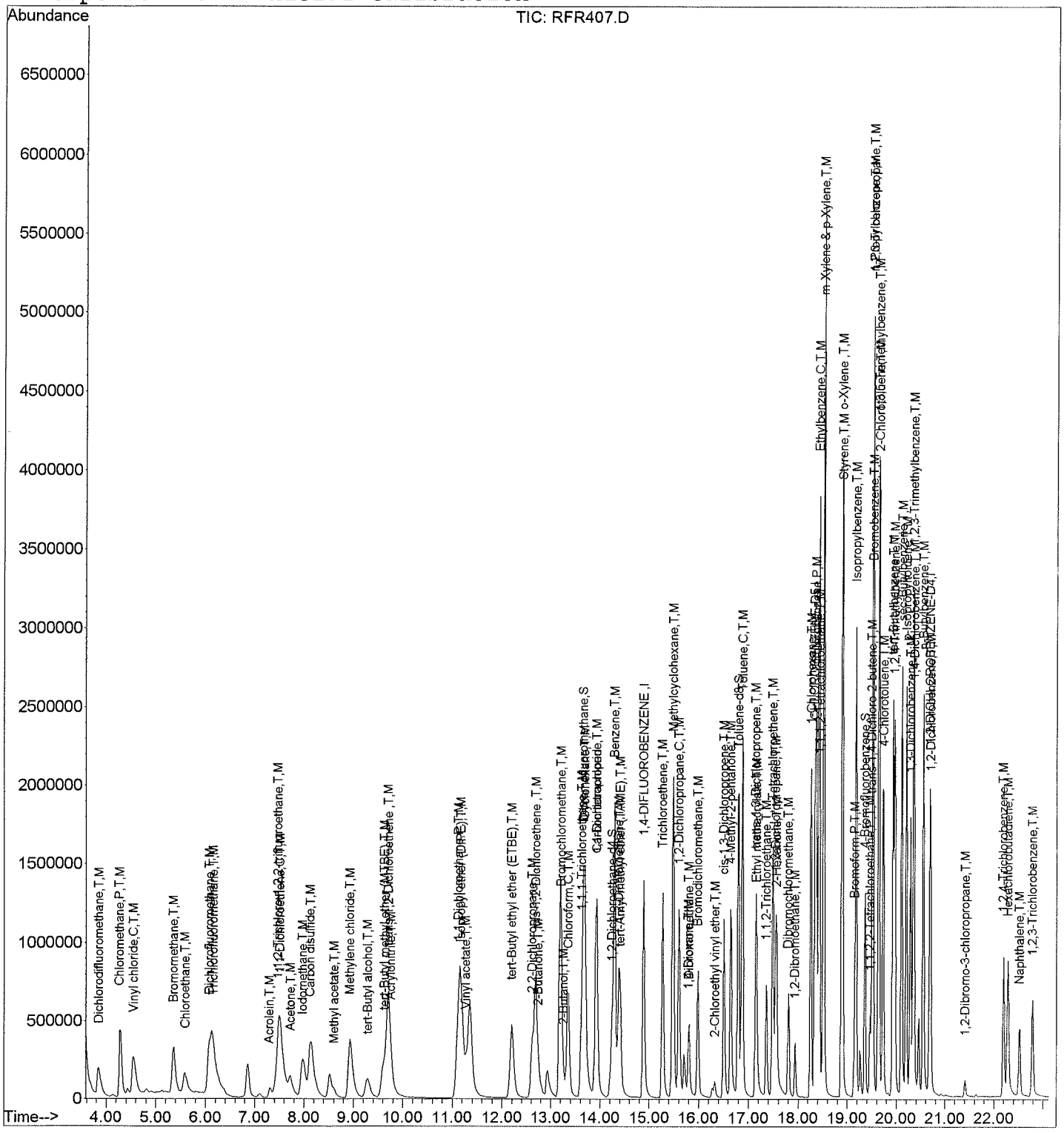
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1564324	10.11	ug/l	99
82)	2-Chlorotoluene	19.64	91	1588372	10.05	ug/l	99
83)	4-Chlorotoluene	19.73	91	1480506	10.57	ug/l	100
84)	tert-Butylbenzene	19.92	134	319563	9.87	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	1482066	9.98	ug/l	98
86)	sec-Butylbenzene	20.10	105	2179197	10.35	ug/l	100
87)	p-Isopropyltoluene	20.19	119	1668931	9.95	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	827244	10.52	ug/l	96
89)	1,2,3-Trimethylbenzene	20.34	105	1269659	9.20	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	814696	10.13	ug/l	97
92)	n-Butylbenzene	20.55	91	1740726	9.48	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	672348	10.28	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	39199	10.63	ug/l	97
95)	1,2,4-Trichlorobenzene	22.19	180	385330	10.00	ug/l	100
96)	Hexachlorobutadiene	22.28	225	254912	10.61	ug/l	99
97)	Naphthalene	22.52	128	521425	9.49	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	294420	9.82	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR407.D Vial: 3
Acq On : 23 Jun 2020 3:40 pm Operator: ENguye/ODinh
Sample : VOF3F18L Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:06 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR408.D Vial: 4
Acq On : 23 Jun 2020 4:09 pm Operator: ENguye/ODinh
Sample : VOF3F18C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:07 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1546424	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1209175	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	415581	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	555836	10.15	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.50%			
40) 1,2-Dichloroethane-d4	14.24	65	483123	10.72	ug/l	0.00
Spiked Amount 10.000			Recovery = 107.20%			
55) Toluene-d8	16.80	98	1710093	10.21	ug/l	0.02
Spiked Amount 10.000			Recovery = 102.10%			
75) 4-Bromofluorobenzene	19.36	95	551444	10.59	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	554829	10.24	ug/l	98
4) Chloromethane	4.29	50	1006089	9.47	ug/l	100
6) Vinyl chloride	4.56	62	758912	8.99	ug/l	99
7) Bromomethane	5.35	94	468398	7.89	ug/l	99
8) Chloroethane	5.60	64	364559	8.30	ug/l	97
9) Dichlorofluoromethane	6.09	67	1372180	10.55	ug/l	99
10) Trichlorofluoromethane	6.18	101	820952	11.18	ug/l	99
11) Acrolein	7.33	56	174737	35.99	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	329925	9.72	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1109357	9.80	ug/l	99
14) Acetone	7.73	43	394774	48.82	ug/l	99
15) Iodomethane	7.98	142	1031337	11.01	ug/l	98
16) Methyl acetate	8.61	43	191554	8.58	ug/l	94
17) Carbon disulfide	8.14	76	2204371	10.97	ug/l	100
18) Methylene chloride	8.93	49	1053735	9.78	ug/l	95
19) tert-Butyl alcohol	9.29	59	548019	234.15	ug/l	95
20) tert-Butyl methyl ether (M	9.63	73	816684	8.87	ug/l	95
21) trans-1,2-Dichloroethene	9.71	96	621218	10.42	ug/l	99
22) Acrylonitrile	9.76	53	403493	46.85	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	2133669	8.87	ug/l	96
24) 1,1-Dichloroethane	11.13	63	1326350	10.34	ug/l	99
25) Vinyl acetate	11.27	43	814310	9.99	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1303870	8.06	ug/l	98
27) 2,2-Dichloropropane	12.62	77	615175	11.14	ug/l	98
28) cis-1,2-Dichloroethene	12.69	96	621378	9.95	ug/l	100
29) 2-Butanone	12.74	72	121819	52.22	ug/l	93
30) 2-Butanol	13.34	45	12788	5.81	ug/l #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR408.D Vial: 4
Acq On : 23 Jun 2020 4:09 pm Operator: ENguye/ODinh
Sample : VOF3F18C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:07 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	309711	10.47 ug/l	98
33)	Chloroform	13.36	83	1081867	10.30 ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	758010	11.24 ug/l	99
36)	Cyclohexane	13.68	84	856759	10.89 ug/l	99
37)	1,1-Dichloropropene	13.93	110	295600	10.35 ug/l	99
38)	Carbon tetrachloride	13.93	119	675672	11.83 ug/l	99
42)	Benzene	14.29	78	2301808	10.46 ug/l	99
43)	1,2-Dichloroethane	14.38	62	544034	10.45 ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	160482	8.56 ug/l	96
45)	Trichloroethene	15.27	130	598785	10.41 ug/l	99
46)	Methylcyclohexane	15.48	83	1125134	12.43 ug/l	95
47)	1,2-Dichloropropane	15.60	63	640168	10.22 ug/l	94
48)	1,4-Dioxane	15.79	88	34900	225.60 ug/l	91
49)	Dibromomethane	15.80	93	254740	10.71 ug/l	99
50)	Bromodichloromethane	15.98	83	713190	11.23 ug/l	99
51)	2-Chloroethyl vinyl ether	16.33	63	71403	6.50 ug/l	98
52)	cis-1,3-Dichloropropene	16.50	75	846677	11.27 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1338380	50.63 ug/l	97
56)	Toluene	16.87	91	2091566	10.03 ug/l	100
57)	Ethyl methacrylate	17.16	69	408149	10.99 ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	628539	10.56 ug/l	100
59)	1,1,2-Trichloroethane	17.35	97	295668	10.43 ug/l	99
60)	Tetrachloroethene	17.48	164	456899	11.08 ug/l	99
61)	2-Hexanone	17.56	43	908702	45.14 ug/l	96
62)	1,3-Dichloropropane	17.54	76	539083	10.12 ug/l	99
63)	Dibromochloromethane	17.80	129	411223	11.07 ug/l	99
64)	1,2-Dibromoethane	17.93	107	299862	10.93 ug/l	99
65)	1-Chlorohexane	18.26	91	860750	10.31 ug/l	100
66)	Chlorobenzene	18.36	112	1245760	10.39 ug/l	100
67)	Ethylbenzene	18.42	91	2248594	9.77 ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.44	131	415000	10.45 ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	3504176	20.09 ug/l	99
70)	o-Xylene	18.88	91	1764461	10.36 ug/l	100
71)	Styrene	18.90	104	1290090	10.89 ug/l	100
73)	Bromoform	19.15	173	189706	11.99 ug/l	98
74)	Isopropylbenzene	19.16	105	2026778	10.21 ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	325027	10.22 ug/l	97
77)	trans-1,4-Dichloro-2-buten	19.49	53	93752	10.25 ug/l	100
78)	n-Propylbenzene	19.50	91	2711250	10.27 ug/l	100
79)	1,2,3-Trichloropropane	19.50	110	60645	9.81 ug/l	91
80)	Bromobenzene	19.52	156	450114	10.29 ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F23\RFR408.D Vial: 4
Acq On : 23 Jun 2020 4:09 pm Operator: ENguye/ODinh
Sample : VOF3F18C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:07 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

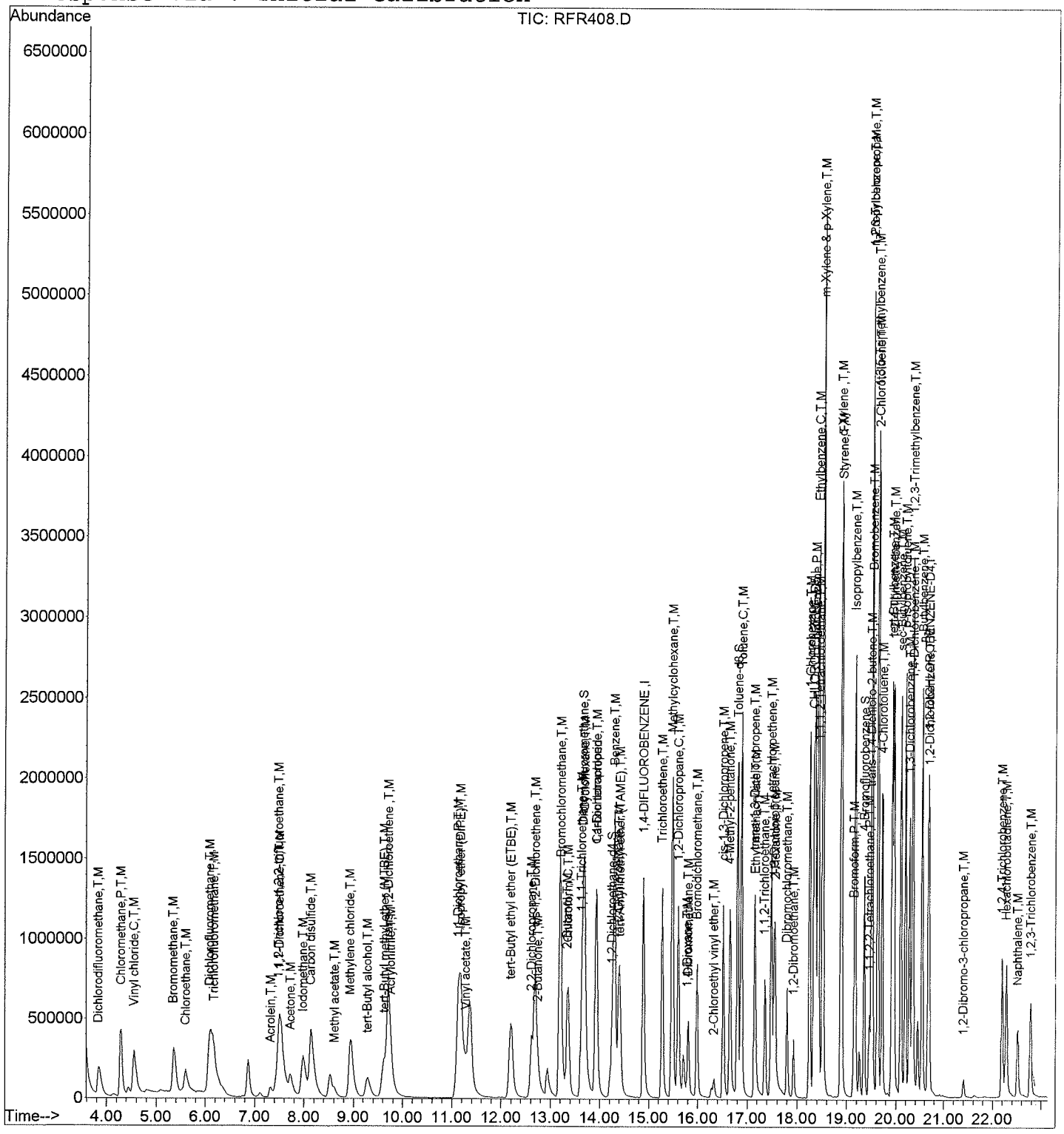
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1536832	9.95	ug/l	99
82)	2-Chlorotoluene	19.64	91	1586138	10.05	ug/l	100
83)	4-Chlorotoluene	19.73	91	1431045	10.24	ug/l	99
84)	tert-Butylbenzene	19.92	134	344860	10.67	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	1583634	10.68	ug/l	98
86)	sec-Butylbenzene	20.10	105	2112365	10.04	ug/l	99
87)	p-Isopropyltoluene	20.19	119	1704438	10.17	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	835730	10.65	ug/l	95
89)	1,2,3-Trimethylbenzene	20.34	105	1348796	9.79	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	831916	10.36	ug/l	97
92)	n-Butylbenzene	20.55	91	1822181	9.93	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	675194	10.34	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	41875	11.37	ug/l	95
95)	1,2,4-Trichlorobenzene	22.19	180	382675	9.94	ug/l	99
96)	Hexachlorobutadiene	22.28	225	234995	9.79	ug/l	97
97)	Naphthalene	22.52	128	528907	9.64	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	302179	10.09	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR408.D Vial: 4
Acq On : 23 Jun 2020 4:09 pm Operator: ENguye/ODinh
Sample : VOF3F18C Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:07 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RDR001
Instrument ID: F3
GC Column: ZB-624 ID:0.25mm

Contract: ICAL
SAS No.: SDG No.: ICAL
BFB Injection Date : 04/02/20
BFB Injection Time : 16:01
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.44
75	30.0 - 60.0% of mass 95	50.24
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.69
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	72.41
175	5.0 - 9.0% of mass 174	6.02(8.3)1
176	95.0 - 101.0% of mass 174	71.36(98.5)1
177	5.0 - 9.0% of mass 176	5.18(7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VOF3D021	RDR002	04/02/20	16:47
2	VSTD0.5	VOF3D022	RDR003	04/02/20	17:16
3	VSTD01	VOF3D023	RDR004	04/02/20	17:46
4	VSTD02	VOF3D024	RDR005	04/02/20	18:15
5	VSTD05	VOF3D025	RDR006	04/02/20	18:44
6	VSTD010	VOF3D026	RDR007	04/02/20	19:14
7	VSTD020	VOF3D027	RDR008	04/02/20	19:43
8	VSTD050	VOF3D029	RDR010	04/02/20	20:41
9	VSTD100	VOF3D0210	RDR011	04/02/20	21:11

FORM V VOA OLM02.0

SC 4/22/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	0.175	0.165	0.197	0.220	0.222	0.242	0.231	0.184	0.186	0.202	13.37	3.7589
	3	Dichlorodifluoromethane	0.310	0.307	0.373	0.391	0.358	0.388	0.379	0.298	------	0.350	11.16	3.8425
	4	Chloromethane	0.705	0.660	0.714	0.733	0.668	0.719	0.703	0.595	------	0.687	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	0.331	0.302	0.343	0.389	0.375	0.400	0.401	0.322	0.329	0.355	10.42	4.7880
	6	Vinyl chloride	0.500	0.474	0.575	0.599	0.575	0.595	0.605	0.491	0.501	0.546	9.75	4.5528
	7	Bromomethane	0.382	0.360	0.383	0.401	0.380	0.412	0.411	0.343	------	0.384	6.23	5.3574
	8	Chloroethane	0.284	0.261	0.295	0.314	0.286	0.297	0.284	0.252	------	0.284	6.98	5.6044
	9	Dichlorofluoromethane	0.933	0.867	0.884	0.928	0.817	0.878	0.794	0.726	0.743	0.841	8.97	6.0816
	10	Trichlorofluoromethane	0.411	0.403	0.501	0.519	0.513	0.509	0.506	0.437	------	0.475	10.30	6.1711
5	11	Acrolein	------	------	------	0.037	0.034	0.030	0.029	0.029	0.030	0.031	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.222	0.216	0.225	0.246	0.224	0.227	0.217	0.199	0.201	0.220	6.46	7.4752
	13	1,1-Dichloroethene	0.759	0.717	0.776	0.820	0.719	0.769	0.722	0.651	0.655	0.732	7.60	7.5281
5	14	Acetone	------	------	------	0.062	0.058	0.048	0.048	0.048	0.049	0.052	12.14	7.7175
	15	Iodomethane	0.598	0.604	0.601	0.666	0.586	0.584	0.585	0.624	0.605	0.606	4.28	8.0221
	16	Methyl acetate	------	------	------	0.163	0.136	0.143	0.151	0.139	0.134	0.144	7.47	8.5966
	17	Carbon disulfide	1.076	1.118	1.366	1.418	1.351	1.483	1.432	1.260	1.188	1.299	11.19	8.1455
	18	Methylene chloride	0.692	0.700	0.726	0.790	0.701	0.701	0.690	0.657	0.613	0.697	6.84	8.9727
25	19	tert-Butyl alcohol	0.017	0.016	0.015	0.016	0.016	0.013	0.014	0.014	0.015	0.015	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	0.711	0.631	0.604	0.658	0.596	0.529	0.530	0.551	0.548	0.595	10.55	9.6218
	21	trans-1,2-Dichloroethene	0.386	0.383	0.392	0.431	0.385	0.384	0.374	0.376	0.358	0.385	5.12	9.7045
5	22	Acrylonitrile	------	------	0.050	0.059	0.058	0.053	0.055	0.057	0.059	0.056	6.20	9.7634
	23	Isopropyl ether (DIPE)	1.509	1.497	1.572	1.765	1.677	1.548	1.519	1.495	1.426	1.556	6.67	11.1810
	24	1,1-Dichloroethane	0.846	0.802	0.873	0.920	0.841	0.838	0.805	0.791	0.753	0.830	5.89	11.1175
	25	Vinyl acetate	------	------	------	0.357	0.467	0.507	0.609	0.542	------	0.496	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	1.223	1.133	1.187	1.038	0.939	0.961	0.941	0.943	1.045	11.38	12.1937
	27	2,2-Dichloropropane	0.399	0.380	0.388	0.379	0.338	0.315	0.302	------	------	0.357	10.74	12.6159
	28	cis-1,2-Dichloroethene	0.407	0.411	0.428	0.440	0.406	0.387	0.381	0.389	0.386	0.404	5.04	12.6905
5	29	2-Butanone	------	------	------	0.015	0.017	0.015	0.014	0.015	0.015	0.015	5.59	12.7443
25	30	2-Butanol	------	------	0.011	0.016	0.016	0.014	0.015	0.014	0.014	0.014	13.24	13.1447
	31	Bromochloromethane	0.182	0.190	0.194	0.213	0.197	0.178	0.184	0.189	0.193	0.191	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	0.682	0.669	0.696	0.751	0.693	0.657	0.662	0.659	0.646	0.679	4.65	13.3528
	34	Dibromofluoromethane	------	0.317	0.346	0.375	0.361	0.366	0.371	0.342	------	0.354	5.79	13.6698
	35	1,1,1-Trichloroethane	0.426	0.452	0.475	0.487	0.438	0.438	0.430	0.401	0.379	0.436	7.71	13.6343
	36	Cyclohexane	0.506	0.466	0.534	0.552	0.518	0.515	0.529	0.448	------	0.509	6.86	13.6839
	37	1,1-Dichloropropene	0.162	0.181	0.185	0.198	0.198	0.192	0.183	0.185	0.179	0.185	6.05	13.9379
	38	Carbon tetrachloride	0.337	0.349	0.381	0.392	0.392	0.373	0.369	0.370	0.361	0.369	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	0.230	0.287	0.274	0.296	0.307	0.285	0.333	0.315	0.297	0.292	9.98	14.2526
	41	2,2,4-Trimethylpentane	1.403	1.362	1.487	1.742	1.666	1.777	1.733	1.412	------	1.573	11.03	14.3132
	42	Benzene	------	1.366	1.479	1.543	1.432	1.375	1.343	1.427	------	1.424	4.94	14.2933
	43	1,2-Dichloroethane	0.318	0.330	0.352	0.387	0.368	0.318	0.325	0.325	0.307	0.337	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	0.112	0.112	0.124	0.136	0.135	0.113	0.119	0.121	0.119	0.121	7.52	14.4078
	45	Trichloroethene	0.327	0.358	0.369	0.400	0.387	0.366	0.366	0.388	0.385	0.372	5.85	15.2746
	46	Methylcyclohexane	------	0.499	0.583	0.586	0.622	0.605	0.617	------	------	0.585	7.70	15.4780
	47	1,2-Dichloropropane	0.387	0.383	0.434	0.441	0.416	0.406	0.391	0.395	0.392	0.405	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	------	0.001	7.92	15.7868
	49	Dibromomethane	------	0.145	0.149	0.169	0.160	0.144	0.149	0.149	0.166	0.154	6.25	15.7991
	50	Bromodichloromethane	0.407	0.382	0.424	0.445	0.428	0.391	0.412	0.401	0.407	0.411	4.67	15.9796
	51	2-Chloroethyl vinyl ether	------	------	0.062	0.073	0.075	0.067	0.072	0.077	------	0.071	8.10	16.3223
	52	cis-1,3-Dichloropropene	0.463	0.437	0.489	0.521	0.515	0.483	0.478	0.488	0.496	0.486	5.25	16.5146
5	53	4-Methyl-2-pentanone	------	0.146	0.165	0.172	0.197	0.169	0.174	0.176	0.169	0.171	8.26	16.6479
	54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
	55	Toluene-d8	------	1.231	1.295	1.454	1.446	1.432	1.414	1.421	------	1.385	6.24	16.7961
	56	Toluene	1.631	1.707	1.744	1.882	1.788	1.693	1.567	1.785	------	1.725	5.72	16.8783
	57	Ethyl methacrylate	------	0.272	0.284	0.332	0.343	0.298	0.284	0.324	0.321	0.307	8.48	17.1680
	58	trans-1,3-Dichloropropene	0.448	0.460	0.475	0.550	0.535	0.498	0.453	0.515	0.494	0.492	7.37	17.1502

SU
4/22/20

59	1,1,2-Trichloroethane	0.205	0.230	0.241	0.271	0.251	0.224	0.209	0.236	0.242	0.235	8.71	17.3583
60	Tetrachloroethene	0.306	0.334	0.342	0.366	0.347	0.338	0.311	0.355	0.370	0.341	6.42	17.4870
5 61	2-Hexanone	0.180	0.172	0.159	0.182	0.183	0.159	0.143	0.161	0.159	0.166	8.10	17.5910
62	1,3-Dichloropropane	0.398	0.428	0.446	0.486	0.476	0.435	0.402	0.443	0.450	0.440	6.69	17.5399
63	Dibromochloromethane	0.269	0.285	0.298	0.332	0.327	0.304	0.289	0.320	0.340	0.307	7.81	17.8024
64	1,2-Dibromoethane	0.199	0.203	0.219	0.259	0.247	0.220	0.218	0.233	0.244	0.227	8.99	17.9361
65	1-Chlorohexane	0.707	0.714	0.673	0.714	0.727	0.694	0.608	0.695	0.682	0.690	5.12	18.2564
66	Chlorobenzene	0.940	0.964	1.005	1.092	1.007	1.015	0.933	1.047	0.918	0.991	5.79	18.3621
67	Ethylbenzene	1.800	1.920	1.966	2.125	1.959	1.928	1.785	1.746	------	1.904	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	0.288	0.319	0.328	0.371	0.336	0.338	0.301	0.346	------	0.329	7.94	18.4274
2 69	m-Xylene & p-Xylene	1.446	1.406	1.449	1.635	1.408	1.412	1.344	------	------	1.443	6.36	18.5134
70	o-Xylene	1.356	1.389	1.399	1.568	1.434	1.468	1.323	1.330	------	1.408	5.79	18.8825
71	Styrene	0.921	0.923	0.953	1.142	1.051	1.055	0.924	0.989	0.856	0.980	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	0.275	0.340	0.396	0.418	0.389	0.369	0.411	0.448	0.381	14.10	19.1406
74	Isopropylbenzene	4.524	4.937	4.839	5.023	5.017	5.178	4.577	4.131	------	4.778	7.21	19.1685
75	4-Bromofluorobenzene	1.200	1.231	1.159	1.281	1.297	1.351	1.282	1.222	------	1.253	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	0.746	0.729	0.822	0.858	0.841	0.733	0.675	0.721	------	0.766	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	0.238	0.217	0.237	0.245	0.214	0.204	0.199	0.206	0.220	7.97	19.4861
78	n-Propylbenzene	5.850	6.629	6.237	6.731	6.660	6.451	5.929	------	------	6.355	5.63	19.5090
79	1,2,3-Trichloropropane	------	0.159	0.142	0.174	0.170	0.139	0.134	0.132	0.138	0.149	11.08	19.5121
80	Bromobenzene	0.935	1.083	0.999	1.148	1.134	1.055	0.995	1.035	1.092	1.053	6.57	19.5162
81	1,3,5-Trimethylbenzene	3.697	3.883	3.670	3.846	3.837	3.858	3.405	3.544	------	3.717	4.64	19.6255
82	2-Chlorotoluene	3.704	4.003	3.715	4.036	3.935	3.918	3.462	3.596	------	3.796	5.46	19.6403
83	4-Chlorotoluene	3.294	3.481	3.352	3.595	3.397	3.444	3.093	3.257	------	3.364	4.56	19.7220
84	tert-Butylbenzene	0.740	0.847	0.765	0.761	0.829	0.794	0.690	0.798	0.775	0.778	6.04	19.9223
85	1,2,4-Trimethylbenzene	3.488	3.757	3.655	3.717	3.644	3.532	3.156	3.587	------	3.567	5.28	19.9579
86	sec-Butylbenzene	5.021	5.448	5.124	5.215	5.019	5.353	4.703	4.598	------	5.060	5.83	20.1010
87	p-Isopropyltoluene	4.207	4.425	3.906	4.135	4.017	4.078	3.624	3.857	------	4.031	6.01	20.1901
88	1,3-Dichlorobenzene	1.914	1.849	1.796	2.034	2.003	1.877	1.675	1.899	1.954	1.889	5.77	20.2790
89	1,2,3-Trimethylbenzene	3.143	3.491	3.459	3.469	3.291	3.307	3.053	3.308	------	3.315	4.76	20.3387
90	1,4-Dichlorobenzene	1.805	1.999	1.923	2.074	1.861	1.967	1.758	1.987	2.017	1.932	5.41	20.3533
91	Benzyl Chloride	1.029	1.050	0.914	1.045	1.085	0.958	0.897	0.992	1.031	1.000	6.47	20.4507
92	n-Butylbenzene	4.394	4.739	4.335	4.497	4.475	4.558	4.071	4.243	------	4.414	4.62	20.5468
93	1,2-Dichlorobenzene	1.521	1.571	1.583	1.652	1.601	1.491	1.498	1.561	1.664	1.571	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	0.081	0.089	0.096	0.087	0.083	0.096	------	0.089	7.42	21.4067
95	1,2,4-Trichlorobenzene	0.902	0.852	0.860	0.947	0.961	0.934	0.863	0.983	1.032	0.926	6.69	22.1991
96	Hexachlorobutadiene	0.549	0.591	0.550	0.576	0.614	0.627	0.535	0.586	0.568	0.577	5.32	22.2850
97	Naphthalene	1.303	1.349	1.173	1.378	1.411	1.283	1.211	1.311	1.459	1.320	6.93	22.5161
98	1,2,3-Trichlorobenzene	0.656	0.654	0.699	0.741	0.781	0.749	0.663	0.761	0.779	0.720	7.34	22.7869

Spike Amount = Nominal Amount * M
Ave_%RSD : 7.4 Max_%RSD : 18.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
25	Vinyl acetate	-0.04163	0.56891	0.9974

SM
4/22/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F3
Beginning DateTime :04/02/20 16:47
Spike Units :PPB
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02

M	IDX	Parameters	.3 16:47 RDR002	.5 17:16 RDR003	1 17:46 RDR004	2 18:15 RDR005	5 18:44 RDR006	10 19:14 RDR007	20 19:43 RDR008	50 20:41 RDR010	100 21:11 RDR011	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	0	14.8833
	2	Chlorotrifluoroethylene	87	82	98	109	110	120	114	91	92	11.6	13.37	3.7589
	3	Dichlorodifluoromethane	89	88	107	112	102	111	108	85	------	9.8	11.16	3.8425
	4	Chloromethane	103	96	104	107	97	105	102	87	------	5	6.49	4.2880
	5	2-Chloro-1,1,1-trifluoroethane	93	85	97	110	106	113	113	91	93	9.2	10.42	4.7880
	6	Vinyl chloride	92	87	105	110	105	109	111	90	92	8.9	9.75	4.5528
	7	Bromomethane	99	94	100	104	99	107	107	89	------	4.7	6.23	5.3574
	8	Chloroethane	100	92	104	111	101	105	100	89	------	4.9	6.98	5.6044
	9	Dichlorofluoromethane	111	103	105	110	97	104	94	86	88	7.5	8.97	6.0816
	10	Trichlorofluoromethane	87	85	105	109	108	107	107	92	------	9.1	10.30	6.1711
5	11	Acrolein	------	------	------	119	110	97	94	94	97	8.1	10.43	7.3088
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	101	98	102	112	102	103	99	90	91	4.6	6.46	7.4752
	13	1,1-Dichloroethene	104	98	106	112	98	105	99	89	89	6	7.60	7.5281
5	14	Acetone	------	------	------	119	112	92	92	92	94	9.9	12.14	7.7175
	15	Iodomethane	99	100	99	110	97	96	97	103	100	2.9	4.28	8.0221
	16	Methyl acetate	------	------	------	113	94	99	105	97	93	5.8	7.47	8.5966
	17	Carbon disulfide	83	86	105	109	104	114	110	97	91	9.5	11.19	8.1455
	18	Methylene chloride	99	100	104	113	101	101	99	94	88	4.3	6.84	8.9727
25	19	tert-Butyl alcohol	113	107	100	107	107	87	93	93	100	6.7	8.47	9.2933
	20	tert-Butyl methyl ether (MTBE)	119	106	102	111	100	89	89	93	92	8.3	10.55	9.6218
	21	trans-1,2-Dichloroethene	100	99	102	112	100	100	97	98	93	3	5.12	9.7045
5	22	Acrylonitrile	------	------	89	105	104	95	98	102	105	4.8	6.20	9.7634
	23	Isopropyl ether (DIPE)	97	96	101	113	108	99	98	96	92	4.9	6.67	11.1810
	24	1,1-Dichloroethane	102	97	105	111	101	101	97	95	91	4.5	5.89	11.1175
	25	Vinyl acetate	------	------	------	99	97	96	111	97	------	4.4	18.92	11.2798
	26	tert-Butyl ethyl ether (ETBE)	------	117	108	114	99	90	92	90	90	9.7	11.38	12.1937
	27	2,2-Dichloropropane	112	106	109	106	95	88	85	------	------	9.4	10.74	12.6159
	28	cis-1,2-Dichloroethene	101	102	106	109	100	96	94	96	96	4	5.04	12.6905
5	29	2-Butanone	------	------	------	100	113	100	93	100	100	3.3	5.59	12.7443
25	30	2-Butanol	------	------	79	114	114	100	107	100	100	8.2	13.24	13.1447
	31	Bromochloromethane	95	99	102	112	103	93	96	99	101	3.8	5.43	13.2176
	32	Tetrahydrofuran	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	33	Chloroform	100	99	103	111	102	97	97	97	95	3.4	4.65	13.3528
	34	Dibromofluoromethane	------	90	98	106	102	103	105	97	------	4.6	5.79	13.6698
	35	1,1,1-Trichloroethane	98	104	109	112	100	100	99	92	87	5.6	7.71	13.6343
	36	Cyclohexane	99	92	105	108	102	101	104	88	------	5.2	6.86	13.6839
	37	1,1-Dichloropropene	88	98	100	107	107	104	99	100	97	4.1	6.05	13.9379
	38	Carbon tetrachloride	91	95	103	106	106	101	100	100	98	3.7	4.93	13.9185
5	39	tert-Amyl alcohol	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	40	1,2-Dichloroethane-d4	79	98	94	101	105	98	114	108	102	6.8	9.98	14.2526
	41	2,2,4-Trimethylpentane	89	87	95	111	106	113	110	90	------	10	11.03	14.3132
	42	Benzene	------	96	104	108	101	97	94	100	------	3.7	4.94	14.2933
	43	1,2-Dichloroethane	94	98	104	115	109	94	96	96	91	6.4	7.93	14.3781
	44	tert-Amyl methyl ether (TAME)	93	93	102	112	112	93	98	100	98	5.7	7.52	14.4078
	45	Trichloroethene	88	96	99	108	104	98	98	104	103	4.4	5.85	15.2746
	46	Methylcyclohexane	------	85	100	100	106	103	105	------	------	5.1	7.70	15.4780
	47	1,2-Dichloropropane	96	95	107	109	103	100	97	98	97	4.2	5.18	15.6032
20	48	1,4-Dioxane	------	------	------	100	100	100	100	100	------	0	7.92	15.7868

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49	Dibromomethane	------	94	97	110	104	94	97	97	108	5.4	6.25	15.7991
50	Bromodichloromethane	99	93	103	108	104	95	100	98	99	3.6	4.67	15.9796
51	2-Chloroethyl vinyl ether	------	------	87	103	106	94	101	108	------	6.1	8.10	16.3223
52	cis-1,3-Dichloropropene	95	90	101	107	106	99	98	100	102	3.7	5.25	16.5146
5 53	4-Methyl-2-pentanone	------	85	96	101	115	99	102	103	99	5.1	8.26	16.6479
54	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	0	18.3324
55	Toluene-d8	------	89	94	105	104	103	102	103	------	5	6.24	16.7961
56	Toluene	95	99	101	109	104	98	91	103	------	4.4	5.72	16.8783
57	Ethyl methacrylate	------	89	93	108	112	97	93	106	105	7.4	8.48	17.1680
58	trans-1,3-Dichloropropene	91	93	97	112	109	101	92	105	100	6	7.37	17.1502
59	1,1,2-Trichloroethane	87	98	103	115	107	95	89	100	103	6.5	8.71	17.3583
60	Tetrachloroethene	90	98	100	107	102	99	91	104	109	4.9	6.42	17.4870
5 61	2-Hexanone	108	104	96	110	110	96	86	97	96	6.8	8.10	17.5910
62	1,3-Dichloropropane	90	97	101	110	108	99	91	101	102	5	6.69	17.5399
63	Dibromochloromethane	88	93	97	108	107	99	94	104	111	6.6	7.81	17.8024
64	1,2-Dibromoethane	88	89	96	114	109	97	96	103	107	7.4	8.99	17.9361
65	1-Chlorohexane	102	103	98	103	105	101	88	101	99	3.5	5.12	18.2564
66	Chlorobenzene	95	97	101	110	102	102	94	106	93	4.7	5.79	18.3621
67	Ethylbenzene	95	101	103	112	103	101	94	92	------	5	6.48	18.4163
68	1,1,1,2-Tetrachloroethane	88	97	100	113	102	103	91	105	------	5.9	7.94	18.4274
2 69	m-Xylene & p-Xylene	100	97	100	113	98	98	93	------	------	4	6.36	18.5134
70	o-Xylene	96	99	99	111	102	104	94	94	------	4.3	5.79	18.8825
71	Styrene	94	94	97	117	107	108	94	101	87	7.3	9.07	18.9020
72	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	0	20.6785
73	Bromoform	------	72	89	104	110	102	97	108	118	10.4	14.10	19.1406
74	Isopropylbenzene	95	103	101	105	105	108	96	86	------	5.8	7.21	19.1685
75	4-Bromofluorobenzene	96	98	92	102	104	108	102	98	------	4	4.89	19.3543
76	1,1,2,2-Tetrachloroethane	97	95	107	112	110	96	88	94	------	7.3	8.62	19.4583
77	trans-1,4-Dichloro-2-butene	------	108	99	108	111	97	93	90	94	6.8	7.97	19.4861
78	n-Propylbenzene	92	104	98	106	105	102	93	------	------	4.7	5.63	19.5090
79	1,2,3-Trichloropropane	------	107	95	117	114	93	90	89	93	9.7	11.08	19.5121
80	Bromobenzene	89	103	95	109	108	100	94	98	104	5.2	6.57	19.5162
81	1,3,5-Trimethylbenzene	99	104	99	103	103	104	92	95	------	3.7	4.64	19.6255
82	2-Chlorotoluene	98	105	98	106	104	103	91	95	------	4.7	5.46	19.6403
83	4-Chlorotoluene	98	103	100	107	101	102	92	97	------	3.4	4.56	19.7220
84	tert-Butylbenzene	95	109	98	98	107	102	89	103	100	4.5	6.04	19.9223
85	1,2,4-Trimethylbenzene	98	105	102	104	102	99	88	101	------	3.7	5.28	19.9579
86	sec-Butylbenzene	99	108	101	103	99	106	93	91	------	4.4	5.83	20.1010
87	p-Isopropyltoluene	104	110	97	103	100	101	90	96	------	4.5	6.01	20.1901
88	1,3-Dichlorobenzene	101	98	95	108	106	99	89	101	103	4.2	5.77	20.2790
89	1,2,3-Trimethylbenzene	95	105	104	105	99	100	92	100	------	3.6	4.76	20.3387
90	1,4-Dichlorobenzene	93	103	100	107	96	102	91	103	104	4.4	5.41	20.3533
91	Benzyl Chloride	103	105	91	104	108	96	90	99	103	5.3	6.47	20.4507
92	n-Butylbenzene	100	107	98	102	101	103	92	96	------	3.5	4.62	20.5468
93	1,2-Dichlorobenzene	97	100	101	105	102	95	95	99	106	3	3.93	20.6950
94	1,2-Dibromo-3-chloropropane	------	------	91	100	108	98	93	108	------	5.6	7.42	21.4067
95	1,2,4-Trichlorobenzene	97	92	93	102	104	101	93	106	111	5.4	6.69	22.1991
96	Hexachlorobutadiene	95	102	95	100	106	109	93	102	98	4.2	5.32	22.2850
97	Naphthalene	99	102	89	104	107	97	92	99	111	5.4	6.93	22.5161
98	1,2,3-Trichlorobenzene	91	91	97	103	108	104	92	106	108	6.5	7.34	22.7869

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Compound List Report F3

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
Total Cpnds : 98

K#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	14.88	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	3.76	0.252	A	1	A	B
3	T	Dichlorodifluoromethane	85	3.85	0.258	A	1	A	B
4	T	Chloromethane	50	4.29	0.288	A	1	A	B
5	T	2-Chloro-1,1,1-trifluoroethane	118	4.80	0.322	A	2	A	B
6	T	Vinyl chloride	62	4.55	0.306	A	1	A	B
7	T	Bromomethane	94	5.36	0.360	A	1	A	B
8	T	Chloroethane	64	5.61	0.377	A	1	A	B
9	T	Dichlorofluoromethane	67	6.09	0.409	A	1	A	B
10	T	Trichlorofluoromethane	101	6.17	0.415	A	1	A	B
11	T	Acrolein	56	7.32	0.492	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	7.48	0.503	A	1	A	B
13	T	1,1-Dichloroethene	61	7.53	0.506	A	2	A	B
14	T	Acetone	43	7.73	0.519	A	1	A	B
15	T	Iodomethane	142	8.03	0.539	A	1	A	B
16	T	Methyl acetate	43	8.59	0.577	A	1	A	B
17	T	Carbon disulfide	76	8.15	0.548	A	1	A	B
18	T	Methylene chloride	49	9.00	0.604	A	2	A	B
19	T	tert-Butyl alcohol	59	9.29	0.624	A	1	A	B
20	T	tert-Butyl methyl ether (MTBE)	73	9.61	0.646	A	1	A	B
21	T	trans-1,2-Dichloroethene	96	9.71	0.652	A	1	A	B
22	T	Acrylonitrile	53	9.76	0.656	A	2	A	B
23	T	Isopropyl ether (DIPE)	45	11.18	0.751	A	1	A	B
24	T	1,1-Dichloroethane	63	11.13	0.748	A	2	A	B
25	T	Vinyl acetate	43	11.27	0.757	L	1	A	B
26	T	tert-Butyl ethyl ether (ETBE)	59	12.19	0.819	A	1	A	B
27	T	2,2-Dichloropropane	77	12.62	0.848	A	2	A	B
28	T	cis-1,2-Dichloroethene	96	12.69	0.853	A	1	A	B
29	T	2-Butanone	72	12.74	0.856	A	1	A	B
30	T	2-Butanol	45	13.14	0.883	A	1	A	B
31	T	Bromochloromethane	130	13.21	0.888	A	1	A	B
32	T	Tetrahydrofuran	71	13.26	0.891	A	1	A	B
33	T	Chloroform	83	13.36	0.898	A	2	A	B
34	S	Dibromofluoromethane	111	13.66	0.918	A	1	A	B
35	T	1,1,1-Trichloroethane	97	13.63	0.916	A	2	A	B
36	T	Cyclohexane	84	13.68	0.919	A	1	A	B
37	T	1,1-Dichloropropene	110	13.93	0.936	A	1	A	B
38	T	Carbon tetrachloride	119	13.91	0.934	A	1	A	B
39	T	tert-Amyl alcohol	59	14.33	0.963	A	1	A	B
40	S	1,2-Dichloroethane-d4	65	14.24	0.957	A	1	A	B
41	T	2,2,4-Trimethylpentane	57	14.32	0.962	A	1	A	B
42	T	Benzene	78	14.29	0.960	A	2	A	B
43	T	1,2-Dichloroethane	62	14.36	0.965	A	1	A	B
44	T	tert-Amyl methyl ether (TAME)	87	14.41	0.968	A	1	A	B
45	T	Trichloroethene	130	15.27	1.026	A	3	A	B
46	T	Methylcyclohexane	83	15.48	1.040	A	2	A	B
47	T	1,2-Dichloropropane	63	15.60	1.048	A	1	A	B
48	T	1,4-Dioxane	88	15.79	1.061	A	1	A	B
49	T	Dibromomethane	93	15.79	1.061	A	2	A	B
50	T	Bromodichloromethane	83	15.98	1.074	A	1	A	B
51	T	2-Chloroethyl vinyl ether	63	16.31	1.096	A	1	A	B
52	T	cis-1,3-Dichloropropene	75	16.50	1.109	A	2	A	B
53	T	4-Methyl-2-pentanone	43	16.64	1.118	A	3	A	B

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4	I	CHLOROBENZENE-D5	117	18.33	1.000	A	2	A	B
5	S	Toluene-d8	98	16.79	0.916	A	1	A	B
6	T	Toluene	91	16.87	0.921	A	1	A	B
7	T	Ethyl methacrylate	69	17.16	0.936	A	1	A	B
8	T	trans-1,3-Dichloropropene	75	17.14	0.935	A	1	A	B
9	T	1,1,2-Trichloroethane	97	17.35	0.946	A	2	A	B
0	T	Tetrachloroethene	164	17.48	0.954	A	3	A	B
1	T	2-Hexanone	43	17.56	0.958	A	1	A	B
2	T	1,3-Dichloropropane	76	17.53	0.956	A	1	A	B
3	T	Dibromochloromethane	129	17.80	0.971	A	1	A	B
4	T	1,2-Dibromoethane	107	17.93	0.978	A	1	A	B
5	T	1-Chlorohexane	91	18.26	0.996	A	1	A	B
6	P,M	Chlorobenzene	112	18.36	1.002	A	1	A	B
7	T	Ethylbenzene	91	18.42	1.005	A	1	A	B
8	T	1,1,1,2-Tetrachloroethane	131	18.42	1.005	A	1	A	B
9	T	m-Xylene & p-Xylene	91	18.51	1.010	A	1	A	B
0	T	o-Xylene	91	18.88	1.030	A	1	A	B
1	T	Styrene	104	18.90	1.031	A	2	A	B
2	I	1,2-DICHLOROBENZENE-D4	152	20.68	1.000	A	1	A	B
3	T	Bromoform	173	19.13	0.925	A	2	A	B
4	T	Isopropylbenzene	105	19.16	0.927	A	3	A	B
5	S	4-Bromofluorobenzene	95	19.36	0.936	A	2	A	B
6	T	1,1,2,2-Tetrachloroethane	83	19.46	0.941	A	1	A	B
7	T	trans-1,4-Dichloro-2-butene	53	19.47	0.942	A	1	A	B
8	T	n-Propylbenzene	91	19.50	0.943	A	2	A	B
9	T	1,2,3-Trichloropropane	110	19.52	0.944	A	1	A	B
0	T	Bromobenzene	156	19.52	0.944	A	1	A	B
1	T	1,3,5-Trimethylbenzene	105	19.62	0.949	A	2	A	B
2	T	2-Chlorotoluene	91	19.64	0.950	A	1	A	B
3	T	4-Chlorotoluene	91	19.71	0.953	A	1	A	B
4	T	tert-Butylbenzene	134	19.92	0.963	A	1	A	B
5	T	1,2,4-Trimethylbenzene	105	19.95	0.965	A	1	A	B
6	T	sec-Butylbenzene	105	20.10	0.972	A	1	A	B
7	T	p-Isopropyltoluene	119	20.19	0.976	A	2	A	B
3	T	1,3-Dichlorobenzene	146	20.28	0.981	A	2	A	B
9	T	1,2,3-Trimethylbenzene	105	20.34	0.983	A	2	A	B
0	T	1,4-Dichlorobenzene	146	20.35	0.984	A	2	A	B
	T	Benzyl Chloride	91	20.44	0.989	A	3	A	B
2	T	n-Butylbenzene	91	20.54	0.994	A	2	A	B
3	T	1,2-Dichlorobenzene	146	20.69	1.001	A	1	A	B
4	T	1,2-Dibromo-3-chloropropane	157	21.41	1.035	A	1	A	B
5	T	1,2,4-Trichlorobenzene	180	22.19	1.073	A	2	A	B
6	T	Hexachlorobutadiene	225	22.28	1.078	A	2	A	B
7	T	Naphthalene	128	22.51	1.088	A	1	A	B
8	T	1,2,3-Trichlorobenzene	180	22.79	1.102	A	2	A	B

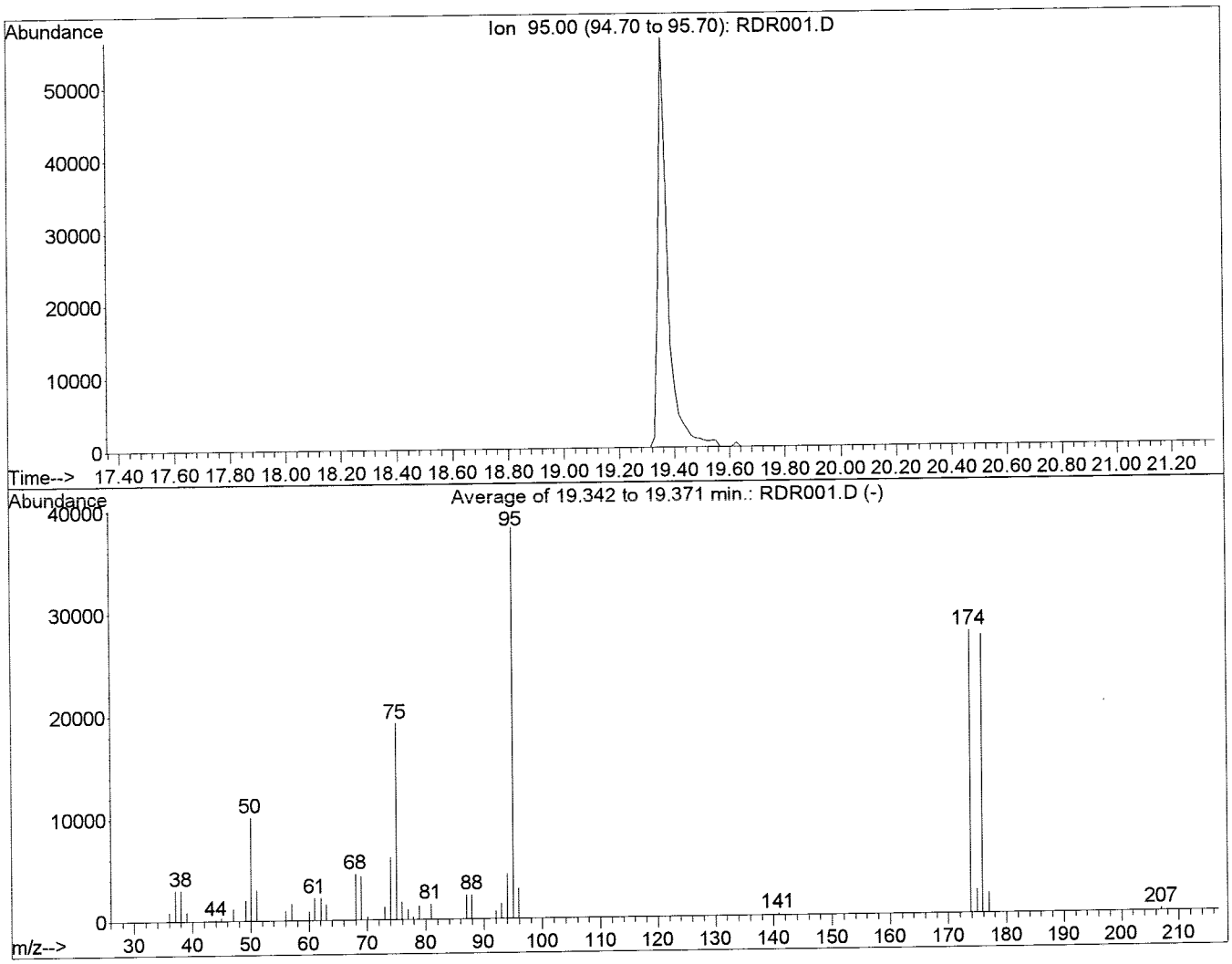
al A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
Qual = number of qualifiers
A/H = Area or Height
D R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VOF3D02.M Thu Apr 16 17:33:18 2020

SW 4/22/20

Data File : C:\HPCHEM\1\DATA\20D02\RDR001.D
Acq On : 2 Apr 2020 4:01 pm
Sample : BFBF3D01
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.4	10107	PASS
75	95	30	60	50.2	19203	PASS
95	95	100	100	100.0	38219	PASS
96	95	5	9	7.7	2940	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.4	27673	PASS
175	174	5	9	8.3	2302	PASS
176	174	95	101	98.5	27271	PASS
177	176	5	9	7.3	1980	PASS

RDR001.D VOF3D02.M Mon Apr 06 13:02:52 2020

SV 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2298716	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.35	117	1901409	10.00	ug/l	0.01
72) 1,2-DICHLOROBENZENE-D4	20.68	152	649361	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	20119	0.25	ug/l	0.03
Spiked Amount 10.000			Recovery =	2.50%		
40) 1,2-Dichloroethane-d4	14.29	65	15842	0.24	ug/l	0.04
Spiked Amount 10.000			Recovery =	2.40%		
55) Toluene-d8	16.83	98	60959	0.23	ug/l	0.04
Spiked Amount 10.000			Recovery =	2.30%		
75) 4-Bromofluorobenzene	19.37	95	23380	0.29	ug/l	0.01
Spiked Amount 10.000			Recovery =	2.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	12072	0.26	ug/l	98
3) Dichlorodifluoromethane	3.85	85	21390	0.27	ug/l	95
4) Chloromethane	4.29	50	48596	0.31	ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	22801	0.28	ug/l	88
6) Vinyl chloride	4.55	62	34513	0.27	ug/l	92
7) Bromomethane	5.36	94	26333	0.30	ug/l	93
8) Chloroethane	5.59	64	19583	0.30	ug/l	97
9) Dichlorofluoromethane	6.09	67	64314	0.33	ug/l	69
10) Trichlorofluoromethane	6.17	101	28370	0.26	ug/l	97
11) Acrolein	7.34	56	13334	1.85	ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	7.46	151	15275	0.30	ug/l	95
13) 1,1-Dichloroethene	7.53	61	52366	0.31	ug/l	100
14) Acetone	7.76	43	28400	2.36	ug/l	86
15) Iodomethane	8.03	142	41265	0.30	ug/l	97
17) Carbon disulfide	8.17	76	74229	0.25	ug/l	100
18) Methylene chloride	8.98	49	47729	0.30	ug/l	97
19) tert-Butyl alcohol	9.31	59	29519	8.48	ug/l	98
20) tert-Butyl methyl ether (M	9.64	73	49053	0.36	ug/l	84
21) trans-1,2-Dichloroethene	9.71	96	26634	0.30	ug/l	98
23) Isopropyl ether (DIPE)	11.20	45	104056	0.29	ug/l	100
24) 1,1-Dichloroethane	11.13	63	58340	0.31	ug/l	98
26) tert-Butyl ethyl ether (ET	12.22	59	98267	0.41	ug/l	100
27) 2,2-Dichloropropane	12.62	77	27524	0.34	ug/l	90
28) cis-1,2-Dichloroethene	12.72	96	28096	0.30	ug/l	94
31) Bromochloromethane	13.24	130	12550	0.29	ug/l	99
33) Chloroform	13.36	83	47042	0.30	ug/l	98
35) 1,1,1-Trichloroethane	13.63	97	29348	0.29	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
36)	Cyclohexane	13.68	84	34906	0.30 ug/l	86
37)	1,1-Dichloropropene	13.96	110	11149	0.26 ug/l	88
38)	Carbon tetrachloride	13.93	119	23254	0.27 ug/l	96
41)	2,2,4-Trimethylpentane	14.32	57	96746	0.27 ug/l	99
42)	Benzene	14.32	78	99592	0.30 ug/l	99
43)	1,2-Dichloroethane	14.41	62	21940	0.28 ug/l	98
44)	tert-Amyl methyl ether (TA	14.42	87	7720	0.28 ug/l	90
45)	Trichloroethene	15.30	130	22530	0.26 ug/l	93
46)	Methylcyclohexane	15.49	83	35217	0.26 ug/l	91
47)	1,2-Dichloropropane	15.63	63	26709	0.29 ug/l	97
50)	Bromodichloromethane	16.00	83	28053	0.30 ug/l	100
52)	cis-1,3-Dichloropropene	16.55	75	31960	0.29 ug/l	95
53)	4-Methyl-2-pentanone	16.70	43	48287	1.23 ug/l	91
56)	Toluene	16.89	91	93025	0.28 ug/l	97
57)	Ethyl methacrylate	17.25	69	15771	0.27 ug/l	84
58)	trans-1,3-Dichloropropene	17.19	75	25576	0.27 ug/l	79
59)	1,1,2-Trichloroethane	17.38	97	11702	0.26 ug/l	96
60)	Tetrachloroethene	17.50	164	17462	0.27 ug/l	93
61)	2-Hexanone	17.74	43	51309	1.62 ug/l	86
62)	1,3-Dichloropropane	17.56	76	22690	0.27 ug/l	91
63)	Dibromochloromethane	17.83	129	15366	0.26 ug/l	92
64)	1,2-Dibromoethane	17.96	107	11326	0.26 ug/l	96
65)	1-Chlorohexane	18.27	91	40336	0.31 ug/l	87
66)	Chlorobenzene	18.37	112	53638	0.28 ug/l	98
67)	Ethylbenzene	18.43	91	102687	0.28 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.43	131	16440	0.26 ug/l	87
69)	m-Xylene & p-Xylene	18.52	91	164960	0.60 ug/l	95
70)	o-Xylene	18.89	91	77337	0.29 ug/l	96
71)	Styrene	18.92	104	52535	0.28 ug/l	95
73)	Bromoform	19.16	173	6321	0.26 ug/l	95
74)	Isopropylbenzene	19.18	105	88125	0.28 ug/l	98
76)	1,1,2,2-Tetrachloroethane	19.47	83	14525	0.29 ug/l	86
77)	trans-1,4-Dichloro-2-buten	19.52	53	2921	0.20 ug/l	70
78)	n-Propylbenzene	19.52	91	113968	0.28 ug/l	99
79)	1,2,3-Trichloropropane	19.53	110	1997	0.21 ug/l	61
80)	Bromobenzene	19.53	156	18222	0.27 ug/l	99
81)	1,3,5-Trimethylbenzene	19.64	105	72014	0.30 ug/l	97
82)	2-Chlorotoluene	19.65	91	72163	0.29 ug/l	99
83)	4-Chlorotoluene	19.74	91	64170	0.29 ug/l	96
84)	tert-Butylbenzene	19.94	134	14408	0.29 ug/l	98
85)	1,2,4-Trimethylbenzene	19.98	105	67941	0.29 ug/l	100

(#) = qualifier out of range (m) = manual integration
RDR002.D VOF3D02.M Thu Apr 16 17:32:17 2020 SU 4/24/20 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D Vial: 2
Acq On : 2 Apr 2020 4:47 pm Operator: RMinam
Sample : VOF3D021 Inst : F3
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
86)	sec-Butylbenzene	20.11	105	97819	0.30 ug/l	99
87)	p-Isopropyltoluene	20.20	119	81949	0.31 ug/l	98
88)	1,3-Dichlorobenzene	20.29	146	37293	0.30 ug/l	96
89)	1,2,3-Trimethylbenzene	20.35	105	61229	0.28 ug/l	97
90)	1,4-Dichlorobenzene	20.37	146	35161	0.28 ug/l	91
91)	Benzyl Chloride	20.47	91	20054	0.31 ug/l	97
92)	n-Butylbenzene	20.56	91	85604	0.30 ug/l	96
93)	1,2-Dichlorobenzene	20.71	146	29632	0.29 ug/l	95
95)	1,2,4-Trichlorobenzene	22.21	180	17570	0.29 ug/l	98
96)	Hexachlorobutadiene	22.30	225	10701	0.29 ug/l	80
97)	Naphthalene	22.54	128	25390	0.30 ug/l	95
98)	1,2,3-Trichlorobenzene	22.80	180	12775	0.27 ug/l	98

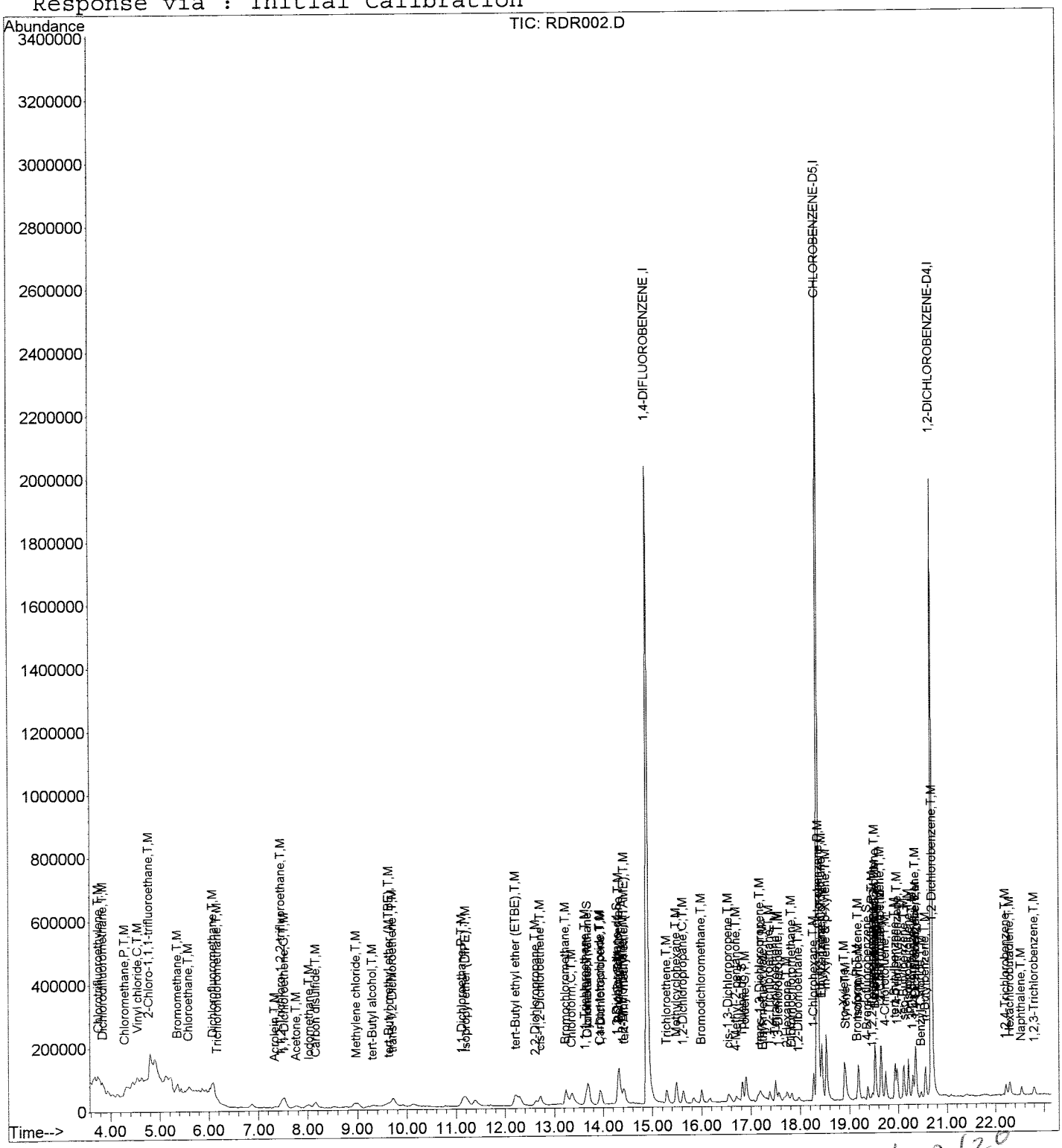
(#) = qualifier out of range (m) = manual integration SA 4/24/20
RDR002.D VOF3D02.M Thu Apr 16 17:32:17 2020 Page 3

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR002.D
Acq On : 2 Apr 2020 4:47 pm
Sample : VOF3D021
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:29 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Su 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2253751	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1733328	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	581543	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	35702	0.45	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.50%		
40) 1,2-Dichloroethane-d4	14.27	65	32358	0.49	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.90%		
55) Toluene-d8	16.82	98	106648	0.44	ug/l	0.03
Spiked Amount 10.000			Recovery =	4.40%		
75) 4-Bromofluorobenzene	19.36	95	35807	0.49	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	18571	0.41	ug/l	99
3) Dichlorodifluoromethane	3.84	85	34544	0.44	ug/l	92
4) Chloromethane	4.29	50	74323	0.48	ug/l	94
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	34075	0.43	ug/l	89
6) Vinyl chloride	4.55	62	53371	0.43	ug/l	94
7) Bromomethane	5.36	94	40563	0.47	ug/l	99
8) Chloroethane	5.61	64	29449	0.46	ug/l	98
9) Dichlorofluoromethane	6.09	67	97710	0.52	ug/l	79
10) Trichlorofluoromethane	6.17	101	45426	0.42	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	24358	0.49	ug/l	97
13) 1,1-Dichloroethene	7.53	61	80771	0.49	ug/l	100
14) Acetone	7.74	43	38513	3.27	ug/l	86
15) Iodomethane	8.04	142	68007	0.50	ug/l	99
17) Carbon disulfide	8.15	76	126024	0.43	ug/l	100
18) Methylene chloride	8.98	49	78847	0.50	ug/l	95
19) tert-Butyl alcohol	9.31	59	45037	13.20	ug/l	81
20) tert-Butyl methyl ether (M	9.63	73	71118	0.53	ug/l	95
21) trans-1,2-Dichloroethene	9.73	96	43209	0.50	ug/l	100
22) Acrylonitrile	9.88	53	24620	1.96	ug/l	93
23) Isopropyl ether (DIPE)	11.20	45	168710	0.48	ug/l	100
24) 1,1-Dichloroethane	11.13	63	90367	0.48	ug/l	97
26) tert-Butyl ethyl ether (ET	12.19	59	137773	0.58	ug/l	99
27) 2,2-Dichloropropane	12.62	77	42773	0.53	ug/l	94
28) cis-1,2-Dichloroethene	12.71	96	46334	0.51	ug/l	96
30) 2-Butanol	13.26	45	22244	6.93	ug/l	90
31) Bromochloromethane	13.24	130	21378	0.50	ug/l	99
33) Chloroform	13.36	83	75369	0.49	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:21 2020 SK 4/22/20 Page 1

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35)	1,1,1-Trichloroethane	13.63	97	50931	0.52	ug/l	98
36)	Cyclohexane	13.68	84	52538	0.46	ug/l	96
37)	1,1-Dichloropropene	13.96	110	20371	0.49	ug/l	96
38)	Carbon tetrachloride	13.93	119	39345	0.47	ug/l	98
41)	2,2,4-Trimethylpentane	14.30	57	153510	0.43	ug/l	98
42)	Benzene	14.30	78	153883	0.48	ug/l	98
43)	1,2-Dichloroethane	14.39	62	37179	0.49	ug/l	94
44)	tert-Amyl methyl ether (TA	14.42	87	12602	0.46	ug/l	94
45)	Trichloroethene	15.29	130	40307	0.48	ug/l	97
46)	Methylcyclohexane	15.48	83	56253	0.43	ug/l	84
47)	1,2-Dichloropropane	15.61	63	43195	0.47	ug/l	99
49)	Dibromomethane	15.82	93	16286	0.47	ug/l	94
50)	Bromodichloromethane	15.98	83	43085	0.47	ug/l	99
52)	cis-1,3-Dichloropropene	16.53	75	49224	0.45	ug/l	88
53)	4-Methyl-2-pentanone	16.68	43	82213	2.13	ug/l	95
56)	Toluene	16.89	91	147943	0.49	ug/l	99
57)	Ethyl methacrylate	17.23	69	23605	0.44	ug/l	97
58)	trans-1,3-Dichloropropene	17.17	75	39857	0.47	ug/l	93
59)	1,1,2-Trichloroethane	17.37	97	19938	0.49	ug/l	94
60)	Tetrachloroethene	17.50	164	28978	0.49	ug/l	97
61)	2-Hexanone	17.66	43	74474	2.58	ug/l	92
62)	1,3-Dichloropropane	17.56	76	37126	0.49	ug/l	98
63)	Dibromochloromethane	17.81	129	24733	0.46	ug/l	95
64)	1,2-Dibromoethane	17.95	107	17584	0.45	ug/l	98
65)	1-Chlorohexane	18.26	91	61916	0.52	ug/l	95
66)	Chlorobenzene	18.36	112	83583	0.49	ug/l	100
67)	Ethylbenzene	18.42	91	166391	0.50	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.44	131	27684	0.49	ug/l	92
69)	m-Xylene & p-Xylene	18.52	91	243672	0.97	ug/l	98
70)	o-Xylene	18.88	91	120352	0.49	ug/l	100
71)	Styrene	18.91	104	79991	0.47	ug/l	98
73)	Bromoform	19.15	173	7990	0.36	ug/l	79
74)	Isopropylbenzene	19.18	105	143566	0.52	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	21184	0.48	ug/l	92
77)	trans-1,4-Dichloro-2-buten	19.51	53	6926	0.54	ug/l	73
78)	n-Propylbenzene	19.52	91	192741	0.52	ug/l	100
79)	1,2,3-Trichloropropane	19.52	110	4616	0.53	ug/l	70
80)	Bromobenzene	19.52	156	31503	0.51	ug/l	92
81)	1,3,5-Trimethylbenzene	19.62	105	112901	0.52	ug/l	99
82)	2-Chlorotoluene	19.64	91	116393	0.53	ug/l	99
83)	4-Chlorotoluene	19.73	91	101216	0.52	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D
Acq On : 2 Apr 2020 5:16 pm
Sample : VOF3D022
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 3
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
84) tert-Butylbenzene	19.92	134	24617	0.54 ug/l	83
85) 1,2,4-Trimethylbenzene	19.97	105	109229	0.53 ug/l	98
86) sec-Butylbenzene	20.10	105	158425	0.54 ug/l	99
87) p-Isopropyltoluene	20.19	119	128655	0.55 ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	53755	0.49 ug/l	98
89) 1,2,3-Trimethylbenzene	20.34	105	101496	0.53 ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	58125	0.52 ug/l	98
91) Benzyl Chloride	20.46	91	30520	0.52 ug/l	93
92) n-Butylbenzene	20.55	91	137810	0.54 ug/l	96
93) 1,2-Dichlorobenzene	20.69	146	45688	0.50 ug/l	91
94) 1,2-Dibromo-3-chloropropan	21.42	157	1717	0.33 ug/l	99
95) 1,2,4-Trichlorobenzene	22.21	180	24774	0.46 ug/l	94
96) Hexachlorobutadiene	22.28	225	17178	0.51 ug/l	97
97) Naphthalene	22.52	128	39224	0.51 ug/l	98
98) 1,2,3-Trichlorobenzene	22.79	180	19020	0.45 ug/l	96

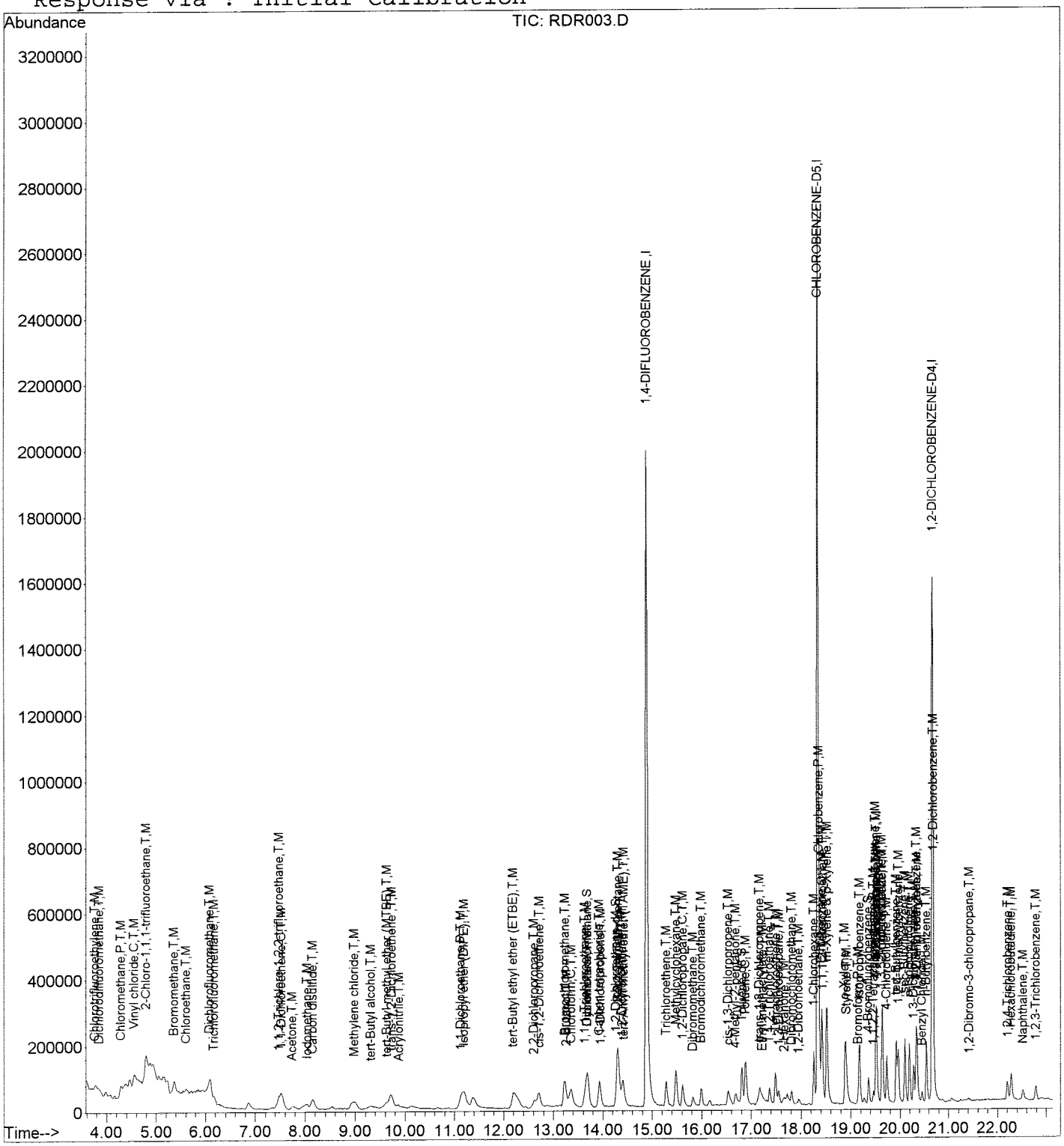
SA 4/22/20

(#) = qualifier out of range (m) = manual integration
RDR003.D VOF3D02.M Thu Apr 16 17:32:22 2020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR003.D Vial: 3
Acq On : 2 Apr 2020 5:16 pm Operator: RMinam
Sample : VOF3D022 Inst : F3
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2169726	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1735707	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	588690	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	75178	0.98	ug/l	0.03
Spiked Amount 10.000			Recovery =	9.80%		
40) 1,2-Dichloroethane-d4	14.26	65	59462	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
55) Toluene-d8	16.80	98	224740	0.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	9.40%		
75) 4-Bromofluorobenzene	19.36	95	68218	0.92	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.20%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	42705	0.97	ug/l	96
3) Dichlorodifluoromethane	3.84	85	80903	1.06	ug/l	97
4) Chloromethane	4.29	50	154823	1.04	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	74512	0.97	ug/l	95
6) Vinyl chloride	4.55	62	124867	1.05	ug/l	97
7) Bromomethane	5.36	94	83152	1.00	ug/l	97
8) Chloroethane	5.61	64	63990	1.04	ug/l	99
9) Dichlorofluoromethane	6.08	67	191814	1.05	ug/l	93
10) Trichlorofluoromethane	6.17	101	108662	1.05	ug/l	96
11) Acrolein	7.34	56	42600	6.25	ug/l	86
12) 1,1,2-Trichloro-1,2,2-trif	7.50	151	48834	1.02	ug/l	99
13) 1,1-Dichloroethene	7.53	61	168399	1.06	ug/l	99
14) Acetone	7.76	43	58922	5.19	ug/l	98
15) Iodomethane	8.02	142	130400	0.99	ug/l	100
16) Methyl acetate	8.66	43	14933	0.48	ug/l	94
17) Carbon disulfide	8.15	76	296376	1.05	ug/l	98
18) Methylene chloride	8.92	49	157447	1.04	ug/l	99
19) tert-Butyl alcohol	9.31	59	82087	25.00	ug/l	95
20) tert-Butyl methyl ether (M	9.64	73	130992	1.01	ug/l	99
21) trans-1,2-Dichloroethene	9.71	96	84964	1.02	ug/l	100
22) Acrylonitrile	9.83	53	53937	4.46	ug/l	94
23) Isopropyl ether (DIPE)	11.20	45	341006	1.01	ug/l	99
24) 1,1-Dichloroethane	11.13	63	189312	1.05	ug/l	99
25) Vinyl acetate	11.40	43	45383	1.10	ug/l	96
26) tert-Butyl ethyl ether (ET	12.19	59	245915	1.08	ug/l	98
27) 2,2-Dichloropropane	12.62	77	84179	1.09	ug/l	95
28) cis-1,2-Dichloroethene	12.69	96	92838	1.06	ug/l	98

(#) = qualifier out of range (m) = manual integration

SC 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30) 2-Butanol	13.21	45	57846	18.72	ug/l	93
31) Bromochloromethane	13.21	130	42186	1.02	ug/l	100
33) Chloroform	13.36	83	150906	1.02	ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	103067	1.09	ug/l	99
36) Cyclohexane	13.68	84	115790	1.05	ug/l	99
37) 1,1-Dichloropropene	13.93	110	40038	1.00	ug/l	99
38) Carbon tetrachloride	13.93	119	82623	1.03	ug/l	100
41) 2,2,4-Trimethylpentane	14.30	57	322724	0.95	ug/l	99
42) Benzene	14.30	78	320915	1.04	ug/l	98
43) 1,2-Dichloroethane	14.39	62	76406	1.05	ug/l	98
44) tert-Amyl methyl ether (TA	14.41	87	26925	1.02	ug/l	99
45) Trichloroethene	15.28	130	80066	0.99	ug/l	97
46) Methylcyclohexane	15.48	83	126436	1.00	ug/l	94
47) 1,2-Dichloropropane	15.61	63	94256	1.07	ug/l	98
48) 1,4-Dioxane	15.83	88	3613	16.65	ug/l	85
49) Dibromomethane	15.81	93	32398	0.97	ug/l	99
50) Bromodichloromethane	15.98	83	92088	1.03	ug/l	98
51) 2-Chloroethyl vinyl ether	16.35	63	13386	0.87	ug/l	72
52) cis-1,3-Dichloropropene	16.52	75	106137	1.01	ug/l	95
53) 4-Methyl-2-pentanone	16.67	43	178757	4.82	ug/l	94
56) Toluene	16.87	91	302771	1.01	ug/l	100
57) Ethyl methacrylate	17.20	69	49213	0.92	ug/l	97
58) trans-1,3-Dichloropropene	17.16	75	82460	0.97	ug/l	97
59) 1,1,2-Trichloroethane	17.37	97	41917	1.03	ug/l	98
60) Tetrachloroethene	17.48	164	59372	1.00	ug/l	97
61) 2-Hexanone	17.60	43	138270	4.79	ug/l	94
62) 1,3-Dichloropropane	17.54	76	77422	1.01	ug/l	99
63) Dibromochloromethane	17.81	129	51679	0.97	ug/l	99
64) 1,2-Dibromoethane	17.94	107	38092	0.97	ug/l	97
65) 1-Chlorohexane	18.26	91	116850	0.97	ug/l	98
66) Chlorobenzene	18.36	112	174428	1.01	ug/l	99
67) Ethylbenzene	18.42	91	341233	1.03	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.44	131	56921	1.00	ug/l	99
69) m-Xylene & p-Xylene	18.51	91	502861	2.01	ug/l	99
70) o-Xylene	18.88	91	242873	0.99	ug/l	97
71) Styrene	18.91	104	165454	0.97	ug/l	99
73) Bromoform	19.15	173	19990	0.89	ug/l	96
74) Isopropylbenzene	19.18	105	284874	1.01	ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	48415	1.07	ug/l	98
77) trans-1,4-Dichloro-2-buten	19.51	53	12764	0.98	ug/l	88
78) n-Propylbenzene	19.51	91	367180	0.98	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D Vial: 4
Acq On : 2 Apr 2020 5:46 pm Operator: RMinam
Sample : VOF3D023 Inst : F3
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	1,2,3-Trichloropropane	19.52	110	8379	0.96	ug/l	84
80)	Bromobenzene	19.52	156	58838	0.95	ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	216034	0.99	ug/l	99
82)	2-Chlorotoluene	19.64	91	218692	0.98	ug/l	99
83)	4-Chlorotoluene	19.73	91	197331	1.00	ug/l	100
84)	tert-Butylbenzene	19.92	134	45023	0.98	ug/l	98
85)	1,2,4-Trimethylbenzene	19.97	105	215140	1.02	ug/l	98
86)	sec-Butylbenzene	20.10	105	301672	1.01	ug/l	96
87)	p-Isopropyltoluene	20.19	119	229967	0.97	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	105731	0.95	ug/l	96
89)	1,2,3-Trimethylbenzene	20.34	105	203626	1.04	ug/l	96
90)	1,4-Dichlorobenzene	20.35	146	113207	1.00	ug/l	98
91)	Benzyl Chloride	20.46	91	53791	0.91	ug/l	96
92)	n-Butylbenzene	20.55	91	255194	0.98	ug/l	98
93)	1,2-Dichlorobenzene	20.69	146	93163	1.01	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	4748	0.91	ug/l	99
95)	1,2,4-Trichlorobenzene	22.21	180	50651	0.93	ug/l	98
96)	Hexachlorobutadiene	22.28	225	32354	0.95	ug/l	98
97)	Naphthalene	22.52	128	69056	0.89	ug/l	97
98)	1,2,3-Trichlorobenzene	22.79	180	41146	0.97	ug/l	95

Su 4/22/20

(#) = qualifier out of range (m) = manual integration

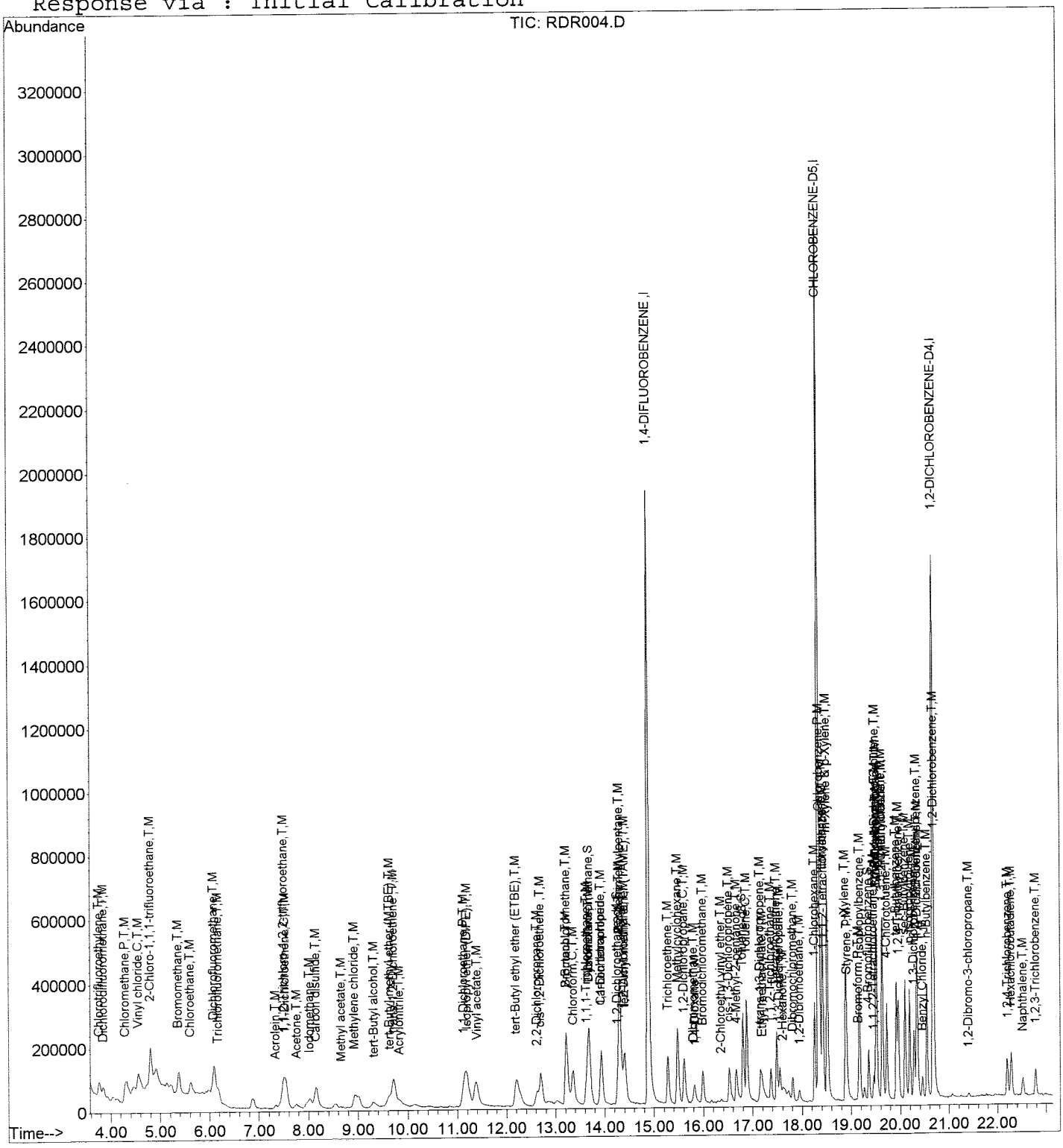
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR004.D
Acq On : 2 Apr 2020 5:46 pm
Sample : VOF3D023
Misc : 1ppb 8260/5ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:30 2020

Vial: 4
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D Vial: 5
Acq On : 2 Apr 2020 6:15 pm Operator: RMinam
Sample : VOF3D024 Inst : F3
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2079658	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1598101	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	591493	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.68	111	156092	2.12	ug/l	0.03
Spiked Amount 10.000			Recovery =	21.20%		
40) 1,2-Dichloroethane-d4	14.24	65	122970	2.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.30%		
55) Toluene-d8	16.80	98	464750	2.10	ug/l	0.01
Spiked Amount 10.000			Recovery =	21.00%		
75) 4-Bromofluorobenzene	19.36	95	151526	2.04	ug/l	0.00
Spiked Amount 10.000			Recovery =	20.40%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	91312	2.17	ug/l	98
3) Dichlorodifluoromethane	3.84	85	162686	2.23	ug/l	97
4) Chloromethane	4.29	50	304853	2.13	ug/l	99
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	161834	2.19	ug/l	96
6) Vinyl chloride	4.55	62	248984	2.19	ug/l	99
7) Bromomethane	5.36	94	166615	2.09	ug/l	98
8) Chloroethane	5.61	64	130681	2.21	ug/l	98
9) Dichlorofluoromethane	6.08	67	386182	2.21	ug/l	95
10) Trichlorofluoromethane	6.17	101	215714	2.18	ug/l	99
11) Acrolein	7.32	56	76970	11.79	ug/l	90
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	102199	2.24	ug/l	98
13) 1,1-Dichloroethene	7.53	61	341160	2.24	ug/l	100
14) Acetone	7.74	43	129316	11.89	ug/l	93
15) Iodomethane	8.01	142	277069	2.20	ug/l	99
16) Methyl acetate	8.64	43	67606	2.25	ug/l	87
17) Carbon disulfide	8.15	76	589707	2.18	ug/l	100
18) Methylene chloride	8.98	49	328496	2.27	ug/l	99
19) tert-Butyl alcohol	9.29	59	169134	53.74	ug/l	93
20) tert-Butyl methyl ether (M	9.64	73	273692	2.21	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	179185	2.24	ug/l	99
22) Acrylonitrile	9.79	53	121779	10.51	ug/l	93
23) Isopropyl ether (DIPE)	11.18	45	733965	2.27	ug/l	99
24) 1,1-Dichloroethane	11.13	63	382453	2.22	ug/l	100
25) Vinyl acetate	11.32	43	148338	1.99	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	493545	2.27	ug/l	98
27) 2,2-Dichloropropane	12.62	77	157455	2.12	ug/l	97
28) cis-1,2-Dichloroethene	12.69	96	183151	2.18	ug/l	98

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:30 2020 Page 1

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.82	72	30937	9.86 ug/l	69
30) 2-Butanol	13.19	45	164096	55.40 ug/l	89
31) Bromochloromethane	13.21	130	88764	2.23 ug/l	99
33) Chloroform	13.36	83	312318	2.21 ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	202547	2.23 ug/l	99
36) Cyclohexane	13.68	84	229731	2.17 ug/l	100
37) 1,1-Dichloropropene	13.93	110	82530	2.15 ug/l	99
38) Carbon tetrachloride	13.91	119	162969	2.12 ug/l	99
41) 2,2,4-Trimethylpentane	14.30	57	724349	2.21 ug/l	99
42) Benzene	14.29	78	641972	2.17 ug/l	99
43) 1,2-Dichloroethane	14.38	62	161059	2.30 ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	56363	2.24 ug/l	96
45) Trichloroethene	15.27	130	166548	2.15 ug/l	98
46) Methylcyclohexane	15.48	83	243573	2.00 ug/l	96
47) 1,2-Dichloropropane	15.60	63	183361	2.18 ug/l	99
48) 1,4-Dioxane	15.80	88	7220	34.70 ug/l	72
49) Dibromomethane	15.80	93	70141	2.19 ug/l	98
50) Bromodichloromethane	15.98	83	185058	2.17 ug/l	99
51) 2-Chloroethyl vinyl ether	16.34	63	30415	2.06 ug/l	92
52) cis-1,3-Dichloropropene	16.52	75	216775	2.15 ug/l	99
53) 4-Methyl-2-pentanone	16.65	43	357713	10.06 ug/l	99
56) Toluene	16.87	91	601609	2.18 ug/l	99
57) Ethyl methacrylate	17.17	69	106043	2.16 ug/l	99
58) trans-1,3-Dichloropropene	17.16	75	175849	2.24 ug/l	99
59) 1,1,2-Trichloroethane	17.36	97	86599	2.31 ug/l	99
60) Tetrachloroethene	17.48	164	116852	2.14 ug/l	99
61) 2-Hexanone	17.57	43	290598	10.92 ug/l	95
62) 1,3-Dichloropropane	17.54	76	155387	2.21 ug/l	100
63) Dibromochloromethane	17.80	129	106260	2.16 ug/l	100
64) 1,2-Dibromoethane	17.93	107	82669	2.28 ug/l	97
65) 1-Chlorohexane	18.26	91	228141	2.07 ug/l	100
66) Chlorobenzene	18.36	112	349057	2.20 ug/l	99
67) Ethylbenzene	18.42	91	679155	2.23 ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.43	131	118731	2.26 ug/l	99
69) m-Xylene & p-Xylene	18.51	91	1045474	4.53 ug/l	100
70) o-Xylene	18.88	91	501229	2.23 ug/l	98
71) Styrene	18.89	104	365066	2.33 ug/l	100
73) Bromoform	19.15	173	46800	2.08 ug/l	99
74) Isopropylbenzene	19.16	105	594160	2.10 ug/l	99
76) 1,1,2,2-Tetrachloroethane	19.46	83	101480	2.24 ug/l	99
77) trans-1,4-Dichloro-2-buten	19.49	53	28041	2.15 ug/l	91

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020

SV 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D Vial: 5
Acq On : 2 Apr 2020 6:15 pm Operator: RMinam
Sample : VOF3D024 Inst : F3
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78)	n-Propylbenzene	19.50	91	796249	2.12 ug/l	99
79)	1,2,3-Trichloropropane	19.52	110	20578	2.34 ug/l	87
80)	Bromobenzene	19.52	156	135809	2.18 ug/l	98
81)	1,3,5-Trimethylbenzene	19.62	105	454985	2.07 ug/l	99
82)	2-Chlorotoluene	19.64	91	477481	2.13 ug/l	99
83)	4-Chlorotoluene	19.73	91	425279	2.14 ug/l	99
84)	tert-Butylbenzene	19.92	134	90043	1.96 ug/l	100
85)	1,2,4-Trimethylbenzene	19.95	105	439709	2.08 ug/l	99
86)	sec-Butylbenzene	20.10	105	616892	2.06 ug/l	98
87)	p-Isopropyltoluene	20.19	119	489141	2.05 ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	240610	2.15 ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	410392	2.09 ug/l	97
90)	1,4-Dichlorobenzene	20.35	146	245312	2.15 ug/l	97
91)	Benzyl Chloride	20.46	91	123591	2.09 ug/l	97
92)	n-Butylbenzene	20.54	91	531977	2.04 ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	195472	2.10 ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	10490	2.00 ug/l	95
95)	1,2,4-Trichlorobenzene	22.19	180	112067	2.05 ug/l	99
96)	Hexachlorobutadiene	22.28	225	68180	2.00 ug/l	95
97)	Naphthalene	22.52	128	163016	2.09 ug/l	98
98)	1,2,3-Trichlorobenzene	22.79	180	87704	2.06 ug/l	98

Su 4/24/20

(#) = qualifier out of range (m) = manual integration
RDR005.D VOF3D02.M Thu Apr 16 17:32:31 2020 Page 3

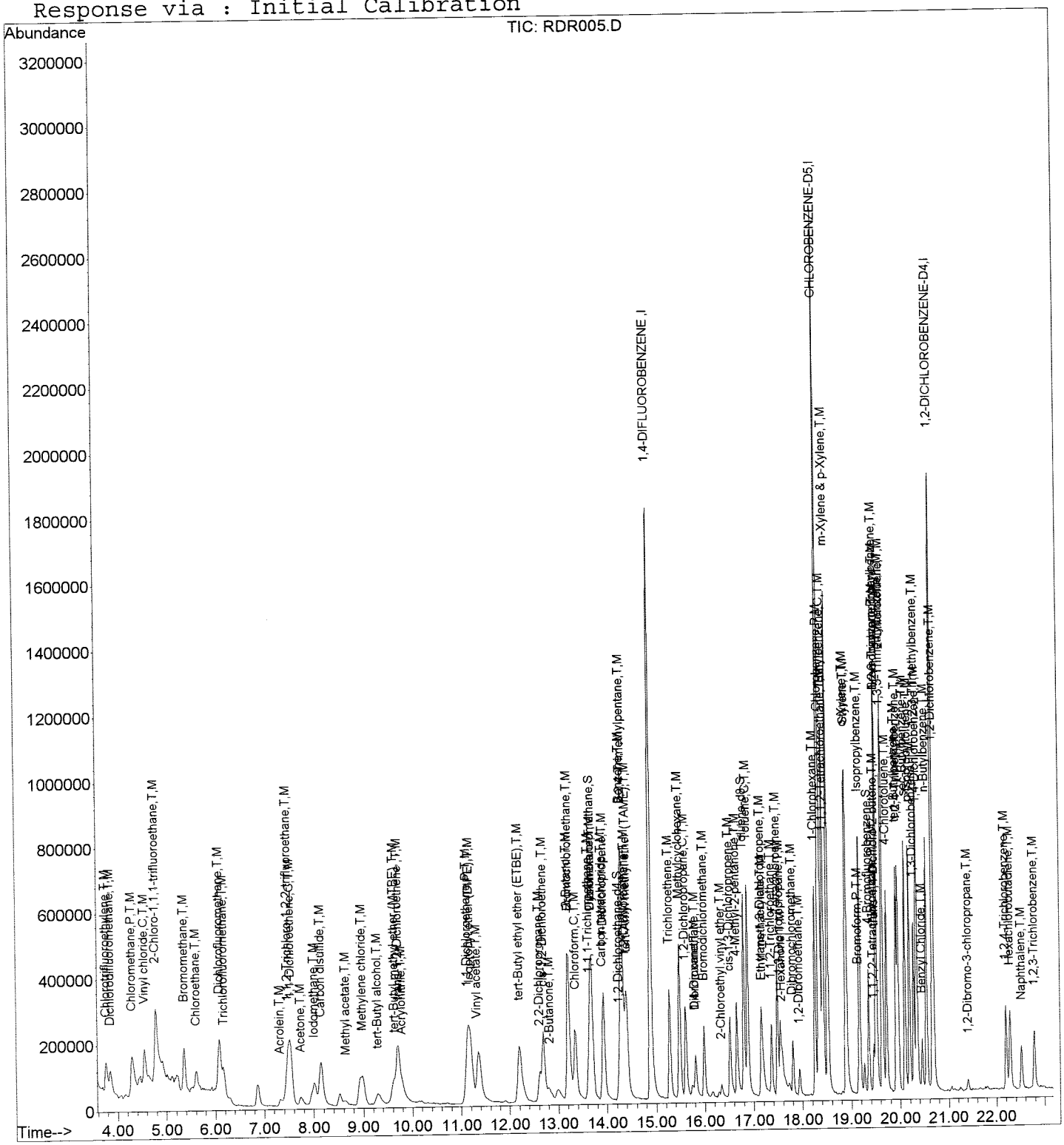
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR005.D
Acq On : 2 Apr 2020 6:15 pm
Sample : VOF3D024
Misc : 2ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 5
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Sng 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2269548	10.00 ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1732127	10.00 ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	585067	10.00 ug/l	0.00
System Monitoring Compounds					
34) Dibromofluoromethane	13.66	111	409582	5.10 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.00%	
40) 1,2-Dichloroethane-d4	14.24	65	348607	5.27 ug/l	0.00
Spiked Amount 10.000			Recovery =	52.70%	
55) Toluene-d8	16.80	98	1252485	5.22 ug/l	0.02
Spiked Amount 10.000			Recovery =	52.20%	
75) 4-Bromofluorobenzene	19.36	95	379351	5.17 ug/l	0.00
Spiked Amount 10.000			Recovery =	51.70%	
Target Compounds					Qvalue
2) Chlorotrifluoroethylene	3.76	116	252123	5.49 ug/l	100
3) Dichlorodifluoromethane	3.85	85	406098	5.11 ug/l	100
4) Chloromethane	4.29	50	758113	4.86 ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	425925	5.29 ug/l	99
6) Vinyl chloride	4.56	62	653016	5.27 ug/l	100
7) Bromomethane	5.37	94	431203	4.95 ug/l	100
8) Chloroethane	5.61	64	324333	5.03 ug/l	99
9) Dichlorofluoromethane	6.09	67	926567	4.85 ug/l	100
10) Trichlorofluoromethane	6.18	101	581955	5.40 ug/l	99
11) Acrolein	7.31	56	191106	26.82 ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	253894	5.09 ug/l	99
13) 1,1-Dichloroethene	7.54	61	815585	4.91 ug/l	100
14) Acetone	7.71	43	331807	27.96 ug/l	99
15) Iodomethane	8.03	142	664633	4.83 ug/l	99
16) Methyl acetate	8.61	43	154667	4.72 ug/l	98
17) Carbon disulfide	8.14	76	1532701	5.20 ug/l	100
18) Methylene chloride	8.98	49	795019	5.03 ug/l	99
19) tert-Butyl alcohol	9.29	59	442682	128.88 ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	676502	5.01 ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	437410	5.00 ug/l	99
22) Acrylonitrile	9.76	53	327566	25.91 ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	1903093	5.39 ug/l	98
24) 1,1-Dichloroethane	11.12	63	954580	5.07 ug/l	100
25) Vinyl acetate	11.30	43	530095	4.84 ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	1178276	4.97 ug/l	99
27) 2,2-Dichloropropane	12.62	77	383661	4.73 ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	460245	5.02 ug/l	100

(#) = qualifier out of range (m) = manual integration

4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.76	72	93923	27.43 ug/l	99
30) 2-Butanol	13.14	45	465054	143.87 ug/l	98
31) Bromochloromethane	13.21	130	223912	5.16 ug/l	99
33) Chloroform	13.36	83	786309	5.10 ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	497132	5.02 ug/l	97
36) Cyclohexane	13.68	84	588069	5.09 ug/l	98
37) 1,1-Dichloropropene	13.93	110	224888	5.36 ug/l	99
38) Carbon tetrachloride	13.93	119	444394	5.30 ug/l	98
41) 2,2,4-Trimethylpentane	14.32	57	1890595	5.30 ug/l	99
42) Benzene	14.29	78	1625036	5.03 ug/l	100
43) 1,2-Dichloroethane	14.38	62	418098	5.47 ug/l	97
44) tert-Amyl methyl ether (TA	14.41	87	153376	5.58 ug/l	97
45) Trichloroethene	15.27	130	438964	5.20 ug/l	98
46) Methylcyclohexane	15.48	83	705381	5.31 ug/l	99
47) 1,2-Dichloropropane	15.60	63	472393	5.14 ug/l	100
48) 1,4-Dioxane	15.79	88	24145	106.35 ug/l	93
49) Dibromomethane	15.81	93	181898	5.21 ug/l	98
50) Bromodichloromethane	15.98	83	485177	5.20 ug/l	100
51) 2-Chloroethyl vinyl ether	16.33	63	84872	5.27 ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	584691	5.30 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	1118199	28.82 ug/l	99
56) Toluene	16.88	91	1548698	5.18 ug/l	100
57) Ethyl methacrylate	17.16	69	296758	5.58 ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	462972	5.43 ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	217348	5.35 ug/l	100
60) Tetrachloroethene	17.48	164	300179	5.08 ug/l	98
61) 2-Hexanone	17.56	43	792214	27.47 ug/l	98
62) 1,3-Dichloropropane	17.54	76	412312	5.40 ug/l	99
63) Dibromochloromethane	17.80	129	283435	5.33 ug/l	97
64) 1,2-Dibromoethane	17.93	107	214054	5.45 ug/l	100
65) 1-Chlorohexane	18.26	91	629576	5.26 ug/l	100
66) Chlorobenzene	18.36	112	872273	5.08 ug/l	100
67) Ethylbenzene	18.41	91	1696705	5.15 ug/l	99
68) 1,1,1,2-Tetrachloroethane	18.42	131	291106	5.12 ug/l	98
69) m-Xylene & p-Xylene	18.51	91	2438200	9.76 ug/l	99
70) o-Xylene	18.88	91	1242264	5.09 ug/l	98
71) Styrene	18.90	104	910546	5.37 ug/l	99
73) Bromoform	19.15	173	122298	5.49 ug/l	98
74) Isopropylbenzene	19.16	105	1467552	5.25 ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	246106	5.49 ug/l	98
77) trans-1,4-Dichloro-2-buten	19.49	53	71676	5.56 ug/l	99

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78) n-Propylbenzene	19.51	91	1948312	5.24	ug/l	99
79) 1,2,3-Trichloropropane	19.51	110	49731	5.72	ug/l	86
80) Bromobenzene	19.52	156	331681	5.38	ug/l	97
81) 1,3,5-Trimethylbenzene	19.62	105	1122358	5.16	ug/l	99
82) 2-Chlorotoluene	19.64	91	1151043	5.18	ug/l	100
83) 4-Chlorotoluene	19.71	91	993608	5.05	ug/l	100
84) tert-Butylbenzene	19.92	134	242610	5.33	ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1066132	5.11	ug/l	100
86) sec-Butylbenzene	20.10	105	1468360	4.96	ug/l	99
87) p-Isopropyltoluene	20.19	119	1175142	4.98	ug/l	99
88) 1,3-Dichlorobenzene	20.28	146	586001	5.30	ug/l	96
89) 1,2,3-Trimethylbenzene	20.34	105	962751	4.96	ug/l	99
90) 1,4-Dichlorobenzene	20.35	146	544286	4.81	ug/l	96
91) Benzyl Chloride	20.46	91	317415	5.43	ug/l	99
92) n-Butylbenzene	20.55	91	1309167	5.07	ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	468214	5.09	ug/l	99
94) 1,2-Dibromo-3-chloropropan	21.41	157	28146	5.43	ug/l	98
95) 1,2,4-Trichlorobenzene	22.19	180	281122	5.19	ug/l	99
96) Hexachlorobutadiene	22.28	225	179571	5.32	ug/l	97
97) Naphthalene	22.52	128	412667	5.34	ug/l	99
98) 1,2,3-Trichlorobenzene	22.79	180	228545	5.42	ug/l	99

SCM 4/22/20

(#) = qualifier out of range (m) = manual integration

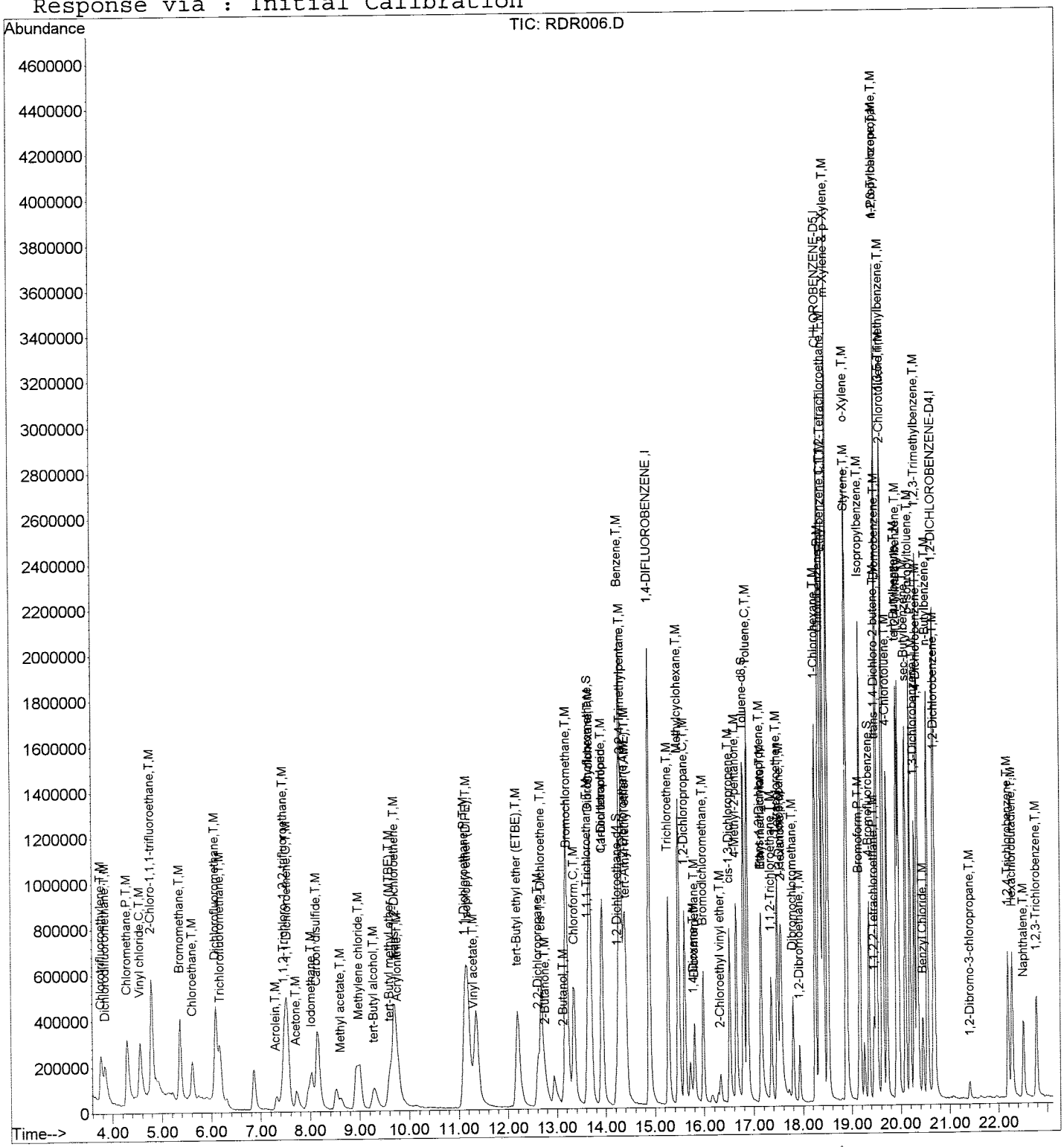
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR006.D
Acq On : 2 Apr 2020 6:44 pm
Sample : VOF3D025
Misc : 5ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 6
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2165754	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1703394	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	566102	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	792396	10.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.30%		
40) 1,2-Dichloroethane-d4	14.24	65	616662	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.70%		
55) Toluene-d8	16.79	98	2438755	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%		
75) 4-Bromofluorobenzene	19.36	95	764976	10.79	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.90%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	523722	11.95	ug/l	100
3) Dichlorodifluoromethane	3.85	85	839521	11.06	ug/l	100
4) Chloromethane	4.29	50	1556176	10.46	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.80	118	866029	11.27	ug/l	100
6) Vinyl chloride	4.55	62	1287803	10.89	ug/l	100
7) Bromomethane	5.36	94	891656	10.72	ug/l	100
8) Chloroethane	5.61	64	643518	10.46	ug/l	100
9) Dichlorofluoromethane	6.09	67	1901230	10.44	ug/l	100
10) Trichlorofluoromethane	6.17	101	1102298	10.72	ug/l	100
11) Acrolein	7.32	56	327662	48.18	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	492686	10.36	ug/l	100
13) 1,1-Dichloroethene	7.53	61	1664559	10.50	ug/l	100
14) Acetone	7.73	43	522304	46.12	ug/l	100
15) Iodomethane	8.03	142	1264125	9.63	ug/l	100
16) Methyl acetate	8.59	43	309510	9.90	ug/l	100
17) Carbon disulfide	8.15	76	3211738	11.42	ug/l	100
18) Methylene chloride	9.00	49	1517590	10.06	ug/l	100
19) tert-Butyl alcohol	9.29	59	696160	212.39	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1146553	8.89	ug/l	100
21) trans-1,2-Dichloroethene	9.71	96	831569	9.96	ug/l	100
22) Acrylonitrile	9.76	53	570150	47.27	ug/l	100
23) Isopropyl ether (DIPE)	11.18	45	3352056	9.94	ug/l	100
24) 1,1-Dichloroethane	11.13	63	1814166	10.10	ug/l	100
25) Vinyl acetate	11.27	43	1098671	9.65	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	2033135	8.98	ug/l	100
27) 2,2-Dichloropropane	12.62	77	682250	8.82	ug/l	100
28) cis-1,2-Dichloroethene	12.69	96	839009	9.59	ug/l	100

(#) = qualifier out of range (m) = manual integration

SW 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29) 2-Butanone	12.74	72	157636	48.25	ug/l	100
30) 2-Butanol	13.14	45	732972	237.63	ug/l	100
31) Bromochloromethane	13.21	130	386133	9.32	ug/l	100
33) Chloroform	13.36	83	1422826	9.67	ug/l	100
35) 1,1,1-Trichloroethane	13.63	97	949420	10.05	ug/l	100
36) Cyclohexane	13.68	84	1114527	10.12	ug/l	100
37) 1,1-Dichloropropene	13.93	110	415107	10.38	ug/l	100
38) Carbon tetrachloride	13.91	119	807848	10.10	ug/l	100
41) 2,2,4-Trimethylpentane	14.32	57	3847593	11.30	ug/l	100
42) Benzene	14.29	78	2977972	9.66	ug/l	100
43) 1,2-Dichloroethane	14.36	62	688570	9.44	ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	243896	9.29	ug/l	100
45) Trichloroethene	15.27	130	793653	9.86	ug/l	100
46) Methylcyclohexane	15.48	83	1310550	10.34	ug/l	100
47) 1,2-Dichloropropane	15.60	63	879701	10.02	ug/l	100
48) 1,4-Dioxane	15.79	88	43128	199.06	ug/l	100
49) Dibromomethane	15.79	93	311891	9.36	ug/l	100
50) Bromodichloromethane	15.98	83	847204	9.52	ug/l	100
51) 2-Chloroethyl vinyl ether	16.31	63	144603	9.40	ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	1046916	9.95	ug/l	100
53) 4-Methyl-2-pentanone	16.64	43	1828274	49.38	ug/l	100
56) Toluene	16.87	91	2883096	9.81	ug/l	100
57) Ethyl methacrylate	17.16	69	507697	9.70	ug/l	100
58) trans-1,3-Dichloropropene	17.14	75	847606	10.11	ug/l	100
59) 1,1,2-Trichloroethane	17.35	97	382072	9.56	ug/l	100
60) Tetrachloroethene	17.48	164	575978	9.92	ug/l	100
61) 2-Hexanone	17.56	43	1352770	47.71	ug/l	100
62) 1,3-Dichloropropane	17.53	76	741498	9.88	ug/l	100
63) Dibromochloromethane	17.80	129	518460	9.91	ug/l	100
64) 1,2-Dibromoethane	17.93	107	375199	9.71	ug/l	100
65) 1-Chlorohexane	18.26	91	1182938	10.06	ug/l	100
66) Chlorobenzene	18.36	112	1729725	10.24	ug/l	100
67) Ethylbenzene	18.42	91	3284767	10.13	ug/l	100
68) 1,1,1,2-Tetrachloroethane	18.42	131	575664	10.29	ug/l	100
69) m-Xylene & p-Xylene	18.51	91	4809194	19.57	ug/l	100
70) o-Xylene	18.88	91	2500715	10.42	ug/l	100
71) Styrene	18.90	104	1797912	10.78	ug/l	100
73) Bromoform	19.13	173	220358	10.22	ug/l	100
74) Isopropylbenzene	19.16	105	2931013	10.84	ug/l	100
76) 1,1,2,2-Tetrachloroethane	19.46	83	414973	9.57	ug/l	100
77) trans-1,4-Dichloro-2-buten	19.47	53	121424	9.74	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78) n-Propylbenzene	19.50	91	3652186	10.15 ug/l	100
79) 1,2,3-Trichloropropane	19.52	110	78970	9.38 ug/l	100
80) Bromobenzene	19.52	156	597373	10.02 ug/l	100
81) 1,3,5-Trimethylbenzene	19.62	105	2184073	10.38 ug/l	100
82) 2-Chlorotoluene	19.64	91	2217816	10.32 ug/l	100
83) 4-Chlorotoluene	19.71	91	1949864	10.24 ug/l	100
84) tert-Butylbenzene	19.92	134	449382	10.21 ug/l	100
85) 1,2,4-Trimethylbenzene	19.95	105	1999628	9.90 ug/l	100
86) sec-Butylbenzene	20.10	105	3030392	10.58 ug/l	100
87) p-Isopropyltoluene	20.19	119	2308422	10.12 ug/l	100
88) 1,3-Dichlorobenzene	20.28	146	1062525	9.94 ug/l	100
89) 1,2,3-Trimethylbenzene	20.34	105	1872199	9.98 ug/l	100
90) 1,4-Dichlorobenzene	20.35	146	1113696	10.18 ug/l	100
91) Benzyl Chloride	20.44	91	542066	9.58 ug/l	100
92) n-Butylbenzene	20.54	91	2580233	10.33 ug/l	100
93) 1,2-Dichlorobenzene	20.69	146	843896	9.49 ug/l	100
94) 1,2-Dibromo-3-chloropropan	21.41	157	49298	9.83 ug/l	100
95) 1,2,4-Trichlorobenzene	22.19	180	528898	10.09 ug/l	100
96) Hexachlorobutadiene	22.28	225	355146	10.87 ug/l	100
97) Naphthalene	22.51	128	726534	9.72 ug/l	100
98) 1,2,3-Trichlorobenzene	22.79	180	423816	10.39 ug/l	100

(#) = qualifier out of range (m) = manual integration

SM 4/22/20

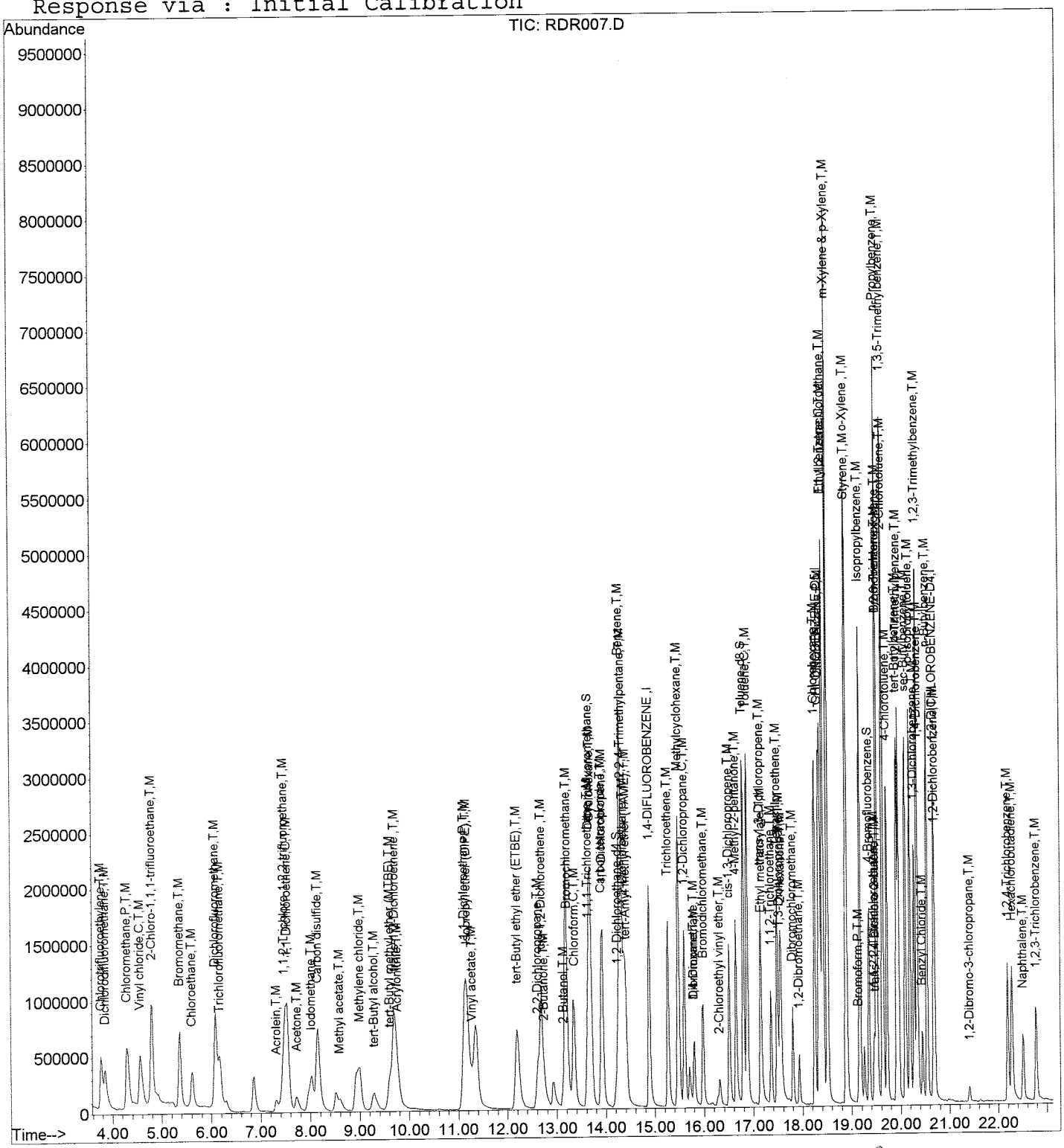
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR007.D
Acq On : 2 Apr 2020 7:14 pm
Sample : VOF3D026
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:25 2020

Vial: 7
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2063384	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1723015	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	597413	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	1532375	20.97	ug/l	0.00
Spiked Amount 10.000			Recovery = 209.70%			
40) 1,2-Dichloroethane-d4	14.24	65	1374809	22.85	ug/l	0.00
Spiked Amount 10.000			Recovery = 228.50%			
55) Toluene-d8	16.79	98	4871167	20.42	ug/l	0.00
Spiked Amount 10.000			Recovery = 204.20%			
75) 4-Bromofluorobenzene	19.34	95	1531997	20.47	ug/l	-0.01
Spiked Amount 10.000			Recovery = 204.70%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	952227	22.81	ug/l	99
3) Dichlorodifluoromethane	3.83	85	1565858	21.65	ug/l	99
4) Chloromethane	4.29	50	2903113	20.48	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	1653168	22.59	ug/l	99
6) Vinyl chloride	4.56	62	2495321	22.15	ug/l	99
7) Bromomethane	5.35	94	1695025	21.40	ug/l	99
8) Chloroethane	5.60	64	1170504	19.97	ug/l	99
9) Dichlorofluoromethane	6.07	67	3275647	18.88	ug/l	100
10) Trichlorofluoromethane	6.16	101	2087791	21.31	ug/l	100
11) Acrolein	7.31	56	591336	91.27	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	897092	19.80	ug/l	99
13) 1,1-Dichloroethene	7.52	61	2980007	19.73	ug/l	100
14) Acetone	7.71	43	992226	91.96	ug/l	100
15) Iodomethane	8.01	142	2415162	19.32	ug/l	100
16) Methyl acetate	8.58	43	624623	20.97	ug/l	100
17) Carbon disulfide	8.14	76	5909977	22.05	ug/l	100
18) Methylene chloride	8.98	49	2848193	19.82	ug/l	99
19) tert-Butyl alcohol	9.26	59	1448642	463.88	ug/l	98
20) tert-Butyl methyl ether (M	9.61	73	2186492	17.80	ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	1542047	19.39	ug/l	100
22) Acrylonitrile	9.74	53	1133648	98.65	ug/l	96
23) Isopropyl ether (DIPE)	11.15	45	6268612	19.52	ug/l	100
24) 1,1-Dichloroethane	11.10	63	3322744	19.41	ug/l	99
25) Vinyl acetate	11.25	43	2513419	22.14	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	3964564	18.38	ug/l	99
27) 2,2-Dichloropropane	12.62	77	1247181	16.92	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	1572251	18.86	ug/l	99

(#) = qualifier out of range (m) = manual integration

SH 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D Vial: 8
Acq On : 2 Apr 2020 7:43 pm Operator: RMinam
Sample : VOF3D027 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	290435	93.30	ug/l	100
30)	2-Butanol	13.11	45	1569596	534.10	ug/l	98
31)	Bromochloromethane	13.21	130	758313	19.22	ug/l	100
33)	Chloroform	13.34	83	2732803	19.49	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	1774054	19.71	ug/l	100
36)	Cyclohexane	13.68	84	2183036	20.80	ug/l	99
37)	1,1-Dichloropropene	13.93	110	754942	19.81	ug/l	97
38)	Carbon tetrachloride	13.91	119	1524378	20.00	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	7149846	22.03	ug/l	100
42)	Benzene	14.29	78	5543561	18.87	ug/l	99
43)	1,2-Dichloroethane	14.36	62	1343260	19.33	ug/l	99
44)	tert-Amyl methyl ether (TA	14.39	87	493145	19.72	ug/l	98
45)	Trichloroethene	15.27	130	1512359	19.71	ug/l	99
46)	Methylcyclohexane	15.48	83	2548070	21.10	ug/l	100
47)	1,2-Dichloropropane	15.60	63	1614957	19.32	ug/l	99
48)	1,4-Dioxane	15.78	88	83935	406.63	ug/l	98
49)	Dibromomethane	15.79	93	614229	19.36	ug/l	99
50)	Bromodichloromethane	15.97	83	1698756	20.04	ug/l	99
51)	2-Chloroethyl vinyl ether	16.31	63	298129	20.35	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1973692	19.69	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	3595056	101.92	ug/l	99
56)	Toluene	16.87	91	5398259	18.17	ug/l	100
57)	Ethyl methacrylate	17.14	69	977124	18.47	ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	1561757	18.42	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	720786	17.84	ug/l	98
60)	Tetrachloroethene	17.48	164	1071431	18.24	ug/l	99
61)	2-Hexanone	17.54	43	2464977	85.94	ug/l	100
62)	1,3-Dichloropropane	17.53	76	1385565	18.26	ug/l	100
63)	Dibromochloromethane	17.80	129	994322	18.79	ug/l	100
64)	1,2-Dibromoethane	17.93	107	749904	19.18	ug/l	98
65)	1-Chlorohexane	18.24	91	2093768	17.60	ug/l	100
66)	Chlorobenzene	18.36	112	3214803	18.82	ug/l	100
67)	Ethylbenzene	18.41	91	6149847	18.75	ug/l	100
68)	1,1,1,2-Tetrachloroethane	18.42	131	1037090	18.32	ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	9262242	37.26	ug/l	99
70)	o-Xylene	18.88	91	4559377	18.79	ug/l	100
71)	Styrene	18.90	104	3184034	18.87	ug/l	99
73)	Bromoform	19.13	173	441272	19.40	ug/l	98
74)	Isopropylbenzene	19.16	105	5468315	19.16	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.45	83	807023	17.64	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	243884	18.54	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D Vial: 8
Acq On : 2 Apr 2020 7:43 pm Operator: RMinam
Sample : VOF3D027 Inst : F3
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
78)	n-Propylbenzene	19.51	91	7084414	18.66	ug/l	99
79)	1,2,3-Trichloropropane	19.51	110	160594	18.08	ug/l	91
80)	Bromobenzene	19.51	156	1189233	18.90	ug/l	99
81)	1,3,5-Trimethylbenzene	19.62	105	4068116	18.32	ug/l	99
82)	2-Chlorotoluene	19.64	91	4136953	18.24	ug/l	100
83)	4-Chlorotoluene	19.71	91	3695415	18.39	ug/l	100
84)	tert-Butylbenzene	19.92	134	824766	17.75	ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	3771128	17.70	ug/l	99
86)	sec-Butylbenzene	20.10	105	5619156	18.59	ug/l	100
87)	p-Isopropyltoluene	20.19	119	4329955	17.98	ug/l	100
88)	1,3-Dichlorobenzene	20.28	146	2001918	17.74	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	3647746	18.42	ug/l	100
90)	1,4-Dichlorobenzene	20.35	146	2100844	18.20	ug/l	98
91)	Benzyl Chloride	20.44	91	1071202	17.93	ug/l	99
92)	n-Butylbenzene	20.55	91	4864345	18.45	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	1790236	19.07	ug/l	100
94)	1,2-Dibromo-3-chloropropan	21.41	157	98846	18.68	ug/l	100
95)	1,2,4-Trichlorobenzene	22.19	180	1030551	18.63	ug/l	99
96)	Hexachlorobutadiene	22.28	225	638808	18.52	ug/l	98
97)	Naphthalene	22.51	128	1446991	18.35	ug/l	99
98)	1,2,3-Trichlorobenzene	22.77	180	792111	18.41	ug/l	100

SM 4/22/20

(#) = qualifier out of range (m) = manual integration
RDR008.D VOF3D02.M Thu Apr 16 17:32:49 2020 Page 3

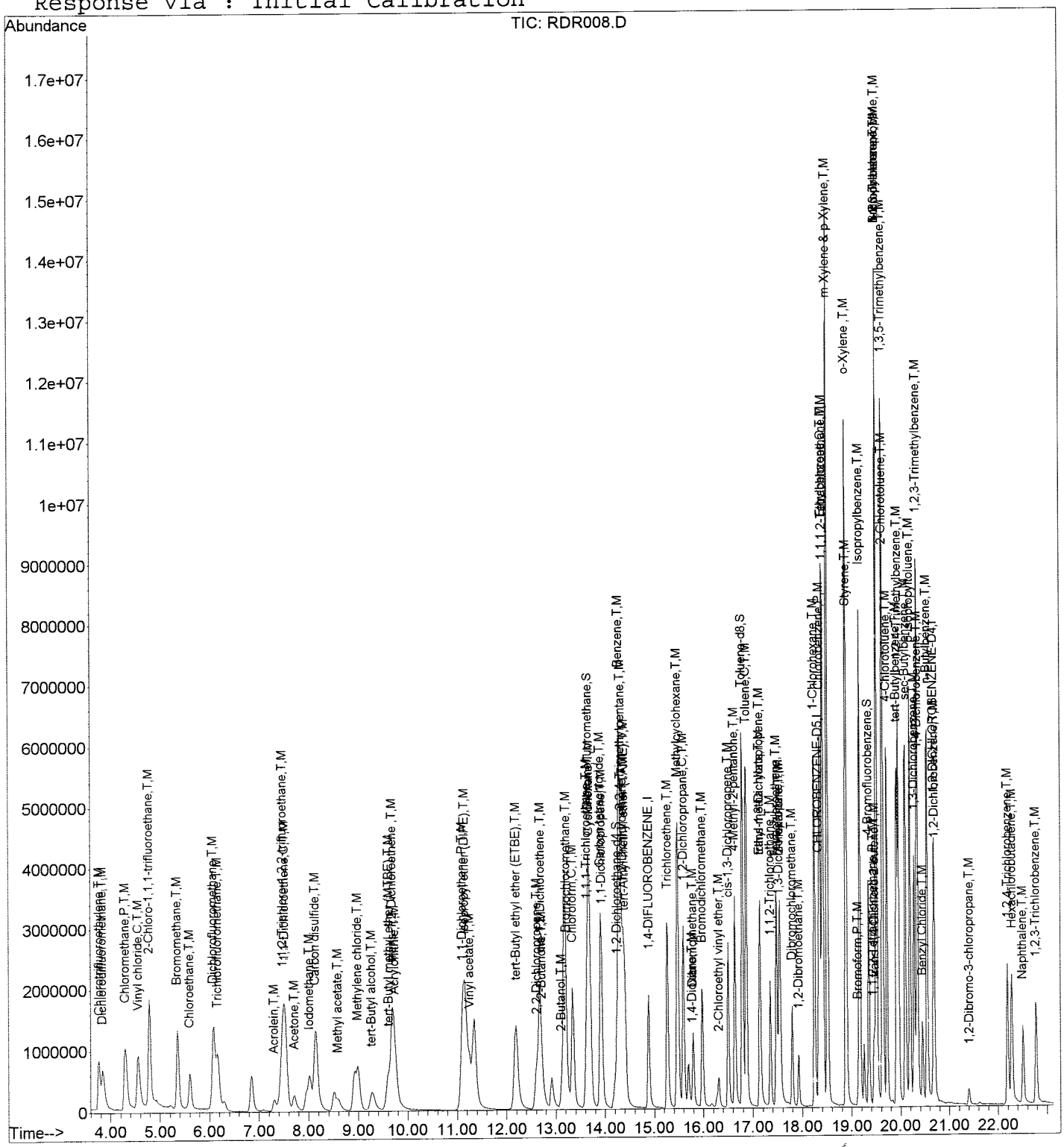
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR008.D
Acq On : 2 Apr 2020 7:43 pm
Sample : VOF3D027
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 8
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D Vial: 10
Acq On : 2 Apr 2020 8:41 pm Operator: RMinam
Sample : VOF3D029 Inst : F3
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2201167	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1649481	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	595666	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	3763680	48.29	ug/l	0.00
Spiked Amount 10.000			Recovery =	482.90%		
40) 1,2-Dichloroethane-d4	14.24	65	3467360	54.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	540.30%		
55) Toluene-d8	16.78	98	11723209	51.33	ug/l	0.00
Spiked Amount 10.000			Recovery =	513.30%		
75) 4-Bromofluorobenzene	19.34	95	3639415	48.76	ug/l	-0.02
Spiked Amount 10.000			Recovery =	487.60%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	2020415	45.37	ug/l	100
3) Dichlorodifluoromethane	3.83	85	3282920	42.55	ug/l	98
4) Chloromethane	4.29	50	6552468	43.33	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.79	118	3543708	45.39	ug/l	97
6) Vinyl chloride	4.56	62	5405019	44.97	ug/l	100
7) Bromomethane	5.33	94	3779429	44.72	ug/l	99
8) Chloroethane	5.60	64	2771670	44.32	ug/l	98
9) Dichlorofluoromethane	6.07	67	7992501	43.17	ug/l	100
10) Trichlorofluoromethane	6.16	101	4811488	46.03	ug/l	100
11) Acrolein	7.29	56	1606058	232.37	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	2186009	45.23	ug/l	99
13) 1,1-Dichloroethene	7.52	61	7166691	44.48	ug/l	97
14) Acetone	7.70	43	2627026	228.23	ug/l	97
15) Iodomethane	8.01	142	6867035	51.49	ug/l	97
16) Methyl acetate	8.58	43	1531683	48.20	ug/l	95
17) Carbon disulfide	8.14	76	13865961	48.49	ug/l	100
18) Methylene chloride	8.97	49	7235673	47.19	ug/l	94
19) tert-Butyl alcohol	9.29	59	3981948	1195.28	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	6067702	46.30	ug/l	98
21) trans-1,2-Dichloroethene	9.69	96	4136691	48.76	ug/l	99
22) Acrylonitrile	9.74	53	3147947	256.77	ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	16459056	48.04	ug/l	98
24) 1,1-Dichloroethane	11.10	63	8706237	47.67	ug/l	99
25) Vinyl acetate	11.25	43	5967485	48.39	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	10355123	45.00	ug/l	99
27) 2,2-Dichloropropane	12.62	77	2904329	36.94	ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	4276966	48.10	ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/22/20

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
29) 2-Butanone	12.72	72	832697	250.75 ug/l	98
30) 2-Butanol	13.11	45	3835105	1223.32 ug/l	96
31) Bromochloromethane	13.21	130	2076279	49.33 ug/l	99
33) Chloroform	13.34	83	7252531	48.50 ug/l	99
35) 1,1,1-Trichloroethane	13.63	97	4410708	45.94 ug/l	99
36) Cyclohexane	13.68	84	4934197	44.08 ug/l	99
37) 1,1-Dichloropropene	13.93	110	2039912	50.17 ug/l	97
38) Carbon tetrachloride	13.91	119	4072503	50.09 ug/l	98
41) 2,2,4-Trimethylpentane	14.32	57	15539520	44.89 ug/l	99
42) Benzene	14.29	78	15709096	50.13 ug/l	98
43) 1,2-Dichloroethane	14.36	62	3580472	48.30 ug/l	100
44) tert-Amyl methyl ether (TA	14.41	87	1337059	50.12 ug/l	98
45) Trichloroethene	15.27	130	4272411	52.20 ug/l	98
46) Methylcyclohexane	15.48	83	5770059	44.79 ug/l	96
47) 1,2-Dichloropropane	15.60	63	4350813	48.78 ug/l	99
48) 1,4-Dioxane	15.77	88	232766	1057.06 ug/l	98
49) Dibromomethane	15.79	93	1642350	48.51 ug/l	97
50) Bromodichloromethane	15.97	83	4418326	48.86 ug/l	99
51) 2-Chloroethyl vinyl ether	16.29	63	851209	54.47 ug/l	100
52) cis-1,3-Dichloropropene	16.50	75	5370532	50.24 ug/l	99
53) 4-Methyl-2-pentanone	16.64	43	9689792	257.51 ug/l	98
56) Toluene	16.87	91	14720005	51.75 ug/l	98
57) Ethyl methacrylate	17.14	69	2670729	52.72 ug/l	95
58) trans-1,3-Dichloropropene	17.13	75	4251432	52.38 ug/l	98
59) 1,1,2-Trichloroethane	17.35	97	1948996	50.38 ug/l	100
60) Tetrachloroethene	17.48	164	2925471	52.02 ug/l	99
61) 2-Hexanone	17.54	43	6654938	242.36 ug/l	97
62) 1,3-Dichloropropane	17.53	76	3650895	50.25 ug/l	100
63) Dibromochloromethane	17.80	129	2639963	52.10 ug/l	100
64) 1,2-Dibromoethane	17.93	107	1921917	51.35 ug/l	99
65) 1-Chlorohexane	18.26	91	5729017	50.30 ug/l	99
66) Chlorobenzene	18.36	112	8636502	52.81 ug/l	100
67) Ethylbenzene	18.40	91	14397005	45.85 ug/l	93
68) 1,1,1,2-Tetrachloroethane	18.42	131	2853722	52.66 ug/l	99
70) o-Xylene	18.88	91	10967059	47.21 ug/l	99
71) Styrene	18.89	104	8157497	50.49 ug/l	98
73) Bromoform	19.13	173	1224233	53.99 ug/l	99
74) Isopropylbenzene	19.16	105	12302184	43.22 ug/l	95
76) 1,1,2,2-Tetrachloroethane	19.44	83	2146145	47.06 ug/l	97
77) trans-1,4-Dichloro-2-buten	19.47	53	593948	45.29 ug/l	97
78) n-Propylbenzene	19.50	91	14228791	37.59 ug/l	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	1,2,3-Trichloropropane	19.50	110	393805	44.46	ug/l	88
80)	Bromobenzene	19.50	156	3083885	49.16	ug/l	100
81)	1,3,5-Trimethylbenzene	19.62	105	10554149	47.66	ug/l	99
82)	2-Chlorotoluene	19.64	91	10708900	47.36	ug/l	98
83)	4-Chlorotoluene	19.71	91	9699694	48.41	ug/l	98
84)	tert-Butylbenzene	19.92	134	2377980	51.34	ug/l	96
85)	1,2,4-Trimethylbenzene	19.95	105	10683536	50.28	ug/l	100
86)	sec-Butylbenzene	20.10	105	13693583	45.43	ug/l	95
87)	p-Isopropyltoluene	20.19	119	11486106	47.84	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	5654380	50.25	ug/l	97
89)	1,2,3-Trimethylbenzene	20.34	105	9852368	49.89	ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	5919399	51.43	ug/l	97
91)	Benzyl Chloride	20.44	91	2954054	49.60	ug/l	99
92)	n-Butylbenzene	20.54	91	12636476	48.06	ug/l	100
93)	1,2-Dichlorobenzene	20.69	146	4650409	49.68	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	286605	54.31	ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	2927932	53.08	ug/l	99
96)	Hexachlorobutadiene	22.28	225	1745136	50.74	ug/l	96
97)	Naphthalene	22.51	128	3905828	49.68	ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	2267325	52.84	ug/l	100

SG 4/22/20

(#) = qualifier out of range (m) = manual integration

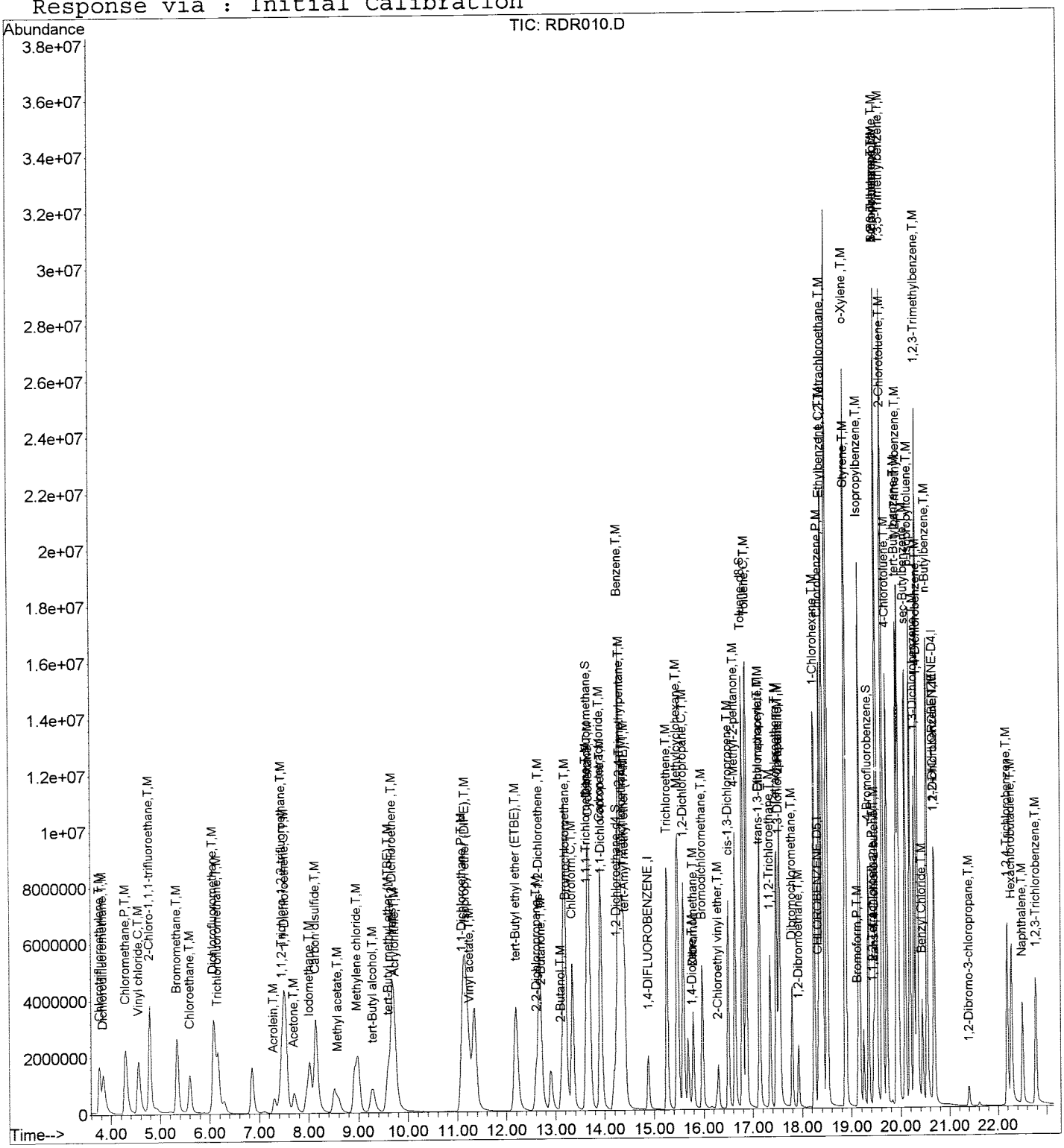
Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR010.D
Acq On : 2 Apr 2020 8:41 pm
Sample : VOF3D029
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:31 2020

Vial: 10
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2110802	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1617324	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	584160	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	6635181	88.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 887.70%			
40) 1,2-Dichloroethane-d4	14.23	65	6270930	101.91	ug/l	-0.02
Spiked Amount 10.000			Recovery = 1019.10%			
55) Toluene-d8	16.78	98	17474129	78.03	ug/l	0.00
Spiked Amount 10.000			Recovery = 780.30%			
75) 4-Bromofluorobenzene	19.34	95	6574044	89.82	ug/l	-0.02
Spiked Amount 10.000			Recovery = 898.20%			
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	3929628	92.03	ug/l	100
3) Dichlorodifluoromethane	3.83	85	6233367	84.25	ug/l	99
4) Chloromethane	4.29	50	12079946	83.30	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	6945857	92.77	ug/l	96
6) Vinyl chloride	4.55	62	10570032	91.70	ug/l	100
7) Bromomethane	5.31	94	5406218	66.71	ug/l	100
8) Chloroethane	5.58	64	4731020	78.89	ug/l	99
9) Dichlorofluoromethane	6.07	67	15682906	88.34	ug/l	100
10) Trichlorofluoromethane	6.16	101	9248248	92.27	ug/l	100
11) Acrolein	7.31	56	3124342	471.39	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	4234724	91.36	ug/l	98
13) 1,1-Dichloroethene	7.52	61	13826626	89.48	ug/l	96
14) Acetone	7.71	43	5174728	468.82	ug/l	98
15) Iodomethane	8.01	142	12777083	99.91	ug/l	97
16) Methyl acetate	8.58	43	2827358	92.78	ug/l	94
17) Carbon disulfide	8.14	76	25067392	91.42	ug/l	100
18) Methylene chloride	8.96	49	12940927	88.01	ug/l	92
19) tert-Butyl alcohol	9.29	59	7772874	2433.10	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	11563581	92.01	ug/l	97
21) trans-1,2-Dichloroethene	9.69	96	7546971	92.77	ug/l	99
22) Acrylonitrile	9.73	53	6233790	530.25	ug/l	96
23) Isopropyl ether (DIPE)	11.18	45	30092972	91.60	ug/l	97
24) 1,1-Dichloroethane	11.10	63	15892280	90.74	ug/l	99
25) Vinyl acetate	11.23	43	10868655	91.24	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	19897746	90.16	ug/l	100
27) 2,2-Dichloropropane	12.62	77	5034549	66.77	ug/l	98
28) cis-1,2-Dichloroethene	12.67	96	8151108	95.60	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:06 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D Vial: 11
Acq On : 2 Apr 2020 9:11 pm Operator: RMinam
Sample : VOF3D0210 Inst : F3
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.72	72	1617399	507.90	ug/l	99
30)	2-Butanol	13.11	45	7477122	2487.15	ug/l	95
31)	Bromochloromethane	13.21	130	4084146	101.18	ug/l	99
33)	Chloroform	13.34	83	13641218	95.12	ug/l	98
35)	1,1,1-Trichloroethane	13.63	97	7994012	86.83	ug/l	97
36)	Cyclohexane	13.68	84	8099640	75.45	ug/l	99
37)	1,1-Dichloropropene	13.93	110	3778597	96.91	ug/l	96
38)	Carbon tetrachloride	13.91	119	7628403	97.84	ug/l	98
41)	2,2,4-Trimethylpentane	14.32	57	26049523	78.47	ug/l	100
43)	1,2-Dichloroethane	14.36	62	6469803	91.01	ug/l	100
44)	tert-Amyl methyl ether (TA	14.39	87	2501890	97.81	ug/l	98
45)	Trichloroethene	15.25	130	8121847	103.48	ug/l	97
46)	Methylcyclohexane	15.48	83	9710338	78.60	ug/l	95
47)	1,2-Dichloropropane	15.60	63	8266177	96.65	ug/l	98
48)	1,4-Dioxane	15.77	88	533217	2525.17	ug/l	95
49)	Dibromomethane	15.79	93	3493763	107.62	ug/l	96
50)	Bromodichloromethane	15.97	83	8591352	99.08	ug/l	100
51)	2-Chloroethyl vinyl ether	16.29	63	1805721	120.50	ug/l	100
52)	cis-1,3-Dichloropropene	16.50	75	10460819	102.04	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	17799741	493.29	ug/l	92
57)	Ethyl methacrylate	17.14	69	5194473	104.58	ug/l	92
58)	trans-1,3-Dichloropropene	17.13	75	7993009	100.44	ug/l	97
59)	1,1,2-Trichloroethane	17.35	97	3919599	103.34	ug/l	99
60)	Tetrachloroethene	17.48	164	5982101	108.49	ug/l	98
61)	2-Hexanone	17.54	43	12866214	477.87	ug/l	95
62)	1,3-Dichloropropane	17.53	76	7274835	102.12	ug/l	100
63)	Dibromochloromethane	17.79	129	5491688	110.53	ug/l	100
64)	1,2-Dibromoethane	17.93	107	3953415	107.73	ug/l	99
65)	1-Chlorohexane	18.26	91	11035250	98.81	ug/l	99
66)	Chlorobenzene	18.36	112	14850913	92.62	ug/l	89
68)	1,1,1,2-Tetrachloroethane	18.43	131	6069383	114.23	ug/l	98
70)	o-Xylene	18.88	91	16047397	70.45	ug/l	75
71)	Styrene	18.89	104	13848286	87.42	ug/l	90
73)	Bromoform	19.13	173	2616586	117.66	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	4285249	95.82	ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.47	53	1204276	93.64	ug/l	96
79)	1,2,3-Trichloropropane	19.50	110	808263	93.05	ug/l	91
80)	Bromobenzene	19.50	156	6376144	103.65	ug/l	100
84)	tert-Butylbenzene	19.92	134	4524934	99.61	ug/l	92
86)	sec-Butylbenzene	20.10	105	18013806	60.94	ug/l	71
88)	1,3-Dichlorobenzene	20.28	146	11412673	103.43	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00

Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
89)	1,2,3-Trimethylbenzene	20.34	105	15615969	80.64 ug/l	85
90)	1,4-Dichlorobenzene	20.35	146	11779631	104.36 ug/l	96
91)	Benzyl Chloride	20.44	91	6021210	103.08 ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	9719365	105.89 ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	614193	118.67 ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	6029494	111.46 ug/l	99
96)	Hexachlorobutadiene	22.28	225	3320468	98.45 ug/l	97
97)	Naphthalene	22.51	128	8525265	110.57 ug/l	100
98)	1,2,3-Trichlorobenzene	22.77	180	4550493	108.14 ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR011.D VOF3D02.M Thu Apr 16 17:33:07 2020

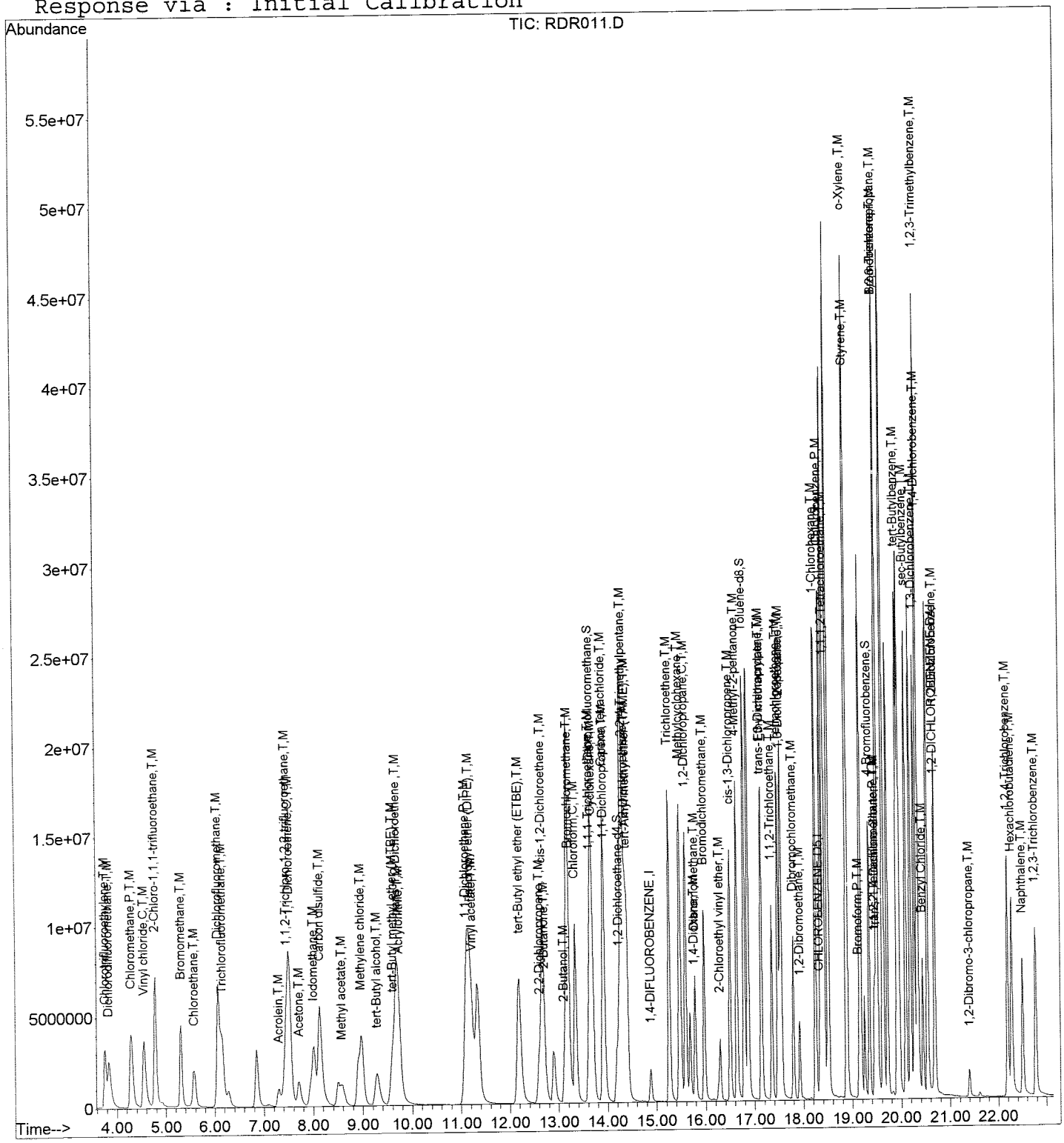
4/22/20

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D02\RDR011.D
Acq On : 2 Apr 2020 9:11 pm
Sample : VOF3D0210
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:33 2020

Vial: 11
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: RDR019 BFB Injection Date : 04/06/20
Instrument ID: F3 BFB Injection Time : 10:37
GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.41
75	30.0 - 60.0% of mass 95	48.18
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.07
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	68.92
175	5.0 - 9.0% of mass 174	5.24(7.6)1
176	95.0 - 101.0% of mass 174	67.96(98.6)1
177	5.0 - 9.0% of mass 176	4.44(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	IVOF3D0202	RDR020	04/06/20	11:22

SW 4/22/20

FORM V VOA OLM02.0

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F3
IC Beginning DateTime :04/02/20 16:47
Spike Amount :10 PPB
CC/CV File :RDR020
IC File :RDR007

Column Spec :ZB-624 ID :0.25MM
IC Ending DateTime :04/02/20 21:11
HPChem Method :VOF3D02
Date_Time :04/06/20 11:22

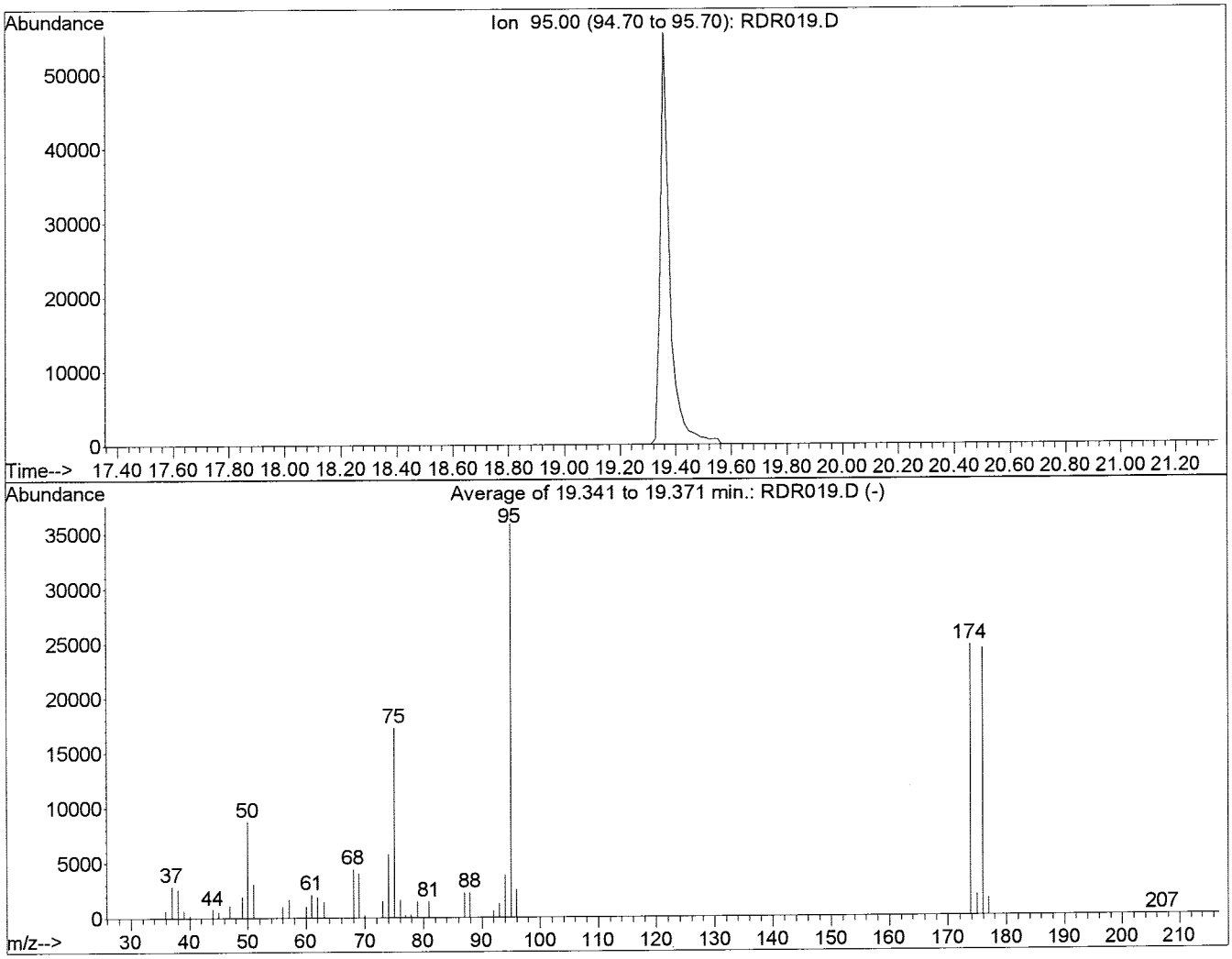
M	IDX	Parameters	CC_Con	CC% D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	% RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	2184009	1	1	14.884	14.883	0				
	2	Chlorotrifluoroethylene	9.856	-1.4	435479	0.199	0.202	3.756	3.759	13.37				
	3	Dichlorodifluoromethane	10.860	8.6	831345	0.381	0.350	3.844	3.842	11.16				
	4	Chloromethane	10.237	2.4	1536000	0.703	0.687	4.285	4.288	6.49				
	5	2-Chloro-1,1,1-trifluoroethane	9.925	-0.7	768887	0.352	0.355	4.779	4.788	10.42				
	6	Vinyl chloride	10.090	0.9	1203406	0.551	0.546	4.550	4.553	9.75				
	7	Bromomethane	8.409	-15.9	705143	0.323	0.384	5.344	5.357	6.23				
	8	Chloroethane	8.795	-12.1	545697	0.250	0.284	5.608	5.604	6.98				
	9	Dichlorofluoromethane	9.705	-2.9	1782782	0.816	0.841	6.085	6.082	8.97				
	10	Trichlorofluoromethane	10.353	3.5	1073710	0.492	0.475	6.173	6.171	10.30				
5	11	Acrolein	49.987	-0.0	342800	0.031	0.031	7.302	7.309	10.43				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.260	-7.4	444090	0.203	0.220	7.478	7.475	6.46				
	13	1,1-Dichloroethene	9.234	-7.7	1476332	0.676	0.732	7.531	7.528	7.60				
5	14	Acetone	43.453	-13.1	496254	0.045	0.052	7.708	7.718	12.14				
	15	Iodomethane	10.924	9.2	1445521	0.662	0.606	8.025	8.022	4.28				
	16	Methyl acetate	9.114	-8.9	287361	0.132	0.144	8.590	8.597	7.47				
	17	Carbon disulfide	10.630	6.3	3016056	1.381	1.299	8.149	8.146	11.19				
	18	Methylene chloride	9.806	-1.9	1491898	0.683	0.697	8.978	8.973	6.84				
25	19	tert-Butyl alcohol	234.770	-6.1	776017	0.014	0.015	9.287	9.293	8.47				
	20	tert-Butyl methyl ether (MTBE)	9.061	-9.4	1178251	0.539	0.595	9.610	9.622	10.55				
	21	trans-1,2-Dichloroethene	10.325	3.2	869017	0.398	0.385	9.709	9.705	5.12				
5	22	Acrylonitrile	48.333	-3.3	587928	0.054	0.056	9.759	9.763	6.20				
	23	Isopropyl ether (DIPE)	9.647	-3.5	3279197	1.501	1.556	11.174	11.181	6.67				
	24	1,1-Dichloroethane	10.061	0.6	1823359	0.835	0.830	11.125	11.118	5.89				
	25	Vinyl acetate	9.619	-3.8	1104226	0.506	0.496	11.274	11.280	18.92	-0.0416	0.5689		0.9974
	26	tert-Butyl ethyl ether (ETBE)	8.915	-10.9	2035624	0.932	1.045	12.193	12.194	11.38				
	27	2,2-Dichloropropane	9.117	-8.8	711282	0.326	0.357	12.615	12.616	10.74				
	28	cis-1,2-Dichloroethene	9.606	-3.9	847440	0.388	0.404	12.689	12.691	5.04				
5	29	2-Butanone	49.316	-1.4	162493	0.015	0.015	12.739	12.744	5.59				
25	30	2-Butanol	258.394	3.4	803750	0.015	0.014	13.137	13.145	13.24				
	31	Bromochloromethane	10.089	0.9	421340	0.193	0.191	13.211	13.218	5.43				
	32	Tetrahydrofuran												
	33	Chloroform	9.817	-1.8	1456634	0.667	0.679	13.335	13.353	4.65				
	34	Dibromofluoromethane	10.500	5.0	812064	0.372	0.354	13.658	13.670	5.79				
	35	1,1,1-Trichloroethane	10.319	3.2	982955	0.450	0.436	13.633	13.634	7.71				
	36	Cyclohexane	10.031	0.3	1114175	0.510	0.509	13.683	13.684	6.86				
	37	1,1-Dichloropropene	9.854	-1.5	397533	0.182	0.185	13.931	13.938	6.05				
	38	Carbon tetrachloride	10.491	4.9	846356	0.388	0.369	13.906	13.918	4.93				
5	39	tert-Amyl alcohol												
	40	1,2-Dichloroethane-d4	9.861	-1.4	627875	0.287	0.292	14.245	14.253	9.98				
	41	2,2,4-Trimethylpentane	10.403	4.0	3573267	1.636	1.573	14.319	14.313	11.03				
	42	Benzene	10.195	1.9	3169225	1.451	1.424	14.289	14.293	4.94				
	43	1,2-Dichloroethane	9.997	-0.0	735324	0.337	0.337	14.364	14.378	7.93				
	44	tert-Amyl methyl ether (TAME)	9.751	-2.5	258083	0.118	0.121	14.408	14.408	7.52				
	45	Trichloroethene	10.495	5.0	852319	0.390	0.372	15.270	15.275	5.85				
	46	Methylcyclohexane	10.942	9.4	1398629	0.640	0.585	15.478	15.478	7.70				
	47	1,2-Dichloropropane	10.040	0.4	888491	0.407	0.405	15.597	15.603	5.18				
20	48	1,4-Dioxane	221.829	10.9	48466	0.001	0.001	15.790	15.787	7.92				
	49	Dibromomethane	10.069	0.7	338226	0.155	0.154	15.790	15.799	6.25				
	50	Bromodichloromethane	10.624	6.2	953228	0.436	0.411	15.983	15.980	4.67				
	51	2-Chloroethyl vinyl ether	10.498	5.0	162767	0.075	0.071	16.310	16.322	8.10				
	52	cis-1,3-Dichloropropene	10.791	7.9	1144601	0.524	0.486	16.503	16.515	5.25				
5	53	4-Methyl-2-pentanone	51.025	2.1	1905019	0.174	0.171	16.637	16.648	8.26				
	54	CHLOROBENZENE-D5	10.000	0	1590689	1	1	18.331	18.332	0				
	55	Toluene-d8	10.943	9.4	2410226	1.515	1.385	16.786	16.796	6.24				
	56	Toluene	10.739	7.4	2945920	1.852	1.725	16.875	16.878	5.72				
	57	Ethyl methacrylate	11.175	11.8	545953	0.343	0.307	17.157	17.168	8.48				
	58	trans-1,3-Dichloropropene	10.965	9.6	858219	0.540	0.492	17.142	17.150	7.37				
	59	1,1,2-Trichloroethane	10.345	3.5	385947	0.243	0.235	17.350	17.358	8.71				
	60	Tetrachloroethene	11.093	10.9	601599	0.378	0.341	17.484	17.487	6.42				
5	61	2-Hexanone	48.845	-2.3	1293445	0.163	0.166	17.558	17.591	8.10				
	62	1,3-Dichloropropane	10.809	8.1	757342	0.476	0.440	17.529	17.540	6.69				
	63	Dibromochloromethane	11.130	11.3	543900	0.342	0.307	17.796	17.802	7.81				
	64	1,2-Dibromoethane	11.104	11.0	400755	0.252	0.227	17.930	17.936	8.99				
	65	1-Chlorohexane	10.489	4.9	1152116	0.724	0.690	18.257	18.256	5.12				
	66	Chlorobenzene	10.896	9.0	1718392	1.080	0.991	18.361	18.362	5.79				
	67	Ethylbenzene	10.687	6.9	3236047	2.034	1.904	18.405	18.416	6.48				
	68	1,1,1,2-Tetrachloroethane	11.091	10.9	579586	0.364	0.329	18.420	18.427	7.94				
2	69	m-Xylene & p-Xylene	20.966	4.8	4811490	1.512	1.443	18.509	18.513	6.36				
	70	o-Xylene	10.233	2.3	2292655	1.441	1.408	18.881	18.882	5.79				
	71	Styrene	10.976	9.8	1710105	1.075	0.980	18.896	18.902	9.07				
	72	1,2-DICHLOROBENZENE-D4	10.000	0	570957	1	1	20.679	20.678	0				
	73	Bromoform	11.629	16.3	252763	0.443	0.381	19.133	19.141	14.10				
	74	Isopropylbenzene	10.201	2.0	2782776	4.874	4.778	19.163	19.169	7.21				
	75	4-Bromofluorobenzene	10.872	8.7	777769	1.362	1.253	19.341	19.354	4.89				
	76	1,1,2,2-Tetrachloroethane	10.178	1.8	444905	0.779	0.766	19.460	19.458	8.62				
	77	trans-1,4-Dichloro-2-butene	11.128	11.3	139875	0.245	0.220	19.490	19.486	7.97				
	78	n-Propylbenzene	10.552	5.5	3828902	6.706	6.355	19.505	19.509	5.63				
	79	1,2,3-Trichloropropane	10.405	4.0	88331	0.155	0.149	19.505	19.512	11.08				
	80	Bromobenzene	10.558	5.6	634782	1.112	1.053	19.520	19.516	6.37				
	81	1,3,5-Trimethylbenzene	10.085	0.9	2140533	3.749	3.717	19.624	19.625	4.64				
	82	2-Chlorotoluene	10.157	1.6	2201391	3.856	3.796	19.639	19.640	5.46				
	83	4-Chlorotoluene	10.519	5.2	2020459	3.539	3.364	19.713	19.722	4.56				
	84	tert-Butylbenzene	10.610	6.1	471082	0.825	0.778	19.921	19.952	6.04				
	85	1,2,4-Trimethylbenzene	10.189	1.9	2075018	3.634	3.567	19.951	19.958	5.28				
	86	sec-Butylbenzene	10.135	1.3	2928107	5.128	5.060	20.099	20.101	5.83				
	87	p-Isopropyltoluene	10.913	9.1	2511639	4.399	4.031	20.188	20.190	6.01				
	88	1,3-Dichlorobenzene	11.491	14.9	1239348	2.171	1.889	20.278	20.279	5.77				
	89	1,2,3-Trimethylbenzene	9.849	-1.5	1864114	3.265	3.315	20.337	20.339	4.76				
	90	1,4-Dichlorobenzene	10.362	3.6	1143160	2.002	1.932	20.352	20.353	5.41				
	91	Benzyl Chloride	10.688	6.9	610193	1.069	1.000	20.441	20.451	6.47				
	92	n-Butylbenzene	9.623	-3.8	2425121	4.247	4.414	20.545	20.547	4.62				
	93	1,2-Dichlorobenzene	10.368	3.7	930159	1.629	1.571	20.694	20.695	3.93				
	94	1,2-Dibromo-3-chloropropane	10.536	5.4	53297	0.093	0.089	21.407	21.407	7.42				
	95	1,2,4-Trichlorobenzene	10.150	1.5	536658	0.940	0.926	22.194	22.199	6.66				
	96	Hexachlorobutadiene	10.407	4.1	343062	0.601	0.577	22.284	22.285	5.32				
	97	Naphthalene	9.451	-5.5	712284	1.248	1.320	22.521	22.516	6.93				
	98	1,2,3-Trichlorobenzene	10.308	3.1	423964	0.743	0.720	22.789	22.787	7.34				

Spike Amount = Nominal Amount * M

Sm 4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR019.D
Acq On : 6 Apr 2020 10:37 am
Sample : BFBF3D02
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: RMinam
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.4	8746	PASS
75	95	30	60	48.2	17264	PASS
95	95	100	100	100.0	35829	PASS
96	95	5	9	7.1	2535	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.9	24694	PASS
175	174	5	9	7.6	1879	PASS
176	174	95	101	98.6	24350	PASS
177	176	5	9	6.5	1592	PASS

RDR019.D VOF3D02.M Mon Apr 06 14:55:58 2020

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	10.000	9.856	1.4	83	0.00
3	T,M	Dichlorodifluoromethane	10.000	10.860	-8.6	99	0.00
4	P,T,M	Chloromethane	10.000	10.237	-2.4	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	9.925	0.7	89	-0.02
6	C,T,M	Vinyl chloride	10.000	10.090	-0.9	93	0.00
7	T,M	Bromomethane	10.000	8.409	15.9	79	-0.02
8	T,M	Chloroethane	10.000	8.795	12.1	85	0.00
9	T,M	Dichlorofluoromethane	10.000	9.705	2.9	94	0.00
10	T,M	Trichlorofluoromethane	10.000	10.353	-3.5	97	0.00
11	T,M	Acrolein	50.000	49.987	0.0	105	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.260	7.4	90	0.00
13	C,T,M	1,1-Dichloroethene	10.000	9.234	7.7	89	0.00
14	T,M	Acetone	50.000	43.453	13.1	95	-0.02
15	T,M	Iodomethane	10.000	10.924	-9.2	114	0.00
16	T,M	Methyl acetate	10.000	9.114	8.9	93	0.00
17	T,M	Carbon disulfide	10.000	10.630	-6.3	94	0.00
18	T,M	Methylene chloride	10.000	9.806	1.9	98	-0.02
19	T,M	tert-Butyl alcohol	250.000	234.770	6.1	111	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	9.061	9.4	103	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	10.324	-3.2	105	0.00
22	T,M	Acrylonitrile	50.000	48.333	3.3	103	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	9.647	3.5	98	0.00
24	P,T,M	1,1-Dichloroethane	10.000	10.061	-0.6	101	0.00
25	T,M	Vinyl acetate	10.000	9.619	3.8	101	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	8.915	10.9	100	0.00
27	T,M	2,2-Dichloropropane	10.000	9.117	8.8	104	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.606	3.9	101	0.00
29	T,M	2-Butanone	50.000	49.316	1.4	103	0.00
30	T,M	2-Butanol	250.000	258.394	-3.4	110	0.00
31	T,M	Bromochloromethane	10.000	10.089	-0.9	109	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.817	1.8	102	-0.03
34	S	Dibromofluoromethane	10.000	10.500	-5.0	102	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.319	-3.2	104	0.00
36	T,M	Cyclohexane	10.000	10.031	-0.3	100	0.00
37	T,M	1,1-Dichloropropene	10.000	9.854	1.5	96	0.00
38	T,M	Carbon tetrachloride	10.000	10.491	-4.9	105	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-0.01
40	S	1,2-Dichloroethane-d4	10.000	9.861	1.4	102	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	10.404	-4.0	93	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
2	T,M	Benzene	10.000	10.195	-2.0	106	0.00
3	T,M	1,2-Dichloroethane	10.000	9.997	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	10.000	9.751	2.5	106	0.00
5	T,M	Trichloroethene	10.000	10.495	-4.9	107	0.00
6	T,M	Methylcyclohexane	10.000	10.942	-9.4	107	0.00
7	C,T,M	1,2-Dichloropropane	10.000	10.040	-0.4	101	0.00
8	T,M	1,4-Dioxane	200.000	221.828	-10.9	112	0.00
9	T,M	Dibromomethane	10.000	10.070	-0.7	108	0.00
0	T,M	Bromodichloromethane	10.000	10.624	-6.2	113	0.00
1	T,M	2-Chloroethyl vinyl ether	10.000	10.498	-5.0	113	0.00
2	T,M	cis-1,3-Dichloropropene	10.000	10.791	-7.9	109	0.00
3	T,M	4-Methyl-2-pentanone	50.000	51.025	-2.0	104	0.00
4	I	CHLOROBENZENE-D5	10.000	10.000	0.0	93	0.00
5	S	Toluene-d8	10.000	10.943	-9.4	99	0.00
6	C,T,M	Toluene	10.000	10.739	-7.4	102	0.00
7	T,M	Ethyl methacrylate	10.000	11.175	-11.8	108	0.00
8	T,M	trans-1,3-Dichloropropene	10.000	10.965	-9.6	101	0.00
9	T,M	1,1,2-Trichloroethane	10.000	10.345	-3.5	101	0.00
0	T,M	Tetrachloroethene	10.000	11.093	-10.9	104	0.00
1	T,M	2-Hexanone	50.000	48.845	2.3	96	0.00
2	T,M	1,3-Dichloropropane	10.000	10.809	-8.1	102	0.00
3	T,M	Dibromochloromethane	10.000	11.130	-11.3	105	0.00
4	T,M	1,2-Dibromoethane	10.000	11.104	-11.0	107	0.00
5	T,M	1-Chlorohexane	10.000	10.489	-4.9	97	0.00
6	P,M	Chlorobenzene	10.000	10.896	-9.0	99	0.00
7	C,T,M	Ethylbenzene	10.000	10.687	-6.9	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	10.000	11.091	-10.9	101	0.00
9	T,M	m-Xylene & p-Xylene	20.000	20.966	-4.8	100	0.00
0	T,M	o-Xylene	10.000	10.234	-2.3	92	0.00
1	T,M	Styrene	10.000	10.976	-9.8	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	101	0.00
3	P,T,M	Bromoform	10.000	11.629	-16.3	115	0.00
4	T,M	Isopropylbenzene	10.000	10.201	-2.0	95	0.00
5	S	4-Bromofluorobenzene	10.000	10.872	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.178	-1.8	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	10.000	11.128	-11.3	115	0.02
8	T,M	n-Propylbenzene	10.000	10.552	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	10.000	10.405	-4.0	112	-0.01
0	T,M	Bromobenzene	10.000	10.558	-5.6	106	0.00

(#) = Out of Range

SW 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T,M	1,3,5-Trimethylbenzene	10.000	10.085	-0.9	98	0.00
2	T,M	2-Chlorotoluene	10.000	10.157	-1.6	99	0.00
3	T,M	4-Chlorotoluene	10.000	10.519	-5.2	104	0.00
4	T,M	tert-Butylbenzene	10.000	10.610	-6.1	105	0.00
5	T,M	1,2,4-Trimethylbenzene	10.000	10.189	-1.9	104	0.00
6	T,M	sec-Butylbenzene	10.000	10.135	-1.3	97	0.00
7	T,M	p-Isopropyltoluene	10.000	10.913	-9.1	109	0.00
8	T,M	1,3-Dichlorobenzene	10.000	11.491	-14.9	117	0.00
9	T,M	1,2,3-Trimethylbenzene	10.000	9.849	1.5	100	0.00
0	T,M	1,4-Dichlorobenzene	10.000	10.362	-3.6	103	0.00
1	T,M	Benzyl Chloride	10.000	10.688	-6.9	113	0.00
2	T,M	n-Butylbenzene	10.000	9.623	3.8	94	0.00
3	T,M	1,2-Dichlorobenzene	10.000	10.368	-3.7	110	0.00
4	T,M	1,2-Dibromo-3-chloropropane	10.000	10.536	-5.4	108	0.00
5	T,M	1,2,4-Trichlorobenzene	10.000	10.150	-1.5	101	0.00
6	T,M	Hexachlorobutadiene	10.000	10.407	-4.1	97	0.00
7	T,M	Naphthalene	10.000	9.452	5.5	98	0.02
8	T,M	1,2,3-Trichlorobenzene	10.000	10.308	-3.1	100	0.00

SC 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	101	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.199	1.5	83	0.00
3	T,M	Dichlorodifluoromethane	0.350	0.381	-8.9	99	0.00
4	P,T,M	Chloromethane	0.687	0.703	-2.3	99	0.00
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.352	0.8	89	-0.02
6	C,T,M	Vinyl chloride	0.546	0.551	-0.9	93	0.00
7	T,M	Bromomethane	0.384	0.323	15.9	79	-0.02
8	T,M	Chloroethane	0.284	0.250	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.841	0.816	3.0	94	0.00
10	T,M	Trichlorofluoromethane	0.475	0.492	-3.6	97	0.00
11	T,M	Acrolein	0.031	0.031	0.0	105	-0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.203	7.7	90	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.676	7.7	89	0.00
14	T,M	Acetone	0.052	0.045	13.5	95	-0.02
15	T,M	Iodomethane	0.606	0.662	-9.2	114	0.00
16	T,M	Methyl acetate	0.144	0.132	8.3	93	0.00
17	T,M	Carbon disulfide	1.299	1.381	-6.3	94	0.00
18	T,M	Methylene chloride	0.697	0.683	2.0	98	-0.02
19	T,M	tert-Butyl alcohol	0.015	0.014	6.7	111	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.539	9.4	103	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.398	-3.4	105	0.00
22	T,M	Acrylonitrile	0.056	0.054	3.6	103	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.501	3.5	98	0.00
24	P,T,M	1,1-Dichloroethane	0.830	0.835	-0.6	101	0.00
25	T,M	Vinyl acetate	0.496	0.506	-2.0	101	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.932	10.8	100	0.00
27	T,M	2,2-Dichloropropane	0.357	0.326	8.7	104	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.388	4.0	101	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	103	0.00
30	T,M	2-Butanol	0.014	0.015	-7.1	110	0.00
31	T,M	Bromochloromethane	0.191	0.193	-1.0	109	0.00
32	T,M	Tetrahydrofuran	0.000	0.017	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.667	1.8	102	-0.03
34	S	Dibromofluoromethane	0.354	0.372	-5.1	102	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.450	-3.2	104	0.00
36	T,M	Cyclohexane	0.509	0.510	-0.2	100	0.00
37	T,M	1,1-Dichloropropene	0.185	0.182	1.6	96	0.00
38	T,M	Carbon tetrachloride	0.369	0.388	-5.1	105	0.00
39	T,M	tert-Amyl alcohol	0.000	0.010	0.0	0#	-0.01
40	S	1,2-Dichloroethane-d4	0.292	0.287	1.7	102	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	1.636	-4.0	93	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
2	T,M	Benzene	1.424	1.451	-1.9	106	0.00
3	T,M	1,2-Dichloroethane	0.337	0.337	0.0	107	0.00
4	T,M	tert-Amyl methyl ether (TAM	0.121	0.118	2.5	106	0.00
5	T,M	Trichloroethene	0.372	0.390	-4.8	107	0.00
6	T,M	Methylcyclohexane	0.585	0.640	-9.4	107	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.407	-0.5	101	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	112	0.00
9	T,M	Dibromomethane	0.154	0.155	-0.6	108	0.00
0	T,M	Bromodichloromethane	0.411	0.436	-6.1	113	0.00
1	T,M	2-Chloroethyl vinyl ether	0.071	0.075	-5.6	113	0.00
2	T,M	cis-1,3-Dichloropropene	0.486	0.524	-7.8	109	0.00
3	T,M	4-Methyl-2-pentanone	0.171	0.174	-1.8	104	0.00
4	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	0.00
5	S	Toluene-d8	1.385	1.515	-9.4	99	0.00
6	C,T,M	Toluene	1.725	1.852	-7.4	102	0.00
7	T,M	Ethyl methacrylate	0.307	0.343	-11.7	108	0.00
8	T,M	trans-1,3-Dichloropropene	0.492	0.540	-9.8	101	0.00
9	T,M	1,1,2-Trichloroethane	0.235	0.243	-3.4	101	0.00
0	T,M	Tetrachloroethene	0.341	0.378	-10.9	104	0.00
1	T,M	2-Hexanone	0.166	0.163	1.8	96	0.00
2	T,M	1,3-Dichloropropane	0.440	0.476	-8.2	102	0.00
3	T,M	Dibromochloromethane	0.307	0.342	-11.4	105	0.00
4	T,M	1,2-Dibromoethane	0.227	0.252	-11.0	107	0.00
5	T,M	1-Chlorohexane	0.690	0.724	-4.9	97	0.00
6	P,M	Chlorobenzene	0.991	1.080	-9.0	99	0.00
7	C,T,M	Ethylbenzene	1.904	2.034	-6.8	99	-0.01
8	T,M	1,1,1,2-Tetrachloroethane	0.329	0.364	-10.6	101	0.00
9	T,M	m-Xylene & p-Xylene	1.443	1.512	-4.8	100	0.00
0	T,M	o-Xylene	1.408	1.441	-2.3	92	0.00
1	T,M	Styrene	0.980	1.075	-9.7	95	0.00
2	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	101	0.00
3	P,T,M	Bromoform	0.381	0.443	-16.3	115	0.00
4	T,M	Isopropylbenzene	4.778	4.874	-2.0	95	0.00
5	S	4-Bromofluorobenzene	1.253	1.362	-8.7	102	-0.01
6	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.779	-1.7	107	0.00
7	T,M	trans-1,4-Dichloro-2-butene	0.220	0.245	-11.4	115	0.02
8	T,M	n-Propylbenzene	6.355	6.706	-5.5	105	0.00
9	T,M	1,2,3-Trichloropropane	0.149	0.155	-4.0	112	-0.01
0	T,M	Bromobenzene	1.053	1.112	-5.6	106	0.00

(#) = Out of Range

SA 4/22/20

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.749	-0.9	98	0.00
82	T,M	2-Chlorotoluene	3.796	3.856	-1.6	99	0.00
83	T,M	4-Chlorotoluene	3.364	3.539	-5.2	104	0.00
84	T,M	tert-Butylbenzene	0.778	0.825	-6.0	105	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.634	-1.9	104	0.00
86	T,M	sec-Butylbenzene	5.060	5.128	-1.3	97	0.00
87	T,M	p-Isopropyltoluene	4.031	4.399	-9.1	109	0.00
88	T,M	1,3-Dichlorobenzene	1.889	2.171	-14.9	117	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.265	1.5	100	0.00
90	T,M	1,4-Dichlorobenzene	1.932	2.002	-3.6	103	0.00
91	T,M	Benzyl Chloride	1.000	1.069	-6.9	113	0.00
92	T,M	n-Butylbenzene	4.414	4.247	3.8	94	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.629	-3.7	110	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.093	-4.5	108	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.940	-1.5	101	0.00
96	T,M	Hexachlorobutadiene	0.577	0.601	-4.2	97	0.00
97	T,M	Naphthalene	1.320	1.248	5.5	98	0.02
98	T,M	1,2,3-Trichlorobenzene	0.720	0.743	-3.2	100	0.00

SM 4/22/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2184009	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1590689	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	570957	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	812064	10.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%		
40) 1,2-Dichloroethane-d4	14.24	65	627875	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
55) Toluene-d8	16.79	98	2410226	10.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.40%		
75) 4-Bromofluorobenzene	19.34	95	777769	10.87	ug/l	-0.01
Spiked Amount 10.000			Recovery =	108.70%		
Target Compounds						Qvalue
2) Chlorotrifluoroethylene	3.76	116	435479	9.86	ug/l	100
3) Dichlorodifluoromethane	3.84	85	831345	10.86	ug/l	100
4) Chloromethane	4.29	50	1536000	10.24	ug/l	100
5) 2-Chloro-1,1,1-trifluoroet	4.78	118	768887	9.93	ug/l	99
6) Vinyl chloride	4.55	62	1203406	10.09	ug/l	100
7) Bromomethane	5.34	94	705143	8.41	ug/l	99
8) Chloroethane	5.61	64	545697	8.79	ug/l	99
9) Dichlorofluoromethane	6.08	67	1782782	9.71	ug/l	100
10) Trichlorofluoromethane	6.17	101	1073710	10.35	ug/l	100
11) Acrolein	7.30	56	342800	49.99	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	444090	9.26	ug/l	99
13) 1,1-Dichloroethene	7.53	61	1476332	9.23	ug/l	99
14) Acetone	7.71	43	496254	43.45	ug/l	95
15) Iodomethane	8.03	142	1445521	10.92	ug/l	99
16) Methyl acetate	8.59	43	287361	9.11	ug/l	97
17) Carbon disulfide	8.15	76	3016056	10.63	ug/l	100
18) Methylene chloride	8.98	49	1491898	9.81	ug/l	98
19) tert-Butyl alcohol	9.29	59	776017	234.77	ug/l	100
20) tert-Butyl methyl ether (M	9.61	73	1178251	9.06	ug/l	97
21) trans-1,2-Dichloroethene	9.71	96	869017	10.32	ug/l	99
22) Acrylonitrile	9.76	53	587928	48.33	ug/l	98
23) Isopropyl ether (DIPE)	11.17	45	3279197	9.65	ug/l	100
24) 1,1-Dichloroethane	11.12	63	1823359	10.06	ug/l	99
25) Vinyl acetate	11.27	43	1104226	9.62	ug/l	99
26) tert-Butyl ethyl ether (ET	12.19	59	2035624	8.92	ug/l	99
27) 2,2-Dichloropropane	12.61	77	711282	9.12	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	847440	9.61	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDR020.D VOF3D02.M Thu Apr 16 17:33:46 2020 SW 4/24/20 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
29)	2-Butanone	12.74	72	162493	49.32	ug/l	100
30)	2-Butanol	13.14	45	803750	258.39	ug/l	97
31)	Bromochloromethane	13.21	130	421340	10.09	ug/l	99
33)	Chloroform	13.34	83	1456634	9.82	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	982955	10.32	ug/l	99
36)	Cyclohexane	13.68	84	1114175	10.03	ug/l	98
37)	1,1-Dichloropropene	13.93	110	397553	9.85	ug/l	99
38)	Carbon tetrachloride	13.91	119	846356	10.49	ug/l	99
41)	2,2,4-Trimethylpentane	14.32	57	3573267	10.40	ug/l	100
42)	Benzene	14.29	78	3169925	10.19	ug/l	100
43)	1,2-Dichloroethane	14.36	62	735324	10.00	ug/l	98
44)	tert-Amyl methyl ether (TA	14.41	87	258083	9.75	ug/l	99
45)	Trichloroethene	15.27	130	852319	10.50	ug/l	99
46)	Methylcyclohexane	15.48	83	1398629	10.94	ug/l	99
47)	1,2-Dichloropropane	15.60	63	888491	10.04	ug/l	99
48)	1,4-Dioxane	15.79	88	48466	221.83	ug/l	100
49)	Dibromomethane	15.79	93	338226	10.07	ug/l	100
50)	Bromodichloromethane	15.98	83	953228	10.62	ug/l	100
51)	2-Chloroethyl vinyl ether	16.31	63	162767	10.50	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	1144601	10.79	ug/l	100
53)	4-Methyl-2-pentanone	16.64	43	1905019	51.03	ug/l	99
56)	Toluene	16.87	91	2945920	10.74	ug/l	100
57)	Ethyl methacrylate	17.16	69	545953	11.18	ug/l	96
58)	trans-1,3-Dichloropropene	17.14	75	858219	10.96	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	385947	10.35	ug/l	98
60)	Tetrachloroethene	17.48	164	601599	11.09	ug/l	99
61)	2-Hexanone	17.56	43	1293445	48.84	ug/l	99
62)	1,3-Dichloropropane	17.53	76	757342	10.81	ug/l	100
63)	Dibromochloromethane	17.80	129	543900	11.13	ug/l	99
64)	1,2-Dibromoethane	17.93	107	400755	11.10	ug/l	100
65)	1-Chlorohexane	18.26	91	1152116	10.49	ug/l	100
66)	Chlorobenzene	18.36	112	1718392	10.90	ug/l	100
67)	Ethylbenzene	18.41	91	3236047	10.69	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	579586	11.09	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	4811490	20.97	ug/l	100
70)	o-Xylene	18.88	91	2292655	10.23	ug/l	99
71)	Styrene	18.90	104	1710105	10.98	ug/l	98
73)	Bromoform	19.13	173	252763	11.63	ug/l	99
74)	Isopropylbenzene	19.16	105	2782776	10.20	ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.46	83	444905	10.18	ug/l	98
77)	trans-1,4-Dichloro-2-buten	19.49	53	139875	11.13	ug/l	97

(#) = qualifier out of range (m) = manual integration

4/22/20

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D Vial: 2
Acq On : 6 Apr 2020 11:22 am Operator: RMinam
Sample : IVOF3D0202 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78)	n-Propylbenzene	19.50	91	3828902	10.55 ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	88331	10.40 ug/l	82
80)	Bromobenzene	19.52	156	634782	10.56 ug/l	100
81)	1,3,5-Trimethylbenzene	19.62	105	2140533	10.09 ug/l	99
82)	2-Chlorotoluene	19.64	91	2201391	10.16 ug/l	99
83)	4-Chlorotoluene	19.71	91	2020459	10.52 ug/l	100
84)	tert-Butylbenzene	19.92	134	471082	10.61 ug/l	97
85)	1,2,4-Trimethylbenzene	19.95	105	2075018	10.19 ug/l	100
86)	sec-Butylbenzene	20.10	105	2928107	10.13 ug/l	99
87)	p-Isopropyltoluene	20.19	119	2511639	10.91 ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	1239348	11.49 ug/l	95
89)	1,2,3-Trimethylbenzene	20.34	105	1864114	9.85 ug/l	99
90)	1,4-Dichlorobenzene	20.35	146	1143160	10.36 ug/l	97
91)	Benzyl Chloride	20.44	91	610193	10.69 ug/l	99
92)	n-Butylbenzene	20.55	91	2425121	9.62 ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	930159	10.37 ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	53297	10.54 ug/l	99
95)	1,2,4-Trichlorobenzene	22.19	180	536658	10.15 ug/l	98
96)	Hexachlorobutadiene	22.28	225	343062	10.41 ug/l	97
97)	Naphthalene	22.52	128	712284	9.45 ug/l	100
98)	1,2,3-Trichlorobenzene	22.79	180	423964	10.31 ug/l	99

4/22/20
SA

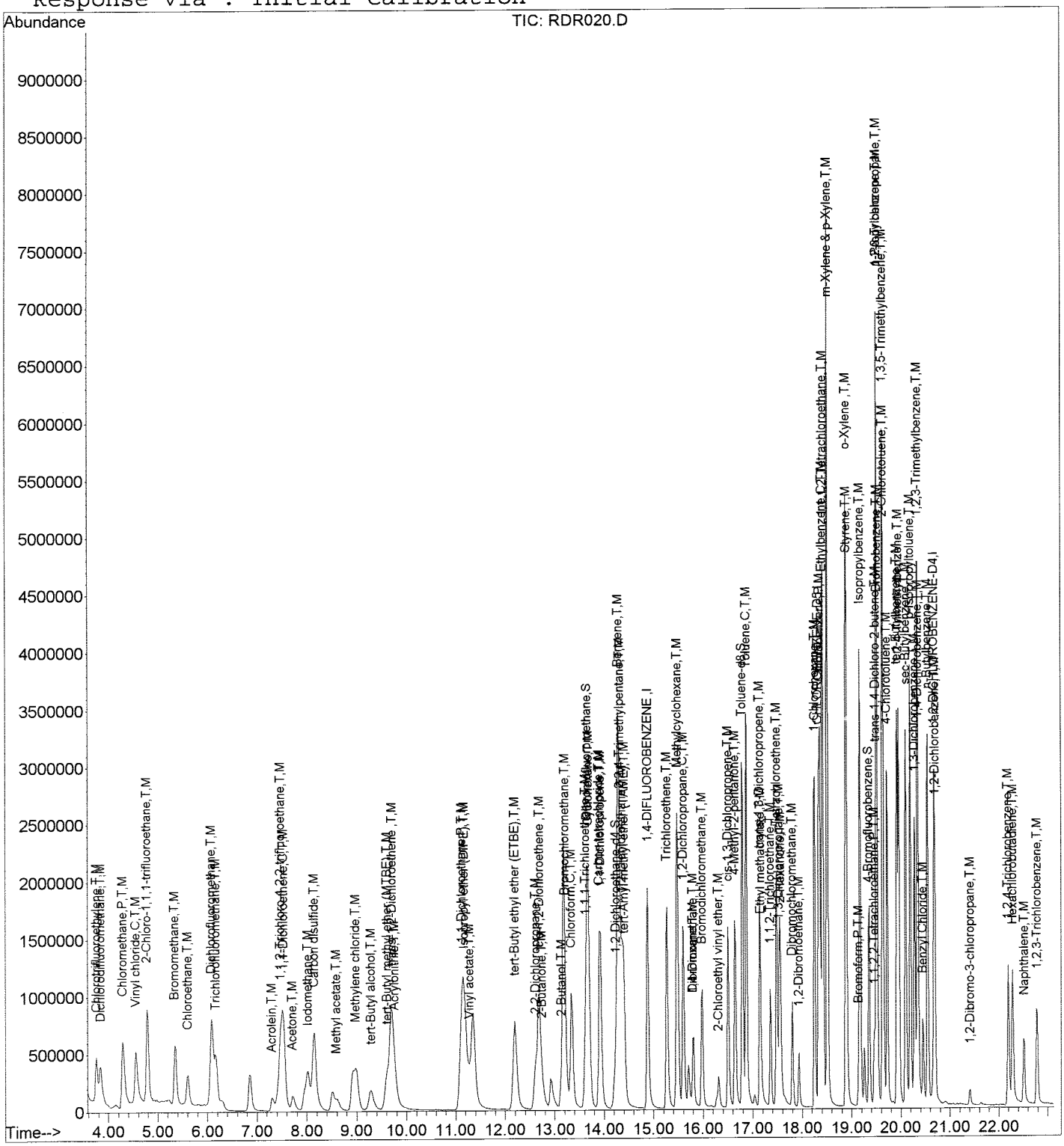
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20D06\RDR020.D
Acq On : 6 Apr 2020 11:22 am
Sample : IVOF3D0202
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 16 16:26 2020

Vial: 2
Operator: RMinam
Inst : F3
Multiplr: 1.00
Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



SA 4/24/20

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY

Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F162

Lab File ID: RFR378 BFB Injection Date : 06/22/20

Instrument ID: F3 BFB Injection Time : 08:04

GC Column: ZB-624 ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.32
75	30.0 - 60.0% of mass 95	46.00
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.25
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	67.43
175	5.0 - 9.0% of mass 174	4.87(7.2)1
176	95.0 - 101.0% of mass 174	64.93(96.3)1
177	5.0 - 9.0% of mass 176	4.47(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVOF3D0233	RFR379	06/22/20	08:33
2	MBLK1W	VOF3F17B	RFR383	06/22/20	10:41
3	LCS1W	VOF3F17L	RFR380	06/22/20	09:13
4	LCD1W	VOF3F17C	RFR381	06/22/20	09:42
5	TB05-GW061820	F162-03	RFR384	06/22/20	11:10
6	TB06-GW061820	F162-06	RFR385	06/22/20	11:40
7	TB07-GW061820	F162-09	RFR386	06/22/20	12:09
8	TB08-GW061820	F162-12	RFR387	06/22/20	12:38
9	MW22-GW061720	F162-01	RFR388	06/22/20	13:07
10	MW21-GW061820	F162-02	RFR389	06/22/20	13:36
11	MW01D-GW061720	F162-04	RFR390	06/22/20	14:05
12	MW13S-GW061820	F162-05	RFR391	06/22/20	14:34
13	MW03RA-GW061820	F162-07	RFR392	06/22/20	15:03
14	MW03RB-GW061820	F162-08	RFR393	06/22/20	15:32
15	MW03RC-GW061820	F162-10	RFR394	06/22/20	16:00
16	MW03RD-GW061820	F162-11	RFR395	06/22/20	16:29

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDR007
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

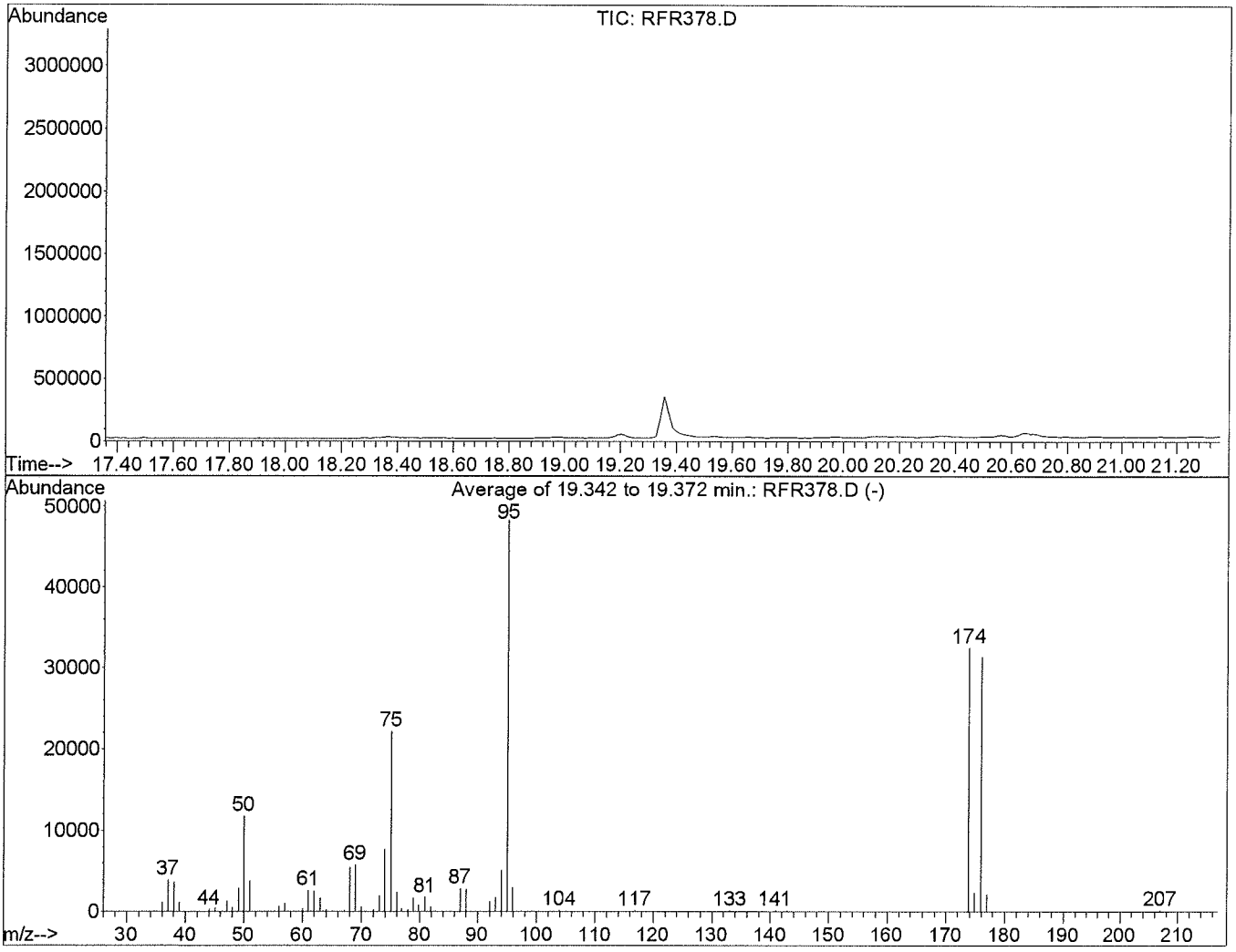
Project: VA SALT LAKE CITY
SDG No: 20F162
Date Analyzed: 04/02/2020
Time Analyzed: 19:14
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2165754	14.88	1703394	18.33	566102	20.68
	UPPER LIMIT	4331508	15.05	3406788	18.50	1132204	20.85
	LOWER LIMIT	1082877	14.71	851697	18.16	283051	20.51
	SAMPLE ID						
1	VSTD010	2412649	14.88	1888391	18.33	608672	20.68
2	MBLK1W	2390129	14.88	1820053	18.33	607210	20.66
3	LCS1W	2571371	14.88	1927330	18.33	642529	20.66
4	LCD1W	2467608	14.88	1827658	18.33	630684	20.66
5	TB05-GW061820	2709899	14.88	1974959	18.33	632309	20.66
6	TB06-GW061820	2522266	14.87	1851221	18.33	625287	20.66
7	TB07-GW061820	2515408	14.88	1866769	18.33	626876	20.66
8	TB08-GW061820	2578216	14.88	1935481	18.33	640618	20.68
9	MW22-GW061720	2505155	14.88	1868491	18.33	635560	20.68
10	MW21-GW061820	2451115	14.88	1865725	18.33	625399	20.68
11	MW01D-GW061720	2553529	14.88	1912764	18.33	626483	20.68
12	MW13S-GW061820	2411513	14.88	1815117	18.33	602979	20.68
13	MW03RA-GW061820	2446573	14.88	1843989	18.33	579125	20.68
14	MW03RB-GW061820	2356948	14.88	1791244	18.33	572312	20.68
15	MW03RC-GW061820	2305725	14.88	1805569	18.33	561156	20.68
16	MW03RD-GW061820	2219347	14.88	1675661	18.33	548212	20.68

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : C:\HPCHEM\1\DATA\20F22\RFR378.D
Acq On : 22 Jun 2020 8:04 am
Sample : BFBF3F17
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ENguye/ODi
Inst : F3
Multiplr: 1.00



AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	11744	PASS
75	95	30	60	46.0	22216	PASS
95	95	100	100	100.0	48291	PASS
96	95	5	9	6.2	3018	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.4	32560	PASS
175	174	5	9	7.2	2351	PASS
176	174	95	101	96.3	31355	PASS
177	176	5	9	6.9	2158	PASS

RFR378.D VOF3D02.M Tue Jun 23 11:12:18 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	111	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-3.76#
3	T,M	Dichlorodifluoromethane	10.000	9.462	5.4	95	-0.01
4	P,T,M	Chloromethane	10.000	9.257	7.4	99	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-4.80#
6	C,T,M	Vinyl chloride	10.000	10.107	-1.1	103	-0.01
7	T,M	Bromomethane	10.000	8.534	14.7	89	-0.01
8	T,M	Chloroethane	10.000	10.374	-3.7	111	-0.01
9	T,M	Dichlorofluoromethane	10.000	10.172	-1.7	109	-0.01
10	T,M	Trichlorofluoromethane	10.000	9.630	3.7	100	-0.03
11	T,M	Acrolein	50.000	26.886	46.2#	62	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.387	6.1	101	-0.01
13	C,T,M	1,1-Dichloroethene	10.000	9.669	3.3	103	-0.03
14	T,M	Acetone	50.000	53.097	-6.2	128	-0.01
15	T,M	Iodomethane	10.000	8.646	13.5	100	-0.05
16	T,M	Methyl acetate	10.000	9.015	9.8	101	0.00
17	T,M	Carbon disulfide	10.000	9.596	4.0	94	-0.01
18	T,M	Methylene chloride	10.000	9.752	2.5	108	-0.06
19	T,M	tert-Butyl alcohol	250.000	213.721	14.5	112	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	8.193	18.1	103	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.659	3.4	108	0.00
22	T,M	Acrylonitrile	50.000	48.846	2.3	115	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	9.217	7.8	103	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.919	0.8	109	-0.02
25	T,M	Vinyl acetate	10.000	8.370	16.3	95	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	7.805	22.0#	97	0.00
27	T,M	2,2-Dichloropropane	10.000	10.348	-3.5	131	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.568	4.3	111	0.00
29	T,M	2-Butanone	50.000	51.222	-2.4	118	0.00
30	T,M	2-Butanol	250.000	204.842	18.1	96	0.00
31	T,M	Bromochloromethane	10.000	8.642	13.6	103	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.299	7.0	107	-0.02
34	S	Dibromofluoromethane	10.000	9.511	4.9	103	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.005	-0.1	111	0.00
36	T,M	Cyclohexane	10.000	8.917	10.8	98	0.00
37	T,M	1,1-Dichloropropene	10.000	9.794	2.1	105	0.00
38	T,M	Carbon tetrachloride	10.000	10.814	-8.1	119	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-14.33#
40	S	1,2-Dichloroethane-d4	10.000	9.187	8.1	105	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	0.067	99.3#	1	0.09

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.216	7.8	106	0.00
43	T,M	1,2-Dichloroethane	10.000	9.043	9.6	107	0.00
44	T,M	tert-Amyl methyl ether (TAM	10.000	8.234	17.7	99	-0.01
45	T,M	Trichloroethene	10.000	9.568	4.3	108	0.00
46	T,M	Methylcyclohexane	10.000	9.172	8.3	99	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.737	2.6	108	0.00
48	T,M	1,4-Dioxane	200.000	198.304	0.8	111	0.00
49	T,M	Dibromomethane	10.000	9.206	7.9	110	0.00
50	T,M	Bromodichloromethane	10.000	9.738	2.6	114	-0.01
51	T,M	2-Chloroethyl vinyl ether	10.000	5.276	47.2#	62	0.02
52	T,M	cis-1,3-Dichloropropene	10.000	9.735	2.7	109	0.00
53	T,M	4-Methyl-2-pentanone	50.000	46.040	7.9	104	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	111	0.00
55	S	Toluene-d8	10.000	9.594	4.1	103	0.00
56	C,T,M	Toluene	10.000	9.463	5.4	107	0.00
57	T,M	Ethyl methacrylate	10.000	8.351	16.5	95	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	9.007	9.9	99	0.00
59	T,M	1,1,2-Trichloroethane	10.000	9.402	6.0	109	0.00
60	T,M	Tetrachloroethene	10.000	9.720	2.8	109	0.00
61	T,M	2-Hexanone	50.000	42.716	14.6	99	0.00
62	T,M	1,3-Dichloropropane	10.000	9.250	7.5	104	0.00
63	T,M	Dibromochloromethane	10.000	9.516	4.8	106	0.00
64	T,M	1,2-Dibromoethane	10.000	9.230	7.7	105	0.00
65	T,M	1-Chlorohexane	10.000	9.445	5.5	104	-0.01
66	P,M	Chlorobenzene	10.000	9.345	6.5	101	0.00
67	C,T,M	Ethylbenzene	10.000	9.353	6.5	102	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	10.000	9.182	8.2	99	0.00
69	T,M	m-Xylene & p-Xylene	20.000	18.387	8.1	104	0.00
70	T,M	o-Xylene	10.000	9.061	9.4	96	0.00
71	T,M	Styrene	10.000	8.874	11.3	91	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	108	0.00
73	P,T,M	Bromoform	10.000	10.216	-2.2	107	0.00
74	T,M	Isopropylbenzene	10.000	10.204	-2.0	101	0.00
75	S	4-Bromofluorobenzene	10.000	10.528	-5.3	105	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.600	4.0	108	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	7.978	20.2#	88	0.00
78	T,M	n-Propylbenzene	10.000	9.914	0.9	105	0.00
79	T,M	1,2,3-Trichloropropane	10.000	9.248	7.5	106	-0.01
80	T,M	Bromobenzene	10.000	9.503	5.0	102	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.702	3.0	101	0.00
82	T,M	2-Chlorotoluene	10.000	9.978	0.2	104	0.00
83	T,M	4-Chlorotoluene	10.000	9.660	3.4	101	0.00
84	T,M	tert-Butylbenzene	10.000	10.396	-4.0	109	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.381	6.2	102	0.00
86	T,M	sec-Butylbenzene	10.000	9.891	1.1	101	0.00
87	T,M	p-Isopropyltoluene	10.000	9.704	3.0	103	0.00
88	T,M	1,3-Dichlorobenzene	10.000	9.307	6.9	101	0.00
89	T,M	1,2,3-Trimethylbenzene	10.000	9.491	5.1	102	0.00
90	T,M	1,4-Dichlorobenzene	10.000	9.179	8.2	97	0.00
91	T,M	Benzyl Chloride	10.000	0.000	100.0#	0	-20.44#
92	T,M	n-Butylbenzene	10.000	9.261	7.4	96	0.00
93	T,M	1,2-Dichlorobenzene	10.000	9.426	5.7	107	0.00
94	T,M	1,2-Dibromo-3-chloropropane	10.000	9.535	4.6	104	0.00
95	T,M	1,2,4-Trichlorobenzene	10.000	9.429	5.7	100	0.00
96	T,M	Hexachlorobutadiene	10.000	9.517	4.8	94	0.00
97	T,M	Naphthalene	10.000	8.626	13.7	95	0.00
98	T,M	1,2,3-Trichlorobenzene	10.000	9.174	8.3	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	111	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.000	100.0#	0#	-3.76#
3	T,M	Dichlorodifluoromethane	0.350	0.332	5.1	95	-0.01
4	P,T,M	Chloromethane	0.687	0.636	7.4	99	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.000	100.0#	0#	-4.80#
6	C,T,M	Vinyl chloride	0.546	0.552	-1.1	103	-0.01
7	T,M	Bromomethane	0.384	0.328	14.6	89	-0.01
8	T,M	Chloroethane	0.284	0.295	-3.9	111	-0.01
9	T,M	Dichlorofluoromethane	0.841	0.855	-1.7	109	-0.01
10	T,M	Trichlorofluoromethane	0.475	0.457	3.8	100	-0.03
11	T,M	Acrolein	0.031	0.017	45.2#	62	-0.01
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.206	6.4	101	-0.01
13	C,T,M	1,1-Dichloroethene	0.732	0.708	3.3	103	-0.03
14	T,M	Acetone	0.052	0.056	-7.7	128	-0.01
15	T,M	Iodomethane	0.606	0.524	13.5	100	-0.05
16	T,M	Methyl acetate	0.144	0.130	9.7	101	0.00
17	T,M	Carbon disulfide	1.299	1.247	4.0	94	-0.01
18	T,M	Methylene chloride	0.697	0.679	2.6	108	-0.06
19	T,M	tert-Butyl alcohol	0.015	0.013	13.3	112	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.488	18.0	103	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.372	3.4	108	0.00
22	T,M	Acrylonitrile	0.056	0.054	3.6	115	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.434	7.8	103	-0.02
24	P,T,M	1,1-Dichloroethane	0.830	0.823	0.8	109	-0.02
25	T,M	Vinyl acetate	0.496	0.435	12.3	95	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.816	21.9#	97	0.00
27	T,M	2,2-Dichloropropane	0.357	0.370	-3.6	131	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.387	4.2	111	0.00
29	T,M	2-Butanone	0.015	0.015	0.0	118	0.00
30	T,M	2-Butanol	0.014	0.012	14.3	96	0.00
31	T,M	Bromochloromethane	0.191	0.165	13.6	103	0.00
32	T,M	Tetrahydrofuran	0.000	0.014	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.632	6.9	107	-0.02
34	S	Dibromofluoromethane	0.354	0.337	4.8	103	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.436	0.0	111	0.00
36	T,M	Cyclohexane	0.509	0.453	11.0	98	0.00
37	T,M	1,1-Dichloropropene	0.185	0.181	2.2	105	0.00
38	T,M	Carbon tetrachloride	0.369	0.399	-8.1	119	0.00
39	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-14.33#
40	S	1,2-Dichloroethane-d4	0.292	0.268	8.2	105	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	0.010	99.4#	1#	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.424	1.312	7.9	106	0.00
43	T,M	1,2-Dichloroethane	0.337	0.305	9.5	107	0.00
44	T,M	tert-Amyl methyl ether (TAM	0.121	0.100	17.4	99	-0.01
45	T,M	Trichloroethene	0.372	0.356	4.3	108	0.00
46	T,M	Methylcyclohexane	0.585	0.537	8.2	99	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.395	2.5	108	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	111	0.00
49	T,M	Dibromomethane	0.154	0.142	7.8	110	0.00
50	T,M	Bromodichloromethane	0.411	0.400	2.7	114	-0.01
51	T,M	2-Chloroethyl vinyl ether	0.071	0.037	47.9#	62	0.02
52	T,M	cis-1,3-Dichloropropene	0.486	0.473	2.7	109	0.00
53	T,M	4-Methyl-2-pentanone	0.171	0.157	8.2	104	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	111	0.00
55	S	Toluene-d8	1.385	1.328	4.1	103	0.00
56	C,T,M	Toluene	1.725	1.632	5.4	107	0.00
57	T,M	Ethyl methacrylate	0.307	0.256	16.6	95	0.00
58	T,M	trans-1,3-Dichloropropene	0.492	0.443	10.0	99	0.00
59	T,M	1,1,2-Trichloroethane	0.235	0.221	6.0	109	0.00
60	T,M	Tetrachloroethene	0.341	0.331	2.9	109	0.00
61	T,M	2-Hexanone	0.166	0.142	14.5	99	0.00
62	T,M	1,3-Dichloropropane	0.440	0.407	7.5	104	0.00
63	T,M	Dibromochloromethane	0.307	0.292	4.9	106	0.00
64	T,M	1,2-Dibromoethane	0.227	0.209	7.9	105	0.00
65	T,M	1-Chlorohexane	0.690	0.652	5.5	104	-0.01
66	P,M	Chlorobenzene	0.991	0.927	6.5	101	0.00
67	C,T,M	Ethylbenzene	1.904	1.780	6.5	102	-0.01
68	T,M	1,1,1,2-Tetrachloroethane	0.329	0.302	8.2	99	0.00
69	T,M	m-Xylene & p-Xylene	1.443	1.326	8.1	104	0.00
70	T,M	o-Xylene	1.408	1.276	9.4	96	0.00
71	T,M	Styrene	0.980	0.869	11.3	91	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	108	0.00
73	P,T,M	Bromoform	0.381	0.389	-2.1	107	0.00
74	T,M	Isopropylbenzene	4.778	4.876	-2.1	101	0.00
75	S	4-Bromofluorobenzene	1.253	1.319	-5.3	105	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.735	4.0	108	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.220	0.176	20.0#	88	0.00
78	T,M	n-Propylbenzene	6.355	6.301	0.8	105	0.00
79	T,M	1,2,3-Trichloropropane	0.149	0.138	7.4	106	-0.01
80	T,M	Bromobenzene	1.053	1.001	4.9	102	-0.01

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.607	3.0	101	0.00
82	T,M	2-Chlorotoluene	3.796	3.788	0.2	104	0.00
83	T,M	4-Chlorotoluene	3.364	3.250	3.4	101	0.00
84	T,M	tert-Butylbenzene	0.778	0.808	-3.9	109	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.346	6.2	102	0.00
86	T,M	sec-Butylbenzene	5.060	5.005	1.1	101	0.00
87	T,M	p-Isopropyltoluene	4.031	3.912	3.0	103	0.00
88	T,M	1,3-Dichlorobenzene	1.889	1.758	6.9	101	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.146	5.1	102	0.00
90	T,M	1,4-Dichlorobenzene	1.932	1.774	8.2	97	0.00
91	T,M	Benzyl Chloride	1.000	0.000	100.0#	0#	-20.44#
92	T,M	n-Butylbenzene	4.414	4.088	7.4	96	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.481	5.7	107	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.084	5.6	104	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.873	5.7	100	0.00
96	T,M	Hexachlorobutadiene	0.577	0.549	4.9	94	0.00
97	T,M	Naphthalene	1.320	1.139	13.7	95	0.00
98	T,M	1,2,3-Trichlorobenzene	0.720	0.661	8.2	95	-0.01

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	2412649	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1888391	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	608672	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	812513	9.51	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.10%			
40) 1,2-Dichloroethane-d4	14.24	65	646164	9.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 91.90%			
55) Toluene-d8	16.79	98	2508419	9.59	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.90%			
75) 4-Bromofluorobenzene	19.34	95	802871	10.53	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.30%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	800151	9.46	ug/l	98
4) Chloromethane	4.27	50	1534411	9.26	ug/l	100
6) Vinyl chloride	4.54	62	1331662	10.11	ug/l	100
7) Bromomethane	5.35	94	790546	8.53	ug/l	99
8) Chloroethane	5.60	64	711090	10.37	ug/l	98
9) Dichlorofluoromethane	6.07	67	2064007	10.17	ug/l	100
10) Trichlorofluoromethane	6.14	101	1103241	9.63	ug/l	100
11) Acrolein	7.31	56	203680	26.89	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	7.47	151	497314	9.39	ug/l	99
13) 1,1-Dichloroethene	7.50	61	1707597	9.67	ug/l	99
14) Acetone	7.71	43	669876	53.10	ug/l	97
15) Iodomethane	7.98	142	1263897	8.65	ug/l	100
16) Methyl acetate	8.60	43	314001	9.01	ug/l	96
17) Carbon disulfide	8.14	76	3007708	9.60	ug/l	99
18) Methylene chloride	8.93	49	1638930	9.75	ug/l	97
19) tert-Butyl alcohol	9.29	59	780398	213.72	ug/l	99
20) tert-Butyl methyl ether (M	9.61	73	1176974	8.19	ug/l	98
21) trans-1,2-Dichloroethene	9.71	96	898097	9.66	ug/l	99
22) Acrylonitrile	9.76	53	656361	48.85	ug/l	98
23) Isopropyl ether (DIPE)	11.15	45	3460814	9.22	ug/l	99
24) 1,1-Dichloroethane	11.10	63	1985670	9.92	ug/l	99
25) Vinyl acetate	11.28	43	1048386	8.37	ug/l	98
26) tert-Butyl ethyl ether (ET	12.19	59	1968853	7.81	ug/l	99
27) 2,2-Dichloropropane	12.62	77	891855	10.35	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	932514	9.57	ug/l	100
29) 2-Butanone	12.74	72	186441	51.22	ug/l	96
30) 2-Butanol	13.14	45	703880	204.84	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
31)	Bromochloromethane	13.21	130	398725	8.64 ug/l	100
33)	Chloroform	13.34	83	1524353	9.30 ug/l	100
35)	1,1,1-Trichloroethane	13.63	97	1052793	10.00 ug/l	99
36)	Cyclohexane	13.68	84	1094062	8.92 ug/l	99
37)	1,1-Dichloropropene	13.93	110	436482	9.79 ug/l	96
38)	Carbon tetrachloride	13.91	119	963696	10.81 ug/l	99
42)	Benzene	14.29	78	3165673	9.22 ug/l	99
43)	1,2-Dichloroethane	14.36	62	734779	9.04 ug/l	98
44)	tert-Amyl methyl ether (TA	14.39	87	240750	8.23 ug/l	99
45)	Trichloroethene	15.27	130	858366	9.57 ug/l	97
46)	Methylcyclohexane	15.48	83	1295178	9.17 ug/l	97
47)	1,2-Dichloropropane	15.60	63	951806	9.74 ug/l	99
48)	1,4-Dioxane	15.79	88	47862	198.30 ug/l	92
49)	Dibromomethane	15.79	93	341608	9.21 ug/l	99
50)	Bromodichloromethane	15.97	83	965217	9.74 ug/l	99
51)	2-Chloroethyl vinyl ether	16.32	63	90368	5.28 ug/l	93
52)	cis-1,3-Dichloropropene	16.50	75	1140724	9.74 ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1898867	46.04 ug/l	98
56)	Toluene	16.87	91	3081789	9.46 ug/l	100
57)	Ethyl methacrylate	17.16	69	484345	8.35 ug/l	98
58)	trans-1,3-Dichloropropene	17.14	75	836958	9.01 ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	416412	9.40 ug/l	99
60)	Tetrachloroethene	17.48	164	625772	9.72 ug/l	99
61)	2-Hexanone	17.56	43	1342839	42.72 ug/l	97
62)	1,3-Dichloropropane	17.53	76	769418	9.25 ug/l	99
63)	Dibromochloromethane	17.80	129	552028	9.52 ug/l	99
64)	1,2-Dibromoethane	17.93	107	395456	9.23 ug/l	100
65)	1-Chlorohexane	18.24	91	1231559	9.44 ug/l	100
66)	Chlorobenzene	18.36	112	1749613	9.35 ug/l	100
67)	Ethylbenzene	18.41	91	3362206	9.35 ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	569636	9.18 ug/l	98
69)	m-Xylene & p-Xylene	18.51	91	5009498	18.39 ug/l	100
70)	o-Xylene	18.88	91	2409806	9.06 ug/l	100
71)	Styrene	18.90	104	1641504	8.87 ug/l	100
73)	Bromoform	19.13	173	236726	10.22 ug/l	98
74)	Isopropylbenzene	19.16	105	2967718	10.20 ug/l	100
76)	1,1,2,2-Tetrachloroethane	19.45	83	447367	9.60 ug/l	99
77)	trans-1,4-Dichloro-2-buten	19.48	53	106905	7.98 ug/l	96
78)	n-Propylbenzene	19.50	91	3834951	9.91 ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	83695	9.25 ug/l	91
80)	Bromobenzene	19.50	156	609105	9.50 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

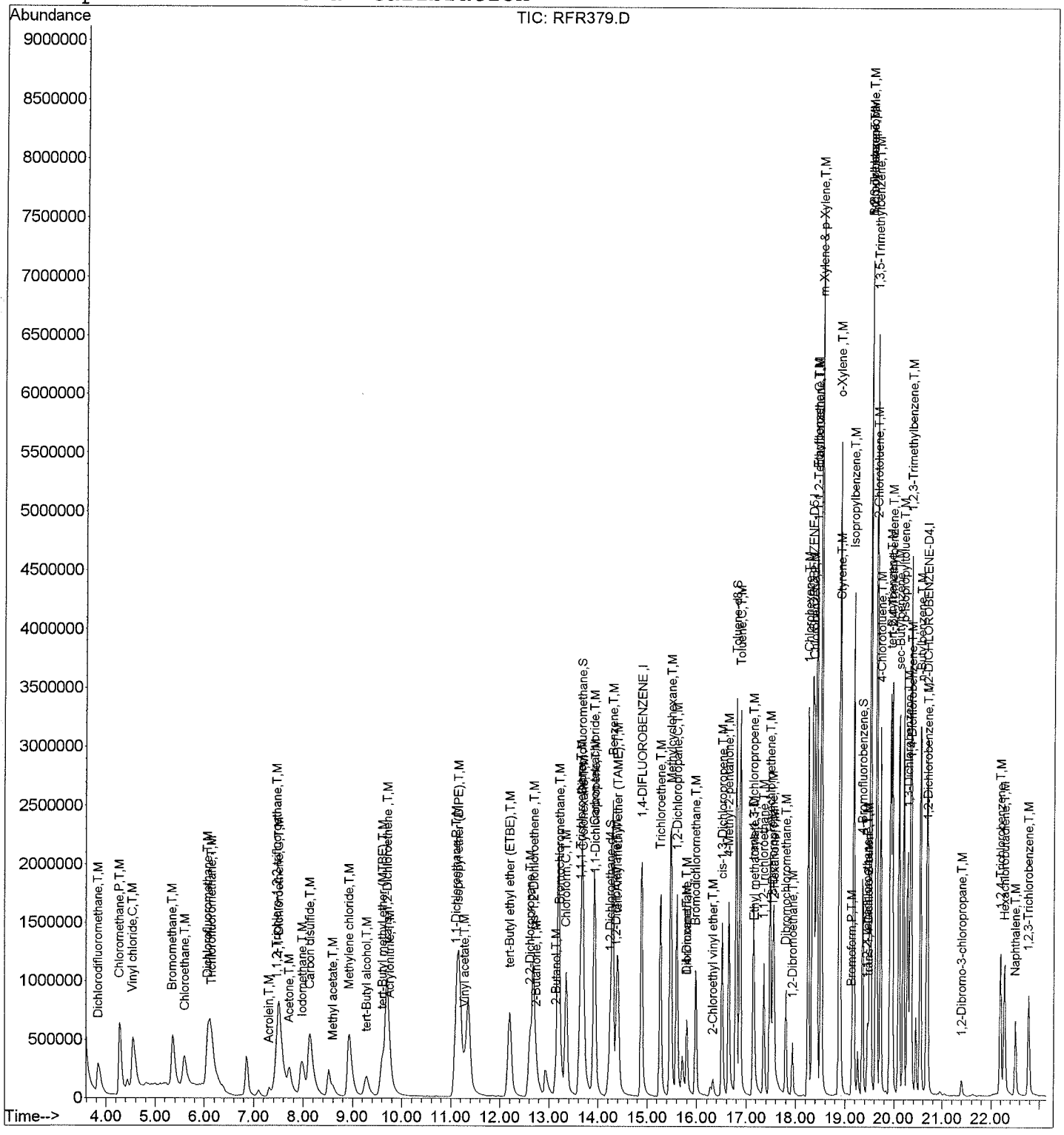
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	2195204	9.70	ug/l		99
82)	2-Chlorotoluene	19.64	91	2305566	9.98	ug/l		100
83)	4-Chlorotoluene	19.71	91	1978023	9.66	ug/l		100
84)	tert-Butylbenzene	19.92	134	492049	10.40	ug/l	#	56
85)	1,2,4-Trimethylbenzene	19.95	105	2036753	9.38	ug/l		100
86)	sec-Butylbenzene	20.10	105	3046550	9.89	ug/l		99
87)	p-Isopropyltoluene	20.19	119	2380989	9.70	ug/l		100
88)	1,3-Dichlorobenzene	20.28	146	1070136	9.31	ug/l		97
89)	1,2,3-Trimethylbenzene	20.34	105	1915139	9.49	ug/l		100
90)	1,4-Dichlorobenzene	20.35	146	1079569	9.18	ug/l		98
92)	n-Butylbenzene	20.55	91	2488225	9.26	ug/l		99
93)	1,2-Dichlorobenzene	20.69	146	901487	9.43	ug/l		100
94)	1,2-Dibromo-3-chloropropan	21.41	157	51417	9.53	ug/l		97
95)	1,2,4-Trichlorobenzene	22.19	180	531473	9.43	ug/l		99
96)	Hexachlorobutadiene	22.28	225	334465	9.52	ug/l		98
97)	Naphthalene	22.51	128	692985	8.63	ug/l		99
98)	1,2,3-Trichlorobenzene	22.77	180	402273	9.17	ug/l		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\20F22\RFR379.D Vial: 2
Acq On : 22 Jun 2020 8:33 am Operator: ENguye/ODinh
Sample : CVOF3D0233 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 23 9:35 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc — Contract: VA SALT LAKE CITY
Lab Code: EMXT — Case No.: — SAS No.: — SDG No.: 20F162
Lab File ID: RFR405 — BFB Injection Date : 06/23/20
Instrument ID: F3 — BFB Injection Time : 14:35
GC Column: ZB-624 ID:0.25mm (mm) — Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	25.58
75	30.0 - 60.0% of mass 95	49.47
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.67
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	75.39
175	5.0 - 9.0% of mass 174	5.83(7.7)1
176	95.0 - 101.0% of mass 174	72.58(96.3)1
177	5.0 - 9.0% of mass 176	4.65(6.4)2

1-Value is % mass 174 — 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVOF3D0234	RFR406	06/23/20	15:04
2	MBLK2W	VOF3F18B	RFR410	06/23/20	17:07
3	LCS2W	VOF3F18L	RFR407	06/23/20	15:40
4	LCD2W	VOF3F18C	RFR408	06/23/20	16:09
5	MW03RB-GW061820DL	F162-08I	RFR414	06/23/20	19:04

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDR007
Instrument ID: F3
GC Column : ZB-624 ID:0.25mm (mm)

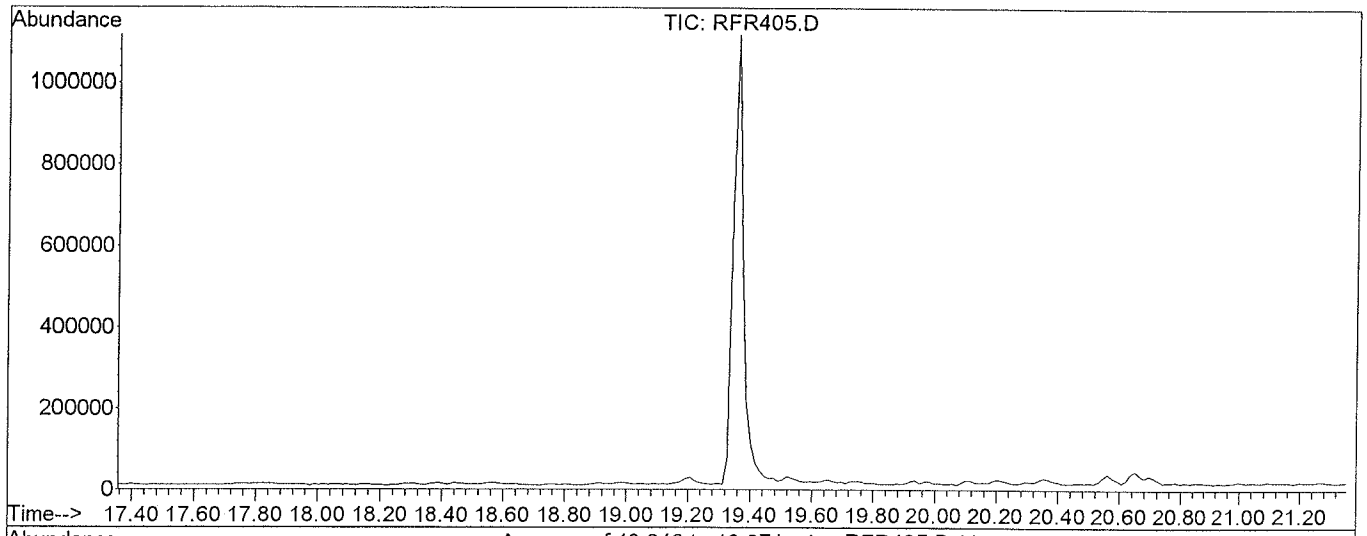
Project: VA SALT LAKE CITY
SDG No: 20F162
Date Analyzed: 04/02/2020
Time Analyzed: 19:14
Heated Purge (Y/N): N

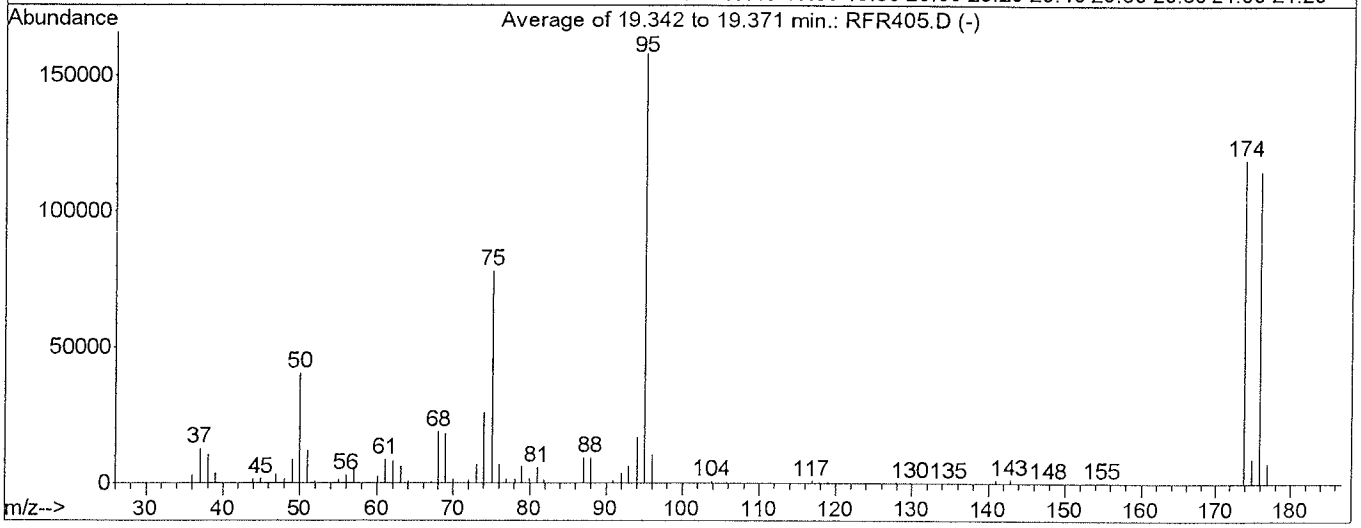
		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	2165754	14.88	1703394	18.33	566102	20.68
	UPPER LIMIT	4331508	15.05	3406788	18.50	1132204	20.85
	LOWER LIMIT	1082877	14.71	851697	18.16	283051	20.51
	SAMPLE ID						
1	VSTD010	1612945	14.88	1266450	18.33	426869	20.68
2	MBLK2W	1660288	14.88	1302550	18.33	441384	20.68
3	LCS2W	1535298	14.88	1182199	18.33	416195	20.68
4	LCD2W	1546424	14.88	1209175	18.33	415581	20.68
5	MW03RB-GW061820DL	1425772	14.88	1148058	18.33	404095	20.68

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : C:\HPCHEM\1\DATA\20F23\RFR405.D
Acq On : 23 Jun 2020 2:35 pm
Sample : BFBF3F18
Misc : T/CHK
MS Integration Params: RTE.P
Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL

Vial: 1
Operator: ENguye/OI
Inst : F3
Multiplr: 1.00





AutoFind: Scans 865, 866, 867; Background Corrected with Scan 861

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.6	40451	PASS
75	95	30	60	49.5	78227	PASS
95	95	100	100	100.0	158133	PASS
96	95	5	9	6.7	10544	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	119216	PASS
175	174	5	9	7.7	9213	PASS
176	174	95	101	96.3	114776	PASS
177	176	5	9	6.4	7349	PASS

RFR405.D VOF3D02.M Wed Jun 24 14:15:17 2020

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	74	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-3.76#
3	T,M	Dichlorodifluoromethane	10.000	9.979	0.2	67	-0.01
4	P,T,M	Chloromethane	10.000	8.561	14.4	61	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-4.80#
6	C,T,M	Vinyl chloride	10.000	9.097	9.0	62	-0.01
7	T,M	Bromomethane	10.000	8.016	19.8	56	0.00
8	T,M	Chloroethane	10.000	9.411	5.9	67	-0.01
9	T,M	Dichlorofluoromethane	10.000	9.534	4.7	68	0.00
10	T,M	Trichlorofluoromethane	10.000	10.444	-4.4	73	0.00
11	T,M	Acrolein	50.000	35.917	28.2#	56	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.819	11.8	63	0.00
13	C,T,M	1,1-Dichloroethene	10.000	9.454	5.5	67	-0.03
14	T,M	Acetone	50.000	50.777	-1.6	82	-0.01
15	T,M	Iodomethane	10.000	9.297	7.0	72	-0.05
16	T,M	Methyl acetate	10.000	8.770	12.3	66	0.00
17	T,M	Carbon disulfide	10.000	8.825	11.8	58	-0.01
18	T,M	Methylene chloride	10.000	9.590	4.1	71	-0.06
19	T,M	tert-Butyl alcohol	250.000	228.293	8.7	80	0.00
20	T,M	tert-Butyl methyl ether (MT	10.000	8.924	10.8	75	0.00
21	T,M	trans-1,2-Dichloroethene	10.000	9.787	2.1	73	0.00
22	T,M	Acrylonitrile	50.000	47.620	4.8	75	0.00
23	T,M	Isopropyl ether (DIPE)	10.000	9.268	7.3	69	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.516	4.8	70	0.00
25	T,M	Vinyl acetate	10.000	9.081	9.2	70	0.00
26	T,M	tert-Butyl ethyl ether (ETB	10.000	8.399	16.0	70	0.00
27	T,M	2,2-Dichloropropane	10.000	10.338	-3.4	87	0.00
28	T,M	cis-1,2-Dichloroethene	10.000	9.625	3.8	75	0.00
29	T,M	2-Butanone	50.000	51.915	-3.8	80	0.00
30	T,M	2-Butanol	250.000	209.441	16.2	66	0.00
31	T,M	Bromochloromethane	10.000	9.730	2.7	78	0.00
32	T,M	Tetrahydrofuran	10.000	0.000	100.0#	0	0.00
33	C,T,M	Chloroform	10.000	9.887	1.1	76	-0.02
34	S	Dibromofluoromethane	10.000	10.189	-1.9	73	0.00
35	T,M	1,1,1-Trichloroethane	10.000	10.544	-5.4	78	0.00
36	T,M	Cyclohexane	10.000	9.244	7.6	68	0.00
37	T,M	1,1-Dichloropropene	10.000	9.863	1.4	71	0.00
38	T,M	Carbon tetrachloride	10.000	11.312	-13.1	83	0.00
39	T,M	tert-Amyl alcohol	50.000	0.000	100.0#	0	-14.33#
40	S	1,2-Dichloroethane-d4	10.000	10.179	-1.8	78	0.00
41	T,M	2,2,4-Trimethylpentane	10.000	0.091	99.1#	1	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Benzene	10.000	9.551	4.5	74	0.00
43	T,M	1,2-Dichloroethane	10.000	10.820	-8.2	85	0.02
44	T,M	tert-Amyl methyl ether (TAM	10.000	8.988	10.1	72	0.00
45	T,M	Trichloroethene	10.000	9.528	4.7	72	0.00
46	T,M	Methylcyclohexane	10.000	9.954	0.5	72	0.00
47	C,T,M	1,2-Dichloropropane	10.000	9.897	1.0	74	0.00
48	T,M	1,4-Dioxane	200.000	213.646	-6.8	80	0.00
49	T,M	Dibromomethane	10.000	10.187	-1.9	81	0.02
50	T,M	Bromodichloromethane	10.000	10.860	-8.6	85	0.00
51	T,M	2-Chloroethyl vinyl ether	10.000	5.650	43.5#	45	0.02
52	T,M	cis-1,3-Dichloropropene	10.000	10.123	-1.2	76	0.00
53	T,M	4-Methyl-2-pentanone	50.000	50.859	-1.7	77	0.00
54	I	CHLOROBENZENE-D5	10.000	10.000	0.0	74	0.00
55	S	Toluene-d8	10.000	9.554	4.5	69	0.02
56	C,T,M	Toluene	10.000	9.989	0.1	76	0.00
57	T,M	Ethyl methacrylate	10.000	9.443	5.6	72	0.00
58	T,M	trans-1,3-Dichloropropene	10.000	9.753	2.5	72	0.00
59	T,M	1,1,2-Trichloroethane	10.000	10.197	-2.0	79	0.00
60	T,M	Tetrachloroethene	10.000	10.032	-0.3	75	0.00
61	T,M	2-Hexanone	50.000	44.591	10.8	69	0.00
62	T,M	1,3-Dichloropropane	10.000	9.875	1.3	74	0.00
63	T,M	Dibromochloromethane	10.000	10.717	-7.2	80	0.00
64	T,M	1,2-Dibromoethane	10.000	10.769	-7.7	82	0.00
65	T,M	1-Chlorohexane	10.000	9.243	7.6	68	0.00
66	P,M	Chlorobenzene	10.000	9.740	2.6	71	0.00
67	C,T,M	Ethylbenzene	10.000	10.024	-0.2	74	0.00
68	T,M	1,1,1,2-Tetrachloroethane	10.000	10.471	-4.7	76	0.00
69	T,M	m-Xylene & p-Xylene	20.000	18.916	5.4	72	0.00
70	T,M	o-Xylene	10.000	9.494	5.1	68	0.00
71	T,M	Styrene	10.000	9.598	4.0	66	0.00
72	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	75	0.00
73	P,T,M	Bromoform	10.000	11.079	-10.8	82	0.02
74	T,M	Isopropylbenzene	10.000	10.260	-2.6	71	0.00
75	S	4-Bromofluorobenzene	10.000	10.588	-5.9	74	0.00
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.625	-6.3	84	0.00
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.666	3.3	75	0.02
78	T,M	n-Propylbenzene	10.000	10.191	-1.9	76	0.00
79	T,M	1,2,3-Trichloropropane	10.000	9.985	0.2	80	-0.01
80	T,M	Bromobenzene	10.000	10.507	-5.1	79	0.00

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	10.000	9.726	2.7	71	0.00
82	T,M	2-Chlorotoluene	10.000	9.890	1.1	72	0.00
83	T,M	4-Chlorotoluene	10.000	10.224	-2.2	75	0.00
84	T,M	tert-Butylbenzene	10.000	10.444	-4.4	77	0.00
85	T,M	1,2,4-Trimethylbenzene	10.000	9.905	1.0	75	0.00
86	T,M	sec-Butylbenzene	10.000	9.730	2.7	69	0.00
87	T,M	p-Isopropyltoluene	10.000	9.730	2.7	73	0.00
88	T,M	1,3-Dichlorobenzene	10.000	9.678	3.2	73	0.00
89	T,M	1,2,3-Trimethylbenzene	10.000	10.321	-3.2	78	0.00
90	T,M	1,4-Dichlorobenzene	10.000	10.213	-2.1	76	0.00
91	T,M	Benzyl Chloride	10.000	0.000	100.0#	0	-20.44#
92	T,M	n-Butylbenzene	10.000	8.752	12.5	64	0.00
93	T,M	1,2-Dichlorobenzene	10.000	9.720	2.8	77	0.00
94	T,M	1,2-Dibromo-3-chloropropane	10.000	9.986	0.1	77	0.00
95	T,M	1,2,4-Trichlorobenzene	10.000	9.919	0.8	74	0.00
96	T,M	Hexachlorobutadiene	10.000	9.473	5.3	66	0.00
97	T,M	Naphthalene	10.000	8.911	10.9	69	0.00
98	T,M	1,2,3-Trichlorobenzene	10.000	9.359	6.4	68	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	74	0.00
2	T,M	Chlorotrifluoroethylene	0.202	0.000	100.0#	0#	-3.76#
3	T,M	Dichlorodifluoromethane	0.350	0.350	0.0	67	-0.01
4	P,T,M	Chloromethane	0.687	0.588	14.4	61	-0.01
5	T,M	2-Chloro-1,1,1-trifluoroeth	0.355	0.000	100.0#	0#	-4.80#
6	C,T,M	Vinyl chloride	0.546	0.497	9.0	62	-0.01
7	T,M	Bromomethane	0.384	0.308	19.8	56	0.00
8	T,M	Chloroethane	0.284	0.267	6.0	67	-0.01
9	T,M	Dichlorofluoromethane	0.841	0.802	4.6	68	0.00
10	T,M	Trichlorofluoromethane	0.475	0.496	-4.4	73	0.00
11	T,M	Acrolein	0.031	0.023	25.8#	56	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.220	0.194	11.8	63	0.00
13	C,T,M	1,1-Dichloroethene	0.732	0.692	5.5	67	-0.03
14	T,M	Acetone	0.052	0.053	-1.9	82	-0.01
15	T,M	Iodomethane	0.606	0.563	7.1	72	-0.05
16	T,M	Methyl acetate	0.144	0.127	11.8	66	0.00
17	T,M	Carbon disulfide	1.299	1.146	11.8	58	-0.01
18	T,M	Methylene chloride	0.697	0.668	4.2	71	-0.06
19	T,M	tert-Butyl alcohol	0.015	0.014	6.7	80	0.00
20	T,M	tert-Butyl methyl ether (MT	0.595	0.531	10.8	75	0.00
21	T,M	trans-1,2-Dichloroethene	0.385	0.377	2.1	73	0.00
22	T,M	Acrylonitrile	0.056	0.053	5.4	75	0.00
23	T,M	Isopropyl ether (DIPE)	1.556	1.442	7.3	69	0.00
24	P,T,M	1,1-Dichloroethane	0.830	0.790	4.8	70	0.00
25	T,M	Vinyl acetate	0.496	0.475	4.2	70	0.00
26	T,M	tert-Butyl ethyl ether (ETB	1.045	0.878	16.0	70	0.00
27	T,M	2,2-Dichloropropane	0.357	0.369	-3.4	87	0.00
28	T,M	cis-1,2-Dichloroethene	0.404	0.389	3.7	75	0.00
29	T,M	2-Butanone	0.015	0.016	-6.7	80	0.00
30	T,M	2-Butanol	0.014	0.012	14.3	66	0.00
31	T,M	Bromochloromethane	0.191	0.186	2.6	78	0.00
32	T,M	Tetrahydrofuran	0.000	0.015	0.0	0#	0.00
33	C,T,M	Chloroform	0.679	0.672	1.0	76	-0.02
34	S	Dibromofluoromethane	0.354	0.361	-2.0	73	0.00
35	T,M	1,1,1-Trichloroethane	0.436	0.460	-5.5	78	0.00
36	T,M	Cyclohexane	0.509	0.470	7.7	68	0.00
37	T,M	1,1-Dichloropropene	0.185	0.182	1.6	71	0.00
38	T,M	Carbon tetrachloride	0.369	0.418	-13.3	83	0.00
39	T,M	tert-Amyl alcohol	0.000	0.000	0.0	0#	-14.33#
40	S	1,2-Dichloroethane-d4	0.292	0.297	-1.7	78	0.00
41	T,M	2,2,4-Trimethylpentane	1.573	0.014	99.1#	1#	0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Benzene	1.424	1.360	4.5	74	0.00
43	T,M	1,2-Dichloroethane	0.337	0.364	-8.0	85	0.02
44	T,M	tert-Amyl methyl ether (TAM	0.121	0.109	9.9	72	0.00
45	T,M	Trichloroethene	0.372	0.354	4.8	72	0.00
46	T,M	Methylcyclohexane	0.585	0.583	0.3	72	0.00
47	C,T,M	1,2-Dichloropropane	0.405	0.401	1.0	74	0.00
48	T,M	1,4-Dioxane	0.001	0.001	0.0	80	0.00
49	T,M	Dibromomethane	0.154	0.157	-1.9	81	0.02
50	T,M	Bromodichloromethane	0.411	0.446	-8.5	85	0.00
51	T,M	2-Chloroethyl vinyl ether	0.071	0.040	43.7#	45#	0.02
52	T,M	cis-1,3-Dichloropropene	0.486	0.492	-1.2	76	0.00
53	T,M	4-Methyl-2-pentanone	0.171	0.174	-1.8	77	0.00
54	I	CHLOROBENZENE-D5	1.000	1.000	0.0	74	0.00
55	S	Toluene-d8	1.385	1.323	4.5	69	0.02
56	C,T,M	Toluene	1.725	1.723	0.1	76	0.00
57	T,M	Ethyl methacrylate	0.307	0.290	5.5	72	0.00
58	T,M	trans-1,3-Dichloropropene	0.492	0.480	2.4	72	0.00
59	T,M	1,1,2-Trichloroethane	0.235	0.239	-1.7	79	0.00
60	T,M	Tetrachloroethene	0.341	0.342	-0.3	75	0.00
61	T,M	2-Hexanone	0.166	0.148	10.8	69	0.00
62	T,M	1,3-Dichloropropane	0.440	0.435	1.1	74	0.00
63	T,M	Dibromochloromethane	0.307	0.329	-7.2	80	0.00
64	T,M	1,2-Dibromoethane	0.227	0.244	-7.5	82	0.00
65	T,M	1-Chlorohexane	0.690	0.638	7.5	68	0.00
66	P,M	Chlorobenzene	0.991	0.966	2.5	71	0.00
67	C,T,M	Ethylbenzene	1.904	1.908	-0.2	74	0.00
68	T,M	1,1,1,2-Tetrachloroethane	0.329	0.344	-4.6	76	0.00
69	T,M	m-Xylene & p-Xylene	1.443	1.365	5.4	72	0.00
70	T,M	o-Xylene	1.408	1.337	5.0	68	0.00
71	T,M	Styrene	0.980	0.940	4.1	66	0.00
72	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	75	0.00
73	P,T,M	Bromoform	0.381	0.422	-10.8	82	0.02
74	T,M	Isopropylbenzene	4.778	4.902	-2.6	71	0.00
75	S	4-Bromofluorobenzene	1.253	1.327	-5.9	74	0.00
76	P,T,M	1,1,2,2-Tetrachloroethane	0.766	0.813	-6.1	84	0.00
77	T,M	trans-1,4-Dichloro-2-butene	0.220	0.213	3.2	75	0.02
78	T,M	n-Propylbenzene	6.355	6.477	-1.9	76	0.00
79	T,M	1,2,3-Trichloropropane	0.149	0.148	0.7	80	-0.01
80	T,M	Bromobenzene	1.053	1.106	-5.0	79	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	1,3,5-Trimethylbenzene	3.717	3.615	2.7	71	0.00
82	T,M	2-Chlorotoluene	3.796	3.754	1.1	72	0.00
83	T,M	4-Chlorotoluene	3.364	3.440	-2.3	75	0.00
84	T,M	tert-Butylbenzene	0.778	0.812	-4.4	77	0.00
85	T,M	1,2,4-Trimethylbenzene	3.567	3.533	1.0	75	0.00
86	T,M	sec-Butylbenzene	5.060	4.924	2.7	69	0.00
87	T,M	p-Isopropyltoluene	4.031	3.922	2.7	73	0.00
88	T,M	1,3-Dichlorobenzene	1.889	1.828	3.2	73	0.00
89	T,M	1,2,3-Trimethylbenzene	3.315	3.422	-3.2	78	0.00
90	T,M	1,4-Dichlorobenzene	1.932	1.974	-2.2	76	0.00
91	T,M	Benzyl Chloride	1.000	0.000	100.0#	0#	-20.44#
92	T,M	n-Butylbenzene	4.414	3.863	12.5	64	0.00
93	T,M	1,2-Dichlorobenzene	1.571	1.527	2.8	77	0.00
94	T,M	1,2-Dibromo-3-chloropropane	0.089	0.088	1.1	77	0.00
95	T,M	1,2,4-Trichlorobenzene	0.926	0.919	0.8	74	0.00
96	T,M	Hexachlorobutadiene	0.577	0.547	5.2	66	0.00
97	T,M	Naphthalene	1.320	1.176	10.9	69	0.00
98	T,M	1,2,3-Trichlorobenzene	0.720	0.674	6.4	68	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:16 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	14.88	114	1612945	10.00	ug/l	0.00
54) CHLOROBENZENE-D5	18.33	117	1266450	10.00	ug/l	0.00
72) 1,2-DICHLOROBENZENE-D4	20.68	152	426869	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	13.66	111	581956	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.90%		
40) 1,2-Dichloroethane-d4	14.24	65	478650	10.18	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.80%		
55) Toluene-d8	16.80	98	1675252	9.55	ug/l	0.02
Spiked Amount 10.000			Recovery =	95.50%		
75) 4-Bromofluorobenzene	19.36	95	566280	10.59	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.90%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	3.83	85	564166	9.98	ug/l	98
4) Chloromethane	4.27	50	948673	8.56	ug/l	100
6) Vinyl chloride	4.54	62	801246	9.10	ug/l	100
7) Bromomethane	5.37	94	496405	8.02	ug/l	99
8) Chloroethane	5.60	64	431246	9.41	ug/l	96
9) Dichlorofluoromethane	6.09	67	1293357	9.53	ug/l	99
10) Trichlorofluoromethane	6.18	101	799929	10.44	ug/l	99
11) Acrolein	7.33	56	181906	35.92	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	7.48	151	312360	8.82	ug/l	98
13) 1,1-Dichloroethene	7.50	61	1116250	9.45	ug/l	99
14) Acetone	7.71	43	428269	50.78	ug/l	100
15) Iodomethane	7.98	142	908503	9.30	ug/l	98
16) Methyl acetate	8.60	43	204218	8.77	ug/l	95
17) Carbon disulfide	8.14	76	1849095	8.82	ug/l	99
18) Methylene chloride	8.93	49	1077531	9.59	ug/l	93
19) tert-Butyl alcohol	9.29	59	557295	228.29	ug/l	96
20) tert-Butyl methyl ether (M	9.61	73	857008	8.92	ug/l	96
21) trans-1,2-Dichloroethene	9.71	96	608354	9.79	ug/l	99
22) Acrylonitrile	9.76	53	427789	47.62	ug/l	97
23) Isopropyl ether (DIPE)	11.18	45	2326471	9.27	ug/l	96
24) 1,1-Dichloroethane	11.13	63	1273615	9.52	ug/l	100
25) Vinyl acetate	11.28	43	766162	9.08	ug/l	100
26) tert-Butyl ethyl ether (ET	12.19	59	1416372	8.40	ug/l	98
27) 2,2-Dichloropropane	12.62	77	595648	10.34	ug/l	99
28) cis-1,2-Dichloroethene	12.69	96	627095	9.62	ug/l	100
29) 2-Butanone	12.74	72	126330	51.92	ug/l	94
30) 2-Butanol	13.14	45	481134	209.44	ug/l	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:16 2020 Quant Results File: VOF3D02.RES

Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
31)	Bromochloromethane	13.21	130	300113	9.73	ug/l	99
33)	Chloroform	13.34	83	1083430	9.89	ug/l	99
35)	1,1,1-Trichloroethane	13.63	97	741792	10.54	ug/l	99
36)	Cyclohexane	13.68	84	758260	9.24	ug/l	100
37)	1,1-Dichloropropene	13.93	110	293885	9.86	ug/l	97
38)	Carbon tetrachloride	13.91	119	673973	11.31	ug/l	99
42)	Benzene	14.29	78	2193242	9.55	ug/l	99
43)	1,2-Dichloroethane	14.38	62	587789	10.82	ug/l	99
44)	tert-Amyl methyl ether (TA	14.41	87	175688	8.99	ug/l	97
45)	Trichloroethene	15.27	130	571453	9.53	ug/l	98
46)	Methylcyclohexane	15.48	83	939721	9.95	ug/l	97
47)	1,2-Dichloropropane	15.60	63	646792	9.90	ug/l	95
48)	1,4-Dioxane	15.79	88	34473	213.65	ug/l	91
49)	Dibromomethane	15.80	93	252710	10.19	ug/l	99
50)	Bromodichloromethane	15.98	83	719583	10.86	ug/l	99
51)	2-Chloroethyl vinyl ether	16.32	63	64693	5.65	ug/l	99
52)	cis-1,3-Dichloropropene	16.50	75	792968	10.12	ug/l	99
53)	4-Methyl-2-pentanone	16.64	43	1402338	50.86	ug/l	98
56)	Toluene	16.87	91	2181685	9.99	ug/l	99
57)	Ethyl methacrylate	17.16	69	367265	9.44	ug/l	96
58)	trans-1,3-Dichloropropene	17.14	75	607759	9.75	ug/l	99
59)	1,1,2-Trichloroethane	17.35	97	302876	10.20	ug/l	97
60)	Tetrachloroethene	17.48	164	433168	10.03	ug/l	99
61)	2-Hexanone	17.56	43	940113	44.59	ug/l	98
62)	1,3-Dichloropropane	17.53	76	550876	9.88	ug/l	99
63)	Dibromochloromethane	17.80	129	416946	10.72	ug/l	99
64)	1,2-Dibromoethane	17.93	107	309458	10.77	ug/l	98
65)	1-Chlorohexane	18.26	91	808254	9.24	ug/l	100
66)	Chlorobenzene	18.36	112	1222899	9.74	ug/l	100
67)	Ethylbenzene	18.42	91	2416496	10.02	ug/l	99
68)	1,1,1,2-Tetrachloroethane	18.42	131	435647	10.47	ug/l	99
69)	m-Xylene & p-Xylene	18.51	91	3456240	18.92	ug/l	100
70)	o-Xylene	18.88	91	1693356	9.49	ug/l	100
71)	Styrene	18.90	104	1190614	9.60	ug/l	100
73)	Bromoform	19.15	173	180034	11.08	ug/l	99
74)	Isopropylbenzene	19.16	105	2092644	10.26	ug/l	99
76)	1,1,2,2-Tetrachloroethane	19.46	83	347220	10.62	ug/l	100
77)	trans-1,4-Dichloro-2-buten	19.49	53	90840	9.67	ug/l	97
78)	n-Propylbenzene	19.50	91	2764648	10.19	ug/l	99
79)	1,2,3-Trichloropropane	19.50	110	63378	9.99	ug/l	95
80)	Bromobenzene	19.52	156	472318	10.51	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:16 2020 Quant Results File: VOF3D02.RES

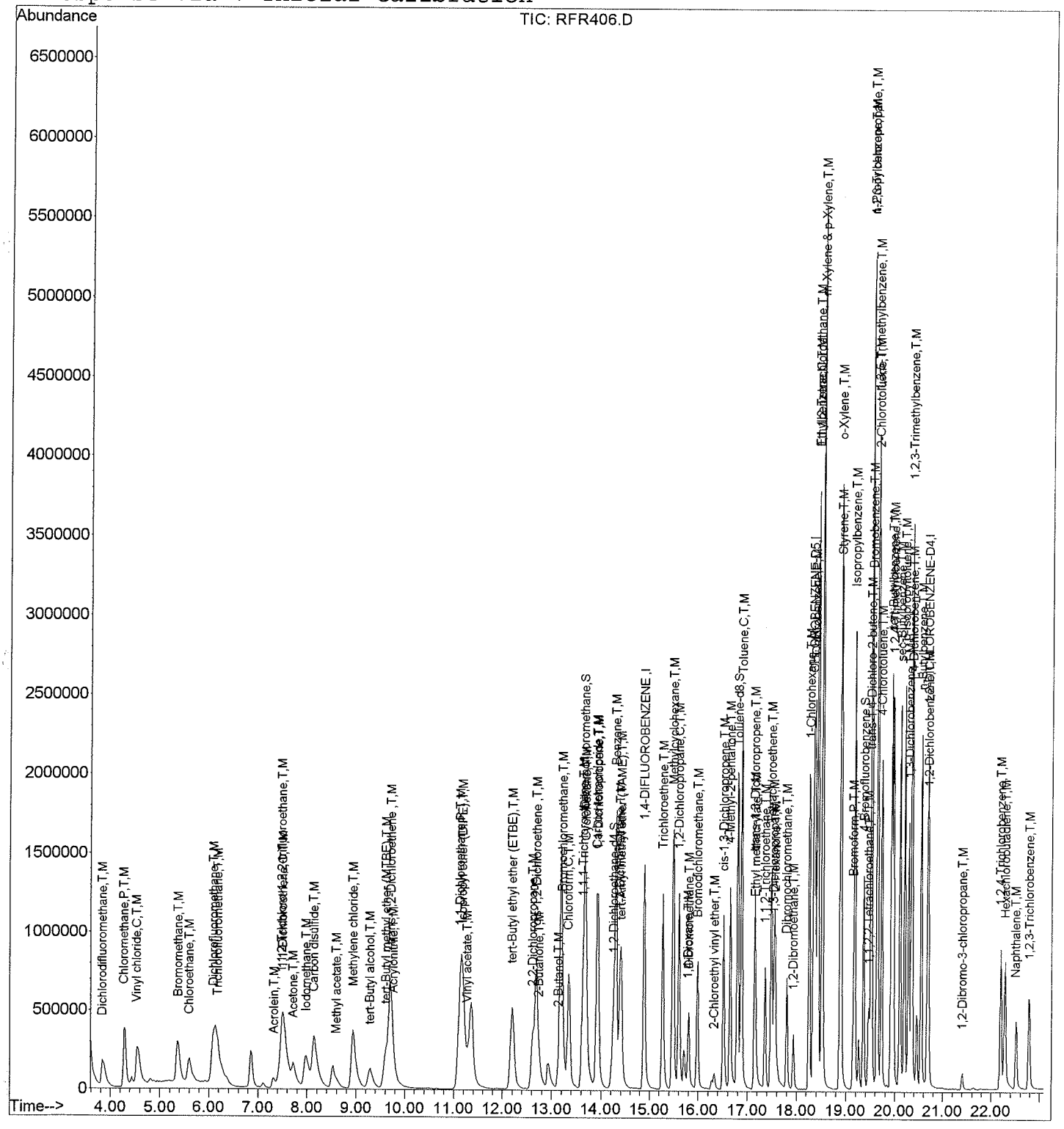
Quant Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration
DataAcq Meth : VOF3D02

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	1,3,5-Trimethylbenzene	19.62	105	1543293	9.73	ug/l	99
82)	2-Chlorotoluene	19.64	91	1602596	9.89	ug/l	99
83)	4-Chlorotoluene	19.71	91	1468216	10.22	ug/l	100
84)	tert-Butylbenzene	19.92	134	346698	10.44	ug/l	99
85)	1,2,4-Trimethylbenzene	19.95	105	1508108	9.90	ug/l	99
86)	sec-Butylbenzene	20.10	105	2101830	9.73	ug/l	99
87)	p-Isopropyltoluene	20.19	119	1674235	9.73	ug/l	99
88)	1,3-Dichlorobenzene	20.28	146	780358	9.68	ug/l	99
89)	1,2,3-Trimethylbenzene	20.34	105	1460597	10.32	ug/l	100
90)	1,4-Dichlorobenzene	20.35	146	842444	10.21	ug/l	99
92)	n-Butylbenzene	20.54	91	1649063	8.75	ug/l	99
93)	1,2-Dichlorobenzene	20.69	146	651949	9.72	ug/l	99
94)	1,2-Dibromo-3-chloropropan	21.41	157	37765	9.99	ug/l	97
95)	1,2,4-Trichlorobenzene	22.19	180	392118	9.92	ug/l	100
96)	Hexachlorobutadiene	22.28	225	233478	9.47	ug/l	99
97)	Naphthalene	22.51	128	502102	8.91	ug/l	99
98)	1,2,3-Trichlorobenzene	22.79	180	287782	9.36	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\20F23\RFR406.D Vial: 2
Acq On : 23 Jun 2020 3:04 pm Operator: ENguye/ODinh
Sample : CVOF3D0234 Inst : F3
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 24 14:16 2020 Quant Results File: VOF3D02.RES

Method : C:\HPCHEM\1\METHODS\VOF3D02.M (RTE Integrator)
Title : METHOD 8260 25mL
Last Update : Thu Apr 16 16:24:44 2020
Response via : Initial Calibration



ANALYTICAL LOG(S)

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/02/20 ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: AF3-021

BATCH VOF3D026

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount A/B (ml)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR001	BFB D01	0.03/0.15	N/A	N/A	N/A		16:01
02		002	VOF3D0201	0.03/0.15					0.3/1.5/7.5 ppb
03		003	2	0.05/0.25					0.5/2.5/12.5
04		004	3	0.1/0.5					1/5/25
05		005	4	0.2/1					2/10/50
06		006	5	0.5/2.5					5/25/125
07		007	6	1/5					10/50/250
08		008	7	2/10					20/100/500
09		009	8	3/15					30/150/750 bias high
10		010	9	5/25					50/250/1250
11		011	10	10/50					100/500/2500
12		012	RINSE						
13		013							
14		014	IVOF3D0201						gas low
15		015	RINSE						
16		016	LOD1						0.2/4 ppb
17		017	2						0.4/4
18		018	3						0.8/4 00:37
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									Rm 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 224TMP+TAA	SV1-33-97-03	*	
DCC CS_2	-97-02	*	
DCC 4ADD	-98-03	*	
DCC gas	SV1-34-07-01	*	
DCC 8260	-08-03	*	
DCC KET-AA	-08-02	*	
BFB	SV1-33-34-01	1	50/250/1250/625
IS/SURR. IS	SV1-34-06-01	5	
IS/SURR. SS	SV1-33-98-01	*	
ICV/LCS CS_2	-74-01	1	
ICV/LCS gas	SV1-34-10-03	1	
ICV/LCS KET	-11-01	5	
ICV/LCS TAA	-02-02	5	
ICV/LCS 8260	SV1-33-62-01	5	
ICV/LCS 3ADD	-50-01	5	
ICV/LCS 224TMP	-16-02	5	
ICV/LCS 2-But	-39-01	5	
		12.5 Rm 4/14/20	500
Data File Folder	20D04		

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		-04-06
Methanol		-04-13
$NaHSO_4$		MSV-02-01-07-2
Reagent Water	RWS-19-001	-4
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments: A: gas, CS_2, SS, 224TMP+TAA, 4ADD
B: 8260, KET-AA

☐ Refer to sample weight log

Analyzed By: Rm

Date Disposed: 04/03/20 Disposed By: Rm

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 04/06/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH IVOF3D0202

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RDR019	BFBF3D02		N/A	N/A	N/A		10:37
02		↓ 020	IVOF3D0202		↓	↓	↓		10/50/250 ppm 11:22
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
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25									
26									
27									
28									
29									
30									Rm 04/14/20

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC			
BFB	SV1-33-34-01	1	
IS/SURR.	↓ -98-01 SV1-34-06-01	1 5	
ICV/LCS	↓ -10-03 SV1-33-74-01	1 1	
ICV/LCS	-62-01 -50-01	5 5	50/250/1250
ICV/LCS	Rm 4/14/20 ↓ -16-02 ~~SV1-34-10-03~~	5	
ICV/LCS	SV1-34-11-01 ↓ -02-02 SV1-33-34-01	5 5	
Data File Folder	20D06	12.5	500

	LOT #	Syringe Lot #
pH strip		MSV-01-04-18
Chlorine strip		↓ -04-06
Methanol		MSV-02-01-07-2
$NaHSO_4$		↓ -4
Reagent Water	RWS-19-001	MSV-01-04-13
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: Rm

Date Disposed: 04/07/20 Disposed By: RM

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.N: 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/22/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: AF3-021

BATCH CVOF3D033

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl2<5ppm	Matrix S	Notes
01		RFR378	BFBF3F17						08:04
02		379	CVOF3D0233						
03		380	VOF3F17L						
04		381	↓ C						
05		382	RINSE						
06		383	VOF3F17B	25mL					
07		384	20F162-03	↓	1.0	✓	✓		
08		385	06		↓	✓	✓		
09		386	09			✓	✓		
10		387	12			✓	✓		
11		388	01			✓	✓		
12		389	02			✓	✓		
13		390	04			✓	✓		
14		391	05			✓	✓		
15		392	07			✓	✓		
16		393	08			✓	✓		25x
17		394	10			✓	✓		
18		395	↓ 11	↓	↓	✓	✓		
19		396	RINSE						
20		397	20F154-02I	25mL	25	✓	✓		
21		398	02N		1.0	✓	✓		
22		399	02M		↓	✓	✓		
23		400	↓ 02S	↓	↓	✓	✓		18:55
24		401	RINSE						
25		402	↓						
26		403							
27		↓ 404							
28									
29									
30									

6/22/20 EN

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	4/2/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-33-98-03	1	
DCC	↓ 34-25-01	1	
DCC	34-28-01	1	
DCC	34-30-03 34-21-01	5 5	
BFB	33-82-03	1	50/250
IS/SURR.	34-40-01	5	
ICV/LCS	33-74-02	1	
ICV/LCS	34-09-02	1	
ICV/LCS	34-11-01	5	
ICV/LCS	↓ 34-20-01 33-49-03	5 5	
Data File Folder	20F22		

	LOT #	Syringe Lot #
pH strip	HC998032	MSV-01-04-08
Chlorine strip	2979	↓ 02-01-08-05
Methanol		
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: EN 6/20

Date Disposed: 6/23/20 Disposed By: EN

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/23/20 ☐ 5-mL Purge ☐ 10-mL Purge ☐ 25-mL Purge

Book #: AF3-021

BATCH CVOF3D0234

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01		RFR405	BFBF3F18						14:35
02		06	CVOF3D0234						
03		07	VOF3F18L						
04		08	↓ C						
05		09	RINSE						
06		10	VOF3F18B	25mL					
07		11	20D110-01	↓	1.0	5	✓		
08		12	20F157-05		↓	✓	✓		
09		13	↓ 01	↓		✓	✓		
10		14	20F162-08I	1mL	25	✓	✓		
11		15	20F160-06N	25mL	1.0	✓	✓		
12		16	↓ 08N	↓	↓	✓	✓		
13		17	20F157-03			✓	✓		
14		18	04			✓	✓		
15		19	02			✓	✓		
16		20	02M			✓	✓		
17		21	↓ 02S	↓	↓	✓	✓		
18		22	EVOF3D0234						22:58
19		23	↓ A						
20		24	↓ B						
21		25	RINSE						
22		26	↓						
23		↓ 27							
24									
25									
26									
27									
28									
29									6/24/20 EN
30									

Instrument No.	F3
INITIAL CALIBRATION REFERENCE	
DATE	04/02/20
ICAL ID	VOF3D02

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	SVI-33-98-03	1	
DCC	34-25-01	1	
DCC	34-28-01	1	
DCC	~~34-30-03~~ 34-21-01	5 5	
BFB	33-82-03	1	50/25D
IS/SURR.	34-40-01	5	
ICV/LCS	33-74-02	1	
ICV/LCS	34-09-02	1	
ICV/LCS	34-11-01	5	
ICV/LCS	↓ ~~34-20-01~~ 33-49-03	5 5	
Data File Folder	20F23		

	LOT #	Syringe Lot #
pH strip	HC998032	MSV-01-04-08
Chlorine strip	2979	↓ 02-01-08-05
Methanol		
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TOF3	

Comments:

☐ Refer to sample weight log

Analyzed By: EN 1DD

Date Disposed: ~~6/25~~ 6/24/20 Disposed By: EN

6/24/20 EN

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F162

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of eight(8) water samples were received on 06/19/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF076) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF017WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF017WL/SVF017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F162
Instrument ID : F0

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF017WB	1	NA	06/23/2010:57	06/22/2009:30	RFF077	RFF005	20SVF017W	Method Blank
LCS1W	SVF017WL	1	NA	06/23/2011:11	06/22/2009:30	RFF078	RFF005	20SVF017W	Lab Control Sample (LCS)
LCD1W	SVF017WC	1	NA	06/23/2011:31	06/22/2009:30	RFF079	RFF005	20SVF017W	LCS Duplicate
MW22-GW061720	20F162-01	1	NA	06/23/2011:50	06/22/2009:30	RFF080	RFF005	20SVF017W	Field Sample
MW21-GW061820	20F162-02	1	NA	06/23/2012:09	06/22/2009:30	RFF081	RFF005	20SVF017W	Field Sample
MW01D-GW061720	20F162-04	1	NA	06/23/2012:28	06/22/2009:30	RFF082	RFF005	20SVF017W	Field Sample
MW13S-GW061820	20F162-05	1	NA	06/23/2012:47	06/22/2009:30	RFF083	RFF005	20SVF017W	Field Sample
MW03RA-GW061820	20F162-07	1	NA	06/23/2013:06	06/22/2009:30	RFF084	RFF005	20SVF017W	Field Sample
MW03RB-GW061820	20F162-08	1	NA	06/23/2013:25	06/22/2009:30	RFF085	RFF005	20SVF017W	Field Sample
MW03RC-GW061820	20F162-10	1	NA	06/23/2013:44	06/22/2009:30	RFF086	RFF005	20SVF017W	Field Sample
MW03RD-GW061820	20F162-11	1	NA	06/23/2014:03	06/22/2009:30	RFF087	RFF005	20SVF017W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW22-GW061720	Date Analyzed:	06/23/20 11:50
Lab Samp ID:	20F162-01	Dilution Factor:	1
Lab File ID:	RFF080	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.43	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	34.7	43.2	80	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 930ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

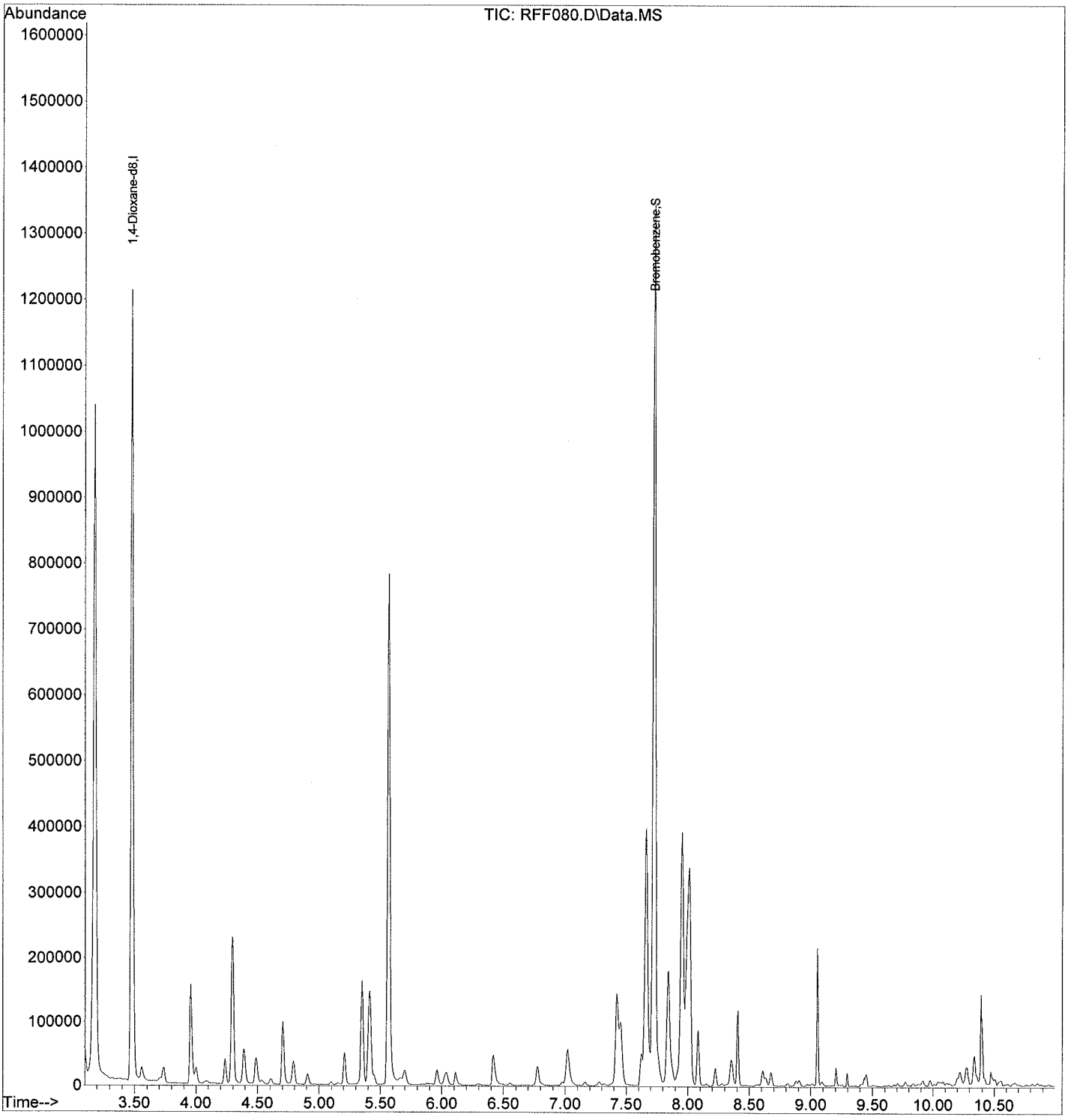
Data File : C:\msdchem\1\DATA\20F23\RFF080.D Vial: 7
Acq On : 23 Jun 2020 11:50 Operator: RMinam
Sample : 20F162-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:12:47 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	180652	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	244599	16.12	ppm	0.00
Spiked Amount 20.000			Recovery =	80.60%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF080.D Vial: 7
Acq On : 23 Jun 2020 11:50 Operator: RMinam
Sample : 20F162-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:12:47 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 11:15
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW21-GW061820	Date Analyzed:	06/23/20 12:09
Lab Samp ID:	20F162-02	Dilution Factor:	1
Lab File ID:	RFF081	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	36.1	44.4	81	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 900ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

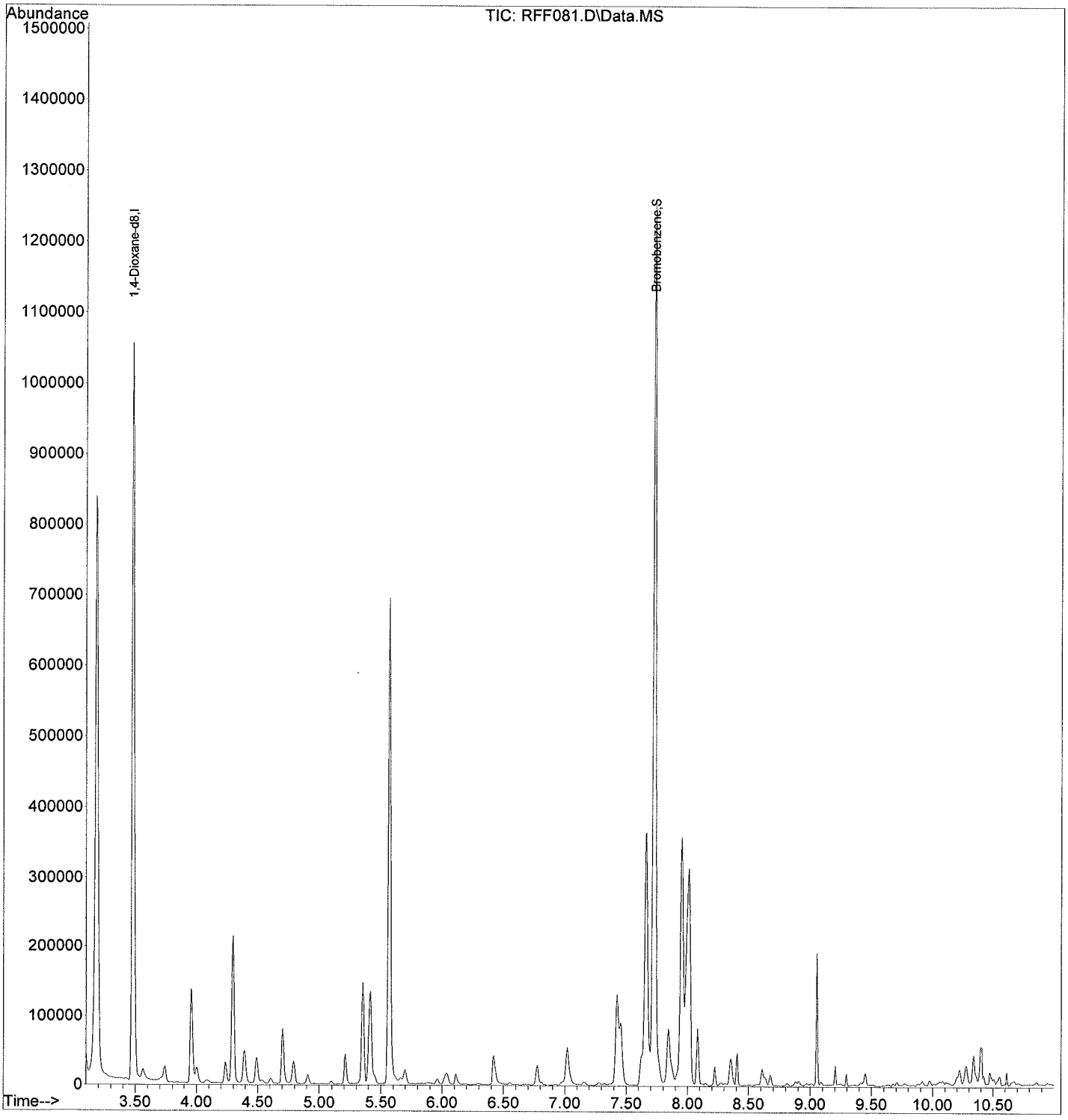
Data File : C:\msdchem\1\DATA\20F23\RFF081.D Vial: 8
Acq On : 23 Jun 2020 12:09 Operator: RMinam
Sample : 20F162-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:29:09 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	165369	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	225446	16.23	ppm	0.00
Spiked Amount 20.000			Recovery =	81.15%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF081.D Vial: 8
Acq On : 23 Jun 2020 12:09 Operator: RMinam
Sample : 20F162-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:29:09 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/17/20 16:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW01D-GW061720	Date Analyzed:	06/23/20 12:28
Lab Samp ID:	20F162-04	Dilution Factor:	1
Lab File ID:	RFF082	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	22.0	41.2	53	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 970ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

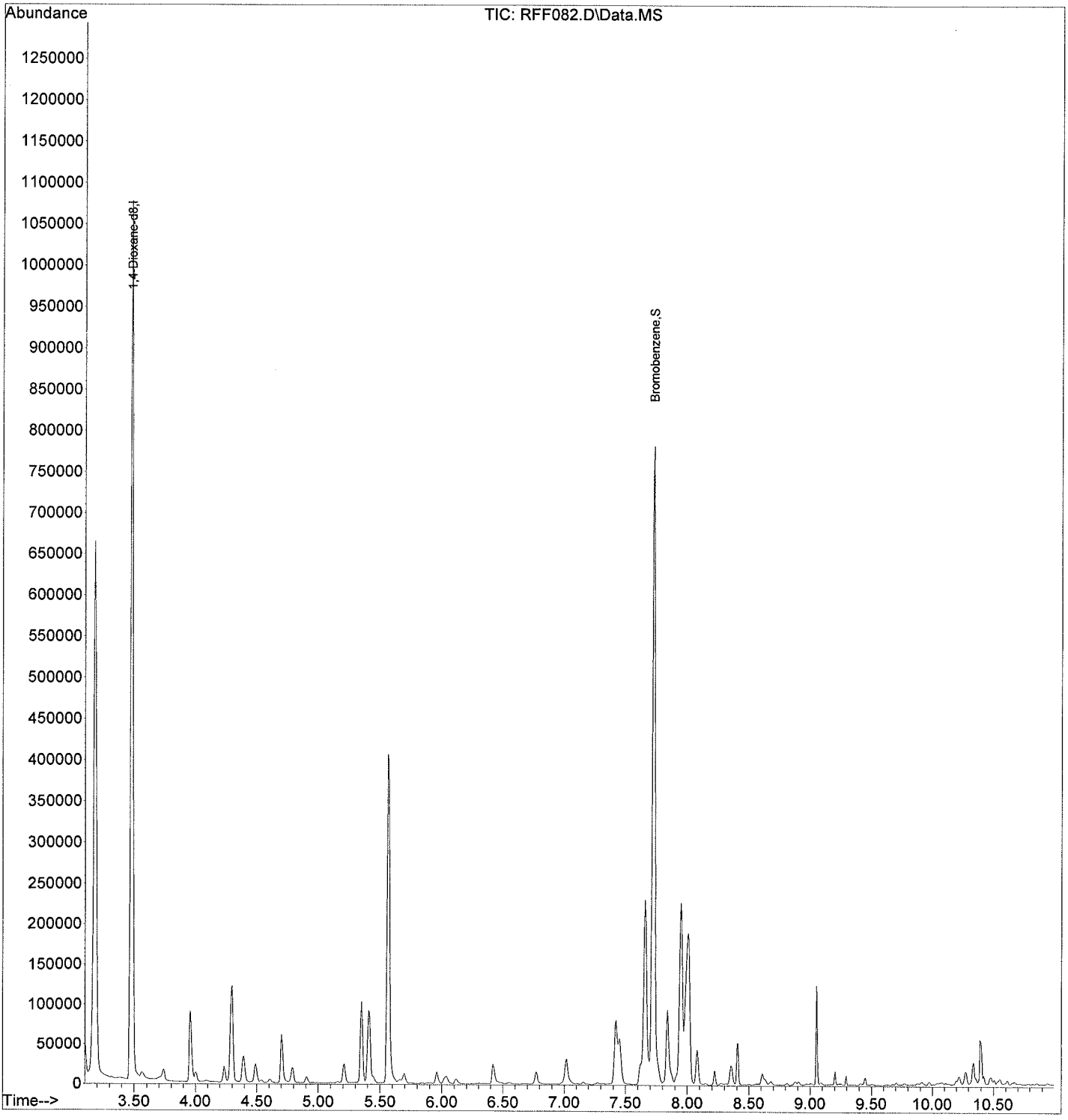
Data File : C:\msdchem\1\DATA\20F23\RFF082.D Vial: 9
Acq On : 23 Jun 2020 12:28 Operator: RMinam
Sample : 20F162-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:16:37 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	162235	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	145391	10.67	ppm	0.00
Spiked Amount 20.000			Recovery =	53.35%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF082.D Vial: 9
Acq On : 23 Jun 2020 12:28 Operator: RMinam
Sample : 20F162-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:16:37 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW13S-GW061820	Date Analyzed:	06/23/20 12:47
Lab Samp ID:	20F162-05	Dilution Factor:	1
Lab File ID:	RFF083	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.45	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	37.1	44.8	83	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 890ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

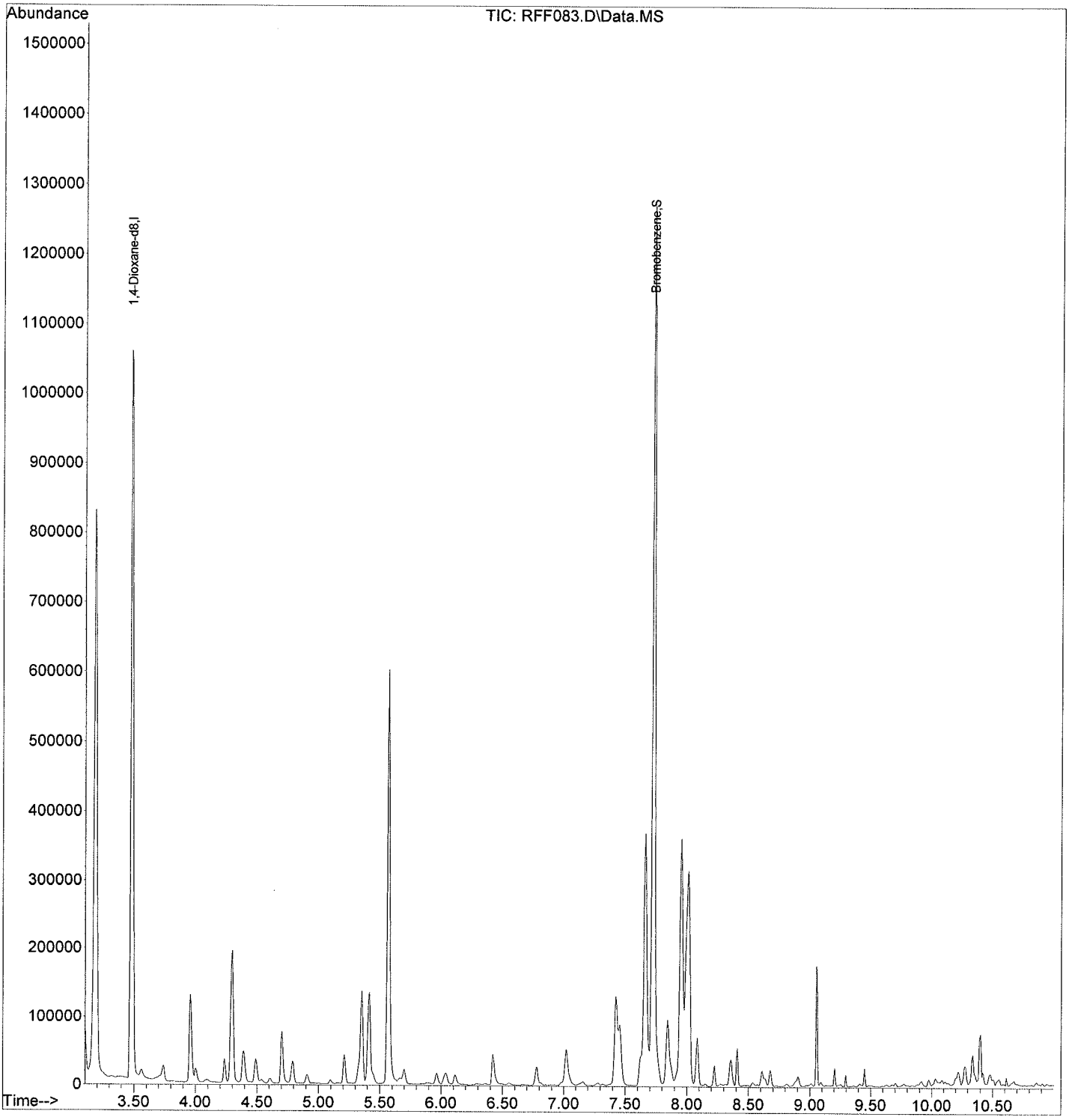
Data File : C:\msdchem\1\DATA\20F23\RFF083.D Vial: 10
Acq On : 23 Jun 2020 12:47 Operator: RMinam
Sample : 20F162-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:16:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	166435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	230610	16.49	ppm	0.00
Spiked Amount 20.000			Recovery =	82.45%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF083.D Vial: 10
Acq On : 23 Jun 2020 12:47 Operator: RMinam
Sample : 20F162-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:16:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 15:40
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW03RA-GW061820	Date Analyzed:	06/23/20 13:06
Lab Samp ID:	20F162-07	Dilution Factor:	1
Lab File ID:	RFF084	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	34.6	40.4	86	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 990ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

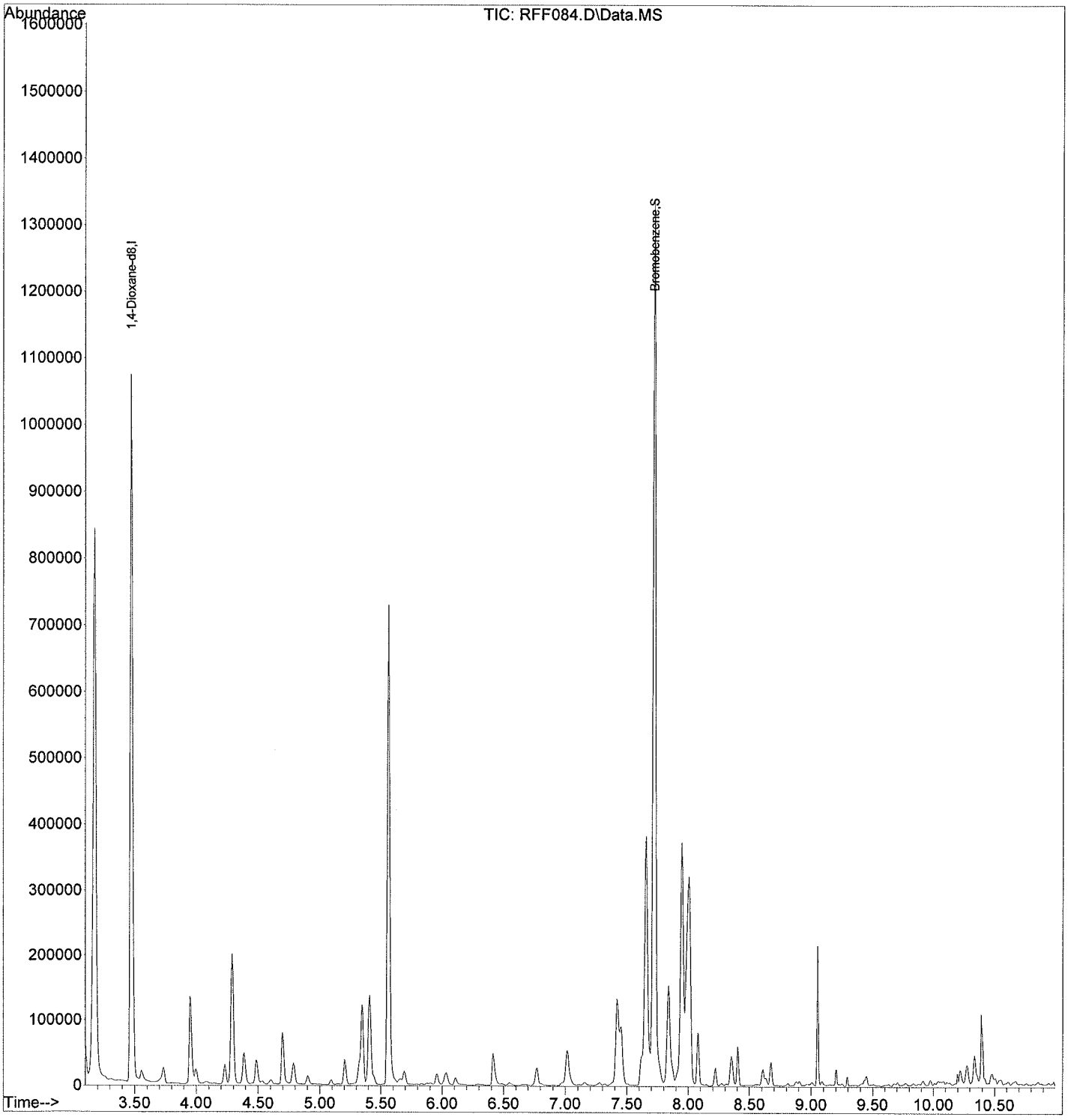
Data File : C:\msdchem\1\DATA\20F23\RFF084.D Vial: 11
Acq On : 23 Jun 2020 13:06 Operator: RMinam
Sample : 20F162-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:32:07 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	166244	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	238931	17.11	ppm	0.00
Spiked Amount 20.000			Recovery =	85.55%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF084.D Vial: 11
Acq On : 23 Jun 2020 13:06 Operator: RMinam
Sample : 20F162-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:32:07 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 15:05
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW03RB-GW061820	Date Analyzed:	06/23/20 13:25
Lab Samp ID:	20F162-08	Dilution Factor:	1
Lab File ID:	RFF085	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	33.4	41.6	80	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 960ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

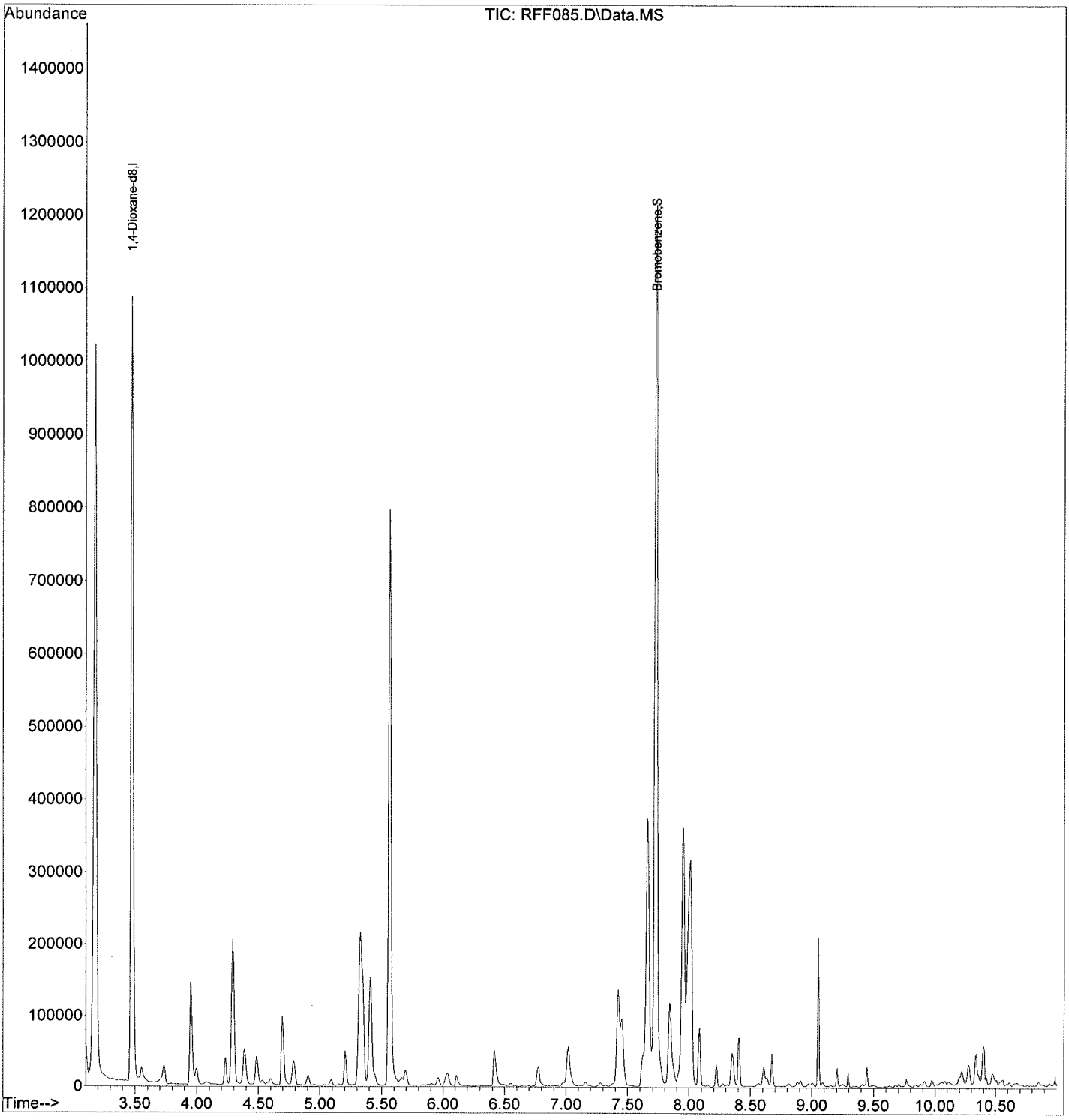
Data File : C:\msdchem\1\DATA\20F23\RFF085.D Vial: 12
Acq On : 23 Jun 2020 13:25 Operator: RMinam
Sample : 20F162-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:53:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	169379	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	227940	16.02	ppm	0.00
Spiked Amount 20.000			Recovery =	80.10%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF085.D Vial: 12
Acq On : 23 Jun 2020 13:25 Operator: RMinam
Sample : 20F162-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 13:53:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW03RC-GW061820	Date Analyzed:	06/23/20 13:44
Lab Samp ID:	20F162-10	Dilution Factor:	1
Lab File ID:	RFF086	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	33.6	41.6	81	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 960ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

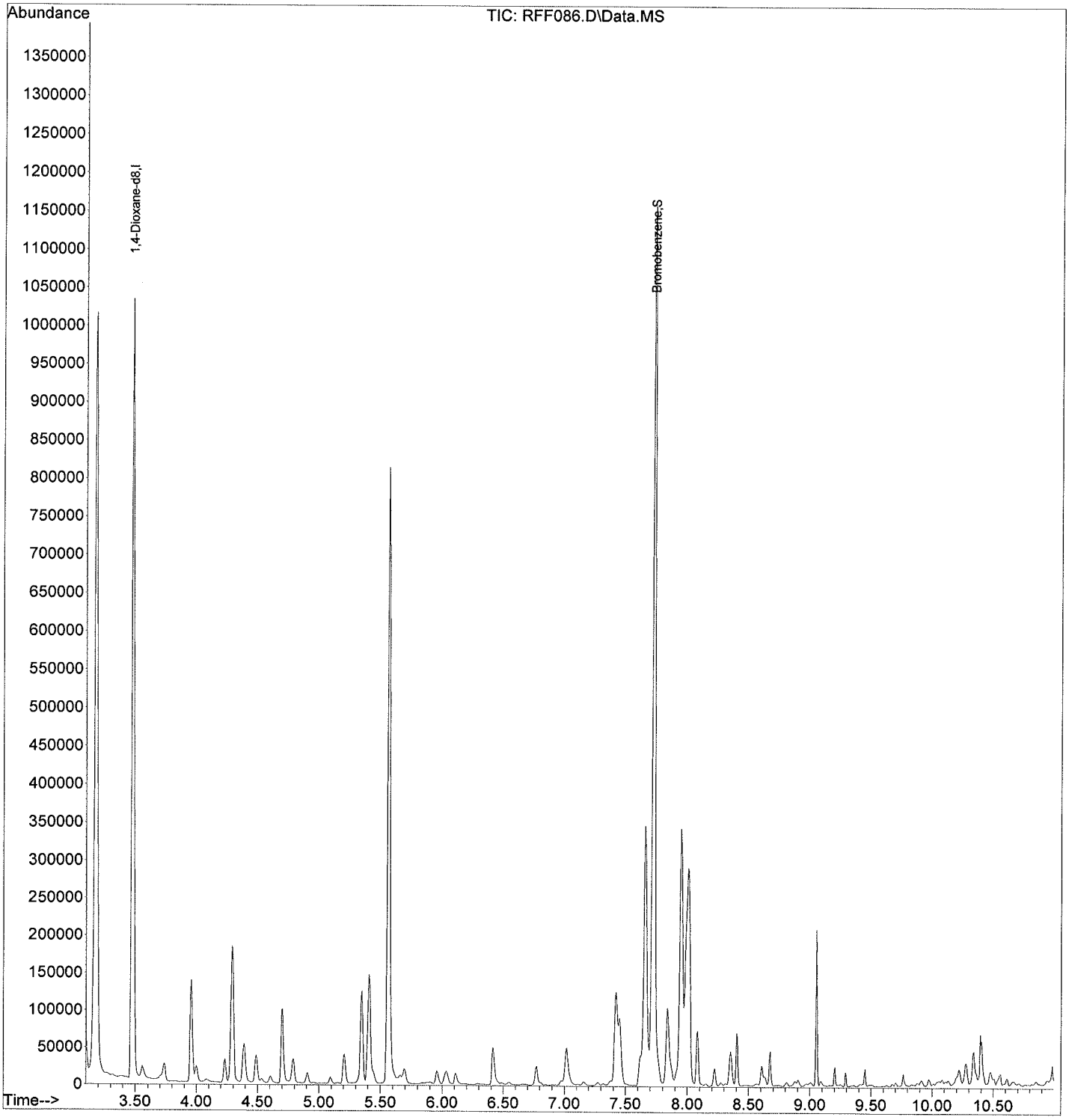
Data File : C:\msdchem\1\DATA\20F23\RFF086.D Vial: 13
Acq On : 23 Jun 2020 13:44 Operator: RMinam
Sample : 20F162-10 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:04:06 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	158947	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	215519	16.14	ppm	0.00
Spiked Amount 20.000			Recovery =	80.70%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF086.D Vial: 13
Acq On : 23 Jun 2020 13:44 Operator: RMinam
Sample : 20F162-10 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:04:06 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 12:35
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MW03RD-GW061820	Date Analyzed:	06/23/20 14:03
Lab Samp ID:	20F162-11	Dilution Factor:	1
Lab File ID:	RFF087	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	37.3	43.6	85	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 920ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

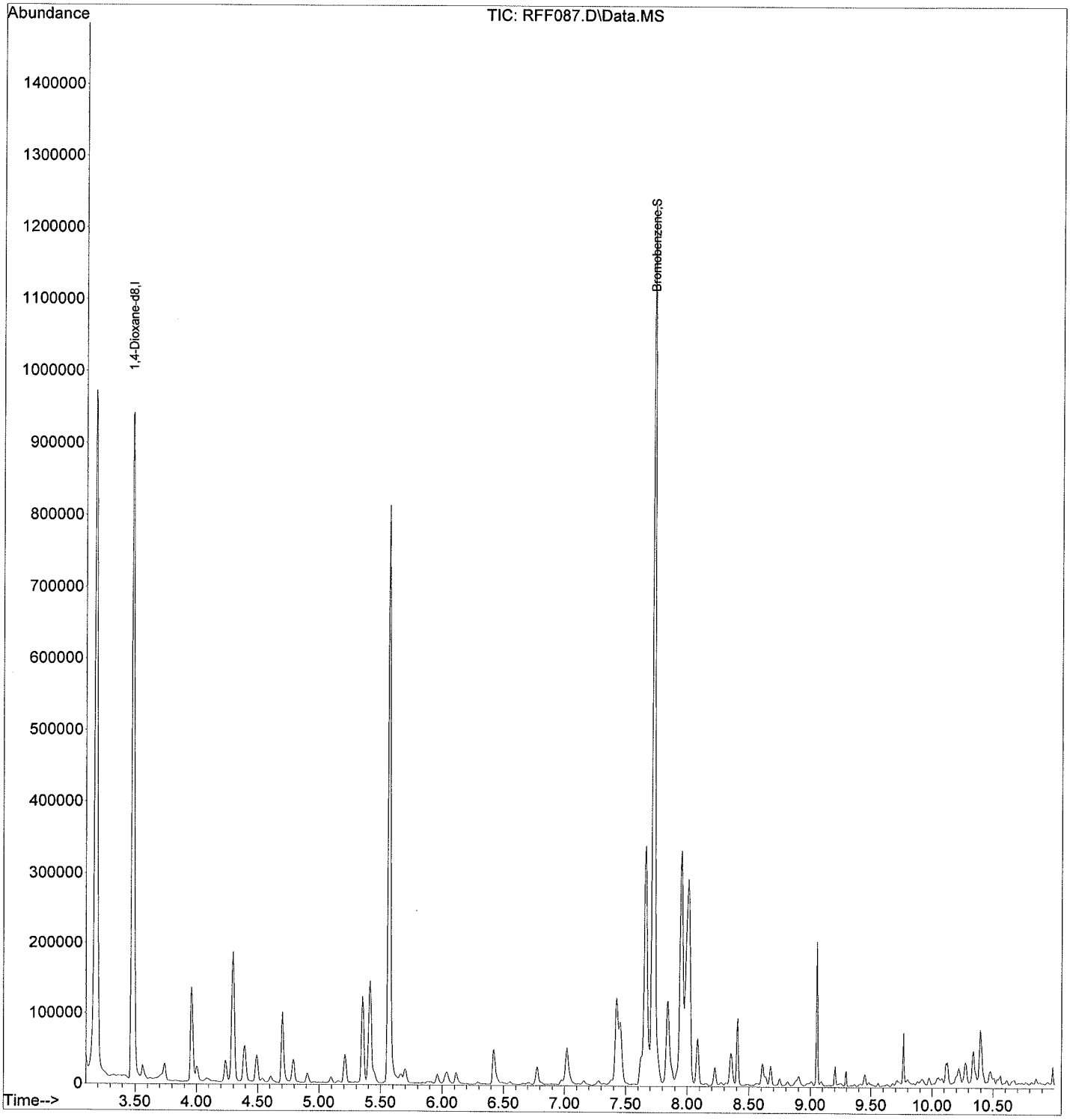
Data File : C:\msdchem\1\DATA\20F23\RFF087.D Vial: 14
Acq On : 23 Jun 2020 14:03 Operator: RMinam
Sample : 20F162-11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:22:35 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	152978	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	220341	17.14	ppm	0.00
Spiked Amount 20.000			Recovery =	85.70%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF087.D Vial: 14
Acq On : 23 Jun 2020 14:03 Operator: RMinam
Sample : 20F162-11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:22:35 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/22/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/22/20
Batch No.	: 20F162	Date Extracted:	06/22/20 09:30
Sample ID	: MBLK1W	Date Analyzed:	06/23/20 10:57
Lab Samp ID:	SVF017WB	Dilution Factor:	1
Lab File ID:	RFF077	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	31.1	40.0	78	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF017WB	SVF017WL	SVF017WC
LAB FILE ID	: RFF077	RFF078	RFF079
DATE PREPARED	: 06/22/20 09:30	06/22/20 09:30	06/22/20 09:30
DATE ANALYZED	: 06/23/20 10:57	06/23/20 11:11	06/23/20 11:31
PREP BATCH	: 20SVF017W	20SVF017W	20SVF017W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	32.5	81	40.0	32.7	82	1	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	33.9	85	40.0	35.2	88	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

QC DATA

Quantitation Report (QT Reviewed)

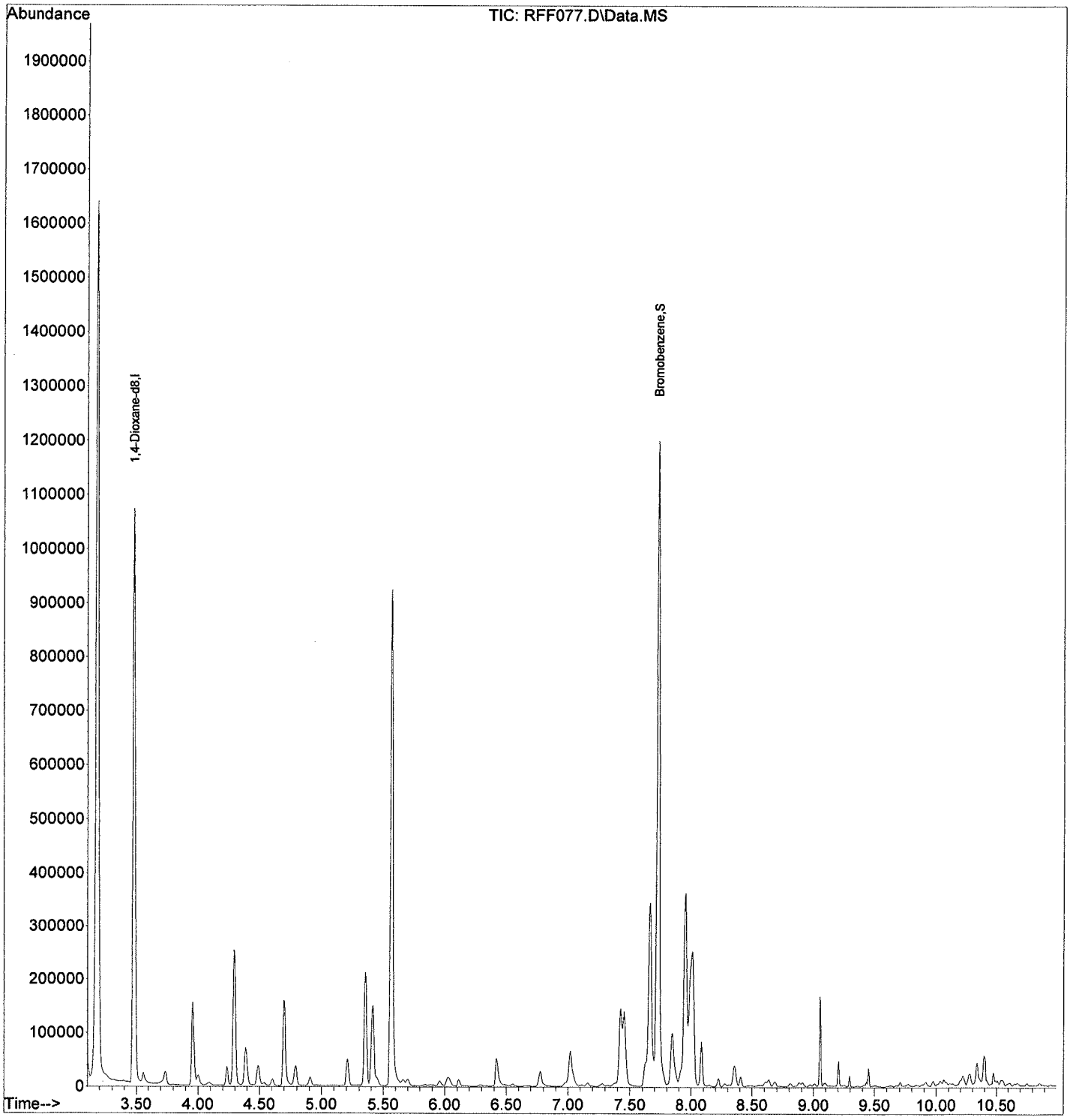
Data File : C:\msdchem\1\DATA\20F23\RFF077.D Vial: 4
Acq On : 23 Jun 2020 10:57 Operator: RMinam
Sample : SVF017WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:27:27 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	164036	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	213990	15.53	ppm	0.00
Spiked Amount 20.000			Recovery =	77.65%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF077.D Vial: 4
Acq On : 23 Jun 2020 10:57 Operator: RMinam
Sample : SVF017WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:27:27 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

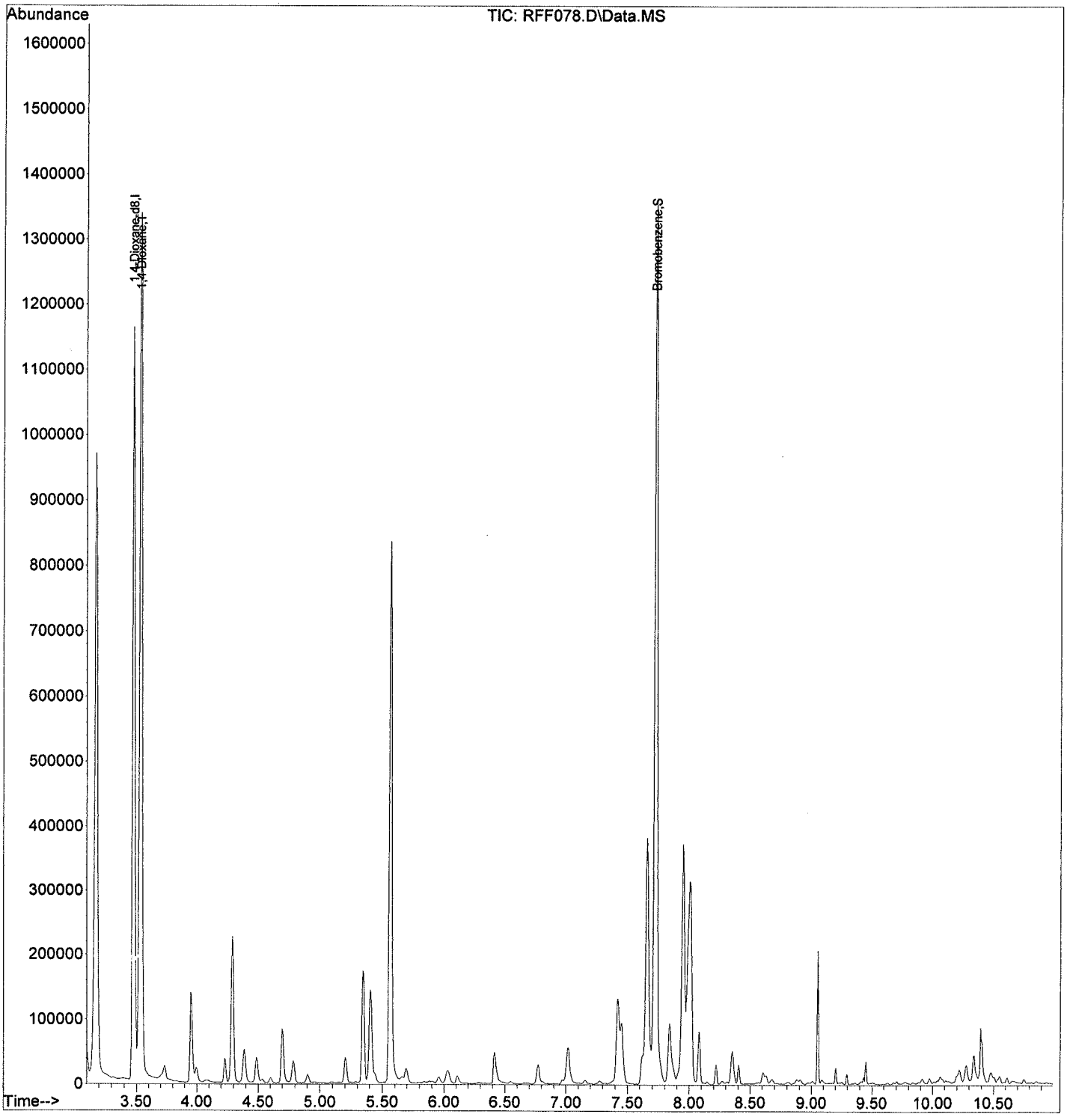
Data File : C:\msdchem\1\DATA\20F23\RFF078.D Vial: 5
Acq On : 23 Jun 2020 11:11 Operator: RMinam
Sample : SVF017WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:45:32 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	174708	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	248813	16.95	ppm	0.00
Spiked Amount 20.000			Recovery =	84.75%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	195703	16.23	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF078.D Vial: 5
Acq On : 23 Jun 2020 11:11 Operator: RMinam
Sample : SVF017WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:45:32 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

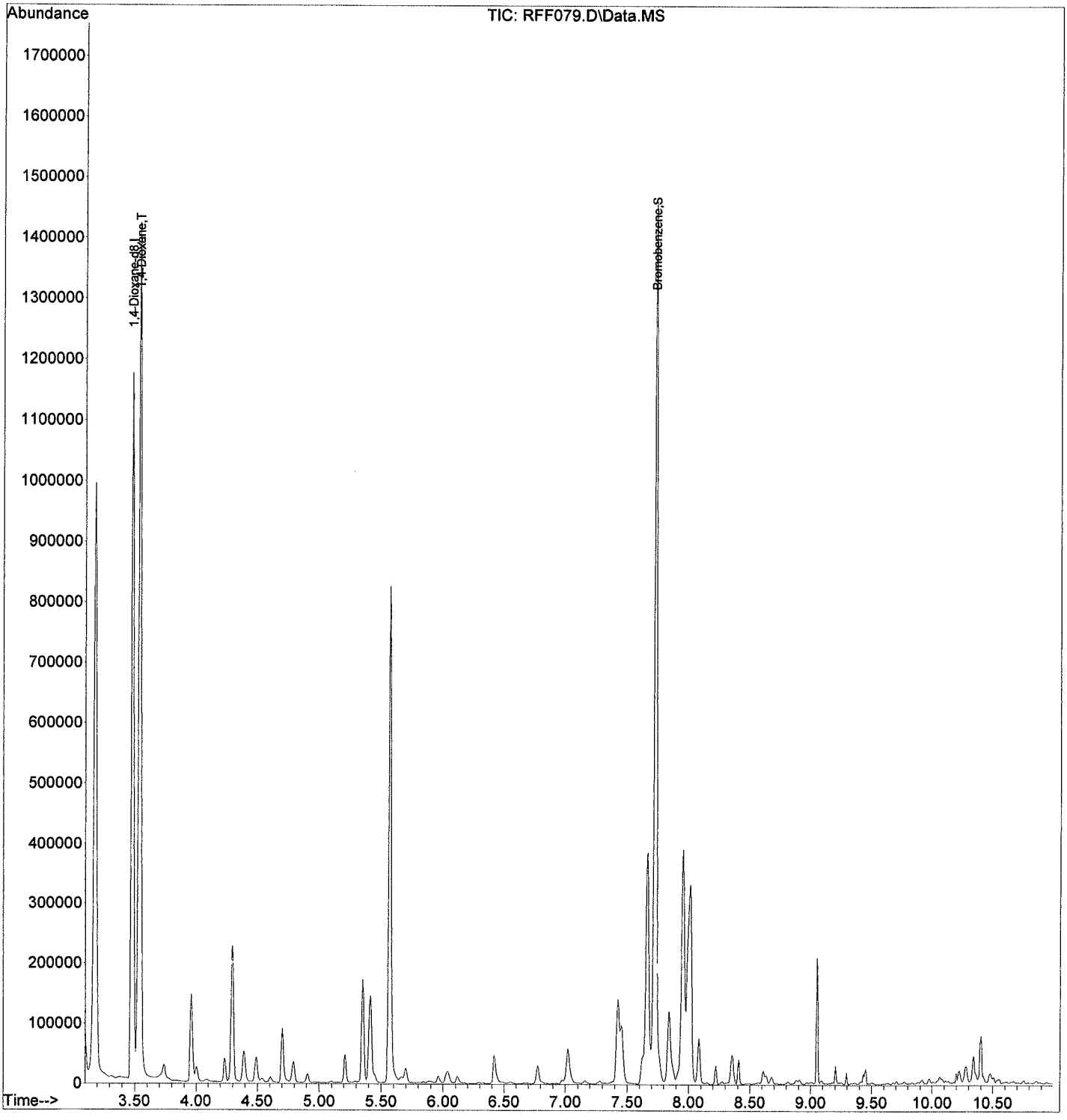
Data File : C:\msdchem\1\DATA\20F23\RFF079.D Vial: 6
Acq On : 23 Jun 2020 11:31 Operator: RMinam
Sample : SVF017WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:04:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	178235	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	263364	17.59	ppm	0.00
Spiked Amount 20.000			Recovery = 87.95%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	200793	16.33	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF079.D Vial: 6
Acq On : 23 Jun 2020 11:31 Operator: RMinam
Sample : SVF017WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:04:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

MW 6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO Column Spec :ZB-Semi-Voa ID :0.25MM

Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15

IC File :RFF005 HPChem Method :SVFOF03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1

SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

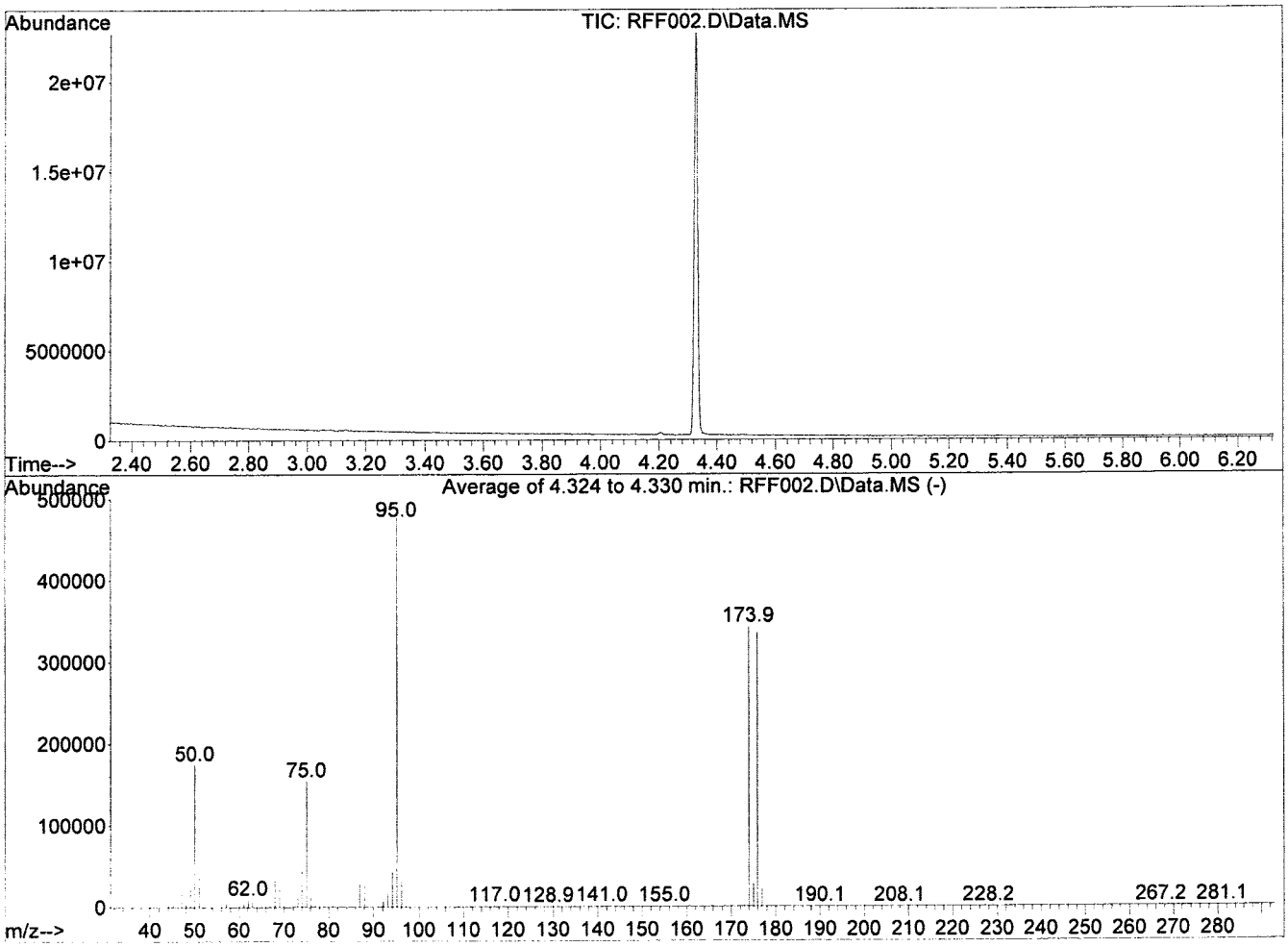
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

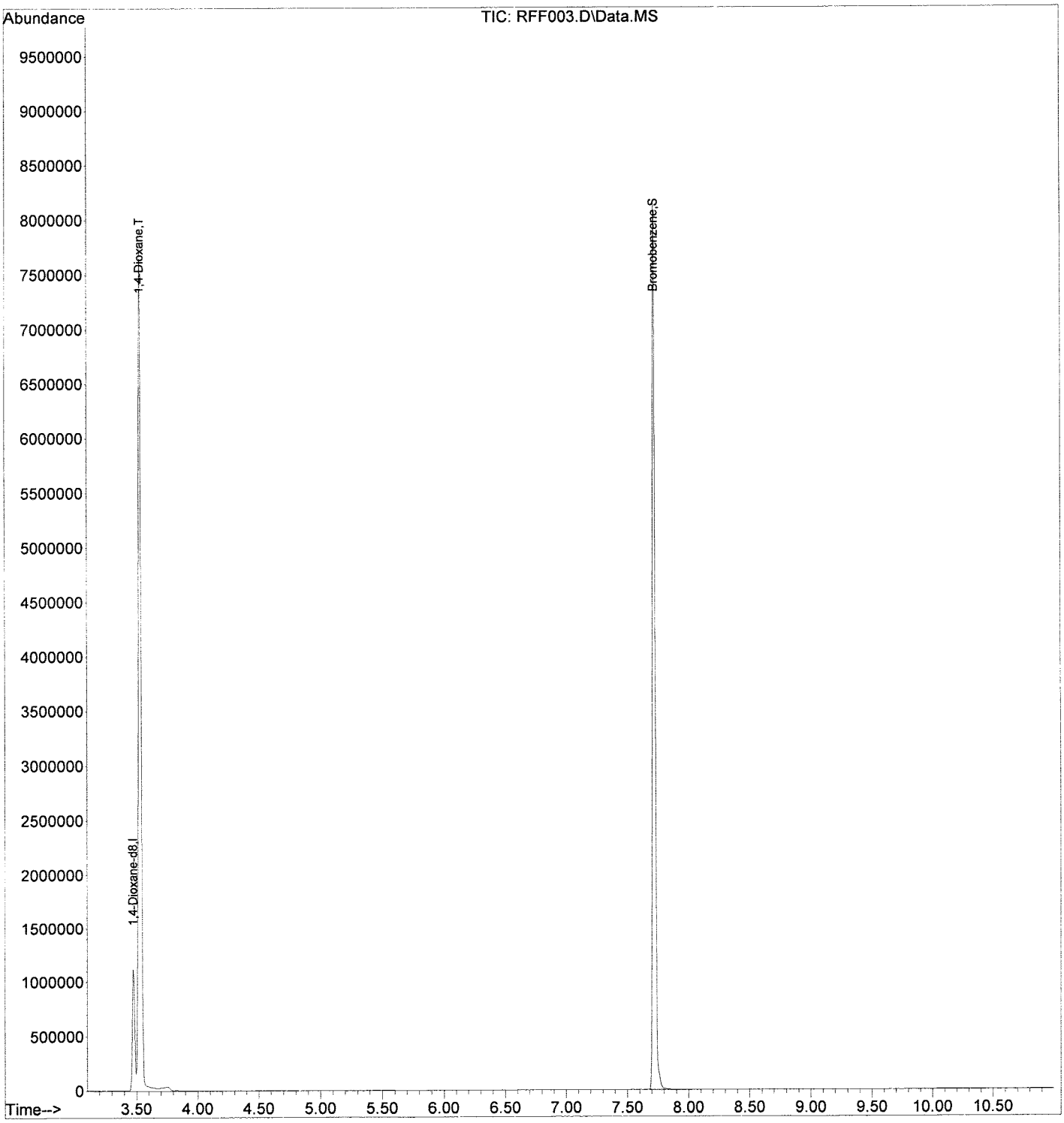
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

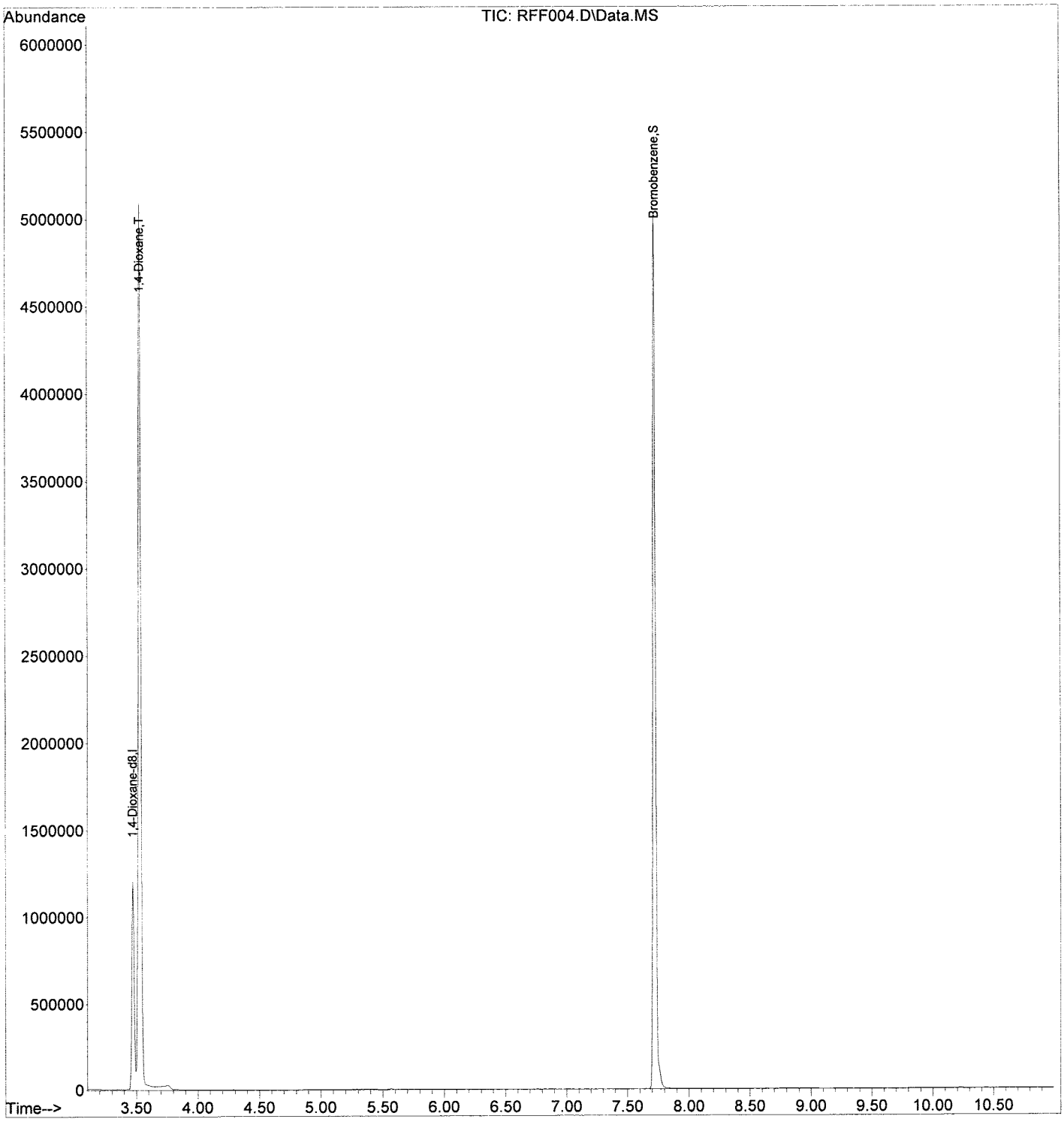
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

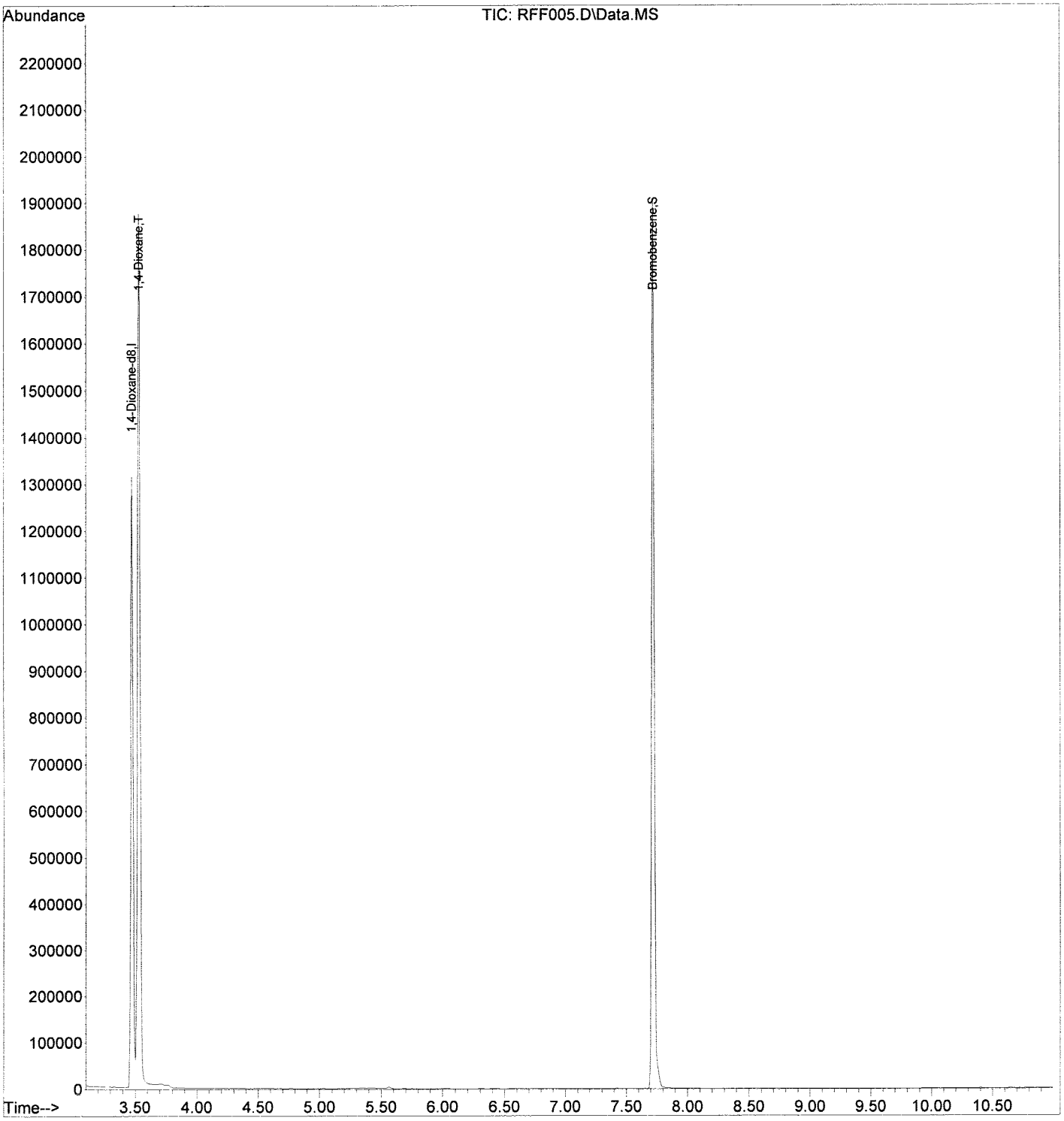
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

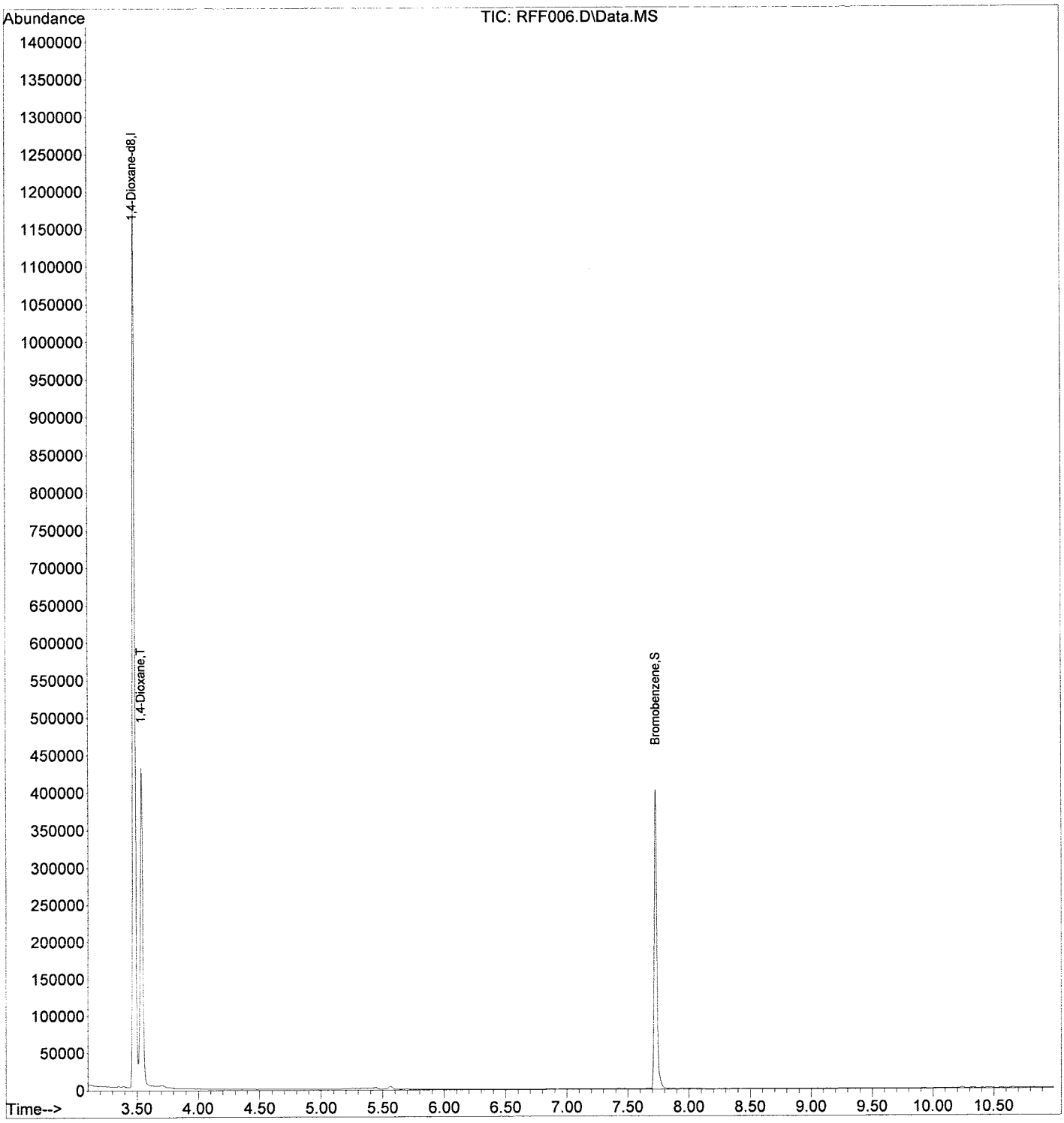
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

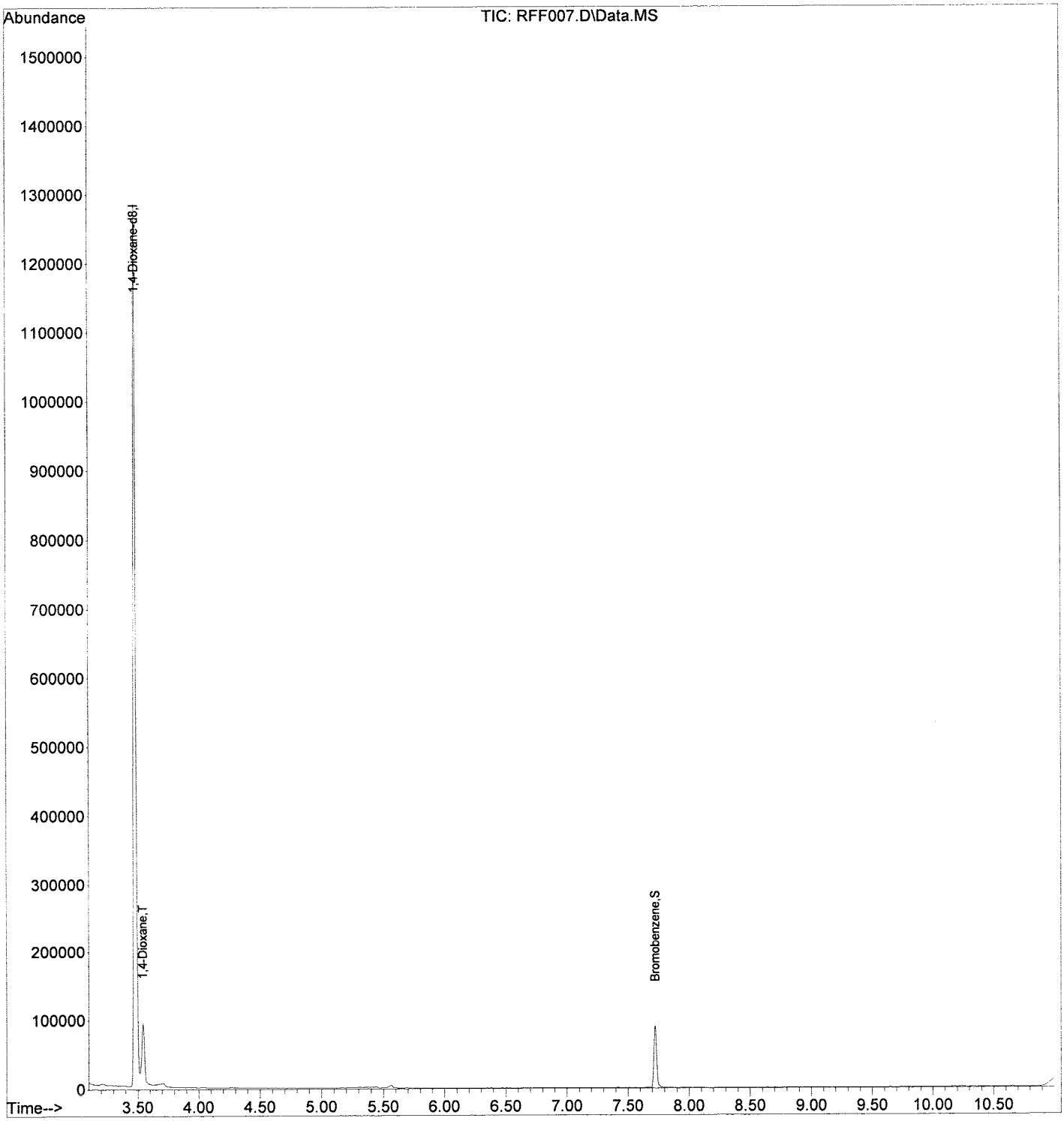
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

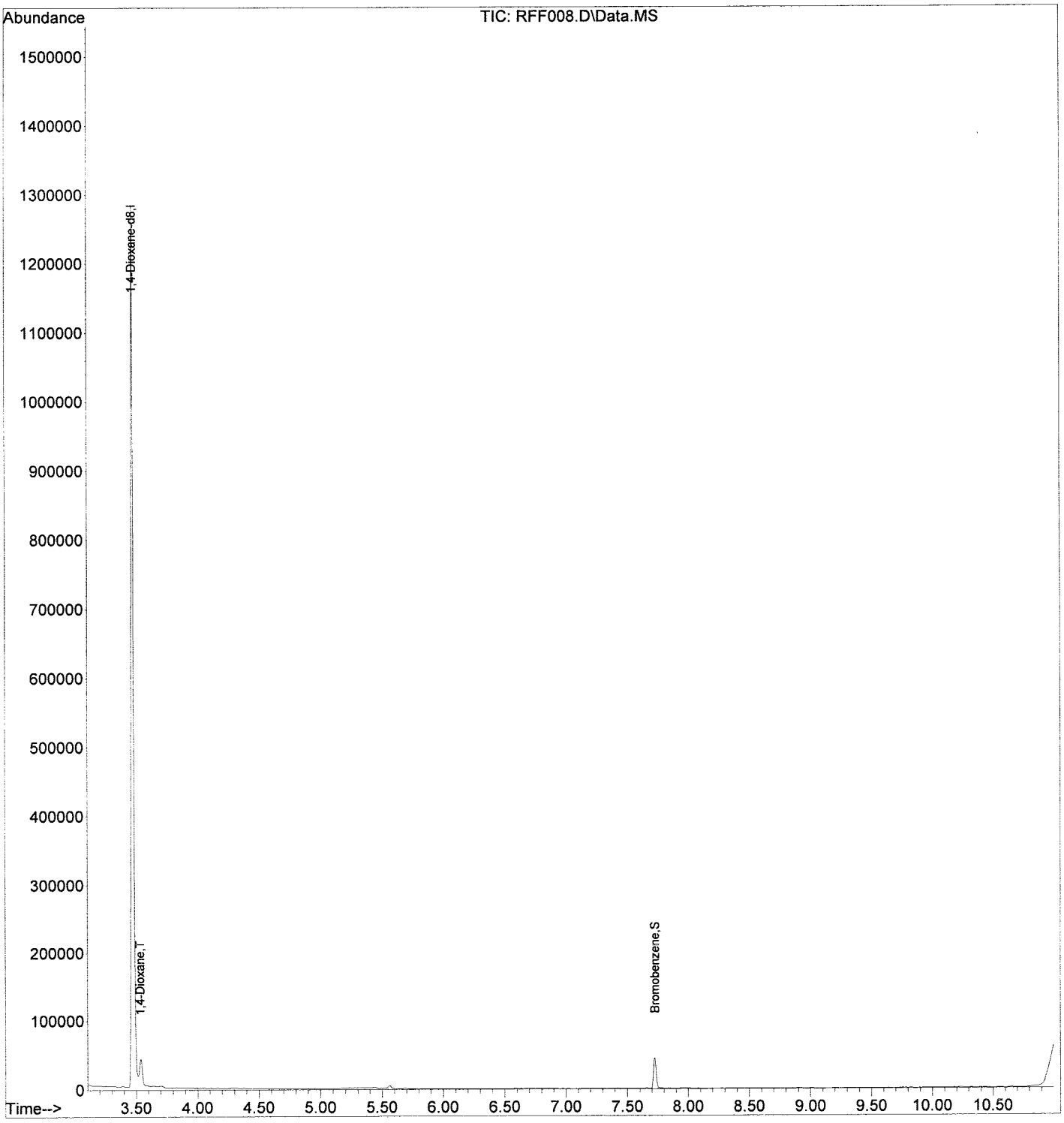
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

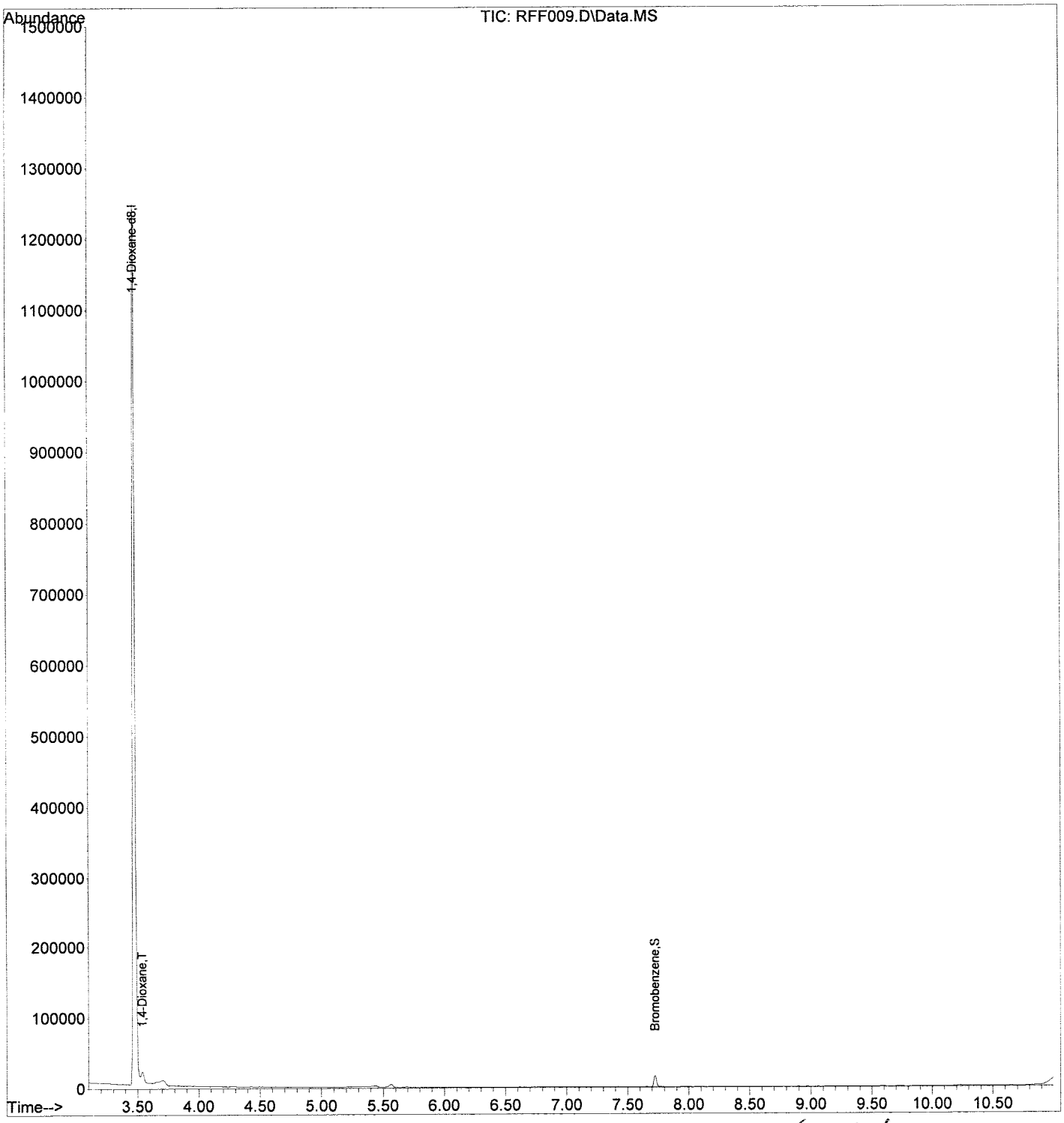
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

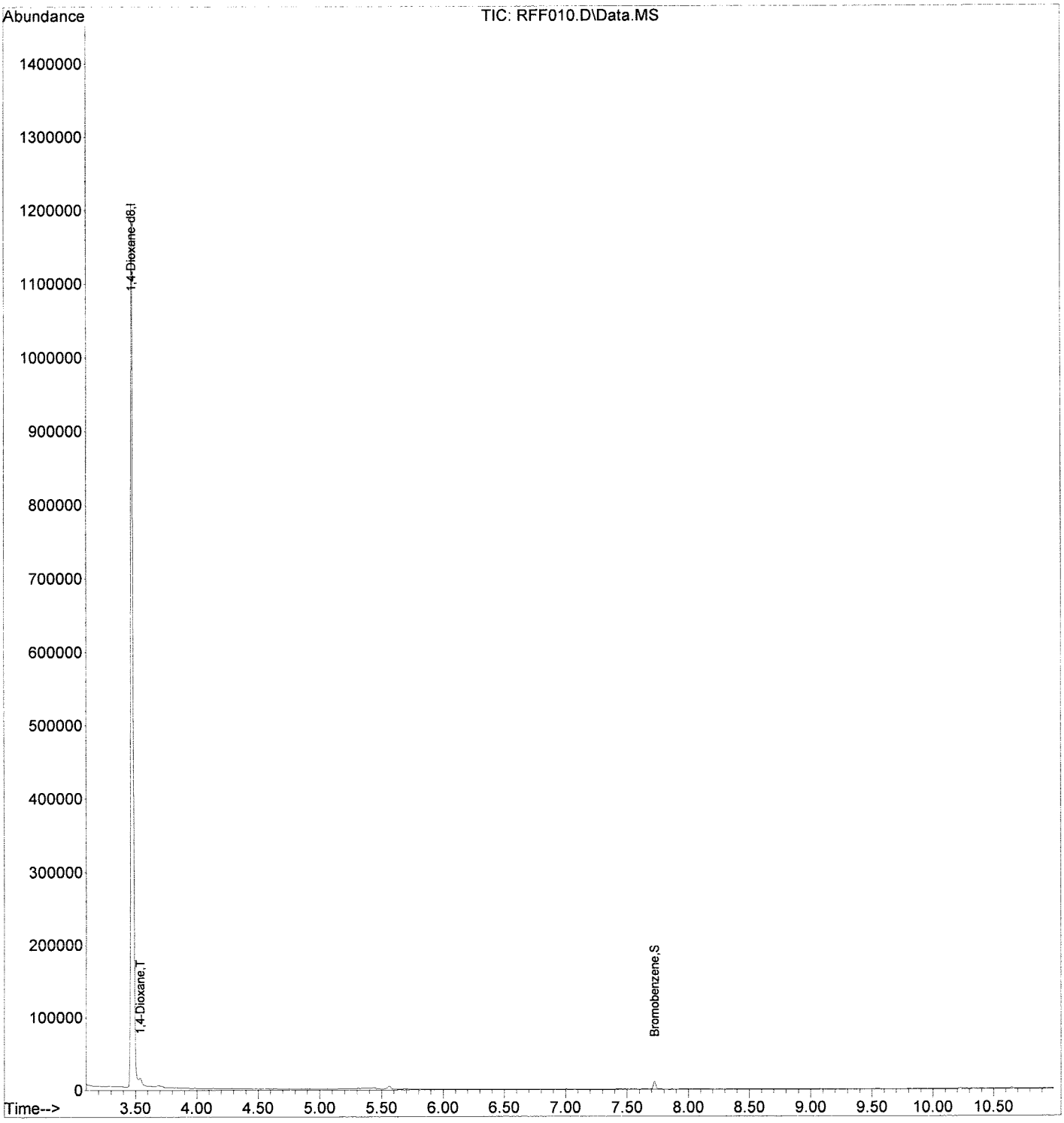
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

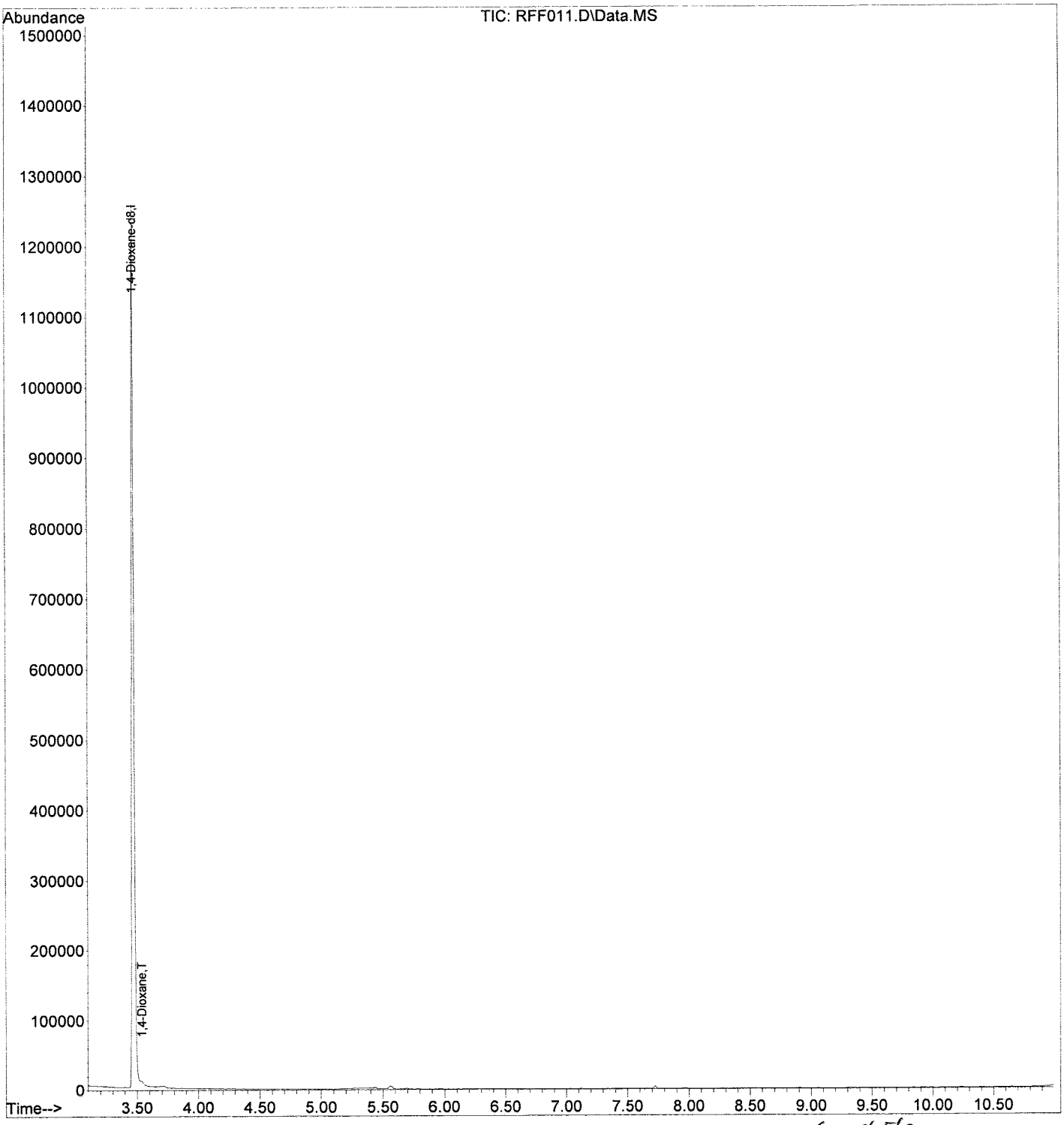
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SVF0F03G.M Thu Jun 04 14:42:14 2020 F0 Page: 2

VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

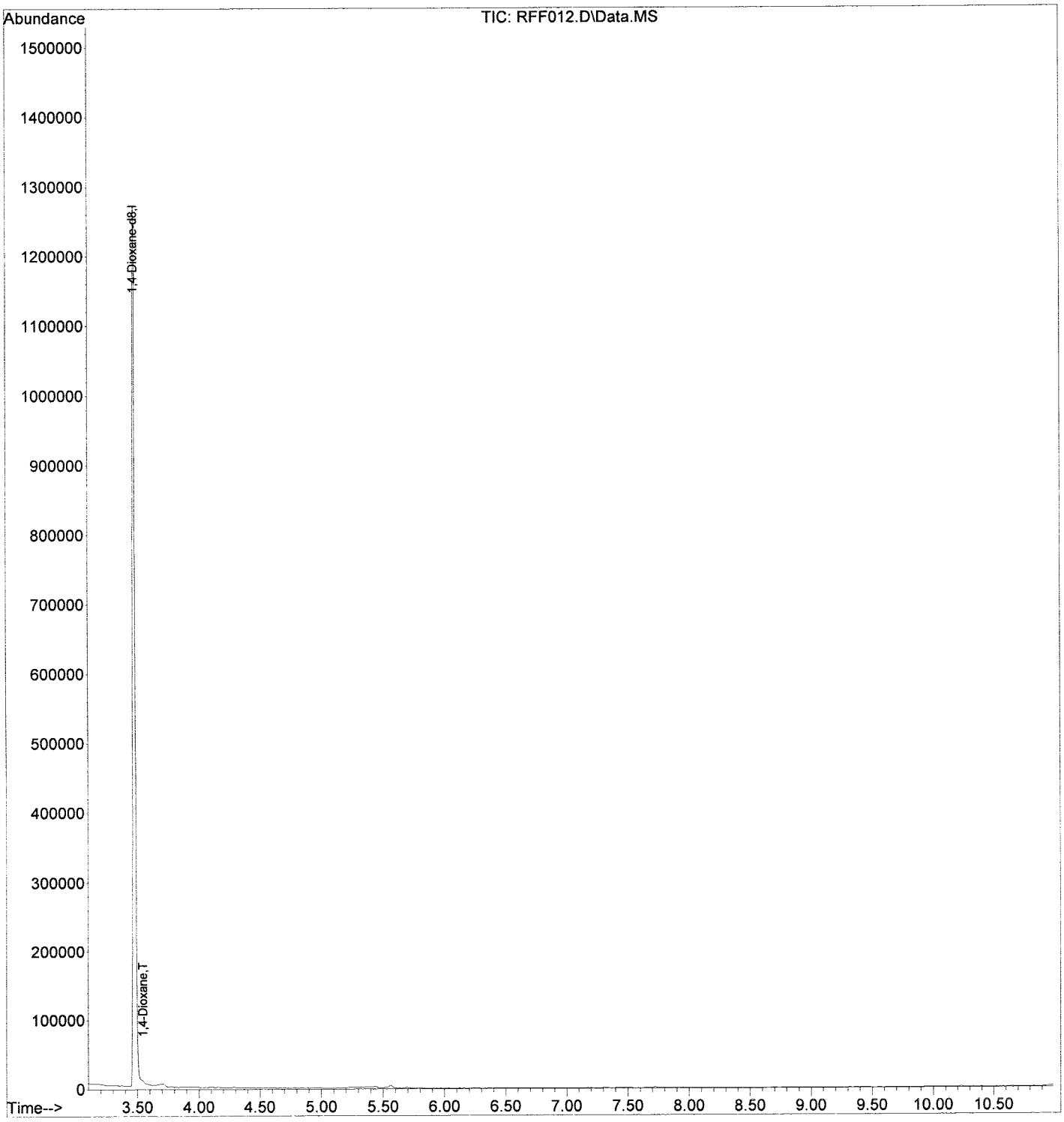
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



6/15/20

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

KL 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery = 107.70%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

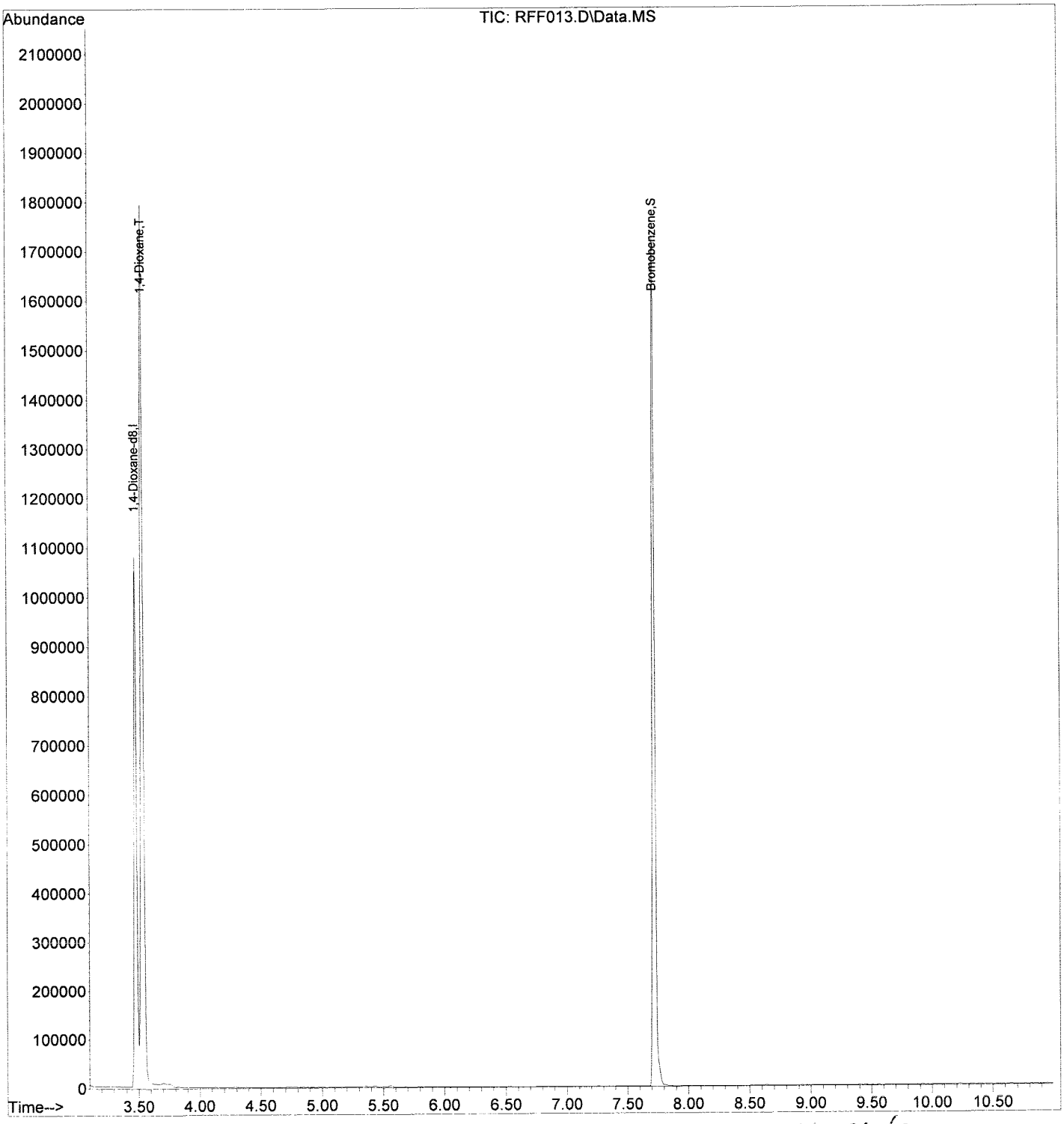
(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D
Acq On : 03 Jun 2020 17:34
Sample : ISVF0F03G1 20ppm
Misc : F0
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F162

Lab File ID: RFF075 DFTPP Injection Date: 06/23/20

Instrument ID: F0 DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.828
75	30 - 60% of mass 95	33.958
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.454
173	Less than 2% of mass 174	0.000(0)1
174	50 - 100% of mass 95	75.208
175	5 - 9% of mass 174	6.095(8.1)1
176	95 - 101% % of mass 174	73.996(98.39)1
177	5 - 9% % of mass 176	4.785(6.47)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G11	RFF076	06/23/20	10:34
2	MBLK1W	SVF017WB	RFF077	06/23/20	10:57
3	LCS1W	SVF017WL	RFF078	06/23/20	11:11
4	LCD1W	SVF017WC	RFF079	06/23/20	11:31
5	MW22-GW061720	20F162-01	RFF080	06/23/20	11:50
6	MW21-GW061820	20F162-02	RFF081	06/23/20	12:09
7	MW01D-GW061720	20F162-04	RFF082	06/23/20	12:28
8	MW13S-GW061820	20F162-05	RFF083	06/23/20	12:47
9	MW03RA-GW061820	20F162-07	RFF084	06/23/20	13:06
10	MW03RB-GW061820	20F162-08	RFF085	06/23/20	13:25
11	MW03RC-GW061820	20F162-10	RFF086	06/23/20	13:44
12	MW03RD-GW061820	20F162-11	RFF087	06/23/20	14:03

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F162

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	180699	3.47
2	MBLK1W	164036	3.48
3	LCS1W	174708	3.47
4	LCD1W	178235	3.48
5	MW22-GW061720	180652	3.48
6	MW21-GW061820	165369	3.48
7	MW01D-GW061720	162235	3.48
8	MW13S-GW061820	166435	3.48
9	MW03RA-GW061820	166244	3.47
10	MW03RB-GW061820	169379	3.47
11	MW03RC-GW061820	158947	3.48
12	MW03RD-GW061820	152978	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF076
IC File :RFF005

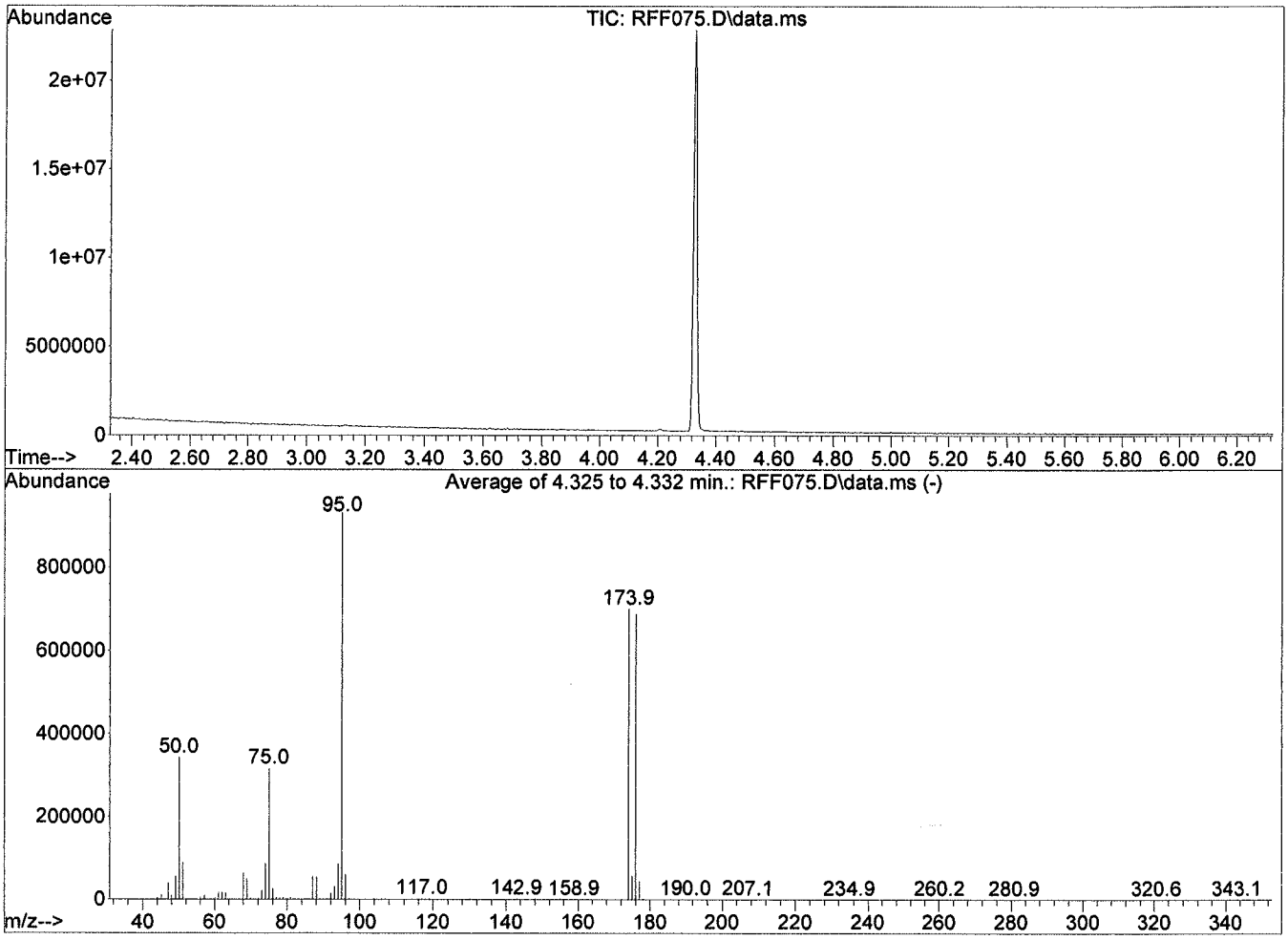
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/23/20 10:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	180699	1	1	3.471	3.472	0				
2	1,4-Dioxane	20.029	0.1	249744	1.382	1.380	3.528	3.536	9.42				
3	Bromobenzene	19.980	-0.1	303324	1.679	1.680	7.725	7.724	2.58				

Data Path : C:\msdchem\1\DATA\20F23\
Data File : RFF075.D
Acq On : 23 Jun 2020 10:18
Operator : RMinam
Sample : BFBF0F03G11
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 633

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.8	342968	PASS
75	95	30	60	34.0	316240	PASS
95	95	100	100	100.0	931281	PASS
96	95	5	9	6.5	60103	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.2	700395	PASS
175	174	5	9	8.1	56765	PASS
176	174	95	101	98.4	689109	PASS
177	176	5	9	6.5	44559	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	90	0.00
2	T	1,4-Dioxane	20.000	20.029	-0.1	93	0.00
3	S	Bromobenzene	20.000	19.980	0.1	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	90	0.00
2	T	1,4-Dioxane	1.380	1.382	-0.1	93	0.00
3	S	Bromobenzene	1.680	1.679	0.1	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

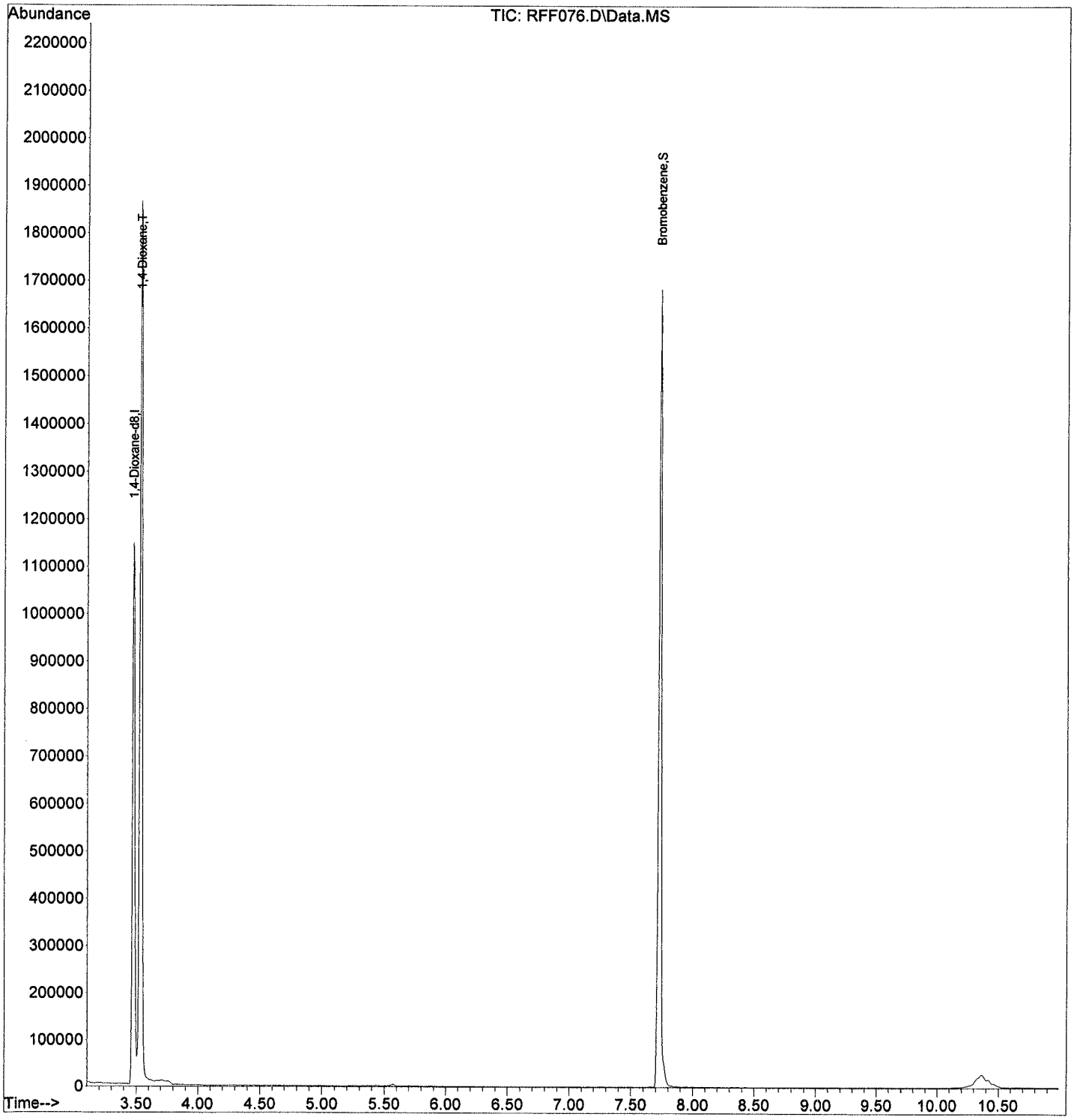
Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	180699	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	303324	19.98	ppm	0.00
Spiked Amount 20.000			Recovery =	99.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	249744	20.03	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F03G3

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 (RM 6/5/20)	1			
	002	BFBF0F0301				
	003	SVF0F03G1				100 ppm
	004	2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	10				0.05
	013	ISVF0F03G1				ICV

RM 06/04/20

Instrument No:	F0
INITIAL CALIBRATION REFERENCE	
Date	SVF0F03G 5
ICAL ID	06/03/20
Standards	
Name	ID / Conc. (mg/L)
DFTPP	
INT. STD.	SS2A-17-01-28 / 1,000
CCV - 8270	
CCV - 1,4-Dioxane	SS2B-19-08-03 / 0.05 - 100
BFB	-09-02 / 50
ICV	-09-03 / 20
Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F03
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐ Book #: AF0-007

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/23/20 10:18 End Date/Time: 06/23/20 16:58

ANALYTICAL BATCH: CSVF0F03G11

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF074	IBF0F03G11				
	075	BFBF0F03G11				
	076	CSVF0F03G11				Rm 06/23/20
SVF017W	077	SVF017WB	1x		x	
	078	L				
	079	C				
	080	20F162-01				
	081	-02				
	082	-04				
	083	-05				
	084	-07				
	085	-08				
	086	-10				
	087	-11				
	088	20F178-01				
	089	-02				
	090	-04				
	091	-05				
	092	-07				
	093	-08				
	094	-10				
	095	-11				
	096	ESVF0F03G12				

Rm 06/23/20

Instrument No:	F0

INITIAL CALIBRATION REFERENCE

Date	06/03/20
ICAL ID	SVF0F03G

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	20
BFB	↓ -09-02	50

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F23

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01 Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: Rm

Date Disposed: 06/23/20

Disposed By: Rm

This page is checked during data review.

EXTRACTION LOGS

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF017W
Matrix: WATER
Micropipette ID: 1000 µl : PE00-02
Micropipette ID: 100 µl : PE97C-03
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS 1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SW1B-006-19-16
H_2SO_4	
NaOH	SS1B-12-92-01
Silica Sand	
Silica Gel	
Reagent Water	SW1A-009-02-07
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	16986363

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF017-WB			1
-WL			1
-WC			1
F162-01			2
-02			2
-04			2
-05			2
-07			2
-08			2
-10			3
-11			3
F178-01			3
-02			3
-04			3
-05			3
-07			4
-08			4
-10			4
-11			4

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output.
		> 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: HW — Witnessed By: EP
Standard Added By: HW — Checked By: VM
Extract Received By: RM 06/23/20 — Location: SE01-15
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF017W01	SVF017WB	1000	ml	6/22/20 10:55	2	1000	2	1	
20SVF017W02	SVF017WL	1000	ml	6/22/20 10:55	2	1000	2	1	1,4-Dioxane
20SVF017W03	SVF017WC	1000	ml	6/22/20 10:55	2	1000	2	1	1,4-Dioxane
20SVF017W04	F162-01	930	ml	6/22/20 10:55	2	1000	2	1.08	
20SVF017W05	F162-02	900	ml	6/22/20 10:55	2	1000	2	1.11	
20SVF017W06	F162-04	970	ml	6/22/20 10:55	2	1000	2	1.03	
20SVF017W07	F162-05	890	ml	6/22/20 10:55	2	1000	2	1.12	
20SVF017W08	F162-07	990	ml	6/22/20 10:55	2	1000	2	1.01	
20SVF017W09	F162-08	960	ml	6/22/20 10:55	2	1000	2	1.04	
20SVF017W10	F162-10	960	ml	6/22/20 10:55	2	1000	2	1.04	
20SVF017W11	F162-11	920	ml	6/22/20 10:55	2	1000	2	1.09	
20SVF017W12	F178-01	910	ml	6/22/20 12:05	2	1000	2	1.1	
20SVF017W13	F178-02	860	ml	6/22/20 12:05	2	1000	2	1.16	
20SVF017W14	F178-04	1000	ml	6/22/20 12:05	2	1000	2	1	
20SVF017W15	F178-05	890	ml	6/22/20 12:05	2	1000	2	1.12	
20SVF017W16	F178-07	970	ml	6/22/20 12:05	2	1000	2	1.03	
20SVF017W17	F178-08	920	ml	6/22/20 12:05	2	1000	2	1.09	
20SVF017W18	F178-10	860	ml	6/22/20 12:05	2	1000	2	1.16	
20SVF017W19	F178-11	1030	ml	6/22/20 12:05	2	1000	2	0.97	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/22/20 9:30 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: HWang

☑ Extraction Ended @ 6/23/20 3:30 ☑ pHAdj(≥11) @ 6/22/20 9:30 Vial Cal Ref.: VC-19-020 Checked By: JM

Comments: volume entered after extraction started, pH=7 for all samples, chlorine not detected Date 6/23/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F162

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD RSK-175
DISSOLVED GASES

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF013WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF013WL/DGF013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F162
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF013WB	1	NA	06/22/2010:52	06/22/2010:00	BF22003A	BF22002A	DGF013W	Method Blank
LCS1W	DGF013WL	1	NA	06/22/2011:04	06/22/2010:00	BF22004A	BF22002A	DGF013W	Lab Control Sample (LCS)
LCD1W	DGF013WC	1	NA	06/22/2011:26	06/22/2010:00	BF22005A	BF22002A	DGF013W	LCS Duplicate
MW22-GW061720	F162-01	1	NA	06/22/2011:39	06/22/2010:00	BF22006A	BF22002A	DGF013W	Field Sample
MW21-GW061820	F162-02	1	NA	06/22/2011:52	06/22/2010:00	BF22007A	BF22002A	DGF013W	Field Sample
MW01D-GW061720	F162-04	1	NA	06/22/2012:04	06/22/2010:00	BF22008A	BF22002A	DGF013W	Field Sample
MW13S-GW061820	F162-05	1	NA	06/22/2012:17	06/22/2010:00	BF22009A	BF22002A	DGF013W	Field Sample
MW03RA-GW061820	F162-07	1	NA	06/22/2012:30	06/22/2010:00	BF22010A	BF22002A	DGF013W	Field Sample
MW03RB-GW061820	F162-08	1	NA	06/22/2012:43	06/22/2010:00	BF22011A	BF22002A	DGF013W	Field Sample
MW03RC-GW061820	F162-10	1	NA	06/22/2012:56	06/22/2010:00	BF22012A	BF22002A	DGF013W	Field Sample
MW03RD-GW061820	F162-11	1	NA	06/22/2013:09	06/22/2010:00	BF22013A	BF22002A	DGF013W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW22-GW061720	Date Analyzed: 06/22/20 11:39
Lab Samp ID: F162-01	Dilution Factor: 1
Lab File ID: BF22006A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

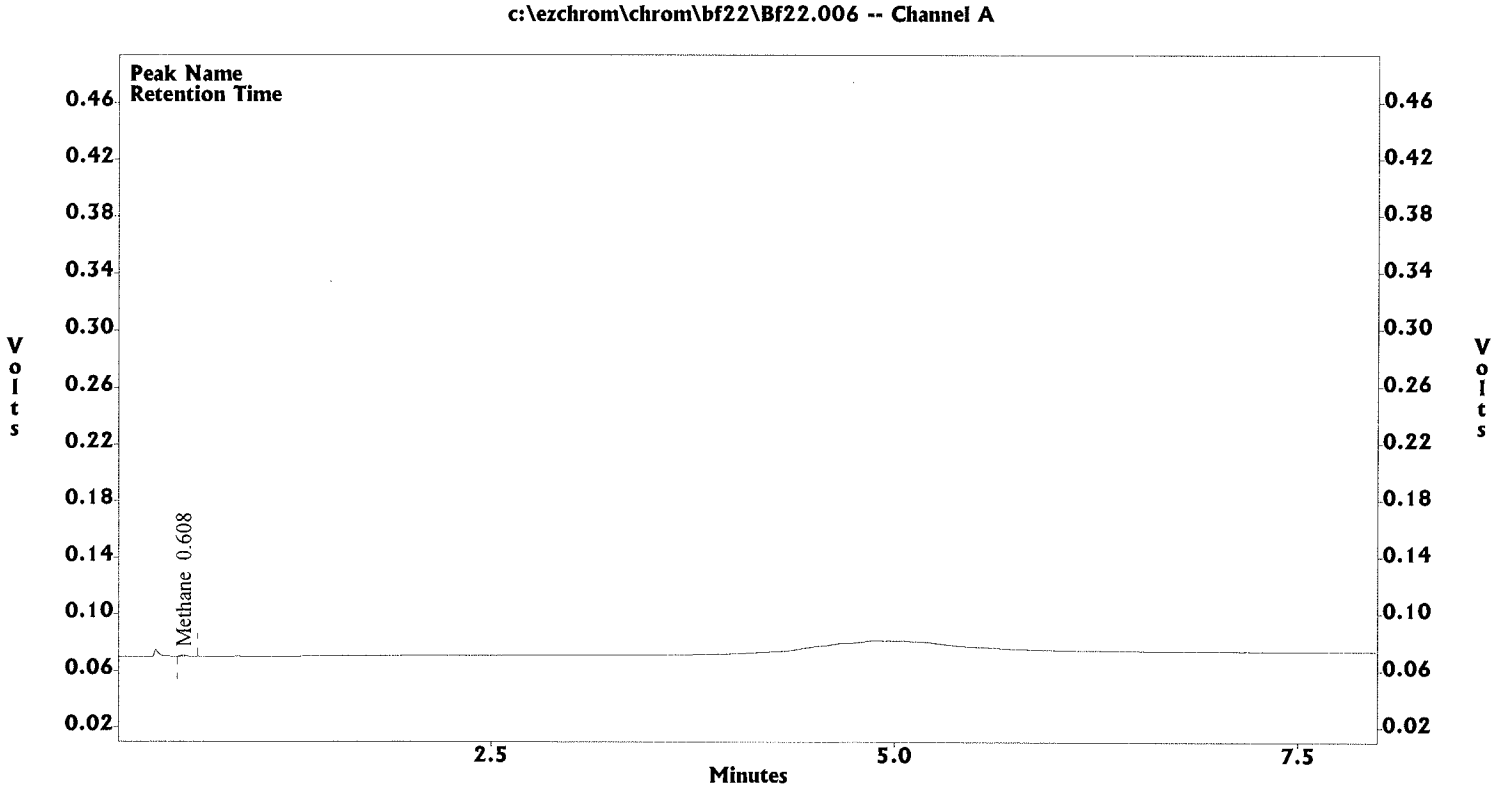
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.006
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-01
Acquired : Jun 22, 2020 11:39:11
Printed : Jun 22, 2020 11:47:12
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	1637	13975.2	0.117
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW21-GW061820	Date Analyzed: 06/22/20 11:52
Lab Samp ID: F162-02	Dilution Factor: 1
Lab File ID: BF22007A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

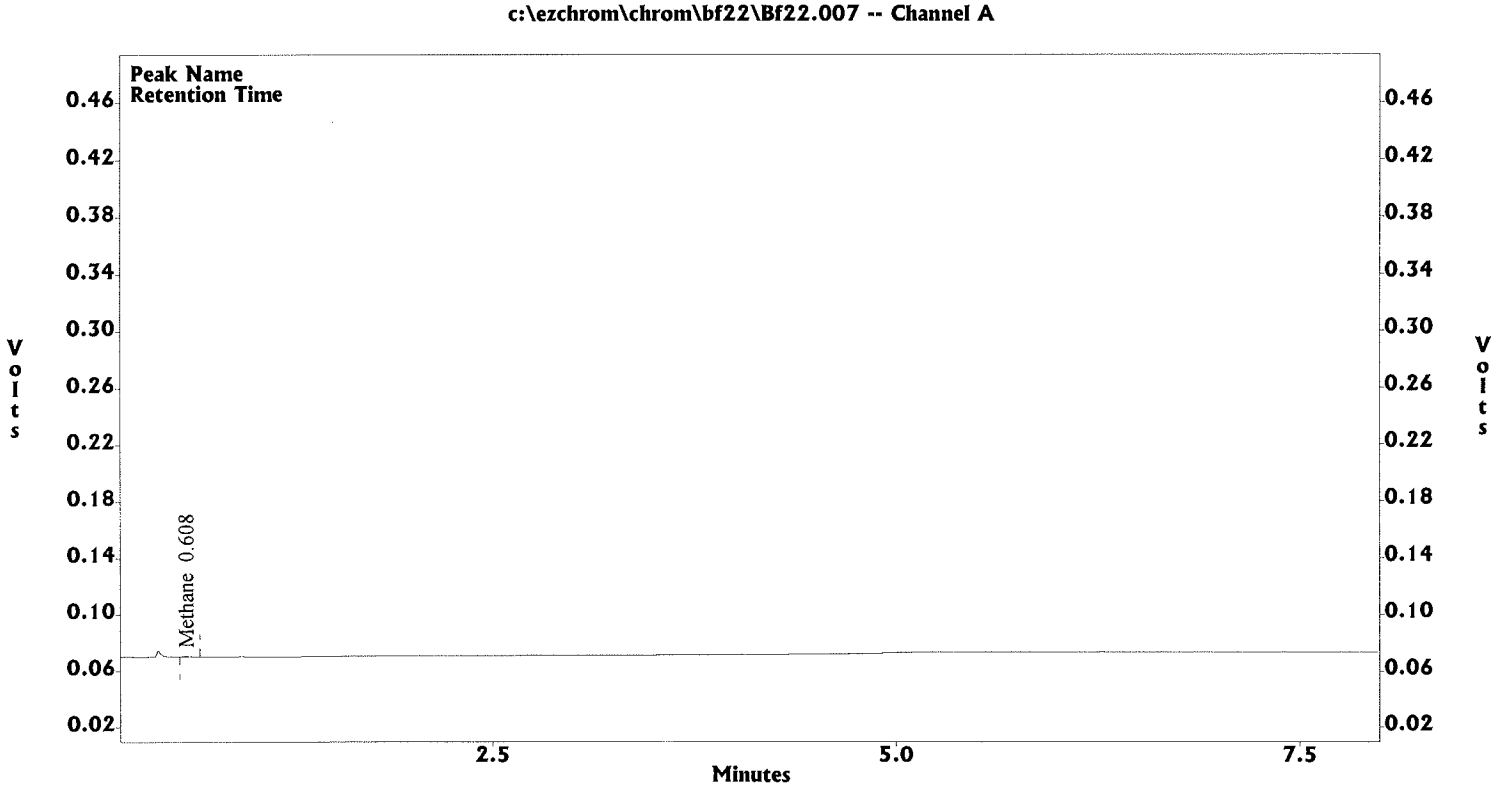
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.007
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-02
Acquired : Jun 22, 2020 11:52:03
Printed : Jun 22, 2020 12:00:05
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	1266	13975.2	0.091
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 10:00
Sample ID:	MW01D-GW061720	Date Analyzed:	06/22/20 12:04
Lab Samp ID:	F162-04	Dilution Factor:	1
Lab File ID:	BF22008A	Matrix :	WATER
Ext Btch ID:	DGF013W	% Moisture :	NA
Calib. Ref.:	BF22002A	Instrument ID :	GCT072

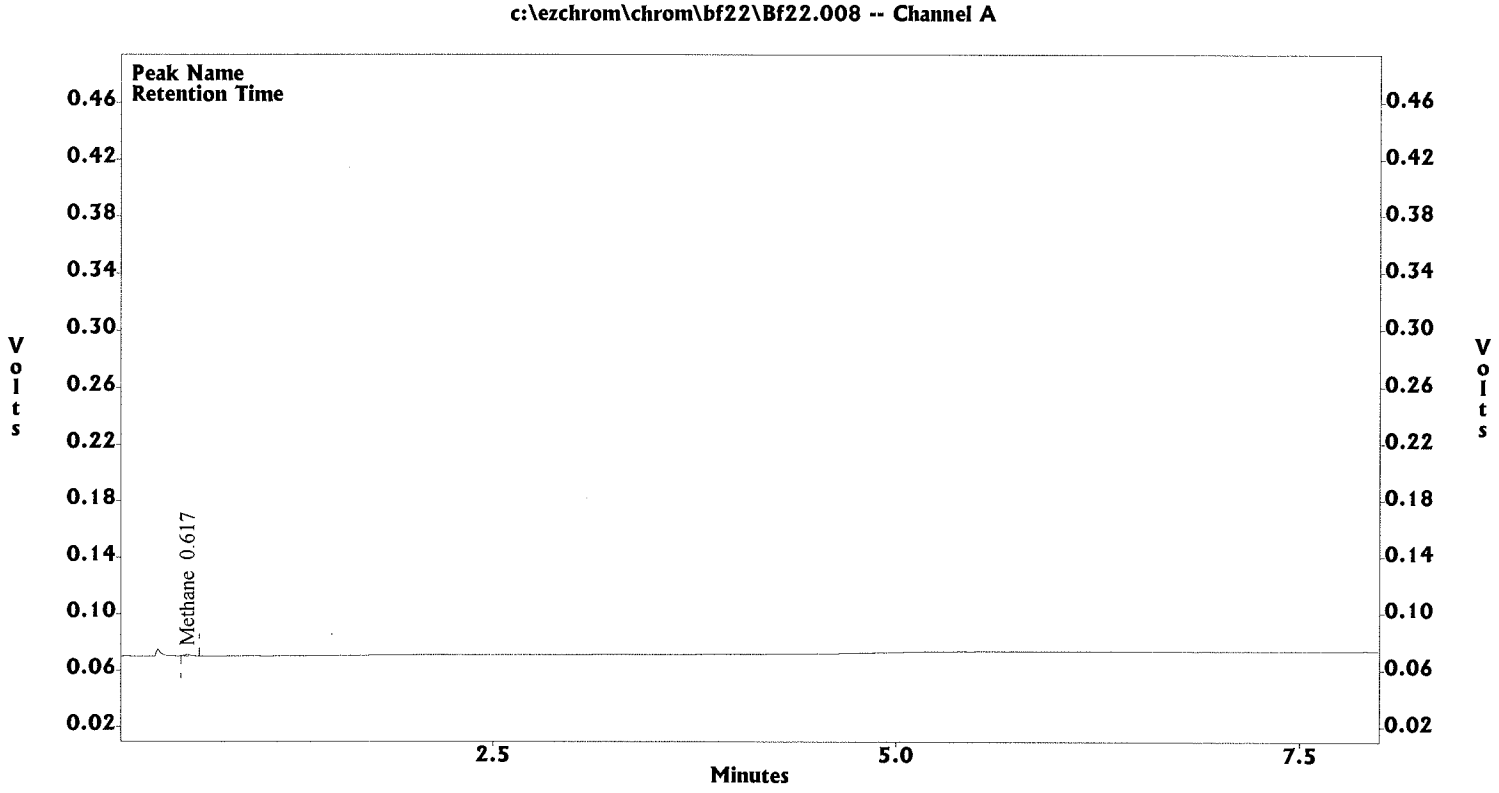
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.008
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-04
Acquired : Jun 22, 2020 12:04:23
Printed : Jun 22, 2020 12:12:25
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	2205	13975.2	0.158
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW13S-GW061820	Date Analyzed: 06/22/20 12:17
Lab Samp ID: F162-05	Dilution Factor: 1
Lab File ID: BF22009A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

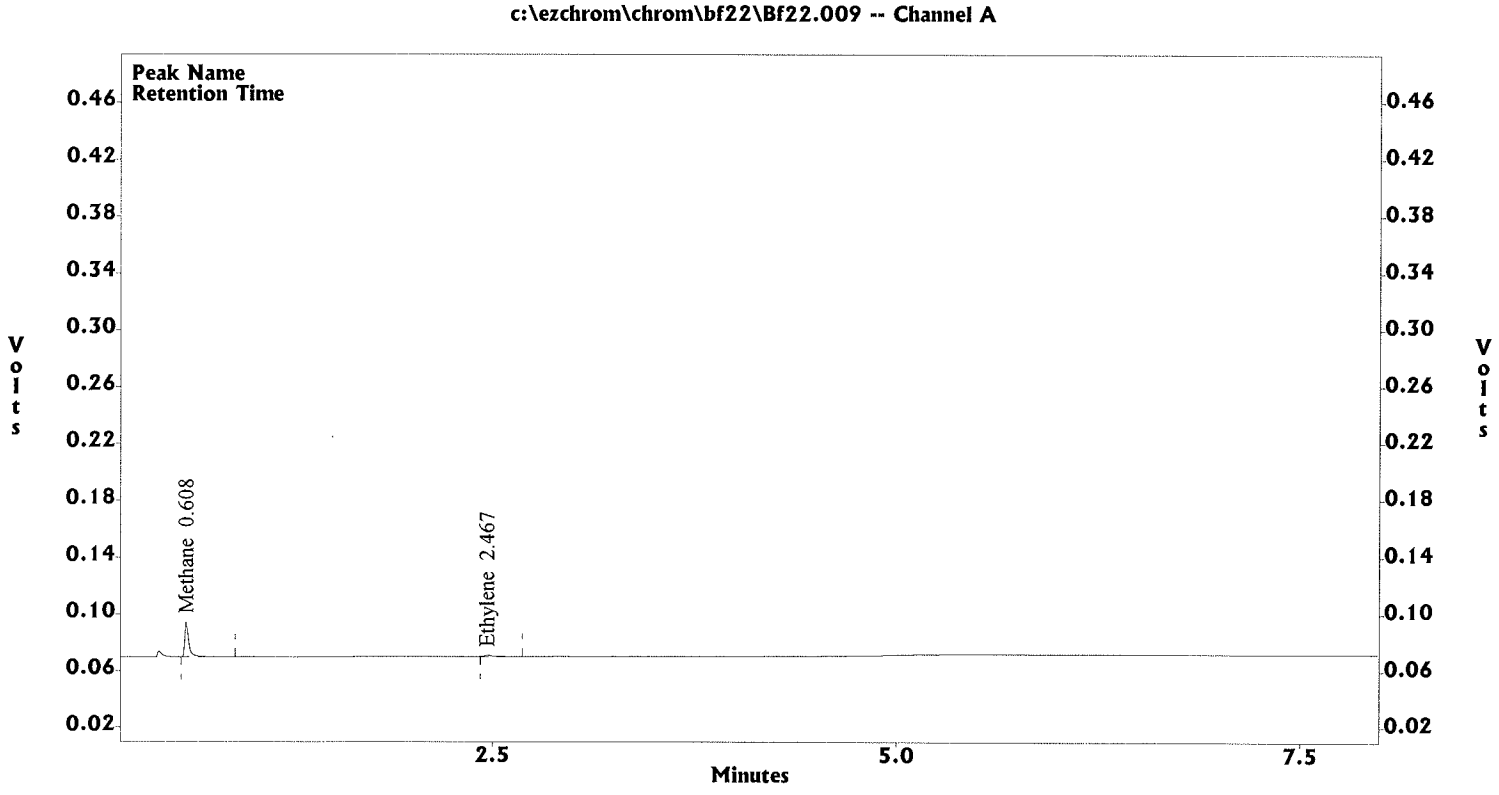
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	3.0	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.009
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-05
Acquired : Jun 22, 2020 12:17:38
Printed : Jun 22, 2020 12:25:39
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	41643	13975.2	2.980
--	Acetylene	2.050	0	0.0	0.000
2	Ethylene	2.467	2615	9519.0	0.275
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW03RA-GW061820	Date Analyzed: 06/22/20 12:30
Lab Samp ID: F162-07	Dilution Factor: 1
Lab File ID: BF22010A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

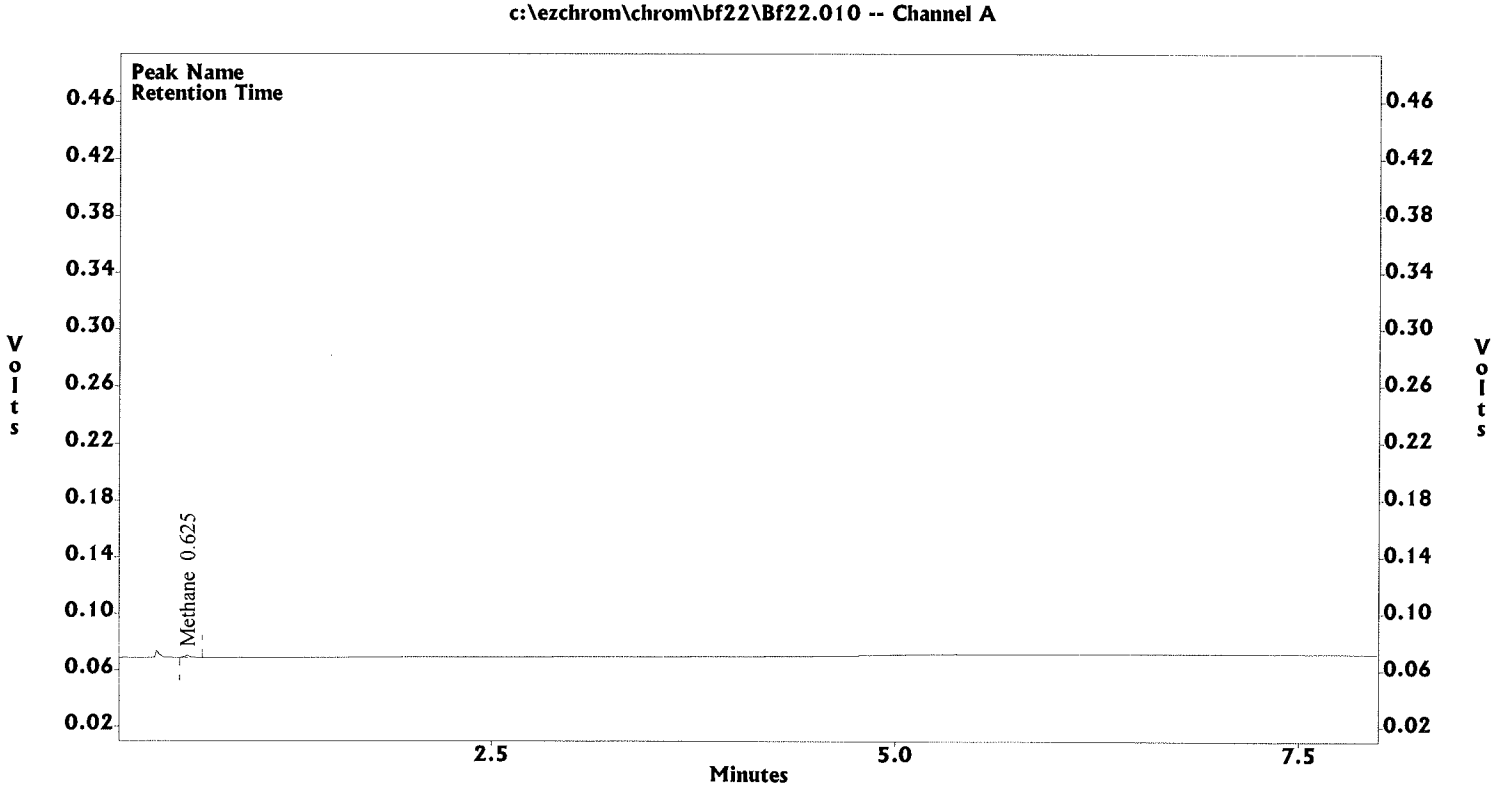
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.24J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.010
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-07
Acquired : Jun 22, 2020 12:30:40
Printed : Jun 22, 2020 12:38:41
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	3356	13975.2	0.240
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
Batch No.	: 20F162	Date Extracted:	06/22/20 10:00
Sample ID:	MW03RB-GW061820	Date Analyzed:	06/22/20 12:43
Lab Samp ID:	F162-08	Dilution Factor:	1
Lab File ID:	BF22011A	Matrix :	WATER
Ext Btch ID:	DGF013W	% Moisture :	NA
Calib. Ref.:	BF22002A	Instrument ID :	GCT072

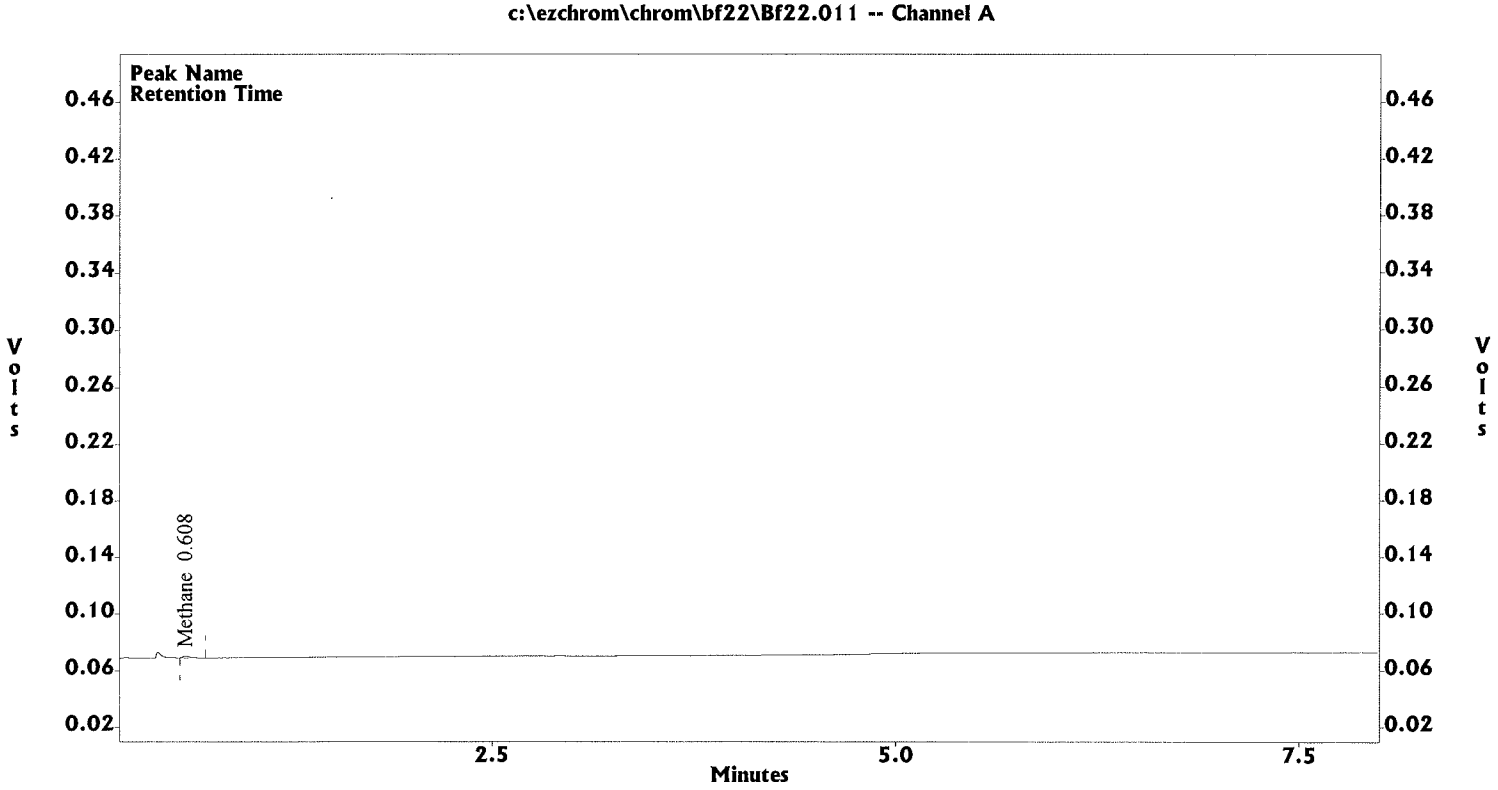
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.20J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.011
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-08
Acquired : Jun 22, 2020 12:43:58
Printed : Jun 22, 2020 12:52:00
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	2821	13975.2	0.202
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW03RC-GW061820	Date Analyzed: 06/22/20 12:56
Lab Samp ID: F162-10	Dilution Factor: 1
Lab File ID: BF22012A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

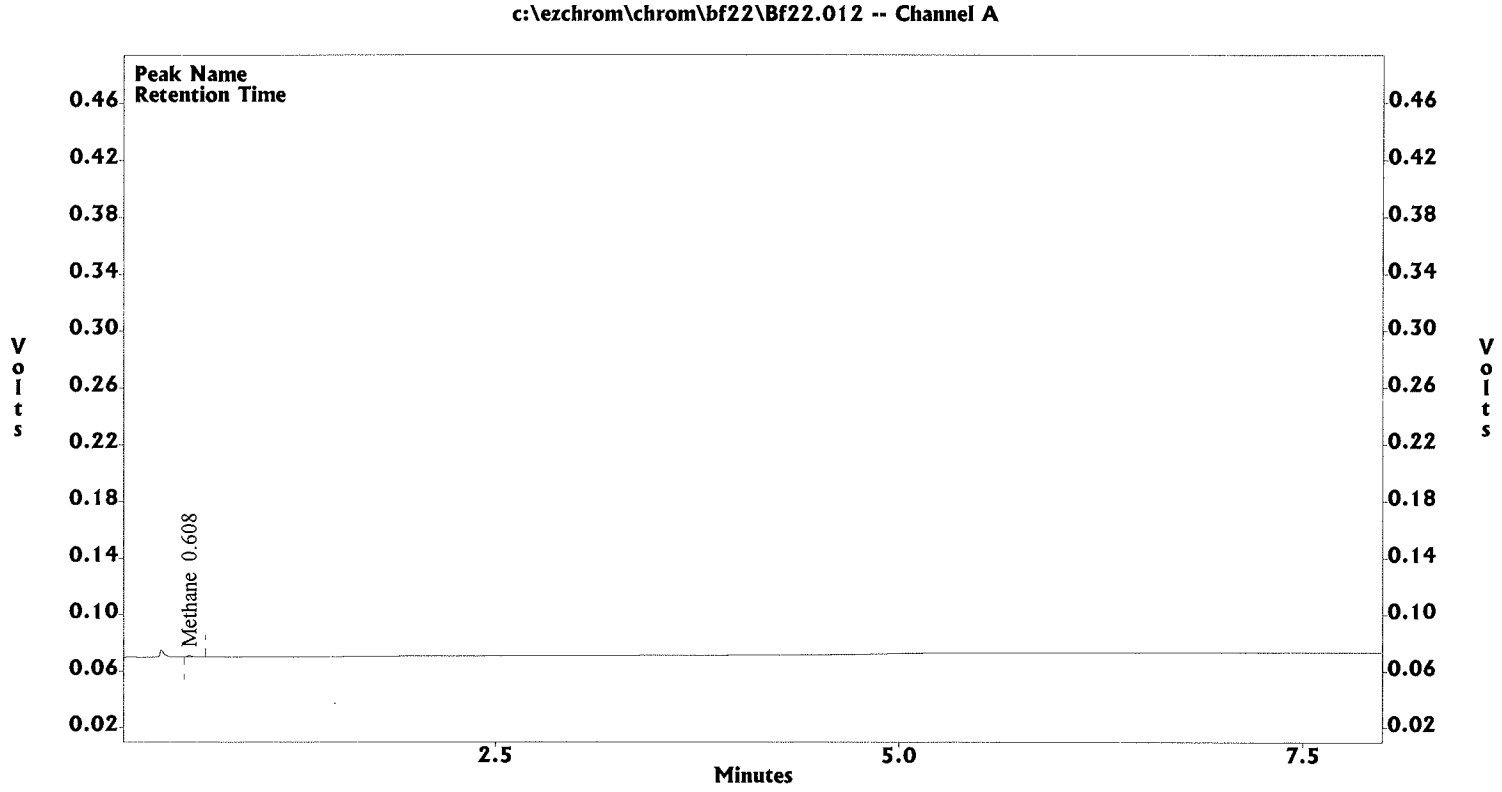
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.012
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-10
Acquired : Jun 22, 2020 12:56:49
Printed : Jun 22, 2020 13:04:49
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	1874	13975.2	0.134
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/19/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MW03RD-GW061820	Date Analyzed: 06/22/20 13:09
Lab Samp ID: F162-11	Dilution Factor: 1
Lab File ID: BF22013A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

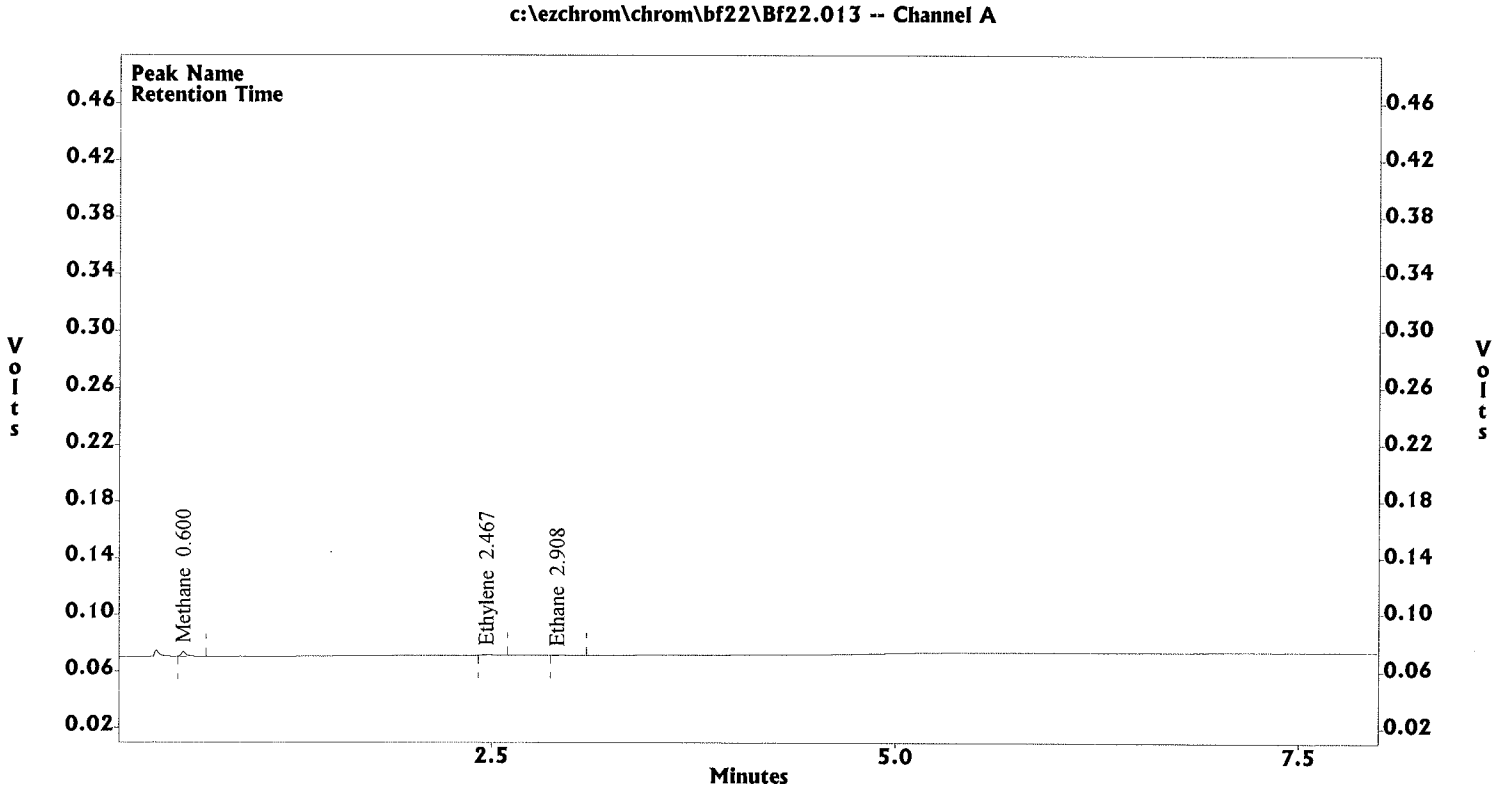
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	0.31J	2.0	0.30
METHANE	0.47J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.013
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F162-11
Acquired : Jun 22, 2020 13:09:12
Printed : Jun 22, 2020 13:17:12
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	6563	13975.2	0.470
--	Acetylene	2.050	0	0.0	0.000
2	Ethylene	2.467	2951	9519.0	0.310
3	Ethane	2.908	1077	13110.4	0.082
--	Propane	5.250	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/22/20
Batch No. : 20F162	Date Extracted: 06/22/20 10:00
Sample ID: MBLK1W	Date Analyzed: 06/22/20 10:52
Lab Samp ID: DGF013WB	Dilution Factor: 1
Lab File ID: BF22003A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF013WB	DGF013WL	DGF013WC		
LAB FILE ID:	BF22003A	BF22004A	BF22005A		
DATE EXTRACTED:	06/22/2010:00	06/22/2010:00	06/22/2010:00	DATE COLLECTED:	NA
DATE ANALYZED:	06/22/2010:52	06/22/2011:04	06/22/2011:26	DATE RECEIVED:	06/22/20
PREP. BATCH:	DGF013W	DGF013W	DGF013W		
CALIB. REF:	BF22002A	BF22002A	BF22002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	25.8	101	25.5	23.0	90	11	70-140	30
Ethene	ND	23.8	23.6	99	23.8	21.3	89	10	70-140	30
Methane	ND	13.6	14.4	106	13.6	13.2	97	9	70-130	30

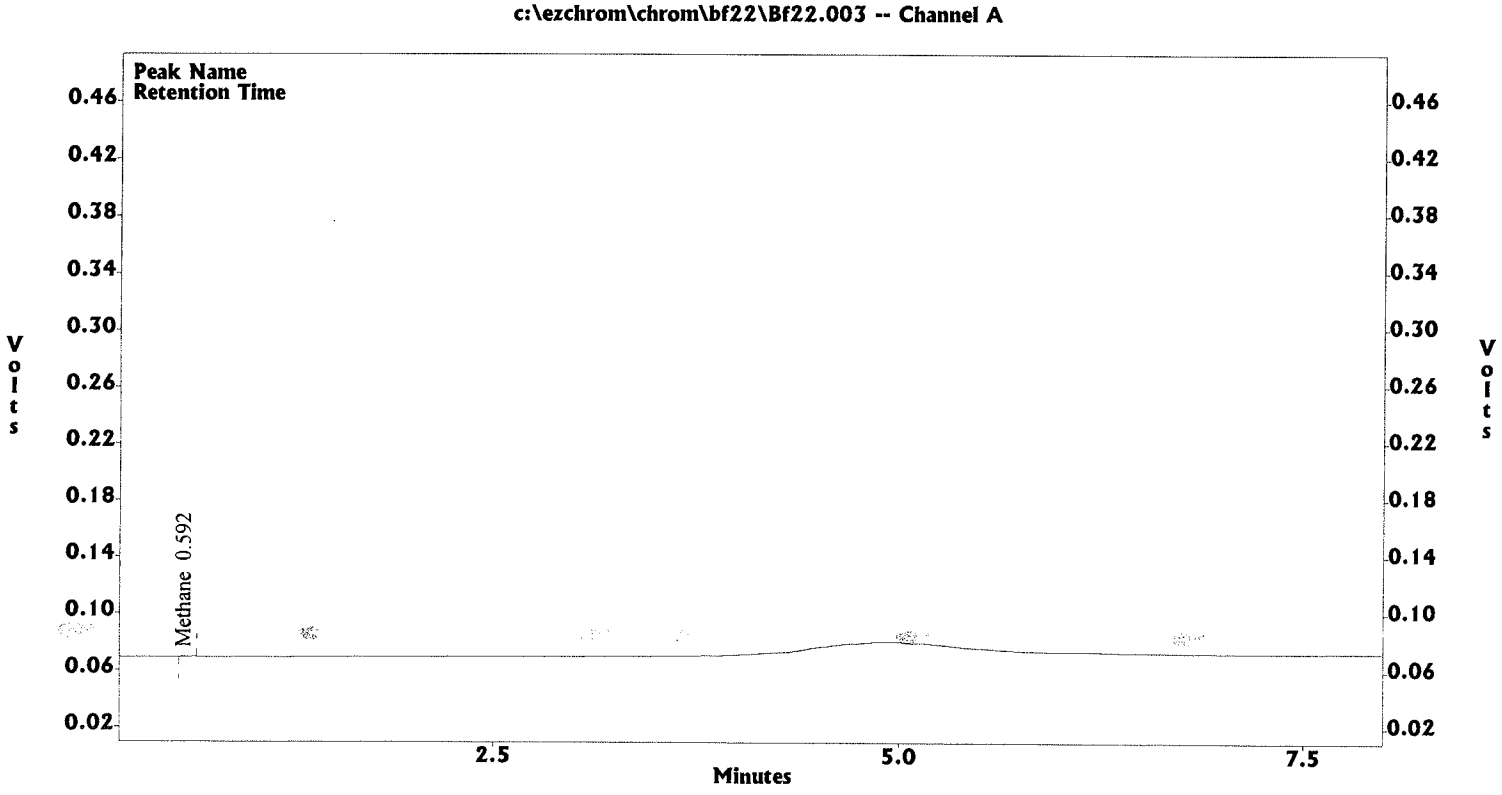
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.003
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WB
Acquired : Jun 22, 2020 10:52:30
Printed : Jun 22, 2020 11:00:32
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.592	971	13975.2	0.069
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000

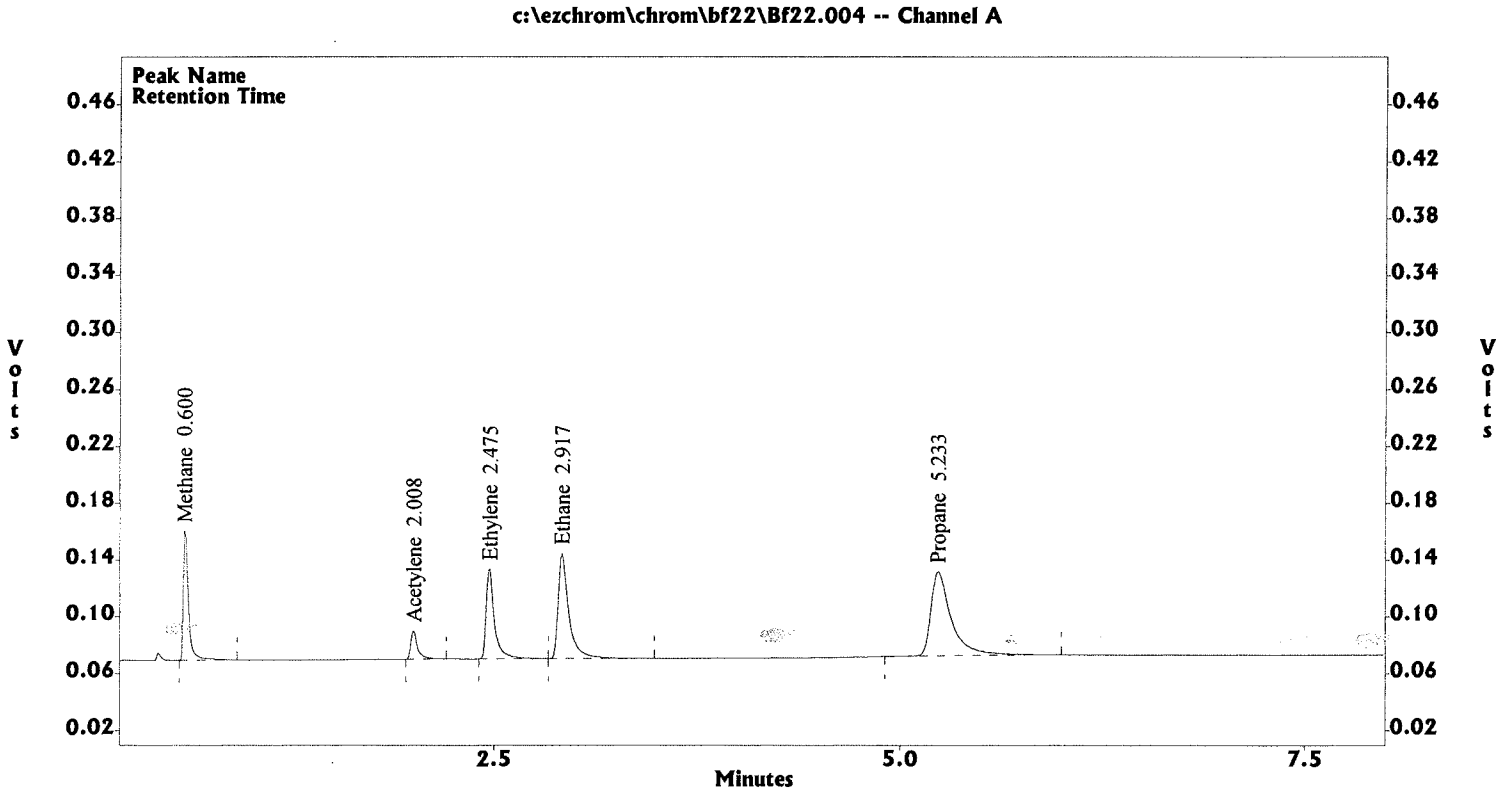


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.004
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WL
Acquired : Jun 22, 2020 11:04:52
Printed : Jun 22, 2020 11:12:53
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	200747	13975.2	14.365
2	Acetylene	2.008	57324	2483.4	23.083
3	Ethylene	2.475	224248	9519.0	23.558
4	Ethane	2.917	338630	13110.4	25.829
5	Propane	5.233	524519	13914.6	37.695

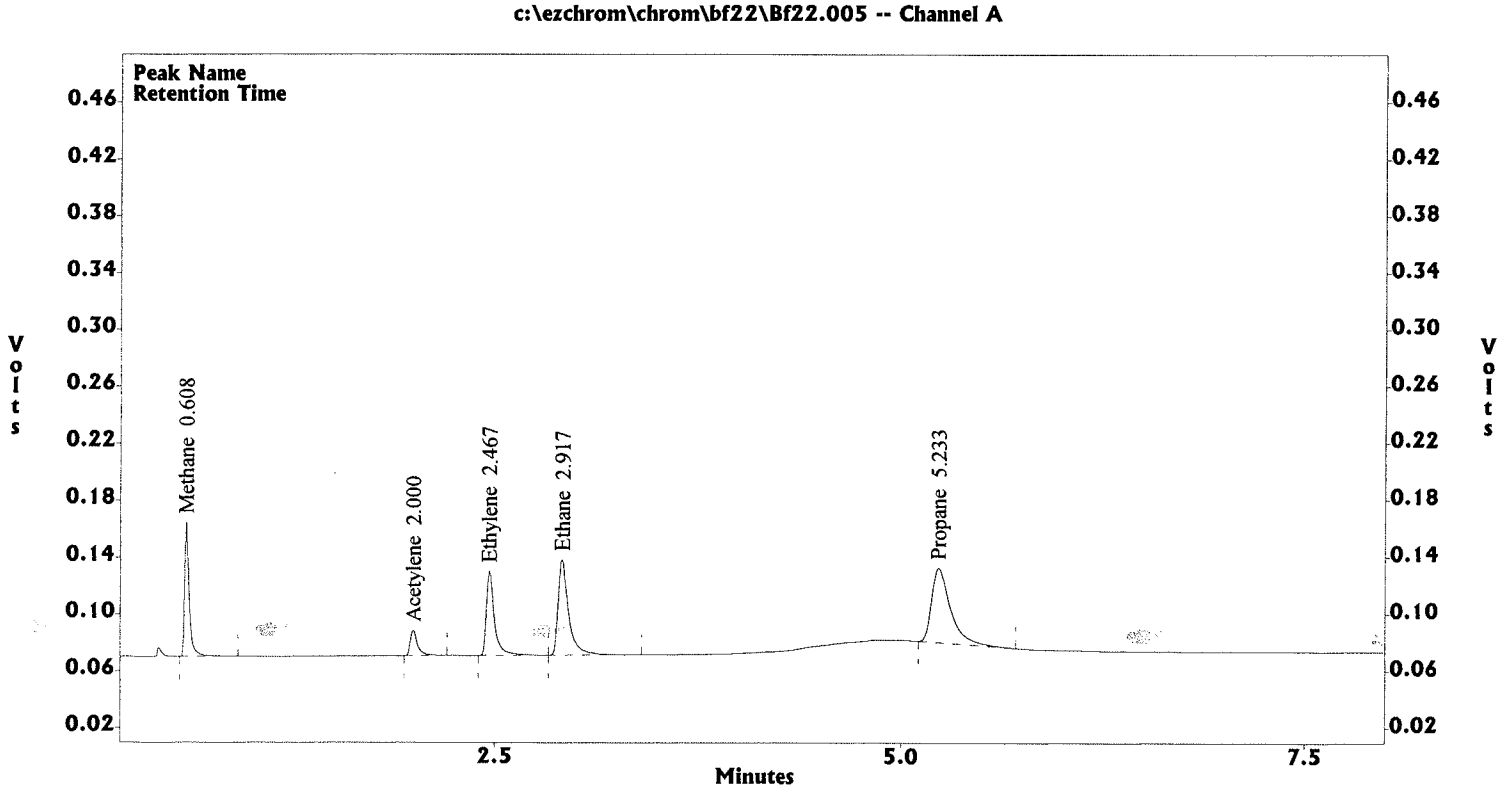


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.005
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WC
Acquired : Jun 22, 2020 11:26:54
Printed : Jun 22, 2020 11:34:55
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	184750	13975.2	13.220
2	Acetylene	2.000	55561	2483.4	22.373
3	Ethylene	2.467	202307	9519.0	21.253
4	Ethane	2.917	301862	13110.4	23.025
5	Propane	5.233	430039	13914.6	30.906



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

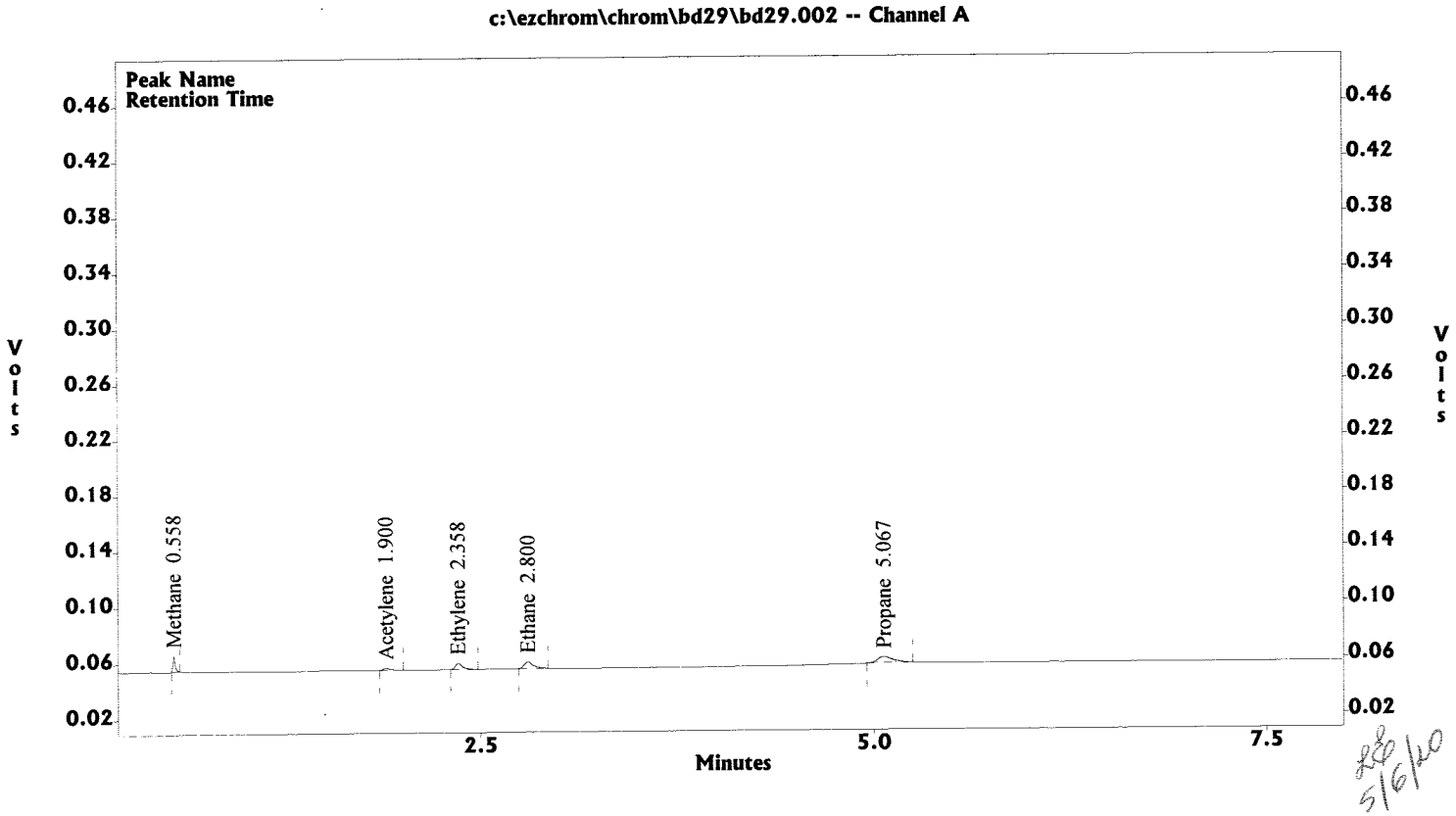
RB 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



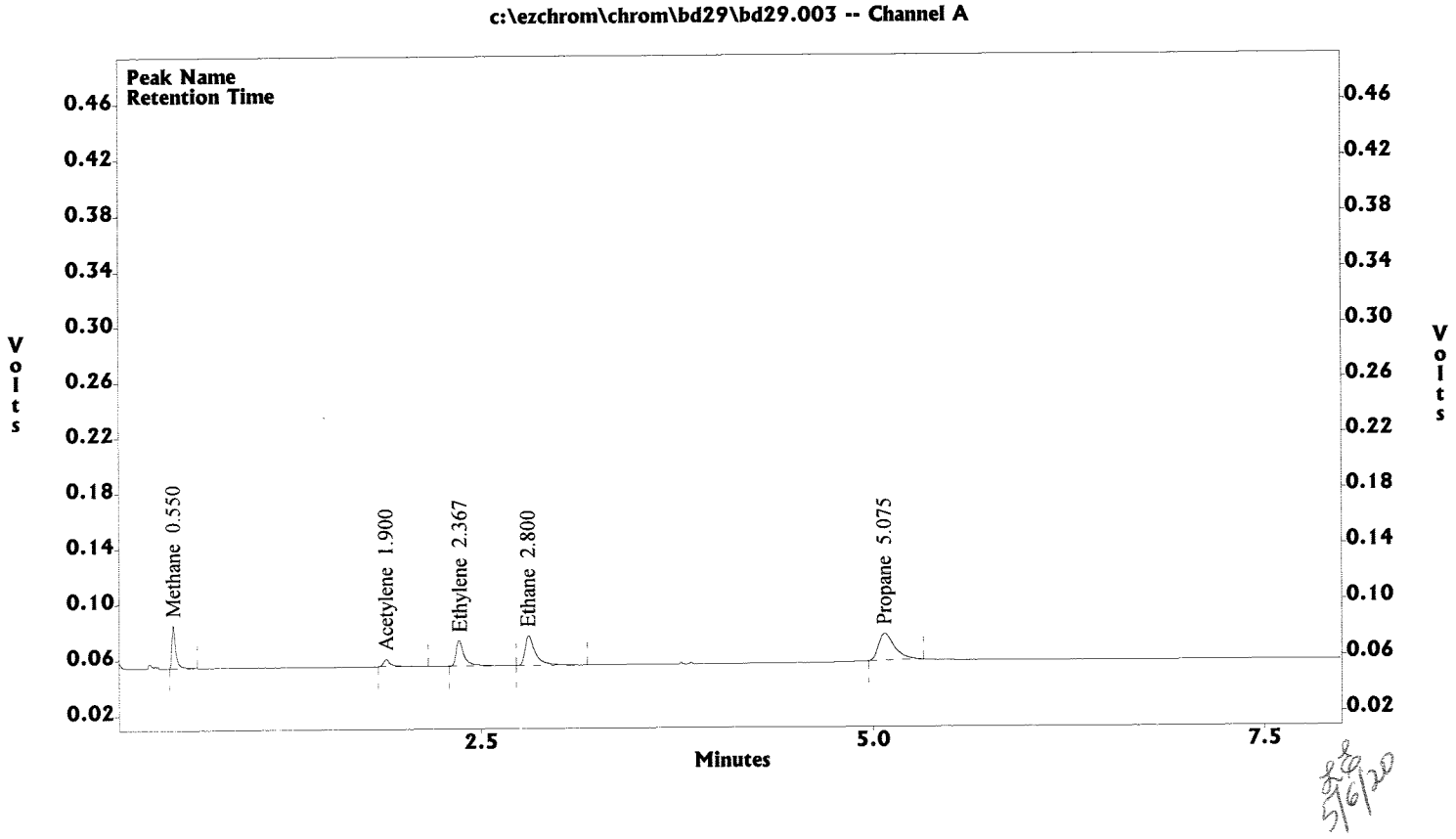
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

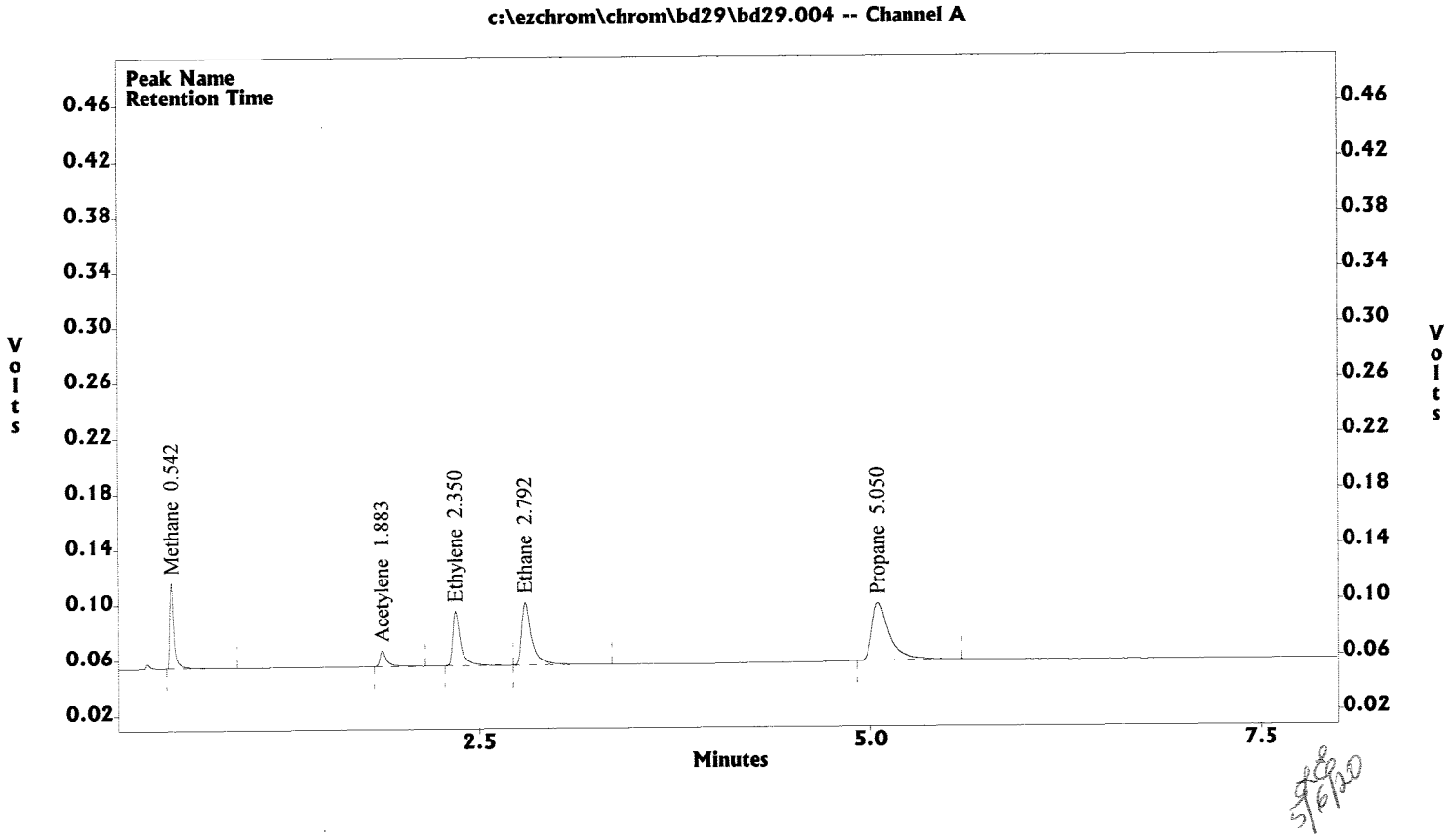


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



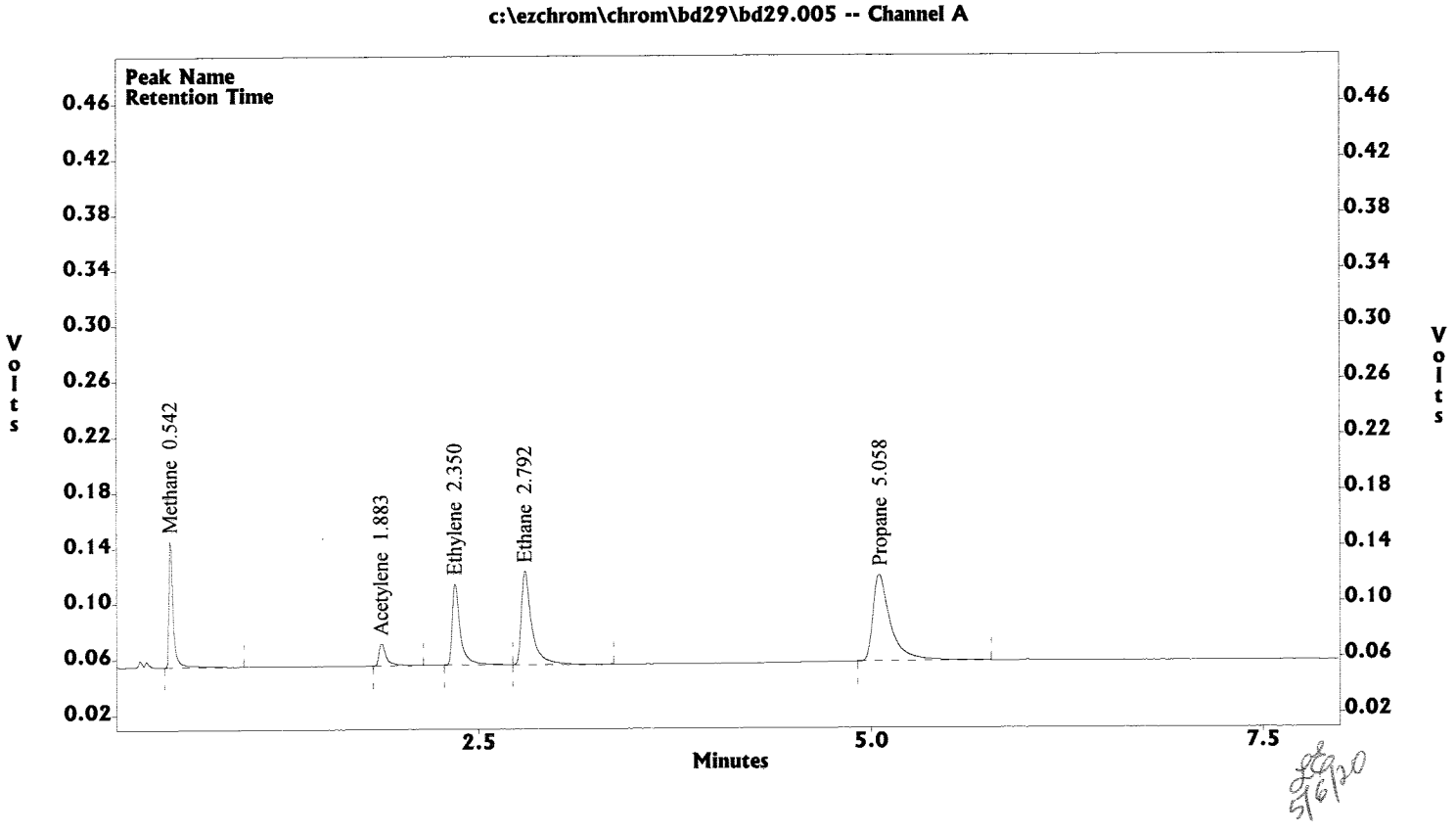
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

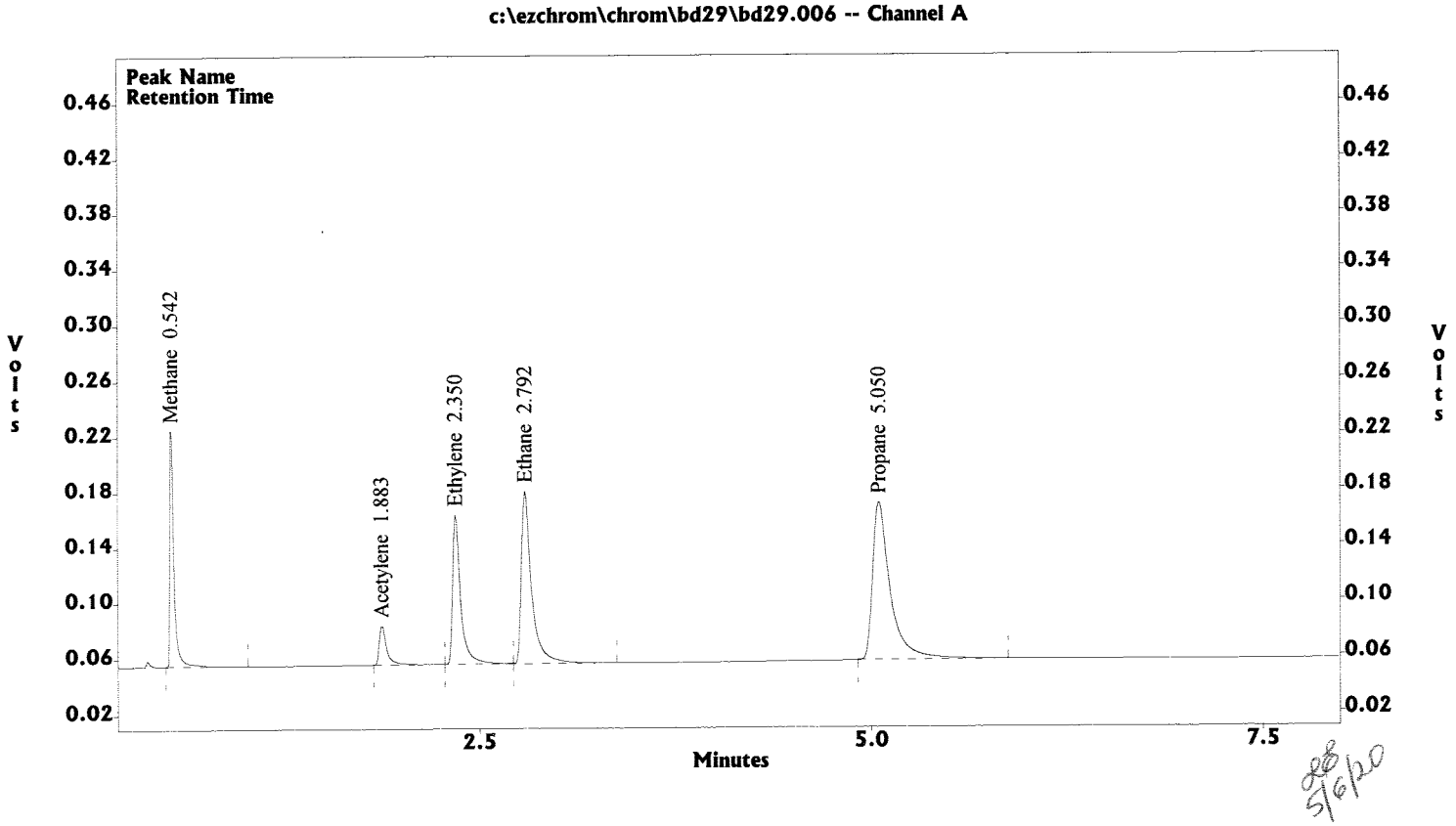


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



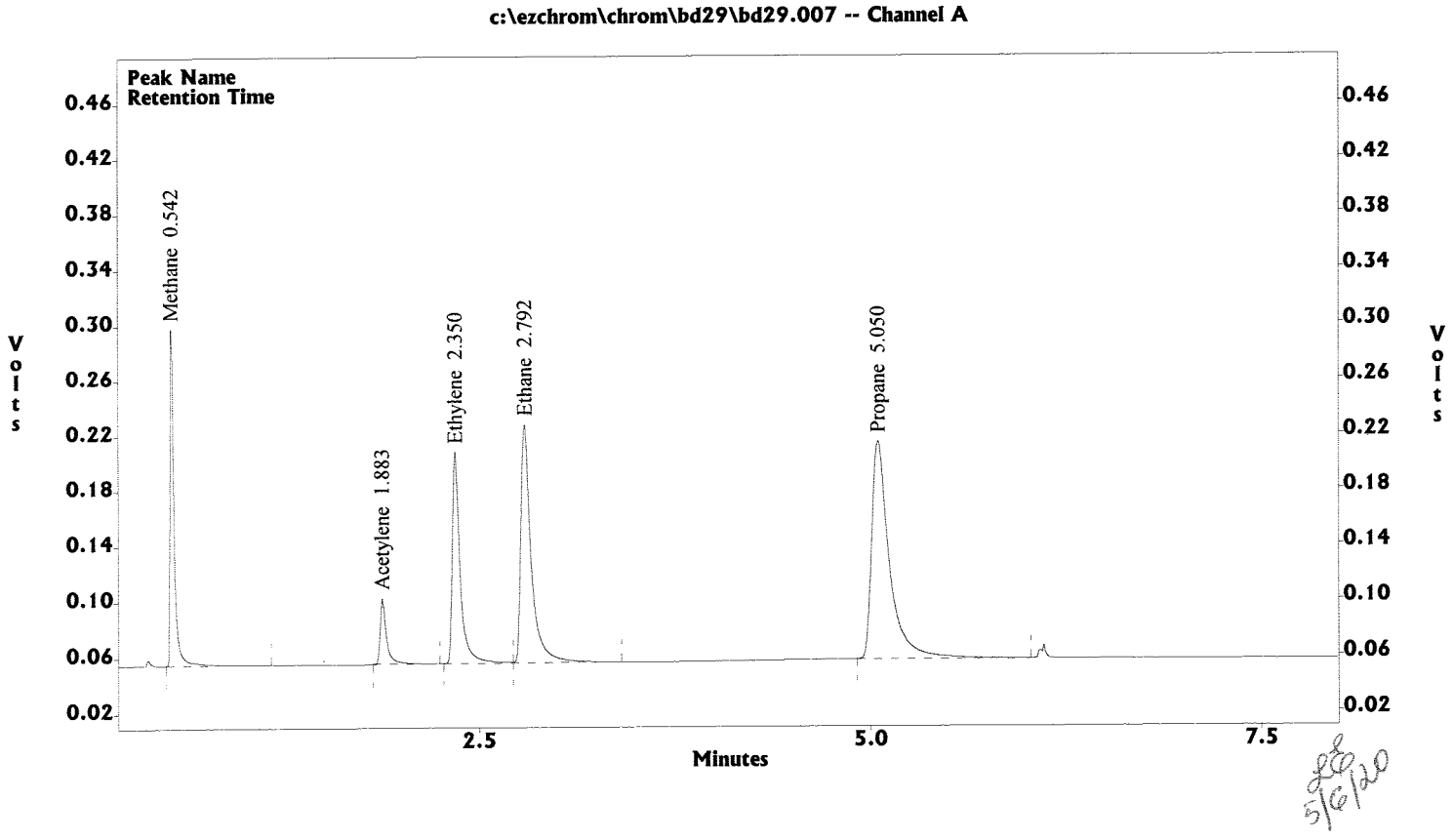
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

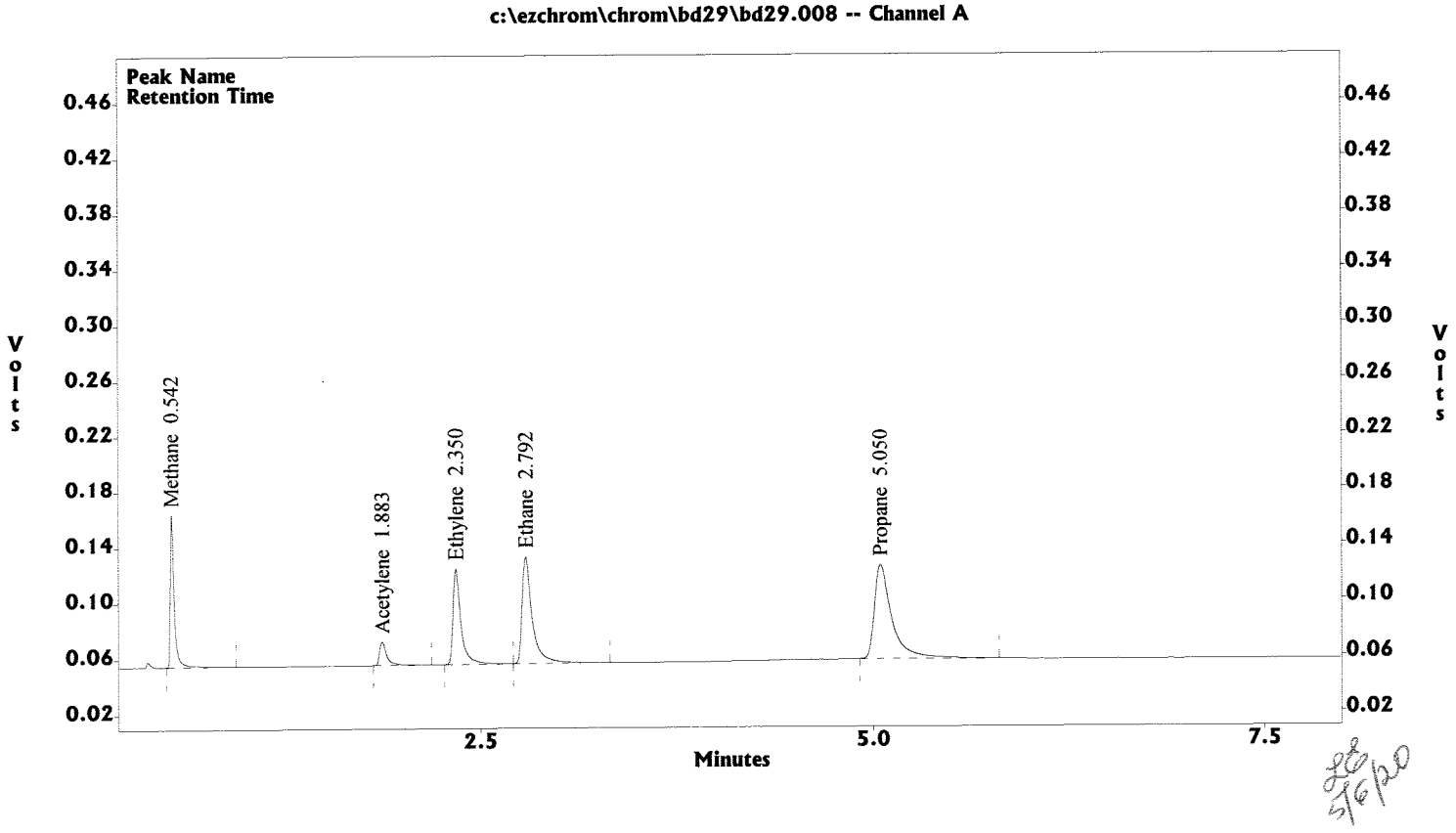
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF22002A 06/22/2020 10:38
CONC UNIT : ppb

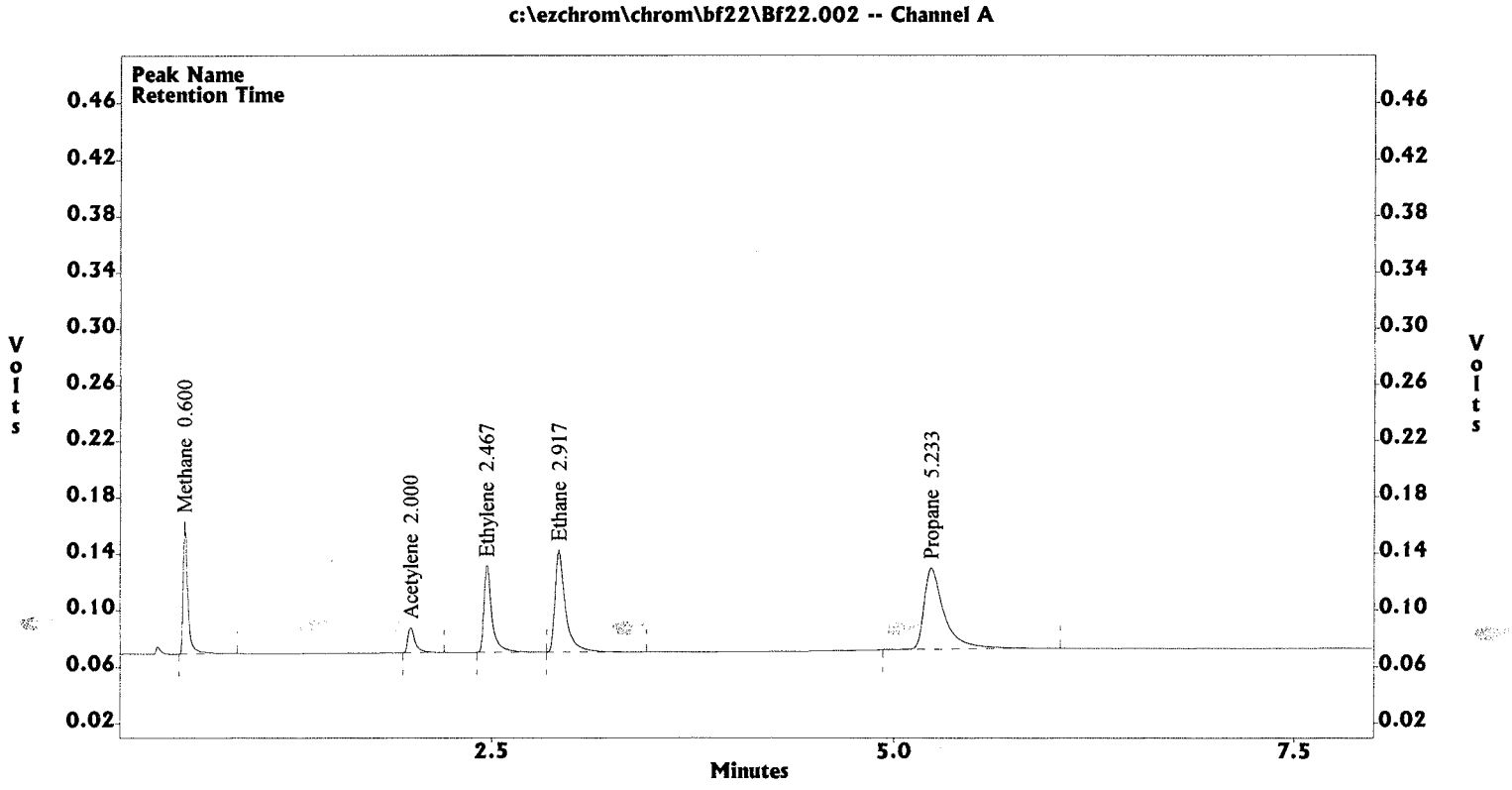
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	196347	14.05	3		15
Acetylene	2.000	1.947	2.053	22.1	2483.4	56226	22.64	2		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	217276	22.83	-4		15
Ethane	2.917	2.879	2.955	25.5	13110.4	327090	24.95	-2		15
Propane	5.233	5.181	5.285	37.4	13914.6	507052	36.44	-3		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.002
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29118
Acquired : Jun 22, 2020 10:38:17
Printed : Jun 22, 2020 10:46:19
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	196347	13975.2	14.050
2	Acetylene	2.000	56226	2483.4	22.641
3	Ethylene	2.467	217276	9519.0	22.826
4	Ethane	2.917	327090	13110.4	24.949
5	Propane	5.233	507052	13914.6	36.440



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF22014A 06/22/2020 13:22
CONC UNIT : ppb

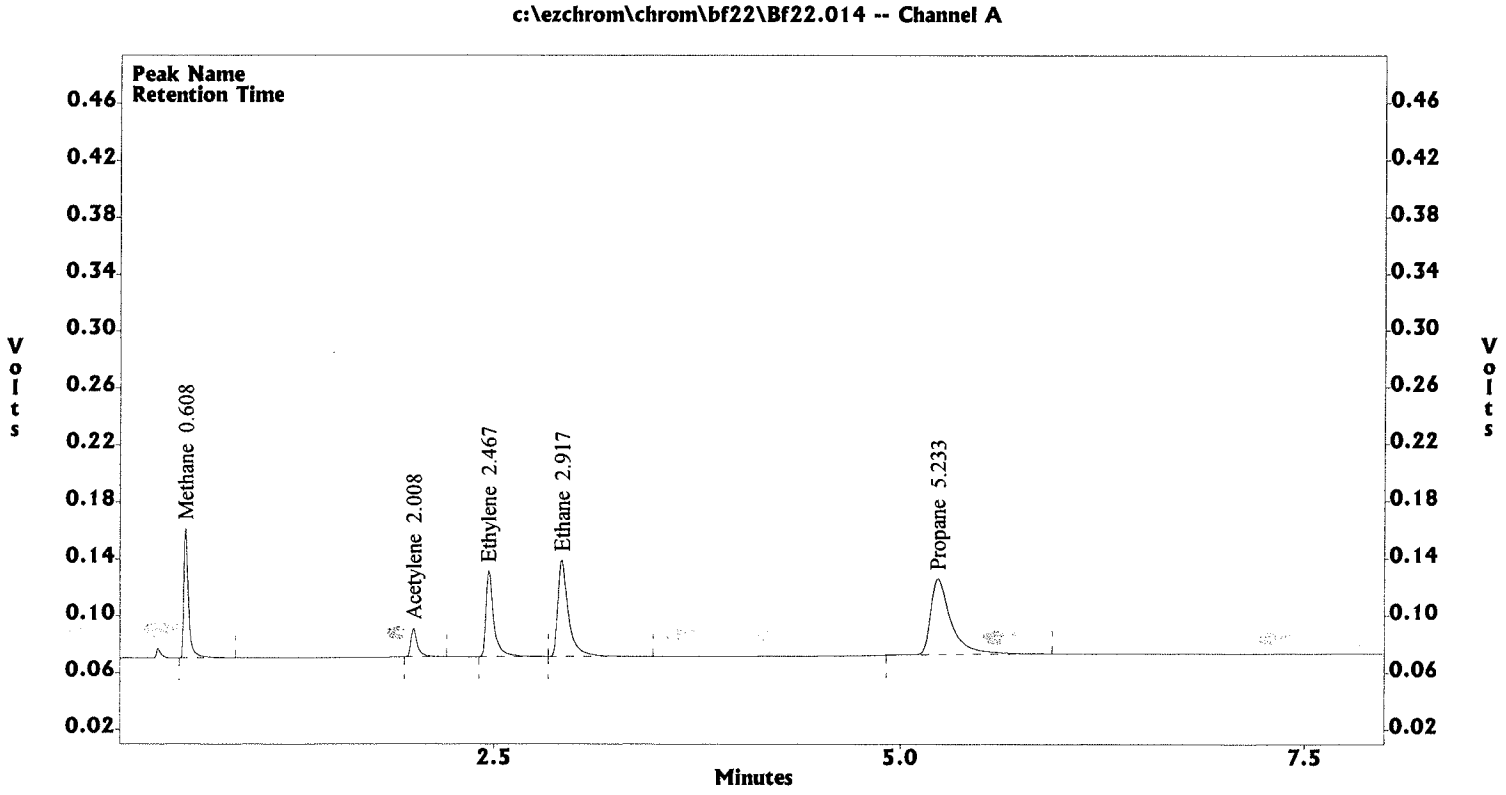
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	184215	13.18	-3		15
Acetylene	2.008	1.955	2.061	22.1	2483.4	56679	22.82	3		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	206862	21.73	-9		15
Ethane	2.917	2.879	2.955	25.5	13110.4	306812	23.40	-8		15
Propane	5.233	5.181	5.285	37.4	13914.6	466691	33.54	-10		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.014
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29119
Acquired : Jun 22, 2020 13:22:00
Printed : Jun 22, 2020 13:30:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	184215	13975.2	13.182
2	Acetylene	2.008	56679	2483.4	22.823
3	Ethylene	2.467	206862	9519.0	21.732
4	Ethane	2.917	306812	13110.4	23.402
5	Propane	5.233	466691	13914.6	33.540



ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019
Instrument No.: 72
Analytical Sequence: BD29
Method File: DG72D29
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	SSSB-18-22-01	10-7500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS
Date: 4/29/20
Disposed By:
Date Disposed:

Batch: bd29.seq

Sample ID						
IB72D2901	dg72d29.met	BD29.001	0	500uL	1	
DG72D2901	dg72d29.met	BD29.002	1	500uL	1	
DG72D2902	dg72d29.met	BD29.003	2	500uL	1	
DG72D2903	dg72d29.met	BD29.004	3	500uL	1	
DG72D2904	dg72d29.met	BD29.005	4	500uL	1	
DG72D2905	dg72d29.met	BD29.006	5	500uL	1	
DG72D2906	dg72d29.met	BD29.007	6	500uL	1	
IDG72D29001	dg72d29.met	BD29.008	8	500uL	1	

FINAL

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
DISSOLVED GAS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF013W: F162, F178

Book #: A72-020

Instrument No.: 72

Analytical Sequence: BF22

Method File: DG72D29

Analytical Batch: CD672D29118

SOP #	Rev. #
☐ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-32-03	200
Temperature (°C)	21	
Data File		

SYRINGES
☐ 500 µL - MSF-02-01-01
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 100 µL - MSF-01-02-13
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC

Date: 6/22/20

Disposed By:

Date Disposed:

Batch: bf22.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F2201	dg72d29.met	BF22.001	500uL	1	
2	CDG72D29118	dg72d29.met	BF22.002	500uL	1	
3	DGF013WB	dg72d29.met	BF22.003	500uL	1	
4	DGF013WL	dg72d29.met	BF22.004	500uL	1	
5	DGF013WC	dg72d29.met	BF22.005	500uL	1	
6	F162-01	dg72d29.met	BF22.006	500uL	1	
7	F162-02	dg72d29.met	BF22.007	500uL	1	
8	F162-04	dg72d29.met	BF22.008	500uL	1	
9	F162-05	dg72d29.met	BF22.009	500uL	1	
10	F162-07	dg72d29.met	BF22.010	500uL	1	
11	F162-08	dg72d29.met	BF22.011	500uL	1	
12	F162-10	dg72d29.met	BF22.012	500uL	1	
13	F162-11	dg72d29.met	BF22.013	500uL	1	
14	CDG72D29119	dg72d29.met	BF22.014	500uL	1	
15	F178-01	dg72d29.met	BF22.015	500uL	1	
16	F178-02	dg72d29.met	BF22.016	500uL	1	
17	F178-04	dg72d29.met	BF22.017	500uL	1	
18	F178-05	dg72d29.met	BF22.018	500uL	1	
19	F178-07	dg72d29.met	BF22.019	500uL	1	
20	F178-08	dg72d29.met	BF22.020	500uL	1	
21	F178-10	dg72d29.met	BF22.021	500uL	1	
22	F178-11	dg72d29.met	BF22.022	500uL	1	
23	CDG72D29120	dg72d29.met	BF22.023	500uL	1	

FINAL

EXTRACTION LOG(S)

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR DISSOLVED GAS

SOP ☒ EMAX-RSK175 Rev. 4 ☐ CO2 ☐ Room Temp. (°C): 21 Book #: EDG-046

Start Date: 6/22/20 Time: 10:00 End Date: 6/22/20 Time: 13:30

PREPARATION BATCH* ~~CM37~~ DGF013W sc 6/22/20

Sample Prep ID	Lab Sample ID	Sample Amount (ml)	Extract Volume (ml)	pH (< 2)	Notes
01	DGF013WB	39	4	N/A	
02	L			N/A	
03	C			N/A	
04	F162-01			✓	
05	-02			✓	
06	-04			✓	
07	-05			✓	
08	-07			✓	
09	-08			✓	
10	-10			✓	
11	-11			✓	
12	F178-01			✓	
13	-02			✓	
14	-04			✓	
15	-05			✓	
16	-07			✓	
17	-08			✓	
18	-10			✓	
19	-11			✓	
20					
21					
22					
23					
24					sc 6/22/20
25					
26					
27					
28					
29					
30					

Standards	ID	Amount Added (ul)
LCS/MS	SSSA-10-02-03	1600

Reagent	Source
H_2O	RW2-18-001
He	SSSA-11-01-01
Thermometer ID #:	RSK175-01
Tedlar Bag Lot#:	28150508
pH Strips:	HC998032
Vial Manufacturer:	~~ESS #FR249828~~ sc 6/22/20
	# FR249828 2 20066

Syringes

- ☐ 10 mL - MSF-01-01-24
- ☒ 5 mL - MSF-01-01-25
- ☐ 5 mL - MSF-01-01-13
- ☒ 5 mL - MSF-01-03-06
- ☐ 1 mL - MSF-01-02-24
- ☐

Comments:

Prepared By: SC

Standard Added By: SC

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F162

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SW6020A
METALS BY ICP-MS

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sodium(26.7J <1/2 LOQ) was detected at trace level in IMF029WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF029WL/IMF029WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F162
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMF029WB	1	NA	6/26/22012:08	06/22/2010:36	H6F22040	H6F22038	IMF029W	Method Blank
LCS1W	IMF029WL	1	NA	6/26/22012:11	06/22/2010:36	H6F22041	H6F22038	IMF029W	Lab Control Sample (LCS)
LCD1W	IMF029WC	1	NA	6/26/22012:14	06/22/2010:36	H6F22042	H6F22038	IMF029W	LCS Duplicate
MW22-GW061720	F162-01	1	NA	6/26/22012:42	06/22/2010:36	H6F22053	H6F22050	IMF029W	Field Sample
MW21-GW061820	F162-02	1	NA	6/26/22012:45	06/22/2010:36	H6F22054	H6F22050	IMF029W	Field Sample
MW01D-GW061720	F162-04	1	NA	6/26/22012:47	06/22/2010:36	H6F22055	H6F22050	IMF029W	Field Sample
MW13S-GW061820	F162-05	1	NA	6/26/22012:50	06/22/2010:36	H6F22056	H6F22050	IMF029W	Field Sample
MW03RA-GW061820	F162-07	1	NA	6/26/22012:53	06/22/2010:36	H6F22057	H6F22050	IMF029W	Field Sample
MW03RB-GW061820	F162-08	1	NA	6/26/22012:55	06/22/2010:36	H6F22058	H6F22050	IMF029W	Field Sample
MW03RC-GW061820	F162-10	1	NA	6/26/22012:58	06/22/2010:36	H6F22059	H6F22050	IMF029W	Field Sample
MW03RD-GW061820	F162-11	1	NA	6/26/22013:00	06/22/2010:36	H6F22060	H6F22050	IMF029W	Field Sample
MW22-GW061720	F162-01I	10	NA	6/26/22013:37	06/22/2010:36	H6F22073	H6F22071	IMF029W	Diluted Sample
MW21-GW061820	F162-02I	10	NA	6/26/22013:40	06/22/2010:36	H6F22074	H6F22071	IMF029W	Diluted Sample
MW01D-GW061720	F162-04I	10	NA	6/26/22013:42	06/22/2010:36	H6F22075	H6F22071	IMF029W	Diluted Sample
MW13S-GW061820	F162-05I	10	NA	6/26/22013:45	06/22/2010:36	H6F22076	H6F22071	IMF029W	Diluted Sample
MW03RA-GW061820	F162-07I	10	NA	6/26/22013:48	06/22/2010:36	H6F22077	H6F22071	IMF029W	Diluted Sample
MW03RB-GW061820	F162-08I	10	NA	6/26/22013:50	06/22/2010:36	H6F22078	H6F22071	IMF029W	Diluted Sample
MW03RC-GW061820	F162-10I	10	NA	6/26/22013:53	06/22/2010:36	H6F22079	H6F22071	IMF029W	Diluted Sample
MW03RD-GW061820	F162-11I	10	NA	6/26/22013:55	06/22/2010:36	H6F22080	H6F22071	IMF029W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW22-GW061720	Date Analyzed:	6/26/220 12:42
Lab Samp ID:	F162-01	Dilution Factor:	1
Lab File ID:	H6F22053	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	54.3J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.719J	1.00	0.125
Barium	67.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.69	1.00	0.100
Cobalt	0.174J	1.00	0.100
Copper	ND	2.00	0.500
Iron	149	100	25.0
Lead	ND	1.00	0.0500
Manganese	7.54	1.00	0.250
Nickel	1.37	1.00	0.250
Potassium	2690	100	25.0
Selenium	0.856J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.10	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW22-GW061720	Date Analyzed:	6/26/220 13:37
Lab Samp ID:	F162-01I	Dilution Factor:	10
Lab File ID:	H6F22073	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	152000	1000	250
Magnesium	52600	1000	250
Sodium	110000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW22-GW061720	Date Analyzed:	6/26/220 12:42
Lab Samp ID:	F162-01	Dilution Factor:	1
Lab File ID:	H6F22053	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	54.3J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.719J	1.00	0.125
Barium	67.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	152000E	100	25.0
Chromium	1.69	1.00	0.100
Cobalt	0.174J	1.00	0.100
Copper	ND	2.00	0.500
Iron	149	100	25.0
Lead	ND	1.00	0.0500
Magnesium	51600E	100	25.0
Manganese	7.54	1.00	0.250
Nickel	1.37	1.00	0.250
Potassium	2690	100	25.0
Selenium	0.856J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	108000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.10	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW22-GW061720	Date Analyzed:	6/26/220 13:37
Lab Samp ID:	F162-01I	Dilution Factor:	10
Lab File ID:	H6F22073	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	69.2	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	152000	1000	250
Chromium	1.34J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	52600	1000	250
Manganese	8.19J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2700	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	110000	1000	250
Thallium	ND	10.0	1.00
Vanadium	ND	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 11:15
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW21-GW061820	Date Analyzed:	6/26/220 12:45
Lab Samp ID:	F162-02	Dilution Factor:	1
Lab File ID:	H6F22054	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	702	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.997J	1.00	0.125
Barium	129	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.63	1.00	0.100
Cobalt	0.148J	1.00	0.100
Copper	ND	2.00	0.500
Iron	60.4J	100	25.0
Lead	ND	1.00	0.0500
Manganese	2.11	1.00	0.250
Nickel	0.570J	1.00	0.250
Potassium	2970	100	25.0
Selenium	0.814J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.83	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW21-GW061820	Date Analyzed:	6/26/220 13:40
Lab Samp ID:	F162-02I	Dilution Factor:	10
Lab File ID:	H6F22074	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	150000	1000	250
Magnesium	53300	1000	250
Sodium	158000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 11:15
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW21-GW061820	Date Analyzed:	6/26/220 12:45
Lab Samp ID:	F162-02	Dilution Factor:	1
Lab File ID:	H6F22054	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	702	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.997J	1.00	0.125
Barium	129	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	144000E	100	25.0
Chromium	1.63	1.00	0.100
Cobalt	0.148J	1.00	0.100
Copper	ND	2.00	0.500
Iron	60.4J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	51400E	100	25.0
Manganese	2.11	1.00	0.250
Nickel	0.570J	1.00	0.250
Potassium	2970	100	25.0
Selenium	0.814J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	151000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.83	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 11:15
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW21-GW061820	Date Analyzed:	6/26/220 13:40
Lab Samp ID:	F162-02I	Dilution Factor:	10
Lab File ID:	H6F22074	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	726J	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.26J	10.0	1.25
Barium	129	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	150000	1000	250
Chromium	1.43J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	53300	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	3100	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	158000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.55J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F162
Sample ID: MW01D-GW061720
Lab Samp ID: F162-04
Lab File ID: H6F22055
Ext Btch ID: IMF029W
Calib. Ref.: H6F22050

Date Collected: 06/17/20 16:25
Date Received: 06/19/20
Date Extracted: 06/22/20 10:36
Date Analyzed: 6/26/220 12:47
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	238	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.359J	1.00	0.125
Barium	23.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	4.26	1.00	0.100
Cobalt	0.133J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37900	100	25.0
Manganese	0.384J	1.00	0.250
Nickel	1.98	1.00	0.250
Potassium	2280	100	25.0
Selenium	1.22	1.00	0.150
Silver	ND	1.00	0.100
Sodium	38700	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.44	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID: MW01D-GW061720
Lab Samp ID: F162-04I
Lab File ID: H6F22075
Ext Btch ID: IMF029W
Calib. Ref.: H6F22071

Date Analyzed: 6/26/220 13:42
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	136000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 16:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW01D-GW061720	Date Analyzed:	6/26/220 12:47
Lab Samp ID:	F162-04	Dilution Factor:	1
Lab File ID:	H6F22055	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	238	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.359J	1.00	0.125
Barium	23.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	136000E	100	25.0
Chromium	4.26	1.00	0.100
Cobalt	0.133J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37900	100	25.0
Manganese	0.384J	1.00	0.250
Nickel	1.98	1.00	0.250
Potassium	2280	100	25.0
Selenium	1.22	1.00	0.150
Silver	ND	1.00	0.100
Sodium	38700	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.44	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/17/20 16:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW01D-GW061720	Date Analyzed:	6/26/220 13:42
Lab Samp ID:	F162-04I	Dilution Factor:	10
Lab File ID:	H6F22075	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	23.0	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	136000	1000	250
Chromium	3.76J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	37100	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2270	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	39200	1000	250
Thallium	ND	10.0	1.00
Vanadium	4.00J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW13S-GW061820	Date Analyzed:	6/26/220 12:50
Lab Samp ID:	F162-05	Dilution Factor:	1
Lab File ID:	H6F22056	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	39.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.557J	1.00	0.125
Barium	71.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	5.70	1.00	0.100
Cobalt	6.33	1.00	0.100
Copper	0.543J	2.00	0.500
Iron	135	100	25.0
Lead	ND	1.00	0.0500
Manganese	772	1.00	0.250
Nickel	239	1.00	0.250
Potassium	4380	100	25.0
Selenium	0.297J	1.00	0.150
Silver	0.150J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	0.509J	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW13S-GW061820	Date Analyzed:	6/26/220 13:45
Lab Samp ID:	F162-05I	Dilution Factor:	10
Lab File ID:	H6F22076	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	179000	1000	250
Magnesium	77200	1000	250
Sodium	127000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW13S-GW061820	Date Analyzed:	6/26/220 12:50
Lab Samp ID:	F162-05	Dilution Factor:	1
Lab File ID:	H6F22056	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	39.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.557J	1.00	0.125
Barium	71.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	180000E	100	25.0
Chromium	5.70	1.00	0.100
Cobalt	6.33	1.00	0.100
Copper	0.543J	2.00	0.500
Iron	135	100	25.0
Lead	ND	1.00	0.0500
Magnesium	78100E	100	25.0
Manganese	772	1.00	0.250
Nickel	239	1.00	0.250
Potassium	4380	100	25.0
Selenium	0.297J	1.00	0.150
Silver	0.150J	1.00	0.100
Sodium	128000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.509J	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW13S-GW061820	Date Analyzed:	6/26/220 13:45
Lab Samp ID:	F162-05I	Dilution Factor:	10
Lab File ID:	H6F22076	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	69.3	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	179000	1000	250
Chromium	5.21J	10.0	1.00
Cobalt	6.48J	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	77200	1000	250
Manganese	791	10.0	2.50
Nickel	242	10.0	2.50
Potassium	4410	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	127000	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.90J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:40
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RA-GW061820	Date Analyzed:	6/26/220 12:53
Lab Samp ID:	F162-07	Dilution Factor:	1
Lab File ID:	H6F22057	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.640J	1.00	0.125
Barium	73.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.83	1.00	0.100
Cobalt	0.315J	1.00	0.100
Copper	0.727J	2.00	0.500
Iron	38.3J	100	25.0
Lead	ND	1.00	0.0500
Manganese	59.7	1.00	0.250
Nickel	3.43	1.00	0.250
Potassium	2620	100	25.0
Selenium	0.844J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.67	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW03RA-GW061820	Date Analyzed:	6/26/220 13:48
Lab Samp ID:	F162-07I	Dilution Factor:	10
Lab File ID:	H6F22077	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	184000	1000	250
Magnesium	62800	1000	250
Sodium	93700	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:40
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RA-GW061820	Date Analyzed:	6/26/220 12:53
Lab Samp ID:	F162-07	Dilution Factor:	1
Lab File ID:	H6F22057	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.640J	1.00	0.125
Barium	73.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	186000E	100	25.0
Chromium	1.83	1.00	0.100
Cobalt	0.315J	1.00	0.100
Copper	0.727J	2.00	0.500
Iron	38.3J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	63800E	100	25.0
Manganese	59.7	1.00	0.250
Nickel	3.43	1.00	0.250
Potassium	2620	100	25.0
Selenium	0.844J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	93800E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.67	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:40
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RA-GW061820	Date Analyzed:	6/26/220 13:48
Lab Samp ID:	F162-07I	Dilution Factor:	10
Lab File ID:	H6F22077	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	73.1	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	184000	1000	250
Chromium	1.42J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	62800	1000	250
Manganese	59.1	10.0	2.50
Nickel	3.46J	10.0	2.50
Potassium	2640	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	93700	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.67J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:05
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RB-GW061820	Date Analyzed:	6/26/220 12:55
Lab Samp ID:	F162-08	Dilution Factor:	1
Lab File ID:	H6F22058	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	40.5J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.437J	1.00	0.125
Barium	36.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.655J	1.00	0.100
Cobalt	0.155J	1.00	0.100
Copper	ND	2.00	0.500
Iron	43.2J	100	25.0
Lead	0.0884J	1.00	0.0500
Manganese	32.5	1.00	0.250
Nickel	1.01	1.00	0.250
Potassium	1920	100	25.0
Selenium	0.985J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	33500	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.45	1.00	0.250
Zinc	5.64J	20.0	5.00

Sample ID:	MW03RB-GW061820	Date Analyzed:	6/26/220 13:50
Lab Samp ID:	F162-08I	Dilution Factor:	10
Lab File ID:	H6F22078	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	135000	1000	250
Magnesium	45100	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:05
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RB-GW061820	Date Analyzed:	6/26/220 12:55
Lab Samp ID:	F162-08	Dilution Factor:	1
Lab File ID:	H6F22058	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	40.5J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.437J	1.00	0.125
Barium	36.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	133000E	100	25.0
Chromium	0.655J	1.00	0.100
Cobalt	0.155J	1.00	0.100
Copper	ND	2.00	0.500
Iron	43.2J	100	25.0
Lead	0.0884J	1.00	0.0500
Magnesium	45700E	100	25.0
Manganese	32.5	1.00	0.250
Nickel	1.01	1.00	0.250
Potassium	1920	100	25.0
Selenium	0.985J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	33500	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.45	1.00	0.250
Zinc	5.64J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 15:05
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RB-GW061820	Date Analyzed:	6/26/220 13:50
Lab Samp ID:	F162-08I	Dilution Factor:	10
Lab File ID:	H6F22078	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	37.3	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	135000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	45100	1000	250
Manganese	32.8	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	1920	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	33400	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.06J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RC-GW061820	Date Analyzed:	6/26/220 12:58
Lab Samp ID:	F162-10	Dilution Factor:	1
Lab File ID:	H6F22059	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.504J	1.00	0.125
Barium	24.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.724J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37500	100	25.0
Manganese	4.17	1.00	0.250
Nickel	0.774J	1.00	0.250
Potassium	1850	100	25.0
Selenium	1.13	1.00	0.150
Silver	ND	1.00	0.100
Sodium	25900	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.89	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW03RC-GW061820	Date Analyzed:	6/26/220 13:53
Lab Samp ID:	F162-10I	Dilution Factor:	10
Lab File ID:	H6F22079	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	119000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RC-GW061820	Date Analyzed:	6/26/220 12:58
Lab Samp ID:	F162-10	Dilution Factor:	1
Lab File ID:	H6F22059	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.504J	1.00	0.125
Barium	24.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	119000E	100	25.0
Chromium	0.724J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37500	100	25.0
Manganese	4.17	1.00	0.250
Nickel	0.774J	1.00	0.250
Potassium	1850	100	25.0
Selenium	1.13	1.00	0.150
Silver	ND	1.00	0.100
Sodium	25900	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.89	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 13:25
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RC-GW061820	Date Analyzed:	6/26/220 13:53
Lab Samp ID:	F162-10I	Dilution Factor:	10
Lab File ID:	H6F22079	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	24.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	119000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	37100	1000	250
Manganese	4.04J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	1910	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	25700	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.55J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F162
Sample ID: MW03RD-GW061820
Lab Samp ID: F162-11
Lab File ID: H6F22060
Ext Btch ID: IMF029W
Calib. Ref.: H6F22050

Date Collected: 06/18/20 12:35
Date Received: 06/19/20
Date Extracted: 06/22/20 10:36
Date Analyzed: 6/26/220 13:00
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.323J	1.00	0.125
Barium	27.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.527J	1.00	0.100
Cobalt	0.629J	1.00	0.100
Copper	ND	2.00	0.500
Iron	56.0J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	38400	100	25.0
Manganese	261	1.00	0.250
Nickel	3.92	1.00	0.250
Potassium	2190	100	25.0
Selenium	0.964J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	0.589J	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID: MW03RD-GW061820
Lab Samp ID: F162-11I
Lab File ID: H6F22080
Ext Btch ID: IMF029W
Calib. Ref.: H6F22071

Date Analyzed: 6/26/220 13:55
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	126000	1000	250
Sodium	49600	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 12:35
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RD-GW061820	Date Analyzed:	6/26/220 13:00
Lab Samp ID:	F162-11	Dilution Factor:	1
Lab File ID:	H6F22060	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22050	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.323J	1.00	0.125
Barium	27.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	127000E	100	25.0
Chromium	0.527J	1.00	0.100
Cobalt	0.629J	1.00	0.100
Copper	ND	2.00	0.500
Iron	56.0J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	38400	100	25.0
Manganese	261	1.00	0.250
Nickel	3.92	1.00	0.250
Potassium	2190	100	25.0
Selenium	0.964J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	48900E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.589J	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 12:35
Project	: VA SALT LAKE CITY	Date Received:	06/19/20
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MW03RD-GW061820	Date Analyzed:	6/26/220 13:55
Lab Samp ID:	F162-11I	Dilution Factor:	10
Lab File ID:	H6F22080	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22071	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	26.8	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	126000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	38000	1000	250
Manganese	261	10.0	2.50
Nickel	4.18J	10.0	2.50
Potassium	2290	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	49600	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.48J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F162	Date Extracted:	06/22/20 10:36
Sample ID:	MBLK1W	Date Analyzed:	6/26/220 12:08
Lab Samp ID:	IMF029WB	Dilution Factor:	1
Lab File ID:	H6F22040	Matrix:	WATER
Ext Btch ID:	IMF029W	% Moisture:	NA
Calib. Ref.:	H6F22038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	ND	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Sodium	26.7J	100	25.0
Thallium	ND	1.00	0.100
Vanadium	ND	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF029WB	IMF029WL	IMF029WC
LAB FILE ID	: H6F22040	H6F22041	H6F22042
DATE PREPARED	: 06/22/20 10:36	06/22/20 10:36	06/22/20 10:36
DATE ANALYZED	: 6/26/220 12:08	6/26/220 12:11	6/26/220 12:14
PREP BATCH	: IMF029W	IMF029W	IMF029W
CALIBRATION REF	: H6F22038	H6F22038	H6F22038

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	3190	106	3000	3040	101	5	80-120	20
Antimony	ND	30	29.7	99	30	28.8	96	3	80-120	20
Arsenic	ND	30	30.3	101	30	29.6	99	2	80-120	20
Barium	ND	30	29.4	98	30	28.6	95	3	80-120	20
Beryllium	ND	30	30.1	100	30	28.9	96	4	80-120	20
Cadmium	ND	30	30.0	100	30	29.4	98	2	80-120	20
Calcium	ND	3000	3110	104	3000	2990	100	4	80-120	20
Chromium	ND	30	31.6	105	30	30.9	103	2	80-120	20
Cobalt	ND	30	32.1	107	30	30.7	102	4	80-120	20
Copper	ND	30	32.6	109	30	31.8	106	2	80-120	20
Iron	ND	3000	3180	106	3000	3080	103	3	80-120	20
Lead	ND	30	31.6	105	30	30.3	101	4	80-120	20
Magnesium	ND	3000	3240	108	3000	3030	101	7	80-120	20
Manganese	ND	30	31.6	105	30	30.2	101	5	80-120	20
Nickel	ND	30	31.8	106	30	31.1	104	2	80-120	20
Potassium	ND	3000	3090	103	3000	3000	100	3	80-120	20
Selenium	ND	30	31.1	104	30	30.9	103	1	80-120	20
Silver	ND	30	31.0	103	30	30.0	100	3	80-120	20
Sodium	26.7J	3000	3160	105	3000	3030	101	4	80-120	20
Thallium	ND	30	31.4	105	30	30.1	100	4	80-120	20
Vanadium	ND	30	31.0	103	30	30.2	101	3	80-120	20
Zinc	ND	60	63.0	105	60	60.3	101	4	80-120	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F162
Method : METHOD SW6020A
Sequence : IH6F22
InstrumentID: H6

Lab Samp ID :		ICV				ICSA1			ICSAB1		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6F22008				H6F22012			H6F22013		
DateAnalyed :		6/26/22010:28				6/26/22010:40			6/26/22010:43		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.74	30	0.9	99	0.22934	0	>0	19.581	20	98
Beryllium	T	30.32	30	1.4	101						
						0.000039500	0	<0.10	19.924	20	100
Boron		34.35	30	1.4	115*	9.7536	0	>5.0	22.314	20	112
Sodium	T	28820	30000	0.6	96	94995	100000	95	100250	100000	100
Magnesium	T	29080	30000	0.8	97	93164	100000	93	96322	100000	96
Aluminum	T	29540	30000	1.5	98	93877	100000	94	97151	100000	97
Silicon		3225	3000	0.4	108	4.2173	0	<20	222.69	200	111
Phosphorus		276.9	300	1.7	92	93807	100000	94	97156	100000	97
Potassium	T	29480	30000	0.3	98	98193	100000	98	102000	100000	102
Calcium	T	29360	30000	1	98	97918	100000	98	103860	100000	104
Titanium		293.4	300	1.1	98	2002.7	2000	100	2103.3	2000	105
Vanadium	T	313.3	300	0.7	104	0.11769	0	<0.25	20.156	20	101
Chromium	T	313.3	300	0.7	104	0.27424	0	>0.1	20.739	20	104
Manganese	T	1955	2000	1	98	0.24806	0	<0.25	19.625	20	98
Iron	T	29580	30000	1.4	99	98569	100000	99	103750	100000	104
Cobalt	T	301.3	300	1.5	100	0.35623	0	>0.1	19.546	20	98
Nickel	T	317.5	300	0.1	106	0.31803	0	>0.25	20.557	20	103
Copper	T	309.9	300	1	103	0.27185	0	<0.50	20.450	20	102
Zinc	T	289.1	300	2.1	96	1.6019	0	<5	21.132	20	106
Arsenic	T	313.9	300	0.6	105	0.073077	0	<0.125	20.030	20	100
Selenium	T	315.4	300	0.9	105	0.21767	0	>0.15	21.602	20	108
Strontium		307.6	300	1.2	103	0.77987	0	<1.0	20.142	20	101
Zirconium		27.59	30	1.1	92	0.11514	0	<2.0	8.5487	20	43*
Molybdenum		304.2	300	1.5	101	1967.9	2000	98	2039.5	2000	102
Silver	T	31.01	30	0.6	103	0.010431	0	<0.1	18.948	20	95
Cadmium	T	311.3	300	1.4	104	0.074785	0	<0.1	19.233	20	96
Tin		307.6	300	0.5	103	0.35856	0	>0.2	19.785	20	99
Antimony	T	58.92	60	0.8	98	0.14623	0	<0.25	19.476	20	97
Barium	T	310.2	300	0.7	103	0.40752	0	>0.25	20.078	20	100
Tungsten		32.14	30	1	107	0.18560	0	<1.0	19.295	20	96
Mercury		2.922	3	1.1	97	0.0041308	0	<0.1	1.9416	2	97
Thallium	T	304.1	300	2.2	101	0.0077403	0	<0.1	18.766	20	94
Lead	T	307.0	300	1.2	102	0.080727	0	>0.05	19.123	20	96
Uranium		305.7	300	1.3	102						
						0.0000052400	0	<0.1	19.160	20	96

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F162
Method : METHOD SW6020A
Sequence : IH6F22
Instrument ID: H6

CCV SampleID		: CCV3				CCV4				CCV5				CCV6				CCV7		
CCV DataFileID		: H6F22038				H6F22050				H6F22061				H6F22071				H6F22081		
CCV DateTime		: 6/26/220 12:01				6/26/220 12:34				6/26/220 13:03				6/26/220 13:32				6/26/220 13:58		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD		RESULT	%REC	RSD		RESULT	%REC	RSD		RESULT	%REC	RSD
Lithium		25	24.6	98	4.2	24.0	96	3		23.8	95	1.9		25.0	100	4.7		24.7	99	2.4
Beryllium	T	25	24.2	97	3.8	23.4	94	1.8		23.3	93	2		24.4	98	4.3		24.4	97	2.9
Boron		50	54.3	109	4.9	54.2	108	3.5		53.3	107	4.7		55.7	111*	6		54.0	108	3.5
Sodium	T	25000	25100	100	0.2	25000	100	0.7		25200	101	0.5		25000	100	0.4		24600	98	0.9
Magnesium	T	25000	25100	100	0.9	25000	100	1.2		25300	101	2.2		25300	101	2.7		24600	99	0.8
Aluminum	T	25000	24800	99	1.5	24800	99	1.9		24800	99	2.3		24900	100	2.9		24500	98	1
Silicon		2500	2480	99	0.7	2470	99	0.7		2510	100	1.2		2460	99	0.8		2450	98	0.4
Phosphorus		250	249	100	0.6	243	97	1.1		244	97	1.6		250	100	3.2		245	98	0.8
Potassium	T	25000	25000	100	0.1	25100	101	0.3		25500	102	0.3		25100	100	0.4		24800	99	0.4
Calcium	T	25000	24900	100	0.2	24900	100	0.5		25100	100	0.4		24800	99	0.3		24700	99	0.3
Titanium		250	247	99	1.6	241	96	1.7		245	98	1.5		248	99	2.3		247	99	0.9
Vanadium	T	250	254	101	0.1	251	100	0.3		255	102	0.9		252	101	0.8		249	100	0.6
Chromium	T	250	254	102	0.7	250	100	0.6		253	101	0.8		251	100	0.6		246	99	1.7
Manganese	T	1500	1500	100	1.7	1480	98	2.9		1480	99	1.9		1500	100	3.5		1490	99	1.6
Iron	T	25000	25000	100	0.5	25400	101	1		25400	102	0.1		25000	100	1.1		25000	100	0.3
Cobalt	T	250	249	99	1.7	245	98	2.9		248	99	1.6		251	100	3		247	99	1.9
Nickel	T	250	259	104	0.9	253	101	0.6		252	101	1.1		252	101	0.8		248	99	1.4
Copper	T	250	256	102	1	254	102	1.2		254	101	0.6		253	101	1.1		248	99	0.5
Zinc	T	250	245	98	0.8	238	95	1.1		238	95	1.9		242	97	1.7		238	95	0.6
Arsenic	T	250	249	100	1	247	99	0.6		248	99	0.5		249	100	0.8		246	98	0.5
Selenium	T	250	257	103	0.1	252	101	0.6		249	100	0.7		253	101	0.6		252	101	0.8
Strontium		250	246	98	2.2	244	98	2.5		244	98	2.8		247	99	3.1		245	98	1.4
Zirconium		25	24.2	97	2	23.9	96	2.8		23.7	95	1.8		24.2	97	2		24.0	96	0.8
Molybdenum		250	244	98	2.7	243	97	2.7		245	98	2.1		249	99	5.4		241	96	1.4
Silver	T	25	24.5	98	1.7	24.1	97	0.7		24.4	98	1		24.9	99	3.5		24.6	98	2.1
Cadmium	T	250	245	98	0.4	241	97	1.2		241	97	1.1		247	99	3.6		243	97	1.7
Tin		250	247	99	0.8	243	97	0.7		247	99	1.1		248	99	4.1		245	98	2.2
Antimony	T	50	49.3	99	1.4	48.1	96	1.2		48.6	97	0.7		49.2	98	4.3		48.6	97	2.2
Barium	T	500	499	100	1.9	491	98	1.6		495	99	0.7		503	101	5.2		492	98	1.8
Tungsten		25	25.0	100	0.8	24.8	99	1.8		24.5	98	1.5		25.1	100	2.4		24.6	99	2
Mercury		2.5	2.49	99	1.2	2.45	98	0.8		2.45	98	0.7		2.47	99	2.4		2.44	98	1.1
Thallium	T	250	250	100	1.6	248	99	1.6		248	99	0.8		251	100	3.4		247	99	1.8
Lead	T	250	252	101	0.7	250	100	1.5		250	100	0.5		253	101	3.4		248	99	0.4
Uranium		250	247	99	1.5	243	97	1		241	97	0.8		245	98	2.7		241	96	1

| Unit: ug/L
| T: Target analyte
|%Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F162
Method : SW6020A
Sequence : IH6F22
Instrument ID: H6

CB SampleID			ICB		CCB3		CCB4		CCB5		CCB6	
CB DataFileID			H6F22009		H6F22039		H6F22051		H6F22062		H6F22072	
CB DateTime			6/26/22010:33		6/26/22012:06		6/26/22012:37		6/26/22013:09		6/26/22013:35	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.09	>0	0.1	>0	0.07	>0	0.2	>0	0.2	>0
Beryllium	T	0.10	0.003	<0.10	0.004	<0.10	0.02	<0.10	0.005	<0.10	0.01	<0.10
Boron		5.0	0.3	<5.0	0.4	<5.0	0.9	<5.0	0.9	<5.0	0.9	<5.0
Sodium	T	25	0.7	<25	20	<25	40	>25	30	>25	10	<25
Magnesium	T	25	0.3	<25	0.5	<25	9	<25	2	<25	9	<25
Aluminum	T	25	0.7	<25	0.4	<25	7	<25	0.5	<25	8	<25
Silicon		20	0.8	<20	0.3	<20	0.5	<20	0.4	<20	0.5	<20
Phosphorus		25	0.5	<25	2	<25	2	<25	1	<25	2	<25
Potassium	T	25	0.7	<25	5	<25	4	<25	4	<25	4	<25
Calcium	T	25	0.4	<25	0.3	<25	3	<25	0.5	<25	4	<25
Titanium		0.5	0.01	<0.5	0.03	<0.5	0.10	<0.5	0.02	<0.5	0.1	<0.5
Vanadium	T	0.25	0.10	<0.25	0.1	<0.25	0.05	<0.25	0.03	<0.25	0.05	<0.25
Chromium	T	0.1	0.01	<0.1	0.04	<0.1	0.03	<0.1	0.05	<0.1	0.02	<0.1
Manganese	T	0.25	0.06	<0.25	0.04	<0.25	0.4	>0.25	0.06	<0.25	0.5	>0.25
Iron	T	25	0.6	<25	0.3	<25	3	<25	0.4	<25	5	<25
Cobalt	T	0.1	0.007	<0.1	0.004	<0.1	0.08	<0.1	0.005	<0.1	0.09	<0.1
Nickel	T	0.25	0.007	<0.25	0.004	<0.25	0.005	<0.25	0.008	<0.25	0.01	<0.25
Copper	T	0.50	0.02	<0.50	0.2	<0.50	0.2	<0.50	0.3	<0.50	0.2	<0.50
Zinc	T	5	0.008	<5	0.07	<5	0.01	<5	0.07	<5	0.01	<5
Arsenic	T	0.125	0.007	<0.125	0.0009	<0.125	0.01	<0.125	0.008	<0.125	0.03	<0.125
Selenium	T	0.15	0.05	<0.15	0.01	<0.15	0.04	<0.15	0.003	<0.15	0.07	<0.15
Strontium		1.0	0.02	<1.0	0.0006	<1.0	0.08	<1.0	0.02	<1.0	0.08	<1.0
Zirconium		2.0	0.002	<2.0	0.002	<2.0	0.005	<2.0	0.003	<2.0	0.010	<2.0
Molybdenum		0.5	0.01	<0.5	0.003	<0.5	0.08	<0.5	0.006	<0.5	0.09	<0.5
Silver	T	0.1	0.0005	<0.1	0.0003	<0.1	0.006	<0.1	0.0005	<0.1	0.007	<0.1
Cadmium	T	0.1	0.02	<0.1	0.008	<0.1	0.10	<0.1	0.009	<0.1	0.1	>0.1
Tin		0.2	0.07	<0.2	0.04	<0.2	0.04	<0.2	0.03	<0.2	0.07	<0.2
Antimony	T	0.25	0.0010	<0.25	0.001	<0.25	0.02	<0.25	0.004	<0.25	0.02	<0.25
Barium	T	0.25	0.01	<0.25	0.007	<0.25	0.1	<0.25	0.009	<0.25	0.1	<0.25
Tungsten		1.0	0.007	<1.0	0.001	<1.0	0.006	<1.0	0.004	<1.0	0.008	<1.0
Mercury		0.1	0.004	<0.1	0.003	<0.1	0.007	<0.1	0.004	<0.1	0.01	<0.1
Thallium	T	0.1	0.03	<0.1	0.0007	<0.1	0.1	>0.1	0.001	<0.1	0.1	>0.1
Lead	T	0.05	0.03	<0.05	0.002	<0.05	0.08	>0.05	0.005	<0.05	0.09	>0.05
Uranium		0.1	0.007	<0.1	0.005	<0.1	0.07	<0.1	0.006	<0.1	0.08	<0.1

CB SampleID			CCB7	
CB DataFileID			H6F22082	
CB DateTime			6/26/22014:01	
PARAMETER		LOD	RESULT	< LOD >
Lithium		0	0.08	>0
Beryllium	T	0.10	0.01	<0.10
Boron		5.0	0.9	<5.0
Sodium	T	25	7	<25
Magnesium	T	25	5	<25
Aluminum	T	25	5	<25
Silicon		20	0.2	<20
Phosphorus		25	2	<25

Potassium	T	25	3	<25
Calcium	T	25	2	<25
Titanium		0.5	0.08	<0.5
Vanadium	T	0.25	0.08	<0.25
Chromium	T	0.1	0.03	<0.1
Manganese	T	0.25	0.3	>0.25
Iron	T	25	2	<25
Cobalt	T	0.1	0.06	<0.1
Nickel	T	0.25	0.005	<0.25
Copper	T	0.50	0.2	<0.50
Zinc	T	5	0.02	<5
Arsenic	T	0.125	0.008	<0.125
Selenium	T	0.15	0.05	<0.15
Strontium		1.0	0.06	<1.0
Zirconium		2.0	0.003	<2.0
Molybdenum		0.5	0.05	<0.5
Silver	T	0.1	0.003	<0.1
Cadmium	T	0.1	0.08	<0.1
Tin		0.2	0.04	<0.2
Antimony	T	0.25	0.01	<0.25
Barium	T	0.25	0.09	<0.25
Tungsten		1.0	0.002	<1.0
Mercury		0.1	0.01	<0.1
Thallium	T	0.1	0.10	<0.1
Lead	T	0.05	0.06	>0.05
Uranium		0.1	0.05	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 06|26|20 10:13

End Date: 06|26|20 16:06

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

see analytical sequence

Book #: AH6-005

Instrument No.: H6

Analytical Batch: 1H6F22

Analytical Sequence: H6F22

Method File: E6020A163

Micropipette ID: ☐ 142781004

Micropipette ID: ☑ ICP-06

Micropipette ID: ☑ 339362028

Micropipette ID: ☑ GFAA-07

Micropipette ID: ☐ 339342032

Micropipette ID: ☑ 542780515

Micropipette ID: ☐ 542761827

Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (0.1)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	66-02	Post-Spike 4	↓
ICSAB	67-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 06|26|20

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6F22001.d		1	
2		CalBlk	BLANK		1101	H6F22002.d		1	
3		CalStd	S0		1102	H6F22003.d		1	
4		CalStd	S1		1104	H6F22004.d		2	
5		CalStd	S2		1105	H6F22005.d		3	
6		CalStd	S3		1106	H6F22006.d		4	
7		CalStd	S4		1107	H6F22007.d		5	
8		ICV	ICV		1204	H6F22008.d			1
9		ICB	ICB		1102	H6F22009.d			1
10		LLCCV	MRLF2601 ✓	1/100/10 ppb	1306	H6F22010.d			1
11		LLCCV2	MRLF2602	0.4/40/4 ppb	1307	H6F22011.d			1
12		ICS-A	ICSA1		1304	H6F22012.d			1
13		ICSB	ICSAB1		1305	H6F22013.d			1
14		Sample	MRLF2603	500 ppb CAT	1207	H6F22014.d			1
15		CCV	CCV1		1206	H6F22015.d			1
16		CCB	CCB1		1102	H6F22016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF035WB		2101	H6F22017.d			1
2		LCSW	IMF035WL		2102	H6F22018.d			1
3		LCSW	IMF035WC		2103	H6F22019.d			1
4		Sample	F170-04		2104	H6F22020.d			1
5		Sample	F170-06		2105	H6F22021.d			1
6		Sample	F170-02 Ca↑		2106	H6F22022.d			1
7		Sample	F170-03 Ca↑		2107	H6F22023.d			1
8		Sample	F170-05 Na Ca↑		2108	H6F22024.d			1
9		Sample	F164-01		2109	H6F22025.d			1
10		CCV	CCV2		1206	H6F22026.d			1
11		CCB	CCB2		1102	H6F22027.d			1
12		Sample	F170-06 ✓	UNDIG	3101	H6F22028.d			1
13		Sample	F170-02I		2110	H6F22029.d			10
14		Sample	F170-03I		2111	H6F22030.d			10
15		Sample	F170-05I		2112	H6F22031.d			10
16		Sample	F155-01 Na Mg Ca↑		2201	H6F22032.d			1
17		Sample	F155-02 Na Mg Ca↑		2202	H6F22033.d			1
18		Sample	F155-01I		2203	H6F22034.d			10
19		Sample	F155-02I		2204	H6F22035.d			10
20		LLCCV	MRLF2604	1/100/10 ppb Na V↑	1306	H6F22036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		LLCCV2	MRLF2605	0.4/40/4 ppb Na V ↑	1307	H6F22037.d			1
22		CCV	CCV3		1206	H6F22038.d			1
23		CCB	CCB3		1102	H6F22039.d			1
24		Blank	IMF029WB		2205	H6F22040.d			1
25		LCSW	IMF029WL		2206	H6F22041.d			1
26		LCSW	IMF029WC		2207	H6F22042.d			1
27		Sample	F154-06 Ca ↑		2208	H6F22043.d			1
28		Sample	F154-01 Na Ca ↑		2209	H6F22044.d			1
29		Sample	F154-02M Na Mg Ca ↑		2210	H6F22045.d			1
30		Sample	F154-02S		2211	H6F22046.d			1
31		Sample	F154-02A		2212	H6F22047.d			1
32		Sample	F154-02		2301	H6F22048.d			1
33		Sample	F154-02J		2302	H6F22049.d			5
34		CCV	CCV4		1206	H6F22050.d			1
35		CCB	CCB4		1102	H6F22051.d			1
36		Sample	F154-05 Na Ca ↑		2303	H6F22052.d			1
37		Sample	F162-01 Na Mg Ca ↑		2304	H6F22053.d			1
38		Sample	F162-02 Na Mg Ca ↑		2305	H6F22054.d			1
39		Sample	F162-04 Ca ↑		2306	H6F22055.d			1
40		Sample	F162-05 Na Mg Ca ↑		2307	H6F22056.d			1
41		Sample	F162-07 Na Mg Ca ↑		2308	H6F22057.d			1
42		Sample	F162-08 Mg Ca ↑		2309	H6F22058.d			1
43		Sample	F162-10 Ca ↑		2310	H6F22059.d			1
44		Sample	F162-11 Na Ca ↑		2311	H6F22060.d			1
45		CCV	CCV5		1206	H6F22061.d			1
46		CCB	CCB5		1102	H6F22062.d			1
47		Sample	F154-01I		2312	H6F22063.d			10
48		Sample	F154-02M		2401	H6F22064.d			10
49		Sample	F154-02S		2402	H6F22065.d			10
50		Sample	F154-02A		2403	H6F22066.d			10
51		Sample	F154-02I		2404	H6F22067.d			10
52		Sample	F154-02J		2405	H6F22068.d			50
53		Sample	F154-05I		2406	H6F22069.d			10
54		Sample	F154-06I		3101	H6F22070.d			10
55		CCV	CCV6		1206	H6F22071.d			1
56		CCB	CCB6		1102	H6F22072.d			1
57		Sample	F162-01I		2407	H6F22073.d			10
58		Sample	F162-02I		2408	H6F22074.d			10
59		Sample	F162-04I		2409	H6F22075.d			10
60		Sample	F162-05I		2410	H6F22076.d			10
61		Sample	F162-07I		2411	H6F22077.d			10
62		Sample	F162-08I		2412	H6F22078.d			10
63		Sample	F162-10I		2501	H6F22079.d			10
64		Sample	F162-11I		2502	H6F22080.d			10
65		CCV	CCV7		1206	H6F22081.d			1
66		CCB	CCB7		1102	H6F22082.d			1
67		LLCCV	MRLF2606 ✓	1/100/10 ppb	1306	H6F22083.d			1
68		LLCCV2	MRLF2607	0.4/40/4 ppb	1307	H6F22084.d			1
69		Blank	IMF013SB		3201	H6F22085.d			1
70		LCSS	IMF013SL		3202	H6F22086.d			1
71		LCSS	IMF013SC		3203	H6F22087.d			1
72		Sample	F106-24		3204	H6F22088.d			1

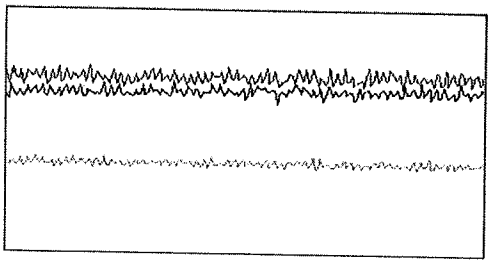
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	F107-10		3205	H6F22089.d			1
74		CCV	CCV8		1206	H6F22090.d			1
75		CCB	CCB8		1102	H6F22091.d			1
76		Sample	F176-02M		2503	H6F22092.d			5
77		Sample	F176-02S		2504	H6F22093.d			5
78		Sample	F176-02A		2505	H6F22094.d			5
79		Sample	F176-02G		2506	H6F22095.d			5
80		Sample	F176-02J		2507	H6F22096.d			25
81		Sample	F176-04G		2508	H6F22097.d			5
82		Sample	F176-06G		2509	H6F22098.d			5
83		CCV	CCV9		1206	H6F22099.d			1
84		CCB	CCB9		1102	H6F22100.d			1
85		Sample	F176-08G		2510	H6F22101.d			5
86		Sample	F176-09G		2511	H6F22102.d			5
87		Sample	F176-10G		2512	H6F22103.d			5
88		Sample	F176-11G		3101	H6F22104.d			5
89		Sample	F176-12G		3102	H6F22105.d			5
90		Sample	F176-13G		3103	H6F22106.d			5
91		ICS-A	ICSA2		1304	H6F22107.d			1
92		ICSB	ICSAB2		1305	H6F22108.d			1
93		CCV	CCV10		1206	H6F22109.d			1
94		CCB	CCB10		1102	H6F22110.d			1
95		Sample	F176-02M		3104	H6F22111.d			1
96		Sample	F176-02S		3105	H6F22112.d			1
97		Sample	F176-02A		3106	H6F22113.d			1
98		Sample	F176-02		3107	H6F22114.d			1
99		Sample	F176-02J		3108	H6F22115.d			5
100		Sample	F176-04		3109	H6F22116.d			1
101		Sample	F176-06		3110	H6F22117.d			1
102		CCV	CCV11		1206	H6F22118.d			1
103		CCB	CCB11		1102	H6F22119.d			1
104		Sample	F176-08		3111	H6F22120.d			1
105		Sample	F176-09		3112	H6F22121.d			1
106		Sample	F176-10		3201	H6F22122.d			1
107		Sample	F176-11		3202	H6F22123.d			1
108		Sample	F176-12		3203	H6F22124.d			1
109		Sample	F176-13		3204	H6F22125.d			1
110		ICS-A	ICSA3		1304	H6F22126.d			1
111		ICSB	ICSAB3		1305	H6F22127.d			1
112		CCV	CCV12		1206	H6F22128.d			1
113		CCB	CCB12		1102	H6F22129.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-06-26 09:06:44
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



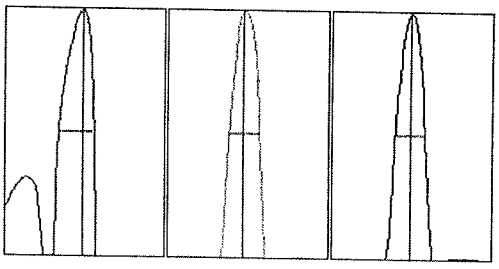
Mass	Range	Count	RSD%	Background
7	10000	7247	2.967	0.150
89	50000	18479	3.240	0.900
205	20000	13284	2.557	3.050

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.319 %
Doubly Charged	70 / 140 1.454 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	7126.74	7.00	0.65	0.77
89	18082.03	88.95	0.57	0.75
205	12905.61	205.00	0.56	0.75

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.08 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.2 V	Deflect	13.0 V
Extract 2	-175.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.03 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9997
Mass Offset	124	Axis Offset	-0.07

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.08	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.16E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	31.6	°C
Nebulizer Gas(DP)	6.16E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.59E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.99E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.21E+2	Pa
Analyzer Press	6.52E-5	Pa
IG HV	178	V
IG Emission	4.98	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.1	%
TMP Current	2.78	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.7	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.8	V
+U Voltage	8.8	V

Name	Value	Unit
-U Voltage	-14.5	V
V Voltage	42.1	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.8	V
-120V	-133.8	V
-720V	-738.2	V
Prefilter Bias	-5.01	V
Pickup Heater I	0.08	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2405	V
Pulse HV	1557	V
EM Gate	-36.2	V
Pulse Gate	341.8	V
EM Entrance	0.2	V
EM HV Gain	-1051.3	V
Inner Pole	-300.3	V
Outer Pole	20.1	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.6	V
Forward Power	1549	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.43	A
Drain I 2	10.96	A
Drain I 3	10.92	A
Drain I 4	10.21	A
Temp Sensor	2.8	V
Driver I	5.60	A

Name	Value	Unit
Igniter	0.1	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.61E-1	kPa
ORS AMFC Temp	31.4	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-175.3	V
Omega Bias	-90.1	V
Omega Lens	7.1	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.0	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	30.6	°C
Internal Temp	36.2	°C
+24V	23.6	V
Water Temp	18.8	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

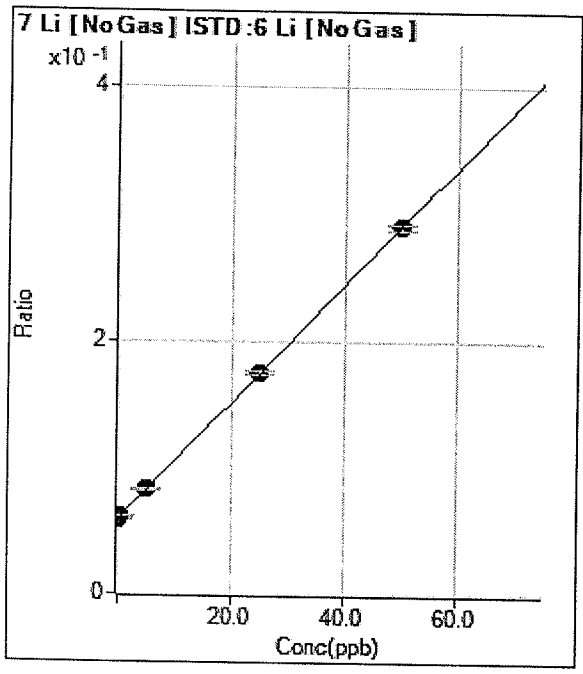
Performance Report History

Sensitivity

Calibration for H6F22129.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b\
Analysis File:	IH6F22.batch.bin
DA Date-Time:	2020-06-26 16:08:30
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

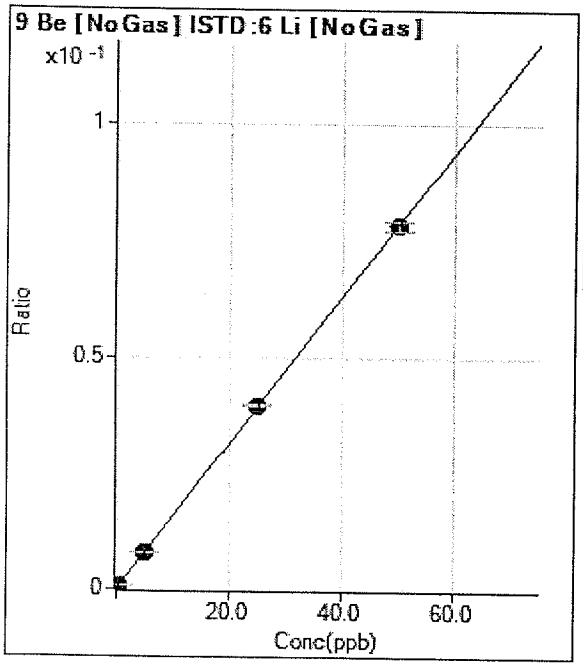
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6F22003.d	S0	2020-06-26 10:13:52
2	H6F22004.d	S1	2020-06-26 10:16:43
3	H6F22005.d	S2	2020-06-26 10:19:33
4	H6F22006.d	S3	2020-06-26 10:22:33
5	H6F22007.d	S4	2020-06-26 10:25:23



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107277.57	0.0585	P	1.9
2	☐	0.500	0.501	113456.89	0.0608	P	0.7
3	☐	5.000	5.122	152974.61	0.0822	P	1.0
4	☐	25.000	25.249	316906.47	0.1754	P	1.7
5	☐	50.000	49.863	522113.21	0.2893	P	1.9

y = 0.0046 * x + 0.0585
R = 1.0000
DL = 0.7082
BEC = 12.64

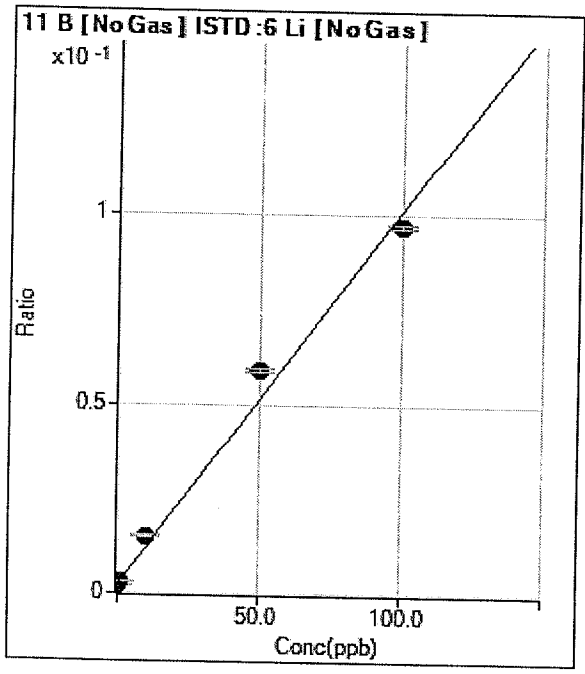
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37.78	0.0000	P	13.4
2	☐	0.500	0.488	1466.74	0.0008	P	2.0
3	☐	5.000	5.037	14749.95	0.0079	P	2.0
4	☐	25.000	25.238	71627.01	0.0396	P	1.0
5	☐	50.000	49.877	141322.42	0.0783	P	2.8

y = 0.0016 * x + 2.0598E-005
R = 1.0000
DL = 0.005266
BEC = 0.01312

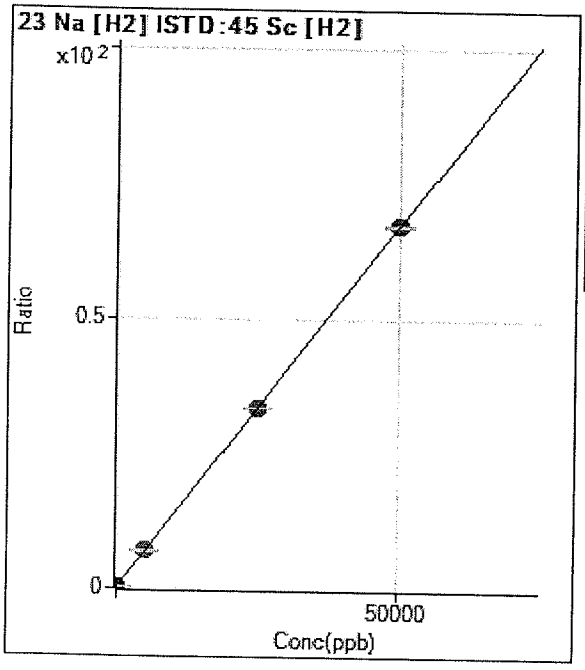
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3679.37	0.0020	P	2.6
2	☐	0.500	0.893	5391.04	0.0029	P	3.5
3	☐	10.000	13.189	28001.18	0.0150	P	1.7
4	☐	50.000	57.636	106612.07	0.0590	P	1.0
5	☐	100.000	95.861	174690.98	0.0968	P	1.2

y = 9.8882E-004 * x + 0.0020
R = 0.9951
DL = 0.1588
BEC = 2.029

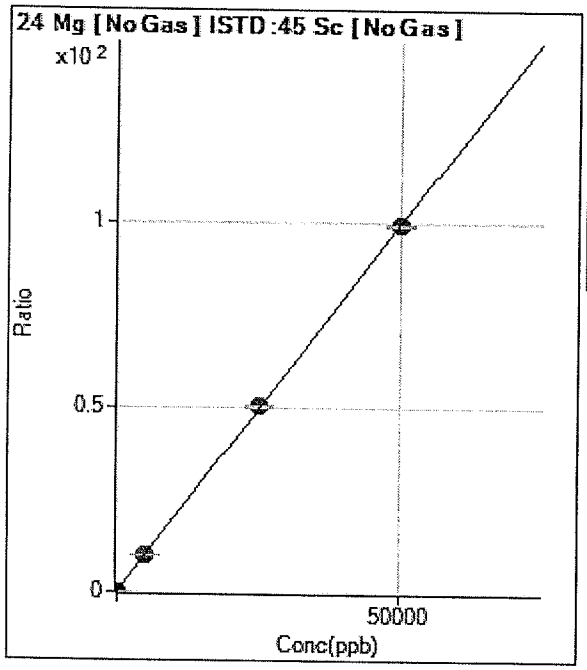
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400057.54	0.1247	P	1.0
2	☐	50.000	53.907	639662.90	0.1971	P	1.2
3	☐	5000.000	5102.978	22472592.67	6.9763	A	1.2
4	☐	25000.000	24875.339	108905344.00	33.5238	A	0.9
5	☐	50000.000	50052.029	215298154.67	67.3276	A	0.7

y = 0.0013 * x + 0.1247
R = 1.0000
DL = 2.659
BEC = 92.9

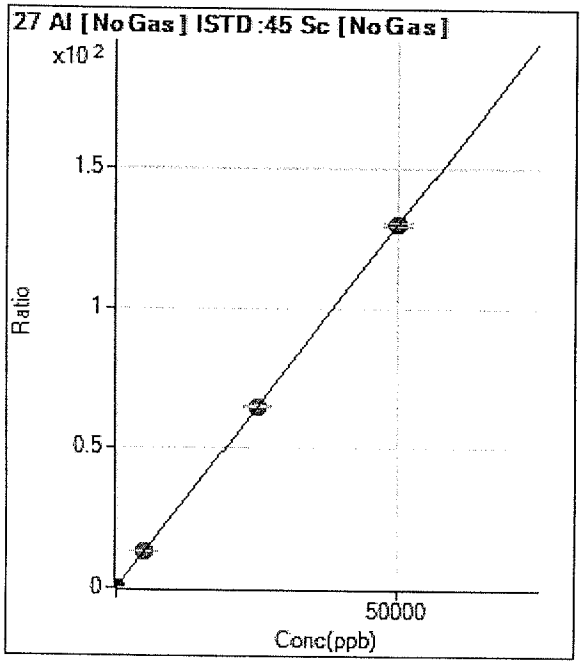
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27330.74	0.0052	P	2.9
2	☐	50.000	53.103	596830.38	0.1109	P	1.5
3	☐	5000.000	5116.253	54577372.00	10.1949	A	0.5
4	☐	25000.000	25290.926	266286757.33	50.3756	A	0.8
5	☐	50000.000	49842.908	525115914.67	99.2742	A	0.5

y = 0.0020 * x + 0.0052
R = 1.0000
DL = 0.2284
BEC = 2.603

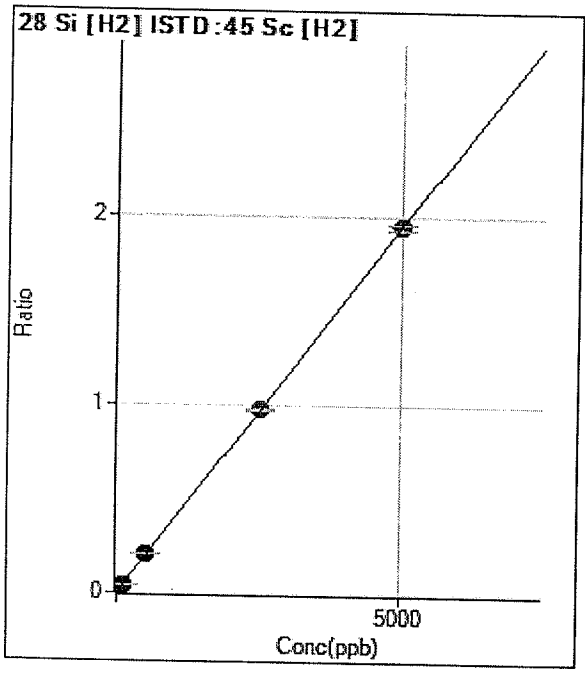
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9022.96	0.0017	P	7.7
2	☐	50.000	52.621	744479.13	0.1384	P	1.7
3	☐	5000.000	5051.799	70249423.96	13.1238	A	1.6
4	☐	25000.000	25004.448	343325328.22	64.9510	A	1.5
5	☐	50000.000	49992.594	686882496.43	129.8580	A	1.0

y = 0.0026 * x + 0.0017
R = 1.0000
DL = 0.152
BEC = 0.6589

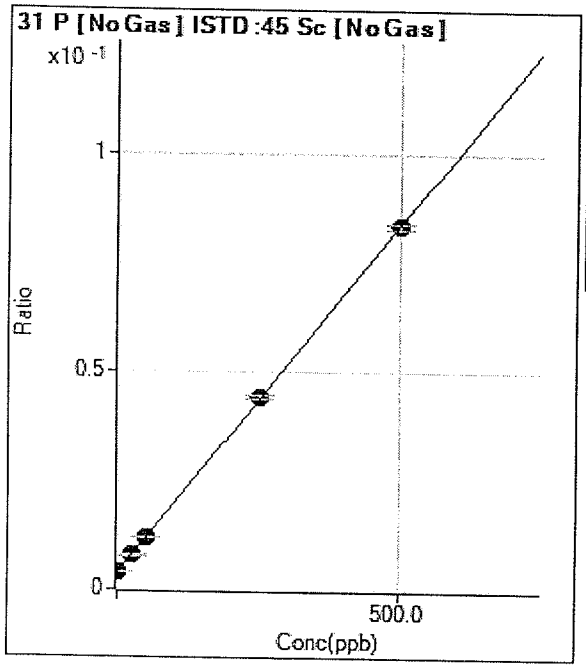
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3723.83	0.0012	P	1.3
2	☐	100.000	100.363	130494.54	0.0402	P	1.5
3	☐	500.000	521.164	656946.84	0.2040	P	1.9
4	☐	2500.000	2502.342	3166854.83	0.9748	A	0.7
5	☐	5000.000	4996.705	6220790.00	1.9454	A	1.6

y = 3.8911E-004 * x + 0.0012
R = 1.0000
DL = 0.1168
BEC = 2.983

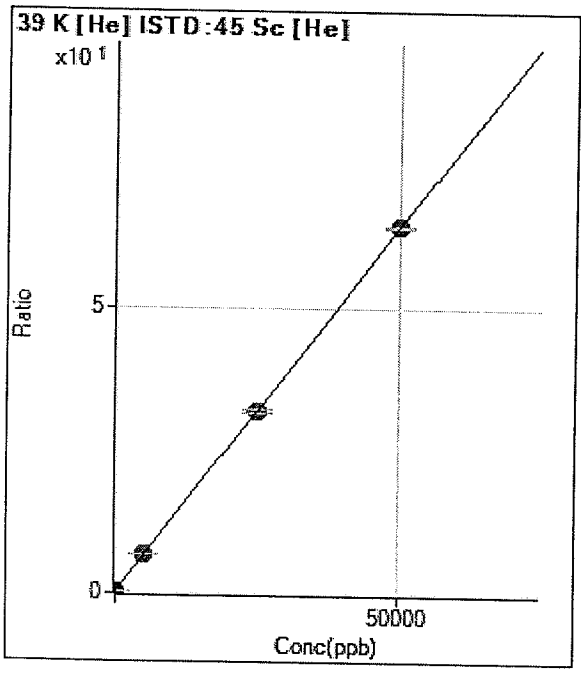
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21333.03	0.0040	P	1.3
2	☐	25.000	23.418	41848.23	0.0078	P	2.3
3	☐	50.000	50.624	64868.35	0.0121	P	0.6
4	☐	250.000	253.068	234646.94	0.0444	P	1.7
5	☐	500.000	498.483	441749.50	0.0835	P	1.7

y = 1.5942E-004 * x + 0.0040
R = 1.0000
DL = 0.9895
BEC = 25.38

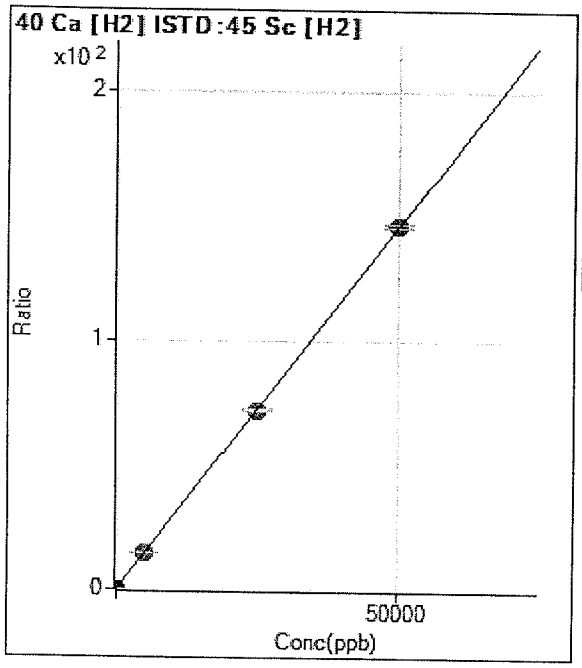
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	101182.78	0.1733	P	2.0
2	☐	50.000	49.715	143690.33	0.2367	P	2.0
3	☐	5000.000	5093.764	3981751.50	6.6671	A	0.1
4	☐	25000.000	24871.960	19119142.67	31.8814	A	1.2
5	☐	50000.000	50054.644	37651220.00	63.9857	A	0.5

y = 0.0013 * x + 0.1733
R = 1.0000
DL = 7.983
BEC = 135.9

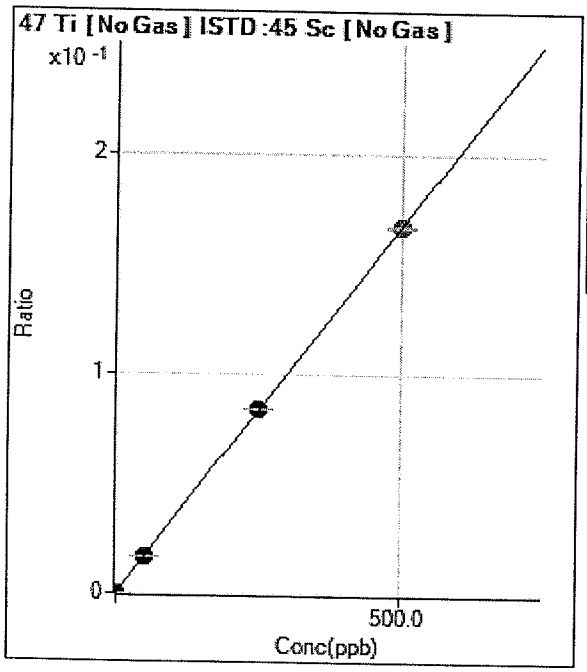
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	134898.41	0.0421	P	0.7
2	☐	50.000	61.007	714788.73	0.2203	P	1.1
3	☐	5000.000	5064.435	47787988.00	14.8355	A	1.5
4	☐	25000.000	24763.234	235123573.33	72.3768	A	0.6
5	☐	50000.000	50111.929	468210709.33	146.4218	A	1.1

y = 0.0029 * x + 0.0421
R = 1.0000
DL = 0.2895
BEC = 14.4

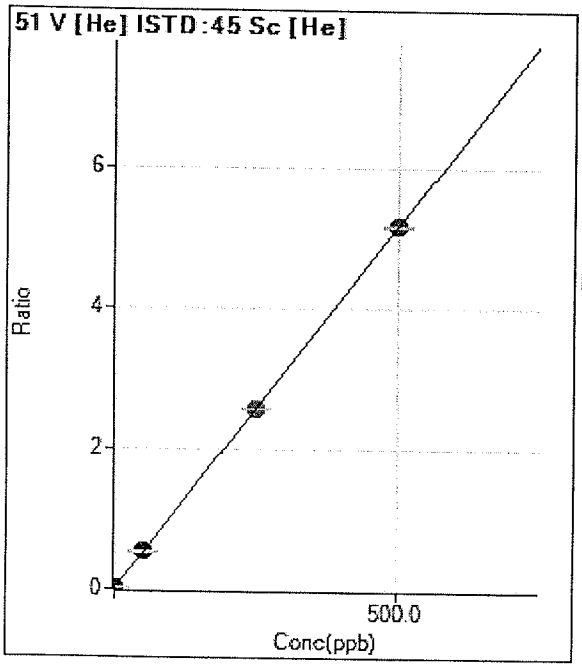
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	476.68	0.0001	P	4.3
2	☐	0.500	0.446	1288.06	0.0002	P	4.6
3	☐	50.000	49.667	89269.93	0.0167	P	0.3
4	☐	250.000	250.967	443433.34	0.0839	P	0.6
5	☐	500.000	499.550	882799.27	0.1669	M	0.7

y = 3.3391E-004 * x + 9.0394E-005
R = 1.0000
DL = 0.03462
BEC = 0.2707

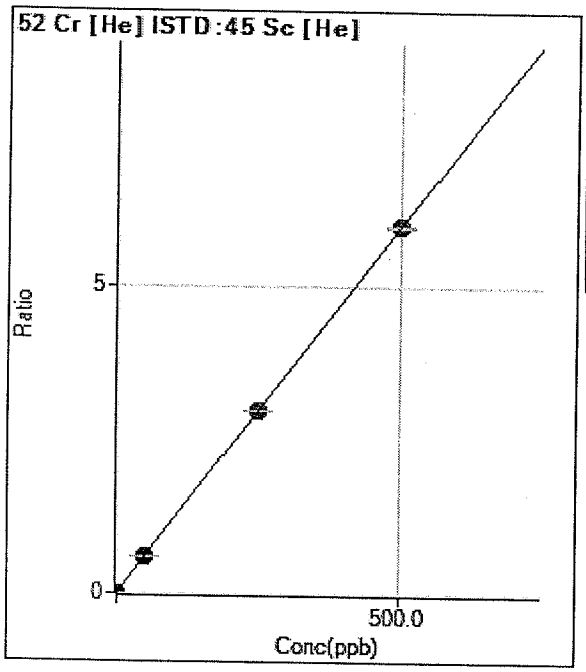
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6548.90	0.0112	P	1.0
2	☐	0.500	0.320	8816.16	0.0145	P	1.7
3	☐	50.000	50.997	320829.67	0.5372	P	1.8
4	☐	250.000	248.935	1546369.29	2.5787	A	0.1
5	☐	500.000	500.433	3043591.42	5.1726	A	0.7

y = 0.0103 * x + 0.0112
R = 1.0000
DL = 0.03223
BEC = 1.087

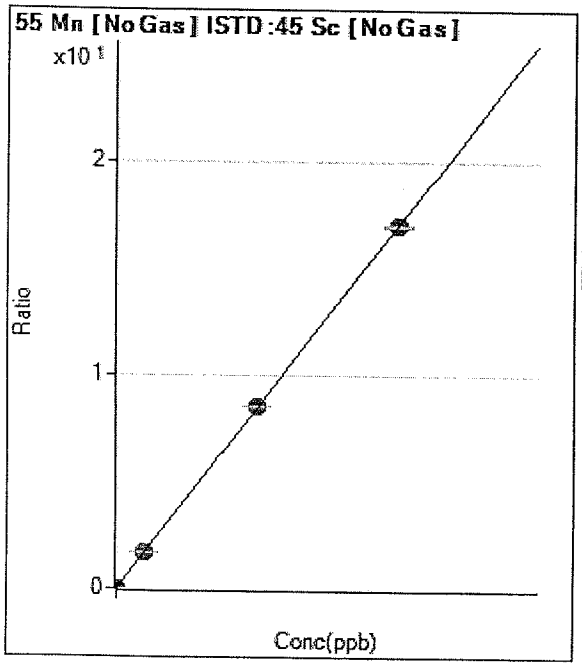
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1209.39	0.0021	P	3.1
2	☐	0.500	0.512	4964.90	0.0082	P	2.1
3	☐	50.000	51.387	367079.05	0.6146	P	0.6
4	☐	250.000	248.852	1780108.04	2.9685	A	0.7
5	☐	500.000	500.435	3511378.67	5.9675	A	0.8

y = 0.0119 * x + 0.0021
R = 1.0000
DL = 0.01616
BEC = 0.1737

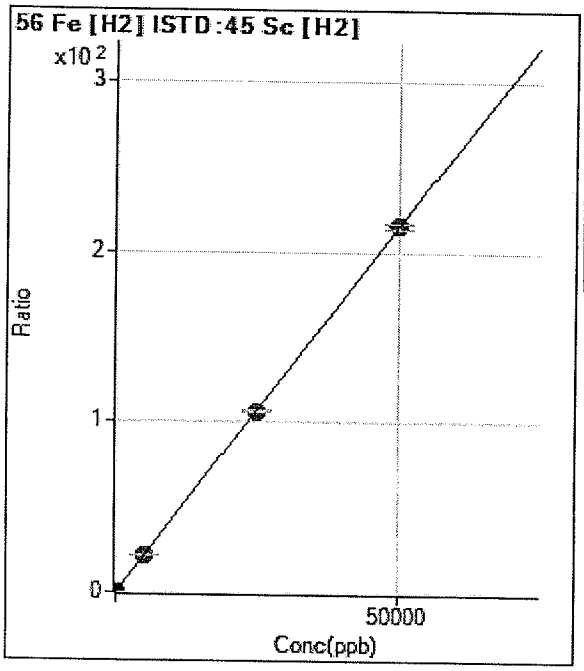
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9121.04	0.0017	P	2.3
2	☐	0.500	0.503	24661.53	0.0046	P	1.3
3	☐	300.000	304.827	9268185.67	1.7314	A	0.9
4	☐	1500.000	1507.791	45231848.00	8.5571	A	0.4
5	☐	3000.000	2995.622	89917986.67	16.9992	A	0.3

y = 0.0057 * x + 0.0017
R = 1.0000
DL = 0.02085
BEC = 0.3049

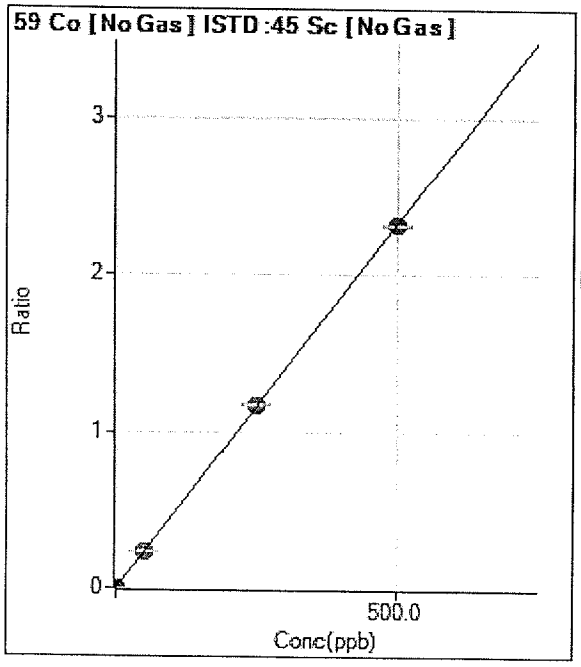
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9666.09	0.0030	P	3.2
2	☐	50.000	53.930	762463.85	0.2349	P	0.8
3	☐	5000.000	5117.117	70898853.33	22.0099	A	1.4
4	☐	25000.000	24789.662	346349685.33	106.6146	A	0.6
5	☐	50000.000	50093.453	688876117.33	215.4372	A	1.6

y = 0.0043 * x + 0.0030
R = 1.0000
DL = 0.06675
BEC = 0.7008

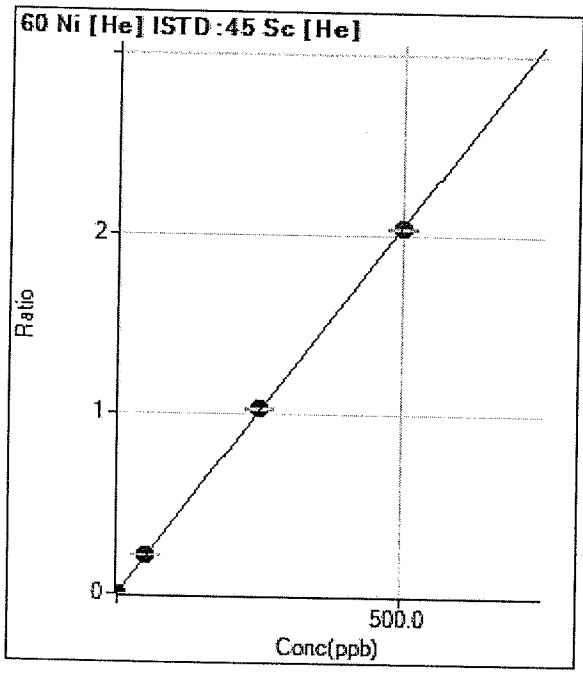
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	253.33	0.0000	P	11.5
2	☐	0.500	0.521	13263.78	0.0025	P	2.0
3	☐	50.000	51.155	1271541.08	0.2375	A	0.8
4	☐	250.000	252.367	6193089.50	1.1716	A	0.8
5	☐	500.000	498.701	12246239.67	2.3152	A	0.7

y = 0.0046 * x + 4.8025E-005
R = 1.0000
DL = 0.003584
BEC = 0.01034

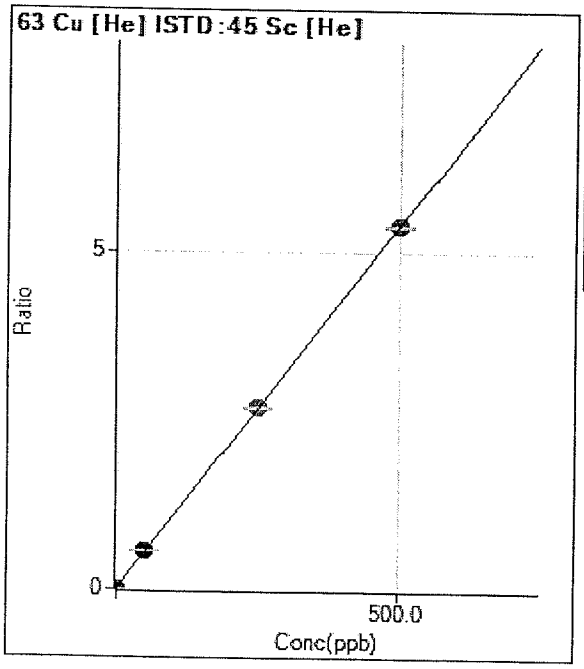
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	127.33	0.0002	P	12.9
2	☐	0.500	0.554	1509.42	0.0025	P	5.7
3	☐	50.000	52.342	128073.24	0.2144	P	0.5
4	☐	250.000	253.030	621163.21	1.0358	P	0.8
5	☐	500.000	498.251	1200083.54	2.0395	A	0.3

y = 0.0041 * x + 2.1811E-004
R = 1.0000
DL = 0.02061
BEC = 0.05329

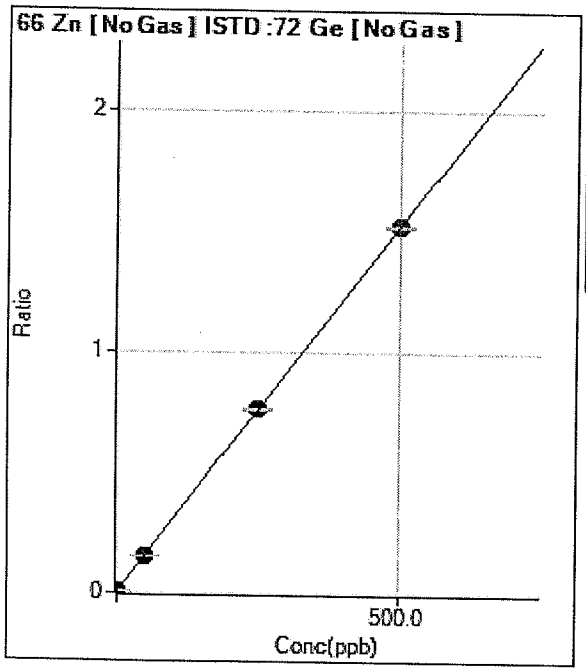
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2564.91	0.0044	P	1.1
2	☐	0.500	0.463	5698.53	0.0094	P	1.5
3	☐	50.000	53.055	344308.34	0.5765	P	0.2
4	☐	250.000	250.314	1621313.09	2.7037	A	0.5
5	☐	500.000	499.537	3172209.42	5.3912	A	0.7

y = 0.0108 * x + 0.0044
R = 1.0000
DL = 0.01313
BEC = 0.4074

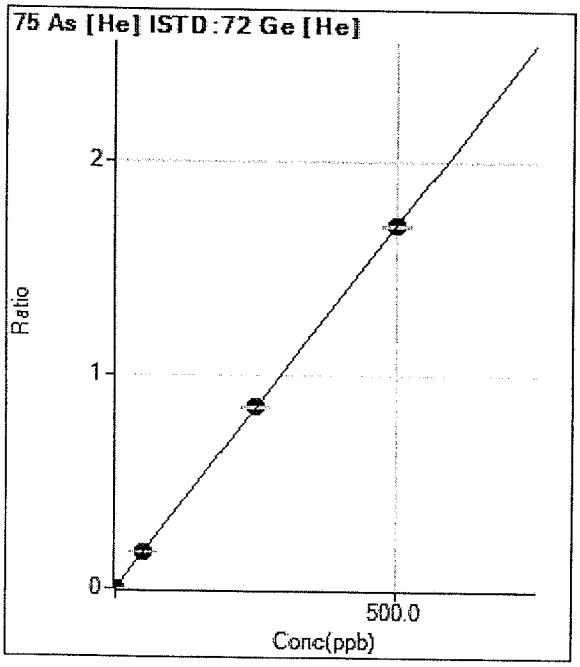
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2090.83	0.0016	P	2.3
2	☐	1.000	1.571	8820.86	0.0063	P	1.4
3	☐	50.000	49.527	209650.23	0.1520	P	0.5
4	☐	250.000	250.186	1025697.56	0.7614	P	0.9
5	☐	500.000	499.953	2034346.00	1.5199	A	0.9

y = 0.0030 * x + 0.0016
R = 1.0000
DL = 0.03577
BEC = 0.5181

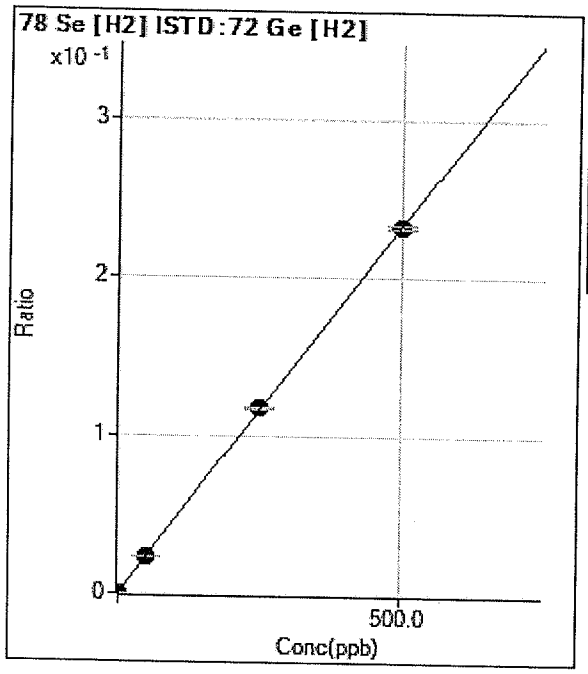
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	315.00	0.0009	P	6.9
2	☐	0.500	0.458	928.70	0.0024	P	6.0
3	☐	50.000	50.252	65680.76	0.1719	P	1.0
4	☐	250.000	250.385	321727.92	0.8531	P	0.8
5	☐	500.000	499.782	634083.98	1.7019	P	0.2

y = 0.0034 * x + 8.5435E-004
R = 1.0000
DL = 0.05231
BEC = 0.251

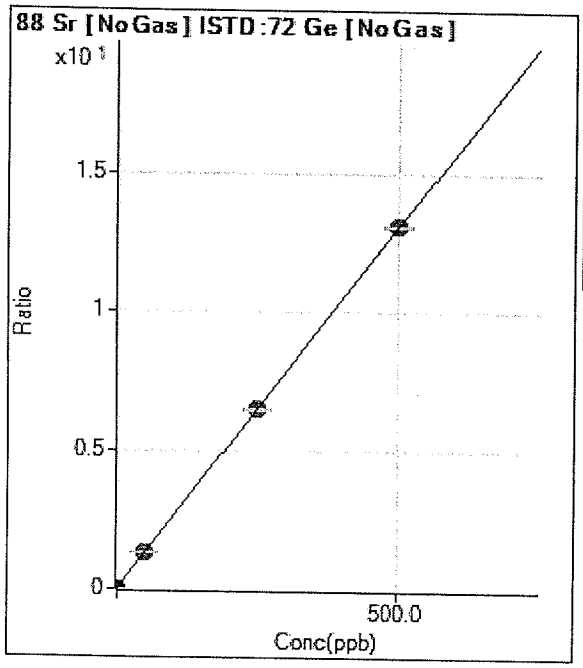
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19.00	0.0000	P	18.4
2	☐	0.500	0.522	246.33	0.0003	P	5.5
3	☐	50.000	51.091	22145.49	0.0238	P	0.5
4	☐	250.000	252.756	108207.87	0.1177	P	0.8
5	☐	500.000	498.513	213494.19	0.2321	P	1.2

y = 4.6553E-004 * x + 2.0993E-005
R = 1.0000
DL = 0.02489
BEC = 0.04509

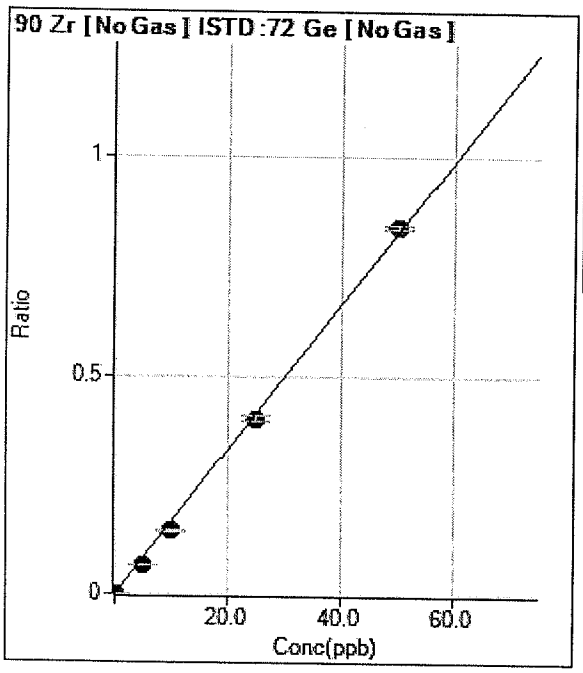
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0005	P	15.0
2	☐	0.500	0.493	18646.33	0.0134	P	2.1
3	☐	50.000	49.352	1778229.51	1.2891	A	0.9
4	☐	250.000	248.266	8733576.87	6.4829	A	0.7
5	☐	500.000	500.932	17507492.08	13.0801	A	0.8

y = 0.0261 * x + 5.3948E-004
R = 1.0000
DL = 0.009283
BEC = 0.02066

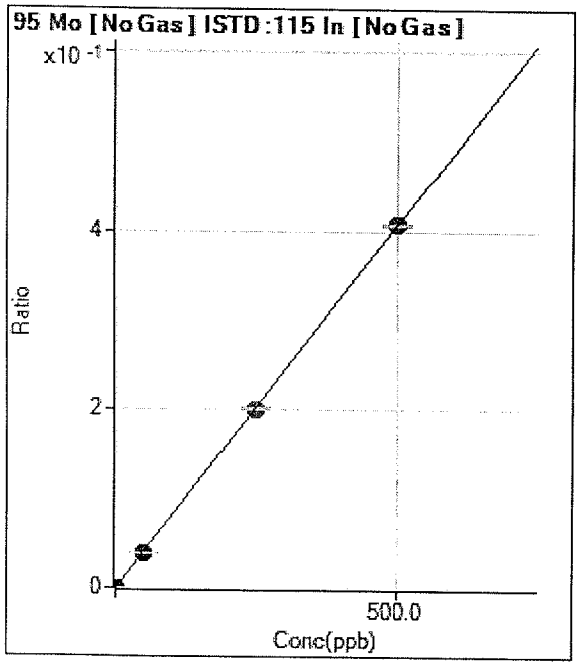
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.67	0.0001	P	11.0
2	☐	5.000	4.131	95227.52	0.0685	P	0.8
3	☐	10.000	8.773	200401.90	0.1453	P	1.5
4	☐	25.000	24.304	541877.09	0.4023	P	2.5
5	☐	50.000	50.680	1122528.42	0.8387	A	1.1

y = 0.0165 * x + 1.3288E-004
R = 0.9996
DL = 0.002656
BEC = 0.008031

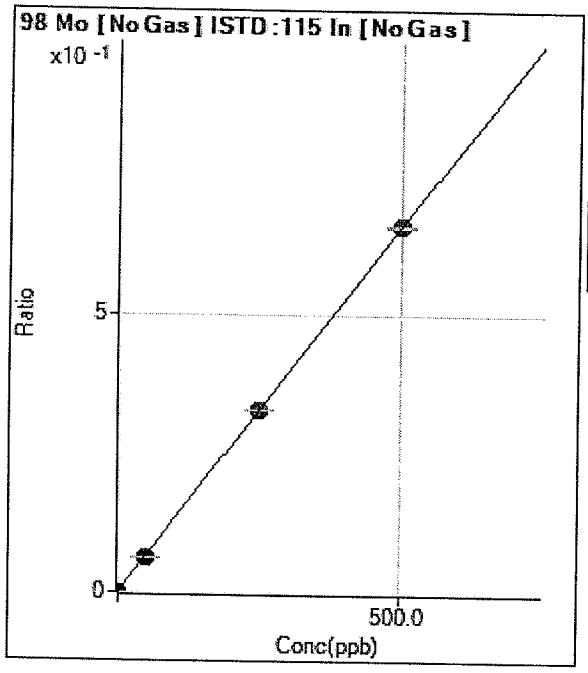
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54.44	0.0000	P	22.5
2	☐	0.500	0.514	3717.19	0.0004	P	3.3
3	☐	50.000	47.934	340781.02	0.0390	P	2.1
4	☐	250.000	248.063	1699527.09	0.2016	A	1.5
5	☐	500.000	501.175	3403505.07	0.4072	A	0.7

y = 8.1258E-004 * x + 6.2156E-006
R = 1.0000
DL = 0.005172
BEC = 0.007649

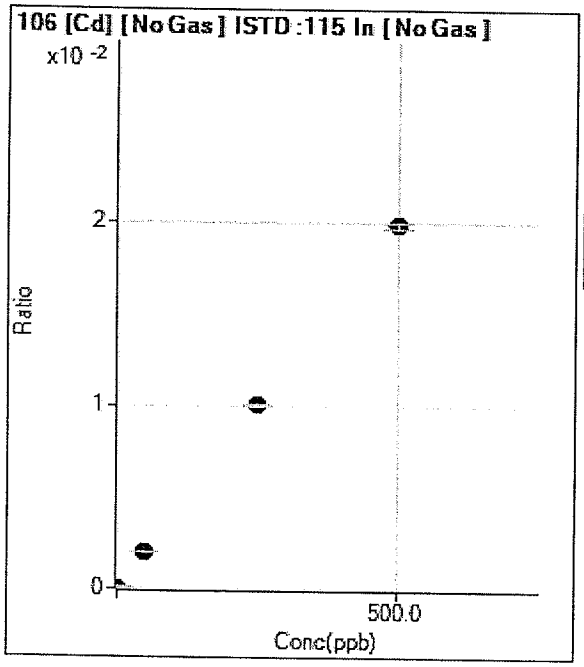
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	154.45	0.0000	P	16.7
2	☐	0.500	0.489	5797.94	0.0007	P	0.6
3	☐	50.000	47.672	548864.80	0.0627	P	2.8
4	☐	250.000	249.158	2764470.79	0.3279	A	0.3
5	☐	500.000	500.654	5505800.89	0.6588	A	0.5

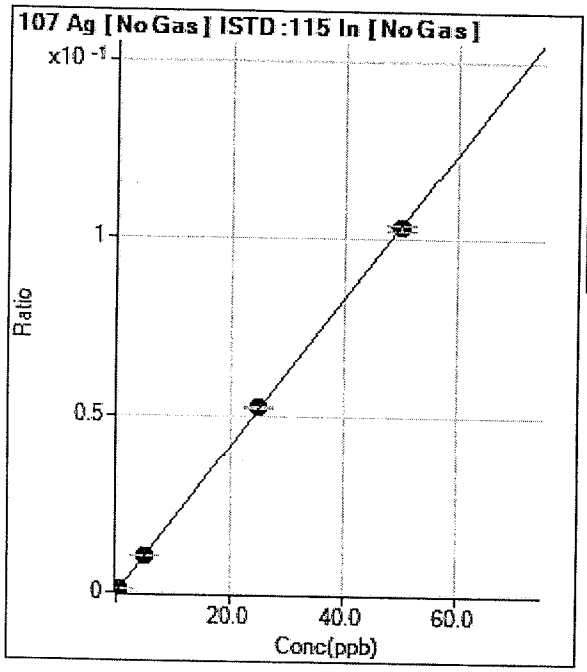
y = 0.0013 * x + 1.7659E-005
R = 1.0000
DL = 0.006737
BEC = 0.01342

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		6.67	0.0000	P	60.8
2	☐	0.500		455.01	0.0001	P	2.9
3	☐	50.000		17412.09	0.0020	P	1.6
4	☐	250.000		85086.33	0.0101	P	0.9
5	☐	500.000		165907.87	0.0199	P	1.6

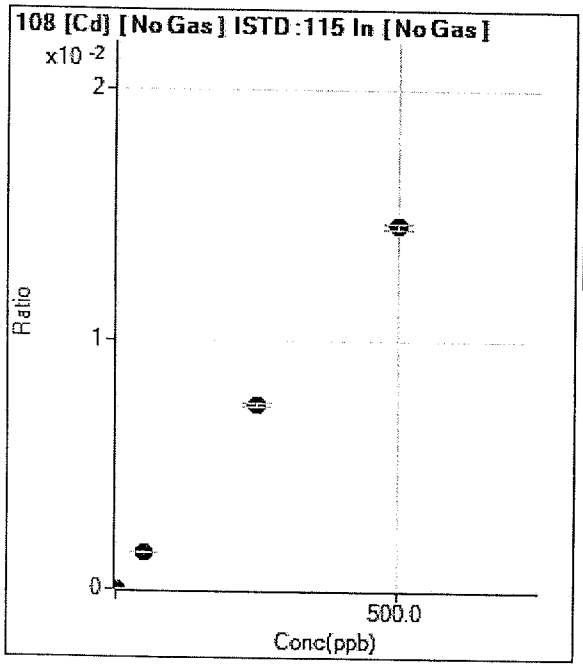
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0000	P	27.5
2	☐	0.500	0.520	9551.23	0.0011	P	1.8
3	☐	5.000	5.026	91123.22	0.0104	P	0.5
4	☐	25.000	25.287	441431.89	0.0524	P	1.3
5	☐	50.000	49.853	862475.51	0.1032	P	1.8

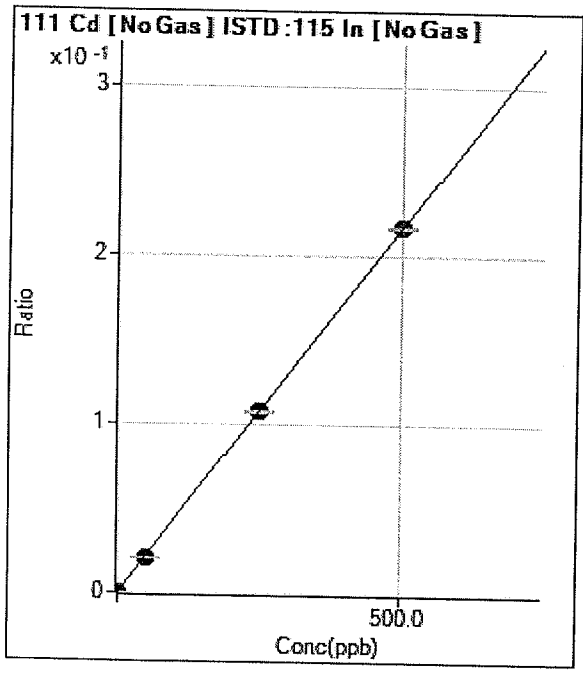
y = 0.0021 * x + 1.1798E-005
R = 1.0000
DL = 0.004705
BEC = 0.005699

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		7.00	0.0000	P	29.2
2	☐	0.500		226.33	0.0000	P	14.6
3	☐	50.000		12806.19	0.0015	P	1.1
4	☐	250.000		62574.71	0.0074	P	1.8
5	☐	500.000		121916.23	0.0146	P	1.4

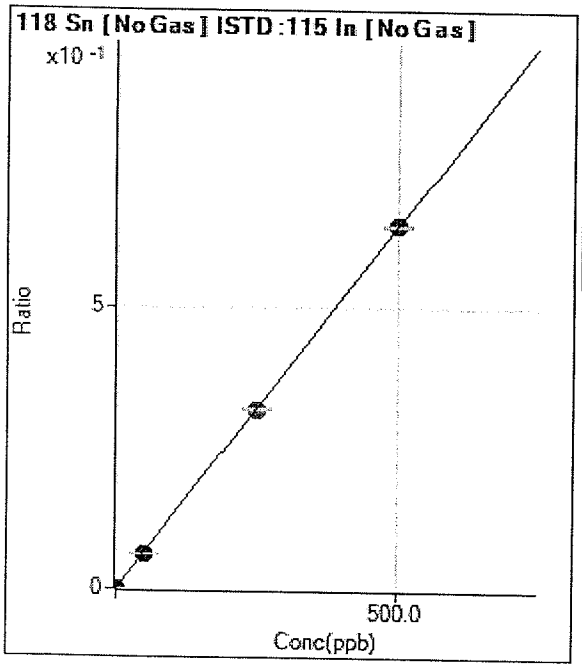
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.92	0.0000	P	20.7
2	☐	0.500	0.529	2047.91	0.0002	P	2.7
3	☐	50.000	48.667	184086.19	0.0210	P	0.4
4	☐	250.000	248.512	905752.50	0.1074	P	1.5
5	☐	500.000	500.877	1809577.17	0.2165	A	0.6

y = 4.3228E-004 * x + 4.6731E-006
R = 1.0000
DL = 0.0067
BEC = 0.01081

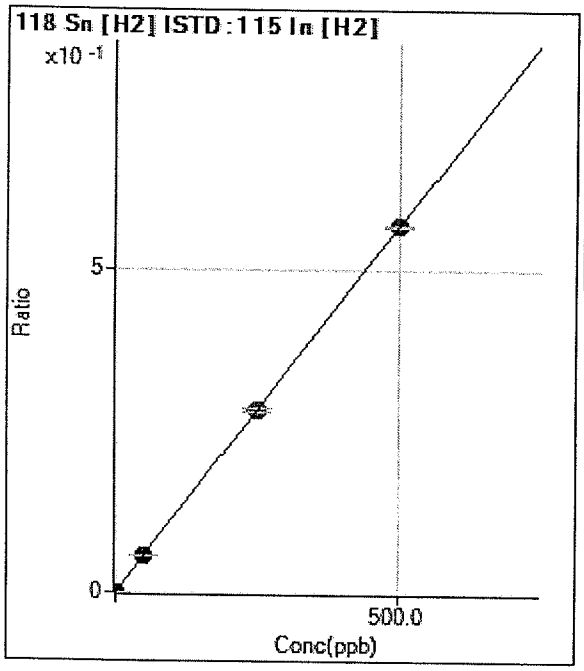
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1496.75	0.0002	P	4.2
2	☐	0.500	0.434	6409.35	0.0007	P	6.3
3	☐	50.000	47.633	539529.87	0.0617	P	0.6
4	☐	250.000	248.060	2701878.64	0.3205	A	0.7
5	☐	500.000	501.207	5409921.03	0.6473	A	0.3

y = 0.0013 * x + 1.7105E-004
R = 1.0000
DL = 0.01673
BEC = 0.1325

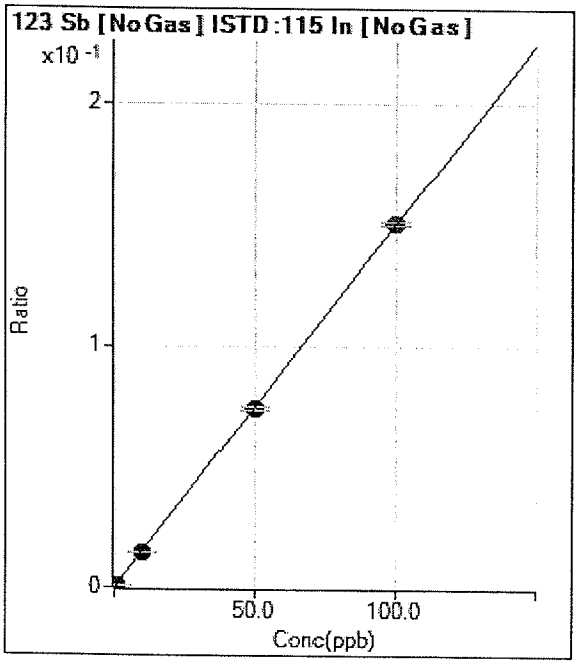
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1144.50	0.0002	P	5.3
2	☐	0.500	0.452	4809.77	0.0007	P	2.7
3	☐	50.000	50.071	402916.03	0.0571	P	0.5
4	☐	250.000	249.394	1955041.31	0.2839	A	1.3
5	☐	500.000	500.296	3888788.18	0.5694	A	0.6

y = 0.0011 * x + 1.6053E-004
R = 1.0000
DL = 0.0226
BEC = 0.1411

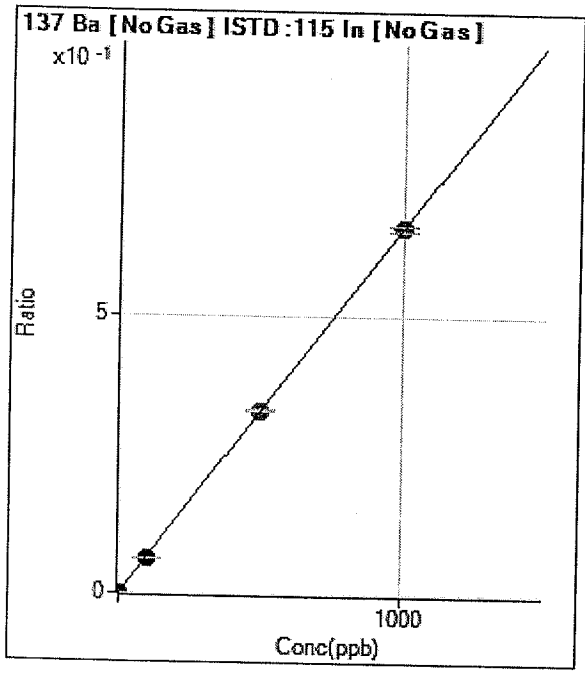
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	125.56	0.0000	P	28.2
2	☐	0.500	0.480	6439.37	0.0007	P	3.5
3	☐	10.000	9.649	126759.06	0.0145	P	0.7
4	☐	50.000	49.492	626080.69	0.0743	P	1.3
5	☐	100.000	100.289	1257398.32	0.1505	A	1.1

y = 0.0015 * x + 1.4346E-005
R = 1.0000
DL = 0.008084
BEC = 0.009563

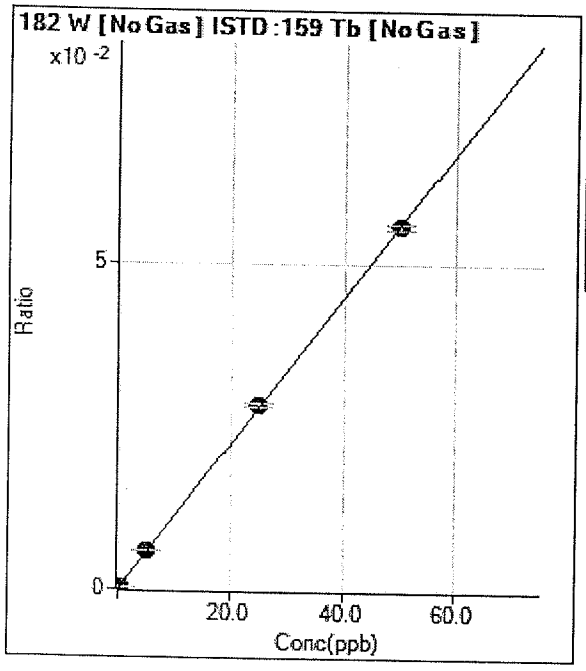
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0000	P	11.9
2	☐	0.500	0.549	3291.53	0.0004	P	2.5
3	☐	100.000	95.435	551137.46	0.0630	P	0.6
4	☐	500.000	500.377	2784517.04	0.3303	A	0.8
5	☐	1000.000	1000.268	5517116.03	0.6602	A	1.3

y = 6.6000E-004 * x + 1.2956E-005
R = 1.0000
DL = 0.007015
BEC = 0.01963

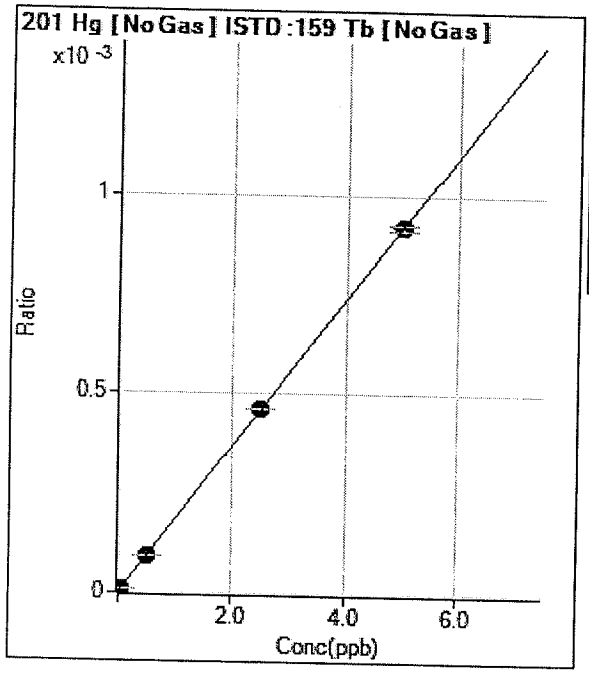
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0000	P	19.8
2	☐	0.500	0.256	3507.16	0.0003	P	5.9
3	☐	5.000	5.255	69426.84	0.0059	P	0.8
4	☐	25.000	25.328	331320.30	0.0284	P	1.3
5	☐	50.000	49.813	650361.67	0.0559	P	1.6

y = 0.0011 * x + 1.1033E-005
R = 0.9999
DL = 0.005828
BEC = 0.009828

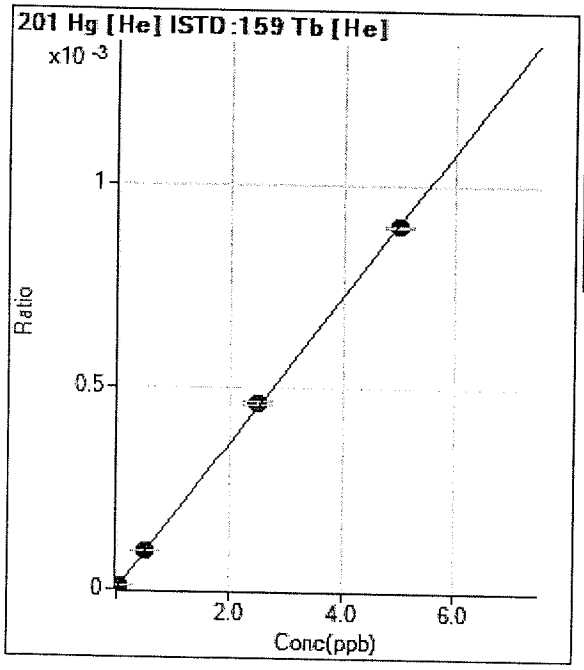
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15.17	0.0000	P	22.3
2	☐	0.050	0.049	121.50	0.0000	P	4.7
3	☐	0.500	0.500	1095.05	0.0001	P	1.2
4	☐	2.500	2.507	5382.32	0.0005	P	0.5
5	☐	5.000	4.996	10693.39	0.0009	P	1.5

y = 1.8380E-004 * x + 1.2867E-006
R = 1.0000
DL = 0.004683
BEC = 0.007

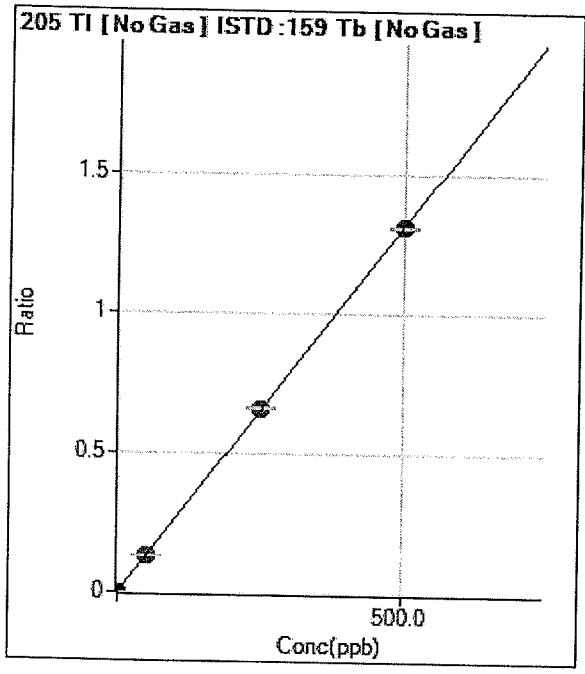
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9.17	0.0000	P	2.4
2	☐	0.050	0.051	70.17	0.0000	P	9.5
3	☐	0.500	0.518	620.02	0.0001	P	3.0
4	☐	2.500	2.558	3026.20	0.0005	P	2.5
5	☐	5.000	4.969	5931.24	0.0009	P	0.6

y = 1.8082E-004 * x + 1.3986E-006
R = 0.9999
DL = 0.0005626
BEC = 0.007735

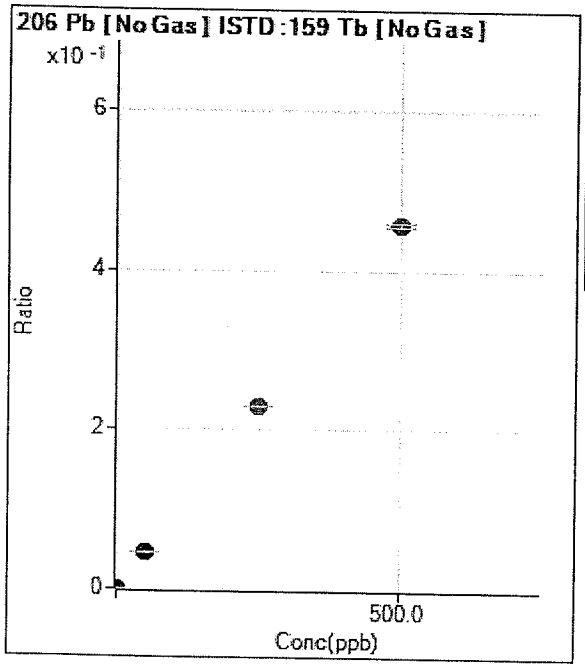
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	788.91	0.0001	P	18.0
2	☐	0.500	0.504	16396.33	0.0014	P	0.7
3	☐	50.000	51.330	1586570.70	0.1351	A	0.5
4	☐	250.000	251.899	7717109.42	0.6626	A	0.7
5	☐	500.000	498.918	15259868.28	1.3122	A	0.8

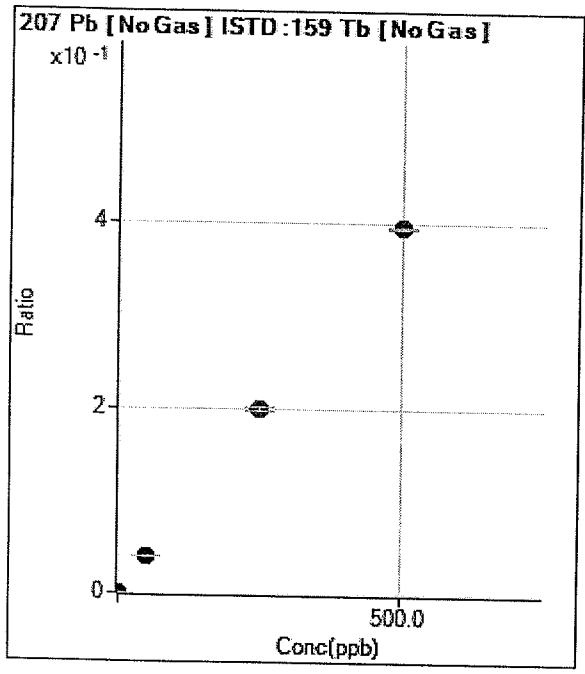
y = 0.0026 * x + 6.6948E-005
R = 1.0000
DL = 0.01372
BEC = 0.02546

Weight: <None>
Min Conc: 0



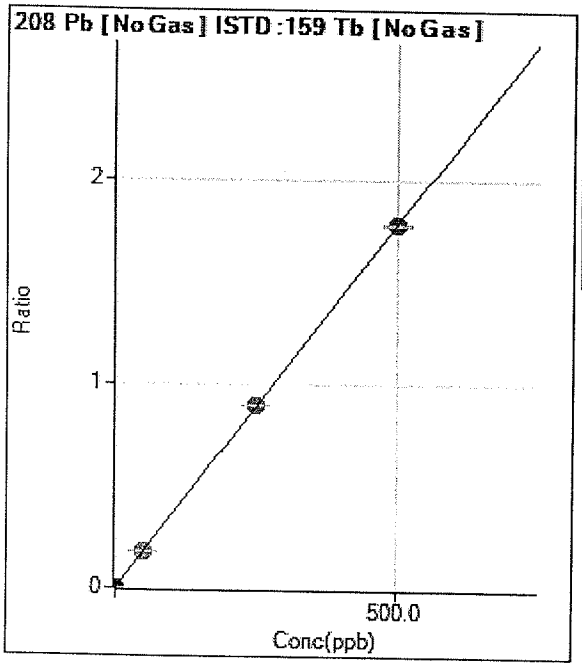
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		453.34	0.0000	P	9.6
2	☐	0.500		5634.62	0.0005	P	5.3
3	☐	50.000		537414.21	0.0457	P	0.1
4	☐	250.000		2673080.80	0.2295	A	0.2
5	☐	500.000		5304658.26	0.4562	A	1.2

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		333.34	0.0000	P	5.5
2	☐	0.500		5157.75	0.0004	P	3.8
3	☐	50.000		467035.70	0.0398	P	1.0
4	☐	250.000		2320627.67	0.1992	A	1.5
5	☐	500.000		4605425.87	0.3960	A	0.6

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1622.27	0.0001	P	1.9
2	☐	0.500	0.515	23213.01	0.0020	P	2.3
3	☐	50.000	50.861	2131938.06	0.1815	M	0.3
4	☐	250.000	251.830	10460288.95	0.8981	A	0.5
5	☐	500.000	498.999	20692463.98	1.7794	A	0.7

y = 0.0036 * x + 1.3783E-004
R = 1.0000
DL = 0.002261
BEC = 0.03865

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq. Date-Time	2020-06-26 09:31:22
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

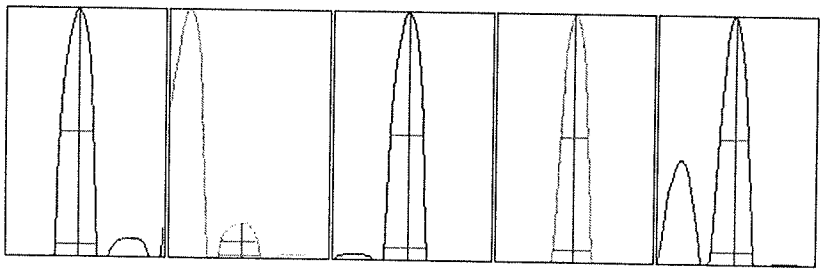
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1946	19463.90			0.768	5.000
24	10.00	10070	100699.33			0.573	5.000
59	10.00	15522	155224.77			0.426	5.000
115	10.00	21455	214546.44			0.691	5.000
208	10.00	11182	111819.27			1.348	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1948	1929	1944	1970	1940
24	10086	10019	10155	10077	10013
59	15527	15533	15434	15618	15501
115	21335	21322	21419	21517	21681
208	11242	11020	11083	11159	11407

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	3457.29	8.90	8.90 - 9.10	
24	16963.16	23.90	23.90 - 24.10	
59	26915.68	58.95	58.90 - 59.10	
115	41984.17	115.00	114.90 - 115.10	
208	21188.05	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.779	0.900	
24	0.65	0.786	0.900	
59	0.61	0.782	0.900	
115	0.53	0.729	0.900	
208	0.55	0.780	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.62 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.0 V	Deflect	13.2 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9997	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.07		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.3 mm		

EM

Discriminator	4.1 mV	Analog HV	2401 V	Pulse HV	1546 V

Calibration Standard Report

Sample Name	S0
File Name	H6F22003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:13:52
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	107277.57	1.3
Be	9	6	No Gas	37.78	13.5
B	11	6	No Gas	3679.37	2.7
Na	23	45	H2	400057.54	0.4
Mg	24	45	No Gas	27330.74	2.7
Al	27	45	No Gas	9022.96	7.4
Si	28	45	H2	3723.83	2.2
P	31	45	No Gas	21333.03	1.5
K	39	45	He	101182.78	2.8
Ca	40	45	H2	134898.41	1.0
Ti	47	45	No Gas	476.68	4.8
V	51	45	He	6548.90	1.7
Cr	52	45	He	1209.39	4.0
Mn	55	45	No Gas	9121.04	2.2
Fe	56	45	H2	9666.09	2.9
Co	59	45	No Gas	253.33	12.1
Ni	60	45	He	127.33	12.8
Cu	63	45	He	2564.91	0.3
Zn	66	72	No Gas	2090.83	2.3
As	75	72	He	315.00	7.3
Se	78	72	H2	19.00	18.2
Sr	88	72	No Gas	716.69	14.8
Zr	90	72	No Gas	176.67	11.8
Mo	95	115	No Gas	54.44	23.2
Ag	107	115	No Gas	103.33	28.1
Cd	111	115	No Gas	40.92	21.1
Sn	118	115	No Gas	1496.75	4.7
Sb	123	115	No Gas	125.56	28.4
Ba	137	115	No Gas	113.33	11.8
W	182	159	No Gas	130.00	20.4
Hg	201	159	He	9.17	3.1
Tl	205	159	No Gas	788.91	18.9
Pb	208	159	No Gas	1622.27	1.3
U	238	159	No Gas	80.00	14.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1833807.01	0.7	1866774.34	98.23	60	120	
Sc	45	No Gas	5272647.17	0.7	5256704	100.3	60	120	
Sc	45	H2	3207538.17	1.3	3216050	99.74	60	120	
Sc	45	He	583892.71	1.0	590136.5	98.94	60	120	
Ge	72	No Gas	1328832.25	0.8	1347600.04	98.61	60	120	
Go	72	H2	905288.73	0.3	912330.27	99.23	60	120	
Ge	72	He	368649.84	0.7	378247.59	97.46	60	120	
In	115	No Gas	8749257.65	0.8	8692051.13	100.66	60	120	
Tb	159	No Gas	11771515.92	0.9	11827603.42	99.53	60	120	
Tb	159	He	6553564.17	1.0	6692094.83	97.93	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6F22004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:16:43
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113456.89	0.7
Be	9	6	No Gas	1466.74	2.1
B	11	6	No Gas	5391.04	3.7
Na	23	45	H2	639662.90	0.8
Mg	24	45	No Gas	596830.38	0.2
Al	27	45	No Gas	744479.13	0.4
Si	28	45	H2	130494.54	0.9
P	31	45	No Gas	41848.23	1.7
K	39	45	He	143690.33	1.9
Ca	40	45	H2	714788.73	0.6
Ti	47	45	No Gas	1288.06	5.8
V	51	45	He	8816.16	1.8
Cr	52	45	He	4964.90	1.9
Mn	55	45	No Gas	24661.53	1.3
Fe	56	45	H2	762463.85	0.8
Co	59	45	No Gas	13263.78	2.1
Ni	60	45	He	1509.42	6.3
Cu	63	45	He	5698.53	2.0
Zn	66	72	No Gas	8820.86	0.5
As	75	72	He	928.70	5.9
Se	78	72	H2	246.33	4.8
Sr	88	72	No Gas	18646.33	2.6
Zr	90	72	No Gas	95227.52	0.9
Mo	95	115	No Gas	3717.19	2.2
Ag	107	115	No Gas	9551.23	2.3
Cd	111	115	No Gas	2047.91	1.7
Sn	118	115	No Gas	6409.35	5.0
Sb	123	115	No Gas	6439.37	3.0
Ba	137	115	No Gas	3291.53	3.3
W	182	159	No Gas	3507.16	5.4
Hg	201	159	He	70.17	9.1
Tl	205	159	No Gas	16396.33	2.2
Pb	208	159	No Gas	23213.01	0.7
U	238	159	No Gas	21090.35	1.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1865481.64	1.4	1866774.34	99.93	60	120	
Sc	45	No Gas	5380215.17	1.4	5256704	102.35	60	120	
Sc	45	H2	3245345.92	1.0	3216050	100.91	60	120	
Sc	45	He	607201.23	0.6	590136.5	102.89	60	120	
Ge	72	No Gas	1390492.63	0.9	1347600.04	103.18	60	120	
Ge	72	H2	933932.67	0.7	912330.27	102.37	60	120	
Ge	72	He	384894.49	0.2	378247.59	101.76	60	120	
In	115	No Gas	8770387.94	1.3	8692051.13	100.9	60	120	
Tb	159	No Gas	11764732.31	1.6	11827603.42	99.47	60	120	
Tb	159	He	6637449.67	0.4	6692094.83	99.18	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6F22005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:19:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	152974.61	0.4
Be	9	6	No Gas	14749.95	1.3
B	11	6	No Gas	28001.18	1.9
Na	23	45	H2	22472592.67	0.6
Mg	24	45	No Gas	54577372.00	1.0
Al	27	45	No Gas	70249423.96	0.4
Si	28	45	H2	656946.84	0.8
P	31	45	No Gas	64868.35	1.6
K	39	45	He	3981751.50	0.2
Ca	40	45	H2	47787988.00	0.4
Ti	47	45	No Gas	89269.93	1.5
V	51	45	He	320829.67	2.0
Cr	52	45	He	367079.05	0.8
Mn	55	45	No Gas	9268185.67	0.4
Fe	56	45	H2	70898853.33	0.4
Co	59	45	No Gas	1271541.08	0.5
Ni	60	45	He	128073.24	0.5
Cu	63	45	He	344308.34	0.2
Zn	66	72	No Gas	209650.23	0.5
As	75	72	He	65680.76	0.8
Se	78	72	H2	22145.49	0.9
Sr	88	72	No Gas	1778229.51	0.9
Zr	90	72	No Gas	200401.90	1.5
Mo	95	115	No Gas	340781.02	1.5
Ag	107	115	No Gas	91123.22	0.7
Cd	111	115	No Gas	184086.19	0.4
Sn	118	115	No Gas	539529.87	0.2
Sb	123	115	No Gas	126759.06	0.2
Ba	137	115	No Gas	551137.46	0.1
W	182	159	No Gas	69426.84	0.9
Hg	201	159	He	620.02	3.4
Tl	205	159	No Gas	1586570.70	0.7
Pb	208	159	No Gas	2131938.06	0.6
U	238	159	No Gas	2072481.44	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1860769.06	0.8	1866774.34	99.68	60	120	
Sc	45	No Gas	5353536.00	1.2	5256704	101.84	60	120	
Sc	45	H2	3221569.92	1.2	3216050	100.17	60	120	
Sc	45	He	597225.71	0.2	590136.5	101.2	60	120	
Ge	72	No Gas	1379402.33	0.0	1347600.04	102.36	60	120	
Ge	72	H2	930292.75	1.4	912330.27	101.97	60	120	
Ge	72	He	382113.18	0.5	378247.59	101.02	60	120	
In	115	No Gas	8748453.84	0.6	8692051.13	100.65	60	120	
Tb	159	No Gas	11746766.20	0.3	11827603.42	99.32	60	120	
Tb	159	He	6518821.83	0.4	6692094.83	97.41	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6F22006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:22:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	316906.47	1.5
Be	9	6	No Gas	71627.01	0.9
B	11	6	No Gas	106612.07	1.1
Na	23	45	H2	108905344.00	0.7
Mg	24	45	No Gas	266286757.33	1.2
Al	27	45	No Gas	343325328.22	1.5
Si	28	45	H2	3166854.83	0.2
P	31	45	No Gas	234646.94	1.7
K	39	45	He	19119142.67	1.6
Ca	40	45	H2	235123573.33	0.5
Ti	47	45	No Gas	443433.34	0.0
V	51	45	He	1546369.29	0.4
Cr	52	45	He	1780108.04	0.2
Mn	55	45	No Gas	45231848.00	0.2
Fe	56	45	H2	346349685.33	0.5
Co	59	45	No Gas	6193089.50	0.7
Ni	60	45	He	621163.21	0.9
Cu	63	45	He	1621313.09	0.5
Zn	66	72	No Gas	1025697.56	0.6
As	75	72	He	321727.92	0.4
Se	78	72	H2	108207.87	0.8
Sr	88	72	No Gas	8733576.87	0.6
Zr	90	72	No Gas	541877.09	2.2
Mo	95	115	No Gas	1699527.09	1.1
Ag	107	115	No Gas	441431.89	0.7
Cd	111	115	No Gas	905752.50	0.9
Sn	118	115	No Gas	2701878.64	0.1
Sb	123	115	No Gas	626080.69	0.7
Ba	137	115	No Gas	2784517.04	0.2
W	182	159	No Gas	331320.30	1.4
Hg	201	159	He	3026.20	1.4
Tl	205	159	No Gas	7717109.42	0.7
Pb	208	159	No Gas	10460288.95	0.5
U	238	159	No Gas	10162585.43	0.7

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1807021.82	0.2	1866774.34	96.8	60	120	
Sc	45	No Gas	5285953.83	0.6	5256704	100.56	60	120	
Sc	45	H2	3248700.92	0.9	3216050	101.02	60	120	
Sc	45	He	599675.08	0.5	590136.5	101.62	60	120	
Ge	72	No Gas	1347186.84	0.4	1347600.04	99.97	60	120	
Ge	72	H2	919451.56	0.1	912330.27	100.78	60	120	
Ge	72	He	377152.10	0.7	378247.59	99.71	60	120	
In	115	No Gas	8431557.94	0.6	8692051.13	97	60	120	
Tb	159	No Gas	11647431.76	0.1	11827603.42	98.48	60	120	
Tb	159	He	6524567.00	1.1	6692094.83	97.5	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6F22007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:25:23
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	522113.21	1.3
Be	9	6	No Gas	141322.42	1.8
B	11	6	No Gas	174690.98	1.1
Na	23	45	H2	215298154.67	0.8
Mg	24	45	No Gas	525115914.67	0.6
Al	27	45	No Gas	686882496.43	0.9
Si	28	45	H2	6220790.00	1.3
P	31	45	No Gas	441749.50	1.3
K	39	45	He	37651220.00	1.1
Ca	40	45	H2	468210709.33	0.8
Ti	47	45	No Gas	882799.27	0.8
V	51	45	He	3043591.42	0.4
Cr	52	45	He	3511378.67	0.8
Mn	55	45	No Gas	89917986.67	0.3
Fe	56	45	H2	688876117.33	0.9
Co	59	45	No Gas	12246239.67	0.5
Ni	60	45	He	1200083.54	0.6
Cu	63	45	He	3172209.42	0.4
Zn	66	72	No Gas	2034346.00	0.5
As	75	72	He	634083.98	1.4
Se	78	72	H2	213494.19	1.0
Sr	88	72	No Gas	17507492.08	0.8
Zr	90	72	No Gas	1122528.42	0.9
Mo	95	115	No Gas	3403505.07	0.6
Ag	107	115	No Gas	862475.51	0.6
Cd	111	115	No Gas	1809577.17	1.0
Sn	118	115	No Gas	5409921.03	0.9
Sb	123	115	No Gas	1257398.32	0.1
Ba	137	115	No Gas	5517116.03	0.5
W	182	159	No Gas	650361.67	0.3
Hg	201	159	He	5931.24	0.7
Tl	205	159	No Gas	15259868.28	1.4
Pb	208	159	No Gas	20692463.98	1.2
U	238	159	No Gas	20299674.75	0.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1804921.77	1.6	1866774.34	96.69	60	120	
Sc	45	No Gas	5289565.00	0.4	5256704	100.63	60	120	
Sc	45	H2	3197800.33	0.7	3216050	99.43	60	120	
Sc	45	He	588421.23	0.6	590136.5	99.71	60	120	
Ge	72	No Gas	1338488.71	0.3	1347600.04	99.32	60	120	
Ge	72	H2	919890.04	0.9	912330.27	100.83	60	120	
Ge	72	He	372561.70	1.2	378247.59	98.5	60	120	
In	115	No Gas	8357718.43	1.2	8692051.13	96.15	60	120	
Tb	159	No Gas	11629119.26	1.3	11827603.42	98.32	60	120	
Tb	159	He	6590832.17	0.6	6692094.83	98.49	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6F22008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:28:08
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.736	ppb	0.9	358762.89	30	99.12	90	110	
Be	9	6	No Gas	30.318	ppb	1.4	87088.92	30	101.06	90	110	
B	11	6	No Gas	34.353	ppb	1.4	65793.73	30	114.51	90	110	> +/- 10%
Na	23	45	H2	28820.585	ppb	0.6	125437029.33	30000	96.07	90	110	
Mg	24	45	No Gas	29084.919	ppb	0.8	304505877.33	30000	96.95	90	110	
Al	27	45	No Gas	29539.820	ppb	1.5	403294793.99	30000	98.47	90	110	
Si	28	45	H2	3225.330	ppb	0.4	4058938.17	3000	107.51	90	110	
P	31	45	No Gas	276.945	ppb	1.7	253303.21	300	92.32	90	110	
K	39	45	He	29477.359	ppb	0.3	22081847.33	30000	98.26	90	110	
Ca	40	45	H2	29356.214	ppb	1.0	277205365.33	30000	97.85	90	110	
Ti	47	45	No Gas	293.408	ppb	1.1	515484.43	300	97.8	90	110	
V	51	45	He	313.309	ppb	0.7	1896610.54	300	104.44	90	110	
Cr	52	45	He	313.274	ppb	0.7	2185556.58	300	104.42	90	110	
Mn	55	45	No Gas	1954.829	ppb	1.0	58316386.67	2000	97.74	90	110	
Fe	56	45	H2	29575.971	ppb	1.4	410980554.67	30000	98.59	90	110	
Co	59	45	No Gas	301.291	ppb	1.5	7352505.67	300	100.43	90	110	
Ni	60	45	He	317.535	ppb	0.1	760300.81	300	105.85	90	110	
Cu	63	45	He	309.944	ppb	1.0	1957464.25	300	103.31	90	110	
Zn	66	72	No Gas	289.061	ppb	2.1	1176040.92	300	96.35	90	110	
As	75	72	He	313.887	ppb	0.6	394956.29	300	104.63	90	110	
Se	78	72	H2	315.425	ppb	0.9	132973.74	300	105.14	90	110	
Sr	88	72	No Gas	307.647	ppb	1.2	10742358.74	300	102.55	90	110	
Zr	90	72	No Gas	27.589	ppb	1.1	610565.53	30	91.96	90	110	
Mo	95	115	No Gas	304.183	ppb	1.5	2059956.23	300	101.39	90	110	
Ag	107	115	No Gas	31.012	ppb	0.6	535050.69	30	103.37	90	110	
Cd	111	115	No Gas	311.300	ppb	1.4	1121536.20	300	103.77	90	110	
Sn	118	115	No Gas	307.583	ppb	0.5	3310964.80	300	102.53	90	110	
Sb	123	115	No Gas	58.921	ppb	0.8	736684.00	60	98.2	90	110	
Ba	137	115	No Gas	310.185	ppb	0.7	1706160.34	300	103.4	90	110	
W	182	159	No Gas	32.137	ppb	1.0	421841.17	30	107.12	90	110	
Hg	201	159	He	2.999	ppb	0.5	3558.67	3	99.97	90	110	
Tl	205	159	No Gas	304.059	ppb	2.2	9349810.46	300	101.35	90	110	
Pb	208	159	No Gas	307.021	ppb	1.2	12798195.58	300	102.34	90	110	
U	238	159	No Gas	305.688	ppb	1.3	12553883.39	300	101.9	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1828949.17	1.6	1866774.34	97.97	60	120	
Sc	45	No Gas	5256178.33	2.0	5256704	99.99	60	120	
Sc	45	H2	3231272.67	0.9	3216050	100.47	60	120	
Sc	45	He	584914.69	0.6	590136.5	99.12	60	120	
Ge	72	No Gas	1337087.17	1.4	1347600.04	99.22	60	120	
Ge	72	H2	905466.06	1.3	912330.27	99.25	60	120	
Ge	72	He	369396.60	0.5	378247.59	97.66	60	120	
In	115	No Gas	8333193.12	1.2	8692051.13	95.87	60	120	
Tb	159	No Gas	11689694.26	1.0	11827603.42	98.83	60	120	
Tb	159	He	6544758.33	0.7	6692094.83	97.8	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6F22009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:33:07
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	104858.54	0.4	
Be	9	6	No Gas	0.003	ppb	100.0	44.45	0.08	
B	11	6	No Gas	0.344	ppb	75.3	4232.87	4	
Na	23	45	H2	0.711	ppb	196.6	395594.45	40	
Mg	24	45	No Gas	0.323	ppb	72.1	30278.99	10	
Al	27	45	No Gas	0.654	ppb	37.1	17705.07	15	
Si	28	45	H2	0.771	ppb	17.2	4596.76	8	
P	31	45	No Gas	<0.000	ppb	N/A	20648.66	10	
K	39	45	He	0.703	ppb	272.1	101012.94	20	
Ca	40	45	H2	0.424	ppb	60.5	136289.07	25	
Ti	47	45	No Gas	0.014	ppb	843.2	495.35	0.5	
V	51	45	He	<0.000	ppb	N/A	5914.61	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1117.38	0.2	
Mn	55	45	No Gas	0.063	ppb	33.3	10860.32	0.2	
Fe	56	45	H2	0.637	ppb	8.2	18096.65	10	
Co	59	45	No Gas	0.007	ppb	46.4	410.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	108.67	0.2	
Cu	63	45	He	0.020	ppb	9.7	2670.26	0.4	
Zn	66	72	No Gas	0.008	ppb	124.4	2100.16	2	
As	75	72	He	<0.000	ppb	N/A	307.00	0.2	
Se	78	72	H2	0.050	ppb	13.1	39.67	0.2	
Sr	88	72	No Gas	0.018	ppb	146.3	1323.67	0.2	
Zr	90	72	No Gas	0.002	ppb	46.1	226.67	2	
Mo	95	115	No Gas	0.012	ppb	24.9	140.00	0.2	
Ag	107	115	No Gas	0.001	ppb	130.8	112.22	0.08	
Cd	111	115	No Gas	0.022	ppb	13.8	122.26	0.2	
Sn	118	115	No Gas	0.074	ppb	3.9	2317.99	0.2	
Sb	123	115	No Gas	0.001	ppb	127.7	137.78	0.4	
Ba	137	115	No Gas	0.013	ppb	4.4	185.56	0.2	
W	182	159	No Gas	0.007	ppb	54.2	226.67	0.3	
Hg	201	159	He	0.004	ppb	51.3	14.33	0.1	
Tl	205	159	No Gas	0.033	ppb	16.2	1821.25	0.1	
Pb	208	159	No Gas	0.031	ppb	11.4	2914.58	0.1	
U	238	159	No Gas	0.007	ppb	13.9	383.34	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1805900.20	1.4	1866774.34	96.74	60	120	
Sc	45	No Gas	5200317.33	1.6	5256704	98.93	60	120	
Sc	45	H2	3148112.17	2.3	3216050	97.89	60	120	
Sc	45	He	579918.98	1.0	590136.5	98.27	60	120	
Ge	72	No Gas	1315078.71	1.4	1347600.04	97.59	60	120	
Ge	72	H2	892639.04	1.3	912330.27	97.84	60	120	
Ge	72	He	369136.27	0.8	378247.59	97.59	60	120	
In	115	No Gas	8709759.51	1.0	8692051.13	100.2	60	120	
Tb	159	No Gas	11780840.64	1.4	11827603.42	99.6	60	120	
Tb	159	He	6721993.83	0.4	6692094.83	100.45	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2601
File Name	H6F22010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:35:43
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.882	ppb	21.5	112120.55	1	88.2	80	120	
Be	9	6	No Gas	0.984	ppb	4.8	2803.62	1	98.4	80	120	
B	11	6	No Gas	9.131	ppb	1.8	19769.45	10	91.31	80	120	
Na	23	45	H2	101.451	ppb	0.3	828278.92	100	101.45	80	120	
Mg	24	45	No Gas	99.949	ppb	1.4	1065124.68	100	99.95	80	120	
Al	27	45	No Gas	100.561	ppb	2.2	1371232.95	100	100.56	80	120	
Si	28	45	H2	100.043	ppb	0.6	127247.18	100	100.04	80	120	
P	31	45	No Gas	47.671	ppb	1.3	60727.72	50	95.34	80	120	
K	39	45	He	103.056	ppb	4.3	178444.80	100	103.06	80	120	
Ca	40	45	H2	103.977	ppb	0.5	1097548.50	100	103.98	80	120	
Ti	47	45	No Gas	0.993	ppb	4.6	2200.18	1	99.3	80	120	
V	51	45	He	0.895	ppb	2.4	11977.89	1	89.5	80	120	
Cr	52	45	He	1.068	ppb	0.9	8672.08	1	106.8	80	120	
Mn	55	45	No Gas	1.040	ppb	1.5	39790.41	1	104	80	120	
Fe	56	45	H2	104.624	ppb	1.3	1437664.25	100	104.62	80	120	
Co	59	45	No Gas	1.022	ppb	0.9	25003.59	1	102.2	80	120	
Ni	60	45	He	1.094	ppb	0.4	2750.94	1	109.4	80	120	
Cu	63	45	He	1.069	ppb	4.3	9327.20	1	106.9	80	120	
Zn	66	72	No Gas	10.040	ppb	1.1	43835.94	10	100.4	80	120	
As	75	72	He	0.964	ppb	2.4	1571.76	1	96.4	80	120	
Se	78	72	H2	1.061	ppb	3.9	476.68	1	106.1	80	120	
Sr	88	72	No Gas	1.991	ppb	0.5	71805.28	2	99.55	80	120	
Zr	90	72	No Gas	3.808	ppb	2.7	86334.70	5	76.16	80	120	> +/- 20%
Mo	95	115	No Gas	0.919	ppb	2.6	6520.49	1	91.9	80	120	
Ag	107	115	No Gas	1.039	ppb	2.7	18724.34	1	103.9	80	120	
Cd	111	115	No Gas	1.002	ppb	1.8	3789.94	1	100.2	80	120	
Sn	118	115	No Gas	0.944	ppb	0.4	12031.07	1	94.4	80	120	
Sb	123	115	No Gas	0.953	ppb	1.0	12493.75	1	95.3	80	120	
Ba	137	115	No Gas	1.049	ppb	1.8	6102.55	1	104.9	80	120	
W	182	159	No Gas	2.077	ppb	0.1	27393.00	2	103.85	80	120	
Hg	201	159	He	0.085	ppb	7.1	112.00	0.1	85	80	120	
Tl	205	159	No Gas	1.029	ppb	2.8	32407.56	1	102.9	80	120	
Pb	208	159	No Gas	1.036	ppb	0.5	44783.81	1	103.6	80	120	
U	238	159	No Gas	0.989	ppb	1.2	40679.65	1	98.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1791533.69	1.2	1866774.34	95.97	60	120	
Sc	45	No Gas	5214731.17	0.9	5256704	99.2	60	120	
Sc	45	H2	3174085.25	0.7	3216050	98.7	60	120	
Sc	45	He	585793.98	0.9	590136.5	99.26	60	120	
Ge	72	No Gas	1367003.67	1.1	1347600.04	101.44	60	120	
Ge	72	H2	925155.17	1.4	912330.27	101.41	60	120	
Ge	72	He	380000.60	0.1	378247.59	100.46	60	120	
In	115	No Gas	8655547.44	0.9	8692051.13	99.58	60	120	
Tb	159	No Gas	11690698.15	0.4	11827603.42	98.84	60	120	
Tb	159	He	6672892.67	0.4	6692094.83	99.71	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA1
File Name	H6F22012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:40:53
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.229	ppb	102.2	98983.75	2	-50	50	
Be	9	6	No Gas	0.000	ppb	5956.4	34.45	0.4	-50	50	
B	11	6	No Gas	9.754	ppb	4.9	19356.65	10	-50	50	> +/- 20%
Na	23	45	H2	94995.036	ppb	0.7	403774208.00	100000	80	120	
Mg	24	45	No Gas	93163.519	ppb	1.1	949078165.33	100000	80	120	
Al	27	45	No Gas	93877.409	ppb	1.4	1247176674.75	100000	80	120	
Si	28	45	H2	4.217	ppb	1.7	8861.50	50	-50	50	
P	31	45	No Gas	93807.222	ppb	0.8	76510472.00	100000	80	120	
K	39	45	He	98193.331	ppb	0.3	70832144.00	100000	80	120	
Ca	40	45	H2	97917.561	ppb	1.0	904676864.00	100000	80	120	
Ti	47	45	No Gas	2002.695	ppb	1.5	3421023.67	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	5651.17	1	-50	50	
Cr	52	45	He	0.274	ppb	3.6	3017.00	1	-50	50	
Mn	55	45	No Gas	0.248	ppb	3.5	16042.73	1	-50	50	
Fe	56	45	H2	98568.621	ppb	2.1	1340498432.00	100000	80	120	
Co	59	45	No Gas	0.356	ppb	2.2	8701.44	0.75	-50	50	
Ni	60	45	He	0.318	ppb	1.2	858.70	1	-50	50	
Cu	63	45	He	0.272	ppb	5.3	4138.63	2	-50	50	
Zn	66	72	No Gas	1.602	ppb	2.3	8395.26	20	-50	50	
As	75	72	He	0.073	ppb	12.8	396.68	1	-50	50	
Se	78	72	H2	0.218	ppb	15.8	107.67	1	-50	50	
Sr	88	72	No Gas	0.780	ppb	0.7	27251.05	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.115	ppb	10.0	2653.61	10	-50	50	
Mo	95	115	No Gas	1967.866	ppb	1.4	13021799.48	2000	80	120	
Ag	107	115	No Gas	0.010	ppb	22.9	272.23	0.4	-50	50	
Cd	111	115	No Gas	0.075	ppb	38.3	301.73	1	-50	50	
Sn	118	115	No Gas	0.359	ppb	4.9	5159.91	1	-50	50	
Ba	137	115	No Gas	0.408	ppb	4.4	2294.65	1	-50	50	
W	182	159	No Gas	0.186	ppb	0.6	2543.59	1	-50	50	
Hg	201	159	He	0.002	ppb	121.4	11.83	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	538.90	0.5	-50	50	
Pb	208	159	No Gas	0.081	ppb	1.8	4933.71	0.5	-50	50	
U	238	159	No Gas	0.000	ppb	11184.7	78.89	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1662265.44	2.6	1866774.34	89.04	60	120	
Sc	45	No Gas	5114177.17	1.8	5256704	97.29	60	120	
Sc	45	H2	3162619.00	0.9	3216050	98.34	60	120	
Sc	45	He	565041.46	1.1	590136.5	95.75	60	120	
Ge	72	No Gas	1303712.33	2.0	1347600.04	96.74	60	120	
Ge	72	H2	880464.38	0.4	912330.27	96.51	60	120	
Ge	72	He	359651.50	0.6	378247.59	95.08	60	120	
In	115	No Gas	8142481.56	2.0	8692051.13	93.68	60	120	
Tb	159	No Gas	11592594.26	2.3	11827603.42	98.01	60	120	
Tb	159	He	6539212.50	0.5	6692094.83	97.72	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB1
File Name	H6F22013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 10:43:30
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.581	ppb	1.3	245283.72	20	80	120	
Be	9	6	No Gas	19.924	ppb	2.9	51476.32	20	80	120	
B	11	6	No Gas	22.314	ppb	1.3	39590.13	20	80	120	
Na	23	45	H2	100251.981	ppb	0.3	426762048.00	100000	80	120	
Mg	24	45	No Gas	96321.885	ppb	2.1	990204416.00	100000	80	120	
Al	27	45	No Gas	97150.885	ppb	1.5	1302457607.26	100000	80	120	
Si	28	45	H2	222.687	ppb	1.1	278133.39	200	80	120	
P	31	45	No Gas	97155.920	ppb	2.1	79968762.67	100000	80	120	
K	39	45	He	102000.772	ppb	1.7	75100917.33	100000	80	120	
Ca	40	45	H2	103855.990	ppb	0.9	961069333.33	100000	80	120	
Ti	47	45	No Gas	2103.311	ppb	2.4	3625589.42	2000	80	120	
V	51	45	He	20.156	ppb	2.2	126368.57	20	80	120	
Cr	52	45	He	20.739	ppb	1.9	143783.99	20	80	120	
Mn	55	45	No Gas	19.625	ppb	1.7	583678.00	20	80	120	
Fe	56	45	H2	103753.587	ppb	1.1	1413312554.67	100000	80	120	
Co	59	45	No Gas	19.546	ppb	1.2	468578.96	20	80	120	
Ni	60	45	He	20.557	ppb	1.9	48652.57	20	80	120	
Cu	63	45	He	20.450	ppb	1.1	129732.00	20	80	120	
Zn	66	72	No Gas	21.132	ppb	1.1	87143.45	20	80	120	
As	75	72	He	20.030	ppb	1.7	25217.83	20	80	120	
Se	78	72	H2	21.602	ppb	1.3	8791.86	20	80	120	
Sr	88	72	No Gas	20.142	ppb	1.2	697726.22	20	80	120	
Zr	90	72	No Gas	8.549	ppb	2.2	187656.19	20	80	120	> +/- 20%
Mo	95	115	No Gas	2039.545	ppb	1.2	13696100.84	2000	80	120	
Ag	107	115	No Gas	18.948	ppb	0.8	324184.99	20	80	120	
Cd	111	115	No Gas	19.233	ppb	0.4	68740.38	20	80	120	
Sn	118	115	No Gas	19.785	ppb	0.4	212620.20	20	80	120	
Sb	123	115	No Gas	19.476	ppb	0.4	241566.22	20	80	120	
Ba	137	115	No Gas	20.078	ppb	0.7	109609.91	20	80	120	
W	182	159	No Gas	19.295	ppb	0.5	255168.37	20	80	120	
Hg	201	159	He	2.020	ppb	1.8	2431.07	2	80	120	
Tl	205	159	No Gas	18.766	ppb	2.6	581951.14	20	80	120	
Pb	208	159	No Gas	19.123	ppb	1.2	804395.74	20	80	120	
U	238	159	No Gas	19.160	ppb	1.1	792644.43	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1644718.44	1.9	1866774.34	88.1	60	120	
Sc	45	No Gas	5160537.00	1.4	5256704	98.17	60	120	
Sc	45	H2	3167616.00	1.1	3216050	98.49	60	120	
Sc	45	He	576853.04	1.4	590136.5	97.75	60	120	
Ge	72	No Gas	1325201.50	1.6	1347600.04	98.34	60	120	
Ge	72	H2	872513.64	1.6	912330.27	95.64	60	120	
Ge	72	He	365384.33	1.9	378247.59	96.6	60	120	
In	115	No Gas	8263891.15	2.8	8692051.13	95.07	60	120	
Tb	159	No Gas	11774390.08	2.1	11827603.42	99.55	60	120	
Tb	159	He	6630706.33	0.9	6692094.83	99.08	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6F22015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:48:43
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.333	ppb	1.4	296499.35	25	97.33	90	110	
Be	9	6	No Gas	24.763	ppb	1.6	67385.47	25	99.05	90	110	
B	11	6	No Gas	55.565	ppb	4.0	98684.24	50	111.13	90	110	> +/- 10%
Na	23	45	H2	24680.379	ppb	1.8	108926117.33	25000	98.72	90	110	
Mg	24	45	No Gas	24488.547	ppb	2.6	261271850.67	25000	97.95	90	110	
Al	27	45	No Gas	24272.939	ppb	2.6	337729468.30	25000	97.09	90	110	
Si	28	45	H2	2495.484	ppb	1.6	3183676.17	2500	99.82	90	110	
P	31	45	No Gas	240.427	ppb	2.4	226984.23	250	96.17	90	110	
K	39	45	He	25468.794	ppb	1.2	19559913.33	25000	101.88	90	110	
Ca	40	45	H2	24945.958	ppb	1.9	238762965.33	25000	99.78	90	110	
Ti	47	45	No Gas	242.650	ppb	1.5	434475.16	250	97.06	90	110	
V	51	45	He	253.745	ppb	0.8	1574934.92	250	101.5	90	110	
Cr	52	45	He	253.445	ppb	0.4	1811615.08	250	101.38	90	110	
Mn	55	45	No Gas	1508.127	ppb	1.7	45845438.67	1500	100.54	90	110	
Fe	56	45	H2	25353.954	ppb	0.7	357126848.00	25000	101.42	90	110	
Co	59	45	No Gas	251.343	ppb	1.6	6250206.67	250	100.54	90	110	
Ni	60	45	He	255.972	ppb	0.4	627923.52	250	102.39	90	110	
Cu	63	45	He	257.534	ppb	0.7	1666764.38	250	103.01	90	110	
Zn	66	72	No Gas	242.351	ppb	2.6	1018859.21	250	96.94	90	110	
As	75	72	He	251.901	ppb	0.9	324704.22	250	100.76	90	110	
Se	78	72	H2	253.763	ppb	1.9	110362.02	250	101.51	90	110	
Sr	88	72	No Gas	248.102	ppb	1.2	8947380.20	250	99.24	90	110	
Zr	90	72	No Gas	24.057	ppb	1.7	549936.45	25	96.23	90	110	
Mo	95	115	No Gas	246.965	ppb	1.3	1756909.24	250	98.79	90	110	
Ag	107	115	No Gas	24.017	ppb	1.5	435357.54	25	96.07	90	110	
Cd	111	115	No Gas	238.406	ppb	1.1	902260.13	250	95.36	90	110	
Sn	118	115	No Gas	244.628	ppb	1.2	2766612.18	250	97.85	90	110	
Sb	123	115	No Gas	47.239	ppb	1.0	620484.49	50	94.48	90	110	
Ba	137	115	No Gas	490.822	ppb	0.3	2835847.11	500	98.16	90	110	
W	182	159	No Gas	24.552	ppb	2.6	329941.78	25	98.21	90	110	
Hg	201	159	He	2.493	ppb	0.6	3023.37	2.5	99.72	90	110	
Tl	205	159	No Gas	250.219	ppb	2.6	7874936.07	250	100.09	90	110	
Pb	208	159	No Gas	254.057	ppb	0.9	10840452.45	250	101.62	90	110	
U	238	159	No Gas	246.796	ppb	1.3	10374103.75	250	98.72	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1732389.92	1.2	1866774.34	92.8	60	120	
Sc	45	No Gas	5356287.17	0.3	5256704	101.89	60	120	
Sc	45	H2	3275347.75	1.6	3216050	101.84	60	120	
Sc	45	He	599227.98	0.2	590136.5	101.54	60	120	
Ge	72	No Gas	1381000.29	1.5	1347600.04	102.48	60	120	
Ge	72	H2	934265.44	2.2	912330.27	102.4	60	120	
Ge	72	He	378353.57	0.8	378247.59	100.03	60	120	
In	115	No Gas	8753711.63	1.3	8692051.13	100.71	60	120	
Tb	159	No Gas	11964646.75	0.4	11827603.42	101.16	60	120	
Tb	159	He	6685128.00	0.2	6692094.83	99.9	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6F22016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 10:53:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98865.27	0.4	
Be	9	6	No Gas	0.004	ppb	213.7	46.67	0.08	
B	11	6	No Gas	0.151	ppb	142.2	3679.38	4	
Na	23	45	H2	8.037	ppb	1.1	432110.11	40	
Mg	24	45	No Gas	1.105	ppb	28.2	38064.79	10	
Al	27	45	No Gas	1.078	ppb	32.4	23240.09	15	
Si	28	45	H2	<0.000	ppb	N/A	3578.46	8	
P	31	45	No Gas	<0.000	ppb	N/A	19215.96	10	
K	39	45	He	0.916	ppb	192.6	101172.94	20	
Ca	40	45	H2	0.438	ppb	41.7	138180.55	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	372.67	0.5	
V	51	45	He	0.069	ppb	64.8	6912.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1075.38	0.2	
Mn	55	45	No Gas	0.062	ppb	26.9	10720.20	0.2	
Fe	56	45	H2	1.209	ppb	5.5	26189.74	10	
Co	59	45	No Gas	0.007	ppb	36.0	420.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	116.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1938.80	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2021.48	2	
As	75	72	He	0.011	ppb	198.7	328.33	0.2	
Se	78	72	H2	0.022	ppb	66.4	28.33	0.2	
Sr	88	72	No Gas	0.005	ppb	71.8	895.59	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	120.00	2	
Mo	95	115	No Gas	0.019	ppb	4.8	187.78	0.2	
Ag	107	115	No Gas	0.001	ppb	184.6	125.56	0.08	
Cd	111	115	No Gas	0.015	ppb	38.2	97.83	0.2	
Sn	118	115	No Gas	0.032	ppb	20.3	1855.60	0.2	
Sb	123	115	No Gas	0.003	ppb	34.5	170.00	0.4	
Ba	137	115	No Gas	0.021	ppb	36.4	235.56	0.2	
W	182	159	No Gas	0.009	ppb	38.6	250.00	0.3	
Hg	201	159	He	0.002	ppb	144.9	11.83	0.1	
Tl	205	159	No Gas	0.022	ppb	22.1	1478.97	0.1	
Pb	208	159	No Gas	0.019	ppb	38.8	2462.32	0.1	
U	238	159	No Gas	0.008	ppb	7.8	428.90	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1709238.89	1.9	1866774.34	91.56	60	120	
Sc	45	No Gas	5156921.00	1.0	5256704	98.1	60	120	
Sc	45	H2	3188394.83	0.3	3216050	99.14	60	120	
Sc	45	He	579926.92	2.5	590136.5	98.27	60	120	
Ge	72	No Gas	1323948.75	2.7	1347600.04	98.24	60	120	
Ge	72	H2	903765.81	0.8	912330.27	99.06	60	120	
Ge	72	He	368350.32	0.8	378247.59	97.38	60	120	
In	115	No Gas	8764699.40	1.9	8692051.13	100.84	60	120	
Tb	159	No Gas	11933850.36	1.7	11827603.42	100.9	60	120	
Tb	159	He	6692787.00	0.4	6692094.83	100.01	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6F22038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:01:06
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.562	ppb	4.2	316501.19	25	98.25	90	110	
Be	9	6	No Gas	24.188	ppb	3.8	69803.86	25	96.75	90	110	
B	11	6	No Gas	54.297	ppb	4.9	102311.98	50	108.59	90	110	
Na	23	45	H2	25083.498	ppb	0.2	104160565.33	25000	100.33	90	110	
Mg	24	45	No Gas	25103.597	ppb	0.9	254803077.33	25000	100.41	90	110	
Al	27	45	No Gas	24776.159	ppb	1.5	327953368.44	25000	99.1	90	110	
Si	28	45	H2	2476.830	ppb	0.7	2973254.92	2500	99.07	90	110	
P	31	45	No Gas	248.891	ppb	0.6	222811.77	250	99.56	90	110	
K	39	45	He	25004.613	ppb	0.1	18128189.33	25000	100.02	90	110	
Ca	40	45	H2	24937.720	ppb	0.2	224591669.33	25000	99.75	90	110	
Ti	47	45	No Gas	246.938	ppb	1.6	420642.49	250	98.78	90	110	
V	51	45	He	253.724	ppb	0.1	1486463.04	250	101.49	90	110	
Cr	52	45	He	254.111	ppb	0.7	1714420.00	250	101.64	90	110	
Mn	55	45	No Gas	1500.074	ppb	1.7	43382666.67	1500	100	90	110	
Fe	56	45	H2	24999.860	ppb	0.5	331302112.00	25000	100	90	110	
Co	59	45	No Gas	248.571	ppb	1.7	5880662.50	250	99.43	90	110	
Ni	60	45	He	258.846	ppb	0.9	599319.31	250	103.54	90	110	
Cu	63	45	He	255.991	ppb	1.0	1563762.29	250	102.4	90	110	
Zn	66	72	No Gas	245.198	ppb	0.8	978665.25	250	98.08	90	110	
As	75	72	He	249.146	ppb	1.0	309151.05	250	99.66	90	110	
Se	78	72	H2	257.167	ppb	0.1	105464.62	250	102.87	90	110	
Sr	88	72	No Gas	246.162	ppb	2.2	8430692.44	250	98.46	90	110	
Zr	90	72	No Gas	24.232	ppb	2.0	526028.29	25	96.93	90	110	
Mo	95	115	No Gas	243.747	ppb	2.7	1652614.93	250	97.5	90	110	
Ag	107	115	No Gas	24.541	ppb	1.7	423924.47	25	98.16	90	110	
Cd	111	115	No Gas	245.430	ppb	0.4	885187.66	250	98.17	90	110	
Sn	118	115	No Gas	246.765	ppb	0.8	2659738.44	250	98.71	90	110	
Sb	123	115	No Gas	49.324	ppb	1.4	617455.30	50	98.65	90	110	
Ba	137	115	No Gas	498.562	ppb	1.9	2745600.38	500	99.71	90	110	
W	182	159	No Gas	24.999	ppb	0.8	328062.25	25	100	90	110	
Hg	201	159	He	2.612	ppb	1.1	3079.71	2.5	104.48	90	110	
Tl	205	159	No Gas	249.970	ppb	1.6	7682628.86	250	99.99	90	110	
Pb	208	159	No Gas	252.361	ppb	0.7	10515277.62	250	100.94	90	110	
U	238	159	No Gas	247.299	ppb	1.5	10149999.32	250	98.92	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1838467.82	2.7	1866774.34	98.48	60	120	
Sc	45	No Gas	5095634.67	0.6	5256704	96.94	60	120	
Sc	45	H2	3081380.00	0.5	3216050	95.81	60	120	
Sc	45	He	565612.50	0.9	590136.5	95.84	60	120	
Ge	72	No Gas	1311457.67	0.9	1347600.04	97.32	60	120	
Ge	72	H2	880772.23	0.6	912330.27	96.54	60	120	
Ge	72	He	364211.76	0.6	378247.59	96.29	60	120	
In	115	No Gas	8343072.46	0.6	8692051.13	95.99	60	120	
Tb	159	No Gas	11684230.65	1.7	11827603.42	98.79	60	120	
Tb	159	He	6502300.50	0.4	6692094.83	97.16	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6F22039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:06:21
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103856.66	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	26.67	0.08	
B	11	6	No Gas	0.398	ppb	52.4	4295.11	4	
Na	23	45	H2	24.503	ppb	4.5	491623.30	40	
Mg	24	45	No Gas	0.474	ppb	40.9	31209.64	10	
Al	27	45	No Gas	0.377	ppb	40.8	13703.60	15	
Si	28	45	H2	<0.000	ppb	N/A	3276.39	8	
P	31	45	No Gas	2.074	ppb	20.0	22301.22	10	
K	39	45	He	5.050	ppb	58.7	102427.94	20	
Ca	40	45	H2	<0.000	ppb	N/A	128443.99	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	413.34	0.5	
V	51	45	He	0.105	ppb	12.0	7011.13	0.5	
Cr	52	45	He	<0.000	ppb	N/A	926.70	0.2	
Mn	55	45	No Gas	0.036	ppb	34.8	9868.23	0.2	
Fe	56	45	H2	0.338	ppb	12.0	13929.12	10	
Co	59	45	No Gas	0.004	ppb	70.6	346.00	0.15	
Ni	60	45	He	0.004	ppb	117.8	134.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1271.39	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1803.46	2	
As	75	72	He	<0.000	ppb	N/A	311.00	0.2	
Se	78	72	H2	0.014	ppb	122.2	24.33	0.2	
Sr	88	72	No Gas	0.001	ppb	344.7	727.80	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	133.33	2	
Mo	95	115	No Gas	0.003	ppb	28.7	77.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	96.66	0.08	
Cd	111	115	No Gas	0.008	ppb	19.7	70.60	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1064.49	0.2	
Sb	123	115	No Gas	0.001	ppb	68.9	137.78	0.4	
Ba	137	115	No Gas	0.007	ppb	47.4	151.11	0.2	
W	182	159	No Gas	0.001	ppb	427.9	146.67	0.3	
Hg	201	159	He	0.004	ppb	42.3	14.33	0.1	
Tl	205	159	No Gas	0.001	ppb	504.9	807.81	0.1	
Pb	208	159	No Gas	0.002	ppb	173.0	1693.39	0.1	
U	238	159	No Gas	0.005	ppb	11.4	271.12	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1790982.70	1.1	1866774.34	95.94	60	120	
Sc	45	No Gas	5095771.17	1.0	5256704	96.94	60	120	
Sc	45	H2	3119000.83	1.1	3216050	96.98	60	120	
Sc	45	He	569895.71	0.9	590136.5	96.57	60	120	
Ge	72	No Gas	1311844.79	0.7	1347600.04	97.35	60	120	
Ge	72	H2	884934.98	0.8	912330.27	97	60	120	
Ge	72	He	365335.43	0.4	378247.59	96.59	60	120	
In	115	No Gas	8653360.68	0.4	8692051.13	99.55	60	120	
Tb	159	No Gas	11733400.09	0.9	11827603.42	99.2	60	120	
Tb	159	He	6577945.17	0.7	6692094.83	98.29	60	120	

Blank Report

Sample Name	IMF029WB
File Name	H6F22040.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:08:56
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	107599.47	0.4	
Be	9	6	No Gas	<0.000	ppb	N/A	35.55	0.08	
B	11	6	No Gas	12.566	ppb	1.6	26718.71	4	>1/2LOQ
Na	23	45	H2	26.673	ppb	6.4	508701.04	40	
Mg	24	45	No Gas	0.880	ppb	9.1	36245.66	10	
Al	27	45	No Gas	1.809	ppb	2.9	33497.07	15	
Si	28	45	H2	1.155	ppb	8.1	5102.27	8	
P	31	45	No Gas	<0.000	ppb	N/A	21122.71	10	
K	39	45	He	1.687	ppb	241.8	102395.57	20	
Ca	40	45	H2	8.106	ppb	1.6	208306.46	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	446.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6124.70	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1144.72	0.2	
Mn	55	45	No Gas	0.052	ppb	21.8	10568.75	0.2	
Fe	56	45	H2	1.148	ppb	0.9	25197.20	10	
Co	59	45	No Gas	<0.000	ppb	N/A	243.33	0.15	
Ni	60	45	He	0.008	ppb	129.7	145.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1288.73	0.4	
Zn	66	72	No Gas	0.936	ppb	0.4	5986.65	2	
As	75	72	He	<0.000	ppb	N/A	276.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	18.33	0.2	
Sr	88	72	No Gas	0.017	ppb	3.6	1320.07	0.2	
Zr	90	72	No Gas	0.133	ppb	10.3	3153.72	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	48.89	0.2	
Ag	107	115	No Gas	0.064	ppb	3.6	1282.28	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	2.02	0.2	
Sn	118	115	No Gas	0.038	ppb	9.0	1956.81	0.2	
Sb	123	115	No Gas	0.002	ppb	89.3	158.89	0.4	
Ba	137	115	No Gas	0.032	ppb	25.0	303.34	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	110.00	0.3	
Hg	201	159	He	0.004	ppb	82.2	13.67	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	466.68	0.1	
Pb	208	159	No Gas	0.002	ppb	134.3	1717.83	0.1	
U	238	159	No Gas	0.000	ppb	1100.3	83.33	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1851300.42	2.0	1866774.34	99.17	60	120	
Sc	45	No Gas	5225422.83	0.8	5256704	99.4	60	120	
Sc	45	H2	3168823.83	0.9	3216050	98.53	60	120	
Sc	45	He	583822.69	1.1	590136.5	98.93	60	120	
Ge	72	No Gas	1355332.08	1.5	1347600.04	100.57	60	120	
Ge	72	H2	910981.90	1.8	912330.27	99.85	60	120	
Ge	72	He	378828.58	0.5	378247.59	100.15	60	120	
In	115	No Gas	8867356.39	1.1	8692051.13	102.02	60	120	
Tb	159	No Gas	11986562.02	2.0	11827603.42	101.34	60	120	
Tb	159	He	6686663.00	0.3	6692094.83	99.92	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF029WL
File Name	H6F22041.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:11:31
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.793	ppb	5.1	359658.70	30	102.64	85	115	
Be	9	6	No Gas	30.119	ppb	5.3	84545.79	30	100.4	83	121	
B	11	6	No Gas	40.933	ppb	4.9	75971.61	30	136.44	85	115	FAIL
Na	23	45	H2	3157.891	ppb	1.1	13432568.67	3000	105.26	85	117	
Mg	24	45	No Gas	3244.857	ppb	4.3	31964596.00	3000	108.16	83	118	
Al	27	45	No Gas	3188.232	ppb	3.5	40948121.89	3000	106.27	84	117	
Si	28	45	H2	1.305	ppb	8.3	5136.28	3000	0.04	85	115	FAIL
P	31	45	No Gas	1.292	ppb	114.4	21003.21	300	0.43	85	115	FAIL
K	39	45	He	3085.549	ppb	0.2	2375150.83	3000	102.85	87	115	
Ca	40	45	H2	3106.269	ppb	0.5	28054591.33	3000	103.54	87	118	
Ti	47	45	No Gas	31.517	ppb	5.7	52426.00	30	105.06	85	115	
V	51	45	He	30.988	ppb	0.4	191320.67	30	103.29	86	115	
Cr	52	45	He	31.573	ppb	0.1	218864.97	30	105.24	85	116	
Mn	55	45	No Gas	31.569	ppb	3.3	894199.85	30	105.23	87	115	
Fe	56	45	H2	3180.030	ppb	1.9	42095357.33	3000	106	87	118	
Co	59	45	No Gas	32.073	ppb	4.1	736118.10	30	106.91	86	115	
Ni	60	45	He	31.761	ppb	1.5	75299.81	30	105.87	85	117	
Cu	63	45	He	32.558	ppb	0.1	205585.86	30	108.53	85	118	
Zn	66	72	No Gas	62.973	ppb	4.9	246987.33	60	104.96	83	119	
As	75	72	He	30.263	ppb	1.6	38427.85	30	100.88	84	116	
Se	78	72	H2	31.079	ppb	0.7	12940.87	30	103.6	80	120	
Sr	88	72	No Gas	31.700	ppb	5.3	1060731.59	30	105.67	85	115	
Zr	90	72	No Gas	0.031	ppb	82.1	806.71	30	0.1	85	115	FAIL
Mo	95	115	No Gas	29.535	ppb	6.3	200253.87	30	98.45	85	115	
Ag	107	115	No Gas	30.969	ppb	5.5	535102.55	30	103.23	85	117	
Cd	111	115	No Gas	30.020	ppb	6.1	108308.02	30	100.07	87	115	
Sn	118	115	No Gas	30.082	ppb	5.4	325608.07	30	100.27	85	115	
Sb	123	115	No Gas	29.735	ppb	6.3	372247.40	30	99.12	85	117	
Ba	137	115	No Gas	29.428	ppb	6.0	162154.92	30	98.09	86	114	
W	182	159	No Gas	0.008	ppb	82.0	230.00	30	0.03	85	115	FAIL
Hg	201	159	He	0.002	ppb	112.8	11.50	2.5	0.08	82	119	FAIL
Tl	205	159	No Gas	31.406	ppb	5.6	941819.44	30	104.69	82	116	
Pb	208	159	No Gas	31.595	ppb	6.5	1284519.18	30	105.32	88	115	
U	238	159	No Gas	31.202	ppb	6.1	1248680.26	30	104.01	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1792319.36	7.7	1866774.34	96.01	60	120	
Sc	45	No Gas	4950680.17	6.2	5256704	94.18	60	120	
Sc	45	H2	3077732.42	1.0	3216050	95.7	60	120	
Sc	45	He	578333.12	1.0	590136.5	98	60	120	
Ge	72	No Gas	1283550.67	6.3	1347600.04	95.25	60	120	
Ge	72	H2	893132.46	0.2	912330.27	97.9	60	120	
Ge	72	He	370037.29	1.3	378247.59	97.83	60	120	
In	115	No Gas	8368917.44	7.7	8692051.13	96.28	60	120	
Tb	159	No Gas	11424453.43	7.3	11827603.42	96.59	60	120	
Tb	159	He	6531211.17	0.8	6692094.83	97.6	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF029WC
File Name	H6F22042.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:14:05
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.856	ppb	4.0	360923.52	30	99.52	85	115	
Be	9	6	No Gas	28.880	ppb	5.1	83204.60	30	96.27	83	121	
B	11	6	No Gas	38.758	ppb	4.8	73991.02	30	129.19	85	115	FAIL
Na	23	45	H2	3027.654	ppb	1.3	13043422.67	3000	100.92	85	117	
Mg	24	45	No Gas	3033.235	ppb	4.1	30814690.67	3000	101.11	83	118	
Al	27	45	No Gas	3036.583	ppb	3.9	40207941.90	3000	101.22	84	117	
Si	28	45	H2	1.012	ppb	8.8	4839.51	3000	0.03	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	20444.37	300	-0.07	85	115	FAIL
K	39	45	He	2999.704	ppb	1.3	2322004.58	3000	99.99	87	115	
Ca	40	45	H2	2991.363	ppb	0.3	27333292.00	3000	99.71	87	118	
Ti	47	45	No Gas	29.724	ppb	4.5	51046.67	30	99.08	85	115	
V	51	45	He	30.166	ppb	0.5	187237.98	30	100.55	86	115	
Cr	52	45	He	30.853	ppb	0.9	214830.23	30	102.84	85	116	
Mn	55	45	No Gas	30.196	ppb	3.4	882139.06	30	100.65	87	115	
Fe	56	45	H2	3080.210	ppb	0.2	41248762.67	3000	102.67	87	118	
Co	59	45	No Gas	30.721	ppb	3.5	727233.25	30	102.4	86	115	
Ni	60	45	He	31.076	ppb	1.3	74004.75	30	103.59	85	117	
Cu	63	45	He	31.843	ppb	1.2	201999.41	30	106.14	85	118	
Zn	66	72	No Gas	60.318	ppb	4.9	242393.32	60	100.53	83	119	
As	75	72	He	29.555	ppb	0.4	37835.52	30	98.52	84	116	
Se	78	72	H2	30.863	ppb	1.1	12954.55	30	102.88	80	120	
Sr	88	72	No Gas	30.117	ppb	4.9	1032340.27	30	100.39	85	115	
Zr	90	72	No Gas	0.016	ppb	125.2	520.06	30	0.05	85	115	FAIL
Mo	95	115	No Gas	28.820	ppb	3.0	199132.82	30	96.07	85	115	
Ag	107	115	No Gas	30.002	ppb	3.0	528054.08	30	100.01	85	117	
Cd	111	115	No Gas	29.368	ppb	2.5	107961.78	30	97.89	87	115	
Sn	118	115	No Gas	29.033	ppb	2.3	320094.93	30	96.78	85	115	
Sb	123	115	No Gas	28.768	ppb	2.3	366968.97	30	95.89	85	117	
Ba	137	115	No Gas	28.572	ppb	3.7	160395.81	30	95.24	86	114	
W	182	159	No Gas	0.005	ppb	35.4	196.67	30	0.02	85	115	FAIL
Hg	201	159	He	0.003	ppb	55.9	12.83	2.5	0.12	82	119	FAIL
Tl	205	159	No Gas	30.059	ppb	2.6	926589.58	30	100.2	82	116	
Pb	208	159	No Gas	30.259	ppb	2.4	1265141.84	30	100.86	88	115	
U	238	159	No Gas	29.586	ppb	1.9	1217306.13	30	98.62	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1835496.29	2.2	1866774.34	98.32	60	120	
Sc	45	No Gas	5098775.17	1.8	5256704	97	60	120	
Sc	45	H2	3113138.33	0.1	3216050	96.8	60	120	
Sc	45	He	580868.02	0.6	590136.5	98.43	60	120	
Ge	72	No Gas	1312855.21	2.7	1347600.04	97.42	60	120	
Ge	72	H2	900373.56	0.7	912330.27	98.69	60	120	
Ge	72	He	372959.99	1.1	378247.59	98.6	60	120	
In	115	No Gas	8501932.59	1.4	8692051.13	97.81	60	120	
Tb	159	No Gas	11712096.75	1.0	11827603.42	99.02	60	120	
Tb	159	He	6586956.50	1.0	6692094.83	98.43	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV4
File Name	H6F22050.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:34:53
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.001	ppb	3.0	330802.97	25	96	90	110	
Be	9	6	No Gas	23.396	ppb	1.8	71677.47	25	93.58	90	110	
B	11	6	No Gas	54.212	ppb	3.5	108451.86	50	108.42	90	110	
Na	23	45	H2	24988.749	ppb	0.7	105500621.33	25000	99.95	90	110	
Mg	24	45	No Gas	25031.111	ppb	1.2	263730069.33	25000	100.12	90	110	
Al	27	45	No Gas	24761.174	ppb	1.9	340221114.93	25000	99.04	90	110	
Si	28	45	H2	2468.266	ppb	0.7	3012578.33	2500	98.73	90	110	
P	31	45	No Gas	243.202	ppb	1.1	226495.64	250	97.28	90	110	
K	39	45	He	25128.928	ppb	0.3	18866252.00	25000	100.52	90	110	
Ca	40	45	H2	24876.613	ppb	0.5	227781408.00	25000	99.51	90	110	
Ti	47	45	No Gas	240.540	ppb	1.7	425327.96	250	96.22	90	110	
V	51	45	He	250.656	ppb	0.3	1520841.00	250	100.26	90	110	
Cr	52	45	He	249.686	ppb	0.6	1744608.92	250	99.87	90	110	
Mn	55	45	No Gas	1476.139	ppb	2.9	44312382.67	1500	98.41	90	110	
Fe	56	45	H2	25362.308	ppb	1.0	341709440.00	25000	101.45	90	110	
Co	59	45	No Gas	245.398	ppb	2.9	6026241.00	250	98.16	90	110	
Ni	60	45	He	252.815	ppb	0.6	606225.86	250	101.13	90	110	
Cu	63	45	He	254.082	ppb	1.2	1607408.00	250	101.63	90	110	
Zn	66	72	No Gas	238.148	ppb	1.1	986191.17	250	95.26	90	110	
As	75	72	He	246.816	ppb	0.6	312816.38	250	98.73	90	110	
Se	78	72	H2	251.856	ppb	0.6	106033.09	250	100.74	90	110	
Sr	88	72	No Gas	244.205	ppb	2.5	8676632.44	250	97.68	90	110	
Zr	90	72	No Gas	23.875	ppb	2.8	537611.84	25	95.5	90	110	
Mo	95	115	No Gas	242.792	ppb	2.7	1693220.63	250	97.12	90	110	
Ag	107	115	No Gas	24.139	ppb	0.7	428911.62	25	96.56	90	110	
Cd	111	115	No Gas	241.489	ppb	1.2	895854.39	250	96.6	90	110	
Sn	118	115	No Gas	242.831	ppb	0.7	2692171.42	250	97.13	90	110	
Sb	123	115	No Gas	48.107	ppb	1.2	619411.11	50	96.21	90	110	
Ba	137	115	No Gas	491.236	ppb	1.6	2782252.53	500	98.25	90	110	
W	182	159	No Gas	24.794	ppb	1.8	332897.27	25	99.18	90	110	
Hg	201	159	He	2.530	ppb	0.5	3059.21	2.5	101.2	90	110	
Tl	205	159	No Gas	248.346	ppb	1.6	7810132.74	250	99.34	90	110	
Pb	208	159	No Gas	249.640	ppb	1.5	10643913.80	250	99.86	90	110	
U	238	159	No Gas	243.096	ppb	1.0	10210899.04	250	97.24	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1950867.72	1.8	1866774.34	104.5	60	120	
Sc	45	No Gas	5289688.67	0.5	5256704	100.63	60	120	
Sc	45	H2	3132903.67	0.9	3216050	97.41	60	120	
Sc	45	He	585744.36	0.5	590136.5	99.26	60	120	
Ge	72	No Gas	1360632.84	1.0	1347600.04	100.97	60	120	
Ge	72	H2	904163.63	0.8	912330.27	99.1	60	120	
Ge	72	He	371996.26	0.5	378247.59	98.35	60	120	
In	115	No Gas	8581506.86	0.9	8692051.13	98.73	60	120	
Tb	159	No Gas	11956029.80	1.5	11827603.42	101.09	60	120	
Tb	159	He	6667117.00	0.2	6692094.83	99.63	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB4
File Name	H6F22051.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:37:30
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	110565.32	0.4	
Be	9	6	No Gas	0.021	ppb	62.3	102.22	0.08	
B	11	6	No Gas	0.928	ppb	29.2	5561.11	4	
Na	23	45	H2	44.833	ppb	5.0	584587.40	40	>LOD
Mg	24	45	No Gas	8.601	ppb	50.9	116752.92	10	
Al	27	45	No Gas	7.422	ppb	54.9	109802.16	15	
Si	28	45	H2	0.478	ppb	10.5	4257.99	8	
P	31	45	No Gas	1.944	ppb	10.8	22828.73	10	
K	39	45	He	3.546	ppb	123.4	105161.48	20	
Ca	40	45	H2	2.929	ppb	14.9	159984.09	25	
Tl	47	45	No Gas	0.098	ppb	56.2	644.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6330.13	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1023.37	0.2	
Mn	55	45	No Gas	0.450	ppb	53.1	22416.35	0.2	>LOD
Fe	56	45	H2	2.568	ppb	17.3	44391.64	10	
Co	59	45	No Gas	0.079	ppb	53.3	2164.20	0.15	
Ni	60	45	He	0.005	ppb	96.9	142.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1342.74	0.4	
Zn	66	72	No Gas	0.014	ppb	326.9	2187.51	2	
As	75	72	He	0.013	ppb	155.3	336.00	0.2	
Se	78	72	H2	0.040	ppb	26.0	36.00	0.2	
Sr	88	72	No Gas	0.083	ppb	48.6	3661.68	0.2	
Zr	90	72	No Gas	0.005	ppb	127.1	290.00	2	
Mo	95	115	No Gas	0.078	ppb	39.3	617.80	0.2	
Ag	107	115	No Gas	0.006	ppb	49.8	217.78	0.08	
Cd	111	115	No Gas	0.099	ppb	40.4	420.53	0.2	
Sn	118	115	No Gas	0.036	ppb	127.3	1922.37	0.2	
Sb	123	115	No Gas	0.016	ppb	48.5	342.23	0.4	
Ba	137	115	No Gas	0.129	ppb	59.6	865.59	0.2	
W	182	159	No Gas	0.006	ppb	67.6	210.00	0.3	
Hg	201	159	He	0.005	ppb	24.2	15.67	0.1	
Tl	205	159	No Gas	0.127	ppb	35.9	4793.22	0.1	>LOD
Pb	208	159	No Gas	0.080	ppb	51.7	5070.46	0.1	
U	238	159	No Gas	0.070	ppb	46.1	3011.55	0.05	>LOD

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1901221.10	0.8	1866774.34	101.85	60	120	
Sc	45	No Gas	5241281.67	1.7	5256704	99.71	60	120	
Sc	45	H2	3161572.58	1.3	3216050	98.31	60	120	
Sc	45	He	591614.79	1.1	590136.5	100.25	60	120	
Ge	72	No Gas	1354976.42	0.6	1347600.04	100.55	60	120	
Ge	72	H2	908907.38	1.3	912330.27	99.62	60	120	
Ge	72	He	374152.11	0.5	378247.59	98.92	60	120	
In	115	No Gas	8875668.89	1.6	8692051.13	102.11	60	120	
Tb	159	No Gas	11995315.91	1.0	11827603.42	101.42	60	120	
Tb	159	He	6687150.17	0.5	6692094.83	99.93	60	120	

Sample Report

Sample Name	F162-01
File Name	H6F22053.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:42:40
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	20.080	20.080	ppb	3.2	274645.84	50	
Be	9	6	No Gas	0.008	0.008	ppb	64.8	58.89	50	
B	11	6	No Gas	139.644	139.644	ppb	2.9	254060.67	100	>LDR
Na	23	45	H2	108454.365	108454.365	ppb	1.8	461498624.00	50000	>LDR
Mg	24	45	No Gas	51554.410	51554.410	ppb	2.1	538428064.00	50000	>LDR
Al	27	45	No Gas	54.302	54.302	ppb	0.6	748486.32	50000	
Si	28	45	H2	8406.768	8406.768	ppb	1.4	10363055.33	5000	>LDR
P	31	45	No Gas	11.093	11.093	ppb	3.7	30484.06	500	
K	39	45	He	2686.627	2686.627	ppb	1.2	2101119.37	50000	
Ca	40	45	H2	152124.180	152124.180	ppb	1.2	1407236224.00	50000	>LDR
Ti	47	45	No Gas	0.721	0.721	ppb	26.0	1734.80	500	
V	51	45	He	2.100	2.100	ppb	1.3	19198.09	500	
Cr	52	45	He	1.692	1.692	ppb	1.3	12989.48	500	
Mn	55	45	No Gas	7.535	7.535	ppb	1.8	233259.04	3000	
Fe	56	45	H2	148.528	148.528	ppb	1.3	2032172.96	50000	
Co	59	45	No Gas	0.174	0.174	ppb	2.6	4488.08	500	
Ni	60	45	He	1.367	1.367	ppb	0.9	3395.09	500	
Cu	63	45	He	0.165	0.165	ppb	6.3	3602.48	500	
Zn	66	72	No Gas	2.497	2.497	ppb	1.9	12343.61	500	
As	75	72	He	0.719	0.719	ppb	7.7	1202.05	500	
Se	78	72	H2	0.856	0.856	ppb	4.4	372.34	500	
Sr	88	72	No Gas	1039.412	1039.412	ppb	2.9	36586628.55	500	>LDR
Zr	90	72	No Gas	0.052	0.052	ppb	73.1	1346.93	50	
Mo	95	115	No Gas	0.797	0.797	ppb	1.1	5656.76	500	
Ag	107	115	No Gas	0.081	0.081	ppb	5.7	1551.20	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.12	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	738.91	500	
Sb	123	115	No Gas	0.051	0.051	ppb	14.5	784.47	100	
Ba	137	115	No Gas	67.617	67.617	ppb	2.2	386354.45	1000	
W	182	159	No Gas	0.021	0.021	ppb	8.0	413.34	50	
Hg	201	159	He	0.002	0.002	ppb	93.4	11.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	686.69	500	
Pb	208	159	No Gas	0.045	0.045	ppb	8.8	3563.55	500	
U	238	159	No Gas	1.626	1.626	ppb	2.3	68021.60	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1813254.90	0.9	1866774.34	97.13	60	120	
Sc	45	No Gas	5242989.17	1.0	5256704	99.74	60	120	
Sc	45	H2	3166917.08	1.7	3216050	98.47	60	120	
Sc	45	He	583948.65	1.0	590136.5	98.95	60	120	
Ge	72	No Gas	1348127.12	0.2	1347600.04	100.04	60	120	
Ge	72	H2	887745.60	0.6	912330.27	97.31	60	120	
Ge	72	He	364122.20	0.6	378247.59	96.27	60	120	
In	115	No Gas	8655918.67	1.3	8692051.13	99.58	60	120	
Tb	159	No Gas	11890337.59	0.4	11827603.42	100.53	60	120	
Tb	159	He	6573334.00	0.6	6692094.83	98.23	60	120	

Sample Report

Sample Name	F162-02
File Name	H6F22054.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:45:15
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	26.279	26.279	ppb	1.9	330631.25	50	
Be	9	6	No Gas	0.007	0.007	ppb	158.4	58.89	50	
B	11	6	No Gas	205.676	205.676	ppb	3.9	376913.97	100	>LDR
Na	23	45	H2	150743.737	150743.737	ppb	1.8	642724224.00	50000	>LDR
Mg	24	45	No Gas	51437.854	51437.854	ppb	3.5	534221301.33	50000	>LDR
Al	27	45	No Gas	702.056	702.056	ppb	2.3	9518325.69	50000	
Si	28	45	H2	9138.360	9138.360	ppb	1.5	11289008.33	5000	>LDR
P	31	45	No Gas	14.716	14.716	ppb	1.8	33335.93	500	
K	39	45	He	2965.486	2965.486	ppb	2.2	2288602.67	50000	
Ca	40	45	H2	144166.966	144166.966	ppb	1.9	1336588416.00	50000	>LDR
Ti	47	45	No Gas	0.756	0.756	ppb	20.5	1787.48	500	
V	51	45	He	2.826	2.826	ppb	1.4	23364.54	500	
Cr	52	45	He	1.631	1.631	ppb	3.5	12450.32	500	
Mn	55	45	No Gas	2.111	2.111	ppb	2.4	71497.73	3000	
Fe	56	45	H2	60.442	60.442	ppb	1.7	834507.40	50000	
Co	59	45	No Gas	0.148	0.148	ppb	2.2	3828.54	500	
Ni	60	45	He	0.570	0.570	ppb	4.6	1478.08	500	
Cu	63	45	He	0.099	0.099	ppb	5.9	3162.37	500	
Zn	66	72	No Gas	1.439	1.439	ppb	2.4	7967.00	500	
As	75	72	He	0.997	0.997	ppb	3.5	1555.09	500	
Se	78	72	H2	0.814	0.814	ppb	2.0	354.00	500	
Sr	88	72	No Gas	909.881	909.881	ppb	2.6	31839920.96	500	>LDR
Zr	90	72	No Gas	0.033	0.033	ppb	2.6	910.03	50	
Mo	95	115	No Gas	0.386	0.386	ppb	4.8	2669.16	500	
Ag	107	115	No Gas	0.081	0.081	ppb	5.6	1504.53	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-4.15	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	894.48	500	
Sb	123	115	No Gas	0.055	0.055	ppb	16.2	810.03	100	
Ba	137	115	No Gas	129.494	129.494	ppb	0.8	713472.96	1000	
W	182	159	No Gas	0.003	0.003	ppb	107.5	166.67	50	
Hg	201	159	He	0.003	0.003	ppb	33.0	12.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	402.23	500	
Pb	208	159	No Gas	0.032	0.032	ppb	2.7	2910.14	500	
U	238	159	No Gas	1.434	1.434	ppb	2.4	58606.38	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1835467.80	0.8	1866774.34	98.32	60	120	
Sc	45	No Gas	5215144.83	0.7	5256704	99.21	60	120	
Sc	45	H2	3174432.08	2.2	3216050	98.71	60	120	
Sc	45	He	578897.71	0.8	590136.5	98.1	60	120	
Ge	72	No Gas	1340237.91	0.2	1347600.04	99.45	60	120	
Ge	72	H2	885221.31	0.6	912330.27	97.03	60	120	
Ge	72	He	366068.90	1.3	378247.59	96.78	60	120	
In	115	No Gas	8346650.36	0.4	8692051.13	96.03	60	120	
Tb	159	No Gas	11617717.59	0.6	11827603.42	98.23	60	120	
Tb	159	He	6514825.83	0.2	6692094.83	97.35	60	120	

Sample Report

Sample Name	F162-04
File Name	H6F22055.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:47:51
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	18.223	18.223	ppb	1.6	271041.96	50	
Be	9	6	No Gas	0.006	0.006	ppb	30.7	55.56	50	
B	11	6	No Gas	57.703	57.703	ppb	2.6	112067.50	100	
Na	23	45	H2	38740.209	38740.209	ppb	2.1	168225610.67	50000	
Mg	24	45	No Gas	37909.866	37909.866	ppb	0.4	397668138.67	50000	
Al	27	45	No Gas	237.672	237.672	ppb	0.2	3260221.10	50000	
Si	28	45	H2	9030.739	9030.739	ppb	2.4	11340834.00	5000	>LDR
P	31	45	No Gas	3.876	3.876	ppb	14.2	24558.35	500	
K	39	45	He	2275.950	2275.950	ppb	0.7	1767015.45	50000	
Ca	40	45	H2	136456.865	136456.865	ppb	2.3	1286147157.33	50000	>LDR
Ti	47	45	No Gas	0.419	0.419	ppb	12.0	1212.06	500	
V	51	45	He	1.438	1.438	ppb	2.9	14970.17	500	
Cr	52	45	He	4.259	4.259	ppb	1.5	30368.25	500	
Mn	55	45	No Gas	0.384	0.384	ppb	3.7	20584.15	3000	
Fe	56	45	H2	22.834	22.834	ppb	1.8	326572.85	50000	
Co	59	45	No Gas	0.133	0.133	ppb	3.0	3507.12	500	
Ni	60	45	He	1.984	1.984	ppb	2.4	4791.51	500	
Cu	63	45	He	0.045	0.045	ppb	21.9	2803.63	500	
Zn	66	72	No Gas	2.262	2.262	ppb	2.7	11417.48	500	
As	75	72	He	0.359	0.359	ppb	7.5	764.69	500	
Se	78	72	H2	1.216	1.216	ppb	3.0	533.68	500	
Sr	88	72	No Gas	1474.937	1474.937	ppb	1.1	52076249.04	500	>LDR
Zr	90	72	No Gas	0.008	0.008	ppb	22.1	350.00	50	
Mo	95	115	No Gas	0.548	0.548	ppb	1.3	3841.67	500	
Ag	107	115	No Gas	0.073	0.073	ppb	3.4	1388.96	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-12.74	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	816.69	500	
Sb	123	115	No Gas	0.048	0.048	ppb	10.3	728.91	100	
Ba	137	115	No Gas	23.254	23.254	ppb	1.7	130699.84	1000	
W	182	159	No Gas	0.009	0.009	ppb	103.4	246.67	50	
Hg	201	159	He	0.003	0.003	ppb	17.5	12.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	383.34	500	
Pb	208	159	No Gas	0.015	0.015	ppb	38.4	2231.20	500	
U	238	159	No Gas	0.862	0.862	ppb	1.3	35705.25	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1897284.70	0.4	1866774.34	101.63	60	120	
Sc	45	No Gas	5266409.67	1.3	5256704	100.18	60	120	
Sc	45	H2	3227268.50	1.9	3216050	100.35	60	120	
Sc	45	He	574685.12	0.4	590136.5	97.38	60	120	
Ge	72	No Gas	1352138.33	0.9	1347600.04	100.34	60	120	
Ge	72	H2	909317.40	0.9	912330.27	99.67	60	120	
Ge	72	He	368597.96	0.9	378247.59	97.45	60	120	
In	115	No Gas	8508244.38	0.5	8692051.13	97.89	60	120	
Tb	159	No Gas	11762574.53	1.3	11827603.42	99.45	60	120	
Tb	159	He	6618659.83	1.3	6692094.83	98.9	60	120	

Sample Report

Sample Name	F162-05
File Name	H6F22056.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:50:27
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	49.003	49.003	ppb	1.0	547676.17	50	>LDR
Be	9	6	No Gas	0.002	0.002	ppb	106.5	44.44	50	
B	11	6	No Gas	166.439	166.439	ppb	3.4	319753.03	100	>LDR
Na	23	45	H2	128455.624	128455.624	ppb	0.9	564039488.00	50000	>LDR
Mg	24	45	No Gas	78126.103	78126.103	ppb	2.7	825213866.67	50000	>LDR
Al	27	45	No Gas	39.204	39.204	ppb	5.0	549115.57	50000	
Si	28	45	H2	7605.633	7605.633	ppb	0.8	9675102.67	5000	>LDR
P	31	45	No Gas	7.014	7.014	ppb	9.5	27385.62	500	
K	39	45	He	4375.459	4375.459	ppb	0.9	3428311.17	50000	
Ca	40	45	H2	179527.857	179527.857	ppb	1.3	1713822336.00	50000	>LDR
Ti	47	45	No Gas	0.434	0.434	ppb	2.4	1248.73	500	
V	51	45	He	0.509	0.509	ppb	8.2	9810.85	500	
Cr	52	45	He	5.705	5.705	ppb	2.2	41764.83	500	
Mn	55	45	No Gas	772.423	772.423	ppb	2.5	23252836.67	3000	
Fe	56	45	H2	134.569	134.569	ppb	1.8	1900982.75	50000	
Co	59	45	No Gas	6.327	6.327	ppb	1.4	156027.00	500	
Ni	60	45	He	239.106	239.106	ppb	1.1	583468.83	500	
Cu	63	45	He	0.543	0.543	ppb	2.5	6108.04	500	
Zn	66	72	No Gas	2.672	2.672	ppb	2.3	13143.04	500	
As	75	72	He	0.557	0.557	ppb	4.4	1025.71	500	
Se	78	72	H2	0.297	0.297	ppb	7.4	145.33	500	
Sr	88	72	No Gas	1337.141	1337.141	ppb	1.9	47361833.68	500	>LDR
Zr	90	72	No Gas	0.128	0.128	ppb	32.9	3043.98	50	
Mo	95	115	No Gas	35.116	35.116	ppb	1.4	243622.31	500	
Ag	107	115	No Gas	0.150	0.150	ppb	1.4	2745.84	50	
Cd	111	115	No Gas	0.023	0.023	ppb	41.3	124.59	500	
Sn	118	115	No Gas	0.044	0.044	ppb	19.0	1940.14	500	
Sb	123	115	No Gas	0.160	0.160	ppb	3.4	2172.40	100	
Ba	137	115	No Gas	71.879	71.879	ppb	1.7	405049.45	1000	
W	182	159	No Gas	0.058	0.058	ppb	17.2	886.70	50	
Hg	201	159	He	0.002	0.002	ppb	58.1	11.50	5	
Tl	205	159	No Gas	0.001	0.001	ppb	43.1	826.69	500	
Pb	208	159	No Gas	0.047	0.047	ppb	6.6	3570.21	500	
U	238	159	No Gas	2.496	2.496	ppb	0.8	102827.01	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1919341.90	1.0	1866774.34	102.82	60	120	
Sc	45	No Gas	5303106.67	0.5	5256704	100.88	60	120	
Sc	45	H2	3268128.17	1.1	3216050	101.62	60	120	
Sc	45	He	596150.31	1.7	590136.5	101.02	60	120	
Ge	72	No Gas	1356377.83	1.2	1347600.04	100.65	60	120	
Ge	72	H2	913513.83	0.8	912330.27	100.13	60	120	
Ge	72	He	372899.83	0.9	378247.59	98.59	60	120	
In	115	No Gas	8535517.79	0.6	8692051.13	98.2	60	120	
Tb	159	No Gas	11715185.64	1.0	11827603.42	99.05	60	120	
Tb	159	He	6563218.67	0.2	6692094.83	98.07	60	120	

Sample Report

Sample Name	F162-07
File Name	H6F22057.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 12:53:03
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.372	15.372	ppb	2.3	254011.35	50	
Be	9	6	No Gas	0.001	0.001	ppb	486.8	43.33	50	
B	11	6	No Gas	84.535	84.535	ppb	1.9	167693.43	100	
Na	23	45	H2	93842.600	93842.600	ppb	0.7	412789824.00	50000	>LDR
Mg	24	45	No Gas	63843.895	63843.895	ppb	2.8	685340586.67	50000	>LDR
Al	27	45	No Gas	9.718	9.718	ppb	1.5	145265.77	50000	
Si	28	45	H2	7790.705	7790.705	ppb	1.1	9925467.00	5000	>LDR
P	31	45	No Gas	6.289	6.289	ppb	7.4	27207.27	500	
K	39	45	He	2621.747	2621.747	ppb	0.4	2093816.92	50000	
Ca	40	45	H2	186372.804	186372.804	ppb	0.2	1781952554.67	50000	>LDR
Ti	47	45	No Gas	0.416	0.416	ppb	1.8	1236.06	500	
V	51	45	He	1.670	1.670	ppb	1.7	16937.12	500	
Cr	52	45	He	1.826	1.826	ppb	1.2	14200.02	500	
Mn	55	45	No Gas	59.745	59.745	ppb	2.3	1836375.17	3000	
Fe	56	45	H2	38.281	38.281	ppb	0.3	548694.54	50000	
Co	59	45	No Gas	0.315	0.315	ppb	0.7	8141.77	500	
Ni	60	45	He	3.432	3.432	ppb	2.1	8495.98	500	
Cu	63	45	He	0.727	0.727	ppb	5.1	7286.62	500	
Zn	66	72	No Gas	1.514	1.514	ppb	2.1	8355.91	500	
As	75	72	He	0.640	0.640	ppb	4.3	1130.38	500	
Se	78	72	H2	0.844	0.844	ppb	7.9	374.67	500	
Sr	88	72	No Gas	1269.142	1269.142	ppb	3.5	44851661.55	500	>LDR
Zr	90	72	No Gas	0.030	0.030	ppb	57.4	856.73	50	
Mo	95	115	No Gas	1.123	1.123	ppb	5.2	7927.92	500	
Ag	107	115	No Gas	0.061	0.061	ppb	6.4	1200.06	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-5.79	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	852.25	500	
Sb	123	115	No Gas	0.057	0.057	ppb	6.3	860.03	100	
Ba	137	115	No Gas	73.163	73.163	ppb	1.3	416846.26	1000	
W	182	159	No Gas	0.030	0.030	ppb	20.9	530.01	50	
Hg	201	159	He	0.003	0.003	ppb	92.3	13.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	696.69	500	
Pb	208	159	No Gas	0.006	0.006	ppb	7.3	1905.61	500	
U	238	159	No Gas	1.641	1.641	ppb	1.3	68441.45	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1959137.34	2.1	1866774.34	104.95	60	120	
Sc	45	No Gas	5389232.00	0.5	5256704	102.52	60	120	
Sc	45	H2	3272954.83	0.4	3216050	101.77	60	120	
Sc	45	He	595569.12	0.7	590136.5	100.92	60	120	
Ge	72	No Gas	1353596.08	0.7	1347600.04	100.44	60	120	
Ge	72	H2	905074.98	0.4	912330.27	99.2	60	120	
Ge	72	He	372870.98	0.8	378247.59	98.58	60	120	
In	115	No Gas	8630363.24	0.1	8692051.13	99.29	60	120	
Tb	159	No Gas	11858834.25	0.9	11827603.42	100.26	60	120	
Tb	159	He	6578447.33	1.3	6692094.83	98.3	60	120	

Sample Report

Sample Name	F162-08
File Name	H6F22058.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:55:39
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	11.637	11.637	ppb	2.1	225805.35	50	
Be	9	6	No Gas	0.004	0.004	ppb	76.2	54.44	50	
B	11	6	No Gas	43.809	43.809	ppb	2.5	91078.38	100	
Na	23	45	H2	33522.994	33522.994	ppb	0.9	144120288.00	50000	
Mg	24	45	No Gas	45656.031	45656.031	ppb	2.2	488665866.67	50000	>LDR
Al	27	45	No Gas	40.548	40.548	ppb	4.2	575059.91	50000	
Si	28	45	H2	7579.464	7579.464	ppb	1.1	9421357.00	5000	>LDR
P	31	45	No Gas	10.448	10.448	ppb	4.7	30690.51	500	
K	39	45	He	1916.389	1916.389	ppb	0.8	1534284.62	50000	
Ca	40	45	H2	132864.366	132864.366	ppb	1.3	1239441749.33	50000	>LDR
Ti	47	45	No Gas	0.700	0.700	ppb	13.1	1741.45	500	
V	51	45	He	1.451	1.451	ppb	3.0	15353.92	500	
Cr	52	45	He	0.655	0.655	ppb	1.4	5793.23	500	
Mn	55	45	No Gas	32.546	32.546	ppb	1.9	1001620.79	3000	
Fe	56	45	H2	43.182	43.182	ppb	0.4	602623.52	50000	
Co	59	45	No Gas	0.155	0.155	ppb	1.9	4123.96	500	
Ni	60	45	He	1.009	1.009	ppb	3.1	2548.91	500	
Cu	63	45	He	0.015	0.015	ppb	54.1	2670.93	500	
Zn	66	72	No Gas	5.640	5.640	ppb	1.9	25547.34	500	
As	75	72	He	0.437	0.437	ppb	4.4	865.36	500	
Se	78	72	H2	0.985	0.985	ppb	4.4	429.34	500	
Sr	88	72	No Gas	897.732	897.732	ppb	2.0	32019980.95	500	>LDR
Zr	90	72	No Gas	0.048	0.048	ppb	14.6	1276.73	50	
Mo	95	115	No Gas	0.696	0.696	ppb	3.6	4967.60	500	
Ag	107	115	No Gas	0.064	0.064	ppb	5.5	1257.84	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-3.90	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1030.04	500	
Sb	123	115	No Gas	0.054	0.054	ppb	2.2	831.14	100	
Ba	137	115	No Gas	36.641	36.641	ppb	1.7	210340.92	1000	
W	182	159	No Gas	0.007	0.007	ppb	28.7	230.00	50	
Hg	201	159	He	0.003	0.003	ppb	81.1	12.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	325.56	500	
Pb	208	159	No Gas	0.088	0.088	ppb	8.1	5359.35	500	
U	238	159	No Gas	1.457	1.457	ppb	2.2	60677.48	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2009568.20	0.9	1866774.34	107.65	60	120	
Sc	45	No Gas	5373335.33	0.6	5256704	102.22	60	120	
Sc	45	H2	3193150.17	0.4	3216050	99.29	60	120	
Sc	45	He	586420.48	0.3	590136.5	99.37	60	120	
Ge	72	No Gas	1366100.37	0.7	1347600.04	101.37	60	120	
Ge	72	H2	895520.48	0.5	912330.27	98.16	60	120	
Ge	72	He	369480.84	0.7	378247.59	97.68	60	120	
In	115	No Gas	8693857.06	0.7	8692051.13	100.02	60	120	
Tb	159	No Gas	11838791.48	1.9	11827603.42	100.09	60	120	
Tb	159	He	6591873.33	0.5	6692094.83	98.5	60	120	

Sample Report

Sample Name	F162-10
File Name	H6F22059.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 12:58:15
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.711	13.711	ppb	1.9	240396.58	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	28.89	50	
B	11	6	No Gas	45.657	45.657	ppb	3.2	92925.14	100	
Na	23	45	H2	25858.867	25858.867	ppb	0.6	109929440.00	50000	
Mg	24	45	No Gas	37521.266	37521.266	ppb	2.4	394001600.00	50000	
Al	27	45	No Gas	10.525	10.525	ppb	6.3	153182.92	50000	
Si	28	45	H2	8506.691	8506.691	ppb	1.4	10446250.67	5000	>LDR
P	31	45	No Gas	6.552	6.552	ppb	8.5	26843.27	500	
K	39	45	He	1850.409	1850.409	ppb	2.5	1479470.46	50000	
Ca	40	45	H2	118945.105	118945.105	ppb	0.4	1096254848.00	50000	>LDR
Ti	47	45	No Gas	0.541	0.541	ppb	9.3	1430.08	500	
V	51	45	He	1.890	1.890	ppb	0.6	17942.39	500	
Cr	52	45	He	0.724	0.724	ppb	3.4	6248.76	500	
Mn	55	45	No Gas	4.174	4.174	ppb	2.3	133979.06	3000	
Fe	56	45	H2	12.276	12.276	ppb	3.9	176050.27	50000	
Co	59	45	No Gas	0.088	0.088	ppb	3.4	2408.22	500	
Ni	60	45	He	0.774	0.774	ppb	6.5	1978.81	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1942.81	500	
Zn	66	72	No Gas	2.888	2.888	ppb	2.2	13998.54	500	
As	75	72	He	0.504	0.504	ppb	5.4	956.37	500	
Se	78	72	H2	1.125	1.125	ppb	2.4	487.01	500	
Sr	88	72	No Gas	1024.649	1024.649	ppb	3.4	36204363.00	500	>LDR
Zr	90	72	No Gas	0.016	0.016	ppb	25.1	540.01	50	
Mo	95	115	No Gas	0.604	0.604	ppb	2.8	4301.81	500	
Ag	107	115	No Gas	0.063	0.063	ppb	4.8	1226.73	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-22.55	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	880.03	500	
Sb	123	115	No Gas	0.044	0.044	ppb	8.4	698.91	100	
Ba	137	115	No Gas	24.804	24.804	ppb	0.2	141817.73	1000	
W	182	159	No Gas	0.011	0.011	ppb	51.7	280.00	50	
Hg	201	159	He	0.002	0.002	ppb	182.8	11.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	228.89	500	
Pb	208	159	No Gas	0.033	0.033	ppb	7.7	3042.37	500	
U	238	159	No Gas	1.220	1.220	ppb	1.5	50827.30	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1971093.18	1.6	1866774.34	105.59	60	120	
Sc	45	No Gas	5272669.50	0.8	5256704	100.3	60	120	
Sc	45	H2	3154837.17	0.4	3216050	98.1	60	120	
Sc	45	He	584342.06	1.2	590136.5	99.02	60	120	
Ge	72	No Gas	1353356.17	0.5	1347600.04	100.43	60	120	
Ge	72	H2	893956.96	1.2	912330.27	97.99	60	120	
Ge	72	He	372268.03	0.4	378247.59	98.42	60	120	
In	115	No Gas	8655852.52	1.3	8692051.13	99.58	60	120	
Tb	159	No Gas	11837784.25	0.5	11827603.42	100.09	60	120	
Tb	159	He	6604814.33	0.4	6692094.83	98.7	60	120	

Sample Report

Sample Name	F162-11
File Name	H6F22060.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:00:51
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	18.608	18.608	ppb	0.7	278822.54	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	26.67	50	
B	11	6	No Gas	56.021	56.021	ppb	2.8	110646.12	100	
Na	23	45	H2	48947.904	48947.904	ppb	1.6	207653584.00	50000	>LDR
Mg	24	45	No Gas	38416.361	38416.361	ppb	1.7	401380266.67	50000	
Al	27	45	No Gas	3.357	3.357	ppb	22.2	54707.71	50000	
Si	28	45	H2	8207.959	8207.959	ppb	1.6	10075888.00	5000	>LDR
P	31	45	No Gas	3.733	3.733	ppb	29.5	24336.63	500	
K	39	45	He	2187.068	2187.068	ppb	1.5	1713497.08	50000	
Ca	40	45	H2	126882.687	126882.687	ppb	1.8	1168960597.33	50000	>LDR
Ti	47	45	No Gas	0.355	0.355	ppb	1.8	1095.37	500	
V	51	45	He	0.589	0.589	ppb	6.0	10003.65	500	
Cr	52	45	He	0.527	0.527	ppb	1.3	4830.85	500	
Mn	55	45	No Gas	261.305	261.305	ppb	2.6	7786678.50	3000	
Fe	56	45	H2	55.988	55.988	ppb	1.0	768890.85	50000	
Co	59	45	No Gas	0.629	0.629	ppb	0.7	15572.90	500	
Ni	60	45	He	3.922	3.922	ppb	2.1	9413.25	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1702.77	500	
Zn	66	72	No Gas	3.978	3.978	ppb	1.1	18306.99	500	
As	75	72	He	0.323	0.323	ppb	3.9	717.69	500	
Se	78	72	H2	0.964	0.964	ppb	4.0	425.68	500	
Sr	88	72	No Gas	1312.455	1312.455	ppb	1.4	45945301.51	500	>LDR
Zr	90	72	No Gas	0.016	0.016	ppb	38.9	536.68	50	
Mo	95	115	No Gas	3.584	3.584	ppb	1.6	25076.96	500	
Ag	107	115	No Gas	0.061	0.061	ppb	6.9	1192.28	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-4.79	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	937.81	500	
Sb	123	115	No Gas	0.070	0.070	ppb	6.3	1025.60	100	
Ba	137	115	No Gas	27.768	27.768	ppb	1.8	157578.22	1000	
W	182	159	No Gas	0.045	0.045	ppb	15.8	723.36	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	7.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	384.45	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1243.36	500	
U	238	159	No Gas	1.654	1.654	ppb	0.6	68301.87	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1927730.12	0.8	1866774.34	103.27	60	120	
Sc	45	No Gas	5245213.33	1.1	5256704	99.78	60	120	
Sc	45	H2	3154062.00	1.2	3216050	98.07	60	120	
Sc	45	He	578580.87	0.7	590136.5	98.04	60	120	
Ge	72	No Gas	1340689.58	0.5	1347600.04	99.49	60	120	
Ge	72	H2	906099.04	0.6	912330.27	99.32	60	120	
Ge	72	He	367294.37	0.3	378247.59	97.1	60	120	
In	115	No Gas	8592798.26	0.6	8692051.13	98.86	60	120	
Tb	159	No Gas	11742544.53	0.9	11827603.42	99.28	60	120	
Tb	159	He	6560350.00	0.4	6692094.83	98.03	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6F22061.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:03:27
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.777	ppb	1.9	324350.81	25	95.11	90	110	
Be	9	6	No Gas	23.332	ppb	2.0	70509.47	25	93.33	90	110	
B	11	6	No Gas	53.278	ppb	4.7	105198.84	50	106.56	90	110	
Na	23	45	H2	25250.404	ppb	0.5	106148493.33	25000	101	90	110	
Mg	24	45	No Gas	25281.733	ppb	2.2	263969322.67	25000	101.13	90	110	
Al	27	45	No Gas	24838.829	ppb	2.3	338216468.29	25000	99.36	90	110	
Si	28	45	H2	2511.098	ppb	1.2	3051645.42	2500	100.44	90	110	
P	31	45	No Gas	243.605	ppb	1.6	224782.66	250	97.44	90	110	
K	39	45	He	25533.268	ppb	0.3	19051371.33	25000	102.13	90	110	
Ca	40	45	H2	25103.867	ppb	0.4	228882688.00	25000	100.42	90	110	
Ti	47	45	No Gas	244.529	ppb	1.5	428471.96	250	97.81	90	110	
V	51	45	He	254.573	ppb	0.9	1535036.37	250	101.83	90	110	
Cr	52	45	He	252.796	ppb	0.8	1755542.46	250	101.12	90	110	
Mn	55	45	No Gas	1479.812	ppb	1.9	44022864.00	1500	98.65	90	110	
Fe	56	45	H2	25385.771	ppb	0.1	340581738.67	25000	101.54	90	110	
Co	59	45	No Gas	247.588	ppb	1.6	6025111.67	250	99.04	90	110	
Ni	60	45	He	251.917	ppb	1.1	600375.92	250	100.77	90	110	
Cu	63	45	He	253.743	ppb	0.6	1595516.50	250	101.5	90	110	
Zn	66	72	No Gas	237.610	ppb	1.9	982110.19	250	95.04	90	110	
As	75	72	He	248.425	ppb	0.5	314485.84	250	99.37	90	110	
Se	78	72	H2	249.473	ppb	0.7	105077.64	250	99.79	90	110	
Sr	88	72	No Gas	244.503	ppb	2.8	8670791.88	250	97.8	90	110	
Zr	90	72	No Gas	23.734	ppb	1.8	533493.85	25	94.94	90	110	
Mo	95	115	No Gas	245.303	ppb	2.1	1692482.12	250	98.12	90	110	
Ag	107	115	No Gas	24.414	ppb	1.0	429167.98	25	97.66	90	110	
Cd	111	115	No Gas	241.473	ppb	1.1	886202.68	250	96.59	90	110	
Sn	118	115	No Gas	246.633	ppb	1.1	2705228.99	250	98.65	90	110	
Sb	123	115	No Gas	48.622	ppb	0.7	619353.71	50	97.24	90	110	
Ba	137	115	No Gas	494.704	ppb	0.7	2772146.69	500	98.94	90	110	
W	182	159	No Gas	24.538	ppb	1.5	326646.89	25	98.15	90	110	
Hg	201	159	He	2.481	ppb	1.1	2957.02	2.5	99.24	90	110	
Tl	205	159	No Gas	248.038	ppb	0.8	7732714.14	250	99.22	90	110	
Pb	208	159	No Gas	250.404	ppb	0.5	10583843.11	250	100.16	90	110	
U	238	159	No Gas	241.413	ppb	0.8	10051410.71	250	96.57	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1924369.99	1.4	1866774.34	103.09	60	120	
Sc	45	No Gas	5241535.67	0.5	5256704	99.71	60	120	
Sc	45	H2	3119508.08	0.4	3216050	97	60	120	
Sc	45	He	582188.56	1.1	590136.5	98.65	60	120	
Ge	72	No Gas	1358146.25	0.9	1347600.04	100.78	60	120	
Ge	72	H2	904598.58	0.9	912330.27	99.15	60	120	
Ge	72	He	371560.37	0.5	378247.59	98.23	60	120	
In	115	No Gas	8490296.00	1.3	8692051.13	97.68	60	120	
Tb	159	No Gas	11851885.64	1.1	11827603.42	100.21	60	120	
Tb	159	He	6572046.67	0.8	6692094.83	98.21	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6F22062.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:09:15
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	105639.82	0.4	
Be	9	6	No Gas	0.005	ppb	49.7	51.11	0.08	
B	11	6	No Gas	0.912	ppb	16.3	5325.46	4	
Na	23	45	H2	25.254	ppb	7.9	513000.43	40	
Mg	24	45	No Gas	1.736	ppb	21.6	45836.58	10	
Al	27	45	No Gas	0.477	ppb	38.5	15639.01	15	
Si	28	45	H2	0.397	ppb	308.5	4244.78	8	
P	31	45	No Gas	1.346	ppb	24.6	22611.04	10	
K	39	45	He	4.423	ppb	76.4	106668.47	20	
Ca	40	45	H2	0.534	ppb	11.6	141080.56	25	
Ti	47	45	No Gas	0.021	ppb	65.1	517.34	0.5	
V	51	45	He	0.028	ppb	77.9	6856.39	0.5	
Cr	52	45	He	<0.000	ppb	N/A	872.69	0.2	
Mn	55	45	No Gas	0.056	ppb	12.6	10855.65	0.2	
Fe	56	45	H2	0.405	ppb	11.9	15387.33	10	
Co	59	45	No Gas	0.005	ppb	31.7	366.00	0.15	
Ni	60	45	He	<0.000	ppb	N/A	109.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	970.03	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1832.13	2	
As	75	72	He	0.008	ppb	137.4	327.67	0.2	
Se	78	72	H2	0.003	ppb	478.0	20.33	0.2	
Sr	88	72	No Gas	0.015	ppb	36.3	1278.95	0.2	
Zr	90	72	No Gas	0.003	ppb	143.8	256.67	2	
Mo	95	115	No Gas	0.006	ppb	25.4	97.78	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	95.56	0.08	
Cd	111	115	No Gas	0.009	ppb	21.6	73.87	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1185.61	0.2	
Sb	123	115	No Gas	0.004	ppb	49.2	176.67	0.4	
Ba	137	115	No Gas	0.009	ppb	44.8	168.89	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	80.00	0.3	
Hg	201	159	He	0.003	ppb	48.3	13.00	0.1	
Tl	205	159	No Gas	0.001	ppb	239.6	815.58	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	1404.48	0.1	
U	238	159	No Gas	0.006	ppb	24.8	314.45	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1830733.36	0.6	1866774.34	98.07	60	120	
Sc	45	No Gas	5307447.67	1.0	5256704	100.97	60	120	
Sc	45	H2	3234391.92	1.9	3216050	100.57	60	120	
Sc	45	He	596232.35	0.7	590136.5	101.03	60	120	
Ge	72	No Gas	1357898.12	1.0	1347600.04	100.76	60	120	
Ge	72	H2	914245.75	1.7	912330.27	100.21	60	120	
Ge	72	He	372399.99	0.5	378247.59	98.45	60	120	
In	115	No Gas	8811759.29	0.8	8692051.13	101.38	60	120	
Tb	159	No Gas	11708866.48	0.5	11827603.42	99	60	120	
Tb	159	He	6656900.50	0.7	6692094.83	99.47	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV6
File Name	H6F22071.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F22.b
Acq Time	2020-06-26 13:32:32
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.046	ppb	4.7	316058.32	25	100.18	90	110	
Be	9	6	No Gas	24.445	ppb	4.3	69547.06	25	97.78	90	110	
B	11	6	No Gas	55.729	ppb	6.0	103420.24	50	111.46	90	110	> +/- 10%
Na	23	45	H2	25018.231	ppb	0.4	105120197.33	25000	100.07	90	110	
Mg	24	45	No Gas	25285.563	ppb	2.7	256930224.00	25000	101.14	90	110	
Al	27	45	No Gas	24923.569	ppb	2.9	330273275.08	25000	99.69	90	110	
Si	28	45	H2	2464.501	ppb	0.8	2993550.75	2500	98.58	90	110	
P	31	45	No Gas	250.287	ppb	3.2	224190.17	250	100.11	90	110	
K	39	45	He	25097.456	ppb	0.4	18611008.00	25000	100.39	90	110	
Ca	40	45	H2	24828.700	ppb	0.3	226256144.00	25000	99.31	90	110	
Ti	47	45	No Gas	247.999	ppb	2.3	422931.74	250	99.2	90	110	
V	51	45	He	252.192	ppb	0.8	1511294.05	250	100.88	90	110	
Cr	52	45	He	250.655	ppb	0.6	1729859.71	250	100.26	90	110	
Mn	55	45	No Gas	1502.931	ppb	3.5	43513373.33	1500	100.2	90	110	
Fe	56	45	H2	25037.191	ppb	1.1	335713717.33	25000	100.15	90	110	
Co	59	45	No Gas	251.239	ppb	3.0	5950085.50	250	100.5	90	110	
Ni	60	45	He	252.159	ppb	0.8	597212.67	250	100.86	90	110	
Cu	63	45	He	253.244	ppb	1.1	1582452.91	250	101.3	90	110	
Zn	66	72	No Gas	241.760	ppb	1.7	973781.58	250	96.7	90	110	
As	75	72	He	248.842	ppb	0.8	314130.92	250	99.54	90	110	
Se	78	72	H2	253.411	ppb	0.6	105336.65	250	101.36	90	110	
Sr	88	72	No Gas	247.130	ppb	3.1	8540721.60	250	98.85	90	110	
Zr	90	72	No Gas	24.213	ppb	2.0	530375.05	25	96.85	90	110	
Mo	95	115	No Gas	248.646	ppb	5.4	1675734.45	250	99.46	90	110	
Ag	107	115	No Gas	24.860	ppb	3.5	427055.72	25	99.44	90	110	
Cd	111	115	No Gas	246.778	ppb	3.6	885095.51	250	98.71	90	110	
Sn	118	115	No Gas	247.539	ppb	4.1	2652944.20	250	99.02	90	110	
Sb	123	115	No Gas	49.239	ppb	4.3	612838.62	50	98.48	90	110	
Ba	137	115	No Gas	502.815	ppb	5.2	2752570.58	500	100.56	90	110	
W	182	159	No Gas	25.074	ppb	2.4	324881.28	25	100.3	90	110	
Hg	201	159	He	2.528	ppb	1.5	2993.53	2.5	101.12	90	110	
Tl	205	159	No Gas	251.209	ppb	3.4	7622189.98	250	100.48	90	110	
Pb	208	159	No Gas	253.025	ppb	3.4	10409071.61	250	101.21	90	110	
U	238	159	No Gas	245.143	ppb	2.7	9935202.11	250	98.06	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1813083.13	3.4	1866774.34	97.12	60	120	
Sc	45	No Gas	5102439.33	1.4	5256704	97.07	60	120	
Sc	45	H2	3117902.17	0.8	3216050	96.95	60	120	
Sc	45	He	578543.67	0.4	590136.5	98.04	60	120	
Ge	72	No Gas	1323526.42	0.8	1347600.04	98.21	60	120	
Ge	72	H2	892737.46	0.9	912330.27	97.85	60	120	
Ge	72	He	370539.62	1.2	378247.59	97.96	60	120	
In	115	No Gas	8302415.06	3.1	8692051.13	95.52	60	120	
Tb	159	No Gas	11539940.10	2.0	11827603.42	97.57	60	120	
Tb	159	He	6529952.17	0.7	6692094.83	97.58	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB6
File Name	H6F22072.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq TIme	2020-06-26 13:35:09
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	106825.27	0.4	
Be	9	6	No Gas	0.013	ppb	69.7	77.78	0.08	
B	11	6	No Gas	0.913	ppb	40.8	5399.94	4	
Na	23	45	H2	14.111	ppb	10.2	458231.90	40	
Mg	24	45	No Gas	8.730	ppb	36.5	115761.07	10	
Al	27	45	No Gas	8.269	ppb	36.6	118855.31	15	
Si	28	45	H2	0.466	ppb	5.4	4280.66	8	
P	31	45	No Gas	2.114	ppb	37.0	22556.29	10	
K	39	45	He	3.585	ppb	136.0	105350.58	20	
Ca	40	45	H2	4.166	ppb	8.2	172986.37	25	
Ti	47	45	No Gas	0.108	ppb	47.2	650.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6339.47	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1090.71	0.2	
Mn	55	45	No Gas	0.528	ppb	31.2	24274.14	0.2	>LOD
Fe	56	45	H2	4.817	ppb	13.3	75768.49	10	
Co	59	45	No Gas	0.088	ppb	32.5	2347.55	0.15	
Ni	60	45	He	0.012	ppb	20.1	159.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1179.38	0.4	
Zn	66	72	No Gas	0.014	ppb	265.5	2134.84	2	
As	75	72	He	0.033	ppb	39.5	361.01	0.2	
Se	78	72	H2	0.069	ppb	10.2	47.67	0.2	
Sr	88	72	No Gas	0.083	ppb	34.7	3578.30	0.2	
Zr	90	72	No Gas	0.010	ppb	31.9	383.34	2	
Mo	95	115	No Gas	0.092	ppb	32.1	693.35	0.2	
Ag	107	115	No Gas	0.007	ppb	49.3	227.78	0.08	
Cd	111	115	No Gas	0.110	ppb	31.6	445.50	0.2	
Sn	118	115	No Gas	0.067	ppb	57.9	2209.08	0.2	
Sb	123	115	No Gas	0.022	ppb	26.1	401.12	0.4	
Ba	137	115	No Gas	0.148	ppb	37.5	944.48	0.2	
W	182	159	No Gas	0.008	ppb	38.5	236.67	0.3	
Hg	201	159	He	0.006	ppb	20.1	15.83	0.1	
Tl	205	159	No Gas	0.133	ppb	37.9	4806.55	0.1	>LOD
Pb	208	159	No Gas	0.094	ppb	25.6	5450.48	0.1	
U	238	159	No Gas	0.077	ppb	32.8	3191.57	0.05	>LOD

LY 06/26/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1861706.77	3.5	1866774.34	99.73	60	120	
Sc	45	No Gas	5148218.00	2.2	5256704	97.94	60	120	
Sc	45	H2	3189619.42	1.3	3216050	99.18	60	120	
Sc	45	He	592413.37	0.7	590136.5	100.39	60	120	
Ge	72	No Gas	1321225.37	1.4	1347600.04	98.04	60	120	
Ge	72	H2	896966.54	0.7	912330.27	98.32	60	120	
Ge	72	He	372985.19	0.8	378247.59	98.61	60	120	
In	115	No Gas	8613712.37	4.6	8692051.13	99.1	60	120	
Tb	159	No Gas	11599602.87	3.5	11827603.42	98.07	60	120	
Tb	159	He	6583235.17	1.0	6692094.83	98.37	60	120	

Sample Report

Sample Name	F162-01I
File Name	H6F22073.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:37:43
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.852	1.985	ppb	4.0	126171.68	50	
Be	9	6	No Gas	0.032	0.003	ppb	50.2	47.78	50	
B	11	6	No Gas	140.067	14.007	ppb	5.8	29542.16	100	
Na	23	45	H2	109664.785	10966.479	ppb	2.3	48339282.67	50000	
Mg	24	45	No Gas	52601.632	5260.163	ppb	2.4	55978993.33	50000	
Al	27	45	No Gas	67.014	6.701	ppb	2.8	102108.42	50000	
Si	28	45	H2	8274.639	827.464	ppb	1.3	1052022.85	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20844.31	500	
K	39	45	He	2703.966	270.397	ppb	2.7	310096.88	50000	
Ca	40	45	H2	152153.263	15215.326	ppb	1.7	144827184.00	50000	
Ti	47	45	No Gas	0.979	0.098	ppb	7.1	657.35	500	
V	51	45	He	2.494	0.249	ppb	17.1	8255.16	500	
Cr	52	45	He	1.341	0.134	ppb	5.3	2196.84	500	
Mn	55	45	No Gas	8.193	0.819	ppb	0.4	34067.02	3000	
Fe	56	45	H2	159.153	15.915	ppb	0.6	232662.84	50000	
Co	59	45	No Gas	0.254	0.025	ppb	14.4	887.36	500	
Ni	60	45	He	1.464	0.146	ppb	5.0	489.34	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1287.40	500	
Zn	66	72	No Gas	6.639	0.664	ppb	5.8	5034.94	500	
As	75	72	He	0.847	0.085	ppb	20.7	438.34	500	
Se	78	72	H2	0.861	0.086	ppb	38.1	57.33	500	
Sr	88	72	No Gas	1030.047	103.005	ppb	2.3	3773136.52	500	
Zr	90	72	No Gas	0.030	0.003	ppb	129.2	256.67	50	
Mo	95	115	No Gas	0.913	0.091	ppb	3.8	705.57	500	
Ag	107	115	No Gas	0.085	0.008	ppb	38.8	257.78	50	
Cd	111	115	No Gas	0.092	0.009	ppb	24.5	76.15	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1173.39	500	
Sb	123	115	No Gas	0.098	0.010	ppb	11.5	254.45	100	
Ba	137	115	No Gas	69.151	6.915	ppb	2.5	40164.20	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	113.33	50	
Hg	201	159	He	0.034	0.003	ppb	49.9	13.33	5	
Tl	205	159	No Gas	0.039	0.004	ppb	67.6	918.92	500	
Pb	208	159	No Gas	0.084	0.008	ppb	58.3	1993.40	500	
U	238	159	No Gas	1.724	0.172	ppb	4.5	7286.62	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1863915.36	1.4	1866774.34	99.85	60	120	
Sc	45	No Gas	5340843.17	0.5	5256704	101.6	60	120	
Sc	45	H2	3255989.25	1.3	3216050	101.24	60	120	
Sc	45	He	598681.90	0.4	590136.5	101.45	60	120	
Ge	72	No Gas	1402617.21	1.0	1347600.04	104.08	60	120	
Ge	72	H2	940289.41	0.9	912330.27	103.06	60	120	
Ge	72	He	383730.36	1.0	378247.59	101.45	60	120	
In	115	No Gas	8776709.21	1.2	8692051.13	100.97	60	120	
Tb	159	No Gas	11893365.08	0.4	11827603.42	100.56	60	120	
Tb	159	He	6627131.17	0.2	6692094.83	99.03	60	120	

Sample Report

Sample Name	F162-02I
File Name	H6F22074.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:40:18
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.830	2.383	ppb	8.6	129298.57	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	34.44	50	
B	11	6	No Gas	209.618	20.962	ppb	4.0	42270.22	100	
Na	23	45	H2	158259.489	15825.949	ppb	0.9	68443922.67	50000	
Mg	24	45	No Gas	53264.788	5326.479	ppb	2.6	56766106.67	50000	
Al	27	45	No Gas	726.439	72.644	ppb	1.7	1018343.71	50000	
Si	28	45	H2	9354.891	935.489	ppb	0.3	1169376.71	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20794.88	500	
K	39	45	He	3103.683	310.368	ppb	0.6	336937.19	50000	
Ca	40	45	H2	150124.202	15012.420	ppb	0.3	140561621.33	50000	
Ti	47	45	No Gas	0.544	0.054	ppb	10.8	580.68	500	
V	51	45	He	5.551	0.555	ppb	4.5	10032.34	500	
Cr	52	45	He	1.430	0.143	ppb	1.9	2236.18	500	
Mn	55	45	No Gas	2.208	0.221	ppb	1.8	15953.96	3000	
Fe	56	45	H2	72.327	7.233	ppb	11.1	109253.00	50000	
Co	59	45	No Gas	0.137	0.014	ppb	6.2	596.01	500	
Ni	60	45	He	0.491	0.049	ppb	24.3	248.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1393.41	500	
Zn	66	72	No Gas	8.908	0.891	ppb	0.9	5905.29	500	
As	75	72	He	1.257	0.126	ppb	21.9	483.01	500	
Se	78	72	H2	0.678	0.068	ppb	20.8	48.33	500	
Sr	88	72	No Gas	949.790	94.979	ppb	1.6	3423448.06	500	
Zr	90	72	No Gas	0.017	0.002	ppb	166.2	223.33	50	
Mo	95	115	No Gas	0.356	0.036	ppb	3.9	307.78	500	
Ag	107	115	No Gas	0.085	0.009	ppb	21.9	257.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	30.09	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	896.70	500	
Sb	123	115	No Gas	0.064	0.006	ppb	2.4	210.00	100	
Ba	137	115	No Gas	129.479	12.948	ppb	2.6	74890.76	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	60.00	50	
Hg	201	159	He	0.006	0.001	ppb	280.7	9.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	437.79	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1613.38	500	
U	238	159	No Gas	1.421	0.142	ppb	1.5	6003.70	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1859905.87	2.6	1866774.34	99.63	60	120	
Sc	45	No Gas	5348414.50	0.5	5256704	101.74	60	120	
Sc	45	H2	3202280.42	0.1	3216050	99.57	60	120	
Sc	45	He	592221.04	0.7	590136.5	100.35	60	120	
Ge	72	No Gas	1380091.37	1.3	1347600.04	102.41	60	120	
Ge	72	H2	920344.15	1.5	912330.27	100.88	60	120	
Ge	72	He	376612.54	0.6	378247.59	99.57	60	120	
In	115	No Gas	8749904.19	0.7	8692051.13	100.67	60	120	
Tb	159	No Gas	11869068.97	1.6	11827603.42	100.35	60	120	
Tb	159	He	6531917.17	1.0	6692094.83	97.61	60	120	

Sample Report

Sample Name	F162-04I
File Name	H6F22075.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:42:54
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	17.447	1.745	ppb	14.9	123866.36	50	
Be	9	6	No Gas	0.002	0.000	ppb	901.3	38.89	50	
B	11	6	No Gas	56.296	5.630	ppb	1.2	14088.18	100	
Na	23	45	H2	39238.734	3923.873	ppb	1.8	17236930.00	50000	
Mg	24	45	No Gas	37125.736	3712.574	ppb	2.2	39115253.33	50000	
Al	27	45	No Gas	242.550	24.255	ppb	1.9	342102.66	50000	
Si	28	45	H2	8818.377	881.838	ppb	1.7	1100391.50	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19505.01	500	
K	39	45	He	2266.670	226.667	ppb	1.5	273393.54	50000	
Ca	40	45	H2	136311.287	13631.129	ppb	1.0	127400765.33	50000	
Ti	47	45	No Gas	0.545	0.054	ppb	13.6	574.01	500	
V	51	45	He	4.003	0.400	ppb	7.5	9075.67	500	
Cr	52	45	He	3.763	0.376	ppb	3.8	3877.22	500	
Mn	55	45	No Gas	0.491	0.049	ppb	15.5	10615.45	3000	
Fe	56	45	H2	30.512	3.051	ppb	1.4	51574.98	50000	
Co	59	45	No Gas	0.129	0.013	ppb	7.3	570.68	500	
Ni	60	45	He	1.942	0.194	ppb	6.9	599.35	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1358.73	500	
Zn	66	72	No Gas	10.900	1.090	ppb	1.8	6729.01	500	
As	75	72	He	0.516	0.052	ppb	43.1	386.67	500	
Se	78	72	H2	1.147	0.115	ppb	18.1	68.67	500	
Sr	88	72	No Gas	1456.358	145.636	ppb	2.7	5240148.12	500	
Zr	90	72	No Gas	0.007	0.001	ppb	310.9	200.00	50	
Mo	95	115	No Gas	0.514	0.051	ppb	19.5	422.23	500	
Ag	107	115	No Gas	0.052	0.005	ppb	7.9	197.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	27.40	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	920.03	500	
Sb	123	115	No Gas	0.052	0.005	ppb	13.1	195.56	100	
Ba	137	115	No Gas	22.996	2.300	ppb	1.9	13474.77	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	60.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	7.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	322.23	500	
Pb	208	159	No Gas	0.001	0.000	ppb	1765.8	1646.71	500	
U	238	159	No Gas	0.804	0.080	ppb	1.1	3446.04	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1860257.99	0.6	1866774.34	99.65	60	120	
Sc	45	No Gas	5285893.00	0.9	5256704	100.56	60	120	
Sc	45	H2	3196492.92	1.2	3216050	99.39	60	120	
Sc	45	He	591411.81	1.1	590136.5	100.22	60	120	
Ge	72	No Gas	1377772.50	0.3	1347600.04	102.24	60	120	
Ge	72	H2	922064.98	1.3	912330.27	101.07	60	120	
Ge	72	He	375439.31	0.2	378247.59	99.26	60	120	
In	115	No Gas	8804180.76	0.9	8692051.13	101.29	60	120	
Tb	159	No Gas	11912396.20	0.2	11827603.42	100.72	60	120	
Tb	159	He	6613502.67	0.6	6692094.83	98.83	60	120	

Sample Report

Sample Name	F162-05I
File Name	H6F22076.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:45:29
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	48.198	4.820	ppb	10.2	147359.37	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	35.56	50	
B	11	6	No Gas	166.189	16.619	ppb	5.7	33613.51	100	
Na	23	45	H2	127165.222	12716.522	ppb	4.3	55039616.00	50000	
Mg	24	45	No Gas	77211.550	7721.155	ppb	3.5	80355837.33	50000	
Al	27	45	No Gas	40.873	4.087	ppb	4.0	64397.19	50000	
Si	28	45	H2	7290.286	729.029	ppb	4.2	911559.92	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19818.13	500	
K	39	45	He	4412.541	441.254	ppb	0.7	439420.89	50000	
Ca	40	45	H2	178681.533	17868.153	ppb	3.7	167192288.00	50000	
Ti	47	45	No Gas	0.114	0.011	ppb	227.5	492.68	500	
V	51	45	He	3.902	0.390	ppb	3.9	9101.03	500	
Cr	52	45	He	5.209	0.521	ppb	3.7	4945.56	500	
Mn	55	45	No Gas	790.717	79.072	ppb	3.5	2352920.83	3000	
Fe	56	45	H2	135.931	13.593	ppb	3.6	196766.96	50000	
Co	59	45	No Gas	6.478	0.648	ppb	1.8	15962.68	500	
Ni	60	45	He	242.440	24.244	ppb	1.7	59386.23	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1358.73	500	
Zn	66	72	No Gas	3.473	0.347	ppb	8.8	3615.82	500	
As	75	72	He	0.658	0.066	ppb	20.5	408.01	500	
Se	78	72	H2	0.068	0.007	ppb	186.9	22.00	500	
Sr	88	72	No Gas	1316.761	131.676	ppb	2.0	4731728.15	500	
Zr	90	72	No Gas	0.067	0.007	ppb	40.9	336.67	50	
Mo	95	115	No Gas	33.716	3.372	ppb	1.5	23809.02	500	
Ag	107	115	No Gas	0.137	0.014	ppb	2.7	347.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	39.61	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	798.91	500	
Sb	123	115	No Gas	0.146	0.015	ppb	7.7	314.45	100	
Ba	137	115	No Gas	69.332	6.933	ppb	0.9	39787.46	1000	
W	182	159	No Gas	0.041	0.004	ppb	21.8	183.33	50	
Hg	201	159	He	0.030	0.003	ppb	79.6	12.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	488.90	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1355.59	500	
U	238	159	No Gas	2.373	0.237	ppb	1.0	9881.77	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1824151.28	2.2	1866774.34	97.72	60	120	
Sc	45	No Gas	5225337.50	1.9	5256704	99.4	60	120	
Sc	45	H2	3203513.42	3.6	3216050	99.61	60	120	
Sc	45	He	597212.12	0.9	590136.5	101.2	60	120	
Ge	72	No Gas	1375924.59	0.7	1347600.04	102.1	60	120	
Ge	72	H2	912814.25	2.3	912330.27	100.05	60	120	
Ge	72	He	378484.20	0.6	378247.59	100.06	60	120	
In	115	No Gas	8670605.48	0.3	8692051.13	99.75	60	120	
Tb	159	No Gas	11759470.36	1.2	11827603.42	99.42	60	120	
Tb	159	He	6601508.33	0.7	6692094.83	98.65	60	120	

Sample Report

Sample Name	F162-07I
File Name	H6F22077.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:48:04
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	17.483	1.748	ppb	4.8	120253.02	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	34.44	50	
B	11	6	No Gas	87.051	8.705	ppb	1.7	19165.28	100	
Na	23	45	H2	93701.243	9370.124	ppb	1.3	40982028.00	50000	
Mg	24	45	No Gas	62783.917	6278.392	ppb	1.5	66918209.33	50000	
Al	27	45	No Gas	13.167	1.317	ppb	29.4	27459.98	50000	
Si	28	45	H2	7552.197	755.220	ppb	0.5	951634.56	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19621.85	500	
K	39	45	He	2641.506	264.151	ppb	2.6	307652.98	50000	
Ca	40	45	H2	184077.557	18407.756	ppb	0.3	173581136.00	50000	
Ti	47	45	No Gas	0.011	0.001	ppb	1472.4	485.34	500	
V	51	45	He	5.670	0.567	ppb	5.8	10292.53	500	
Cr	52	45	He	1.422	0.142	ppb	6.4	2271.52	500	
Mn	55	45	No Gas	59.086	5.909	ppb	1.8	188596.57	3000	
Fe	56	45	H2	39.497	3.950	ppb	1.8	64510.56	50000	
Co	59	45	No Gas	0.305	0.031	ppb	1.8	1014.71	500	
Ni	60	45	He	3.461	0.346	ppb	3.8	986.04	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1430.74	500	
Zn	66	72	No Gas	2.275	0.227	ppb	7.5	3152.37	500	
As	75	72	He	0.947	0.095	ppb	19.3	449.68	500	
Se	78	72	H2	0.767	0.077	ppb	26.3	52.67	500	
Sr	88	72	No Gas	1230.474	123.047	ppb	2.3	4473884.27	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	180.00	50	
Mo	95	115	No Gas	1.104	0.110	ppb	0.9	837.80	500	
Ag	107	115	No Gas	0.052	0.005	ppb	43.1	196.67	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	23.60	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	738.91	500	
Sb	123	115	No Gas	0.083	0.008	ppb	28.9	234.45	100	
Ba	137	115	No Gas	73.122	7.312	ppb	0.4	42259.63	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	86.67	50	
Hg	201	159	He	0.004	0.000	ppb	294.4	9.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	530.01	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1046.68	500	
U	238	159	No Gas	1.657	0.166	ppb	2.6	6908.62	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1805720.72	1.3	1866774.34	96.73	60	120	
Sc	45	No Gas	5349363.67	0.5	5256704	101.76	60	120	
Sc	45	H2	3225655.83	0.7	3216050	100.3	60	120	
Sc	45	He	603210.62	0.6	590136.5	102.22	60	120	
Ge	72	No Gas	1392158.91	0.6	1347600.04	103.31	60	120	
Ge	72	H2	929897.23	1.5	912330.27	101.93	60	120	
Ge	72	He	382081.49	1.1	378247.59	101.01	60	120	
In	115	No Gas	8733386.45	1.2	8692051.13	100.48	60	120	
Tb	159	No Gas	11731327.59	1.2	11827603.42	99.19	60	120	
Tb	159	He	6540419.83	0.2	6692094.83	97.73	60	120	

Sample Report

Sample Name	F162-08I
File Name	H6F22078.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:50:39
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	10.905	1.091	ppb	11.6	116435.36	50	
Be	9	6	No Gas	0.008	0.001	ppb	271.1	40.00	50	
B	11	6	No Gas	47.082	4.708	ppb	3.9	12203.07	100	
Na	23	45	H2	33395.254	3339.525	ppb	1.3	14747130.67	50000	
Mg	24	45	No Gas	45126.341	4512.634	ppb	3.9	47809482.67	50000	
Al	27	45	No Gas	39.120	3.912	ppb	16.6	63110.34	50000	
Si	28	45	H2	7417.646	741.765	ppb	0.7	927315.25	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	20480.43	500	
K	39	45	He	1915.924	191.592	ppb	2.0	253250.37	50000	
Ca	40	45	H2	134527.998	13452.800	ppb	0.4	125884066.67	50000	
Ti	47	45	No Gas	0.330	0.033	ppb	42.2	539.34	500	
V	51	45	He	5.059	0.506	ppb	2.5	9968.29	500	
Cr	52	45	He	0.195	0.020	ppb	11.5	1397.40	500	
Mn	55	45	No Gas	32.765	3.277	ppb	2.9	108043.32	3000	
Fe	56	45	H2	44.393	4.439	ppb	1.8	70737.01	50000	
Co	59	45	No Gas	0.155	0.016	ppb	19.7	638.68	500	
Ni	60	45	He	0.714	0.071	ppb	20.3	309.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	997.37	500	
Zn	66	72	No Gas	6.919	0.692	ppb	2.7	5087.62	500	
As	75	72	He	0.551	0.055	ppb	18.4	393.68	500	
Se	78	72	H2	1.110	0.111	ppb	13.2	67.67	500	
Sr	88	72	No Gas	895.997	89.600	ppb	2.0	3239842.79	500	
Zr	90	72	No Gas	0.013	0.001	ppb	74.1	213.33	50	
Mo	95	115	No Gas	0.674	0.067	ppb	19.1	535.57	500	
Ag	107	115	No Gas	0.052	0.005	ppb	27.7	198.89	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.70	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	734.47	500	
Sb	123	115	No Gas	0.047	0.005	ppb	18.6	187.78	100	
Ba	137	115	No Gas	37.258	3.726	ppb	2.6	21698.11	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	43.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	414.45	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1478.93	500	
U	238	159	No Gas	1.446	0.145	ppb	2.5	6077.07	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1832203.66	1.4	1866774.34	98.15	60	120	
Sc	45	No Gas	5317512.67	0.9	5256704	101.16	60	120	
Sc	45	H2	3200013.17	0.3	3216050	99.5	60	120	
Sc	45	He	606563.13	1.3	590136.5	102.78	60	120	
Ge	72	No Gas	1384572.79	0.7	1347600.04	102.74	60	120	
Ge	72	H2	931792.46	1.5	912330.27	102.13	60	120	
Ge	72	He	377870.57	0.6	378247.59	99.9	60	120	
In	115	No Gas	8778475.96	0.9	8692051.13	100.99	60	120	
Tb	159	No Gas	11807775.92	0.5	11827603.42	99.83	60	120	
Tb	159	He	6555083.17	0.6	6692094.83	97.95	60	120	

Sample Report

Sample Name	F162-10I
File Name	H6F22079.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:53:14
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.193	1.319	ppb	16.5	119018.57	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	34.44	50	
B	11	6	No Gas	46.915	4.691	ppb	1.1	12242.00	100	
Na	23	45	H2	25680.245	2568.025	ppb	0.7	11466555.33	50000	
Mg	24	45	No Gas	37095.192	3709.519	ppb	3.9	38938937.33	50000	
Al	27	45	No Gas	10.305	1.031	ppb	9.5	23112.82	50000	
Si	28	45	H2	8325.638	832.564	ppb	0.3	1043466.54	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19529.71	500	
K	39	45	He	1914.611	191.461	ppb	1.4	248616.99	50000	
Ca	40	45	H2	118627.162	11862.716	ppb	0.5	111347517.33	50000	
Ti	47	45	No Gas	0.060	0.006	ppb	316.9	486.68	500	
V	51	45	He	5.552	0.555	ppb	1.3	10091.72	500	
Cr	52	45	He	0.273	0.027	ppb	9.0	1427.41	500	
Mn	55	45	No Gas	4.036	0.404	ppb	3.7	21173.72	3000	
Fe	56	45	H2	11.081	1.108	ppb	2.0	24968.13	50000	
Co	59	45	No Gas	0.075	0.008	ppb	12.8	437.34	500	
Ni	60	45	He	0.648	0.065	ppb	13.3	288.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	914.70	500	
Zn	66	72	No Gas	3.840	0.384	ppb	8.0	3777.19	500	
As	75	72	He	0.551	0.055	ppb	31.2	394.68	500	
Se	78	72	H2	0.896	0.090	ppb	28.4	57.33	500	
Sr	88	72	No Gas	1011.454	101.145	ppb	2.9	3642556.11	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	153.33	50	
Mo	95	115	No Gas	0.584	0.058	ppb	10.5	471.12	500	
Ag	107	115	No Gas	0.033	0.003	ppb	38.9	163.33	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	17.88	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	648.91	500	
Sb	123	115	No Gas	0.032	0.003	ppb	31.1	167.78	100	
Ba	137	115	No Gas	24.371	2.437	ppb	2.8	14243.39	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	50.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	197.78	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1376.69	500	
U	238	159	No Gas	1.191	0.119	ppb	1.6	5049.93	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1842281.84	1.5	1866774.34	98.69	60	120	
Sc	45	No Gas	5267765.67	0.7	5256704	100.21	60	120	
Sc	45	H2	3209495.42	0.5	3216050	99.8	60	120	
Sc	45	He	595670.06	0.8	590136.5	100.94	60	120	
Ge	72	No Gas	1378953.96	1.4	1347600.04	102.33	60	120	
Ge	72	H2	914542.96	1.0	912330.27	100.24	60	120	
Ge	72	He	378890.28	0.4	378247.59	100.17	60	120	
In	115	No Gas	8784478.44	0.4	8692051.13	101.06	60	120	
Tb	159	No Gas	11875997.58	0.4	11827603.42	100.41	60	120	
Tb	159	He	6564797.50	0.8	6692094.83	98.1	60	120	

Sample Report

Sample Name	F162-11I
File Name	H6F22080.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:55:48
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	18.187	1.819	ppb	2.8	120591.22	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	21.11	50	
B	11	6	No Gas	56.346	5.635	ppb	2.4	13655.52	100	
Na	23	45	H2	49597.300	4959.730	ppb	0.6	21559331.33	50000	
Mg	24	45	No Gas	38014.864	3801.486	ppb	3.5	39357358.67	50000	
Al	27	45	No Gas	5.632	0.563	ppb	5.6	16486.46	50000	
Si	28	45	H2	8039.695	803.969	ppb	0.8	997821.37	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	19358.15	500	
K	39	45	He	2294.539	229.454	ppb	2.9	272118.19	50000	
Ca	40	45	H2	126366.957	12636.696	ppb	1.3	117433557.33	50000	
Ti	47	45	No Gas	1.077	0.108	ppb	161.3	658.05	500	
V	51	45	He	3.478	0.348	ppb	8.4	8647.39	500	
Cr	52	45	He	0.071	0.007	ppb	154.2	1258.72	500	
Mn	55	45	No Gas	261.180	26.118	ppb	2.8	778818.75	3000	
Fe	56	45	H2	56.093	5.609	ppb	0.9	86238.85	50000	
Co	59	45	No Gas	0.633	0.063	ppb	3.9	1776.12	500	
Ni	60	45	He	4.184	0.418	ppb	1.5	1128.05	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	856.70	500	
Zn	66	72	No Gas	5.112	0.511	ppb	5.9	4264.00	500	
As	75	72	He	0.525	0.052	ppb	23.6	386.01	500	
Se	78	72	H2	0.891	0.089	ppb	9.5	56.67	500	
Sr	88	72	No Gas	1292.613	129.261	ppb	2.4	4604114.40	500	
Zr	90	72	No Gas	0.001	0.000	ppb	358.0	183.33	50	
Mo	95	115	No Gas	3.487	0.349	ppb	8.0	2489.12	500	
Ag	107	115	No Gas	0.050	0.005	ppb	14.1	190.00	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	13.69	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	688.91	500	
Sb	123	115	No Gas	0.060	0.006	ppb	13.1	201.11	100	
Ba	137	115	No Gas	26.814	2.681	ppb	3.8	15327.94	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	93.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	370.00	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	993.35	500	
U	238	159	No Gas	1.573	0.157	ppb	0.9	6472.83	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1801935.31	0.3	1866774.34	96.53	60	120	
Sc	45	No Gas	5194032.67	0.9	5256704	98.81	60	120	
Sc	45	H2	3177937.58	0.7	3216050	98.81	60	120	
Sc	45	He	584314.87	1.7	590136.5	99.01	60	120	
Ge	72	No Gas	1363796.83	1.2	1347600.04	101.2	60	120	
Ge	72	H2	907066.21	1.0	912330.27	99.42	60	120	
Ge	72	He	373691.93	0.3	378247.59	98.8	60	120	
In	115	No Gas	8599243.64	1.2	8692051.13	98.93	60	120	
Tb	159	No Gas	11572987.60	0.8	11827603.42	97.85	60	120	
Tb	159	He	6468609.83	0.4	6692094.83	96.66	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV7
File Name	H6F22081.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 13:58:24
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.669	ppb	2.4	311482.78	25	98.68	90	110	
Be	9	6	No Gas	24.371	ppb	2.9	69034.53	25	97.48	90	110	
B	11	6	No Gas	54.011	ppb	3.5	99936.41	50	108.02	90	110	
Na	23	45	H2	24592.682	ppb	0.9	103716309.33	25000	98.37	90	110	
Mg	24	45	No Gas	24645.205	ppb	0.8	251971258.67	25000	98.58	90	110	
Al	27	45	No Gas	24473.765	ppb	1.0	326318561.80	25000	97.9	90	110	
Si	28	45	H2	2451.217	ppb	0.4	2988469.67	2500	98.05	90	110	
P	31	45	No Gas	244.570	ppb	0.8	220901.07	250	97.83	90	110	
K	39	45	He	24818.013	ppb	0.4	18694250.00	25000	99.27	90	110	
Ca	40	45	H2	24717.969	ppb	0.3	226077514.67	25000	98.87	90	110	
Ti	47	45	No Gas	246.824	ppb	0.9	423500.97	250	98.73	90	110	
V	51	45	He	248.953	ppb	0.6	1515436.42	250	99.58	90	110	
Cr	52	45	He	246.274	ppb	1.7	1726327.38	250	98.51	90	110	
Mn	55	45	No Gas	1491.416	ppb	1.6	43448232.00	1500	99.43	90	110	
Fe	56	45	H2	25005.979	ppb	0.3	336550432.00	25000	100.02	90	110	
Co	59	45	No Gas	247.249	ppb	1.9	5892315.67	250	98.9	90	110	
Ni	60	45	He	248.294	ppb	1.4	597304.02	250	99.32	90	110	
Cu	63	45	He	248.430	ppb	0.5	1576828.62	250	99.37	90	110	
Zn	66	72	No Gas	238.342	ppb	0.6	970289.88	250	95.34	90	110	
As	75	72	He	245.659	ppb	0.5	311621.74	250	98.26	90	110	
Se	78	72	H2	251.626	ppb	0.8	105746.23	250	100.65	90	110	
Sr	88	72	No Gas	244.779	ppb	1.4	8549542.16	250	97.91	90	110	
Zr	90	72	No Gas	23.993	ppb	0.8	531178.21	25	95.97	90	110	
Mo	95	115	No Gas	241.075	ppb	1.4	1651119.52	250	96.43	90	110	
Ag	107	115	No Gas	24.607	ppb	2.1	429419.04	25	98.43	90	110	
Cd	111	115	No Gas	242.811	ppb	1.7	884716.02	250	97.12	90	110	
Sn	118	115	No Gas	245.010	ppb	2.2	2667878.85	250	98	90	110	
Sb	123	115	No Gas	48.573	ppb	2.2	614277.27	50	97.15	90	110	
Ba	137	115	No Gas	492.430	ppb	1.8	2739554.20	500	98.49	90	110	
W	182	159	No Gas	24.643	ppb	2.0	323786.53	25	98.57	90	110	
Hg	201	159	He	2.476	ppb	1.8	2933.51	2.5	99.04	90	110	
Tl	205	159	No Gas	246.644	ppb	1.8	7590391.92	250	98.66	90	110	
Pb	208	159	No Gas	247.936	ppb	0.4	10345221.67	250	99.17	90	110	
U	238	159	No Gas	240.749	ppb	1.0	9895645.72	250	96.3	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1803736.93	0.7	1866774.34	96.62	60	120	
Sc	45	No Gas	5132659.50	1.0	5256704	97.64	60	120	
Sc	45	H2	3129404.50	1.0	3216050	97.31	60	120	
Sc	45	He	587637.21	0.2	590136.5	99.58	60	120	
Ge	72	No Gas	1337521.96	1.1	1347600.04	99.25	60	120	
Ge	72	H2	902600.94	1.1	912330.27	98.93	60	120	
Ge	72	He	372317.26	0.3	378247.59	98.43	60	120	
In	115	No Gas	8428804.99	0.8	8692051.13	96.97	60	120	
Tb	159	No Gas	11700014.26	1.2	11827603.42	98.92	60	120	
Tb	159	He	6532007.83	0.5	6692094.83	97.61	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB7
File Name	H6F22082.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 14:01:01
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	104910.04	0.4	
Be	9	6	No Gas	0.012	ppb	13.8	70.00	0.08	
B	11	6	No Gas	0.866	ppb	36.3	5159.84	4	
Na	23	45	H2	7.319	ppb	7.2	424914.73	40	
Mg	24	45	No Gas	5.262	ppb	53.3	80325.16	10	
Al	27	45	No Gas	5.224	ppb	53.1	78330.66	15	
Si	28	45	H2	0.233	ppb	36.9	3952.56	8	
P	31	45	No Gas	1.573	ppb	9.6	22063.51	10	
K	39	45	He	2.920	ppb	131.7	104228.62	20	
Ca	40	45	H2	1.866	ppb	14.3	150036.27	25	
Ti	47	45	No Gas	0.080	ppb	57.0	600.68	0.5	
V	51	45	He	<0.000	ppb	N/A	6117.36	0.5	
Cr	52	45	He	<0.000	ppb	N/A	990.71	0.2	
Mn	55	45	No Gas	0.345	ppb	46.8	18923.82	0.2	>LOD
Fe	56	45	H2	2.118	ppb	8.8	38292.41	10	
Co	59	45	No Gas	0.060	ppb	50.4	1670.78	0.15	
Ni	60	45	He	<0.000	ppb	N/A	117.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1031.37	0.4	
Zn	66	72	No Gas	0.016	ppb	172.3	2152.84	2	
As	75	72	He	0.008	ppb	32.3	326.00	0.2	
Se	78	72	H2	0.050	ppb	18.5	39.33	0.2	
Sr	88	72	No Gas	0.055	ppb	49.2	2629.18	0.2	
Zr	90	72	No Gas	0.003	ppb	84.7	250.00	2	
Mo	95	115	No Gas	0.054	ppb	39.3	438.90	0.2	
Ag	107	115	No Gas	0.003	ppb	76.0	163.34	0.08	
Cd	111	115	No Gas	0.081	ppb	37.9	349.13	0.2	
Sn	118	115	No Gas	0.040	ppb	61.2	1949.04	0.2	
Sb	123	115	No Gas	0.013	ppb	30.4	295.56	0.4	
Ba	137	115	No Gas	0.092	ppb	62.6	646.69	0.2	
W	182	159	No Gas	0.002	ppb	331.8	153.33	0.3	
Hg	201	159	He	0.006	ppb	8.8	16.17	0.1	
Tl	205	159	No Gas	0.099	ppb	39.4	3865.09	0.1	
Pb	208	159	No Gas	0.061	ppb	45.4	4209.19	0.1	
U	238	159	No Gas	0.048	ppb	46.2	2074.65	0.05	

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1804659.77	1.8	1866774.34	96.67	60	120	
Sc	45	No Gas	5135073.17	0.6	5256704	97.69	60	120	
Sc	45	H2	3157902.75	1.1	3216050	98.19	60	120	
Sc	45	He	588930.85	0.5	590136.5	99.8	60	120	
Ge	72	No Gas	1326374.59	0.7	1347600.04	98.42	60	120	
Ge	72	H2	888365.02	0.8	912330.27	97.37	60	120	
Ge	72	He	369617.03	0.3	378247.59	97.72	60	120	
In	115	No Gas	8774585.69	0.6	8692051.13	100.95	60	120	
Tb	159	No Gas	11843397.59	0.6	11827603.42	100.13	60	120	
Tb	159	He	6588305.83	0.6	6692094.83	98.45	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2606
File Name	H6F22083.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F22.b
Acq Time	2020-06-26 14:03:36
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F22002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.911	ppb	14.7	113391.67	1	91.1	80	120	
Be	9	6	No Gas	1.000	ppb	4.7	2873.63	1	100	80	120	
B	11	6	No Gas	8.945	ppb	4.4	19613.69	10	89.45	80	120	
Na	23	45	H2	104.452	ppb	2.0	835323.58	100	104.45	80	120	
Mg	24	45	No Gas	100.912	ppb	3.0	1071777.33	100	100.91	80	120	
Al	27	45	No Gas	99.757	ppb	2.5	1356013.88	100	99.76	80	120	
Si	28	45	H2	97.444	ppb	1.7	123192.51	100	97.44	80	120	
P	31	45	No Gas	47.937	ppb	2.3	60767.25	50	95.87	80	120	
K	39	45	He	103.120	ppb	9.5	176533.98	100	103.12	80	120	
Ca	40	45	H2	103.311	ppb	0.4	1083956.29	100	103.31	80	120	
Tl	47	45	No Gas	1.045	ppb	7.8	2282.86	1	104.5	80	120	
V	51	45	He	1.033	ppb	3.9	12669.18	1	103.3	80	120	
Cr	52	45	He	1.012	ppb	4.0	8189.78	1	101.2	80	120	
Mn	55	45	No Gas	1.036	ppb	3.4	39562.48	1	103.6	80	120	
Fe	56	45	H2	104.519	ppb	0.6	1426595.71	100	104.52	80	120	
Co	59	45	No Gas	1.010	ppb	2.6	24628.22	1	101	80	120	
Ni	60	45	He	1.077	ppb	0.8	2681.60	1	107.7	80	120	
Cu	63	45	He	0.844	ppb	6.9	7819.58	1	84.4	80	120	
Zn	66	72	No Gas	9.999	ppb	1.8	43044.15	10	99.99	80	120	
As	75	72	He	1.007	ppb	2.4	1588.09	1	100.7	80	120	
Se	78	72	H2	1.039	ppb	6.9	457.01	1	103.9	80	120	
Sr	88	72	No Gas	2.015	ppb	2.4	71630.02	2	100.75	80	120	
Zr	90	72	No Gas	3.877	ppb	4.9	86613.37	5	77.54	80	120	> +/- 20%
Mo	95	115	No Gas	0.956	ppb	3.8	6890.68	1	95.6	80	120	
Ag	107	115	No Gas	1.019	ppb	0.9	18655.37	1	101.9	80	120	
Cd	111	115	No Gas	1.005	ppb	1.2	3865.40	1	100.5	80	120	
Sn	118	115	No Gas	0.934	ppb	2.5	12113.37	1	93.4	80	120	
Sb	123	115	No Gas	0.954	ppb	2.4	12722.84	1	95.4	80	120	
Ba	137	115	No Gas	1.019	ppb	1.7	6030.29	1	101.9	80	120	
W	182	159	No Gas	2.062	ppb	1.8	27226.14	2	103.1	80	120	
Hg	201	159	He	0.075	ppb	10.8	98.00	0.1	75	80	120	> +/- 20%
Tl	205	159	No Gas	1.003	ppb	2.1	31660.08	1	100.3	80	120	
Pb	208	159	No Gas	1.011	ppb	1.8	43817.80	1	101.1	80	120	
U	238	159	No Gas	0.959	ppb	1.6	39530.26	1	95.9	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1808021.53	1.7	1866774.34	96.85	60	120	
Sc	45	No Gas	5199346.50	0.7	5256704	98.91	60	120	
Sc	45	H2	3152611.67	0.9	3216050	98.03	60	120	
Sc	45	He	579546.60	1.7	590136.5	98.21	60	120	
Ge	72	No Gas	1347698.96	0.6	1347600.04	100.01	60	120	
Ge	72	H2	905416.13	1.2	912330.27	99.24	60	120	
Ge	72	He	370734.43	1.7	378247.59	98.01	60	120	
In	115	No Gas	8798985.00	0.1	8692051.13	101.23	60	120	
Tb	159	No Gas	11705508.70	0.4	11827603.42	98.97	60	120	
Tb	159	He	6557762.33	1.3	6692094.83	97.99	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #SM5A-04-04-10

ALL SAMPLES PH<2

Book #: EIM-081
Batch: IMF029W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.2 °C		93.1 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	↓ -06-26	0.15
MS	SAMPSPIKE SOLN AND VOL	AS LAS 1,2
Blank Soil (Bead)		
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1mL
pH Strip (0-14)	HC998032	N/A

Digestate Location	METALS
Extract Location	N/A
☑ Reagent Water ID:	SWIA-009-03-03
☑ Thermometer ID:	192272442/E12
☑ Pipette ID:	74276631
☑ Pipette ID:	84278057 9
☐ Pipette ID:	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask	
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask	

Prepared By: CK/MC
Standard Added By: CK Witnessed By: NT
Extract Rcvd By: LY Checked By: MC

EMAX LABS

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF029W01	IMF029WB	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W02	IMF029WL	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W03	IMF029WC	50	ml	6/22/20 9:47	50	50	50	1	
20IMF029W04	F154-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W05	F154-02	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W06	F154-02M	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W07	F154-02S	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W08	F154-05	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W09	F154-06	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W10	F162-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W11	F162-02	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W12	F162-04	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W13	F162-05	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W14	F162-07	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W15	F162-08	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W16	F162-10	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W17	F162-11	50	ml	6/22/20 9:47	50	50	50	1	TOTAL
20IMF029W18	F071-01	50	ml	6/22/20 9:47	50	50	50	1	TOTAL

CK

6/22/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/22/20 10:36 Prepared By: CKaing/MCande

☑ Digestion Ended @ 6/22/20 13:27 Checked By: CK / MC

Comments: Date 6/22/20

SOP EMAX-6020 Rev. 13

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGG004WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGG004WL/HGG004WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F162
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGG004WB	1	NA	07/07/2017:26	07/07/2012:27	M47G003039	M47G003	20HGG004W	Method Blank
LCS1W	HGG004WL	1	NA	07/07/2017:28	07/07/2012:27	M47G003040	M47G003	20HGG004W	Lab Control Sample (LCS)
LCD1W	HGG004WC	1	NA	07/07/2017:31	07/07/2012:27	M47G003041	M47G003	20HGG004W	LCS Duplicate
MW22-GW061720	F162-01	1	NA	07/07/2017:33	07/07/2012:27	M47G003042	M47G003	20HGG004W	Field Sample
MW21-GW061820	F162-02	1	NA	07/07/2017:36	07/07/2012:27	M47G003043	M47G003	20HGG004W	Field Sample
MW01D-GW061720	F162-04	1	NA	07/07/2017:38	07/07/2012:27	M47G003044	M47G003	20HGG004W	Field Sample
MW13S-GW061820	F162-05	1	NA	07/07/2017:40	07/07/2012:27	M47G003045	M47G003	20HGG004W	Field Sample
MW03RA-GW061820	F162-07	1	NA	07/07/2017:47	07/07/2012:27	M47G003048	M47G003	20HGG004W	Field Sample
MW03RB-GW061820	F162-08	1	NA	07/07/2017:50	07/07/2012:27	M47G003049	M47G003	20HGG004W	Field Sample
MW03RC-GW061820	F162-10	1	NA	07/07/2017:52	07/07/2012:27	M47G003050	M47G003	20HGG004W	Field Sample
MW03RD-GW061820	F162-11	1	NA	07/07/2017:54	07/07/2012:27	M47G003051	M47G003	20HGG004W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162
Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGG004WB	ND	1	NA	0.500	0.100	07/07/2017:26	07/07/2012:27	M47G003039	M47G003	20HGG004W	NA	NA
LCS1W	HGG004WL	2.54	1	NA	0.500	0.100	07/07/2017:28	07/07/2012:27	M47G003040	M47G003	20HGG004W	NA	NA
LCD1W	HGG004WC	2.52	1	NA	0.500	0.100	07/07/2017:31	07/07/2012:27	M47G003041	M47G003	20HGG004W	NA	NA
MW22-GW061720	F162-01	ND	1	NA	0.500	0.100	07/07/2017:33	07/07/2012:27	M47G003042	M47G003	20HGG004W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02	ND	1	NA	0.500	0.100	07/07/2017:36	07/07/2012:27	M47G003043	M47G003	20HGG004W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04	ND	1	NA	0.500	0.100	07/07/2017:38	07/07/2012:27	M47G003044	M47G003	20HGG004W	06/17/2016:25	06/19/20
MW13S-GW061820	F162-05	ND	1	NA	0.500	0.100	07/07/2017:40	07/07/2012:27	M47G003045	M47G003	20HGG004W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07	ND	1	NA	0.500	0.100	07/07/2017:47	07/07/2012:27	M47G003048	M47G003	20HGG004W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08	ND	1	NA	0.500	0.100	07/07/2017:50	07/07/2012:27	M47G003049	M47G003	20HGG004W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10	ND	1	NA	0.500	0.100	07/07/2017:52	07/07/2012:27	M47G003050	M47G003	20HGG004W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11	ND	1	NA	0.500	0.100	07/07/2017:54	07/07/2012:27	M47G003051	M47G003	20HGG004W	06/18/2012:35	06/19/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGG004WB	HGG004WL	HGG004WC
LAB FILE ID	: M47G003039	M47G003040	M47G003041
DATE PREPARED	: 07/07/2012:27	07/07/2012:27	07/07/2012:27
DATE ANALYZED	: 07/07/2017:26	07/07/2017:28	07/07/2017:31
PREP BATCH	: 20HGG004W	20HGG004W	20HGG004W
CALIBRATION REF	: M47G003	M47G003	M47G003

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.54	102	2.50	2.52	101	1	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 7/7/20 Start Time: 15:54

End Date: 7/7/20 End Time: 18:54

Comments:

QC OK

Book #:	A47-121
Instrument No.:	47
Analytical Sequence/Batch:	M476003
Method File:	HG1
Micropipette ID:	☑ 339342032
Micropipette ID:	☑ HG-03
Micropipette ID:	☐ 742781062
Micropipette ID:	☑ HG-06
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	Blank
S2	SM3B-19-22-03
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-19-22-04
LCS	
Analytical Spike	
	SM3B-19-22-05 TV 3 ug/L

Analyzed By: MC

Date: 7/8/20

Disposed By:

Date:

"M47G003"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47G003001	STD01REP1	0	14743		07/07/2015:54	1
M47G003002	STD02REP1	.2	46891		07/07/2015:57	1
M47G003003	STD03REP1	.5	96047		07/07/2015:59	1
M47G003004	STD04REP1	1	179820		07/07/2016:01	1
M47G003005	STD05REP1	2	348157		07/07/2016:04	1
M47G003006	STD06REP1	5	833922		07/07/2016:06	1
M47G003007	ICV	2.01	344828	0	07/07/2016:10	1
M47G003008	ICB	-.015	12851	0	07/07/2016:12	1
M47G003009	MRLG0702	.512	99442	0	07/07/2016:15	1
M47G003010	CCV1	2.03	349236	0	07/07/2016:17	1
M47G003011	CCB1	-.027	10900	0	07/07/2016:19	1
M47G003012	F206-03	-.015	12969	0	07/07/2016:22	1
M47G003013	F206-04	-.014	12995	0	07/07/2016:24	1
M47G003014	F206-05	-.02	12134	0	07/07/2016:26	1
M47G003015	F213-01	-.002	15040	0	07/07/2016:29	1
M47G003016	F213-02	-.014	12990	0	07/07/2016:31	1
M47G003017	F213-03	-.021	11962	0	07/07/2016:33	1
M47G003018	F213-04	-.011	13610	0	07/07/2016:35	1
M47G003019	F213-05	-.004	14737	0	07/07/2016:38	1
M47G003020	F213-06	-.015	12889	0	07/07/2016:40	1
M47G003021	F213-07	-.003	14876	0	07/07/2016:42	1
M47G003022	CCV2	2.02	347502	0	07/07/2016:44	1
M47G003023	CCB2	-.009	13910	0	07/07/2016:47	1
M47G003024	F213-08	-.036	9482	0	07/07/2016:49	1
M47G003025	F213-09	-.002	14997	0	07/07/2016:52	1
M47G003026	F213-10	-.024	11381	0	07/07/2016:54	1
M47G003027	F213-11A	2.71	460580	0	07/07/2016:56	1
M47G003028	F213-11	-.011	13519	0	07/07/2016:58	1
M47G003029	F213-11J	-.011	13638	0	07/07/2017:01	5
M47G003030	F213-11M	2.28	389442	0	07/07/2017:03	1
M47G003031	F213-11S	2.27	387044	0	07/07/2017:05	1
M47G003032	F213-12	-.016	12800	0	07/07/2017:08	1
M47G003033	F213-13	-.014	12985	0	07/07/2017:11	1
M47G003034	CCV3	2.03	349164	0	07/07/2017:13	1
M47G003035	CCB3	.007	16488	0	07/07/2017:15	1
M47G003036	F213-14	-.024	11376	0	07/07/2017:18	1
M47G003037	F213-15	-.017	12515	0	07/07/2017:20	1
M47G003038	F213-16	-.009	13892	0	07/07/2017:23	1
M47G003039	HGG004WB	-.019	12195	0	07/07/2017:26	1
M47G003040	HGG004WL	2.54	431836	0	07/07/2017:28	1
M47G003041	HGG004WC	2.52	429170	0	07/07/2017:31	1
M47G003042	F162-01	.011	17088	0	07/07/2017:33	1
M47G003043	F162-02	-.034	9746	0	07/07/2017:36	1
M47G003044	F162-04	-.037	9270	0	07/07/2017:38	1
M47G003045	F162-05	-.032	10056	0	07/07/2017:40	1
M47G003046	CCV4	2.01	345251	0	07/07/2017:42	1
M47G003047	CCB4	-.021	11912	0	07/07/2017:45	1
M47G003048	F162-07	-.039	8937	0	07/07/2017:47	1
M47G003049	F162-08	-.024	11353	0	07/07/2017:50	1
M47G003050	F162-10	-.024	11432	0	07/07/2017:52	1
M47G003051	F162-11	-.048	7536	0	07/07/2017:54	1
M47G003052	F183-01	-.038	9082	0	07/07/2017:57	1
M47G003053	F183-02	-.022	11749	0	07/07/2017:59	1
M47G003054	F183-03	-.039	8988	0	07/07/2018:01	1
M47G003055	F183-05	-.042	8505	0	07/07/2018:03	1
M47G003056	F183-06	-.03	10388	0	07/07/2018:06	1
M47G003057	F183-07	-.032	10104	0	07/07/2018:08	1
M47G003058	CCV5	2	343390	0	07/07/2018:11	1
M47G003059	CCB5	.007	16536	0	07/07/2018:13	1
M47G003060	F183-08A	2.98	504447	0	07/07/2018:15	1
M47G003061	F183-08	-.041	8709	0	07/07/2018:18	1
M47G003062	F183-08J	.007	16564	0	07/07/2018:21	5
M47G003063	F183-08M	2.47	420048	0	07/07/2018:23	1
M47G003064	F183-08S	2.49	424634	0	07/07/2018:25	1
M47G003065	F183-12	-.043	8385	0	07/07/2018:27	1
M47G003066	F183-13	-.033	9880	0	07/07/2018:30	1
M47G003067	F183-14	-.025	11245	0	07/07/2018:32	1
M47G003068	F183-15	-.028	10700	0	07/07/2018:35	1
M47G003069	F183-16	-.039	8958	0	07/07/2018:37	1
M47G003070	CCV6	1.98	339515	0	07/07/2018:39	1
M47G003071	CCB6	-.003	14934	0	07/07/2018:42	1
M47G003072	HGG003WB	-.006	14414	0	07/07/2018:44	1
M47G003073	HGG003WL	2.53	429719	0	07/07/2018:47	1

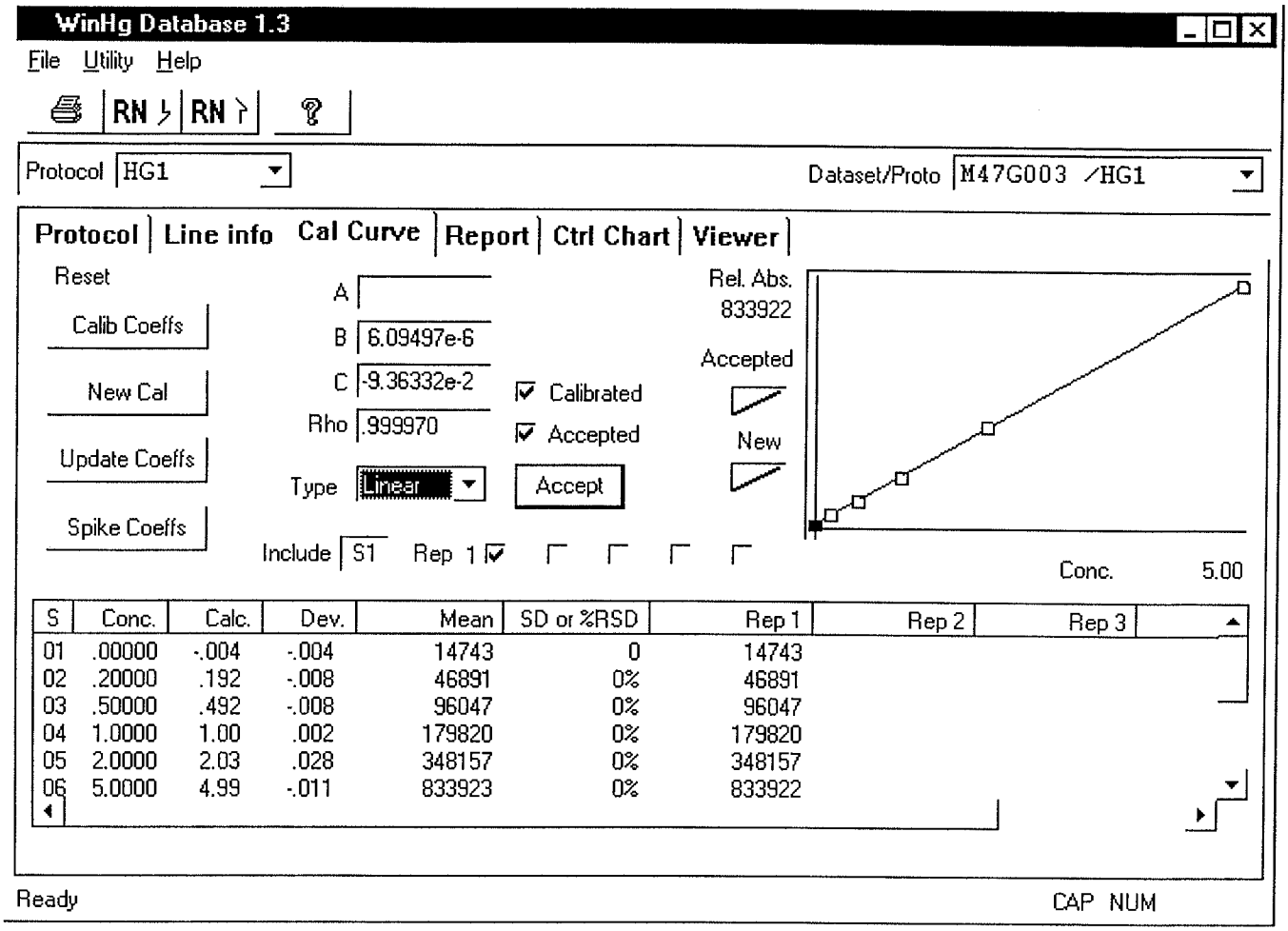
M47G003074	HGG003WC	2.55	433378	0	07/07/2018:49	1
M47G003075	CCV7	1.96	336710	0	07/07/2018:52	1
M47G003076	CCB7	.002	15684	0	07/07/2018:54	1
**********	**********	**********	**********	**********	**********	***
EMAX1fid	EMAX1sid	Xint	Yint	rrf	adatetime	DF
M47G003000		0	0	0	07/07/2018:54	1
M47G003001	BLANK	-9.372693E-02	15376.81	.9999697	07/07/2018:54	1

M476003

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLG0702	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	F206-03		1.0000	1.0000	
7	F206-04		1.0000	1.0000	
8	F206-05		1.0000	1.0000	
9	F213-01		1.0000	1.0000	
10	F213-02		1.0000	1.0000	
11	F213-03		1.0000	1.0000	
12	F213-04		1.0000	1.0000	
13	F213-05		1.0000	1.0000	
14	F213-06		1.0000	1.0000	
15	F213-07		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F213-08		1.0000	1.0000	
19	F213-09		1.0000	1.0000	
20	F213-10		1.0000	1.0000	
21	F213-11A		1.0000	1.0000	
22	F213-11		1.0000	1.0000	
23	F213-11J	5X	1.0000	1.0000	
24	F213-11M		1.0000	1.0000	
25	F213-11S		1.0000	1.0000	
26	F213-12		1.0000	1.0000	
27	F213-13		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F213-14		1.0000	1.0000	
31	F213-15		1.0000	1.0000	
32	F213-16		1.0000	1.0000	
33	HGG004WB		1.0000	1.0000	
34	HGG004WL		1.0000	1.0000	
35	HGG004WC		1.0000	1.0000	
36	F162-01		1.0000	1.0000	
37	F162-02		1.0000	1.0000	
38	F162-04		1.0000	1.0000	
39	F162-05		1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	F162-07		1.0000	1.0000	
43	F162-08		1.0000	1.0000	
44	F162-10		1.0000	1.0000	

MC 7/7/2020

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	F162-11		1.0000	1.0000	
2	F183-01		1.0000	1.0000	
3	F183-02		1.0000	1.0000	
4	F183-03		1.0000	1.0000	
5	F183-05		1.0000	1.0000	
6	F183-06		1.0000	1.0000	
7	F183-07		1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	F183-08A		1.0000	1.0000	
11	F183-08		1.0000	1.0000	
12	F183-08J	5X	1.0000	1.0000	
13	F183-08M		1.0000	1.0000	
14	F183-08S		1.0000	1.0000	
15	F183-12		1.0000	1.0000	
16	F183-13		1.0000	1.0000	
17	F183-14		1.0000	1.0000	
18	F183-15		1.0000	1.0000	
19	F183-16		1.0000	1.0000	
20	CCV6		1.0000	1.0000	
21	CCB6		1.0000	1.0000	
22	HGG003WB		1.0000	1.0000	
23	HGG003WL		1.0000	1.0000	
24	HGG003WC		1.0000	1.0000	
25	CCV7		1.0000	1.0000	
26	CCB7		1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47G003 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.09497e-6
C -9.36332e-2
Rho .999970
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
833922
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.004 -.004 14743 0 14743
02 .20000 .192 -.008 46891 0% 46891
03 .50000 .492 -.008 96047 0% 96047
04 1.0000 1.00 .002 179820 0% 179820
05 2.0000 2.03 .028 348157 0% 348157
06 5.0000 4.99 -.011 833923 0% 833922
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1		15:54:54 07 Jul 20			HG
Hg	.000	ppb	14743						
*** Standard: 2 Rep: 1				Seq: 2		15:57:08 07 Jul 20			HG
Hg	.200	ppb	46891						
*** Standard: 3 Rep: 1				Seq: 3		15:59:28 07 Jul 20			HG
Hg	.500	ppb	96047						
*** Standard: 4 Rep: 1				Seq: 4		16:01:46 07 Jul 20			HG
Hg	1.00	ppb	179820						
*** Standard: 5 Rep: 1				Seq: 5		16:04:03 07 Jul 20			HG
Hg	2.00	ppb	348157						
*** Standard: 6 Rep: 1				Seq: 6		16:06:20 07 Jul 20			HG
Hg	5.00	ppb	833922						
*** Sample ID: ICV				Seq: 7		16:10:33 07 Jul 20			HG
Hg	2.01	ppb	344828						
*** Sample ID: ICB				Seq: 8		16:12:54 07 Jul 20			HG
Hg	-.015	ppb	12851						
*** Sample ID: MRLG0702				Seq: 9		16:15:23 07 Jul 20			HG
Hg	.512	ppb	0.5 99442						
*** Sample ID: CCV1				Seq: 10		16:17:37 07 Jul 20			HG
Hg	2.03	ppb	349236						
*** Sample ID: CCB1				Seq: 11		16:19:48 07 Jul 20			HG
Hg	-.027	ppb	10900						
*** Sample ID: F206-03				Seq: 12		16:22:00 07 Jul 20			HG
Hg	-.015	ppb	12969						
*** Sample ID: F206-04				Seq: 13		16:24:10 07 Jul 20			HG
Hg	-.014	ppb	12995						
*** Sample ID: F206-05				Seq: 14		16:26:19 07 Jul 20			HG
Hg	-.020	ppb	12134						
*** Sample ID: F213-01				Seq: 15		16:29:02 07 Jul 20			HG
Hg	-.002	ppb	15040						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F213-02				Seq: 16	16:31:18 07 Jul 20	HG		
Hg	-.014	ppb	12990					
*** Sample ID: F213-03				Seq: 17	16:33:42 07 Jul 20	HG		
Hg	-.021	ppb	11962					
*** Sample ID: F213-04				Seq: 18	16:35:50 07 Jul 20	HG		
Hg	-.011	ppb	13610					
*** Sample ID: F213-05				Seq: 19	16:38:09 07 Jul 20	HG		
Hg	-.004	ppb	14737					
*** Sample ID: F213-06				Seq: 20	16:40:17 07 Jul 20	HG		
Hg	-.015	ppb	12889					
*** Sample ID: F213-07				Seq: 21	16:42:27 07 Jul 20	HG		
Hg	-.003	ppb	14876					
*** Sample ID: CCV2				Seq: 22	16:44:48 07 Jul 20	HG		
Hg	2.02	ppb	347502					
*** Sample ID: CCB2				Seq: 23	16:47:13 07 Jul 20	HG		
Hg	-.009	ppb	13910					
*** Sample ID: F213-08				Seq: 24	16:49:21 07 Jul 20	HG		
Hg	-.036	ppb	9482					
*** Sample ID: F213-09				Seq: 25	16:52:04 07 Jul 20	HG		
Hg	-.002	ppb	14997					
*** Sample ID: F213-10				Seq: 26	16:54:14 07 Jul 20	HG		
Hg	-.024	ppb	11381					
*** Sample ID: F213-11A				Seq: 27	16:56:24 07 Jul 20	HG		
Hg	2.71	ppb	460580					
*** Sample ID: F213-11				Seq: 28	16:58:56 07 Jul 20	HG		
Hg	-.011	ppb	13519					
*** Sample ID: F213-11J				Seq: 29	17:01:06 07 Jul 20	HG		
Hg	-.011	ppb	5X 13638					
*** Sample ID: F213-11M				Seq: 30	17:03:35 07 Jul 20	HG		
Hg	2.28	ppb	389442					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F213-11S				Seq: 31	17:05:55 07 Jul 20	HG		
Hg	2.27	ppb	387044					
*** Sample ID: F213-12				Seq: 32	17:08:25 07 Jul 20	HG		
Hg	-.016	ppb	12800					
*** Sample ID: F213-13				Seq: 33	17:11:00 07 Jul 20	HG		
Hg	-.014	ppb	12985					
*** Sample ID: CCV3				Seq: 34	17:13:21 07 Jul 20	HG		
Hg	2.03	ppb	349164					
*** Sample ID: CCB3				Seq: 35	17:15:44 07 Jul 20	HG		
Hg	.007	ppb	16488					
*** Sample ID: F213-14				Seq: 36	17:18:26 07 Jul 20	HG		
Hg	-.024	ppb	11376					
*** Sample ID: F213-15				Seq: 37	17:20:46 07 Jul 20	HG		
Hg	-.017	ppb	12515					
*** Sample ID: F213-16				Seq: 38	17:23:16 07 Jul 20	HG		
Hg	-.009	ppb	13892					
*** Sample ID: HGG004WB				Seq: 39	17:26:17 07 Jul 20	HG		
Hg	-.019	ppb	12195					
*** Sample ID: HGG004WL				Seq: 40	17:28:27 07 Jul 20	HG		
Hg	2.54	ppb	431836					
*** Sample ID: HGG004WC				Seq: 41	17:31:02 07 Jul 20	HG		
Hg	2.52	ppb	429170					
*** Sample ID: F162-01				Seq: 42	17:33:11 07 Jul 20	HG		
Hg	.011	ppb	17088					
*** Sample ID: F162-02				Seq: 43	17:36:10 07 Jul 20	HG		
Hg	-.034	ppb	9746					
*** Sample ID: F162-04				Seq: 44	17:38:20 07 Jul 20	HG		
Hg	-.037	ppb	9270					
*** Sample ID: F162-05				Seq: 45	17:40:39 07 Jul 20	HG		
Hg	-.032	ppb	10056					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	17:42:53 07 Jul 20	HG		
Hg	2.01	ppb	345251					
*** Sample ID: CCB4				Seq: 47	17:45:14 07 Jul 20	HG		
Hg	-.021	ppb	11912					
*** Sample ID: F162-07				Seq: 48	17:47:44 07 Jul 20	HG		
Hg	-.039	ppb	8937					
*** Sample ID: F162-08				Seq: 49	17:50:04 07 Jul 20	HG		
Hg	-.024	ppb	11353					
*** Sample ID: F162-10				Seq: 50	17:52:20 07 Jul 20	HG		
Hg	-.024	ppb	11432					
*** Sample ID: F162-11				Seq: 51	17:54:50 07 Jul 20	HG		
Hg	-.048	ppb	7536					
*** Sample ID: F183-01				Seq: 52	17:57:02 07 Jul 20	HG		
Hg	-.038	ppb	9082					
*** Sample ID: F183-02				Seq: 53	17:59:14 07 Jul 20	HG		
Hg	-.022	ppb	11749					
*** Sample ID: F183-03				Seq: 54	18:01:44 07 Jul 20	HG		
Hg	-.039	ppb	8988					
*** Sample ID: F183-05				Seq: 55	18:03:59 07 Jul 20	HG		
Hg	-.042	ppb	8505					
*** Sample ID: F183-06				Seq: 56	18:06:13 07 Jul 20	HG		
Hg	-.030	ppb	10388					
*** Sample ID: F183-07				Seq: 57	18:08:35 07 Jul 20	HG		
Hg	-.032	ppb	10104					
*** Sample ID: CCV5				Seq: 58	18:11:08 07 Jul 20	HG		
Hg	2.00	ppb	343390					
*** Sample ID: CCB5				Seq: 59	18:13:18 07 Jul 20	HG		
Hg	.007	ppb	16536					
*** Sample ID: F183-08A				Seq: 60	18:15:41 07 Jul 20	HG		
Hg	2.98	ppb	504447					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F183-08				Seq: 61		18:18:43 07 Jul 20			HG
Hg	-.041	ppb	8709						
*** Sample ID: F183-08J				Seq: 62		18:21:04 07 Jul 20			HG
			5X						
Hg	.007	ppb	16564						
*** Sample ID: F183-08M				Seq: 63		18:23:15 07 Jul 20			HG
Hg	2.47	ppb	420048						
*** Sample ID: F183-08S				Seq: 64		18:25:31 07 Jul 20			HG
Hg	2.49	ppb	424634						
*** Sample ID: F183-12				Seq: 65		18:27:42 07 Jul 20			HG
Hg	-.043	ppb	8385						
*** Sample ID: F183-13				Seq: 66		18:30:42 07 Jul 20			HG
Hg	-.033	ppb	9880						
*** Sample ID: F183-14				Seq: 67		18:32:56 07 Jul 20			HG
Hg	-.025	ppb	11245						
*** Sample ID: F183-15				Seq: 68		18:35:12 07 Jul 20			HG
Hg	-.028	ppb	10700						
*** Sample ID: F183-16				Seq: 69		18:37:22 07 Jul 20			HG
Hg	-.039	ppb	8958						
*** Sample ID: CCV6				Seq: 70		18:39:52 07 Jul 20			HG
Hg	1.98	ppb	339515						
*** Sample ID: CCB6				Seq: 71		18:42:03 07 Jul 20			HG
Hg	-.003	ppb	14934						
*** Sample ID: HGG003WB				Seq: 72		18:44:45 07 Jul 20			HG
Hg	-.006	ppb	14414						
*** Sample ID: HGG003WL				Seq: 73		18:47:07 07 Jul 20			HG
Hg	2.53	ppb	429719						
*** Sample ID: HGG003WC				Seq: 74		18:49:20 07 Jul 20			HG
Hg	2.55	ppb	433378						
*** Sample ID: CCV7				Seq: 75		18:52:40 07 Jul 20			HG
Hg	1.96	ppb	336710						

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB7 Seq: 76 18:54:52 07 Jul 20 HG

Hg	.002	ppb	15684					

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28619010

Aqua Regia Prep. Vessel Lot#: N/A

All samples pH<2

ICAL on HGG003W

Book #: E47-116

Batch No.: HGG004W

Matrix: water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-22-03	50	0.2, 0.5, 1, 1.5
CCV	↓	↓	2
ICV	SM3B-19-22-04	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3	SWIA-009-02-08
HCl	N/A
H_2SO_4	SWIA-08-24-05
$KMnO_4$	SMSB-04-14-04
$K_2S_2O_8$	SMSB-04-13-04
$NH_2OH \cdot HCl \cdot NaCl$	SMSB-04-15-01
$SnCl_2$	SMSB-04-14-03
Silica Sand	N/A
Reagent Water	RW1-19-003
pH strip 0-14	HC863163
Digestor ID/ Temp (°C)	B / 95.4
Thermometer ID/LOC:	170236083 / BIM
Thermometer ID/LOC:	
Pipette ID:	H6-06, 7427810G2, H6-03, 3393M2032
☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder	
☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder	
☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder	

Prepared By: MC

Standard Added By: MC Witnessed By: TH

EMAX LABORATORIES

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGG004W01	HGG004WB	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W02	HGG004WL	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W03	HGG004WC	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W04	F162-01	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W05	F162-02	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W06	F162-04	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W07	F162-05	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W08	F162-07	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W09	F162-08	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W10	F162-10	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W11	F162-11	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W12	F183-01	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W13	F183-02	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W14	F183-03	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W15	F183-05	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W16	F183-06	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W17	F183-07	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W18	F183-08	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W19	F183-08M	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W20	F183-08S	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W21	F183-12	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W22	F183-13	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W23	F183-14	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W24	F183-15	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W25	F183-16	50	ml	7/7/20 11:13	80	50	80	1	

MC
7/7/2020

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 7/7/20 12:27

☑ Digestion Ended @ 7/7/20 14:34

Comments:

Prepared By: MCande

Checked By: MC

Date 7/7/2020

SOP EMAX-7470 Rev. 8

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F162

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD E300.0
CHLORIDE

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, three(3) method blanks were analyzed. ICF029WB, ICF031WB and ICF033WB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, three(3) sets of LCS/LCD were analyzed. ICF029WL/ICF029WC, ICF031WL/ICF031WC and ICF033WL/ICF033WC were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD E300.0
SULFATE

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF029WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF029WL/ICF029WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RESULTS

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF029WB	ND	1	NA	0.2	0.05	06/22/2011:11	NA	AF27-03	AF27-01	ICF029W	NA	NA
LCS1W	ICF029WL	1.94	1	NA	0.2	0.05	06/22/2011:28	NA	AF27-04	AF27-01	ICF029W	NA	NA
LCD1W	ICF029WC	1.94	1	NA	0.2	0.05	06/22/2011:45	NA	AF27-05	AF27-01	ICF029W	NA	NA
MW22-GW061720	F162-01J	266	200	NA	40	10	06/22/2021:00	NA	AF27-25	AF27-18	ICF029W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02J	363	200	NA	40	10	06/22/2023:16	NA	AF27-33	AF27-30	ICF029W	06/18/2011:15	06/19/20
MW13S-GW061820	F162-05J	415	200	NA	40	10	06/23/2000:08	NA	AF27-36	AF27-30	ICF029W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07J	371	200	NA	40	10	06/23/2002:24	NA	AF27-44	AF27-42	ICF029W	06/18/2015:40	06/19/20
MW03RD-GW061820	F162-11I	83.4	20	NA	4	1	06/23/2003:50	NA	AF27-49	AF27-42	ICF029W	06/18/2012:35	06/19/20
MBLK2W	ICF031WB	ND	1	NA	0.2	0.05	06/23/2010:54	NA	AF29-03	AF29-01	ICF031W	NA	NA
LCS2W	ICF031WL	1.95	1	NA	0.2	0.05	06/23/2011:11	NA	AF29-04	AF29-01	ICF031W	NA	NA
LCD2W	ICF031WC	1.96	1	NA	0.2	0.05	06/23/2011:28	NA	AF29-05	AF29-01	ICF031W	NA	NA
MW03RB-GW061820	F162-08I	166	100	NA	20	5	06/23/2012:34	NA	AF29-08	AF29-01	ICF031W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10I	72.6	50	NA	10	2.5	06/23/2012:51	NA	AF29-09	AF29-01	ICF031W	06/18/2013:25	06/19/20
MBLK3W	ICF033WB	ND	1	NA	0.2	0.05	06/24/2010:55	NA	AF31-03	AF31-01	ICF033W	NA	NA
LCS3W	ICF033WL	1.91	1	NA	0.2	0.05	06/24/2011:12	NA	AF31-04	AF31-01	ICF033W	NA	NA
LCD3W	ICF033WC	1.95	1	NA	0.2	0.05	06/24/2011:29	NA	AF31-05	AF31-01	ICF033W	NA	NA
MW01D-GW061720	F162-04I	107	50	NA	10	2.5	06/24/2023:29	NA	AF31-44	AF31-37	ICF033W	06/17/2016:25	06/19/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
InstrumentID : DO

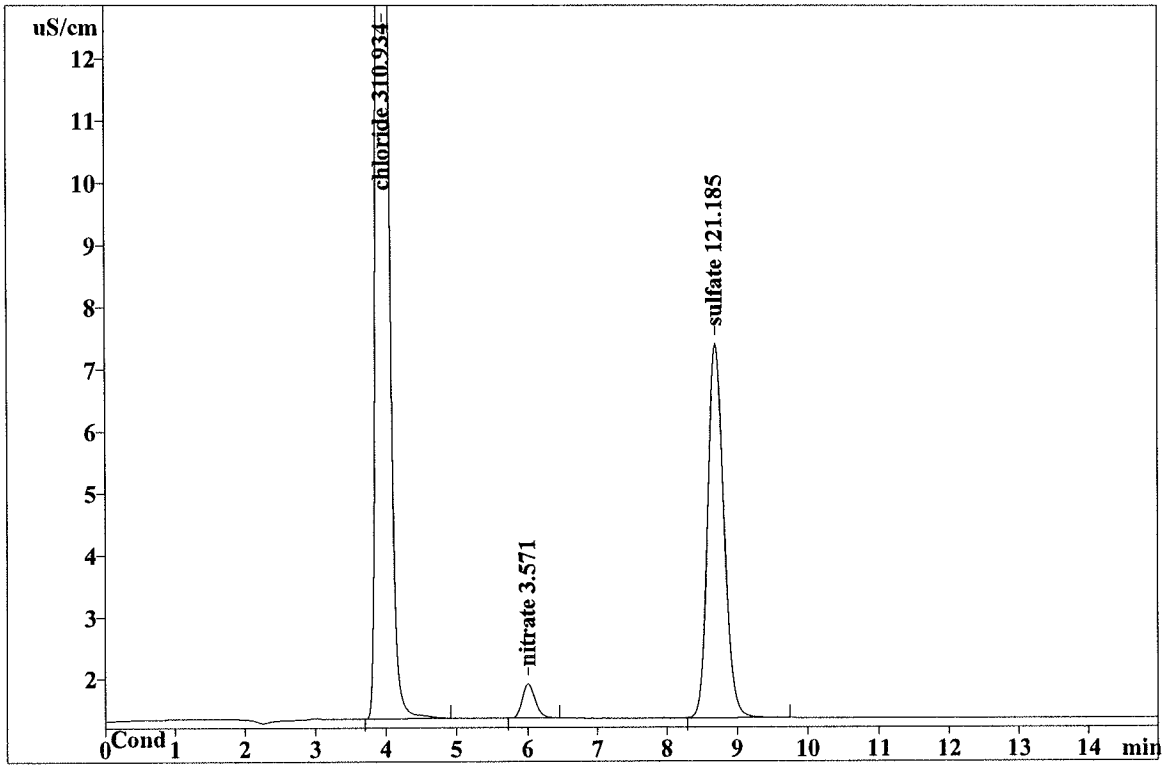
CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF029WB	ND	1	NA	0.5	0.13	06/22/2011:11	NA	AF27-03	AF27-01	ICF029W	NA	NA
LCS1W	ICF029WL	4.63	1	NA	0.5	0.13	06/22/2011:28	NA	AF27-04	AF27-01	ICF029W	NA	NA
LCD1W	ICF029WC	4.66	1	NA	0.5	0.13	06/22/2011:45	NA	AF27-05	AF27-01	ICF029W	NA	NA
MW13S-GW061820	F162-05I	219	20	NA	10	2.6	06/22/2017:12	NA	AF27-17	AF27-06	ICF029W	06/18/2013:25	06/19/20
MW22-GW061720	F162-01I	121	20	NA	10	2.6	06/22/2020:43	NA	AF27-24	AF27-18	ICF029W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02I	80.3	20	NA	10	2.6	06/22/2022:59	NA	AF27-32	AF27-30	ICF029W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04I	149	20	NA	10	2.6	06/22/2023:33	NA	AF27-34	AF27-30	ICF029W	06/17/2016:25	06/19/20
MW03RA-GW061820	F162-07I	97.7	20	NA	10	2.6	06/23/2000:25	NA	AF27-37	AF27-30	ICF029W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08I	111	20	NA	10	2.6	06/23/2002:41	NA	AF27-45	AF27-42	ICF029W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10I	157	20	NA	10	2.6	06/23/2003:15	NA	AF27-47	AF27-42	ICF029W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11I	199	20	NA	10	2.6	06/23/2003:50	NA	AF27-49	AF27-42	ICF029W	06/18/2012:35	06/19/20

Report date: 6/23/2020 3:32:49 PM
Printed by: TWangc

Ident: AF27-24 F162-01I DF=20
Analysis from: 6/22/2020 8:43:08 PM
File: _2020-06-22_20-43.chw Last save: 6/23/2020 11:48:07 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159279

SAMPLE: METHOD300/9056/4110B
:
Vial number: 24
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	35.91	329.314	310.934	chloride
2	6.01	0.55	6.997	3.571	nitrate
3	8.69	6.04	97.745	121.185	sulfate ✓
3	15.00	42.51	434.056	435.690	

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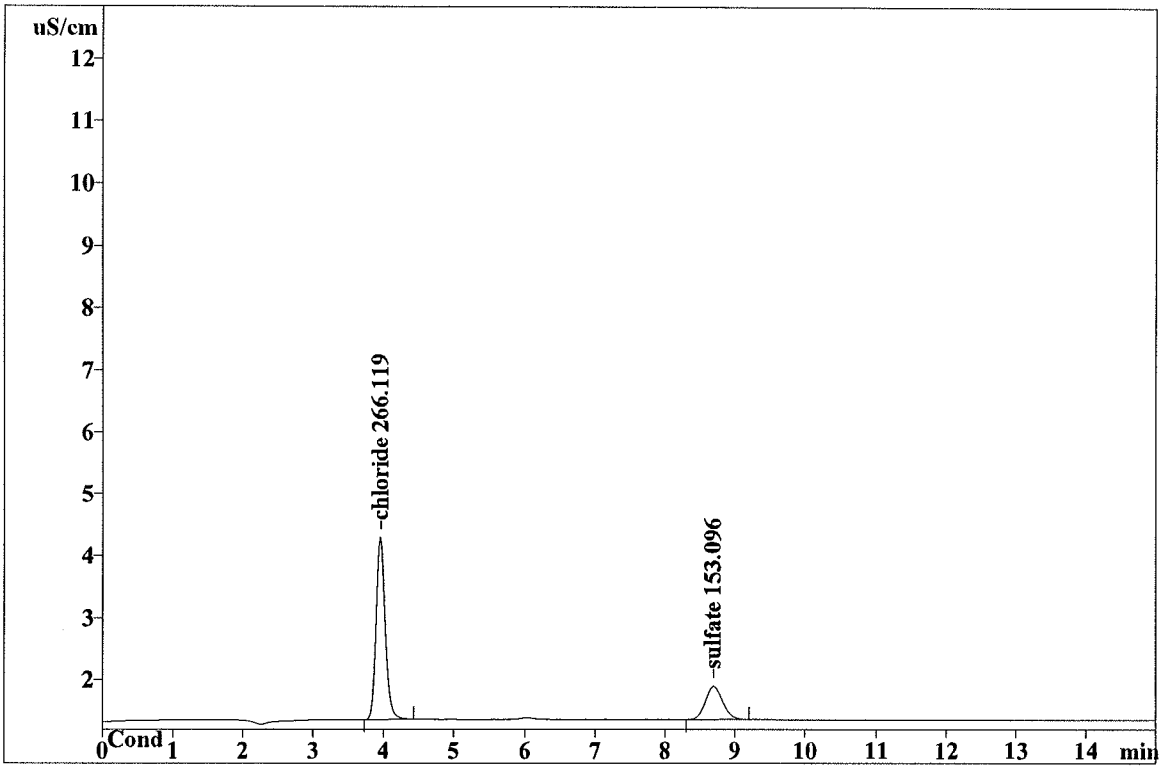
METROHM LTD

Report date: 6/23/2020 3:50:26 PM
Printed by: TWangc

Ident: AF27-25 F162-01J DF=200
Analysis from: 6/22/2020 9:00:12 PM
File: _2020-06-22_21-00.chw Last save: 6/23/2020 11:48:31 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159280

SAMPLE: METHOD300/9056/4110B
:
Vial number: 25
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	2.94	26.413	266.119	chloride ✓
2	8.70	0.54	9.163	153.096	sulfate
2	15.00	3.47	35.576	419.215	

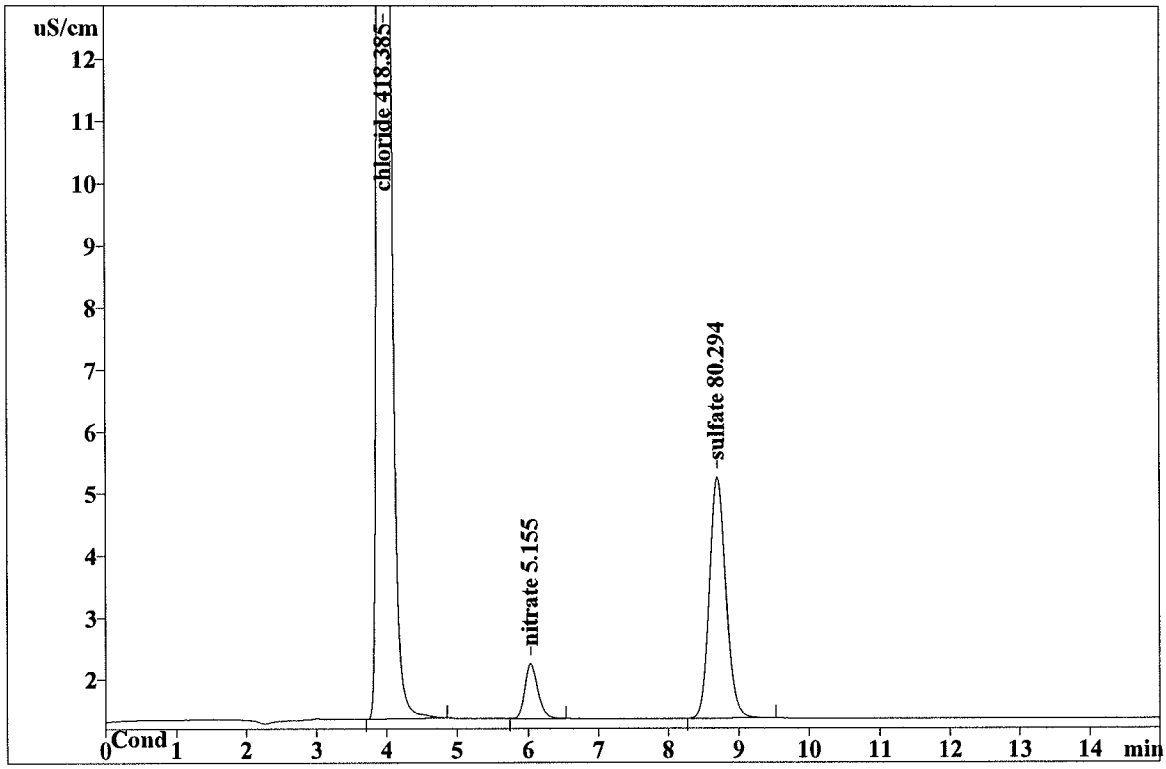
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:51:03 PM
Printed by: TWangc

Ident: AF27-32 F162-02I DF=20
Analysis from: 6/22/2020 10:59:44 PM
File: _2020-06-22_22-59.chw Last save: 6/22/2020 11:14:41 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159287

SAMPLE: METHOD300/9056/4110B
:
Vial number: 32
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	47.88	443.787	418.385	chloride
2	6.04	0.89	11.198	5.155	nitrate
3	8.69	3.89	63.533	80.294	sulfate ✓
3	15.00	52.66	518.518	503.834	

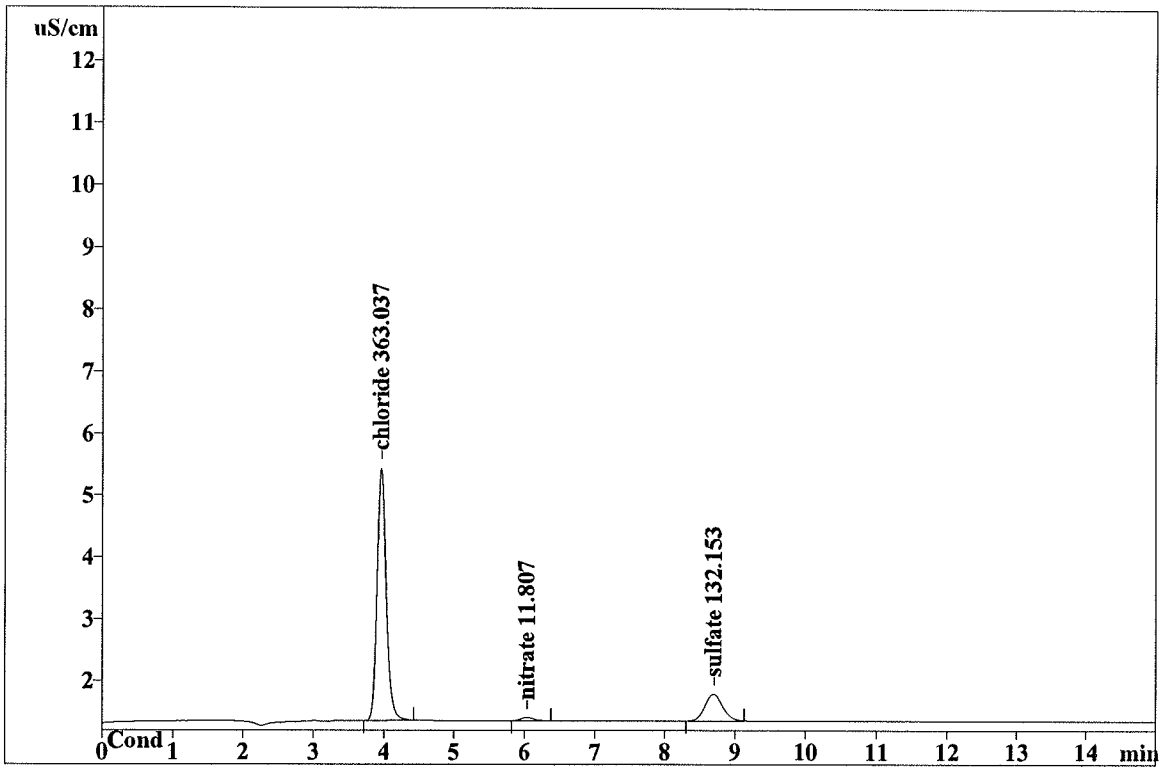
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:51:17 PM
Printed by: TWangc

Ident: AF27-33 F162-02J DF=200
Analysis from: 6/22/2020 11:16:49 PM
File: _2020-06-22_23-16.chw Last save: 6/23/2020 11:49:15 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159288

SAMPLE: METHOD300/9056/4110B
:
Vial number: 33
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	4.09	36.738	363.037	chloride ✓
2	6.04	0.05	0.661	11.807	nitrate
3	8.69	0.43	7.411	132.153	sulfate
3	15.00	4.57	44.810	506.997	

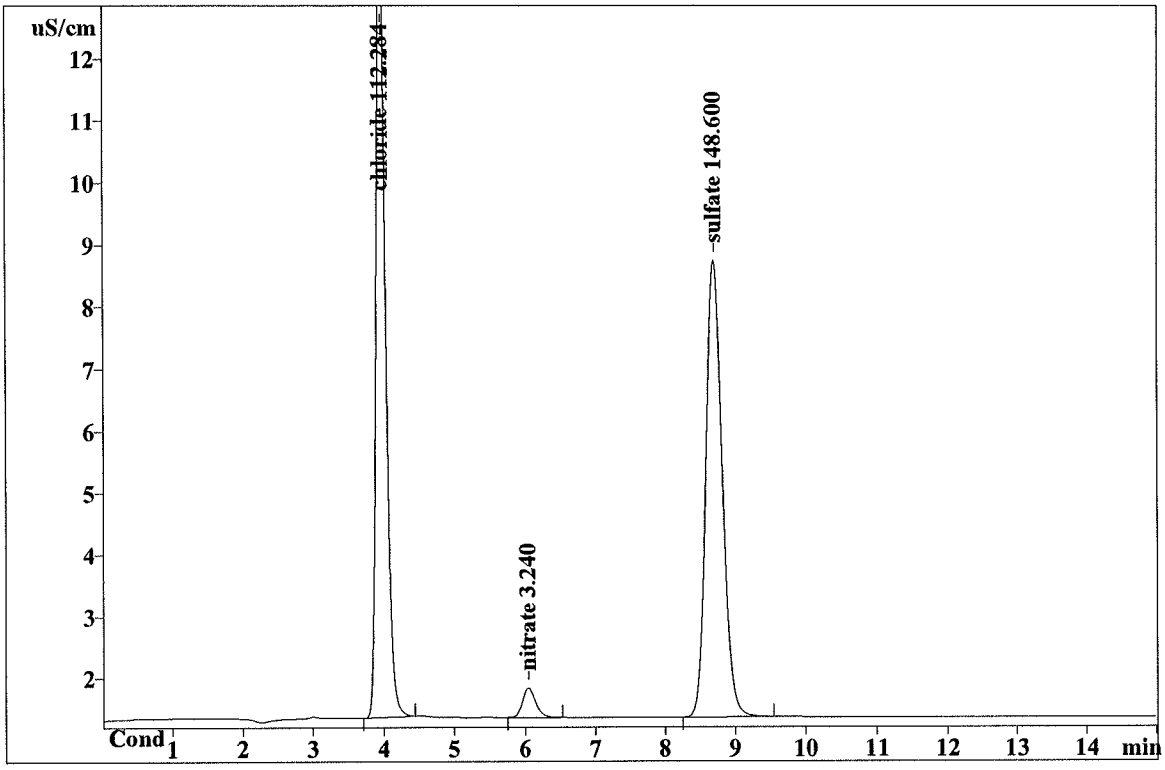
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:51:41 PM
Printed by: TWangc

Ident: AF27-34 F162-04I DF=20
Analysis from: 6/22/2020 11:33:54 PM
File: _2020-06-22_23-33.chw Last save: 6/22/2020 11:48:51 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159289

SAMPLE: METHOD300/9056/4110B
:
Vial number: 34
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	12.92	117.684	112.284	chloride
2	6.04	0.47	6.121	3.240	nitrate
3	8.69	7.38	120.682	148.600	sulfate ✓
3	15.00	20.78	244.487	264.125	

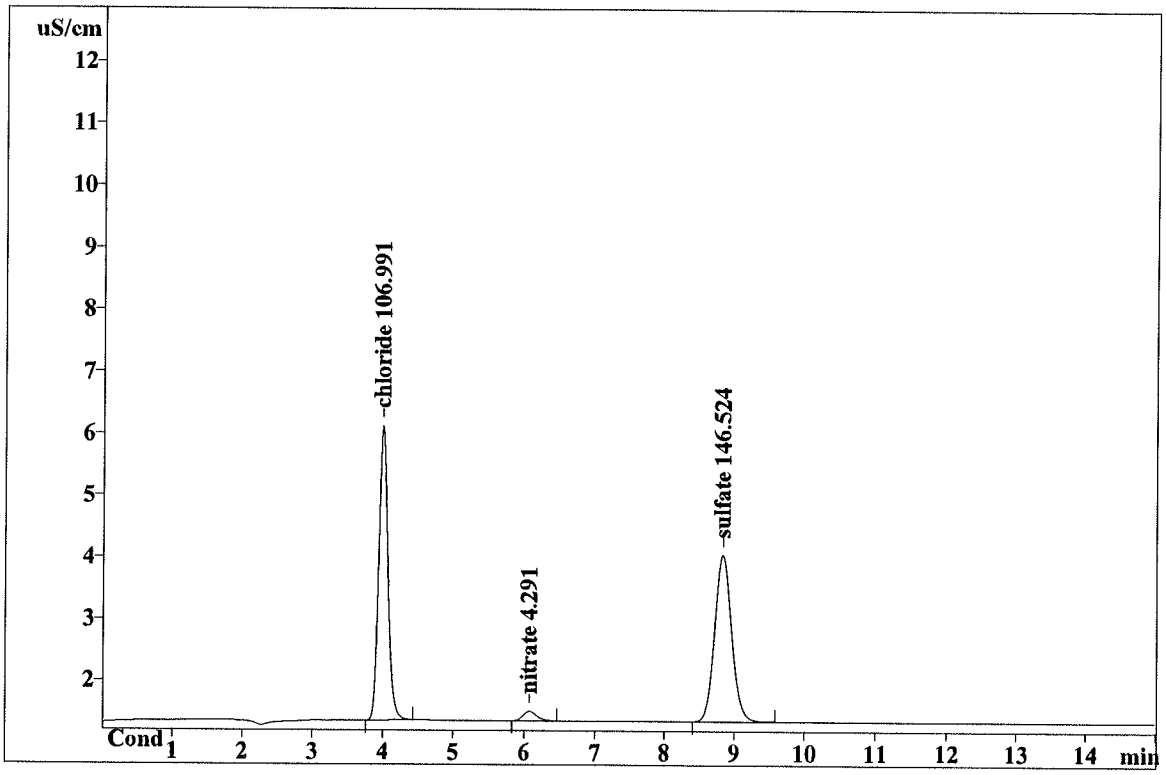
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:53:00 AM
Printed by: TWangc

Ident: AF31-44 F162-04I DF=50
Analysis from: 6/24/2020 11:29:07 PM
File: _2020-06-24_23-29.chw Last save: 6/24/2020 11:44:04 PM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159396

SAMPLE: METHOD300/9056/4110B
:
Vial number: 44
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.99	4.77	43.655	106.991	chloride ✓
2	6.08	0.15	2.082	4.291	nitrate
3	8.83	2.70	45.391	146.524	sulfate
3	15.00	7.62	91.128	257.806	

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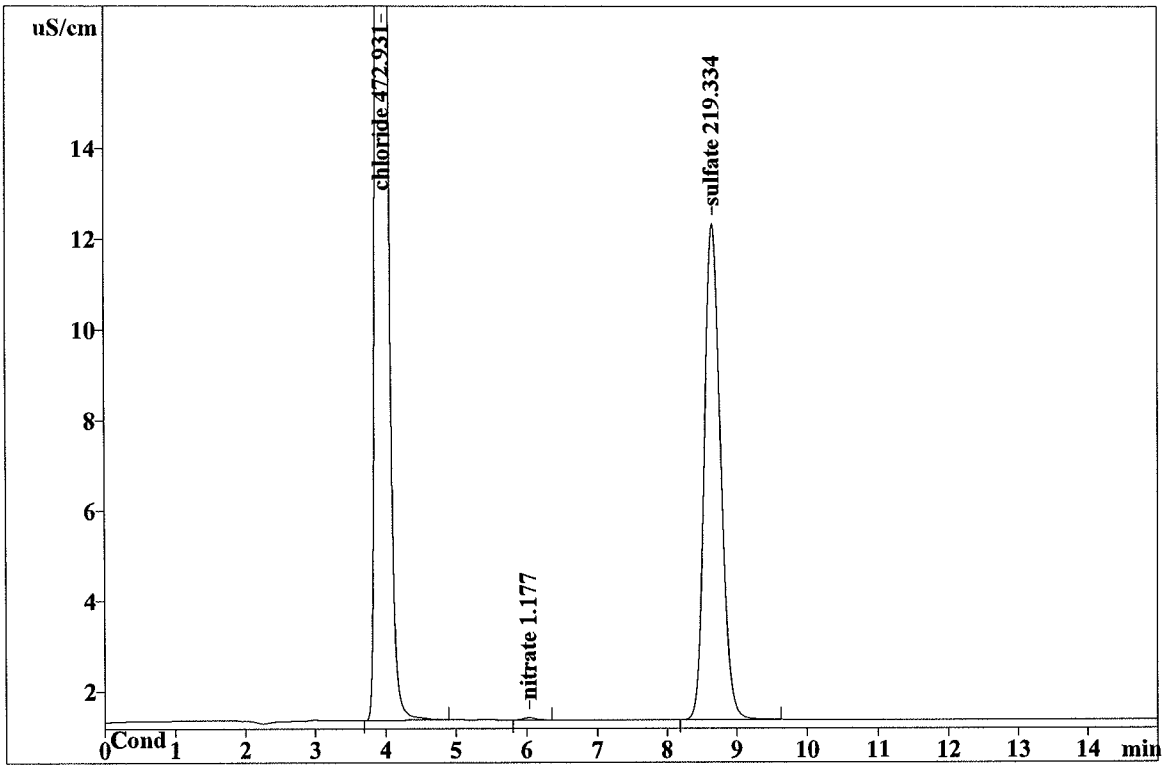
METROHM LTD

Report date: 6/23/2020 3:48:51 PM
Printed by: TWangc

Ident: AF27-17 F162-05I DF=20
Analysis from: 6/22/2020 5:12:20 PM
File: _2020-06-22_17-12.chw Last save: 6/22/2020 5:43:09 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159267

SAMPLE: METHOD300/9056/4110B
:
Vial number: 17
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.95	56.61	501.897	472.931	chloride
2	6.03	0.05	0.652	1.177	nitrate
3	8.65	10.96	179.862	219.334	sulfate ✓
3	15.00	67.63	682.411	693.442	

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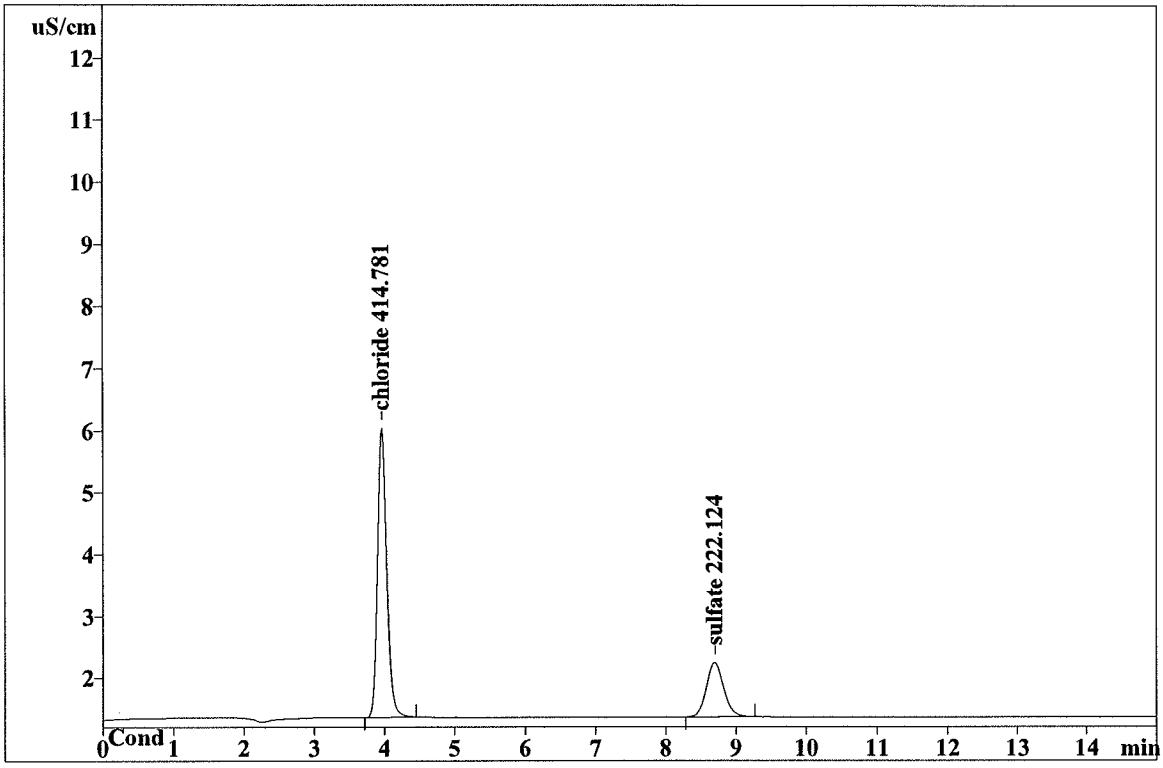
METROHM LTD

Report date: 6/23/2020 3:57:50 PM
Printed by: TWangc

Ident: AF27-36 F162-05J DF=200
Analysis from: 6/23/2020 12:08:03 AM
File: _2020-06-23_00-08.chw Last save: 6/23/2020 12:23:00 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159291

SAMPLE: METHOD300/9056/4110B
:
Vial number: 36
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	4.67	42.251	414.781	chloride ✓
2	8.69	0.88	14.938	222.124	sulfate
2	15.00	5.55	57.189	636.905	

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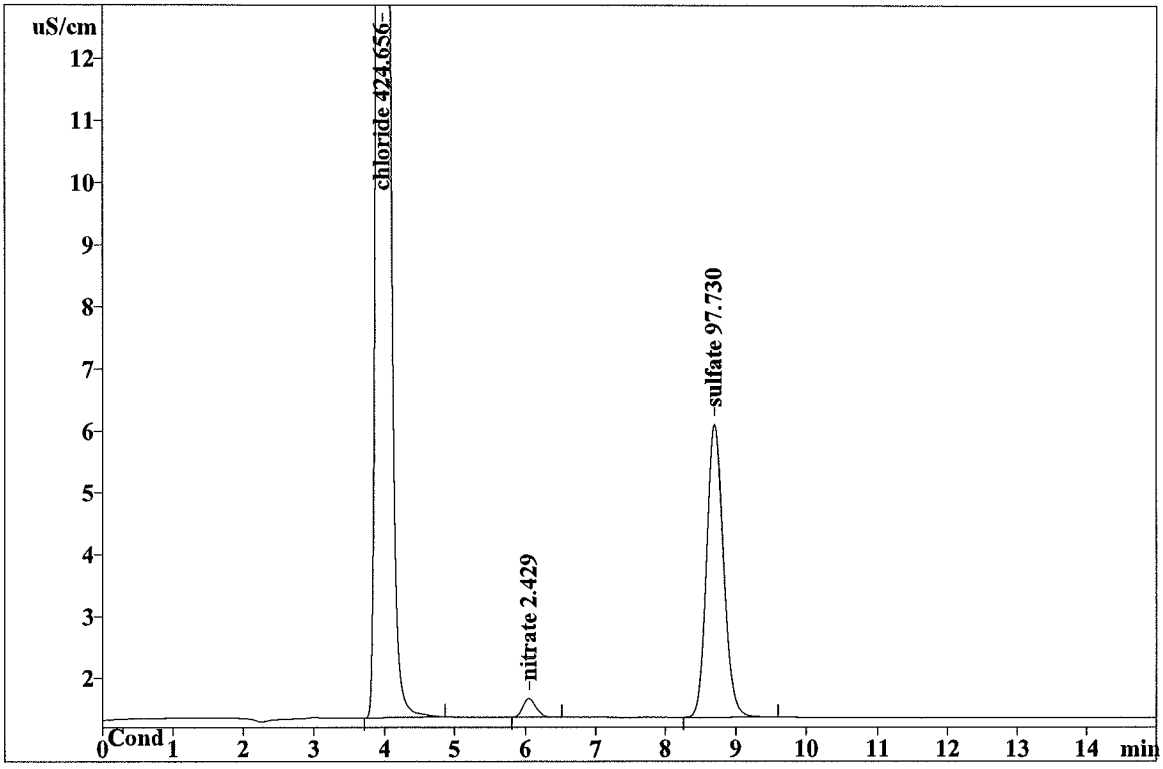
METROHM LTD

Report date: 6/23/2020 3:52:18 PM
Printed by: TWangc

Ident: AF27-37 F162-07I DF=20
Analysis from: 6/23/2020 12:25:08 AM
File: _2020-06-23_00-25.chw Last save: 6/23/2020 12:40:05 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159292

SAMPLE: METHOD300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	47.97	450.467	424.656	chloride
2	6.05	0.30	3.971	2.429	nitrate
3	8.70	4.75	78.121	97.730	sulfate ✓
3	15.00	53.02	532.559	524.815	

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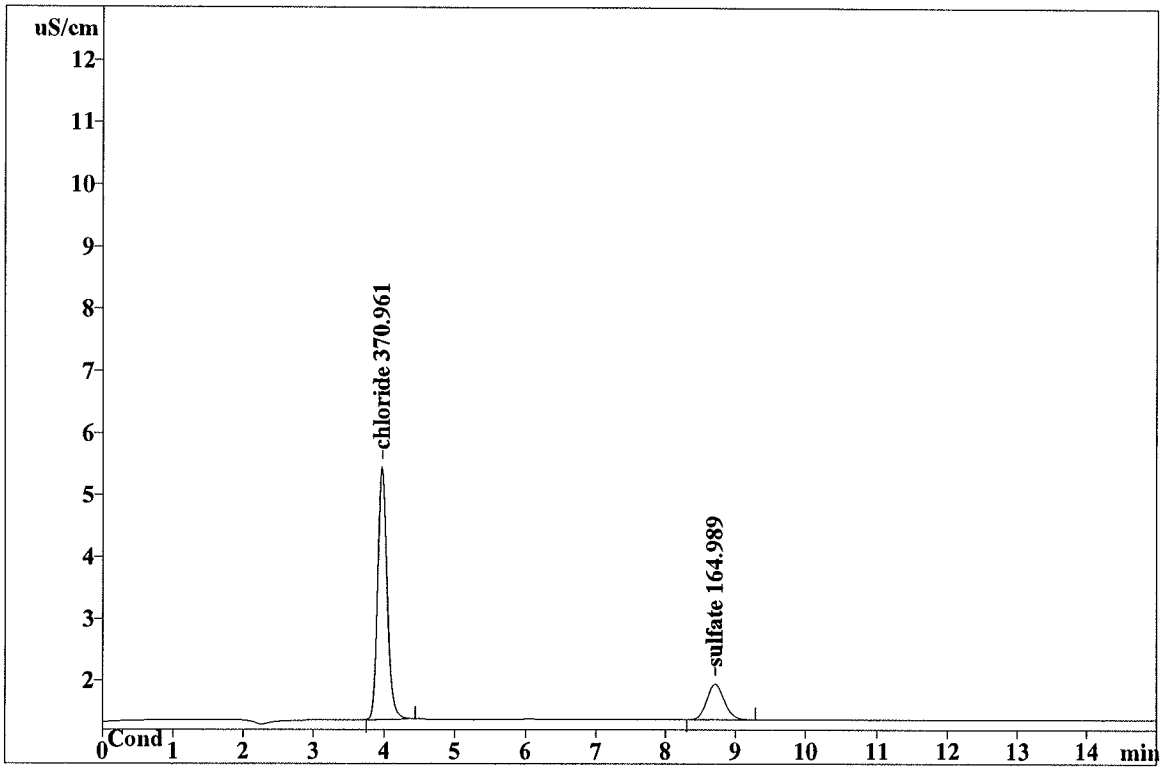
Report date: 6/23/2020 3:52:38 PM
Printed by: TWangc

Ident: AF27-44 F162-07J DF=200
Analysis from: 6/23/2020 2:24:41 AM
File: _2020-06-23_02-24.chw Last save: 6/23/2020 2:39:38 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159299

SAMPLE: METHOD300/9056/4110B
:
Vial number: 44
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	4.08	37.582	370.961	chloride ✓
2	8.71	0.58	10.158	164.989	sulfate
2	15.00	4.66	47.740	535.950	

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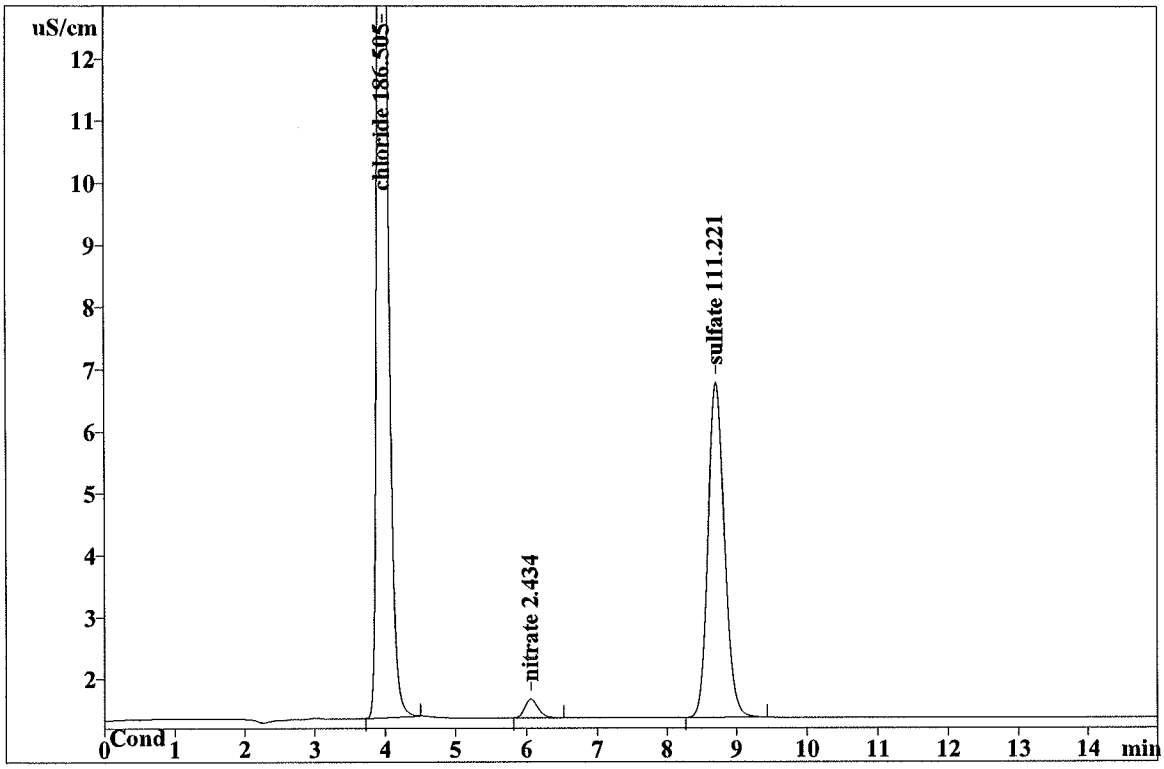
Report date: 6/23/2020 3:53:02 PM
Printed by: TWangc

Ident: AF27-45 F162-08I DF=20
Analysis from: 6/23/2020 2:41:45 AM
File: _2020-06-23_02-41.chw Last save: 6/23/2020 2:56:42 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159300

SAMPLE: METHOD300/9056/4110B
:
Vial number: 45
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	21.07	196.755	186.505	chloride
2	6.06	0.30	3.983	2.434	nitrate
3	8.70	5.41	89.409	111.221	sulfate ✓
3	15.00	26.78	290.147	300.160	

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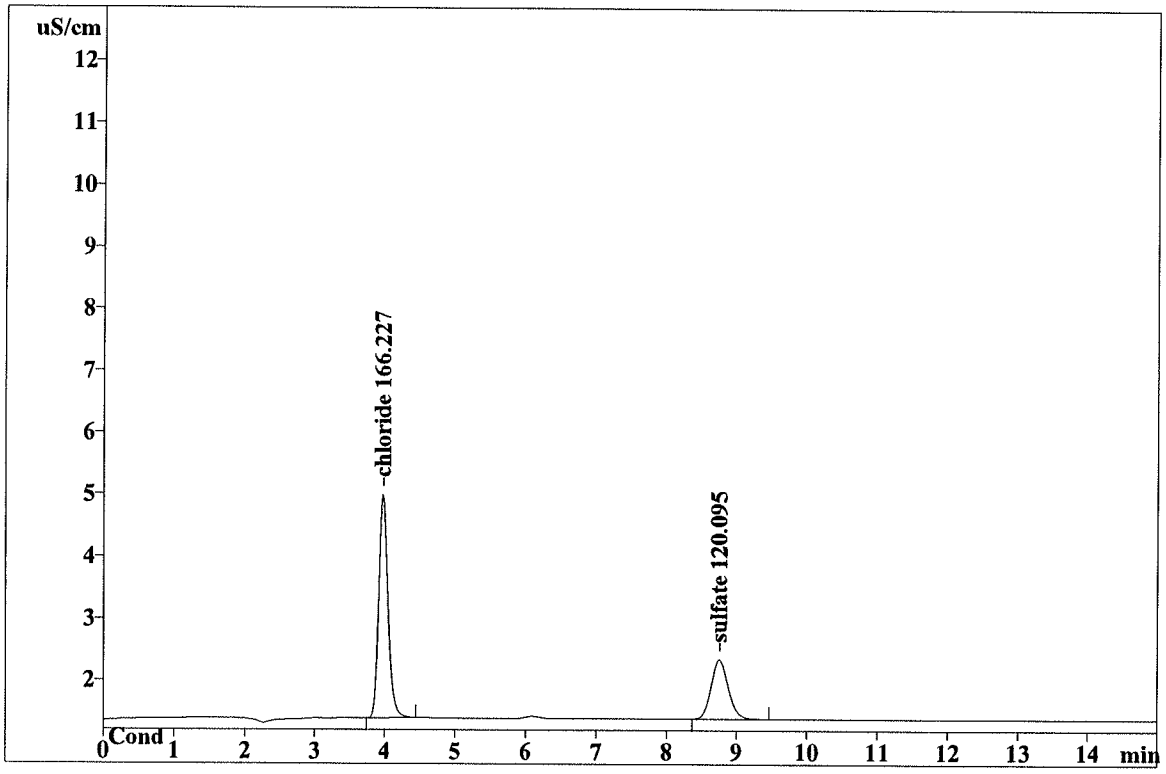
Report date: 6/25/2020 5:33:17 PM
Printed by: TWangc

Ident: AF29-08 F162-08I DF=100
Analysis from: 6/23/2020 12:34:48 PM
File: _2020-06-23_12-34.chw Last save: 6/23/2020 12:49:45 PM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159317

SAMPLE: METHOD300/9056/4110B
:
Vial number: 8
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	3.60	33.480	166.227	chloride ✓
2	8.75	0.96	16.450	120.095	sulfate
2	15.00	4.56	49.930	286.323	

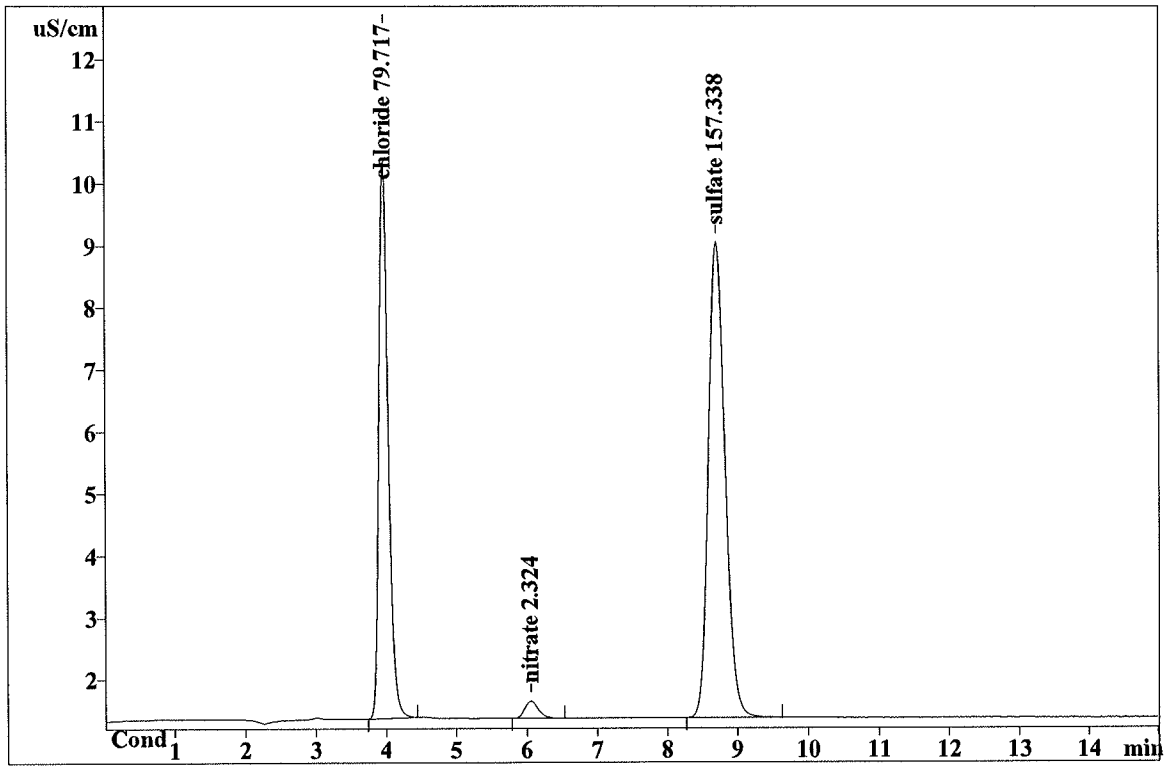
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:53:21 PM
Printed by: TWangc

Ident: AF27-47 F162-10I DF=20
Analysis from: 6/23/2020 3:15:54 AM
File: _2020-06-23_03-15.chw Last save: 6/23/2020 3:30:51 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159302

SAMPLE: METHOD300/9056/4110B
:
Vial number: 47
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	8.99	82.989	79.717	chloride
2	6.06	0.28	3.691	2.324	nitrate
3	8.70	7.68	127.992	157.338	sulfate ✓
3	15.00	16.96	214.672	239.378	

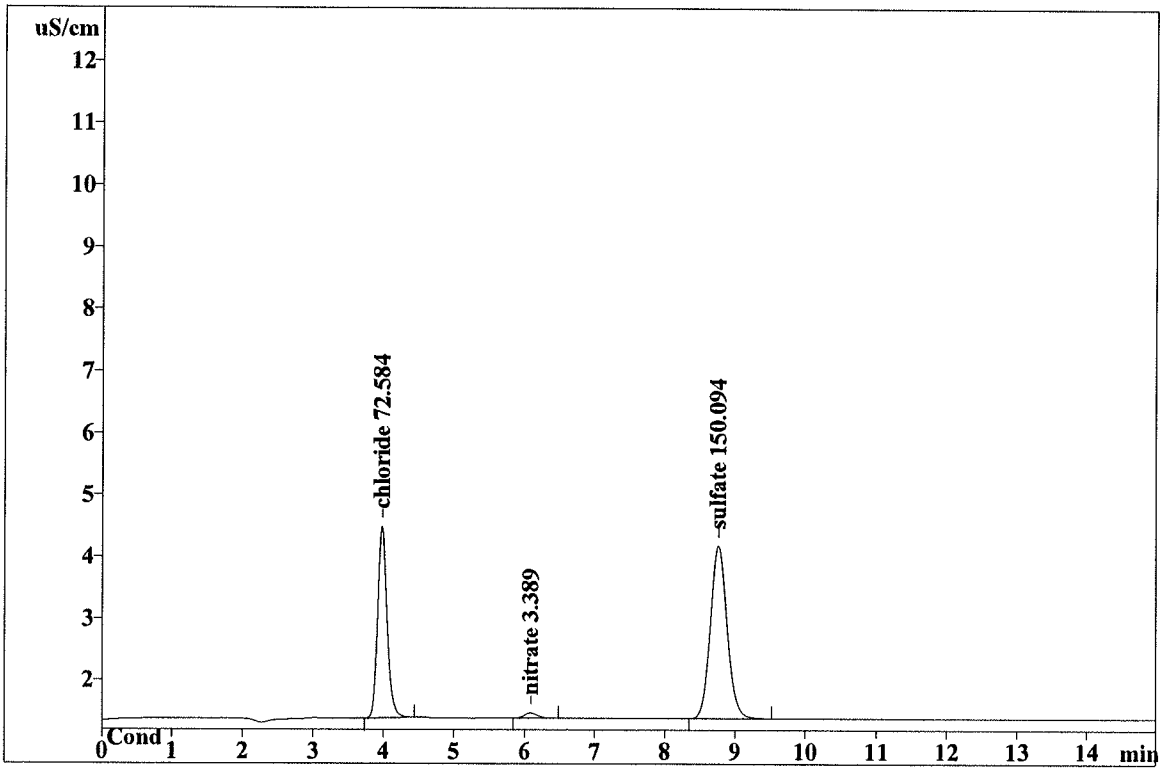
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 5:33:29 PM
Printed by: TWangc

Ident: AF29-09 F162-10I DF=50
Analysis from: 6/23/2020 12:51:53 PM
File: _2020-06-23_12-51.chw Last save: 6/23/2020 1:06:50 PM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159318

SAMPLE: METHOD300/9056/4110B
:
Vial number: 9
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	3.11	28.993	72.584	chloride ✓
2	6.09	0.08	1.126	3.389	nitrate
3	8.76	2.80	46.585	150.094	sulfate
3	15.00	5.99	76.704	226.068	

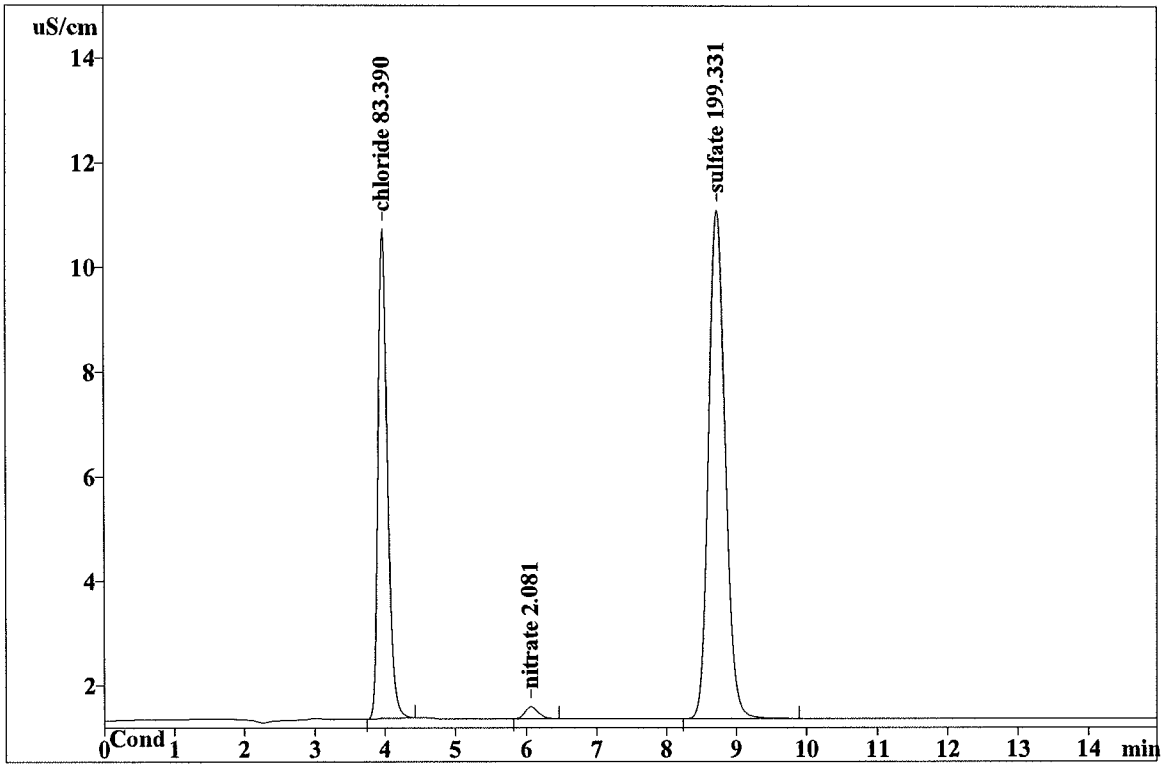
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 3:53:49 PM
Printed by: TWangc

Ident: AF27-49 F162-11I DF=20
Analysis from: 6/23/2020 3:50:03 AM
File: _2020-06-23_03-50.chw Last save: 6/23/2020 4:05:00 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159304

SAMPLE: METHOD300/9056/4110B
:
Vial number: 49
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	9.36	86.901	83.390	chloride ✓
2	6.07	0.23	3.047	2.081	nitrate
3	8.71	9.73	163.127	199.331	sulfate ✓
3	15.00	19.32	253.075	284.802	

This report has been created by IC Net
METROHM LTD

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF029WB	ICF029WL	ICF029WC
LAB FILE ID :	AF27-03	AF27-04	AF27-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/22/2011:11	06/22/2011:28	06/22/2011:45
PREP BATCH :	ICF029W	ICF029W	ICF029W
CALIBRATION REF:	AF27-01	AF27-01	AF27-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.94	97	2	1.94	97	0	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK2W	LCS2W	LCD2W
LAB SAMPLE ID :	ICF031WB	ICF031WL	ICF031WC
LAB FILE ID :	AF29-03	AF29-04	AF29-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/23/2010:54	06/23/2011:11	06/23/2011:28
PREP BATCH :	ICF031W	ICF031W	ICF031W
CALIBRATION REF:	AF29-01	AF29-01	AF29-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.95	98	2	1.96	98	1	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK3W	LCS3W	LCD3W
LAB SAMPLE ID :	ICF033WB	ICF033WL	ICF033WC
LAB FILE ID :	AF31-03	AF31-04	AF31-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/24/2010:55	06/24/2011:12	06/24/2011:29
PREP BATCH :	ICF033W	ICF033W	ICF033W
CALIBRATION REF:	AF31-01	AF31-01	AF31-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.91	95	2	1.95	98	2	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF029WB	ICF029WL	ICF029WC
LAB FILE ID :	AF27-03	AF27-04	AF27-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/22/2011:11	06/22/2011:28	06/22/2011:45
PREP BATCH :	ICF029W	ICF029W	ICF029W
CALIBRATION REF:	AF27-01	AF27-01	AF27-01

ACCESSION:

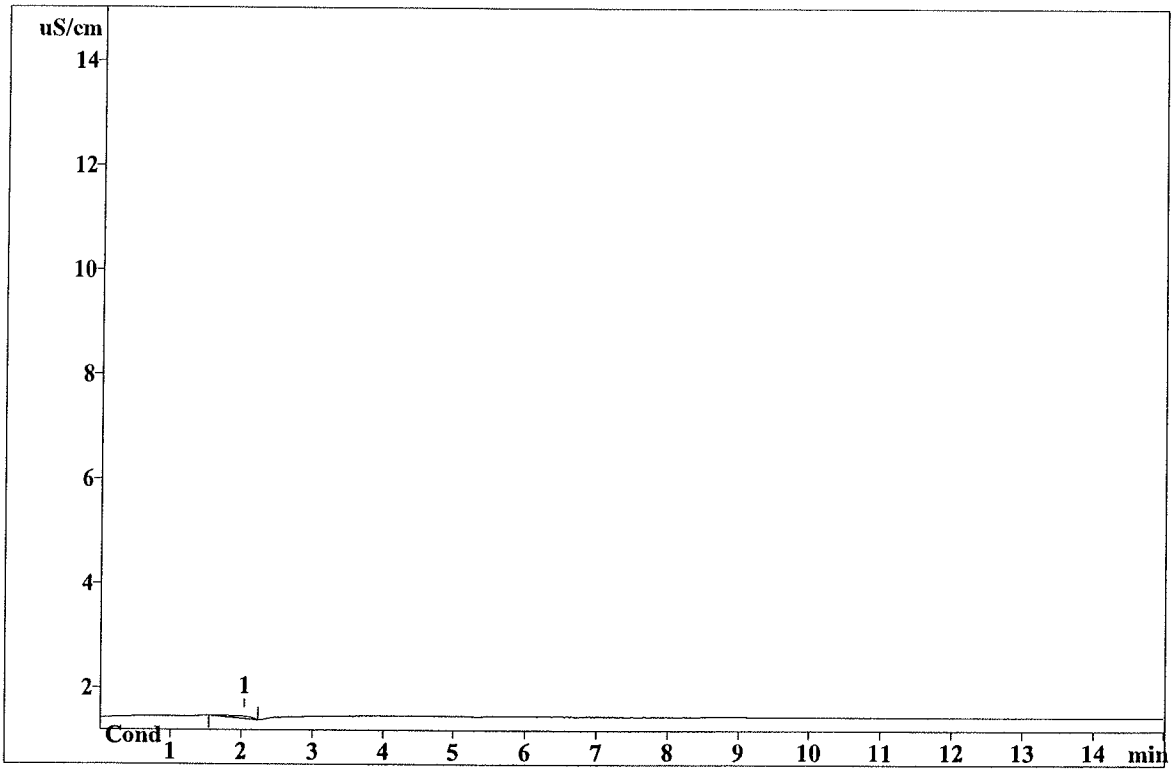
PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.63	93	5	4.66	93	1	87-112	20

QC DATA

Report date: 6/25/2020 11:37:25 AM
Printed by: TWangc

Ident: AF31-03 ICF033WB
Analysis from: 6/24/2020 10:55:43 AM
File: _2020-06-24_10-55.chw Last save: 6/24/2020 11:10:40 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159355

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.03	0.04	1.086	0.000	

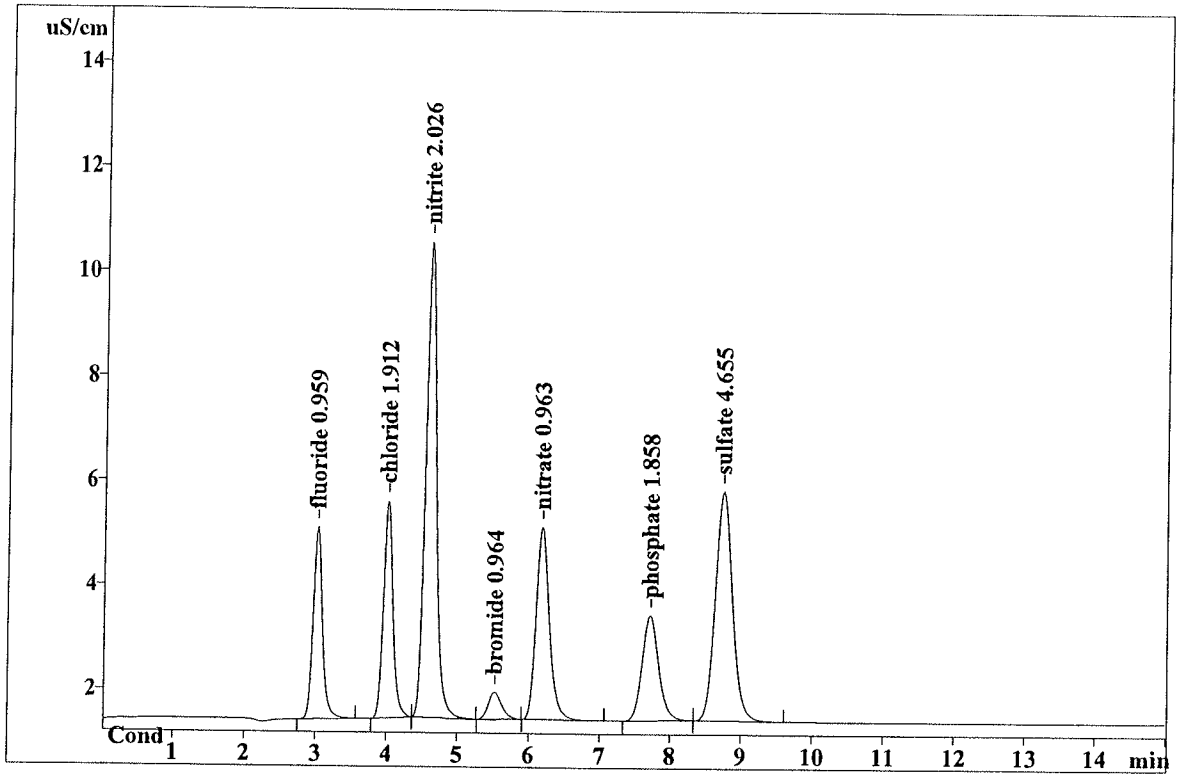
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:37:37 AM
Printed by: TWangc

Ident: AF31-04 ICF033WL
Analysis from: 6/24/2020 11:12:48 AM
File: _2020-06-24_11-12.chw Last save: 6/24/2020 11:27:45 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159356

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.67	33.322	0.959	fluoride
2	4.00	4.15	38.804	1.912	chloride
3	4.58	9.09	98.430	2.026	nitrite
4	5.53	0.51	6.829	0.964	bromide
5	6.17	3.68	48.587	0.963	nitrate
6	7.71	2.01	32.537	1.858	phosphate
7	8.74	4.39	74.252	4.655	sulfate
7	15.00	27.51	332.760	13.337	

This report has been created by IC Net
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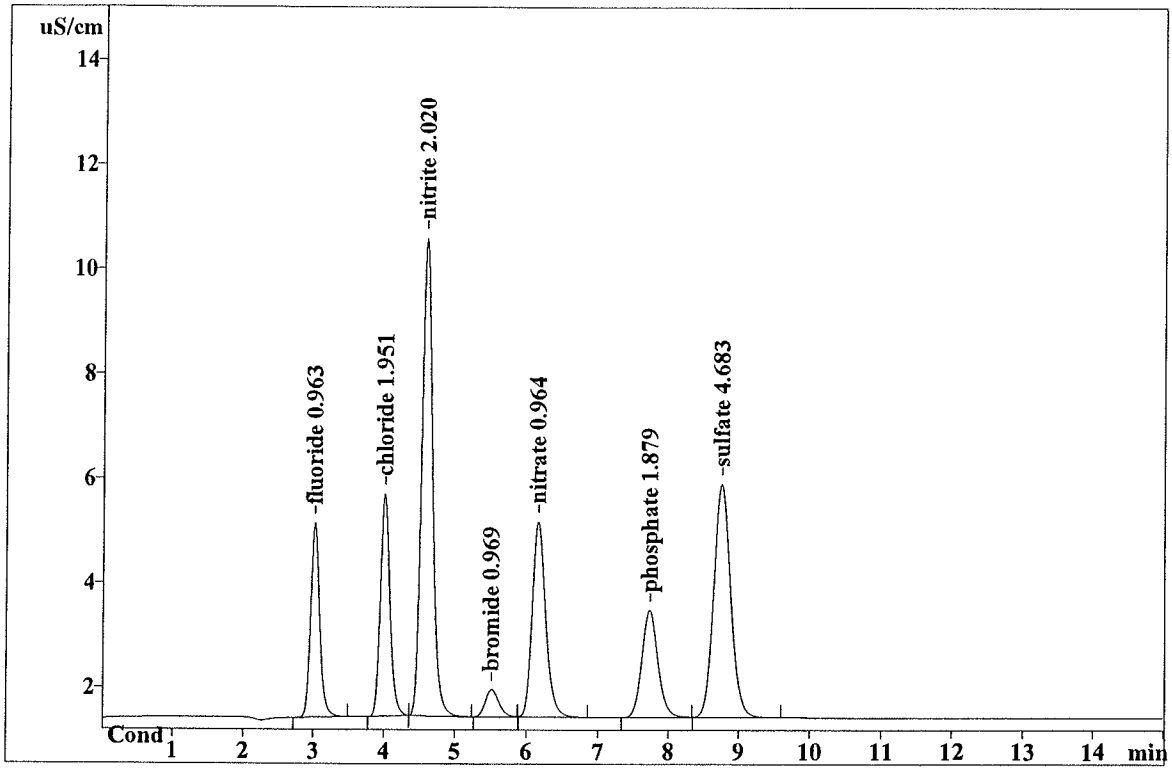
Report date: 6/25/2020 11:37:46 AM
Printed by: TWangc

Ident: AF31-05 ICF033WC
Analysis from: 6/24/2020 11:29:53 AM
File: _2020-06-24_11-29.chw Last save: 6/24/2020 11:44:50 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159357

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

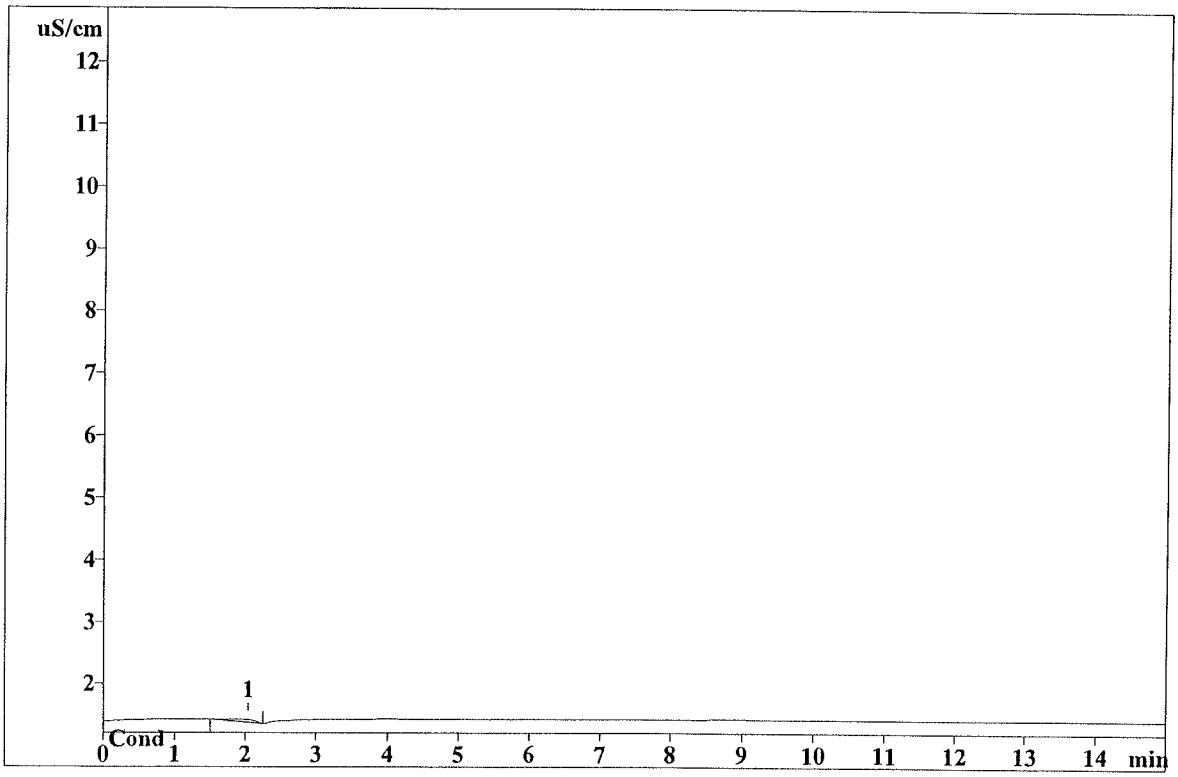
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	3.72	33.453	0.963	fluoride
2	4.00	4.26	39.624	1.951	chloride
3	4.58	9.14	98.124	2.020	nitrite
4	5.52	0.52	6.882	0.969	bromide
5	6.16	3.73	48.620	0.964	nitrate
6	7.72	2.05	32.947	1.879	phosphate
7	8.75	4.45	74.715	4.683	sulfate
7	15.00	27.89	334.365	13.428	

This report has been created by IC Net
METROHM LTD

Report date: 6/24/2020 10:10:50 AM
Printed by: TWangc

Ident: AF29-03 ICF031WB
Analysis from: 6/23/2020 10:54:18 AM
File: _2020-06-23_10-54.chw Last save: 6/23/2020 11:09:15 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159312

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.03	0.04	1.168	0.000	

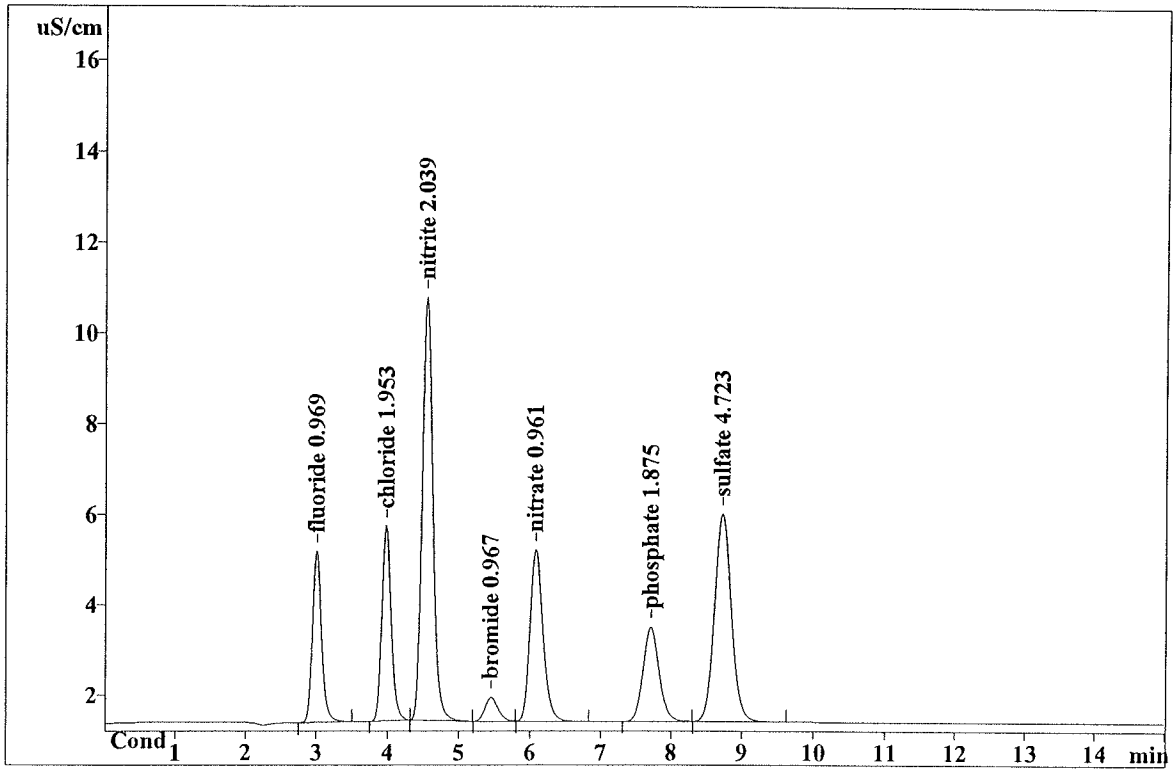
This report has been created by IC Net
METROHM LTD

Report date: 6/24/2020 10:11:09 AM
Printed by: TWangc

Ident: AF29-04 ICF031WL
Analysis from: 6/23/2020 11:11:23 AM
File: _2020-06-23_11-11.chw Last save: 6/23/2020 11:26:20 AM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159313

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.79	33.655	0.969	fluoride
2	3.97	4.32	39.679	1.953	chloride
3	4.54	9.34	99.083	2.039	nitrite
4	5.45	0.53	6.864	0.967	bromide
5	6.08	3.80	48.501	0.961	nitrate
6	7.71	2.09	32.878	1.875	phosphate
7	8.72	4.59	75.379	4.723	sulfate
7	15.00	28.46	336.039	13.487	

This report has been created by IC Net
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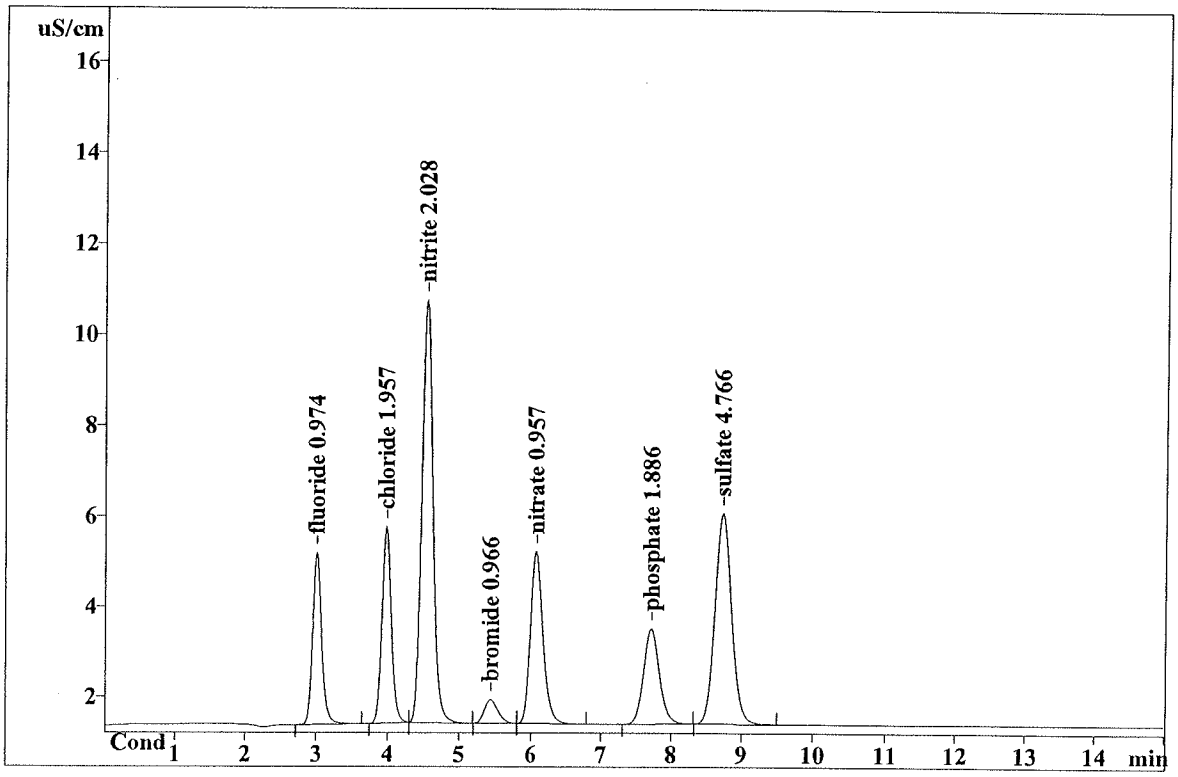
Report date: 6/24/2020 10:11:31 AM
Printed by: TWangc

Ident: AF29-05 ICF031WC
Analysis from: 6/23/2020 11:28:28 AM
File: _2020-06-23_11-28.chw Last save: 6/23/2020 11:43:25 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159314

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

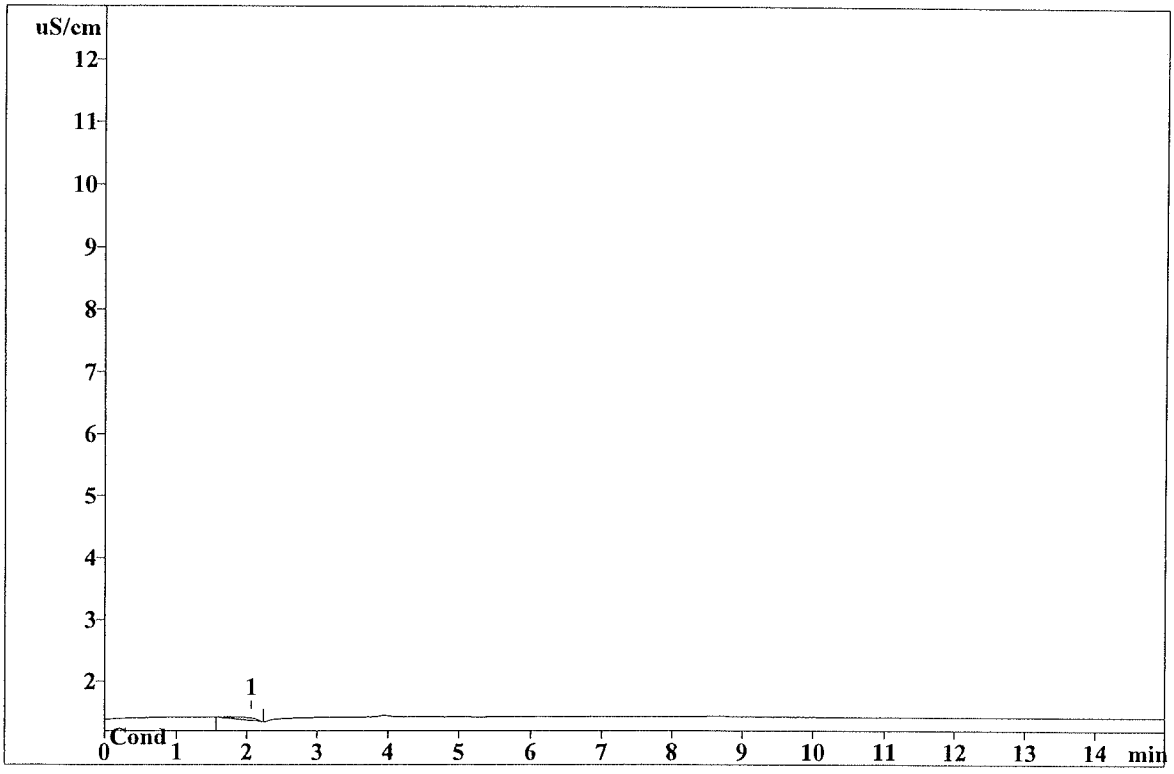
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.80	33.859	0.974	fluoride
2	3.97	4.34	39.764	1.957	chloride
3	4.54	9.33	98.541	2.028	nitrite
4	5.44	0.53	6.856	0.966	bromide
5	6.07	3.80	48.285	0.957	nitrate
6	7.71	2.12	33.093	1.886	phosphate
7	8.73	4.65	76.103	4.766	sulfate
7	15.00	28.57	336.502	13.536	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:44:35 AM
Printed by: TWangc

Ident: AF27-03 ICF029WB
Analysis from: 6/22/2020 11:11:48 AM
File: _2020-06-22_11-11.chw Last save: 6/22/2020 11:26:46 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159251

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.05	0.04	1.019	0.000	

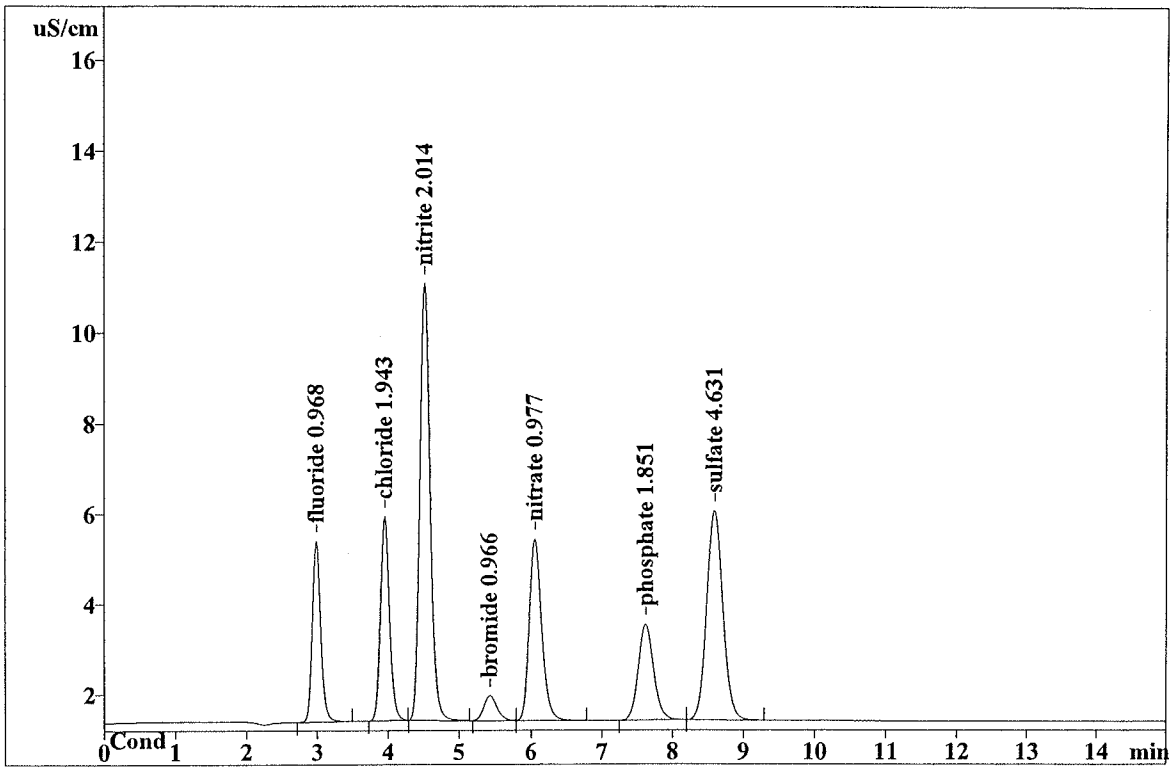
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:44:55 AM
Printed by: TWangc

Ident: AF27-04 ICF029WL
Analysis from: 6/22/2020 11:28:53 AM
File: _2020-06-22_11-28.chw Last save: 6/22/2020 11:43:50 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159252

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	4.00	33.640	0.968	fluoride
2	3.95	4.51	39.464	1.943	chloride
3	4.51	9.66	97.866	2.014	nitrite
4	5.43	0.55	6.855	0.966	bromide
5	6.05	4.02	49.322	0.977	nitrate
6	7.62	2.12	32.401	1.851	phosphate
7	8.58	4.64	73.843	4.631	sulfate
7	15.00	29.51	333.391	13.350	

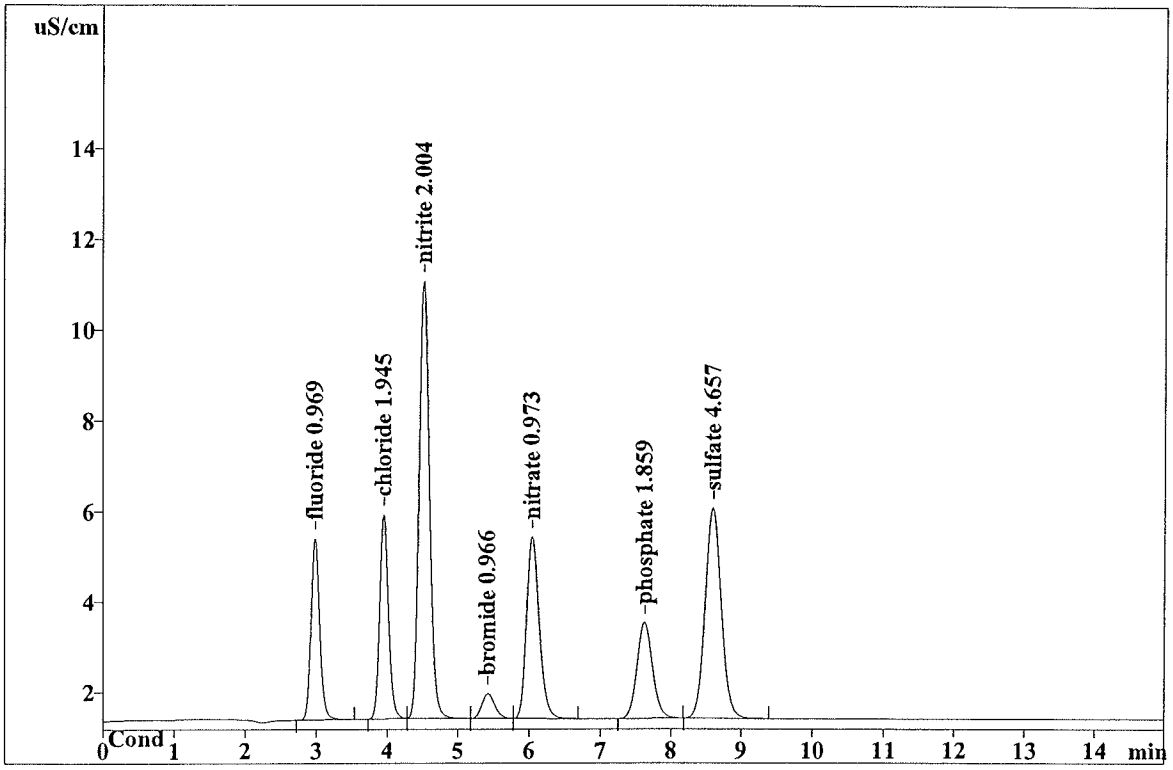
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:45:56 AM
Printed by: TWangc

Ident: AF27-05 ICF029WC
Analysis from: 6/22/2020 11:45:58 AM
File: _2020-06-22_11-45.chw Last save: 6/22/2020 12:09:21 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159253

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	4.02	33.679	0.969	fluoride
2	3.95	4.53	39.501	1.945	chloride
3	4.51	9.65	97.370	2.004	nitrite
4	5.42	0.55	6.856	0.966	bromide
5	6.05	4.02	49.130	0.973	nitrate
6	7.62	2.13	32.562	1.859	phosphate
7	8.59	4.65	74.275	4.657	sulfate
7	15.00	29.55	333.373	13.374	

This report has been created by IC Net
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INITIAL CALIBRATION(S)

IC Result Check FormVersion : B24/AB25(2020)

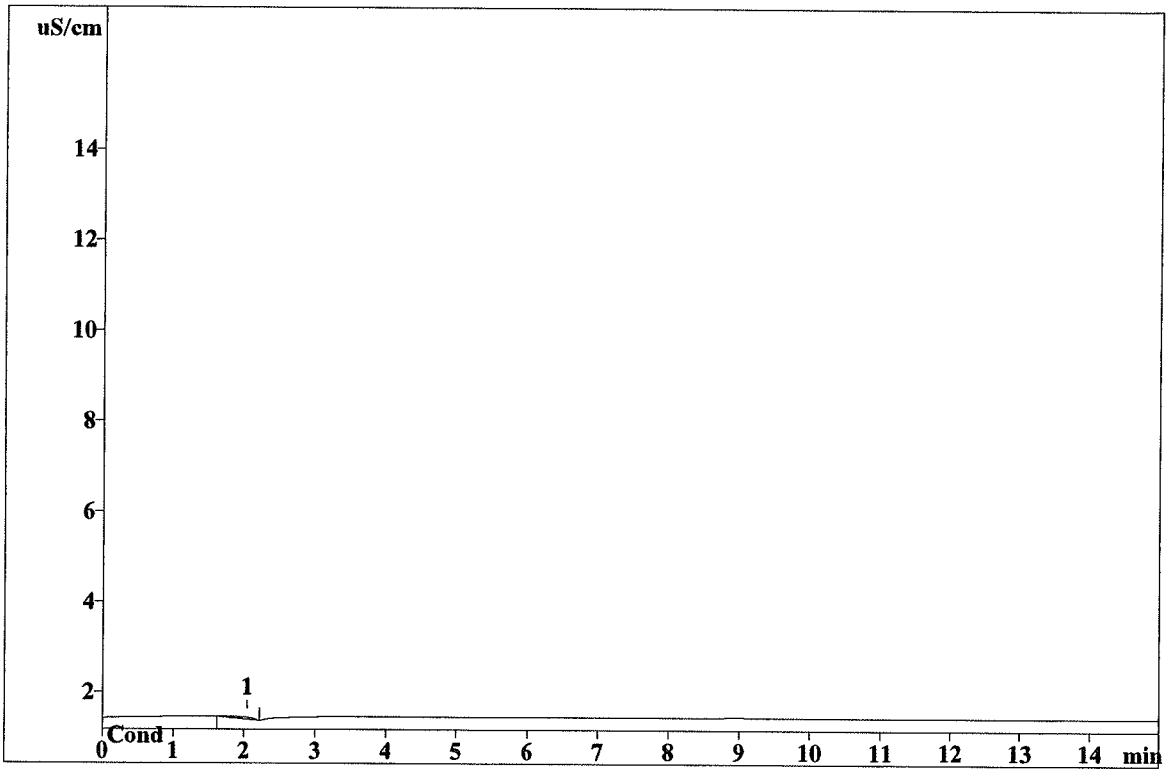
LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AB25-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-47	1
AB25-03	S1	OCFIBNPS	0	0.130932	0.0736569	0.0777071	0.262476	0.0835989	0.194145	0.268643	_2020-02-24_21-04	1
AB25-04	S2	OCFIBNPS	0	0.164605	0.106859	0.111126	0.294912	0.119582	0.213056	0.302238	_2020-02-24_21-21	1
AB25-05	S3	OCFIBNPS	0	0.23743	0.182756	0.194941	0.367787	0.19938	0.278602	0.370165	_2020-02-24_21-39	1
AB25-06	S4	OCFIBNPS	0	0.479227	0.467048	0.463725	0.590591	0.467839	0.473997	0.59173	_2020-02-24_21-56	1
AB25-07	S5	OCFIBNPS	0	0.907337	0.953599	0.917912	0.969488	0.952213	0.838299	0.964092	_2020-02-24_22-13	1
AB25-08	S6	OCFIBNPS	0	1.8697	1.99933	1.99949	1.79754	2.02739	1.75229	1.79408	_2020-02-24_22-30	1
AB25-09	S7	OCFIBNPS	0	5.06077	5.12498	5.1581	4.61476	5.46023	5.09961	4.62219	_2020-02-24_22-47	1
AB25-10	S8	OCFIBNPS	0	10.5296	9.94178	9.92699	9.72349	11.2469	11.2045	9.69729	_2020-02-24_23-04	1
AB25-11	S9	OCFIBNPS	0	21.5568	18.5889	21.4357	20.229	22.8079	23.7145	20.2396	_2020-02-24_23-21	1
AB25-12	ICV	OCFIBNPS	0%*	95.1%	96.9%	100.8%	97.7%	98.3%	91.5%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	OCFIBNPS	0%*	91.8%	98.3%	95.5%	98.1%	97%	88.2%*	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:19:29 PM
Printed by: LDip

Ident: AB25-02 S0
Analysis from: 2/24/2020 8:47:50 PM
File: _2020-02-24_20-47.chw Last save: 2/25/2020 12:15:05 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155970

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

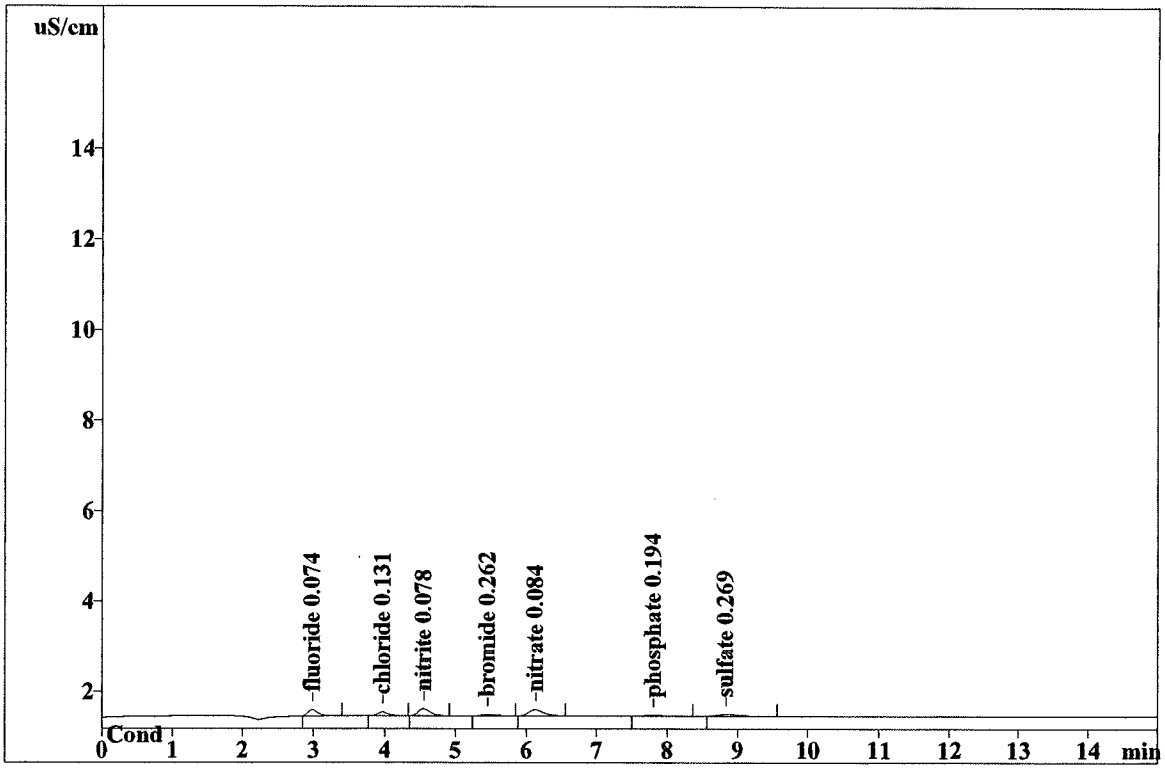
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.891	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:02 PM
Printed by: LDip

Ident: AB25-03 S1
Analysis from: 2/24/2020 9:04:55 PM
File: _2020-02-24_21-04.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155971

SAMPLE: METHOD300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.14	1.336	0.074	fluoride
2	3.96	0.08	0.852	0.131	chloride
3	4.54	0.16	1.770	0.078	nitrite
4	5.45	0.03	0.395	0.262	bromide
5	6.12	0.14	1.964	0.084	nitrate
6	7.79	0.02	0.341	0.194	phosphate
7	8.84	0.04	0.849	0.269	sulfate
7	15.00	0.60	7.507	1.091	

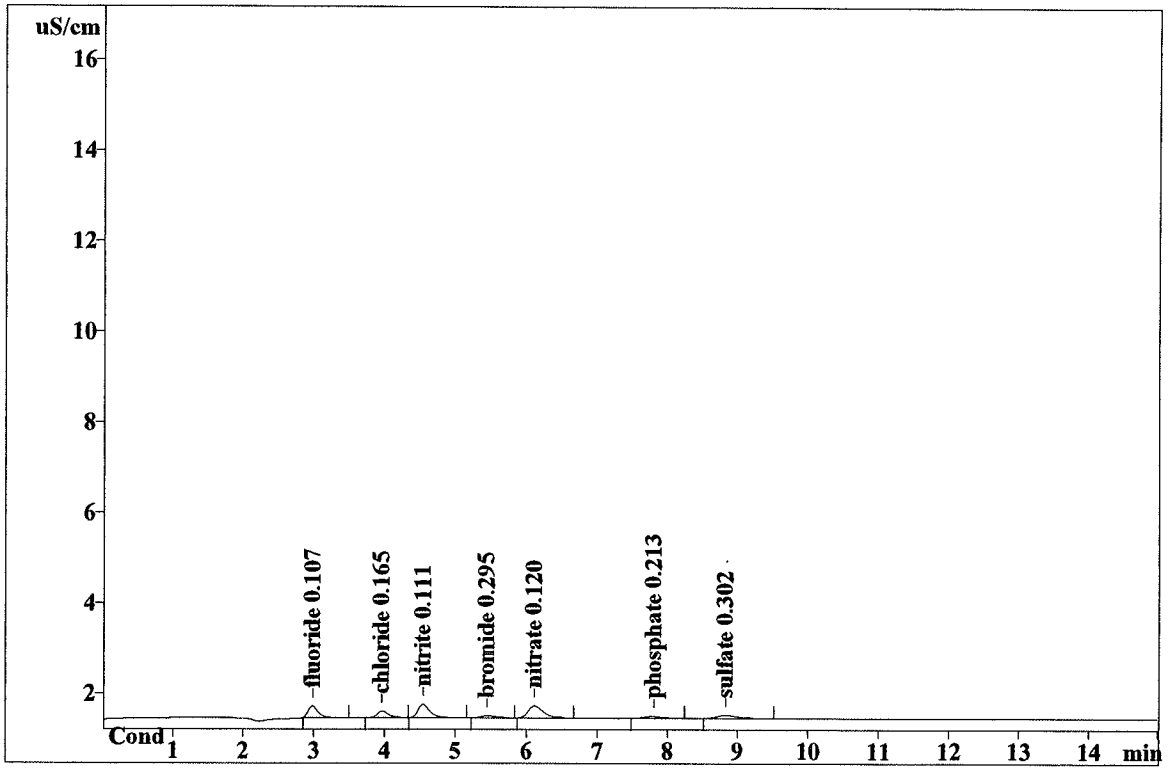
This report has been created by IC Net
METROHM LTD

3/26/20

Report date: 2/25/2020 12:20:17 PM
Printed by: LDip

Ident: AB25-04 S2
Analysis from: 2/24/2020 9:21:59 PM
File: _2020-02-24_21-21.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155972

SAMPLE: METHOD300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.26	2.535	0.107	fluoride
2	3.96	0.15	1.570	0.165	chloride
3	4.54	0.29	3.428	0.111	nitrite
4	5.45	0.05	0.692	0.295	bromide
5	6.12	0.26	3.872	0.120	nitrate
6	7.79	0.04	0.707	0.213	phosphate
7	8.84	0.07	1.412	0.302	sulfate
7	15.00	1.13	14.215	1.312	

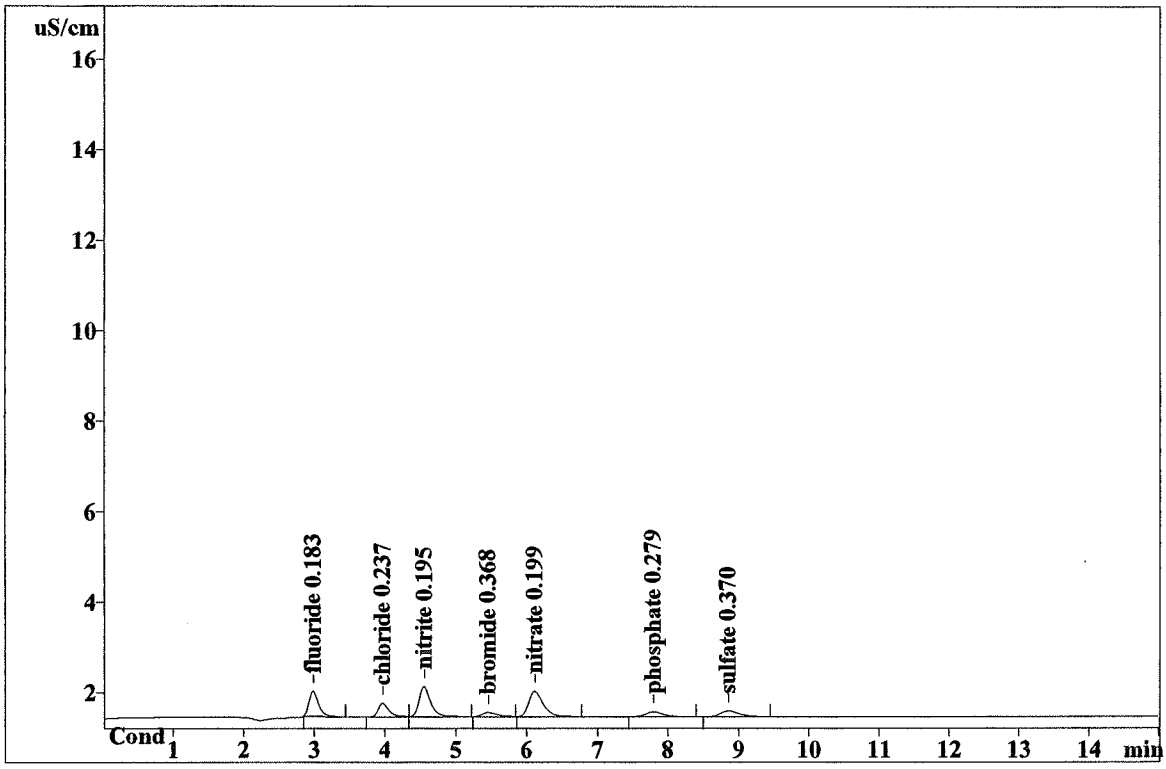
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:25 PM
Printed by: LDip

Ident: AB25-05 S3
Analysis from: 2/24/2020 9:39:04 PM
File: _2020-02-24_21-39.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155973

SAMPLE: METHOD300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.56	5.276	0.183	fluoride
2	3.97	0.30	3.121	0.237	chloride
3	4.54	0.67	7.587	0.195	nitrite
4	5.45	0.09	1.361	0.368	bromide
5	6.12	0.56	8.103	0.199	nitrate
6	7.80	0.11	1.975	0.279	phosphate
7	8.85	0.13	2.548	0.370	sulfate
7	15.00	2.43	29.971	1.831	

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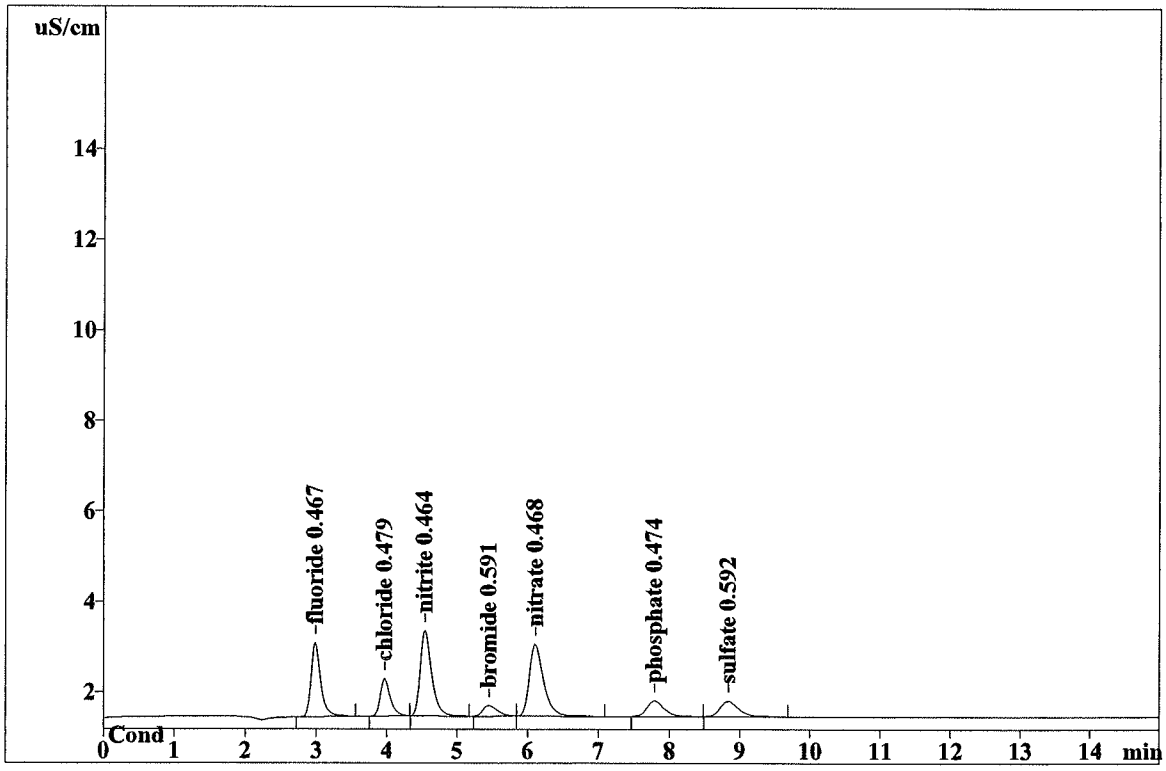
METROHM LTD

Report date: 2/25/2020 12:20:38 PM
Printed by: LDip

Ident: AB25-06 S4
Analysis from: 2/24/2020 9:56:09 PM
File: _2020-02-24_21-56.chw Last save: 2/25/2020 12:15:06 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155974

SAMPLE: METHOD300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	1.64	15.542	0.467	fluoride
2	3.97	0.82	8.273	0.479	chloride
3	4.54	1.89	20.923	0.464	nitrite
4	5.45	0.24	3.406	0.591	bromide
5	6.11	1.59	22.337	0.468	nitrate
6	7.79	0.34	5.757	0.474	phosphate
7	8.83	0.34	6.256	0.592	sulfate
7	15.00	6.86	82.494	3.534	

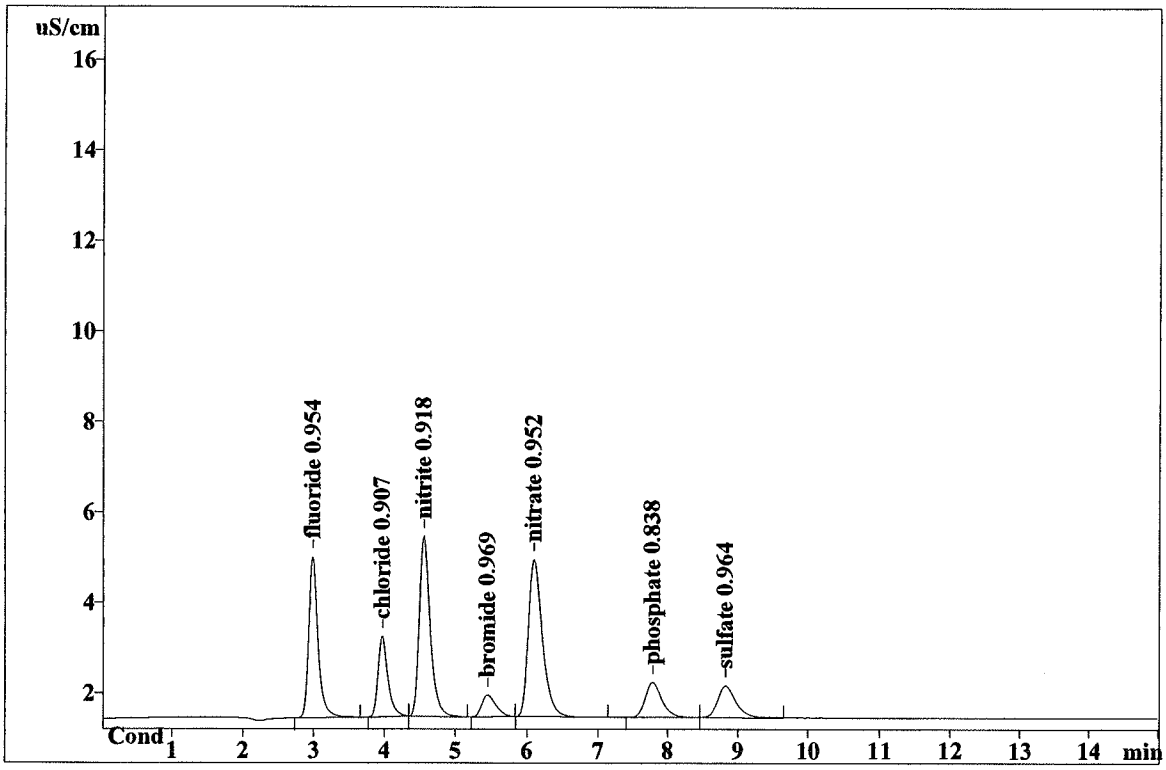
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:46 PM
Printed by: LDip

Ident: AB25-07 S5
Analysis from: 2/24/2020 10:13:14 PM
File: _2020-02-24_22-13.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155975

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

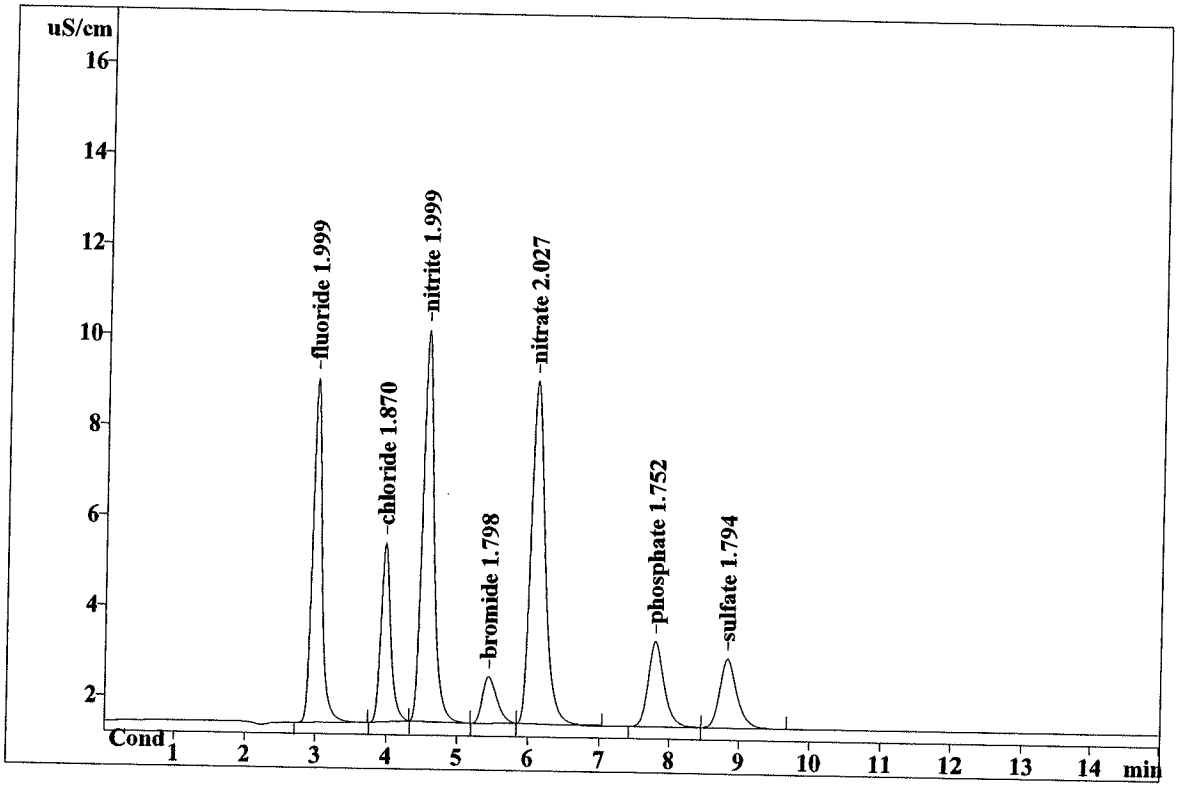


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.55	33.112	0.954	fluoride
2	3.96	1.78	17.395	0.907	chloride
3	4.54	3.97	43.459	0.918	nitrite
4	5.44	0.48	6.884	0.969	bromide
5	6.10	3.47	48.019	0.952	nitrate
6	7.78	0.78	12.807	0.838	phosphate
7	8.82	0.70	12.486	0.964	sulfate
7	15.00	14.72	174.163	6.503	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:20:51 PM		
Printed by:	LDip		
Ident:	AB25-08 S6		
Analysis from:	2/24/2020 10:30:19 PM		
File:	_2020-02-24_22-30.chw	Last save:	2/25/2020 12:15:06 PM
Method:	ICD0-B24.mtw	Last save:	2/24/2020 9:54:01 PM
Run operator:	LDip		
Analysis number:	155976		
SAMPLE:	METHOD300/9056/4110B		
:	2.0 PPM		
Vial number:	8		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		

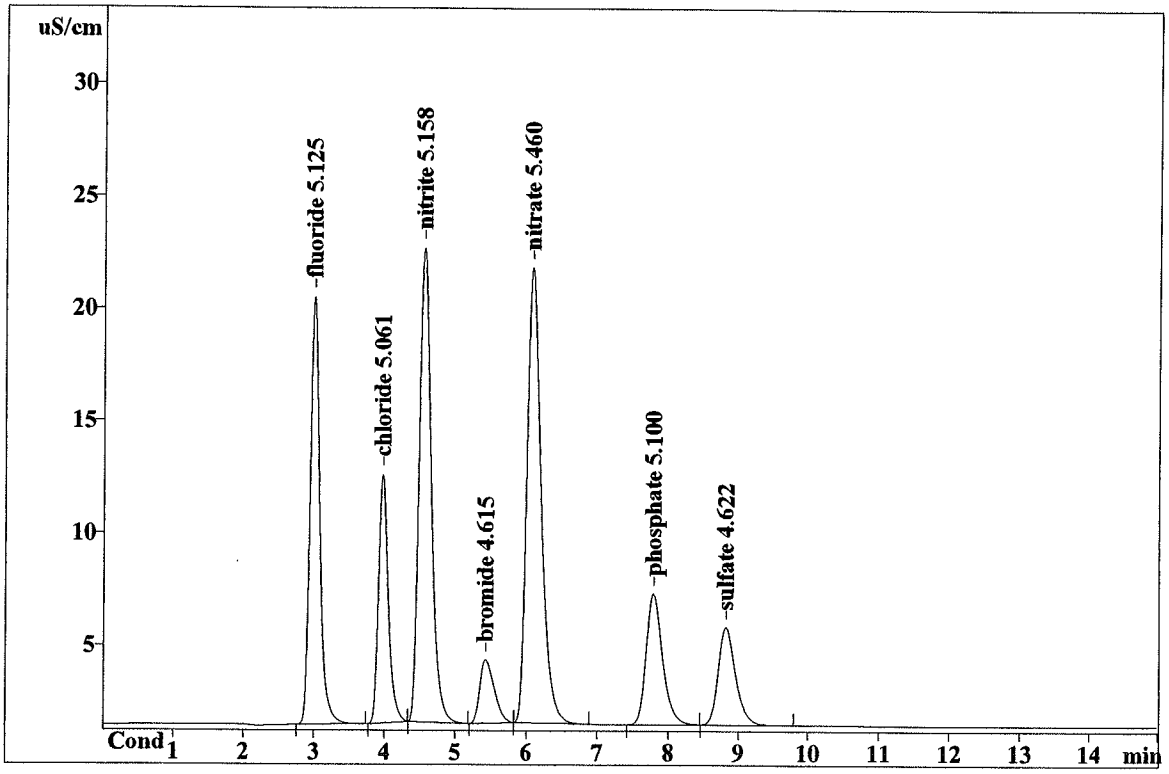


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	7.62	70.876	1.999	fluoride
2	3.96	3.97	37.900	1.870	chloride
3	4.54	8.67	97.125	1.999	nitrite
4	5.44	1.03	14.483	1.798	bromide
5	6.09	7.58	105.026	2.027	nitrate
6	7.78	1.88	30.496	1.752	phosphate
7	8.82	1.52	26.375	1.794	sulfate
7	15.00	32.27	382.281	13.240	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:20:59 PM		
Printed by:	LDip		
Ident:	AB25-09 S7		
Analysis from:	2/24/2020 10:47:23 PM		
File:	_2020-02-24_22-47.chw	Last save:	2/25/2020 12:15:06 PM
Method:	ICD0-B24.mtw	Last save:	2/24/2020 9:54:01 PM
Run operator:	LDip		
Analysis number:	155977		
SAMPLE:	METHOD300/9056/4110B		
:	5.0 PPM		
Vial number:	9		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	19.07	183.749	5.125	fluoride
2	3.96	11.09	105.892	5.061	chloride
3	4.54	21.13	253.850	5.158	nitrite
4	5.43	2.84	40.339	4.615	bromide
5	6.07	20.29	287.039	5.460	nitrate
6	7.78	5.85	95.279	5.100	phosphate
7	8.82	4.37	73.698	4.622	sulfate
7	15.00	84.64	1039.816	35.141	

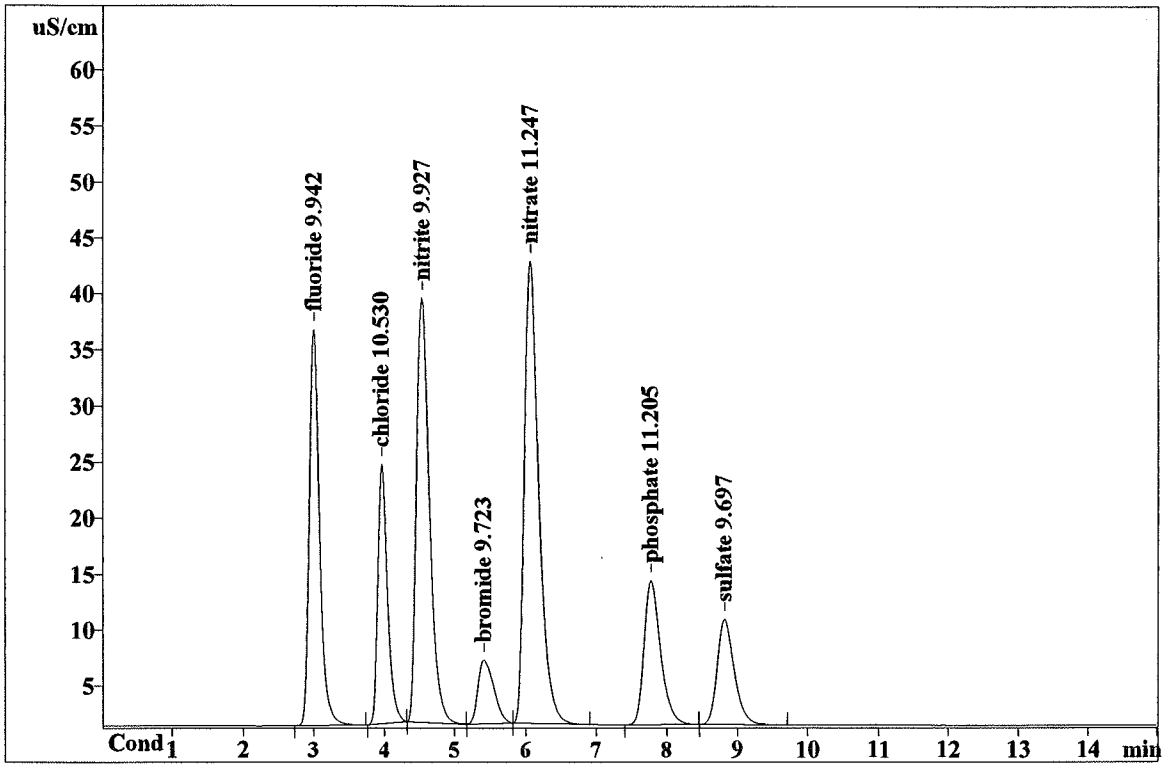
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:07 PM
Printed by: LDip

Ident: AB25-10 S8
Analysis from: 2/24/2020 11:04:28 PM
File: _2020-02-24_23-04.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155978

SAMPLE: METHOD300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	35.35	357.692	9.942	fluoride
2	3.96	23.13	222.415	10.530	chloride
3	4.54	37.88	490.473	9.927	nitrite
4	5.41	5.69	87.226	9.723	bromide
5	6.06	41.27	593.856	11.247	nitrate
6	7.77	12.84	213.432	11.205	phosphate
7	8.81	9.41	158.621	9.697	sulfate
7	15.00	165.57	2123.716	72.271	

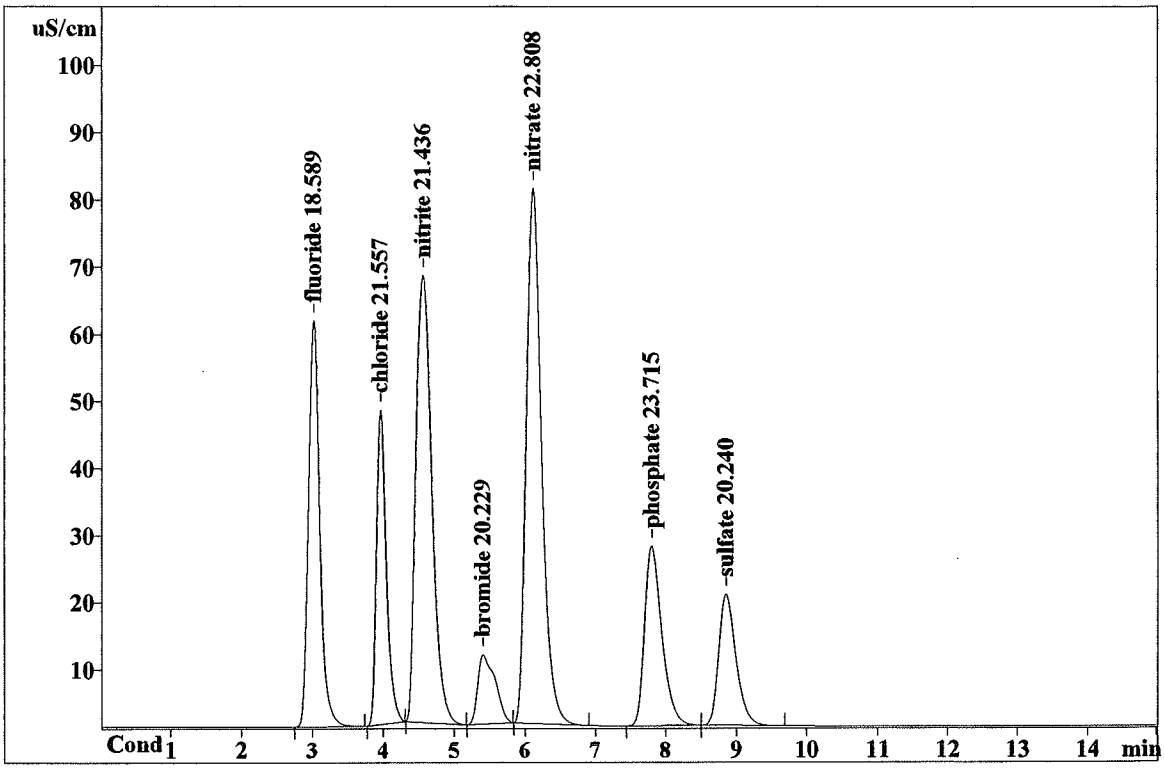
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:13 PM
Printed by: LDip

Ident: AB25-11 S9
Analysis from: 2/24/2020 11:21:33 PM
File: _2020-02-24_23-21.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155979

SAMPLE: METHOD300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



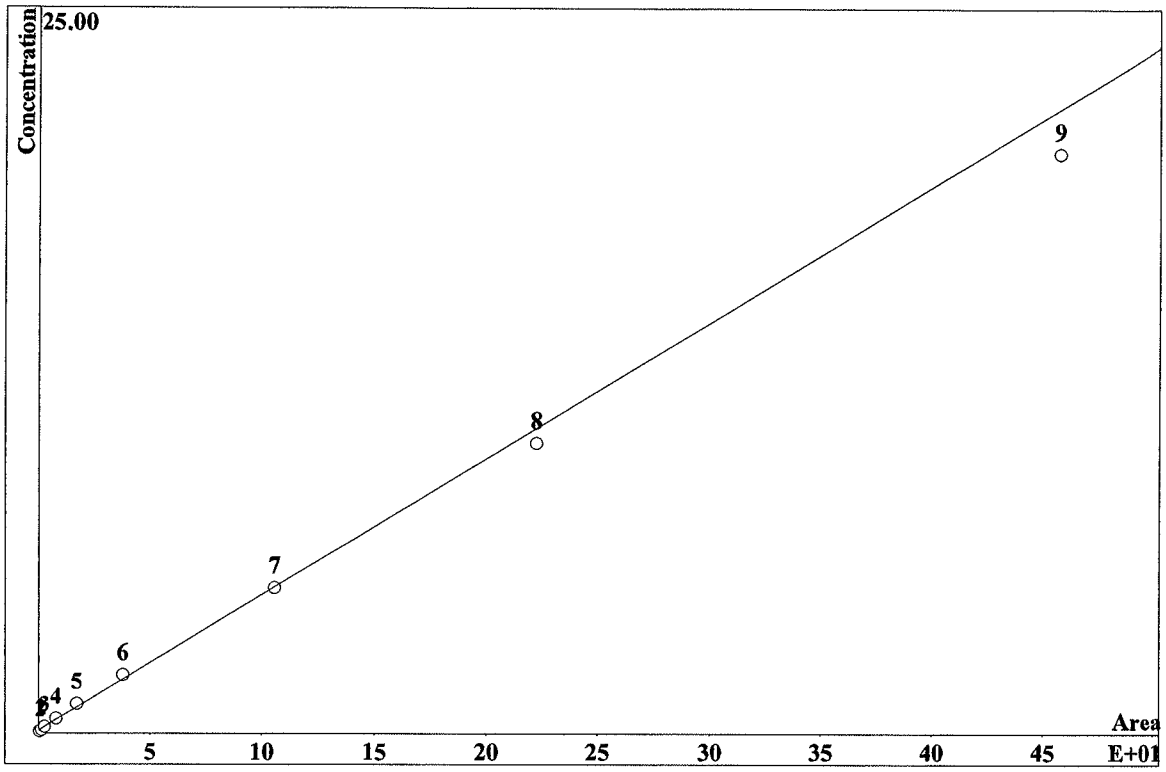
Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	60.60	669.957	18.589	fluoride
2	3.96	46.92	457.371	21.557	chloride
3	4.55	66.71	1061.515	21.436	nitrite
4	5.40	10.32	183.643	20.229	bromide
5	6.11	79.75	1206.835	22.808	nitrate
6	7.80	26.69	455.548	23.715	phosphate
7	8.85	19.55	335.027	20.240	sulfate
7	15.00	310.55	4369.897	148.572	

This report has been created by IC Net
METROHM LTD

CALIBRATION OF COMPONENT chloride

Method: ICD0-B24.mtw
Equation: Q = 0.0469332·A + 0.0909434
RSD: 7.233 %
Correlation coefficient: 0.998906

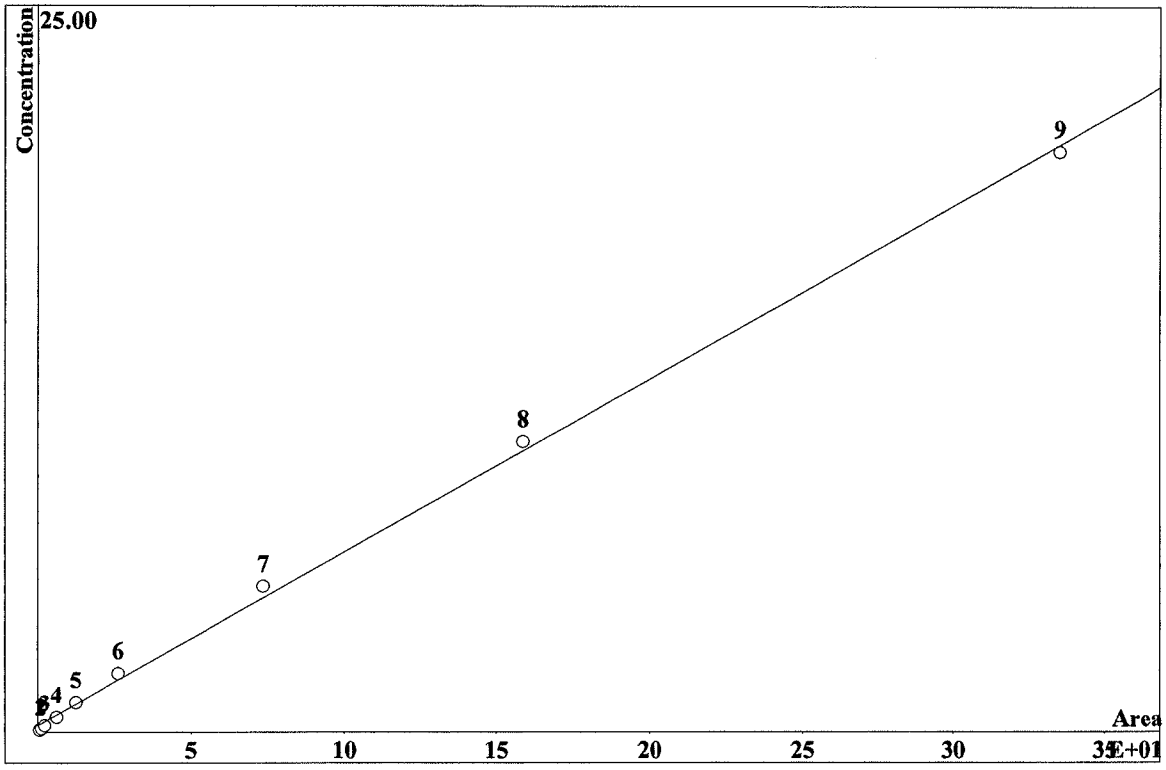


K3 = 0 K2 = 0 K1 = 0.0469332 K0 = 0.0909434
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.08183	0.852	0.05	1	3.96	Yes	_2020-02-24_2□
2	0.1492	1.57	0.1	1	3.96	Yes	_2020-02-24_2□
3	0.3042	3.121	0.2	1	3.96	Yes	_2020-02-24_2□
4	0.8241	8.273	0.5	1	3.96	Yes	_2020-02-24_2□
5	1.778	17.39	1	1	3.96	Yes	_2020-02-24_2□
6	3.966	37.9	2	1	3.96	Yes	_2020-02-24_2□
7	11.09	105.9	5	1	3.96	Yes	_2020-02-24_2□
8	23.13	222.4	10	1	3.96	No	_2020-02-24_2
9	46.92	457.4	20	1	3.96	No	_2020-02-24_2

CALIBRATION OF COMPONENT sulfate

Method: ICD0-B24.mtw
Equation: Q = 0.0597613·A + 0.217884
RSD: 5.948 %
Correlation coefficient: 0.999363



K3 = 0 K2 = 0 K1 = 0.0597613 K0 = 0.217884
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.04145	0.8494	0.05	1	8.83	Yes	_2020-02-24_2□
2	0.07188	1.412	0.1	1	8.83	Yes	_2020-02-24_2□
3	0.1354	2.548	0.2	1	8.83	Yes	_2020-02-24_2□
4	0.3422	6.256	0.5	1	8.83	Yes	_2020-02-24_2□
5	0.6991	12.49	1	1	8.83	Yes	_2020-02-24_2□
6	1.523	26.37	2	1	8.83	Yes	_2020-02-24_2□
7	4.368	73.7	5	1	8.83	Yes	_2020-02-24_2□
8	9.407	158.6	10	1	8.83	Yes	_2020-02-24_2
9	19.55	335	20	1	8.83	Yes	_2020-02-24_2

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : B24/AB25(2020)

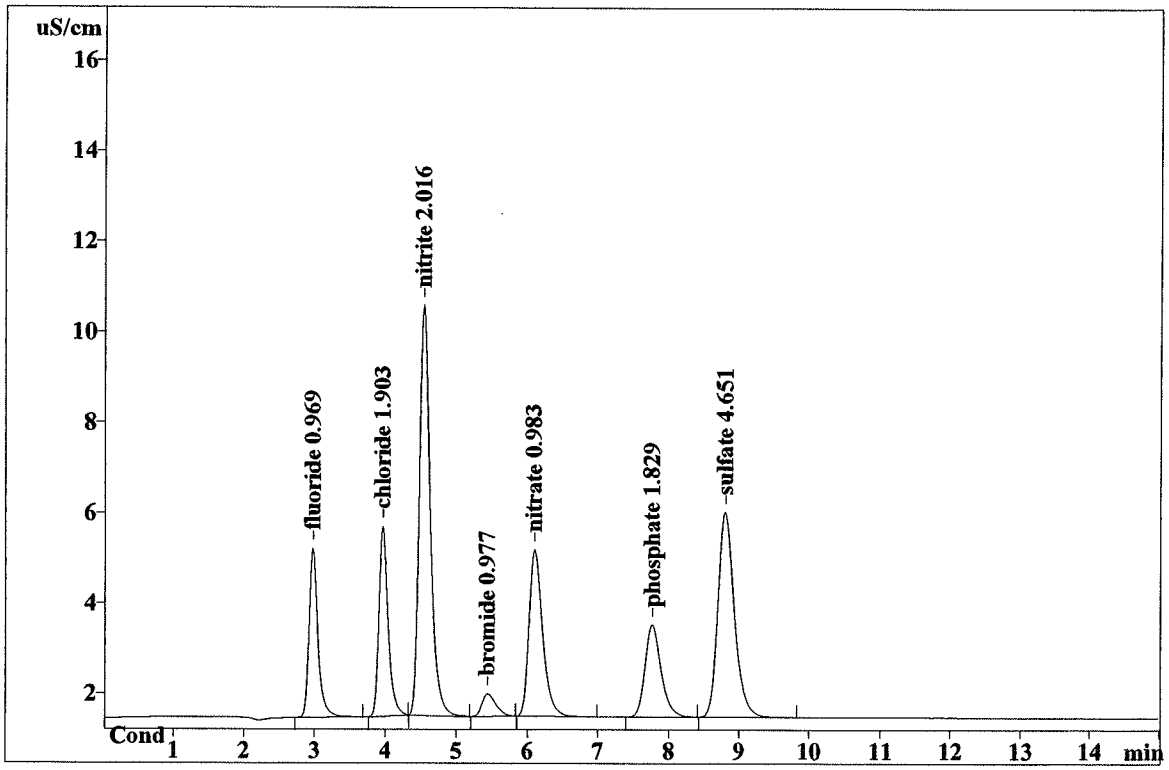
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AB25-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-12	ICV	PINOFCBS	91.5%	100.8%	98.3%	0%*	96.9%	95.1%	97.7%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	PINOFCBS	88.2%*	95.5%	97%	0%*	98.3%	91.8%	98.1%	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:21:18 PM
Printed by: LDip

Ident: AB25-12 ICV
Analysis from: 2/24/2020 11:38:38 PM
File: _2020-02-24_23-38.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155980

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	3.75	33.675	0.969	fluoride
2	3.96	4.21	38.609	1.903	chloride
3	4.53	9.07	97.933	2.016	nitrite
4	5.44	0.50	6.951	0.977	bromide
5	6.10	3.69	49.671	0.983	nitrate
6	7.76	2.05	31.988	1.829	phosphate
7	8.80	4.54	74.179	4.651	sulfate
7	15.00	27.80	333.006	13.328	

This report has been created by IC Net
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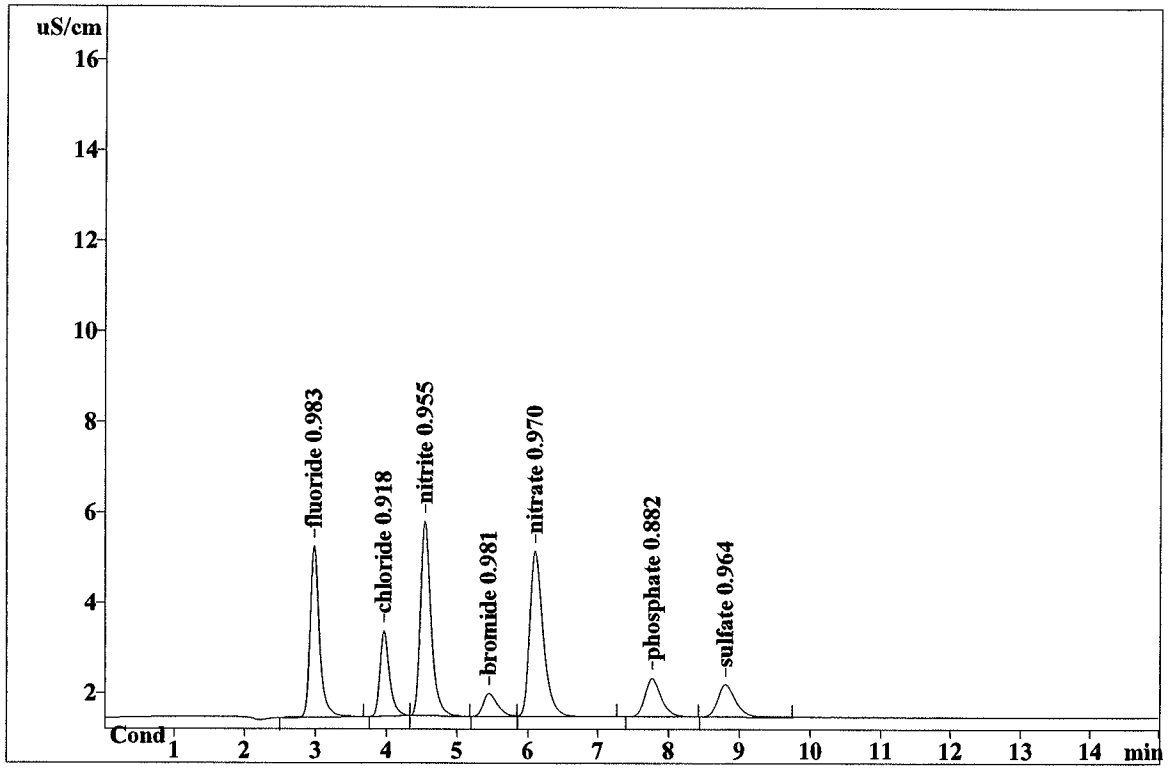
Report date: 2/25/2020 12:21:23 PM
Printed by: LDip

Ident: AB25-13 ICV1
Analysis from: 2/24/2020 11:55:43 PM
File: _2020-02-24_23-55.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155981

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.79	34.158	0.983	fluoride
2	3.96	1.88	17.616	0.918	chloride
3	4.54	4.31	45.313	0.955	nitrite
4	5.45	0.51	6.985	0.981	bromide
5	6.10	3.65	48.958	0.970	nitrate
6	7.77	0.85	13.652	0.882	phosphate
7	8.80	0.72	12.482	0.964	sulfate
7	15.00	15.70	179.164	6.652	

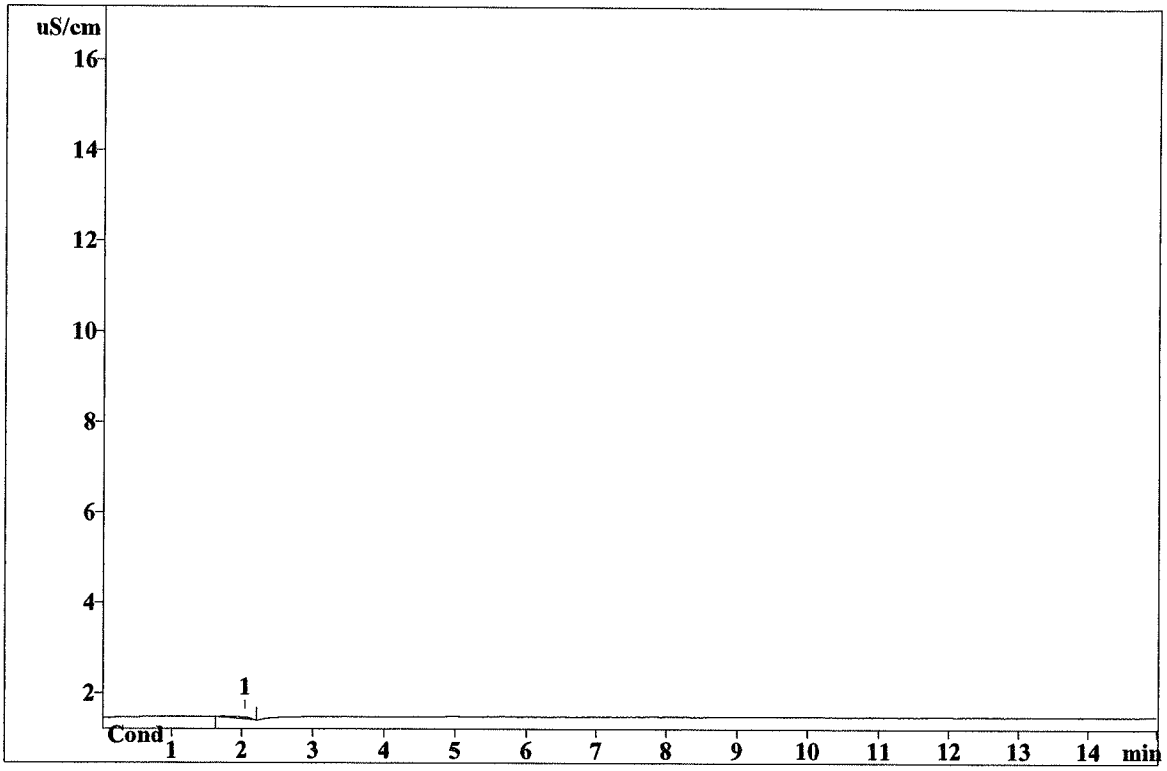
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:29 PM
Printed by: LDip

Ident: AB25-14 ICB
Analysis from: 2/25/2020 12:12:47 AM
File: _2020-02-25_00-12.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155982

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.898	0.000	

This report has been created by IC Net
METROHM LTD

DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F162
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF27-01	CCV723	96.9	06/22/2010:37
AF27-06	CCV725	96.7	06/22/2012:10
AF27-18	CCV727	94.8	06/22/2018:59
AF27-30	CCV729	95.6	06/22/2022:25
AF27-42	CCV731	96.5	06/23/2001:50
AF27-52	CCV733	95.5	06/23/2004:41
AF29-01	CCV735	94.4	06/23/2010:20
AF29-13	CCV737	95.7	06/23/2014:57
AF31-01	CCV745	95	06/24/2010:21
AF31-13	CCV747	104.8	06/24/2013:46
AF31-37	CCV751	96.4	06/24/2021:29
AF31-49	CCV753	99.3	06/25/2000:54

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F162
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF27-01	CCV723	93.4	06/22/2010:37
AF27-06	CCV725	92.7	06/22/2012:10
AF27-18	CCV727	91.9	06/22/2018:59
AF27-30	CCV729	93.6	06/22/2022:25
AF27-42	CCV731	93.7	06/23/2001:50
AF27-52	CCV733	92.9	06/23/2004:41

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : B24/AB25(2020)

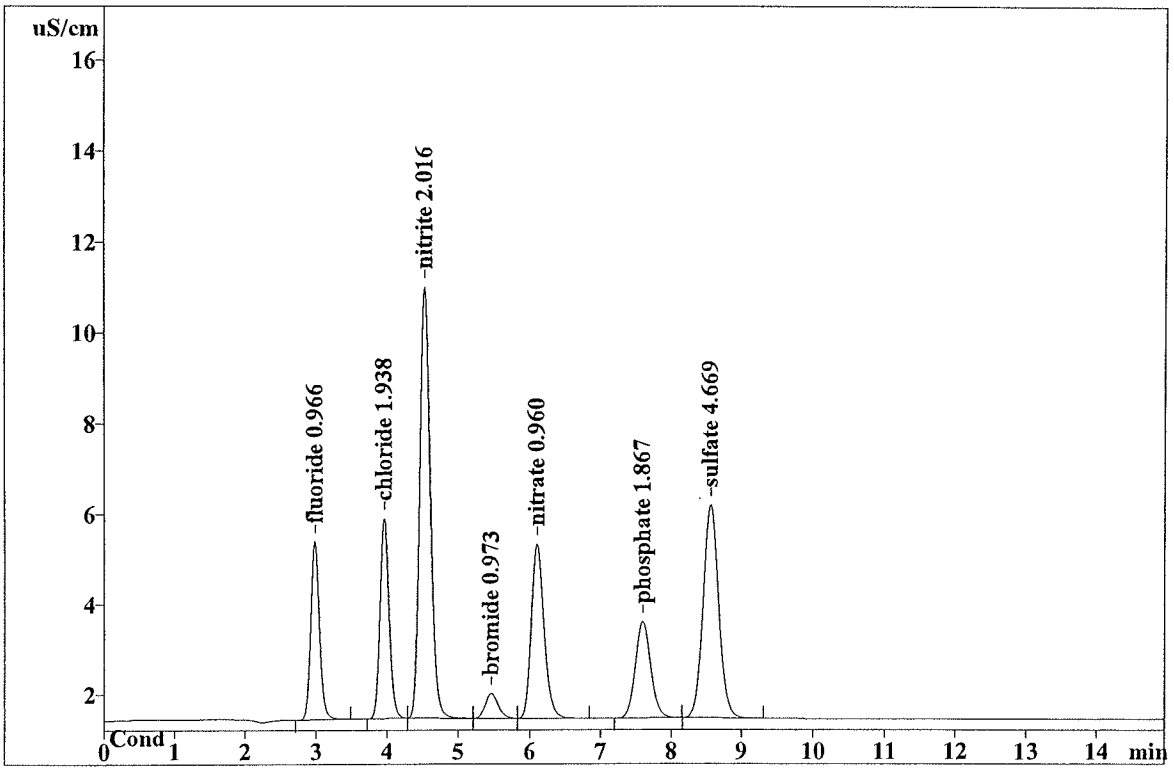
LFID	LSID	Selection	nitrate	chloride	fluoride	iodide	nitrite	bromide	phosphate	sulfate	RawNetID	DF
AF27-01	CCV723	NCFOIBPS	96%	96.9%	96.6%	0%*	100.8%	97.3%	93.3%	93.4%	_2020-06-22_10-37	1
AF27-02	CCB723	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_10-54	1
AF27-06	CCV725	NCFOIBPS	95%	96.7%	96.7%	0%*	100.4%	96.8%	92.4%	92.7%	_2020-06-22_12-10	1
AF27-07	CCB725	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_13-06	1
AF27-18	CCV727	NCFOIBPS	93.1%	94.8%	95.8%	0%*	100.9%	95.2%	91.6%	91.9%	_2020-06-22_18-59	1
AF27-19	CCB727	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_19-16	1
AF27-30	CCV729	NCFOIBPS	93.6%	95.6%	97%	0%*	101.4%	95.7%	92.6%	93.6%	_2020-06-22_22-25	1
AF27-31	CCB729	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-22_22-42	1
AF27-42	CCV731	NCFOIBPS	94%	96.5%	97%	0%*	102%	96.5%	93.5%	93.7%	_2020-06-23_01-50	1
AF27-43	CCB731	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-23_02-07	1
AF27-52	CCV733	NCFOIBPS	94%	95.5%	96.7%	0%*	101.3%	96.2%	91.4%	92.9%	_2020-06-23_04-41	1
AF27-53	CCB733	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-23_04-58	1

Report date: 6/23/2020 10:41:16 AM
Printed by: TWangc

Ident: AF27-01 CCV723
Analysis from: 6/22/2020 10:37:38 AM
File: _2020-06-22_10-37.chw Last save: 6/22/2020 10:52:35 AM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159249

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.95	33.569	0.966	fluoride
2	3.96	4.44	39.355	1.938	chloride
3	4.53	9.54	97.966	2.016	nitrite
4	5.47	0.55	6.920	0.973	bromide
5	6.10	3.87	48.414	0.960	nitrate
6	7.59	2.14	32.707	1.867	phosphate
7	8.55	4.71	74.483	4.669	sulfate
7	15.00	29.19	333.414	13.389	

This report has been created by IC Net
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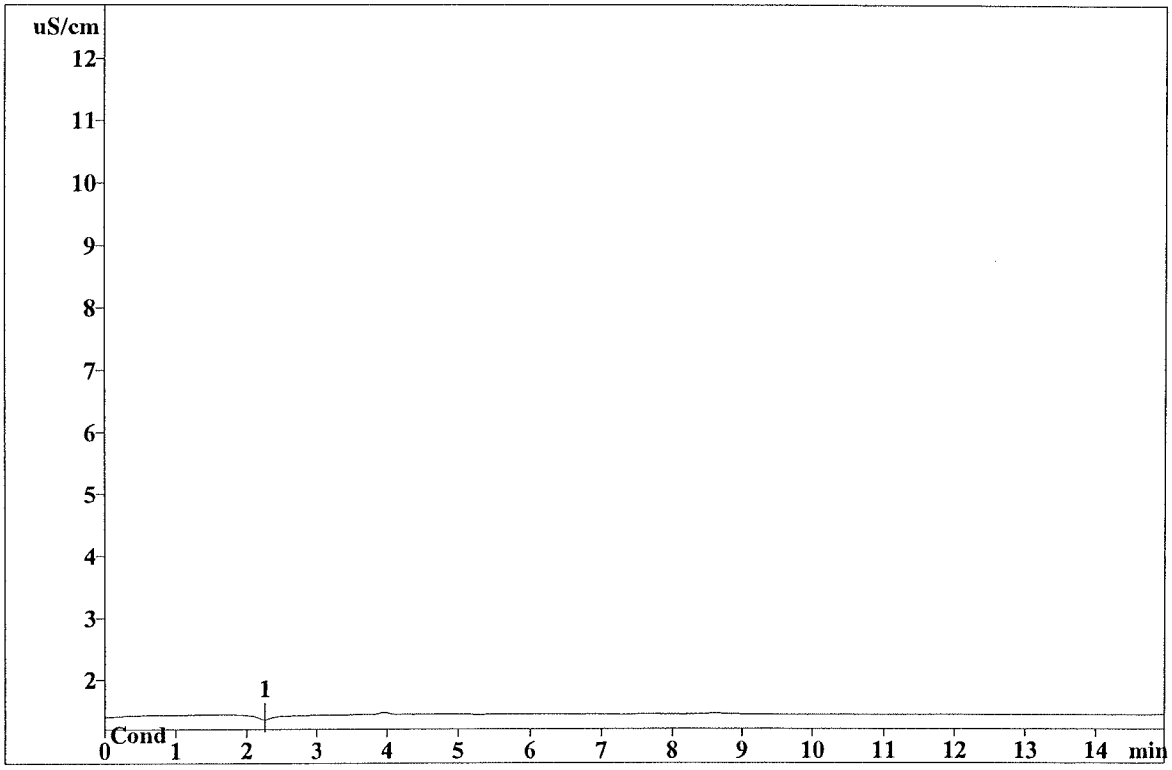
Report date: 6/23/2020 10:43:28 AM
Printed by: TWangc

Ident: AF27-02 CCB723
Analysis from: 6/22/2020 10:54:43 AM
File: _2020-06-22_10-54.chw Last save: 6/22/2020 11:09:40 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159250

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

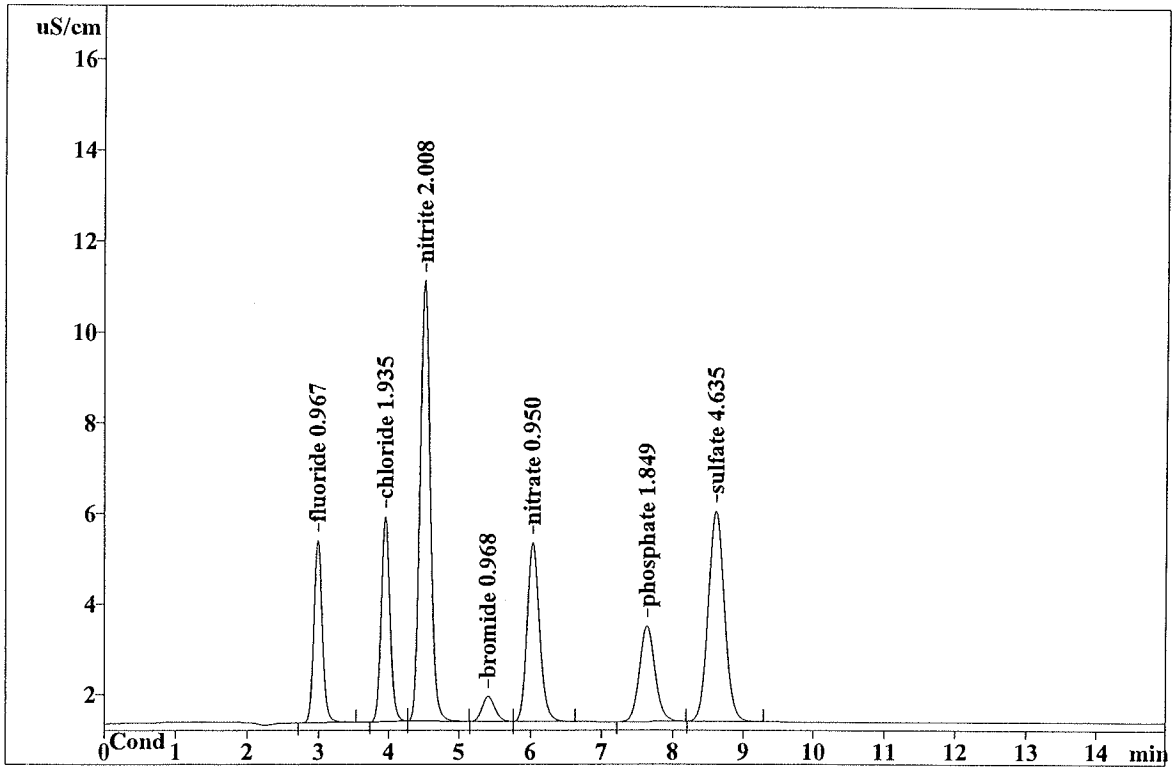
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:46:13 AM
Printed by: TWangc

Ident: AF27-06 CCV725
Analysis from: 6/22/2020 12:10:14 PM
File: _2020-06-22_12-10.chw Last save: 6/22/2020 1:03:24 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159254

SAMPLE: METHOD300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

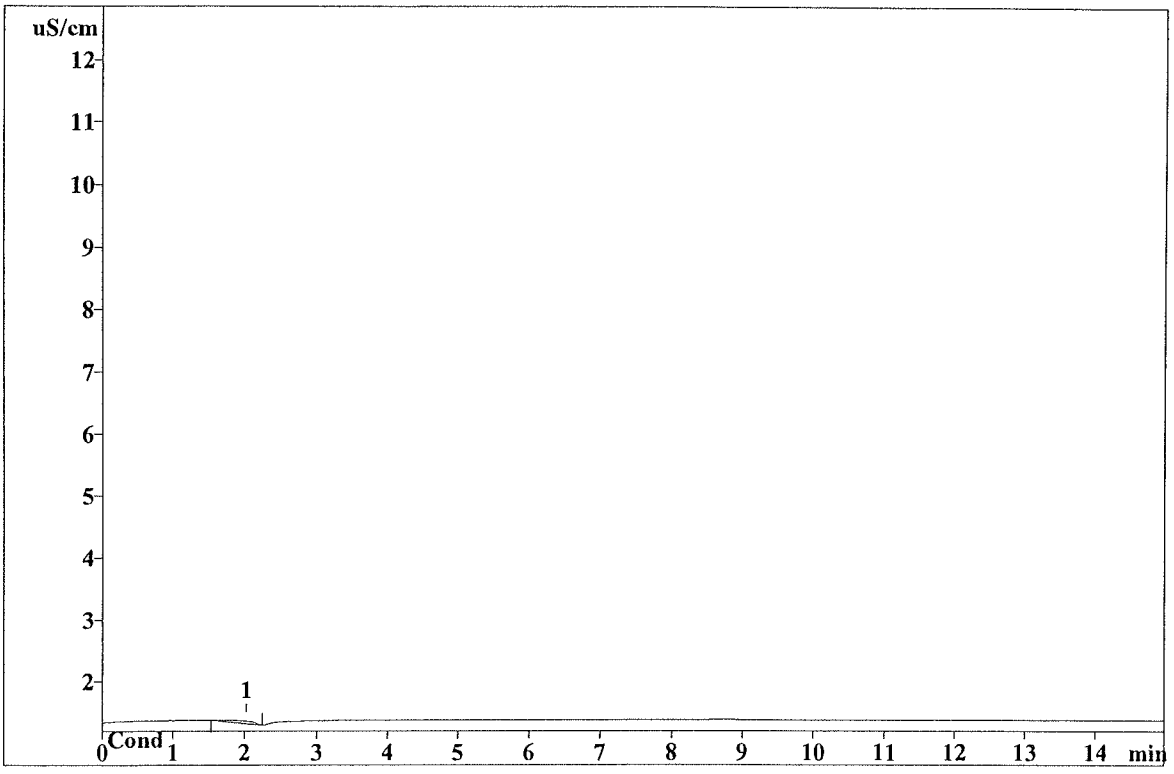
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	4.03	33.605	0.967	fluoride
2	3.94	4.53	39.288	1.935	chloride
3	4.51	9.71	97.556	2.008	nitrite
4	5.41	0.55	6.871	0.968	bromide
5	6.03	3.94	47.916	0.950	nitrate
6	7.63	2.11	32.361	1.849	phosphate
7	8.60	4.64	73.914	4.635	sulfate
7	15.00	29.52	331.510	13.312	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:47:05 AM
Printed by: TWangc

Ident: AF27-07 CCB725
Analysis from: 6/22/2020 1:06:43 PM
File: _2020-06-22_13-06.chw Last save: 6/22/2020 1:21:40 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159257

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 7
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.01	0.04	1.145	0.000	

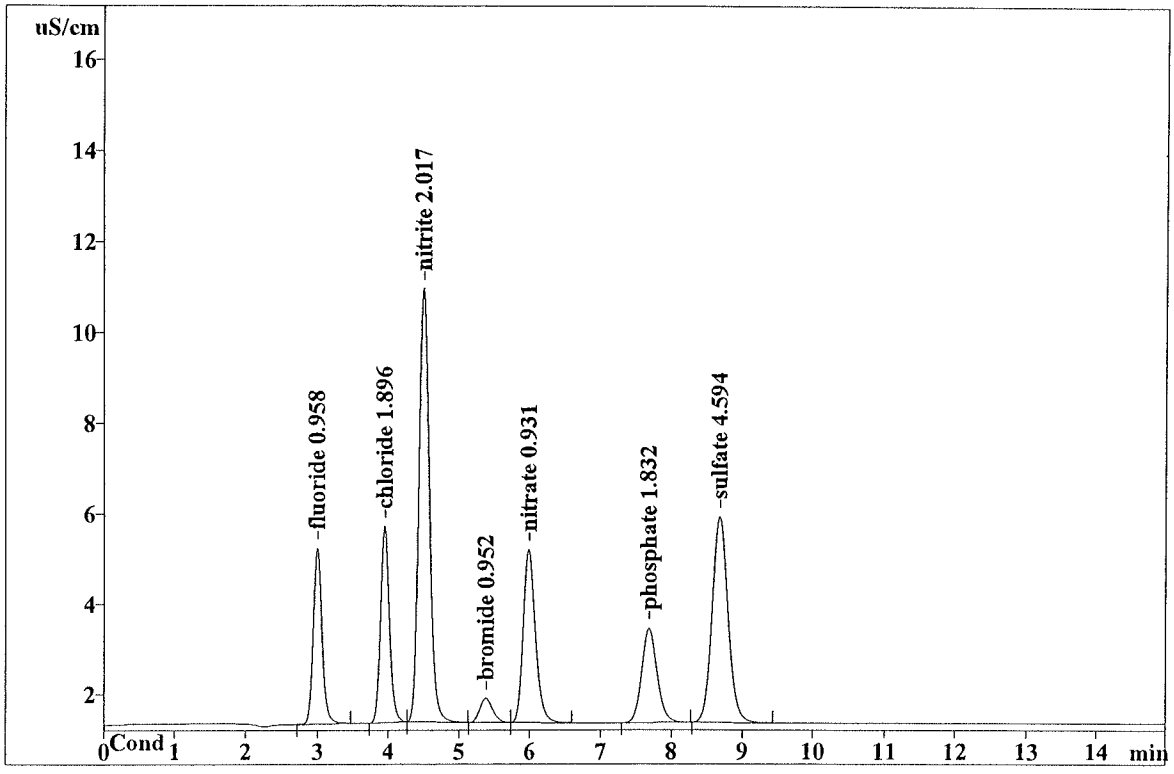
This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:47:30 AM
Printed by: TWangc

Ident: AF27-18 CCV727
Analysis from: 6/22/2020 6:59:36 PM
File: _2020-06-22_18-59.chw Last save: 6/22/2020 7:14:33 PM

Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159273

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 18
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

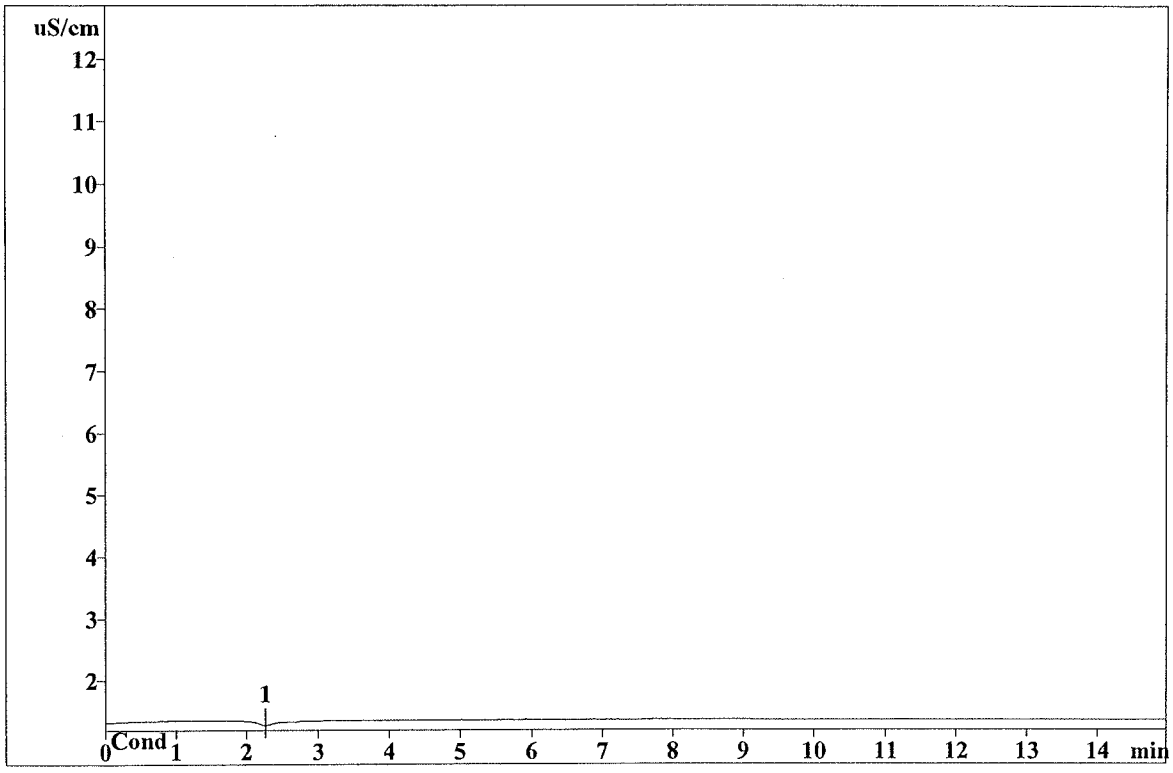
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.89	33.279	0.958	fluoride
2	3.94	4.34	38.468	1.896	chloride
3	4.50	9.57	98.019	2.017	nitrite
4	5.38	0.54	6.725	0.952	bromide
5	5.98	3.83	46.891	0.931	nitrate
6	7.68	2.09	32.048	1.832	phosphate
7	8.67	4.56	73.223	4.594	sulfate
7	15.00	28.81	328.652	13.181	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:48:23 AM
Printed by: TWangc

Ident: AF27-19 CCB727
Analysis from: 6/22/2020 7:16:41 PM
File: _2020-06-22_19-16.chw Last save: 6/22/2020 7:31:38 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159274

SAMPLE: METHOD 300/9056/4110B
:
Vial number: 19
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

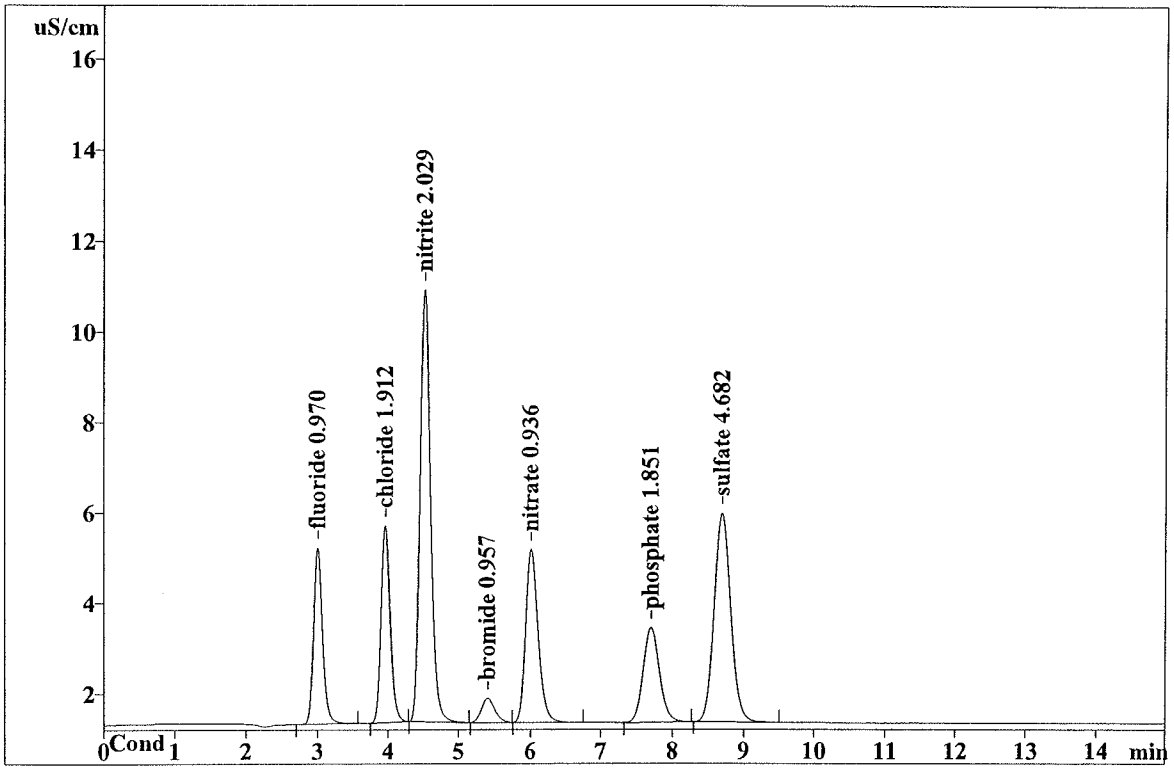
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:48:54 AM
Printed by: TWangc

Ident: AF27-30 CCV729
Analysis from: 6/22/2020 10:25:35 PM
File: _2020-06-22_22-25.chw Last save: 6/22/2020 10:40:32 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159285

SAMPLE: METHOD300/9056/4110B
:
Vial number: 30
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

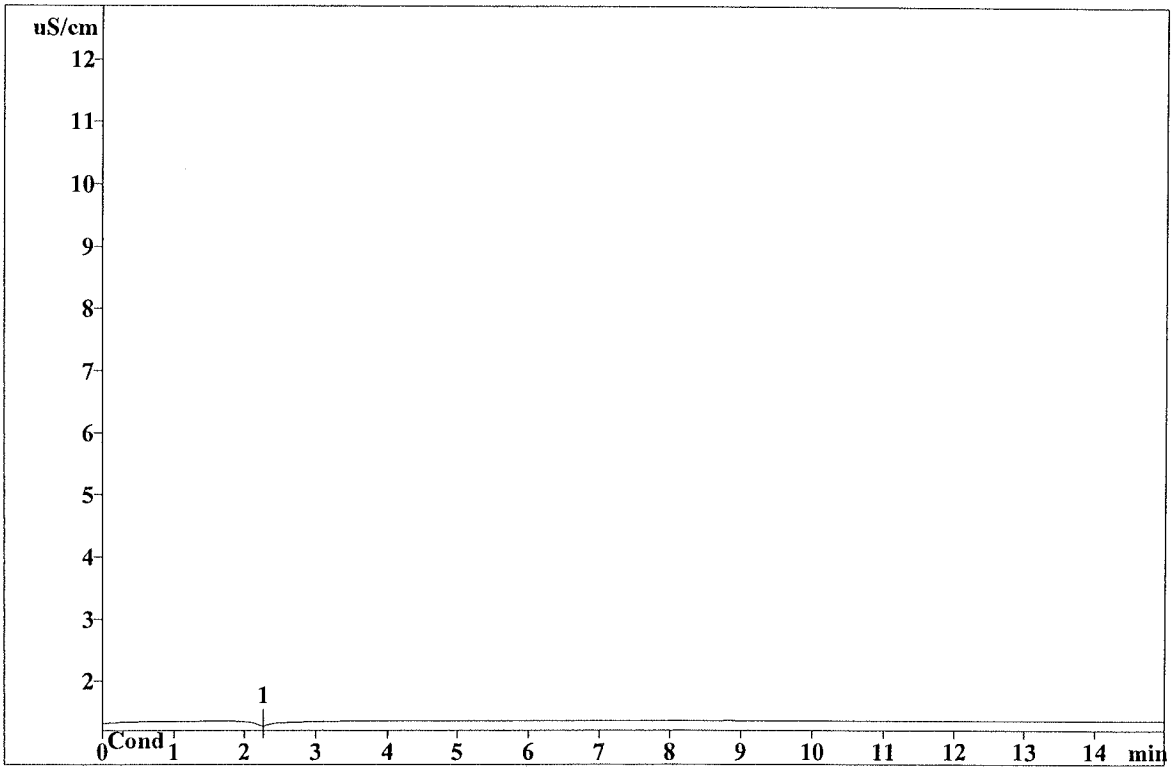
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.89	33.703	0.970	fluoride
2	3.96	4.35	38.808	1.912	chloride
3	4.51	9.55	98.580	2.029	nitrite
4	5.40	0.53	6.767	0.957	bromide
5	6.01	3.82	47.154	0.936	nitrate
6	7.70	2.09	32.411	1.851	phosphate
7	8.69	4.60	74.698	4.682	sulfate
7	15.00	28.82	332.121	13.337	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:49:59 AM
Printed by: TWangc

Ident: AF27-31 CCB729
Analysis from: 6/22/2020 10:42:40 PM
File: _2020-06-22_22-42.chw Last save: 6/22/2020 10:57:37 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159286

SAMPLE: METHOD300/9056/4110B
:
Vial number: 31
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

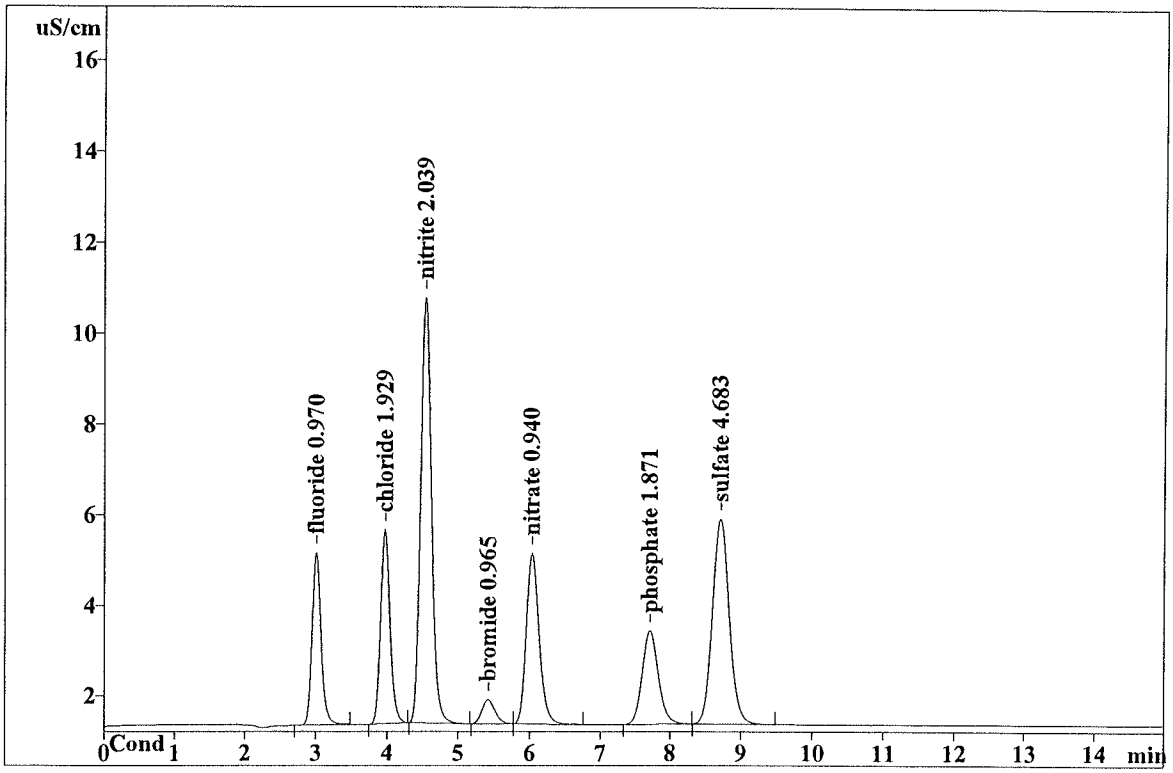
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:50:31 AM
Printed by: TWangc

Ident: AF27-42 CCV731
Analysis from: 6/23/2020 1:50:31 AM
File: _2020-06-23_01-50.chw Last save: 6/23/2020 2:05:28 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159297

SAMPLE: METHOD300/9056/4110B
:
Vial number: 42
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

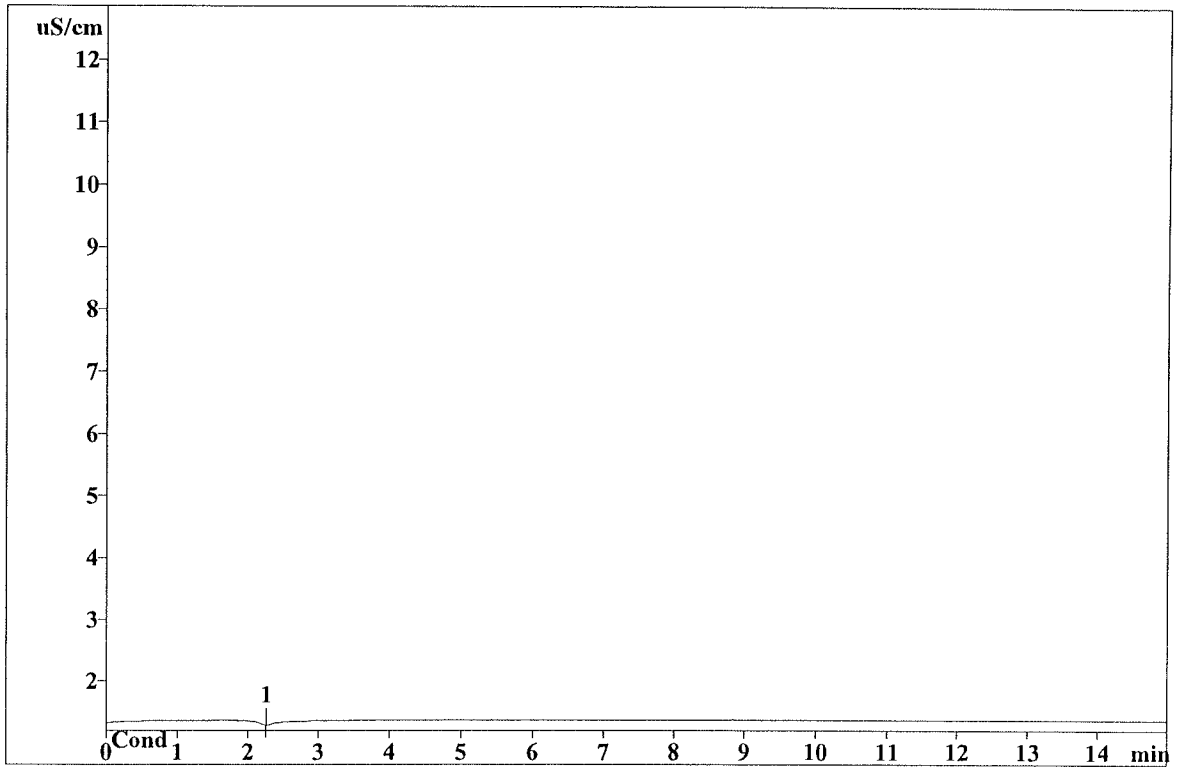
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.80	33.691	0.970	fluoride
2	3.96	4.28	39.170	1.929	chloride
3	4.52	9.40	99.093	2.039	nitrite
4	5.41	0.53	6.840	0.965	bromide
5	6.03	3.77	47.382	0.940	nitrate
6	7.71	2.07	32.789	1.871	phosphate
7	8.71	4.53	74.715	4.683	sulfate
7	15.00	28.38	333.679	13.397	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:51:17 AM
Printed by: TWangc

Ident: AF27-43 CCB731
Analysis from: 6/23/2020 2:07:36 AM
File: _2020-06-23_02-07.chw Last save: 6/23/2020 2:22:33 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159298

SAMPLE: METHOD300/9056/4110B
:
Vial number: 43
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

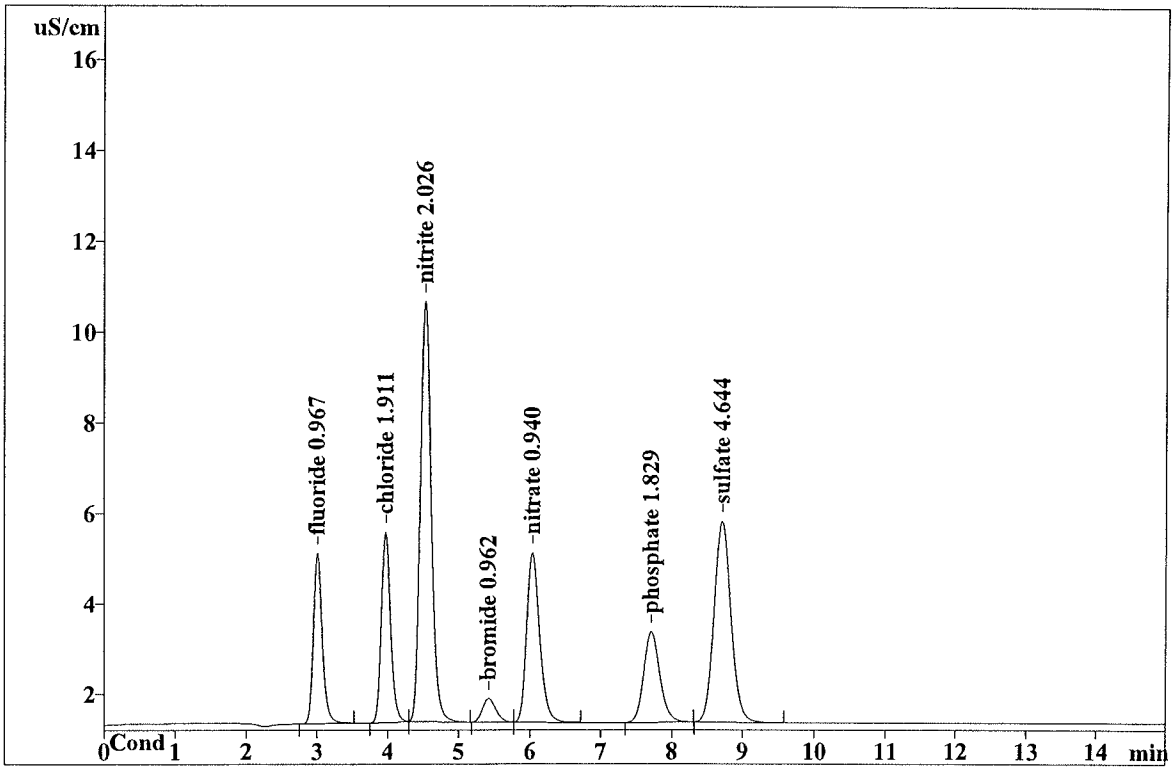
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/23/2020 10:51:48 AM
Printed by: TWangc

Ident: AF27-52 CCV733
Analysis from: 6/23/2020 4:41:17 AM
File: _2020-06-23_04-41.chw Last save: 6/23/2020 4:56:14 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159307

SAMPLE: METHOD300/9056/4110B
:
Vial number: 52
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.77	33.612	0.967	fluoride
2	3.96	4.22	38.770	1.911	chloride
3	4.52	9.30	98.460	2.026	nitrite
4	5.42	0.53	6.810	0.962	bromide
5	6.03	3.76	47.378	0.940	nitrate
6	7.71	2.01	31.972	1.829	phosphate
7	8.71	4.45	74.066	4.644	sulfate
7	15.00	28.03	331.068	13.279	

This report has been created by IC Net
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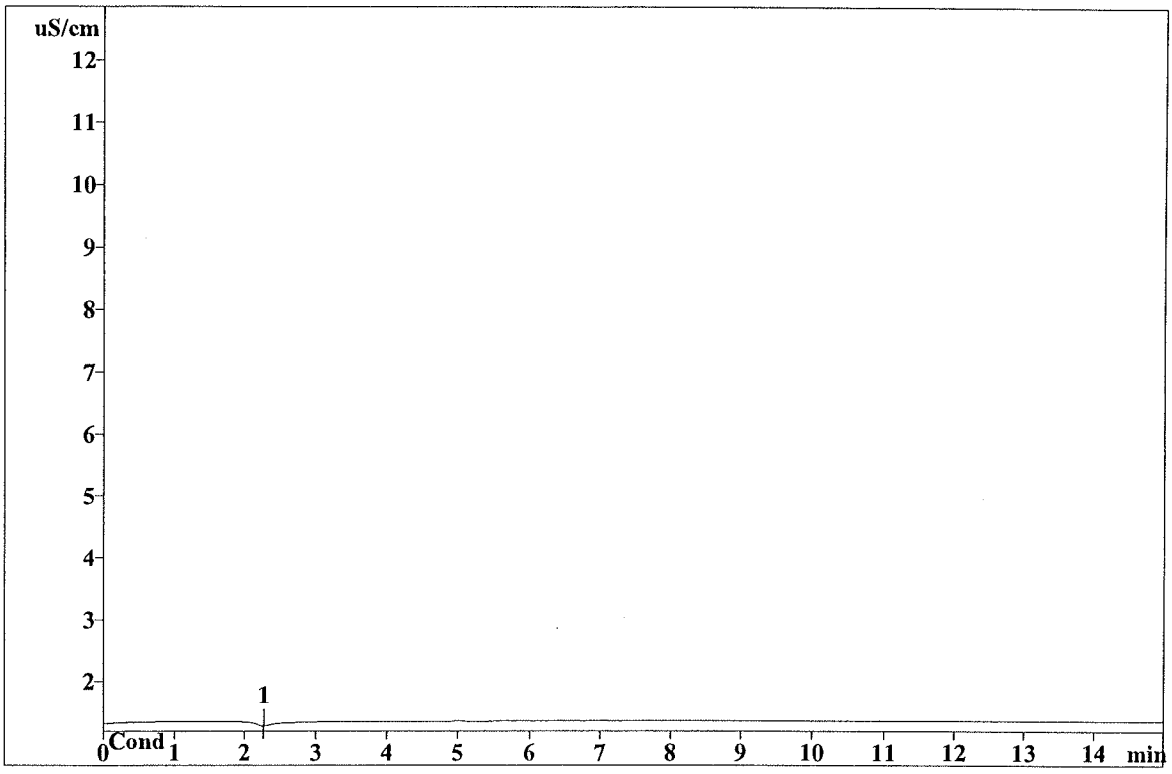
Report date: 6/23/2020 10:52:37 AM
Printed by: TWangc

Ident: AF27-53 CCB733
Analysis from: 6/23/2020 4:58:22 AM
File: _2020-06-23_04-58.chw Last save: 6/23/2020 5:13:19 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/22/2020 10:38:18 AM
Run operator: TWangc
Analysis number: 159308

SAMPLE: METHOD300/9056/4110B
:
Vial number: 53
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.26	-0.00	0.000	0.000	

This report has been created by IC Net
METROHM LTD

IC Result Check FormVersion : B24/AB25(2020)

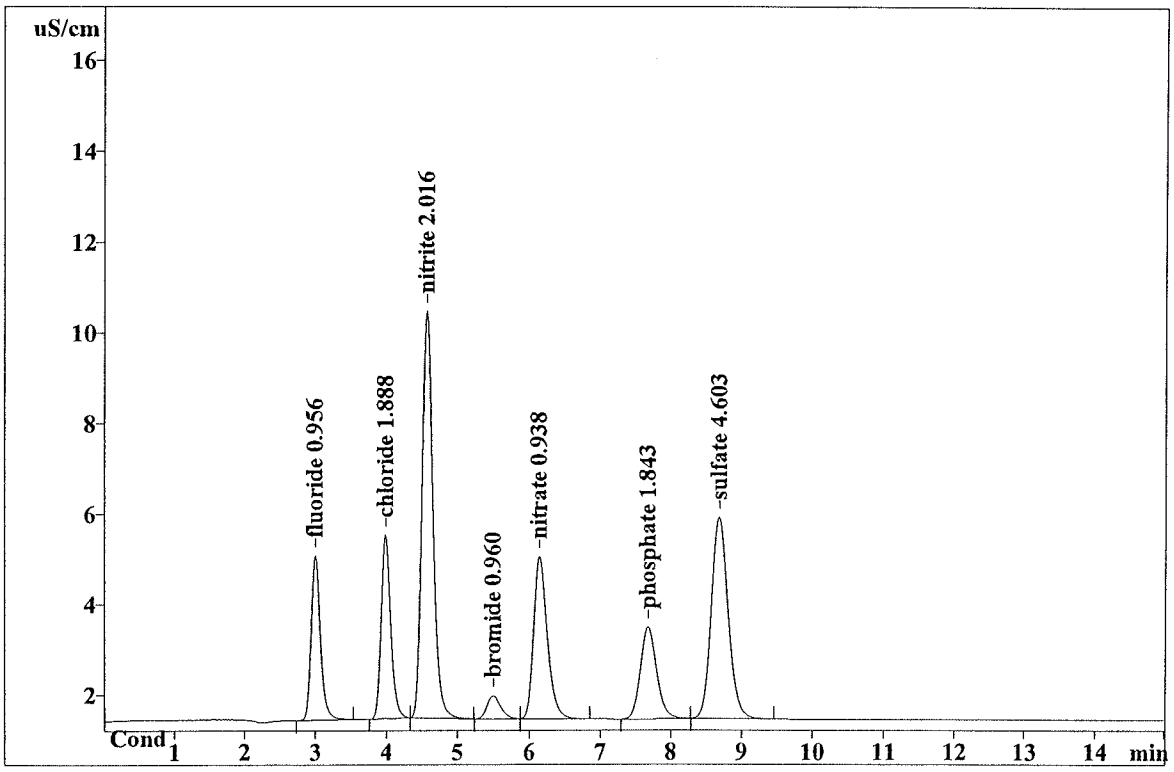
LFID	LSID	Selection	bromide	chloride	nitrate	iodide	fluoride	nitrite	phosphate	sulfate	RawNetID	DF
AF29-01	CCV735	BCNOFIPS	96%	94.4%	93.8%	0%*	95.6%	100.8%	92.1%	92.1%	_2020-06-23_10-20	1
AF29-02	CCB735	BCNOFIPS	0	0	0	0	0	0	0	0	_2020-06-23_10-37	1
AF29-13	CCV737	BCNOFIPS	96.9%	95.7%	93.9%	0%*	96.3%	101.9%	91.8%	92.4%	_2020-06-23_14-57	1
AF29-14	CCB737	BCNOFIPS	0	0	0	0	0	0	0	0	_2020-06-23_15-19	1
AF29-25	CCV739	BCNOFIPS	97.7%	96.4%	94.7%	0%*	97.3%	102.3%	93.7%	94.3%	_2020-06-23_18-27	1
AF29-26	CCB739	BCNOFIPS	0	0	0	0	0	0	0	0	_2020-06-23_18-44	1
AF29-37	CCV741	BCNOFIPS	97.8%	96.7%	95.3%	0%*	97.6%	102.9%	93.6%	93.9%	_2020-06-23_21-52	1
AF29-38	CCB741	BCNOFIPS	0	0	0	0	0	0	0	0	_2020-06-23_22-09	1
AF29-41	CCV743	BCNOFIPS	97.5%	97.8%	97.6%	0%*	98.3%	102.9%	94.4%	94.3%	_2020-06-23_23-00	1
AF29-42	CCB743	BCNOFIPS	0	0	0	0	0	0	0	0	_2020-06-23_23-17	1

Report date: 6/24/2020 10:09:40 AM
Printed by: TWangc

Ident: AF29-01 CCV735
Analysis from: 6/23/2020 10:20:08 AM
File: _2020-06-23_10-20.chw Last save: 6/23/2020 10:35:06 AM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159310

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.64	33.190	0.956	fluoride
2	3.98	4.06	38.285	1.888	chloride
3	4.56	8.99	97.951	2.016	nitrite
4	5.50	0.51	6.795	0.960	bromide
5	6.14	3.58	47.251	0.938	nitrate
6	7.68	2.03	32.244	1.843	phosphate
7	8.69	4.46	73.372	4.603	sulfate
7	15.00	27.27	329.090	13.203	

This report has been created by IC Net
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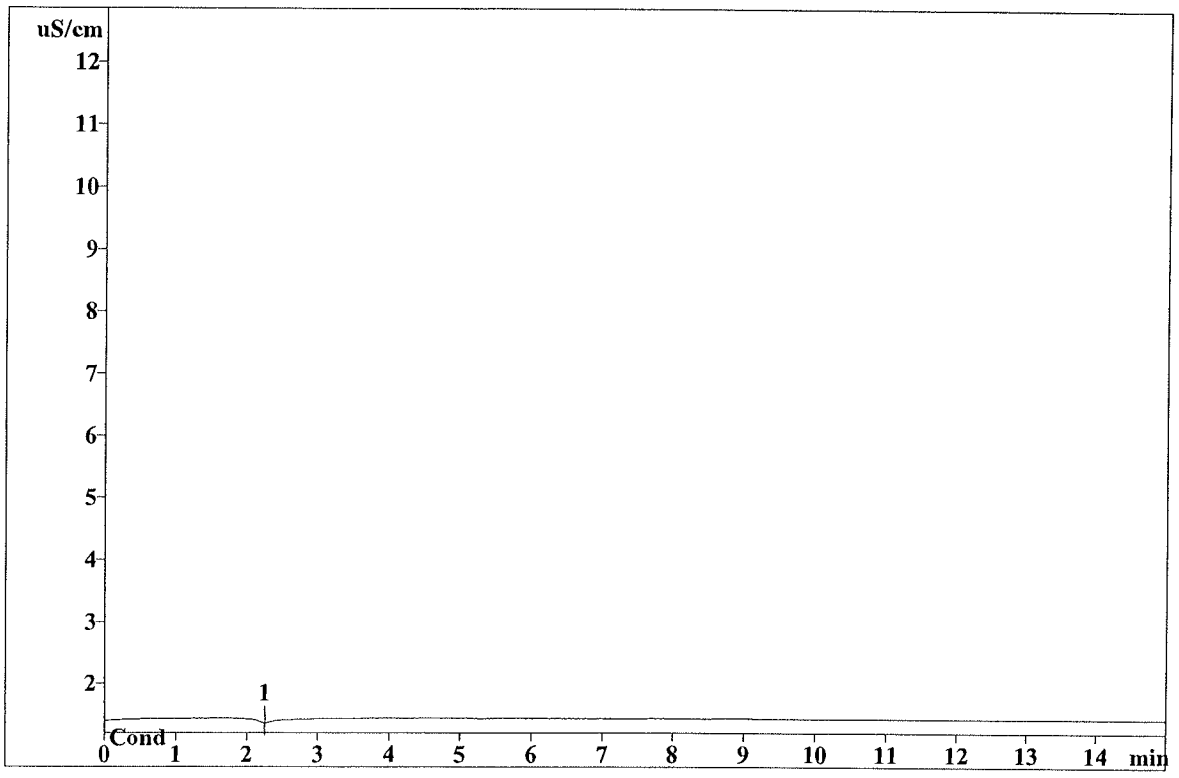
Report date: 6/24/2020 10:10:06 AM
Printed by: TWangc

Ident: AF29-02 CCB735
Analysis from: 6/23/2020 10:37:14 AM
File: _2020-06-23_10-37.chw Last save: 6/23/2020 10:55:50 AM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159311

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

This report has been created by IC Net
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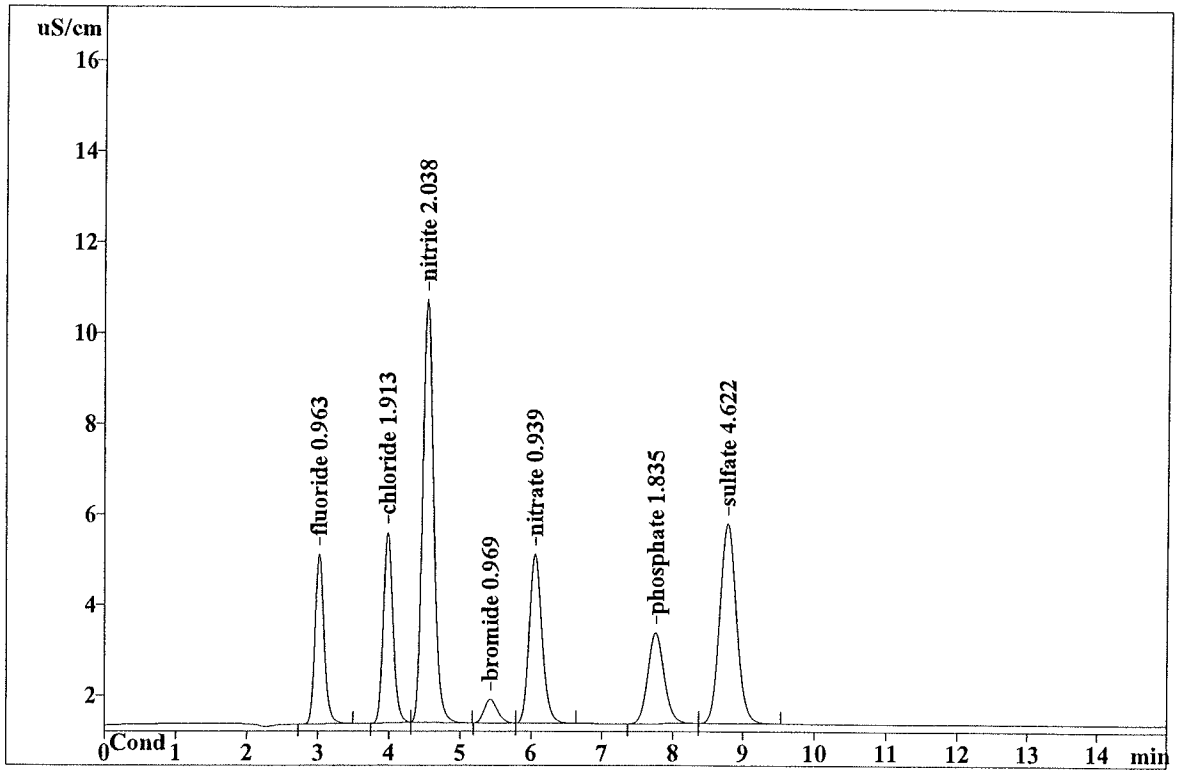
Report date: 6/24/2020 10:11:53 AM
Printed by: TWangc

Ident: AF29-13 CCV737
Analysis from: 6/23/2020 2:57:50 PM
File: _2020-06-23_14-57.chw Last save: 6/23/2020 5:24:24 PM

Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159322

SAMPLE: METHOD300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

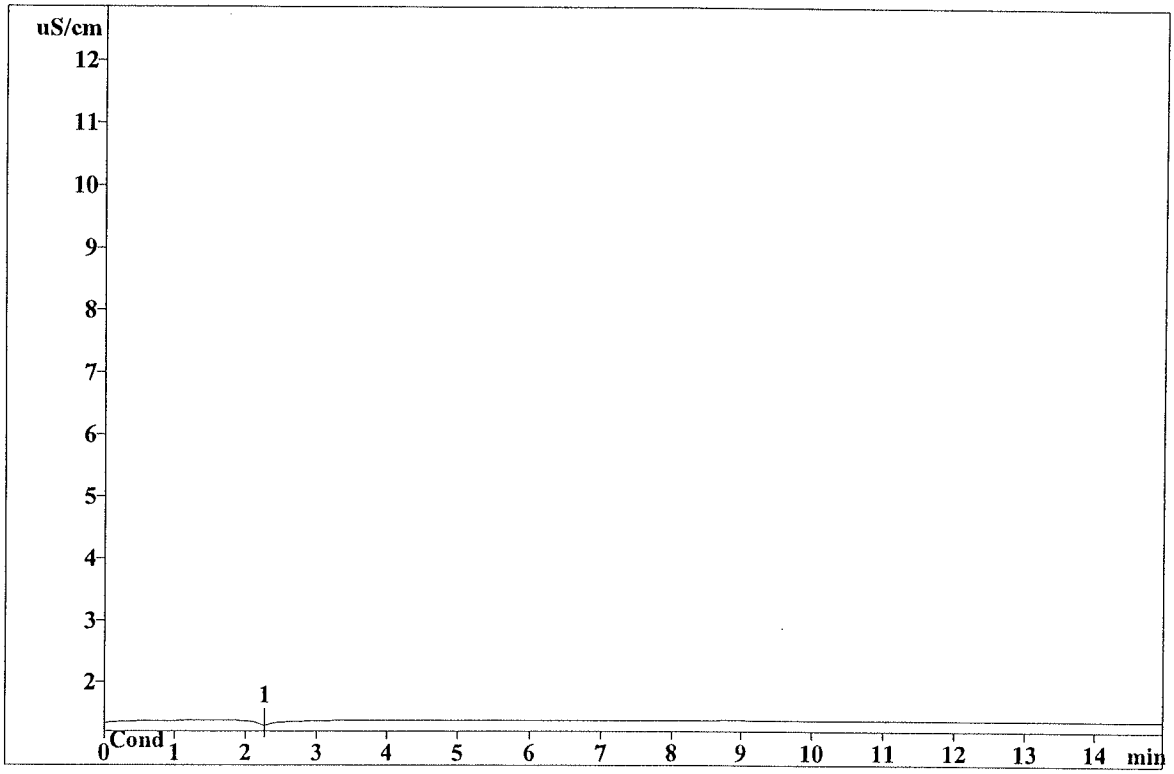
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.75	33.454	0.963	fluoride
2	3.98	4.21	38.833	1.913	chloride
3	4.54	9.34	99.032	2.038	nitrite
4	5.43	0.53	6.883	0.969	bromide
5	6.05	3.73	47.337	0.939	nitrate
6	7.75	2.01	32.098	1.835	phosphate
7	8.77	4.41	73.693	4.622	sulfate
7	15.00	27.99	331.330	13.280	

This report has been created by IC Net
METROHM LTD

Report date: 6/24/2020 10:12:55 AM
Printed by: TWangc

Ident: AF29-14 CCB737
Analysis from: 6/23/2020 3:19:45 PM
File: _2020-06-23_15-19.chw Last save: 6/23/2020 3:34:42 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/23/2020 10:23:47 AM
Run operator: TWangc
Analysis number: 159323

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

IC Result Check FormVersion : B24/AB25(2020)

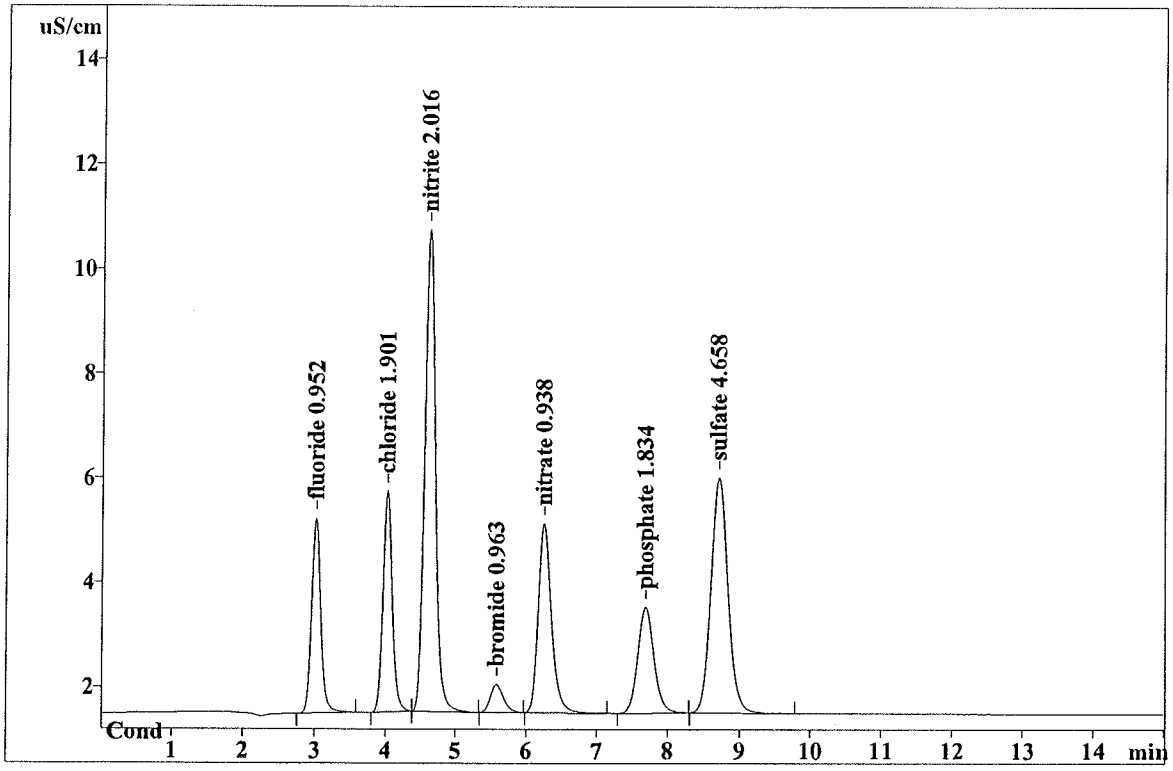
LFID	LSID	Selection	bromide	chloride	fluoride	iodide	sulfate	phosphate	nitrite	nitrate	RawNetID	DF
AF31-01	CCV745	BCFOSPIN	96.3%	95%	95.2%	0%*	93.2%	91.7%	100.8%	93.8%	_2020-06-24_10-21	1
AF31-02	CCB745	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_10-38	1
AF31-13	CCV747	BCFOSPIN	98.2%	104.8%	97.3%	0%*	94.7%	93.5%	102.5%	94.9%	_2020-06-24_13-46	1
AF31-14	CCB747	BCFOSPIN	0	0.110798	0	0	0	0	0	0	_2020-06-24_14-03	1
AF31-25	CCV749	BCFOSPIN	97.4%	96.9%	97.2%	0%*	93.9%	93.5%	102.5%	94.2%	_2020-06-24_17-41	1
AF31-26	CCB749	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_18-21	1
AF31-37	CCV751	BCFOSPIN	97.4%	96.4%	96.9%	0%*	93.2%	94.2%	102.8%	94.5%	_2020-06-24_21-29	1
AF31-38	CCB751	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_21-46	1
AF31-49	CCV753	BCFOSPIN	97.5%	99.3%	97.3%	0%*	96.3%	93%	102.8%	94.2%	_2020-06-25_00-54	1
AF31-50	CCB753	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_01-11	1
AF31-61	CCV755	BCFOSPIN	97.5%	96.1%	96.4%	0%*	92.2%	92.9%	102.3%	93.8%	_2020-06-25_04-19	1
AF31-62	CCB755	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_04-36	1
AF31-72	CCV757	BCFOSPIN	97.7%	96.4%	97.1%	0%*	92.9%	93.2%	102.5%	94.1%	_2020-06-25_07-27	1
AF31-73	CCB757	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_07-44	1

Report date: 6/25/2020 11:36:40 AM
Printed by: TWangc

Ident: AF31-01 CCV745
Analysis from: 6/24/2020 10:21:33 AM
File: _2020-06-24_10-21.chw Last save: 6/24/2020 10:36:30 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159353

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.73	33.046	0.952	fluoride
2	4.01	4.22	38.560	1.901	chloride
3	4.61	9.21	97.955	2.016	nitrite
4	5.58	0.53	6.827	0.963	bromide
5	6.25	3.61	47.277	0.938	nitrate
6	7.68	2.02	32.081	1.834	phosphate
7	8.70	4.49	74.298	4.658	sulfate
7	15.00	27.82	330.044	13.262	

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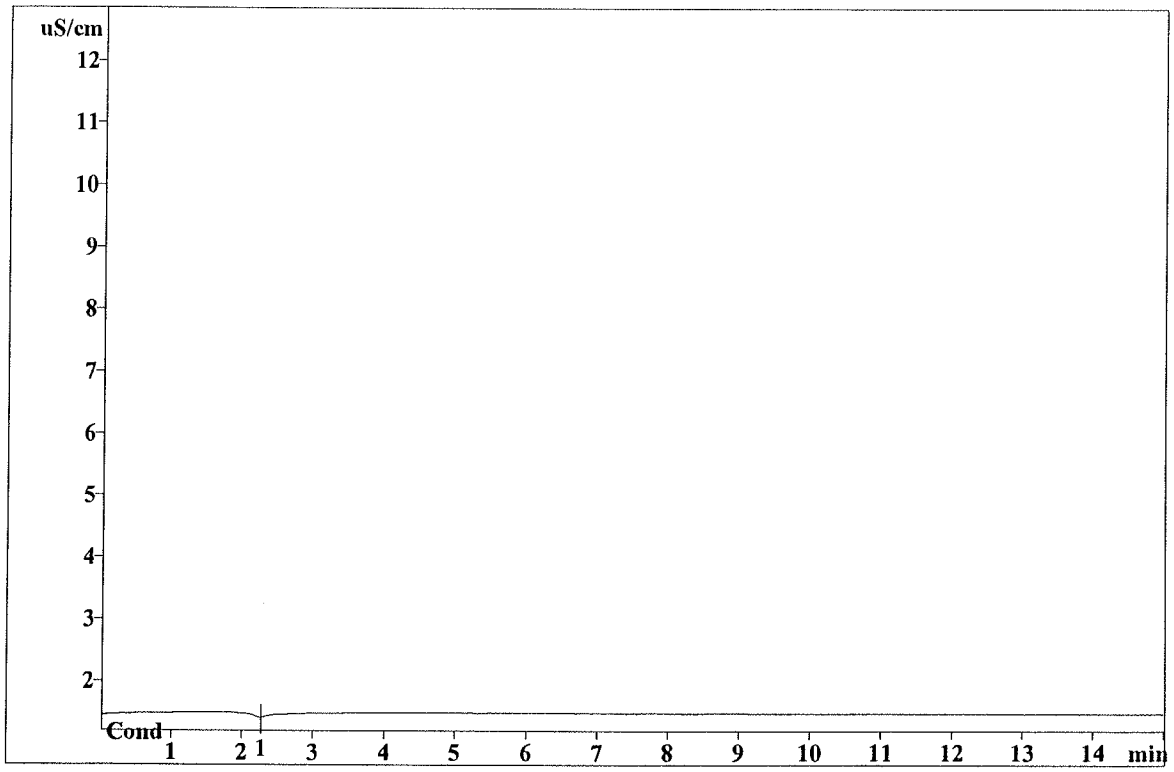
METROHM LTD

Report date: 6/25/2020 11:37:06 AM
Printed by: TWangc

Ident: AF31-02 CCB745
Analysis from: 6/24/2020 10:38:38 AM
File: _2020-06-24_10-38.chw Last save: 6/24/2020 10:53:35 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159354

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.28	-0.00	-0.000	0.000	

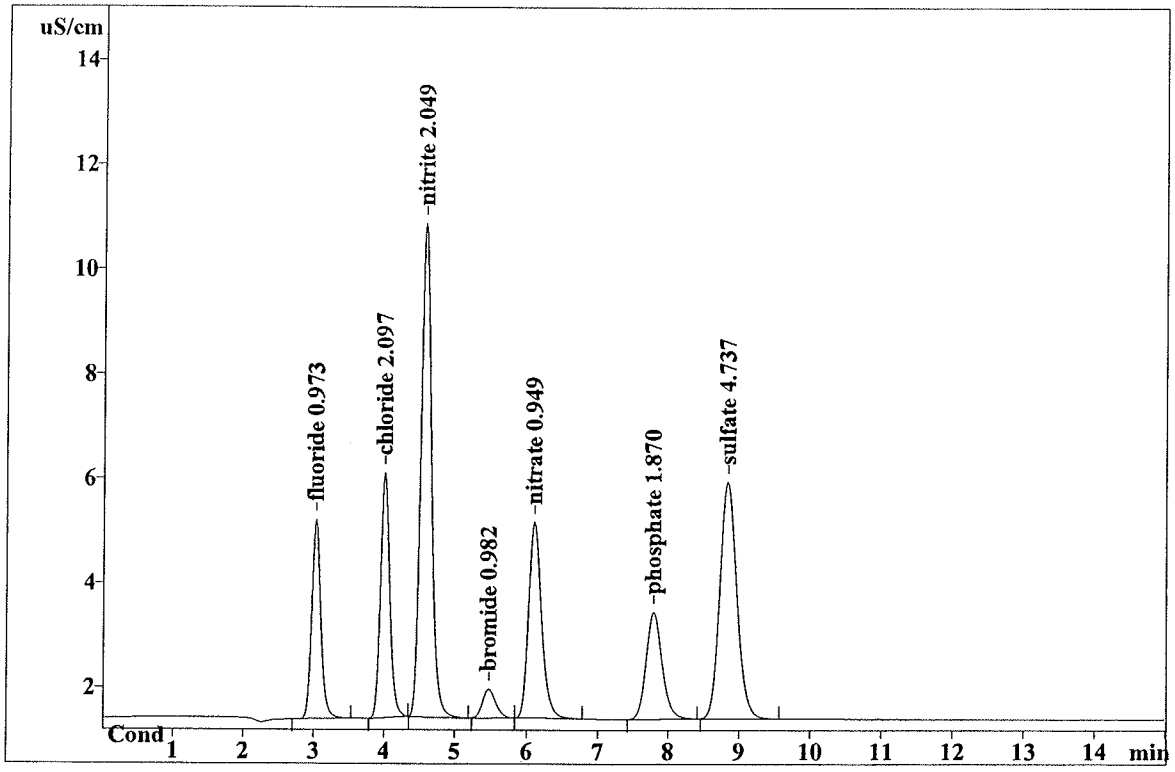
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:37:55 AM
Printed by: TWangc

Ident: AF31-13 CCV747
Analysis from: 6/24/2020 1:46:36 PM
File: _2020-06-24_13-46.chw Last save: 6/24/2020 2:01:33 PM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159365

SAMPLE: METHOD300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

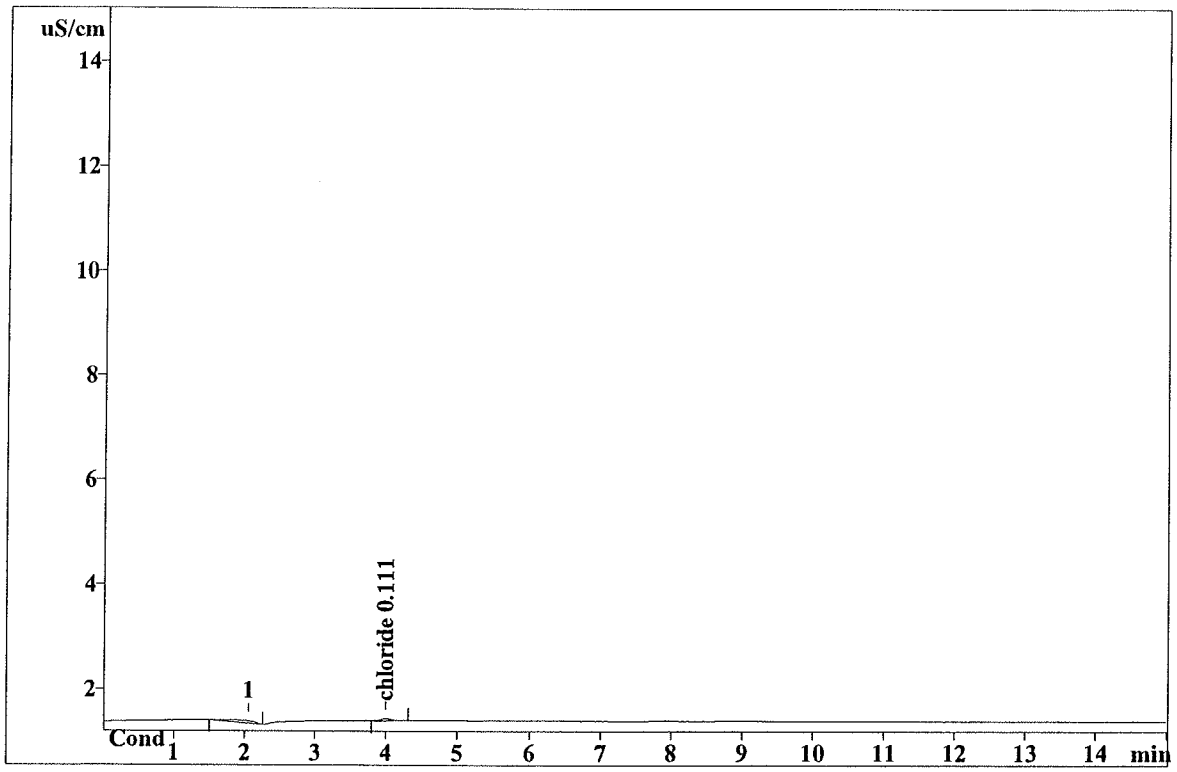
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.81	33.817	0.973	fluoride
2	4.00	4.67	42.734	2.097	chloride
3	4.56	9.43	99.584	2.049	nitrite
4	5.47	0.55	7.002	0.982	bromide
5	6.10	3.75	47.835	0.949	nitrate
6	7.79	2.04	32.772	1.870	phosphate
7	8.83	4.52	75.615	4.737	sulfate
7	15.00	28.77	339.359	13.656	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:45:43 AM
Printed by: TWangc

Ident: AF31-14 CCB747
Analysis from: 6/24/2020 2:03:41 PM
File: _2020-06-24_14-03.chw Last save: 6/25/2020 11:38:36 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159366

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

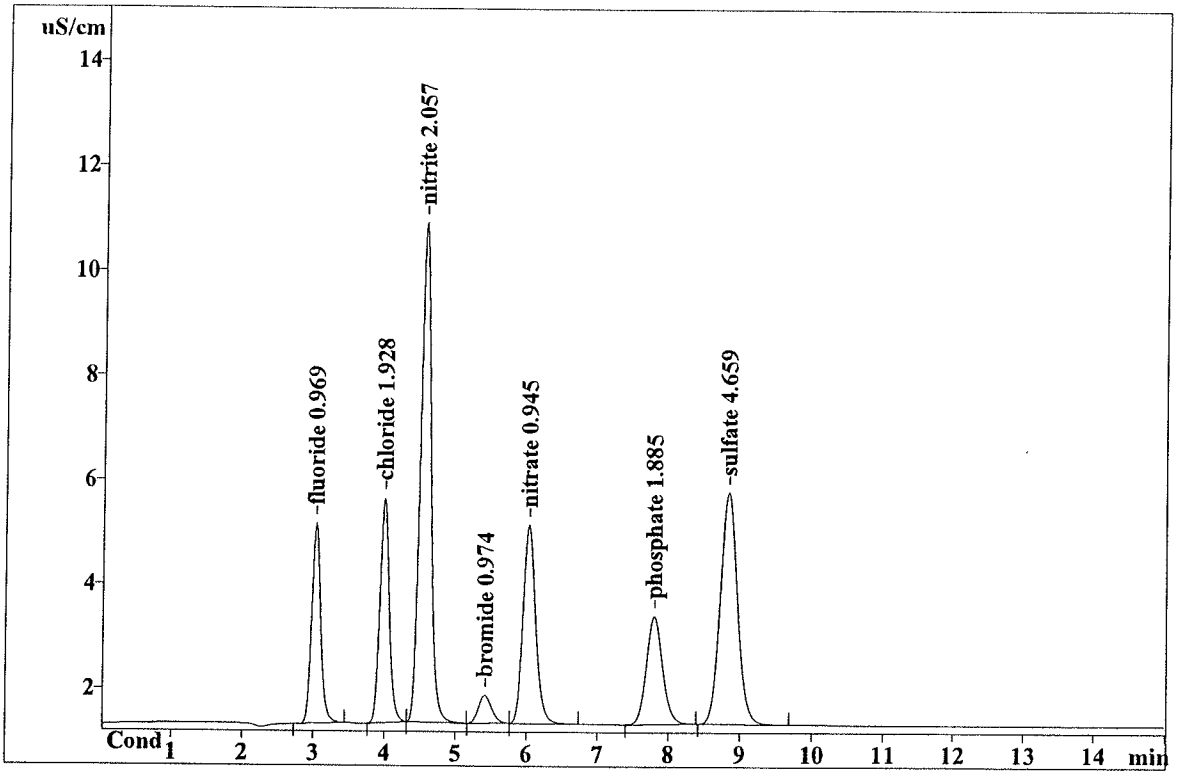
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.05	0.05	1.332	0.000	
2	4.00	0.04	0.423	0.111	chloride
2	15.00	0.09	1.755	0.111	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:06 AM
Printed by: TWangc

Ident: AF31-37 CCV751
Analysis from: 6/24/2020 9:29:35 PM
File: _2020-06-24_21-29.chw Last save: 6/24/2020 9:44:32 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159389

SAMPLE: METHOD300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

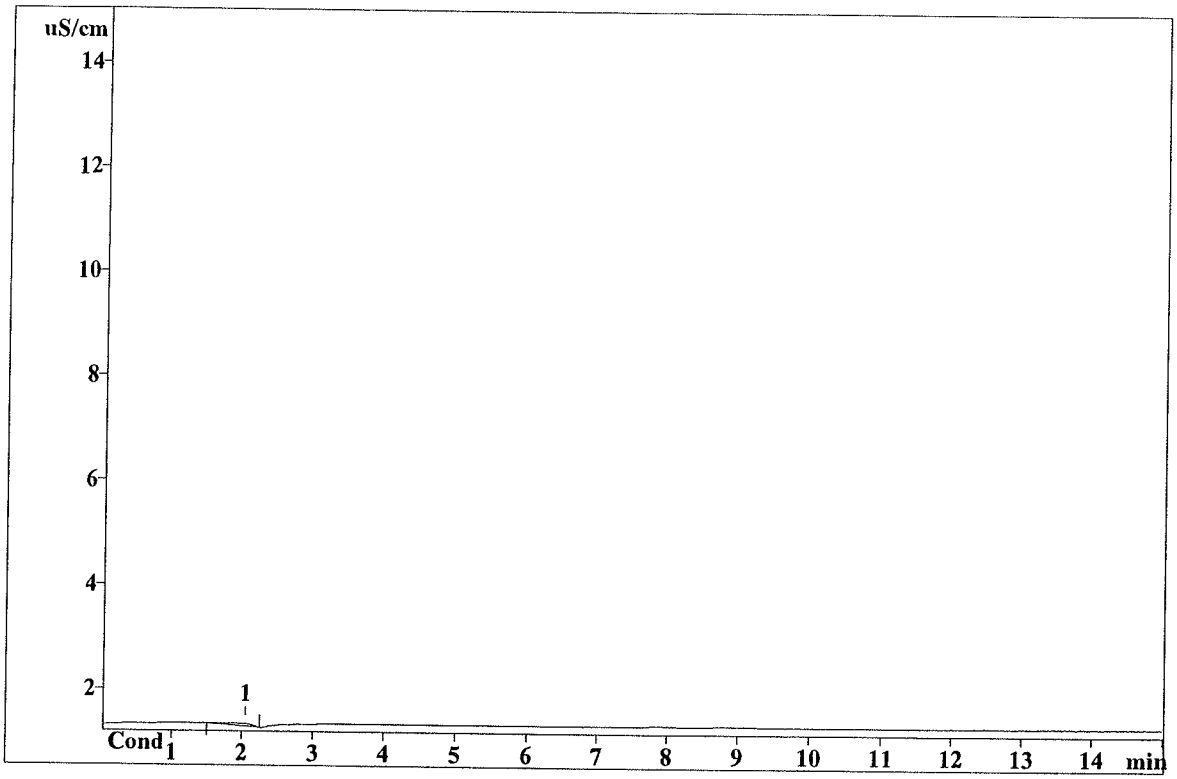


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.83	33.686	0.969	fluoride
2	3.98	4.30	39.140	1.928	chloride
3	4.53	9.55	99.972	2.057	nitrite
4	5.41	0.53	6.929	0.974	bromide
5	6.02	3.80	47.647	0.945	nitrate
6	7.79	2.06	33.057	1.885	phosphate
7	8.82	4.44	74.316	4.659	sulfate
7	15.00	28.51	334.746	13.418	

This report has been created by IC Net
METROHM LTD

Report date:	6/25/2020 11:39:18 AM		
Printed by:	TWangc		
Ident:	AF31-38 CCB751		
Analysis from:	6/24/2020 9:46:40 PM		
File:	_2020-06-24_21-46.chw	Last save:	6/24/2020 10:01:37 PM
Modified!			
Method:	ICD0-B24.mtw	Last save:	6/24/2020 10:23:36 AM
Run operator:	TWangc		
Analysis number:	159390		
SAMPLE:	METHOD300/9056/4110B		
:			
Vial number:	38		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

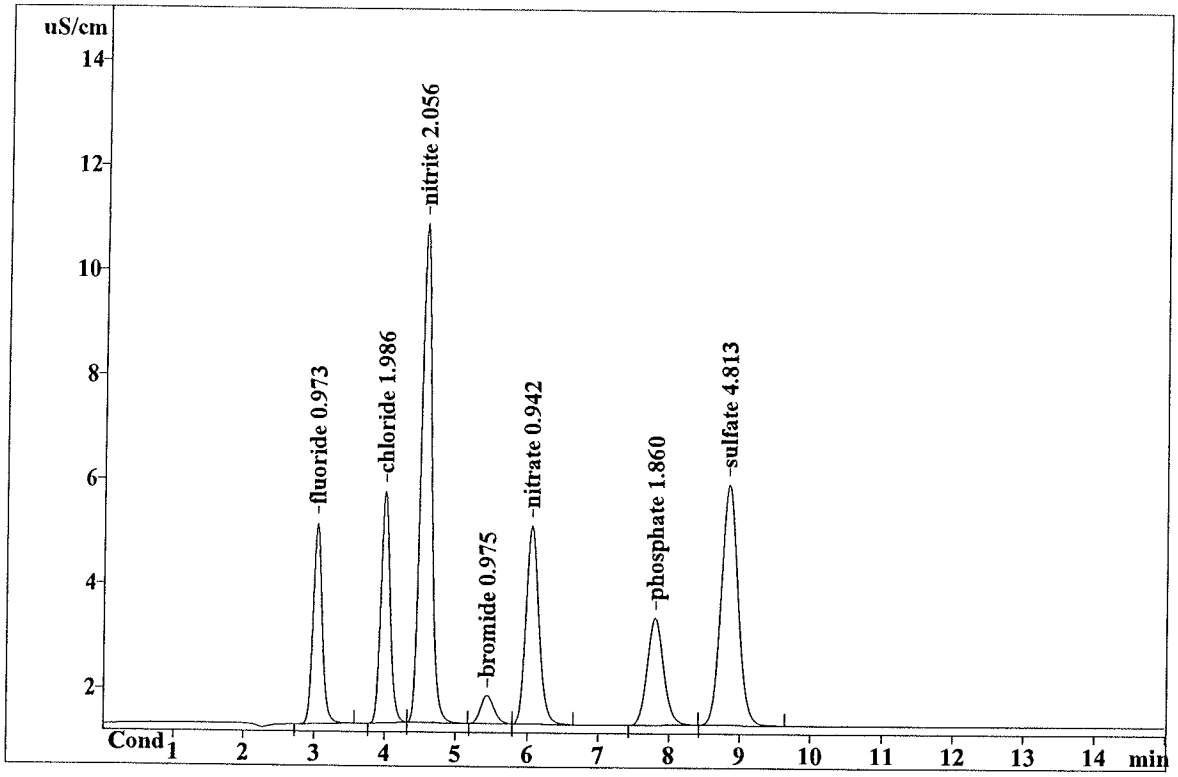
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.06	0.04	1.273	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:30 AM
Printed by: TWangc

Ident: AF31-49 CCV753
Analysis from: 6/25/2020 12:54:32 AM
File: _2020-06-25_00-54.chw Last save: 6/25/2020 1:09:28 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159401

SAMPLE: METHOD300/9056/4110B
:
Vial number: 49
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

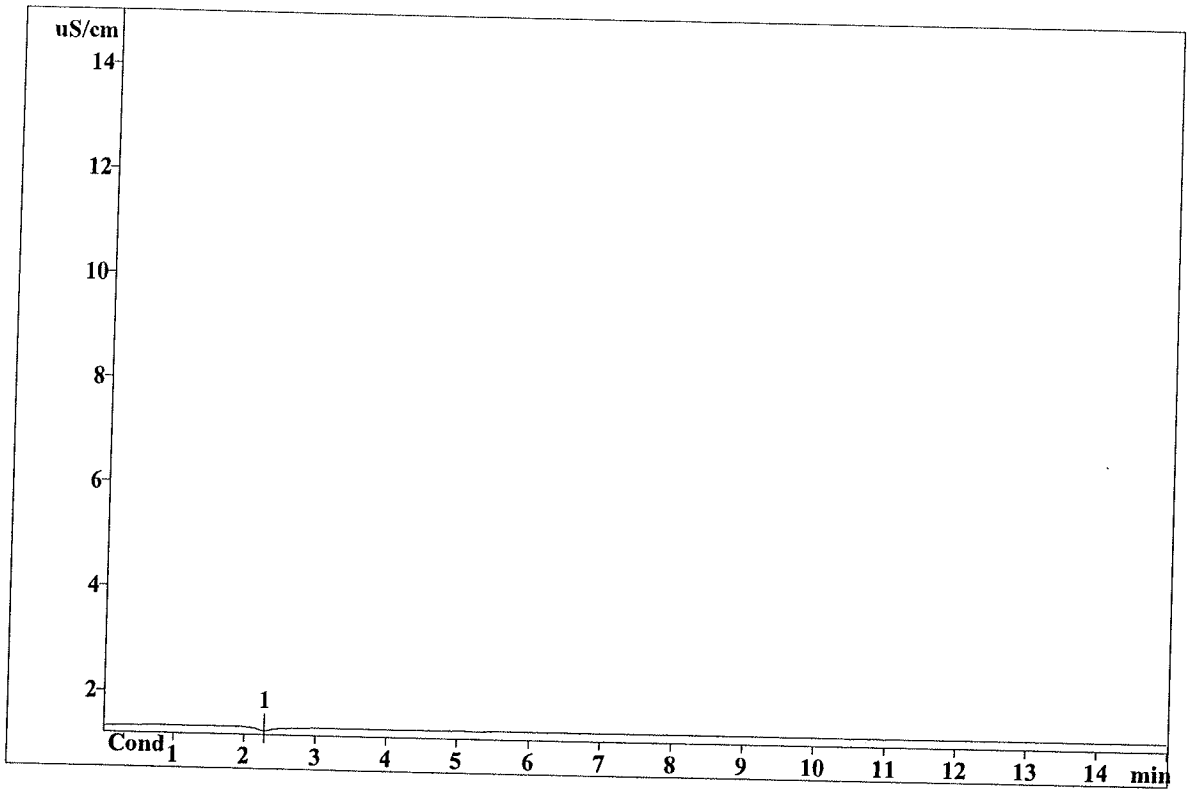


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.83	33.814	0.973	fluoride
2	3.99	4.43	40.382	1.986	chloride
3	4.55	9.55	99.939	2.056	nitrite
4	5.44	0.53	6.937	0.975	bromide
5	6.05	3.78	47.499	0.942	nitrate
6	7.80	2.03	32.588	1.860	phosphate
7	8.83	4.59	76.899	4.813	sulfate
7	15.00	28.75	338.059	13.607	

This report has been created by IC Net
METROHM LTD

Report date:	6/25/2020 11:39:46 AM		
Printed by:	TWangc		
Ident:	AF31-50 CCB753		
Analysis from:	6/25/2020 1:11:36 AM		
File:	_2020-06-25_01-11.chw	Last save:	6/25/2020 1:26:33 AM
Modified!			
Method:	ICD0-B24.mtw	Last save:	6/24/2020 10:23:36 AM
Run operator:	TWangc		
Analysis number:	159402		
SAMPLE:	METHOD300/9056/4110B		
:			
Vial number:	50		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.28	0.00	0.000	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	Concentrations (ppm)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (ppm)
F	10
Cl	5
NO_2	10
Br	20
NO_3	2
PO_4	5
SO_4	20

IC ELUENT PREPARATION Expiration Date: 03/20/20

Std ID	Aliquot	Final Vol*
SP2-01-07-01	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 03/21/20

Std ID	Aliquot	Final Vol*
SP2-01-22-02	100 mL	1 L

* Reagent Water ID: SW1A-08-21-09

Book #: AD0-067
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AB25
Method File: ICD0 - B24. mtw
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-11-42-03
ICV	SW3B-11-42-01
~~CCV~~ ICV1	SW3B-11-43-01
LCS	—
MS	—

Filters Lot #:
0.45 µm:
0.2 µm:

Snap Seal Containers Lot #:
4 oz: 04119002
1.5 oz:

Column: Metrosep A Supp 5-100
Flow Rate: 0.70 ml/min

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LO
Date: 2/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-02-24_20-30.chw	ICD0-B24.mtw	AB25-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_20-47.chw	ICD0-B24.mtw	AB25-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_21-04.chw	ICD0-B24.mtw	AB25-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD300/9056/4110B	0.05 PPM
2020-02-24_21-21.chw	ICD0-B24.mtw	AB25-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD300/9056/4110B	0.1 PPM
2020-02-24_21-39.chw	ICD0-B24.mtw	AB25-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD300/9056/4110B	0.2 PPM
2020-02-24_21-56.chw	ICD0-B24.mtw	AB25-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD300/9056/4110B	0.5 PPM
2020-02-24_22-13.chw	ICD0-B24.mtw	AB25-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD300/9056/4110B	1.0 PPM
2020-02-24_22-30.chw	ICD0-B24.mtw	AB25-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD300/9056/4110B	2.0 PPM
2020-02-24_22-47.chw	ICD0-B24.mtw	AB25-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD300/9056/4110B	5.0 PPM
2020-02-24_23-04.chw	ICD0-B24.mtw	AB25-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD300/9056/4110B	10.0 PPM
2020-02-24_23-21.chw	ICD0-B24.mtw	AB25-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD300/9056/4110B	20.0 PPM
2020-02-24_23-38.chw	ICD0-B24.mtw	AB25-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_23-55.chw	ICD0-B24.mtw	AB25-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1.0 PPM
2020-02-25_00-12.chw	ICD0-B24.mtw	AB25-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL 02/25/20

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF27
Method File:	ICD0-B2H.mtW
Analytical Batch:	ICF029W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	–
ICV	–
CCV	SW3B-13-08-01
LCS	SW3B-13-08-02
MS	SCP refer to LCS Parent ID

Filters Lot #:	Snap Seal Containers Lot #:
0.45 µm: 00191103	4 oz:
~~0.2 µm~~ 0.22 µm: 91478103 JW 6/22/20	1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 7/18/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 7/19/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SWA-009-03-04

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: TW

Date: 6/22/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-06-22_10-37.chw	ICD0-B24.mtw	AF27-01 CCV723	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_10-54.chw	ICD0-B24.mtw	AF27-02 CCB723	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-11.chw	ICD0-B24.mtw	AF27-03 ICF029WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-28.chw	ICD0-B24.mtw	AF27-04 ICF029WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_11-45.chw	ICD0-B24.mtw	AF27-05 ICF029WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_12-10.chw	ICD0-B24.mtw	AF27-06 CCV725	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_13-06.chw	ICD0-B24.mtw	AF27-07 CCB725	7	1.0	10.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_14-28.chw	ICD0-B24.mtw	AF27-08 F167-07I DF=100	8	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_14-45.chw	ICD0-B24.mtw	AF27-09 F167-04I DF=10000	9	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_15-02.chw	ICD0-B24.mtw	AF27-10 F164-01	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_15-19.chw	ICD0-B24.mtw	AF27-11 F155-01	11	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_15-36.chw	ICD0-B24.mtw	AF27-12 F155-02	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_16-04.chw	ICD0-B24.mtw	AF27-13 F167-04J DF=20000	13	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-21.chw	ICD0-B24.mtw	AF27-14 F167-04JM DF=2000	14	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-38.chw	ICD0-B24.mtw	AF27-15 F167-04JS DF=20000	15	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_16-55.chw	ICD0-B24.mtw	AF27-16 F167-04JD DF=2000	16	1.0	20000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-22_17-12.chw	ICD0-B24.mtw	AF27-17 F162-05I DF=20	17	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_18-59.chw	ICD0-B24.mtw	AF27-18 CCV727	18	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_19-16.chw	ICD0-B24.mtw	AF27-19 CCB727	19	1.0	1.0	1.0	100.0	0	METHOD 300/9056/4110B	
2020-06-22_19-34.chw	ICD0-B24.mtw	AF27-20 F155-01I DF=20	20	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_19-51.chw	ICD0-B24.mtw	AF27-21 F155-01J DF=200	21	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-08.chw	ICD0-B24.mtw	AF27-22 F155-02I DF=20	22	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-26.chw	ICD0-B24.mtw	AF27-23 F155-02J DF=200	23	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_20-43.chw	ICD0-B24.mtw	AF27-24 F162-01I DF=20	24	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-00.chw	ICD0-B24.mtw	AF27-25 F162-01J DF=200	25	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-17.chw	ICD0-B24.mtw	AF27-26 F164-01I DF=40	26	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-34.chw	ICD0-B24.mtw	AF27-27 F164-01ID DF=40	27	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_21-51.chw	ICD0-B24.mtw	AF27-28 F164-01IM DF=40	28	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-08.chw	ICD0-B24.mtw	AF27-29 F164-01IS DF=40	29	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-25.chw	ICD0-B24.mtw	AF27-30 CCV729	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-42.chw	ICD0-B24.mtw	AF27-31 CCB729	31	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_22-59.chw	ICD0-B24.mtw	AF27-32 F162-02I DF=20	32	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-16.chw	ICD0-B24.mtw	AF27-33 F162-02J DF=200	33	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-33.chw	ICD0-B24.mtw	AF27-34 F162-04I DF=20	34	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-22_23-50.chw	ICD0-B24.mtw	AF27-35 F162-04J DF=200	35	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-08.chw	ICD0-B24.mtw	AF27-36 F162-05J DF=200	36	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-25.chw	ICD0-B24.mtw	AF27-37 F162-07I DF=20	37	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-42.chw	ICD0-B24.mtw	AF27-38 F164-01J DF=2	38	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_00-59.chw	ICD0-B24.mtw	AF27-39 F164-01JD DF=2	39	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-16.chw	ICD0-B24.mtw	AF27-40 F164-01JM DF=2	40	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-33.chw	ICD0-B24.mtw	AF27-41 F164-01JS DF=2	41	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_01-50.chw	ICD0-B24.mtw	AF27-42 CCV731	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-07.chw	ICD0-B24.mtw	AF27-43 CCB731	43	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-24.chw	ICD0-B24.mtw	AF27-44 F162-07J DF=200	44	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-41.chw	ICD0-B24.mtw	AF27-45 F162-08I DF=20	45	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_02-58.chw	ICD0-B24.mtw	AF27-46 F162-08J DF=200	46	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-15.chw	ICD0-B24.mtw	AF27-47 F162-10I DF=20	47	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-32.chw	ICD0-B24.mtw	AF27-48 F162-10J DF=200	48	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_03-50.chw	ICD0-B24.mtw	AF27-49 F162-11I DF=20	49	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-07.chw	ICD0-B24.mtw	AF27-50 F162-11J DF=200	50	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-24.chw	ICD0-B24.mtw	AF27-51 F167-03I DF=200	51	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-41.chw	ICD0-B24.mtw	AF27-52 CCV733	52	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-23_04-58.chw	ICD0-B24.mtw	AF27-53 CCB733	53	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL 6/23/20

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF29
Method File:	ICD0-B24.mtw
Analytical Batch:	ICF031W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	–
ICV	–
CCV	SW3B-13-08-03
LCS	SW3B-13-09-01
MS	SCP refer to LCS Parent ID

Filters Lot #:	Snap Seal Containers Lot #:
0.45 µm: 00191103	4 oz:
~~0.22~~ 0.2 µm: 91478103 TW 6/23/20	1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION — Expiration Date: 7/19/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 7/22/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SW1A-009-03-03

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: TW

Date: 6/23/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-23_10-20.chw	ICD0-B24.mtw	AF29-01 CCV735	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_10-37.chw	ICD0-B24.mtw	AF29-02 CCB735	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_10-54.chw	ICD0-B24.mtw	AF29-03 ICF031WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_11-11.chw	ICD0-B24.mtw	AF29-04 ICF031WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_11-28.chw	ICD0-B24.mtw	AF29-05 ICF031WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_11-45.chw	ICD0-B24.mtw	AF29-06 F182-01I DF=20	6	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_12-17.chw	ICD0-B24.mtw	AF29-07 F162-04I DF=100	7	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_12-34.chw	ICD0-B24.mtw	AF29-08 F162-08I DF=100	8	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_12-51.chw	ICD0-B24.mtw	AF29-09 F162-10I DF=50	9	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_13-08.chw	ICD0-B24.mtw	AF29-10 F162-11I DF=50	10	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_14-23.chw	ICD0-B24.mtw	AF29-11 F159-01I DF=20	11	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_14-40.chw	ICD0-B24.mtw	AF29-12 F159-01J DF=100	12	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_14-57.chw	ICD0-B24.mtw	AF29-13 CCV737	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_15-19.chw	ICD0-B24.mtw	AF29-14 CCB737	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_15-36.chw	ICD0-B24.mtw	AF29-15 F186-01	15	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_15-53.chw	ICD0-B24.mtw	AF29-16 F182-01IM DF=20	16	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_16-10.chw	ICD0-B24.mtw	AF29-17 F182-01IS DF=20	17	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_16-28.chw	ICD0-B24.mtw	AF29-18 F182-01ID DF=20	18	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_16-45.chw	ICD0-B24.mtw	AF29-19 F159-02I DF=40	19	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_17-02.chw	ICD0-B24.mtw	AF29-20 F159-15I DF=200	20	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_17-19.chw	ICD0-B24.mtw	AF29-21 F159-04J DF=10000	21	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_17-36.chw	ICD0-B24.mtw	AF29-22 F186-01D	22	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_17-53.chw	ICD0-B24.mtw	AF29-23 F186-01M	23	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_18-10.chw	ICD0-B24.mtw	AF29-24 F186-01S	24	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_18-27.chw	ICD0-B24.mtw	AF29-25 CCV739	25	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_18-44.chw	ICD0-B24.mtw	AF29-26 CCB739	26	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_19-01.chw	ICD0-B24.mtw	AF29-27 F159-08I DF=20	27	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_19-18.chw	ICD0-B24.mtw	AF29-28 F159-08J DF=200	28	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_19-35.chw	ICD0-B24.mtw	AF29-29 F159-09I DF=200	29	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_19-53.chw	ICD0-B24.mtw	AF29-30 F159-09J DF=10000	30	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_20-10.chw	ICD0-B24.mtw	AF29-31 F159-06I DF=40	31	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_20-27.chw	ICD0-B24.mtw	AF29-32 F186-01I DF=5	32	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_20-44.chw	ICD0-B24.mtw	AF29-33 F186-01ID DF=5	33	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_21-01.chw	ICD0-B24.mtw	AF29-34 F186-01IM DF=5	34	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_21-18.chw	ICD0-B24.mtw	AF29-35 F186-01IS DF=5	35	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_21-35.chw	ICD0-B24.mtw	AF29-36 F159-04I DF=200	36	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_21-52.chw	ICD0-B24.mtw	AF29-37 CCV741	37	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_22-09.chw	ICD0-B24.mtw	AF29-38 CCB741	38	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_22-26.chw	ICD0-B24.mtw	AF29-39 F159-05I DF=200	39	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-23_22-43.chw	ICD0-B24.mtw	AF29-40 F159-05J DF=10000	40	1.0	10000.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_23-00.chw	ICD0-B24.mtw	AF29-41 CCV743	41	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-23_23-17.chw	ICD0-B24.mtw	AF29-42 CCB743	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

TW
FINAL 6/26/20

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF31
Method File:	ICD0 - B24.mtw
Analytical Batch:	ICF033W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	———
ICV	———
CCV	SW3B-13—09-02
LCS	SW3B-13—09-03
MS	SOP Refer to LCS parent ID

Filters Lot #: Snap Seal Containers Lot #:

0.45 µm: 00191103 4 oz:

~~0.2~~ 0.22 µm: 91478103 1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 7/19/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 7/22/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SW1A-009-03-03

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LD

Date: 6/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-24_10-21.chw	ICD0-B24.mtw	AF31-01 CCV745	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_10-38.chw	ICD0-B24.mtw	AF31-02 CCB745	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_10-55.chw	ICD0-B24.mtw	AF31-03 ICF033WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-12.chw	ICD0-B24.mtw	AF31-04 ICF033WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-29.chw	ICD0-B24.mtw	AF31-05 ICF033WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-46.chw	ICD0-B24.mtw	AF31-06 F190-03	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-04.chw	ICD0-B24.mtw	AF31-07 F193-04	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-21.chw	ICD0-B24.mtw	AF31-08 F193-02	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-38.chw	ICD0-B24.mtw	AF31-09 F190-01I DF=2	9	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_12-55.chw	ICD0-B24.mtw	AF31-10 F190-04	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-12.chw	ICD0-B24.mtw	AF31-11 F195-01I DF=5	11	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-29.chw	ICD0-B24.mtw	AF31-12 F193-03	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-46.chw	ICD0-B24.mtw	AF31-13 CCV747	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-03.chw	ICD0-B24.mtw	AF31-14 CCB747	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-20.chw	ICD0-B24.mtw	AF31-15 F190-02	15	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-37.chw	ICD0-B24.mtw	AF31-16 F193-04I DF=2	16	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-54.chw	ICD0-B24.mtw	AF31-17 F193-02I DF=5	17	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_15-12.chw	ICD0-B24.mtw	AF31-18 F193-03I DF=5	18	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_15-29.chw	ICD0-B24.mtw	AF31-19 F195-01J DF=2	19	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_15-46.chw	ICD0-B24.mtw	AF31-20 F193-04J DF=5	20	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_16-03.chw	ICD0-B24.mtw	AF31-21 F193-02J DF=10	21	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_16-20.chw	ICD0-B24.mtw	AF31-22 F193-03J DF=10	22	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-06.chw	ICD0-B24.mtw	AF31-23 F193-04JM DF=5	23	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-24.chw	ICD0-B24.mtw	AF31-24 F193-04JD DF=5	24	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-41.chw	ICD0-B24.mtw	AF31-25 CCV749	25	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-21.chw	ICD0-B24.mtw	AF31-26 CCB749	26	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-38.chw	ICD0-B24.mtw	AF31-27 F193-04JS DF=5	27	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-55.chw	ICD0-B24.mtw	AF31-28 F193-04K DF=20	28	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-12.chw	ICD0-B24.mtw	AF31-29 F193-04KD DF=20	29	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-30.chw	ICD0-B24.mtw	AF31-30 F193-04KM DF=20	30	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-47.chw	ICD0-B24.mtw	AF31-31 F193-04KS DF=20	31	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-04.chw	ICD0-B24.mtw	AF31-32 F193-02K DF=20	32	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-21.chw	ICD0-B24.mtw	AF31-33 F193-03K DF=20	33	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-38.chw	ICD0-B24.mtw	AF31-34 F190-01J DF=20	34	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-55.chw	ICD0-B24.mtw	AF31-35 F190-01K DF=200	35	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_21-12.chw	ICD0-B24.mtw	AF31-36 F190-02R	36	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_21-29.chw	ICD0-B24.mtw	AF31-37 CCV751	37	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_21-46.chw	ICD0-B24.mtw	AF31-38 CCB751	38	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-03.chw	ICD0-B24.mtw	AF31-39 F190-03I DF=5	39	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-20.chw	ICD0-B24.mtw	AF31-40 F190-03J DF=100	40	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-37.chw	ICD0-B24.mtw	AF31-41 F190-04I DF=20	41	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-54.chw	ICD0-B24.mtw	AF31-42 F193-02T DF=100	42	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-12.chw	ICD0-B24.mtw	AF31-43 F193-03T DF=100	43	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-29.chw	ICD0-B24.mtw	AF31-44 F162-04I DF=50	44	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-46.chw	ICD0-B24.mtw	AF31-45 F159-02I DF=100	45	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-03.chw	ICD0-B24.mtw	AF31-46 F159-06I DF=100	46	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-20.chw	ICD0-B24.mtw	AF31-47 F159-15I DF=400	47	1.0	400.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-37.chw	ICD0-B24.mtw	AF31-48 F178-01I DF=20	48	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-25_00-54.chw	ICD0-B24.mtw	AF31-49 CCV753	49	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-11.chw	ICD0-B24.mtw	AF31-50 CCB753	50	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-28.chw	ICD0-B24.mtw	AF31-51 F193-04T DF=50	51	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-45.chw	ICD0-B24.mtw	AF31-52 F193-04TD DF=50	52	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-02.chw	ICD0-B24.mtw	AF31-53 F193-04TM DF=50	53	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-19.chw	ICD0-B24.mtw	AF31-54 F193-04TS DF=50	54	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-37.chw	ICD0-B24.mtw	AF31-55 F178-01J DF=200	55	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-54.chw	ICD0-B24.mtw	AF31-56 F178-02I DF=20	56	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_03-11.chw	ICD0-B24.mtw	AF31-57 F178-02J DF=50	57	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_03-28.chw	ICD0-B24.mtw	AF31-58 F178-04I DF=20	58	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-25_03-45.chw	ICD0-B24.mtw	AF31-59 F178-04J DF=100	59	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-02.chw	ICD0-B24.mtw	AF31-60 F178-05I DF=20	60	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-19.chw	ICD0-B24.mtw	AF31-61 CCV755	61	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-36.chw	ICD0-B24.mtw	AF31-62 CCB755	62	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-53.chw	ICD0-B24.mtw	AF31-63 F178-05J DF=200	63	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-10.chw	ICD0-B24.mtw	AF31-64 F178-07I DF=20	64	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-27.chw	ICD0-B24.mtw	AF31-65 F178-07J DF=200	65	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-44.chw	ICD0-B24.mtw	AF31-66 F178-08I DF=20	66	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-01.chw	ICD0-B24.mtw	AF31-67 F178-08J DF=200	67	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-19.chw	ICD0-B24.mtw	AF31-68 F178-10I DF=20	68	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-36.chw	ICD0-B24.mtw	AF31-69 F178-10J DF=200	69	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-53.chw	ICD0-B24.mtw	AF31-70 F178-11I DF=20	70	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-10.chw	ICD0-B24.mtw	AF31-71 F178-11J DF=100	71	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-27.chw	ICD0-B24.mtw	AF31-72 CCV757	72	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-44.chw	ICD0-B24.mtw	AF31-73 CCB757	73	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column:	METROSEP A SUPP 5
		Column size:	100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
06/05/14

RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D0 (761 IC) IC column: METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**2.99**	2.90	3.08	**0.090**
CHLORIDE	**3.96**	3.86	4.07	**0.104**
NITRITE	**4.54**	4.38	4.70	**0.159**
BROMIDE	**5.44**	5.11	5.76	**0.329**
NITRATE	**6.10**	5.68	6.52	**0.420**
PHOSPHATE	**7.79**	7.26	8.31	**0.528**
SULFATE	**8.83**	8.03	9.63	**0.797**

ICD0-B24.mtw

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SM2320B
TOTAL ALKALINITY

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF014WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF014WL/ALF014WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF014WB	ND	1	NA	5	5	06/25/2016:28	NA	20E5F0903	20E5F09	ALF014W	NA	NA
LCS1W	ALF014WL	72.7	1	NA	5	5	06/25/2016:36	NA	20E5F0904	20E5F09	ALF014W	NA	NA
LCD1W	ALF014WC	75.7	1	NA	5	5	06/25/2016:43	NA	20E5F0905	20E5F09	ALF014W	NA	NA
MW22-GW061720	F162-01	288	1	NA	5	5	06/25/2018:50	NA	20E5F0918	20E5F09	ALF014W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02	279	1	NA	5	5	06/25/2018:57	NA	20E5F0919	20E5F09	ALF014W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04	254	1	NA	5	5	06/25/2019:05	NA	20E5F0920	20E5F09	ALF014W	06/17/2016:25	06/19/20
MW13S-GW061820	F162-05	332	1	NA	5	5	06/25/2019:14	NA	20E5F0921	20E5F09	ALF014W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07	273	1	NA	5	5	06/25/2019:22	NA	20E5F0922	20E5F09	ALF014W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08	229	1	NA	5	5	06/25/2019:29	NA	20E5F0923	20E5F09	ALF014W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10	227	1	NA	5	5	06/25/2019:37	NA	20E5F0924	20E5F09	ALF014W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11	257	1	NA	5	5	06/25/2019:46	NA	20E5F0925	20E5F09	ALF014W	06/18/2012:35	06/19/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALF014WB	ALF014WL	ALF014WC
LAB FILE ID :	20E5F0903	20E5F0904	20E5F0905
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/25/2016:28	06/25/2016:36	06/25/2016:43
PREP BATCH :	ALF014W	ALF014W	ALF014W
CALIBRATION REF:	20E5F09	20E5F09	20E5F09

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	72.7	96	75.8	75.7	100	4	80-120	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☐ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Reagent Water: RW1-19-003

Comments:

Book#: AAL-043

Instrument No.: ☐ 53 ☑ E5

Analytical Batch: 20E5F09

Analytical Sequence: ALF014

SOP #	Rev. #
☑ EMAX-2320B	6
☐ EMAX-	

STANDARDS ID		Conc. (mg/L)
0.02N HCL	SWR1-02-24-10	0.02N
LCS	SW1-02-05-02	75.8
MS/MSD	NA	NA
ICV	NA	NA

pH Buffer	ID
pH 4	SW1-02-05-21
pH 7	SW1-02-05-22
pH 10	SW1-02-05-23
pH 8.0 (Check)	SW1-02-05-19
pH Strip	HC998032

Analyzed By: LD/TK

Date: 6/25/20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1167 **Analytical Batch#** 20E5F09

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F09	06/25/20	4:14 PM	7.94	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F09	06/25/20	4:22 PM	8.90	.36	1.51	-1.00	14.54	60.21	31.13	29.09	.00	
3	ALF014WB	20E5F09	06/25/20	4:28 PM	6.80	.00	.07	.11	.00	1.01	1.01	.00	.00	
4	ALF014WL	20E5F09	06/25/20	4:36 PM	9.04	1.12	1.82	-1.00	44.64	72.74	.00	56.21	16.53	
5	ALF014WC	20E5F09	06/25/20	4:43 PM	9.07	1.18	1.89	-1.00	47.23	75.74	.00	57.00	18.73	
6	F167-01	20E5F09	06/25/20	4:58 PM	7.50	.00	24.73	-1.00	.00	989.04	989.04	.00	.00	
7	F167-03	20E5F09	06/25/20	5:05 PM	7.10	.00	7.09	-1.00	.00	283.67	283.67	.00	.00	
8	F167-04	20E5F09	06/25/20	5:12 PM	7.05	.00	4.30	-1.00	.00	171.93	171.93	.00	.00	
9	F167-04D	20E5F09	06/25/20	5:19 PM	7.07	.00	4.33	-1.00	.00	173.03	173.03	.00	.00	
10	F167-05	20E5F09	06/25/20	5:29 PM	7.44	.00	11.24	-1.00	.00	449.57	449.57	.00	.00	
11	F167-06	20E5F09	06/25/20	5:38 PM	6.74	.00	10.80	-1.00	.00	432.06	432.06	.00	.00	
12	F167-07	20E5F09	06/25/20	5:51 PM	7.47	.00	19.57	-1.00	.00	782.92	782.92	.00	.00	
13	F167-08	20E5F09	06/25/20	6:08 PM	7.58	.00	31.63	-1.00	.00	1,265.31	1,265.31	.00	.00	
14	F167-09	20E5F09	06/25/20	6:19 PM	7.85	.00	11.83	-1.00	.00	473.23	473.23	.00	.00	
15	F167-10	20E5F09	06/25/20	6:26 PM	7.08	.00	3.97	-1.00	.00	158.61	158.61	.00	.00	
16	F167-11	20E5F09	06/25/20	6:33 PM	7.19	.00	5.39	-1.00	.00	215.40	215.40	.00	.00	
17	F164-01	20E5F09	06/25/20	6:40 PM	8.05	.00	4.67	-1.00	.00	186.82	186.82	.00	.00	
18	F162-01	20E5F09	06/25/20	6:50 PM	7.52	.00	7.21	-1.00	.00	288.40	288.40	.00	.00	

Analyzed by: LD TK

Reviewed by: TK Date: 07/06/20

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Run Number 1167 Analytical Batch# 20E5F09

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F162-02	20E5F09	06/25/20	6:57 PM	7.55	.00	6.99	-1.00	.00	279.47	279.47	.00	.00	
20	F162-04	20E5F09	06/25/20	7:05 PM	7.63	.00	6.34	-1.00	.00	253.61	253.61	.00	.00	
21	F162-05	20E5F09	06/25/20	7:14 PM	7.67	.00	8.31	-1.00	.00	332.36	332.36	.00	.00	
22	F162-07	20E5F09	06/25/20	7:22 PM	7.50	.00	6.82	-1.00	.00	272.94	272.94	.00	.00	
23	F162-08	20E5F09	06/25/20	7:29 PM	7.63	.00	5.72	-1.00	.00	228.74	228.74	.00	.00	
24	F162-10	20E5F09	06/25/20	7:37 PM	7.68	.00	5.68	-1.00	.00	227.26	227.26	.00	.00	
25	F162-11	20E5F09	06/25/20	7:46 PM	7.69	.00	6.43	-1.00	.00	257.08	257.08	.00	.00	
26	RINSE	20E5F09	06/25/20	7:55 PM	8.21	.00	.16	.21	.00	4.73	4.73	.00	.00	

Analyzed by: LD / TK

Reviewed by: TK Date: 07/06/20

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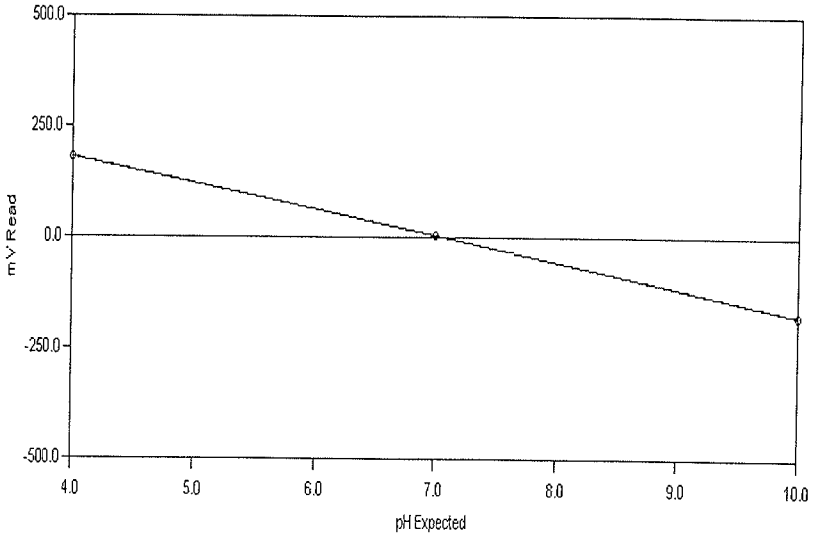
PC-TitratION PLUS
Calibration Report

Calibration Record # 825



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/25/2020
Channel	1	Time	4:12 PM
Probe Type	pH	Temperature	298.81 K 25.66 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.385	CorrCoeff	1.0000
Intercept	3.093	Equation: Y = (-59.385) X + (3.093)	

Calibration Validity **True** Operator

	Result	Minimum	Maximum
Slope	-59.385	-65.00	-53.00
Intercept	3.093	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	**Standard**	**Reading**
	4.00	181.27
	7.00	3.05
	10.00	-175.04

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PC-Titrate For Windows

Running List Report

Order Number - 20E5F09

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF014WB	6	.00	25.00
5	PH-ALK	ALF014WL	7	.00	25.00
6	PH-ALK	ALF014WC	8	.00	25.00
7	PH-ALK	F167-01	9	.00	25.00
8	PH-ALK	F167-03	10	.00	25.00
9	PH-ALK	F167-04	11	.00	25.00
10	PH-ALK	F167-04D	12	.00	25.00
11	PH-ALK	F167-05	13	.00	25.00
12	PH-ALK	F167-06	14	.00	25.00
13	PH-ALK	F167-07	15	.00	25.00
14	PH-ALK	F167-08	16	.00	25.00
15	PH-ALK	F167-09	17	.00	25.00
16	PH-ALK	F167-10	18	.00	25.00
17	PH-ALK	F167-11	19	.00	25.00
18	PH-ALK	F164-01	20	.00	25.00
19	PH-ALK	F162-01	21	.00	25.00
20	PH-ALK	F162-02	22	.00	25.00
21	PH-ALK	F162-04	23	.00	25.00
22	PH-ALK	F162-05	24	.00	25.00
23	PH-ALK	F162-07	25	.00	25.00
24	PH-ALK	F162-08	26	.00	25.00
25	PH-ALK	F162-10	27	.00	25.00
26	PH-ALK	F162-11	28	.00	25.00
27	PH-ALK	RINSE	29	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW
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CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF007WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF007WL. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF007WB	ND	1	NA	10	10	06/23/2015:55	NA	20TDF00701	20TDF007	TDF007W	NA	NA
LCS1W	TDF007WL	992	1	NA	10	10	06/23/2015:55	NA	20TDF00702	20TDF007	TDF007W	NA	NA
MW22-GW061720	F162-01	934	1	NA	10	10	06/23/2015:55	NA	20TDF00716	20TDF007	TDF007W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02	1080	1	NA	10	10	06/23/2015:55	NA	20TDF00717	20TDF007	TDF007W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04	680	1	NA	10	10	06/23/2015:55	NA	20TDF00718	20TDF007	TDF007W	06/17/2016:25	06/19/20
MW13S-GW061820	F162-05	1270	1	NA	10	10	06/23/2015:55	NA	20TDF00719	20TDF007	TDF007W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07	1120	1	NA	10	10	06/23/2015:55	NA	20TDF00720	20TDF007	TDF007W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08	731	1	NA	10	10	06/23/2015:55	NA	20TDF00721	20TDF007	TDF007W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10	677	1	NA	10	10	06/23/2015:55	NA	20TDF00722	20TDF007	TDF007W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11	691	1	NA	10	10	06/23/2015:55	NA	20TDF00723	20TDF007	TDF007W	06/18/2012:35	06/19/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : SM2540C

MATRIX : WATER
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : TDF007WB TDF007WL
LAB FILE ID : 20TDF00701 20TDF00702
DATE PREPARED : NA NA
DATE ANALYZED : 06/23/2015:55 06/23/2015:55
PREP BATCH : TDF007W TDF007W
CALIBRATION REF: 20TDF007 20TDF007

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	992	99	80-120

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF007

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF00701	TDF007WB	100	B	91.3252	91.3256	6/24/20 12:43	91.3256	6/24/20 16:08			0	0.4	4	ND
20TDF00702	TDF007WL	20	L	21.37465	21.39423	6/24/20 12:43	21.39449	6/24/20 16:09			0.26	19.84	992	992
20TDF00703	F155-01	20	1	21.06002	21.08269	6/24/20 12:43	21.08247	6/24/20 16:09			0.22	22.45	1122.5	1120
20TDF00704	F155-02	20	2	21.68362	21.70426	6/24/20 12:43	21.70407	6/24/20 16:09			0.19	20.45	1022.5	1020
20TDF00705	F155-02D	20	3	21.33222	21.35289	6/24/20 12:44	21.3525	6/24/20 16:09			0.39	20.28	1014	1010
20TDF00706	F159-01	20	4	21.34053	21.35565	6/24/20 12:44	21.35578	6/24/20 16:09			0.13	15.25	762.5	762
20TDF00707	F159-02	20	5	21.34275	21.35714	6/24/20 12:44	21.35707	6/24/20 16:10			0.07	14.32	716	716
20TDF00708	F159-04	2	6	21.35226	21.42397	6/24/20 12:44	21.42362	6/24/20 16:15			0.35	71.36	35680	35700
20TDF00709	F159-05	2	7	21.40939	21.48163	6/24/20 12:44	21.48131	6/24/20 16:16			0.32	71.92	35960	36000
20TDF00710	F159-06	20	8	21.49475	21.51136	6/24/20 12:45	21.51149	6/24/20 16:16			0.13	16.74	837	837
20TDF00711	F159-07	100	9	87.7233	87.7764	6/24/20 12:45	87.7763	6/24/20 16:16			0.1	53	530	530
20TDF00712	F159-08	20	10	21.40869	21.44286	6/24/20 12:45	21.44305	6/24/20 16:17			0.19	34.36	1718	1720
20TDF00713	F159-09	2	11	21.28109	21.35022	6/24/20 12:45	21.35018	6/24/20 16:17			0.04	69.09	34545	34500
20TDF00714	F159-10	10	12	21.37856	21.42004	6/24/20 12:46	21.42042	6/24/20 16:17			0.38	41.86	4186	4190
20TDF00715	F159-10D	10	13	21.4007	21.44136	6/24/20 12:46	21.44158	6/24/20 16:17			0.22	40.88	4088	4090
20TDF00716	F162-01	20	14	21.49106	21.5098	6/24/20 12:46	21.50974	6/24/20 16:18			0.06	18.68	934	934
20TDF00717	F162-02	20	15	21.41219	21.43383	6/24/20 12:46	21.43388	6/24/20 16:18			0.05	21.69	1084.5	1080
20TDF00718	F162-04	50	16	42.73548	42.76936	6/24/20 12:46	42.76948	6/24/20 16:18			0.12	34	680	680
20TDF00719	F162-05	20	17	21.41848	21.44371	6/24/20 12:47	21.44388	6/24/20 16:18			0.17	25.4	1270	1270
20TDF00720	F162-07	20	18	21.13161	21.15424	6/24/20 12:47	21.15396	6/24/20 16:18			0.28	22.35	1117.5	1120
20TDF00721	F162-08	50	19	43.41324	43.44936	6/24/20 12:47	43.44979	6/24/20 16:19			0.43	36.55	731	731
20TDF00722	F162-10	100	20	84.6207	84.6888	6/24/20 12:47	84.6884	6/24/20 16:19			0.4	67.7	677	677
20TDF00723	F162-11	50	21	43.7608	43.79489	6/24/20 12:48	43.79533	6/24/20 16:19			0.44	34.53	690.6	691
20TDF00724	F164-01	100	22	90.9287	90.9691	6/24/20 12:48	90.9694	6/24/20 16:20			0.3	40.7	407	407

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/23/20 15:54	PASSED
5	4.9996	6/23/20 15:55	PASSED
100	99.9994	6/23/20 15:55	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/23/20 16:02	PASSED
5	4.9997	6/23/20 16:02	PASSED
100	99.9995	6/23/20 16:02	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 12:41	PASSED
5	4.9996	6/24/20 12:42	PASSED
100	99.9995	6/24/20 12:42	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/24/20 16:20	PASSED
5	4.9998	6/24/20 16:20	PASSED
100	99.9998	6/24/20 16:21	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-19-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF007WB	4	ND	MB Passed
TDF007WL	992	1000	%R=99
#N/A	#N/A	#N/A	#N/A
F155-02D	1014	1022.5	%D=1
F159-10D	4088	4186	%D=2

Oven Drying Thermometer ID: 3078

Evaporating				
☑ Start	6/23/2020 16:20	Temp	90	°C
☑ End	6/24/2020 9:54	Temp	90	°C
1st Drying				
☑ Start	6/24/20 10:51	Temp	180	°C
☑ End	6/24/20 11:52	Temp	180	°C
2nd Drying				
☑ Start	6/24/20 14:19	Temp	180	°C
☑ End	6/24/20 15:19	Temp	180	°C
Final Drying				
☐ Start		Temp		°C
☐ End		Temp		°C

Notes:

SOP

Analyzedby: YAquin

Checked by: TK

☑ EMAX-2540C Rev. 9

Date: 06/26/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 642780221

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of eight(8) water samples were received on 06/19/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAG001WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAG001WL/NAG001WC were within LCS limits. Refer to LCS summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG001WB	ND	1	NA	0.05	0.01	07/07/2016:00	NA	20NAG00110	20NAG001	NAG001W	NA	NA
LCS1W	NAG001WL	0.482	1	NA	0.05	0.01	07/07/2016:00	NA	20NAG00111	20NAG001	NAG001W	NA	NA
LCD1W	NAG001WC	0.471	1	NA	0.05	0.01	07/07/2016:00	NA	20NAG00112	20NAG001	NAG001W	NA	NA
MW22-GW061720	F162-01I	3.44	5	NA	0.25	0.05	07/07/2016:00	NA	20NAG00113	20NAG001	NAG001W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02I	3.21	5	NA	0.25	0.05	07/07/2016:00	NA	20NAG00114	20NAG001	NAG001W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04I	0.905	2	NA	0.1	0.02	07/07/2016:01	NA	20NAG00115	20NAG001	NAG001W	06/17/2016:25	06/19/20
MW13S-GW061820	F162-05I	1.12	2	NA	0.1	0.02	07/07/2016:01	NA	20NAG00116	20NAG001	NAG001W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07I	0.811	2	NA	0.1	0.02	07/07/2016:02	NA	20NAG00117	20NAG001	NAG001W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08I	1.14	2	NA	0.1	0.02	07/07/2016:02	NA	20NAG00118	20NAG001	NAG001W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10I	0.905	2	NA	0.1	0.02	07/07/2016:03	NA	20NAG00119	20NAG001	NAG001W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11I	0.884	2	NA	0.1	0.02	07/07/2016:24	NA	20NAG00122	20NAG001	NAG001W	06/18/2012:35	06/19/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F162
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAG001WB	NAG001WL	NAG001WC
LAB FILE ID	: 20NAG00110	20NAG00111	20NAG00112
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 07/07/2016:00	07/07/2016:00	07/07/2016:00
PREP BATCH	: NAG001W	NAG001W	NAG001W
CALIBRATION REF	: 20NAG001	20NAG001	20NAG001

ACCESSION:

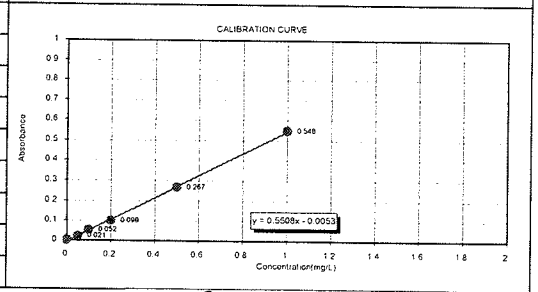
PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.482	96	0.500	0.471	94	2	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAG00101	S0	0	543nm	0	7/7/20 15:34	0.009672019	ND
20NAG00102	S1	0.05	543nm	0.021	7/7/20 15:34	0.047798996	96
20NAG00103	S2	0.1	543nm	0.052	7/7/20 15:34	0.104081675	104
20NAG00104	S3	0.2	543nm	0.099	7/7/20 15:34	0.189413479	95
20NAG00105	S4	0.5	543nm	0.267	7/7/20 15:34	0.494429289	99
20NAG00106	S5	1	543nm	0.548	7/7/20 15:35	1.004604543	100
20NAG00107	NO2-N Std Check	0.5	543nm	0.249	7/7/20 15:35	0.461749023	92
20NAG00108	ICV	0.5	543nm	0.288	7/7/20 15:35	0.532556265	107
20NAG00109	ICB	0	543nm	0	7/7/20 15:35	0.009672019	ND
20NAG00120	CCV1	0.5	543nm	0.291	7/7/20 16:03	0.538002976	108
20NAG00121	CCB1	0	543nm	0	7/7/20 16:03	0.009672019	ND
20NAG00129	CCV2	0.5	543nm	0.294	7/7/20 16:26	0.543449687	109
20NAG00130	CCB2	0	543nm	0	7/7/20 16:26	0.009672019	ND

Reduction Time	Coloring Time
7/7/20 14:29	7/7/20 14:30
7/7/20 14:32	7/7/20 14:33
7/7/20 14:35	7/7/20 14:36
7/7/20 14:38	7/7/20 14:39
7/7/20 14:42	7/7/20 14:43
7/7/20 14:45	7/7/20 14:46
NA	7/7/20 14:46
7/7/20 14:49	7/7/20 14:50
7/7/20 14:54	7/7/20 14:55

InstrumentID: H9



$$FC = [(A * CF) - Y] * DF$$

CF= 1.815570298 Y= -0.00967 r= 0.999809

DL Water(mg/L)	0.01	DL Soil(mg/Kg)	0.1
LOD Water(mg/L)	0.02	LOD Soil(mg/Kg)	0.2
LOQ Water(mg/L)	0.05	LOQ Soil(mg/Kg)	0.5

SOP

☑ EMAX-4500-NO3E Rev. 5

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-16-05	ICAL CCV (mg/L)	10	07/07/20
SW2B-30-16-06	ICV LCS MS Std (mg/L)	10	07/07/20
SW2B-30-16-07	NO2 CHK	10	07/07/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-56-50-01	NH4Cl-EDTA Soln	**	01/07/21
SWP1-56-49-03	HCl	1N	07/07/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	7/7/20 15:35
S1	0.1	20	7/7/20 15:35
S2	0.2	20	7/7/20 15:35
S3	0.4	20	7/7/20 15:35
S4	1	20	7/7/20 15:35
S5	2	20	7/7/20 15:35
ICV	1	20	7/7/20 15:35
CCV	1	20	7/7/20 15:35
NO2 CHK	1	20	7/7/20 15:35
LCS EV	1	20	7/7/20 15:35
MS EV	1	20	7/7/20 15:35

MicropipetteID: 842750082 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-56

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00110	NAG001WB	ND	ND	MB Passed
20NAG00111	NAG001WL	0.482	0.5	%R=96
20NAG00112	NAG001WC	0.471	0.5	%R=94

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00126	F493-03	0.06		
20NAG00128	F493-03M	0.57	0.5	%R=101

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAG00126	F493-03	0.06		12
20NAG00127	F493-03D	0.05	0.06	

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.02	7/7/20 10:33
SW1-02-05-11	7.01	7	7/7/20 10:34
SW1-02-05-12	10.02	10.04	7/7/20 10:35
SW1-02-05-08	Check Std (7.96)	7.98	7/7/20 10:36

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

Reviewed by: VD

Date: 07/07/20

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnt	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAG00110	NAG001WB	ND		mg/L	20	ml	NA	20	543nm	0 a	7/7/20 16:00	0	1		0.009672	1		VDuran	5.9.	8.55	7/7/20 14:58	7/7/20 14:59
20NAG00111	NAG001WL	0.482		mg/L	20	ml	NA	20	543nm	0.26 a	7/7/20 16:00	0	1		0.48172	1		VDuran	5.93	8.55	7/7/20 15:01	7/7/20 15:02
20NAG00112	NAG001WC	0.471		mg/L	20	ml	NA	20	543nm	0.254 a	7/7/20 16:00	0	1		0.470827	1		VDuran	5.93	8.55	7/7/20 15:05	7/7/20 15:06
20NAG00113	F162-01I	3.443		mg/L	20	ml	NA	20	543nm	0.374 a	7/7/20 16:00	0	5		3.443477	5		VDuran	1.45	8.52	7/7/20 15:08	7/7/20 15:09
20NAG00114	F162-02I	3.207		mg/L	20	ml	NA	20	543nm	0.348 a	7/7/20 16:00	0	5		3.207452	5		VDuran	1.4	8.52	7/7/20 15:11	7/7/20 15:12
20NAG00115	F162-04I	0.905		mg/L	20	ml	NA	20	543nm	0.244 a	7/7/20 16:01	0	2		0.905342	2		VDuran	1.38	8.57	7/7/20 15:14	7/7/20 15:15
20NAG00116	F162-05I	1.123		mg/L	20	ml	NA	20	543nm	0.304 a	7/7/20 16:01	0	2		1.123211	2		VDuran	1.38	8.55	7/7/20 15:18	7/7/20 15:19
20NAG00117	F162-07I	0.811		mg/L	20	ml	NA	20	543nm	0.218 a	7/7/20 16:02	0	2		0.810933	2		VDuran	1.41	8.53	7/7/20 15:21	7/7/20 15:22
20NAG00118	F162-08I	1.145		mg/L	20	ml	NA	20	543nm	0.31 a	7/7/20 16:02	0	2		1.144998	2		VDuran	1.37	8.5	7/7/20 15:24	7/7/20 15:25
20NAG00119	F162-10I	0.905		mg/L	20	ml	NA	20	543nm	0.244 a	7/7/20 16:03	0	2		0.905342	2		VDuran	1.36	8.52	7/7/20 15:27	7/7/20 15:29
20NAG00120	CCV1	0.538		mg/L	20	ml	NA	20	543nm	0.291 a	7/7/20 16:03	0	1		0.538003	1		VDuran			7/7/20 15:31	7/7/20 15:32
20NAG00121	CCB1	ND		mg/L	20	ml	NA	20	543nm	0 a	7/7/20 16:03	0	1		0.009672	1		VDuran			7/7/20 15:36	7/7/20 15:37
20NAG00122	F162-11I	0.884		mg/L	20	ml	NA	20	543nm	0.238 a	7/7/20 16:24	0	2		0.883556	2		VDuran	1.38	8.54	7/7/20 15:39	7/7/20 15:40
20NAG00123	F186-01I	1.247		mg/L	20	ml	NA	20	543nm	0.338 a	7/7/20 16:25	0	2		1.24667	2		VDuran	1.38	8.53	7/7/20 15:43	7/7/20 15:44
20NAG00124	F493-01	0.0787		mg/L	20	ml	NA	20	543nm	0.038 a	7/7/20 16:25	0	1		0.078664	1		VDuran	1.07	8.5	7/7/20 15:46	7/7/20 15:47
20NAG00125	F493-02	0.0532		mg/L	20	ml	NA	20	543nm	0.024 a	7/7/20 16:25	0	1		0.053246	1		VDuran	1.06	8.51	7/7/20 15:50	7/7/20 15:51
20NAG00126	F493-03	0.0605		mg/L	20	ml	NA	20	543nm	0.028 a	7/7/20 16:25	0	1		0.060508	1		VDuran	1.03	8.52	7/7/20 15:53	7/7/20 15:54
20NAG00127	F493-03D	0.0532		mg/L	20	ml	NA	20	543nm	0.024 a	7/7/20 16:25	0	1		0.053246	1		VDuran	1.03	8.52	7/7/20 15:57	7/7/20 15:58
20NAG00128	F493-03M	0.567		mg/L	20	ml	NA	20	543nm	0.307 a	7/7/20 16:26	0	1		0.567052	1		VDuran	1.03	8.52	7/7/20 16:00	7/7/20 16:02
20NAG00129	CCV2	0.543		mg/L	20	ml	NA	20	543nm	0.294 a	7/7/20 16:26	0	1		0.54345	1		VDuran			7/7/20 16:04	7/7/20 16:05
20NAG00130	CCB2	ND		mg/L	20	ml	NA	20	543nm	0 a	7/7/20 16:26	0	1		0.009672	1		VDuran			7/7/20 16:08	7/7/20 16:09

Reviewed by: VD

Date: 8/10/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F162

METHOD SW9060
TOC

A total of eight(8) water samples were received on 06/19/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Organic Carbon was not detected in TCG003WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. TCG003WL/TCG003WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Total Organic Carbon was within MS QC limits in F162-01M/F162-01S. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F162

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG003WB	ND	1	NA	1.00	0.250	07/10/2018:07	NA	TCG004-05	TCG004-02	TCG003W	NA	NA
LCS1W	TCG003WL	24.5	1	NA	1.00	0.250	07/10/2018:23	NA	TCG004-06	TCG004-02	TCG003W	NA	NA
LCD1W	TCG003WC	24.7	1	NA	1.00	0.250	07/10/2018:39	NA	TCG004-07	TCG004-02	TCG003W	NA	NA
MW22-GW061720	F162-01	0.478J	1	NA	1.00	0.250	07/10/2019:09	NA	TCG004-09	TCG004-02	TCG003W	06/17/2015:25	06/19/20
MW22-GW061720DUP	F162-01D	0.446J	1	NA	1.00	0.250	07/10/2019:24	NA	TCG004-10	TCG004-02	TCG003W	06/17/2015:25	06/19/20
MW22-GW061720MS	F162-01M	24.5	1	NA	1.00	0.250	07/10/2019:40	NA	TCG004-11	TCG004-02	TCG003W	06/17/2015:25	06/19/20
MW22-GW061720MSD	F162-01S	24.4	1	NA	1.00	0.250	07/10/2019:56	NA	TCG004-12	TCG004-02	TCG003W	06/17/2015:25	06/19/20
MW21-GW061820	F162-02	0.716J	1	NA	1.00	0.250	07/10/2020:11	NA	TCG004-13	TCG004-02	TCG003W	06/18/2011:15	06/19/20
MW01D-GW061720	F162-04	0.278J	1	NA	1.00	0.250	07/10/2021:10	NA	TCG004-16	TCG004-14	TCG003W	06/17/2016:25	06/19/20
MW13S-GW061820	F162-05	1.10	1	NA	1.00	0.250	07/10/2021:25	NA	TCG004-17	TCG004-14	TCG003W	06/18/2013:25	06/19/20
MW03RA-GW061820	F162-07	0.897J	1	NA	1.00	0.250	07/10/2021:40	NA	TCG004-18	TCG004-14	TCG003W	06/18/2015:40	06/19/20
MW03RB-GW061820	F162-08	1.79	1	NA	1.00	0.250	07/10/2021:55	NA	TCG004-19	TCG004-14	TCG003W	06/18/2015:05	06/19/20
MW03RC-GW061820	F162-10	2.15	1	NA	1.00	0.250	07/10/2022:10	NA	TCG004-20	TCG004-14	TCG003W	06/18/2013:25	06/19/20
MW03RD-GW061820	F162-11	7.95	1	NA	1.00	0.250	07/10/2022:25	NA	TCG004-21	TCG004-14	TCG003W	06/18/2012:35	06/19/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	TCG003WB	TCG003WL	TCG003WC		
LAB FILE ID:	TCG004-05	TCG004-06	TCG004-07		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/10/2018:07	07/10/2018:23	07/10/2018:39	DATE RECEIVED:	NA
PREP. BATCH:	TCG003W	TCG003W	TCG003W		
CALIB. REF:	TCG004-02	TCG004-02	TCG004-02		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.5	98	25	24.7	99	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: SW9060

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW22-GW061720				
LAB SAMP ID:	F162-01	F162-01M	F162-01S		
LAB FILE ID:	TCG004-09	TCG004-11	TCG004-12		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	06/17/20 15:25
DATE ANALYZED:	07/10/2019:09	07/10/2019:40	07/10/2019:56	DATE RECEIVED:	06/19/20
PREP. BATCH:	TCG003W	TCG003W	TCG003W		
CALIB. REF:	TCG004-02	TCG004-02	TCG004-02		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	.478J	25	24.5	96	25	24.4	96	0	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F162
METHOD: SW9060

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MW22-GW061720			
EMAX SAMP ID:	F162-01	F162-01D		
LAB FILE ID:	TCG004-09	TCG004-10		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	06/17/20 15:25
DATE ANALYZED:	07/10/2019:09	07/10/2019:24	DATE RECEIVED:	06/19/20
PREP. BATCH:	TCG003W	TCG003W		
CALIB. REF:	TCG004-02	TCG004-02		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Total Organic Carbon	0.478J	0.446J	NA	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
TOC

	Date	Time
Start	07/10/20	19:39
End	07/11/20	03:12

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☐ Sample was filtered. Filter ID:

Comments: TCG003W : 20F186
20F162
20F178
20F182
20F195

Reagent Water ID #: RWI-19-003

pH Strips Lot #: HC994832

2 M HCl SWP1-50-38-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☐ 439350020

Micropipette ID: ☐ 539360056

Micropipette ID: ☐ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG004

Method File: TCG004

Analytical Batch: TCG003W

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RWI-19-003	0
S1	SWIB-01-18-03	1
S2	↓	5
S3		10
S4		40
S5		80
S6	—	—
ICV/LCS	SW7B-01-18-05	25
CCV	SW7B-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: LW

Date: 07/10/20

	Type	Analysis	Sample Name	Sample ID	Dilution	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG004-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG004-02	1.000	NPOC:25.20 mg/L	
3	Unknown	NPOC	ICB	TCG004-03	1.000	NPOC:0.06831 mg	
4	Unknown	NPOC	HCO3/CO3	TCG004-04	1.000	NPOC:0.1329 mg/	
5	Unknown	NPOC	TCG003WB	TCG004-05	1.000	NPOC:0.2234 mg/	
6	Unknown	NPOC	TCG003WL	TCG004-06	1.000	NPOC:24.53 mg/L	
7	Unknown	NPOC	TCG003WC	TCG004-07	1.000	NPOC:24.66 mg/L	
8	Unknown	NPOC	F186-01	TCG004-08	1.000	NPOC:0.9313 mg/	PH<2
9	Unknown	NPOC	F162-01	TCG004-09	1.000	NPOC:0.4777 mg/	PH<2
10	Unknown	NPOC	F162-01D	TCG004-10	1.000	NPOC:0.4459 mg/	PH<2
11	Unknown	NPOC	F162-01M	TCG004-11	1.000	NPOC:24.46 mg/L	PH<2
12	Unknown	NPOC	F162-01S	TCG004-12	1.000	NPOC:24.37 mg/L	PH<2
13	Unknown	NPOC	F162-02	TCG004-13	1.000	NPOC:0.7161 mg/	PH<2
14	Control	NPOC	CCV1	TCG004-14	1.000	NPOC:24.26 mg/L	
15	Unknown	NPOC	CCB1	TCG004-15	1.000	NPOC:0.1567 mg/	
16	Unknown	NPOC	F162-04	TCG004-16	1.000	NPOC:0.2785 mg/	PH<2
17	Unknown	NPOC	F162-05	TCG004-17	1.000	NPOC:1.100 mg/L	PH<2
18	Unknown	NPOC	F162-07	TCG004-18	1.000	NPOC:0.8970 mg/	PH<2
19	Unknown	NPOC	F162-08	TCG004-19	1.000	NPOC:1.792 mg/L	PH<2
20	Unknown	NPOC	F162-10	TCG004-20	1.000	NPOC:2.148 mg/L	PH<2
21	Unknown	NPOC	F162-11	TCG004-21	1.000	NPOC:7.946 mg/L	PH<2
22	Unknown	NPOC	F178-01	TCG004-22	1.000	NPOC:0.3988 mg/	PH<2
23	Unknown	NPOC	F178-02	TCG004-23	1.000	NPOC:0.3320 mg/	PH<2
24	Unknown	NPOC	F178-04	TCG004-24	1.000	NPOC:0.4791 mg/	PH<2
25	Unknown	NPOC	F178-07	TCG004-25	1.000	NPOC:0.5941 mg/	PH<2
26	Control	NPOC	CCV2	TCG004-26	1.000	NPOC:24.63 mg/L	
27	Unknown	NPOC	CCB2	TCG004-27	1.000	NPOC:0.1405 mg/	
28	Unknown	NPOC	F178-05	TCG004-28	1.000	NPOC:0.6371 mg/	PH<2
29	Unknown	NPOC	F178-05D	TCG004-29	1.000	NPOC:0.7048 mg/	PH<2
30	Unknown	NPOC	F178-05M	TCG004-30	1.000	NPOC:23.97 mg/L	PH<2
31	Unknown	NPOC	F178-05S	TCG004-31	1.000	NPOC:24.19 mg/L	PH<2
32	Unknown	NPOC	F178-08	TCG004-32	1.000	NPOC:0.7004 mg/	PH<2
33	Unknown	NPOC	F178-10	TCG004-33	1.000	NPOC:0.6784 mg/	PH<2
34	Unknown	NPOC	F178-11	TCG004-34	1.000	NPOC:0.4101 mg/	PH<2
35	Unknown	NPOC	F182-01	TCG004-35	1.000	NPOC:1.271 mg/L	PH<2
36	Unknown	NPOC	F195-01	TCG004-36	1.000	NPOC:0.6992 mg/	PH<2
37	Control	NPOC	CCV3	TCG004-37	1.000	NPOC:24.30 mg/L	
38	Unknown	NPOC	CCB3	TCG004-38	1.000	NPOC:0.1689 mg/	
39							
40							
41							
42							
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WR 7/15/20

Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

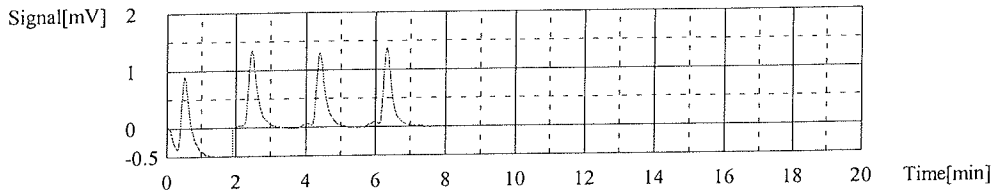
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG004-01
Cal. Curve:	TCG004.2020_07_10_14_31_07.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.022	50uL	1	*******		07/10/20 02:39:30 PM
2	2.321	50uL	1	*******		07/10/20 02:41:34 PM
3	2.261	50uL	1	*******		07/10/20 02:43:38 PM
4	2.088	50uL	1	*******		07/10/20 02:45:43 PM

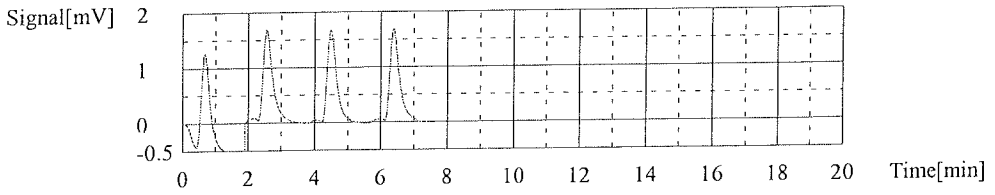
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 2.173



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.094	50uL	1	*******		07/10/20 02:54:28 PM
2	3.480	50uL	1	*******		07/10/20 02:56:32 PM
3	3.269	50uL	1	*******		07/10/20 02:58:37 PM
4	3.385	50uL	1	*******		07/10/20 03:00:41 PM

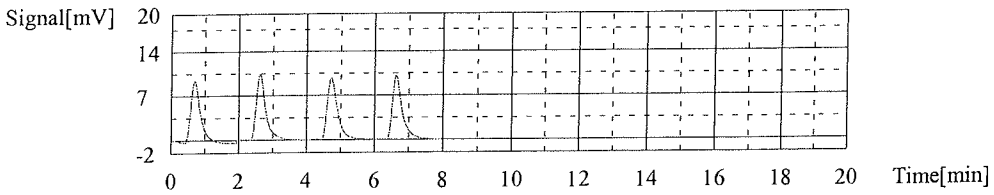
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 3.307



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.35	50uL	1	*******		07/10/20 03:09:28 PM
2	20.57	50uL	1	*******		07/10/20 03:11:44 PM
3	20.35	50uL	1	*******		07/10/20 03:13:50 PM
4	20.47	50uL	1	*******		07/10/20 03:15:54 PM

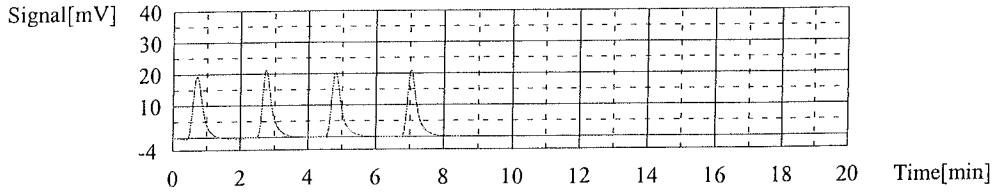
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.44



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	42.13	50uL	1	*******		07/10/20 03:24:53 PM
2	41.94	50uL	1	*******		07/10/20 03:27:06 PM
3	42.30	50uL	1	*******		07/10/20 03:29:31 PM
4	41.83	50uL	1	*******		07/10/20 03:31:46 PM

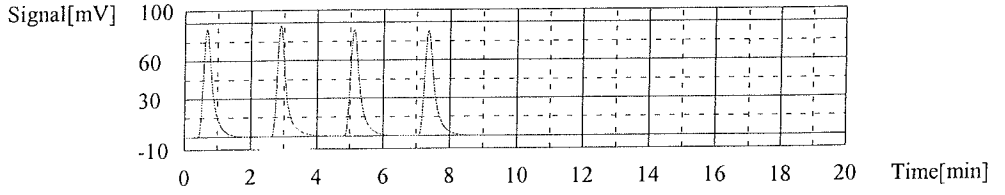
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 42.05



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	175.7	50uL	1	*******		07/10/20 03:40:51 PM
2	175.5	50uL	1	*******		07/10/20 03:43:14 PM
3	175.1	50uL	1	*******		07/10/20 03:45:38 PM
4	176.7	50uL	1	*******		07/10/20 03:48:03 PM

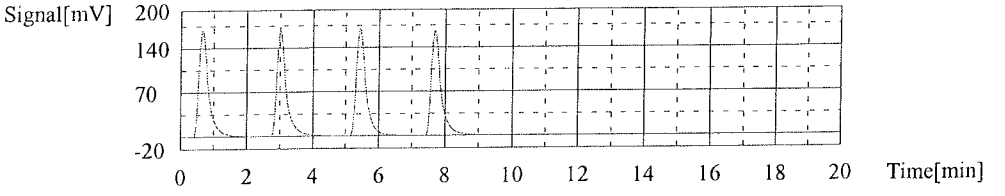
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 175.8



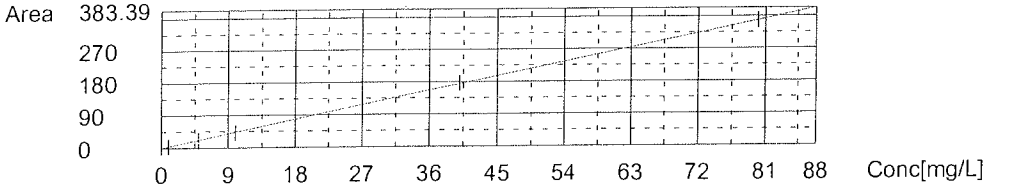
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	351.1	50uL	1	*******		07/10/20 03:57:19 PM
2	347.7	50uL	1	*******		07/10/20 03:59:53 PM
3	349.2	50uL	1	*******		07/10/20 04:02:21 PM
4	343.2	50uL	1	*******		07/10/20 04:04:57 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 347.8



Slope: 4.357
Intercept 0.000
r^2 0.999869



Control Sample

Sample Name: ICV
Sample ID: TCG004-02
Method: TCG004.tpl
Chk. Result Control value: 25.20 / Control exceeds range!

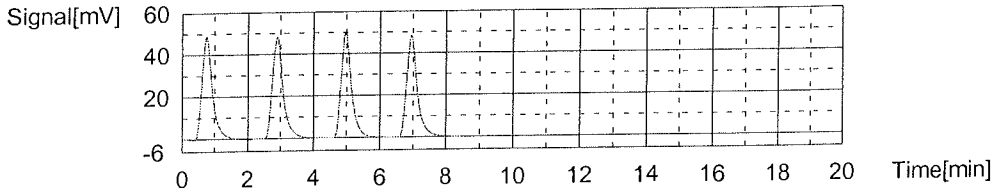
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.20 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.0	25.48mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:14:08 PM
2	109.6	25.16mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:16:23 PM
3	108.4	24.88mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:18:31 PM
4	110.1	25.27mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:20:53 PM

Mean Area 109.8
Mean Conc. 25.20mg/L



Sample

Sample Name: ICB
Sample ID: TCG004-03
Origin: TCG004.cal
Chk. Result

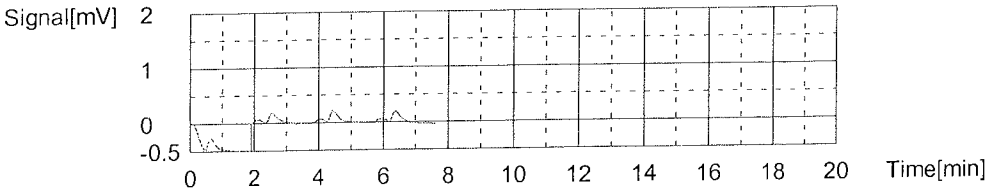
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06831 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2862	0.06569mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:43:12 PM
2	0.2885	0.06622mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:45:17 PM
3	0.3009	0.06907mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:47:21 PM
4	0.3149	0.07228mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:49:26 PM

Mean Area 0.2976
Mean Conc. 0.06831mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG004-04
Origin: TCG004.cal
Chk. Result

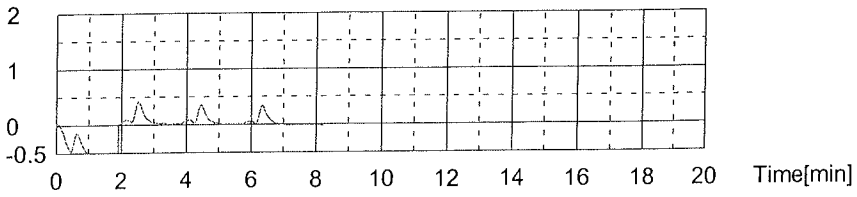
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1329 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4990	0.1145mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:58:13 PM
2	0.7677	0.1762mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:00:18 PM
3	0.5301	0.1217mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:02:22 PM
4	0.5198	0.1193mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:04:27 PM

Mean Area 0.5792
Mean Conc. 0.1329mg/L



Sample

Sample Name: TCG003WB
Sample ID: TCG004-05
Origin: TCG004.cal
Chk. Result

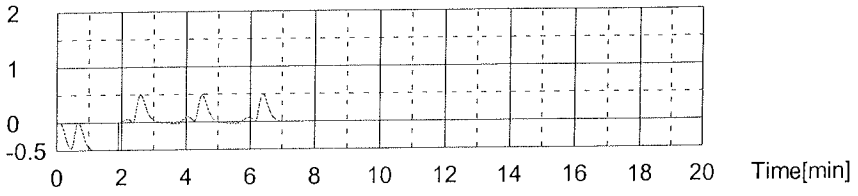
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2234 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8199	0.1882mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:01:11 PM
2	1.124	0.2580mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:03:16 PM
3	1.034	0.2373mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:05:20 PM
4	0.9160	0.2103mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:07:24 PM

Mean Area 0.9735
Mean Conc. 0.2234mg/L



Sample

Sample Name: TCG003WL
Sample ID: TCG004-06
Origin: TCG004.cal
Chk. Result

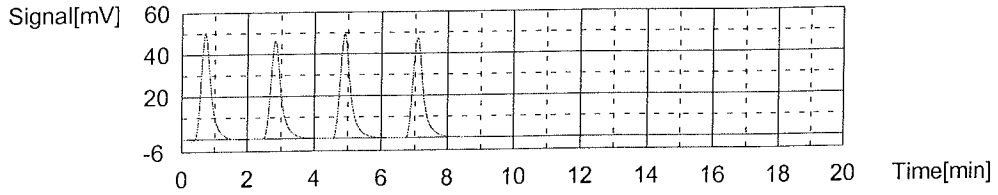
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.53 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.3	24.63mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:16:12 PM
2	103.8	23.83mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:18:28 PM
3	108.1	24.81mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:20:48 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:23:12 PM

Mean Area 106.9
Mean Conc. 24.53mg/L



Sample

Sample Name: TCG003WC
Sample ID: TCG004-07
Origin: TCG004.cal
Chk. Result

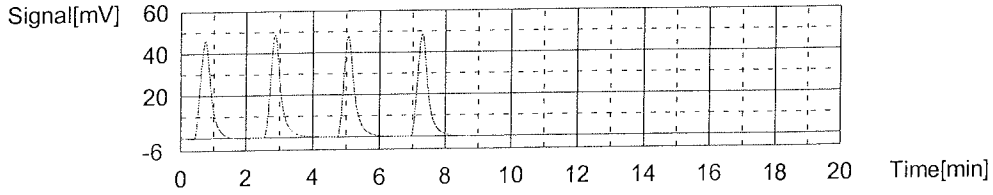
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.66 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.7	24.49mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:32:11 PM
2	107.7	24.72mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:34:34 PM
3	107.2	24.61mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:36:57 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:39:20 PM

Mean Area 107.5
Mean Conc. 24.66mg/L



Sample

Sample Name: F186-01
Sample ID: TCG004-08
Origin: TCG004.cal
Chk. Result

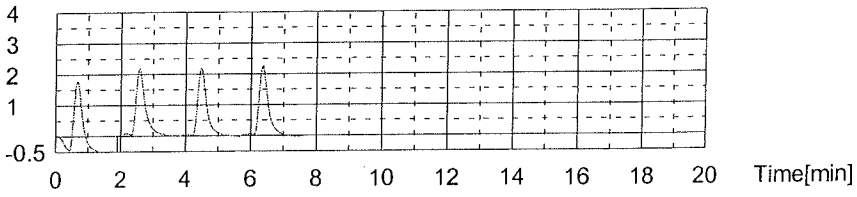
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.9313 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.678	0.8442mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:48:06 PM
2	4.109	0.9431mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:50:11 PM
3	4.069	0.9340mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:52:15 PM
4	4.373	1.004mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:54:20 PM

Mean Area 4.057
Mean Conc. 0.9313mg/L



Sample

Sample Name: F162-01
Sample ID: TCG004-09
Origin: TCG004.cal
Chk. Result

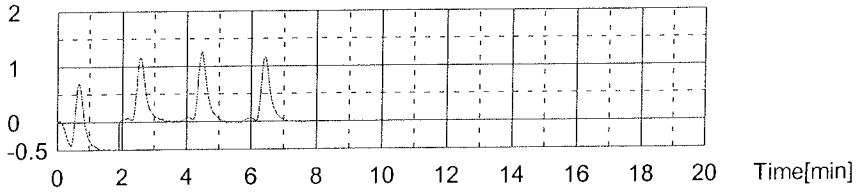
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4777 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.848	0.4242mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:03:06 PM
2	2.102	0.4825mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:05:10 PM
3	2.269	0.5208mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:07:15 PM
4	2.105	0.4832mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:09:20 PM

Mean Area 2.081
Mean Conc. 0.4777mg/L



Sample

Sample Name: F162-01D
Sample ID: TCG004-10
Origin: TCG004.cal
Chk. Result

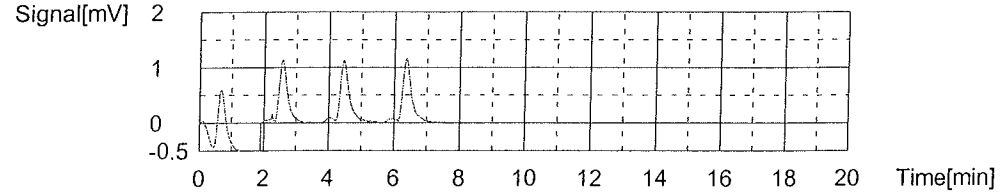
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4459 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.854	0.4256mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:18:06 PM
2	1.910	0.4384mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:20:10 PM
3	2.094	0.4806mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:22:15 PM
4	1.913	0.4391mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:24:20 PM

Mean Area 1.943
Mean Conc. 0.4459mg/L



Sample

Sample Name: F162-01M
Sample ID: TCG004-11
Origin: TCG004.cal
Chk. Result

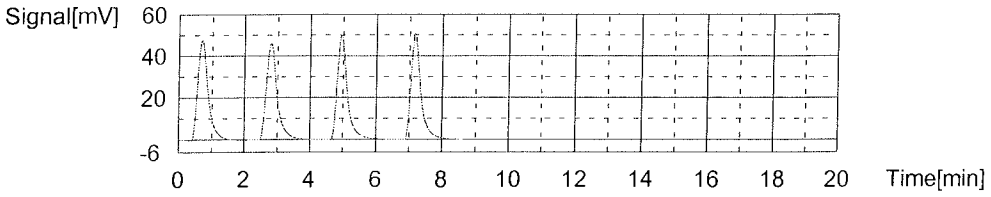
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.46 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.9	24.54mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:33:17 PM
2	105.9	24.31mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:35:37 PM
3	107.0	24.56mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:38:02 PM
4	106.5	24.45mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:40:21 PM

Mean Area 106.6
Mean Conc. 24.46mg/L



Sample

Sample Name: F162-01S
Sample ID: TCG004-12
Origin: TCG004.cal
Chk. Result

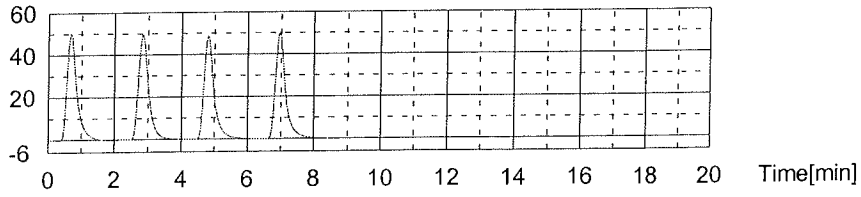
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.37 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.8	24.28mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:49:20 PM
2	106.4	24.42mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:51:30 PM
3	104.3	23.94mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:53:47 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:56:12 PM

Mean Area 106.2
Mean Conc. 24.37mg/L



Sample

Sample Name: F162-02
Sample ID: TCG004-13
Origin: TCG004.cal
Chk. Result

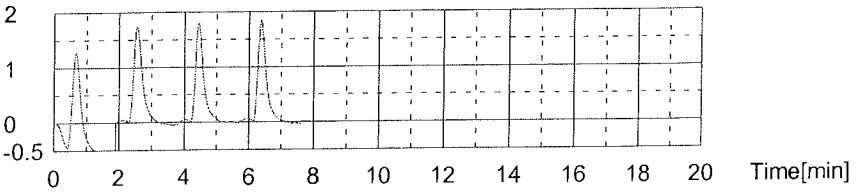
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7161 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.035	0.6966mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:04:58 PM
2	3.199	0.7343mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:07:02 PM
3	3.195	0.7334mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:09:07 PM
4	3.050	0.7001mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:11:11 PM

Mean Area 3.120
Mean Conc. 0.7161mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG004-14
Method: TCG004.tpl
Chk. Result Control value: 24.26 / Control exceeds range!

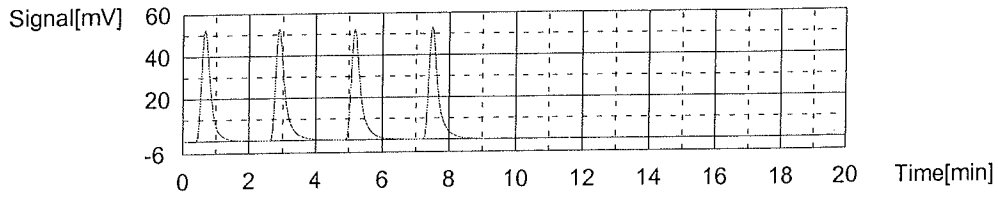
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.26 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.9	24.31mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:20:18 PM
2	106.2	24.38mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:22:45 PM
3	104.8	24.05mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:25:15 PM
4	105.8	24.28mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:27:40 PM

Mean Area 105.7
Mean Conc. 24.26mg/L



Sample

Sample Name: CCB1
Sample ID: TCG004-15
Origin: TCG004.cal
Chk. Result

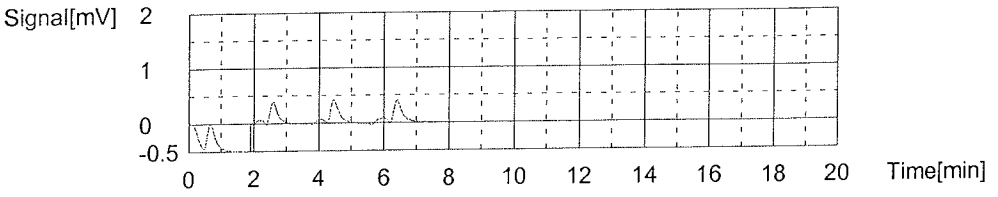
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1567 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6672	0.1531mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:49:17 PM
2	0.6356	0.1459mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:51:21 PM
3	0.7782	0.1786mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:53:26 PM
4	0.6501	0.1492mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:55:30 PM

Mean Area 0.6828
Mean Conc. 0.1567mg/L



Sample

Sample Name: F162-04
Sample ID: TCG004-16
Origin: TCG004.cal
Chk. Result

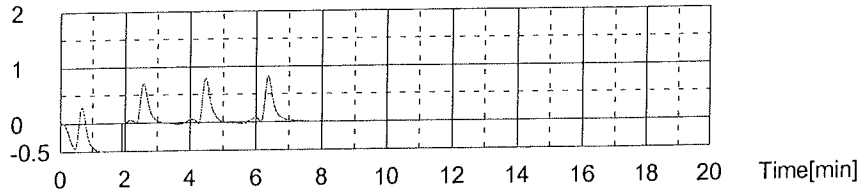
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2785 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.140	0.2617mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:04:17 PM
2	1.146	0.2630mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:06:21 PM
3	1.370	0.3145mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:08:26 PM
4	1.198	0.2750mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:10:30 PM

Mean Area 1.214
Mean Conc. 0.2785mg/L



Sample

Sample Name: F162-05
Sample ID: TCG004-17
Origin: TCG004.cal
Chk. Result

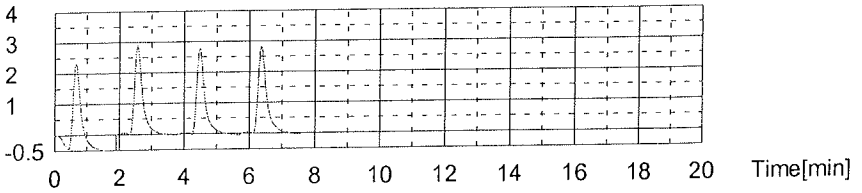
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.100 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.812	1.105mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:19:17 PM
2	4.829	1.108mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:21:21 PM
3	4.743	1.089mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:23:26 PM
4	4.779	1.097mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:25:30 PM

Mean Area 4.791
Mean Conc. 1.100mg/L



Sample

Sample Name: F162-07
Sample ID: TCG004-18
Origin: TCG004.cal
Chk. Result

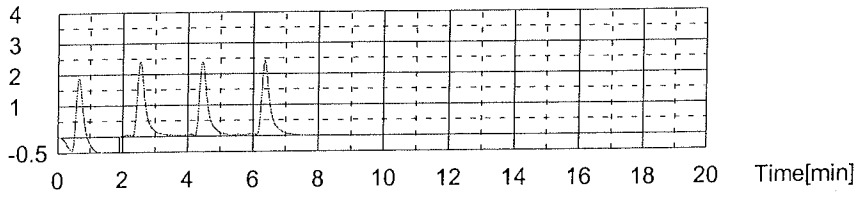
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.8970 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.682	0.8451mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:34:16 PM
2	3.965	0.9101mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:36:21 PM
3	3.953	0.9073mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:38:25 PM
4	4.031	0.9252mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:40:30 PM

Mean Area 3.908
Mean Conc. 0.8970mg/L



Sample

Sample Name: F162-08
Sample ID: TCG004-19
Origin: TCG004.cal
Chk. Result

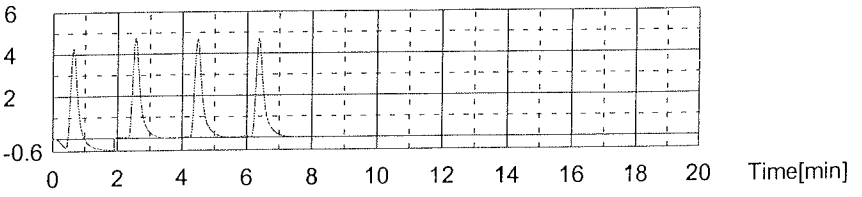
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.792 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.551	1.733mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:49:16 PM
2	7.646	1.755mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:51:21 PM
3	8.039	1.845mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:53:25 PM
4	7.997	1.836mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:55:30 PM

Mean Area 7.808
Mean Conc. 1.792mg/L



Sample

Sample Name: F162-10
Sample ID: TCG004-20
Origin: TCG004.cal
Chk. Result

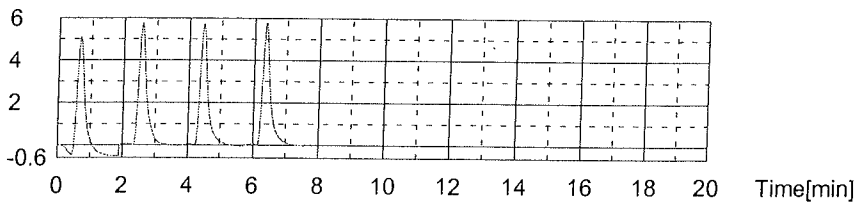
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.148 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.923	2.048mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:04:16 PM
2	9.532	2.188mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:06:21 PM
3	9.637	2.212mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:08:25 PM
4	9.341	2.144mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:10:30 PM

Mean Area 9.358
Mean Conc. 2.148mg/L



Sample

Sample Name: F162-11
Sample ID: TCG004-21
Origin: TCG004.cal
Chk. Result

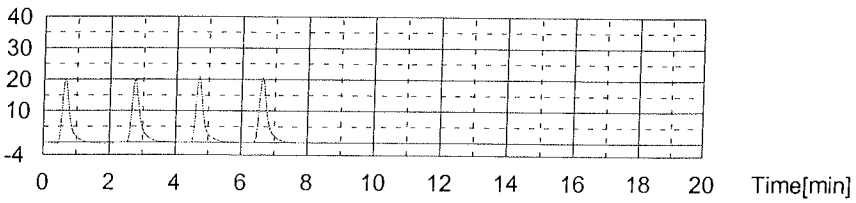
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:7.946 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.00	7.804mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:19:29 PM
2	34.45	7.907mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:21:36 PM
3	34.79	7.985mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:23:41 PM
4	35.24	8.089mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:25:51 PM

Mean Area 34.62
Mean Conc. 7.946mg/L



Sample

Sample Name: F178-01
Sample ID: TCG004-22
Origin: TCG004.cal
Chk. Result

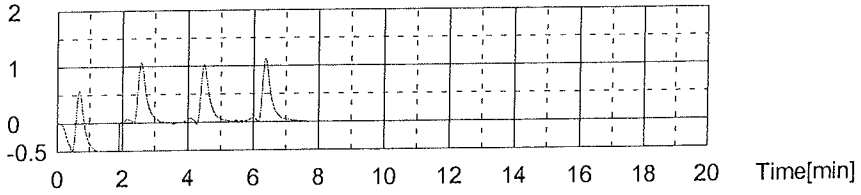
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3988 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.661	0.3813mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:34:37 PM
2	1.720	0.3948mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:36:42 PM
3	1.674	0.3842mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:38:46 PM
4	1.894	0.4347mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:40:51 PM

Mean Area 1.737
Mean Conc. 0.3988mg/L



Sample

Sample Name: F178-02
Sample ID: TCG004-23
Origin: TCG004.cal
Chk. Result

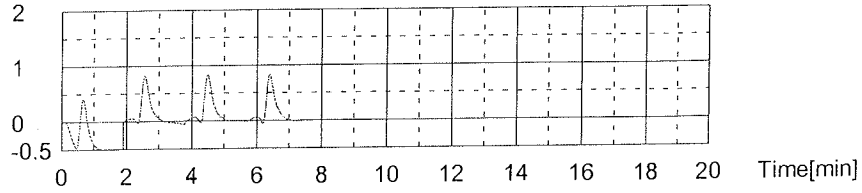
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3320 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.333	0.3060mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:49:31 PM
2	1.444	0.3314mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:51:36 PM
3	1.460	0.3351mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:53:40 PM
4	1.548	0.3553mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:55:45 PM

Mean Area 1.446
Mean Conc. 0.3320mg/L



Sample

Sample Name: F178-04
Sample ID: TCG004-24
Origin: TCG004.cal
Chk. Result

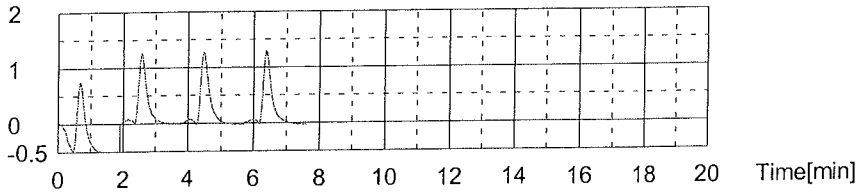
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4791 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.029	0.4657mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:04:31 PM
2	1.922	0.4412mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:06:36 PM
3	2.244	0.5151mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:08:40 PM
4	2.154	0.4944mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:10:45 PM

Mean Area 2.087
Mean Conc. 0.4791mg/L



Sample

Sample Name: F178-07
Sample ID: TCG004-25
Origin: TCG004.cal
Chk. Result

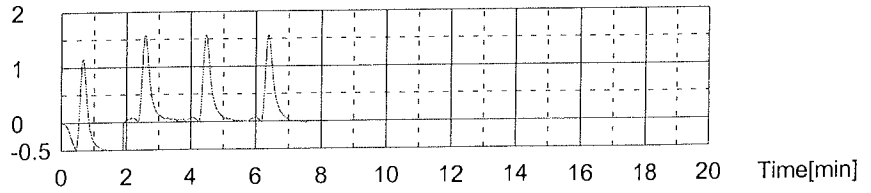
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5941 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.480	0.5692mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:19:31 PM
2	2.565	0.5887mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:21:36 PM
3	2.603	0.5975mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:23:40 PM
4	2.705	0.6209mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:25:45 PM

Mean Area 2.588
Mean Conc. 0.5941mg/L



Control Sample

Sample Name: CCV2
Sample ID: TCG004-26
Method: TCG004.tpl
Chk. Result Control value: 24.63 / Control exceeds range!

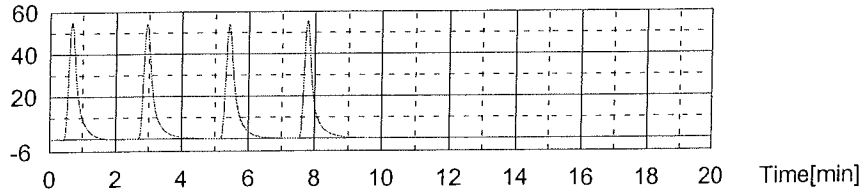
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.63 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.6	24.70mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:34:53 PM
2	107.8	24.74mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:37:31 PM
3	107.1	24.58mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:40:03 PM
4	106.8	24.51mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:42:47 PM

Mean Area 107.3
Mean Conc. 24.63mg/L



Sample

Sample Name: CCB2
Sample ID: TCG004-27
Origin: TCG004.cal
Chk. Result

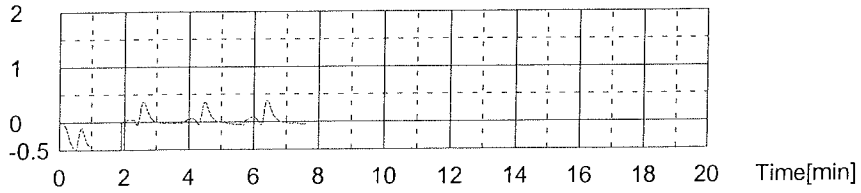
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1405 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6340	0.1455mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:04:23 AM
2	0.5839	0.1340mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:06:27 AM
3	0.5717	0.1312mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:08:32 AM
4	0.6583	0.1511mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:10:37 AM

Mean Area 0.6120
Mean Conc. 0.1405mg/L



Sample

Sample Name: F178-05
Sample ID: TCG004-28
Origin: TCG004.cal
Chk. Result

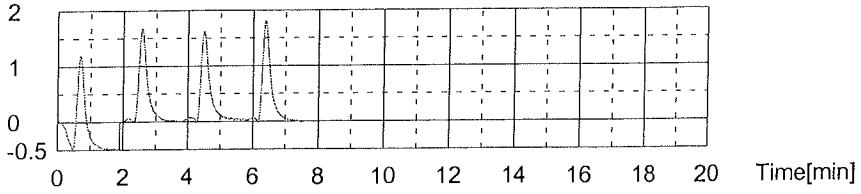
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6371 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.522	0.5789mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:19:23 AM
2	2.866	0.6578mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:21:27 AM
3	2.694	0.6184mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:23:32 AM
4	3.021	0.6934mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:25:37 AM

Mean Area 2.776
Mean Conc. 0.6371mg/L



Sample

Sample Name: F178-05D
Sample ID: TCG004-29
Origin: TCG004.cal
Chk. Result

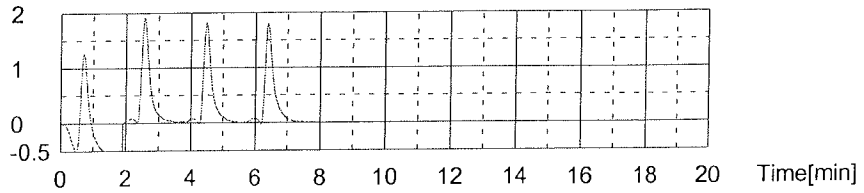
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7048 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.026	0.6946mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:34:23 AM
2	3.126	0.7175mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:36:27 AM
3	2.897	0.6650mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:38:32 AM
4	3.234	0.7423mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:40:36 AM

Mean Area 3.071
Mean Conc. 0.7048mg/L



Sample

Sample Name: F178-05M
Sample ID: TCG004-30
Origin: TCG004.cal
Chk. Result

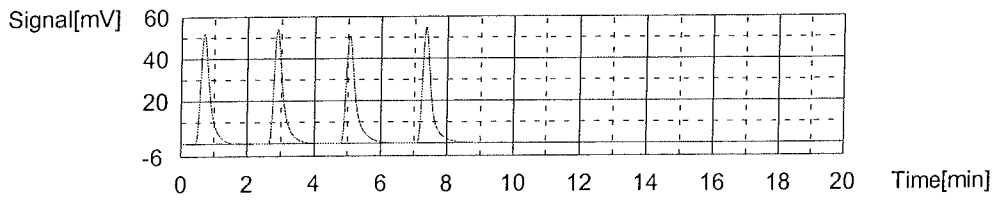
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.97 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.6	24.01mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:49:39 AM
2	104.3	23.94mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:51:59 AM
3	103.7	23.80mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:54:28 AM
4	105.1	24.12mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:56:58 AM

Mean Area 104.4
Mean Conc. 23.97mg/L



Sample

Sample Name: F178-05S
Sample ID: TCG004-31
Origin: TCG004.cal
Chk. Result

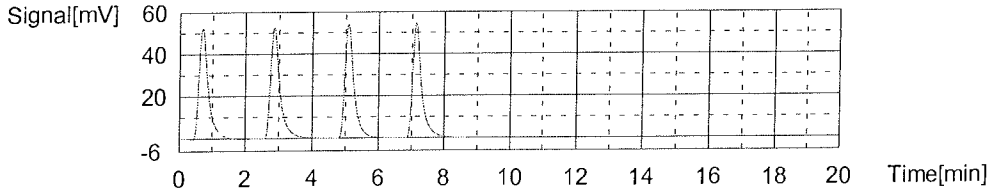
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.19 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.2	24.15mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:06:00 AM
2	104.9	24.08mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:08:23 AM
3	106.0	24.33mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:10:36 AM
4	105.5	24.22mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:13:01 AM

Mean Area 105.4
Mean Conc. 24.19mg/L



Sample

Sample Name: F178-08
Sample ID: TCG004-32
Origin: TCG004.cal
Chk. Result

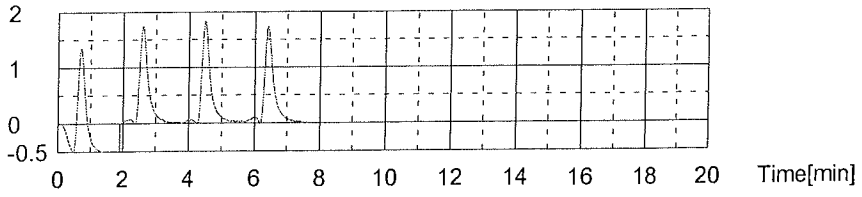
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7004 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.099	0.7113mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:21:49 AM
2	2.911	0.6682mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:23:53 AM
3	3.081	0.7072mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:25:58 AM
4	3.114	0.7148mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:28:02 AM

Mean Area 3.051
Mean Conc. 0.7004mg/L



Sample

Sample Name: F178-10
Sample ID: TCG004-33
Origin: TCG004.cal
Chk. Result

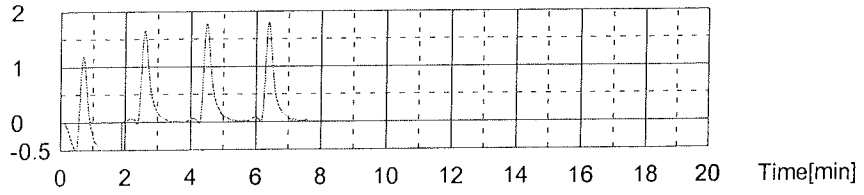
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6784 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.698	0.6193mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:36:49 AM
2	2.892	0.6638mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:38:54 AM
3	3.251	0.7462mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:40:59 AM
4	2.981	0.6842mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:43:03 AM

Mean Area 2.956
Mean Conc. 0.6784mg/L



Sample

Sample Name: F178-11
Sample ID: TCG004-34
Origin: TCG004.cal
Chk. Result

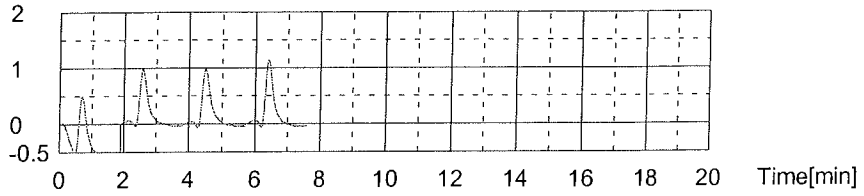
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4101 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.584	0.3636mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:51:49 AM
2	1.748	0.4012mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:53:54 AM
3	1.839	0.4221mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:55:59 AM
4	1.976	0.4536mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:58:03 AM

Mean Area 1.787
Mean Conc. 0.4101mg/L



Sample

Sample Name: F182-01
Sample ID: TCG004-35
Origin: TCG004.cal
Chk. Result

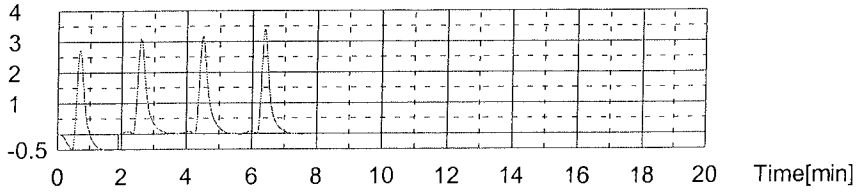
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.271 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.506	1.264mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:06:50 AM
2	5.547	1.273mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:08:55 AM
3	5.714	1.312mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:11:00 AM
4	5.384	1.236mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:13:04 AM

Mean Area 5.538
Mean Conc. 1.271mg/L



Sample

Sample Name: F195-01
Sample ID: TCG004-36
Origin: TCG004.cal
Chk. Result

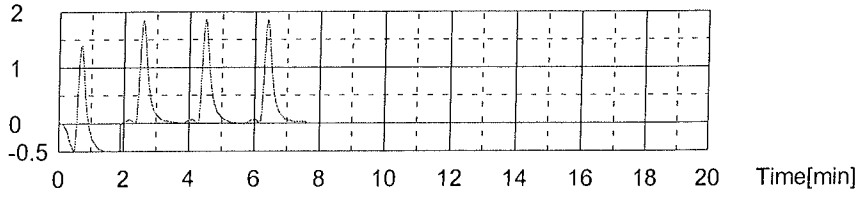
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6992 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.880	0.6611mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:21:51 AM
2	3.049	0.6998mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:23:56 AM
3	3.190	0.7322mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:26:01 AM
4	3.065	0.7035mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:28:05 AM

Mean Area 3.046
Mean Conc. 0.6992mg/L



Control Sample

Sample Name: CCV3
Sample ID: TCG004-37
Method: TCG004.tpl
Chk. Result Control value: 24.30 / Control exceeds range!

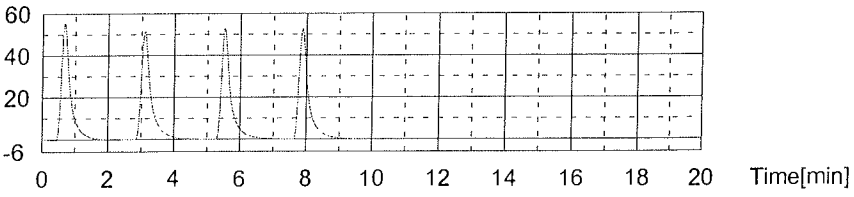
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.30 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.1	24.81mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:37:21 AM
2	106.4	24.42mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:39:58 AM
3	103.6	23.78mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:42:29 AM
4	105.4	24.19mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:45:03 AM

Mean Area 105.9
Mean Conc. 24.30mg/L



Sample

Sample Name: CCB3
Sample ID: TCG004-38
Origin: TCG004.cal
Chk. Result

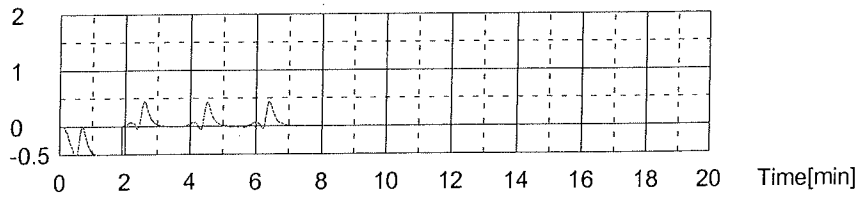
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1689 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8021	0.1841mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:06:36 AM
2	0.6762	0.1552mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:08:41 AM
3	0.7488	0.1719mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:10:45 AM
4	0.7163	0.1644mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:12:50 AM

Mean Area 0.7359
Mean Conc. 0.1689mg/L



EMAX
LABORATORIES, INC.®
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-30-2020
EMAX Batch No.: 20F178

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/20/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW13D-GW061820	F178-01	06/18/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW25C-GW061920	F178-02	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB09-GW061920	F178-03	06/19/20	WATER	VOCS BY 8260C
MW05R-GW061920	F178-04	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW15S-GW061920	F178-05	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
TB10-GW061920	F178-06	06/19/20	WATER	VOCS BY 8260C
MW15D-GW061920	F178-07	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
FD03-GW061920	F178-08	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB11-GW061920	F178-09	06/19/20	WATER	VOCS BY 8260C
MW12S-GW061920	F178-10	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW12D-GW061920	F178-11	06/19/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB12-GW061920	F178-12	06/19/20	WATER	VOCS BY 8260C

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F178
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270D SIM; Gases MEE / RSK-175; metals / mercury / 6020A / 7470; chloride / sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW13D-GW061820	~~DER~~	6/18/20	1620	13					VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, chloride/sulfate, Nitrate Nitrite, Alkalinity, TOC	
2	MW25C-GW061920		6/19/20	1155	13					VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, chloride/sulfate, Nitrate Nitrite, Alkalinity, TOC	
3	TB09-GW061920		6/19/20	1610	2					VOCs	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.4	
4	2.8	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL — RECEIVED BY
Raman Singh	6/19/20	1700	6/20/20 8:15

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

2

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F178
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; chloride/sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9R
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
4 • 1	MW05R-GW061920		6/19/20	1515	13					X X X X X X X X	
5 • 2	MW15S-GW061920		6/19/20	0915	13					X X X X X X X X	
6 • 3	TB10-GW061920		6/19/20	1615	2					X	
• 4											
• 5											
• 6											
• 7											
• 8											
• 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.4	
4	2.8	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Emma Pitt	6/19/20	1700	DHS 6/20/2020 08:15

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; chloride/sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW15D-GW061920		6/19/20	0900	13					X X X X X X X X	
2	FD03-GW061920		6/19/20	0905	13					X X X X X X X X	
3	TB11-GW061920		6/19/20	1620	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.4	
4	2.8	

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Cat	6/19/20	1700	6/20/20 08:15

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO. 20F178

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COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

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SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
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O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/ mercury / 6020A / 7470; Chloride / sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9d
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
10 1	MW12S-GW061920		6/19/20	1240	13					X X X X X X X X	
11 2	MW12D-GW061920		6/19/20	1535	13					X X X X X X X X	
12 3	TB12-GW061920		6/19/20	1625	2					X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	2.3	
2	2.7	
3	2.4	
4	2.8	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL	RECEIVED BY
Emma Pitt	6/19/20	1700		6/20/20 @ 8:15

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Type of Delivery	Airbill / Tracking Number	ECN 20F178
☑ Fedex ☐ UPS ☐ GSO ☐ Others	394047435771 / 394047435782	Recipient Rosie Carrillo
☑ EMAX Courier ☐ Client Delivery	394047435793 / 394047435808	Date 6/20/2020 Time 8:15

COC INSPECTION

☑ Client Name ☑ Client PM/FC ☐ Sampler Name ☑ Sampling Date/Time ☑ Sample ID ☑ Matrix
☑ Address ☑ Tel # / Fax # ☐ Courier Signature ☑ Analysis Required ☐ Preservative (if any) ☑ TAT
Safety Issues (if any) ☐ High concentrations expected ☐ From Superfund Site ☐ Rad screening required
Note: Corrections ARE not initialed, dated.

PACKAGING INSPECTION

Container ☑ Cooler ☐ Box ☐ Other
Condition ☑ Custody Seal ☐ Intact ☐ Damaged
Packaging ☑ Bubble Pack ☐ Styrofoam ☐ Popcorn ☐ Sufficient ☐ _____
Temperatures (Cool. ≤6 °C but not frozen): ☑ Cooler 1 2.3 °C ☑ Cooler 2 2.7 °C ☑ Cooler 3 2.4 °C ☑ Cooler 4 2.8 °C ☐ Cooler 5 _____ °C
☐ Cooler 6 _____ °C ☐ Cooler 7 _____ °C ☐ Cooler 8 _____ °C ☐ Cooler 9 _____ °C ☐ Cooler 10 _____ °C
Thermometer: A - S/N 192381464 B - S/N _____ C - S/N 200291756 D - S/N _____
Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**
Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1,5,7,8,	3,50,54,68,70-75,78,81	D10		RJ
6,2,4,5,7,8,10,11	7,20,35,48,63,76,	D2	Label read; Analysis Metals. Only	Analyze Metals + Hg
	91,104	↓	↓	↓
1-12		D14	Cont's preserved per Label/sticker.	RJ - label

6/20/20 6/22/20

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
(D2)	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
(D10)	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
(D16)	Preservation not indicated in COC
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

☐ **Continue to next page.**

Code	Description-Sample Management
(R1)	Proceed as indicated in ☐ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling: [signature] Date 6/20/2020 6/22/20
SRF: [signature] Date 6/22/20
PM: [signature] Date 6/22/20

(1) Sealed "C" @ 8:15

2.3

ORIGIN ID:BTFA (406) 241-3259

CDM SMITH
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 19JUN20
ACTWGT: 49.90 LB
CAD: 6993845/SSFE2110
DIMS: 25x14x14 IN

BILL THIRD PARTY

Part # 156297-435 RRDW1 EXP 07/20

TO ATTN: SAMPLE RECIEVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF: 238824-6495-F3048-05.SAMPL

INV:
PO: DEPT:

FedEx Express

1 of 4

TRK# 0201 3940 4743 5771

MASTER

SATURDAY 9:30A
FIRST OVERNIGHT
AHS

FedEx

TRK# 0201 3940 4743 5771

SATURDAY 9:30A
FIRST OVERNIGHT
DSR

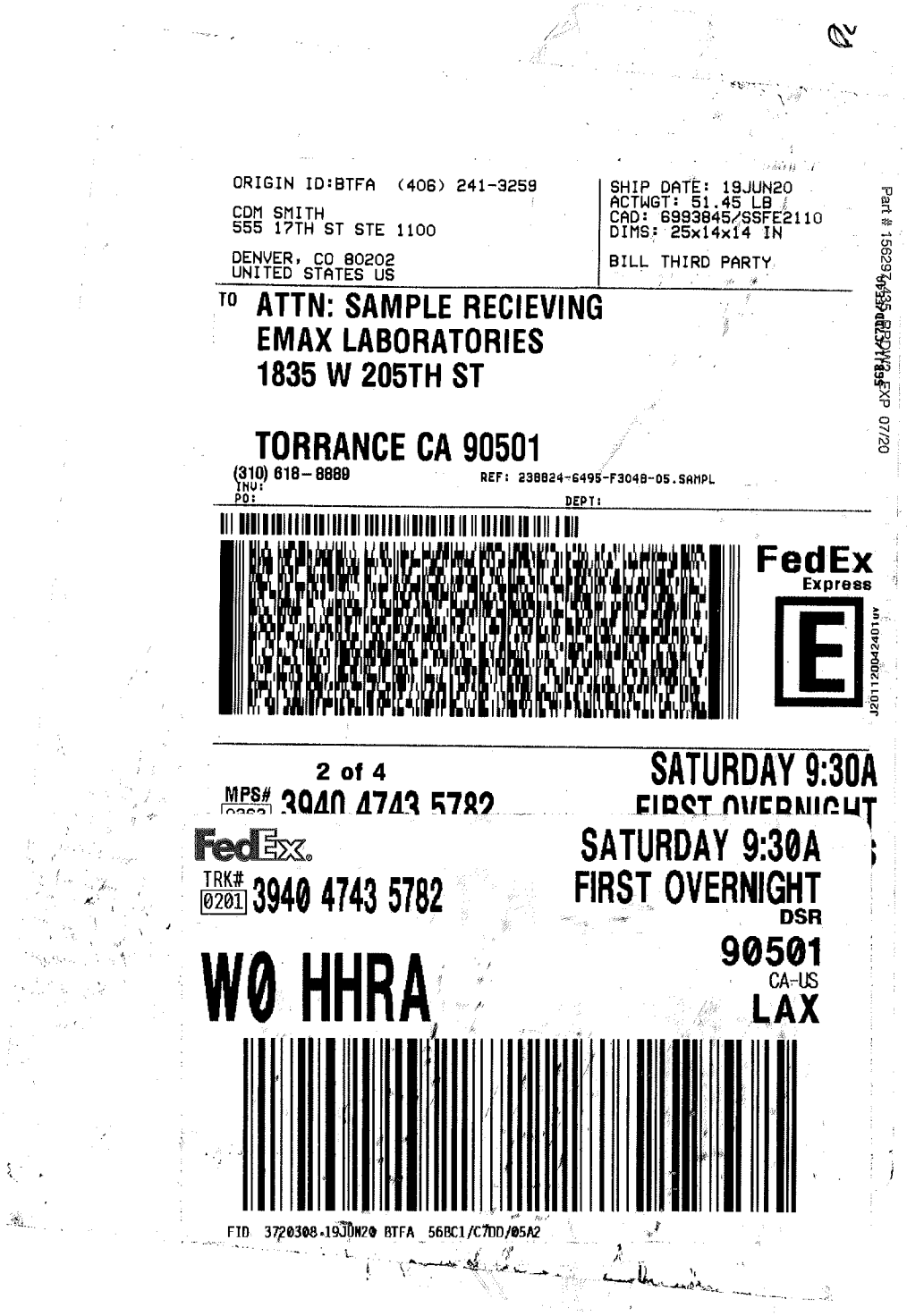
W0 HHRA

90501
CA-US
LAX

FID 3720308 19JUN20 BTFA 56BC1/C7DD/05A2

#2 Sealed

2.7



ORIGIN ID:BTFA (406) 241-3259

CDM SMITH
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 19JUN20
ACTWGT: 51.45 LB
CAD: 6993845/SSFE2110
DIMS: 25x14x14 IN

BILL THIRD PARTY

TO ATTN: SAMPLE RECIEVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889
INV:
PO:
REF: 238824-6495-F3048-05.SAMPL
DEPT:

FedEx Express

2 of 4
MPS# 3940 4743 5782

SATURDAY 9:30A
FIRST OVERNIGHT

FedEx
TRK# 0201 3940 4743 5782

SATURDAY 9:30A
FIRST OVERNIGHT
DSR

WO HHRA

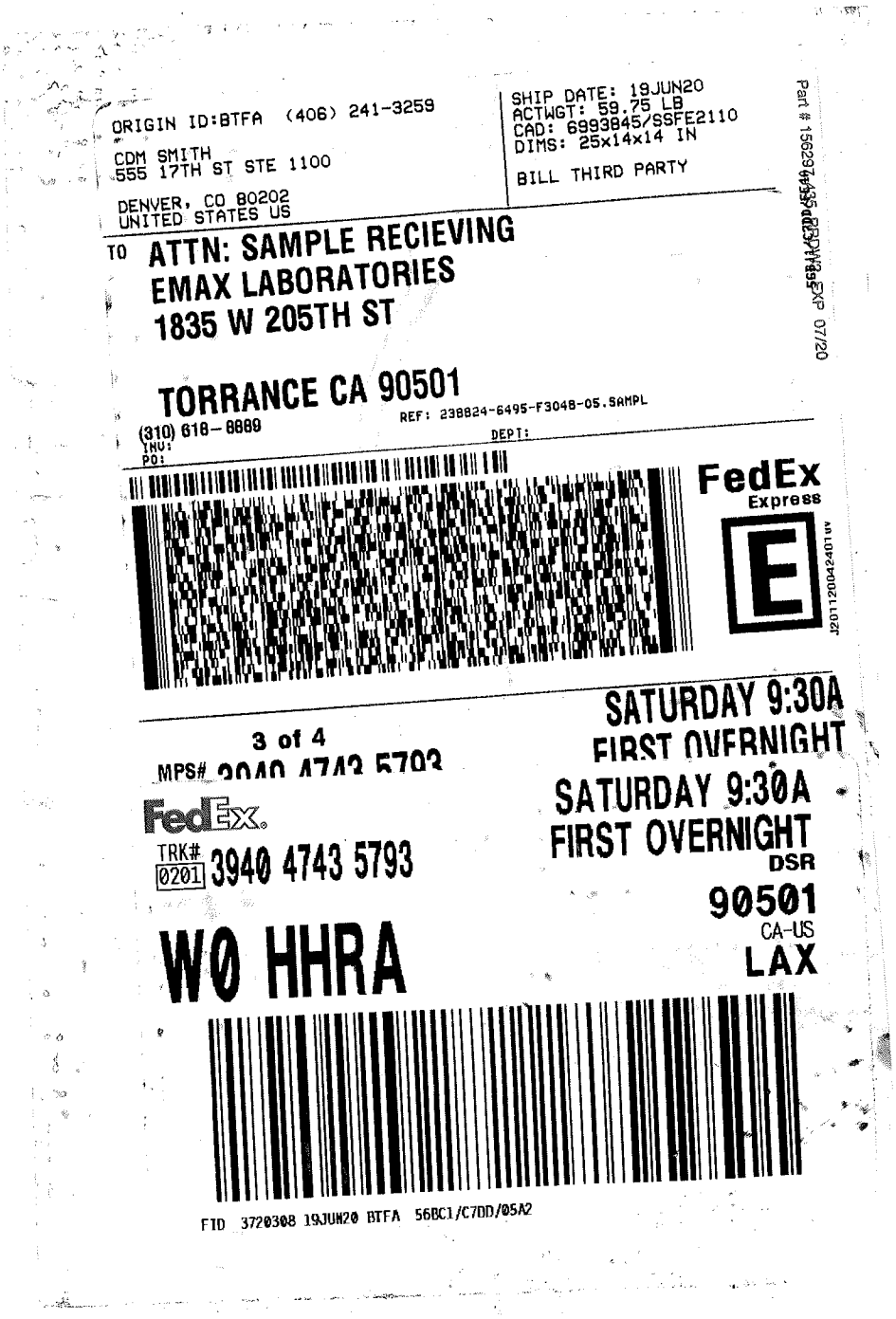
90501
CA-US
LAX

FID 3720308-19JUN20 BTFA 56BC1/C7DD/05A2

Part # 156292-435 REV10 EXP 07/20

#3 Sealed.

2.4



ORIGIN ID:BTFA (406) 241-3259

CDM SMITH
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 19JUN20
ACTWGT: 59.75 LB
CAD: 6993845/SSFE2110
DIMS: 25x14x14 IN

BILL THIRD PARTY

TO ATTN: SAMPLE RECIEVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889

REF: 238824-6495-F3048-05.SAMPL

INV:
PO:
DEPT:

FedEx Express

3 of 4
MPS# 3940 4743 5703

SATURDAY 9:30A
FIRST OVERNIGHT

FedEx

TRK# 0201 3940 4743 5793

SATURDAY 9:30A
FIRST OVERNIGHT
DSR

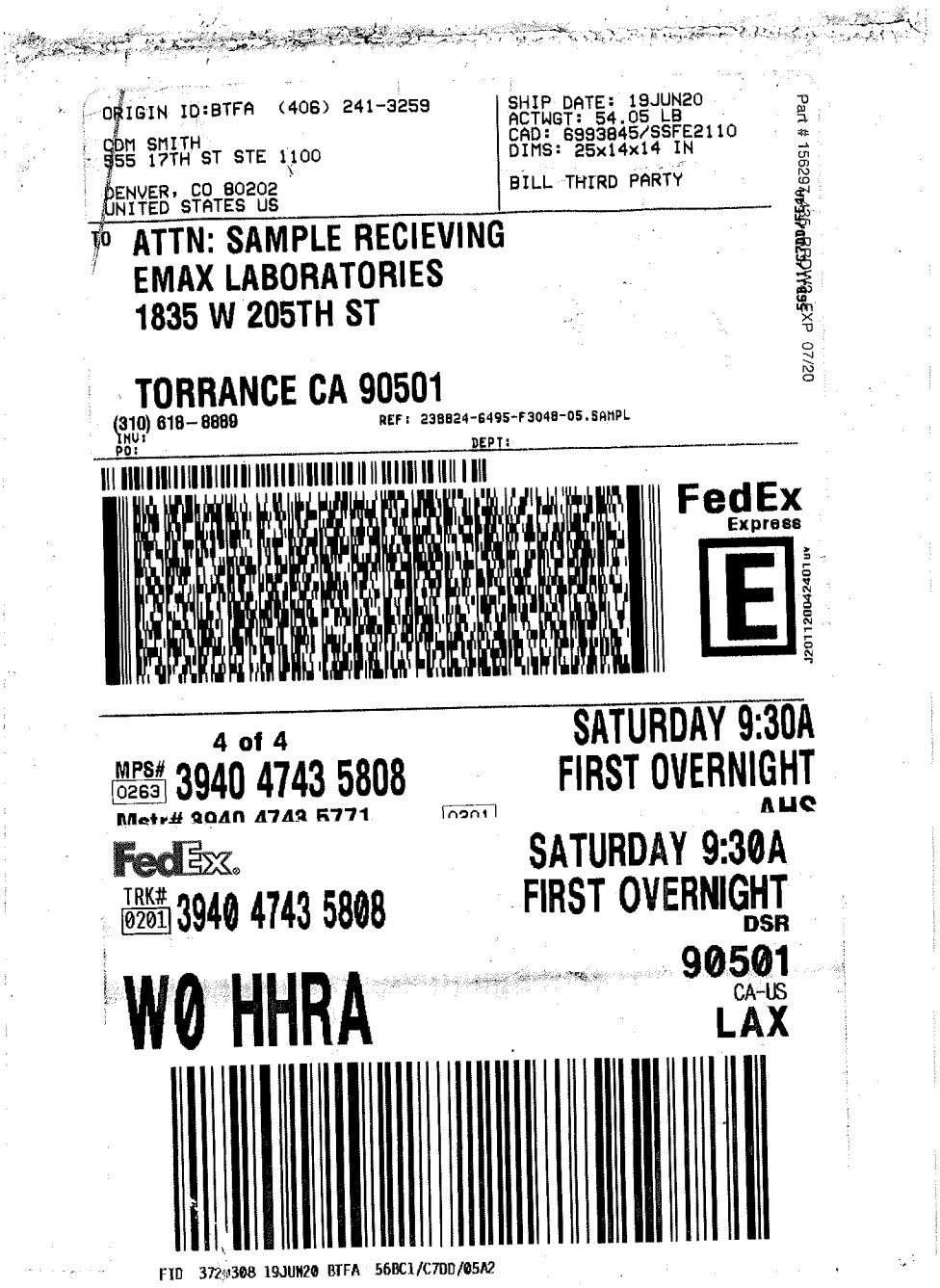
90501
CA-US
LAX

W0 HHRA

FID 3720308 19JUN20 BTFA 56BC1/C7DD/05A2

Part # 156267-556440-RRD Rev Exp 07/20

#14 Seabd 2-8



ORIGIN ID:BTFA (406) 241-3259

CDM SMITH
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 19JUN20
ACTWGT: 54.05 LB
CAD: 6993845/SSFE2110
DIMS: 25x14x14 IN

BILL THIRD PARTY

Part # 156294-446-DHDW EXP 07/20

TO ATTN: SAMPLE RECIEVING
EMAX LABORATORIES
1835 W 205TH ST

TORRANCE CA 90501

(310) 618-8889 REF: 238824-6495-F3048-05.SAMPL

INV:
PO: DEPT:

FedEx Express

4 of 4

MPS# 0263 3940 4743 5808

Mstr# 3940 4743 5771

0201

SATURDAY 9:30A
FIRST OVERNIGHT
AHS

FedEx

TRK# 0201 3940 4743 5808

SATURDAY 9:30A
FIRST OVERNIGHT
DSR

90501
CA-US
LAX

W0 HHRA

FID 372@308 19JUN20 BTFA 56BC1/C7DD/05A2

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F178

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of twelve(12) water samples were received on 06/20/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. For this SDG, the following were noted: Target analytes in CCV(Datafile ID:RFV330) were within calibration acceptance criteria.Chloroethane was detected biased high(%D=25.5) in CCV(data file ID RFV357). However, note that Chloroethane was not detected in any of the associated field samples. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.
Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. VO01F16B and VO01F17B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. VO01F16L/VO01F16C and VO01F17L/VO01F17C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F178
Instrument ID : 01

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V001F16B	1	NA	06/26/2014:40	06/26/2014:40	RFV334	REV203	V001F16	Method Blank
LCS1W	V001F16L	1	NA	06/26/2013:19	06/26/2013:19	RFV331	REV203	V001F16	Lab Control Sample (LCS)
LCD1W	V001F16C	1	NA	06/26/2013:45	06/26/2013:45	RFV332	REV203	V001F16	LCS Duplicate
TB09-GW061920	F178-03	1	NA	06/26/2019:36	06/26/2019:36	RFV345	REV203	V001F16	Field Sample
TB10-GW061920	F178-06	1	NA	06/26/2020:03	06/26/2020:03	RFV346	REV203	V001F16	Field Sample
TB11-GW061920	F178-09	1	NA	06/26/2020:32	06/26/2020:32	RFV347	REV203	V001F16	Field Sample
TB12-GW061920	F178-12	1	NA	06/26/2020:59	06/26/2020:59	RFV348	REV203	V001F16	Field Sample
MW13D-GW061820	F178-01	1	NA	06/26/2021:28	06/26/2021:28	RFV349	REV203	V001F16	Field Sample
MW25C-GW061920	F178-02	1	NA	06/26/2021:55	06/26/2021:55	RFV350	REV203	V001F16	Field Sample
MW05R-GW061920	F178-04	1	NA	06/26/2022:24	06/26/2022:24	RFV351	REV203	V001F16	Field Sample
MW15S-GW061920	F178-05	1	NA	06/26/2022:51	06/26/2022:51	RFV352	REV203	V001F16	Field Sample
MW15D-GW061920	F178-07	1	NA	06/26/2023:20	06/26/2023:20	RFV353	REV203	V001F16	Field Sample
MBLK2W	V001F17B	1	NA	06/29/2013:21	06/29/2013:21	RFV361	REV203	V001F17	Method Blank
LCS2W	V001F17L	1	NA	06/29/2012:01	06/29/2012:01	RFV358	REV203	V001F17	Lab Control Sample (LCS)
LCD2W	V001F17C	1	NA	06/29/2012:28	06/29/2012:28	RFV359	REV203	V001F17	LCS Duplicate
FD03-GW061920	F178-08	1	NA	06/29/2015:08	06/29/2015:08	RFV365	REV203	V001F17	Field Sample
MW12S-GW061920	F178-10	1	NA	06/29/2015:35	06/29/2015:35	RFV366	REV203	V001F17	Field Sample
MW12D-GW061920	F178-11	1	NA	06/29/2016:02	06/29/2016:02	RFV367	REV203	V001F17	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 21:28
Sample ID:	MW13D-GW061820	Date Analyzed:	06/26/20 21:28
Lab Samp ID:	F178-01	Dilution Factor:	1
Lab File ID:	RFV349	Matrix	: WATER
Ext Btch ID:	V001F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.55J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.20J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.27J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.3	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.36J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	62	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.53J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.80	10.00	98.0	70-130
DIBROMOFLUOROMETHANE	10.8	10.00	108	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV349.D Vial: 22
Acq On : 26 Jun 2020 9:28 pm Operator: VLu
Sample : 20F178-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:15 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

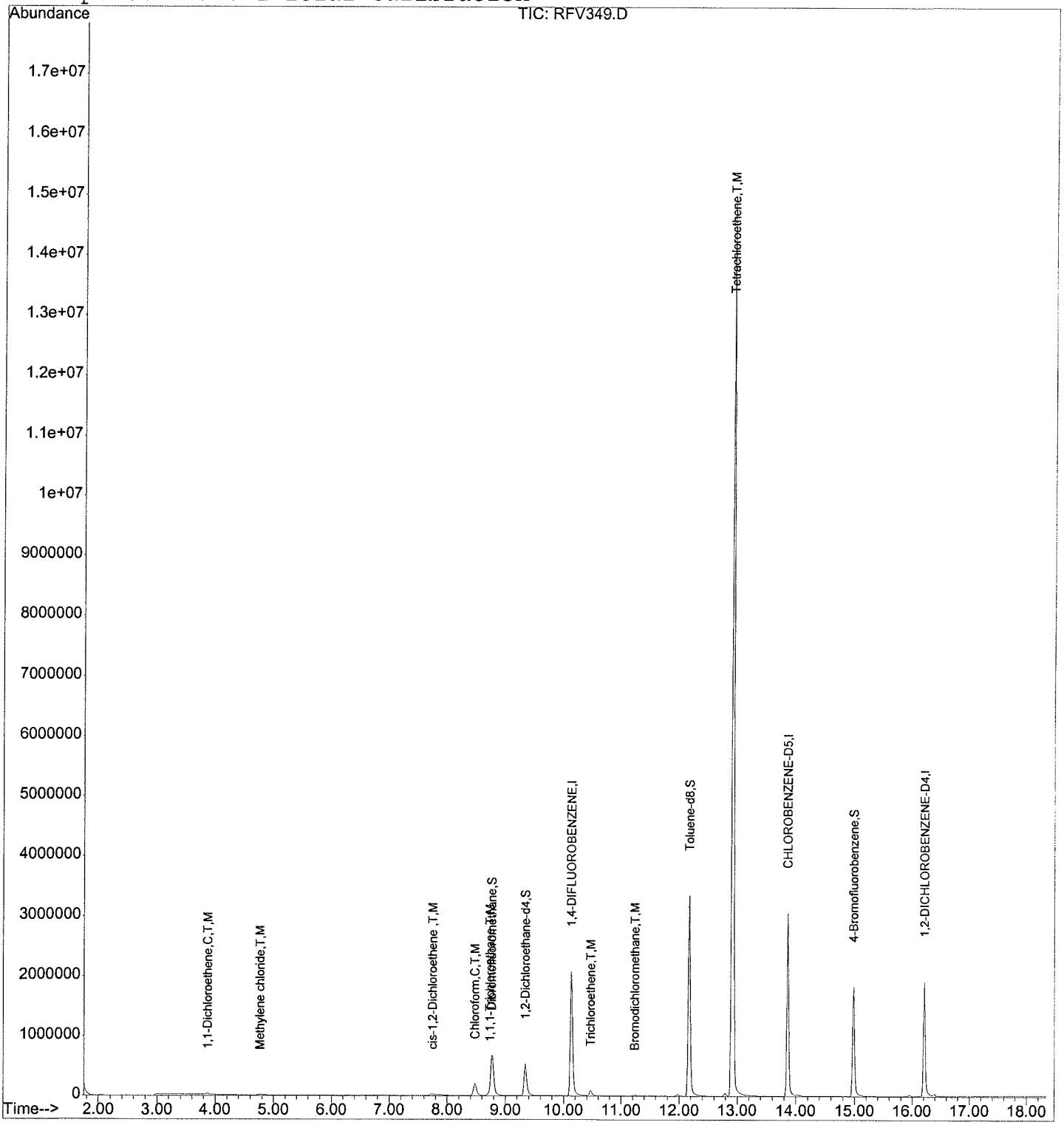
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2723636	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2274773	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	743289	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	825050	10.76	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.60%		
38) 1,2-Dichloroethane-d4	9.34	65	560496	10.98	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.80%		
54) Toluene-d8	12.17	98	3035401	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.00%		
74) 4-Bromofluorobenzene	14.98	95	940565	10.58	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.80%		
Target Compounds						Qvalue
14) 1,1-Dichloroethene	3.87	61	27038	0.20	ug/l	99
18) Methylene chloride	4.77	49	19708	0.18	ug/l	91
29) cis-1,2-Dichloroethene	7.75	96	33092	0.36	ug/l	95
33) Chloroform	8.47	83	304002	2.31	ug/l	100
35) 1,1,1-Trichloroethane	8.73	97	57947	0.55	ug/l	98
44) Trichloroethene	10.47	130	53199	0.53	ug/l	98
49) Bromodichloromethane	11.24	83	23474	0.27	ug/l	96
59) Tetrachloroethene	12.91	164	4867691	62.46	ug/l	98

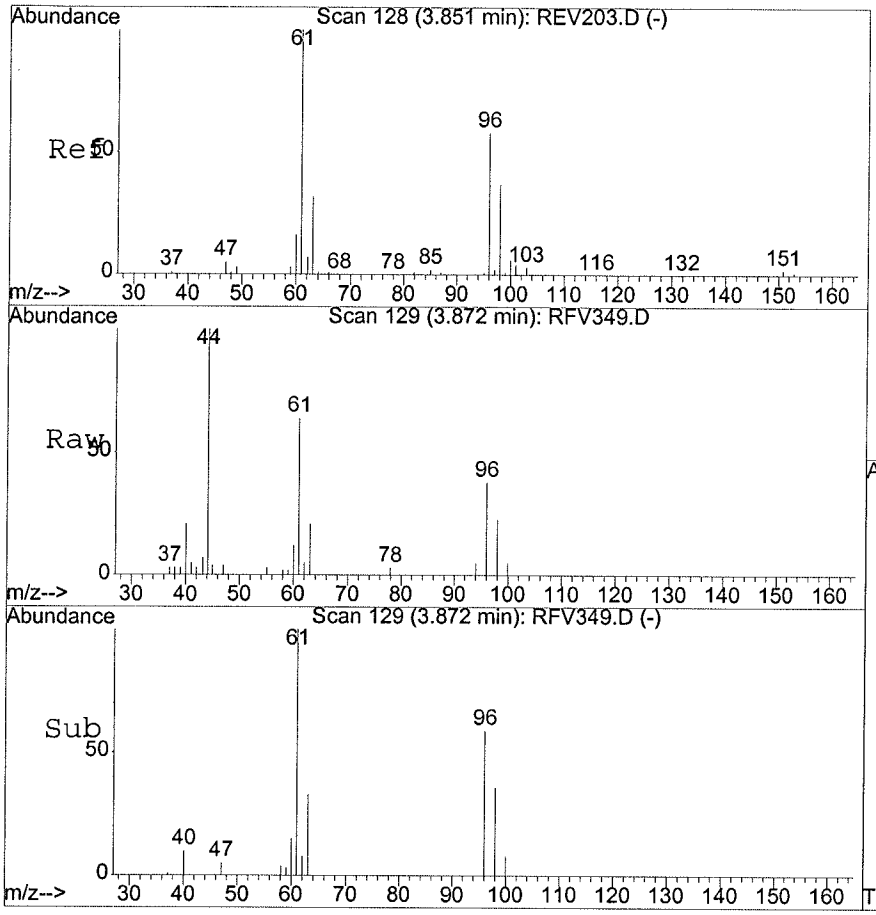
(#) = qualifier out of range (m) = manual integration
RFV349.D VO01E13.M Mon Jun 29 11:15:38 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV349.D Vial: 22
Acq On : 26 Jun 2020 9:28 pm Operator: VLu
Sample : 20F178-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:15 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

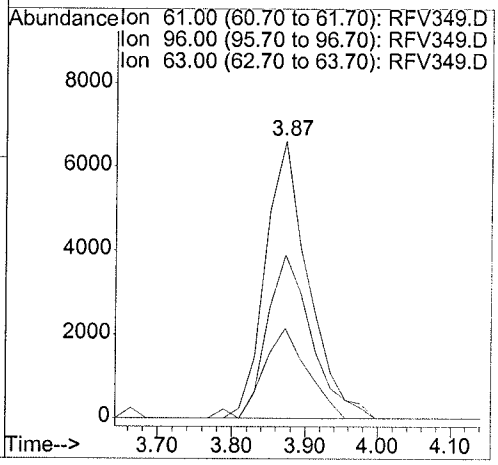


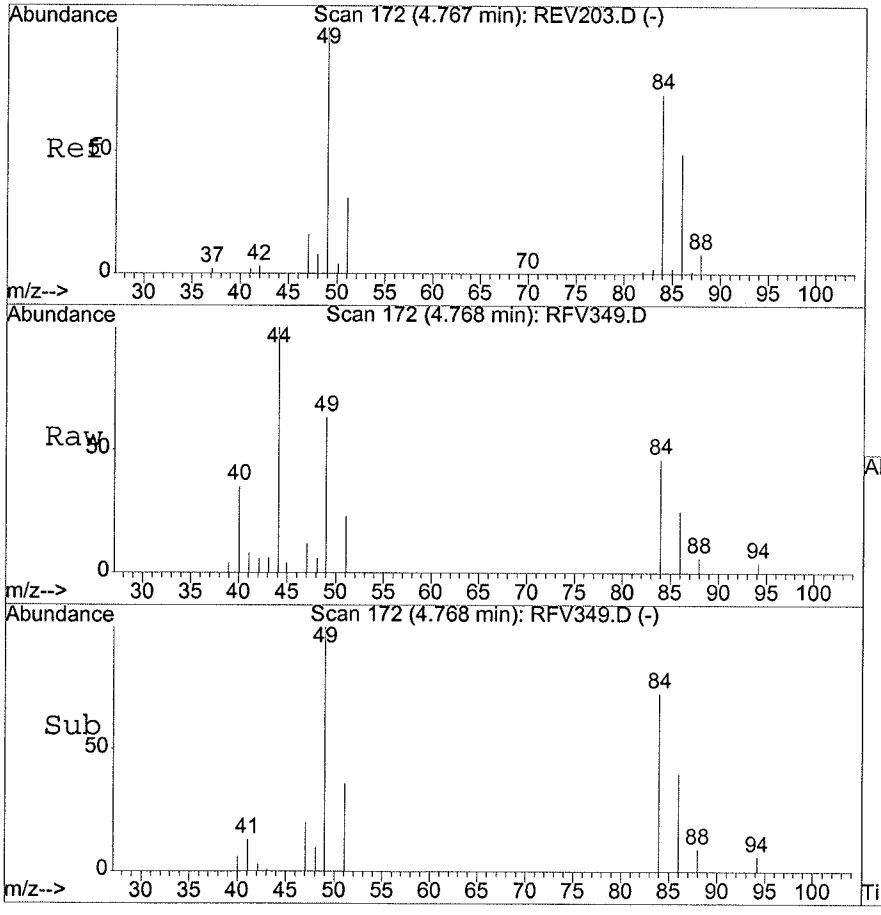


#14
1,1-Dichloroethene
Concen: 0.20 ug/l
RT: 3.87 min Scan# 129
Delta R.T. 0.02 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 61 Resp: 27038

Ion	Ratio	Lower	Upper
61	100		
96	60.7	31.4	91.4
63	33.5	2.1	62.1

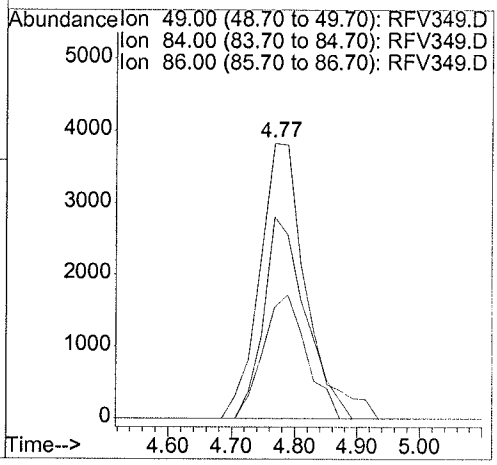


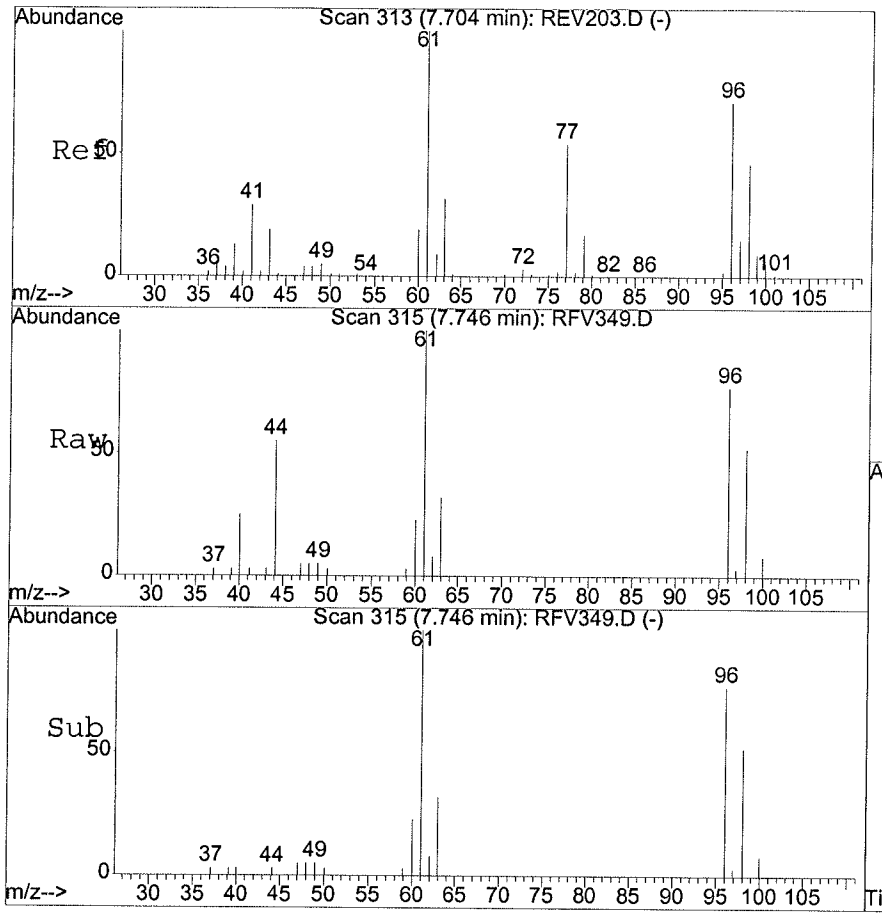


#18
Methylene chloride
Concen: 0.18 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 49 Resp: 19708

Ion	Ratio	Lower	Upper
49	100		
84	65.9	43.3	103.3
86	41.7	17.1	77.1

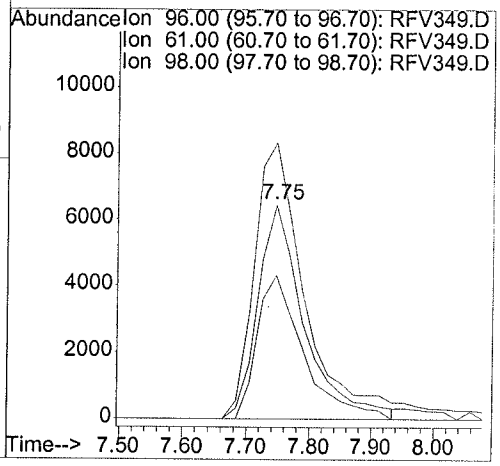


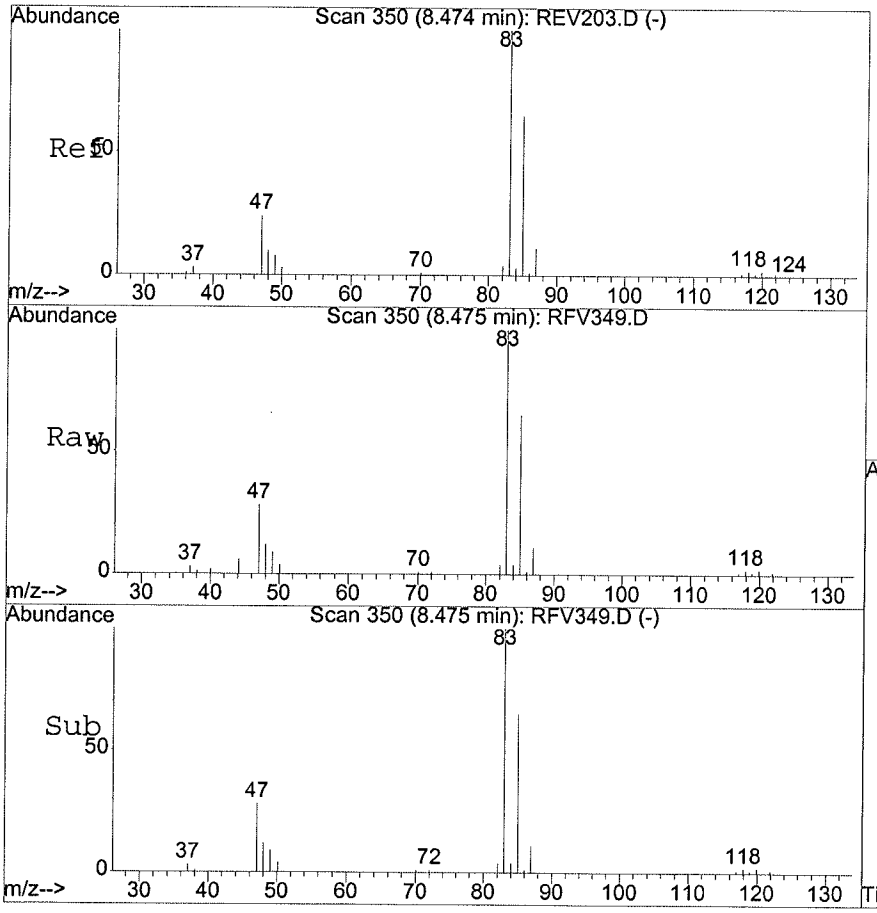


#29
cis-1,2-Dichloroethene
Concen: 0.36 ug/l
RT: 7.75 min Scan# 315
Delta R.T. 0.04 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 96 Resp: 33092

Ion	Ratio	Lower	Upper
96	100		
61	139.8	117.3	177.3
98	66.8	35.2	95.2

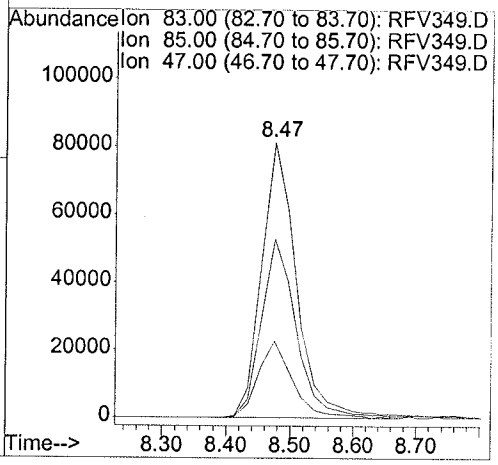


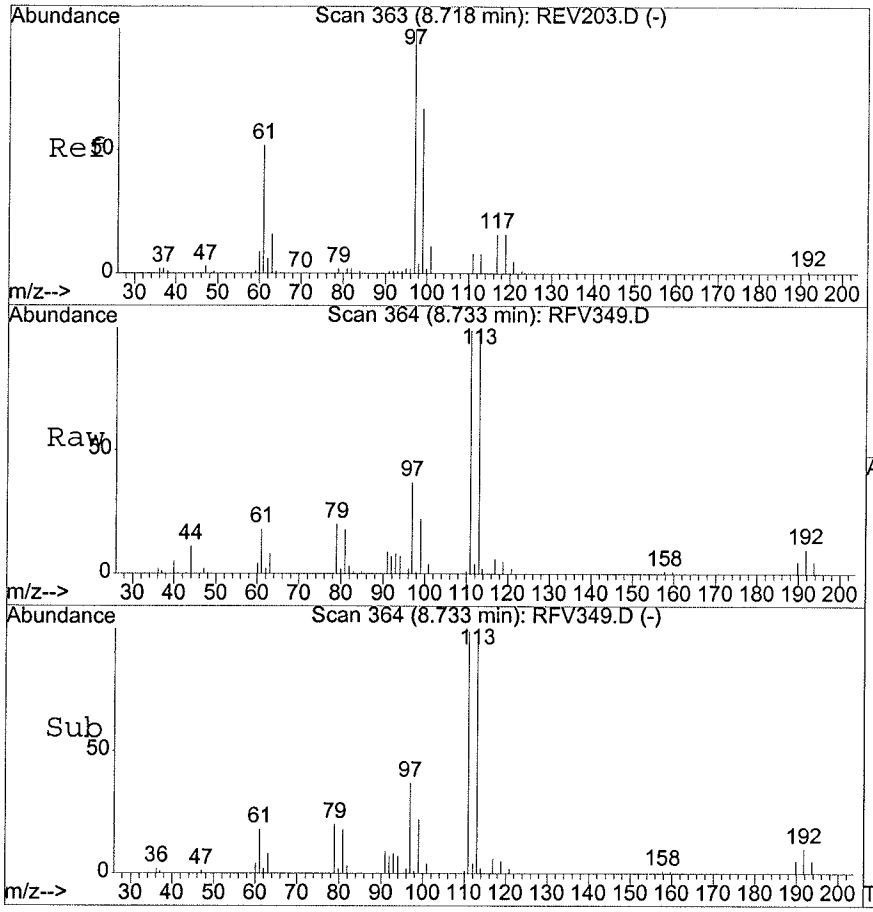


#33
Chloroform
Concen: 2.31 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 83 Resp: 304002

Ion	Ratio	Lower	Upper
83	100		
85	65.0	35.3	95.3
47	27.5	0.0	57.1

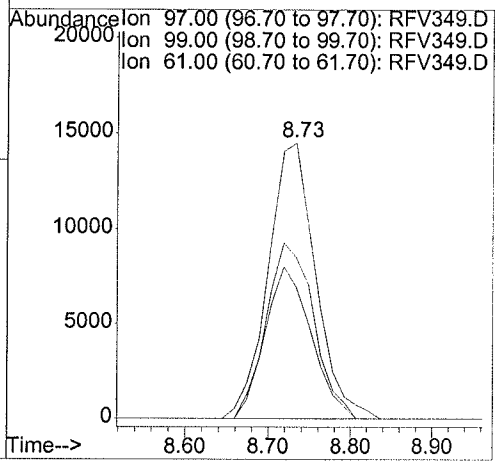


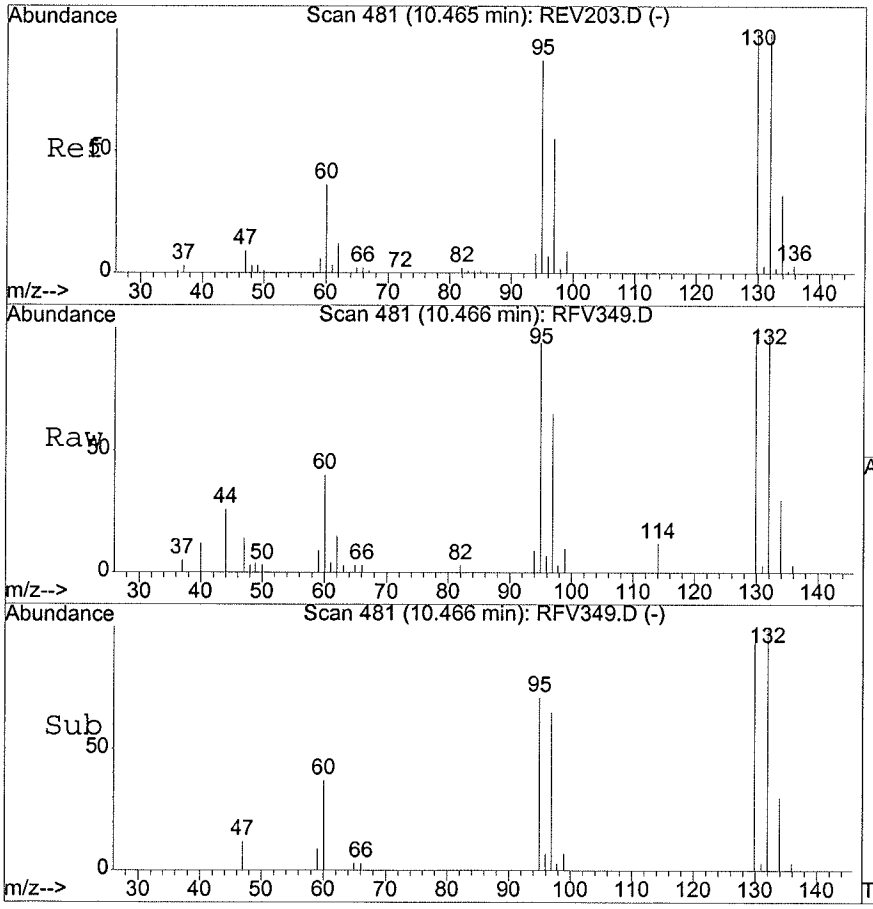


#35
1,1,1-Trichloroethane
Concen: 0.55 ug/l
RT: 8.73 min Scan# 364
Delta R.T. 0.02 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 97 Resp: 57947

Ion	Ratio	Lower	Upper
97	100		
99	63.9	36.2	96.2
61	53.5	22.1	82.1

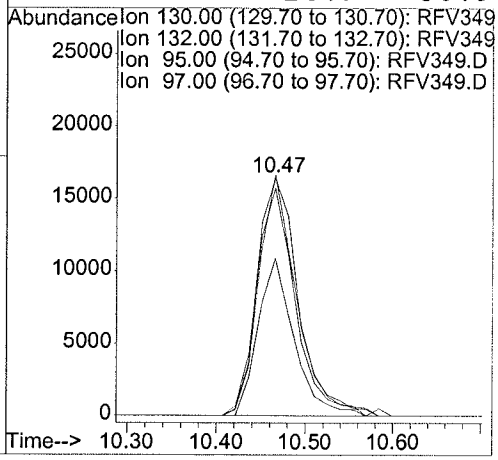


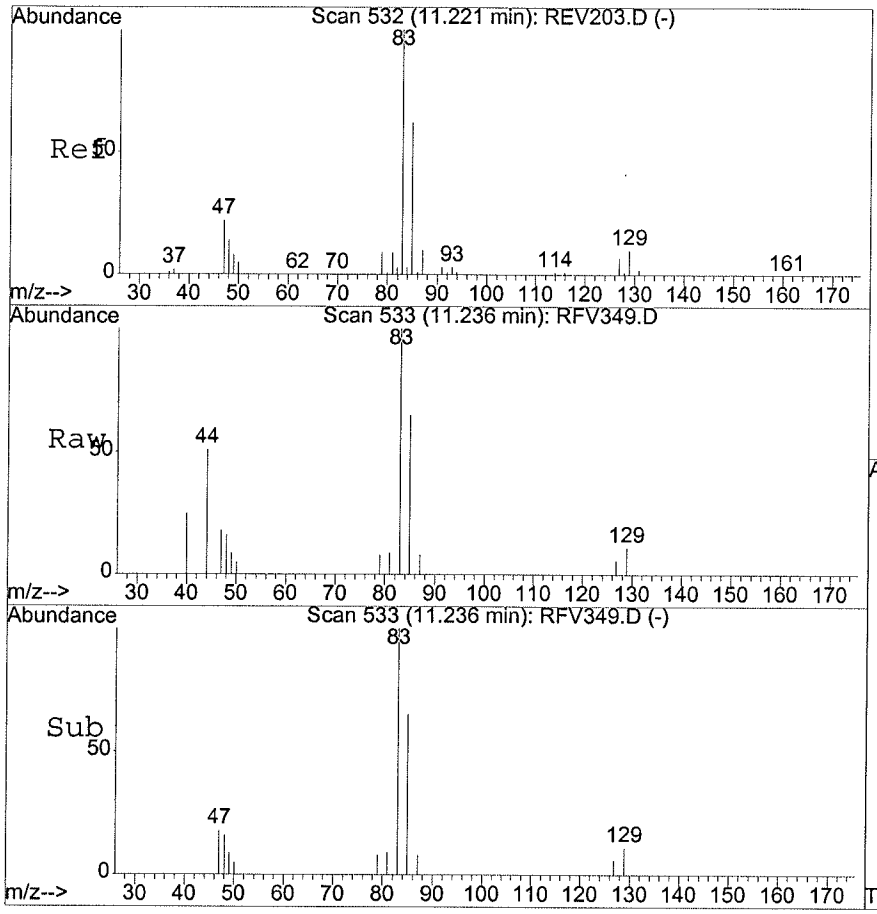


#44
Trichloroethene
Concen: 0.53 ug/l
RT: 10.47 min Scan# 481
Delta R.T. 0.00 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion:130 Resp: 53199

Ion	Ratio	Lower	Upper
130	100		
132	93.7	66.3	126.3
95	91.3	59.7	119.7
97	58.2	26.9	86.9

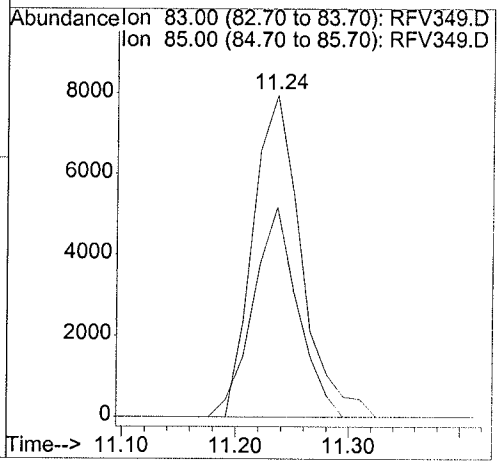


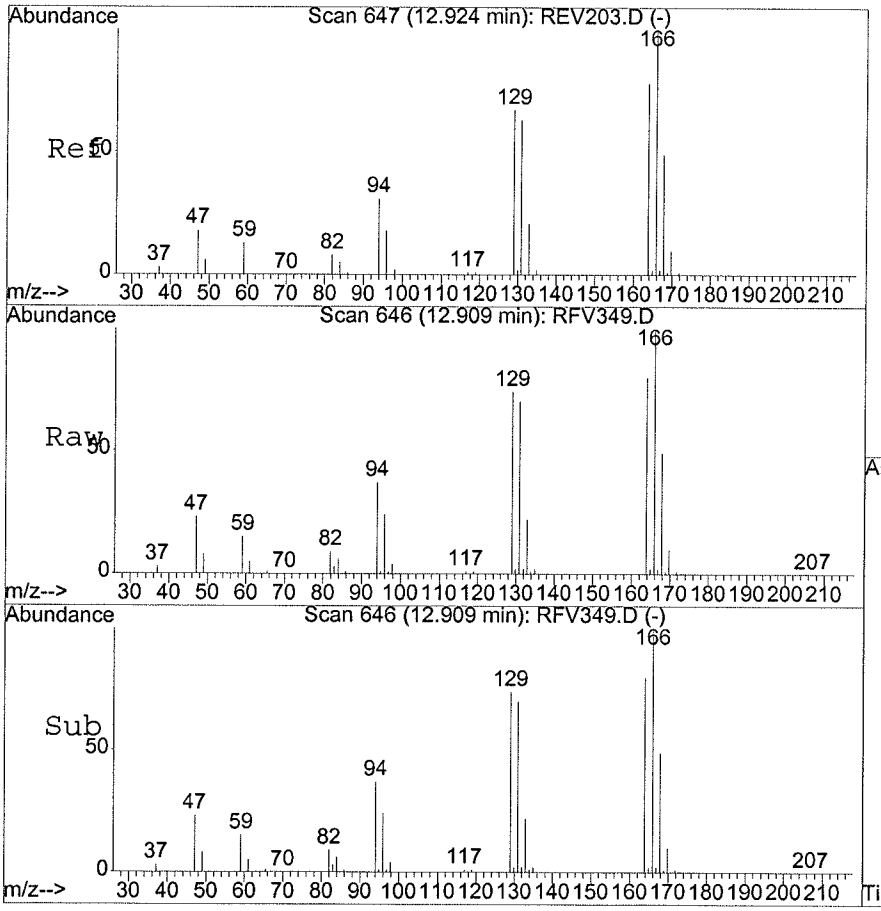


#49
Bromodichloromethane
Concen: 0.27 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.02 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion: 83 Resp: 23474

Ion	Ratio	Lower	Upper
83	100		
85	60.4	33.3	93.3

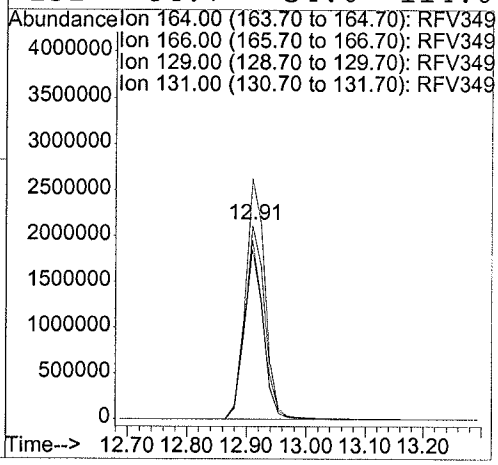




#59
Tetrachloroethene
Concen: 62.46 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RFV349.D
Acq: 26 Jun 2020 9:28 pm

Tgt Ion:164 Resp: 4867691

Ion	Ratio	Lower	Upper
164	100		
166	124.9	99.2	159.2
129	89.7	59.7	119.7
131	84.7	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV349.D Vial: 22
Acq On : 26 Jun 2020 9:28 pm Operator: VLu
Sample : 20F178-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2723583	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2261150	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	743264	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV349.D VO01E14.M Mon Jun 29 10:16:36 2020 Page 1

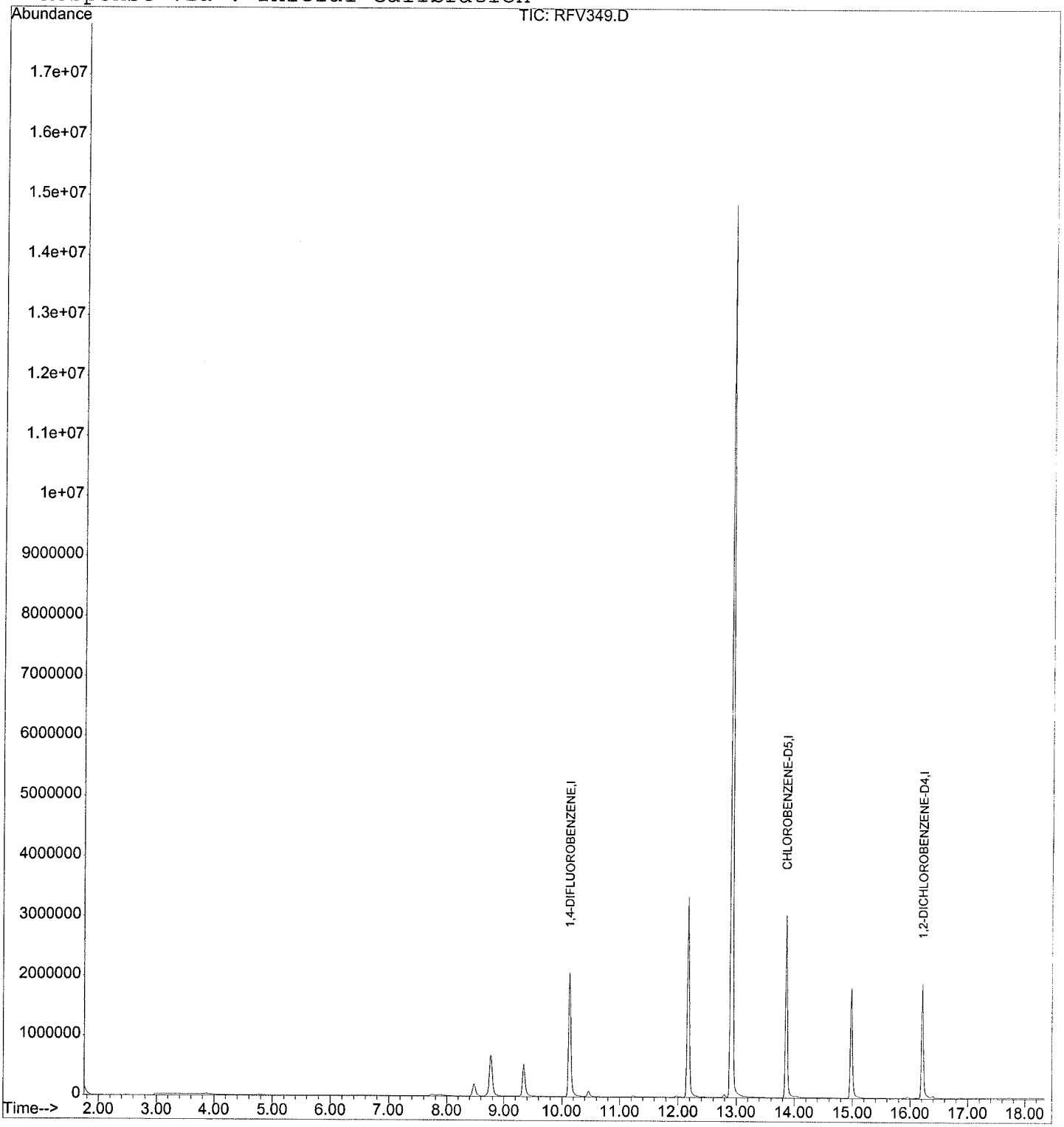
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV349.D
Acq On : 26 Jun 2020 9:28 pm
Sample : 20F178-01 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020

Vial: 22
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 21:55
Sample ID:	MW25C-GW061920	Date Analyzed:	06/26/20 21:55
Lab Samp ID:	F178-02	Dilution Factor:	1
Lab File ID:	RFV350	Matrix :	WATER
Ext Btch ID:	VO01F16	% Moisture :	NA
Calib. Ref.:	REV203	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.40J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	0.11J	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	3.1	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	0.97J	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.87	10.00	98.7	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV350.D Vial: 23
Acq On : 26 Jun 2020 9:55 pm Operator: VLu
Sample : 20F178-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:16 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

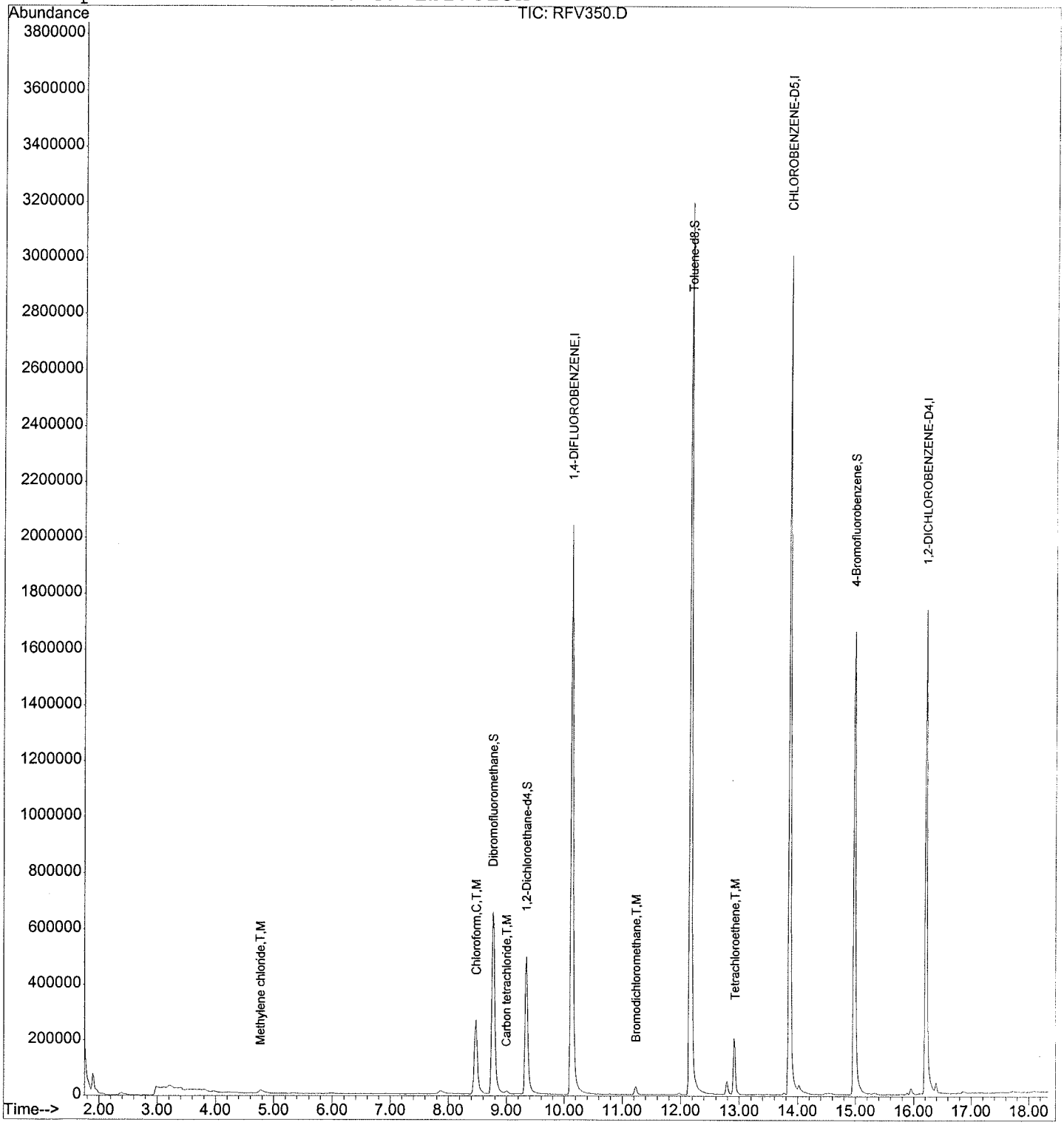
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2668510	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2238297	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	695420	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	798676	10.63	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.30%		
38) 1,2-Dichloroethane-d4	9.34	65	538004	10.76	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.60%		
54) Toluene-d8	12.17	98	3006816	9.87	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.70%		
74) 4-Bromofluorobenzene	14.98	95	872731	10.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	17831	0.16	ug/l	95
33) Chloroform	8.48	83	405183	3.14	ug/l	99
40) Carbon tetrachloride	9.00	119	9192	0.11	ug/l	89
49) Bromodichloromethane	11.24	83	33475	0.40	ug/l	95
59) Tetrachloroethene	12.92	164	74585	0.97	ug/l	98

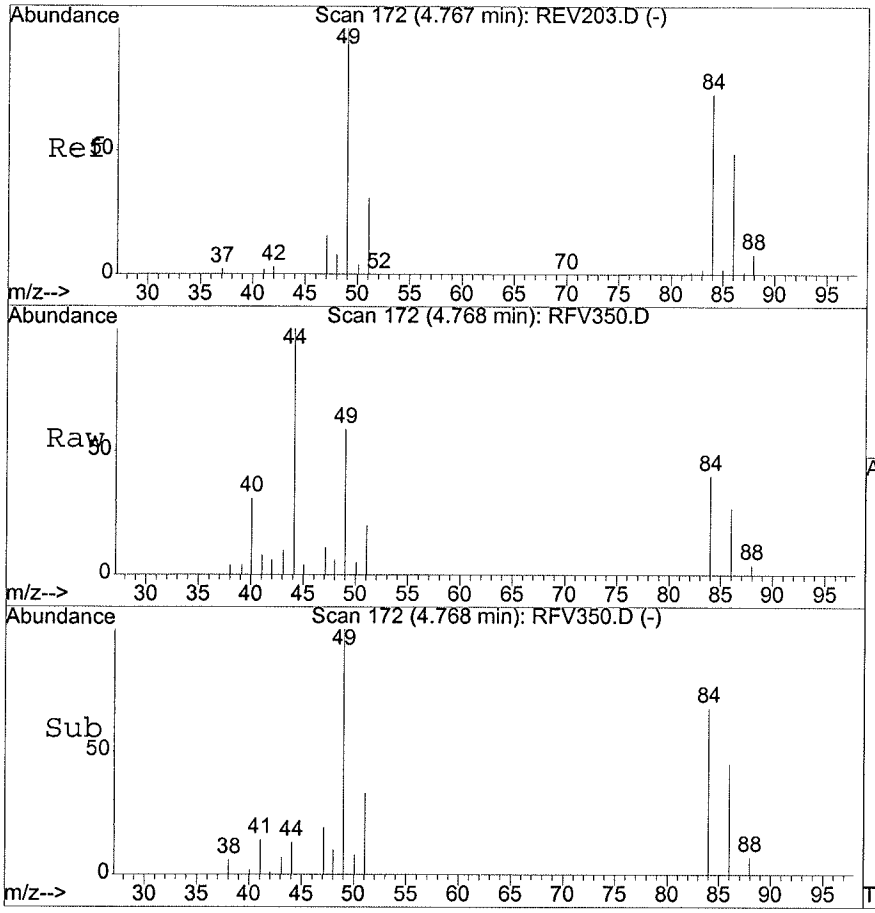
(#) = qualifier out of range (m) = manual integration
RFV350.D VO01E13.M Mon Jun 29 11:17:07 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV350.D Vial: 23
Acq On : 26 Jun 2020 9:55 pm Operator: VLu
Sample : 20F178-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:16 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

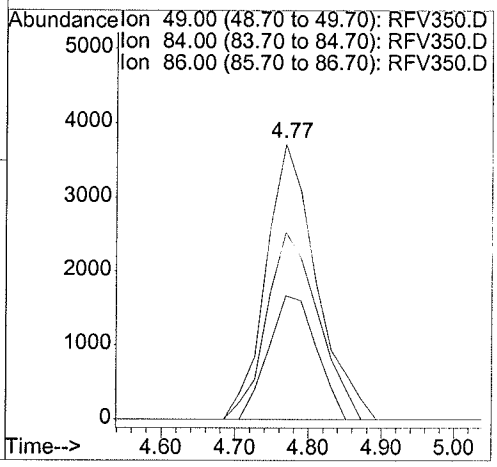


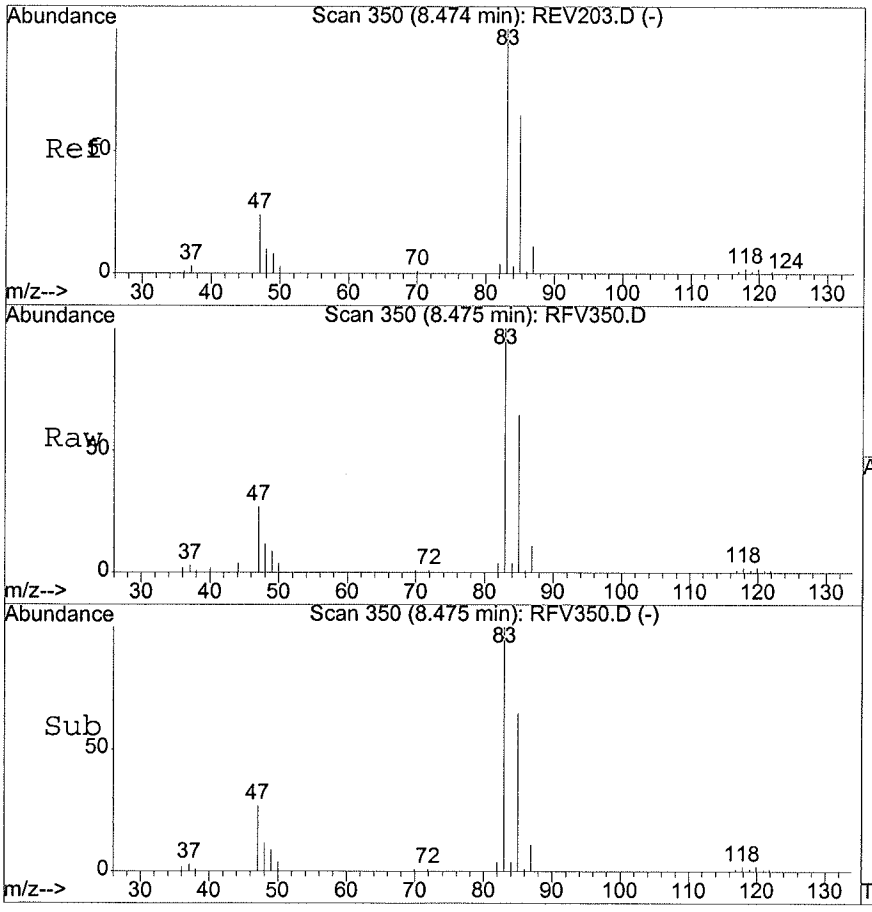


#18
Methylene chloride
Concen: 0.16 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV350.D
Acq: 26 Jun 2020 9:55 pm

Tgt Ion: 49 Resp: 17831

Ion	Ratio	Lower	Upper
49	100		
84	69.5	43.3	103.3
86	42.8	17.1	77.1

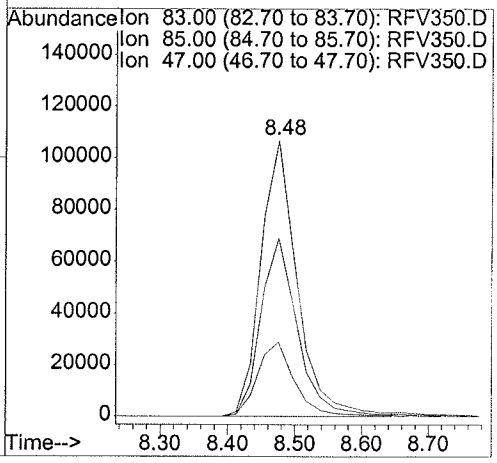


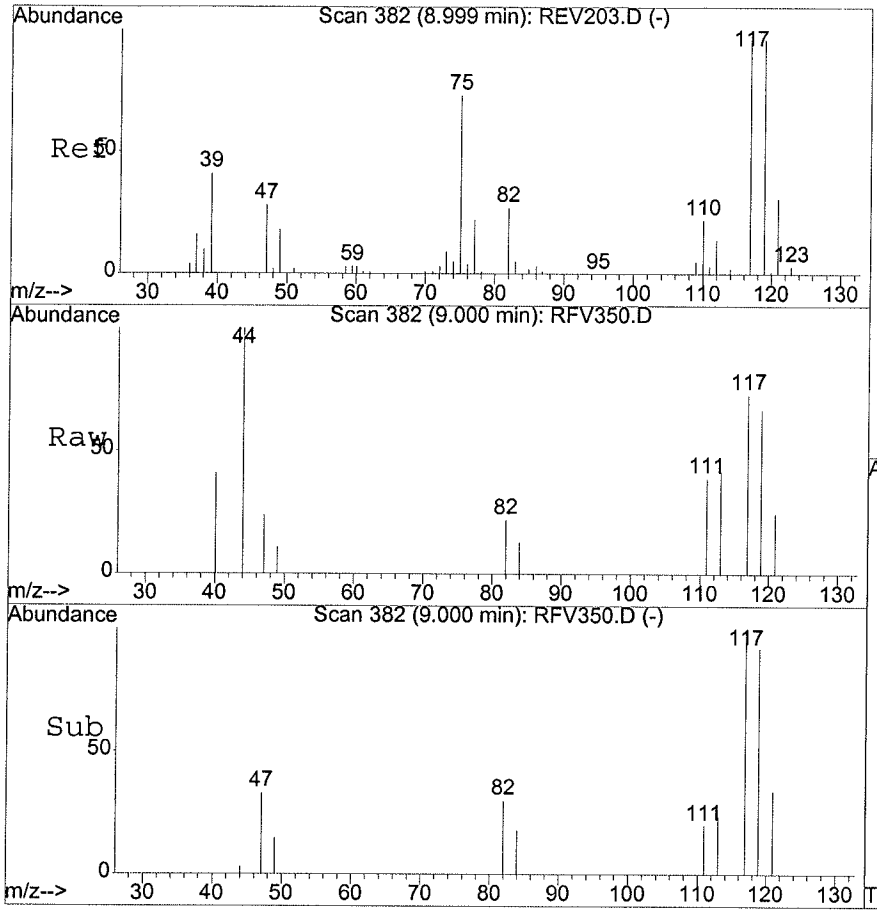


#33
Chloroform
Concen: 3.14 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV350.D
Acq: 26 Jun 2020 9:55 pm

Tgt Ion: 83 Resp: 405183

Ion	Ratio	Lower	Upper
83	100		
85	64.1	35.3	95.3
47	27.2	0.0	57.1

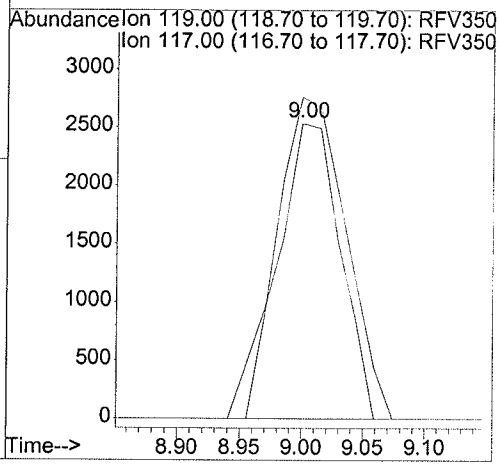


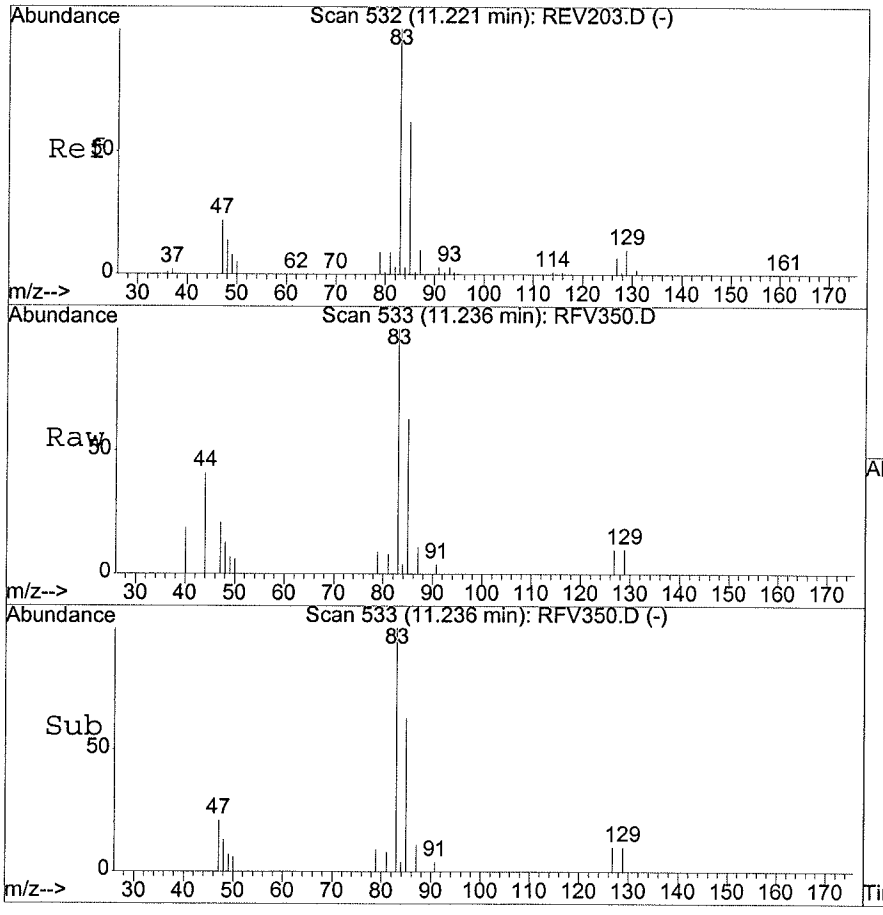


#40
Carbon tetrachloride
Concen: 0.11 ug/l
RT: 9.00 min Scan# 382
Delta R.T. 0.00 min
Lab File: RFV350.D
Acq: 26 Jun 2020 9:55 pm

Tgt Ion:119 Resp: 9192

Ion	Ratio	Lower	Upper
119	100		
117	115.6	74.5	134.5

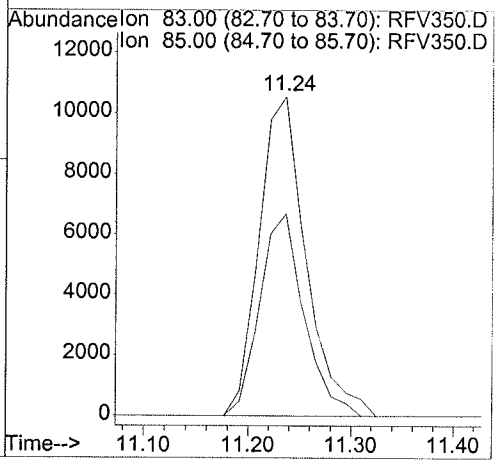


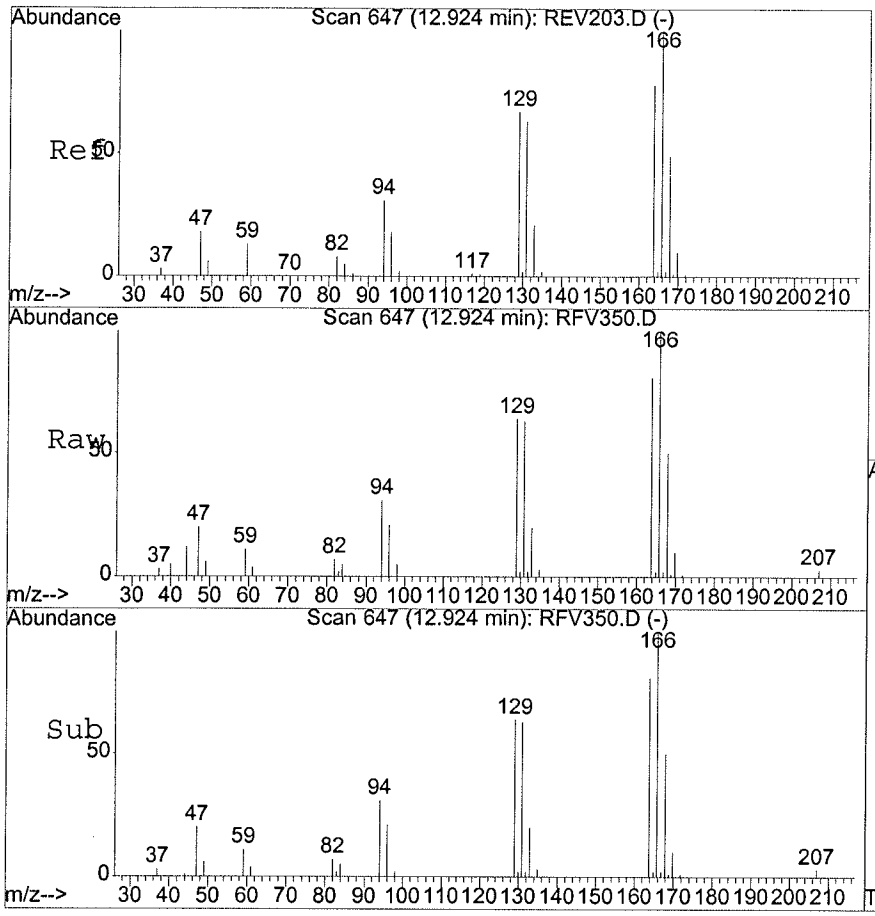


#49
Bromodichloromethane
Concen: 0.40 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.02 min
Lab File: RFV350.D
Acq: 26 Jun 2020 9:55 pm

Tgt Ion: 83 Resp: 33475

Ion	Ratio	Lower	Upper
83	100		
85	59.8	33.3	93.3

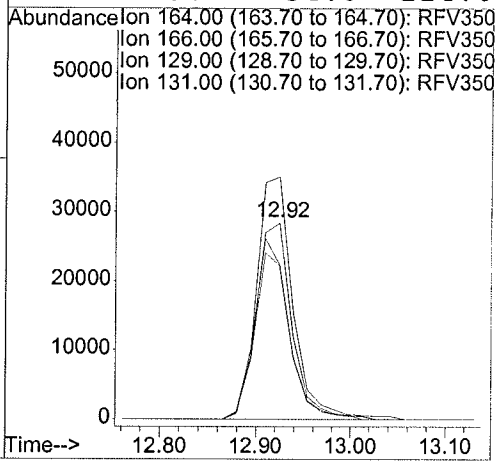




#59
Tetrachloroethene
Concen: 0.97 ug/l
RT: 12.92 min Scan# 647
Delta R.T. 0.00 min
Lab File: RFV350.D
Acq: 26 Jun 2020 9:55 pm

Tgt Ion:164 Resp: 74585

Ion	Ratio	Lower	Upper
164	100		
166	126.0	99.2	159.2
129	88.6	59.7	119.7
131	83.4	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV350.D Vial: 23
Acq On : 26 Jun 2020 9:55 pm Operator: VLu
Sample : 20F178-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2668455	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2221233	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	695400	10.00	ug/l	0.00

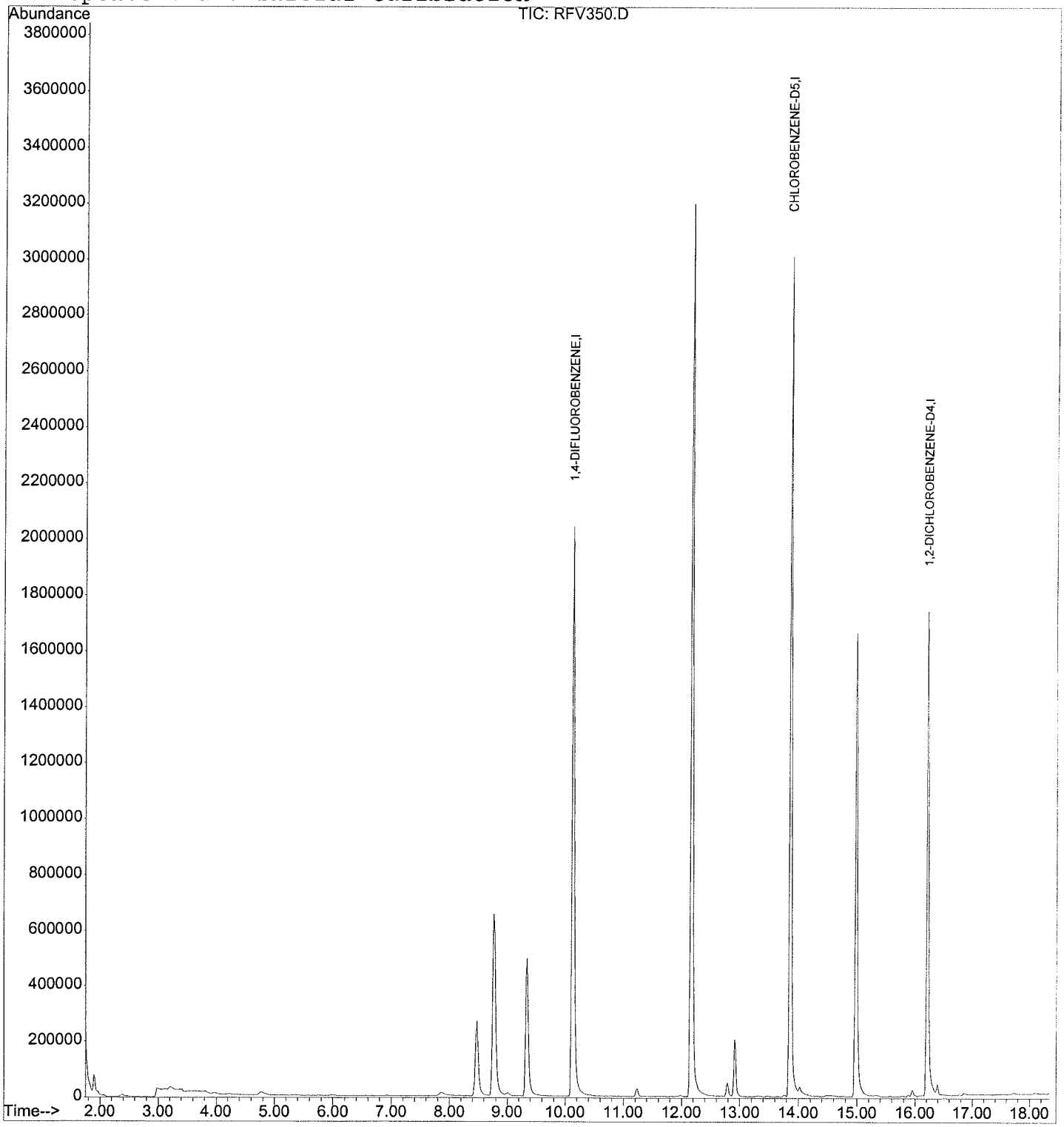
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV350.D VO01E14.M Mon Jun 29 10:16:02 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV350.D Vial: 23
Acq On : 26 Jun 2020 9:55 pm Operator: VLu
Sample : 20F178-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/26/20 19:36
Sample ID: TB09-GW061920	Date Analyzed: 06/26/20 19:36
Lab Samp ID: F178-03	Dilution Factor: 1
Lab File ID: RFV345	Matrix : WATER
Ext Btch ID: V001F16	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.4	10.00	104	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.99	10.00	99.9	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV345.D Vial: 18
Acq On : 26 Jun 2020 7:36 pm Operator: VLu
Sample : 20F178-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:10 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2787883	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2287200	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	725905	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	814889	10.39	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.90%			
38) 1,2-Dichloroethane-d4	9.34	65	543026	10.39	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.90%			
54) Toluene-d8	12.17	98	3109903	9.99	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.90%			
74) 4-Bromofluorobenzene	14.98	95	922852	10.63	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.30%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	23270	0.20	ug/l	92

(#) = qualifier out of range (m) = manual integration
RFV345.D VO01E13.M Mon Jun 29 11:10:59 2020 Page 1

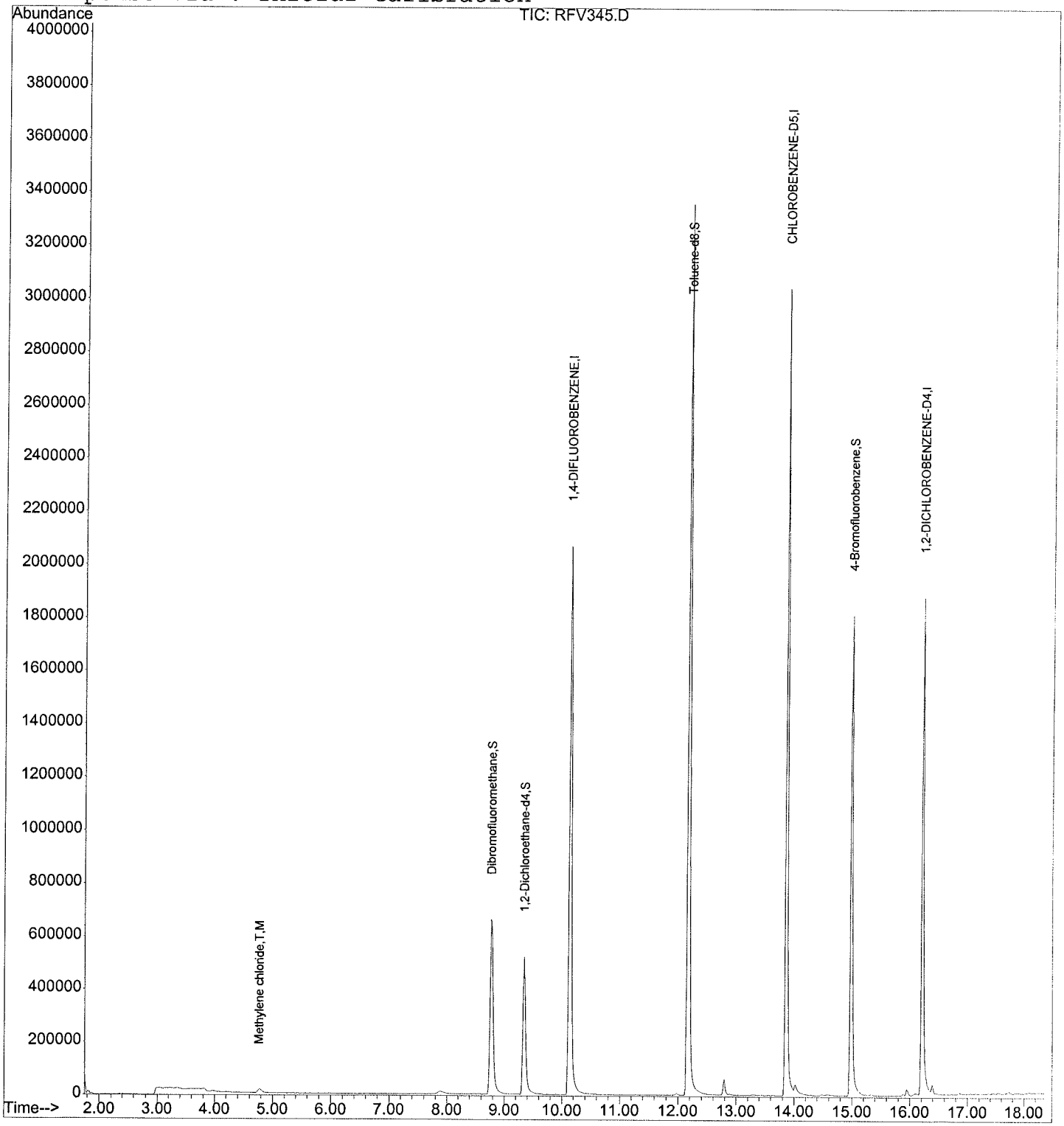
Quantitation Report

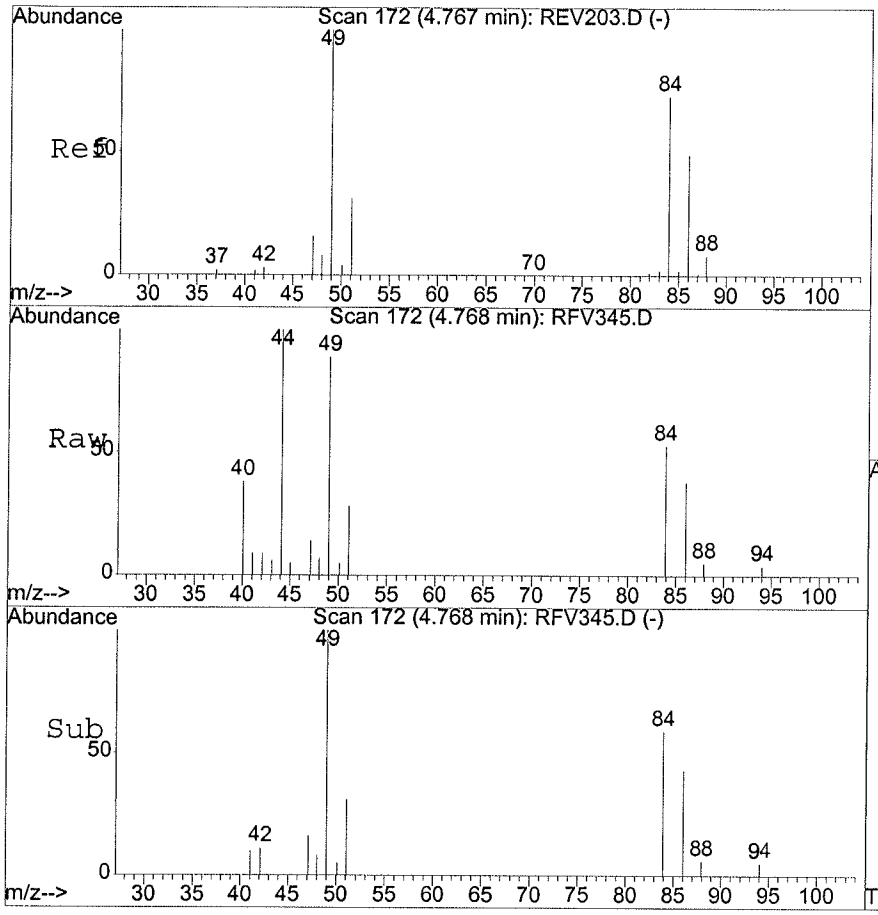
Data File : D:\HPCHEM\1\DATA\20F26\RFV345.D
Acq On : 26 Jun 2020 7:36 pm
Sample : 20F178-03 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 11:10 2020

Vial: 18
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

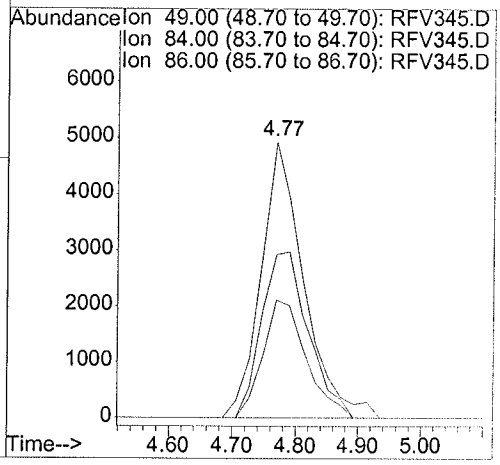




#18
Methylene chloride
Concen: 0.20 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV345.D
Acq: 26 Jun 2020 7:36 pm

Tgt Ion: 49 Resp: 23270

Ion	Ratio	Lower	Upper
49	100		
84	65.9	43.3	103.3
86	43.4	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV345.D Vial: 18
Acq On : 26 Jun 2020 7:36 pm Operator: VLu
Sample : 20F178-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2787941	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2275633	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	725883	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV345.D VO01E14.M Mon Jun 29 09:50:17 2020 Page 1

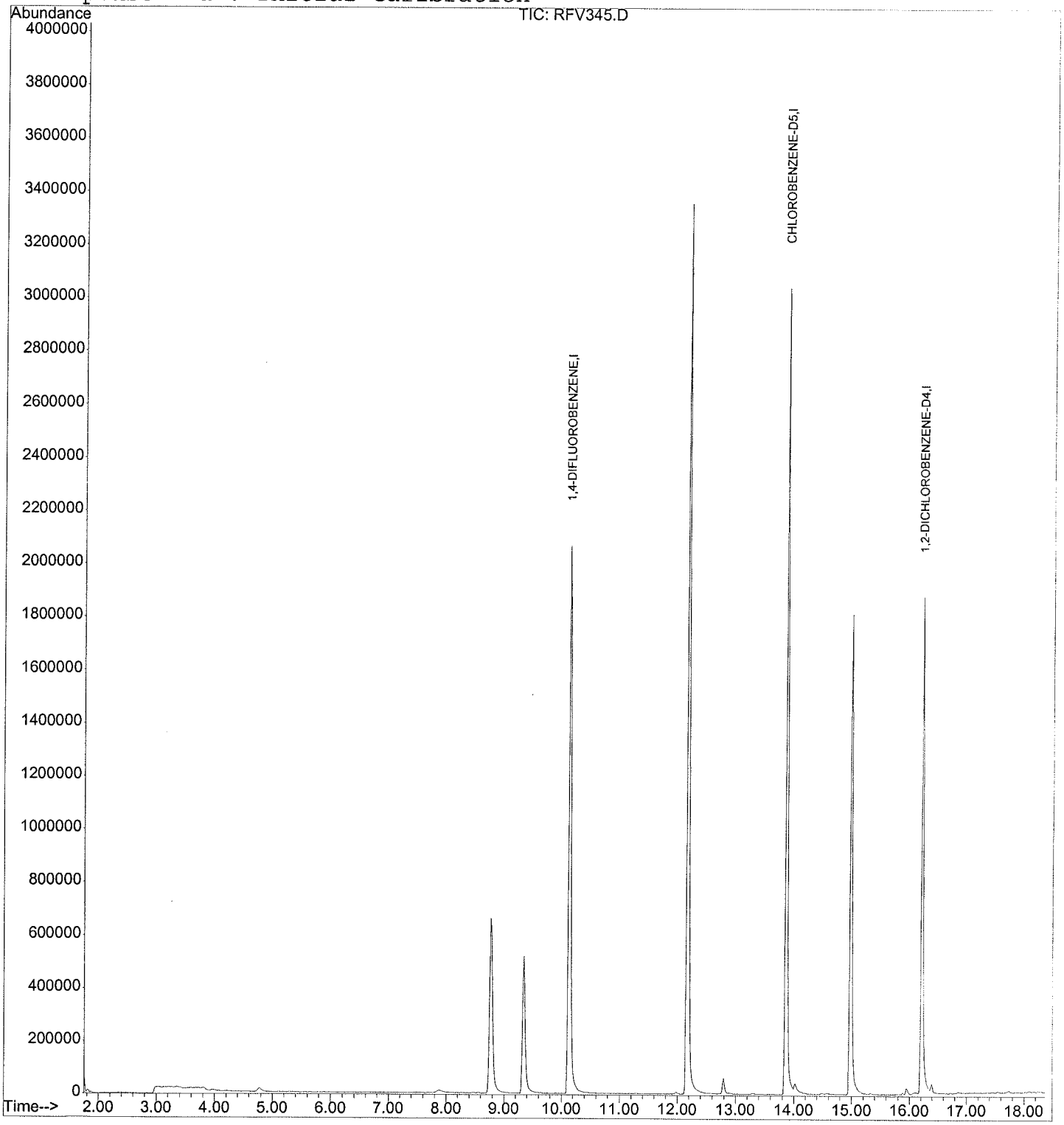
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV345.D
Acq On : 26 Jun 2020 7:36 pm
Sample : 20F178-03 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020

Vial: 18
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 22:24
Sample ID:	MW05R-GW061920	Date Analyzed:	06/26/20 22:24
Lab Samp ID:	F178-04	Dilution Factor:	1
Lab File ID:	RFV351	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.29J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	6.1	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.86	10.00	98.6	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV351.D Vial: 24
Acq On : 26 Jun 2020 10:24 pm Operator: VLu
Sample : 20F178-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:17 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

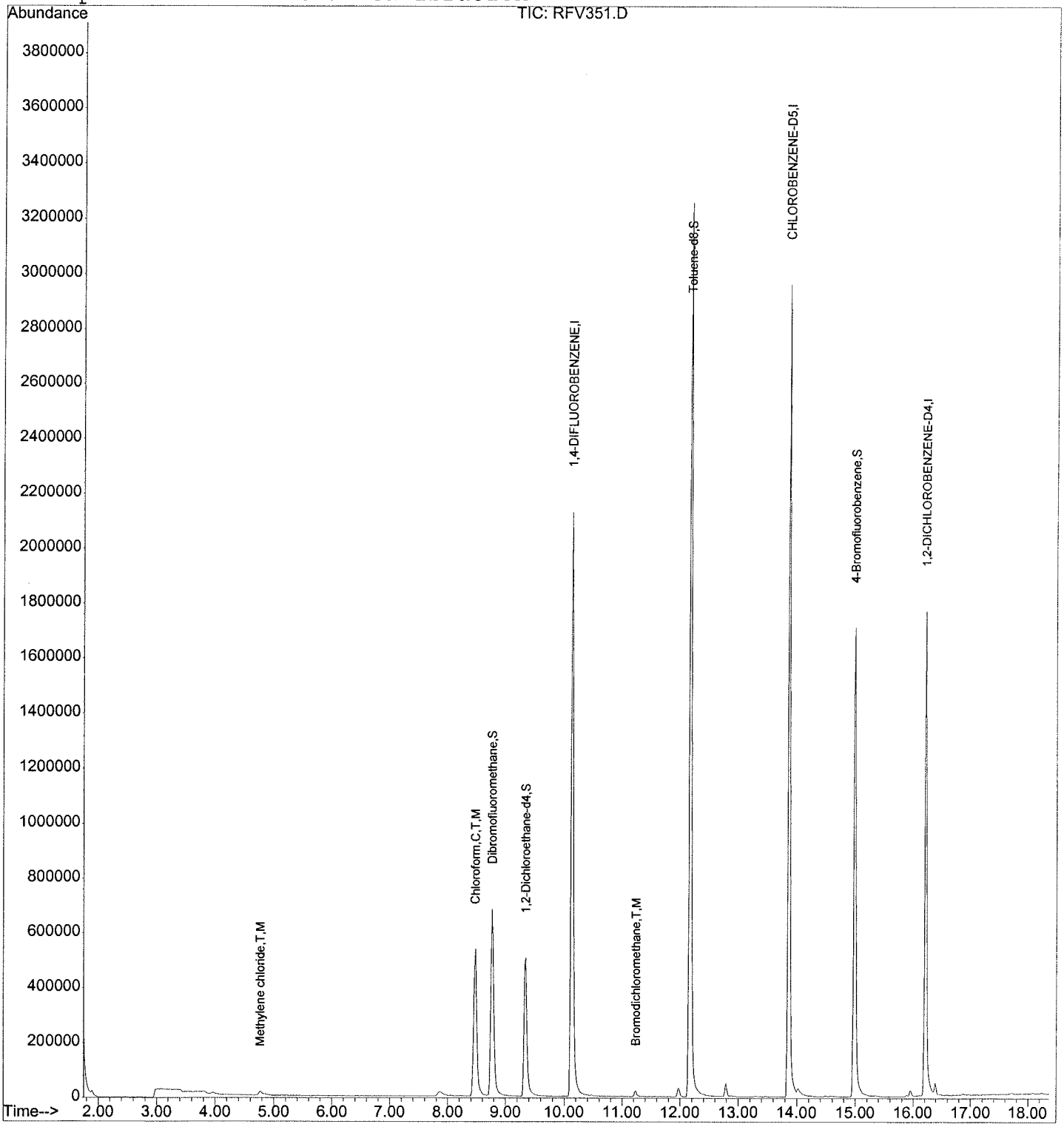
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2710144	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2266737	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	697225	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	800845	10.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.00%		
38) 1,2-Dichloroethane-d4	9.34	65	561996	11.06	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.60%		
54) Toluene-d8	12.17	98	3041704	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
74) 4-Bromofluorobenzene	14.98	95	903261	10.84	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.40%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	21508	0.19	ug/l	92
33) Chloroform	8.47	83	794660	6.06	ug/l	99
49) Bromodichloromethane	11.24	83	24678	0.29	ug/l	92

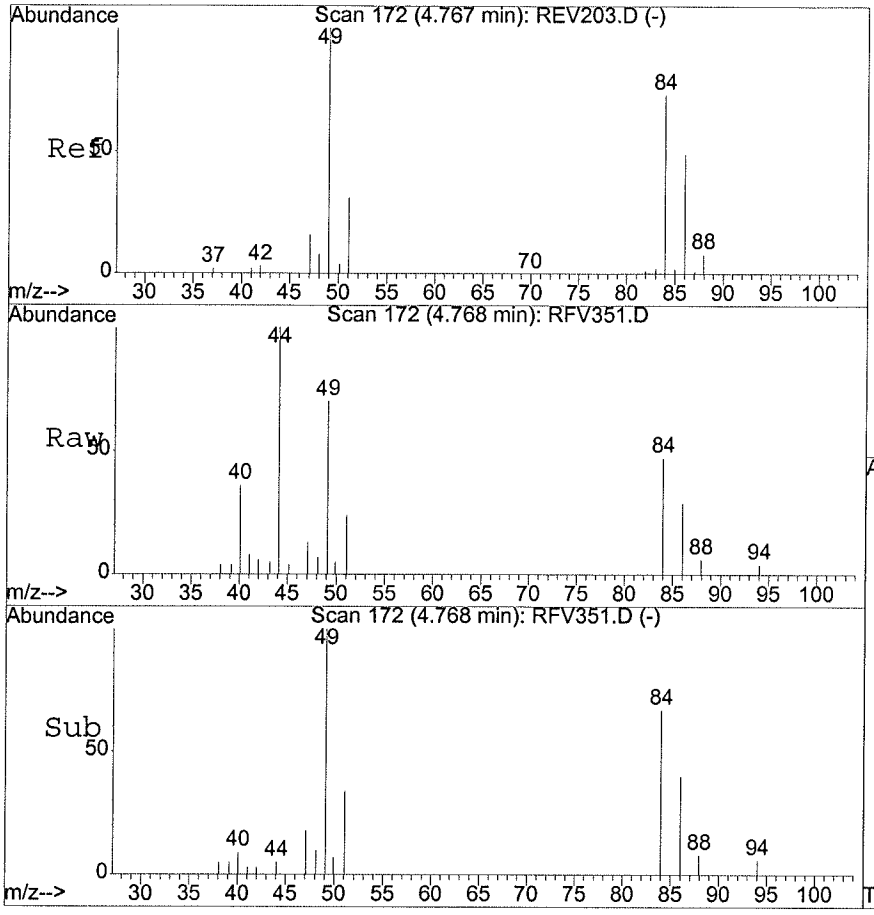
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV351.D Vial: 24
Acq On : 26 Jun 2020 10:24 pm Operator: VLu
Sample : 20F178-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:17 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

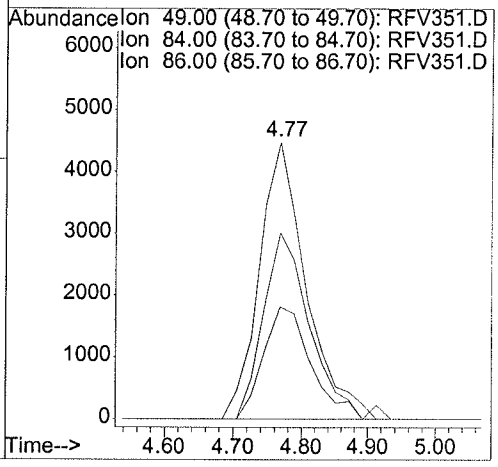


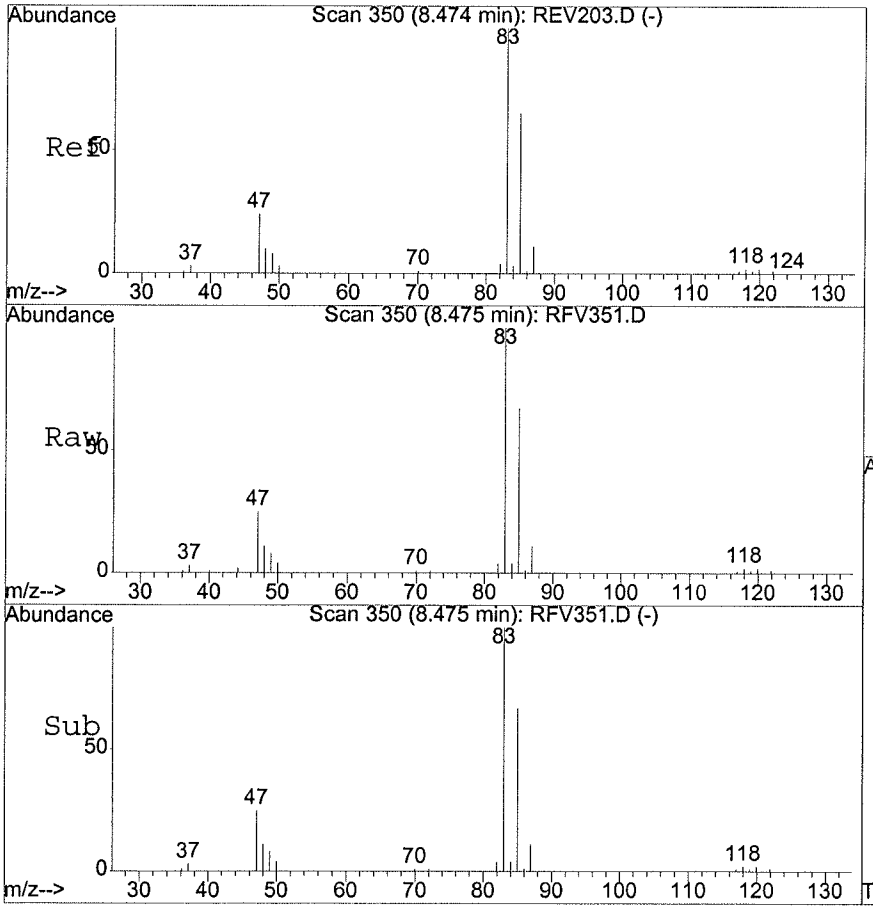


#18
Methylene chloride
Concen: 0.19 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV351.D
Acq: 26 Jun 2020 10:24 pm

Tgt Ion: 49 Resp: 21508

Ion	Ratio	Lower	Upper
49	100		
84	67.4	43.3	103.3
86	41.4	17.1	77.1

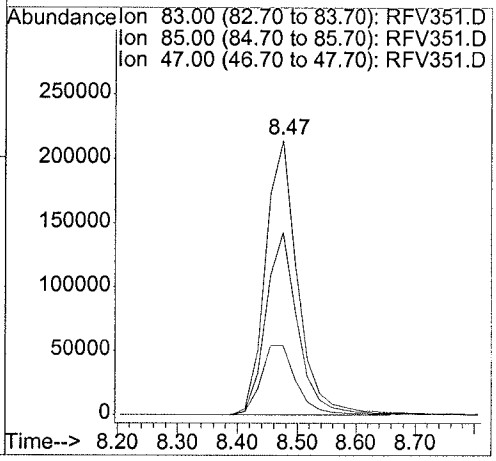


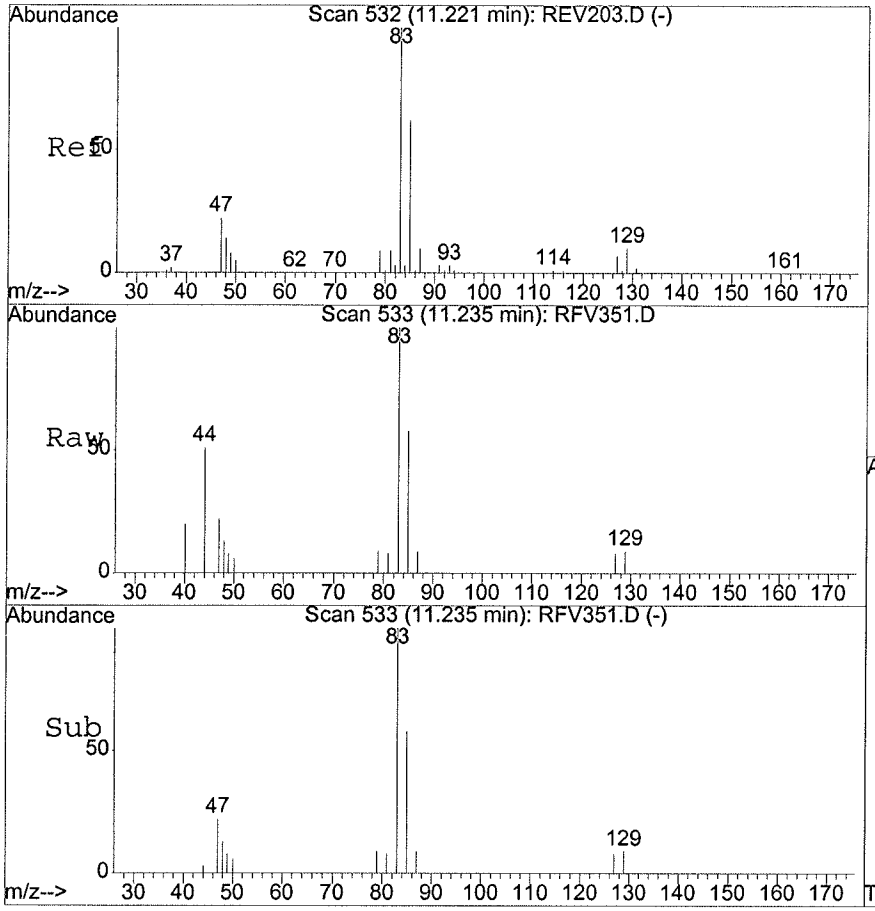


#33
Chloroform
Concen: 6.06 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV351.D
Acq: 26 Jun 2020 10:24 pm

Tgt Ion: 83 Resp: 794660

Ion	Ratio	Lower	Upper
83	100		
85	65.9	35.3	95.3
47	27.9	0.0	57.1

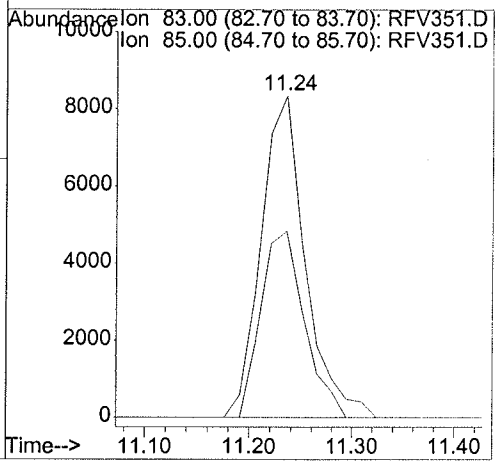




#49
Bromodichloromethane
Concen: 0.29 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV351.D
Acq: 26 Jun 2020 10:24 pm

Tgt Ion: 83 Resp: 24678

Ion	Ratio	Lower	Upper
83	100		
85	57.2	33.3	93.3



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV351.D Vial: 24
Acq On : 26 Jun 2020 10:24 pm Operator: VLu
Sample : 20F178-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2710201	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2247863	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	697249	10.00	ug/l	0.00

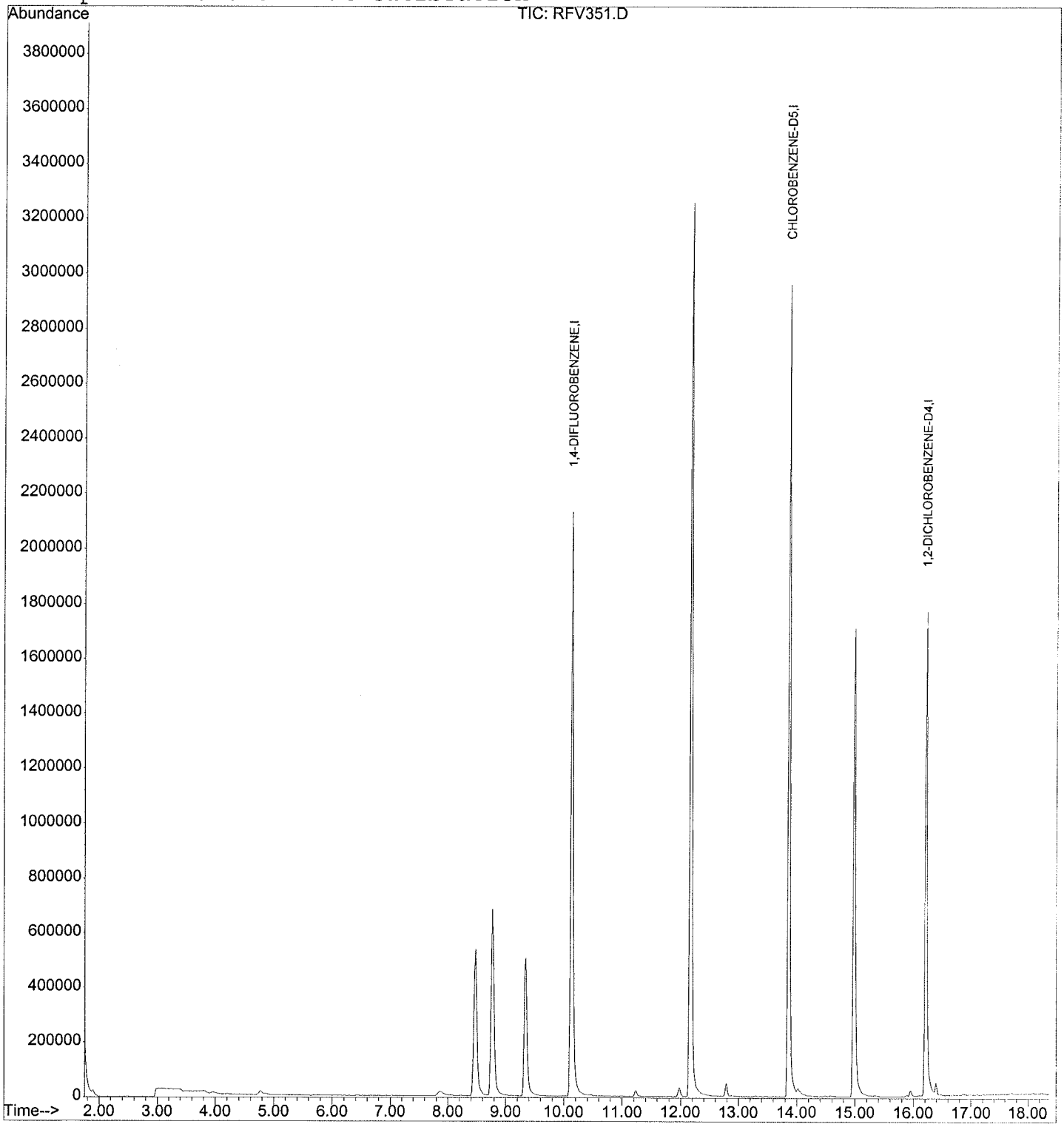
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV351.D VO01E14.M Mon Jun 29 10:17:39 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV351.D Vial: 24
Acq On : 26 Jun 2020 10:24 pm Operator: VLu
Sample : 20F178-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 22:51
Sample ID:	MW15S-GW061920	Date Analyzed:	06/26/20 22:51
Lab Samp ID:	F178-05	Dilution Factor:	1
Lab File ID:	RFV352	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.8	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	0.36J	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.73	10.00	97.3	70-130
DIBROMOFLUOROMETHANE	10.7	10.00	107	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV352.D Vial: 25
Acq On : 26 Jun 2020 10:51 pm Operator: VLu
Sample : 20F178-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

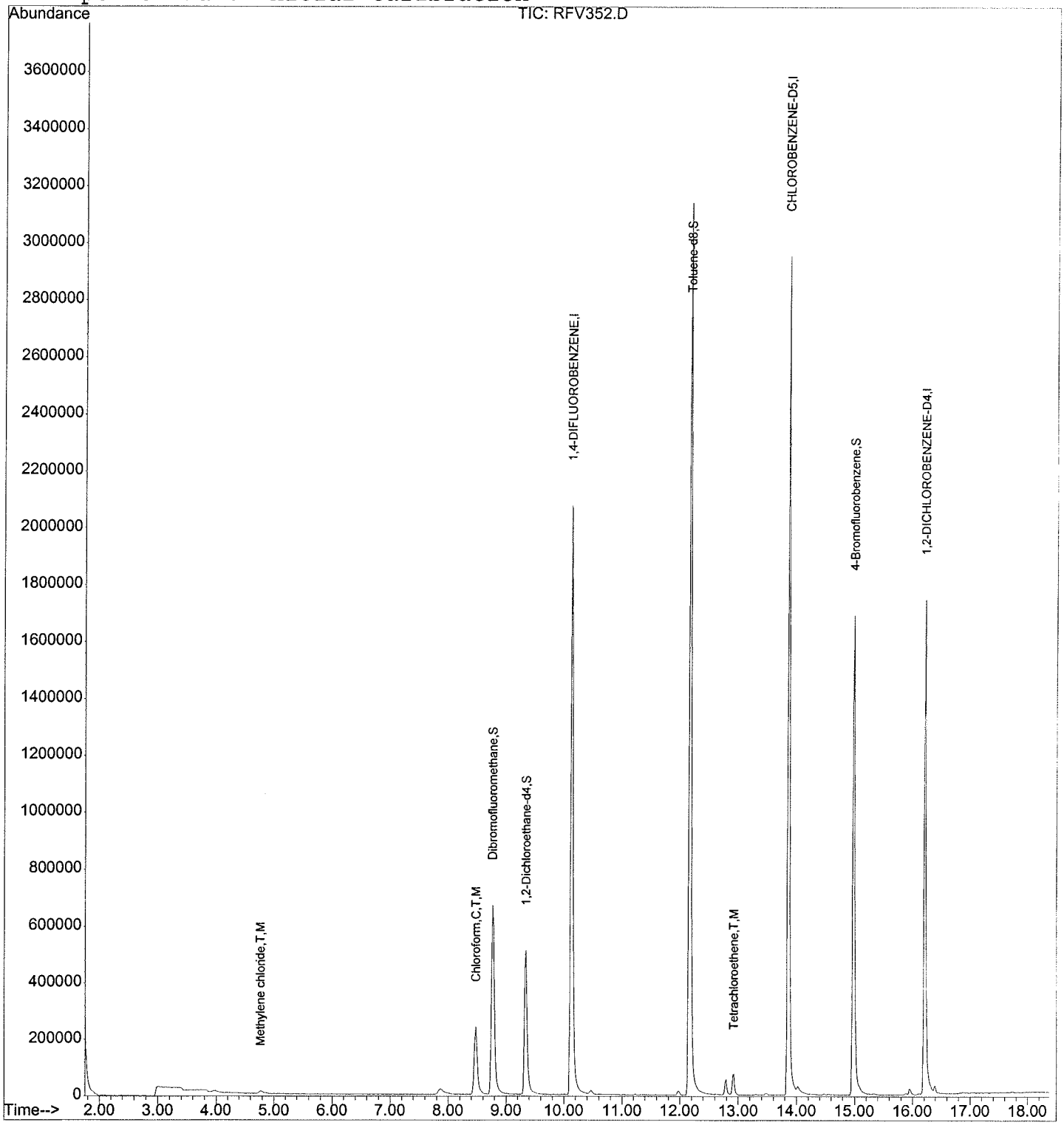
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2667475	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2250872	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	685635	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	804761	10.72	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.20%		
38) 1,2-Dichloroethane-d4	9.34	65	554525	11.09	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.90%		
54) Toluene-d8	12.17	98	2980443	9.73	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.30%		
74) 4-Bromofluorobenzene	14.98	95	886585	10.82	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.20%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	15079	0.14	ug/l	96
33) Chloroform	8.47	83	366914	2.84	ug/l	99
59) Tetrachloroethene	12.92	164	27942	0.36	ug/l	98

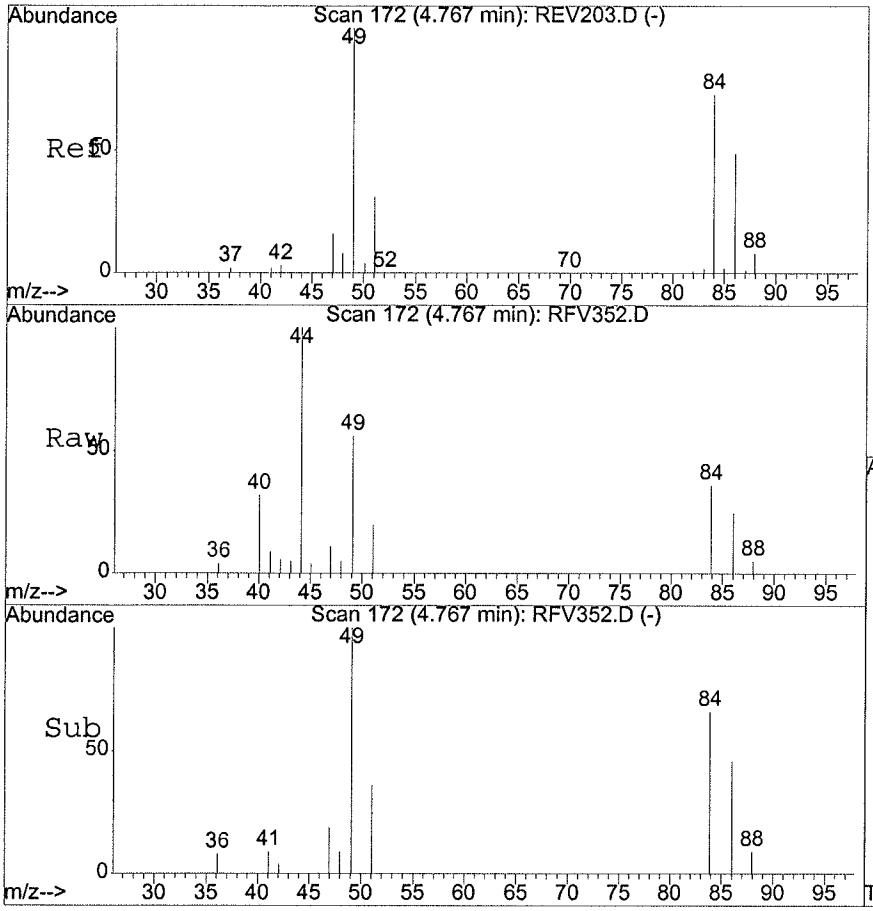
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV352.D Vial: 25
Acq On : 26 Jun 2020 10:51 pm Operator: VLu
Sample : 20F178-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

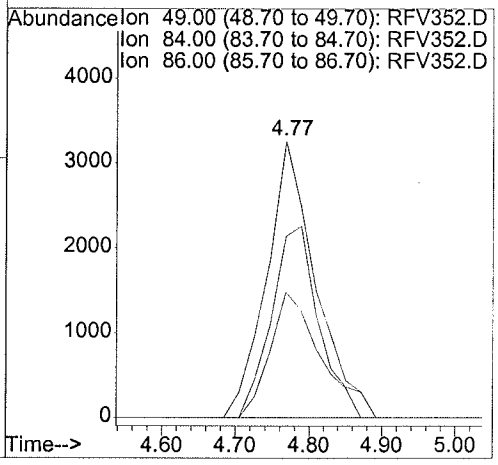


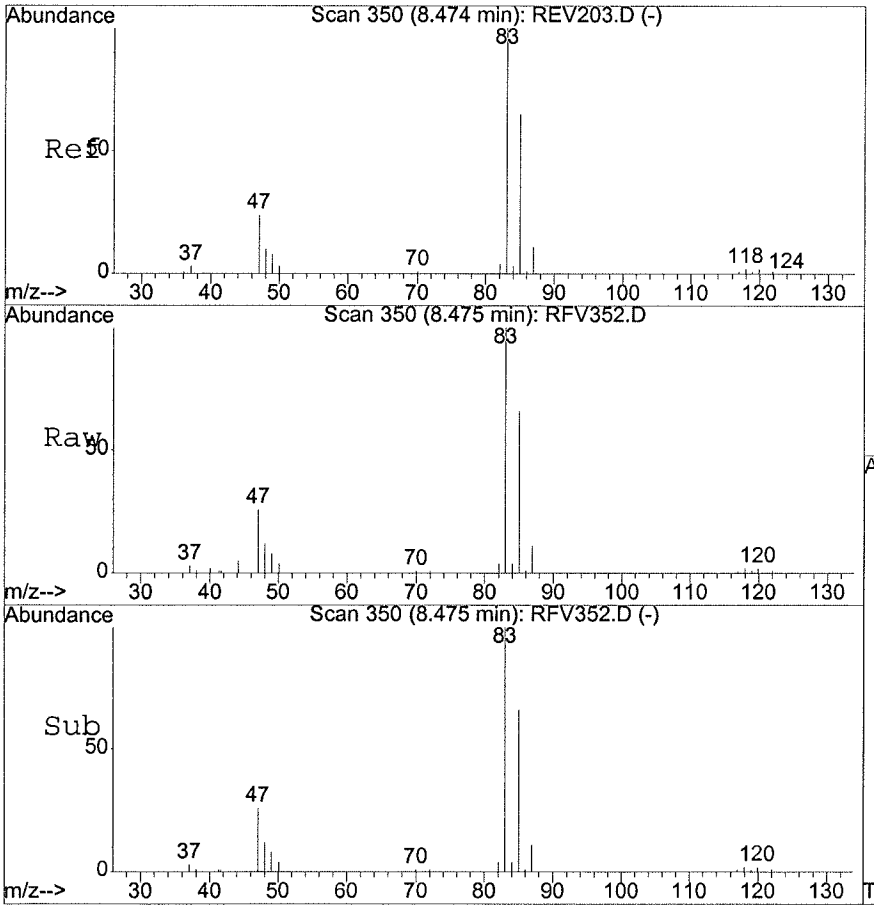


#18
Methylene chloride
Concen: 0.14 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV352.D
Acq: 26 Jun 2020 10:51 pm

Tgt Ion: 49 Resp: 15079

Ion	Ratio	Lower	Upper
49	100		
84	69.5	43.3	103.3
86	45.1	17.1	77.1

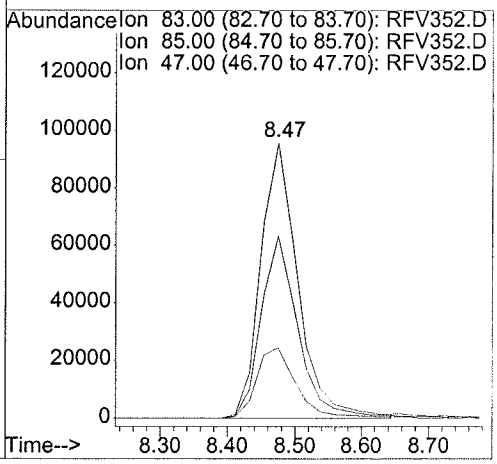


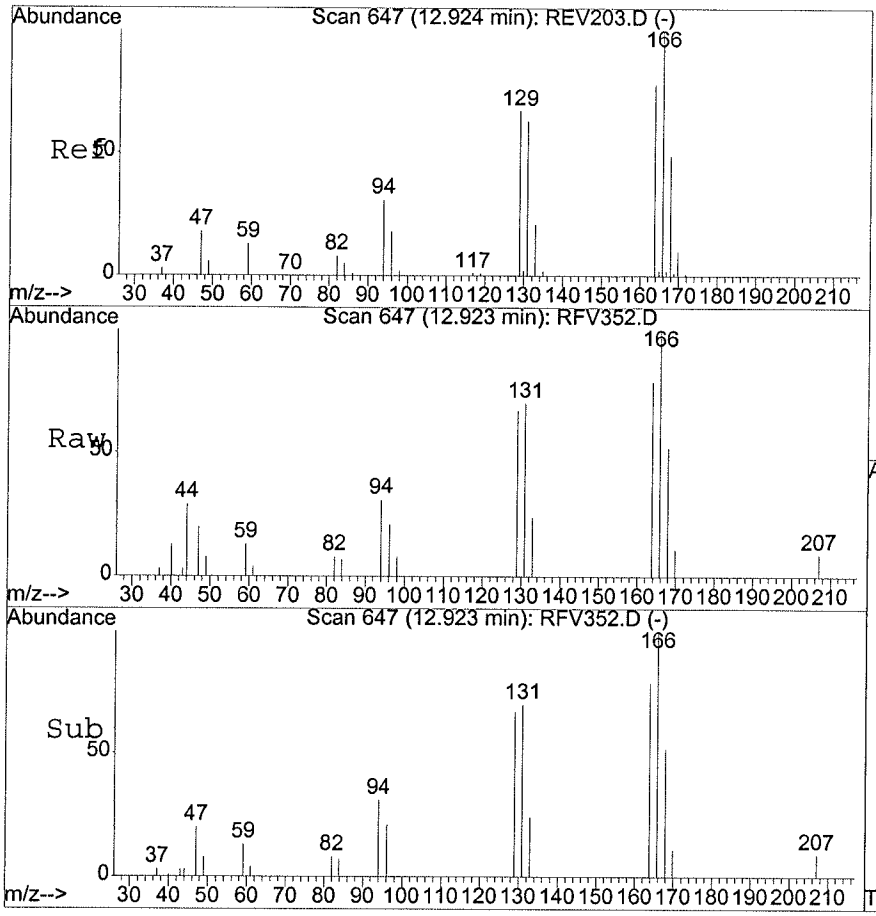


#33
Chloroform
Concen: 2.84 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV352.D
Acq: 26 Jun 2020 10:51 pm

Tgt Ion: 83 Resp: 366914

Ion	Ratio	Lower	Upper
83	100		
85	64.2	35.3	95.3
47	27.3	0.0	57.1

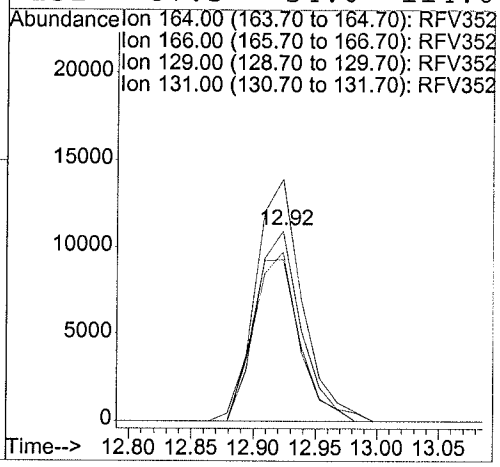




#59
Tetrachloroethene
Concen: 0.36 ug/l
RT: 12.92 min Scan# 647
Delta R.T. -0.00 min
Lab File: RFV352.D
Acq: 26 Jun 2020 10:51 pm

Tgt Ion:164 Resp: 27942

Ion	Ratio	Lower	Upper
164	100		
166	130.7	99.2	159.2
129	89.9	59.7	119.7
131	87.5	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV352.D Vial: 25
Acq On : 26 Jun 2020 10:51 pm Operator: VLu
Sample : 20F178-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:51 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2667424	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2234033	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	685612	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV352.D VO01E14.M Mon Jun 29 10:17:43 2020 Page 1

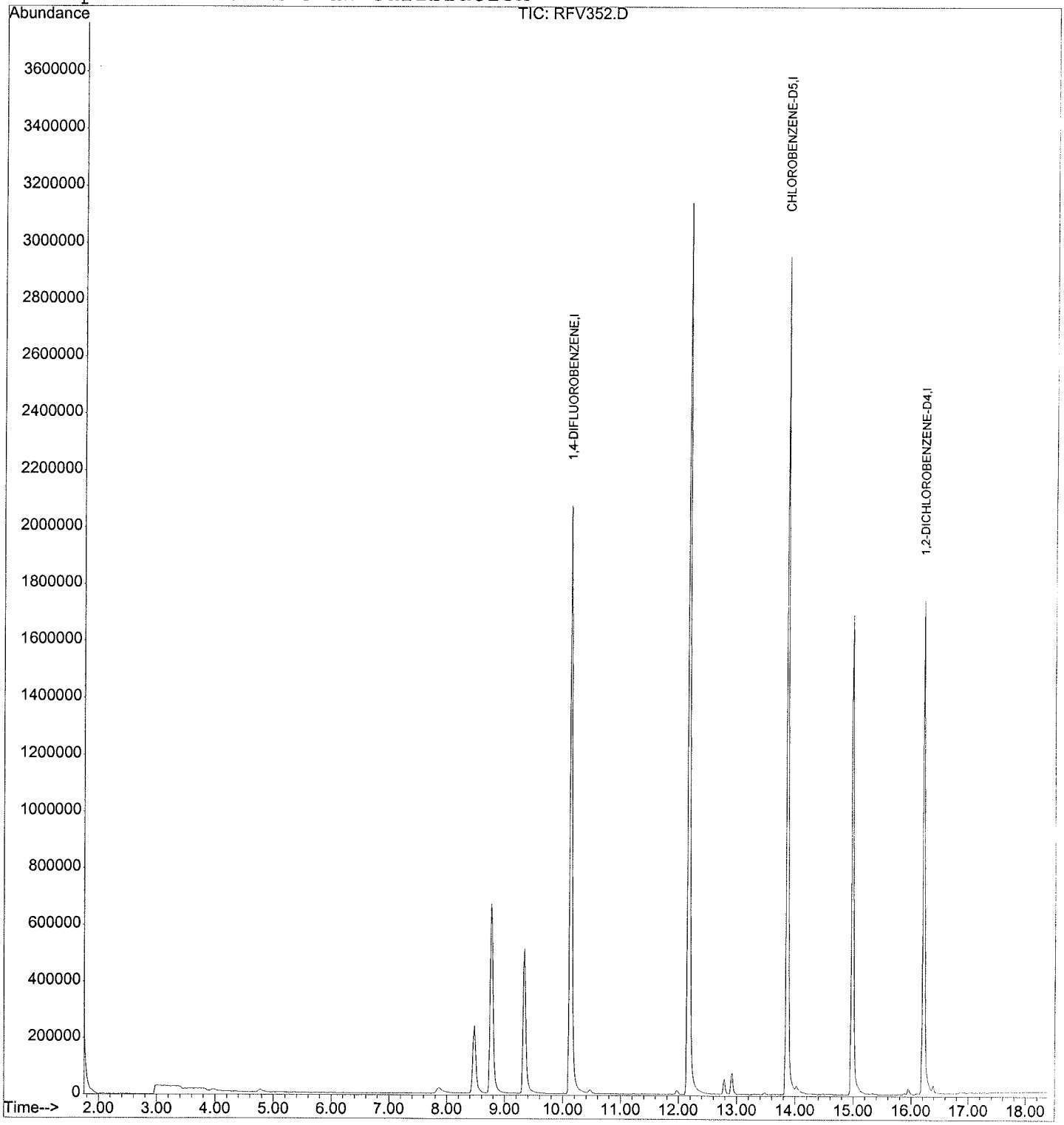
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV352.D
Acq On : 26 Jun 2020 10:51 pm
Sample : 20F178-05 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:51 2020

Vial: 25
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 20:03
Sample ID:	TB10-GW061920	Date Analyzed:	06/26/20 20:03
Lab Samp ID:	F178-06	Dilution Factor:	1
Lab File ID:	RFV346	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.73	10.00	97.3	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV346.D Vial: 19
Acq On : 26 Jun 2020 8:03 pm Operator: VLu
Sample : 20F178-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:13 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

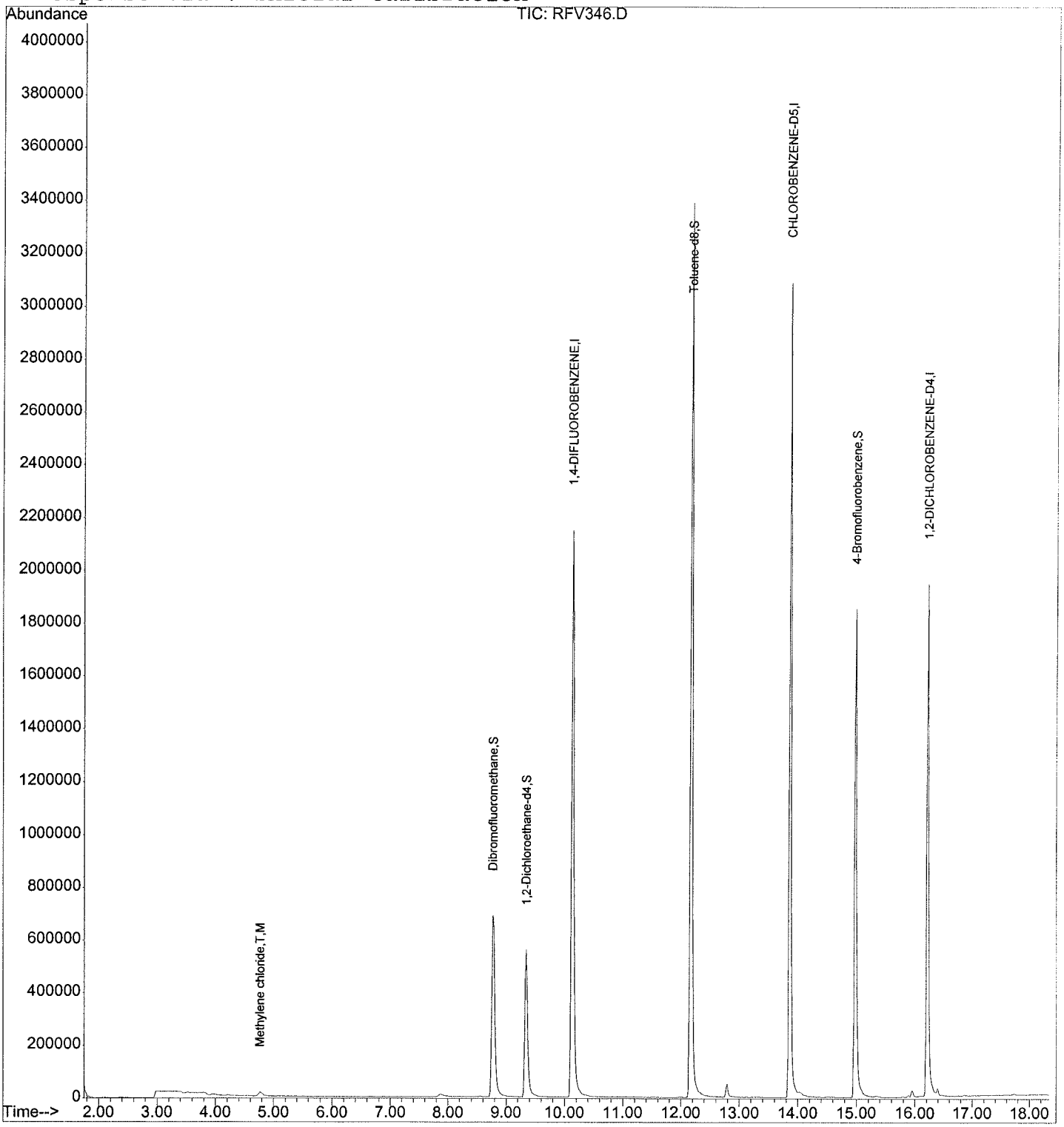
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2826465	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2376032	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	753453	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	839708	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.60%			
38) 1,2-Dichloroethane-d4	9.34	65	590428	11.14	ug/l	0.00
Spiked Amount 10.000			Recovery = 111.40%			
54) Toluene-d8	12.17	98	3147561	9.73	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.30%			
74) 4-Bromofluorobenzene	14.98	95	948486	10.53	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.30%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	24615	0.21	ug/l	94

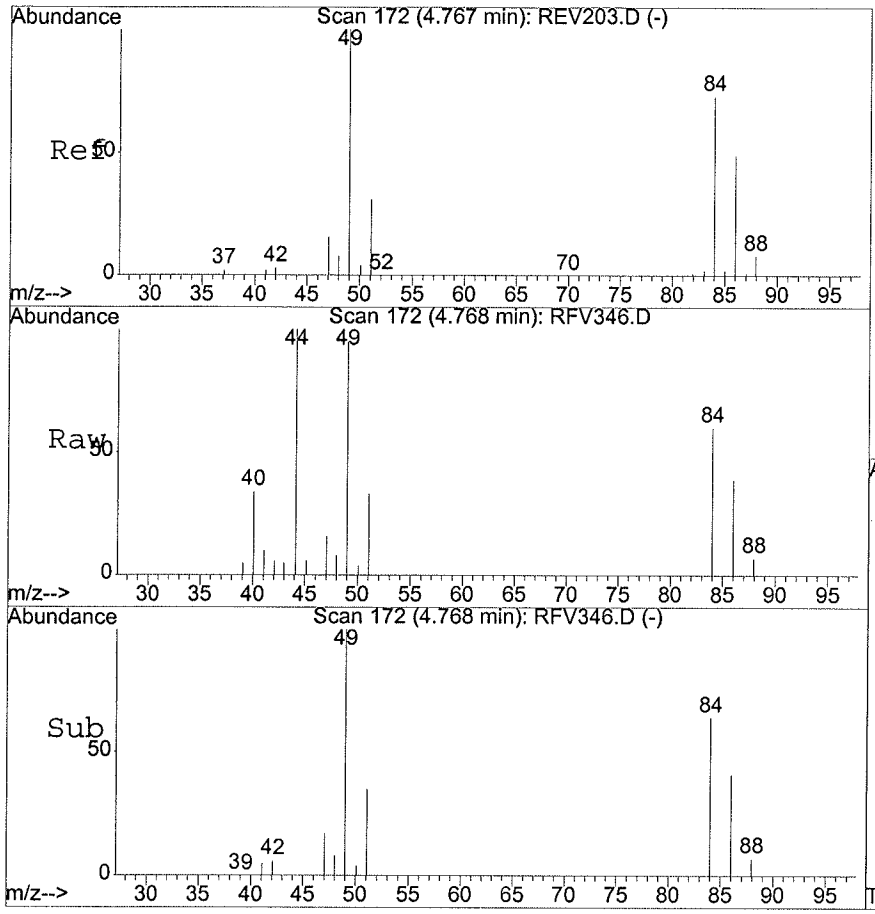
(#) = qualifier out of range (m) = manual integration
RFV346.D VO01E13.M Mon Jun 29 11:13:48 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV346.D Vial: 19
Acq On : 26 Jun 2020 8:03 pm Operator: VLu
Sample : 20F178-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:13 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

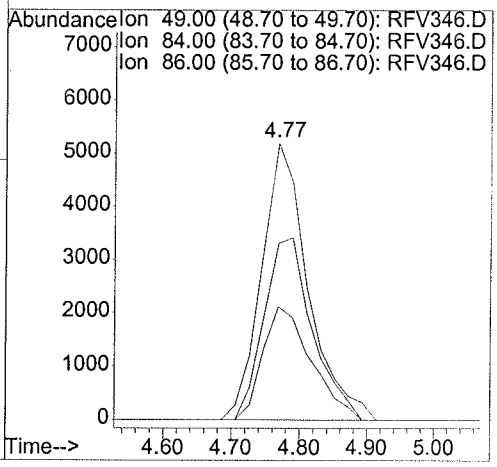




#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV346.D
Acq: 26 Jun 2020 8:03 pm

Tgt Ion: 49 Resp: 24615

Ion	Ratio	Lower	Upper
49	100		
84	68.4	43.3	103.3
86	42.6	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV346.D Vial: 19
Acq On : 26 Jun 2020 8:03 pm Operator: VLu
Sample : 20F178-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2826524	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2361865	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	753478	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV346.D VO01E14.M Mon Jun 29 09:50:26 2020 Page 1

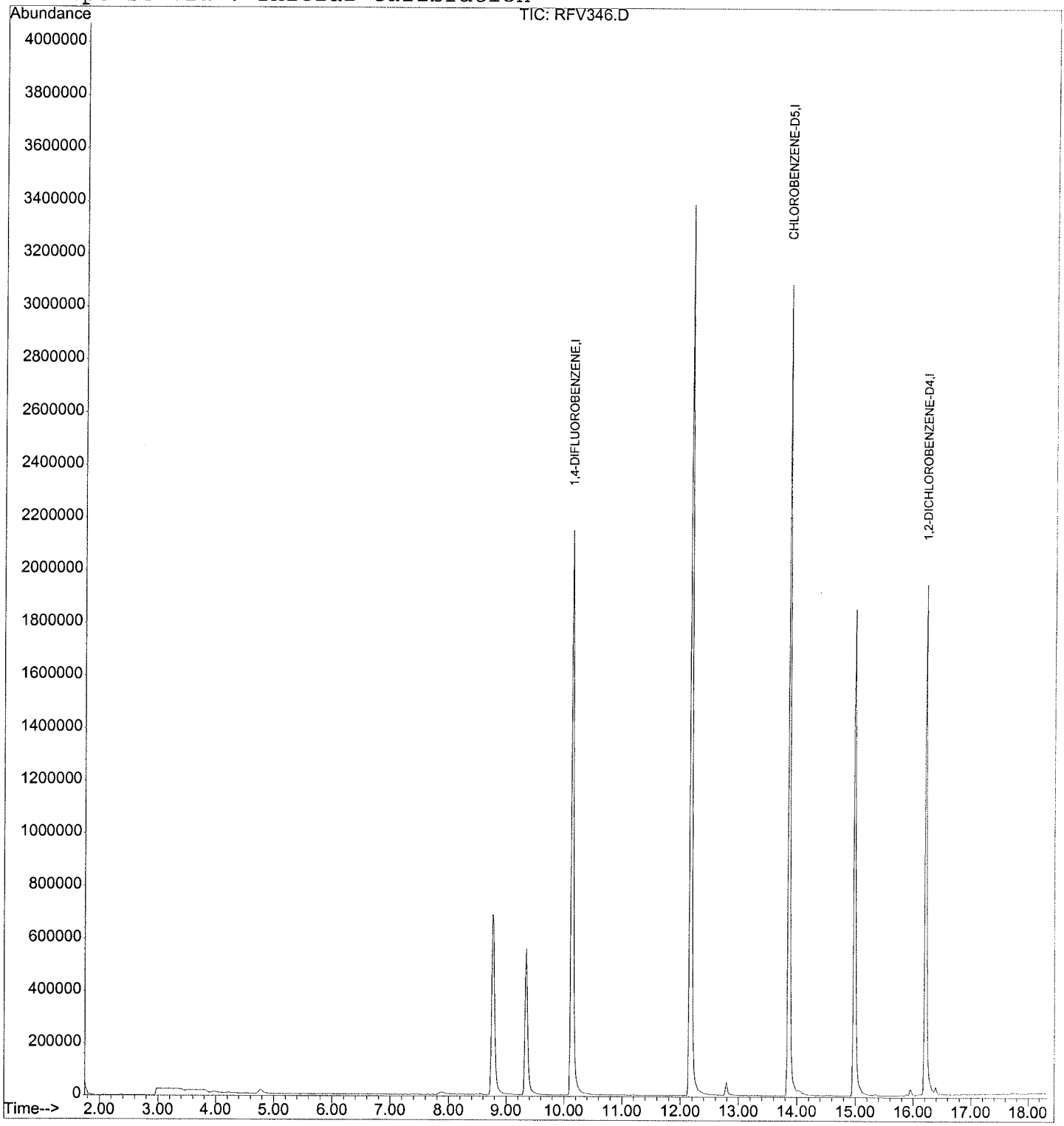
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV346.D
Acq On : 26 Jun 2020 8:03 pm
Sample : 20F178-06 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020

Vial: 19
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/26/20 23:20
Sample ID: MW15D-GW061920	Date Analyzed: 06/26/20 23:20
Lab Samp ID: F178-07	Dilution Factor: 1
Lab File ID: RFV353	Matrix : WATER
Ext Btch ID: VO01F16	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	3.5	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.53	10.00	95.3	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV353.D Vial: 26
Acq On : 26 Jun 2020 11:20 pm Operator: VLu
Sample : 20F178-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2726066	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2315125	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	720781	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	809852	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.60%		
38) 1,2-Dichloroethane-d4	9.34	65	557505	10.91	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.10%		
54) Toluene-d8	12.17	98	3004240	9.53	ug/l	0.00
Spiked Amount 10.000			Recovery =	95.30%		
74) 4-Bromofluorobenzene	14.97	95	908716	10.55	ug/l	-0.01
Spiked Amount 10.000			Recovery =	105.50%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	16318	0.15	ug/l	91
33) Chloroform	8.48	83	454773	3.45	ug/l	100
59) Tetrachloroethene	12.92	164	10217	0.13	ug/l	95

(#) = qualifier out of range (m) = manual integration

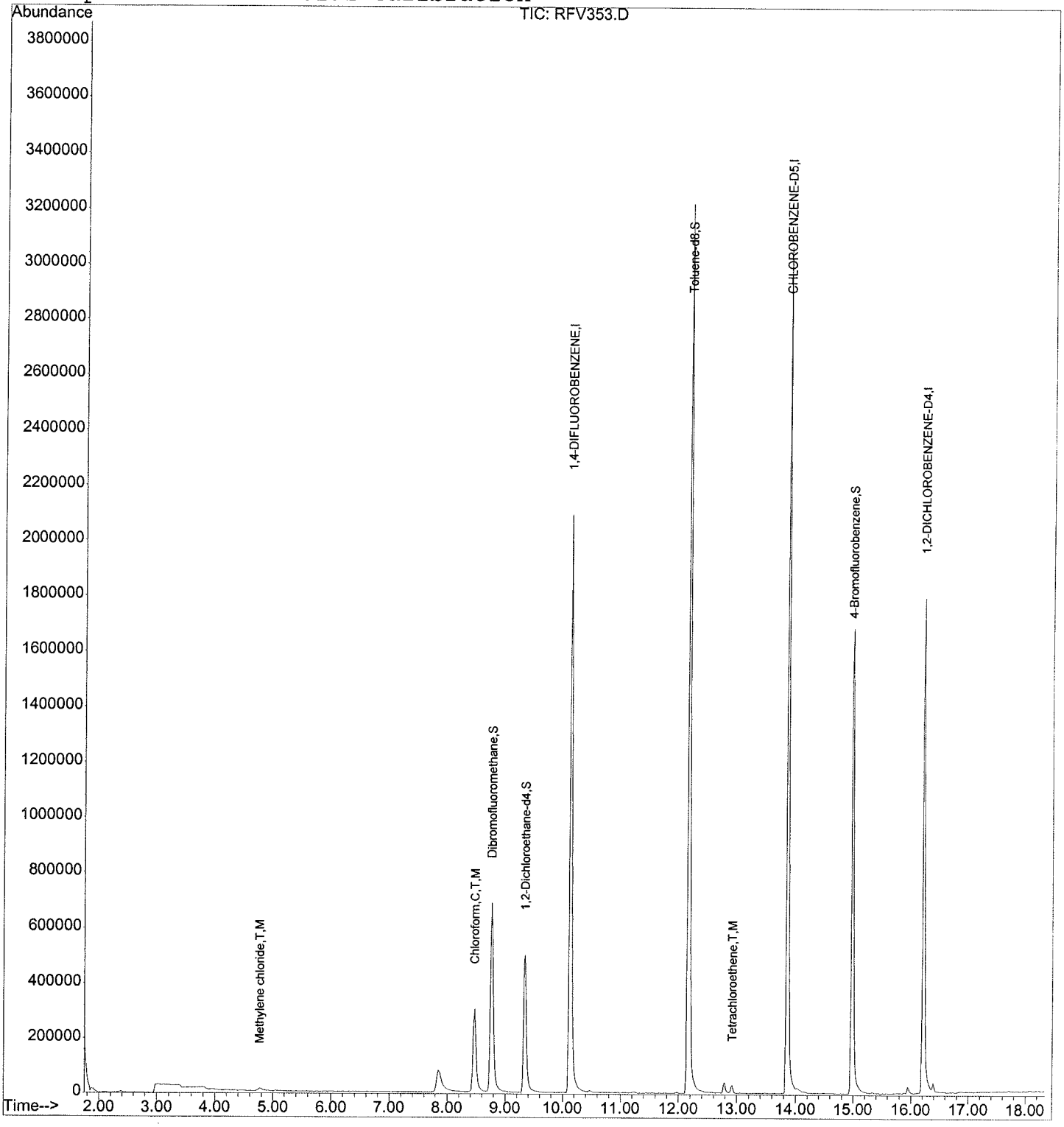
Quantitation Report

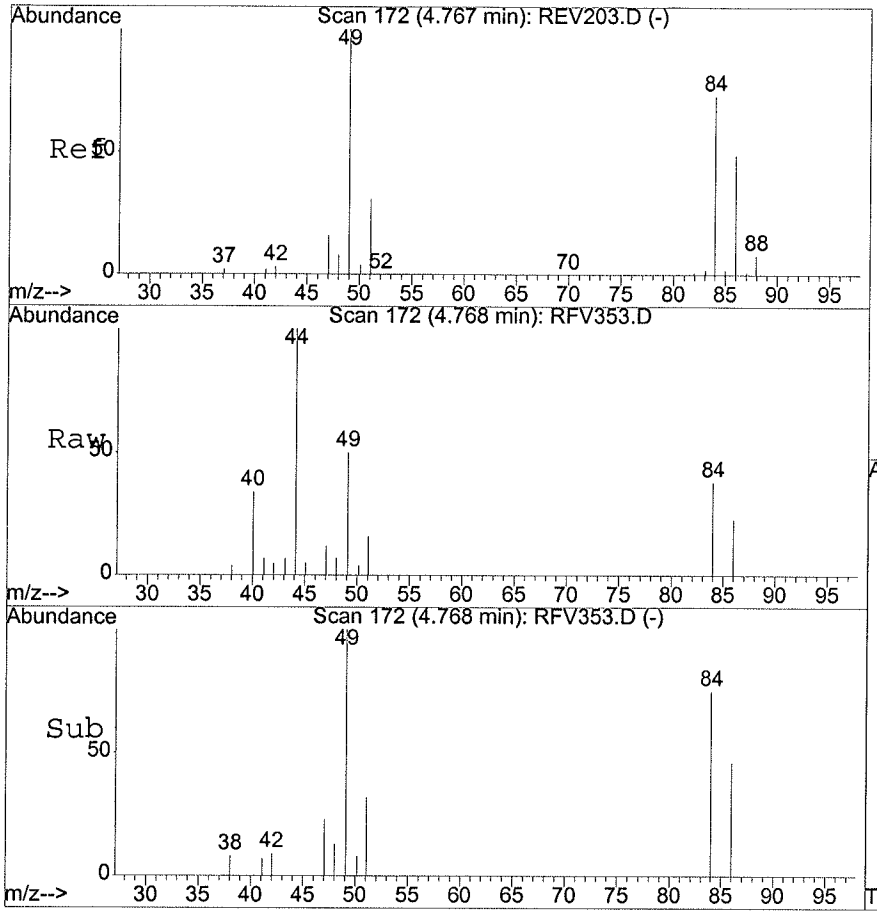
Data File : D:\HPCHEM\1\DATA\20F26\RFV353.D
Acq On : 26 Jun 2020 11:20 pm
Sample : 20F178-07 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 11:21 2020

Vial: 26
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

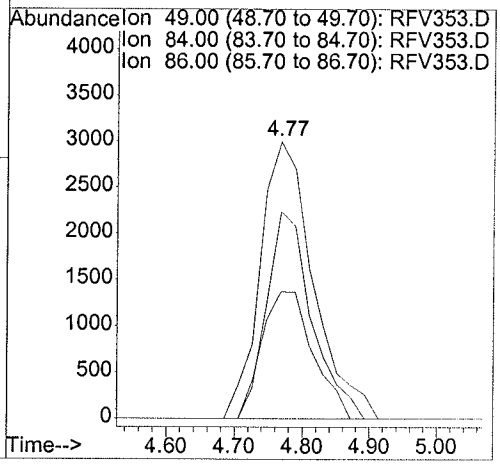


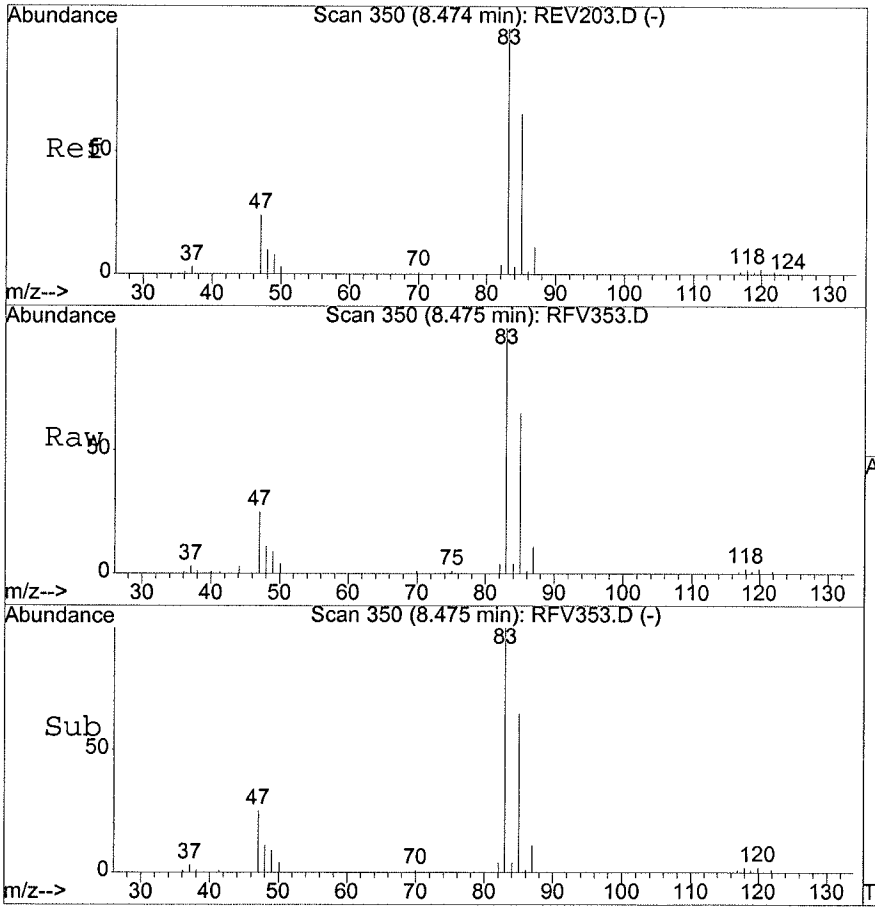


#18
Methylene chloride
Concen: 0.15 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV353.D
Acq: 26 Jun 2020 11:20 pm

Tgt Ion: 49 Resp: 16318

Ion	Ratio	Lower	Upper
49	100		
84	63.3	43.3	103.3
86	44.2	17.1	77.1

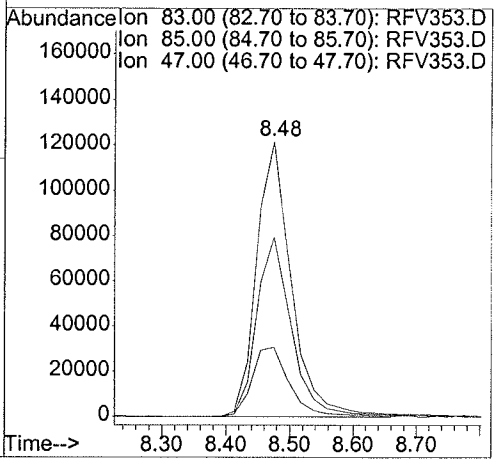


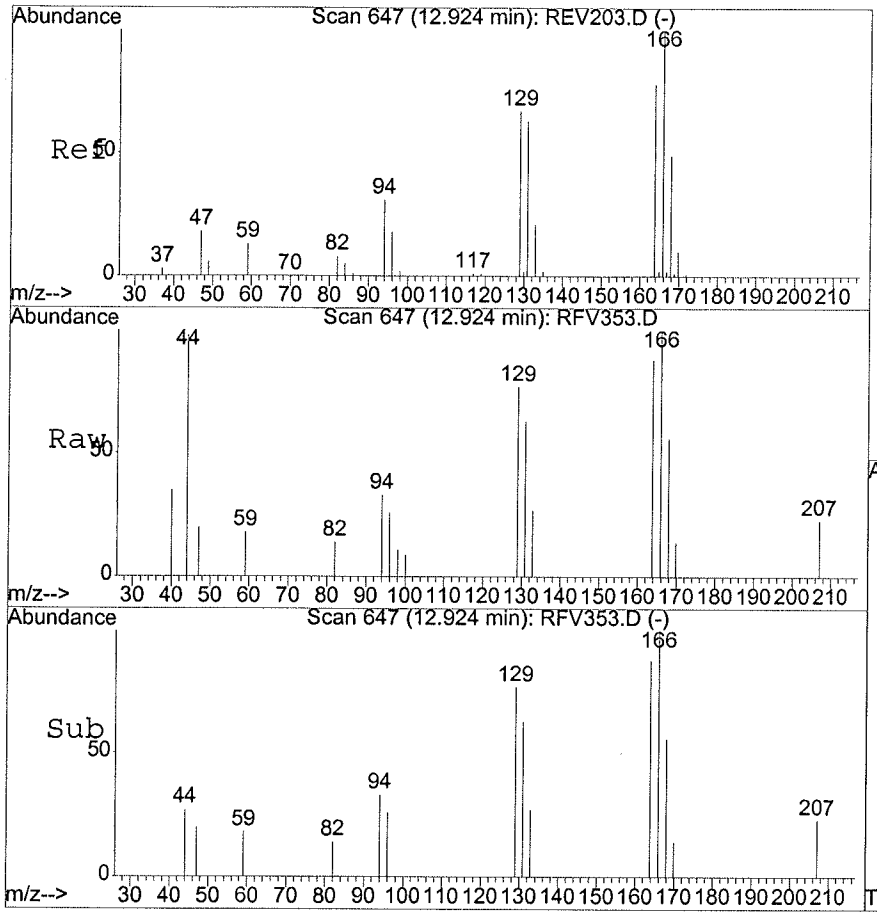


#33
Chloroform
Concen: 3.45 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV353.D
Acq: 26 Jun 2020 11:20 pm

Tgt Ion: 83 Resp: 454773

Ion	Ratio	Lower	Upper
83	100		
85	65.3	35.3	95.3
47	27.5	0.0	57.1

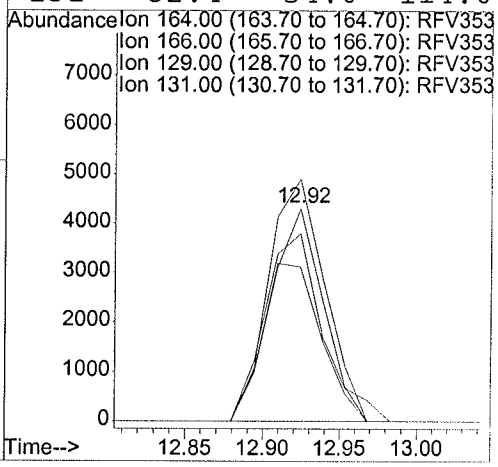




#59
Tetrachloroethene
Concen: 0.13 ug/l
RT: 12.92 min Scan# 647
Delta R.T. 0.00 min
Lab File: RFV353.D
Acq: 26 Jun 2020 11:20 pm

Tgt Ion:164 Resp: 10217

Ion	Ratio	Lower	Upper
164	100		
166	122.5	99.2	159.2
129	97.0	59.7	119.7
131	82.4	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV353.D Vial: 26
Acq On : 26 Jun 2020 11:20 pm Operator: VLu
Sample : 20F178-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:51 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2726128	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2293324	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	720804	10.00	ug/l	0.00

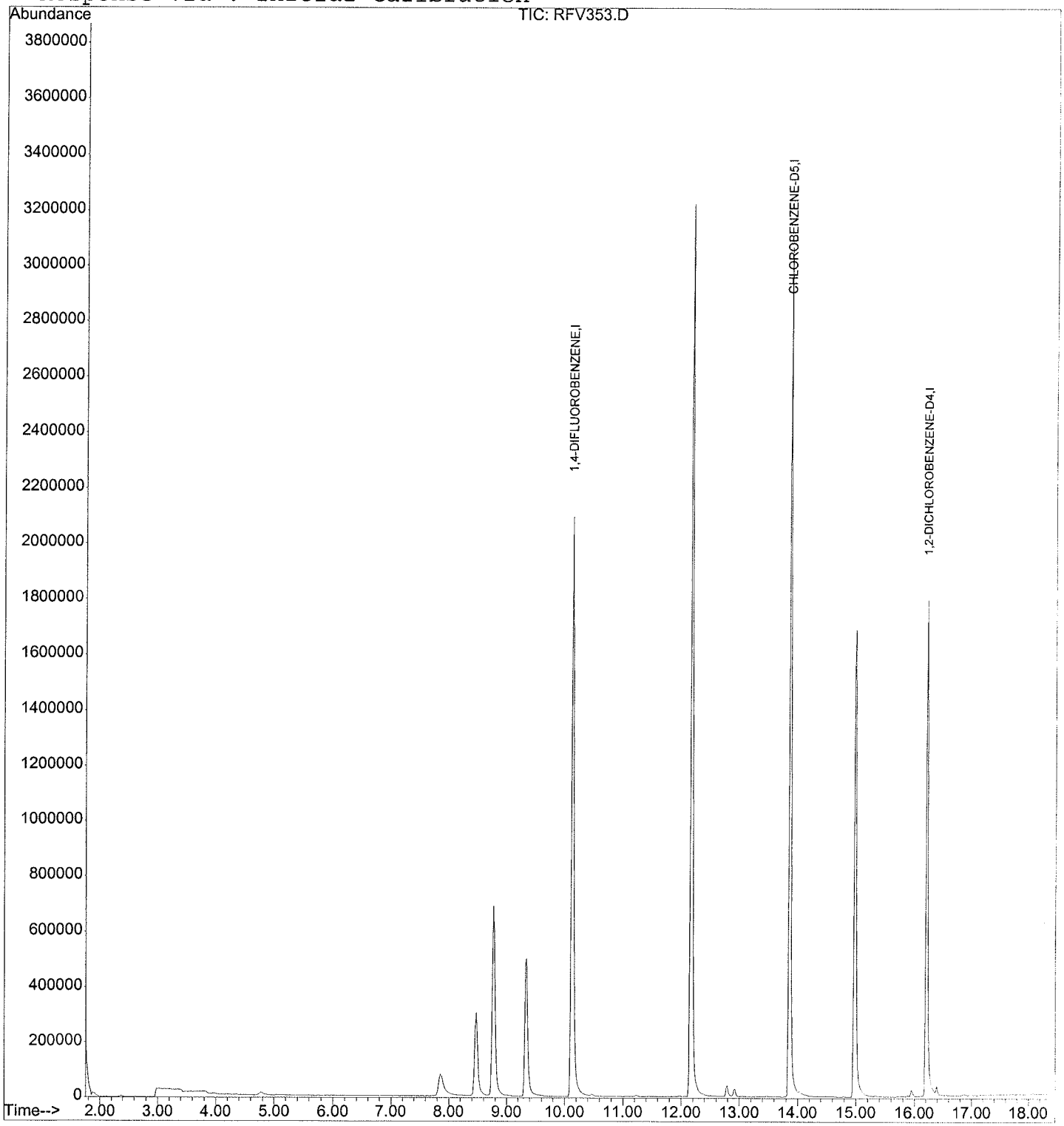
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV353.D VO01E14.M Mon Jun 29 10:17:49 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV353.D Vial: 26
Acq On : 26 Jun 2020 11:20 pm Operator: VLu
Sample : 20F178-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:51 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/29/20 15:08
Sample ID:	FD03-GW061920	Date Analyzed:	06/29/20 15:08
Lab Samp ID:	F178-08	Dilution Factor:	1
Lab File ID:	RFV365	Matrix	: WATER
Ext Btch ID:	VO01F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	3.5	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.76	10.00	97.6	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV365.D Vial: 10
Acq On : 29 Jun 2020 3:08 pm Operator: VLu
Sample : 20F178-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:12 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

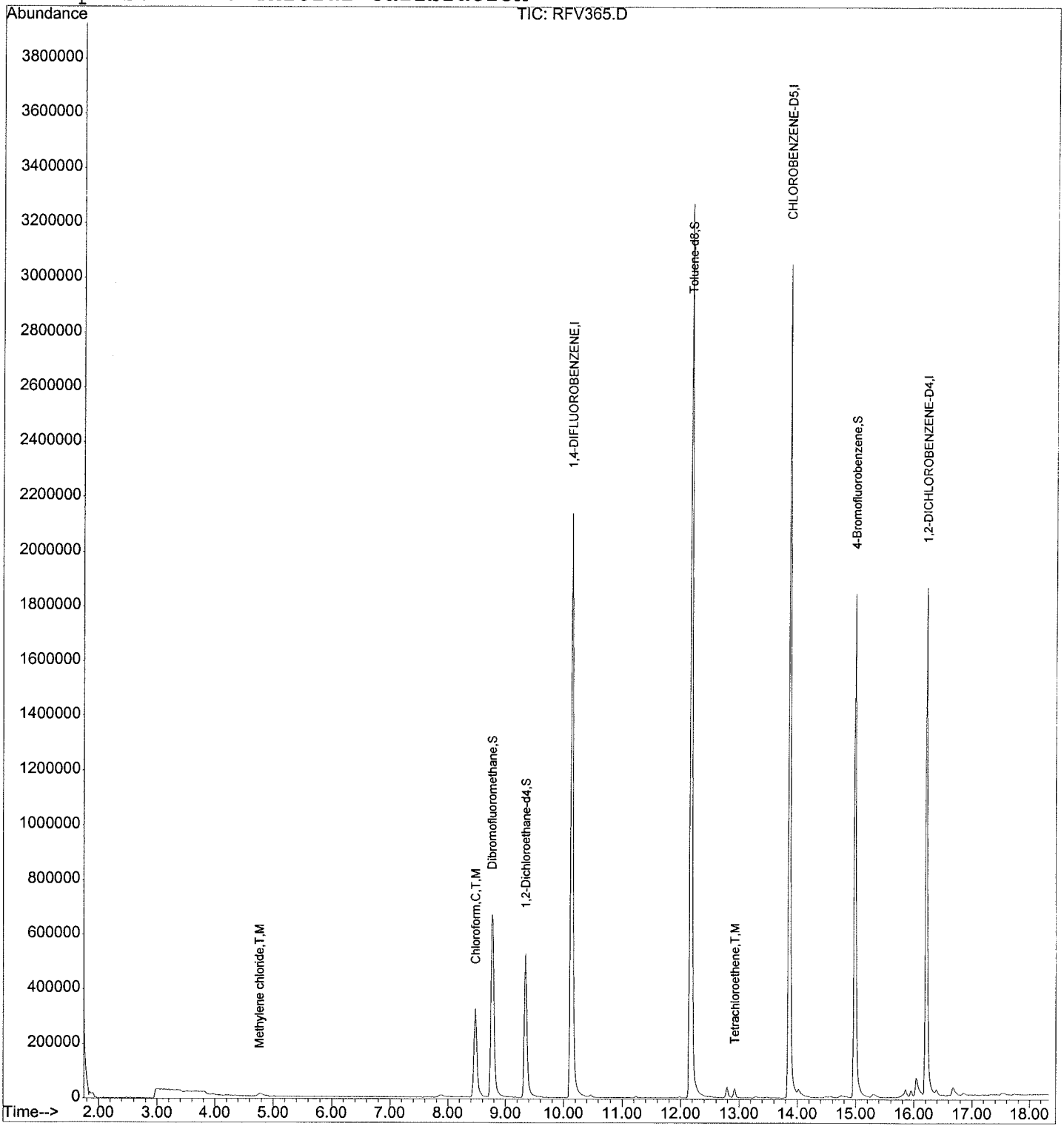
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2785774	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2318338	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	711466	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	818873	10.44	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.40%		
38) 1,2-Dichloroethane-d4	9.34	65	554535	10.62	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.20%		
54) Toluene-d8	12.17	98	3080123	9.76	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.60%		
74) 4-Bromofluorobenzene	14.98	95	907341	10.67	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.70%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	16495	0.14	ug/l	92
33) Chloroform	8.47	83	472687	3.51	ug/l	100
59) Tetrachloroethene	12.92	164	10803	0.14	ug/l	97

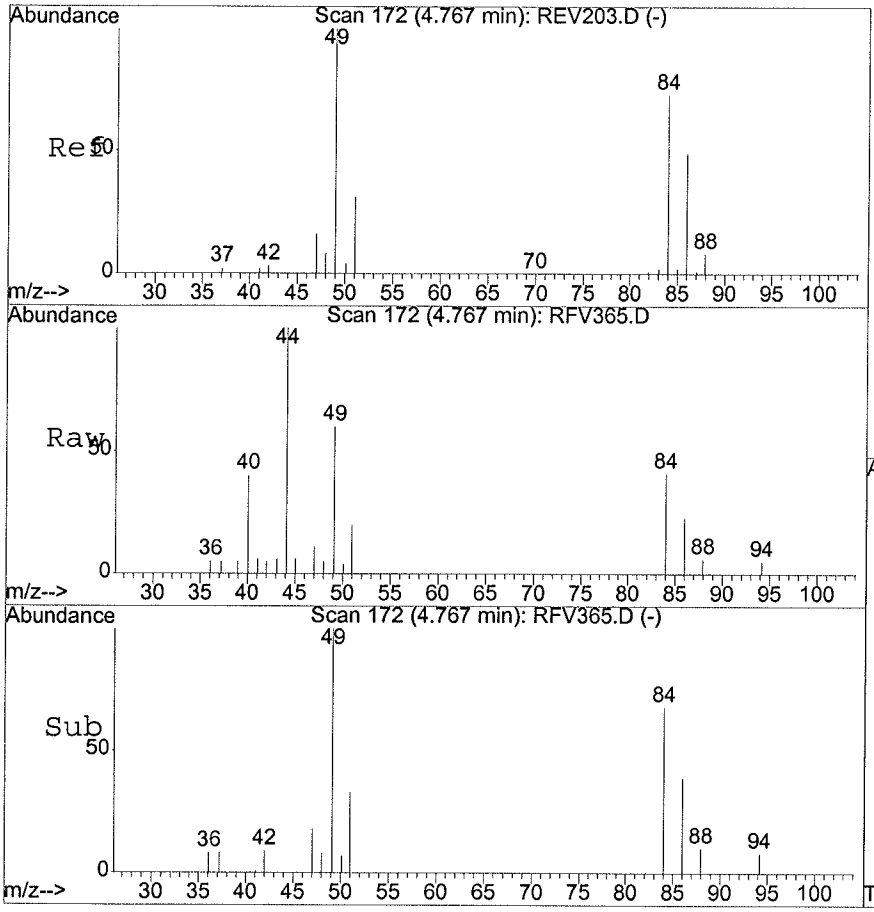
(#) = qualifier out of range (m) = manual integration
RFV365.D VO01E13.M Tue Jun 30 11:12:37 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV365.D Vial: 10
Acq On : 29 Jun 2020 3:08 pm Operator: VLu
Sample : 20F178-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:12 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

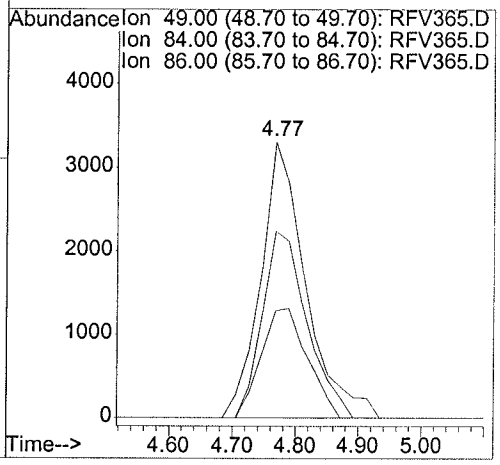


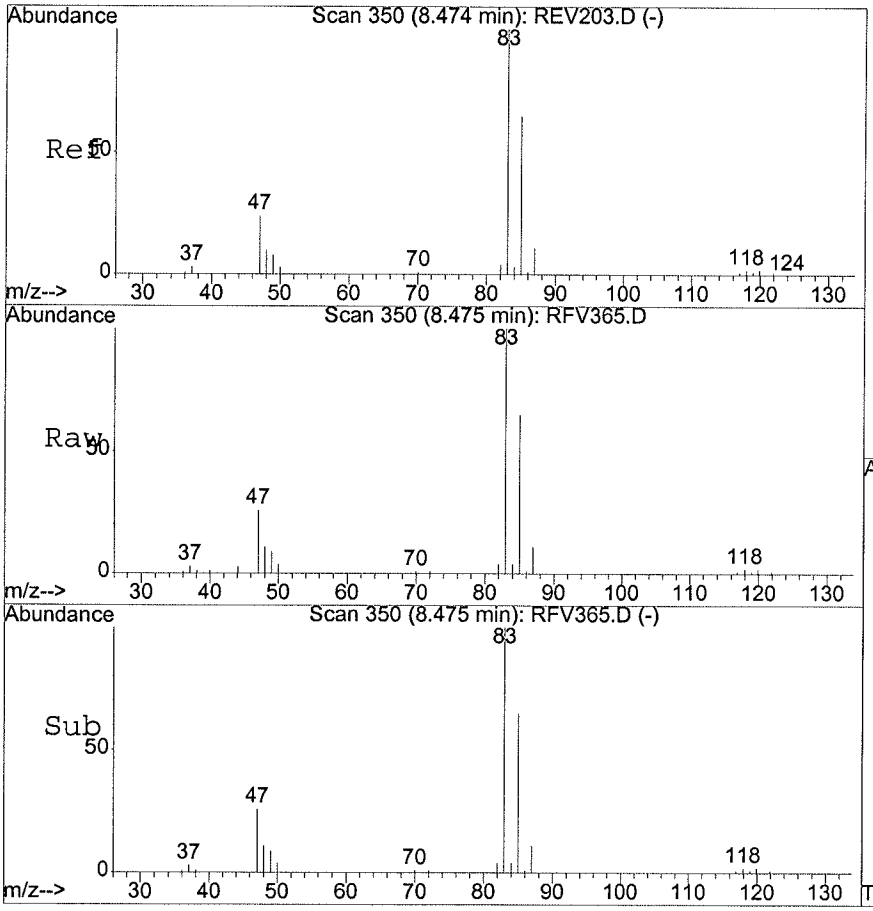


#18
Methylene chloride
Concen: 0.14 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV365.D
Acq: 29 Jun 2020 3:08 pm

Tgt Ion: 49 Resp: 16495

Ion	Ratio	Lower	Upper
49	100		
84	67.2	43.3	103.3
86	40.7	17.1	77.1

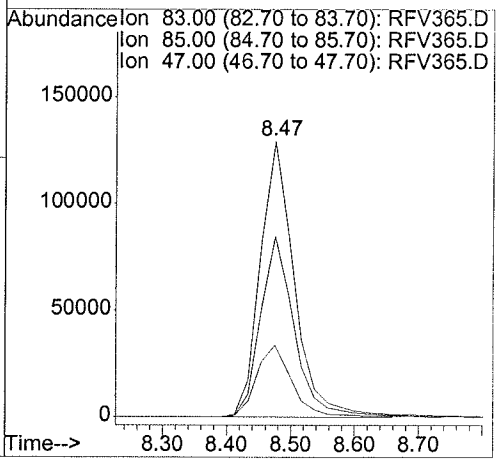


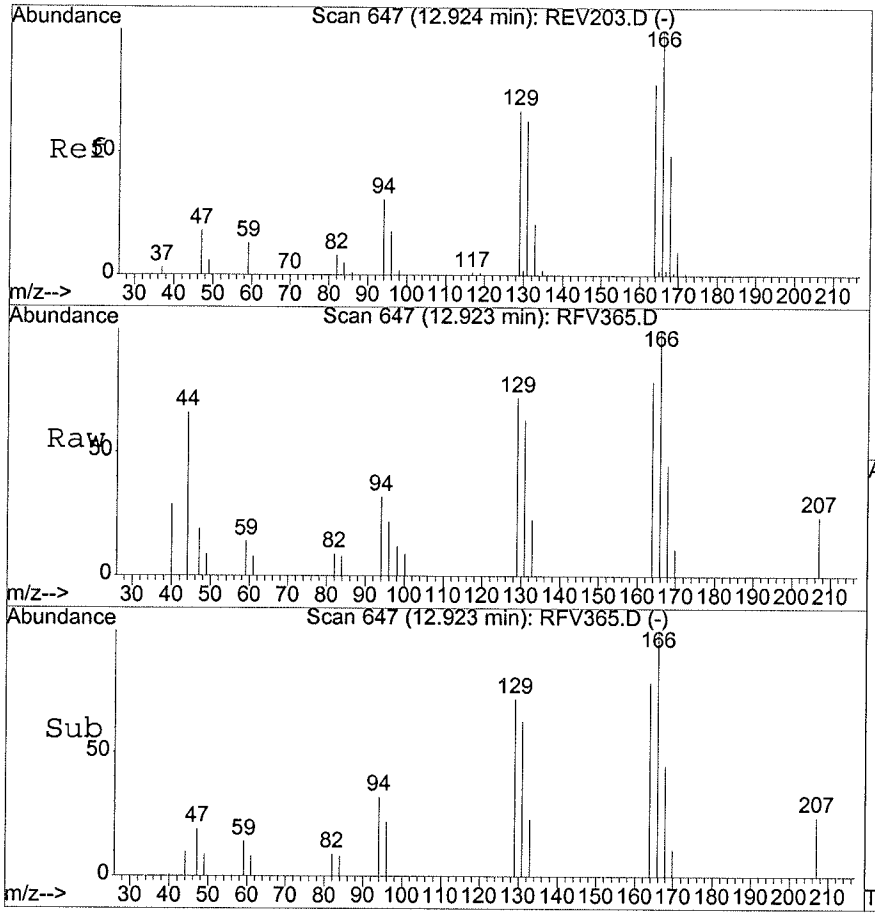


#33
Chloroform
Concen: 3.51 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV365.D
Acq: 29 Jun 2020 3:08 pm

Tgt Ion: 83 Resp: 472687

Ion	Ratio	Lower	Upper
83	100		
85	65.1	35.3	95.3
47	27.3	0.0	57.1

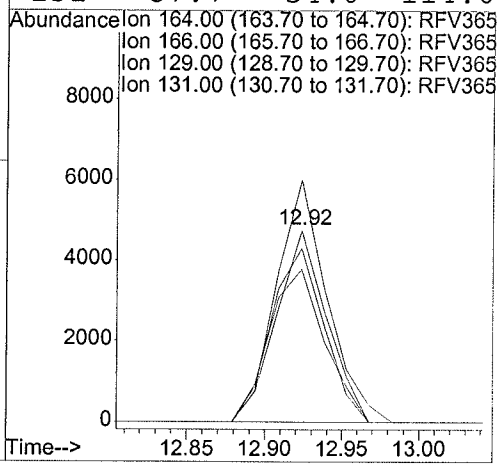




#59
Tetrachloroethene
Concen: 0.14 ug/l
RT: 12.92 min Scan# 647
Delta R.T. -0.00 min
Lab File: RFV365.D
Acq: 29 Jun 2020 3:08 pm

Tgt Ion:164 Resp: 10803

Ion	Ratio	Lower	Upper
164	100		
166	127.6	99.2	159.2
129	94.8	59.7	119.7
131	87.7	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV365.D Vial: 10
Acq On : 29 Jun 2020 3:08 pm Operator: VLu
Sample : 20F178-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2785837	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2307588	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	711446	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV365.D VO01E14.M Tue Jun 30 10:33:33 2020 Page 1

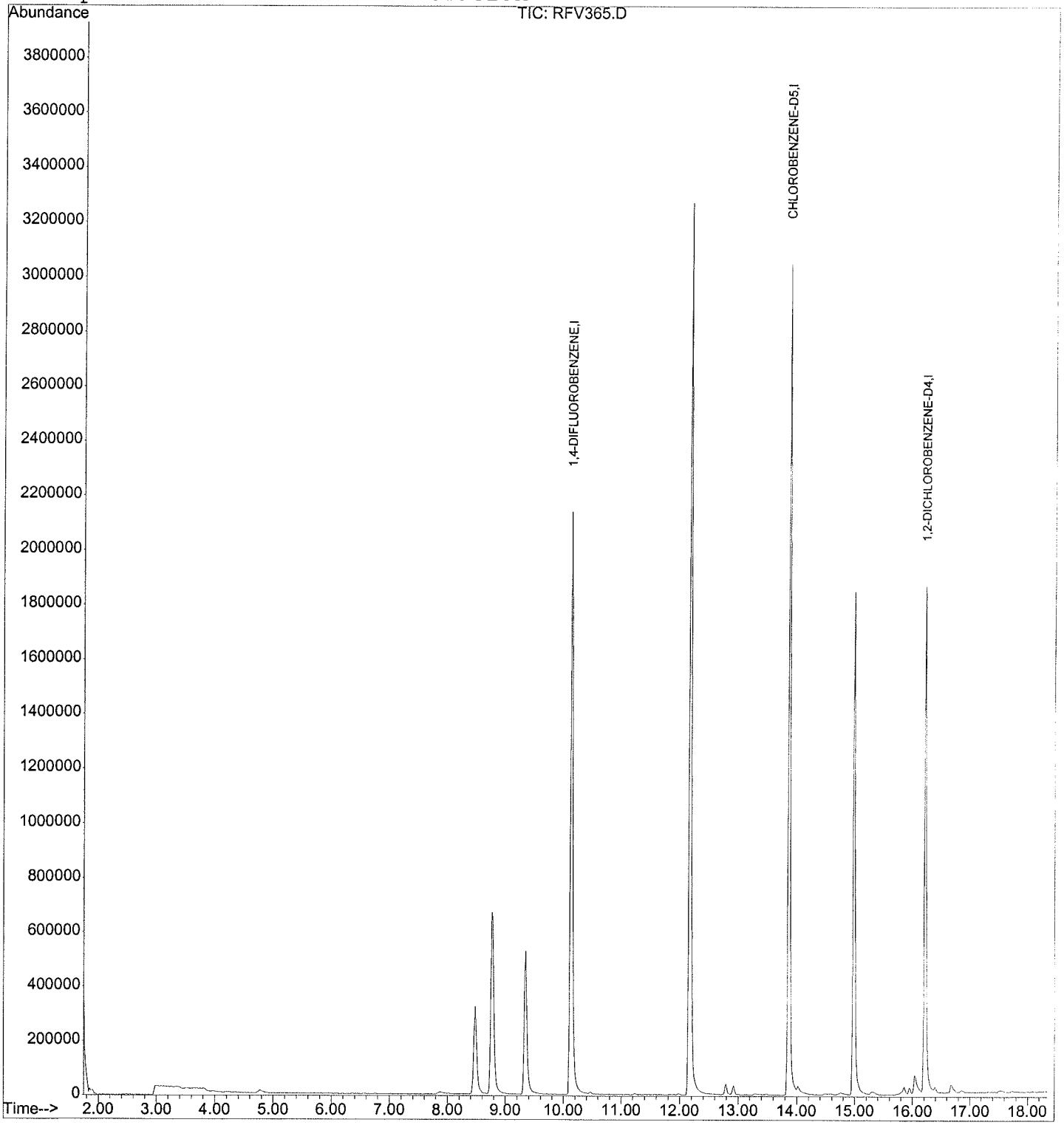
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV365.D
Acq On : 29 Jun 2020 3:08 pm
Sample : 20F178-08 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020

Vial: 10
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/26/20 20:32
Sample ID: TB11-GW061920	Date Analyzed: 06/26/20 20:32
Lab Samp ID: F178-09	Dilution Factor: 1
Lab File ID: RFV347	Matrix : WATER
Ext Btch ID: V001F16	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.73	10.00	97.3	70-130
DIBROMOFLUOROMETHANE	10.7	10.00	107	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV347.D Vial: 20
Acq On : 26 Jun 2020 8:32 pm Operator: VLu
Sample : 20F178-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:14 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2776228	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2351521	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	746179	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	833040	10.66	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.60%			
38) 1,2-Dichloroethane-d4	9.34	65	582818	11.20	ug/l	0.00
Spiked Amount 10.000			Recovery = 112.00%			
54) Toluene-d8	12.17	98	3113152	9.73	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.30%			
74) 4-Bromofluorobenzene	14.98	95	935509	10.49	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.90%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	23701	0.21	ug/l	95

(#) = qualifier out of range (m) = manual integration
RFV347.D VO01E13.M Mon Jun 29 11:14:13 2020 Page 1

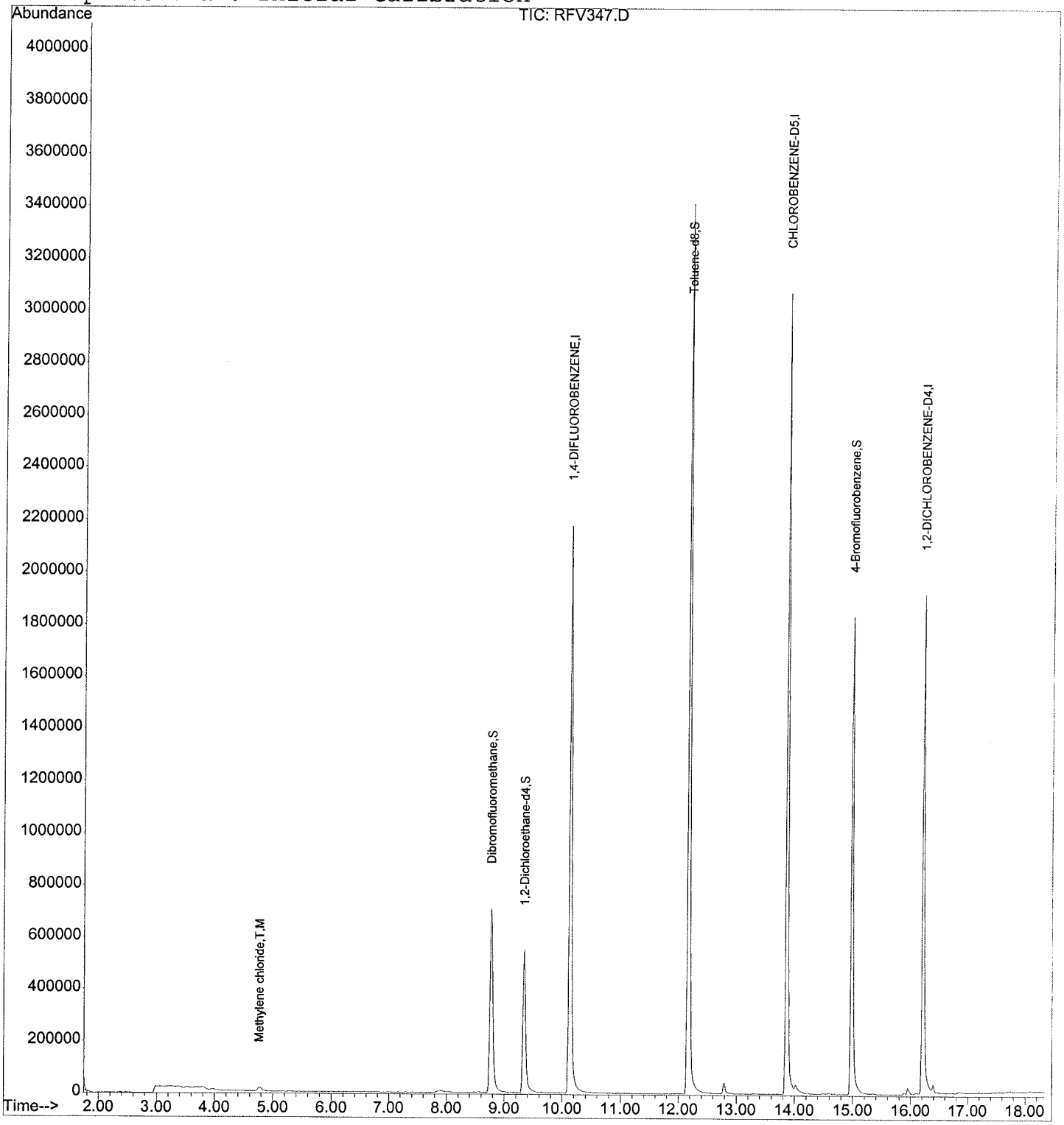
Quantitation Report

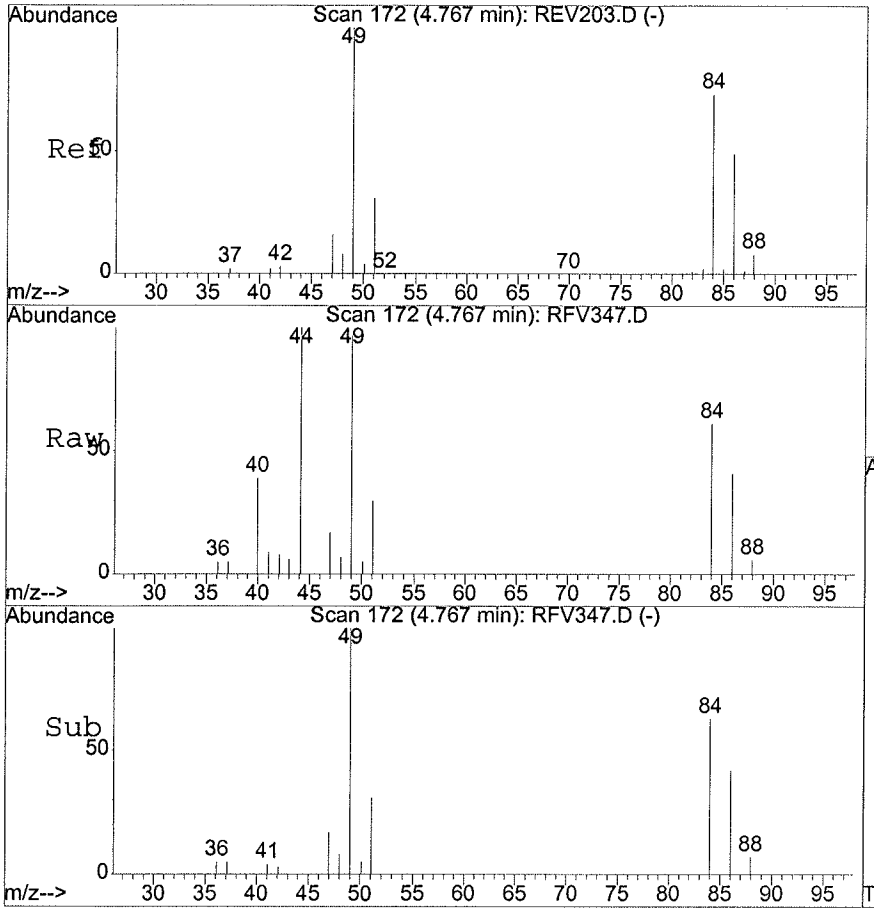
Data File : D:\HPCHEM\1\DATA\20F26\RFV347.D
Acq On : 26 Jun 2020 8:32 pm
Sample : 20F178-09 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 11:14 2020

Vial: 20
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

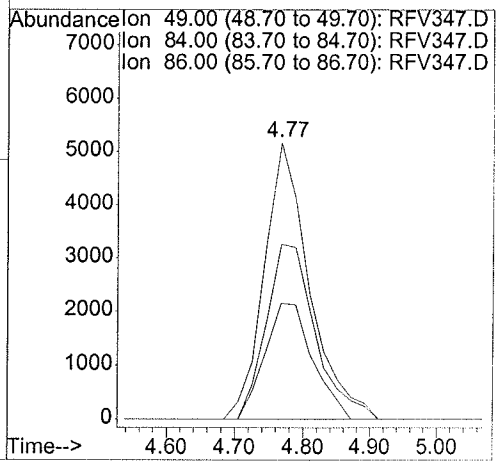




#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV347.D
Acq: 26 Jun 2020 8:32 pm

Tgt Ion: 49 Resp: 23701

Ion	Ratio	Lower	Upper
49	100		
84	68.8	43.3	103.3
86	44.2	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV347.D Vial: 20
Acq On : 26 Jun 2020 8:32 pm Operator: VLu
Sample : 20F178-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2776286	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2336613	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	746204	10.00	ug/l	0.00

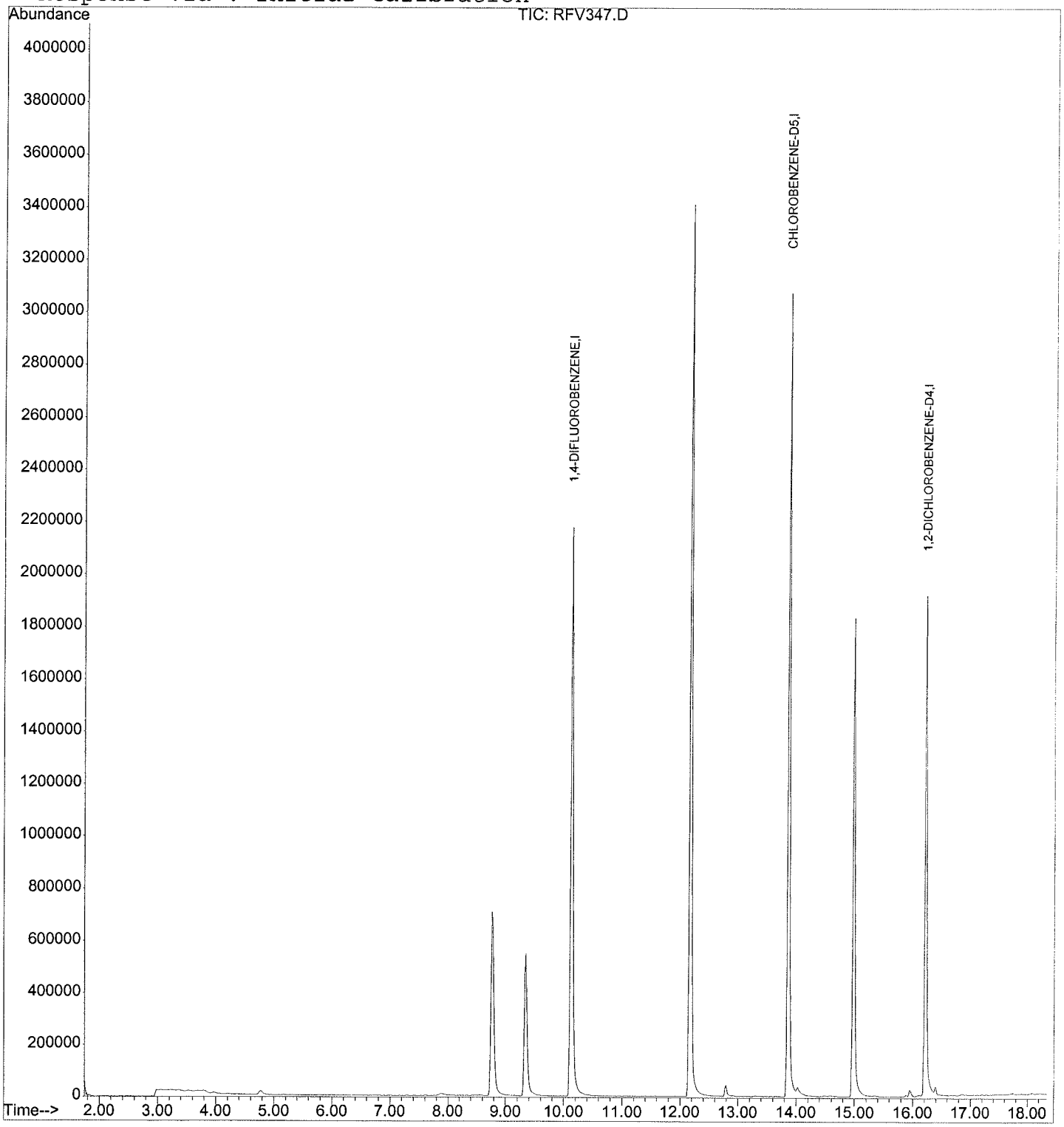
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV347.D VO01E14.M Mon Jun 29 09:50:34 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV347.D Vial: 20
Acq On : 26 Jun 2020 8:32 pm Operator: VLu
Sample : 20F178-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/29/20 15:35
Sample ID:	MW12S-GW061920	Date Analyzed:	06/29/20 15:35
Lab Samp ID:	F178-10	Dilution Factor:	1
Lab File ID:	RFV366	Matrix	: WATER
Ext Btch ID:	V001F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.16J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.6	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	2.2	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.24J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.95	10.00	99.5	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV366.D Vial: 11
Acq On : 29 Jun 2020 3:35 pm Operator: VLu
Sample : 20F178-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:14 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

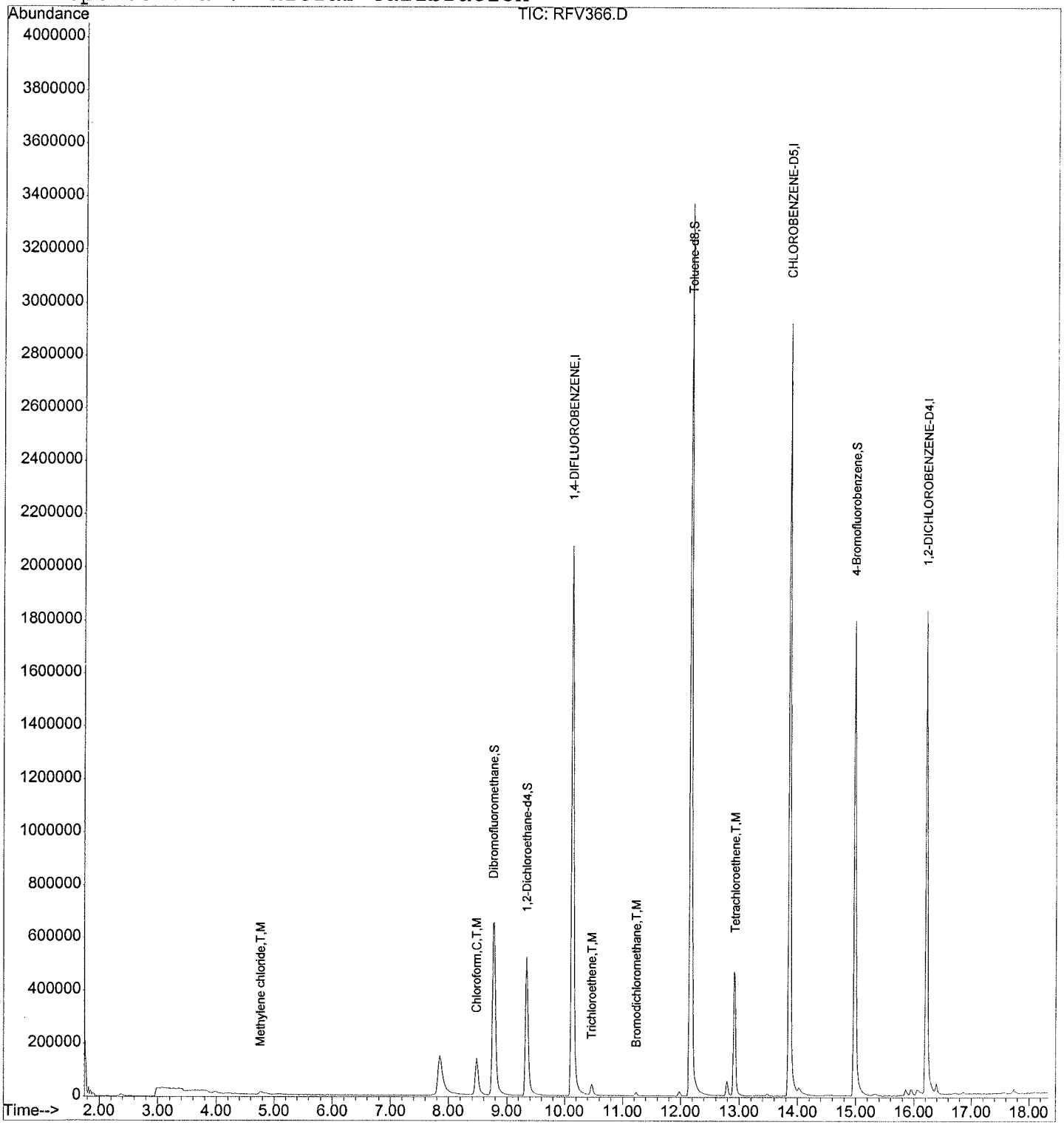
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2781046	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2304757	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	722205	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	817131	10.44	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.40%		
38) 1,2-Dichloroethane-d4	9.34	65	560354	10.75	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.50%		
54) Toluene-d8	12.17	98	3120912	9.95	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.50%		
74) 4-Bromofluorobenzene	14.98	95	916022	10.61	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.10%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	15964	0.14	ug/l	95
33) Chloroform	8.48	83	210250	1.56	ug/l	98
44) Trichloroethene	10.47	130	24827	0.24	ug/l	98
49) Bromodichloromethane	11.24	83	14103	0.16	ug/l	100
59) Tetrachloroethene	12.92	164	176754	2.24	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFV366.D VO01E13.M Tue Jun 30 11:14:11 2020 Page 1

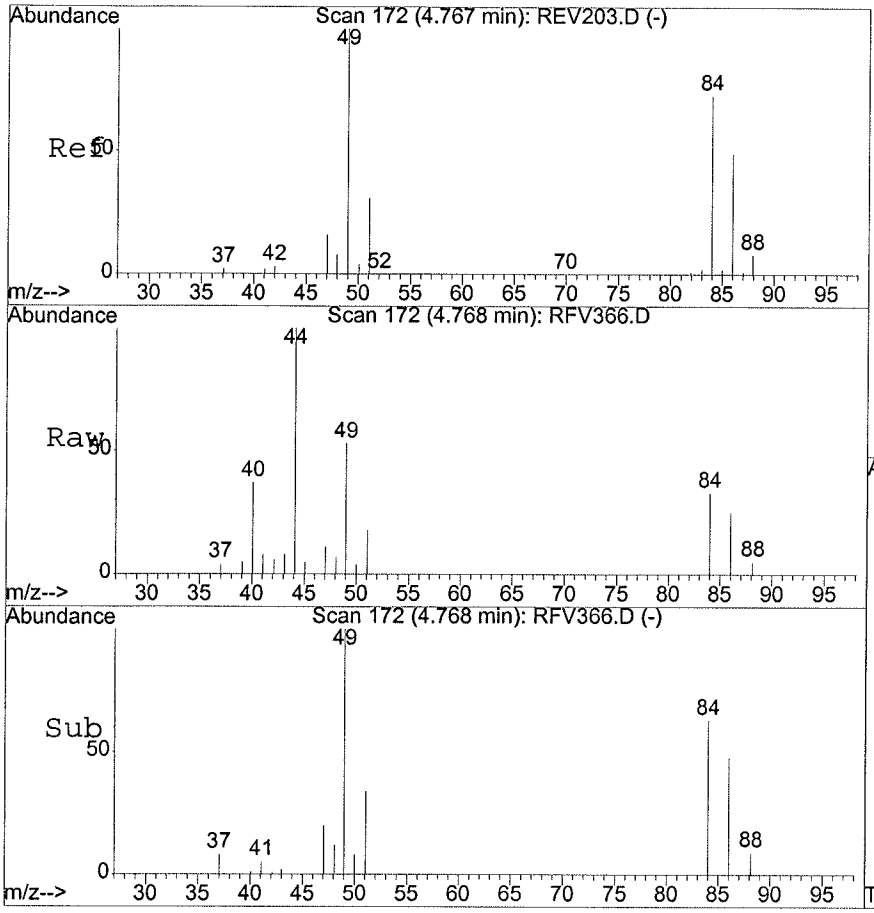
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV366.D Vial: 11
Acq On : 29 Jun 2020 3:35 pm Operator: VLu
Sample : 20F178-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:14 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



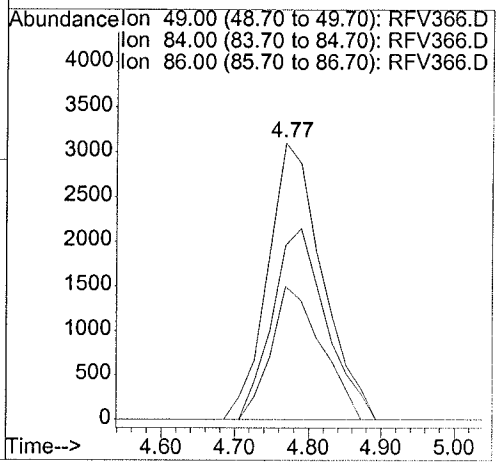
RFV366.D VO01E13.M Tue Jun 30 11:14:12 2020 Page 2

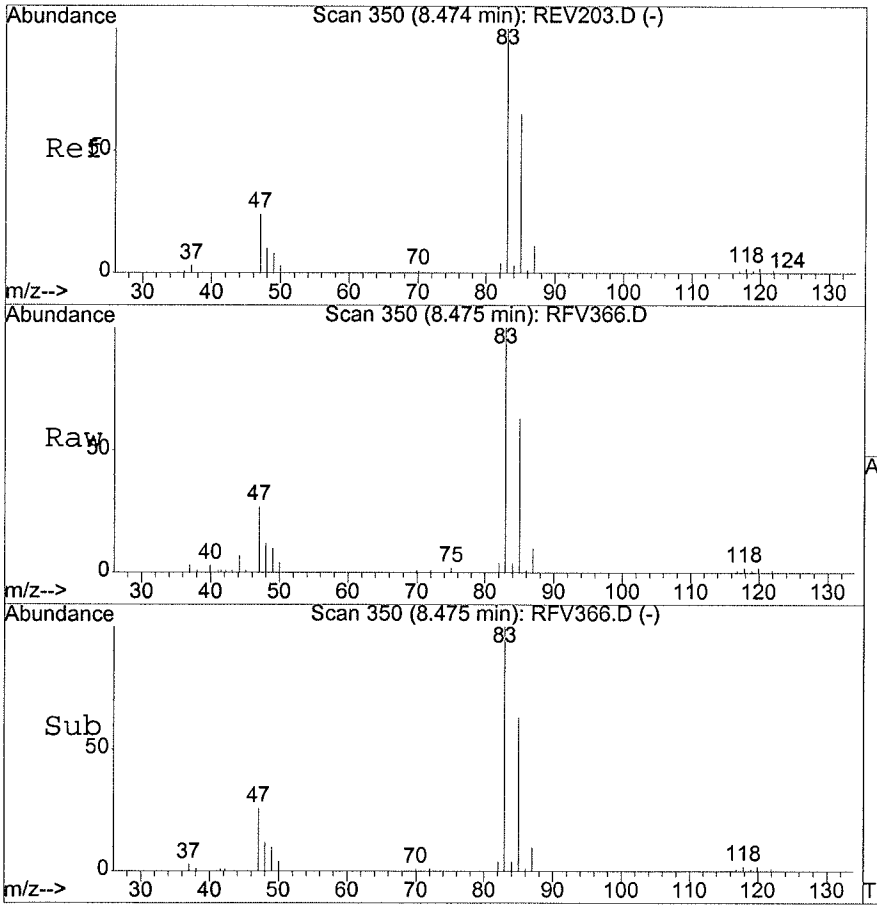


#18
Methylene chloride
Concen: 0.14 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV366.D
Acq: 29 Jun 2020 3:35 pm

Tgt Ion: 49 Resp: 15964

Ion	Ratio	Lower	Upper
49	100		
84	68.3	43.3	103.3
86	44.6	17.1	77.1

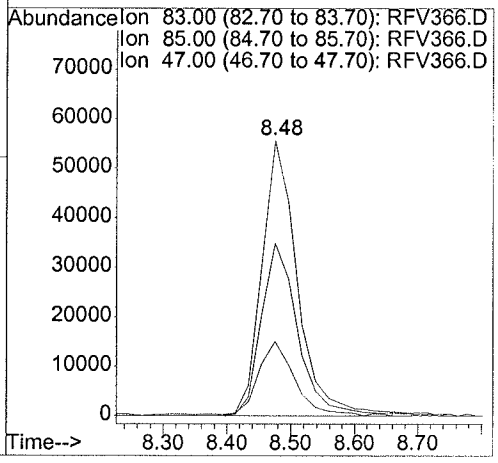


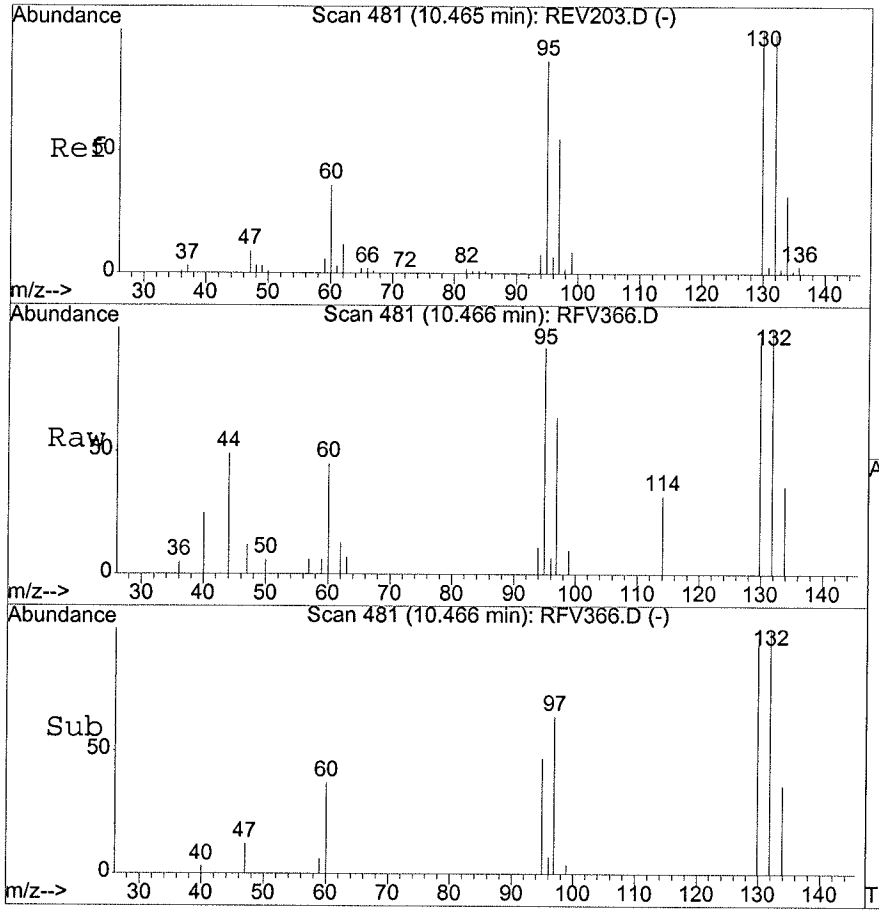


#33
Chloroform
Concen: 1.56 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV366.D
Acq: 29 Jun 2020 3:35 pm

Tgt Ion: 83 Resp: 210250

Ion	Ratio	Lower	Upper
83	100		
85	65.8	35.3	95.3
47	29.8	0.0	57.1

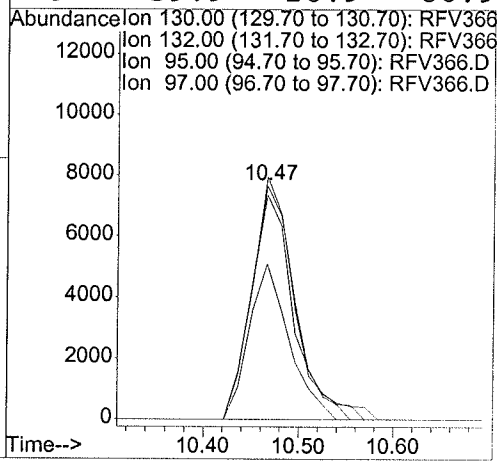


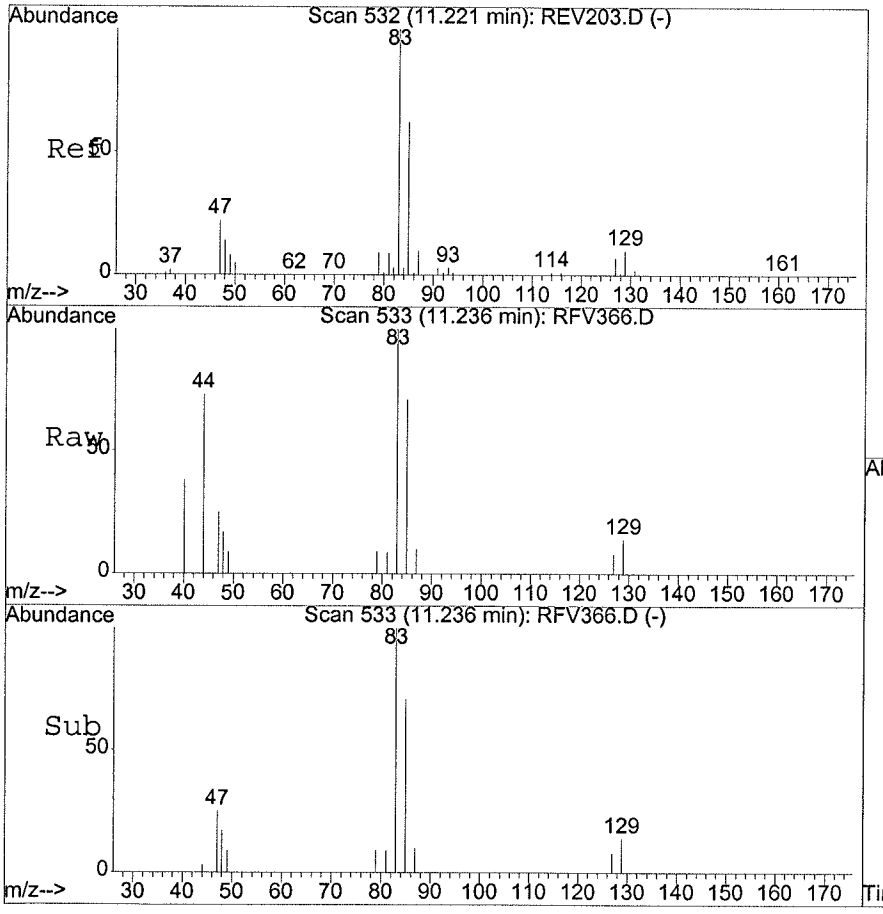


#44
Trichloroethene
Concen: 0.24 ug/l
RT: 10.47 min Scan# 481
Delta R.T. 0.00 min
Lab File: RFV366.D
Acq: 29 Jun 2020 3:35 pm

Tgt Ion:130 Resp: 24827

Ion	Ratio	Lower	Upper
130	100		
132	98.4	66.3	126.3
95	91.0	59.7	119.7
97	59.9	26.9	86.9

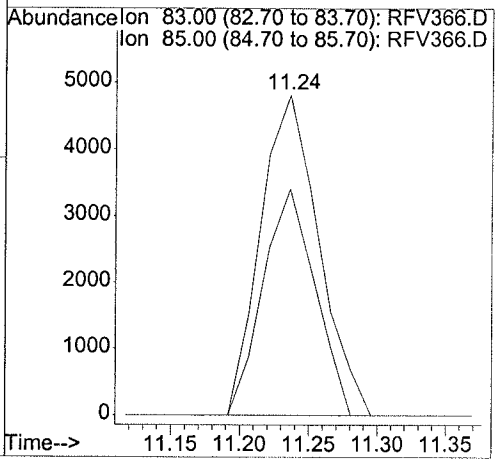


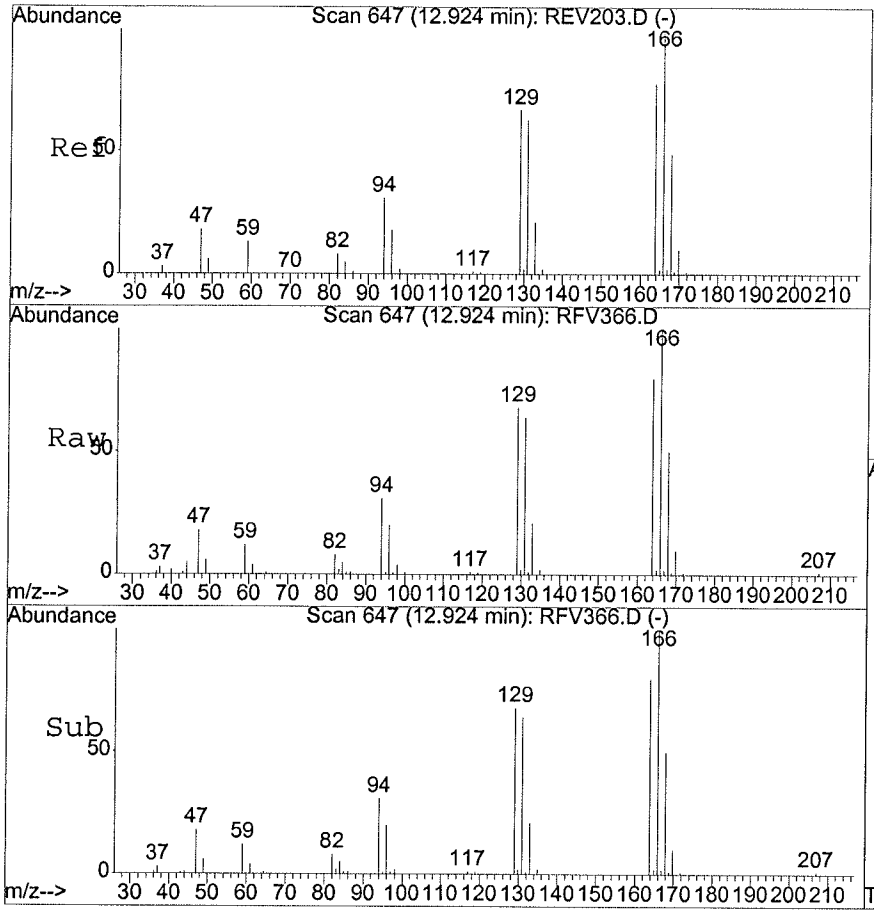


#49
Bromodichloromethane
Concen: 0.16 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.02 min
Lab File: RFV366.D
Acq: 29 Jun 2020 3:35 pm

Tgt Ion: 83 Resp: 14103

Ion	Ratio	Lower	Upper
83	100		
85	63.5	33.3	93.3

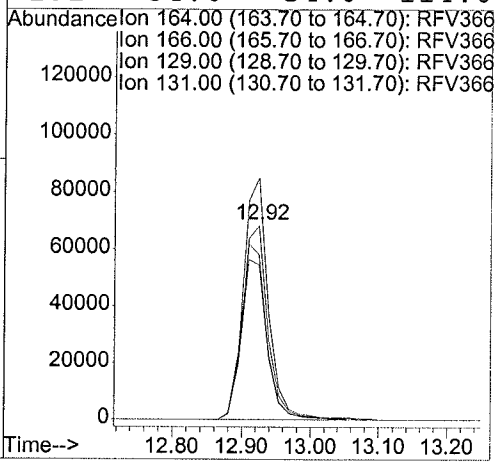




#59
Tetrachloroethene
Concen: 2.24 ug/l
RT: 12.92 min Scan# 647
Delta R.T. 0.00 min
Lab File: RFV366.D
Acq: 29 Jun 2020 3:35 pm

Tgt Ion:164 Resp: 176754

Ion	Ratio	Lower	Upper
164	100		
166	124.2	99.2	159.2
129	90.4	59.7	119.7
131	84.0	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV366.D Vial: 11
Acq On : 29 Jun 2020 3:35 pm Operator: VLu
Sample : 20F178-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2781108	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2290956	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	713354	10.00	ug/l	0.00

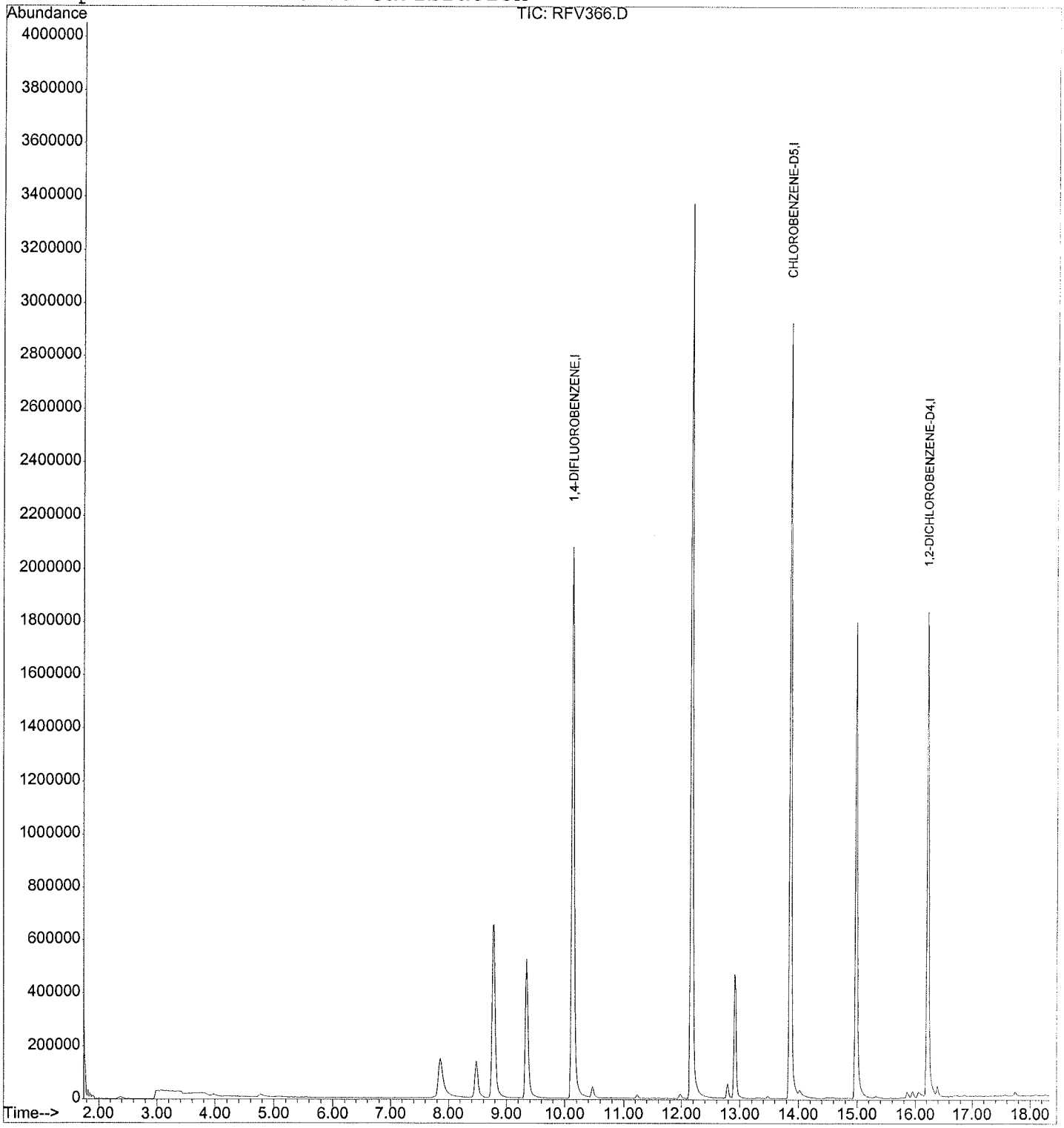
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV366.D VO01E14.M Tue Jun 30 10:33:40 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV366.D Vial: 11
Acq On : 29 Jun 2020 3:35 pm Operator: VLu
Sample : 20F178-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/29/20 16:02
Sample ID:	MW12D-GW061920	Date Analyzed:	06/29/20 16:02
Lab Samp ID:	F178-11	Dilution Factor:	1
Lab File ID:	RFV367	Matrix	: WATER
Ext Btch ID:	VOO1F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	5.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.44J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	5.2	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.83	10.00	98.3	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VOO1E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV367.D Vial: 12
Acq On : 29 Jun 2020 4:02 pm Operator: VLu
Sample : 20F178-11 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:14 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2750347	10.00	ug/l	0.01
53) CHLOROBENZENE-D5	13.86	117	2256929	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	692224	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	819895	10.59	ug/l	0.01
Spiked Amount 10.000			Recovery =	105.90%		
38) 1,2-Dichloroethane-d4	9.34	65	550068	10.67	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.70%		
54) Toluene-d8	12.17	98	3020499	9.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.30%		
74) 4-Bromofluorobenzene	14.98	95	886424	10.71	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.10%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	18817	0.17	ug/l	94
33) Chloroform	8.47	83	689992	5.19	ug/l	99
49) Bromodichloromethane	11.24	83	37995	0.44	ug/l	98

(#) = qualifier out of range (m) = manual integration

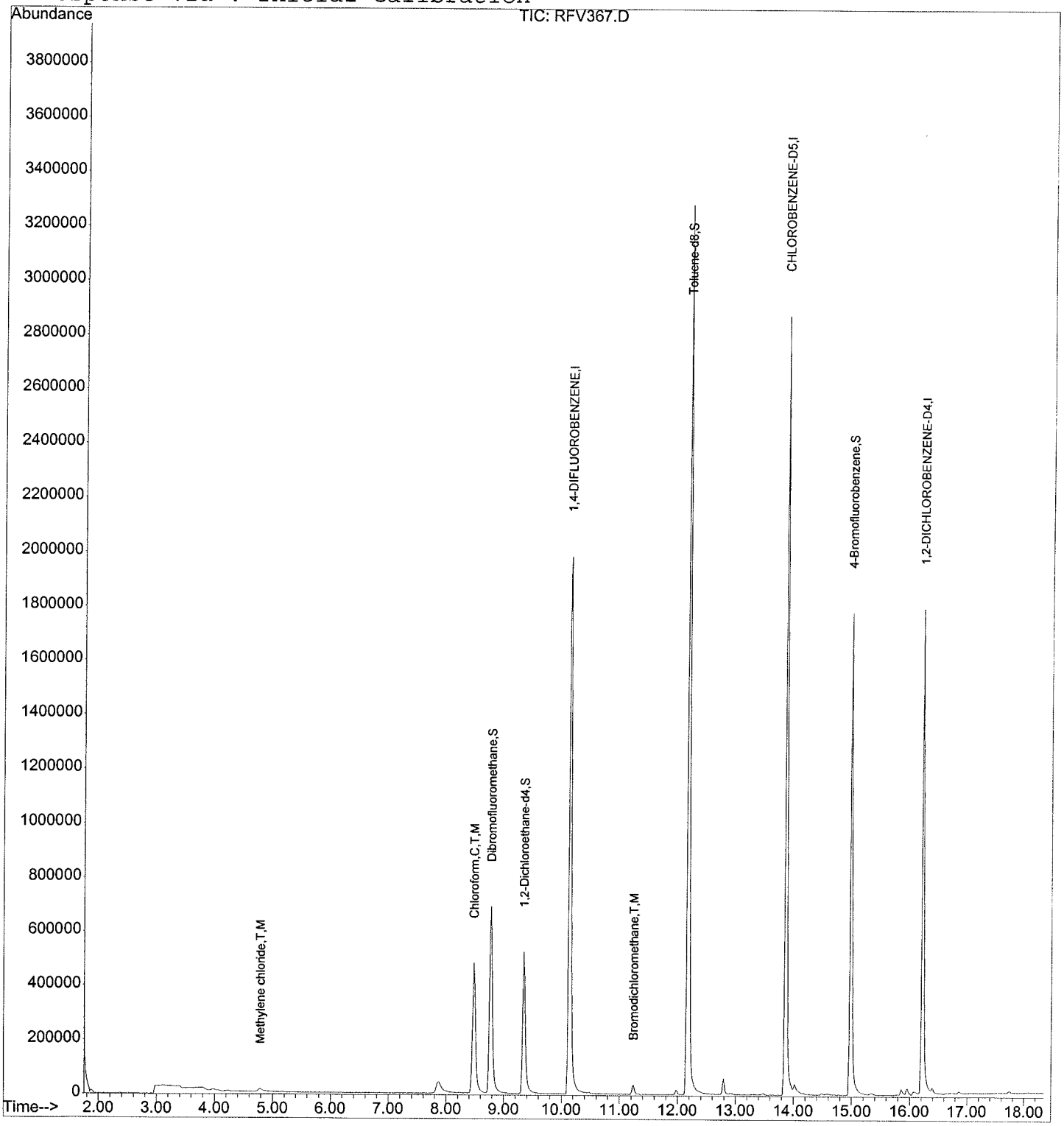
Quantitation Report

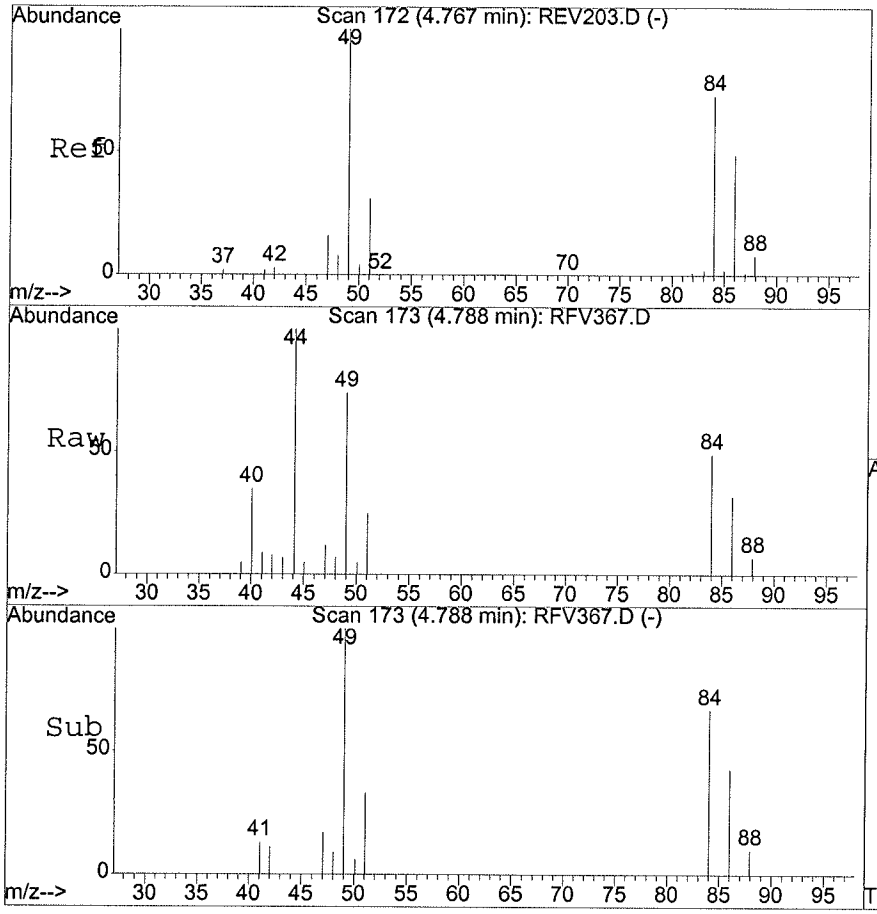
Data File : D:\HPCHEM\1\DATA\20F29\RFV367.D
Acq On : 29 Jun 2020 4:02 pm
Sample : 20F178-11 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 11:14 2020

Vial: 12
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

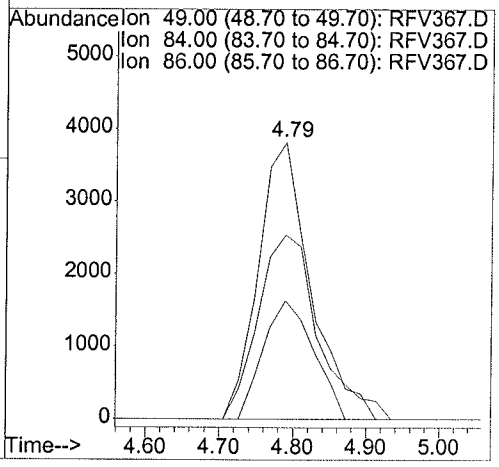


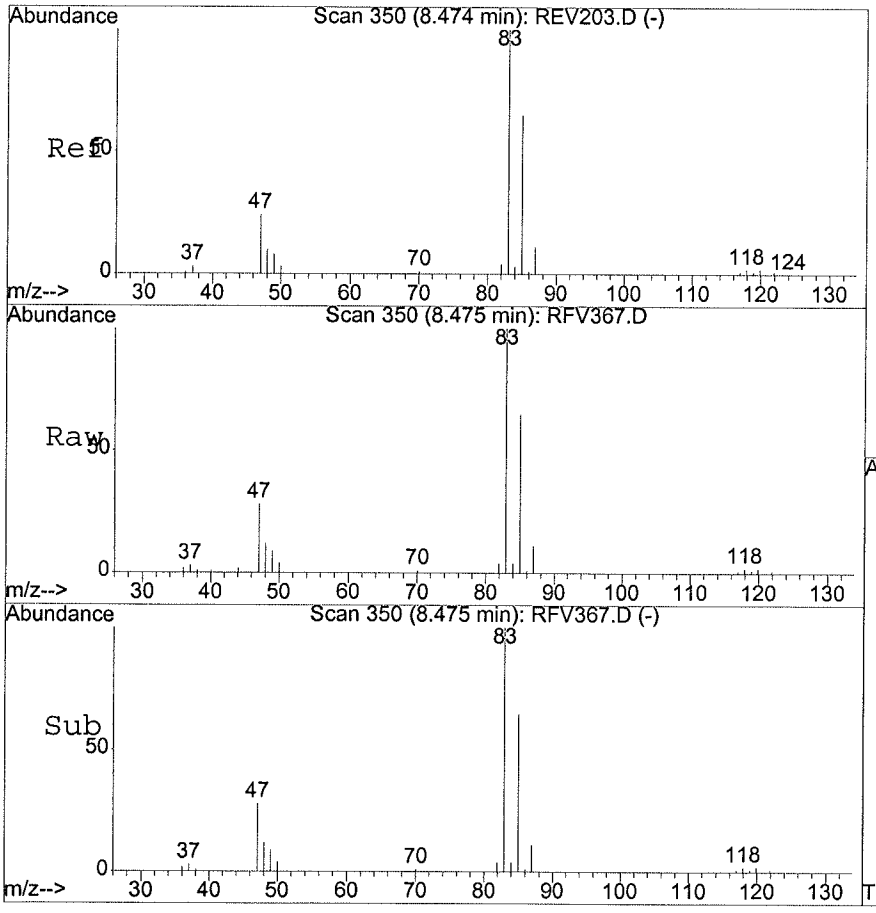


#18
Methylene chloride
Concen: 0.17 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV367.D
Acq: 29 Jun 2020 4:02 pm

Tgt Ion: 49 Resp: 18817

Ion	Ratio	Lower	Upper
49	100		
84	76.8	43.3	103.3
86	41.2	17.1	77.1

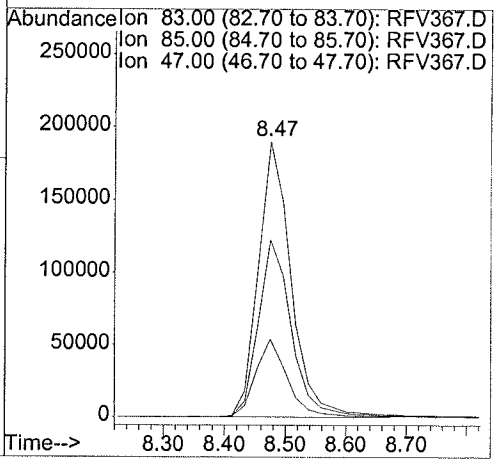


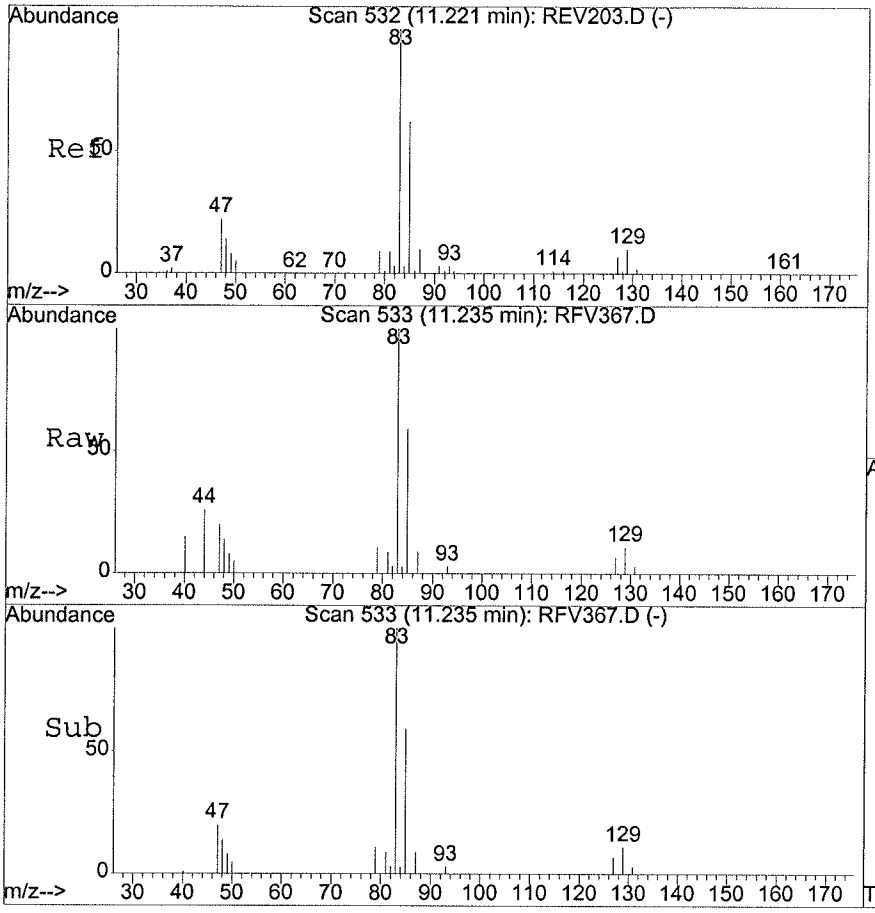


#33
Chloroform
Concen: 5.19 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV367.D
Acq: 29 Jun 2020 4:02 pm

Tgt Ion: 83 Resp: 689992

Ion	Ratio	Lower	Upper
83	100		
85	66.0	35.3	95.3
47	28.4	0.0	57.1

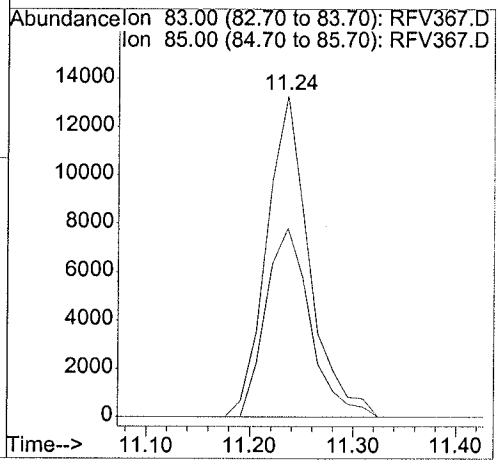




#49
Bromodichloromethane
Concen: 0.44 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV367.D
Acq: 29 Jun 2020 4:02 pm

Tgt Ion: 83 Resp: 37995

Ion	Ratio	Lower	Upper
83	100		
85	61.7	33.3	93.3



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV367.D Vial: 12
Acq On : 29 Jun 2020 4:02 pm Operator: VLu
Sample : 20F178-11 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2726670	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2245977	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	683344	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV367.D VO01E14.M Tue Jun 30 10:33:49 2020 Page 1

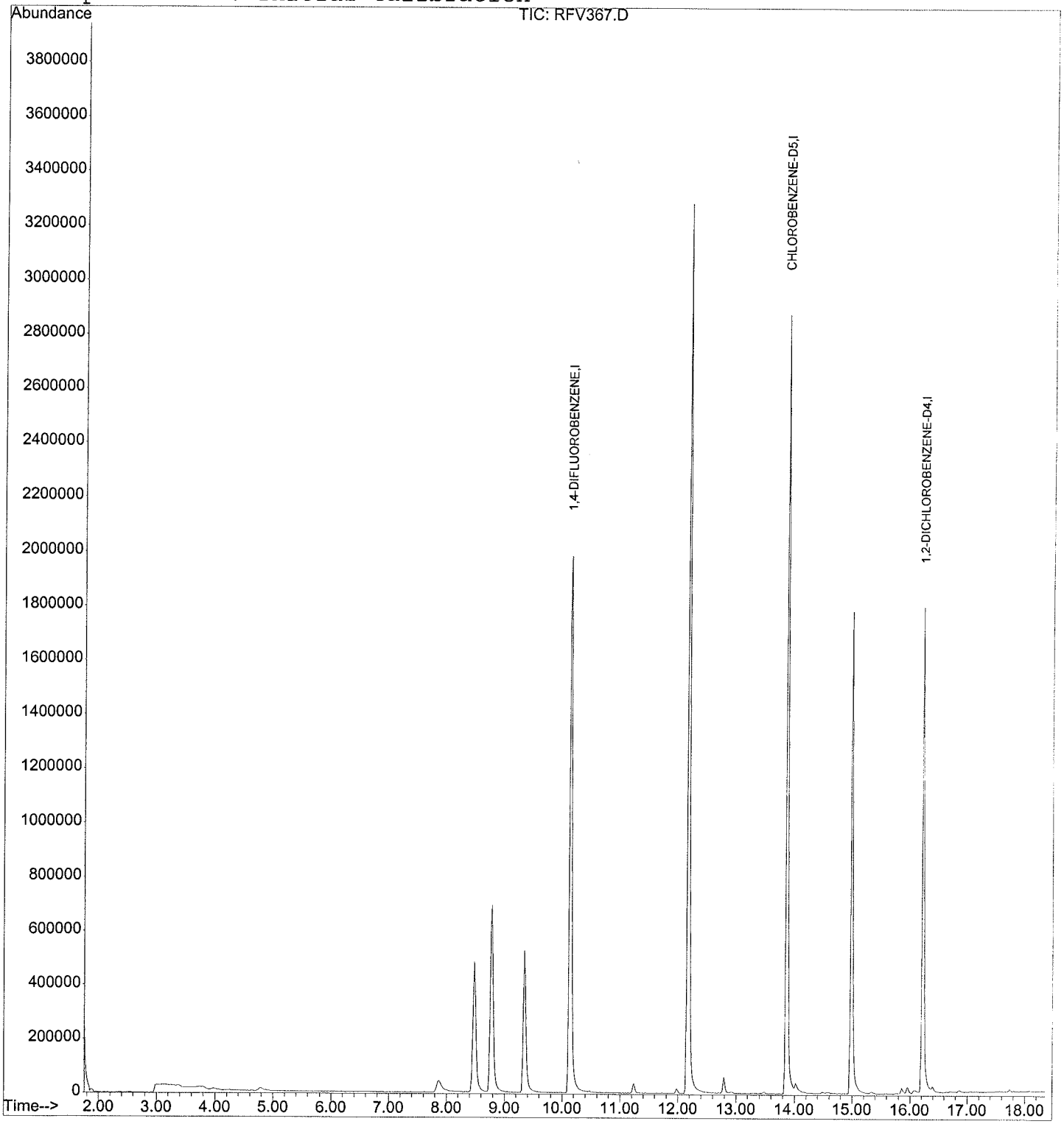
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV367.D
Acq On : 29 Jun 2020 4:02 pm
Sample : 20F178-11 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020

Vial: 12
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/19/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/26/20 20:59
Sample ID:	TB12-GW061920	Date Analyzed:	06/26/20 20:59
Lab Samp ID:	F178-12	Dilution Factor:	1
Lab File ID:	RFV348	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.90	10.00	99.0	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV348.D Vial: 21
Acq On : 26 Jun 2020 8:59 pm Operator: VLu
Sample : 20F178-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:16 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

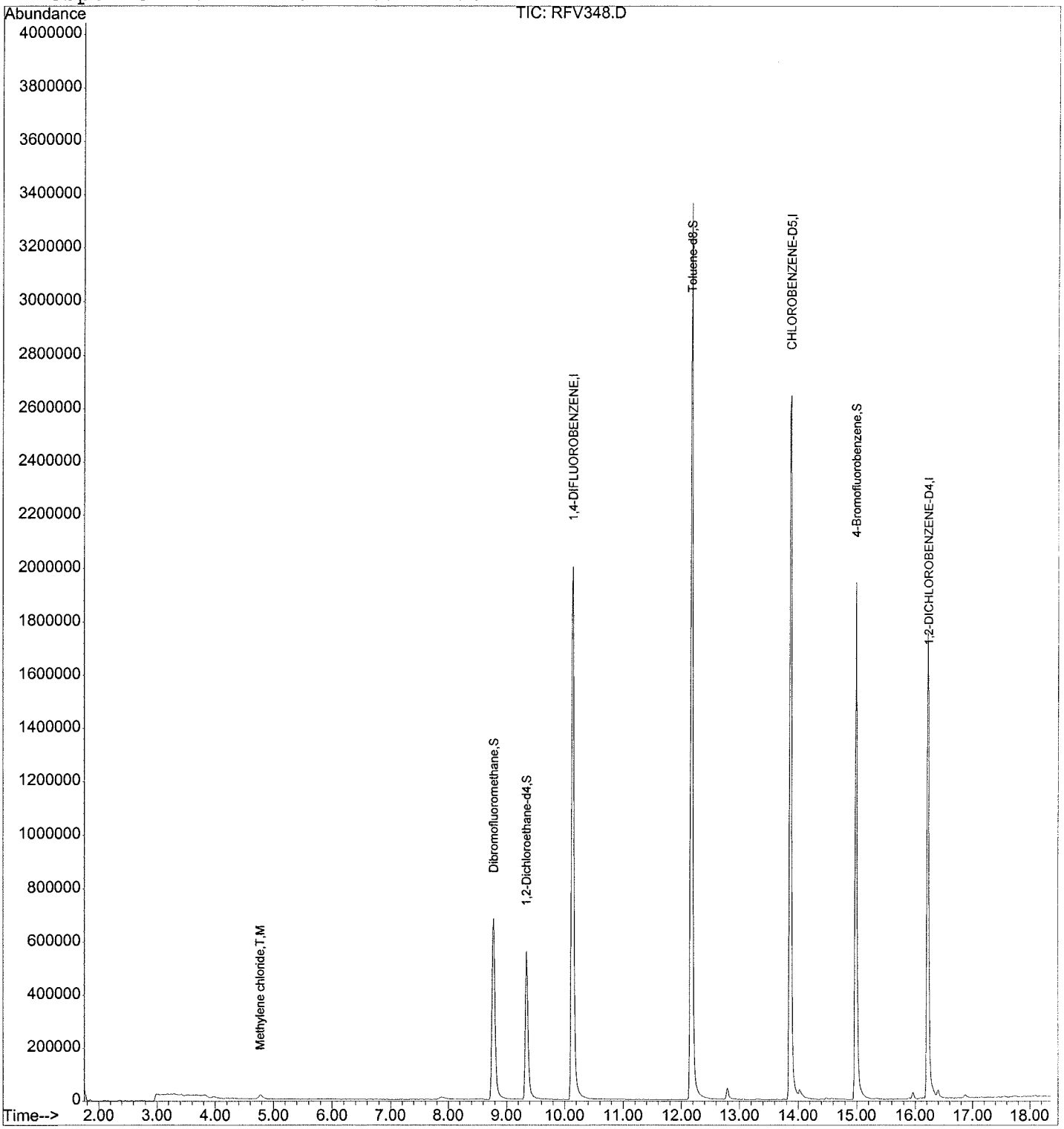
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2775570	10.00	ug/l	0.01
53) CHLOROBENZENE-D5	13.87	117	2328222	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	735919	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	821248	10.51	ug/l	0.01
Spiked Amount 10.000			Recovery =	105.10%		
38) 1,2-Dichloroethane-d4	9.34	65	575765	11.07	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.70%		
54) Toluene-d8	12.17	98	3138317	9.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.00%		
74) 4-Bromofluorobenzene	14.98	95	944018	10.73	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.30%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	25366	0.22	ug/l	89

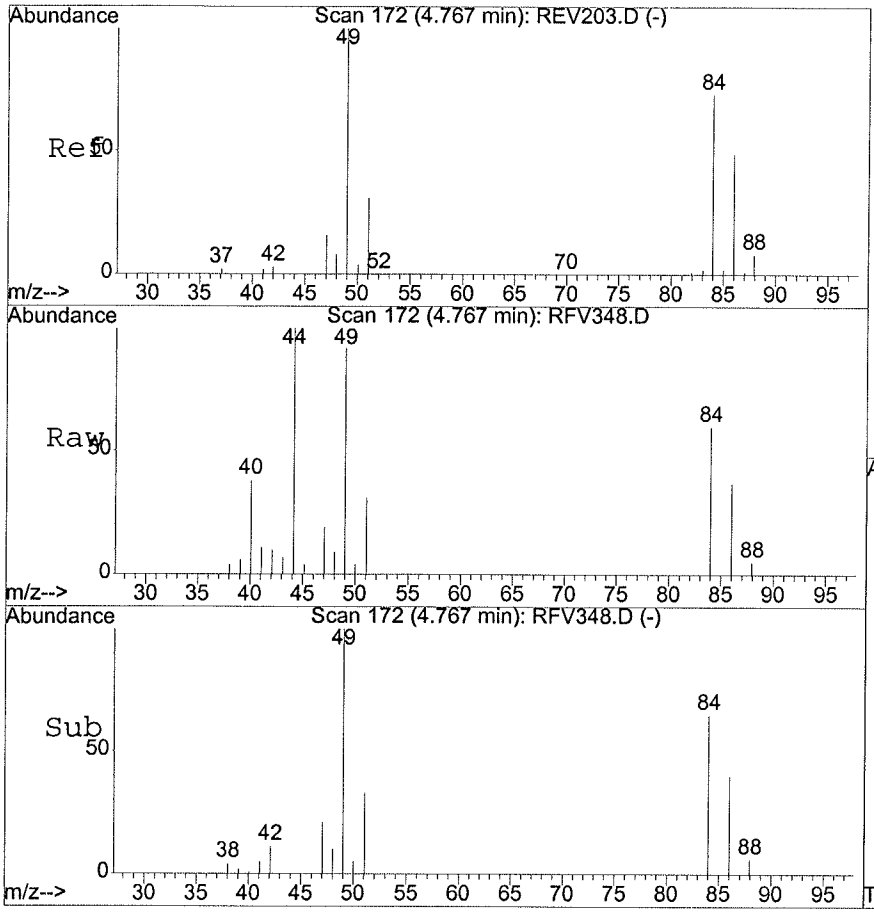
(#) = qualifier out of range (m) = manual integration
RFV348.D VO01E13.M Mon Jun 29 11:16:18 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV348.D Vial: 21
Acq On : 26 Jun 2020 8:59 pm Operator: VLu
Sample : 20F178-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:16 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

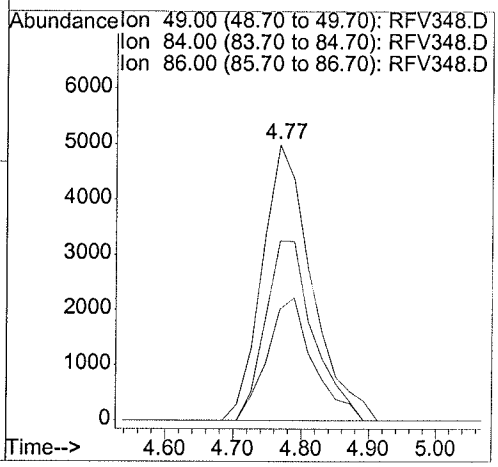




#18
Methylene chloride
Concen: 0.22 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV348.D
Acq: 26 Jun 2020 8:59 pm

Tgt Ion: 49 Resp: 25366

Ion	Ratio	Lower	Upper
49	100		
84	63.0	43.3	103.3
86	41.1	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV348.D Vial: 21
Acq On : 26 Jun 2020 8:59 pm Operator: VLu
Sample : 20F178-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2753097	10.00	ug/l	0.01
3) CHLOROBENZENE-D5	13.87	117	2325291	10.00	ug/l	0.01
4) 1,2-DICHLOROBENZENE-D4	16.23	152	735894	10.00	ug/l	0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV348.D VO01E14.M Mon Jun 29 09:50:42 2020 Page 1

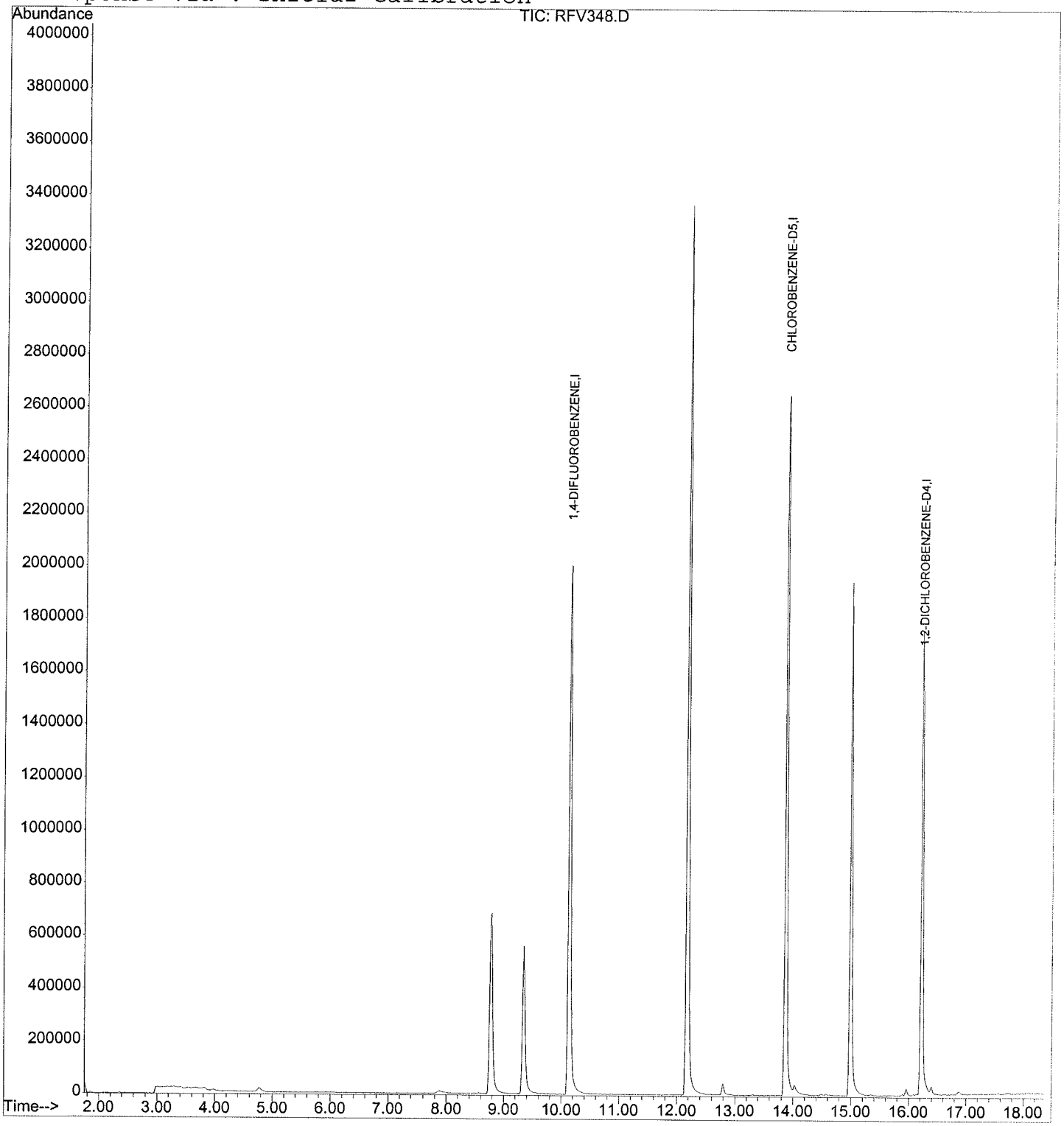
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV348.D
Acq On : 26 Jun 2020 8:59 pm
Sample : 20F178-12 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020

Vial: 21
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/26/20
Batch No.	: 20F178	Date Extracted:	06/26/20 14:40
Sample ID:	MBLK1W	Date Analyzed:	06/26/20 14:40
Lab Samp ID:	V001F16B	Dilution Factor:	1
Lab File ID:	RFV334	Matrix	: WATER
Ext Btch ID:	V001F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.82	10.00	98.2	70-130
DIBROMOFLUOROMETHANE	10.1	10.00	101	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: SW5030B/8260C

MATRIX: WATER
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: V001F16B V001F16L V001F16C
LAB FILE ID: RFV334 RFV331 RFV332
DATE EXTRACTED: 06/26/2014:40 06/26/2013:19 06/26/2013:45
DATE ANALYZED: 06/26/2014:40 06/26/2013:19 06/26/2013:45
PREP. BATCH: V001F16 V001F16 V001F16
CALIB. REF: REV203 REV203 REV203

% MOISTURE: NA
DATE COLLECTED: NA
DATE RECEIVED: 06/26/20

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.85	98	10.0	10.1	101	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.9	109	10.0	10.7	107	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.5	105	10.0	10.5	105	0	80-119	20
1,1-Dichloroethane	ND	10.0	10.5	105	10.0	10.4	104	1	77-125	20
1,1-Dichloroethene	ND	10.0	9.17	92	10.0	9.18	92	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	11.1	111	10.0	11.1	111	0	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	10.8	108	10.0	10.7	107	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	11.0	110	10.0	10.8	108	2	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.7	107	10.0	10.3	103	3	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.4	104	10.0	10.5	105	1	80-119	20
1,2-Dichloroethane	ND	10.0	10.9	109	10.0	11.0	110	0	73-128	20
1,2-Dichloropropane	ND	10.0	10.7	107	10.0	10.9	109	2	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.7	107	10.0	10.7	107	0	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.6	106	10.0	10.6	106	0	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	0	79-118	20
2-Butanone	ND	50.0	53.6	107	50.0	53.2	106	1	56-143	20
2-Hexanone	ND	50.0	54.5	109	50.0	53.4	107	2	57-139	20
Acetone	ND	50.0	50.6	101	50.0	49.2	98	3	39-160	20
Benzene	ND	10.0	11.1	111	10.0	11.2	112	1	79-120	20
Bromochloromethane	ND	10.0	10.7	107	10.0	10.8	108	1	78-120	20
Bromodichloromethane	ND	10.0	11.3	113	10.0	11.4	114	1	79-125	20
Bromoform	ND	10.0	12.3	123	10.0	12.0	120	3	66-130	20
Bromomethane	ND	10.0	9.93	99	10.0	9.95	100	0	53-141	20
Carbon Disulfide	ND	10.0	10.4	104	10.0	10.0	100	4	64-133	20
Carbon Tetrachloride	ND	10.0	10.4	104	10.0	10.5	105	0	72-136	20
Chlorobenzene	ND	10.0	10.6	106	10.0	10.7	107	2	82-118	20
Chloroethane	ND	10.0	9.97	100	10.0	10.1	101	1	60-138	20
Chloroform	ND	10.0	10.5	105	10.0	10.5	105	1	79-124	20
Chloromethane	ND	10.0	11.2	112	10.0	11.0	110	1	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.2	102	10.0	10.3	103	0	78-123	20
Dibromochloromethane	ND	10.0	11.3	113	10.0	11.0	110	2	74-126	20
Dichlorodifluoromethane	ND	10.0	8.06	81	10.0	7.78	78	4	32-152	20
Ethylbenzene	ND	10.0	9.74	97	10.0	9.88	99	1	79-121	20
Isopropylbenzene	ND	10.0	10.6	106	10.0	10.5	105	1	72-131	20
m,p-Xylene	ND	20.0	19.9	100	20.0	20.1	101	1	80-121	20
4-Methyl-2-Pentanone	ND	50.0	57.0	114	50.0	56.7	113	1	67-130	20
Methylene Chloride	ND	10.0	10.4	104	10.0	10.6	106	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.56	96	10.0	9.58	96	0	71-124	20
o-Xylene	ND	10.0	10.1	101	10.0	10.2	102	1	78-122	20
Styrene	ND	10.0	10.5	105	10.0	10.5	105	0	78-123	20
Tetrachloroethene	ND	10.0	10.2	102	10.0	9.86	99	3	74-129	20
Toluene	ND	10.0	10.2	102	10.0	10.0	100	2	80-121	20
Trans-1,2-DCE	ND	10.0	9.59	96	10.0	9.78	98	2	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.7	117	10.0	11.8	118	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.8	108	10.0	10.8	108	0	73-127	20
TCE	ND	10.0	10.5	105	10.0	10.5	105	0	79-123	20
Trichlorofluoromethane	ND	10.0	12.1	121	10.0	11.5	115	5	65-141	20
Vinyl Chloride	ND	10.0	10.4	104	10.0	9.98	100	4	58-137	20
1,2-Dibromoethane	ND	10.0	10.9	109	10.0	10.7	107	1	77-121	20
Vinyl Acetate	ND	10.0	9.76	98	10.0	9.78	98	0	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.50	95	10.0	9.39	94	1	70-136	20
Methyl Acetate	ND	10.0	11.2	112	10.0	11.0	110	2	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.7	107	70-130
Bromofluorobenzene	10.0	10.4	104	10.0	10.4	104	70-130
Toluene-d8	10.0	9.80	98	10.0	9.84	98	70-130
Dibromofluoromethane	10.0	10.3	103	10.0	10.5	105	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/29/20
Batch No.	: 20F178	Date Extracted:	06/29/20 13:21
Sample ID:	MBLK2W	Date Analyzed:	06/29/20 13:21
Lab Samp ID:	V001F17B	Dilution Factor:	1
Lab File ID:	RFV361	Matrix	: WATER
Ext Btch ID:	V001F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.96	10.00	99.6	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK2W
LAB SAMP ID: VO01F17B VO01F17L VO01F17C
LAB FILE ID: RFV361 RFV358 RFV359
DATE EXTRACTED: 06/29/2013:21 06/29/2012:01 06/29/2012:28 DATE COLLECTED: NA
DATE ANALYZED: 06/29/2013:21 06/29/2012:01 06/29/2012:28 DATE RECEIVED: 06/29/20
PREP. BATCH: VO01F17 VO01F17 VO01F17
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.4	104	10.0	10.3	103	1	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	11.4	114	10.0	11.4	114	0	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.9	109	10.0	10.8	108	1	80-119	20
1,1-Dichloroethane	ND	10.0	10.9	109	10.0	10.5	105	4	77-125	20
1,1-Dichloroethene	ND	10.0	9.59	96	10.0	9.40	94	2	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	11.0	110	10.0	11.1	111	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	10.8	108	10.0	10.9	109	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	11.3	113	10.0	11.0	110	3	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.7	107	10.0	11.0	110	3	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.5	105	10.0	10.6	106	0	80-119	20
1,2-Dichloroethane	ND	10.0	11.3	113	10.0	11.2	112	1	73-128	20
1,2-Dichloropropane	ND	10.0	11.1	111	10.0	10.9	109	1	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	11.3	113	10.0	10.9	109	4	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.9	109	10.0	10.7	107	2	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.8	108	10.0	10.5	105	2	79-118	20
2-Butanone	ND	50.0	55.8	112	50.0	57.6	115	3	56-143	20
2-Hexanone	ND	50.0	55.6	111	50.0	58.5	117	5	57-139	20
Acetone	ND	50.0	52.2	104	50.0	53.8	108	3	39-160	20
Benzene	ND	10.0	11.3	113	10.0	11.0	110	3	79-120	20
Bromochloromethane	ND	10.0	11.2	112	10.0	11.0	110	1	78-120	20
Bromodichloromethane	ND	10.0	11.6	116	10.0	11.5	115	0	79-125	20
Bromoform	ND	10.0	12.7	127	10.0	12.7	127	0	66-130	20
Bromomethane	ND	10.0	10.6	106	10.0	10.1	101	5	53-141	20
Carbon Disulfide	ND	10.0	10.7	107	10.0	10.3	103	4	64-133	20
Carbon Tetrachloride	ND	10.0	11.1	111	10.0	10.7	107	4	72-136	20
Chlorobenzene	ND	10.0	10.8	108	10.0	10.8	108	0	82-118	20
Chloroethane	ND	10.0	10.6	106	10.0	10.5	105	1	60-138	20
Chloroform	ND	10.0	10.7	107	10.0	10.5	105	2	79-124	20
Chloromethane	ND	10.0	11.7	117	10.0	11.6	116	1	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.4	104	10.0	10.4	104	0	78-123	20
Dibromochloromethane	ND	10.0	11.6	116	10.0	11.7	117	1	74-126	20
Dichlorodifluoromethane	ND	10.0	8.33	83	10.0	7.98	80	4	32-152	20
Ethylbenzene	ND	10.0	10.0	100	10.0	9.94	99	1	79-121	20
Isopropylbenzene	ND	10.0	11.1	111	10.0	10.5	105	6	72-131	20
m,p-Xylene	ND	20.0	20.6	103	20.0	20.3	102	1	80-121	20
4-Methyl-2-Pentanone	ND	50.0	58.4	117	50.0	59.8	120	2	67-130	20
Methylene Chloride	ND	10.0	10.6	106	10.0	10.4	104	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	10.1	101	10.0	10.1	101	0	71-124	20
o-Xylene	ND	10.0	10.6	106	10.0	10.4	104	2	78-122	20
Styrene	ND	10.0	10.8	108	10.0	10.8	108	0	78-123	20
Tetrachloroethene	ND	10.0	10.3	103	10.0	10.2	102	1	74-129	20
Toluene	ND	10.0	10.6	106	10.0	10.4	104	2	80-121	20
Trans-1,2-DCE	ND	10.0	10.2	102	10.0	9.80	98	4	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.8	118	10.0	11.9	119	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	11.3	113	10.0	11.2	112	1	73-127	20
TCE	ND	10.0	10.7	107	10.0	10.5	105	1	79-123	20
Trichlorofluoromethane	ND	10.0	12.6	126	10.0	12.1	121	4	65-141	20
Vinyl Chloride	ND	10.0	11.2	112	10.0	10.6	106	6	58-137	20
1,2-Dibromoethane	ND	10.0	11.2	112	10.0	11.2	112	0	77-121	20
Vinyl Acetate	ND	10.0	10.9	109	10.0	10.4	104	5	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.73	97	10.0	9.69	97	0	70-136	20
Methyl Acetate	ND	10.0	11.5	115	10.0	11.6	116	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.4	104	70-130
Bromofluorobenzene	10.0	10.5	105	10.0	10.3	103	70-130
Toluene-d8	10.0	9.86	99	10.0	9.77	98	70-130
Dibromofluoromethane	10.0	10.4	104	10.0	10.3	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

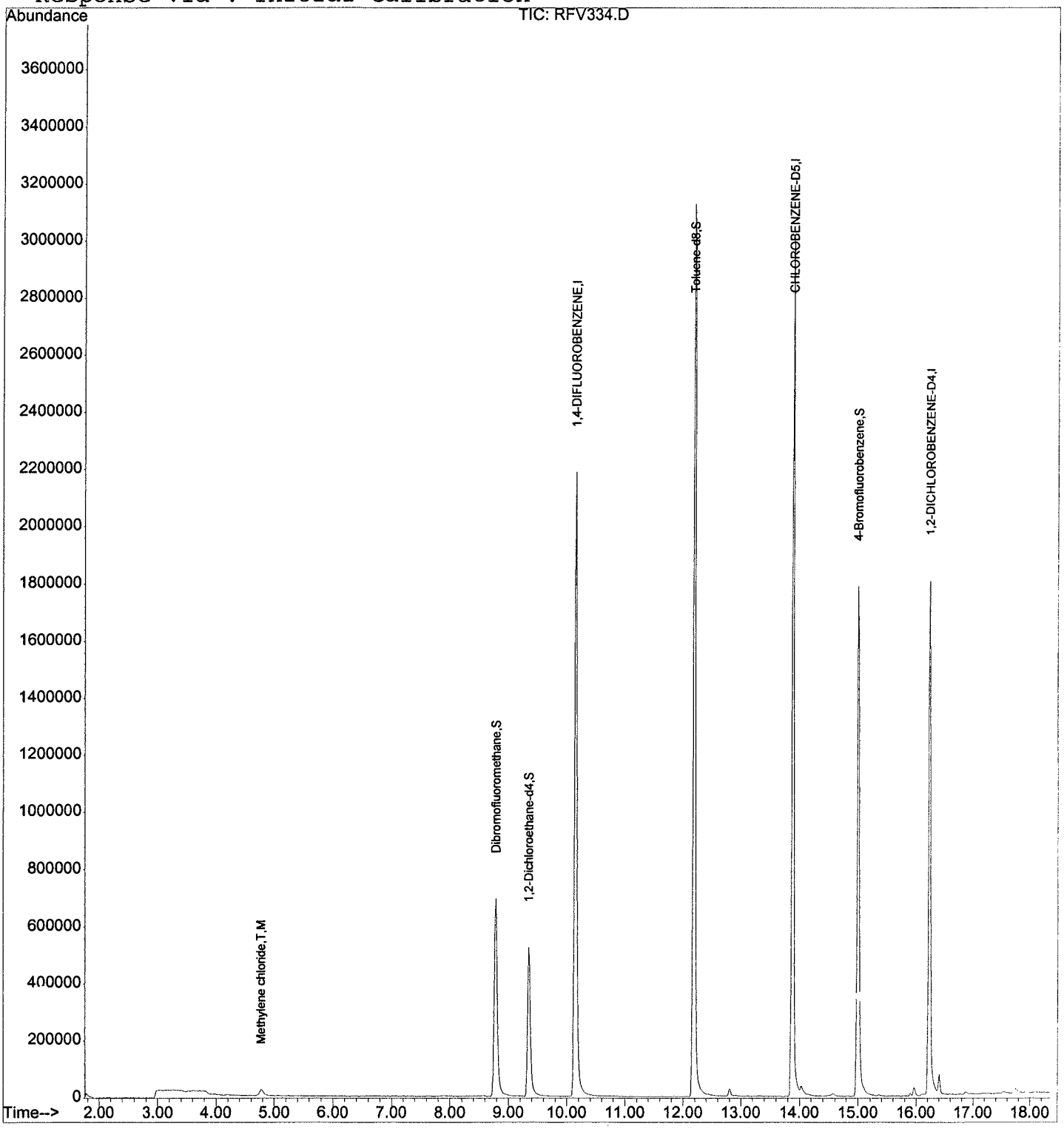
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2909618	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.87	117	2370401	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	753121	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	824004	10.06	ug/l	0.02
Spiked Amount 10.000			Recovery =	100.60%		
38) 1,2-Dichloroethane-d4	9.34	65	556414	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.00%		
54) Toluene-d8	12.17	98	3166940	9.82	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.20%		
74) 4-Bromofluorobenzene	14.98	95	949802	10.55	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.50%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	33113	0.28	ug/l	93

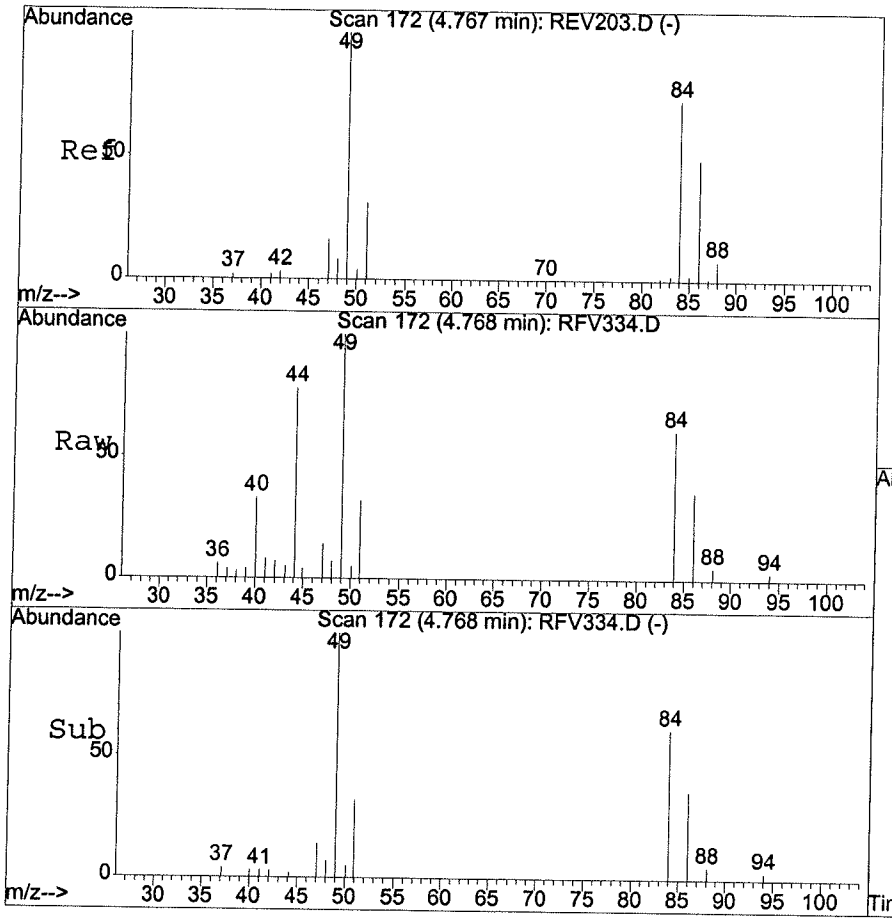
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

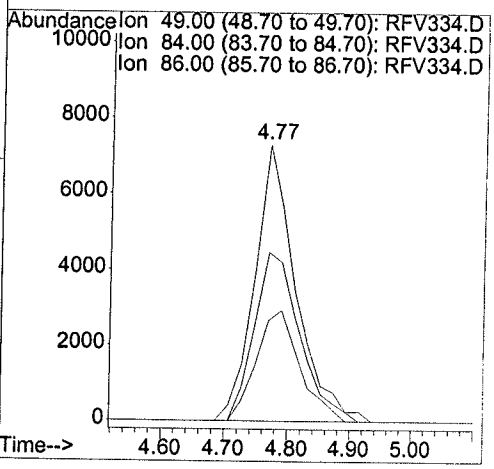




#18
Methylene chloride
Concen: 0.28 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV334.D
Acq: 26 Jun 2020 2:40 pm

Tgt Ion: 49 Resp: 33113

Ion	Ratio	Lower	Upper
49	100		
84	67.6	43.3	103.3
86	42.4	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2909558	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.87	117	2367293	10.00	ug/l	0.02
4) 1,2-DICHLOROBENZENE-D4	16.23	152	753146	10.00	ug/l	0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV334.D VO01E14.M Mon Jun 29 09:47:01 2020 Page 1

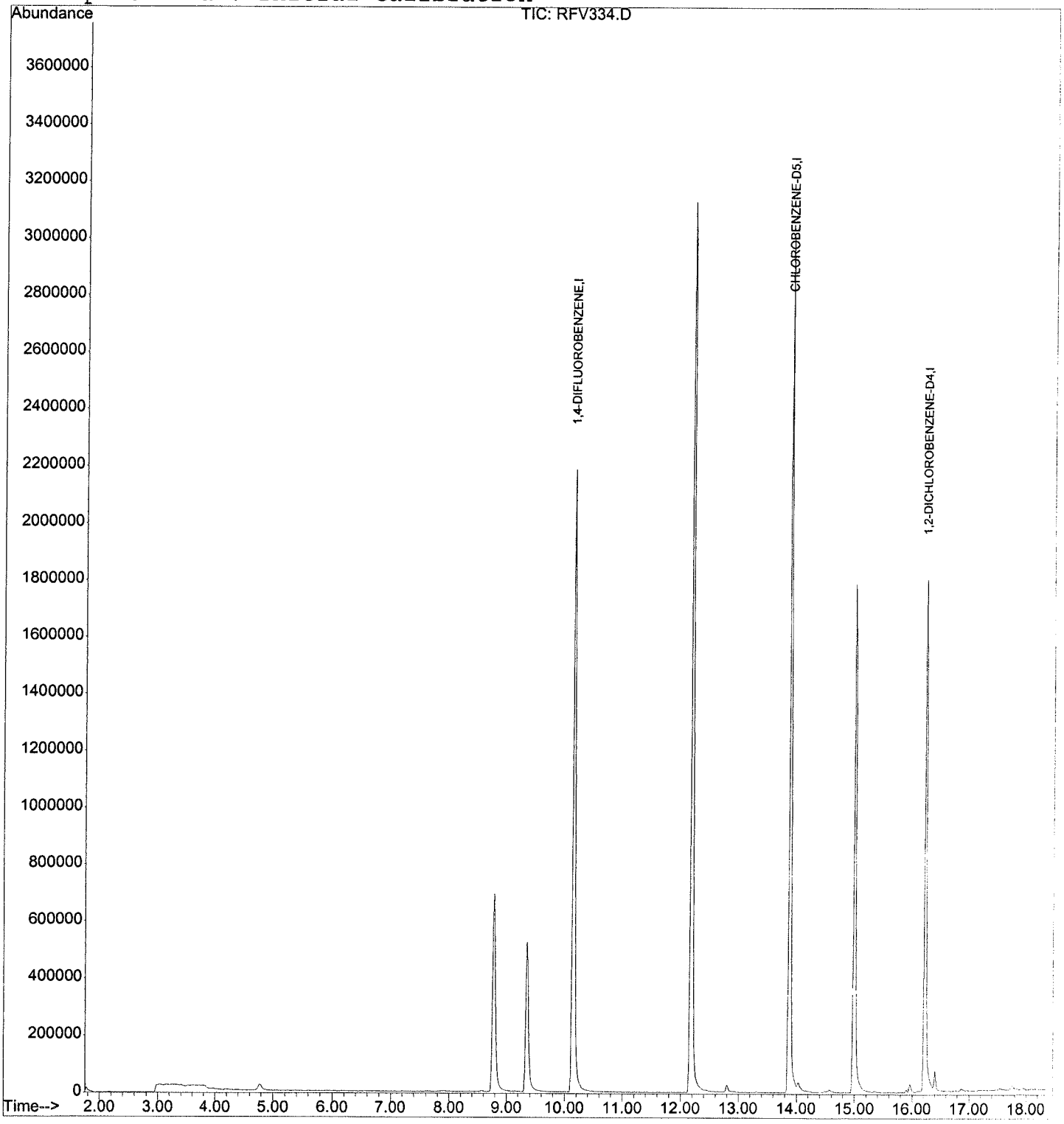
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D
Acq On : 26 Jun 2020 2:40 pm
Sample : VO01F16B 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 29 9:46 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2754474	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2296743	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	765264	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	802344	10.35	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.50%		
38) 1,2-Dichloroethane-d4	9.34	65	544991	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.60%		
54) Toluene-d8	12.17	98	3063789	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.00%		
74) 4-Bromofluorobenzene	14.97	95	953797	10.43	ug/l	-0.02
Spiked Amount 10.000			Recovery =	104.30%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	682859	8.06	ug/l	98
4) Chloromethane	2.10	50	1130959	11.17	ug/l	98
5) Vinyl chloride	2.24	62	1030332	10.38	ug/l	98
7) Bromomethane	2.63	94	657051	9.93	ug/l	98
8) Chloroethane	2.76	64	548207	9.97	ug/l	99
9) Dichlorofluoromethane	3.08	67	1504350	11.09	ug/l	99
10) Trichlorofluoromethane	3.14	101	1110718	12.08	ug/l	100
11) Acrolein	3.70	56	242976	50.86	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	548164	9.50	ug/l	98
13) Acetone	3.95	43	473273	50.60	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1233901	9.17	ug/l	98
15) Iodomethane	4.10	142	1523136	10.02	ug/l	98
16) Carbon disulfide	4.20	76	3076512	10.42	ug/l	100
17) Methyl acetate	4.54	43	276637	11.23	ug/l	100
18) Methylene chloride	4.77	49	1176768	10.38	ug/l	98
19) tert-Butyl alcohol	5.10	59	644803	251.36	ug/l	99
20) Acrylonitrile	5.23	53	589218	51.42	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1133887	9.56	ug/l	96
22) trans-1,2-Dichloroethene	5.33	61	1276102	9.59	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1694636	10.51	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2824741	10.06	ug/l	100
27) tert-Butyl ethyl ether (ET	7.45	59	1868329	9.21	ug/l	99
28) 2-Butanone	7.75	43	200134	53.58	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	954602	10.22	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1066883	10.46	ug/l	99
31) Tetrahydrofurane	8.27	42	82750	8.65	ug/l	87
32) Bromochloromethane	8.20	49	714568	10.73	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.47	83	1394911	10.47 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1046983	9.85 ug/l	99
36)	Cyclohexane	8.84	84	1941724	12.83 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1580236	10.10 ug/l	100
39)	1,1-Dichloropropene	9.03	110	456637	10.12 ug/l	100
40)	Carbon tetrachloride	9.00	119	931104	10.44 ug/l	98
41)	Benzene	9.34	78	3639294	11.05 ug/l	99
42)	1,2-Dichloroethane	9.46	62	676126	10.93 ug/l	100
44)	Trichloroethene	10.45	130	1058883	10.51 ug/l	99
45)	Methylcyclohexane	10.79	83	2384911	14.04 ug/l	100
46)	1,2-Dichloropropane	10.82	63	954737	10.74 ug/l	99
47)	1,4-Dioxane	10.97	88	58600	193.30 ug/l	100
48)	Dibromomethane	10.94	93	358887	10.65 ug/l	98
49)	Bromodichloromethane	11.22	83	980494	11.33 ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	235539	8.57 ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1297240	11.66 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2208735	57.04 ug/l	100
55)	Toluene	12.26	91	3672728	10.21 ug/l	100
56)	Ethyl methacrylate	12.67	69	676097	10.55 ug/l	99
57)	trans-1,3-Dichloropropene	12.58	75	917608	10.82 ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	506843	10.53 ug/l	99
59)	Tetrachloroethene	12.91	164	800739	10.18 ug/l	99
60)	1,3-Dichloropropane	13.00	76	979585	10.62 ug/l	100
61)	2-Hexanone	13.07	43	1416298	54.55 ug/l	100
62)	Dibromochloromethane	13.25	129	673806	11.26 ug/l	99
63)	1,2-Dibromoethane	13.37	107	524105	10.85 ug/l	98
64)	1-Chlorohexane	13.87	91	1585794	9.74 ug/l	99
65)	Chlorobenzene	13.89	112	2384073	10.56 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	777176	10.75 ug/l	100
67)	Ethylbenzene	13.99	91	4149242	9.74 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6035701	19.92 ug/l	98
69)	o-Xylene	14.48	91	2938658	10.11 ug/l	98
70)	Styrene	14.49	104	2515803	10.50 ug/l	100
72)	Bromoform	14.69	173	317724	12.33 ug/l	99
73)	Isopropylbenzene	14.80	105	4242211	10.61 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	605705	10.92 ug/l	98
76)	Bromobenzene	15.10	156	856676	10.95 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	121404	10.95 ug/l	97
78)	1,2,3-Trichloropropane	15.13	110	151543	11.28 ug/l	100
79)	n-Propylbenzene	15.17	91	4902227	10.60 ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3027553	10.73 ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

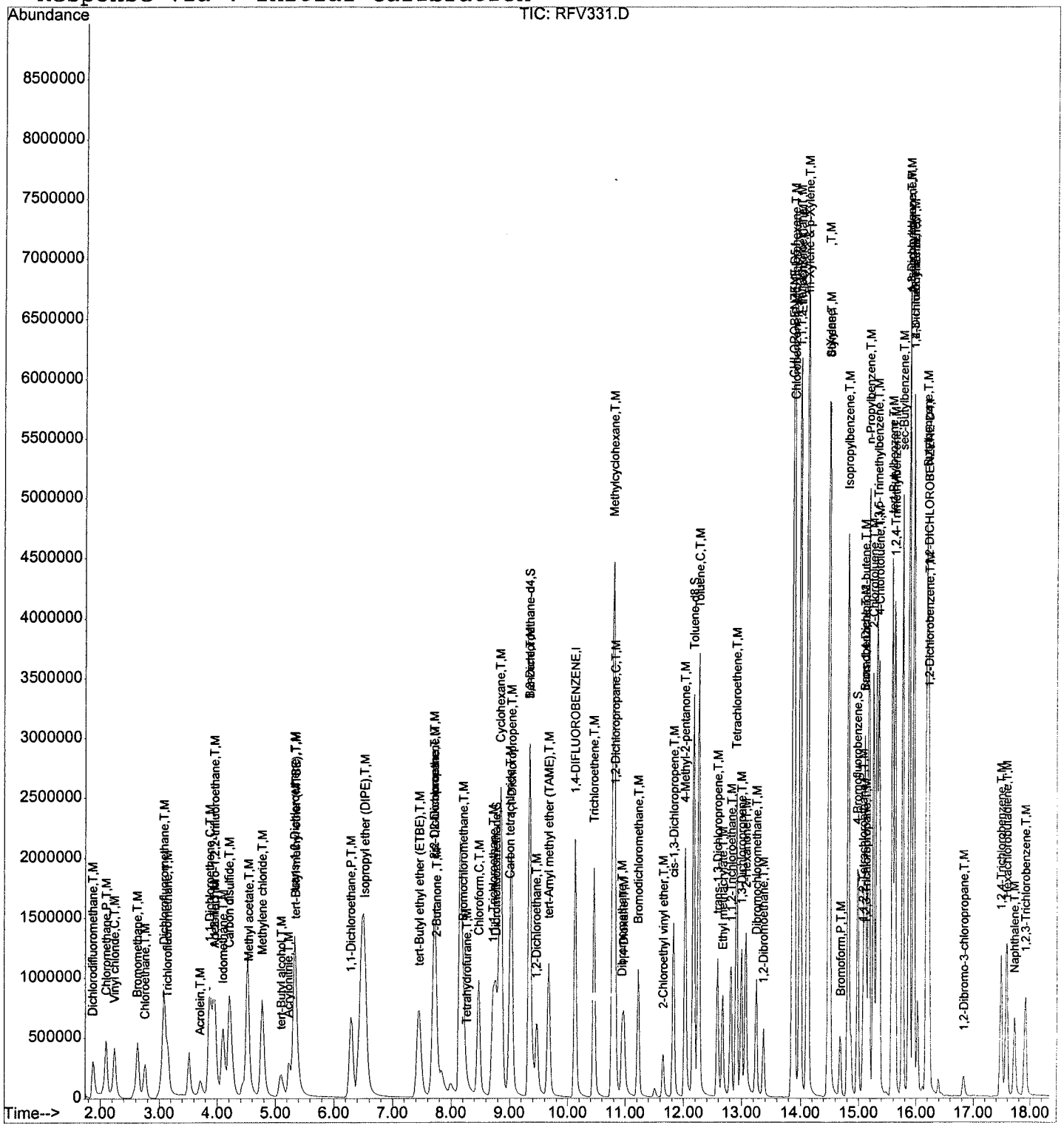
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2405690	10.84	ug/l	100
82)	4-Chlorotoluene	15.35	91	2813480	10.71	ug/l	100
83)	tert-Butylbenzene	15.57	134	794968	10.43	ug/l	72
84)	1,2,4-Trimethylbenzene	15.62	105	2989379	10.96	ug/l	98
85)	sec-Butylbenzene	15.75	105	4528844	10.78	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3378240	10.55	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1549492	10.63	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1483887	10.47	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2493945	9.96	ug/l	99
90)	n-Butylbenzene	16.18	91	2972973	10.23	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1243728	10.41	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	69701	10.67	ug/l	96
93)	1,2,4-Trichlorobenzene	17.48	180	636570	10.84	ug/l	99
94)	Hexachlorobutadiene	17.59	225	447451	9.98	ug/l	100
95)	Naphthalene	17.72	128	873159	11.23	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	487661	11.09	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

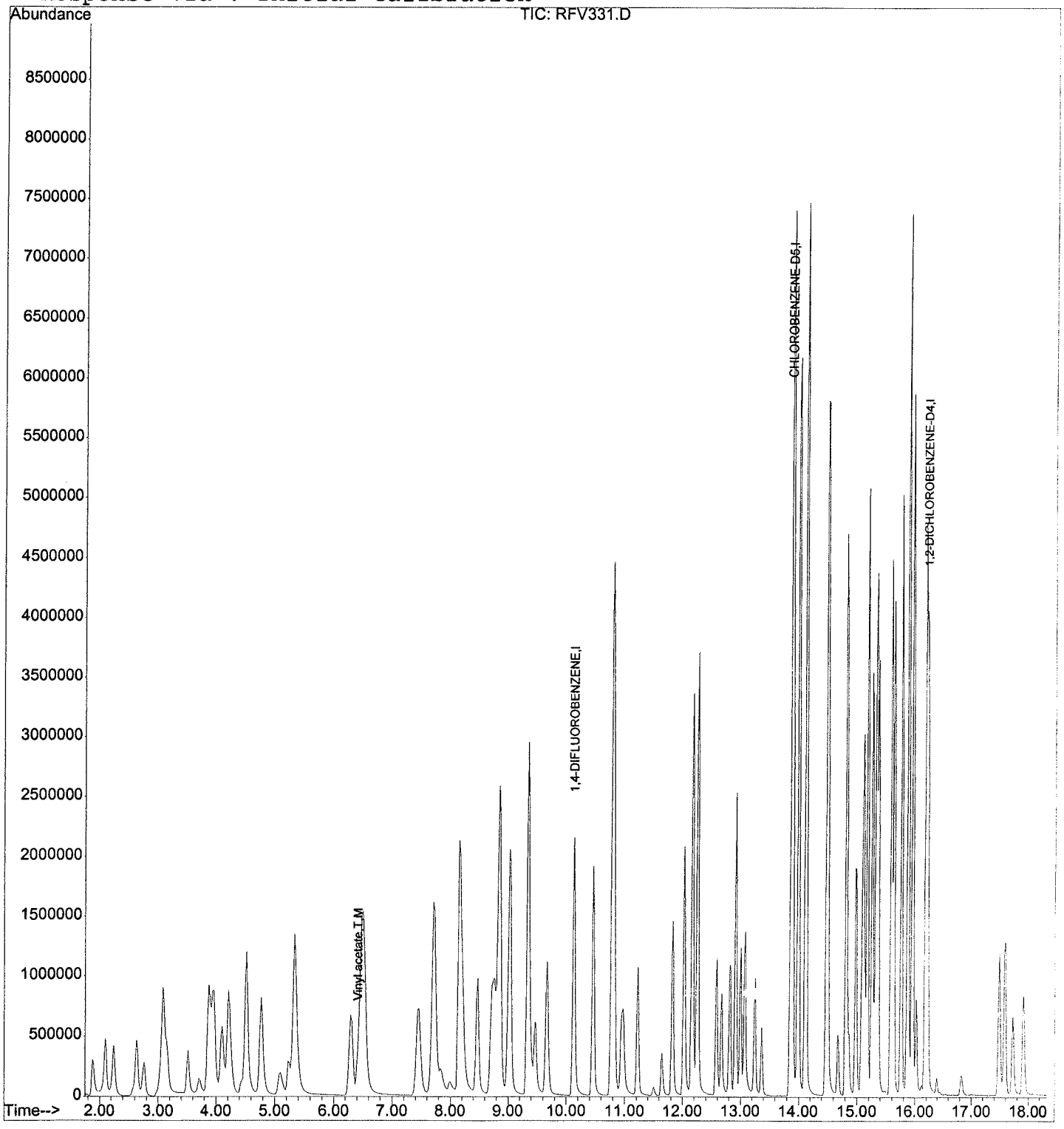
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2754421	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2286492	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	765289	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	883890	9.76	ug/l	94

(#) = qualifier out of range (m) = manual integration
RFV331.D VO01E14.M Mon Jun 29 09:46:29 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2682669	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2269858	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	763929	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	794381	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.20%			
38) 1,2-Dichloroethane-d4	9.32	65	539389	10.73	ug/l	-0.01
Spiked Amount 10.000			Recovery = 107.30%			
54) Toluene-d8	12.17	98	3040191	9.84	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.40%			
74) 4-Bromofluorobenzene	14.97	95	954368	10.45	ug/l	-0.01
Spiked Amount 10.000			Recovery = 104.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	641827	7.78	ug/l	98
4) Chloromethane	2.10	50	1087010	11.02	ug/l	98
5) Vinyl chloride	2.24	62	964515	9.98	ug/l	98
7) Bromomethane	2.63	94	641265	9.95	ug/l	100
8) Chloroethane	2.76	64	540123	10.09	ug/l	99
9) Dichlorofluoromethane	3.08	67	1438440	10.88	ug/l	99
10) Trichlorofluoromethane	3.14	101	1032142	11.52	ug/l	100
11) Acrolein	3.71	56	238778	51.32	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	527610	9.39	ug/l	98
13) Acetone	3.96	43	447909	49.17	ug/l	100
14) 1,1-Dichloroethene	3.87	61	1202542	9.18	ug/l	99
15) Iodomethane	4.10	142	1494519	10.09	ug/l	98
16) Carbon disulfide	4.21	76	2878960	10.01	ug/l	100
17) Methyl acetate	4.54	43	263911	11.00	ug/l	100
18) Methylene chloride	4.77	49	1165628	10.56	ug/l	99
19) tert-Butyl alcohol	5.10	59	611797	244.87	ug/l	99
20) Acrylonitrile	5.23	53	580713	52.03	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1106812	9.58	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1267092	9.78	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1638779	10.43	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	2792125	10.21	ug/l	99
27) tert-Butyl ethyl ether (ET	7.45	59	1830798	9.27	ug/l	99
28) 2-Butanone	7.75	43	773680	53.19	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	933977	10.27	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1029872	10.37	ug/l	99
31) Tetrahydrofurane	8.27	42	81305	8.72	ug/l	86
32) Bromochloromethane	8.20	49	700307	10.80	ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.47	83	1368129	10.55 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1041857	10.06 ug/l	99
36)	Cyclohexane	8.84	84	1909924	12.96 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1531610	10.05 ug/l	100
39)	1,1-Dichloropropene	9.03	110	443585	10.10 ug/l	99
40)	Carbon tetrachloride	9.00	119	908041	10.46 ug/l	99
41)	Benzene	9.34	78	3592946	11.20 ug/l	100
42)	1,2-Dichloroethane	9.46	62	661739	10.99 ug/l	99
44)	Trichloroethene	10.45	130	1032262	10.52 ug/l	99
45)	Methylcyclohexane	10.79	83	2400063	14.51 ug/l	99
46)	1,2-Dichloropropane	10.82	63	947272	10.94 ug/l	100
47)	1,4-Dioxane	10.97	88	58517	198.20 ug/l	98
48)	Dibromomethane	10.94	93	355975	10.84 ug/l	98
49)	Bromodichloromethane	11.22	83	960269	11.40 ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	237201	8.86 ug/l	98
51)	cis-1,3-Dichloropropene	11.83	75	1276842	11.79 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2136838	56.66 ug/l	100
55)	Toluene	12.26	91	3570526	10.04 ug/l	100
56)	Ethyl methacrylate	12.67	69	659133	10.40 ug/l	99
57)	trans-1,3-Dichloropropene	12.58	75	904204	10.78 ug/l	98
58)	1,1,2-Trichloroethane	12.82	97	500354	10.52 ug/l	98
59)	Tetrachloroethene	12.91	164	766787	9.86 ug/l	98
60)	1,3-Dichloropropane	13.00	76	968477	10.63 ug/l	100
61)	2-Hexanone	13.07	43	1369605	53.37 ug/l	99
62)	Dibromochloromethane	13.25	129	652905	11.04 ug/l	99
63)	1,2-Dibromoethane	13.37	107	511185	10.71 ug/l	98
64)	1-Chlorohexane	13.87	91	1561582	9.70 ug/l	98
65)	Chlorobenzene	13.89	112	2396584	10.74 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	766681	10.73 ug/l	99
67)	Ethylbenzene	13.99	91	4157360	9.88 ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6032847	20.14 ug/l	98
69)	o-Xylene	14.48	91	2931988	10.21 ug/l	99
70)	Styrene	14.49	104	2491623	10.53 ug/l	100
72)	Bromoform	14.69	173	308565	11.99 ug/l	99
73)	Isopropylbenzene	14.80	105	4190739	10.50 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	593862	10.73 ug/l	100
76)	Bromobenzene	15.10	156	844043	10 81 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	119963	10.84 ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	144565	10.78 ug/l	98
79)	n-Propylbenzene	15.17	91	4757166	10.30 ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	3024257	10.74 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

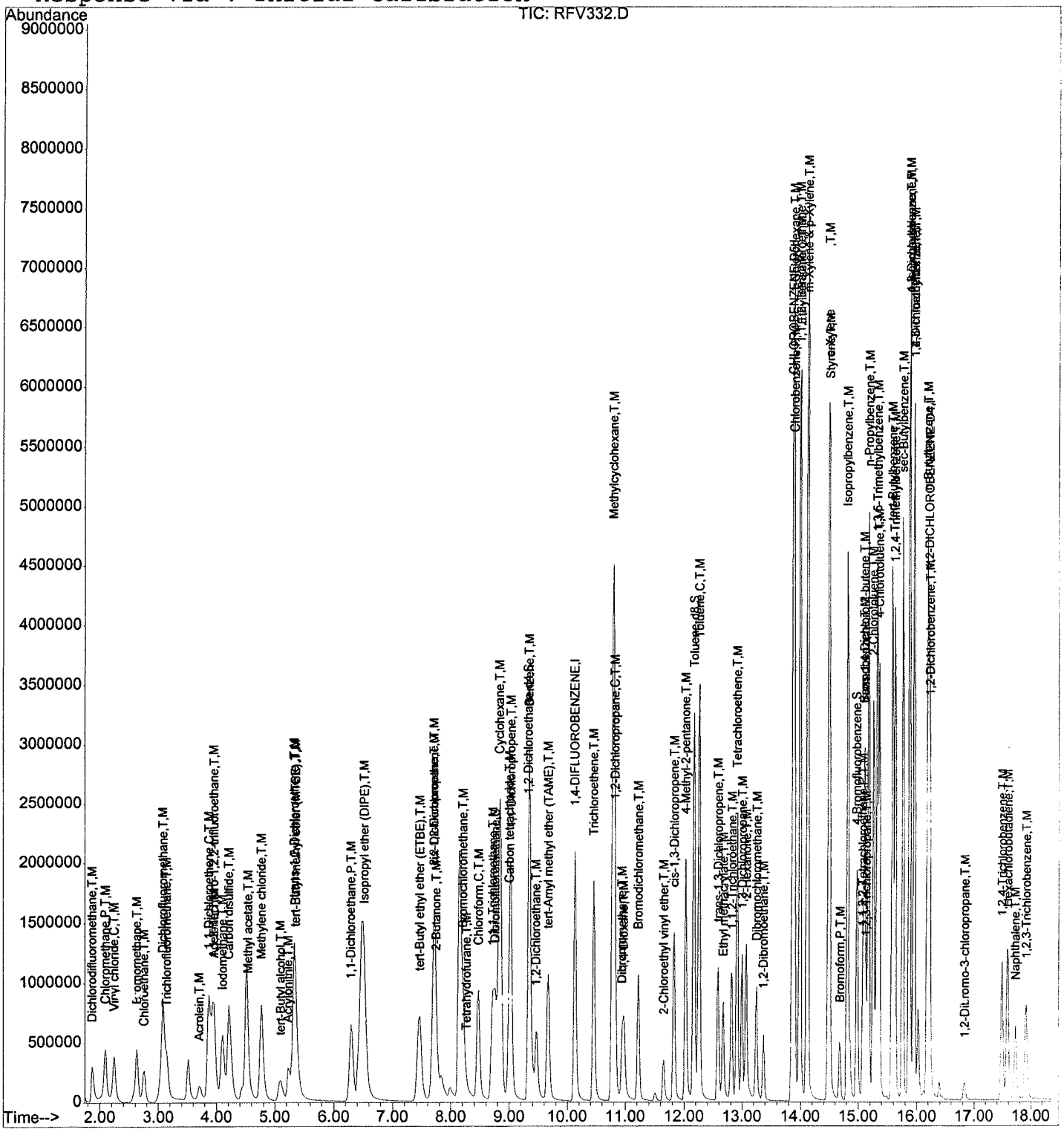
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2340157	10.56	ug/l	100
82)	4-Chlorotoluene	15.35	91	2815239	10.73	ug/l	100
83)	tert-Butylbenzene	15.57	134	808249	10.63	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	2932338	10.77	ug/l	99
85)	sec-Butylbenzene	15.75	105	4469701	10.66	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3305658	10.34	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1548961	10.65	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1474356	10.43	ug/l	98
89)	1,2,3-Trimethylbenzene	15.94	105	2443130	9.77	ug/l	98
90)	n-Butylbenzene	16.18	91	3020428	10.41	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1254793	10.52	ug/l	98
92)	1,2-Dibromo-3-chloropropan	16.83	157	67233	10.31	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	627516	10.70	ug/l	98
94)	Hexachlorobutadiene	17.59	225	453634	10.14	ug/l	98
95)	Naphthalene	17.72	128	845448	10.90	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	487716	11.11	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFV332.D VO01E13.M Mon Jun 29 10:22:04 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

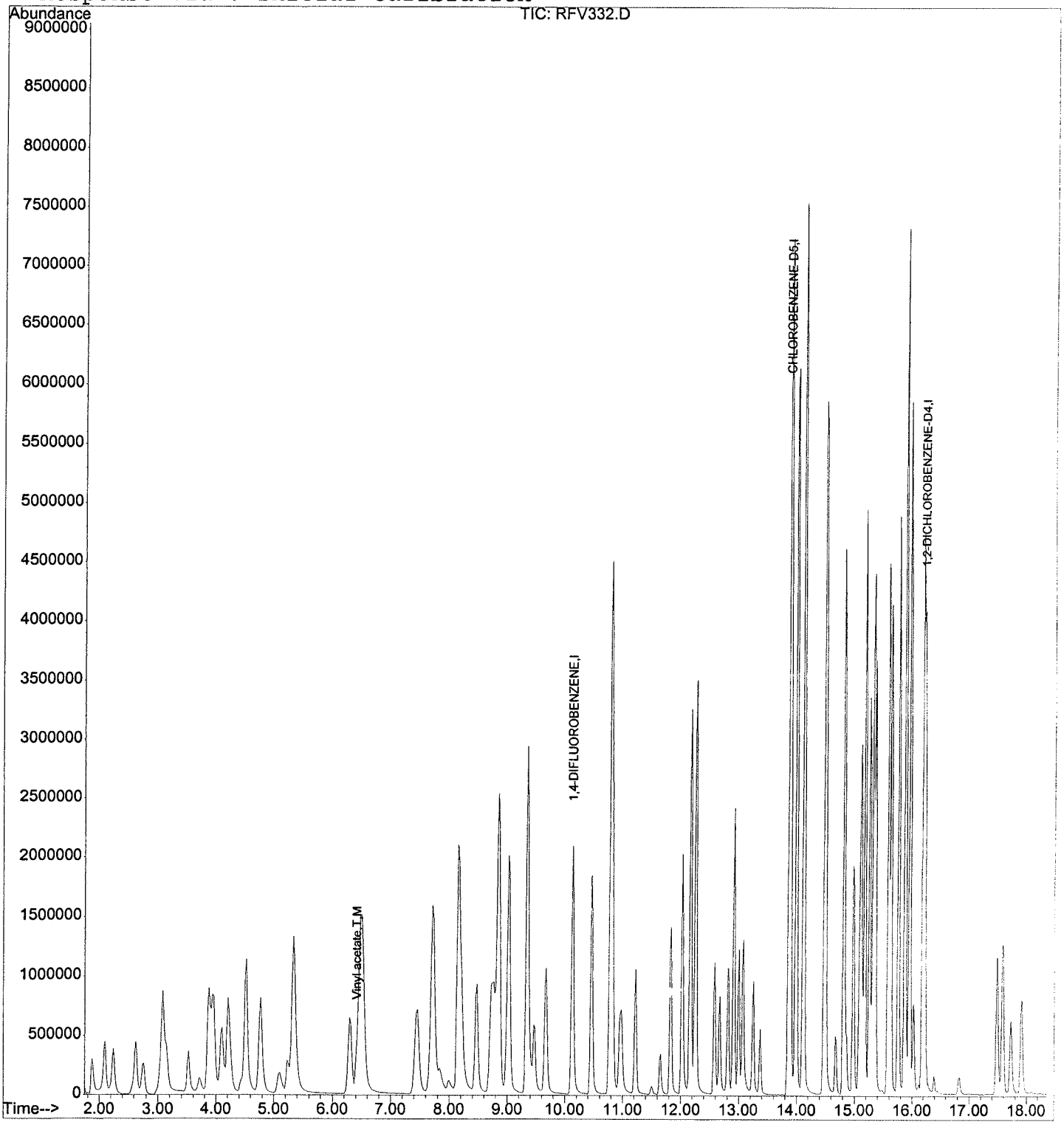
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2682617	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2257533	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	763906	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	863270	9.78	ug/l	94

(#) = qualifier out of range (m) = manual integration
RFV332.D VO01E14.M Mon Jun 29 09:46:39 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:09 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

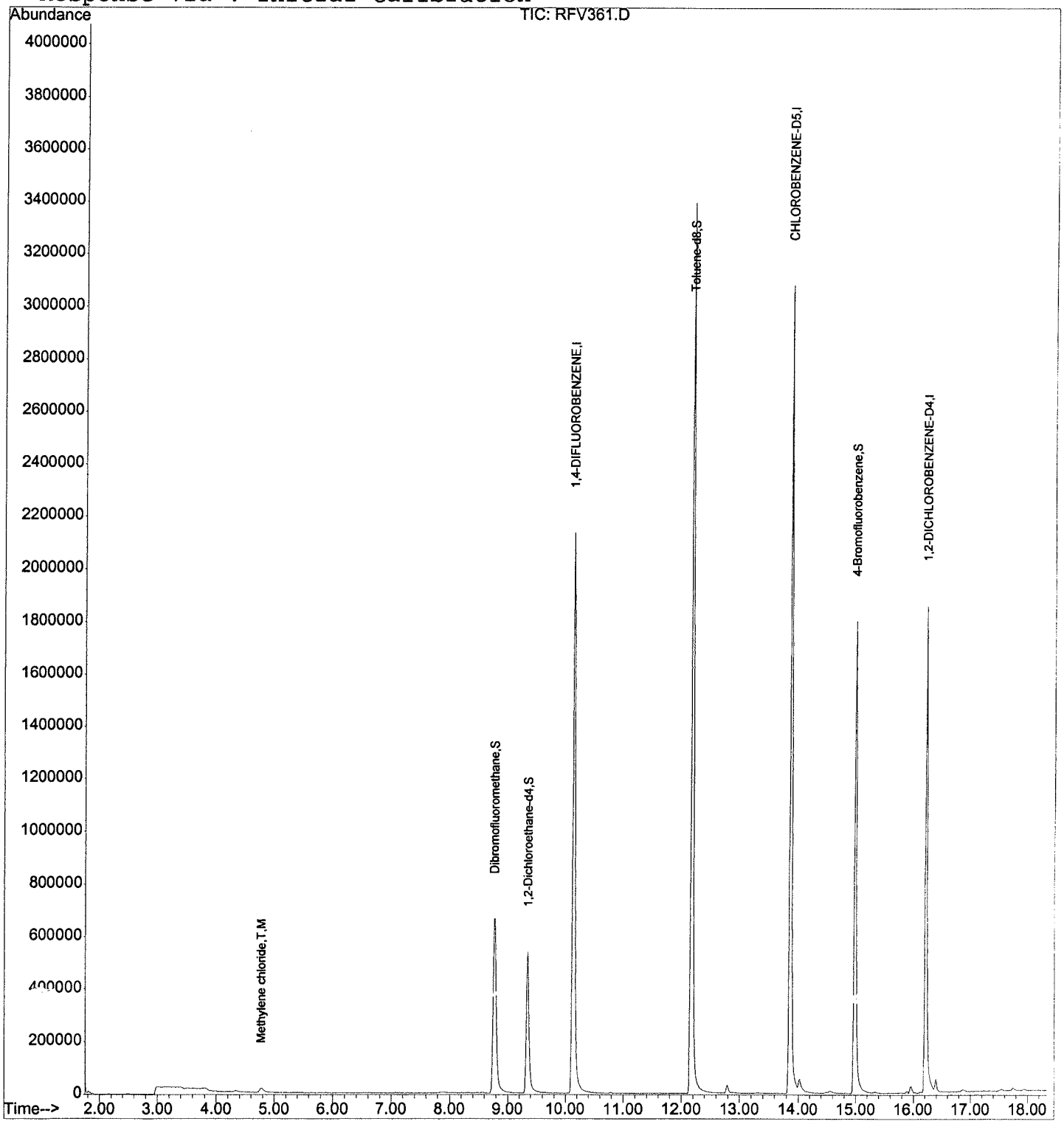
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2857990	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2329130	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	729540	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	816961	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.60%			
38) 1,2-Dichloroethane-d4	9.34	65	561827	10.49	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.90%			
54) Toluene-d8	12.17	98	3158683	9.96	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.60%			
74) 4-Bromofluorobenzene	14.98	95	930862	10.67	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.70%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	26093	0.22	ug/l	97

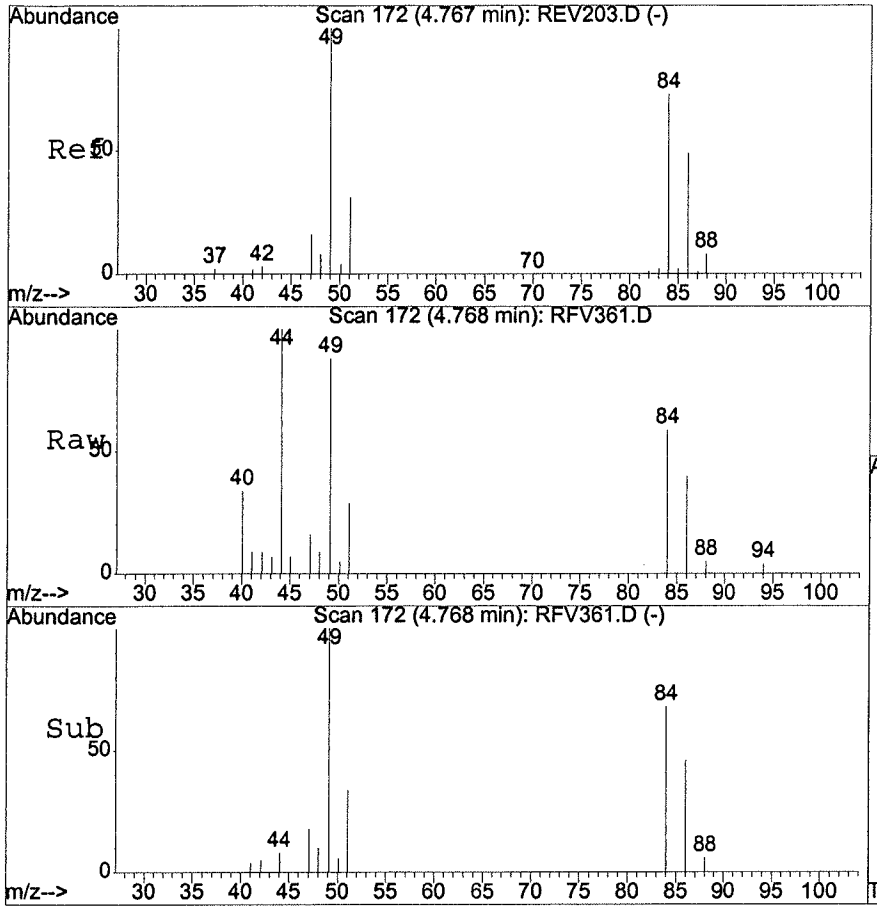
(#) = qualifier out of range (m) = manual integration
RFV361.D VO01E13.M Tue Jun 30 11:09:35 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:09 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

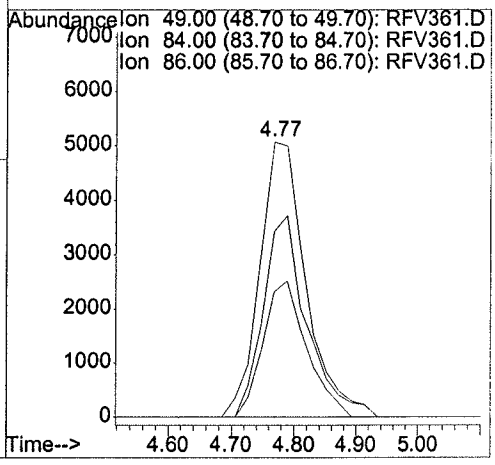




#18
Methylene chloride
Concen: 0.22 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV361.D
Acq: 29 Jun 2020 1:21 pm

Tgt Ion: 49 Resp: 26093

Ion	Ratio	Lower	Upper
49	100		
84	69.0	43.3	103.3
86	46.6	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2858050	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2313332	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	729518	10.00	ug/l	0.00

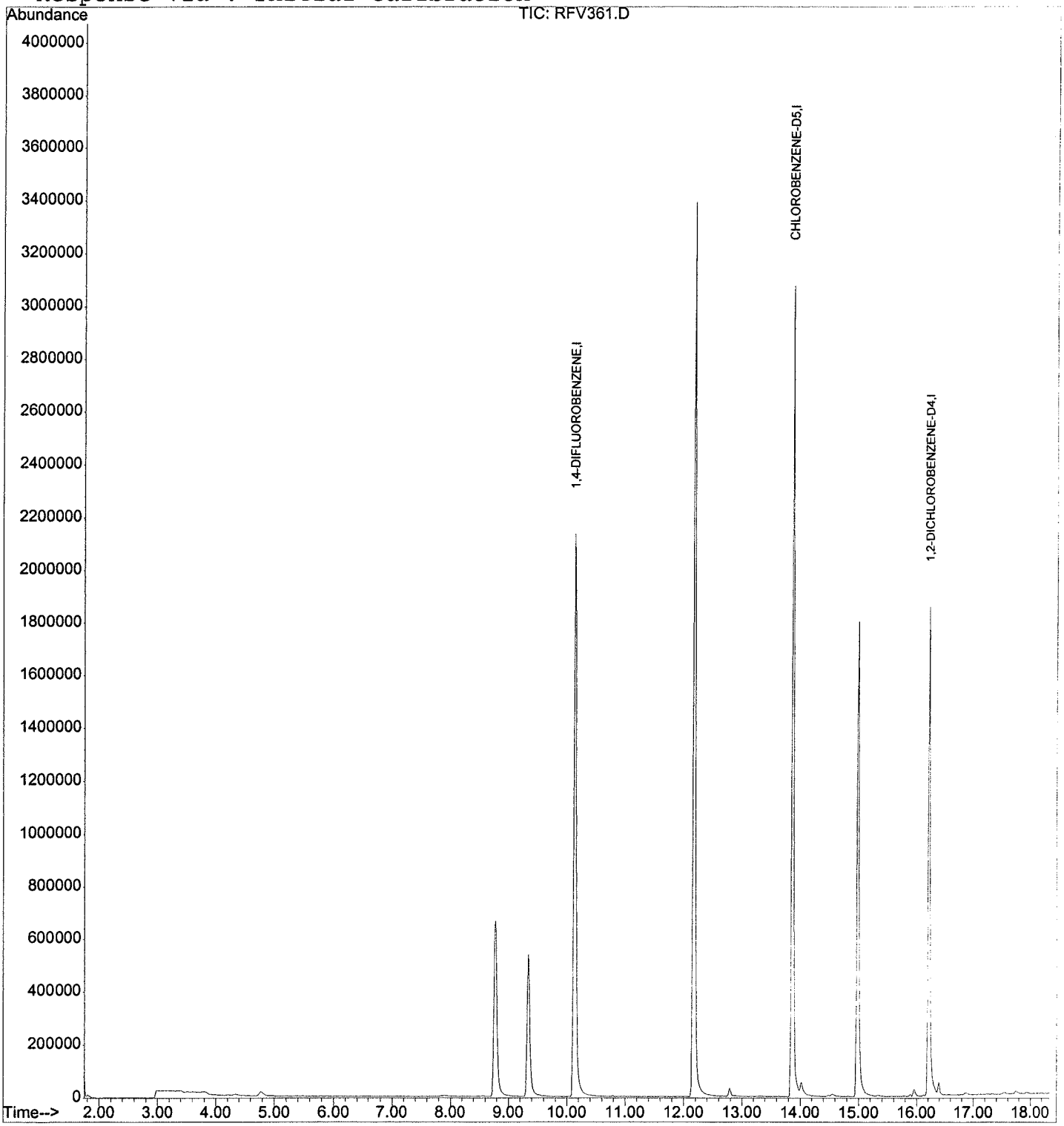
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV361.D VO01E14.M Tue Jun 30 10:32:57 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2775829	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2289223	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	758157	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	813342	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.10%		
38) 1,2-Dichloroethane-d4	9.32	65	547407	10.52	ug/l	-0.02
Spiked Amount 10.000			Recovery =	105.20%		
54) Toluene-d8	12.17	98	3073180	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.60%		
74) 4-Bromofluorobenzene	14.97	95	953543	10.52	ug/l	-0.02
Spiked Amount 10.000			Recovery =	105.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	711188	8.33	ug/l	97
4) Chloromethane	2.10	50	1189129	11.66	ug/l	98
5) Vinyl chloride	2.24	62	1117605	11.17	ug/l	98
7) Bromomethane	2.63	94	707987	10.62	ug/l	99
8) Chloroethane	2.76	64	588180	10.62	ug/l	98
9) Dichlorofluoromethane	3.08	67	1585081	11.59	ug/l	100
10) Trichlorofluoromethane	3.14	101	1171369	12.64	ug/l	99
11) Acrolein	3.71	56	266188	55.29	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	565305	9.73	ug/l	99
13) Acetone	3.96	43	491745	52.17	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1300044	9.59	ug/l	98
15) Iodomethane	4.10	142	1560711	10.18	ug/l	98
16) Carbon disulfide	4.21	76	3181134	10.69	ug/l	100
17) Methyl acetate	4.54	43	284965	11.48	ug/l	99
18) Methylene chloride	4.77	49	1205585	10.55	ug/l	97
19) tert-Butyl alcohol	5.08	59	673766	260.63	ug/l	98
20) Acrylonitrile	5.23	53	620992	53.77	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1205659	10.08	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1373467	10.25	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1778885	10.94	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2951383	10.43	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	1946879	9.53	ug/l	100
28) 2-Butanone	7.75	43	840066	55.82	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	978254	10.39	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1152388	11.22	ug/l	99
31) Tetrahydrofurane	8.25	42	87272	9.05	ug/l	92
32) Bromochloromethane	8.20	49	748303	11.15	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.47	83	1437187	10.71	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1117426	10.43	ug/l	99
36)	Cyclohexane	8.84	84	1843381	12.09	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1614070	10.23	ug/l	100
39)	1,1-Dichloropropene	9.03	110	486796	10.71	ug/l	99
40)	Carbon tetrachloride	9.00	119	998091	11.11	ug/l	99
41)	Benzene	9.34	78	3757213	11.32	ug/l	100
42)	1,2-Dichloroethane	9.46	62	704605	11.31	ug/l	99
44)	Trichloroethene	10.45	130	1084879	10.69	ug/l	99
45)	Methylcyclohexane	10.78	83	2353203	13.75	ug/l	99
46)	1,2-Dichloropropane	10.82	63	990636	11.06	ug/l	100
47)	1,4-Dioxane	10.97	88	61548	201.46	ug/l	99
48)	Dibromomethane	10.94	93	366006	10.77	ug/l	98
49)	Bromodichloromethane	11.22	83	1007169	11.55	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	232580	8.40	ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1325089	11.82	ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	2278046	58.38	ug/l	99
55)	Toluene	12.26	91	3797167	10.59	ug/l	100
56)	Ethyl methacrylate	12.67	69	688437	10.77	ug/l	97
57)	trans-1,3-Dichloropropene	12.58	75	958954	11.34	ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	523431	10.91	ug/l	99
59)	Tetrachloroethene	12.91	164	804798	10.26	ug/l	99
60)	1,3-Dichloropropane	13.00	76	1024170	11.14	ug/l	100
61)	2-Hexanone	13.07	43	1439771	55.63	ug/l	100
62)	Dibromochloromethane	13.25	129	692952	11.62	ug/l	99
63)	1,2-Dibromoethane	13.37	107	538955	11.19	ug/l	98
64)	1-Chlorohexane	13.87	91	1663075	10.25	ug/l	98
65)	Chlorobenzene	13.89	112	2441274	10.85	ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.97	131	800717	11.11	ug/l	100
67)	Ethylbenzene	13.99	91	4257375	10.03	ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6220571	20.59	ug/l	98
69)	o-Xylene	14.48	91	3075893	10.62	ug/l	99
70)	Styrene	14.49	104	2575040	10.79	ug/l	100
72)	Bromoform	14.69	173	324729	12.72	ug/l	100
73)	Isopropylbenzene	14.82	105	4389691	11.08	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	627685	11.43	ug/l	99
76)	Bromobenzene	15.10	156	875369	11.29	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	126595	11.53	ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	153939	11.56	ug/l	100
79)	n-Propylbenzene	15.17	91	5012666	10.94	ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3166458	11.33	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

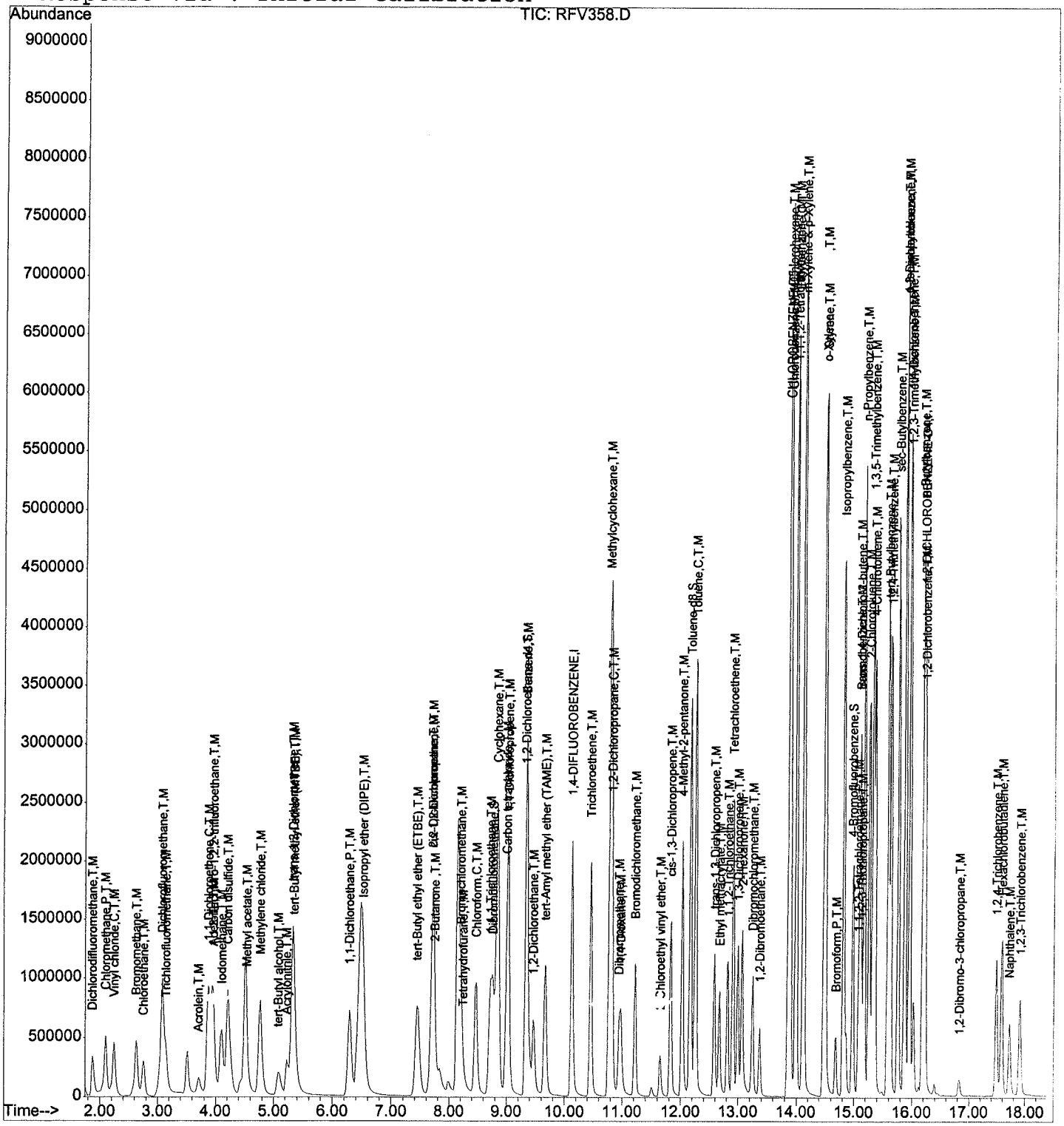
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81)	2-Chlorotoluene	15.26	91	2499200	11.37 ug/l	99
82)	4-Chlorotoluene	15.35	91	2897964	11.13 ug/l	100
83)	tert-Butylbenzene	15.59	134	821477	10.88 ug/l	99
84)	1,2,4-Trimethylbenzene	15.63	105	3040994	11.26 ug/l	99
85)	sec-Butylbenzene	15.75	105	4639055	11.15 ug/l	100
86)	p-Isopropyltoluene	15.87	119	3443649	10.86 ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1577648	10.93 ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1508954	10.75 ug/l	99
89)	1,2,3-Trimethylbenzene	15.96	105	2534520	10.21 ug/l	99
90)	n-Butylbenzene	16.18	91	3008585	10.45 ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1248020	10.54 ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	68995	10.66 ug/l	96
93)	1,2,4-Trichlorobenzene	17.48	180	629755	10.82 ug/l	100
94)	Hexachlorobutadiene	17.59	225	465108	10.47 ug/l	100
95)	Naphthalene	17.72	128	831906	10.80 ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	478672	10.99 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:39 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

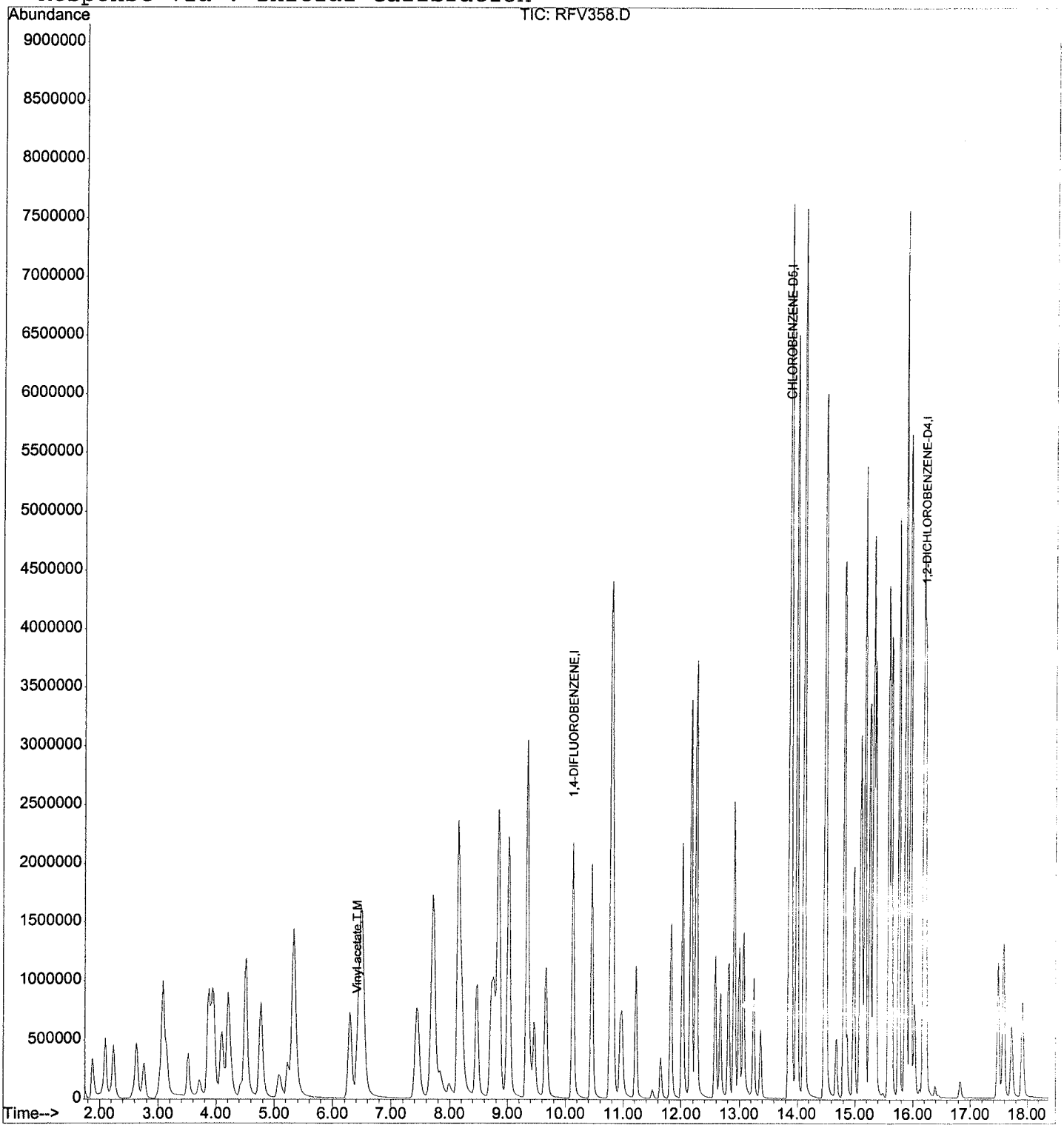
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2775775	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2279035	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	758132	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	1000787	10.88	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV358.D VO01E14.M Tue Jun 30 10:32:38 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:39 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2832970	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2324325	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	792881	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	821826	10.31	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.10%			
38) 1,2-Dichloroethane-d4	9.34	65	554119	10.43	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.30%			
54) Toluene-d8	12.17	98	3092160	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.70%			
74) 4-Bromofluorobenzene	14.97	95	980438	10.34	ug/l	-0.01
Spiked Amount 10.000			Recovery = 103.40%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	695385	7.98	ug/l	97
4) Chloromethane	2.09	50	1204873	11.57	ug/l	98
5) Vinyl chloride	2.25	62	1077869	10.56	ug/l	98
7) Bromomethane	2.63	94	687204	10.10	ug/l	99
8) Chloroethane	2.76	64	593158	10.49	ug/l	98
9) Dichlorofluoromethane	3.08	67	1567487	11.23	ug/l	99
10) Trichlorofluoromethane	3.14	101	1148596	12.14	ug/l	100
11) Acrolein	3.71	56	270563	55.07	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	574829	9.69	ug/l	99
13) Acetone	3.96	43	517740	53.82	ug/l	100
14) 1,1-Dichloroethene	3.87	61	1301062	9.40	ug/l	98
15) Iodomethane	4.10	142	1557715	9.96	ug/l	98
16) Carbon disulfide	4.21	76	3121893	10.28	ug/l	100
17) Methyl acetate	4.54	43	293882	11.60	ug/l	99
18) Methylene chloride	4.77	49	1209077	10.37	ug/l	97
19) tert-Butyl alcohol	5.08	59	714651	270.86	ug/l	99
20) Acrylonitrile	5.23	53	651309	55.26	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1227702	10.06	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1340751	9.80	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1739524	10.49	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2951686	10.22	ug/l	99
27) tert-Butyl ethyl ether (ET	7.46	59	2010296	9.64	ug/l	100
28) 2-Butanone	7.75	43	884554	57.59	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	994137	10.35	ug/l	97
30) 2,2-Dichloropropane	7.71	77	1156810	11.03	ug/l	99
31) Tetrahydrofurane	8.27	42	92277	9.37	ug/l	94
32) Bromochloromethane	8.21	49	753978	11.01	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFV359.D VO01E13.M Tue Jun 30 11:08:59 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.48	83	1441216	10.52 ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1128684	10.32 ug/l	99
36)	Cyclohexane	8.84	84	1859209	11.94 ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1687972	10.49 ug/l	100
39)	1,1-Dichloropropene	9.03	110	479418	10.33 ug/l	99
40)	Carbon tetrachloride	9.00	119	983222	10.72 ug/l	99
41)	Benzene	9.34	78	3720653	10.98 ug/l	100
42)	1,2-Dichloroethane	9.47	62	709652	11.16 ug/l	100
44)	Trichloroethene	10.45	130	1092965	10.55 ug/l	99
45)	Methylcyclohexane	10.79	83	2364074	13.53 ug/l	99
46)	1,2-Dichloropropane	10.82	63	997347	10.91 ug/l	100
47)	1,4-Dioxane	10.97	88	60103	192.77 ug/l	95
48)	Dibromomethane	10.94	93	371223	10.71 ug/l	100
49)	Bromodichloromethane	11.22	83	1025586	11.53 ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	246908	8.73 ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1361285	11.90 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2382011	59.81 ug/l	100
55)	Toluene	12.26	91	3789373	10.41 ug/l	100
56)	Ethyl methacrylate	12.67	69	718754	11.08 ug/l	98
57)	trans-1,3-Dichloropropene	12.58	75	962019	11.20 ug/l	99
58)	1,1,2-Trichloroethane	12.82	97	524000	10.75 ug/l	100
59)	Tetrachloroethene	12.91	164	810516	10.18 ug/l	99
60)	1,3-Dichloropropane	13.00	76	1014905	10.88 ug/l	100
61)	2-Hexanone	13.07	43	1538420	58.55 ug/l	100
62)	Dibromochloromethane	13.25	129	711310	11.75 ug/l	100
63)	1,2-Dibromoethane	13.37	107	548082	11.21 ug/l	97
64)	1-Chlorohexane	13.87	91	1649750	10.01 ug/l	99
65)	Chlorobenzene	13.89	112	2467622	10.80 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.99	131	801416	10.95 ug/l	99
67)	Ethylbenzene	13.99	91	4283334	9.94 ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6232561	20.32 ug/l	98
69)	o-Xylene	14.48	91	3067499	10.43 ug/l	98
70)	Styrene	14.49	104	2616788	10.80 ug/l	100
72)	Bromoform	14.69	173	338804	12.69 ug/l	99
73)	Isopropylbenzene	14.82	105	4337206	10.47 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	657359	11.44 ug/l	98
76)	Bromobenzene	15.10	156	881986	10.88 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	129998	11.32 ug/l	93
78)	1,2,3-Trichloropropane	15.13	110	158765	11.40 ug/l	100
79)	n-Propylbenzene	15.17	91	5024509	10.49 ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3180363	10.88 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

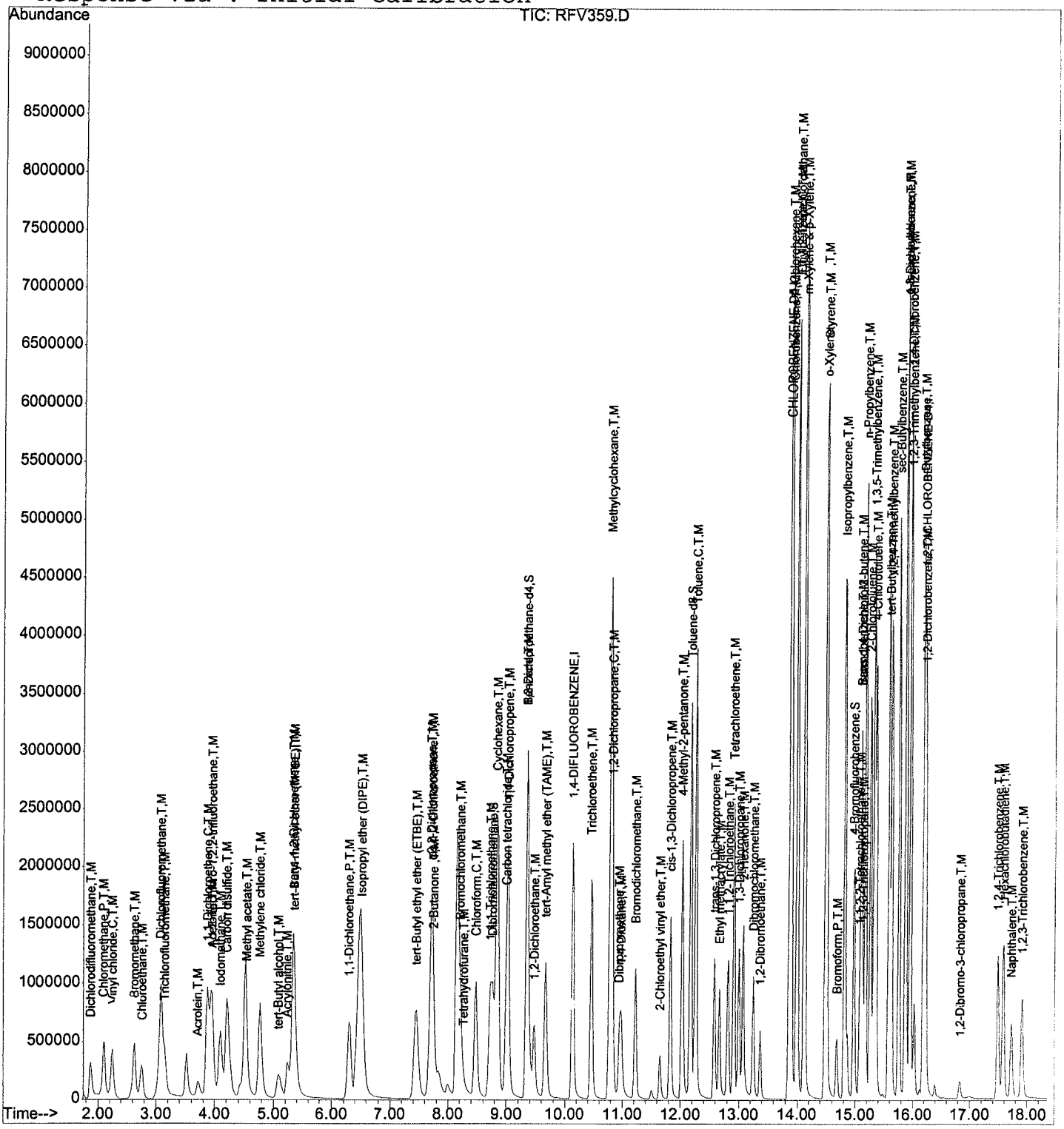
Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2526919	10.99	ug/l	100
82)	4-Chlorotoluene	15.35	91	2929377	10.76	ug/l	100
83)	tert-Butylbenzene	15.59	134	824844	10.45	ug/l	71
84)	1,2,4-Trimethylbenzene	15.62	105	3096010	10.96	ug/l	99
85)	sec-Butylbenzene	15.75	105	4628269	10.63	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3484534	10.50	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1622276	10.74	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1548137	10.55	ug/l	98
89)	1,2,3-Trimethylbenzene	15.96	105	2567321	9.89	ug/l	99
90)	n-Butylbenzene	16.18	91	3091800	10.26	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1307957	10.56	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	74714	11.04	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	663519	10.90	ug/l	99
94)	Hexachlorobutadiene	17.59	225	472503	10.17	ug/l	100
95)	Naphthalene	17.72	128	908270	11.28	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	506715	11.12	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:40 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

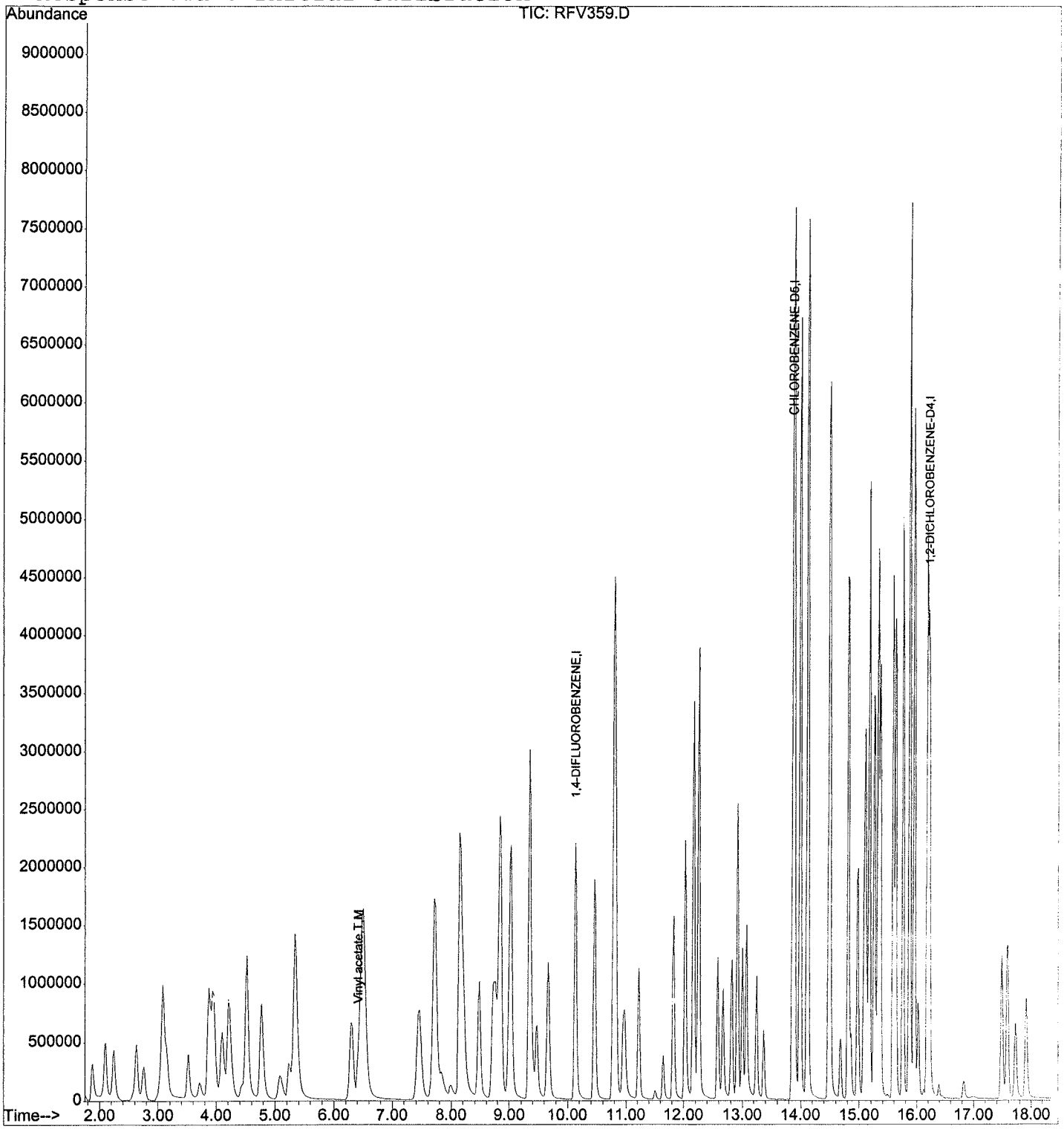
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2832915	10.00 ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2314561	10.00 ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	792907	10.00 ug/l	0.00
Target Compounds					Qvalue
2) Vinyl acetate	6.41	43	968065	10.35 ug/l	95

(#) = qualifier out of range (m) = manual integration
RFV359.D VO01E14.M Tue Jun 30 10:32:46 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:40 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV197 BFB Injection Date : 05/13/20
Instrument ID: 01 BFB Injection Time : 13:15
GC Column:RX-624SLIMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.92
75	30.0 - 60.0% of mass 95	44.02
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.87
173	Less than 2.0% of mass 174	0.26(0.3)1
174	Greater than 50% of mass 95	74.01
175	5.0 - 9.0% of mass 174	5.02(6.8)1
176	95.0 - 101.0% of mass 174	72.36(97.8)1
177	5.0 - 9.0% of mass 176	4.84(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VO01E131	REV198	05/13/20	14:04
2	VSTD0.5	VO01E132	REV199	05/13/20	14:30
3	VSTD01	VO01E133	REV200	05/13/20	14:57
4	VSTD02	VO01E134	REV201	05/13/20	15:24
5	VSTD05	VO01E135	REV202	05/13/20	15:52
6	VSTD010	VO01E136	REV203	05/13/20	16:20
7	VSTD020	VO01E137	REV204	05/13/20	16:47
8	VSTD030	VO01E138	REV205	05/13/20	17:14
9	VSTD050	VO01E139	REV206	05/13/20	17:40
10	VSTD100	VO01E1310	REV207	05/13/20	18:06
11	VSTD010	IVO01E1301	REV210	05/13/20	19:32

FORM V VOA OLM02.0

SA
5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :VO01E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	0.279	0.287	0.314	0.330	0.310	0.314	0.312	0.312	0.311	0.308	5.00	1.8755
	4	Chloromethane	0.329	0.363	0.370	0.359	0.386	0.373	0.365	0.367	0.374	0.388	0.368	4.47	2.1028
	5	Vinyl chloride	------	0.315	0.341	0.342	0.391	0.378	0.365	0.371	0.361	0.380	0.360	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	0.229	0.234	0.243	0.274	0.260	0.234	0.207	------	------	0.240	9.04	2.6334
	8	Chloroethane	0.191	0.210	0.199	0.211	0.221	0.211	0.195	0.186	0.172	------	0.200	7.77	2.7503
	9	Dichlorofluoromethane	0.549	0.506	0.521	0.506	0.511	0.491	0.479	0.468	0.467	0.429	0.493	6.83	3.0785
	10	Trichlorofluoromethane	------	0.297	0.322	0.326	0.351	0.350	0.344	0.340	0.342	0.331	0.334	5.09	3.1384
5	11	Acrolein	------	------	0.019	0.015	0.018	0.018	0.018	0.017	0.017	0.018	0.017	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.213	0.210	0.209	0.210	0.215	0.210	0.210	0.214	0.204	0.199	0.209	2.31	3.9533
5	13	Acetone	------	------	0.037	0.033	0.033	0.034	0.035	0.034	0.031	0.034	0.034	5.07	3.9396
	14	1,1-Dichloroethene	0.482	0.485	0.490	0.502	0.510	0.496	0.491	0.498	0.471	0.460	0.488	3.02	3.8575
	15	Iodomethane	0.537	0.547	0.546	0.565	0.571	0.559	0.553	0.558	0.545	0.541	0.552	2.01	4.0970
	16	Carbon disulfide	------	0.957	1.012	1.034	1.129	1.105	1.101	1.104	1.099	1.109	1.072	5.38	4.2052
	17	Methyl acetate	------	------	------	0.075	0.080	0.094	0.094	0.089	0.090	0.104	0.089	10.51	4.5295
	18	Methylene chloride	------	------	0.465	0.432	0.415	0.406	0.403	0.399	0.385	0.389	0.412	6.33	4.7623
25	19	tert-Butyl alcohol	0.010	0.009	0.008	0.008	0.009	0.010	0.010	0.010	0.010	------	0.009	7.49	5.0916
5	20	Acrylonitrile	------	------	------	0.033	0.037	0.042	0.044	0.044	0.043	0.048	0.042	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	0.461	0.421	0.427	0.407	0.425	0.446	0.438	0.424	0.411	0.447	0.431	3.93	5.3508
	22	trans-1,2-Dichloroethene	0.488	0.469	0.478	0.490	0.503	0.491	0.481	0.487	0.477	0.464	0.483	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	0.568	0.567	0.588	0.590	0.608	0.594	0.586	0.594	0.575	0.583	0.586	2.19	6.2859
	25	Isopropyl ether (DIPE)	1.016	0.993	1.010	1.016	1.020	1.042	1.058	1.036	0.990	1.015	1.020	2.05	6.5067
25	26	2-Butanol	------	------	0.006	0.007	0.009	0.011	0.011	0.011	0.011	------	0.010	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	0.869	0.787	0.719	0.722	0.721	0.719	0.693	0.675	0.718	0.736	7.93	7.4358
5	28	2-Butanone	------	------	------	0.042	0.049	0.057	0.058	0.057	0.056	0.061	0.054	11.88	7.7369
	29	cis-1,2-Dichloroethene	0.333	0.329	0.341	0.343	0.352	0.340	0.341	0.351	0.332	0.329	0.339	2.44	7.7105
	30	2,2-Dichloropropane	0.371	0.382	0.372	0.376	0.385	0.369	0.367	0.376	0.358	0.345	0.370	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	0.025	0.034	0.038	0.038	0.036	0.034	0.039	0.035	13.54	8.2605
	32	Bromochloromethane	0.246	0.234	0.245	0.244	0.251	0.247	0.243	0.242	0.233	0.233	0.242	2.67	8.1958
	33	Chloroform	0.495	0.496	0.476	0.477	0.491	0.486	0.483	0.488	0.468	0.475	0.484	1.90	8.4582
	34	Dibromofluoromethane	------	0.239	0.265	0.267	0.291	0.314	0.295	0.290	0.283	0.288	0.281	7.67	8.7575
	35	1,1,1-Trichloroethane	0.337	0.364	0.369	0.380	0.386	0.381	0.410	0.413	0.406	0.416	0.386	6.62	8.7151
	36	Cyclohexane	0.487	0.574	0.554	0.553	0.585	0.543	0.557	0.560	0.535	0.547	0.549	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	0.575	0.562	0.571	0.562	0.585	0.583	0.578	0.565	0.536	0.566	0.568	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	0.158	0.177	0.179	0.193	0.207	0.202	0.194	0.184	0.192	0.187	7.96	9.3301
	39	1,1-Dichloropropene	0.142	0.157	0.167	0.170	0.174	0.170	0.169	0.169	0.162	0.157	0.164	5.84	9.0216
	40	Carbon tetrachloride	0.296	0.302	0.312	0.328	0.340	0.334	0.334	0.338	0.330	0.323	0.324	4.73	8.9979
	41	Benzene	1.203	1.193	1.182	1.221	1.240	1.181	1.211	1.190	1.140	------	1.196	2.37	9.3400
	42	1,2-Dichloroethane	0.208	0.218	0.226	0.226	0.228	0.231	0.233	0.229	0.219	0.227	0.225	3.25	9.4644
	43	2,2,4-Trimethylpentane	1.263	1.570	1.553	1.636	1.804	1.733	1.659	1.708	1.608	------	1.615	9.56	9.6131
	44	Trichloroethene	0.343	0.354	0.364	0.373	0.385	0.373	0.375	0.369	0.367	0.354	0.366	3.40	10.4521
	45	Methylcyclohexane	0.466	0.592	0.624	0.636	0.675	0.652	0.653	0.639	0.626	0.604	0.617	9.40	10.7779
	46	1,2-Dichloropropane	0.325	0.310	0.323	0.337	0.337	0.335	0.333	0.320	0.308	0.299	0.323	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	8.66	10.9626
	48	Dibromomethane	0.112	0.112	0.121	0.119	0.128	0.129	0.127	0.126	0.122	0.127	0.122	5.25	10.9408

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49	Bromodichloromethane	0.281	0.293	0.293	0.308	0.327	0.326	0.329	0.332	0.322	0.329	0.314	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	0.081	0.084	0.094	0.102	0.106	0.107	0.106	0.119	0.100	12.71	11.6445
51	cis-1,3-Dichloropropene	0.361	0.358	0.375	0.386	0.417	0.422	0.435	0.428	0.423	0.433	0.404	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	0.126	0.128	0.139	0.154	0.155	0.149	0.146	0.128	0.141	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	1.297	1.244	1.372	1.440	1.413	1.401	------	------	1.361	5.54	12.1609
55	Toluene	1.539	1.614	1.579	1.633	1.635	1.546	1.576	1.611	1.361	------	1.566	5.39	12.2491
56	Ethyl methacrylate	------	------	0.249	0.256	0.274	0.287	0.288	0.285	0.281	0.314	0.279	7.24	12.6645
57	trans-1,3-Dichloropropene	------	0.320	0.326	0.356	0.368	0.373	0.389	0.391	0.383	0.420	0.369	8.70	12.5765
58	1,1,2-Trichloroethane	0.206	0.203	0.204	0.211	0.213	0.213	0.210	0.211	0.205	0.220	0.210	2.49	12.8112
59	Tetrachloroethene	0.331	0.332	0.344	0.352	0.357	0.339	0.342	0.350	0.340	0.339	0.343	2.48	12.9104
60	1,3-Dichloropropane	0.377	0.385	0.400	0.403	0.407	0.411	0.408	0.411	0.393	0.422	0.402	3.31	12.9963
5 61	2-Hexanone	------	------	0.086	0.096	0.106	0.121	0.126	0.124	0.121	0.124	0.113	13.31	13.0643
62	Dibromochloromethane	0.218	0.227	0.245	0.250	0.270	0.274	0.277	0.281	0.269	0.294	0.260	9.43	13.2480
63	1,2-Dibromoethane	0.180	0.184	0.204	0.205	0.221	0.221	0.221	0.221	0.213	0.234	0.210	8.30	13.3709
64	1-Chlorohexane	0.709	0.704	0.703	0.714	0.735	0.698	0.709	0.724	0.686	------	0.709	2.00	13.8731
65	Chlorobenzene	0.944	0.986	0.998	1.006	1.013	0.983	0.983	0.997	0.940	------	0.983	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	0.289	0.286	0.310	0.326	0.330	0.326	0.326	0.326	0.315	0.314	0.315	5.03	13.9766
67	Ethylbenzene	1.774	1.822	1.857	1.889	1.963	1.856	1.892	1.779	------	------	1.854	3.39	13.9825
2 68	m-Xylene & p-Xylene	1.283	1.326	1.323	1.357	1.407	1.365	1.302	1.192	------	------	1.319	4.89	14.1102
69	o-Xylene	1.277	1.242	1.292	1.286	1.330	1.289	1.281	1.294	1.096	------	1.265	5.32	14.4803
70	Styrene	0.987	1.001	1.036	1.047	1.095	1.060	1.084	1.093	0.983	------	1.043	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	0.266	0.293	0.306	0.347	0.359	0.371	0.386	0.367	------	0.337	12.81	14.6766
73	Isopropylbenzene	5.246	5.155	5.143	5.373	5.510	5.118	5.195	5.059	------	------	5.225	2.85	14.8062
74	4-Bromofluorobenzene	------	1.008	1.119	1.112	1.262	1.257	1.249	1.316	1.184	1.254	1.196	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	0.666	0.695	0.718	0.712	0.746	0.753	0.736	0.757	0.699	0.764	0.725	4.41	15.0724
76	Bromobenzene	0.945	0.965	1.021	1.036	1.080	1.033	1.025	1.075	1.007	1.039	1.022	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	0.139	0.152	0.142	0.134	0.139	0.146	0.151	0.143	0.157	0.145	5.11	15.1055
78	1,2,3-Trichloropropane	0.154	0.162	0.175	0.172	0.183	0.183	0.182	0.185	0.171	0.190	0.176	6.36	15.1317
79	n-Propylbenzene	5.875	5.876	6.026	6.300	6.554	6.127	6.181	5.411	------	------	6.044	5.63	15.1746
80	1,3,5-Trimethylbenzene	3.697	3.626	3.666	3.769	3.882	3.758	3.722	3.898	3.154	------	3.686	5.94	15.3145
81	2-Chlorotoluene	2.611	2.772	2.839	3.058	3.006	3.003	2.977	3.111	2.725	------	2.900	5.87	15.2503
82	4-Chlorotoluene	3.139	3.507	3.500	3.504	3.619	3.457	3.434	3.574	3.169	------	3.434	4.90	15.3556
83	tert-Butylbenzene	0.956	0.965	1.003	1.037	1.081	0.993	0.991	1.044	0.958	0.927	0.996	4.73	15.5759
84	1,2,4-Trimethylbenzene	3.539	3.450	3.568	3.584	3.818	3.527	3.662	3.787	3.134	------	3.563	5.65	15.6238
85	sec-Butylbenzene	5.127	5.462	5.451	5.694	5.873	5.510	5.628	5.172	------	------	5.490	4.58	15.7540
86	p-Isopropyltoluene	3.935	3.983	4.133	4.264	4.389	4.184	4.240	4.345	------	------	4.184	3.86	15.8724
87	1,3-Dichlorobenzene	1.815	1.776	1.894	1.960	2.025	1.969	1.945	2.023	1.903	1.735	1.905	5.27	15.8721
88	1,4-Dichlorobenzene	1.959	1.897	1.840	1.874	1.940	1.827	1.899	1.911	1.781	1.585	1.851	5.83	15.9491
89	1,2,3-Trimethylbenzene	3.244	3.167	3.297	3.384	3.462	3.296	3.317	3.352	2.935	------	3.273	4.63	15.9463
90	n-Butylbenzene	3.662	3.624	3.720	3.867	4.084	3.888	3.939	4.124	3.284	------	3.799	6.84	16.1833
91	1,2-Dichlorobenzene	1.646	1.536	1.586	1.559	1.607	1.527	1.549	1.585	1.507	1.511	1.561	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	0.069	0.066	0.082	0.087	0.093	0.094	0.090	0.102	0.085	14.58	16.8220
93	1,2,4-Trichlorobenzene	0.667	0.677	0.725	0.737	0.792	0.783	0.840	0.848	0.799	0.808	0.768	8.26	17.4892
94	Hexachlorobutadiene	0.537	0.550	0.581	0.594	0.641	0.589	0.624	0.628	0.583	0.530	0.586	6.55	17.5766
95	Naphthalene	0.976	0.886	0.915	0.912	1.038	1.023	1.094	1.109	1.049	1.156	1.016	9.03	17.7262
96	1,2,3-Trichlorobenzene	0.516	0.524	0.568	0.560	0.611	0.582	0.610	0.614	0.572	0.590	0.575	6.00	17.9113

Spike Amount = Nominal Amount * M
Ave_%RSD : 6.1 Max_%RSD : 22.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
26	2-Butanol	-0.01634	0.01139	0.9993

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INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :V001E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	91	93	102	107	101	102	101	101	101	3.5	5.00	1.8755
	4	Chloromethane	89	99	101	98	105	101	99	100	102	105	2.9	4.47	2.1028
	5	Vinyl chloride	------	88	95	95	109	105	101	103	100	106	5.2	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	95	98	101	114	108	98	86	------	------	6.7	9.04	2.6334
	8	Chloroethane	96	105	100	106	110	106	98	93	86	------	6.1	7.77	2.7503
	9	Dichlorofluoromethane	111	103	106	103	104	100	97	95	95	87	5.3	6.83	3.0785
	10	Trichlorofluoromethane	------	89	96	98	105	105	103	102	102	99	3.9	5.09	3.1384
5	11	Acrolein	------	------	112	88	106	106	106	100	100	106	5.9	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	102	100	100	100	103	100	100	102	98	95	1.6	2.31	3.9533
5	13	Acetone	------	------	109	97	97	100	103	100	91	100	3.3	5.07	3.9396
	14	1,1-Dichloroethene	99	99	100	103	105	102	101	102	97	94	2.3	3.02	3.8575
	15	Iodomethane	97	99	99	102	103	101	100	101	99	98	1.6	2.01	4.0970
	16	Carbon disulfide	------	89	94	96	105	103	103	103	103	103	4.4	5.38	4.2052
	17	Methyl acetate	------	------	------	84	90	106	106	100	101	117	7.9	10.51	4.5295
	18	Methylene chloride	------	------	113	105	101	99	98	97	93	94	4.7	6.33	4.7623
25	19	tert-Butyl alcohol	111	100	89	89	100	111	111	111	111	------	8.6	7.49	5.0916
5	20	Acrylonitrile	------	------	------	79	88	100	105	105	102	114	8.5	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	107	98	99	94	99	103	102	98	95	104	3.2	3.93	5.3508
	22	trans-1,2-Dichloroethene	101	97	99	101	104	102	100	101	99	96	1.9	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	97	97	100	101	104	101	100	101	98	99	1.6	2.19	6.2859
	25	Isopropyl ether (DIPE)	100	97	99	100	100	102	104	102	97	100	1.5	2.05	6.5067
25	26	2-Butanol	------	------	112	90	92	105	104	97	100	------	6	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	118	107	98	98	98	98	94	92	98	5.6	7.93	7.4358
5	28	2-Butanone	------	------	------	78	91	106	107	106	104	113	9.5	11.88	7.7369
	29	cis-1,2-Dichloroethene	98	97	101	101	104	100	101	104	98	97	2	2.44	7.7105
	30	2,2-Dichloropropane	100	103	101	102	104	100	99	102	97	93	2.2	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	71	97	109	109	103	97	111	9.4	13.54	8.2605
	32	Bromochloromethane	102	97	101	101	104	102	100	100	96	96	2.1	2.67	8.1958
	33	Chloroform	102	102	98	99	101	100	100	101	97	98	1.6	1.90	8.4582
	34	Dibromofluoromethane	------	85	94	95	104	112	105	103	101	102	5.8	7.67	8.7575
	35	1,1,1-Trichloroethane	87	94	96	98	100	99	106	107	105	108	5.2	6.62	8.7151
	36	Cyclohexane	89	105	101	101	107	99	101	102	97	100	3.2	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	101	99	101	99	103	103	102	99	94	100	1.8	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	84	95	96	103	111	108	104	98	103	6.1	7.96	9.3301
	39	1,1-Dichloropropene	87	96	102	104	106	104	103	103	99	96	4.5	5.84	9.0216
	40	Carbon tetrachloride	91	93	96	101	105	103	103	104	102	100	3.8	4.73	8.9979
	41	Benzene	101	100	99	102	104	99	101	99	95	------	1.7	2.37	9.3400
	42	1,2-Dichloroethane	92	97	100	100	101	103	104	102	97	101	2.4	3.25	9.4644
	43	2,2,4-Trimethylpentane	78	97	96	101	112	107	103	106	100	------	6.4	9.56	9.6131
	44	Trichloroethene	94	97	99	102	105	102	102	101	100	97	2.6	3.40	10.4521
	45	Methylcyclohexane	76	96	101	103	109	106	106	104	101	98	6.1	9.40	10.7779
	46	1,2-Dichloropropane	101	96	100	104	104	104	103	99	95	93	3.3	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	100	100	100	100	100	100	100	0	8.66	10.9626
	48	Dibromomethane	92	92	99	98	105	106	104	103	100	104	4.2	5.25	10.9408

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49	Bromodichloromethane	89	93	93	98	104	104	105	106	103	105	5.2	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	81	84	94	102	106	107	106	119	10.1	12.71	11.6445
51	cis-1,3-Dichloropropene	89	89	93	96	103	104	108	106	105	107	6.7	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	89	91	99	109	110	106	104	91	7.4	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	95	91	101	106	104	103	------	------	4.4	5.54	12.1609
55	Toluene	98	103	101	104	104	99	101	103	87	------	3.6	5.39	12.2491
56	Ethyl methacrylate	------	------	89	92	98	103	103	102	101	113	5.3	7.24	12.6645
57	trans-1,3-Dichloropropene	------	87	88	96	100	101	105	106	104	114	6.5	8.70	12.5765
58	1,1,2-Trichloroethane	98	97	97	100	101	101	100	100	98	105	1.9	2.49	12.8112
59	Tetrachloroethene	97	97	100	103	104	99	100	102	99	99	1.9	2.48	12.9104
60	1,3-Dichloropropane	94	96	100	100	101	102	101	102	98	105	2.6	3.31	12.9963
5 61	2-Hexanone	------	------	76	85	94	107	112	110	107	110	11.3	13.31	13.0643
62	Dibromochloromethane	84	87	94	96	104	105	107	108	103	113	7.9	9.43	13.2480
63	1,2-Dibromoethane	86	88	97	98	105	105	105	105	101	111	6.6	8.30	13.3709
64	1-Chlorohexane	100	99	99	101	104	98	100	102	97	------	1.4	2.00	13.8731
65	Chlorobenzene	96	100	102	102	103	100	100	101	96	------	1.9	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	92	91	98	103	105	103	103	103	100	100	3.8	5.03	13.9766
67	Ethylbenzene	96	98	100	102	106	100	102	96	------	------	2.5	3.39	13.9825
2 68	m-Xylene & p-Xylene	97	101	100	103	107	103	99	90	------	------	3.4	4.89	14.1102
69	o-Xylene	101	98	102	102	105	102	101	102	87	------	3.4	5.32	14.4803
70	Styrene	95	96	99	100	105	102	104	105	94	------	3.5	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	79	87	91	103	107	110	115	109	------	10.8	12.81	14.6766
73	Isopropylbenzene	100	99	98	103	105	98	99	97	------	------	2.2	2.85	14.8062
74	4-Bromofluorobenzene	------	84	94	93	106	105	104	110	99	105	6.7	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	92	96	99	98	103	104	102	104	96	105	3.7	4.41	15.0724
76	Bromobenzene	92	94	100	101	106	101	100	105	99	102	3	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	96	105	98	92	96	101	104	99	108	4.1	5.11	15.1055
78	1,2,3-Trichloropropane	88	92	99	98	104	104	103	105	97	108	5.1	6.36	15.1317
79	n-Propylbenzene	97	97	100	104	108	101	102	90	------	------	4.1	5.63	15.1746
80	1,3,5-Trimethylbenzene	100	98	99	102	105	102	101	106	86	------	3.7	5.94	15.3145
81	2-Chlorotoluene	90	96	98	105	104	104	103	107	94	------	5	5.87	15.2503
82	4-Chlorotoluene	91	102	102	102	105	101	100	104	92	------	3.6	4.90	15.3556
83	tert-Butylbenzene	96	97	101	104	109	100	99	105	96	93	3.7	4.73	15.5759
84	1,2,4-Trimethylbenzene	99	97	100	101	107	99	103	106	88	------	3.8	5.65	15.6238
85	sec-Butylbenzene	93	99	99	104	107	100	103	94	------	------	3.4	4.58	15.7540
86	p-Isopropyltoluene	94	95	99	102	105	100	101	104	------	------	3	3.86	15.8724
87	1,3-Dichlorobenzene	95	93	99	103	106	103	102	106	100	91	4.2	5.27	15.8721
88	1,4-Dichlorobenzene	106	102	99	101	105	99	103	103	96	86	4	5.83	15.9491
89	1,2,3-Trimethylbenzene	99	97	101	103	106	101	101	102	90	------	3.2	4.63	15.9463
90	n-Butylbenzene	96	95	98	102	108	102	104	109	86	------	5.3	6.84	16.1833
91	1,2-Dichlorobenzene	105	98	102	100	103	98	99	102	97	97	2.3	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	81	78	96	102	109	111	106	120	11.6	14.58	16.8220
93	1,2,4-Trichlorobenzene	87	88	94	96	103	102	109	110	104	105	6.9	8.26	17.4892
94	Hexachlorobutadiene	92	94	99	101	109	101	106	107	99	90	5	6.55	17.5766
95	Naphthalene	96	87	90	90	102	101	108	109	103	114	7.4	9.03	17.7262
96	1,2,3-Trichlorobenzene	90	91	99	97	106	101	106	107	99	103	4.6	6.00	17.9113

For 8260C
SA
5/18/20

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
Total Cpnds : 96

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	1.84	0.181	A	2	A	B
3	T	Dichlorodifluoromethane	85	1.88	0.185	A	1	A	B
4	T	Chloromethane	50	2.11	0.208	A	1	A	B
5	T	Vinyl chloride	62	2.25	0.222	A	1	A	B
6	T	2-Chloro-1,1,1-trifluoroethane	118	2.36	0.233	A	2	A	B
7	T	Bromomethane	94	2.63	0.260	A	1	A	B
8	T	Chloroethane	64	2.75	0.271	A	1	A	B
9	T	Dichlorofluoromethane	67	3.08	0.304	A	1	A	B
10	T	Trichlorofluoromethane	101	3.14	0.310	A	1	A	B
11	T	Acrolein	56	3.71	0.366	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	3.95	0.391	A	1	A	B
13	T	Acetone	43	3.93	0.389	A	1	A	B
14	T	1,1-Dichloroethene	61	3.85	0.380	A	2	A	B
15	T	Iodomethane	142	4.10	0.405	A	1	A	B
16	T	Carbon disulfide	76	4.20	0.415	A	1	A	B
17	T	Methyl acetate	43	4.52	0.446	A	1	A	B
18	T	Methylene chloride	49	4.77	0.471	A	2	A	B
19	T	tert-Butyl alcohol	59	5.08	0.502	A	1	A	B
20	T	Acrylonitrile	53	5.23	0.516	A	2	A	B
21	T	tert-Butyl methyl ether (MTBE)	73	5.35	0.528	A	1	A	B
22	T	trans-1,2-Dichloroethene	61	5.31	0.524	A	2	A	B
23	T	Vinyl acetate	86	6.29	0.621	A	1	A	B
24	T	1,1-Dichloroethane	63	6.29	0.621	A	2	A	B
25	T	Isopropyl ether (DIPE)	45	6.50	0.642	A	1	A	B
26	T	2-Butanol	45	8.29	0.818	L	1	A	B
27	T	tert-Butyl ethyl ether (ETBE)	59	7.43	0.734	A	1	A	B
28	T	2-Butanone	43	7.72	0.763	A	1	A	B
29	T	cis-1,2-Dichloroethene	96	7.70	0.761	A	2	A	B
30	T	2,2-Dichloropropane	77	7.68	0.759	A	2	A	B
31	T	Tetrahydrofurane	42	8.27	0.816	A	2	A	B
32	T	Bromochloromethane	49	8.20	0.810	A	2	A	B
33	T	Chloroform	83	8.47	0.837	A	2	A	B
34	S	Dibromofluoromethane	111	8.76	0.865	A	2	A	B
35	T	1,1,1-Trichloroethane	97	8.72	0.861	A	2	A	B
36	T	Cyclohexane	84	8.84	0.873	A	1	A	B
37	T	tert-Amyl methyl ether (TAME)	73	9.67	0.955	A	1	A	B
38	S	1,2-Dichloroethane-d4	65	9.34	0.922	A	1	A	B
39	T	1,1-Dichloropropene	110	9.03	0.892	A	1	A	B
40	T	Carbon tetrachloride	119	9.00	0.889	A	1	A	B
41	T	Benzene	78	9.34	0.922	A	2	A	B
42	T	1,2-Dichloroethane	62	9.47	0.936	A	1	A	B
43	T	2,2,4-Trimethylpentane	57	9.62	0.950	A	1	A	B
44	T	Trichloroethene	130	10.47	1.034	A	3	A	B
45	T	Methylcyclohexane	83	10.79	1.066	A	2	A	B
46	T	1,2-Dichloropropane	63	10.82	1.069	A	1	A	B
47	T	1,4-Dioxane	88	10.97	1.083	A	1	A	B
48	T	Dibromomethane	93	10.95	1.082	A	2	A	B
49	T	Bromodichloromethane	83	11.22	1.108	A	1	A	B
50	T	2-Chloroethyl vinyl ether	63	11.65	1.151	A	2	A	B
51	T	cis-1,3-Dichloropropene	75	11.83	1.168	A	1	A	B
52	T	4-Methyl-2-pentanone	43	12.04	1.189	A	3	A	B

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53	I	CHLOROBENZENE-D5	117	13.87	1.000	A	2	A	B
54	S	Toluene-d8	98	12.17	0.877	A	1	A	B
55	T	Toluene	91	12.26	0.884	A	1	A	B
56	T	Ethyl methacrylate	69	12.67	0.914	A	1	A	B
57	T	trans-1,3-Dichloropropene	75	12.58	0.907	A	1	A	B
58	T	1,1,2-Trichloroethane	97	12.82	0.924	A	2	A	B
59	T	Tetrachloroethene	164	12.92	0.932	A	3	A	B
60	T	1,3-Dichloropropane	76	13.01	0.938	A	1	A	B
61	T	2-Hexanone	43	13.07	0.942	A	1	A	B
62	T	Dibromochloromethane	129	13.26	0.956	A	1	A	B
63	T	1,2-Dibromoethane	107	13.38	0.965	A	1	A	B
64	T	1-Chlorohexane	91	13.89	1.001	A	1	A	B
65	P,M	Chlorobenzene	112	13.90	1.002	A	1	A	B
66	T	1,1,1,2-Tetrachloroethane	131	13.99	1.009	A	1	A	B
67	T	Ethylbenzene	91	13.99	1.009	A	1	A	B
68	T	m-Xylene & p-Xylene	91	14.12	1.018	A	1	A	B
69	T	o-Xylene	91	14.49	1.045	A	1	A	B
70	T	Styrene	104	14.51	1.046	A	2	A	B
71	I	1,2-DICHLOROBENZENE-D4	152	16.23	1.000	A	1	A	B
72	T	Bromoform	173	14.69	0.905	A	2	A	B
73	T	Isopropylbenzene	105	14.82	0.913	A	3	A	B
74	S	4-Bromofluorobenzene	95	14.98	0.923	A	2	A	B
75	T	1,1,2,2-Tetrachloroethane	83	15.09	0.930	A	1	A	B
76	T	Bromobenzene	156	15.12	0.932	A	1	A	B
77	T	trans-1,4-Dichloro-2-butene	53	15.12	0.932	A	1	A	B
78	T	1,2,3-Trichloropropane	110	15.14	0.933	A	1	A	B
79	T	n-Propylbenzene	91	15.19	0.936	A	2	A	B
80	T	1,3,5-Trimethylbenzene	105	15.32	0.944	A	2	A	B
81	T	2-Chlorotoluene	91	15.26	0.941	A	1	A	B
82	T	4-Chlorotoluene	91	15.37	0.947	A	1	A	B
83	T	tert-Butylbenzene	134	15.59	0.961	A	1	A	B
84	T	1,2,4-Trimethylbenzene	105	15.63	0.963	A	1	A	B
85	T	sec-Butylbenzene	105	15.77	0.972	A	1	A	B
86	T	p-Isopropyltoluene	119	15.89	0.979	A	2	A	B
87	T	1,3-Dichlorobenzene	146	15.89	0.979	A	2	A	B
88	T	1,4-Dichlorobenzene	146	15.96	0.984	A	2	A	B
89	T	1,2,3-Trimethylbenzene	105	15.96	0.984	A	2	A	B
90	T	n-Butylbenzene	91	16.20	0.998	A	2	A	B
91	T	1,2-Dichlorobenzene	146	16.24	1.001	A	1	A	B
92	T	1,2-Dibromo-3-chloropropane	157	16.83	1.037	A	1	A	B
93	T	1,2,4-Trichlorobenzene	180	17.50	1.078	A	2	A	B
94	T	Hexachlorobutadiene	225	17.60	1.085	A	1	A	B
95	T	Naphthalene	128	17.74	1.093	A	1	A	B
96	T	1,2,3-Trichlorobenzene	180	17.93	1.105	A	2	A	B

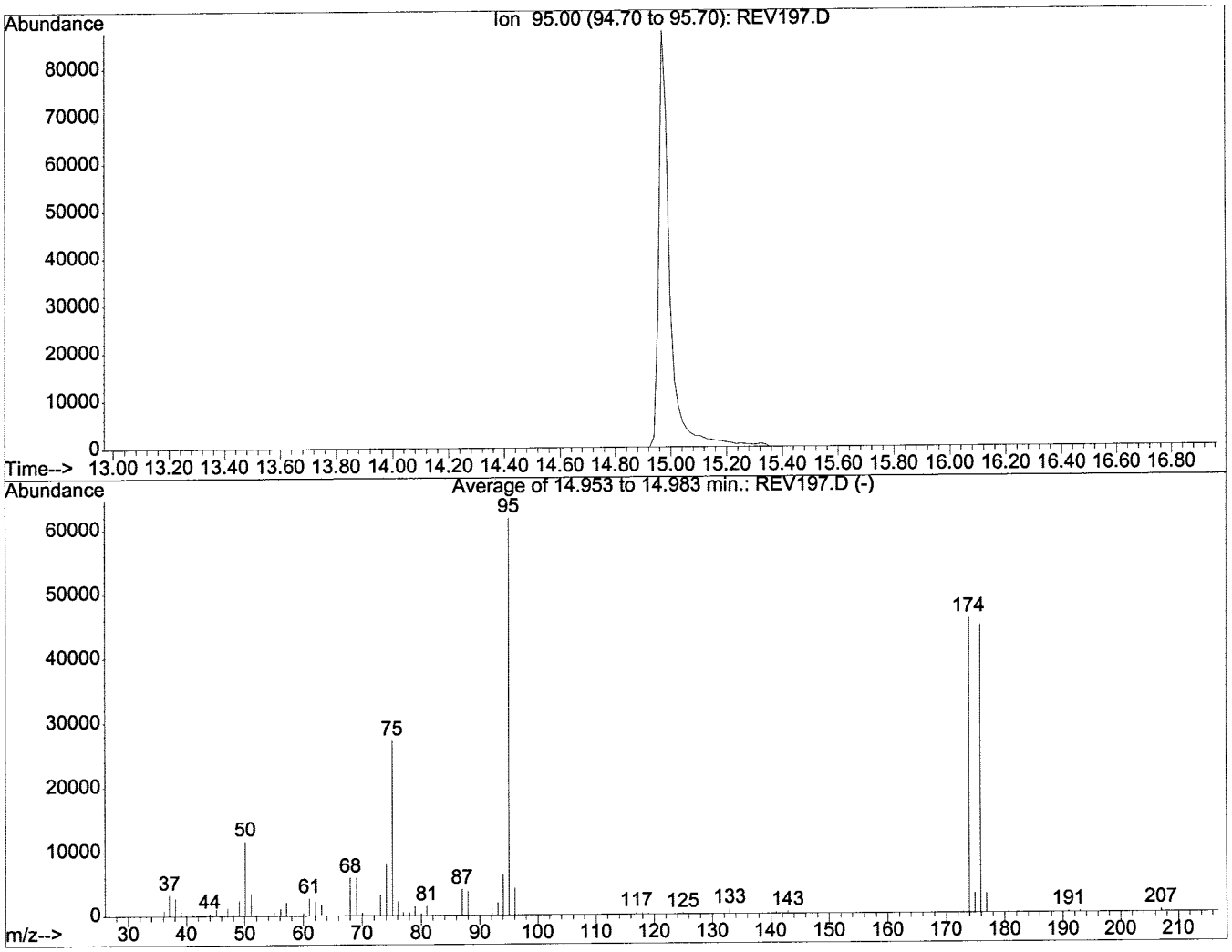
Qual A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
RTD R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E13.M Thu May 14 17:49:40 2020

SA 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV197.D
Acq On : 13 May 2020 1:15 pm
Sample : BFB01E09
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 784, 785, 786; Background Corrected with Scan 780

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	11689	PASS
75	95	30	60	44.0	27197	PASS
95	95	100	100	100.0	61784	PASS
96	95	5	9	6.9	4244	PASS
173	174	0.00	2	0.3	158	PASS
174	95	50	100	74.0	45728	PASS
175	174	5	9	6.8	3104	PASS
176	174	95	101	97.8	44709	PASS
177	176	5	9	6.7	2988	PASS

REV197.D VO01E13.M Thu May 14 13:47:25 2020

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.11	114	3270533	10.00	ug/l	-0.01
53) CHLOROBENZENE-D5	13.86	117	2740871	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	908656	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	16459	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
38) 1,2-Dichloroethane-d4	9.34	65	11364	0.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.90%			
54) Toluene-d8	12.17	98	67086	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
74) 4-Bromofluorobenzene	14.98	95	21655	0.20	ug/l	0.00
Spiked Amount 10.000			Recovery = 2.00%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	22668	0.23	ug/l	92
4) Chloromethane	2.10	50	32279	0.27	ug/l	97
5) Vinyl chloride	2.24	62	25870	0.22	ug/l	76
7) Bromomethane	2.63	94	19066	0.24	ug/l	95
8) Chloroethane	2.75	64	18789	0.29	ug/l	88
9) Dichlorofluoromethane	3.08	67	53832	0.33	ug/l	94
10) Trichlorofluoromethane	3.12	101	25369	0.23	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	20869	0.30	ug/l	97
13) Acetone	3.96	43	30015	2.70	ug/l	93
14) 1,1-Dichloroethene	3.85	61	47304	0.30	ug/l	99
15) Iodomethane	4.08	142	52641	0.29	ug/l	99
16) Carbon disulfide	4.21	76	72219	0.21	ug/l	94
18) Methylene chloride	4.77	49	63196	0.47	ug/l	98
19) tert-Butyl alcohol	5.10	59	23329	7.66	ug/l	95
20) Acrylonitrile	5.35	53	10949	0.80	ug/l	94
21) tert-Butyl methyl ether (M	5.35	73	45230	0.32	ug/l	83
22) trans-1,2-Dichloroethene	5.33	61	47913	0.30	ug/l	99
24) 1,1-Dichloroethane	6.29	63	55757	0.29	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	99671	0.30	ug/l	98
26) 2-Butanol	8.41	45	7304	16.31	ug/l	92
27) tert-Butyl ethyl ether (ET	7.43	59	101325	0.42	ug/l	100
28) 2-Butanone	7.87	43	12838	0.72	ug/l	85
29) cis-1,2-Dichloroethene	7.73	96	32701	0.29	ug/l	99
30) 2,2-Dichloropropane	7.68	77	36397	0.30	ug/l	98
32) Bromochloromethane	8.20	49	24151	0.31	ug/l	94
33) Chloroform	8.45	83	48567	0.31	ug/l	99
35) 1,1,1-Trichloroethane	8.70	97	33033	0.26	ug/l	96

(#) = qualifier out of range (m) = manual integration
REV198.D VO01E13.M Thu May 14 18:33:45 2020 SY 5/18/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
36)	Cyclohexane	8.82	84	47768	0.27	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	56376	0.30	ug/l	95
39)	1,1-Dichloropropene	9.03	110	13938	0.26	ug/l	91
40)	Carbon tetrachloride	8.98	119	29051	0.27	ug/l	100
41)	Benzene	9.34	78	118043	0.30	ug/l	99
42)	1,2-Dichloroethane	9.47	62	20435	0.28	ug/l	100
43)	2,2,4-Trimethylpentane	9.61	57	123917	0.23	ug/l	98
44)	Trichloroethene	10.45	130	33621	0.28	ug/l	97
45)	Methylcyclohexane	10.78	83	45764	0.23	ug/l	97
46)	1,2-Dichloropropane	10.81	63	31886	0.30	ug/l	94
48)	Dibromomethane	10.94	93	10957	0.27	ug/l	97
49)	Bromodichloromethane	11.22	83	27597	0.27	ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	35404	0.27	ug/l	92
52)	4-Methyl-2-pentanone	12.04	43	57455	1.25	ug/l	94
55)	Toluene	12.26	91	126512	0.29	ug/l	98
56)	Ethyl methacrylate	12.69	69	17953	0.23	ug/l	94
57)	trans-1,3-Dichloropropene	12.60	75	24125	0.24	ug/l	89
58)	1,1,2-Trichloroethane	12.82	97	16953	0.30	ug/l	95
59)	Tetrachloroethene	12.91	164	27179	0.29	ug/l	97
60)	1,3-Dichloropropane	13.00	76	30998	0.28	ug/l	98
61)	2-Hexanone	13.12	43	27987	0.90	ug/l	98
62)	Dibromochloromethane	13.25	129	17947	0.25	ug/l	96
63)	1,2-Dibromoethane	13.38	107	14771	0.26	ug/l	97
64)	1-Chlorohexane	13.87	91	58338	0.30	ug/l	98
65)	Chlorobenzene	13.89	112	77628	0.29	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	23752	0.28	ug/l	96
67)	Ethylbenzene	13.99	91	145845	0.29	ug/l	98
68)	m-Xylene & p-Xylene	14.11	91	211064	0.58	ug/l	97
69)	o-Xylene	14.48	91	104965	0.30	ug/l	98
70)	Styrene	14.51	104	81176	0.28	ug/l	99
72)	Bromoform	14.69	173	7623	0.25	ug/l	90
73)	Isopropylbenzene	14.80	105	143013	0.30	ug/l	98
75)	1,1,2,2-Tetrachloroethane	15.07	83	18146	0.28	ug/l	92
76)	Bromobenzene	15.12	156	25767	0.28	ug/l	96
77)	trans-1,4-Dichloro-2-buten	15.12	53	2899	0.22	ug/l	81
78)	1,2,3-Trichloropropane	15.13	110	4197	0.26	ug/l	92
79)	n-Propylbenzene	15.18	91	160139	0.29	ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	100775	0.30	ug/l	100
81)	2-Chlorotoluene	15.25	91	71165	0.27	ug/l	91
82)	4-Chlorotoluene	15.37	91	85562	0.27	ug/l	94
83)	tert-Butylbenzene	15.57	134	26062	0.29	ug/l	74

(#) = qualifier out of range (m) = manual integration
REV198.D VO01E13.M Thu May 14 18:33:46 2020 SU 5/18/20 Page 2

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
84)	1,2,4-Trimethylbenzene	15.63	105	96484	0.30	ug/l	99
85)	sec-Butylbenzene	15.75	105	139764	0.28	ug/l	100
86)	p-Isopropyltoluene	15.87	119	107256	0.28	ug/l	98
87)	1,3-Dichlorobenzene	15.87	146	49471	0.29	ug/l	100
88)	1,4-Dichlorobenzene	15.96	146	53403	0.32	ug/l	97
89)	1,2,3-Trimethylbenzene	15.95	105	88433	0.30	ug/l	98
90)	n-Butylbenzene	16.18	91	99838	0.29	ug/l	98
91)	1,2-Dichlorobenzene	16.23	146	44881	0.32	ug/l	100
93)	1,2,4-Trichlorobenzene	17.50	180	18180	0.26	ug/l	98
94)	Hexachlorobutadiene	17.57	225	14649	0.28	ug/l	94
95)	Naphthalene	17.74	128	26599	0.29	ug/l	94
96)	1,2,3-Trichlorobenzene	17.93	180	14059	0.27	ug/l	96

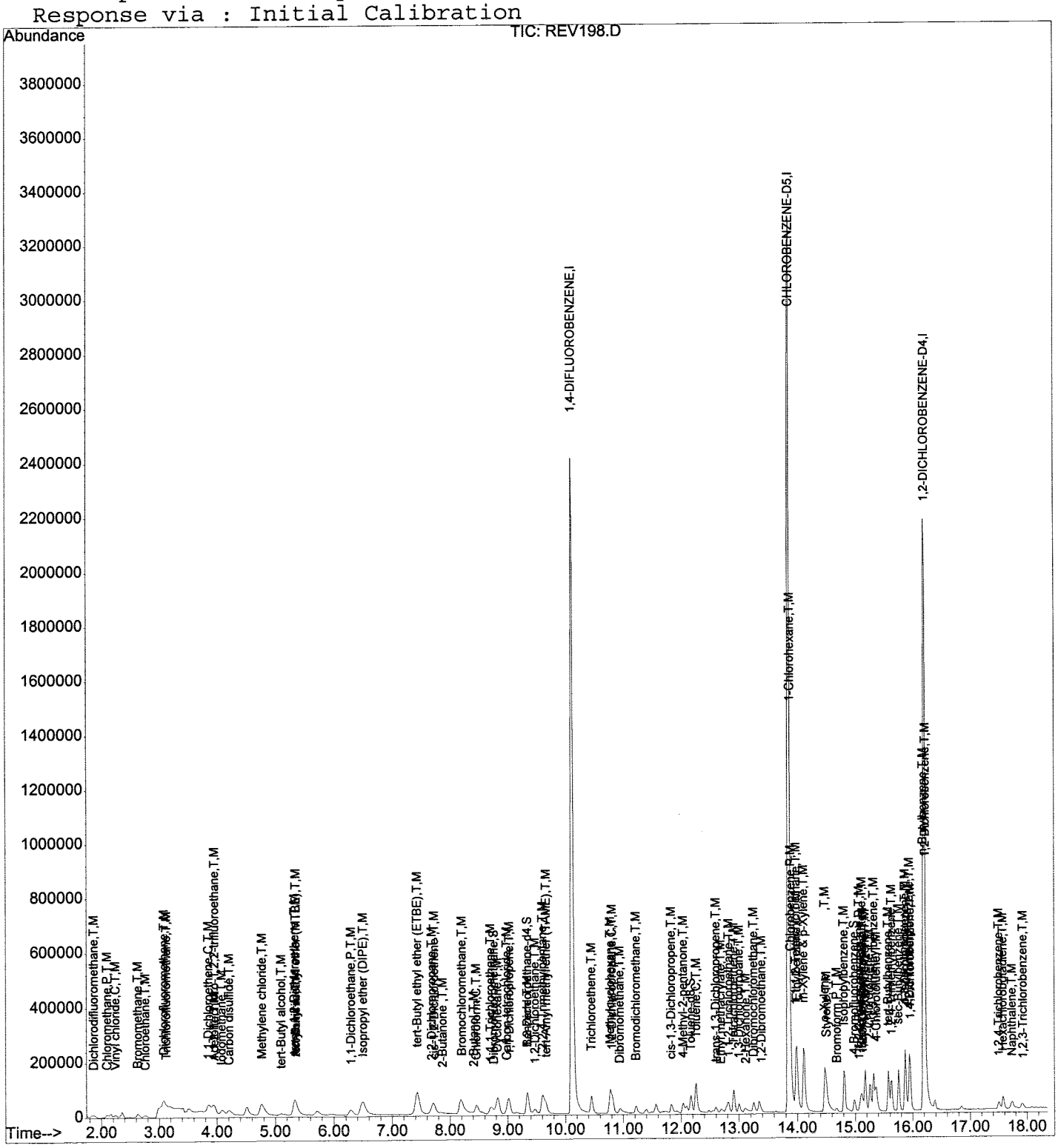
SU 5/18/20

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D
Acq On : 13 May 2020 2:04 pm
Sample : VO01E131
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3170172	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2635786	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	902237	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	37869	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
38) 1,2-Dichloroethane-d4	9.34	65	25025	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
54) Toluene-d8	12.17	98	148562	0.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.10%		
74) 4-Bromofluorobenzene	14.98	95	45459	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	44207	0.45	ug/l	98
4) Chloromethane	2.10	50	57568	0.49	ug/l	94
5) Vinyl chloride	2.25	62	49863	0.44	ug/l	86
7) Bromomethane	2.63	94	36265	0.48	ug/l	95
8) Chloroethane	2.75	64	33299	0.53	ug/l	98
9) Dichlorofluoromethane	3.08	67	80273	0.51	ug/l	95
10) Trichlorofluoromethane	3.14	101	47142	0.45	ug/l	98
11) Acrolein	3.73	56	17573	3.20	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	33258	0.50	ug/l	98
13) Acetone	3.96	43	35871	3.33	ug/l	91
14) 1,1-Dichloroethene	3.87	61	76917	0.50	ug/l	99
15) Iodomethane	4.10	142	86763	0.50	ug/l	99
16) Carbon disulfide	4.21	76	151665	0.45	ug/l	97
18) Methylene chloride	4.77	49	85076	0.65	ug/l	99
19) tert-Butyl alcohol	5.12	59	34279	11.61	ug/l	97
20) Acrylonitrile	5.33	53	18306	1.39	ug/l	90
21) tert-Butyl methyl ether (M	5.35	73	66802	0.49	ug/l	90
22) trans-1,2-Dichloroethene	5.33	61	74369	0.49	ug/l	99
24) 1,1-Dichloroethane	6.29	63	89856	0.48	ug/l	97
25) Isopropyl ether (DIPE)	6.52	45	157460	0.49	ug/l	99
26) 2-Butanol	8.39	45	22966	20.71	ug/l	96
27) tert-Butyl ethyl ether (ET	7.45	59	137822	0.59	ug/l	100
28) 2-Butanone	7.85	43	23543	1.37	ug/l	94
29) cis-1,2-Dichloroethene	7.73	96	52219	0.49	ug/l	96
30) 2,2-Dichloropropane	7.70	77	60616	0.52	ug/l	98
32) Bromochloromethane	8.20	49	37024	0.48	ug/l	99
33) Chloroform	8.48	83	78573	0.51	ug/l	98

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 SU 5/18/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
35)	1,1,1-Trichloroethane	8.72	97	57642	0.47 ug/l	98
36)	Cyclohexane	8.84	84	91053	0.52 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	89116	0.49 ug/l	98
39)	1,1-Dichloropropene	9.03	110	24897	0.48 ug/l	95
40)	Carbon tetrachloride	9.00	119	47850	0.47 ug/l	99
41)	Benzene	9.34	78	189099	0.50 ug/l	99
42)	1,2-Dichloroethane	9.47	62	34621	0.49 ug/l	94
43)	2,2,4-Trimethylpentane	9.61	57	248870	0.49 ug/l	100
44)	Trichloroethene	10.45	130	56130	0.48 ug/l	98
45)	Methylcyclohexane	10.78	83	93888	0.48 ug/l	99
46)	1,2-Dichloropropane	10.82	63	49135	0.48 ug/l	98
48)	Dibromomethane	10.94	93	17822	0.46 ug/l	97
49)	Bromodichloromethane	11.22	83	46459	0.47 ug/l	99
50)	2-Chloroethyl vinyl ether	11.67	63	11010	0.35 ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	56723	0.44 ug/l	97
52)	4-Methyl-2-pentanone	12.04	43	97150	2.18 ug/l	95
55)	Toluene	12.26	91	212747	0.52 ug/l	98
56)	Ethyl methacrylate	12.69	69	29579	0.40 ug/l	98
57)	trans-1,3-Dichloropropene	12.60	75	42111	0.43 ug/l	88
58)	1,1,2-Trichloroethane	12.82	97	26812	0.49 ug/l	99
59)	Tetrachloroethene	12.91	164	43804	0.49 ug/l	98
60)	1,3-Dichloropropane	13.00	76	50738	0.48 ug/l	99
61)	2-Hexanone	13.10	43	48952	1.64 ug/l	93
62)	Dibromochloromethane	13.25	129	29957	0.44 ug/l	99
63)	1,2-Dibromoethane	13.37	107	24216	0.44 ug/l	97
64)	1-Chlorohexane	13.87	91	92746	0.50 ug/l	96
65)	Chlorobenzene	13.89	112	129949	0.50 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.98	131	37723	0.45 ug/l	92
67)	Ethylbenzene	13.99	91	240142	0.49 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	349554	1.01 ug/l	98
69)	o-Xylene	14.48	91	163669	0.49 ug/l	99
70)	Styrene	14.51	104	131895	0.48 ug/l	98
72)	Bromoform	14.69	173	11980	0.39 ug/l	96
73)	Isopropylbenzene	14.80	105	232550	0.49 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	31354	0.48 ug/l	99
76)	Bromobenzene	15.10	156	43525	0.47 ug/l	97
77)	trans-1,4-Dichloro-2-buten	15.12	53	6293	0.48 ug/l	61
78)	1,2,3-Trichloropropane	15.13	110	7317	0.46 ug/l	79
79)	n-Propylbenzene	15.17	91	265056	0.49 ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	163567	0.49 ug/l	97
81)	2-Chlorotoluene	15.25	91	125070	0.48 ug/l	95

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 SU 5/18/20 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	4-Chlorotoluene	15.35	91	158201	0.51	ug/l	99
83)	tert-Butylbenzene	15.57	134	43543	0.48	ug/l	73
84)	1,2,4-Trimethylbenzene	15.63	105	155637	0.48	ug/l	100
85)	sec-Butylbenzene	15.75	105	246395	0.50	ug/l	98
86)	p-Isopropyltoluene	15.87	119	179658	0.48	ug/l	97
87)	1,3-Dichlorobenzene	15.87	146	80120	0.47	ug/l	98
88)	1,4-Dichlorobenzene	15.96	146	85582	0.51	ug/l	96
89)	1,2,3-Trimethylbenzene	15.94	105	142868	0.48	ug/l	96
90)	n-Butylbenzene	16.18	91	163480	0.48	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	69303	0.49	ug/l	94
92)	1,2-Dibromo-3-chloropropan	16.83	157	2667	0.35	ug/l	91
93)	1,2,4-Trichlorobenzene	17.50	180	30556	0.44	ug/l	98
94)	Hexachlorobutadiene	17.57	225	24796	0.47	ug/l	98
95)	Naphthalene	17.74	128	39961	0.44	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	23629	0.46	ug/l	94

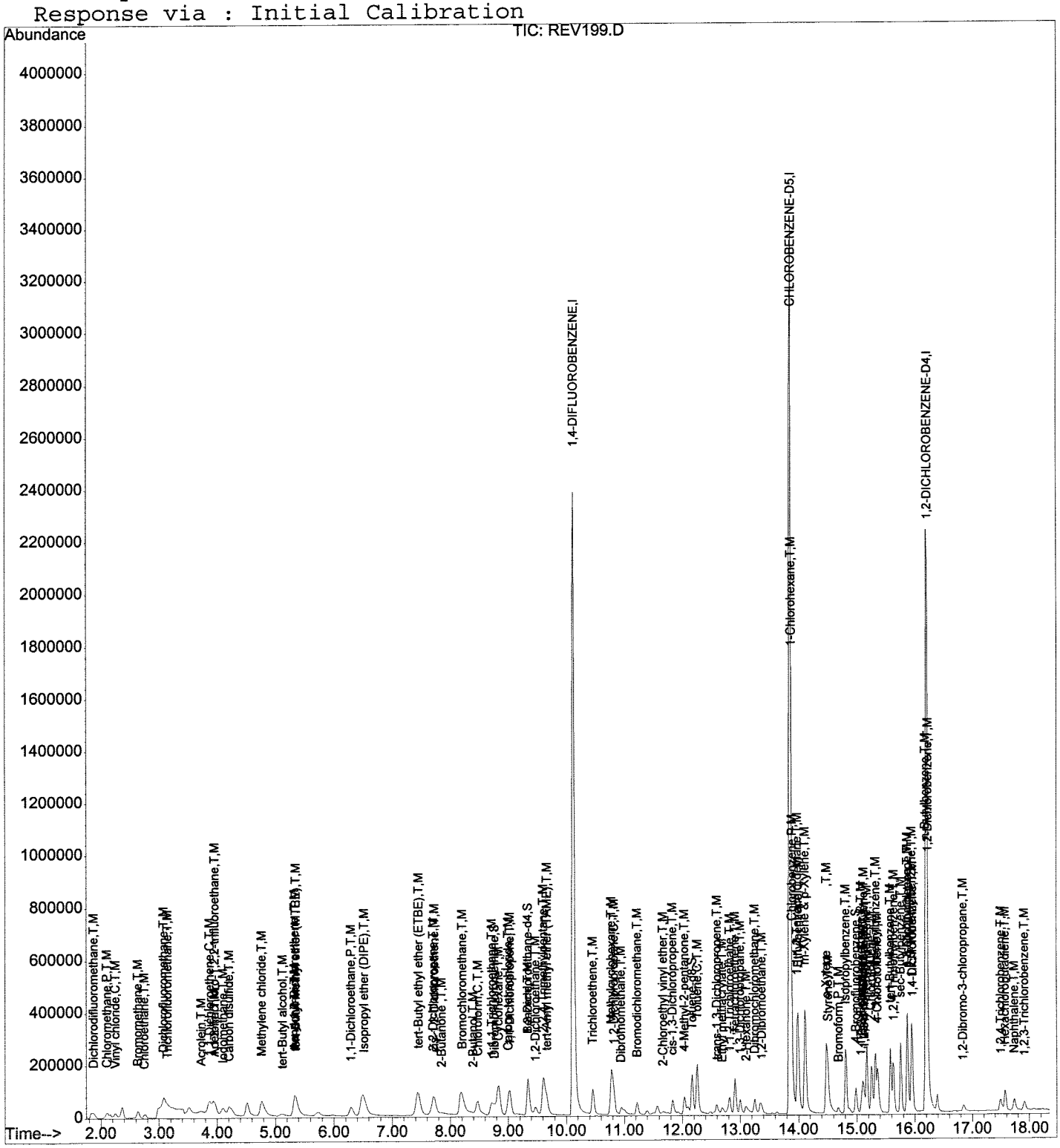
SU 5/18/20

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:57 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3247102	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2673432	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	922687	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	86000	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
38) 1,2-Dichloroethane-d4	9.34	65	57394	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
54) Toluene-d8	12.17	98	346613	0.95	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.50%		
74) 4-Bromofluorobenzene	14.98	95	103247	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	93211	0.93	ug/l	98
4) Chloromethane	2.10	50	120062	1.01	ug/l	94
5) Vinyl chloride	2.24	62	110651	0.95	ug/l	95
7) Bromomethane	2.64	94	75832	0.97	ug/l	97
8) Chloroethane	2.75	64	64560	1.00	ug/l	98
9) Dichlorofluoromethane	3.08	67	169088	1.06	ug/l	99
10) Trichlorofluoromethane	3.14	101	104545	0.96	ug/l	97
11) Acrolein	3.71	56	30725	5.46	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	67741	1.00	ug/l	99
13) Acetone	3.96	43	60789	5.51	ug/l	97
14) 1,1-Dichloroethene	3.85	61	158974	1.00	ug/l	98
15) Iodomethane	4.10	142	177172	0.99	ug/l	99
16) Carbon disulfide	4.21	76	328630	0.94	ug/l	97
17) Methyl acetate	4.56	43	18464	0.64	ug/l	94
18) Methylene chloride	4.77	49	150980	1.13	ug/l	99
19) tert-Butyl alcohol	5.10	59	68958	22.80	ug/l	95
20) Acrylonitrile	5.29	53	46419	3.44	ug/l	95
21) tert-Butyl methyl ether (M	5.35	73	138637	0.99	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	155219	0.99	ug/l	99
24) 1,1-Dichloroethane	6.29	63	190956	1.00	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	328018	0.99	ug/l	100
26) 2-Butanol	8.35	45	50538	28.01	ug/l	90
27) tert-Butyl ethyl ether (ET	7.43	59	255647	1.07	ug/l	98
28) 2-Butanone	7.81	43	63659	3.62	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	110618	1.00	ug/l	98
30) 2,2-Dichloropropane	7.68	77	120645	1.00	ug/l	99
31) Tetrahydrofurane	8.31	42	7526	0.67	ug/l #	58

(#) = qualifier out of range (m) = manual integration

SM 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.20	49	79542	1.01	ug/l	99
33)	Chloroform	8.45	83	154549	0.98	ug/l	97
35)	1,1,1-Trichloroethane	8.72	97	119696	0.95	ug/l	99
36)	Cyclohexane	8.84	84	179772	1.01	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	185571	1.01	ug/l	97
39)	1,1-Dichloropropene	9.03	110	54165	1.02	ug/l	97
40)	Carbon tetrachloride	9.00	119	101375	0.96	ug/l	98
41)	Benzene	9.34	78	383654	0.99	ug/l	100
42)	1,2-Dichloroethane	9.47	62	73244	1.00	ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	504350	0.96	ug/l	99
44)	Trichloroethene	10.45	130	118147	0.99	ug/l	99
45)	Methylcyclohexane	10.78	83	202512	1.01	ug/l	99
46)	1,2-Dichloropropane	10.82	63	104806	1.00	ug/l	99
47)	1,4-Dioxane	10.98	88	5164	14.45	ug/l	98
48)	Dibromomethane	10.94	93	39252	0.99	ug/l	97
49)	Bromodichloromethane	11.22	83	95093	0.93	ug/l	98
50)	2-Chloroethyl vinyl ether	11.66	63	26452	0.82	ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	121910	0.93	ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	205168	4.49	ug/l	99
55)	Toluene	12.26	91	422220	1.01	ug/l	100
56)	Ethyl methacrylate	12.67	69	66500	0.89	ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	87034	0.88	ug/l	98
58)	1,1,2-Trichloroethane	12.82	97	54566	0.97	ug/l	99
59)	Tetrachloroethene	12.91	164	92069	1.01	ug/l	99
60)	1,3-Dichloropropane	13.00	76	106827	1.00	ug/l	98
61)	2-Hexanone	13.09	43	115271	3.81	ug/l	99
62)	Dibromochloromethane	13.25	129	65456	0.94	ug/l	99
63)	1,2-Dibromoethane	13.37	107	54525	0.97	ug/l	95
64)	1-Chlorohexane	13.87	91	187894	0.99	ug/l	98
65)	Chlorobenzene	13.89	112	266680	1.01	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	82840	0.98	ug/l	99
67)	Ethylbenzene	13.99	91	496364	1.00	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	707521	2.01	ug/l	99
69)	o-Xylene	14.48	91	345540	1.02	ug/l	98
70)	Styrene	14.49	104	276993	0.99	ug/l	99
72)	Bromoform	14.69	173	27051	0.87	ug/l	98
73)	Isopropylbenzene	14.80	105	474532	0.98	ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	66248	0.99	ug/l	93
76)	Bromobenzene	15.10	156	94162	1.00	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.11	53	13979	1.05	ug/l	70
78)	1,2,3-Trichloropropane	15.13	110	16160	1.00	ug/l	91

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

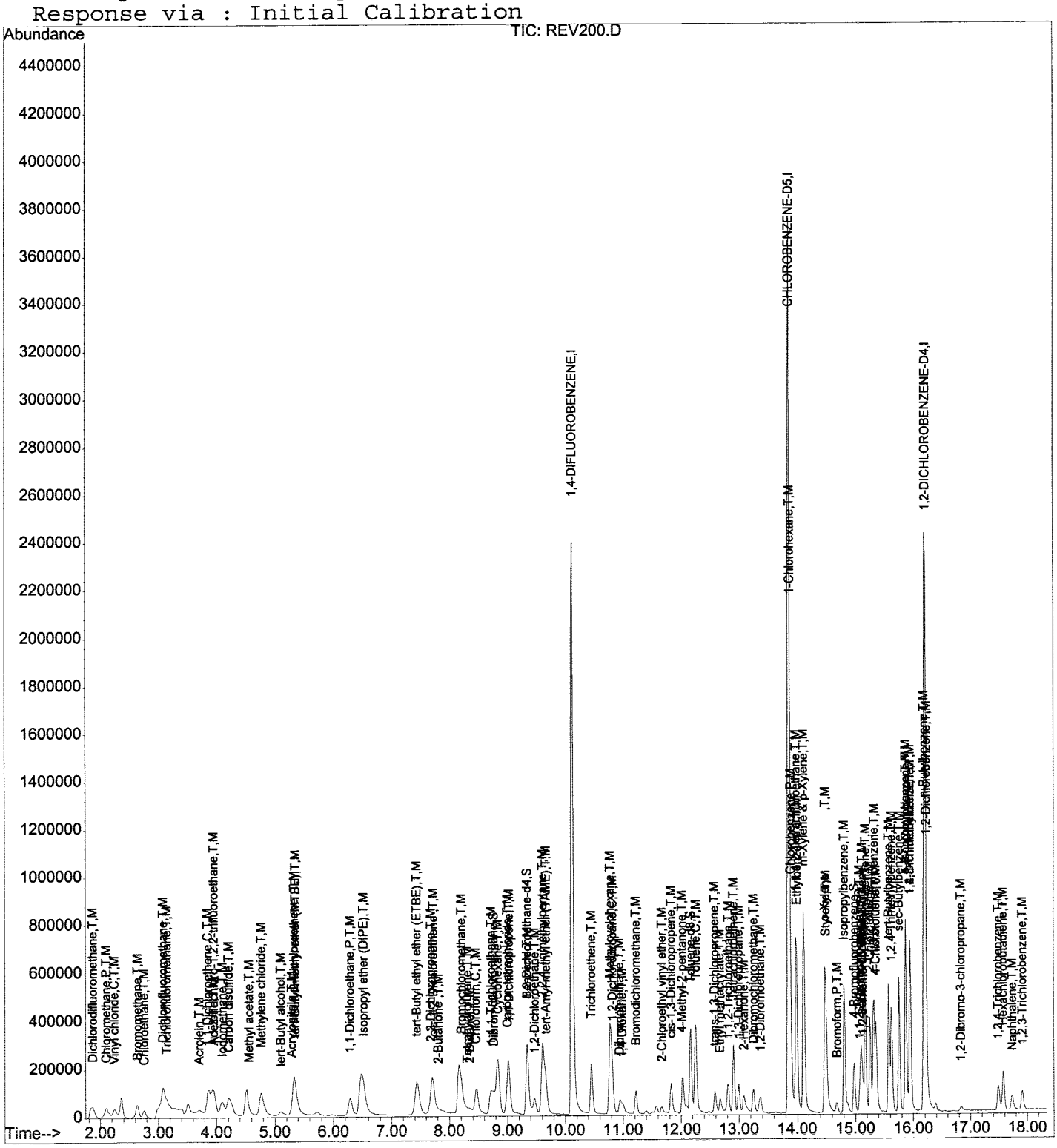
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	555994	1.00	ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	338291	0.99	ug/l	98
81)	2-Chlorotoluene	15.25	91	261974	0.98	ug/l	95
82)	4-Chlorotoluene	15.35	91	322900	1.02	ug/l	97
83)	tert-Butylbenzene	15.57	134	92579	1.01	ug/l	73
84)	1,2,4-Trimethylbenzene	15.62	105	329231	1.00	ug/l	99
85)	sec-Butylbenzene	15.75	105	503002	0.99	ug/l	99
86)	p-Isopropyltoluene	15.87	119	381382	0.99	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	174793	0.99	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	169737	0.99	ug/l	97
89)	1,2,3-Trimethylbenzene	15.94	105	304224	1.01	ug/l	97
90)	n-Butylbenzene	16.18	91	343211	0.98	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	146373	1.02	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.83	157	6354	0.81	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	66885	0.94	ug/l	99
94)	Hexachlorobutadiene	17.57	225	53609	0.99	ug/l	98
95)	Naphthalene	17.74	128	84410	0.90	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	52401	0.99	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3186295	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2617335	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	907050	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	170417	1.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	19.00%		
38) 1,2-Dichloroethane-d4	9.33	65	114229	1.91	ug/l	-0.01
Spiked Amount 10.000			Recovery =	19.10%		
54) Toluene-d8	12.17	98	651399	1.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	18.30%		
74) 4-Bromofluorobenzene	14.97	95	201707	1.86	ug/l	-0.01
Spiked Amount 10.000			Recovery =	18.60%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	199914	2.04	ug/l	100
4) Chloromethane	2.11	50	228761	1.95	ug/l	100
5) Vinyl chloride	2.25	62	217850	1.90	ug/l	96
7) Bromomethane	2.63	94	155081	2.03	ug/l	98
8) Chloroethane	2.76	64	134628	2.12	ug/l	97
9) Dichlorofluoromethane	3.08	67	322611	2.06	ug/l	100
10) Trichlorofluoromethane	3.14	101	207989	1.96	ug/l	99
11) Acrolein	3.71	56	48905	8.85	ug/l	82
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	133835	2.01	ug/l	99
13) Acetone	3.96	43	105132	9.72	ug/l	99
14) 1,1-Dichloroethene	3.87	61	319620	2.05	ug/l	99
15) Iodomethane	4.10	142	360356	2.05	ug/l	100
16) Carbon disulfide	4.21	76	658774	1.93	ug/l	98
17) Methyl acetate	4.56	43	47946	1.68	ug/l	99
18) Methylene chloride	4.77	49	275056	2.10	ug/l	99
19) tert-Butyl alcohol	5.10	59	133828	45.10	ug/l	100
20) Acrylonitrile	5.27	53	104099	7.85	ug/l	97
21) tert-Butyl methyl ether (M	5.35	73	259484	1.89	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	312283	2.03	ug/l	99
24) 1,1-Dichloroethane	6.29	63	376193	2.02	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	647378	1.99	ug/l	98
26) 2-Butanol	8.33	45	111378	45.04	ug/l	93
27) tert-Butyl ethyl ether (ET	7.43	59	458361	1.95	ug/l	99
28) 2-Butanone	7.79	43	133416	7.72	ug/l	97
29) cis-1,2-Dichloroethene	7.70	96	218592	2.02	ug/l	99
30) 2,2-Dichloropropane	7.68	77	239726	2.03	ug/l	100
31) Tetrahydrofurane	8.29	42	15926	1.44	ug/l	72

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.20	49	155633	2.02 ug/l	99
33) Chloroform	8.45	83	304210	1.97 ug/l	98
35) 1,1,1-Trichloroethane	8.72	97	242170	1.97 ug/l	99
36) Cyclohexane	8.84	84	352317	2.01 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	358332	1.98 ug/l	99
39) 1,1-Dichloropropene	9.01	110	108557	2.08 ug/l	99
40) Carbon tetrachloride	9.00	119	208927	2.03 ug/l	98
41) Benzene	9.34	78	778215	2.04 ug/l	100
42) 1,2-Dichloroethane	9.46	62	144248	2.02 ug/l	98
43) 2,2,4-Trimethylpentane	9.61	57	1042829	2.03 ug/l	100
44) Trichloroethene	10.45	130	237462	2.04 ug/l	100
45) Methylcyclohexane	10.78	83	405427	2.06 ug/l	100
46) 1,2-Dichloropropane	10.81	63	214759	2.09 ug/l	99
47) 1,4-Dioxane	10.98	88	11622	33.14 ug/l	97
48) Dibromomethane	10.94	93	75637	1.94 ug/l	97
49) Bromodichloromethane	11.22	83	196150	1.96 ug/l	99
50) 2-Chloroethyl vinyl ether	11.65	63	53304	1.68 ug/l	97
51) cis-1,3-Dichloropropene	11.83	75	246163	1.91 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	407706	9.10 ug/l	100
55) Toluene	12.24	91	854968	2.09 ug/l	99
56) Ethyl methacrylate	12.67	69	134023	1.83 ug/l	96
57) trans-1,3-Dichloropropene	12.58	75	186145	1.93 ug/l	97
58) 1,1,2-Trichloroethane	12.81	97	110314	2.01 ug/l	99
59) Tetrachloroethene	12.91	164	184441	2.06 ug/l	99
60) 1,3-Dichloropropane	13.00	76	211019	2.01 ug/l	99
61) 2-Hexanone	13.07	43	251126	8.49 ug/l	100
62) Dibromochloromethane	13.25	129	130626	1.92 ug/l	100
63) 1,2-Dibromoethane	13.37	107	107090	1.95 ug/l	98
64) 1-Chlorohexane	13.87	91	373573	2.01 ug/l	99
65) Chlorobenzene	13.89	112	526855	2.05 ug/l	99
66) 1,1,1,2-Tetrachloroethane	13.97	131	170716	2.07 ug/l	99
67) Ethylbenzene	13.97	91	988864	2.04 ug/l	100
68) m-Xylene & p-Xylene	14.11	91	1420704	4.11 ug/l	99
69) o-Xylene	14.48	91	673059	2.03 ug/l	100
70) Styrene	14.49	104	548157	2.01 ug/l	98
72) Bromoform	14.67	173	55465	1.82 ug/l	99
73) Isopropylbenzene	14.80	105	974630	2.06 ug/l	99
75) 1,1,2,2-Tetrachloroethane	15.07	83	129096	1.96 ug/l	96
76) Bromobenzene	15.10	156	187880	2.03 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	25769	1.96 ug/l	88
78) 1,2,3-Trichloropropane	15.13	110	31155	1.96 ug/l	96

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	1142923	2.08	ug/l	99
80)	1,3,5-Trimethylbenzene	15.31	105	683742	2.05	ug/l	99
81)	2-Chlorotoluene	15.25	91	554801	2.11	ug/l	99
82)	4-Chlorotoluene	15.35	91	635588	2.04	ug/l	98
83)	tert-Butylbenzene	15.57	134	188074	2.08	ug/l	75
84)	1,2,4-Trimethylbenzene	15.62	105	650244	2.01	ug/l	99
85)	sec-Butylbenzene	15.75	105	1032858	2.07	ug/l	99
86)	p-Isopropyltoluene	15.87	119	773598	2.04	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	355583	2.06	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	339893	2.02	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	613803	2.07	ug/l	98
90)	n-Butylbenzene	16.18	91	701545	2.04	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	282786	2.00	ug/l	97
92)	1,2-Dibromo-3-chloropropan	16.82	157	12013	1.55	ug/l	89
93)	1,2,4-Trichlorobenzene	17.48	180	133623	1.92	ug/l	99
94)	Hexachlorobutadiene	17.57	225	107771	2.03	ug/l	98
95)	Naphthalene	17.72	128	165357	1.79	ug/l	98
96)	1,2,3-Trichlorobenzene	17.91	180	101595	1.95	ug/l	98

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

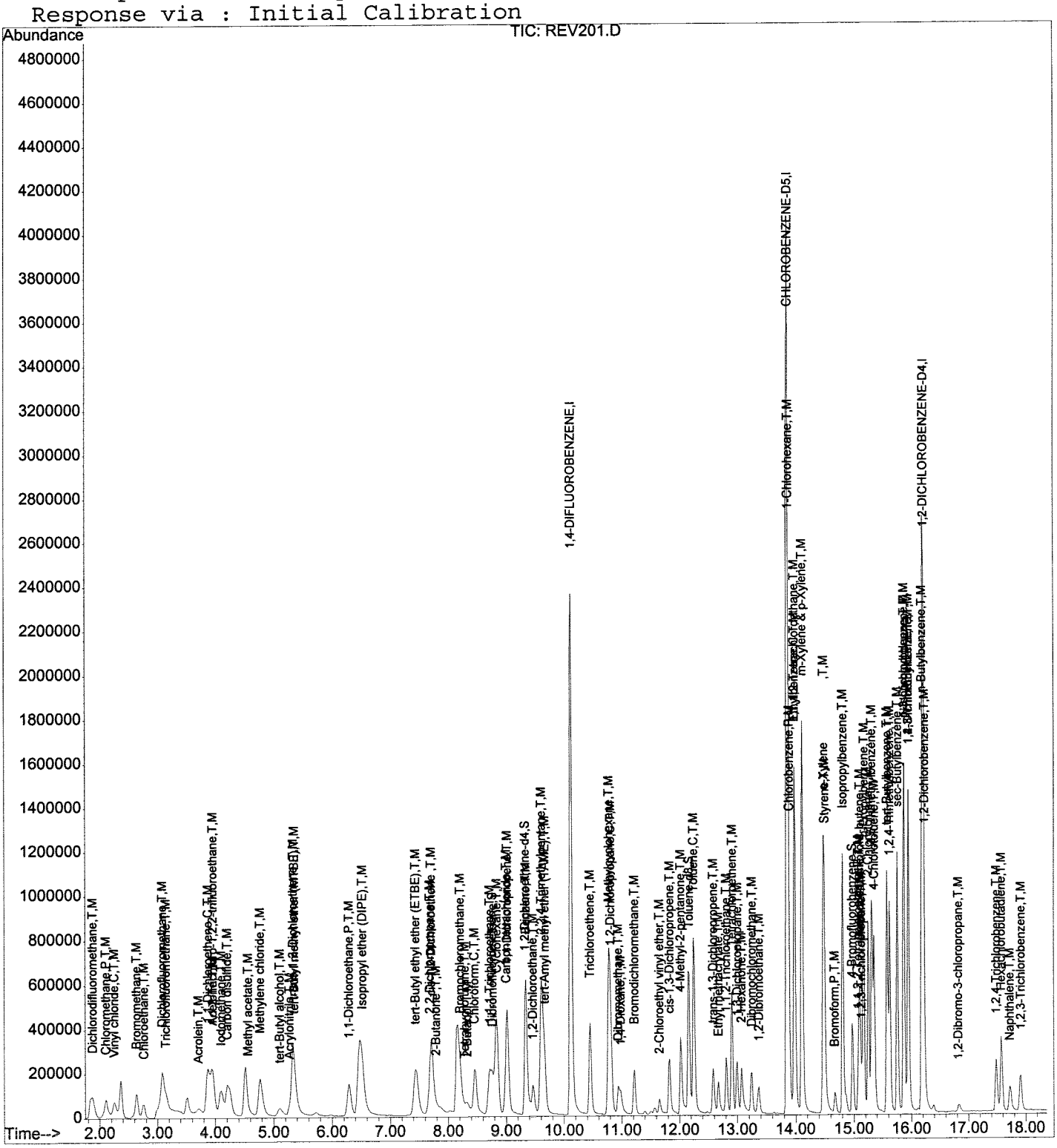
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D
Acq On : 13 May 2020 3:24 pm
Sample : VO01E134
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3068168	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2568523	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	879227	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	446817	5.17	ug/l	0.00
Spiked Amount 10.000			Recovery = 51.70%			
38) 1,2-Dichloroethane-d4	9.33	65	296517	5.16	ug/l	-0.01
Spiked Amount 10.000			Recovery = 51.60%			
54) Toluene-d8	12.15	98	1761756	5.04	ug/l	-0.01
Spiked Amount 10.000			Recovery = 50.40%			
74) 4-Bromofluorobenzene	14.97	95	554791	5.28	ug/l	-0.01
Spiked Amount 10.000			Recovery = 52.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	506812	5.37	ug/l	98
4) Chloromethane	2.11	50	592582	5.25	ug/l	100
5) Vinyl chloride	2.25	62	600511	5.43	ug/l	99
7) Bromomethane	2.63	94	419992	5.70	ug/l	100
8) Chloroethane	2.76	64	339374	5.54	ug/l	99
9) Dichlorofluoromethane	3.08	67	783268	5.18	ug/l	100
10) Trichlorofluoromethane	3.14	101	538831	5.26	ug/l	98
11) Acrolein	3.70	56	137854	25.91	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	329748	5.13	ug/l	100
13) Acetone	3.93	43	254309	24.41	ug/l	100
14) 1,1-Dichloroethene	3.85	61	781704	5.22	ug/l	100
15) Iodomethane	4.10	142	876246	5.17	ug/l	100
16) Carbon disulfide	4.20	76	1732715	5.27	ug/l	99
17) Methyl acetate	4.54	43	123272	4.49	ug/l	99
18) Methylene chloride	4.77	49	636836	5.04	ug/l	100
19) tert-Butyl alcohol	5.08	59	346905	121.40	ug/l	100
20) Acrylonitrile	5.25	53	286592	22.45	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	651856	4.93	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	771966	5.21	ug/l	100
24) 1,1-Dichloroethane	6.29	63	933361	5.20	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	1565266	5.00	ug/l	100
26) 2-Butanol	8.31	45	351213	114.86	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1108262	4.91	ug/l	100
28) 2-Butanone	7.75	43	378494	22.75	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	539988	5.19	ug/l	100
30) 2,2-Dichloropropane	7.68	77	590879	5.20	ug/l	99
31) Tetrahydrofurane	8.27	42	51619	4.84	ug/l	95

(#) = qualifier out of range (m) = manual integration

SU 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.18	49	384291	5.18 ug/l	99
33)	Chloroform	8.45	83	752620	5.07 ug/l	99
35)	1,1,1-Trichloroethane	8.70	97	592851	5.01 ug/l	100
36)	Cyclohexane	8.84	84	896678	5.32 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	897060	5.15 ug/l	99
39)	1,1-Dichloropropene	9.01	110	267353	5.32 ug/l	99
40)	Carbon tetrachloride	9.00	119	521272	5.25 ug/l	99
41)	Benzene	9.34	78	1901912	5.18 ug/l	100
42)	1,2-Dichloroethane	9.46	62	350508	5.09 ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	2767817	5.59 ug/l	100
44)	Trichloroethene	10.45	130	591124	5.27 ug/l	99
45)	Methylcyclohexane	10.78	83	1034744	5.47 ug/l	100
46)	1,2-Dichloropropane	10.81	63	517549	5.23 ug/l	99
47)	1,4-Dioxane	10.97	88	32881	97.37 ug/l	99
48)	Dibromomethane	10.94	93	196998	5.25 ug/l	99
49)	Bromodichloromethane	11.22	83	500906	5.20 ug/l	98
50)	2-Chloroethyl vinyl ether	11.65	63	143987	4.70 ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	639392	5.16 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	1067954	24.76 ug/l	100
55)	Toluene	12.24	91	2099951	5.22 ug/l	100
56)	Ethyl methacrylate	12.67	69	351968	4.91 ug/l	97
57)	trans-1,3-Dichloropropene	12.57	75	472240	4.98 ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	273166	5.07 ug/l	99
59)	Tetrachloroethene	12.91	164	458690	5.21 ug/l	99
60)	1,3-Dichloropropane	13.00	76	522545	5.07 ug/l	99
61)	2-Hexanone	13.06	43	683543	23.54 ug/l	100
62)	Dibromochloromethane	13.25	129	346328	5.18 ug/l	100
63)	1,2-Dibromoethane	13.37	107	283853	5.25 ug/l	99
64)	1-Chlorohexane	13.87	91	943461	5.18 ug/l	100
65)	Chlorobenzene	13.89	112	1300326	5.15 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	424095	5.24 ug/l	99
67)	Ethylbenzene	13.98	91	2520635	5.29 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	3614787	10.67 ug/l	100
69)	o-Xylene	14.48	91	1707881	5.26 ug/l	99
70)	Styrene	14.49	104	1405832	5.25 ug/l	100
72)	Bromoform	14.67	173	152702	5.16 ug/l	99
73)	Isopropylbenzene	14.80	105	2422335	5.27 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	327943	5.15 ug/l	100
76)	Bromobenzene	15.10	156	474715	5.28 ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	58989	4.63 ug/l	97
78)	1,2,3-Trichloropropane	15.13	110	80450	5.21 ug/l	96

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
79) n-Propylbenzene	15.16	91	2881270	5.42 ug/l	100
80) 1,3,5-Trimethylbenzene	15.31	105	1706508	5.27 ug/l	100
81) 2-Chlorotoluene	15.25	91	1321281	5.18 ug/l	98
82) 4-Chlorotoluene	15.35	91	1590984	5.27 ug/l	99
83) tert-Butylbenzene	15.57	134	475222	5.43 ug/l	74
84) 1,2,4-Trimethylbenzene	15.62	105	1678254	5.36 ug/l	99
85) sec-Butylbenzene	15.75	105	2581945	5.35 ug/l	99
86) p-Isopropyltoluene	15.87	119	1929357	5.24 ug/l	100
87) 1,3-Dichlorobenzene	15.87	146	890179	5.32 ug/l	100
88) 1,4-Dichlorobenzene	15.94	146	852945	5.24 ug/l	100
89) 1,2,3-Trimethylbenzene	15.94	105	1522078	5.29 ug/l	100
90) n-Butylbenzene	16.18	91	1795599	5.38 ug/l	100
91) 1,2-Dichlorobenzene	16.23	146	706630	5.15 ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.82	157	36201	4.82 ug/l	99
93) 1,2,4-Trichlorobenzene	17.48	180	348169	5.16 ug/l	98
94) Hexachlorobutadiene	17.57	225	281905	5.47 ug/l	100
95) Naphthalene	17.72	128	456263	5.11 ug/l	99
96) 1,2,3-Trichlorobenzene	17.91	180	268571	5.32 ug/l	99

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

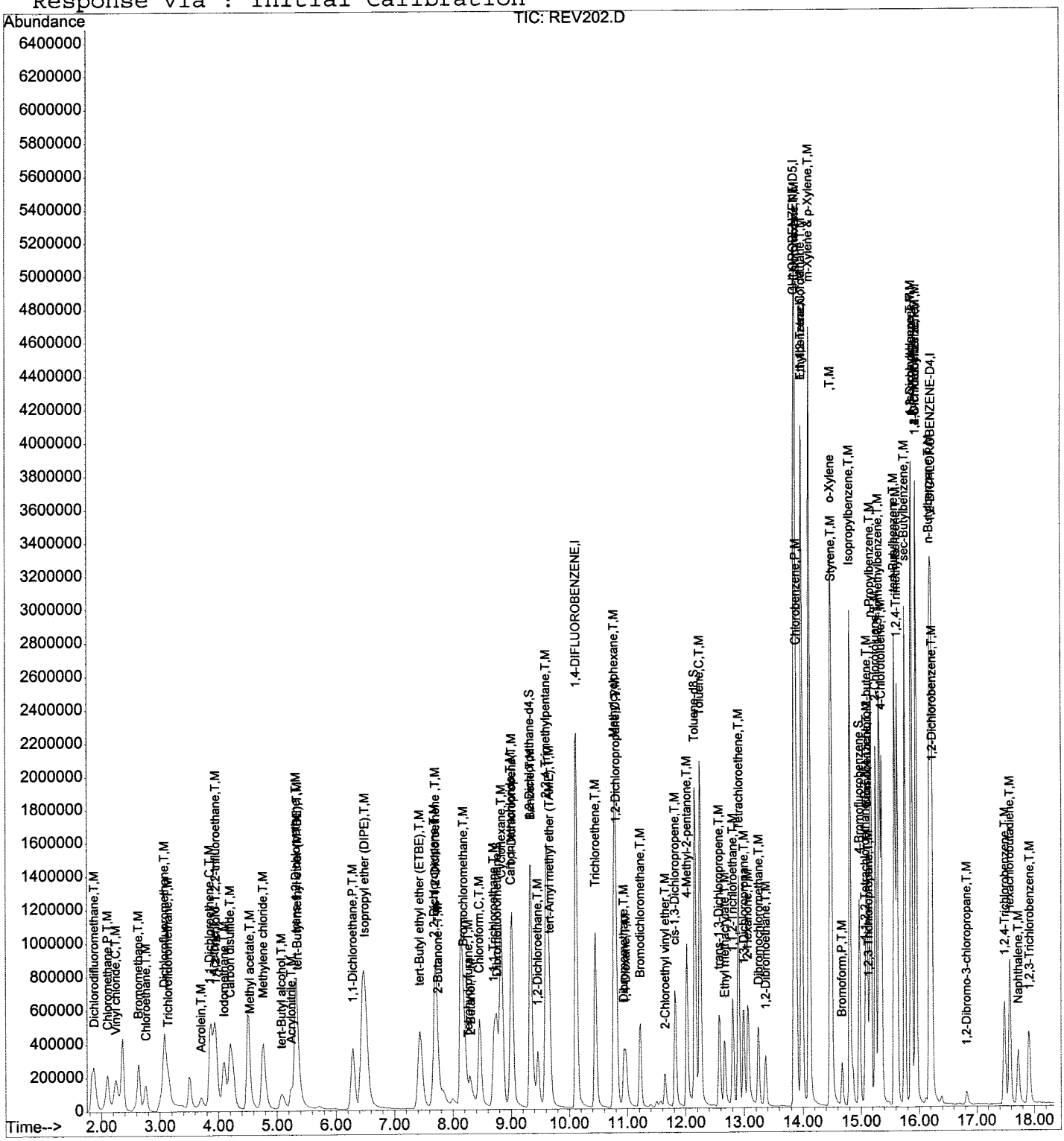
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3167387	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.87	117	2685414	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	938720	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	993253	11.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.40%		
38) 1,2-Dichloroethane-d4	9.34	65	656685	11.06	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.60%		
54) Toluene-d8	12.17	98	3866037	10.58	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.80%		
74) 4-Bromofluorobenzene	14.98	95	1180395	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	981849	10.08	ug/l	100
4) Chloromethane	2.11	50	1182341	10.16	ug/l	100
5) Vinyl chloride	2.25	62	1196903	10.48	ug/l	100
7) Bromomethane	2.63	94	824161	10.84	ug/l	100
8) Chloroethane	2.75	64	668881	10.58	ug/l	100
9) Dichlorofluoromethane	3.08	67	1556421	9.98	ug/l	100
10) Trichlorofluoromethane	3.14	101	1108586	10.48	ug/l	100
11) Acrolein	3.71	56	280483	51.06	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	666223	10.05	ug/l	100
13) Acetone	3.93	43	542441	50.44	ug/l	100
14) 1,1-Dichloroethene	3.85	61	1570988	10.16	ug/l	100
15) Iodomethane	4.10	142	1769760	10.12	ug/l	100
16) Carbon disulfide	4.20	76	3499947	10.31	ug/l	100
17) Methyl acetate	4.52	43	297519	10.50	ug/l	100
18) Methylene chloride	4.77	49	1284809	9.85	ug/l	100
19) tert-Butyl alcohol	5.08	59	798979	270.85	ug/l	100
20) Acrylonitrile	5.23	53	658986	50.01	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1411462	10.34	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1555305	10.17	ug/l	100
24) 1,1-Dichloroethane	6.29	63	1882548	10.15	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3300430	10.22	ug/l	100
26) 2-Butanol	8.29	45	892519	261.78	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2283239	9.79	ug/l	100
28) 2-Butanone	7.72	43	897015	52.23	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	1075506	10.02	ug/l	100
30) 2,2-Dichloropropane	7.68	77	1169852	9.98	ug/l	100
31) Tetrahydrofurane	8.27	42	119830	10.89	ug/l	100

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.20	49	781851	10.21	ug/l	100
33)	Chloroform	8.47	83	1539774	10.05	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1205417	9.86	ug/l	100
36)	Cyclohexane	8.84	84	1721201	9.89	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1845114	10.25	ug/l	100
39)	1,1-Dichloropropene	9.03	110	538098	10.37	ug/l	100
40)	Carbon tetrachloride	9.00	119	1059221	10.33	ug/l	100
41)	Benzene	9.34	78	3741497	9.88	ug/l	100
42)	1,2-Dichloroethane	9.47	62	731073	10.28	ug/l	100
43)	2,2,4-Trimethylpentane	9.62	57	5488288	10.73	ug/l	100
44)	Trichloroethene	10.47	130	1181673	10.20	ug/l	100
45)	Methylcyclohexane	10.79	83	2066215	10.58	ug/l	100
46)	1,2-Dichloropropane	10.82	63	1060172	10.37	ug/l	100
47)	1,4-Dioxane	10.97	88	72346	207.53	ug/l	100
48)	Dibromomethane	10.95	93	409460	10.56	ug/l	100
49)	Bromodichloromethane	11.22	83	1034032	10.39	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	322016	10.19	ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1338031	10.46	ug/l	100
52)	4-Methyl-2-pentanone	12.04	43	2431087	54.60	ug/l	100
55)	Toluene	12.26	91	4152375	9.87	ug/l	100
56)	Ethyl methacrylate	12.67	69	770340	10.28	ug/l	100
57)	trans-1,3-Dichloropropene	12.58	75	1001116	10.09	ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	572207	10.16	ug/l	100
59)	Tetrachloroethene	12.92	164	909641	9.89	ug/l	100
60)	1,3-Dichloropropane	13.01	76	1103037	10.23	ug/l	100
61)	2-Hexanone	13.07	43	1624022	53.49	ug/l	100
62)	Dibromochloromethane	13.26	129	734730	10.50	ug/l	100
63)	1,2-Dibromoethane	13.38	107	592704	10.49	ug/l	100
64)	1-Chlorohexane	13.89	91	1873736	9.84	ug/l	100
65)	Chlorobenzene	13.90	112	2639229	10.00	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.99	131	875621	10.36	ug/l	100
67)	Ethylbenzene	13.99	91	4985455	10.01	ug/l	100
68)	m-Xylene & p-Xylene	14.12	91	7330631	20.69	ug/l	100
69)	o-Xylene	14.49	91	3462673	10.19	ug/l	100
70)	Styrene	14.51	104	2846005	10.16	ug/l	100
72)	Bromoform	14.69	173	336685	10.65	ug/l	100
73)	Isopropylbenzene	14.82	105	4804245	9.80	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.09	83	706426	10.39	ug/l	100
76)	Bromobenzene	15.12	156	969879	10.10	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.12	53	130204	9.58	ug/l	100
78)	1,2,3-Trichloropropane	15.14	110	171536	10.41	ug/l	100

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D
Acq On : 13 May 2020 4:20 pm
Sample : VO01E136
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.19	91	5751258	10.14	ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3527307	10.19	ug/l	100
81)	2-Chlorotoluene	15.26	91	2819407	10.36	ug/l	100
82)	4-Chlorotoluene	15.37	91	3245399	10.07	ug/l	100
83)	tert-Butylbenzene	15.59	134	932120	9.97	ug/l	100
84)	1,2,4-Trimethylbenzene	15.63	105	3310630	9.90	ug/l	100
85)	sec-Butylbenzene	15.77	105	5172032	10.04	ug/l	100
86)	p-Isopropyltoluene	15.89	119	3927374	10.00	ug/l	100
87)	1,3-Dichlorobenzene	15.89	146	1848020	10.34	ug/l	100
88)	1,4-Dichlorobenzene	15.96	146	1715478	9.87	ug/l	100
89)	1,2,3-Trimethylbenzene	15.96	105	3094271	10.07	ug/l	100
90)	n-Butylbenzene	16.20	91	3649801	10.23	ug/l	100
91)	1,2-Dichlorobenzene	16.24	146	1433728	9.78	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.83	157	81338	10.15	ug/l	100
93)	1,2,4-Trichlorobenzene	17.50	180	735466	10.21	ug/l	100
94)	Hexachlorobutadiene	17.60	225	553020	10.06	ug/l	100
95)	Naphthalene	17.74	128	960056	10.07	ug/l	100
96)	1,2,3-Trichlorobenzene	17.93	180	545979	10.12	ug/l	100

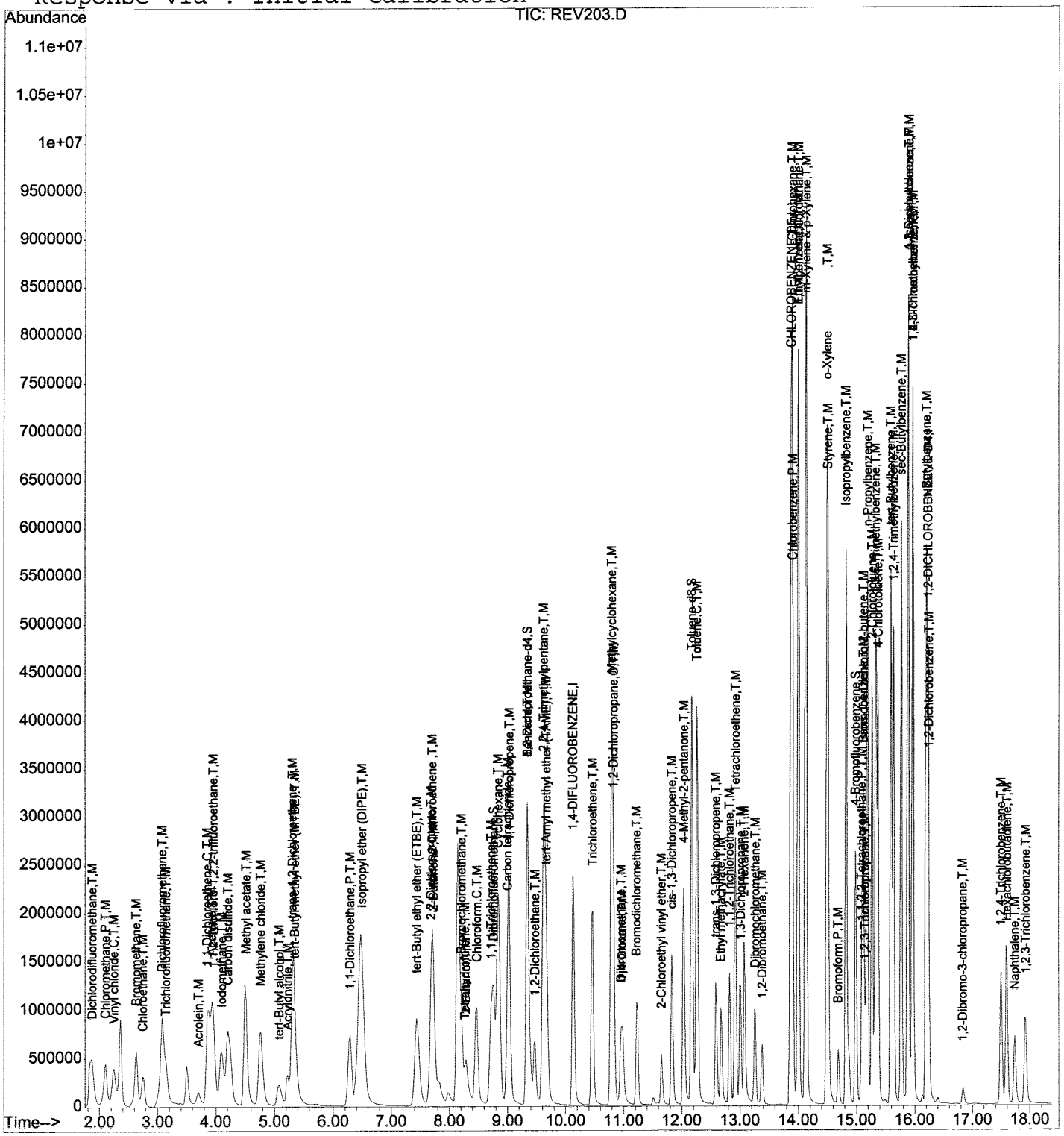
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3182543	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2678062	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	936569	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1880478	20.99	ug/l	0.00
Spiked Amount 10.000			Recovery =	209.90%		
38) 1,2-Dichloroethane-d4	9.32	65	1288229	21.59	ug/l	-0.01
Spiked Amount 10.000			Recovery =	215.90%		
54) Toluene-d8	12.15	98	7569793	20.77	ug/l	-0.01
Spiked Amount 10.000			Recovery =	207.70%		
74) 4-Bromofluorobenzene	14.97	95	2338620	20.89	ug/l	-0.01
Spiked Amount 10.000			Recovery =	208.90%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	1998148	20.41	ug/l	99
4) Chloromethane	2.11	50	2325987	19.89	ug/l	99
5) Vinyl chloride	2.25	62	2323224	20.25	ug/l	99
7) Bromomethane	2.63	94	1488642	19.48	ug/l	99
8) Chloroethane	2.75	64	1238755	19.51	ug/l	99
9) Dichlorofluoromethane	3.08	67	3046413	19.43	ug/l	100
10) Trichlorofluoromethane	3.14	101	2191412	20.62	ug/l	99
11) Acrolein	3.71	56	562100	101.84	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	1339436	20.10	ug/l	99
13) Acetone	3.93	43	1108442	102.57	ug/l	98
14) 1,1-Dichloroethene	3.87	61	3122522	20.09	ug/l	100
15) Iodomethane	4.10	142	3519510	20.03	ug/l	99
16) Carbon disulfide	4.21	76	7009690	20.54	ug/l	100
17) Methyl acetate	4.54	43	595262	20.91	ug/l	99
18) Methylene chloride	4.77	49	2564333	19.57	ug/l	99
19) tert-Butyl alcohol	5.08	59	1634918	551.60	ug/l	100
20) Acrylonitrile	5.23	53	1408295	106.36	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	2786059	20.32	ug/l	99
22) trans-1,2-Dichloroethene	5.33	61	3063263	19.93	ug/l	99
24) 1,1-Dichloroethane	6.29	63	3732915	20.03	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	6732312	20.75	ug/l	100
26) 2-Butanol	8.29	45	1828437	518.82	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	4574261	19.53	ug/l	100
28) 2-Butanone	7.72	43	1835472	106.37	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	2168474	20.10	ug/l	100
30) 2,2-Dichloropropane	7.70	77	2338863	19.85	ug/l	100
31) Tetrahydrofurane	8.27	42	240698	21.77	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.20	49	1546357	20.10 ug/l	99
33) Chloroform	8.45	83	3074501	19.98 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	2611987	21.26 ug/l	94
36) Cyclohexane	8.84	84	3547352	20.29 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	3677301	20.34 ug/l	100
39) 1,1-Dichloropropene	9.03	110	1077442	20.67 ug/l	99
40) Carbon tetrachloride	9.00	119	2123420	20.61 ug/l	100
41) Benzene	9.34	78	7706690	20.25 ug/l	100
42) 1,2-Dichloroethane	9.46	62	1480291	20.72 ug/l	100
43) 2,2,4-Trimethylpentane	9.62	57	10559536	20.54 ug/l	100
44) Trichloroethene	10.45	130	2388345	20.52 ug/l	100
45) Methylcyclohexane	10.78	83	4154051	21.17 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2120613	20.65 ug/l	100
47) 1,4-Dioxane	10.95	88	146941	419.51 ug/l	99
48) Dibromomethane	10.94	93	808725	20.76 ug/l	99
49) Bromodichloromethane	11.22	83	2097141	20.98 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	677307	21.33 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	2768892	21.55 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	4919602	109.96 ug/l	99
55) Toluene	12.24	91	8439015	20.12 ug/l	99
56) Ethyl methacrylate	12.66	69	1540328	20.60 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2086191	21.09 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	1124048	20.02 ug/l	100
59) Tetrachloroethene	12.91	164	1832883	19.98 ug/l	100
60) 1,3-Dichloropropane	13.00	76	2183646	20.31 ug/l	99
61) 2-Hexanone	13.06	43	3370336	111.32 ug/l	99
62) Dibromochloromethane	13.25	129	1485763	21.30 ug/l	100
63) 1,2-Dibromoethane	13.37	107	1184644	21.03 ug/l	99
64) 1-Chlorohexane	13.87	91	3797027	20.00 ug/l	99
65) Chlorobenzene	13.89	112	5266132	20.00 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	1745026	20.69 ug/l	100
67) Ethylbenzene	13.97	91	10131853	20.41 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	13945469	39.46 ug/l	98
69) o-Xylene	14.48	91	6861711	20.25 ug/l	100
70) Styrene	14.49	104	5804762	20.78 ug/l	99
72) Bromoform	14.67	173	694516	22.02 ug/l	100
73) Isopropylbenzene	14.80	105	9730818	19.89 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	1378338	20.31 ug/l	99
76) Bromobenzene	15.10	156	1919633	20.05 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	272937	20.12 ug/l	97
78) 1,2,3-Trichloropropane	15.13	110	341841	20.78 ug/l	100

(#) = qualifier out of range (m) = manual integration
REV204.D VO01E13.M Thu May 14 18:36:29 2020 5/18/20 Page 2

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	11578541	20.46	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	6971891	20.20	ug/l	100
81)	2-Chlorotoluene	15.25	91	5576205	20.53	ug/l	99
82)	4-Chlorotoluene	15.35	91	6432235	20.00	ug/l	99
83)	tert-Butylbenzene	15.57	134	1856231	19.91	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	6859128	20.55	ug/l	99
85)	sec-Butylbenzene	15.75	105	10541362	20.50	ug/l	100
86)	p-Isopropyltoluene	15.87	119	7941541	20.27	ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	3644189	20.43	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	3557043	20.52	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	6212747	20.27	ug/l	100
90)	n-Butylbenzene	16.18	91	7377784	20.73	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	2901035	19.84	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	174288	21.79	ug/l	100
93)	1,2,4-Trichlorobenzene	17.48	180	1573315	21.89	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1168258	21.29	ug/l	100
95)	Naphthalene	17.72	128	2049737	21.55	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1141986	21.22	ug/l	100

Sa 5/18/20

(#) = qualifier out of range (m) = manual integration

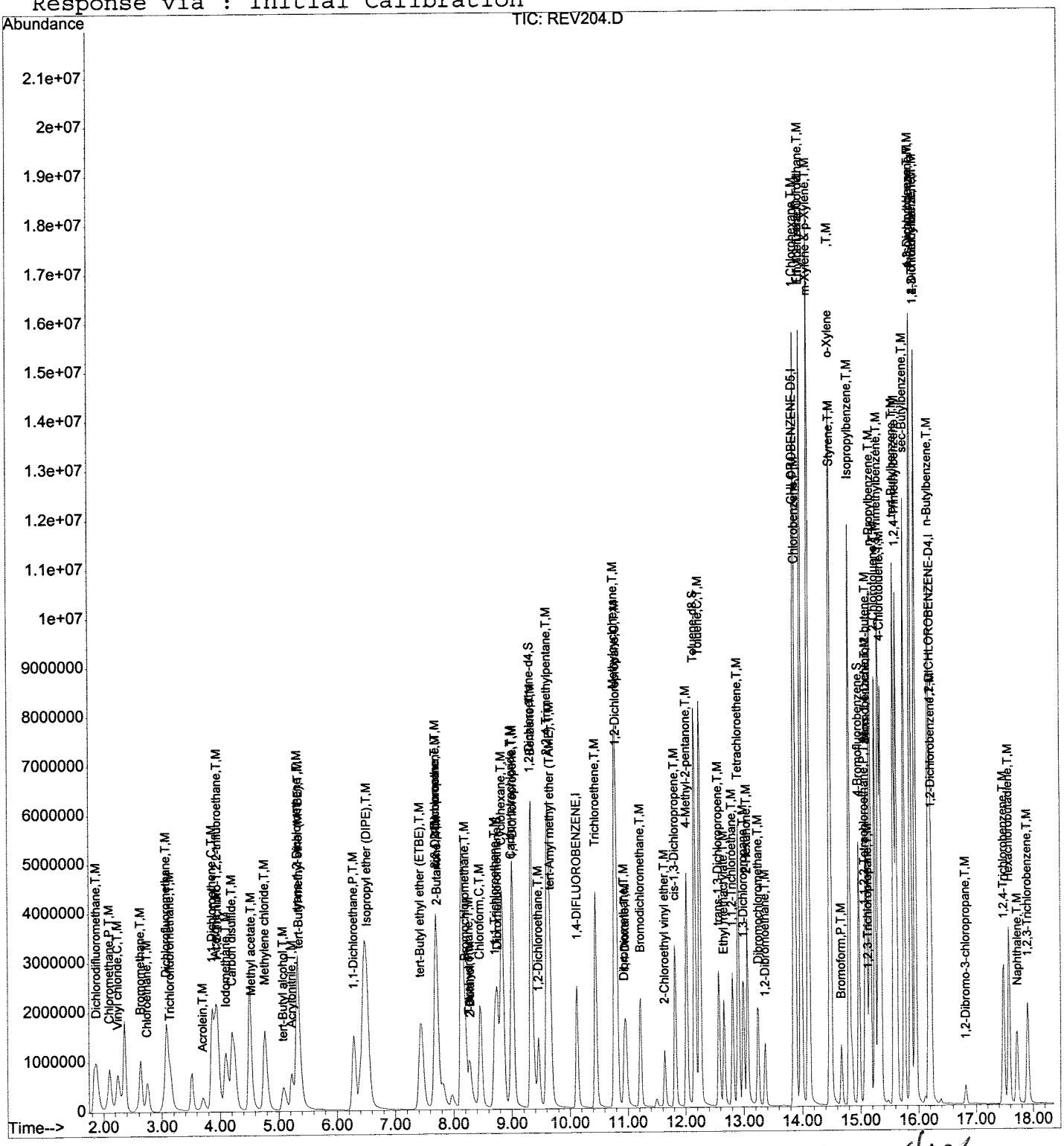
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D
Acq On : 13 May 2020 4:47 pm
Sample : VO01E137
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



REV204.D VO01E13.M Thu May 14 18:36:32 2020 Page 4

Su 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3096634	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2554592	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	862320	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	2698043	30.96	ug/l	-0.01
Spiked Amount 10.000			Recovery = 309.60%			
38) 1,2-Dichloroethane-d4	9.33	65	1798985	30.99	ug/l	-0.01
Spiked Amount 10.000			Recovery = 309.90%			
54) Toluene-d8	12.15	98	10740206	30.89	ug/l	-0.01
Spiked Amount 10.000			Recovery = 308.90%			
74) 4-Bromofluorobenzene	14.97	95	3403768	33.02	ug/l	-0.01
Spiked Amount 10.000			Recovery = 330.20%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	2897044	30.41	ug/l	100
4) Chloromethane	2.10	50	3412463	29.98	ug/l	99
5) Vinyl chloride	2.25	62	3449445	30.91	ug/l	100
7) Bromomethane	2.63	94	1926536	25.91	ug/l	100
8) Chloroethane	2.75	64	1723670	27.90	ug/l	100
9) Dichlorofluoromethane	3.08	67	4343157	28.47	ug/l	99
10) Trichlorofluoromethane	3.14	101	3159000	30.56	ug/l	99
11) Acrolein	3.70	56	783974	145.97	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	1988674	30.67	ug/l	99
13) Acetone	3.93	43	1567085	149.03	ug/l	99
14) 1,1-Dichloroethene	3.85	61	4627877	30.60	ug/l	100
15) Iodomethane	4.10	142	5180142	30.30	ug/l	100
16) Carbon disulfide	4.20	76	10252462	30.88	ug/l	100
17) Methyl acetate	4.52	43	828838	29.92	ug/l	99
18) Methylene chloride	4.77	49	3706868	29.08	ug/l	99
19) tert-Butyl alcohol	5.08	59	2281663	791.16	ug/l	99
20) Acrylonitrile	5.23	53	2038109	158.19	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	3938132	29.52	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	4525972	30.26	ug/l	99
24) 1,1-Dichloroethane	6.29	63	5521859	30.45	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	9627906	30.49	ug/l	100
26) 2-Butanol	8.27	45	2527526	731.05	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	6441656	28.26	ug/l	100
28) 2-Butanone	7.72	43	2670603	159.06	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	3261005	31.06	ug/l	98
30) 2,2-Dichloropropane	7.70	77	3492021	30.46	ug/l	100
31) Tetrahydrofurane	8.25	42	335319	31.16	ug/l	99

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	2252313	30.09 ug/l	99
33) Chloroform	8.45	83	4532185	30.27 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	3833308	32.07 ug/l	95
36) Cyclohexane	8.84	84	5202996	30.58 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	5249152	29.83 ug/l	100
39) 1,1-Dichloropropene	9.01	110	1569661	30.95 ug/l	100
40) Carbon tetrachloride	9.00	119	3139048	31.32 ug/l	100
41) Benzene	9.34	78	11053787	29.86 ug/l	100
42) 1,2-Dichloroethane	9.46	62	2122967	30.53 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	15867817	31.73 ug/l	100
44) Trichloroethene	10.45	130	3428358	30.27 ug/l	100
45) Methylcyclohexane	10.78	83	5937114	31.09 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2973181	29.76 ug/l	99
47) 1,4-Dioxane	10.95	88	214599	629.67 ug/l	99
48) Dibromomethane	10.94	93	1172558	30.94 ug/l	98
49) Bromodichloromethane	11.21	83	3084990	31.72 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	992684	32.12 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	3972967	31.78 ug/l	100
52) 4-Methyl-2-pentanone	12.02	43	6910110	158.74 ug/l	99
55) Toluene	12.24	91	12347445	30.86 ug/l	99
56) Ethyl methacrylate	12.66	69	2186278	30.66 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2996543	31.75 ug/l	100
58) 1,1,2-Trichloroethane	12.81	97	1619105	30.23 ug/l	99
59) Tetrachloroethene	12.91	164	2680006	30.62 ug/l	99
60) 1,3-Dichloropropane	12.98	76	3147529	30.69 ug/l	100
61) 2-Hexanone	13.06	43	4767662	165.08 ug/l	98
62) Dibromochloromethane	13.24	129	2154157	32.37 ug/l	99
63) 1,2-Dibromoethane	13.37	107	1694224	31.54 ug/l	99
64) 1-Chlorohexane	13.87	91	5545249	30.62 ug/l	100
65) Chlorobenzene	13.89	112	7640289	30.42 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.98	131	2499661	31.08 ug/l	100
67) Ethylbenzene	13.98	91	13633368	28.79 ug/l	97
68) m-Xylene & p-Xylene	14.11	91	18268724	54.20 ug/l	89
69) o-Xylene	14.48	91	9920435	30.69 ug/l	100
70) Styrene	14.49	104	8379889	31.46 ug/l	99
72) Bromoform	14.67	173	998157	34.37 ug/l	100
73) Isopropylbenzene	14.80	105	13086936	29.05 ug/l	97
75) 1,1,2,2-Tetrachloroethane	15.07	83	1959221	31.36 ug/l	100
76) Bromobenzene	15.10	156	2781747	31.55 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	391876	31.37 ug/l	99
78) 1,2,3-Trichloropropane	15.13	110	477791	31.55 ug/l	100

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.18	91	13997621	26.86	ug/l	92
80)	1,3,5-Trimethylbenzene	15.31	105	10084275	31.73	ug/l	100
81)	2-Chlorotoluene	15.25	91	8048367	32.18	ug/l	98
82)	4-Chlorotoluene	15.35	91	9245029	31.22	ug/l	100
83)	tert-Butylbenzene	15.57	134	2699922	31.45	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	9797004	31.88	ug/l	99
85)	sec-Butylbenzene	15.75	105	13380886	28.27	ug/l	95
86)	p-Isopropyltoluene	15.87	119	11241032	31.16	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	5233107	31.86	ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	4944171	30.97	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	8671658	30.73	ug/l	99
90)	n-Butylbenzene	16.18	91	10667864	32.56	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	4099793	30.45	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	243048	33.01	ug/l	99
93)	1,2,4-Trichlorobenzene	17.49	180	2193270	33.14	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1625625	32.18	ug/l	99
95)	Naphthalene	17.72	128	2869688	32.76	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1588500	32.06	ug/l	100

Su 5/18/20

(#) = qualifier out of range (m) = manual integration
REV205.D VO01E13.M Thu May 14 18:36:40 2020

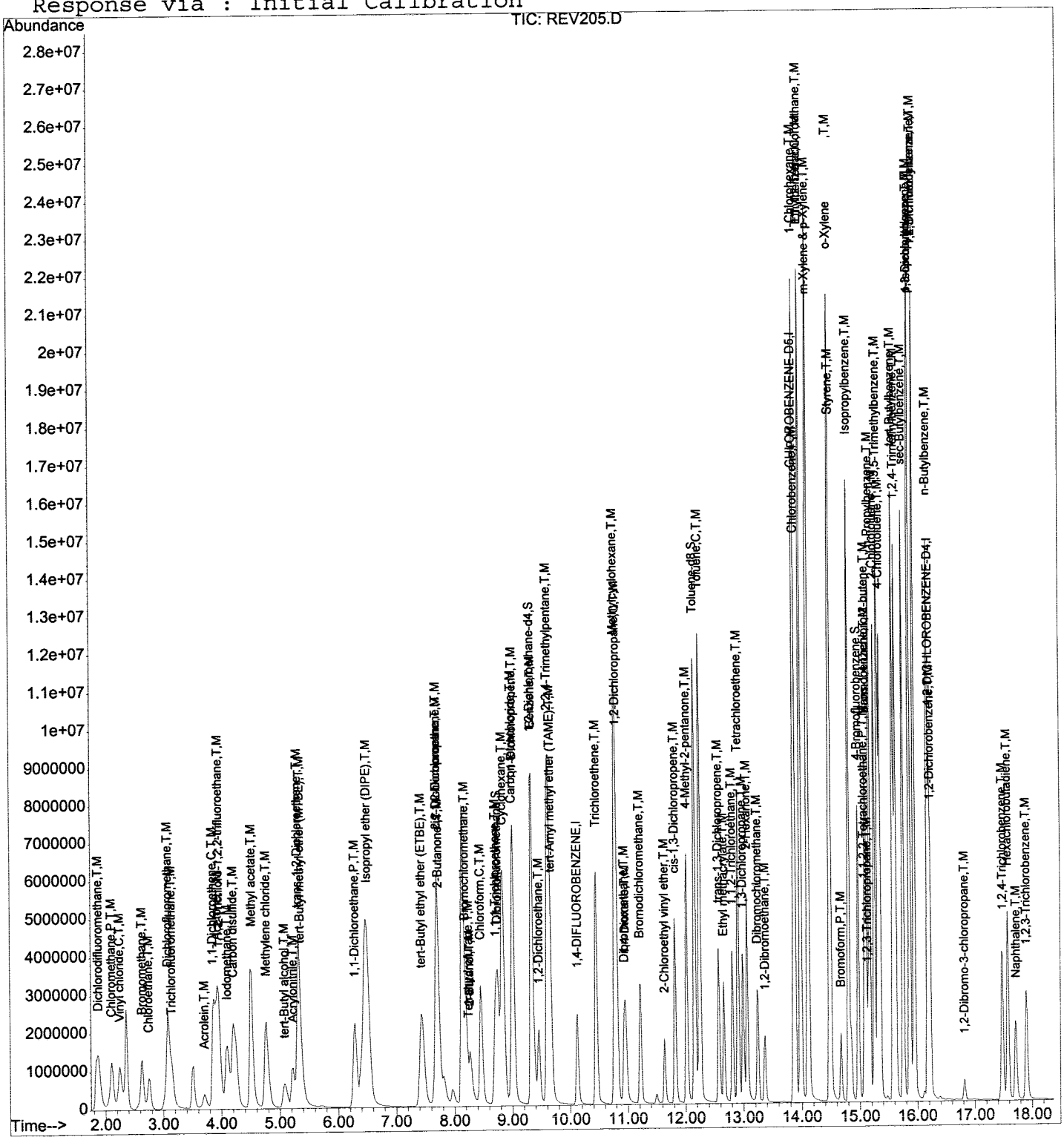
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3150156	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2611192	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.20	152	901049	10.00	ug/l	-0.03
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	4465266	50.36	ug/l	-0.01
Spiked Amount 10.000			Recovery =	503.60%		
38) 1,2-Dichloroethane-d4	9.33	65	2900379	49.12	ug/l	-0.01
Spiked Amount 10.000			Recovery =	491.20%		
54) Toluene-d8	12.15	98	16440098	46.25	ug/l	-0.01
Spiked Amount 10.000			Recovery =	462.50%		
74) 4-Bromofluorobenzene	14.97	95	5334374	49.52	ug/l	-0.01
Spiked Amount 10.000			Recovery =	495.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	4908013	50.64	ug/l	100
4) Chloromethane	2.10	50	5894461	50.91	ug/l	99
5) Vinyl chloride	2.24	62	5690849	50.12	ug/l	99
7) Bromomethane	2.63	94	2636932	34.86	ug/l	99
8) Chloroethane	2.74	64	2701585	42.98	ug/l	100
9) Dichlorofluoromethane	3.08	67	7358611	47.42	ug/l	100
10) Trichlorofluoromethane	3.12	101	5388767	51.24	ug/l	99
11) Acrolein	3.71	56	1312815	240.29	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	3216191	48.76	ug/l	100
13) Acetone	3.94	43	2479926	231.84	ug/l	100
14) 1,1-Dichloroethene	3.85	61	7411335	48.18	ug/l	99
15) Iodomethane	4.10	142	8576834	49.32	ug/l	99
16) Carbon disulfide	4.21	76	17310985	51.25	ug/l	100
17) Methyl acetate	4.52	43	1417314	50.30	ug/l	99
18) Methylene chloride	4.75	49	6064325	46.77	ug/l	99
19) tert-Butyl alcohol	5.08	59	3752185	1278.95	ug/l	99
20) Acrylonitrile	5.21	53	3406355	259.90	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	6480793	47.76	ug/l	99
22) trans-1,2-Dichloroethene	5.31	61	7519203	49.42	ug/l	99
24) 1,1-Dichloroethane	6.29	63	9051617	49.07	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	15594435	48.55	ug/l	100
26) 2-Butanol	8.27	45	4434529	1250.44	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	10634323	45.86	ug/l	100
28) 2-Butanone	7.73	43	4397913	257.49	ug/l	99
29) cis-1,2-Dichloroethene	7.71	96	5227128	48.94	ug/l	100
30) 2,2-Dichloropropane	7.71	77	5636752	48.34	ug/l	100
31) Tetrahydrofurane	8.25	42	538206	49.17	ug/l	98

(#) = qualifier out of range (m) = manual integration SG 5/18/20
REV206.D VO01E13.M Thu May 14 18:36:53 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.18	49	3662643	48.11	ug/l	100
33)	Chloroform	8.45	83	7371090	48.39	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	6392327	52.56	ug/l	99
36)	Cyclohexane	8.84	84	8420160	48.65	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	8435107	47.13	ug/l	100
39)	1,1-Dichloropropene	9.01	110	2559117	49.60	ug/l	99
40)	Carbon tetrachloride	9.00	119	5202905	51.03	ug/l	100
41)	Benzene	9.34	78	17956135	47.68	ug/l	100
42)	1,2-Dichloroethane	9.46	62	3451270	48.79	ug/l	99
43)	2,2,4-Trimethylpentane	9.62	57	25329094	49.79	ug/l	100
44)	Trichloroethene	10.45	130	5780585	50.18	ug/l	100
45)	Methylcyclohexane	10.78	83	9854254	50.72	ug/l	99
46)	1,2-Dichloropropane	10.81	63	4843612	47.65	ug/l	99
47)	1,4-Dioxane	10.95	88	337303	972.89	ug/l	99
48)	Dibromomethane	10.94	93	1923801	49.90	ug/l	100
49)	Bromodichloromethane	11.21	83	5074290	51.29	ug/l	99
50)	2-Chloroethyl vinyl ether	11.64	63	1663108	52.90	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	6657180	52.34	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	11507992	259.87	ug/l	100
55)	Toluene	12.24	91	17773741	43.46	ug/l	89
56)	Ethyl methacrylate	12.66	69	3666534	50.30	ug/l	100
57)	trans-1,3-Dichloropropene	12.57	75	4995826	51.79	ug/l	100
58)	1,1,2-Trichloroethane	12.81	97	2670877	48.79	ug/l	99
59)	Tetrachloroethene	12.91	164	4440492	49.64	ug/l	99
60)	1,3-Dichloropropane	12.98	76	5128104	48.91	ug/l	99
61)	2-Hexanone	13.06	43	7899490	267.60	ug/l	98
62)	Dibromochloromethane	13.24	129	3510442	51.61	ug/l	100
63)	1,2-Dibromoethane	13.37	107	2783751	50.69	ug/l	99
64)	1-Chlorohexane	13.87	91	8957593	48.39	ug/l	99
65)	Chlorobenzene	13.89	112	12267173	47.78	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	4119024	50.10	ug/l	100
67)	Ethylbenzene	13.98	91	16483338	34.05	ug/l	76
68)	m-Xylene & p-Xylene	14.11	91	21093164	61.22	ug/l	65
69)	o-Xylene	14.48	91	14312232	43.32	ug/l	92
70)	Styrene	14.49	104	12831033	47.12	ug/l	97
72)	Bromoform	14.67	173	1655066	54.54	ug/l	99
73)	Isopropylbenzene	14.80	105	16741851	35.56	ug/l	85
75)	1,1,2,2-Tetrachloroethane	15.07	83	3151339	48.27	ug/l	100
76)	Bromobenzene	15.10	156	4535634	49.23	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	644992	49.42	ug/l	98
78)	1,2,3-Trichloropropane	15.13	110	768220	48.55	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
79) n-Propylbenzene	15.18	91	16572053	30.43 ug/l	73
80) 1,3,5-Trimethylbenzene	15.31	105	14210237	42.79 ug/l	90
81) 2-Chlorotoluene	15.25	91	12277228	46.98 ug/l	97
82) 4-Chlorotoluene	15.35	91	14276500	46.15 ug/l	98
83) tert-Butylbenzene	15.57	134	4317113	48.13 ug/l	99
84) 1,2,4-Trimethylbenzene	15.62	105	14119313	43.98 ug/l	91
85) sec-Butylbenzene	15.75	105	17685886	35.75 ug/l	85
86) p-Isopropyltoluene	15.87	119	15062222	39.95 ug/l	89
87) 1,3-Dichlorobenzene	15.87	146	8574730	49.97 ug/l	99
88) 1,4-Dichlorobenzene	15.95	146	8022440	48.09 ug/l	99
89) 1,2,3-Trimethylbenzene	15.95	105	13222336	44.84 ug/l	97
90) n-Butylbenzene	16.18	91	14794710	43.22 ug/l	87
91) 1,2-Dichlorobenzene	16.21	146	6791254	48.27 ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.82	157	405016	52.64 ug/l	99
93) 1,2,4-Trichlorobenzene	17.49	180	3599170	52.04 ug/l	99
94) Hexachlorobutadiene	17.57	225	2628209	49.80 ug/l	99
95) Naphthalene	17.71	128	4726401	51.64 ug/l	100
96) 1,2,3-Trichlorobenzene	17.90	180	2578361	49.80 ug/l	99

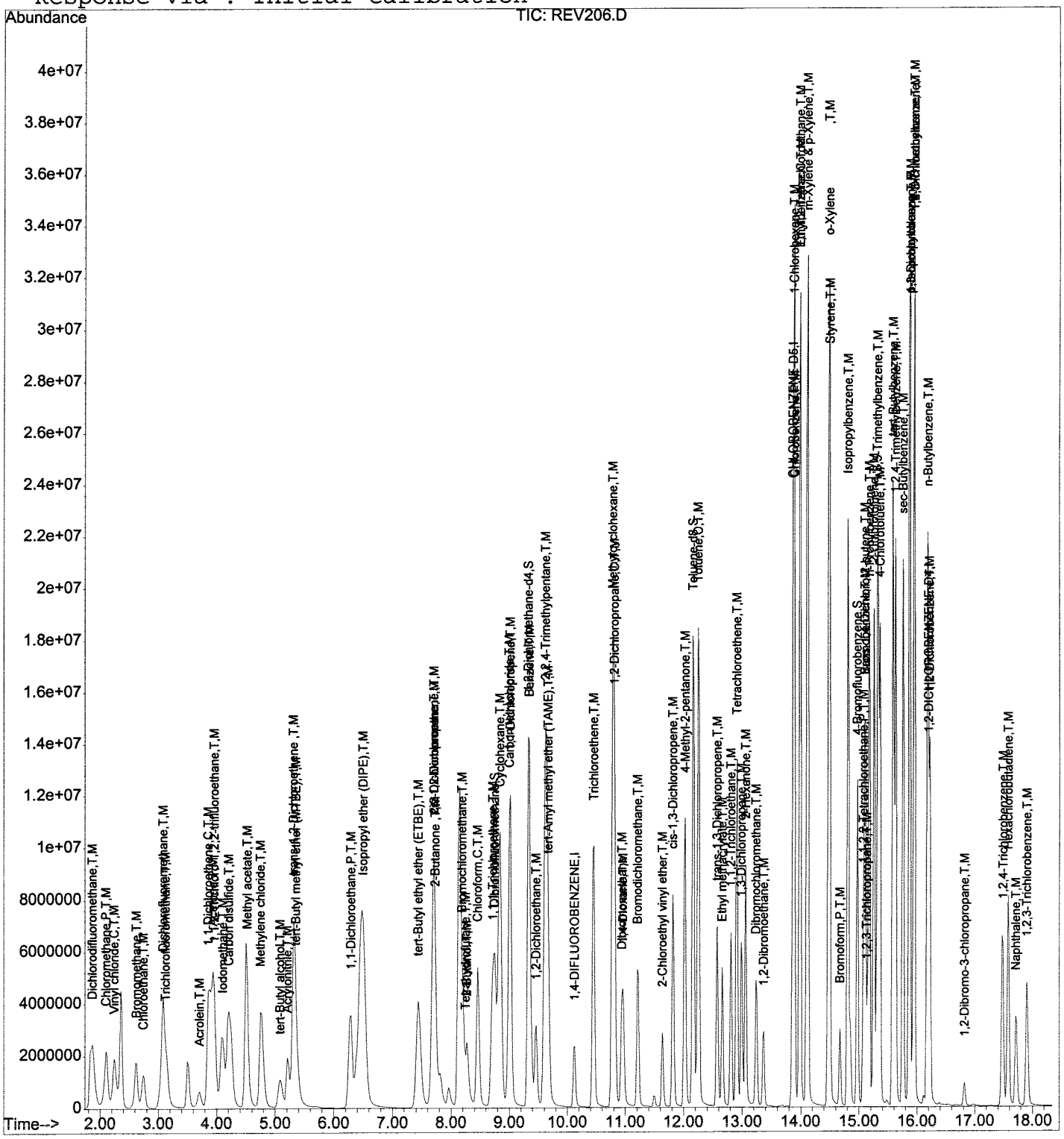
(#) = qualifier out of range (m) = manual integration
REV206.D VO01E13.M Thu May 14 18:36:54 2020

SG 5/18/20

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3172256	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2530086	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	853058	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	9126720	102.22	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1022.20%		
38) 1,2-Dichloroethane-d4	9.33	65	6102438	102.62	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1026.20%		
54) Toluene-d8	12.15	98	23741109	68.94	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 689.40%		
74) 4-Bromofluorobenzene	14.97	95	10693146	104.85	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1048.50%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	9880249	101.24	ug/l	100
4) Chloromethane	2.10	50	12304782	105.54	ug/l	99
5) Vinyl chloride	2.24	62	12041039	105.32	ug/l	100
7) Bromomethane	2.60	94	2873546	37.72	ug/l	97
8) Chloroethane	2.71	64	3704181	58.52	ug/l	98
9) Dichlorofluoromethane	3.06	67	13600393	87.03	ug/l	99
10) Trichlorofluoromethane	3.12	101	10510039	99.24	ug/l	99
11) Acrolein	3.71	56	2788761	506.88	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.93	151	6300937	94.87	ug/l	100
13) Acetone	3.93	43	5353116	496.96	ug/l	100
14) 1,1-Dichloroethene	3.85	61	14588987	94.18	ug/l	99
15) Iodomethane	4.08	142	17152390	97.94	ug/l	100
16) Carbon disulfide	4.21	76	35178512	103.42	ug/l	100
17) Methyl acetate	4.52	43	3295745	116.15	ug/l	99
18) Methylene chloride	4.75	49	12333062	94.45	ug/l	99
19) tert-Butyl alcohol	5.10	59	9299908	3147.83	ug/l	99
20) Acrylonitrile	5.21	53	7646437	579.36	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	14195388	103.88	ug/l	98
22) trans-1,2-Dichloroethene	5.31	61	14713873	96.04	ug/l	98
24) 1,1-Dichloroethane	6.27	63	18508258	99.64	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	32187001	99.51	ug/l	100
26) 2-Butanol	8.29	45	11109580	3089.49	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	22779979	97.56	ug/l	100
28) 2-Butanone	7.73	43	9623231	559.49	ug/l	98
29) cis-1,2-Dichloroethene	7.70	96	10429986	96.98	ug/l	98
30) 2,2-Dichloropropane	7.70	77	10936733	93.14	ug/l	100
31) Tetrahydrofurane	8.25	42	1226824	111.30	ug/l	99

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
32)	Bromochloromethane	8.18	49	7381914	96.28 ug/l		99
33)	Chloroform	8.45	83	15083674	98.34 ug/l		100
35)	1,1,1-Trichloroethane	8.72	97	13185211	107.67 ug/l		95
36)	Cyclohexane	8.84	84	17351991	99.55 ug/l		97
37)	tert-Amyl methyl ether (TA	9.67	73	17949425	99.58 ug/l		99
39)	1,1-Dichloropropene	9.01	110	4973623	95.72 ug/l		99
40)	Carbon tetrachloride	9.00	119	10237967	99.71 ug/l		100
41)	Benzene	9.34	78	27379124	72.19 ug/l		88
42)	1,2-Dichloroethane	9.46	62	7208190	101.20 ug/l		99
43)	2,2,4-Trimethylpentane	9.62	57	36292611	70.84 ug/l		95
44)	Trichloroethene	10.45	130	11234629	96.84 ug/l		100
45)	Methylcyclohexane	10.78	83	19166853	97.97 ug/l		99
46)	1,2-Dichloropropane	10.81	63	9483875	92.66 ug/l		97
47)	1,4-Dioxane	10.95	88	760347	2177.82 ug/l		99
48)	Dibromomethane	10.94	93	4030480	103.82 ug/l		98
49)	Bromodichloromethane	11.21	83	10434033	104.73 ug/l		99
50)	2-Chloroethyl vinyl ether	11.64	63	3770775	119.11 ug/l		99
51)	cis-1,3-Dichloropropene	11.81	75	13724340	107.15 ug/l		99
52)	4-Methyl-2-pentanone	12.02	43	20313007	455.51 ug/l		87
55)	Toluene	12.24	91	24571394	62.01 ug/l		78
56)	Ethyl methacrylate	12.66	69	7939909	112.42 ug/l		99
57)	trans-1,3-Dichloropropene	12.57	75	10635398	113.79 ug/l		100
58)	1,1,2-Trichloroethane	12.81	97	5573989	105.10 ug/l		99
59)	Tetrachloroethene	12.91	164	8564407	98.80 ug/l		99
60)	1,3-Dichloropropane	13.00	76	10664648	104.98 ug/l		99
61)	2-Hexanone	13.06	43	15630741	546.47 ug/l		92
62)	Dibromochloromethane	13.25	129	7448855	113.02 ug/l		99
63)	1,2-Dibromoethane	13.37	107	5918931	111.24 ug/l		99
64)	1-Chlorohexane	13.87	91	14403522	80.30 ug/l		94
65)	Chlorobenzene	13.89	112	17855295	71.78 ug/l		83
66)	1,1,1,2-Tetrachloroethane	13.98	131	7939976	99.67 ug/l		100
67)	Ethylbenzene	13.99	91	20952504	44.67 ug/l		46
68)	m-Xylene & p-Xylene	14.11	91	25586512	76.64 ug/l	#	56
69)	o-Xylene	14.48	91	18864582	58.93 ug/l		68
70)	Styrene	14.49	104	18203697	68.99 ug/l		73
72)	Bromoform	14.67	173	3607425	125.55 ug/l		100
73)	Isopropylbenzene	14.80	105	20898068	46.89 ug/l		57
75)	1,1,2,2-Tetrachloroethane	15.07	83	6520414	105.49 ug/l		100
76)	Bromobenzene	15.10	156	8861957	101.60 ug/l		100
77)	trans-1,4-Dichloro-2-buten	15.10	53	1342756	108.66 ug/l		90
78)	1,2,3-Trichloropropane	15.13	110	1617705	107.99 ug/l		98

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

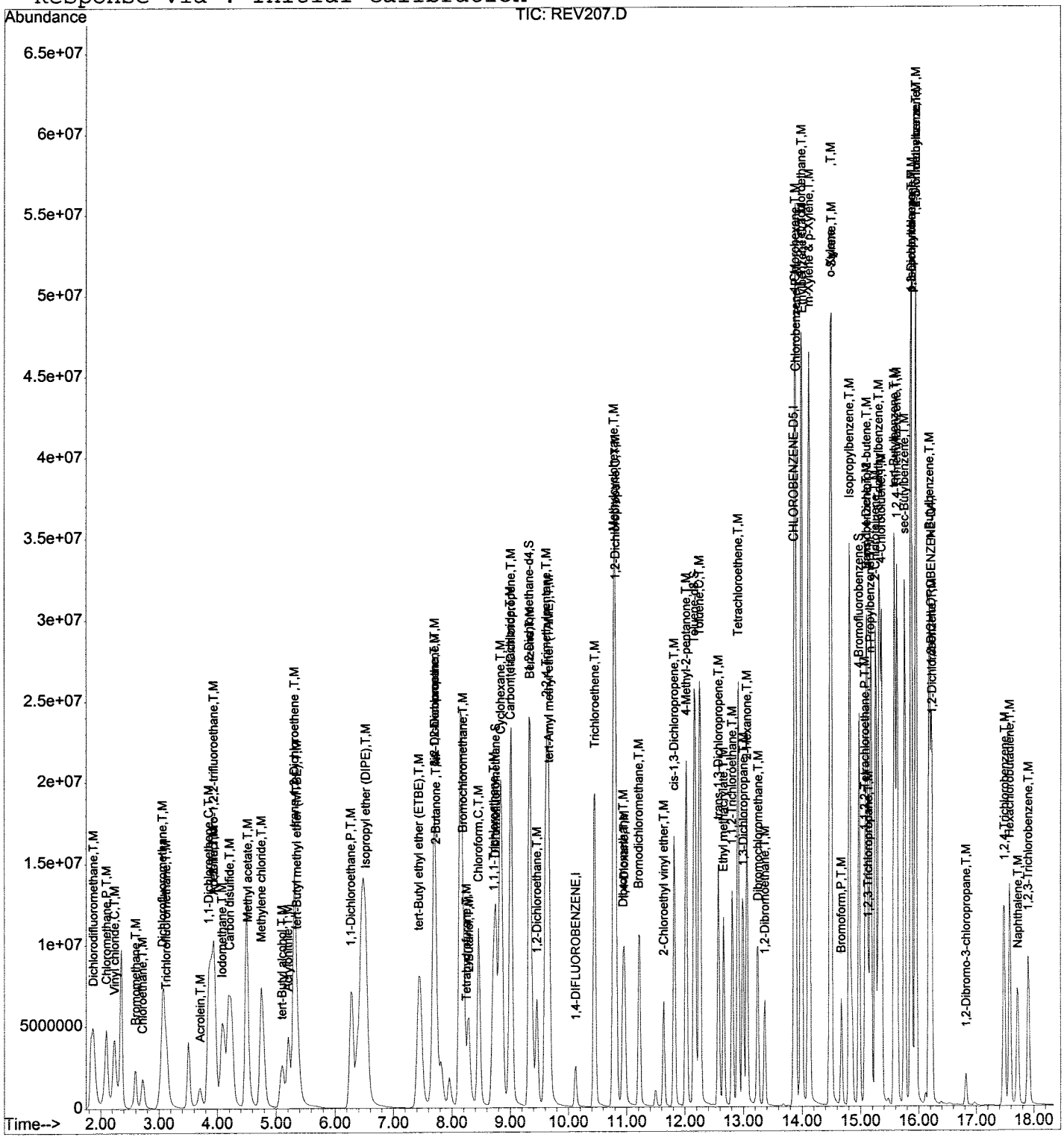
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
79)	n-Propylbenzene	15.16	91	20335903	39.44	ug/l	#	41
80)	1,3,5-Trimethylbenzene	15.31	105	17042971	54.21	ug/l		64
81)	2-Chlorotoluene	15.25	91	15897140	64.25	ug/l		66
82)	4-Chlorotoluene	15.35	91	20195058	68.95	ug/l		78
83)	tert-Butylbenzene	15.57	134	7910197	93.14	ug/l		99
84)	1,2,4-Trimethylbenzene	15.62	105	17915851	58.94	ug/l	#	59
85)	sec-Butylbenzene	15.75	105	20135698	43.00	ug/l		49
86)	p-Isopropyltoluene	15.87	119	18632144	52.20	ug/l		67
87)	1,3-Dichlorobenzene	15.87	146	14803713	91.12	ug/l		95
88)	1,4-Dichlorobenzene	15.94	146	13517560	85.60	ug/l		95
89)	1,2,3-Trimethylbenzene	15.94	105	16966497	60.77	ug/l		72
90)	n-Butylbenzene	16.18	91	18156476	56.02	ug/l		69
91)	1,2-Dichlorobenzene	16.23	146	12888716	96.76	ug/l		99
92)	1,2-Dibromo-3-chloropropan	16.82	157	871457	119.63	ug/l		100
93)	1,2,4-Trichlorobenzene	17.48	180	6892033	105.26	ug/l		99
94)	Hexachlorobutadiene	17.57	225	4518805	90.43	ug/l		99
95)	Naphthalene	17.72	128	9861623	113.81	ug/l		100
96)	1,2,3-Trichlorobenzene	17.90	180	5033779	102.69	ug/l		100

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/13/20 14:04
Spike Amount :10 PPB
CC/CV File :REV210
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/13/20 18:06
HPChem Method :V001E13
Date_Time :05/13/20 19:32

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	3245262	1	1	10.125	10.123	0				
	2	Chlorotrifluoroethylene												
	3	Dichlorodifluoromethane	8.366	-16.3	835274	0.257	0.308	1.872	1.875	5.00				
	4	Chloromethane	9.736	-2.6	1161255	0.358	0.368	2.100	2.103	4.47				
	5	Vinyl chloride	9.364	-6.4	1095208	0.337	0.360	2.242	2.246	6.66				
	6	2-Chloro-1,1,1-trifluoroethane												
	7	Bromomethane	8.136	-18.6	634004	0.195	0.240	2.627	2.633	9.04				
	8	Chloroethane	8.800	-12.0	569814	0.176	0.200	2.755	2.750	7.77				
	9	Dichlorofluoromethane	10.125	1.3	1618676	0.499	0.493	3.081	3.079	6.83				
	10	Trichlorofluoromethane	10.512	5.1	1138894	0.351	0.334	3.143	3.138	5.09				
5	11	Acrolein	52.346	4.7	294623	0.018	0.017	3.706	3.705	6.10				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.147	-8.5	621550	0.192	0.209	3.955	3.953	2.31				
5	13	Acetone	46.579	-6.8	513288	0.032	0.034	3.935	3.940	5.07				
	14	1,1-Dichloroethene	8.849	-11.5	1402362	0.432	0.488	3.851	3.858	3.02				
	15	Iodomethane	10.032	0.3	1797370	0.554	0.552	4.101	4.097	2.01				
	16	Carbon disulfide	10.453	4.5	3637274	1.121	1.072	4.205	4.205	5.38				
	17	Methyl acetate	9.958	-0.4	289063	0.089	0.089	4.539	4.530	10.51				
	18	Methylene chloride	9.434	-5.7	1260186	0.388	0.412	4.768	4.762	6.33				
25	19	tert-Butyl alcohol	259.049	3.6	782946	0.010	0.009	5.080	5.092	7.49				
5	20	Acrylonitrile	47.874	-4.3	646391	0.040	0.042	5.226	5.229	12.27				
	21	tert-Butyl methyl ether (MTBE)	9.158	-8.4	1280291	0.395	0.431	5.351	5.351	3.93				
	22	trans-1,2-Dichloroethene	9.389	-6.1	1471529	0.453	0.483	5.309	5.322	2.38				
	23	Vinyl acetate												
	24	1,1-Dichloroethane	9.718	-2.8	1846659	0.569	0.586	6.288	6.286	2.19				
	25	Isopropyl ether (DIPE)	9.251	-7.5	3061053	0.943	1.020	6.496	6.507	2.05				
25	26	2-Butanol	210.055	-16.0	723313	0.009	0.010	8.288	8.299	22.94	-0.0163	0.0114		0.9993
	27	tert-Butyl ethyl ether (ETBE)	8.820	-11.8	2106808	0.649	0.736	7.434	7.436	7.93				
5	28	2-Butanone	50.815	1.6	894131	0.055	0.054	7.725	7.737	11.88				
	29	cis-1,2-Dichloroethene	9.783	-2.2	1076415	0.332	0.339	7.704	7.710	2.44				
	30	2,2-Dichloropropane	9.719	-2.8	1167450	0.360	0.370	7.704	7.694	3.19				
	31	Tetrahydrofurane	10.374	3.7	116974	0.036	0.035	8.267	8.260	13.54				
	32	Bromochloromethane	10.096	1.0	791869	0.244	0.242	8.183	8.196	2.67				
	33	Chloroform	9.751	-2.5	1530083	0.471	0.484	8.454	8.458	1.90				
	34	Dibromofluoromethane	11.024	10.2	1006917	0.310	0.281	8.762	8.757	7.67				
	35	1,1,1-Trichloroethane	9.405	-6.0	1178265	0.363	0.386	8.718	8.715	6.62				
	36	Cyclohexane	9.738	-2.6	1736396	0.535	0.549	8.836	8.835	4.79				
	37	tert-Amyl methyl ether (TAME)	9.347	-6.5	1723573	0.531	0.568	9.665	9.666	2.47				
	38	1,2-Dichloroethane-d4	11.056	10.6	672576	0.207	0.187	9.325	9.330	7.96				
	39	1,1-Dichloropropene	9.996	-0.0	531339	0.164	0.164	9.014	9.022	5.84				
	40	Carbon tetrachloride	9.974	-0.3	1047641	0.323	0.324	8.999	8.998	4.73				
	41	Benzene	10.521	5.2	4082361	1.258	1.196	9.340	9.340	2.37				
	42	1,2-Dichloroethane	10.128	1.3	738000	0.227	0.225	9.458	9.464	3.25				
	43	2,2,4-Trimethylpentane	9.483	-5.2	4970151	1.532	1.615	9.621	9.613	9.56				
	44	Trichloroethene	10.018	0.2	1188904	0.366	0.366	10.450	10.452	3.40				
	45	Methylcyclohexane	11.361	13.6	2273785	0.701	0.617	10.776	10.778	9.40				
	46	1,2-Dichloropropane	9.981	-0.2	1045127	0.322	0.323	10.806	10.811	4.19				
20	47	1,4-Dioxane	197.868	-1.1	70672	0.001	0.001	10.969	10.963	8.66				
	48	Dibromomethane	10.271	2.7	407944	0.126	0.122	10.939	10.941	5.25				
	49	Bromodichloromethane	10.577	5.8	1078052	0.332	0.314	11.220	11.216	5.97				
	50	2-Chloroethyl vinyl ether	10.164	1.6	329168	0.101	0.100	11.635	11.644	12.71				
	51	cis-1,3-Dichloropropene	10.785	7.8	1413137	0.435	0.404	11.813	11.820	7.53				
5	52	4-Methyl-2-pentanone	53.518	7.0	2441493	0.150	0.141	12.020	12.022	8.42				
	53	CHLOROBENZENE-D5	10.000	0	2655474	1	1	13.856	13.858	0				
	54	Toluene-d8	10.999	10.0	3975687	1.497	1.361	12.153	12.161	5.54				
	55	Toluene	9.910	-0.9	4121322	1.552	1.566	12.242	12.249	5.39				
	56	Ethyl methacrylate	10.474	4.7	776375	0.292	0.279	12.657	12.665	7.24				
	57	trans-1,3-Dichloropropene	10.380	3.8	1018200	0.383	0.369	12.568	12.576	8.70				
	58	1,1,2-Trichloroethane	10.256	2.6	570900	0.215	0.210	12.805	12.811	2.49				
	59	Tetrachloroethene	10.022	0.2	911745	0.343	0.343	12.909	12.910	2.48				
	60	1,3-Dichloropropane	10.449	4.5	1114078	0.420	0.402	12.997	12.996	3.31				
5	61	2-Hexanone	53.644	7.3	1610450	0.121	0.113	13.057	13.064	13.31				
	62	Dibromochloromethane	10.571	5.7	731261	0.275	0.260	13.249	13.248	9.43				
	63	1,2-Dibromoethane	10.453	4.5	583740	0.220	0.210	13.368	13.371	8.30				
	64	1-Chlorohexane	9.612	-3.9	1809636	0.681	0.709	13.871	13.873	2.00				
	65	Chlorobenzene	10.194	1.9	2661607	1.002	0.983	13.886	13.888	2.60				
	66	1,1,1,2-Tetrachloroethane	10.188	1.9	851850	0.321	0.315	13.975	13.977	5.03				
	67	Ethylbenzene	9.552	-4.5	4702397	1.771	1.854	13.975	13.983	3.39				
2	68	m-Xylene & p-Xylene	19.973	-0.1	6998409	1.318	1.319	14.108	14.110	4.89				
	69	o-Xylene	10.064	0.6	3381380	1.273	1.265	14.478	14.480	5.32				
	70	Styrene	10.357	3.6	2868256	1.080	1.043	14.493	14.498	4.25				
	71	1,2-DICHLOROBENZENE-D4	10.000	0	957151	1	1	16.211	16.211	0				
	72	Bromoform	10.870	8.7	350438	0.366	0.337	14.671	14.677	12.81				
	73	Isopropylbenzene	9.458	-5.4	4730111	4.942	5.225	14.804	14.806	2.85				
	74	4-Bromofluorobenzene	10.785	7.9	1234188	1.289	1.196	14.967	14.972	8.21				
	75	1,1,2,2-Tetrachloroethane	9.945	-0.5	689734	0.721	0.725	15.071	15.072	4.41				
	76	Bromobenzene	10.179	1.8	996200	1.041	1.022	15.100	15.104	4.15				
	77	trans-1,4-Dichloro-2-butene	9.923	-0.8	137577	0.144	0.145	15.100	15.106	5.11				
	78	1,2,3-Trichloropropane	10.537	5.4	177107	0.185	0.176	15.130	15.132	6.36				
	79	n-Propylbenzene	9.908	-0.9	5731622	5.988	6.044	15.174	15.175	5.63				
	80	1,3,5-Trimethylbenzene	9.858	-1.4	3477829	3.634	3.686	15.308	15.314	5.94				
	81	2-Chlorotoluene	9.875	-1.2	2741409	2.864	2.900	15.248	15.250	5.87				
	82	4-Chlorotoluene	9.872	-1.3	3244216	3.389	3.434	15.352	15.356	4.90				
	83	tert-Butylbenzene	9.674	-3.3	921806	0.963	0.996	15.574	15.576	4.73				
	84	1,2,4-Trimethylbenzene	10.181	1.8	3472310	3.628	3.563	15.619	15.624	5.65				
	85	sec-Butylbenzene	9.851	-1.5	5175831	5.408	5.490	15.752	15.754	4.58				
	86	p-Isopropyltoluene	9.866	-1.3	3951312	4.128	4.184	15.870	15.872	3.86				
	87	1,3-Dichlorobenzene	10.138	1.4	1848134	1.931	1.905	15.870	15.872	5.27				
	88	1,4-Dichlorobenzene	9.759	-2.4	1729312	1.807	1.851	15.944	15.949	5.83				
	89	1,2,3-Trimethylbenzene	9.252	-7.5	2898244	3.028	3.273	15.944	15.946	4.63				
	90	n-Butylbenzene	10.081	0.8	3665738	3.830	3.799	16.181	16.183	6.84				
	91	1,2-Dichlorobenzene	9.849	-1.5	1471950	1.538	1.561	16.226	16.226	2.86				
	92	1,2-Dibromo-3-chloropropane	10.061	0.6	82234	0.086	0.085	16.818	16.822	14.58				
	93	1,2,4-Trichlorobenzene	10.156	1.6	746168	0.780	0.768	17.485	17.489	8.26				
	94	Hexachlorobutadiene	9.641	-3.6	540537	0.565	0.586	17.588	17.577	6.55				
	95	Naphthalene	10.322	3.2	1003542	1.048	1.016	17.721	17.726	9.03				
	96	1,2,3-Trichlorobenzene	9.906	-0.9	544806	0.569	0.575	17.914	17.911	6.00				

Spike Amount = Nominal Amount * M

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	0.00
3	T,M	Dichlorodifluoromethane	10.000	8.366	16.3	85	0.00
4	P,T,M	Chloromethane	10.000	9.736	2.6	98	0.00
5	C,T,M	Vinyl chloride	10.000	9.364	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	0.00
7	T,M	Bromomethane	10.000	8.136	18.6	77	0.00
8	T,M	Chloroethane	10.000	8.800	12.0	85	0.00
9	T,M	Dichlorofluoromethane	10.000	10.125	-1.3	104	0.00
10	T,M	Trichlorofluoromethane	10.000	10.512	-5.1	103	0.00
11	T,M	Acrolein	50.000	52.346	-4.7	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.147	8.5	93	0.00
13	T,M	Acetone	50.000	46.579	6.8	95	0.00
14	C,T,M	1,1-Dichloroethene	10.000	8.849	11.5	89	0.00
15	T,M	Iodomethane	10.000	10.032	-0.3	102	0.00
16	T,M	Carbon disulfide	10.000	10.453	-4.5	104	0.00
17	T,M	Methyl acetate	10.000	9.958	0.4	97	0.02
18	T,M	Methylene chloride	10.000	9.434	5.7	98	0.00
19	T,M	tert-Butyl alcohol	250.000	259.049	-3.6	98	0.00
20	T,M	Acrylonitrile	50.000	47.874	4.3	98	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.158	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.389	6.1	95	0.00
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.718	2.8	98	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	9.251	7.5	93	0.00
26	T,M	2-Butanol	250.000	210.055	16.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	8.820	11.8	92	0.00
28	T,M	2-Butanone	50.000	50.815	-1.6	100	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	9.783	2.2	100	0.00
30	T,M	2,2-Dichloropropane	10.000	9.719	2.8	100	0.02
31	T,M	Tetrahydrofurane	10.000	10.374	-3.7	98	0.00
32	T,M	Bromochloromethane	10.000	10.096	-1.0	101	-0.02
33	C,T,M	Chloroform	10.000	9.751	2.5	99	-0.02
34	S	Dibromofluoromethane	10.000	11.024	-10.2	101	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.405	6.0	98	0.00
36	T,M	Cyclohexane	10.000	9.738	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.347	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	10.000	11.056	-10.6	102	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.996	0.0	99	-0.01
40	T,M	Carbon tetrachloride	10.000	9.974	0.3	99	0.00
41	T,M	Benzene	10.000	10.521	-5.2	109	0.00

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.128	-1.3	101	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	9.483	5.2	91	0.00
44	T,M	Trichloroethene	10.000	10.018	-0.2	101	-0.01
45	T,M	Methylcyclohexane	10.000	11.361	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.981	0.2	99	-0.01
47	T,M	1,4-Dioxane	200.000	197.868	1.1	98	0.00
48	T,M	Dibromomethane	10.000	10.271	-2.7	100	-0.01
49	T,M	Bromodichloromethane	10.000	10.577	-5.8	104	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	10.164	-1.6	102	-0.01
51	T,M	cis-1,3-Dichloropropene	10.000	10.785	-7.9	106	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	53.518	-7.0	100	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	-0.01
54	S	Toluene-d8	10.000	10.999	-10.0	103	-0.01
55	C,T,M	Toluene	10.000	9.910	0.9	99	-0.01
56	T,M	Ethyl methacrylate	10.000	10.473	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	10.380	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.256	-2.6	100	-0.01
59	T,M	Tetrachloroethene	10.000	10.022	-0.2	100	-0.01
60	T,M	1,3-Dichloropropane	10.000	10.449	-4.5	101	-0.01
61	T,M	2-Hexanone	50.000	53.644	-7.3	99	-0.01
62	T,M	Dibromochloromethane	10.000	10.571	-5.7	100	-0.01
63	T,M	1,2-Dibromoethane	10.000	10.453	-4.5	98	-0.01
64	T,M	1-Chlorohexane	10.000	9.612	3.9	97	-0.01
65	P,M	Chlorobenzene	10.000	10.194	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.188	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	10.000	9.552	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	19.974	0.1	95	-0.01
69	T,M	o-Xylene	10.000	10.064	-0.6	98	-0.01
70	T,M	Styrene	10.000	10.357	-3.6	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	102	-0.01
72	P,T,M	Bromoform	10.000	10.870	-8.7	104	-0.01
73	T,M	Isopropylbenzene	10.000	9.458	5.4	98	-0.01
74	S	4-Bromofluorobenzene	10.000	10.785	-7.9	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.945	0.5	98	-0.01
76	T,M	Bromobenzene	10.000	10.179	-1.8	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.923	0.8	106	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.537	-5.4	103	-0.01
79	T,M	n-Propylbenzene	10.000	9.908	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	9.858	1.4	99	-0.01

(#) = Out of Range

5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	9.875	1.3	97	-0.01
82	T,M	4-Chlorotoluene	10.000	9.872	1.3	100	-0.01
83	T,M	tert-Butylbenzene	10.000	9.674	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.181	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	10.000	9.850	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.867	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	10.138	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.760	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	9.252	7.5	94	-0.01
90	T,M	n-Butylbenzene	10.000	10.081	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.849	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	10.061	-0.6	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.156	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.641	3.6	98	-0.01
95	T,M	Naphthalene	10.000	10.322	-3.2	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	9.906	0.9	100	-0.01

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.108	0.0	0#	0.00
3	T,M	Dichlorodifluoromethane	0.308	0.257	16.6	85	0.00
4	P,T,M	Chloromethane	0.368	0.358	2.7	98	0.00
5	C,T,M	Vinyl chloride	0.360	0.337	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.295	0.0	0#	0.00
7	T,M	Bromomethane	0.240	0.195	18.7	77	0.00
8	T,M	Chloroethane	0.200	0.176	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.493	0.499	-1.2	104	0.00
10	T,M	Trichlorofluoromethane	0.334	0.351	-5.1	103	0.00
11	T,M	Acrolein	0.017	0.018	-5.9	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.192	8.1	93	0.00
13	T,M	Acetone	0.034	0.032	5.9	95	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.432	11.5	89	0.00
15	T,M	Iodomethane	0.552	0.554	-0.4	102	0.00
16	T,M	Carbon disulfide	1.072	1.121	-4.6	104	0.00
17	T,M	Methyl acetate	0.089	0.089	0.0	97	0.02
18	T,M	Methylene chloride	0.412	0.388	5.8	98	0.00
19	T,M	tert-Butyl alcohol	0.009	0.010	-11.1	98	0.00
20	T,M	Acrylonitrile	0.042	0.040	4.8	98	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.395	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.453	6.2	95	0.00
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	-0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.569	2.9	98	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	0.943	7.5	93	0.00
26	T,M	2-Butanol	0.010	0.009	10.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.649	11.8	92	0.00
28	T,M	2-Butanone	0.054	0.055	-1.9	100	0.00
29	T,M	cis-1,2-Dichloroethene	0.339	0.332	2.1	100	0.00
30	T,M	2,2-Dichloropropane	0.370	0.360	2.7	100	0.02
31	T,M	Tetrahydrofurane	0.035	0.036	-2.9	98	0.00
32	T,M	Bromochloromethane	0.242	0.244	-0.8	101	-0.02
33	C,T,M	Chloroform	0.484	0.471	2.7	99	-0.02
34	S	Dibromofluoromethane	0.281	0.310	-10.3	101	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.363	6.0	98	0.00
36	T,M	Cyclohexane	0.549	0.535	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.531	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.207	-10.7	102	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.164	0.0	99	-0.01
40	T,M	Carbon tetrachloride	0.324	0.323	0.3	99	0.00
41	T,M	Benzene	1.196	1.258	-5.2	109	0.00

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.227	-0.9	101	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	1.532	5.1	91	0.00
44	T,M	Trichloroethene	0.366	0.366	0.0	101	-0.01
45	T,M	Methylcyclohexane	0.617	0.701	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.322	0.3	99	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	98	0.00
48	T,M	Dibromomethane	0.122	0.126	-3.3	100	-0.01
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	104	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.101	-1.0	102	-0.01
51	T,M	cis-1,3-Dichloropropene	0.404	0.435	-7.7	106	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.150	-6.4	100	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	99	-0.01
54	S	Toluene-d8	1.361	1.497	-10.0	103	-0.01
55	C,T,M	Toluene	1.566	1.552	0.9	99	-0.01
56	T,M	Ethyl methacrylate	0.279	0.292	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	0.369	0.383	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	0.210	0.215	-2.4	100	-0.01
59	T,M	Tetrachloroethene	0.343	0.343	0.0	100	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.420	-4.5	101	-0.01
61	T,M	2-Hexanone	0.113	0.121	-7.1	99	-0.01
62	T,M	Dibromochloromethane	0.260	0.275	-5.8	100	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.220	-4.8	98	-0.01
64	T,M	1-Chlorohexane	0.709	0.681	3.9	97	-0.01
65	P,M	Chlorobenzene	0.983	1.002	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.321	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	1.854	1.771	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.318	0.1	95	-0.01
69	T,M	o-Xylene	1.265	1.273	-0.6	98	-0.01
70	T,M	Styrene	1.043	1.080	-3.5	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	102	-0.01
72	P,T,M	Bromoform	0.337	0.366	-8.6	104	-0.01
73	T,M	Isopropylbenzene	5.225	4.942	5.4	98	-0.01
74	S	4-Bromofluorobenzene	1.196	1.289	-7.8	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.721	0.6	98	-0.01
76	T,M	Bromobenzene	1.022	1.041	-1.9	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.144	0.7	106	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.185	-5.1	103	-0.01
79	T,M	n-Propylbenzene	6.044	5.988	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.634	1.4	99	-0.01

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.864	1.2	97	-0.01
82	T,M	4-Chlorotoluene	3.434	3.389	1.3	100	-0.01
83	T,M	tert-Butylbenzene	0.996	0.963	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.628	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	5.490	5.408	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.128	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.931	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.807	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.028	7.5	94	-0.01
90	T,M	n-Butylbenzene	3.799	3.830	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.538	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.086	-1.2	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.780	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.565	3.6	98	-0.01
95	T,M	Naphthalene	1.016	1.048	-3.1	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.569	1.0	100	-0.01

SUS 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3245262	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2655474	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	957151	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1006917	11.02	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.20%			
38) 1,2-Dichloroethane-d4	9.32	65	672576	11.06	ug/l	-0.01
Spiked Amount 10.000			Recovery = 110.60%			
54) Toluene-d8	12.15	98	3975687	11.00	ug/l	-0.01
Spiked Amount 10.000			Recovery = 110.00%			
74) 4-Bromofluorobenzene	14.97	95	1234188	10.79	ug/l	-0.01
Spiked Amount 10.000			Recovery = 107.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	835274	8.37	ug/l	100
4) Chloromethane	2.10	50	1161255	9.74	ug/l	100
5) Vinyl chloride	2.24	62	1095208	9.36	ug/l	99
7) Bromomethane	2.63	94	634004	8.14	ug/l	100
8) Chloroethane	2.75	64	569814	8.80	ug/l	99
9) Dichlorofluoromethane	3.08	67	1618676	10.13	ug/l	100
10) Trichlorofluoromethane	3.14	101	1138894	10.51	ug/l	100
11) Acrolein	3.71	56	294623	52.35	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	621550	9.15	ug/l	99
13) Acetone	3.93	43	513288	46.58	ug/l	99
14) 1,1-Dichloroethene	3.85	61	1402362	8.85	ug/l	99
15) Iodomethane	4.10	142	1797370	10.03	ug/l	100
16) Carbon disulfide	4.21	76	3637274	10.45	ug/l	100
17) Methyl acetate	4.54	43	289063	9.96	ug/l	99
18) Methylene chloride	4.77	49	1260186	9.43	ug/l	99
19) tert-Butyl alcohol	5.08	59	782946	259.05	ug/l	100
20) Acrylonitrile	5.23	53	646391	47.87	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1280291	9.16	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1471529	9.39	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1846659	9.72	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	3061053	9.25	ug/l	100
26) 2-Butanol	8.29	45	723313	210.06	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2106808	8.82	ug/l	99
28) 2-Butanone	7.73	43	894131	50.81	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	1076415	9.78	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1167450	9.72	ug/l	100
31) Tetrahydrofurane	8.27	42	116974	10.37	ug/l	97

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	791869	10.10 ug/l	98
33) Chloroform	8.45	83	1530083	9.75 ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	1178265	9.40 ug/l	99
36) Cyclohexane	8.84	84	1736396	9.74 ug/l	99
37) tert-Amyl methyl ether (TA	9.67	73	1723573	9.35 ug/l	100
39) 1,1-Dichloropropene	9.01	110	531339	10.00 ug/l	99
40) Carbon tetrachloride	9.00	119	1047641	9.97 ug/l	100
41) Benzene	9.34	78	4082361	10.52 ug/l	100
42) 1,2-Dichloroethane	9.46	62	738000	10.13 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	4970151	9.48 ug/l	100
44) Trichloroethene	10.45	130	1188904	10.02 ug/l	100
45) Methylcyclohexane	10.78	83	2273785	11.36 ug/l	98
46) 1,2-Dichloropropane	10.81	63	1045127	9.98 ug/l	100
47) 1,4-Dioxane	10.97	88	70672	197.87 ug/l	99
48) Dibromomethane	10.94	93	407944	10.27 ug/l	99
49) Bromodichloromethane	11.22	83	1078052	10.58 ug/l	100
50) 2-Chloroethyl vinyl ether	11.64	63	329168	10.16 ug/l	98
51) cis-1,3-Dichloropropene	11.81	75	1413137	10.78 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	2441493	53.52 ug/l	100
55) Toluene	12.24	91	4121322	9.91 ug/l	100
56) Ethyl methacrylate	12.66	69	776375	10.47 ug/l	98
57) trans-1,3-Dichloropropene	12.57	75	1018200	10.38 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	570900	10.26 ug/l	100
59) Tetrachloroethene	12.91	164	911745	10.02 ug/l	99
60) 1,3-Dichloropropane	13.00	76	1114078	10.45 ug/l	99
61) 2-Hexanone	13.06	43	1610450	53.64 ug/l	100
62) Dibromochloromethane	13.25	129	731261	10.57 ug/l	100
63) 1,2-Dibromoethane	13.37	107	583740	10.45 ug/l	99
64) 1-Chlorohexane	13.87	91	1809636	9.61 ug/l	99
65) Chlorobenzene	13.89	112	2661607	10.19 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	851850	10.19 ug/l	100
67) Ethylbenzene	13.97	91	4702397	9.55 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	6998409	19.97 ug/l	100
69) o-Xylene	14.48	91	3381380	10.06 ug/l	100
70) Styrene	14.49	104	2868256	10.36 ug/l	100
72) Bromoform	14.67	173	350438	10.87 ug/l	99
73) Isopropylbenzene	14.80	105	4730111	9.46 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	689734	9.95 ug/l	99
76) Bromobenzene	15.10	156	996200	10.18 ug/l	99
77) trans-1,4-Dichloro-2-buten	15.10	53	137577	9.92 ug/l	91
78) 1,2,3-Trichloropropane	15.13	110	177107	10.54 ug/l	96

(#) = qualifier out of range (m) = manual integration

REV210.D VO01E13.M Thu May 14 18:32:31 2020

SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	5731622	9.91	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	3477829	9.86	ug/l	100
81)	2-Chlorotoluene	15.25	91	2741409	9.88	ug/l	99
82)	4-Chlorotoluene	15.35	91	3244216	9.87	ug/l	99
83)	tert-Butylbenzene	15.57	134	921806	9.67	ug/l	74
84)	1,2,4-Trimethylbenzene	15.62	105	3472310	10.18	ug/l	99
85)	sec-Butylbenzene	15.75	105	5175831	9.85	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3951312	9.87	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1848134	10.14	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	1729312	9.76	ug/l	100
89)	1,2,3-Trimethylbenzene	15.94	105	2898244	9.25	ug/l	100
90)	n-Butylbenzene	16.18	91	3665738	10.08	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1471950	9.85	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	82234	10.06	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	746168	10.16	ug/l	100
94)	Hexachlorobutadiene	17.59	225	540537	9.64	ug/l	99
95)	Naphthalene	17.72	128	1003542	10.32	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	544806	9.91	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

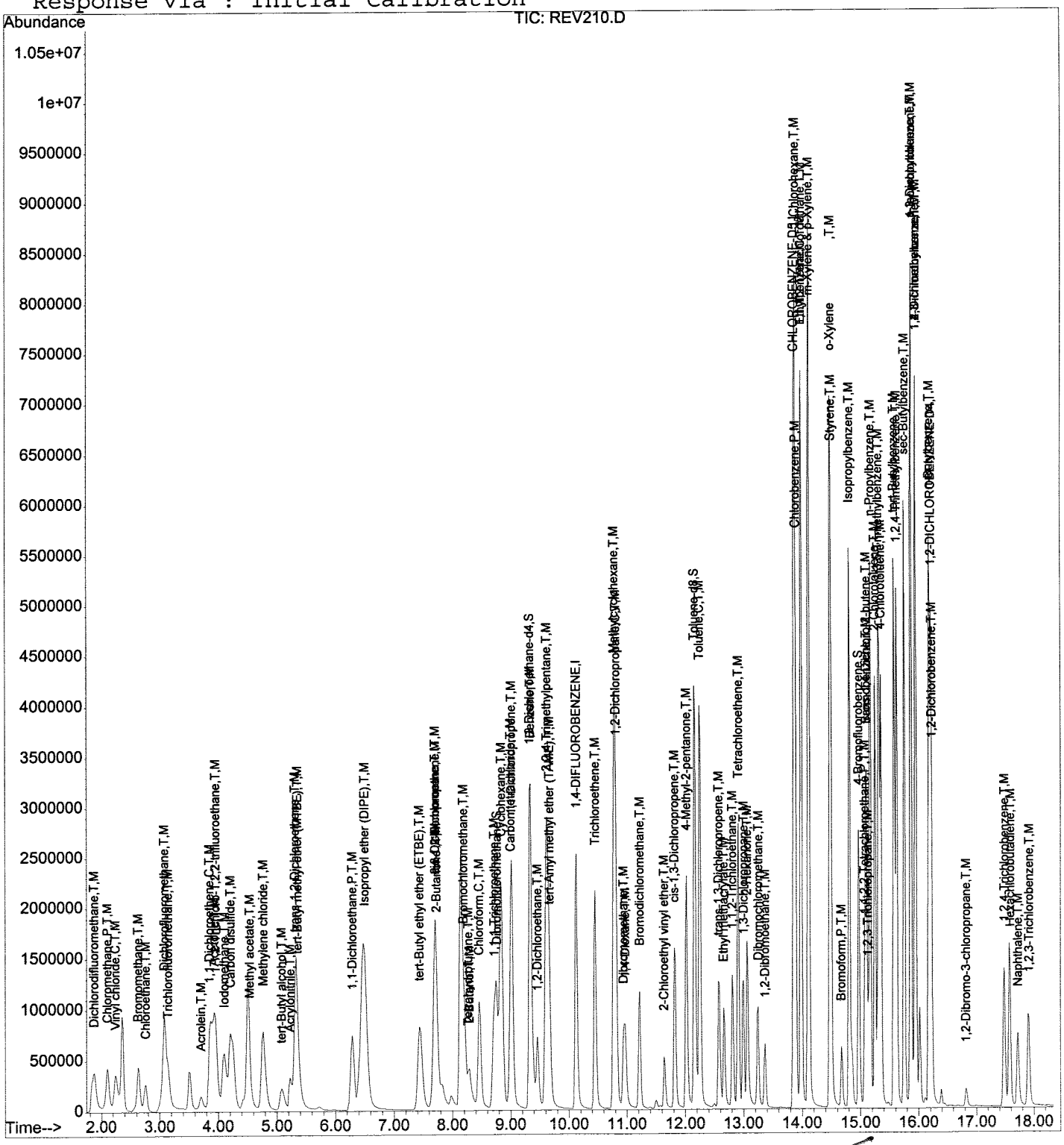
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV212 BFB Injection Date : 05/14/20
Instrument ID: 01 BFB Injection Time : 16:40
GC Column:RXI-624SILMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.28
75	30.0 - 60.0% of mass 95	42.92
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.98
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	81.50
175	5.0 - 9.0% of mass 174	5.64(6.9)1
176	95.0 - 101.0% of mass 174	77.50(95.1)1
177	5.0 - 9.0% of mass 176	5.13(6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD01	V001E141	REV213	05/14/20	17:31
2	VSTD02	V001E142	REV214	05/14/20	17:59
3	VSTD05	V001E143	REV215	05/14/20	18:26
4	VSTD010	V001E144	REV216	05/14/20	18:53
5	VSTD020	V001E145	REV217	05/14/20	19:20
6	VSTD030	V001E146	REV218	05/14/20	19:48
7	VSTD010	IV001E1401	REV219	05/14/20	20:17

FORM V VOA OLM02.0

SU 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :VO01E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	0.165	0.239	0.259	0.305	0.356	0.350	0.279	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

Ave_%RSD : 26.1 Max_%RSD : 26.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
2	Vinyl acetate	-0.02369	0.35322	0.9980

SM
5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :V001E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	114	101	87	93	104	101	6.7	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

For 8260 C

SM

5/18/20

Compound List Report 01

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
Total Cpnds : 4

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Vinyl acetate	43	6.41	0.633	L	1	A	B
3	I	CHLOROBENZENE-D5	117	13.86	1.000	A	2	A	B
4	I	1,2-DICHLOROBENZENE-D4	152	16.21	1.000	A	1	A	B

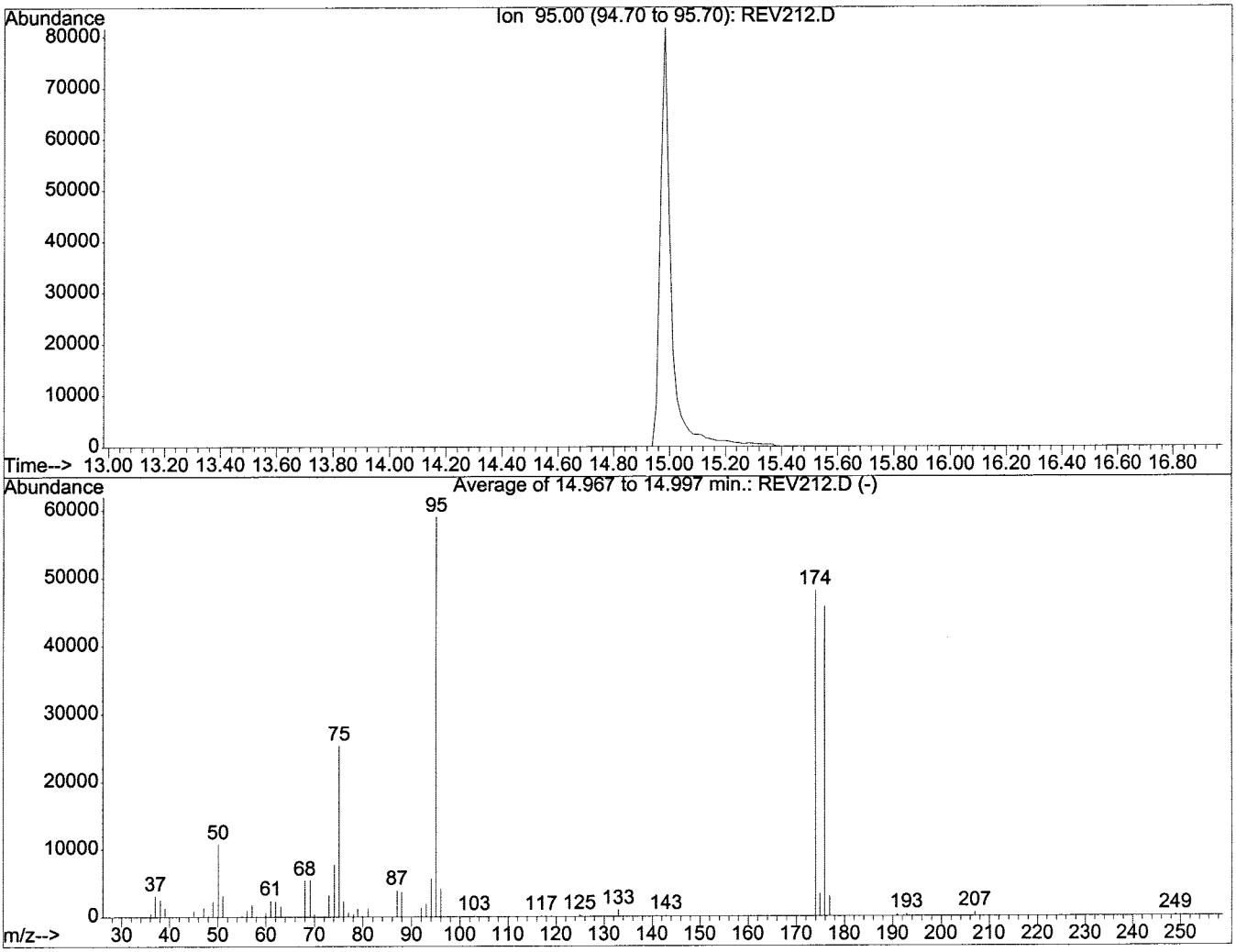
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E14.M Fri May 15 11:55:17 2020

SH
5/18/20

Data File : D:\HPCHEM\1\DATA\20E14\REV212.D
Acq On : 14 May 2020 4:40 pm
Sample : BFB01E10
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 782

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	10796	PASS
75	95	30	60	42.9	25347	PASS
95	95	100	100	100.0	59053	PASS
96	95	5	9	7.0	4122	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.5	48131	PASS
175	174	5	9	6.9	3328	PASS
176	174	95	101	95.1	45768	PASS
177	176	5	9	6.6	3031	PASS

SU 5/18/20

REV212.D VO01E14.M Fri May 15 11:35:24 2020

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3326579	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2719976	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	925504	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.48	43	54933	1.14	ug/l	97

SM
5/18/20

(#) = qualifier out of range (m) = manual integration
REV213.D VO01E14.M Fri May 15 11:52:36 2020 Page 1

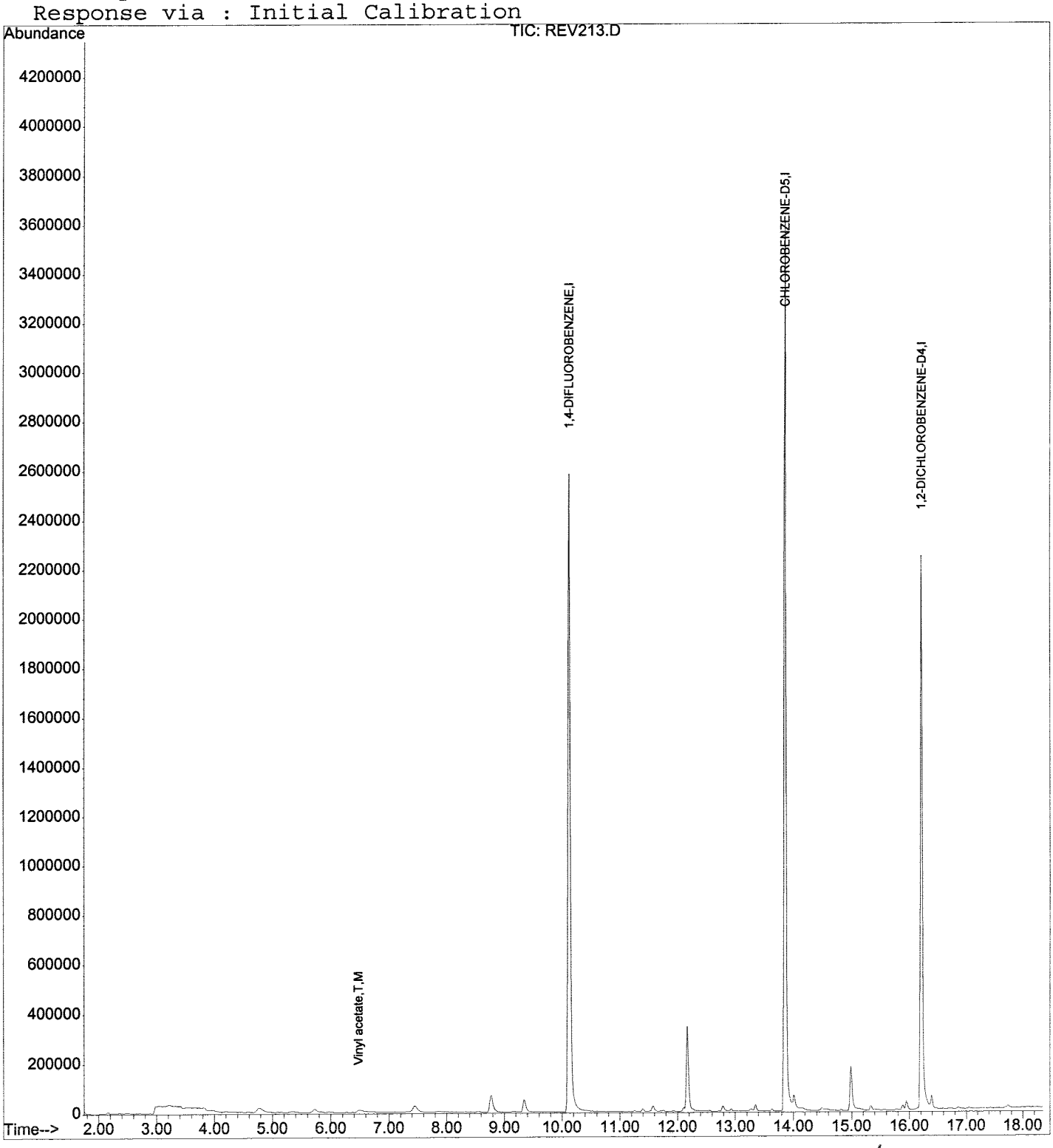
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3246029	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2751412	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	957167	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.45	43	154840	2.02	ug/l	100

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

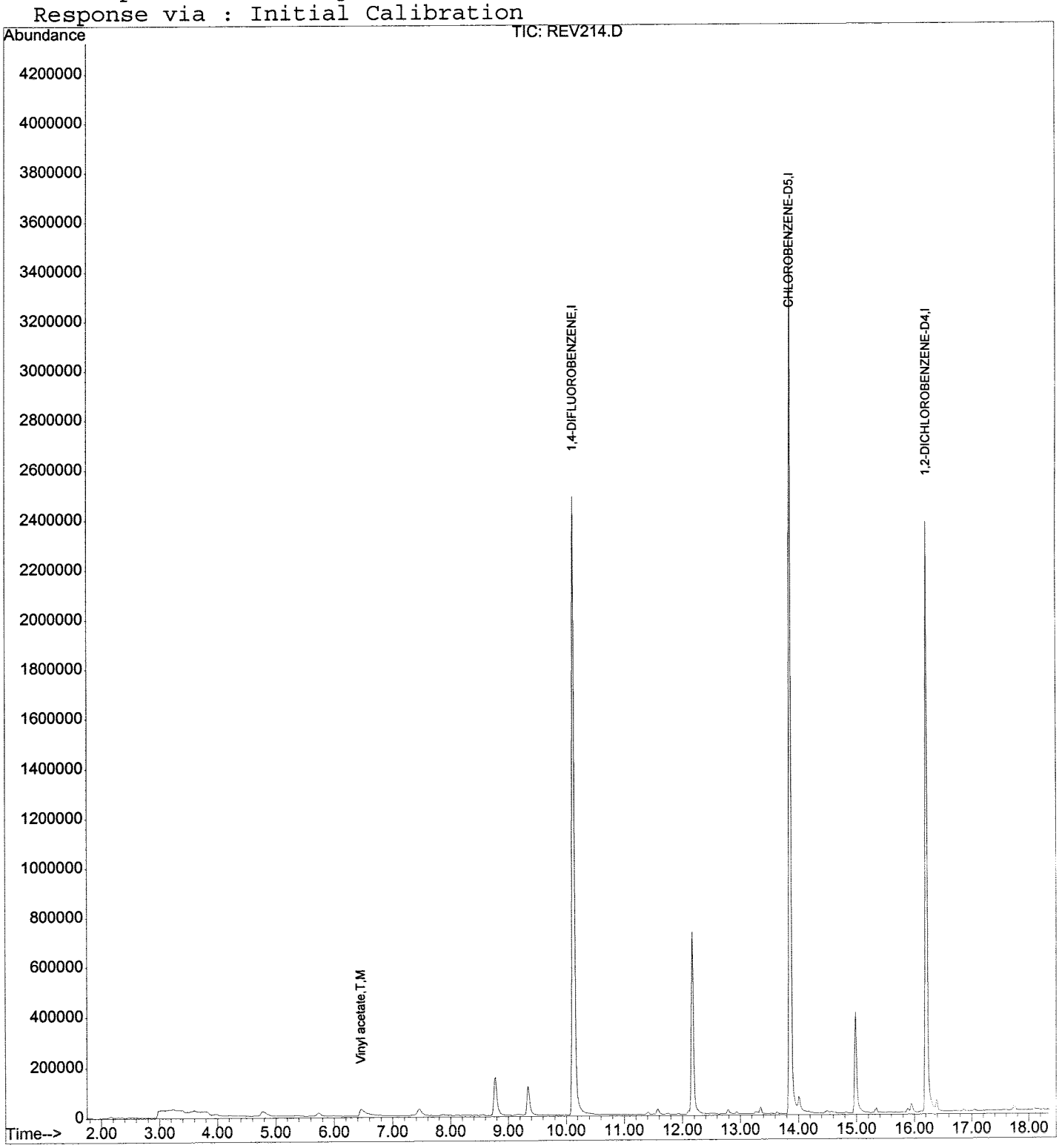
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D
Acq On : 14 May 2020 6:26 pm
Sample : VO01E143
Misc : 5.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 4
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3257045	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2685056	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	920046	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.43	43	422325	4.34	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

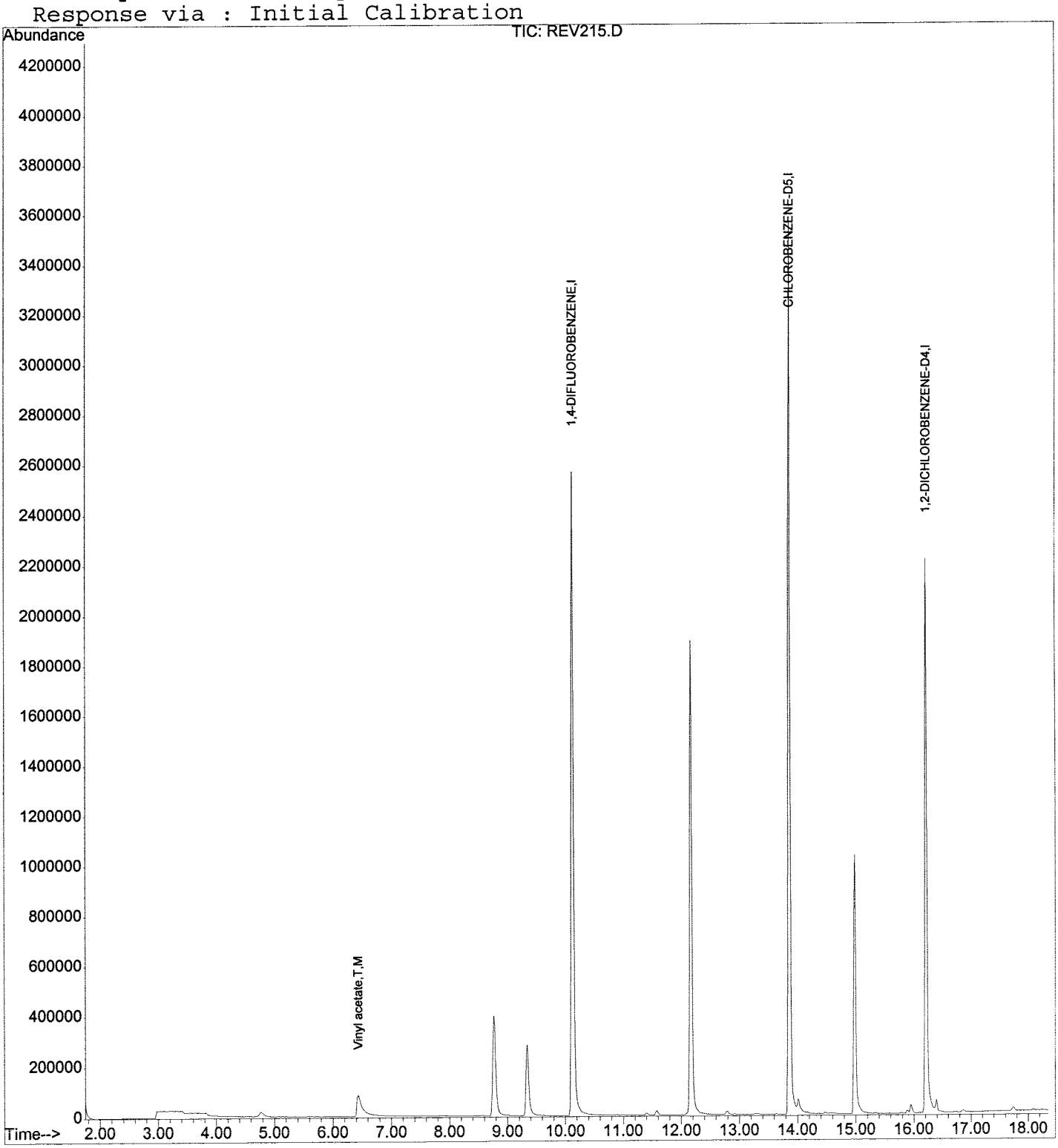
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D
Acq On : 14 May 2020 6:26 pm
Sample : VO01E143
Misc : 5.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 4
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3148628	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2661281	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	903830	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.41	43	958998	9.29	ug/l	100

(#) = qualifier out of range (m) = manual integration

REV216.D VO01E14.M Fri May 15 11:52:20 2020

SA 5/18/20

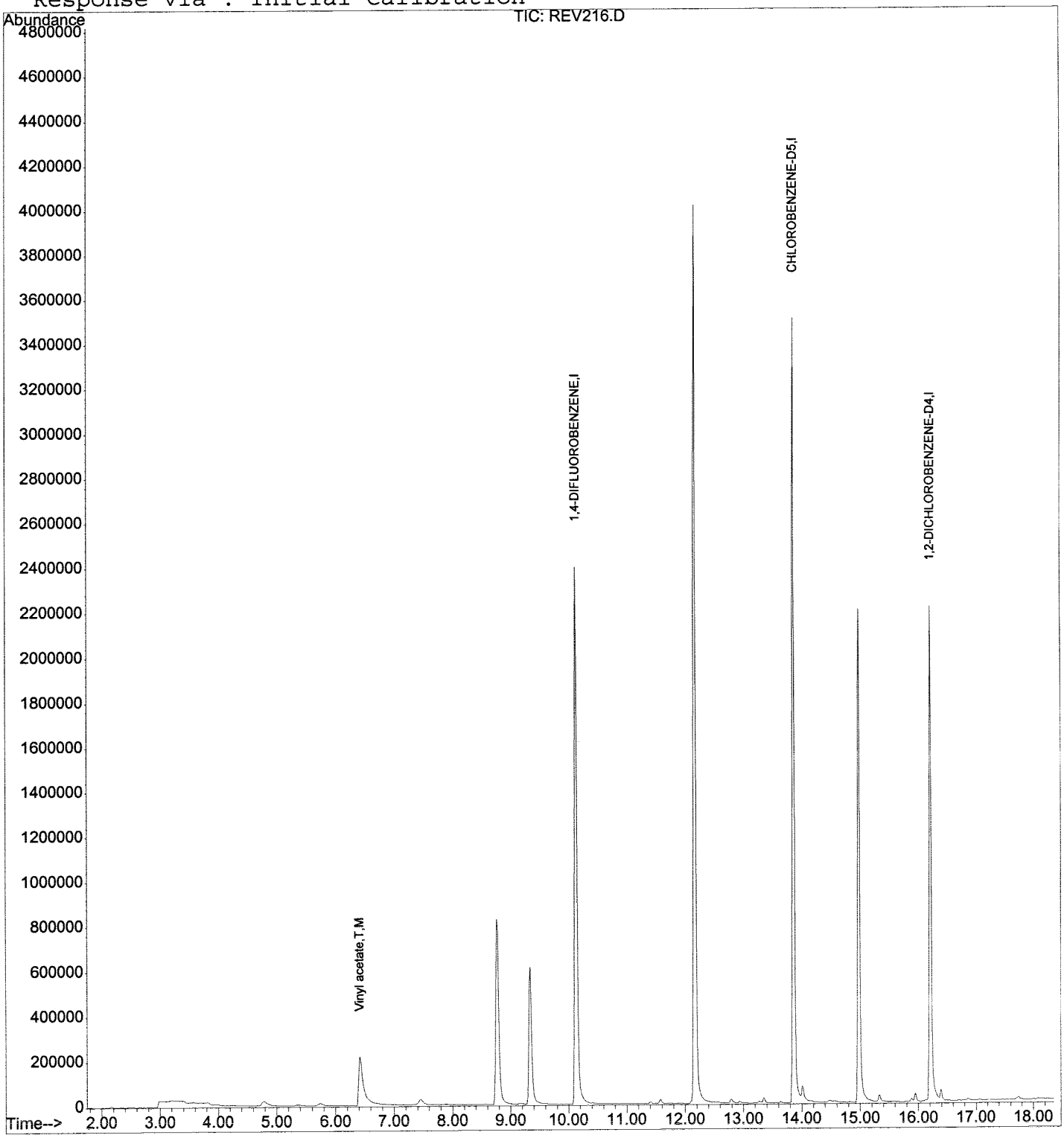
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3034475	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2602560	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	894519	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.39	43	2157955	20.80	ug/l	100

Su 5/18/20

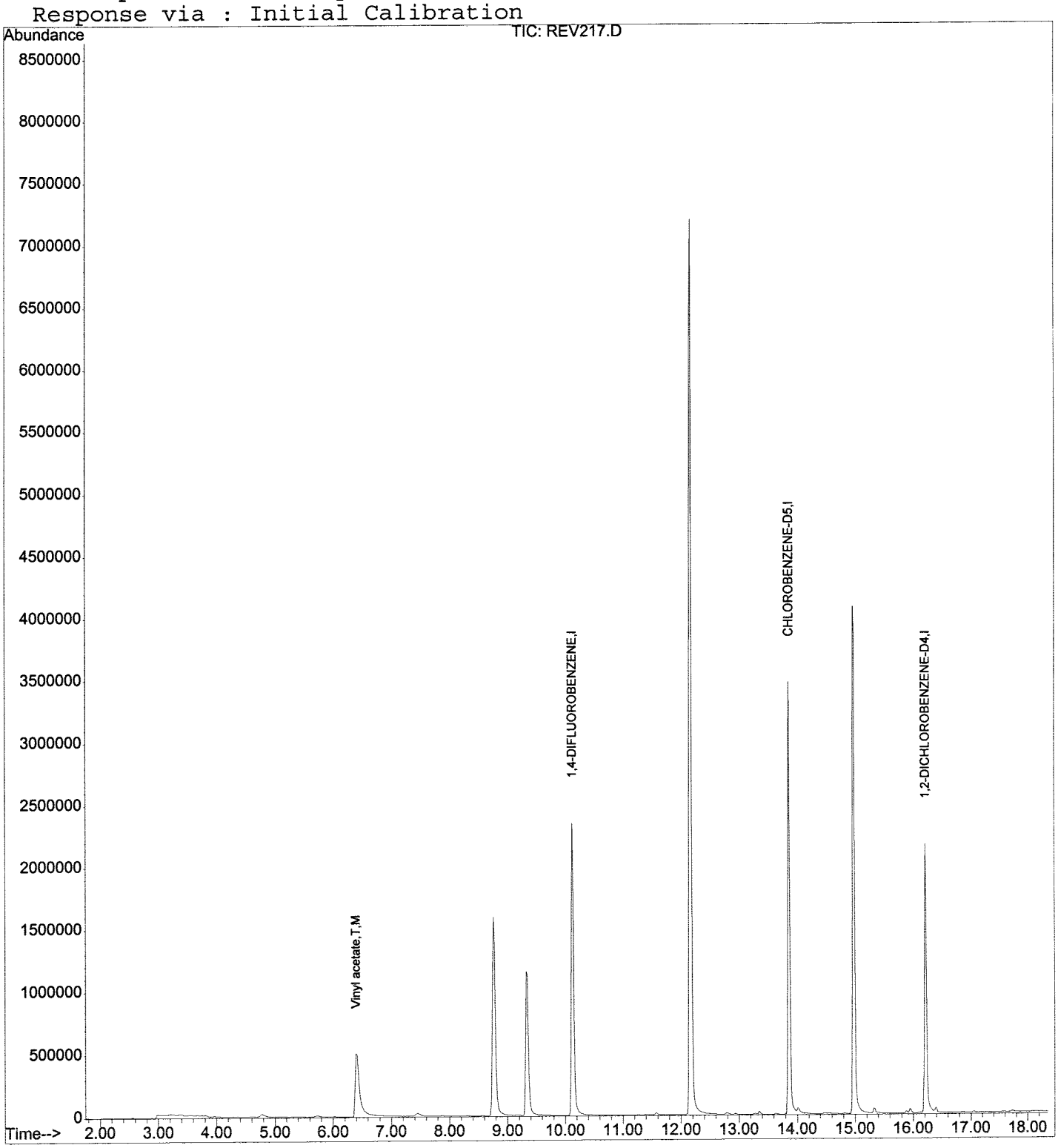
(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3111434	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2585038	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	902599	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.39	43	3267501	30.40	ug/l	100

(#) = qualifier out of range (m) = manual integration
REV218.D VO01E14.M Fri May 15 11:54:05 2020 Page 1

5/19/20

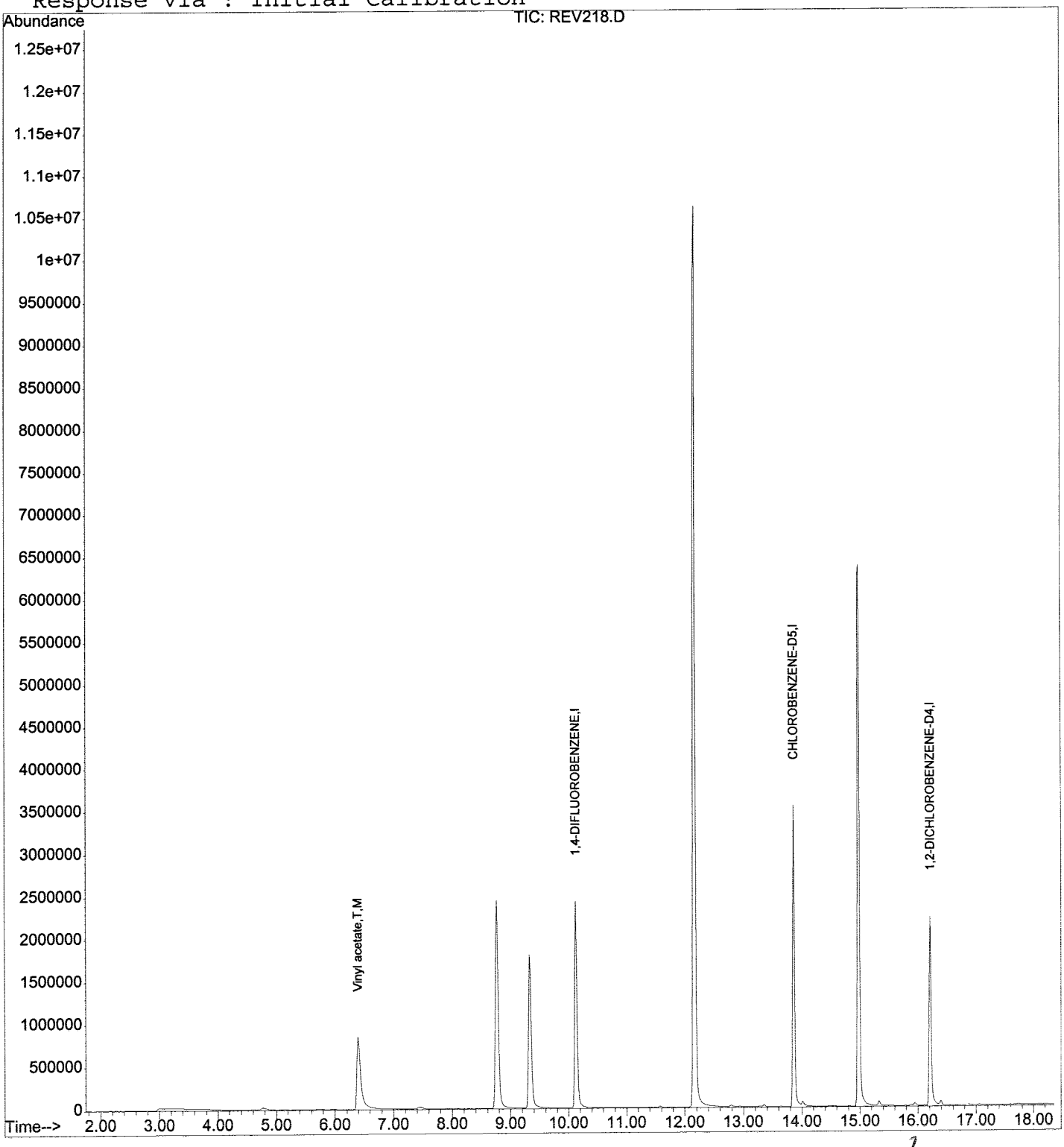
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/14/20 17:31
Spike Amount :10 PPB
CC/CV File :REV219
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/14/20 19:48
HPChem Method :V001E14
Date_Time :05/14/20 20:17

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-DIFLUOROBENZENE	10.000	0	3074649	1	1	10.124	10.125	0				
2	Vinyl acetate	9.844	-1.6	996265	0.324	0.279	6.413	6.427	26.14	-0.0237	0.3532		0.9980
3	CHLOROBENZENE-D5	10.000	0	2594947	1	1	13.856	13.857	0				
4	1,2-DICHLOROBENZENE-D4	10.000	0	883852	1	1	16.211	16.211	0				

SU
5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	98	0.00
2	T,M	Vinyl acetate	10.000	9.844	1.6	104	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	98	0.00

SA 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00
2	T,M	Vinyl acetate	0.279	0.324	-16.1	104	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	98	0.00

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3074649	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2594947	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	883852	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	996265	9.84	ug/l	100

5/18/20

(#) = qualifier out of range (m) = manual integration

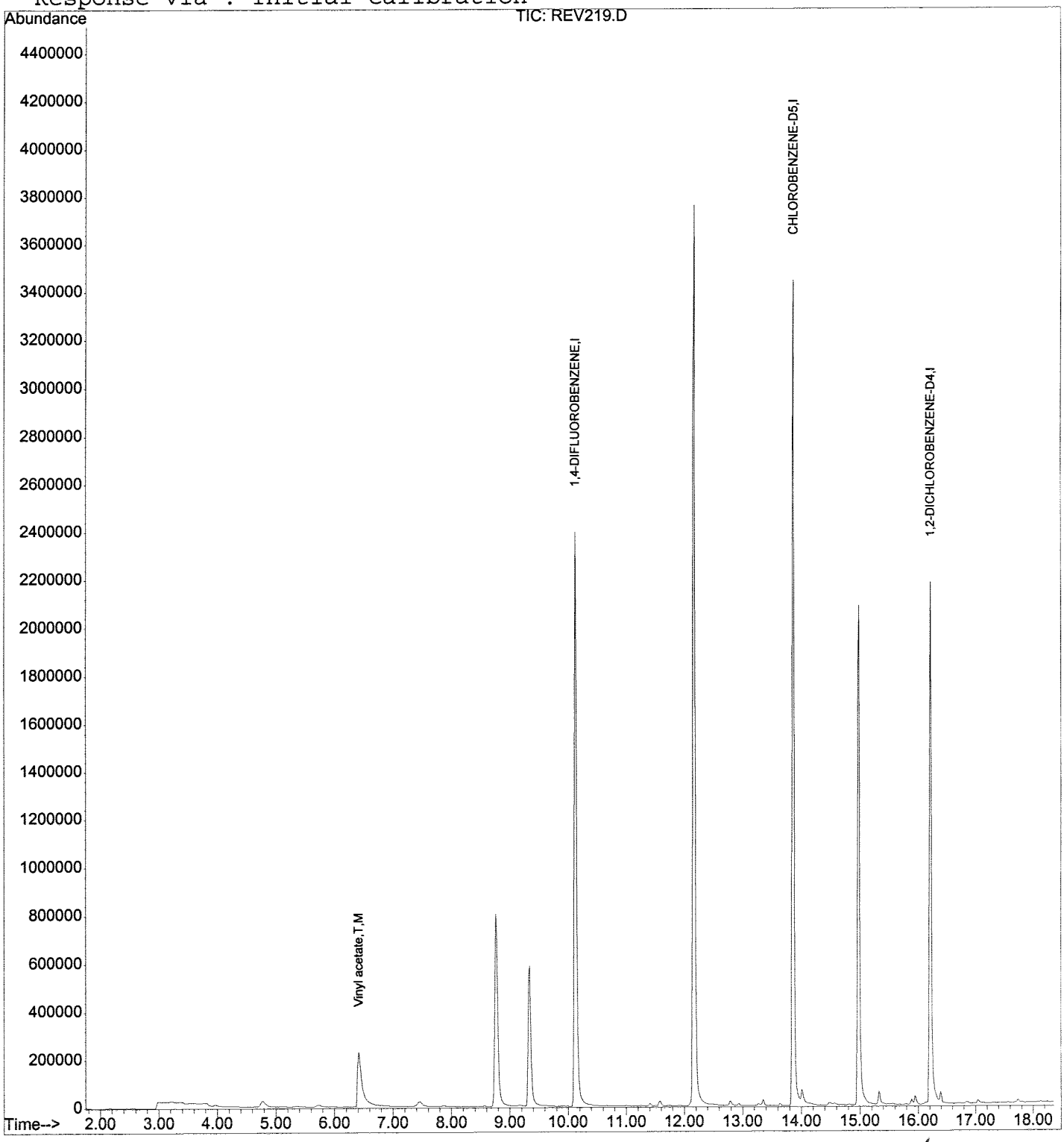
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SU 5/18/20

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F178
Lab File ID: RFV328 BFB Injection Date : 06/26/20
Instrument ID: 01 BFB Injection Time : 11:53
GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.36
75	30.0 - 60.0% of mass 95	45.60
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.36
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	79.20
175	5.0 - 9.0% of mass 174	5.99(7.6)1
176	95.0 - 101.0% of mass 174	77.78(98.2)1
177	5.0 - 9.0% of mass 176	5.76(7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV001E1324	RFV330	06/26/20	12:52
2	MBLK1W	V001F16B	RFV334	06/26/20	14:40
3	LCS1W	V001F16L	RFV331	06/26/20	13:19
4	LCD1W	V001F16C	RFV332	06/26/20	13:45
5	TB09-GW061920	F178-03	RFV345	06/26/20	19:36
6	TB10-GW061920	F178-06	RFV346	06/26/20	20:03
7	TB11-GW061920	F178-09	RFV347	06/26/20	20:32
8	TB12-GW061920	F178-12	RFV348	06/26/20	20:59
9	MW13D-GW061820	F178-01	RFV349	06/26/20	21:28
10	MW25C-GW061920	F178-02	RFV350	06/26/20	21:55
11	MW05R-GW061920	F178-04	RFV351	06/26/20	22:24
12	MW15S-GW061920	F178-05	RFV352	06/26/20	22:51
13	MW15D-GW061920	F178-07	RFV353	06/26/20	23:20

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F178
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	2873956	10.13	2329188	13.86	765795	16.21
2	MBLK1W	2909618	10.14	2370401	13.87	753121	16.23
3	LCS1W	2754474	10.12	2296743	13.86	765264	16.21
4	LCD1W	2682669	10.12	2269858	13.86	763929	16.21
5	TB09-GW061920	2787883	10.13	2287200	13.86	725905	16.21
6	TB10-GW061920	2826465	10.13	2376032	13.86	753453	16.21
7	TB11-GW061920	2776228	10.13	2351521	13.86	746179	16.21
8	TB12-GW061920	2775570	10.14	2328222	13.87	735919	16.23
9	MW13D-GW061820	2723636	10.13	2274773	13.86	743289	16.21
10	MW25C-GW061920	2668510	10.13	2238297	13.86	695420	16.21
11	MW05R-GW061920	2710144	10.12	2266737	13.86	697225	16.21
12	MW15S-GW061920	2667475	10.12	2250872	13.86	685635	16.21
13	MW15D-GW061920	2726066	10.12	2315125	13.86	720781	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

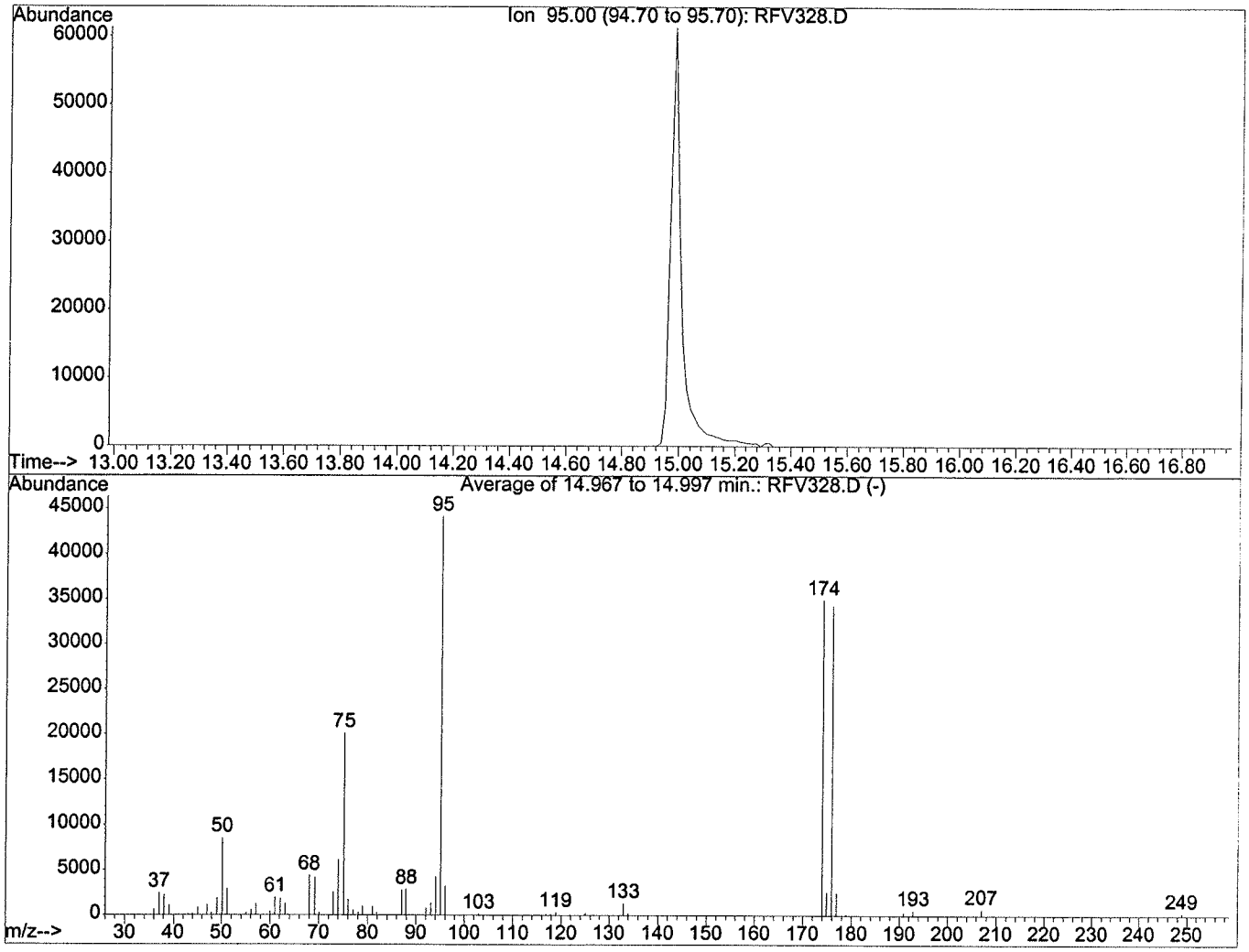
Project: VA SALT LAKE CITY
SDG No: 20F178
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	2861192	10.13	2329333	13.86	765824	16.21
2	MBLK1W	2909558	10.14	2367293	13.87	753146	16.23
3	LCS1W	2754421	10.12	2286492	13.86	765289	16.21
4	LCD1W	2682617	10.12	2257533	13.86	763906	16.21
5	TB09-GW061920	2787941	10.13	2275633	13.86	725883	16.21
6	TB10-GW061920	2826524	10.13	2361865	13.86	753478	16.21
7	TB11-GW061920	2776286	10.13	2336613	13.86	746204	16.21
8	TB12-GW061920	2753097	10.14	2325291	13.87	735894	16.23
9	MW13D-GW061820	2723583	10.13	2261150	13.86	743264	16.21
10	MW25C-GW061920	2668455	10.13	2221233	13.86	695400	16.21
11	MW05R-GW061920	2710201	10.12	2247863	13.86	697249	16.21
12	MW15S-GW061920	2667424	10.12	2234033	13.86	685612	16.21
13	MW15D-GW061920	2726128	10.12	2293324	13.86	720804	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F26\RFV328.D
Acq On : 26 Jun 2020 11:53 am
Sample : BFB01F16
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 780

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8551	PASS
75	95	30	60	45.6	20139	PASS
95	95	100	100	100.0	44168	PASS
96	95	5	9	7.4	3250	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.2	34981	PASS
175	174	5	9	7.6	2644	PASS
176	174	95	101	98.2	34352	PASS
177	176	5	9	7.4	2546	PASS

RFV328.D VO01E13.M Mon Jun 29 10:20:30 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	8.714	12.9	78	0.00
4	P,T,M	Chloromethane	10.000	8.871	11.3	79	0.00
5	C,T,M	Vinyl chloride	10.000	9.463	5.4	82	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	9.414	5.9	79	0.00
8	T,M	Chloroethane	10.000	11.029	-10.3	95	0.01
9	T,M	Dichlorofluoromethane	10.000	9.590	4.1	87	0.00
10	T,M	Trichlorofluoromethane	10.000	10.536	-5.4	91	-0.02
11	T,M	Acrolein	50.000	53.859	-7.7	96	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.856	11.4	80	0.00
13	T,M	Acetone	50.000	50.506	-1.0	91	0.00
14	C,T,M	1,1-Dichloroethene	10.000	8.465	15.4	76	0.02
15	T,M	Iodomethane	10.000	7.992	20.1#	72	0.00
16	T,M	Carbon disulfide	10.000	9.168	8.3	81	0.00
17	T,M	Methyl acetate	10.000	9.864	1.4	85	0.02
18	T,M	Methylene chloride	10.000	9.229	7.7	85	0.00
19	T,M	tert-Butyl alcohol	250.000	219.563	12.2	74	0.00
20	T,M	Acrylonitrile	50.000	49.878	0.2	91	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.401	6.0	82	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	8.790	12.1	78	0.02
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.661	3.4	86	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	9.901	1.0	88	0.00
26	T,M	2-Butanol	250.000	215.930	13.6	74	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.195	8.0	85	0.00
28	T,M	2-Butanone	50.000	50.899	-1.8	88	0.02
29	T,M	cis-1,2-Dichloroethene	10.000	9.382	6.2	85	0.00
30	T,M	2,2-Dichloropropane	10.000	10.021	-0.2	91	0.02
31	T,M	Tetrahydrofurane	10.000	9.004	10.0	75	0.00
32	T,M	Bromochloromethane	10.000	9.616	3.8	85	0.00
33	C,T,M	Chloroform	10.000	9.666	3.3	87	0.00
34	S	Dibromofluoromethane	10.000	10.162	-1.6	83	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.352	6.5	86	0.00
36	T,M	Cyclohexane	10.000	11.130	-11.3	102	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.781	2.2	87	0.00
38	S	1,2-Dichloroethane-d4	10.000	10.098	-1.0	83	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.263	7.4	81	-0.01
40	T,M	Carbon tetrachloride	10.000	9.686	3.1	85	0.00
41	T,M	Benzene	10.000	9.641	3.6	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	9.692	3.1	86	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	9.440	5.6	84	-0.01
45	T,M	Methylcyclohexane	10.000	11.474	-14.7	98	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.905	1.0	87	-0.01
47	T,M	1,4-Dioxane	200.000	170.546	14.7	75	0.00
48	T,M	Dibromomethane	10.000	9.374	6.3	81	-0.01
49	T,M	Bromodichloromethane	10.000	10.032	-0.3	88	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	6.825	31.8#	61	0.00
51	T,M	cis-1,3-Dichloropropene	10.000	9.892	1.1	86	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	52.935	-5.9	88	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	87	-0.01
54	S	Toluene-d8	10.000	9.878	1.2	81	-0.01
55	C,T,M	Toluene	10.000	9.473	5.3	83	-0.01
56	T,M	Ethyl methacrylate	10.000	8.992	10.1	76	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	9.893	1.1	85	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.041	-0.4	86	-0.01
59	T,M	Tetrachloroethene	10.000	9.144	8.6	80	-0.01
60	T,M	1,3-Dichloropropane	10.000	9.741	2.6	83	-0.01
61	T,M	2-Hexanone	50.000	51.826	-3.7	84	-0.01
62	T,M	Dibromochloromethane	10.000	10.317	-3.2	85	-0.01
63	T,M	1,2-Dibromoethane	10.000	9.616	3.8	79	-0.01
64	T,M	1-Chlorohexane	10.000	9.349	6.5	82	-0.01
65	P,M	Chlorobenzene	10.000	9.771	2.3	85	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.113	-1.1	85	-0.01
67	C,T,M	Ethylbenzene	10.000	9.295	7.1	81	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	18.844	5.8	79	-0.01
69	T,M	o-Xylene	10.000	9.646	3.5	82	-0.01
70	T,M	Styrene	10.000	9.712	2.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	82	-0.01
72	P,T,M	Bromoform	10.000	10.866	-8.7	83	-0.01
73	T,M	Isopropylbenzene	10.000	10.168	-1.7	85	-0.01
74	S	4-Bromofluorobenzene	10.000	10.452	-4.5	81	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.256	-2.6	81	-0.01
76	T,M	Bromobenzene	10.000	10.336	-3.4	83	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.802	2.0	84	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.422	-4.2	82	-0.01
79	T,M	n-Propylbenzene	10.000	10.205	-2.1	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	10.271	-2.7	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.183	-1.8	80	-0.01
82	T,M	4-Chlorotoluene	10.000	10.175	-1.8	82	-0.01
83	T,M	tert-Butylbenzene	10.000	10.008	-0.1	82	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.187	-1.9	84	-0.01
85	T,M	sec-Butylbenzene	10.000	10.193	-1.9	83	-0.01
86	T,M	p-Isopropyltoluene	10.000	10.099	-1.0	82	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	10.111	-1.1	80	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.797	2.0	81	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	10.212	-2.1	83	-0.01
90	T,M	n-Butylbenzene	10.000	9.938	0.6	79	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.714	2.9	81	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.458	5.4	76	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.241	-2.4	82	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.737	2.6	79	-0.01
95	T,M	Naphthalene	10.000	10.246	-2.5	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.441	-4.4	84	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	91	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.268	13.0	78	0.00
4	P,T,M	Chloromethane	0.368	0.326	11.4	79	0.00
5	C,T,M	Vinyl chloride	0.360	0.341	5.3	82	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.226	5.8	79	0.00
8	T,M	Chloroethane	0.200	0.220	-10.0	95	0.01
9	T,M	Dichlorofluoromethane	0.493	0.472	4.3	87	0.00
10	T,M	Trichlorofluoromethane	0.334	0.352	-5.4	91	-0.02
11	T,M	Acrolein	0.017	0.019	-11.8	96	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.185	11.5	80	0.00
13	T,M	Acetone	0.034	0.034	0.0	91	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.413	15.4	76	0.02
15	T,M	Iodomethane	0.552	0.441	20.1#	72	0.00
16	T,M	Carbon disulfide	1.072	0.983	8.3	81	0.00
17	T,M	Methyl acetate	0.089	0.088	1.1	85	0.02
18	T,M	Methylene chloride	0.412	0.380	7.8	85	0.00
19	T,M	tert-Butyl alcohol	0.009	0.008	11.1	74	0.00
20	T,M	Acrylonitrile	0.042	0.042	0.0	91	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.405	6.0	82	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.425	12.0	78	0.02
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	0.00
24	P,T,M	1,1-Dichloroethane	0.586	0.566	3.4	86	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.010	1.0	88	0.00
26	T,M	2-Butanol	0.010	0.009	10.0	74	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.677	8.0	85	0.00
28	T,M	2-Butanone	0.054	0.055	-1.9	88	0.02
29	T,M	cis-1,2-Dichloroethene	0.339	0.318	6.2	85	0.00
30	T,M	2,2-Dichloropropane	0.370	0.371	-0.3	91	0.02
31	T,M	Tetrahydrofurane	0.035	0.031	11.4	75	0.00
32	T,M	Bromochloromethane	0.242	0.232	4.1	85	0.00
33	C,T,M	Chloroform	0.484	0.467	3.5	87	0.00
34	S	Dibromofluoromethane	0.281	0.286	-1.8	83	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.361	6.5	86	0.00
36	T,M	Cyclohexane	0.549	0.612	-11.5	102	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.556	2.1	87	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.189	-1.1	83	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.152	7.3	81	-0.01
40	T,M	Carbon tetrachloride	0.324	0.314	3.1	85	0.00
41	T,M	Benzene	1.196	1.153	3.6	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.218	3.1	86	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.345	5.7	84	-0.01
45	T,M	Methylcyclohexane	0.617	0.708	-14.7	98	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.320	0.9	87	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	75	0.00
48	T,M	Dibromomethane	0.122	0.115	5.7	81	-0.01
49	T,M	Bromodichloromethane	0.314	0.315	-0.3	88	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.068	32.0#	61	0.00
51	T,M	cis-1,3-Dichloropropene	0.404	0.399	1.2	86	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.149	-5.7	88	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	87	-0.01
54	S	Toluene-d8	1.361	1.345	1.2	81	-0.01
55	C,T,M	Toluene	1.566	1.484	5.2	83	-0.01
56	T,M	Ethyl methacrylate	0.279	0.251	10.0	76	0.00
57	T,M	trans-1,3-Dichloropropene	0.369	0.365	1.1	85	0.00
58	T,M	1,1,2-Trichloroethane	0.210	0.210	0.0	86	-0.01
59	T,M	Tetrachloroethene	0.343	0.313	8.7	80	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.391	2.7	83	-0.01
61	T,M	2-Hexanone	0.113	0.117	-3.5	84	-0.01
62	T,M	Dibromochloromethane	0.260	0.269	-3.5	85	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.202	3.8	79	-0.01
64	T,M	1-Chlorohexane	0.709	0.663	6.5	82	-0.01
65	P,M	Chlorobenzene	0.983	0.961	2.2	85	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.318	-1.0	85	-0.01
67	C,T,M	Ethylbenzene	1.854	1.723	7.1	81	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.243	5.8	79	-0.01
69	T,M	o-Xylene	1.265	1.220	3.6	82	-0.01
70	T,M	Styrene	1.043	1.013	2.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	82	-0.01
72	P,T,M	Bromoform	0.337	0.366	-8.6	83	-0.01
73	T,M	Isopropylbenzene	5.225	5.313	-1.7	85	-0.01
74	S	4-Bromofluorobenzene	1.196	1.250	-4.5	81	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.743	-2.5	81	-0.01
76	T,M	Bromobenzene	1.022	1.057	-3.4	83	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.142	2.1	84	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.183	-4.0	82	-0.01
79	T,M	n-Propylbenzene	6.044	6.167	-2.0	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.786	-2.7	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.953	-1.8	80	-0.01
82	T,M	4-Chlorotoluene	3.434	3.494	-1.7	82	-0.01
83	T,M	tert-Butylbenzene	0.996	0.996	0.0	82	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.630	-1.9	84	-0.01
85	T,M	sec-Butylbenzene	5.490	5.596	-1.9	83	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.225	-1.0	82	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.926	-1.1	80	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.814	2.0	81	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.342	-2.1	83	-0.01
90	T,M	n-Butylbenzene	3.799	3.776	0.6	79	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.517	2.8	81	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.081	4.7	76	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.786	-2.3	82	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.570	2.7	79	-0.01
95	T,M	Naphthalene	1.016	1.041	-2.5	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.600	-4.3	84	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2873956	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2329188	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	765795	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	821963	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.60%			
38) 1,2-Dichloroethane-d4	9.33	65	543980	10.10	ug/l	-0.01
Spiked Amount 10.000			Recovery = 101.00%			
54) Toluene-d8	12.16	98	3131807	9.88	ug/l	-0.01
Spiked Amount 10.000			Recovery = 98.80%			
74) 4-Bromofluorobenzene	14.97	95	956931	10.45	ug/l	-0.01
Spiked Amount 10.000			Recovery = 104.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	770474	8.71	ug/l	98
4) Chloromethane	2.10	50	937037	8.87	ug/l	98
5) Vinyl chloride	2.25	62	980144	9.46	ug/l	98
7) Bromomethane	2.63	94	649677	9.41	ug/l	100
8) Chloroethane	2.76	64	632442	11.03	ug/l	98
9) Dichlorofluoromethane	3.08	67	1357672	9.59	ug/l	100
10) Trichlorofluoromethane	3.12	101	1010922	10.54	ug/l	99
11) Acrolein	3.71	56	268458	53.86	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	532908	8.86	ug/l	99
13) Acetone	3.93	43	492877	50.51	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1188051	8.47	ug/l	99
15) Iodomethane	4.10	142	1268089	7.99	ug/l	98
16) Carbon disulfide	4.20	76	2825151	9.17	ug/l	100
17) Methyl acetate	4.54	43	253582	9.86	ug/l	99
18) Methylene chloride	4.77	49	1091778	9.23	ug/l	98
19) tert-Butyl alcohol	5.08	59	587678	219.56	ug/l	100
20) Acrylonitrile	5.23	53	596391	49.88	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1163894	9.40	ug/l	99
22) trans-1,2-Dichloroethene	5.33	61	1220016	8.79	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1625707	9.66	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	2901362	9.90	ug/l	99
26) 2-Butanol	8.29	45	659783	215.93	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1945203	9.20	ug/l	100
28) 2-Butanone	7.75	43	793131	50.90	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	914117	9.38	ug/l	98
30) 2,2-Dichloropropane	7.70	77	1066050	10.02	ug/l	99
31) Tetrahydrofurane	8.27	42	89919	9.00	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	667949	9.62 ug/l	97
33)	Chloroform	8.47	83	1343194	9.67 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1037621	9.35 ug/l	99
36)	Cyclohexane	8.84	84	1757633	11.13 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1597186	9.78 ug/l	100
39)	1,1-Dichloropropene	9.02	110	436027	9.26 ug/l	100
40)	Carbon tetrachloride	9.00	119	901041	9.69 ug/l	98
41)	Benzene	9.34	78	3312896	9.64 ug/l	100
42)	1,2-Dichloroethane	9.46	62	625426	9.69 ug/l	100
44)	Trichloroethene	10.45	130	992215	9.44 ug/l	99
45)	Methylcyclohexane	10.78	83	2033687	11.47 ug/l	99
46)	1,2-Dichloropropane	10.81	63	918497	9.91 ug/l	99
47)	1,4-Dioxane	10.97	88	53944	170.55 ug/l	98
48)	Dibromomethane	10.94	93	329693	9.37 ug/l	99
49)	Bromodichloromethane	11.22	83	905494	10.03 ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	195736	6.82 ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	1147882	9.89 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2138607	52.93 ug/l	99
55)	Toluene	12.24	91	3455435	9.47 ug/l	100
56)	Ethyl methacrylate	12.67	69	584680	8.99 ug/l	98
57)	trans-1,3-Dichloropropene	12.58	75	851258	9.89 ug/l	98
58)	1,1,2-Trichloroethane	12.81	97	490268	10.04 ug/l	99
59)	Tetrachloroethene	12.91	164	729700	9.14 ug/l	99
60)	1,3-Dichloropropane	13.00	76	910952	9.74 ug/l	100
61)	2-Hexanone	13.06	43	1364677	51.83 ug/l	100
62)	Dibromochloromethane	13.25	129	626002	10.32 ug/l	100
63)	1,2-Dibromoethane	13.37	107	471048	9.62 ug/l	97
64)	1-Chlorohexane	13.87	91	1543840	9.35 ug/l	99
65)	Chlorobenzene	13.89	112	2237683	9.77 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	741684	10.11 ug/l	99
67)	Ethylbenzene	13.98	91	4013728	9.30 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	5791278	18.84 ug/l	98
69)	o-Xylene	14.48	91	2842678	9.65 ug/l	99
70)	Styrene	14.49	104	2358998	9.71 ug/l	100
72)	Bromoform	14.67	173	280269	10.87 ug/l	99
73)	Isopropylbenzene	14.81	105	4068394	10.17 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	569084	10.26 ug/l	99
76)	Bromobenzene	15.10	156	809338	10.34 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	108733	9.80 ug/l	93
78)	1,2,3-Trichloropropane	15.13	110	140164	10.42 ug/l	98
79)	n-Propylbenzene	15.18	91	4722875	10.20 ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

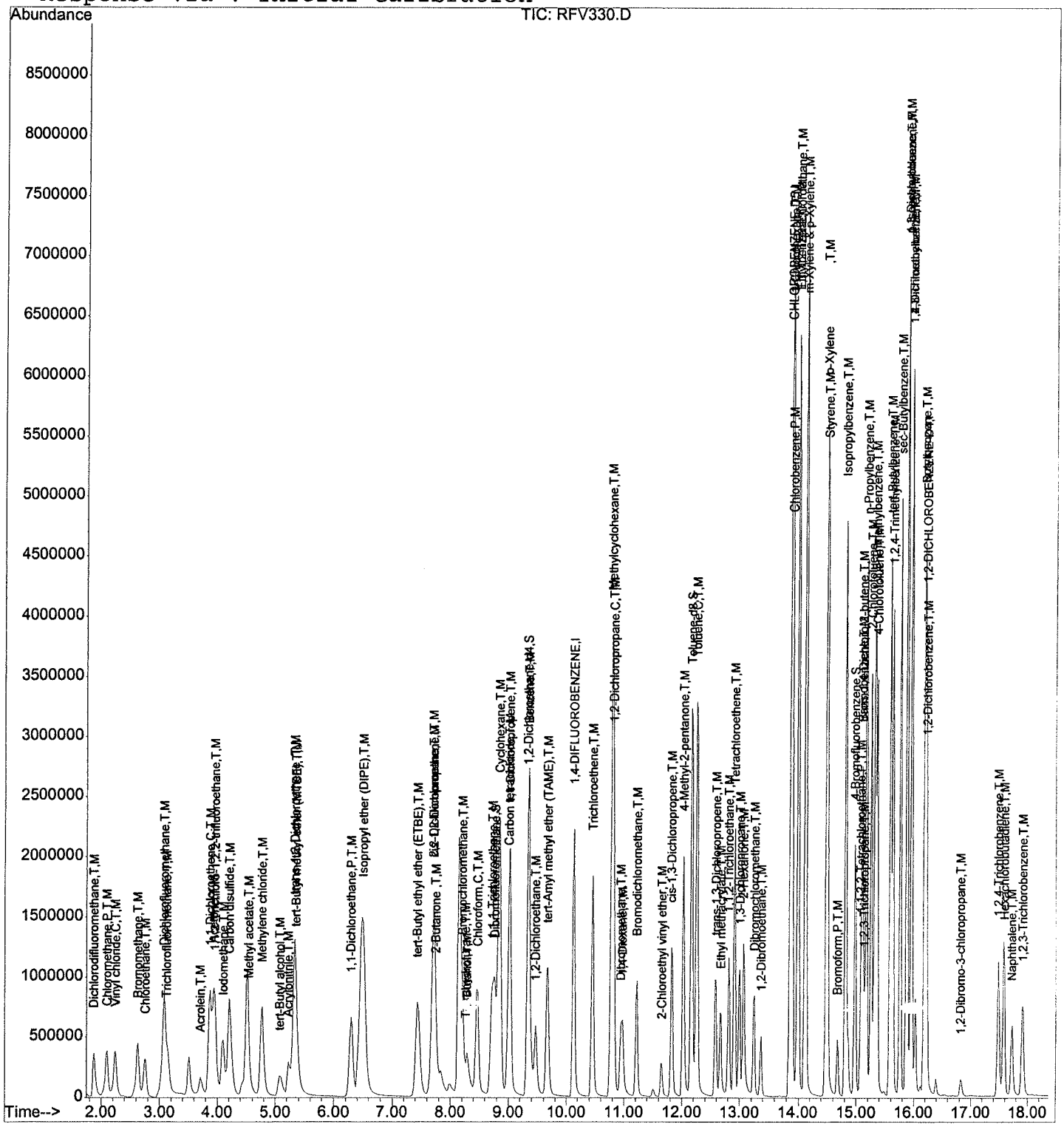
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.32	105	2899128	10.27 ug/l	99
81)	2-Chlorotoluene	15.25	91	2261774	10.18 ug/l	99
82)	4-Chlorotoluene	15.35	91	2675429	10.18 ug/l	99
83)	tert-Butylbenzene	15.58	134	762983	10.01 ug/l	73
84)	1,2,4-Trimethylbenzene	15.62	105	2779792	10.19 ug/l	99
85)	sec-Butylbenzene	15.75	105	4285060	10.19 ug/l	100
86)	p-Isopropyltoluene	15.87	119	3235740	10.10 ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1474706	10.11 ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	1388945	9.80 ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	2559397	10.21 ug/l	99
90)	n-Butylbenzene	16.18	91	2891434	9.94 ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1161554	9.71 ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	61849	9.46 ug/l	97
93)	1,2,4-Trichlorobenzene	17.49	180	601994	10.24 ug/l	99
94)	Hexachlorobutadiene	17.59	225	436779	9.74 ug/l	99
95)	Naphthalene	17.72	128	796950	10.25 ug/l	100
96)	1,2,3-Trichlorobenzene	17.92	180	459454	10.44 ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Vinyl acetate	10.000	8.850	11.5	86	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	88	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Vinyl acetate	10.000	8.850	11.5	86	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	88	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:45 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

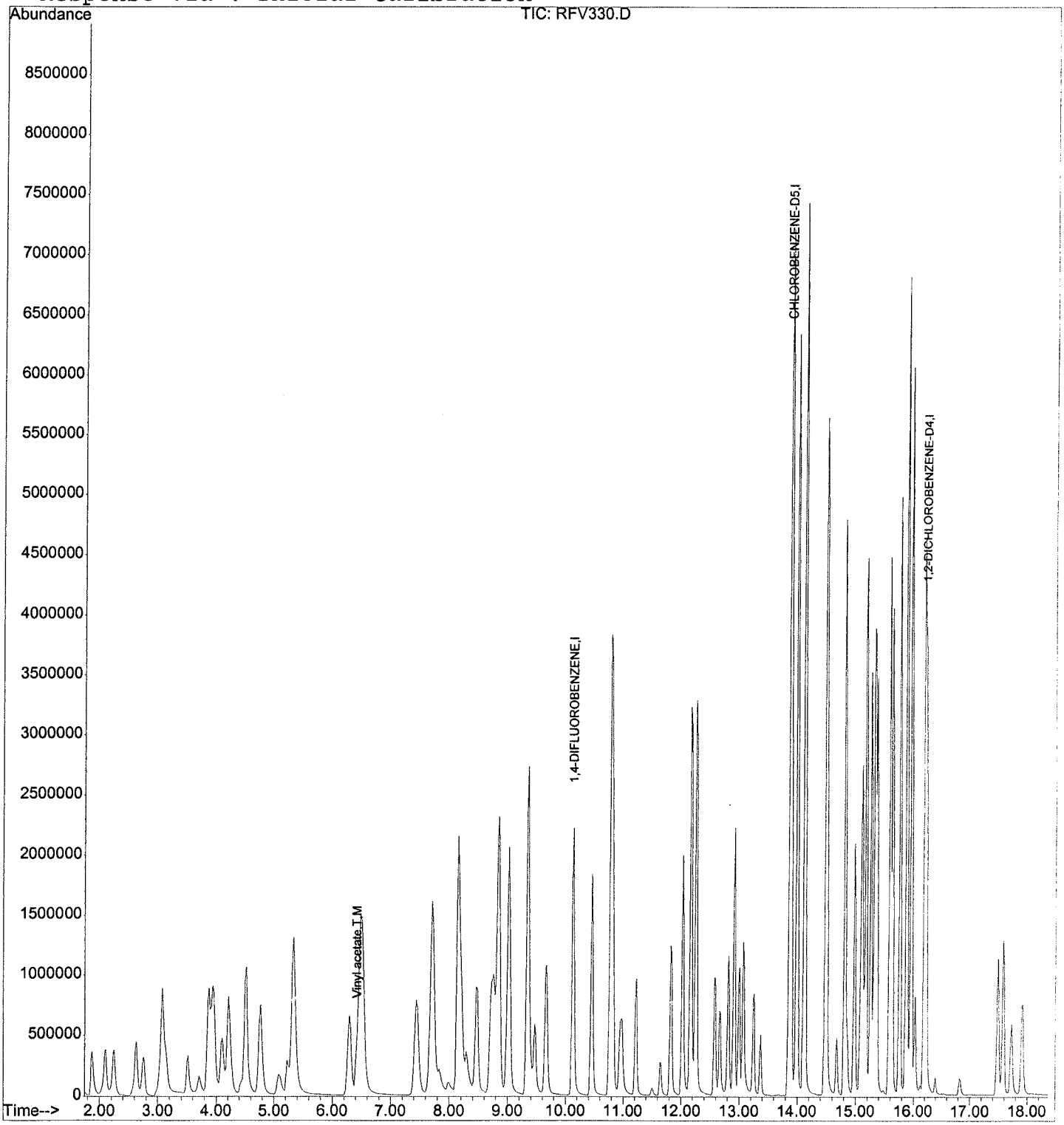
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2861192	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2329333	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	765824	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	826632	8.85	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV330.D VO01E14.M Mon Jun 29 09:46:21 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:45 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F178
Lab File ID: RFV356 BFB Injection Date : 06/29/20
Instrument ID: 01 BFB Injection Time : 10:32
GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.24
75	30.0 - 60.0% of mass 95	42.72
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.86
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	76.63
175	5.0 - 9.0% of mass 174	5.36(7.0)1
176	95.0 - 101.0% of mass 174	74.57(97.3)1
177	5.0 - 9.0% of mass 176	4.97(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVO01E1325	RFV357	06/29/20	11:21
2	MBLK2W	VO01F17B	RFV361	06/29/20	13:21
3	LCS2W	VO01F17L	RFV358	06/29/20	12:01
4	LCD2W	VO01F17C	RFV359	06/29/20	12:28
5	FD03-GW061920	F178-08	RFV365	06/29/20	15:08
6	MW12S-GW061920	F178-10	RFV366	06/29/20	15:35
7	MW12D-GW061920	F178-11	RFV367	06/29/20	16:02

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F178
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	2782201	10.12	2317168	13.86	764401	16.21
2	MBLK2W	2857990	10.13	2329130	13.86	729540	16.21
3	LCS2W	2775829	10.12	2289223	13.86	758157	16.21
4	LCD2W	2832970	10.13	2324325	13.86	792881	16.21
5	FD03-GW061920	2785774	10.12	2318338	13.86	711466	16.21
6	MW12S-GW061920	2781046	10.13	2304757	13.86	722205	16.21
7	MW12D-GW061920	2750347	10.14	2256929	13.86	692224	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

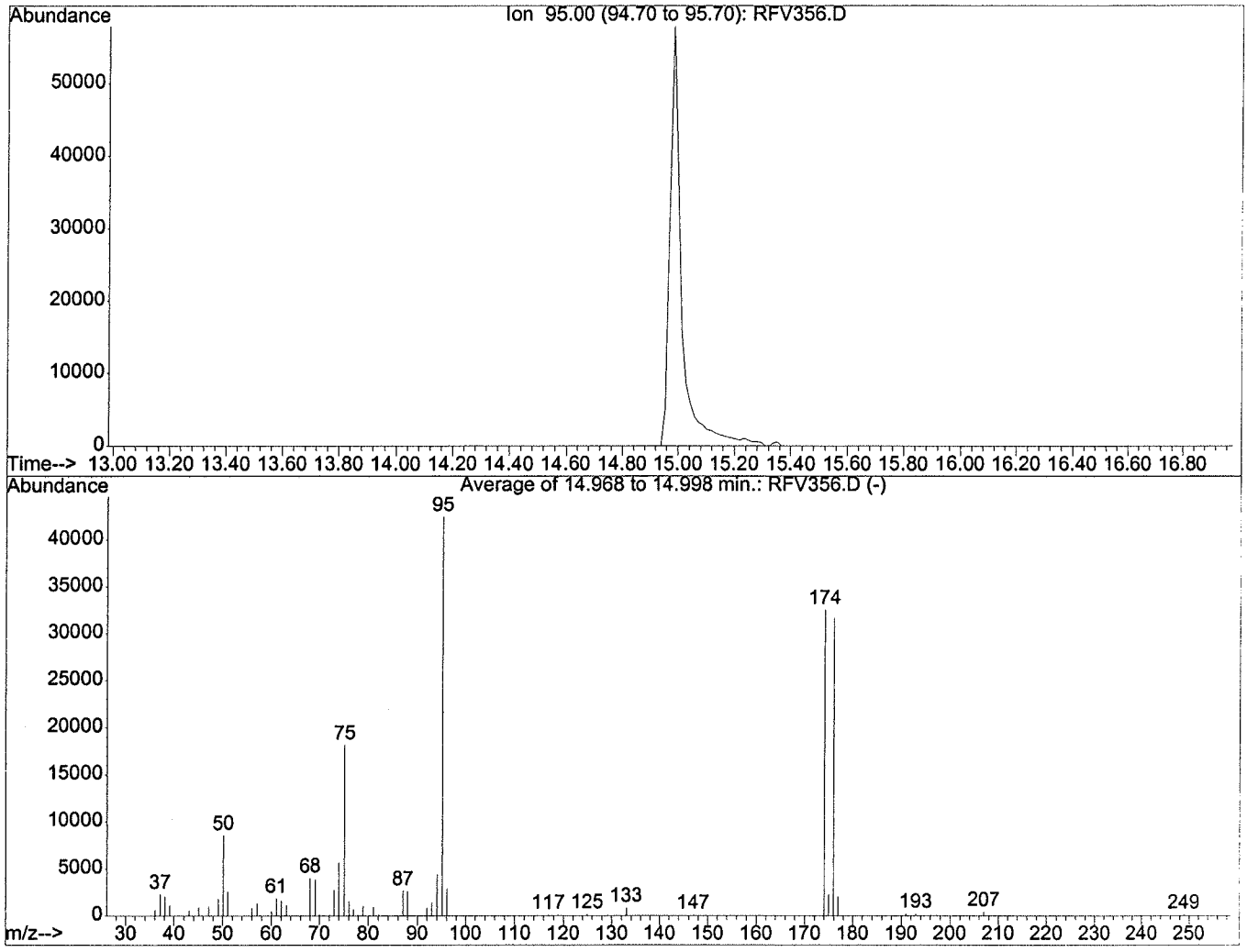
Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F178
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	2782259	10.12	2300239	13.86	764426	16.21
2	MBLK2W	2858050	10.13	2313332	13.86	729518	16.21
3	LCS2W	2775775	10.12	2279035	13.86	758132	16.21
4	LCD2W	2832915	10.13	2314561	13.86	792907	16.21
5	FD03-GW061920	2785837	10.12	2307588	13.86	711446	16.21
6	MW12S-GW061920	2781108	10.13	2290956	13.86	713354	16.21
7	MW12D-GW061920	2726670	10.14	2245977	13.86	683344	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F29\RFV356.D Vial: 1
Acq On : 29 Jun 2020 10:32 am Operator: VLu
Sample : BFB01F17 Inst : 01
Misc : T/CHK Multiplr: 1.00
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 781

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	8598	PASS
75	95	30	60	42.7	18149	PASS
95	95	100	100	100.0	42485	PASS
96	95	5	9	6.9	2913	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.6	32557	PASS
175	174	5	9	7.0	2275	PASS
176	174	95	101	97.3	31679	PASS
177	176	5	9	6.7	2113	PASS

RFV356.D VO01E13.M Tue Jun 30 11:07:31 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	88	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	10.859	-8.6	95	0.00
4	P,T,M	Chloromethane	10.000	10.776	-7.8	93	0.00
5	C,T,M	Vinyl chloride	10.000	11.084	-10.8	93	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	10.879	-8.8	88	0.00
8	T,M	Chloroethane	10.000	12.551	-25.5#	104	0.01
9	T,M	Dichlorofluoromethane	10.000	10.292	-2.9	91	0.00
10	T,M	Trichlorofluoromethane	10.000	11.766	-17.7	99	0.00
11	T,M	Acrolein	50.000	53.804	-7.6	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.190	8.1	80	0.00
13	T,M	Acetone	50.000	54.311	-8.6	95	0.02
14	C,T,M	1,1-Dichloroethene	10.000	8.994	10.1	78	0.02
15	T,M	Iodomethane	10.000	8.280	17.2	72	0.00
16	T,M	Carbon disulfide	10.000	9.290	7.1	79	0.00
17	T,M	Methyl acetate	10.000	9.929	0.7	83	0.02
18	T,M	Methylene chloride	10.000	9.982	0.2	89	0.00
19	T,M	tert-Butyl alcohol	250.000	239.710	4.1	78	0.00
20	T,M	Acrylonitrile	50.000	54.000	-8.0	95	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.970	0.3	85	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.305	7.0	80	0.02
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	0.02
24	P,T,M	1,1-Dichloroethane	10.000	10.137	-1.4	88	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	10.585	-5.9	91	0.00
26	T,M	2-Butanol	250.000	224.797	10.1	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.647	3.5	87	0.00
28	T,M	2-Butanone	50.000	53.527	-7.1	90	0.02
29	T,M	cis-1,2-Dichloroethene	10.000	9.808	1.9	86	0.00
30	T,M	2,2-Dichloropropane	10.000	10.790	-7.9	95	0.02
31	T,M	Tetrahydrofurane	10.000	9.630	3.7	78	0.00
32	T,M	Bromochloromethane	10.000	10.249	-2.5	88	0.00
33	C,T,M	Chloroform	10.000	10.234	-2.3	89	0.00
34	S	Dibromofluoromethane	10.000	10.339	-3.4	82	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.864	1.4	88	0.00
36	T,M	Cyclohexane	10.000	10.208	-2.1	91	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	10.014	-0.1	86	0.00
38	S	1,2-Dichloroethane-d4	10.000	10.572	-5.7	84	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.510	4.9	81	0.00
40	T,M	Carbon tetrachloride	10.000	10.352	-3.5	88	0.00
41	T,M	Benzene	10.000	9.959	0.4	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.355	-3.6	88	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	9.711	2.9	84	-0.01
45	T,M	Methylcyclohexane	10.000	10.837	-8.4	90	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	10.429	-4.3	88	0.00
47	T,M	1,4-Dioxane	200.000	174.155	12.9	74	0.00
48	T,M	Dibromomethane	10.000	9.981	0.2	83	-0.01
49	T,M	Bromodichloromethane	10.000	10.576	-5.8	89	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	7.192	28.1#	62	0.00
51	T,M	cis-1,3-Dichloropropene	10.000	10.345	-3.5	87	0.00
52	T,M	4-Methyl-2-pentanone	50.000	55.860	-11.7	90	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	-0.01
54	S	Toluene-d8	10.000	9.840	1.6	80	0.00
55	C,T,M	Toluene	10.000	9.647	3.5	84	0.00
56	T,M	Ethyl methacrylate	10.000	9.206	7.9	77	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	10.298	-3.0	88	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.294	-2.9	87	-0.01
59	T,M	Tetrachloroethene	10.000	9.223	7.8	80	-0.01
60	T,M	1,3-Dichloropropane	10.000	9.932	0.7	84	-0.01
61	T,M	2-Hexanone	50.000	54.399	-8.8	88	0.00
62	T,M	Dibromochloromethane	10.000	10.544	-5.4	87	-0.01
63	T,M	1,2-Dibromoethane	10.000	9.912	0.9	81	-0.01
64	T,M	1-Chlorohexane	10.000	9.398	6.0	82	-0.01
65	P,M	Chlorobenzene	10.000	9.984	0.2	86	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.544	-5.4	88	-0.01
67	C,T,M	Ethylbenzene	10.000	9.600	4.0	83	0.00
68	T,M	m-Xylene & p-Xylene	20.000	19.326	3.4	81	-0.01
69	T,M	o-Xylene	10.000	9.725	2.8	82	-0.01
70	T,M	Styrene	10.000	9.805	2.0	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	81	-0.01
72	P,T,M	Bromoform	10.000	11.128	-11.3	85	-0.01
73	T,M	Isopropylbenzene	10.000	10.127	-1.3	84	-0.01
74	S	4-Bromofluorobenzene	10.000	10.547	-5.5	82	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.767	-7.7	84	-0.01
76	T,M	Bromobenzene	10.000	10.475	-4.7	84	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	10.005	-0.1	85	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.744	-7.4	84	-0.01
79	T,M	n-Propylbenzene	10.000	10.219	-2.2	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	10.465	-4.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.429	-4.3	82	-0.01
82	T,M	4-Chlorotoluene	10.000	10.175	-1.8	82	-0.01
83	T,M	tert-Butylbenzene	10.000	10.219	-2.2	83	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.354	-3.5	85	-0.01
85	T,M	sec-Butylbenzene	10.000	10.249	-2.5	83	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.889	1.1	81	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	9.978	0.2	79	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.735	2.7	80	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	10.232	-2.3	83	-0.01
90	T,M	n-Butylbenzene	10.000	9.861	1.4	78	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.809	1.9	82	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.740	2.6	78	0.00
93	T,M	1,2,4-Trichlorobenzene	10.000	10.033	-0.3	80	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.641	3.6	78	-0.01
95	T,M	Naphthalene	10.000	9.685	3.1	78	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.286	-2.9	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	88	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.334	-8.4	95	0.00
4	P,T,M	Chloromethane	0.368	0.396	-7.6	93	0.00
5	C,T,M	Vinyl chloride	0.360	0.399	-10.8	93	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.261	-8.8	88	0.00
8	T,M	Chloroethane	0.200	0.250	-25.0#	104	0.01
9	T,M	Dichlorofluoromethane	0.493	0.507	-2.8	91	0.00
10	T,M	Trichlorofluoromethane	0.334	0.393	-17.7	99	0.00
11	T,M	Acrolein	0.017	0.019	-11.8	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.192	8.1	80	0.00
13	T,M	Acetone	0.034	0.037	-8.8	95	0.02
14	C,T,M	1,1-Dichloroethene	0.488	0.439	10.0	78	0.02
15	T,M	Iodomethane	0.552	0.457	17.2	72	0.00
16	T,M	Carbon disulfide	1.072	0.996	7.1	79	0.00
17	T,M	Methyl acetate	0.089	0.089	0.0	83	0.02
18	T,M	Methylene chloride	0.412	0.411	0.2	89	0.00
19	T,M	tert-Butyl alcohol	0.009	0.009	0.0	78	0.00
20	T,M	Acrylonitrile	0.042	0.045	-7.1	95	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.429	0.5	85	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.449	7.0	80	0.02
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.594	-1.4	88	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.079	-5.8	91	0.00
26	T,M	2-Butanol	0.010	0.010	0.0	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.710	3.5	87	0.00
28	T,M	2-Butanone	0.054	0.058	-7.4	90	0.02
29	T,M	cis-1,2-Dichloroethene	0.339	0.333	1.8	86	0.00
30	T,M	2,2-Dichloropropane	0.370	0.399	-7.8	95	0.02
31	T,M	Tetrahydrofurane	0.035	0.033	5.7	78	0.00
32	T,M	Bromochloromethane	0.242	0.248	-2.5	88	0.00
33	C,T,M	Chloroform	0.484	0.495	-2.3	89	0.00
34	S	Dibromofluoromethane	0.281	0.291	-3.6	82	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.381	1.3	88	0.00
36	T,M	Cyclohexane	0.549	0.561	-2.2	91	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.569	-0.2	86	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.198	-5.9	84	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.156	4.9	81	0.00
40	T,M	Carbon tetrachloride	0.324	0.335	-3.4	88	0.00
41	T,M	Benzene	1.196	1.191	0.4	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.233	-3.6	88	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.355	3.0	84	-0.01
45	T,M	Methylcyclohexane	0.617	0.668	-8.3	90	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.336	-4.0	88	0.00
47	T,M	1,4-Dioxane	0.001	0.001	0.0	74	0.00
48	T,M	Dibromomethane	0.122	0.122	0.0	83	-0.01
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	89	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.072	28.0#	62	0.00
51	T,M	cis-1,3-Dichloropropene	0.404	0.418	-3.5	87	0.00
52	T,M	4-Methyl-2-pentanone	0.141	0.157	-11.3	90	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	-0.01
54	S	Toluene-d8	1.361	1.339	1.6	80	0.00
55	C,T,M	Toluene	1.566	1.511	3.5	84	0.00
56	T,M	Ethyl methacrylate	0.279	0.257	7.9	77	0.00
57	T,M	trans-1,3-Dichloropropene	0.369	0.380	-3.0	88	0.00
58	T,M	1,1,2-Trichloroethane	0.210	0.216	-2.9	87	-0.01
59	T,M	Tetrachloroethene	0.343	0.316	7.9	80	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.399	0.7	84	-0.01
61	T,M	2-Hexanone	0.113	0.123	-8.8	88	0.00
62	T,M	Dibromochloromethane	0.260	0.275	-5.8	87	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.208	1.0	81	-0.01
64	T,M	1-Chlorohexane	0.709	0.666	6.1	82	-0.01
65	P,M	Chlorobenzene	0.983	0.982	0.1	86	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.332	-5.4	88	-0.01
67	C,T,M	Ethylbenzene	1.854	1.780	4.0	83	0.00
68	T,M	m-Xylene & p-Xylene	1.319	1.275	3.3	81	-0.01
69	T,M	o-Xylene	1.265	1.231	2.7	82	-0.01
70	T,M	Styrene	1.043	1.023	1.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	81	-0.01
72	P,T,M	Bromoform	0.337	0.375	-11.3	85	-0.01
73	T,M	Isopropylbenzene	5.225	5.291	-1.3	84	-0.01
74	S	4-Bromofluorobenzene	1.196	1.261	-5.4	82	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.780	-7.6	84	-0.01
76	T,M	Bromobenzene	1.022	1.071	-4.8	84	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.145	0.0	85	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.189	-7.4	84	-0.01
79	T,M	n-Propylbenzene	6.044	6.176	-2.2	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.857	-4.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	3.025	-4.3	82	-0.01
82	T,M	4-Chlorotoluene	3.434	3.494	-1.7	82	-0.01
83	T,M	tert-Butylbenzene	0.996	1.017	-2.1	83	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.689	-3.5	85	-0.01
85	T,M	sec-Butylbenzene	5.490	5.626	-2.5	83	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.137	1.1	81	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.900	0.3	79	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.802	2.6	80	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.348	-2.3	83	-0.01
90	T,M	n-Butylbenzene	3.799	3.746	1.4	78	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.532	1.9	82	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.083	2.4	78	0.00
93	T,M	1,2,4-Trichlorobenzene	0.768	0.770	-0.3	80	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.565	3.6	78	-0.01
95	T,M	Naphthalene	1.016	0.984	3.1	78	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.591	-2.8	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2782201	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2317168	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	764401	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	809642	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.40%		
38) 1,2-Dichloroethane-d4	9.33	65	551378	10.57	ug/l	-0.01
Spiked Amount 10.000			Recovery =	105.70%		
54) Toluene-d8	12.17	98	3103503	9.84	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.40%		
74) 4-Bromofluorobenzene	14.97	95	963822	10.55	ug/l	-0.01
Spiked Amount 10.000			Recovery =	105.50%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	929503	10.86	ug/l	97
4) Chloromethane	2.10	50	1101854	10.78	ug/l	98
5) Vinyl chloride	2.25	62	1111392	11.08	ug/l	97
7) Bromomethane	2.63	94	726799	10.88	ug/l	100
8) Chloroethane	2.76	64	696758	12.55	ug/l	99
9) Dichlorofluoromethane	3.08	67	1410529	10.29	ug/l	99
10) Trichlorofluoromethane	3.14	101	1092903	11.77	ug/l	99
11) Acrolein	3.71	56	259620	53.80	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	535348	9.19	ug/l	98
13) Acetone	3.95	43	513090	54.31	ug/l	97
14) 1,1-Dichloroethene	3.87	61	1221936	8.99	ug/l	98
15) Iodomethane	4.10	142	1271742	8.28	ug/l	98
16) Carbon disulfide	4.20	76	2771238	9.29	ug/l	100
17) Methyl acetate	4.54	43	247102	9.93	ug/l	100
18) Methylene chloride	4.77	49	1143129	9.98	ug/l	96
19) tert-Butyl alcohol	5.08	59	621118	239.71	ug/l	100
20) Acrylonitrile	5.23	53	625070	54.00	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	1194902	9.97	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1250308	9.31	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1651312	10.14	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3002702	10.58	ug/l	98
26) 2-Butanol	8.29	45	666812	224.80	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1975656	9.65	ug/l	99
28) 2-Butanone	7.75	43	807466	53.53	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	925119	9.81	ug/l	96
30) 2,2-Dichloropropane	7.70	77	1111221	10.79	ug/l	99
31) Tetrahydrofurane	8.27	42	93099	9.63	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	689142	10.25 ug/l	95
33)	Chloroform	8.47	83	1376669	10.23 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1059492	9.86 ug/l	99
36)	Cyclohexane	8.84	84	1560567	10.21 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	1583129	10.01 ug/l	100
39)	1,1-Dichloropropene	9.03	110	433398	9.51 ug/l	99
40)	Carbon tetrachloride	9.00	119	932265	10.35 ug/l	99
41)	Benzene	9.34	78	3312827	9.96 ug/l	100
42)	1,2-Dichloroethane	9.46	62	646870	10.35 ug/l	98
44)	Trichloroethene	10.45	130	988044	9.71 ug/l	98
45)	Methylcyclohexane	10.78	83	1859354	10.84 ug/l	98
46)	1,2-Dichloropropane	10.82	63	936152	10.43 ug/l	100
47)	1,4-Dioxane	10.97	88	53327	174.16 ug/l	94
48)	Dibromomethane	10.94	93	339841	9.98 ug/l	98
49)	Bromodichloromethane	11.22	83	924154	10.58 ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	199674	7.19 ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1162126	10.35 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2184722	55.86 ug/l	99
55)	Toluene	12.26	91	3500916	9.65 ug/l	100
56)	Ethyl methacrylate	12.67	69	595476	9.21 ug/l	98
57)	trans-1,3-Dichloropropene	12.58	75	881530	10.30 ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	499997	10.29 ug/l	99
59)	Tetrachloroethene	12.91	164	732166	9.22 ug/l	99
60)	1,3-Dichloropropane	13.00	76	924037	9.93 ug/l	99
61)	2-Hexanone	13.07	43	1425038	54.40 ug/l	99
62)	Dibromochloromethane	13.25	129	636469	10.54 ug/l	100
63)	1,2-Dibromoethane	13.37	107	483037	9.91 ug/l	98
64)	1-Chlorohexane	13.87	91	1543804	9.40 ug/l	99
65)	Chlorobenzene	13.89	112	2274741	9.98 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	769315	10.54 ug/l	100
67)	Ethylbenzene	13.99	91	4123889	9.60 ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	5908703	19.33 ug/l	99
69)	o-Xylene	14.48	91	2851355	9.73 ug/l	98
70)	Styrene	14.49	104	2369407	9.81 ug/l	100
72)	Bromoform	14.67	173	286493	11.13 ug/l	100
73)	Isopropylbenzene	14.80	105	4044541	10.13 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	596383	10.77 ug/l	98
76)	Bromobenzene	15.10	156	818695	10.47 ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	110784	10.01 ug/l	94
78)	1,2,3-Trichloropropane	15.13	110	144224	10.74 ug/l	98
79)	n-Propylbenzene	15.17	91	4721127	10.22 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

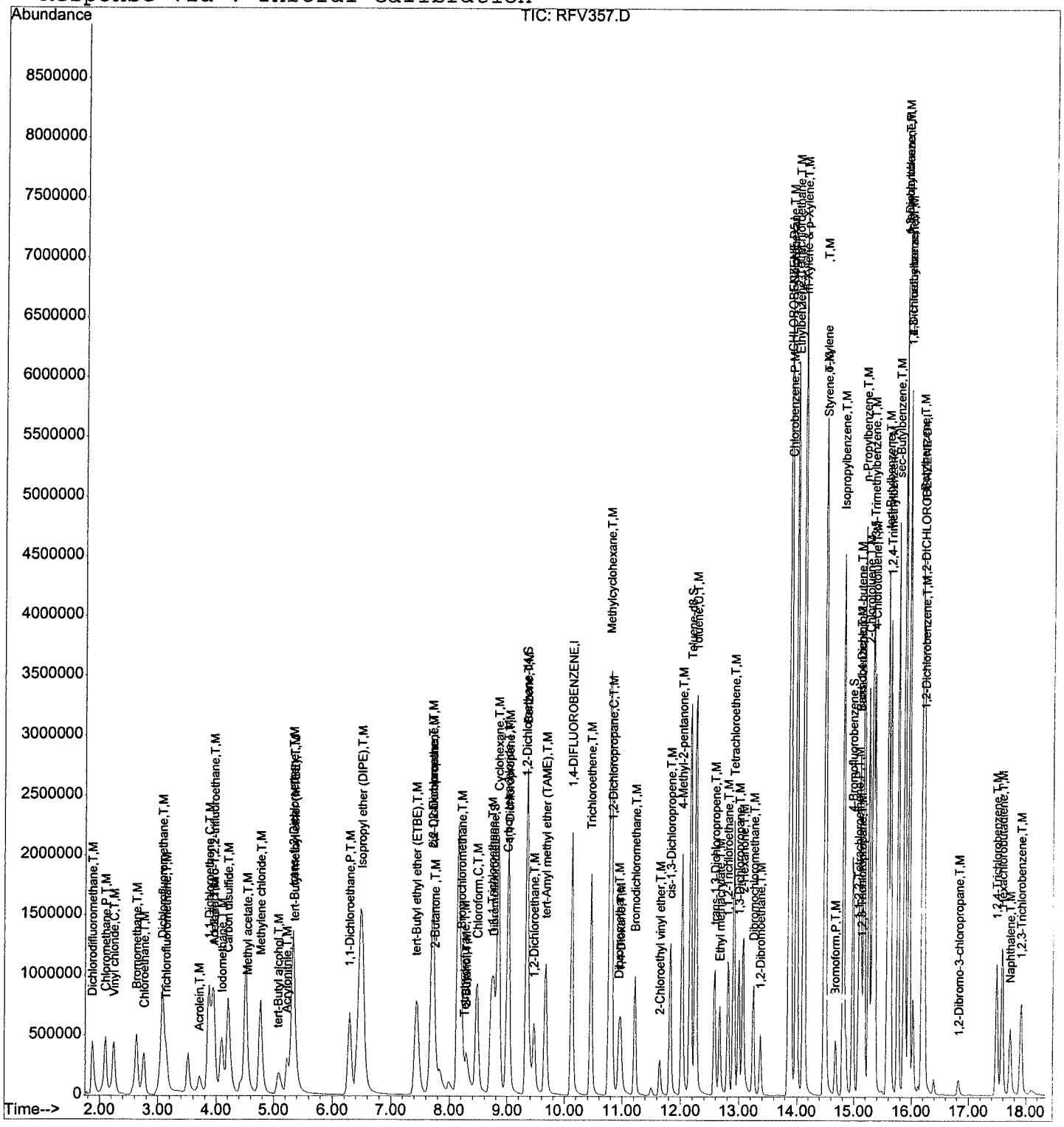
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.32	105	2948336	10.46 ug/l	100
81)	2-Chlorotoluene	15.25	91	2312159	10.43 ug/l	99
82)	4-Chlorotoluene	15.35	91	2670585	10.18 ug/l	100
83)	tert-Butylbenzene	15.57	134	777629	10.22 ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	2820098	10.35 ug/l	99
85)	sec-Butylbenzene	15.75	105	4300760	10.25 ug/l	100
86)	p-Isopropyltoluene	15.87	119	3162626	9.89 ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	1452625	9.98 ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1377639	9.74 ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2559591	10.23 ug/l	99
90)	n-Butylbenzene	16.18	91	2863726	9.86 ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1170716	9.81 ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	63577	9.74 ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	588694	10.03 ug/l	99
94)	Hexachlorobutadiene	17.59	225	431672	9.64 ug/l	99
95)	Naphthalene	17.72	128	751945	9.68 ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	451814	10.29 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	88	0.00
2	T,M	Vinyl acetate	10.000	9.411	5.9	90	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	88	0.00
2	T,M	Vinyl acetate	0.279	0.309	-10.8	90	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

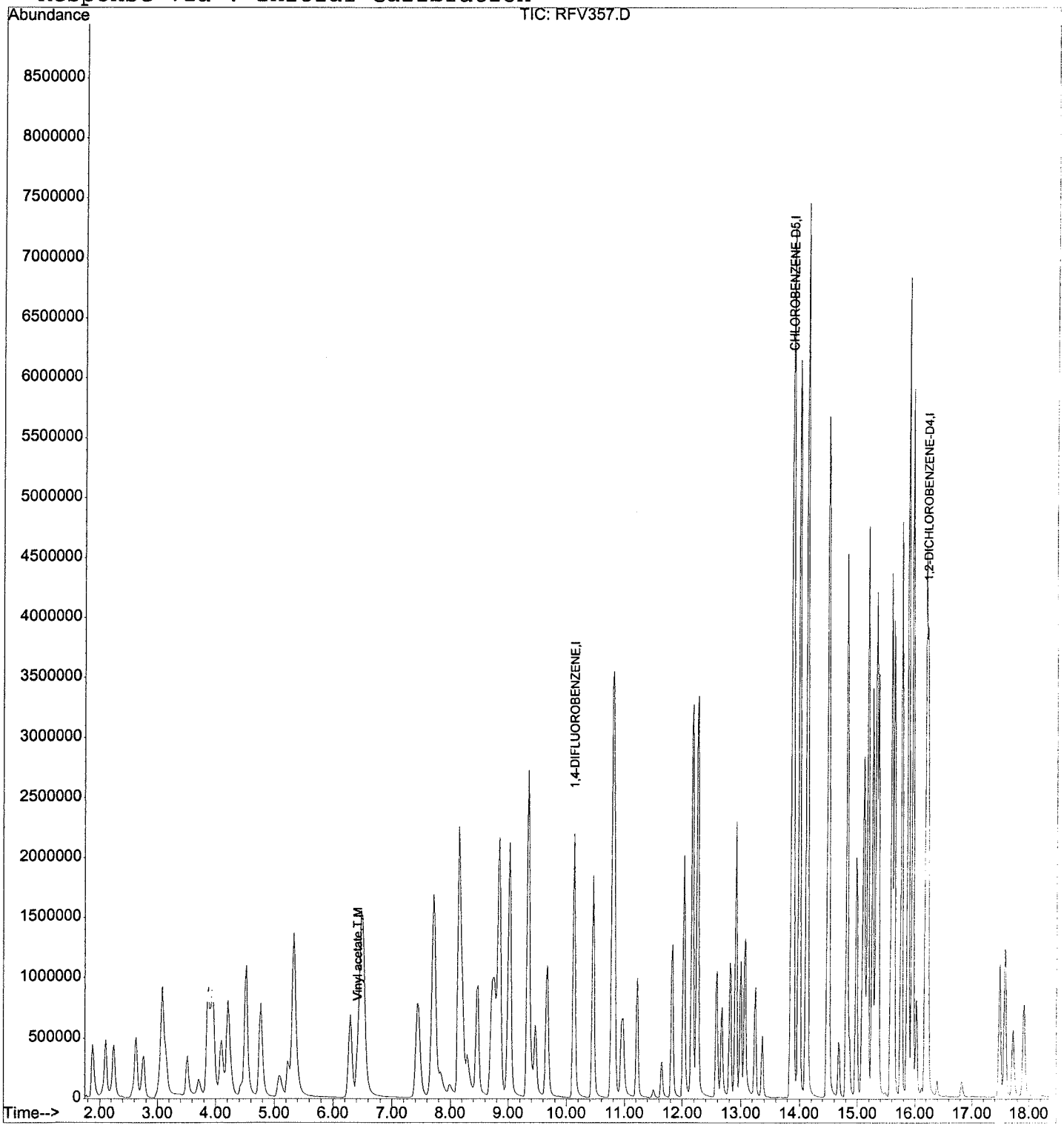
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2782259	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2300239	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	764426	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	858941	9.41	ug/l	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



ANALYTICAL LOGS

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCP5IM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/26/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A01-063

BATCH CV001E1324

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RFV328		BFB01F16 ✓						11:53
02	29		STD CHK						
03	30		CV001E1324 ✓						
04	31		V001F16L ✓						
05	32		↓ C ✓						
06	33		RINSE						
07	34		V001F16B ✓	25 mL					
08	35		20F220-04 ✓	↓	1.0	✓	✓		
09	36		↓ -01 ✓		↓	✓	✓		
10	37		20F221-01 ✓			✓	✓		
11	38		↓ -02 ✓	↓	↓	✓	✓		
12	39		PV-003-02-18 ✓						
13	40		20F179-01 ✓	25 mL	1.0	✓	✓		
14	41		-02 ✓	↓	↓	✓	✓		
15	42		-03 ✓			✓	✓		
16	43		-04 ✓			✓	✓		
17	44		-05 ✓			✓	✓		
18	45		20F178-03 ✓			✓	✓		
19	46		-06 ✓			✓	✓		
20	47		-09 ✓			✓	✓		
21	48		-12 ✓			✓	✓		
22	49		-01 ✓			✓	✓		
23	50		-02 ✓			✓	✓		
24	51		-04 ✓			✓	✓		
25	52		-05 ✓			✓	✓		
26	53		↓ -07 ✓	↓	↓	✓	✓		23:20
27	54		RINSE						
28	↓ 55		↓						
29									
30									VL 6/29/20

Instrument No.	01	
INITIAL CALIBRATION REFERENCE		
DATE	5/13/20 / 5/14/20	
ICAL ID	V001E13 / V001E14	
STANDARDS		
NAME	ID	Amount (µl) / Conc. (mg/L)
DCC 8260 Ref-AA	SVI-34-08-03 -42-02	5 5
DCC 4add	-13-01	1
DCC GAS	-38-01	1
DCC CS_2	-05-01	1
BFB	-26-03	1
IS/SURR.	-40-01	5
ICV/LCS 8260 Ref-AA	-20-01 -47-03	5 5
ICV/LCS 3add	-48-01	5
ICV/LCS GAS	-42-01	1
ICV/LCS CS_2	SVI-33-74-01	1
		50/250/1250
Data File Folder	20F26	
	LOT #	Syringe Lot #
pH strip	HC863463	MSV-02-01-05-1
Chlorine strip	002214	-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		
Reagent Water	BWS-19-001	
Sand		
Electronic Data Archival Location		Date
HPCHEM_VOA/TO01		

Comments:

Analyzed By: VL

Date Disposed: 6/29/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/29/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A01-063

BATCH CV001E1325

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RFV356		BFB01F17 ✓						10:32
02	57		CV001E1325 ✓						
03	58		V001F17L ✓						
04	59		↓ L ✓						
05	60		RINSE						
06	61		V001F17B ✓	25 mL					
07	62		20F238-05 ✓		1.0	✓	✓		
08	63		↓ -02 ✓			✓	✓		
09	64		↓ -03 ✓			✓	✓		
10	65		20F178-08 ✓			✓	✓		
11	66		↓ -10 ✓			✓	✓		
12	67		↓ -11 ✓			✓	✓		
13	68		20F183-04 ✓			✓	✓		
14	69		↓ -09 ✓			✓	✓		
15	70		4 TB PREP						
16	71		20F183-10 ✓	25mL	1.0	✓	✓		
17	72		-11 ✓			✓	✓		
18	73		-17 ✓			✓	✓		
19	74		-01 ✓			✓	✓		
20	75		-02 ✓			✓	✓		
21	76		-03 ✓			✓	✓		
22	77		-05 ✓			✓	✓		
23	78		-06 ✓			✓	✓		
24	79		↓ -07 ✓		↓	✓	✓		22:07
25	↓ 80		RINSE						
26									
27									
28									
29									
30									VL 6/30/20

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20 / 5/14/20
ICAL ID	V001E13 / V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 Ref-BA	SVI-34-08-03	5	
	-42-02	5	
DCC 4add	-13-01	1	
DCC GAS	-38-01	1	
DCC CS_2	-05-01	1	
BFB	-26-03	1	
IS/SURR.	-40-01	5	
ICV/LCS 8260 Ref-BA	-20-01	5	
	-47-03	5	
ICV/LCS 3add	-48-01	5	
ICV/LCS GAS	-42-01	1	
ICV/LCS CS_2	SVI-33-74-01	1	

SOP2501 1250

Data File Folder	20F29	
	LOT #	Syringe Lot #
pH strip	HC998032	MSV-02-01-05-1
Chlorine strip	002214	-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		
Electronic Data Archival Location		Date
HPCHEM_VOA/TO01		

Comments:

Analyzed By: VL

Date Disposed: 6/30/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/13/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V001E136

	Sample Prep ID	Data File Name	Lab Sample ID	(mL) Sample Amount (*)	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes 8260	Notes ket-AA	Notes TBA
01		REV197	BFB01E09 ✓	A / B	NA	NA	NA				13:15
02		98	V001E131 ✓	0.03/0.15					0.3	1.5	7.5 ppb
03		99	2 ✓	0.05/0.25					0.5	2.5	12.5
04		200	3 ✓	0.1/0.5					1.0	5.0	25
05		01	4 ✓	0.2/1.0					2.0	10	50
06		02	5 ✓	0.5/2.5					5.0	25	125
07		03	6 ✓	1.0/5.0					10	50	250
08		04	7 ✓	2.0/10					20	100	500
09		05	8 ✓	3.0/15					30	150	750
10		06	9 ✓	5.0/25					50	250	1250
11		07	10 ✓	10/50					100	500	2500
12		08	RINSE								
13		09									
14		10	IV001E1301 ✓						10	50	250 ppb
15		11	RINSE								19:58
16									(A): GAS, CS_2, 4add, 224-TMP		
17									(B): 8260, ket-AA		
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30									VL 5/14/20		

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20
ICAL ID	V001E13

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 ket-AA	SV1-34-31-02	*	50/1250
	-34-20-03		250
DCC 4add GAS	-34-13-01		25016250
	-34-32-01		250
DCC CS_2	-33-97-01		250
DCC 224-TMP	-34-33-03		250
BFB	-34-27-01	1	50
IS/SURR. IS	-34-23-02	5	50
SS	-34-01-01	*	250
ICV/LCS 8260 ket-AA	-34-20-01	5	50/1250
	-34-11-01	5	250
ICV/LCS 3add 2out GAS	-33-50-01	5	50
	-25-19-05	6.25	1000
ICV/LCS CS_2	-34-10-03	1	250
	-33-74-01	1	250
ICV/LCS 224-TMP	-34-05-02	5	50
Data File Folder	20E13		

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RW5-19-001	-01-03-12
Sand		N01-C5916

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: (*) varied amount

Analyzed By: VL

Date Disposed: 5/14/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/14/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V001E144

	Sample Prep ID	Data File Name	Lab Sample ID	(*) Sample Amount (mL)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		REV212	BFB01E10 ✓		NA	NA	NA		16:40
02		13	V001E14 1 ✓	0.5					1.0 ppb
03		14	2 ✓	1.0					2.0 ppb
04		15	3 ✓	2.5					5.0 ppb
05		16	4 ✓	5.0					10 ppb
06		17	5 ✓	10					20 ppb
07		18	6 ✓	15					30 ppb
08		19	IV001E1401 ✓						10 ppb 20:17
09		20	RINSE						
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

VL 5/15/20

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/14/20
ICAL ID	V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC	SVI-34-34-03	*	50
BFB	-27-01	1	50
IS/SURR. IS	-23-02	5	50
ICV/LCS	-35-01	5	50
ICV/LCS			
ICV/LCS			
ICV/LCS			
Data File Folder			

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RWS-19-001	N01-C5916
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: ** vinyl acetate ICAL ** method of analysis V001E14 same parameters as V001E13 **

Analyzed By: VL

Date Disposed: 5/15/20 Disposed By: VL

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F178

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of eight(8) water samples were received on 06/20/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF076) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF017WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF017WL/SVF017WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F178
Instrument ID : F0

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF017WB	1	NA	06/23/2010:57	06/22/2009:30	RFF077	RFF005	20SVF017W	Method Blank
LCS1W	SVF017WL	1	NA	06/23/2011:11	06/22/2009:30	RFF078	RFF005	20SVF017W	Lab Control Sample (LCS)
LCD1W	SVF017WC	1	NA	06/23/2011:31	06/22/2009:30	RFF079	RFF005	20SVF017W	LCS Duplicate
MW13D-GW061820	20F178-01	1	NA	06/23/2014:22	06/22/2009:30	RFF088	RFF005	20SVF017W	Field Sample
MW25C-GW061920	20F178-02	1	NA	06/23/2014:41	06/22/2009:30	RFF089	RFF005	20SVF017W	Field Sample
MW05R-GW061920	20F178-04	1	NA	06/23/2015:00	06/22/2009:30	RFF090	RFF005	20SVF017W	Field Sample
MW15S-GW061920	20F178-05	1	NA	06/23/2015:18	06/22/2009:30	RFF091	RFF005	20SVF017W	Field Sample
MW15D-GW061920	20F178-07	1	NA	06/23/2015:37	06/22/2009:30	RFF092	RFF005	20SVF017W	Field Sample
FD03-GW061920	20F178-08	1	NA	06/23/2015:56	06/22/2009:30	RFF093	RFF005	20SVF017W	Field Sample
MW12S-GW061920	20F178-10	1	NA	06/23/2016:15	06/22/2009:30	RFF094	RFF005	20SVF017W	Field Sample
MW12D-GW061920	20F178-11	1	NA	06/23/2016:34	06/22/2009:30	RFF095	RFF005	20SVF017W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/18/20 16:20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW13D-GW061820	Date Analyzed:	06/23/20 14:22
Lab Samp ID:	20F178-01	Dilution Factor:	1
Lab File ID:	RFF088	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	38.0	44.0	86	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 910ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

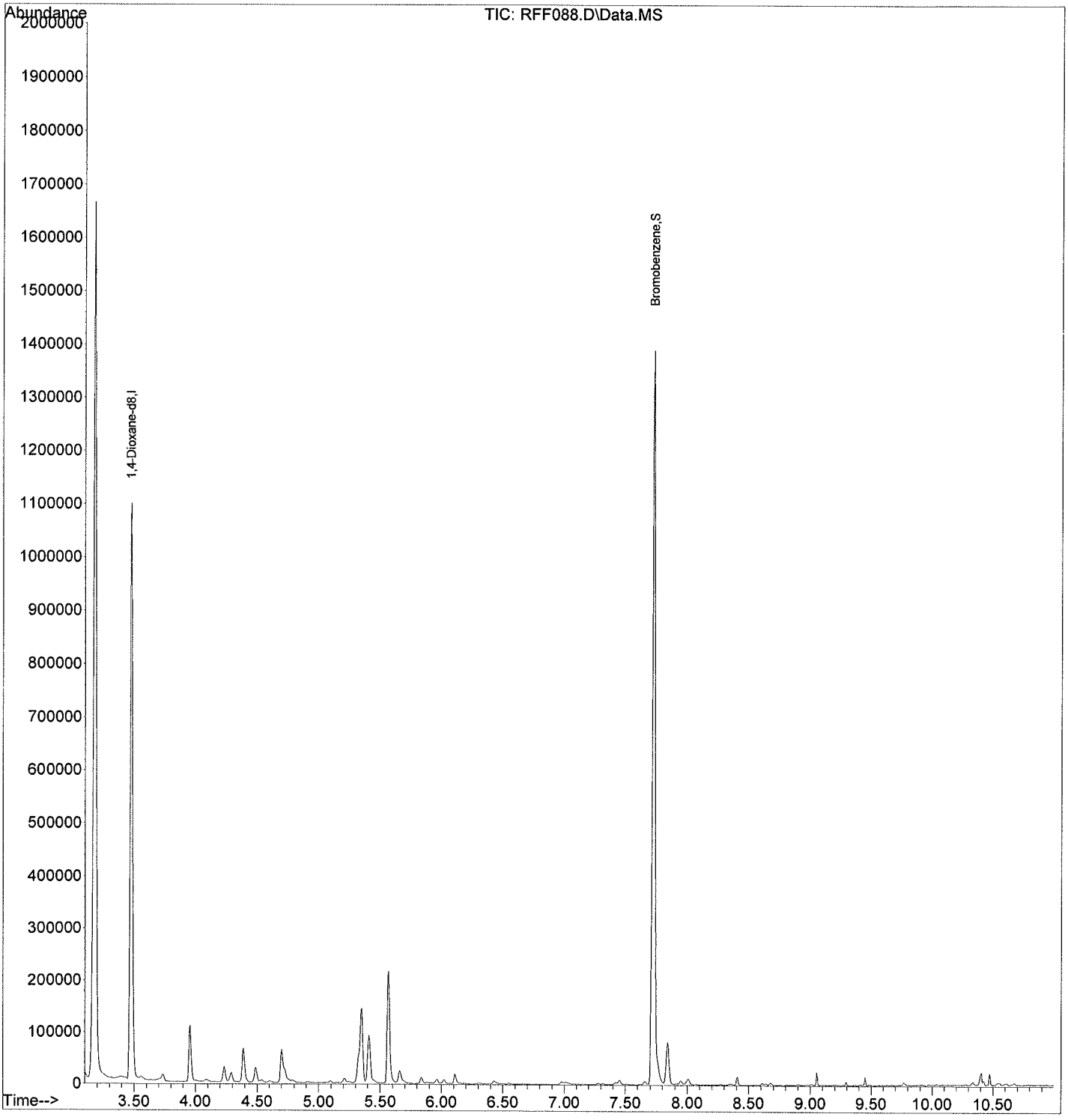
Data File : C:\msdchem\1\DATA\20F23\RFF088.D Vial: 15
Acq On : 23 Jun 2020 14:22 Operator: RMinam
Sample : 20F178-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:48:55 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	174990	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	254028	17.28	ppm	0.00
Spiked Amount 20.000			Recovery =	86.40%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF088.D Vial: 15
Acq On : 23 Jun 2020 14:22 Operator: RMinam
Sample : 20F178-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 14:48:55 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 11:55
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW25C-GW061920	Date Analyzed:	06/23/20 14:41
Lab Samp ID:	20F178-02	Dilution Factor:	1
Lab File ID:	RFF089	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.46	0.23	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	43.4	46.4	94	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 860ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

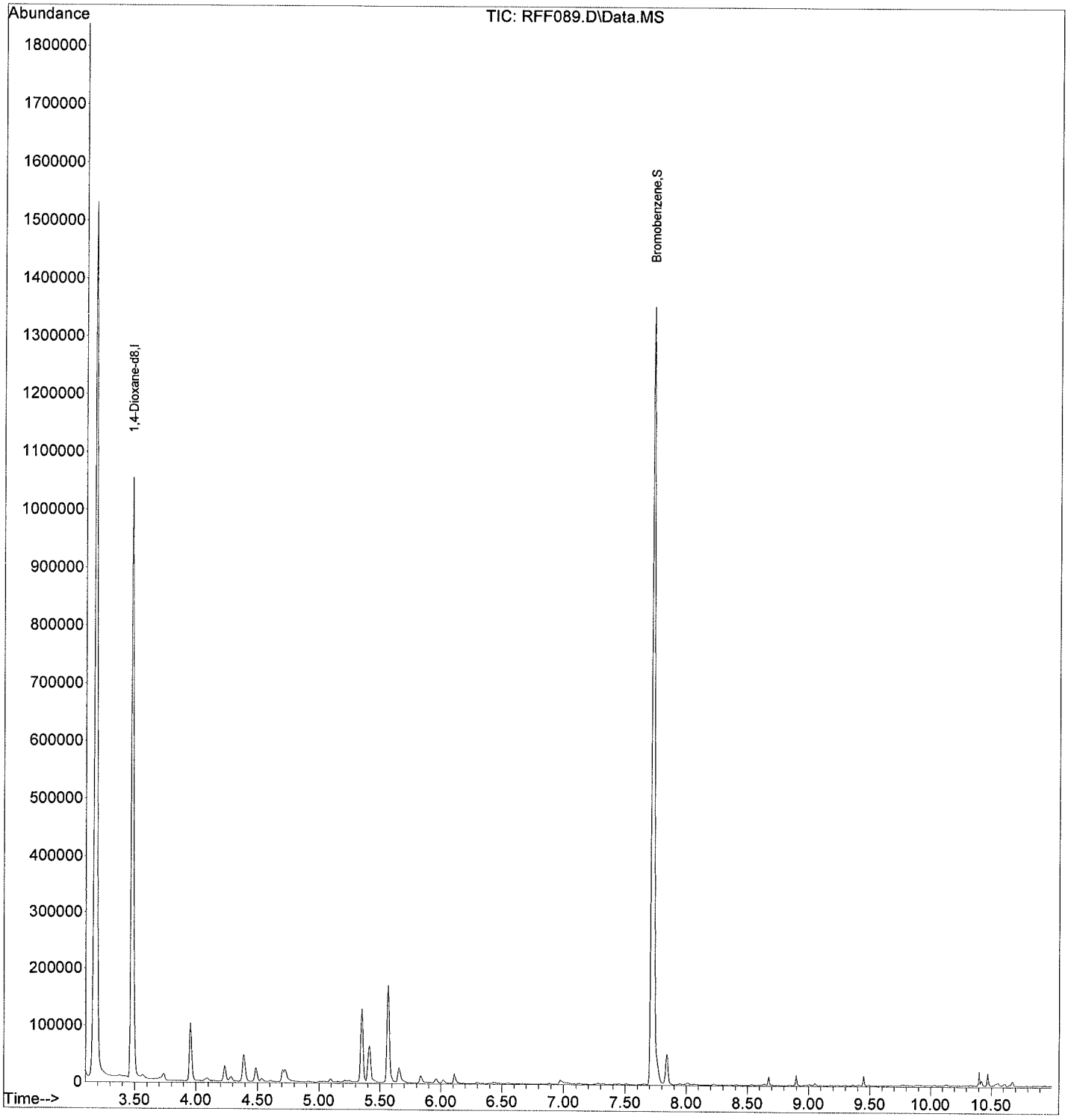
Data File : C:\msdchem\1\DATA\20F23\RFF089.D Vial: 16
Acq On : 23 Jun 2020 14:41 Operator: RMinam
Sample : 20F178-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:01:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	160638	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	251913	18.67	ppm	0.00
Spiked Amount 20.000			Recovery =	93.35%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF089.D Vial: 16
Acq On : 23 Jun 2020 14:41 Operator: RMinam
Sample : 20F178-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:01:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 15:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW05R-GW061920	Date Analyzed:	06/23/20 15:00
Lab Samp ID:	20F178-04	Dilution Factor:	1
Lab File ID:	RFF090	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	36.8	40.0	92	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

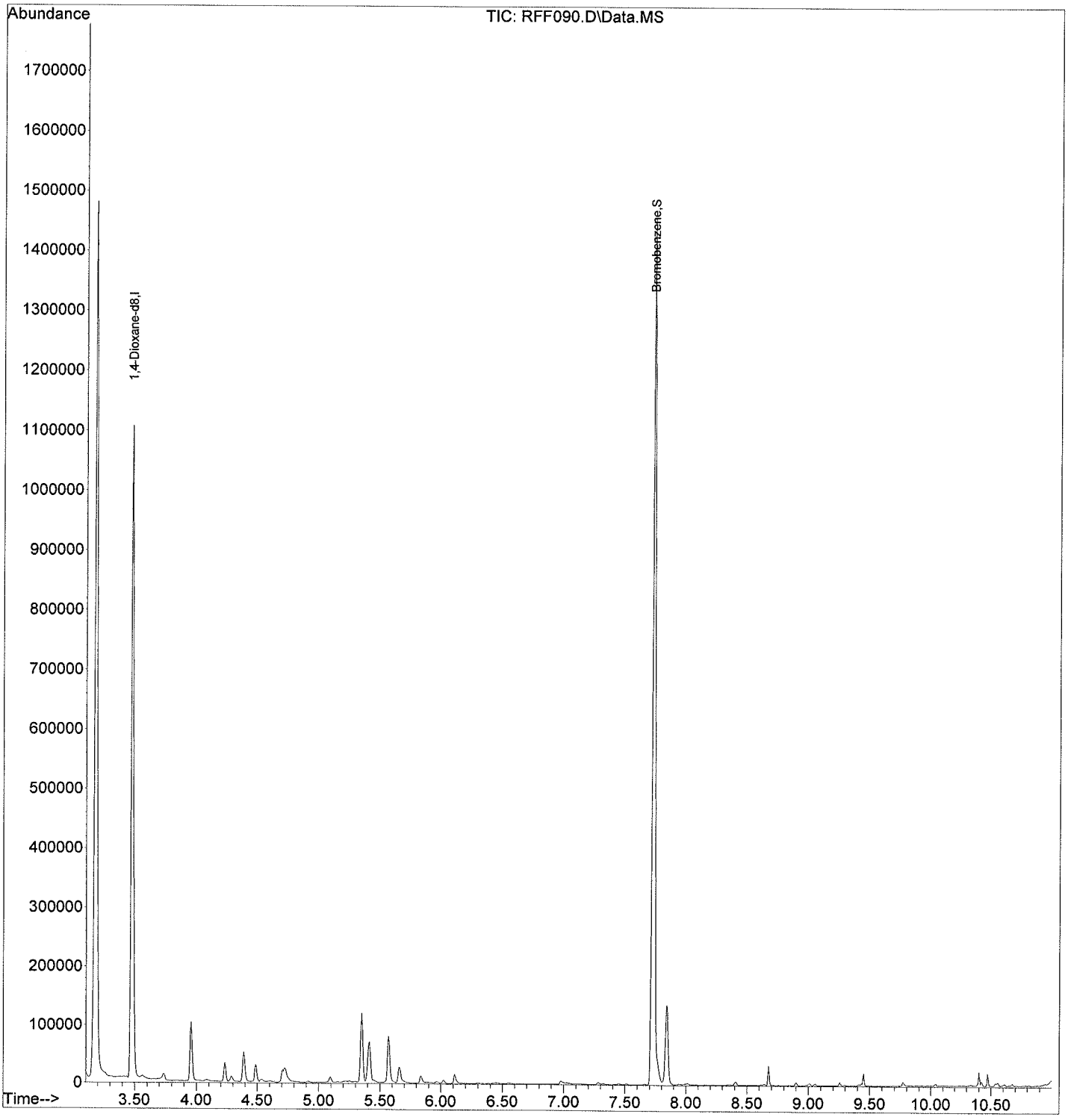
Data File : C:\msdchem\1\DATA\20F23\RFF090.D Vial: 17
Acq On : 23 Jun 2020 15:00 Operator: RMinam
Sample : 20F178-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:19:20 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	170810	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	263979	18.40	ppm	0.00
Spiked Amount 20.000			Recovery =	92.00%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF090.D Vial: 17
Acq On : 23 Jun 2020 15:00 Operator: RMinam
Sample : 20F178-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:19:20 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 09:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW15S-GW061920	Date Analyzed:	06/23/20 15:18
Lab Samp ID:	20F178-05	Dilution Factor:	1
Lab File ID:	RFF091	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.45	0.22	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	46.3	44.8	103	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 890ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

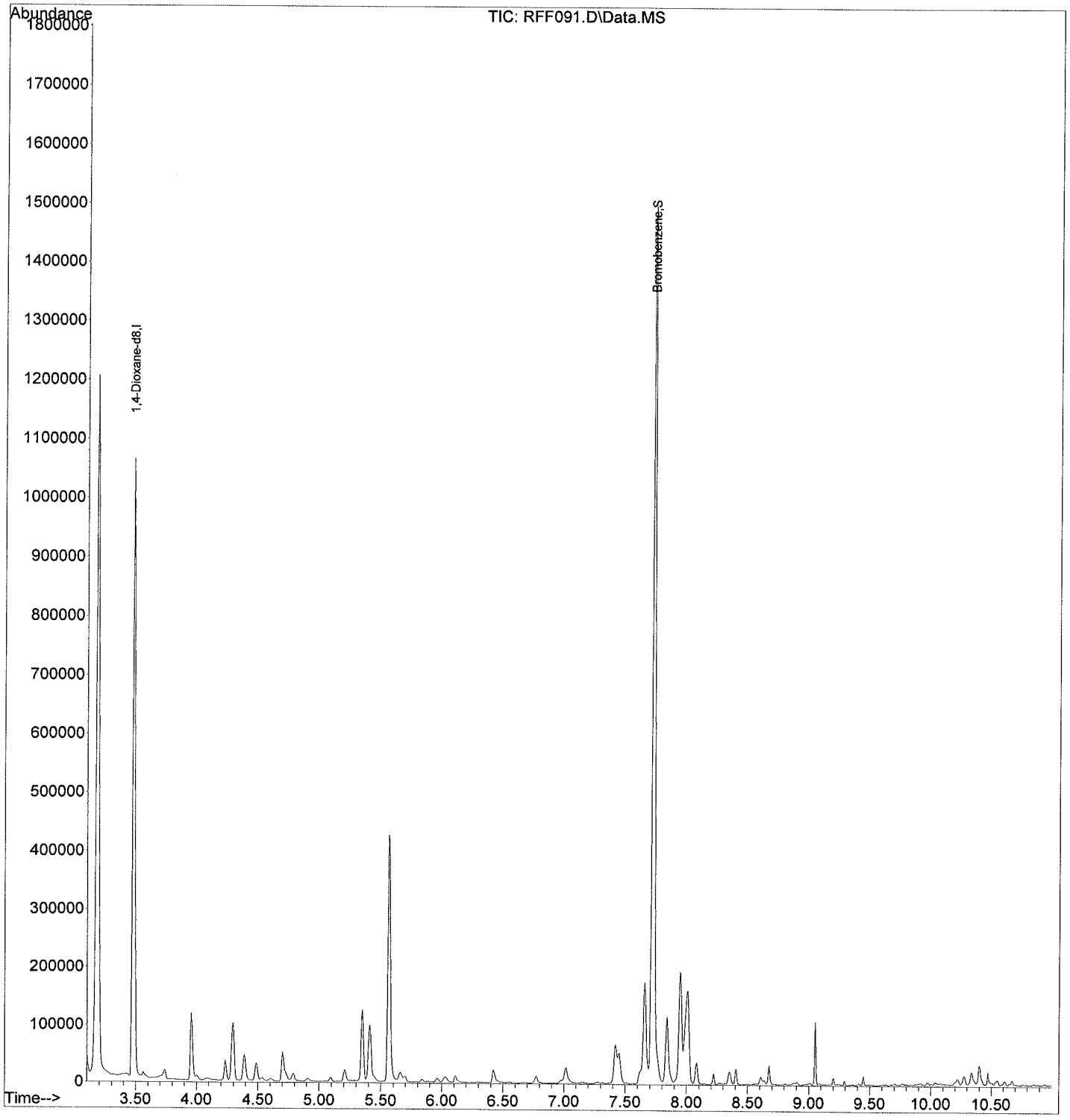
Data File : C:\msdchem\1\DATA\20F23\RFF091.D Vial: 18
Acq On : 23 Jun 2020 15:18 Operator: RMinam
Sample : 20F178-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:38:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	162624	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	281566	20.61	ppm	0.00
Spiked Amount 20.000			Recovery =	103.05%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF091.D Vial: 18
Acq On : 23 Jun 2020 15:18 Operator: RMinam
Sample : 20F178-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 15:38:16 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 09:00
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW15D-GW061920	Date Analyzed:	06/23/20 15:37
Lab Samp ID:	20F178-07	Dilution Factor:	1
Lab File ID:	RFF092	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	43.3	41.2	105	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 970ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

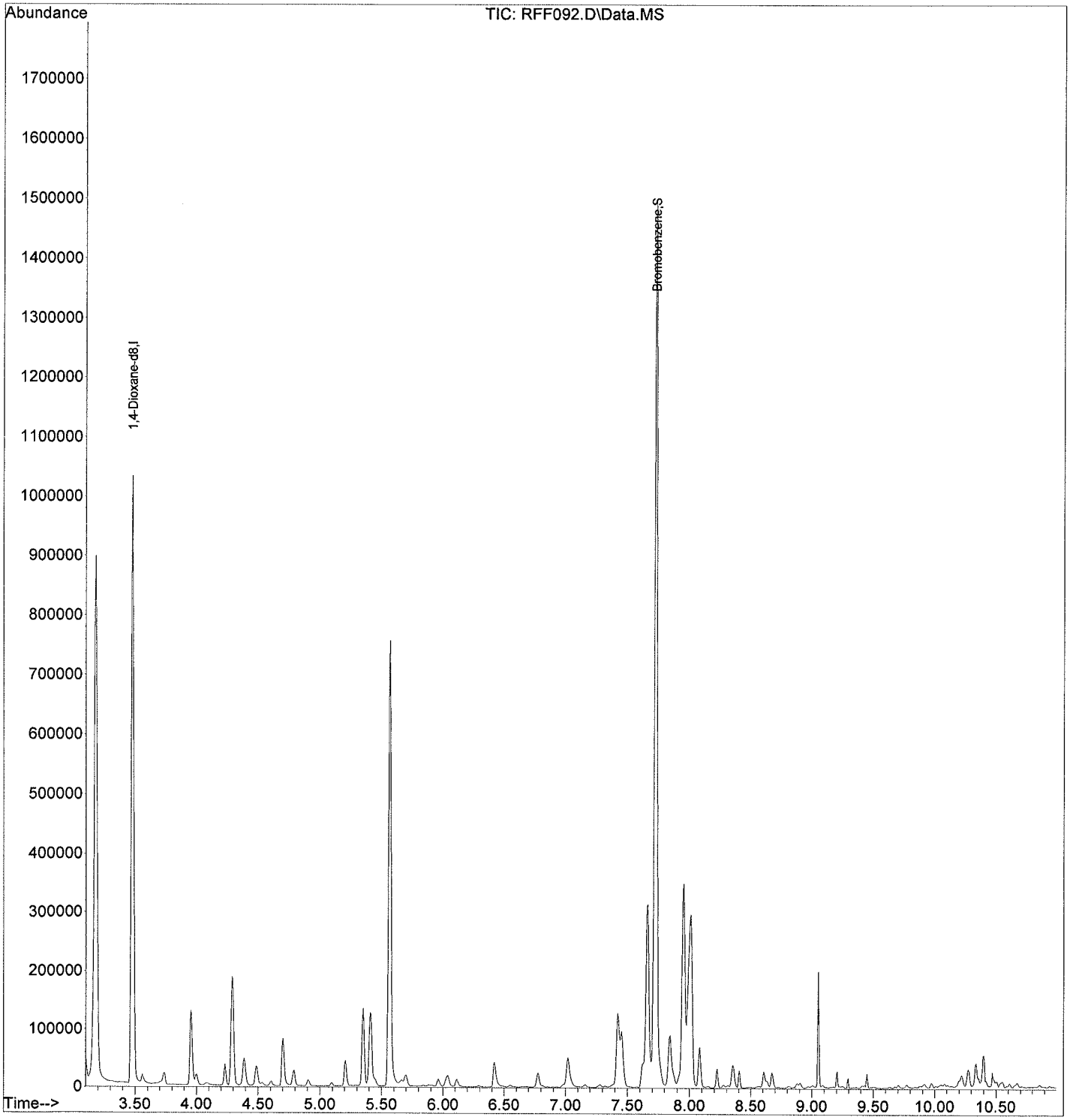
Data File : C:\msdchem\1\DATA\20F23\RFF092.D Vial: 19
Acq On : 23 Jun 2020 15:37 Operator: RMinam
Sample : 20F178-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:01:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	155333	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	274214	21.01	ppm	0.00
Spiked Amount 20.000			Recovery =	105.05%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF092.D Vial: 19
Acq On : 23 Jun 2020 15:37 Operator: RMinam
Sample : 20F178-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:01:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 09:05
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: FD03-GW061920	Date Analyzed:	06/23/20 15:56
Lab Samp ID	: 20F178-08	Dilution Factor:	1
Lab File ID	: RFF093	Matrix:	WATER
Ext Btch ID	: 20SVF017W	% Moisture:	NA
Calib. Ref.	: RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	41.0	43.6	94	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 920ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

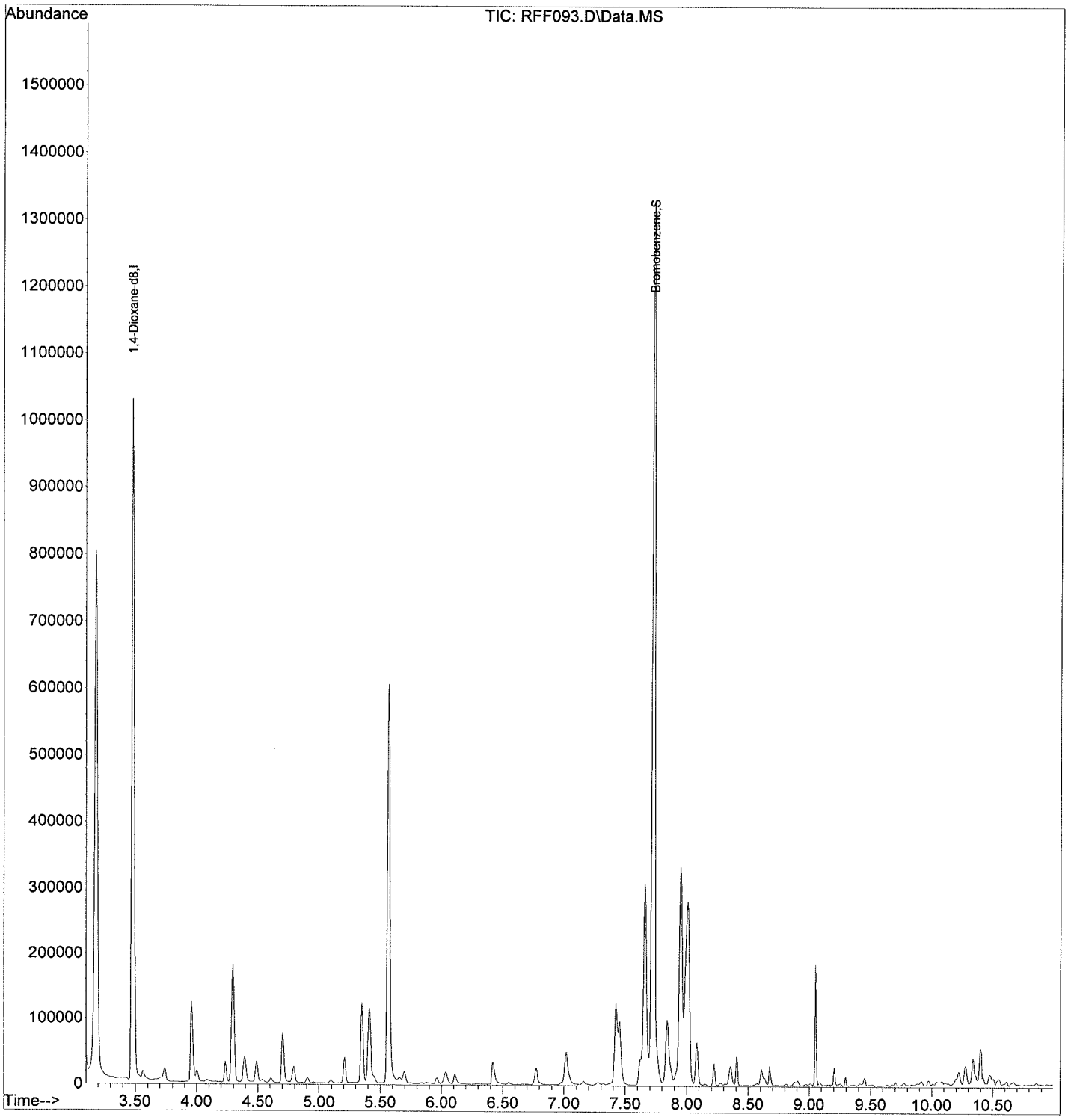
Data File : C:\msdchem\1\DATA\20F23\RFF093.D Vial: 20
Acq On : 23 Jun 2020 15:56 Operator: RMinam
Sample : 20F178-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:32:06 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	160247	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	253879	18.86	ppm	0.00
Spiked Amount 20.000			Recovery =	94.30%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF093.D Vial: 20
Acq On : 23 Jun 2020 15:56 Operator: RMinam
Sample : 20F178-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:32:06 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 12:40
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW12S-GW061920	Date Analyzed:	06/23/20 16:15
Lab Samp ID:	20F178-10	Dilution Factor:	1
Lab File ID:	RFF094	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.46	0.23

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	45.2	46.4	97	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 860ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

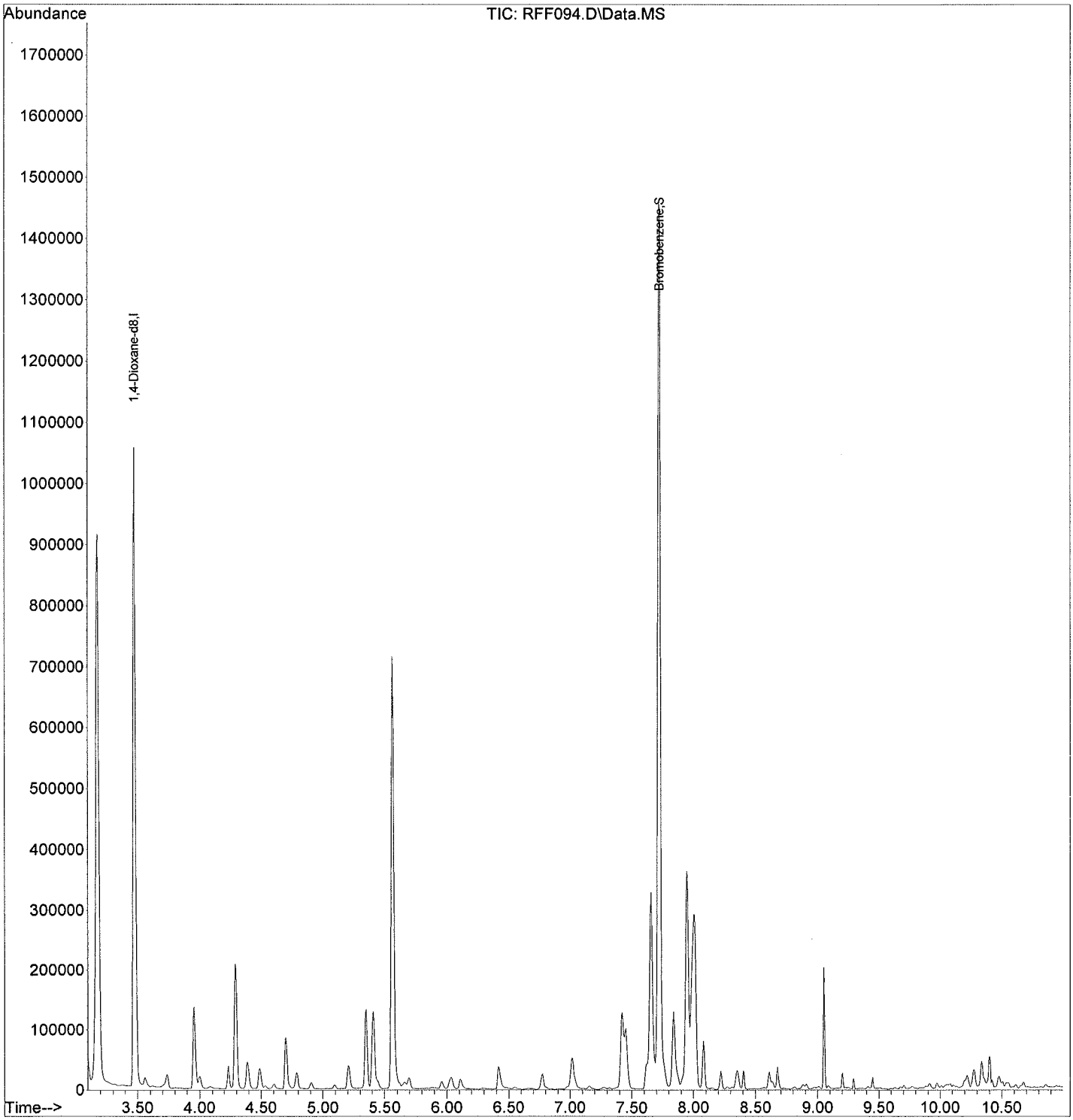
Data File : C:\msdchem\1\DATA\20F23\RFF094.D Vial: 21
Acq On : 23 Jun 2020 16:15 Operator: RMinam
Sample : 20F178-10 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:35:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	165065	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	269632	19.44	ppm	0.00
Spiked Amount 20.000			Recovery =	97.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF094.D Vial: 21
Acq On : 23 Jun 2020 16:15 Operator: RMinam
Sample : 20F178-10 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:35:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/19/20 15:35
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MW12D-GW061920	Date Analyzed:	06/23/20 16:34
Lab Samp ID:	20F178-11	Dilution Factor:	1
Lab File ID:	RFF095	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.39	0.19

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	37.0	38.8	95	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1030ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

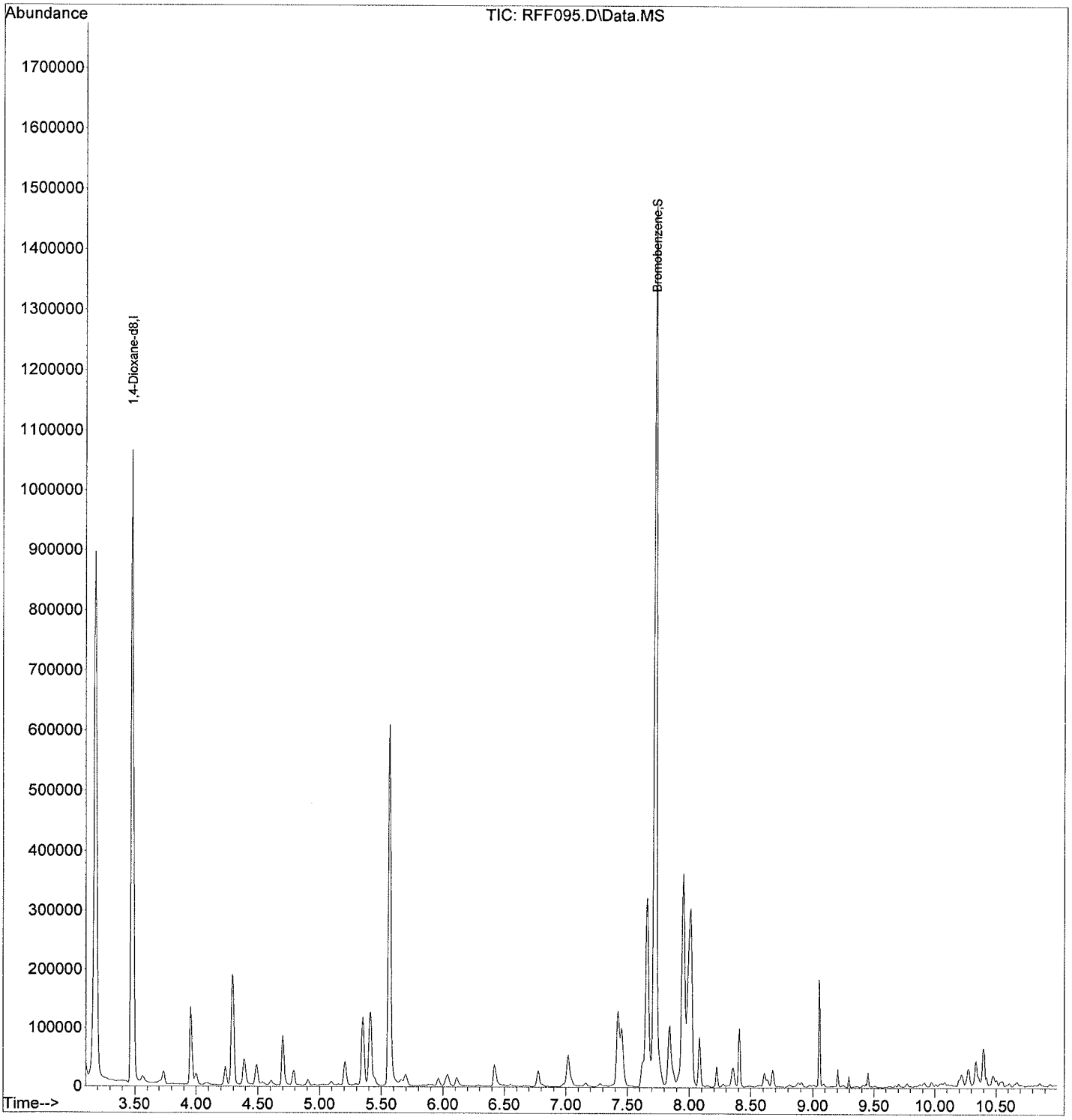
Data File : C:\msdchem\1\DATA\20F23\RFF095.D Vial: 22
Acq On : 23 Jun 2020 16:34 Operator: RMinam
Sample : 20F178-11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:58:58 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	163741	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	261806	19.03	ppm	0.00
Spiked Amount 20.000			Recovery =	95.15%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF095.D Vial: 22
Acq On : 23 Jun 2020 16:34 Operator: RMinam
Sample : 20F178-11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 16:58:58 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/22/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/22/20
Batch No.	: 20F178	Date Extracted:	06/22/20 09:30
Sample ID	: MBLK1W	Date Analyzed:	06/23/20 10:57
Lab Samp ID:	SVF017WB	Dilution Factor:	1
Lab File ID:	RFF077	Matrix:	WATER
Ext Btch ID:	20SVF017W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	31.1	40.0	78	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF017WB	SVF017WL	SVF017WC
LAB FILE ID	: RFF077	RFF078	RFF079
DATE PREPARED	: 06/22/20 09:30	06/22/20 09:30	06/22/20 09:30
DATE ANALYZED	: 06/23/20 10:57	06/23/20 11:11	06/23/20 11:31
PREP BATCH	: 20SVF017W	20SVF017W	20SVF017W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	32.5	81	40.0	32.7	82	1	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	33.9	85	40.0	35.2	88	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

QC DATA

Quantitation Report (QT Reviewed)

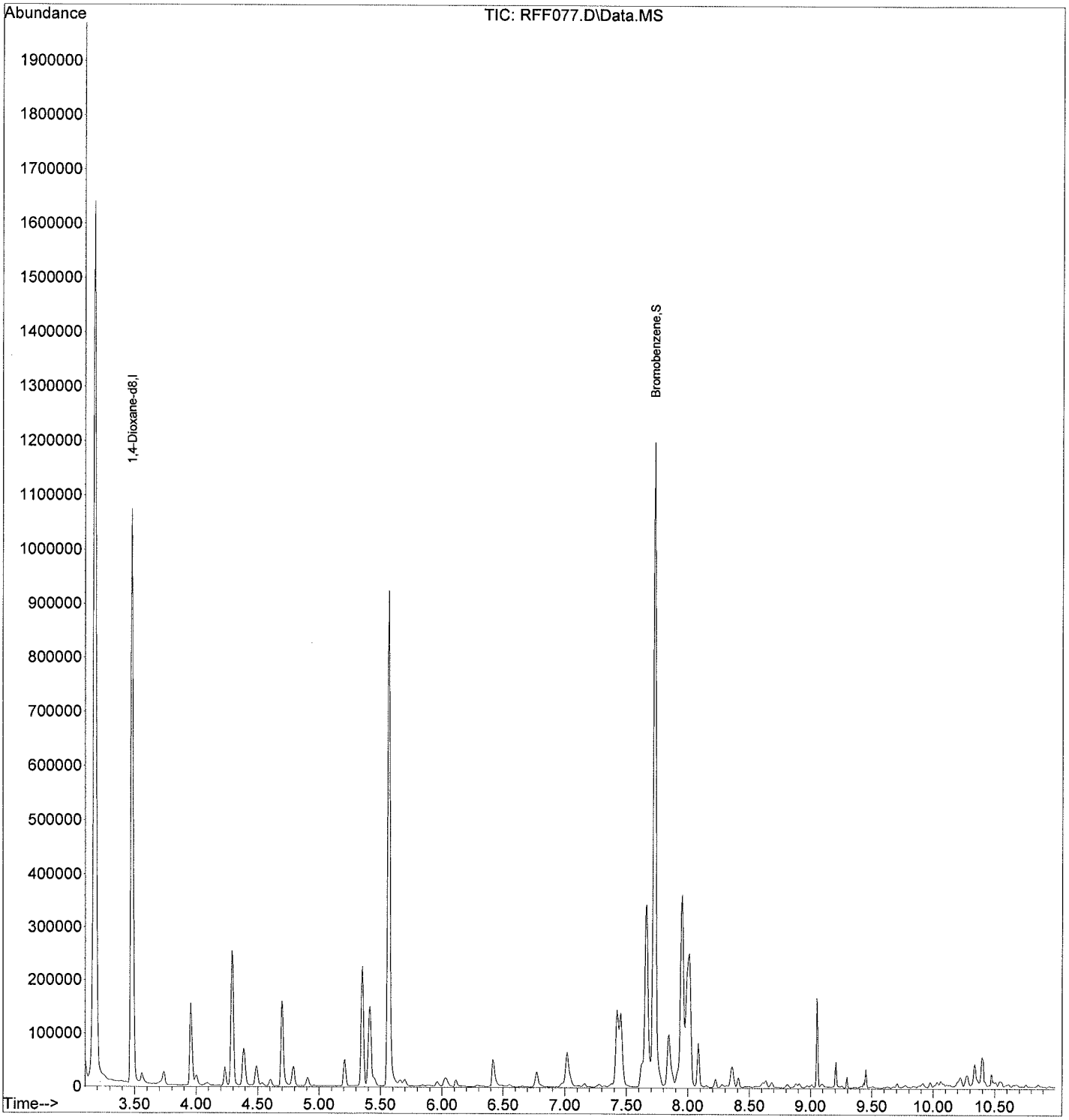
Data File : C:\msdchem\1\DATA\20F23\RFF077.D Vial: 4
Acq On : 23 Jun 2020 10:57 Operator: RMinam
Sample : SVF017WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:27:27 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	164036	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	213990	15.53	ppm	0.00
Spiked Amount 20.000			Recovery =	77.65%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF077.D Vial: 4
Acq On : 23 Jun 2020 10:57 Operator: RMinam
Sample : SVF017WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:27:27 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF078.D Vial: 5
Acq On : 23 Jun 2020 11:11 Operator: RMinam
Sample : SVF017WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 11:45:32 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

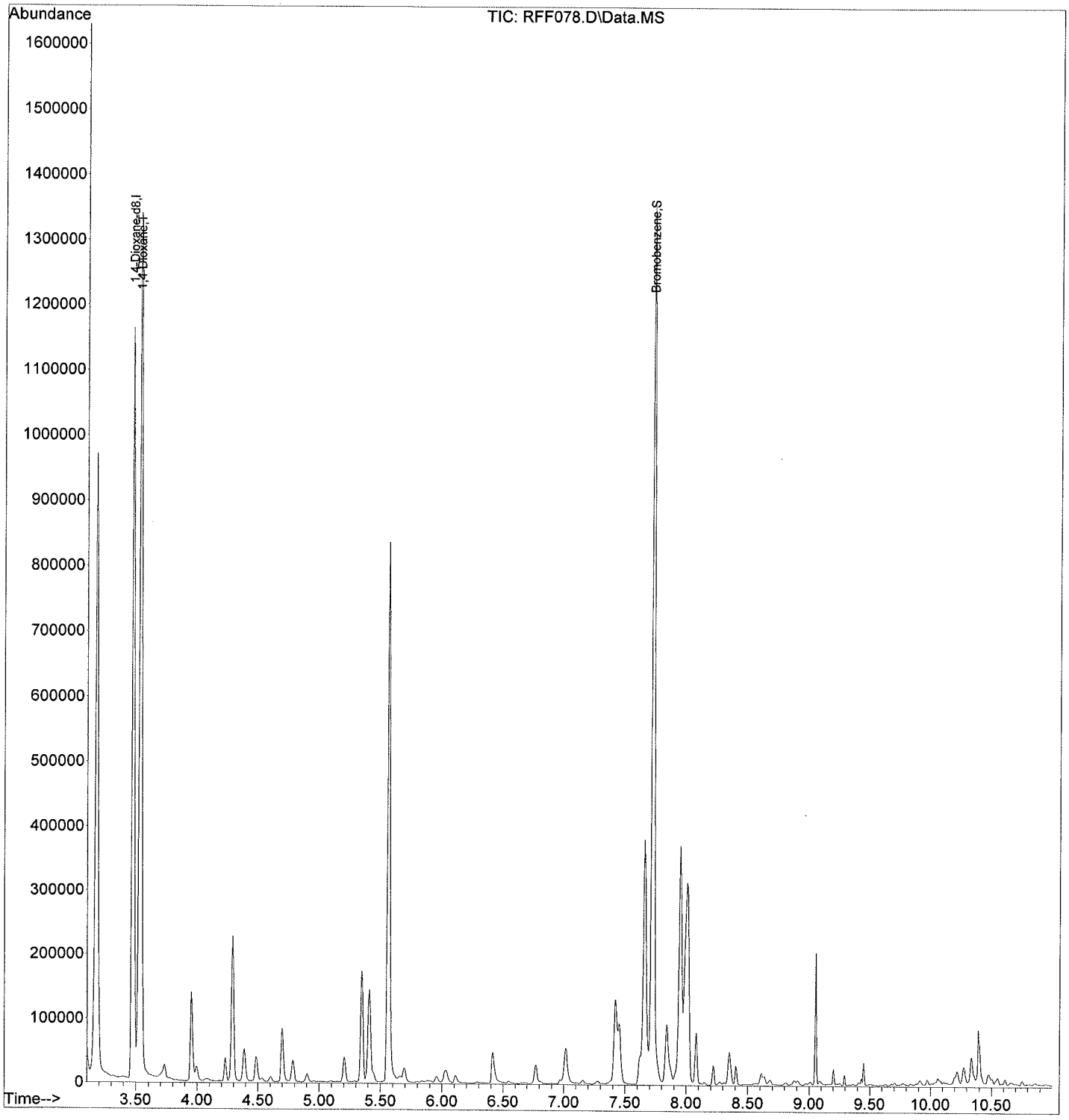
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	174708	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	248813	16.95	ppm	0.00
Spiked Amount 20.000			Recovery = 84.75%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	195703	16.23	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF078.D
Acq On : 23 Jun 2020 11:11
Sample : SVF017WL
Misc : F0
Integrator: RTE
Quant Time: Jun 23 11:45:32 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 5
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



Quantitation Report (QT Reviewed)

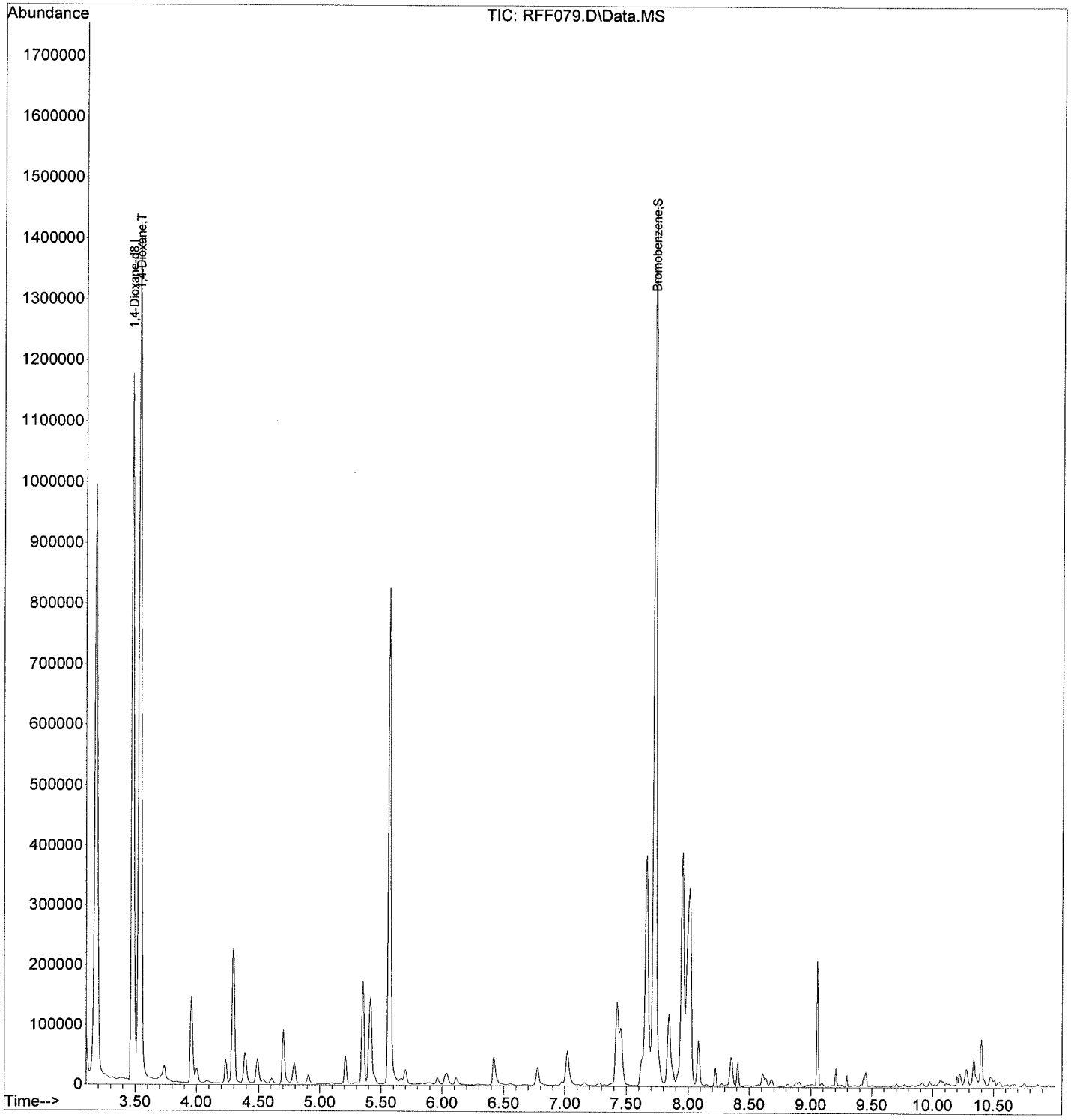
Data File : C:\msdchem\1\DATA\20F23\RFF079.D Vial: 6
Acq On : 23 Jun 2020 11:31 Operator: RMinam
Sample : SVF017WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:04:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	178235	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	263364	17.59	ppm	0.00
Spiked Amount 20.000			Recovery =	87.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	200793	16.33	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF079.D Vial: 6
Acq On : 23 Jun 2020 11:31 Operator: RMinam
Sample : SVF017WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 12:04:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVFOF03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

MW 6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

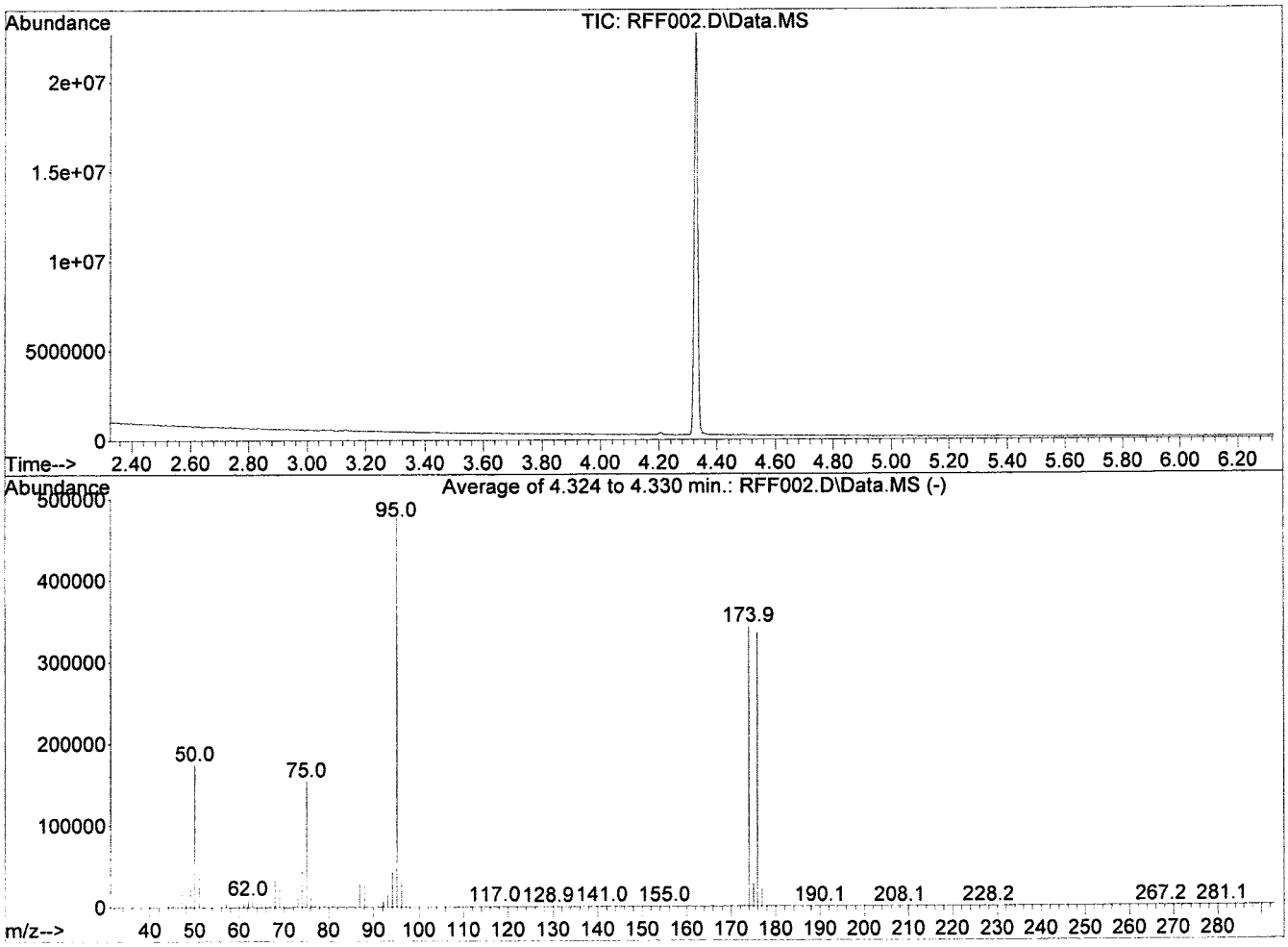
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

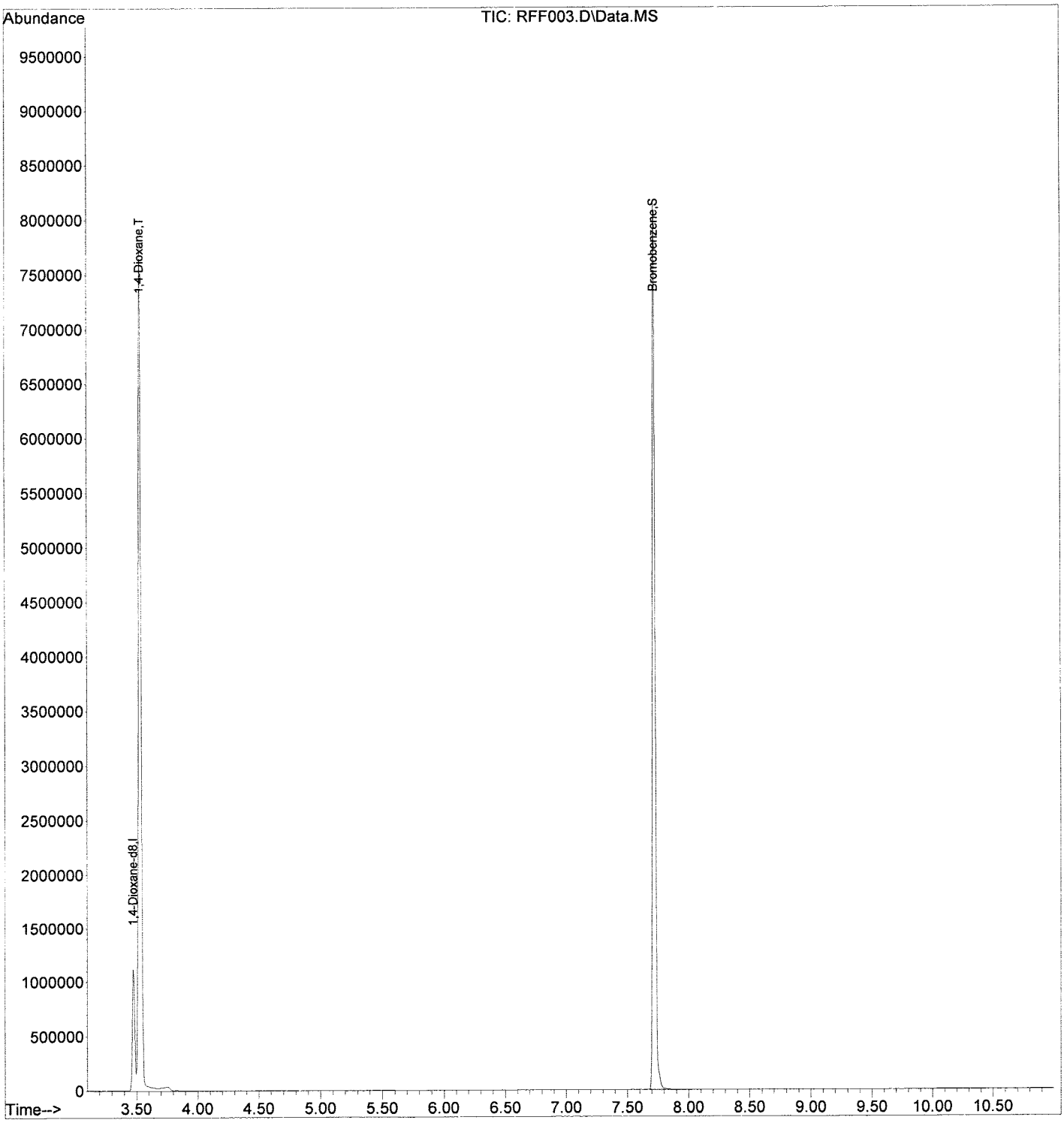
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

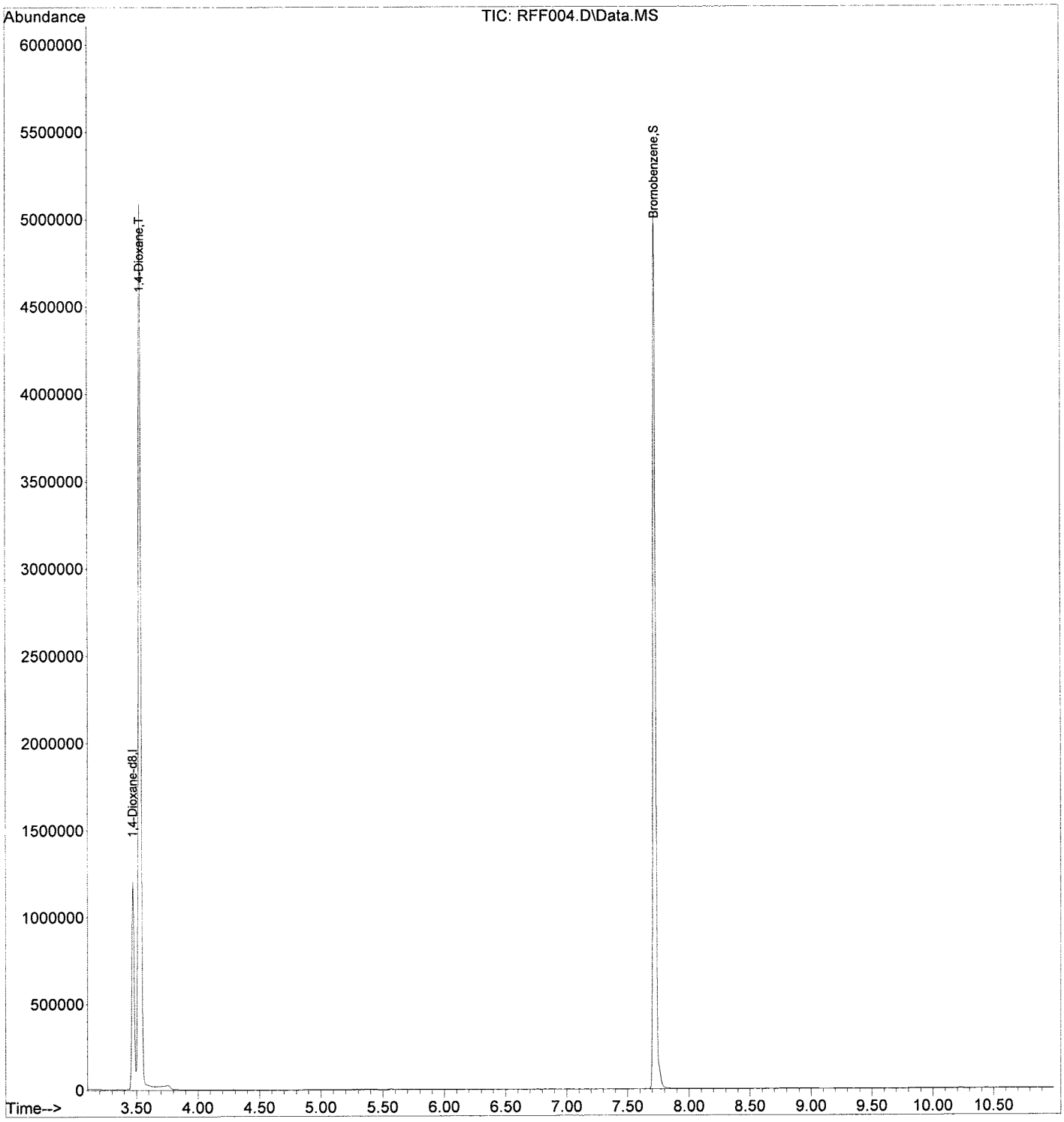
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

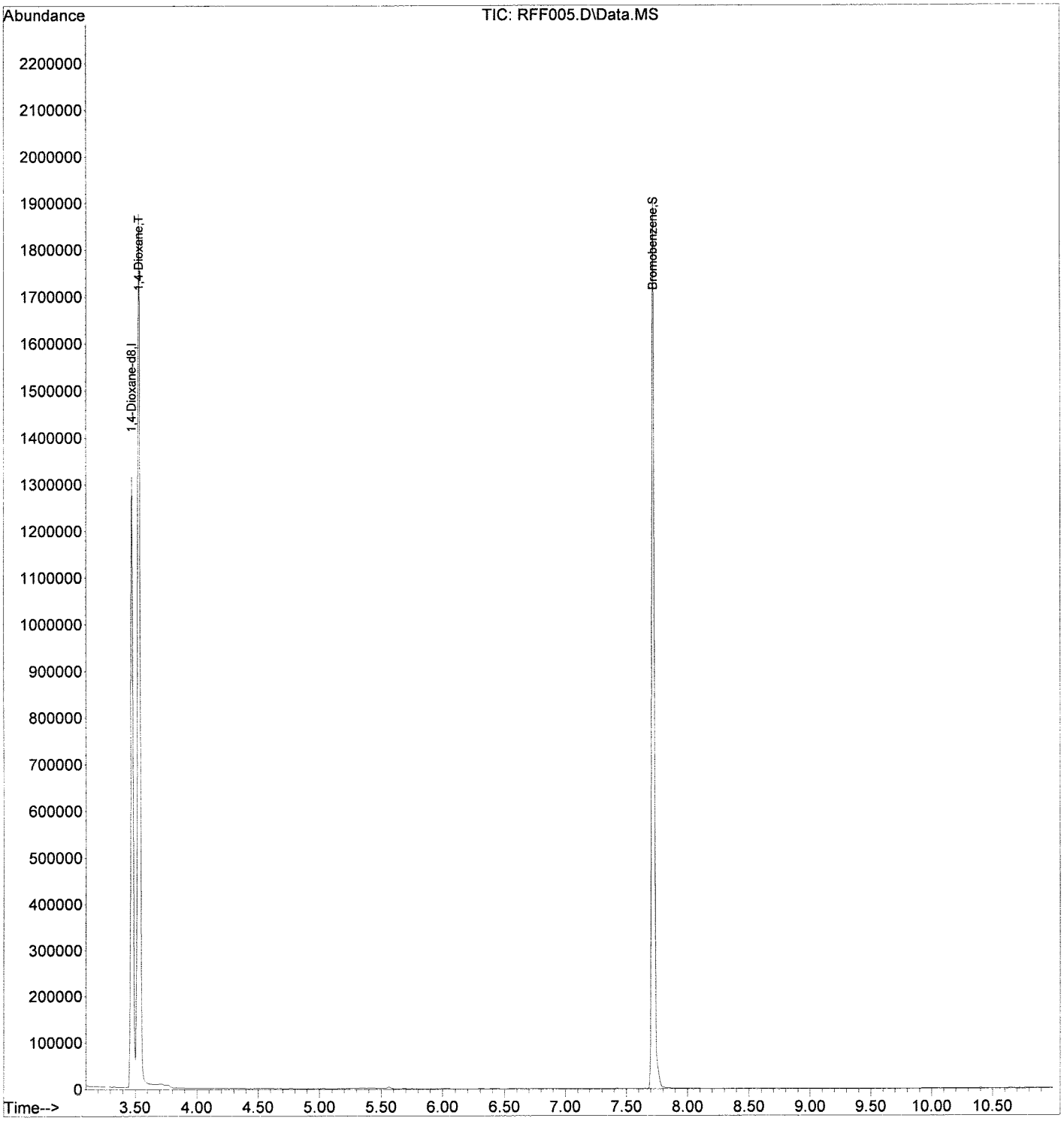
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

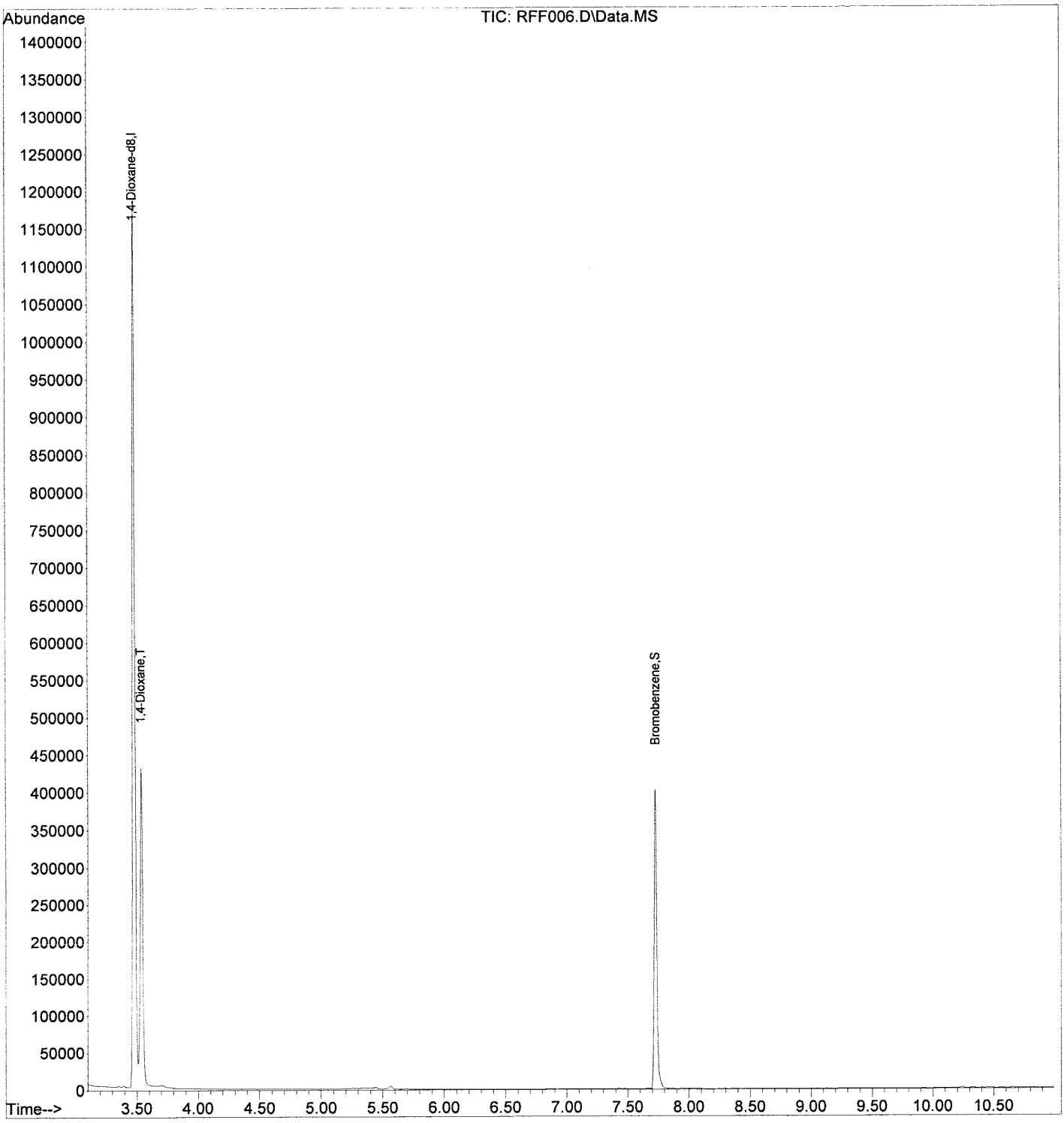
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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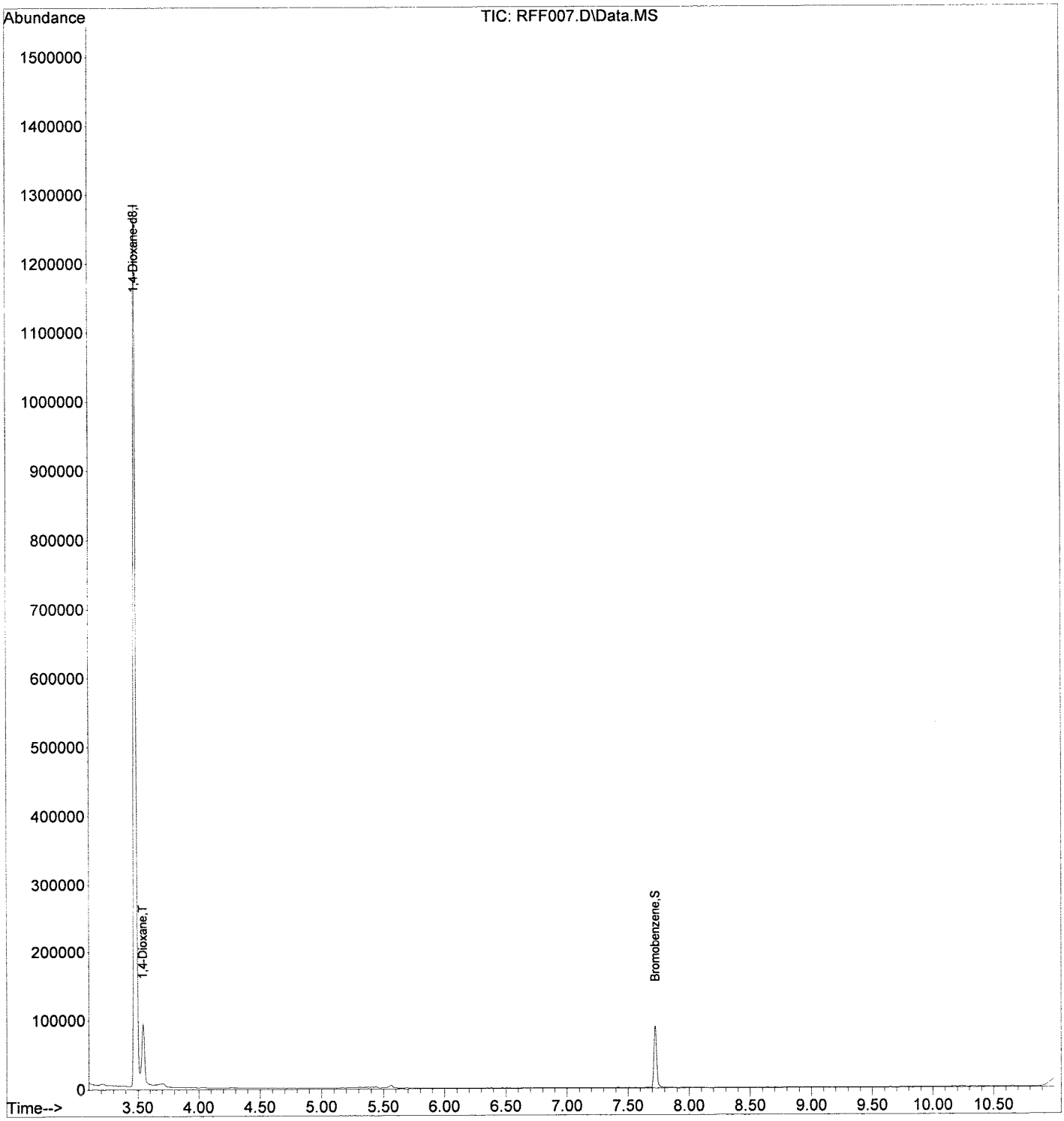
Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

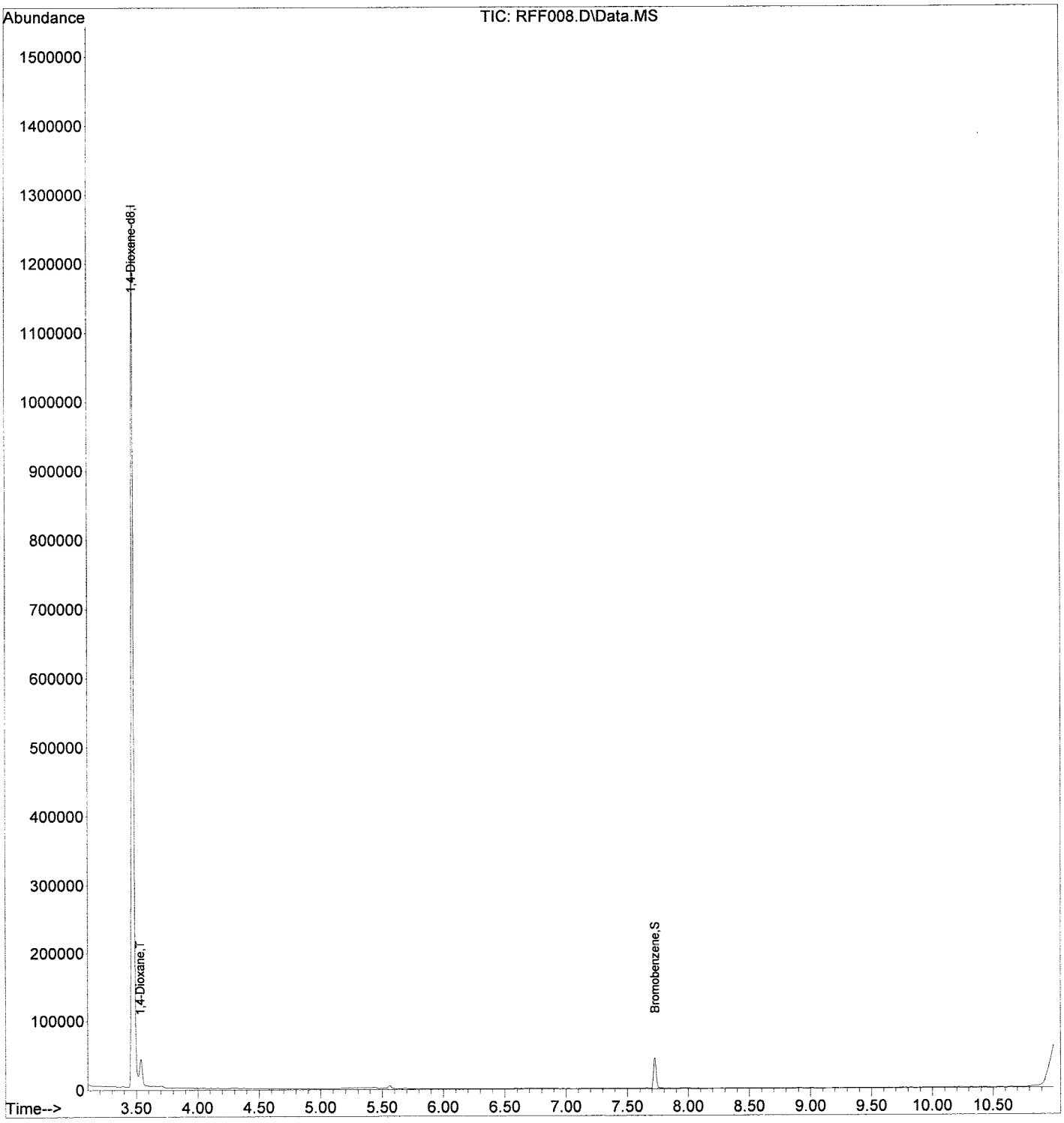
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

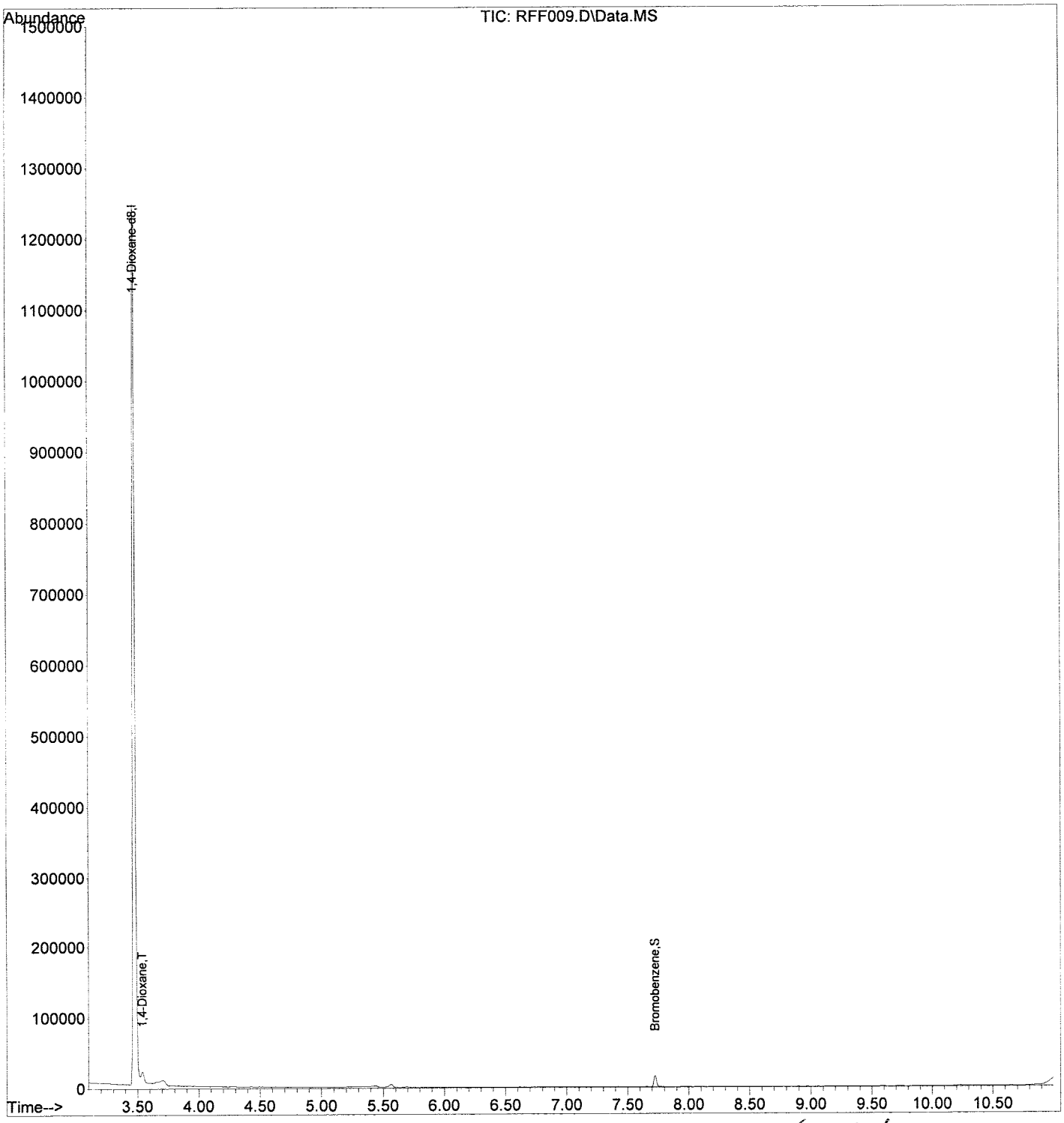
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

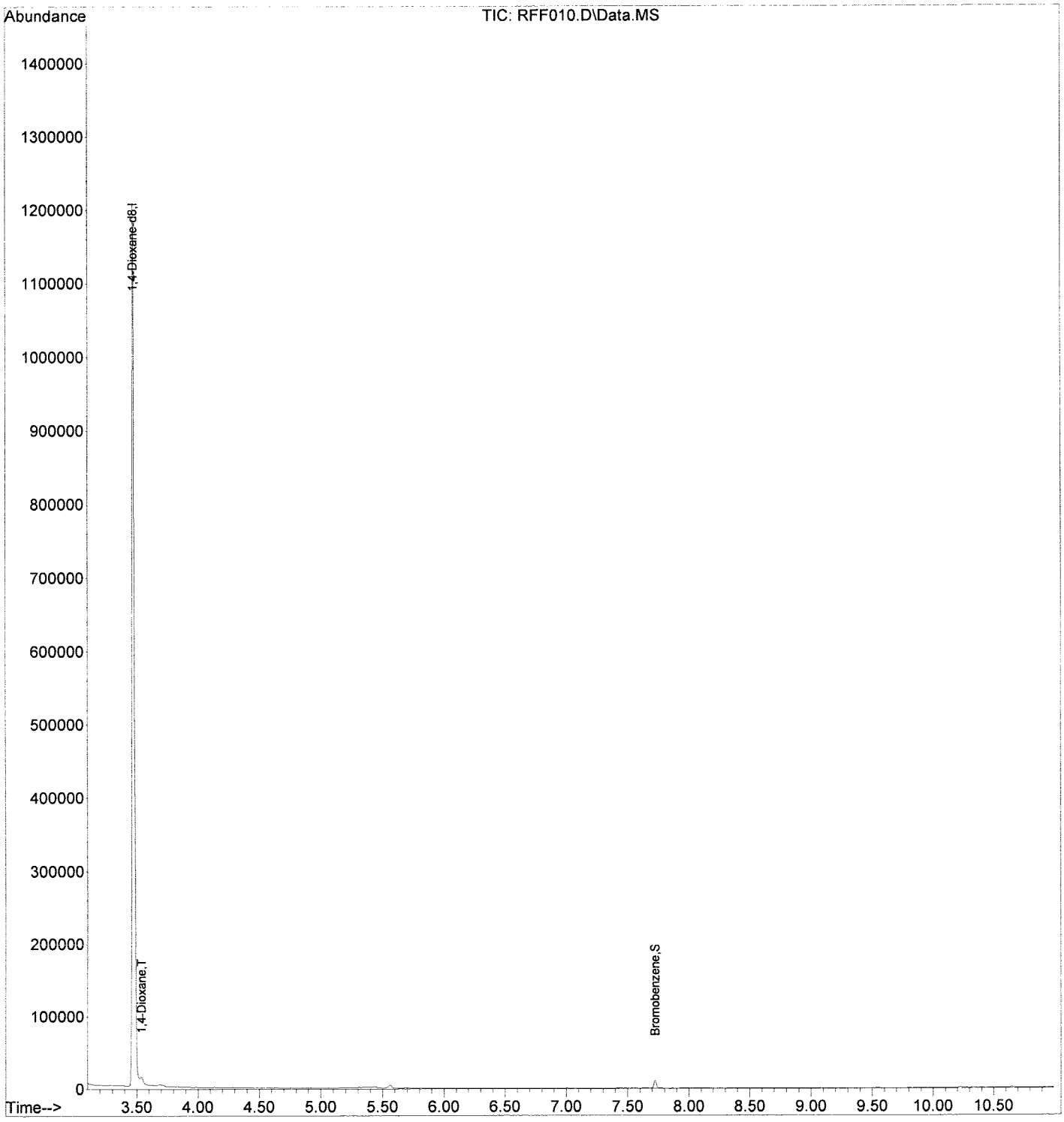
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

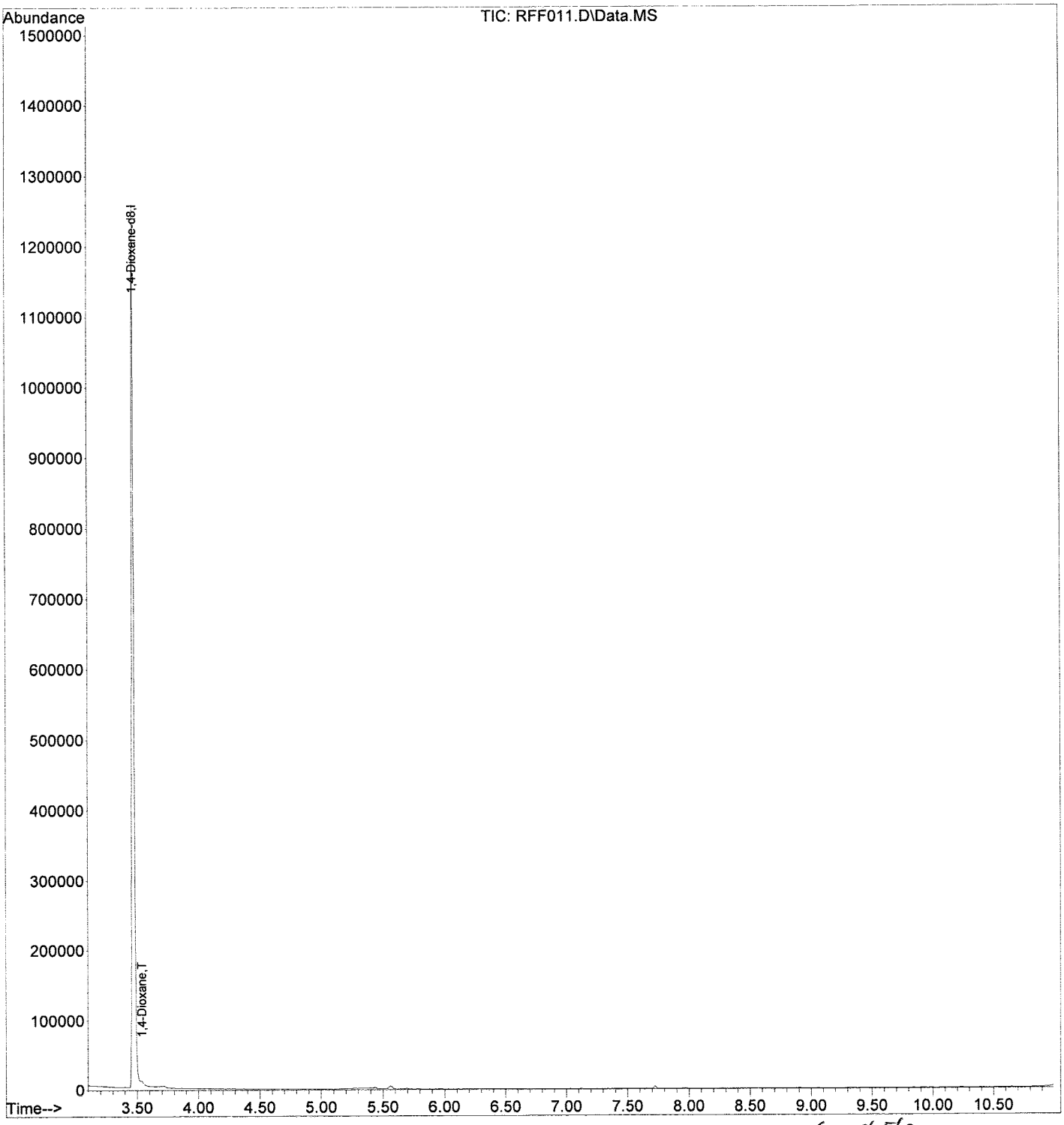
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SVF0F03G.M Thu Jun 04 14:42:14 2020 F0 Page: 2

VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

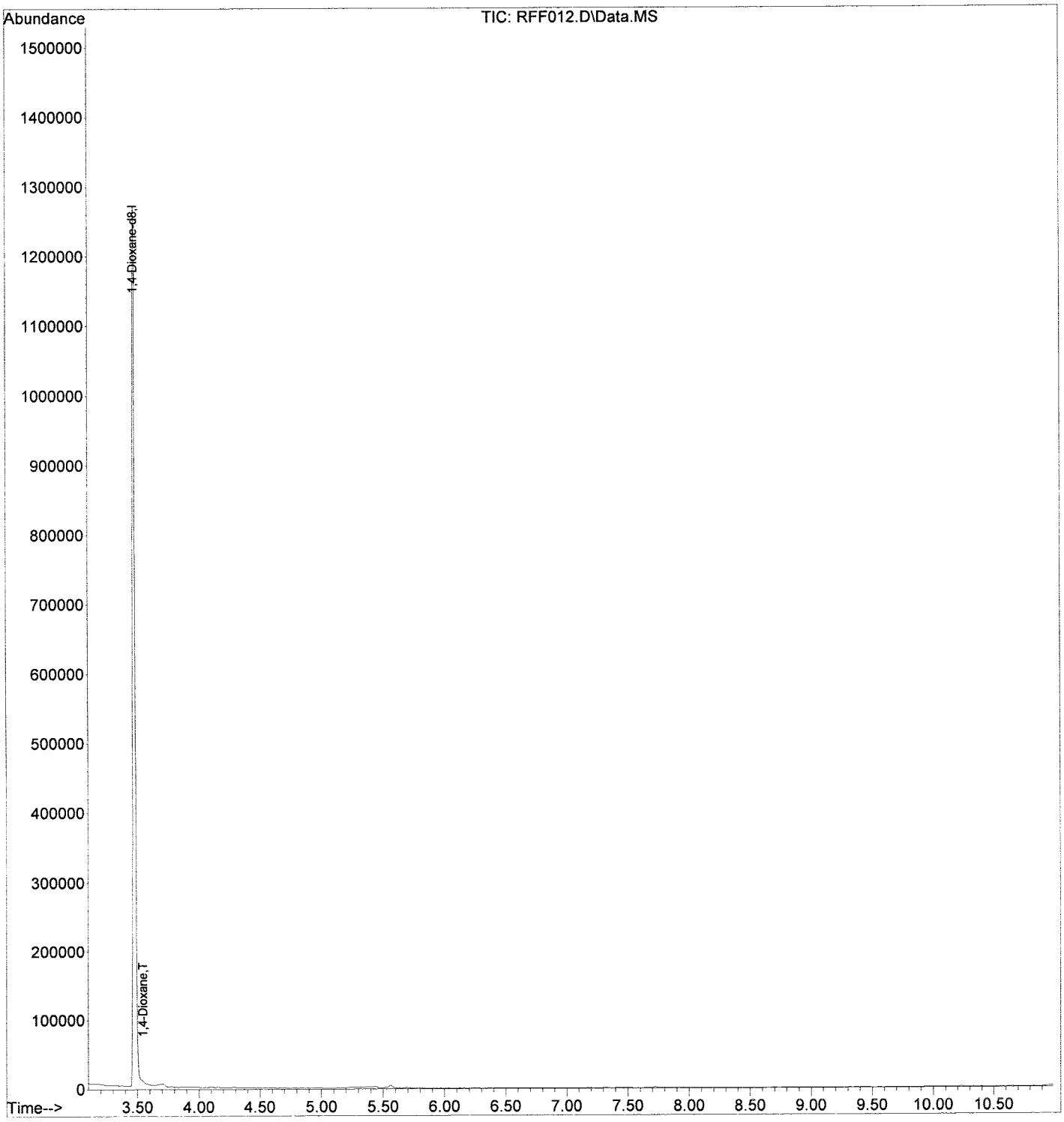
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery = 107.70%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

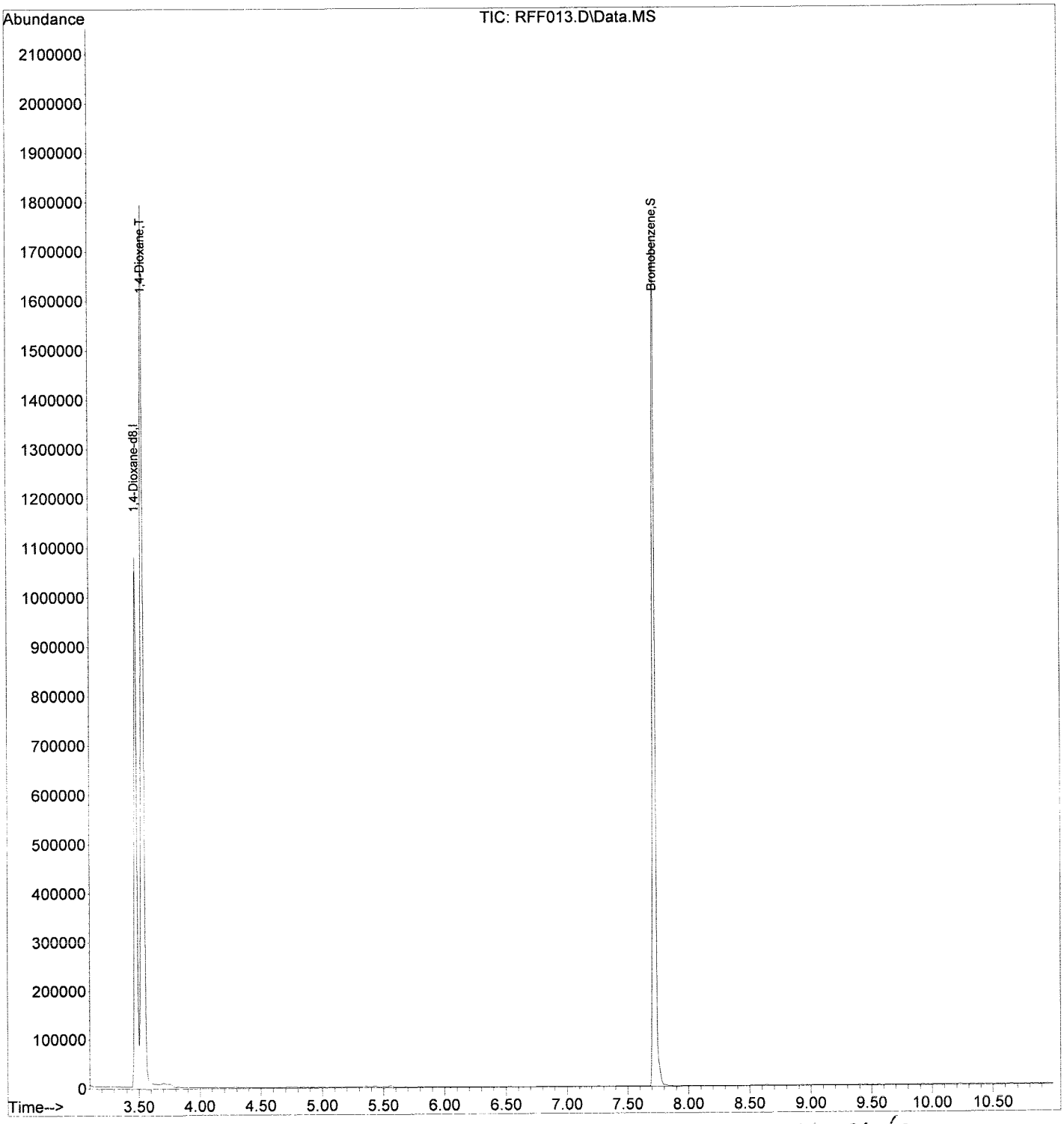
(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D
Acq On : 03 Jun 2020 17:34
Sample : ISVF0F03G1 20ppm
Misc : F0
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



KV 6/5/20

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F178

Lab File ID: RFF075 DFTPP Injection Date: 06/23/20

Instrument ID: F0 DFTPP Injection Time: 10:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.828
75	30 - 60% of mass 95	33.958
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.454
173	Less than 2% of mass 174	0.000(0)1
174	50 - 100% of mass 95	75.208
175	5 - 9% of mass 174	6.095(8.1)1
176	95 - 101% % of mass 174	73.996(98.39)1
177	5 - 9% % of mass 176	4.785(6.47)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G11	RFF076	06/23/20	10:34
2	MBLK1W	SVF017WB	RFF077	06/23/20	10:57
3	LCS1W	SVF017WL	RFF078	06/23/20	11:11
4	LCD1W	SVF017WC	RFF079	06/23/20	11:31
5	MW13D-GW061820	20F178-01	RFF088	06/23/20	14:22
6	MW25C-GW061920	20F178-02	RFF089	06/23/20	14:41
7	MW05R-GW061920	20F178-04	RFF090	06/23/20	15:00
8	MW15S-GW061920	20F178-05	RFF091	06/23/20	15:18
9	MW15D-GW061920	20F178-07	RFF092	06/23/20	15:37
10	FD03-GW061920	20F178-08	RFF093	06/23/20	15:56
11	MW12S-GW061920	20F178-10	RFF094	06/23/20	16:15
12	MW12D-GW061920	20F178-11	RFF095	06/23/20	16:34

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Project: VA SALT LAKE CITY
Lab Code: EMAX
SDG No: 20F178
Lab File ID: RFF005
Date Analyzed: 06/03/20
Instrument ID: FO
Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	180699	3.47
2	MBLK1W	164036	3.48
3	LCS1W	174708	3.47
4	LCD1W	178235	3.48
5	MW13D-GW061820	174990	3.47
6	MW25C-GW061920	160638	3.48
7	MW05R-GW061920	170810	3.48
8	MW15S-GW061920	162624	3.48
9	MW15D-GW061920	155333	3.48
10	FD03-GW061920	160247	3.48
11	MW12S-GW061920	165065	3.48
12	MW12D-GW061920	163741	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :FO
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF076
IC File :RFF005

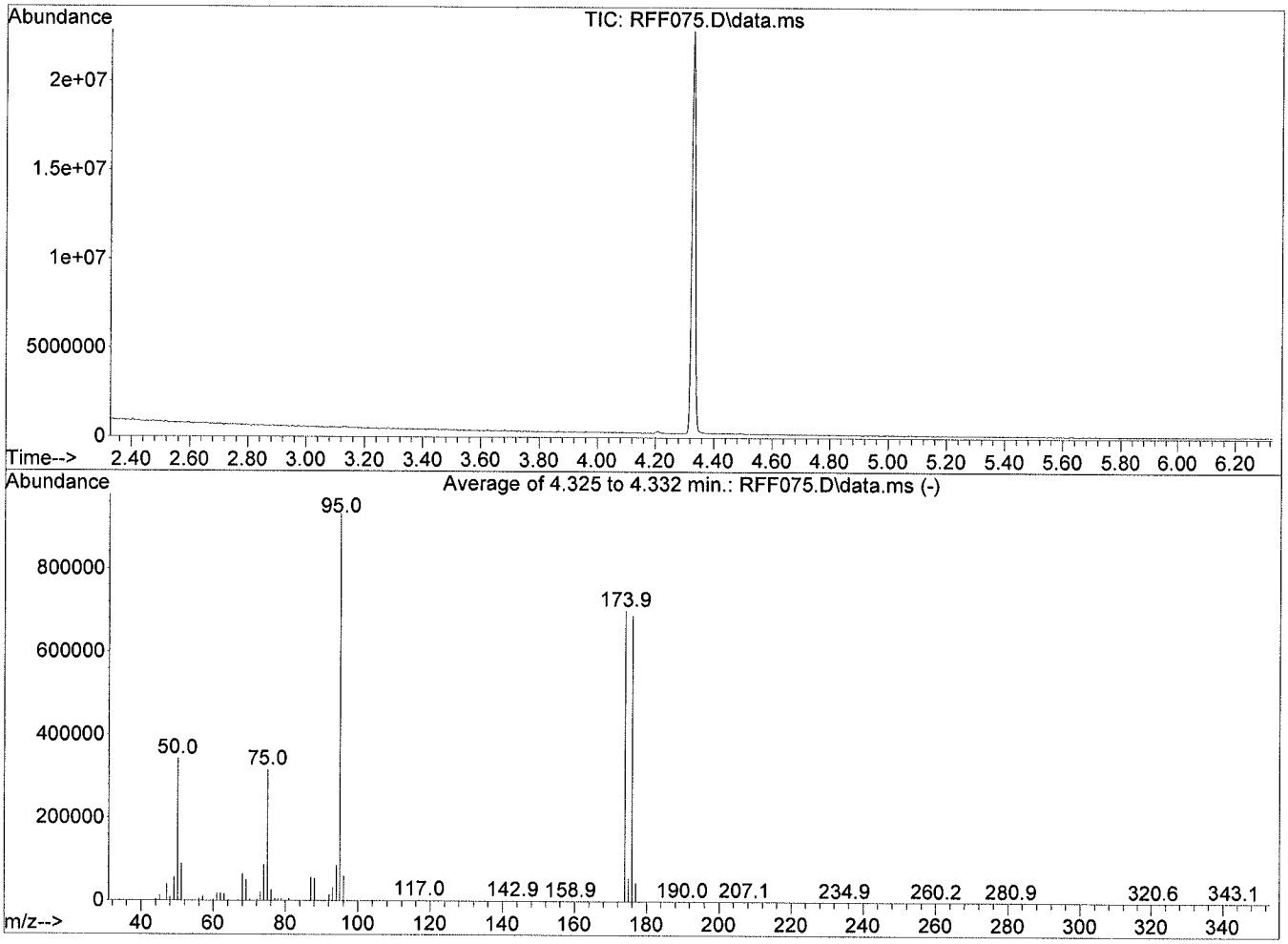
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVFOF03G
Date_Time :06/23/20 10:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	180699	1	1	3.471	3.472	0				
2	1,4-Dioxane	20.029	0.1	249744	1.382	1.380	3.528	3.536	9.42				
3	Bromobenzene	19.980	-0.1	303324	1.679	1.680	7.725	7.724	2.58				

Data Path : C:\msdchem\1\DATA\20F23\
Data File : RFF075.D
Acq On : 23 Jun 2020 10:18
Operator : RMinam
Sample : BFBF0F03G11
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 633

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.8	342968	PASS
75	95	30	60	34.0	316240	PASS
95	95	100	100	100.0	931281	PASS
96	95	5	9	6.5	60103	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.2	700395	PASS
175	174	5	9	8.1	56765	PASS
176	174	95	101	98.4	689109	PASS
177	176	5	9	6.5	44559	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	90	0.00
2	T	1,4-Dioxane	20.000	20.029	-0.1	93	0.00
3	S	Bromobenzene	20.000	19.980	0.1	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	90	0.00
2	T	1,4-Dioxane	1.380	1.382	-0.1	93	0.00
3	S	Bromobenzene	1.680	1.679	0.1	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

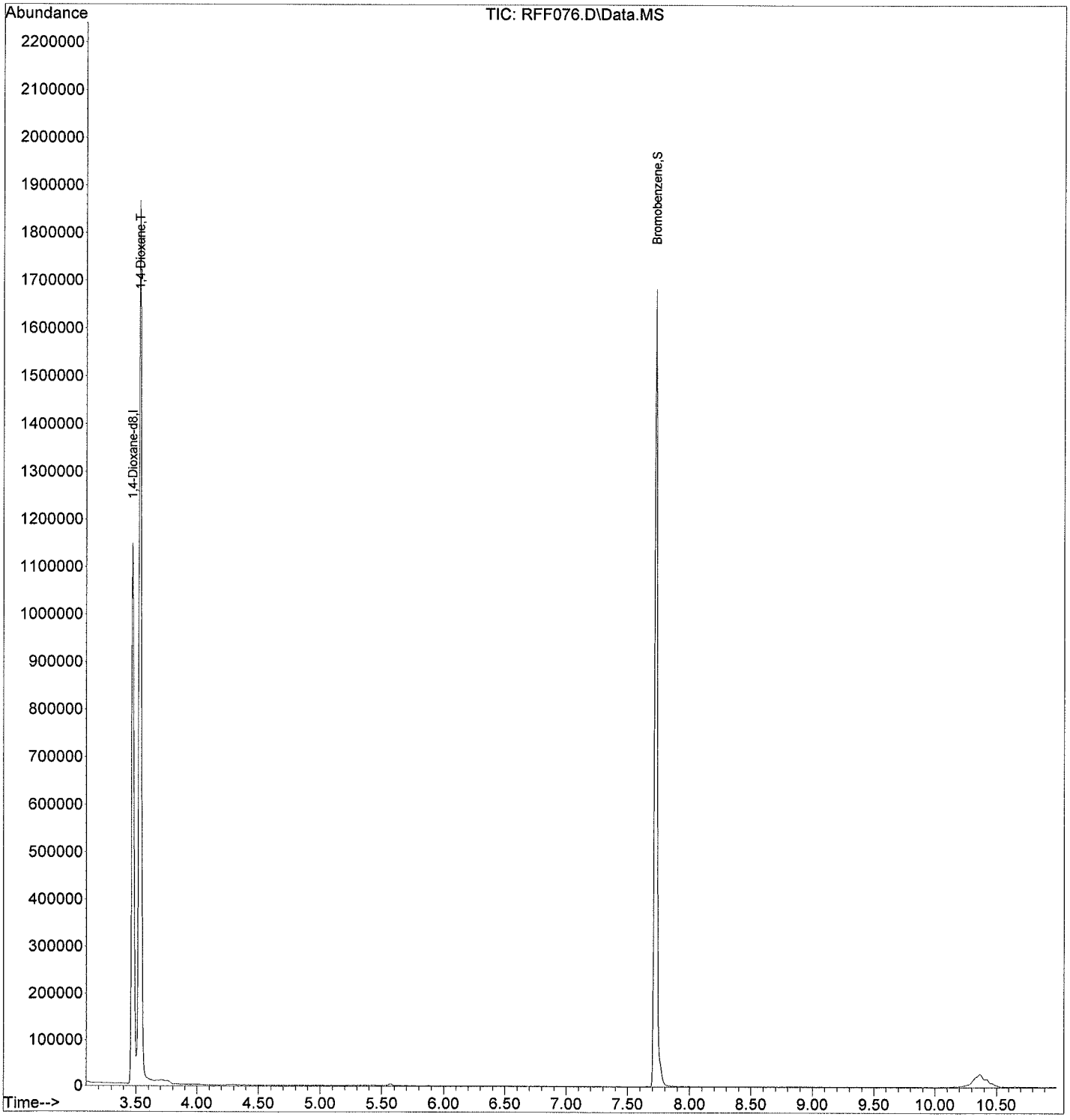
Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	180699	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	303324	19.98	ppm	0.00
Spiked Amount 20.000			Recovery =	99.90%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	249744	20.03	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F23\RFF076.D Vial: 3
Acq On : 23 Jun 2020 10:34 Operator: RMinam
Sample : CSVF0F03G11 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 23 10:57:01 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F03G3

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 RM 6/5/20	1			
↓	002	BFBF0F0301				
	003	SVF0F03G1				100 ppm
	004	↓ 2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	↓ 10				0.05
↓	013	ISVF0F03G1				ICV

RM 06/04/20

	Instrument No:	F0
INITIAL CALIBRATION REFERENCE		
Date	SVF0F03G	
ICAL ID	06/03/20	
Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	0.05 - 100
BFB	↓ -09-02	50
ICV	↓ -09-03	20
Solvent	ID	
CH_2Cl_2	59340	
DATA FILE	20F03	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOF0		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AF0-007

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/23/20 10:18 End Date/Time: 06/23/20 16:58

ANALYTICAL BATCH: CSVF0F03G11

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF074	IBF0F03G11				
	075	BFBF0F03G11				
	076	CSVF0F03G11				
SVF017W	077	SVF017WB	1x		x	
	078	L				
	079	C				
	080	20F162-01				
	081	-02				
	082	-04				
	083	-05				
	084	-07				
	085	-08				
	086	-10				
	087	-11				
	088	20F178-01				
	089	-02				
	090	-04				
	091	-05				
	092	-07				
	093	-08				
	094	-10				
	095	-11				
	096	ESVF0F03G12				

RM 06/23/20

	Instrument No:	F0
INITIAL CALIBRATION REFERENCE		
Date	06/03/20	
ICAL ID	SVF0F03G	
Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	20
BFB	↓ -09-02	50
Solvent	ID	
CH_2Cl_2	59340	
DATA FILE	20F23	
Electronic Data Archival		
Location		Date
HPCHEM_SVOA/TOF0		

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: 06/23/20

Disposed By: RM

This page is checked during data review.

EXTRACTION LOGS

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF017W
Matrix: WATER
Micropipette ID: 1000 µL: PE00-02
Micropipette ID: 100 µL: PE97C-03
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS/1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SWIB-006-19-16
H_2SO_4	
NaOH	SSIB-12-92-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-009-02-07
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	16986363

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF017-WB			1
-WL			1
-WC			1
F162-01			2
-02			2
-04			2
-05			2
-07			2
-08			2
-10			3
-11			3
F178-01			3
-02			3
-04			3
-05			3
-07			4
-08			4
-10			4
-11			4

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output. > 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: HW — Witnessed By: EP
Standard Added By: HW — Checked By: VM
Extract Received By: RM 06/23/20 — Location: SE01-15
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF017W01	SVF017WB	1000	ml	6/22/20 10:55	2	1000	2	1	
20SVF017W02	SVF017WL	1000	ml	6/22/20 10:55	2	1000	2	1	1,4-Dioxane
20SVF017W03	SVF017WC	1000	ml	6/22/20 10:55	2	1000	2	1	1,4-Dioxane
20SVF017W04	F162-01	930	ml	6/22/20 10:55	2	1000	2	1.08	
20SVF017W05	F162-02	900	ml	6/22/20 10:55	2	1000	2	1.11	
20SVF017W06	F162-04	970	ml	6/22/20 10:55	2	1000	2	1.03	
20SVF017W07	F162-05	890	ml	6/22/20 10:55	2	1000	2	1.12	
20SVF017W08	F162-07	990	ml	6/22/20 10:55	2	1000	2	1.01	
20SVF017W09	F162-08	960	ml	6/22/20 10:55	2	1000	2	1.04	
20SVF017W10	F162-10	960	ml	6/22/20 10:55	2	1000	2	1.04	
20SVF017W11	F162-11	920	ml	6/22/20 10:55	2	1000	2	1.09	
20SVF017W12	F178-01	910	ml	6/22/20 12:05	2	1000	2	1.1	
20SVF017W13	F178-02	860	ml	6/22/20 12:05	2	1000	2	1.16	
20SVF017W14	F178-04	1000	ml	6/22/20 12:05	2	1000	2	1	
20SVF017W15	F178-05	890	ml	6/22/20 12:05	2	1000	2	1.12	
20SVF017W16	F178-07	970	ml	6/22/20 12:05	2	1000	2	1.03	
20SVF017W17	F178-08	920	ml	6/22/20 12:05	2	1000	2	1.09	
205VF017W18	F178-10	860	ml	6/22/20 12:05	2	1000	2	1.16	
20SVF017W19	F178-11	1030	ml	6/22/20 12:05	2	1000	2	0.97	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/22/20 9:30 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: HWang

☑ Extraction Ended @ 6/23/20 3:30 ☑ pHAdj(≥11) @ 6/22/20 9:30 Vial Cal Ref.: VC-19-020 Checked By: JM

Comments: volume entered after extraction started, pH=7 for all samples, chlorine not detected Date 6/23/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F178

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD RSK-175
DISSOLVED GASES

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF013WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF013WL/DGF013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F178
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF013WB	1	NA	06/22/2010:52	06/22/2010:00	BF22003A	BF22002A	DGF013W	Method Blank
LCS1W	DGF013WL	1	NA	06/22/2011:04	06/22/2010:00	BF22004A	BF22002A	DGF013W	Lab Control Sample (LCS)
LCD1W	DGF013WC	1	NA	06/22/2011:26	06/22/2010:00	BF22005A	BF22002A	DGF013W	LCS Duplicate
MW13D-GW061820	F178-01	1	NA	06/22/2013:35	06/22/2010:00	BF22015A	BF22014A	DGF013W	Field Sample
MW25C-GW061920	F178-02	1	NA	06/22/2013:52	06/22/2010:00	BF22016A	BF22014A	DGF013W	Field Sample
MW05R-GW061920	F178-04	1	NA	06/22/2014:05	06/22/2010:00	BF22017A	BF22014A	DGF013W	Field Sample
MW15S-GW061920	F178-05	1	NA	06/22/2014:17	06/22/2010:00	BF22018A	BF22014A	DGF013W	Field Sample
MW15D-GW061920	F178-07	1	NA	06/22/2014:32	06/22/2010:00	BF22019A	BF22014A	DGF013W	Field Sample
FD03-GW061920	F178-08	1	NA	06/22/2014:47	06/22/2010:00	BF22020A	BF22014A	DGF013W	Field Sample
MW12S-GW061920	F178-10	1	NA	06/22/2015:01	06/22/2010:00	BF22021A	BF22014A	DGF013W	Field Sample
MW12D-GW061920	F178-11	1	NA	06/22/2015:13	06/22/2010:00	BF22022A	BF22014A	DGF013W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW13D-GW061820	Date Analyzed: 06/22/20 13:35
Lab Samp ID: F178-01	Dilution Factor: 1
Lab File ID: BF22015A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

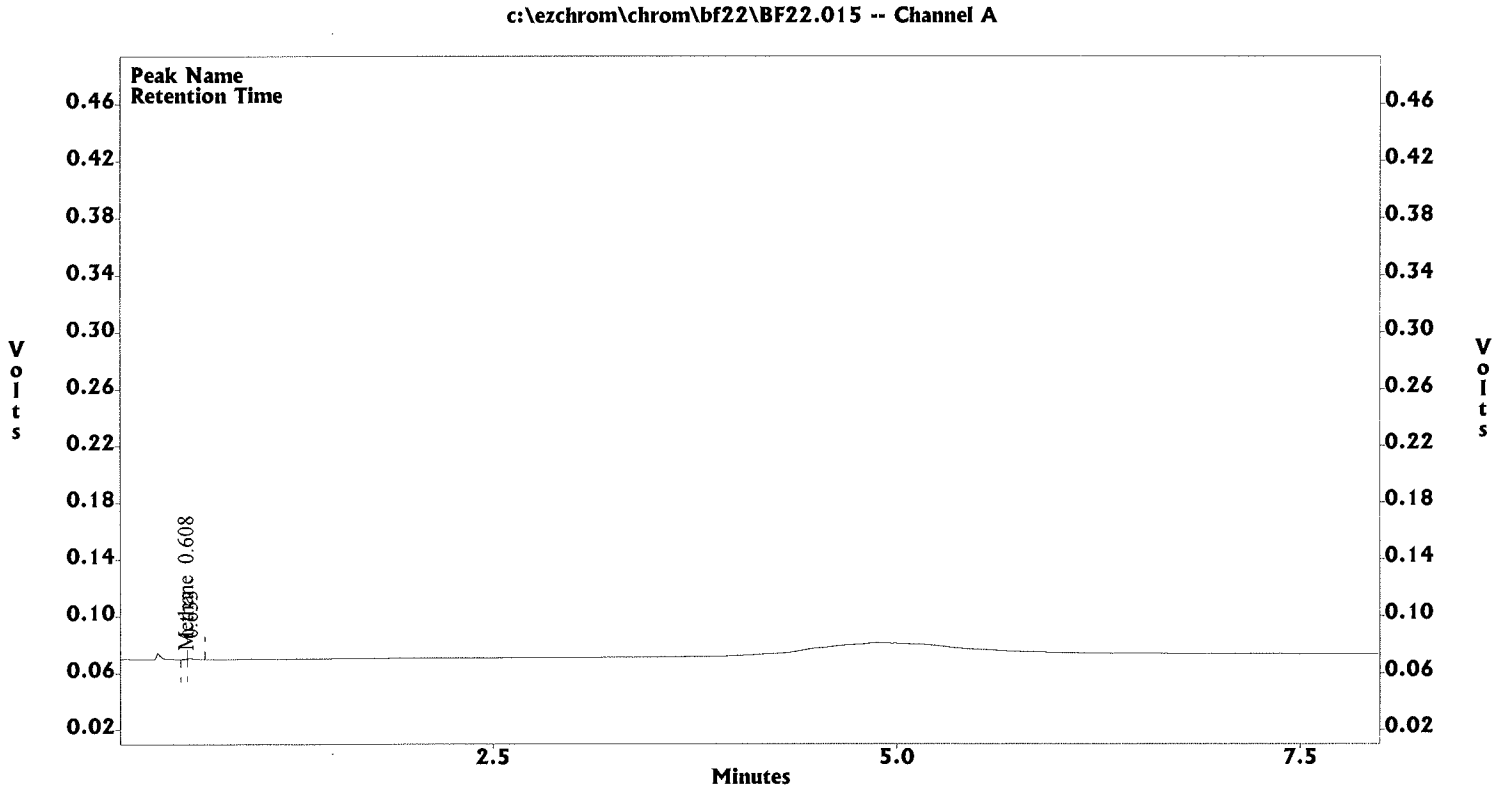
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\BF22.015
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : F178-01
Acquired : Jun 22, 2020 13:35:53
Printed : Jun 22, 2020 13:51:19
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	712	13975.2	0.051
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW25C-GW061920	Date Analyzed: 06/22/20 13:52
Lab Samp ID: F178-02	Dilution Factor: 1
Lab File ID: BF22016A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

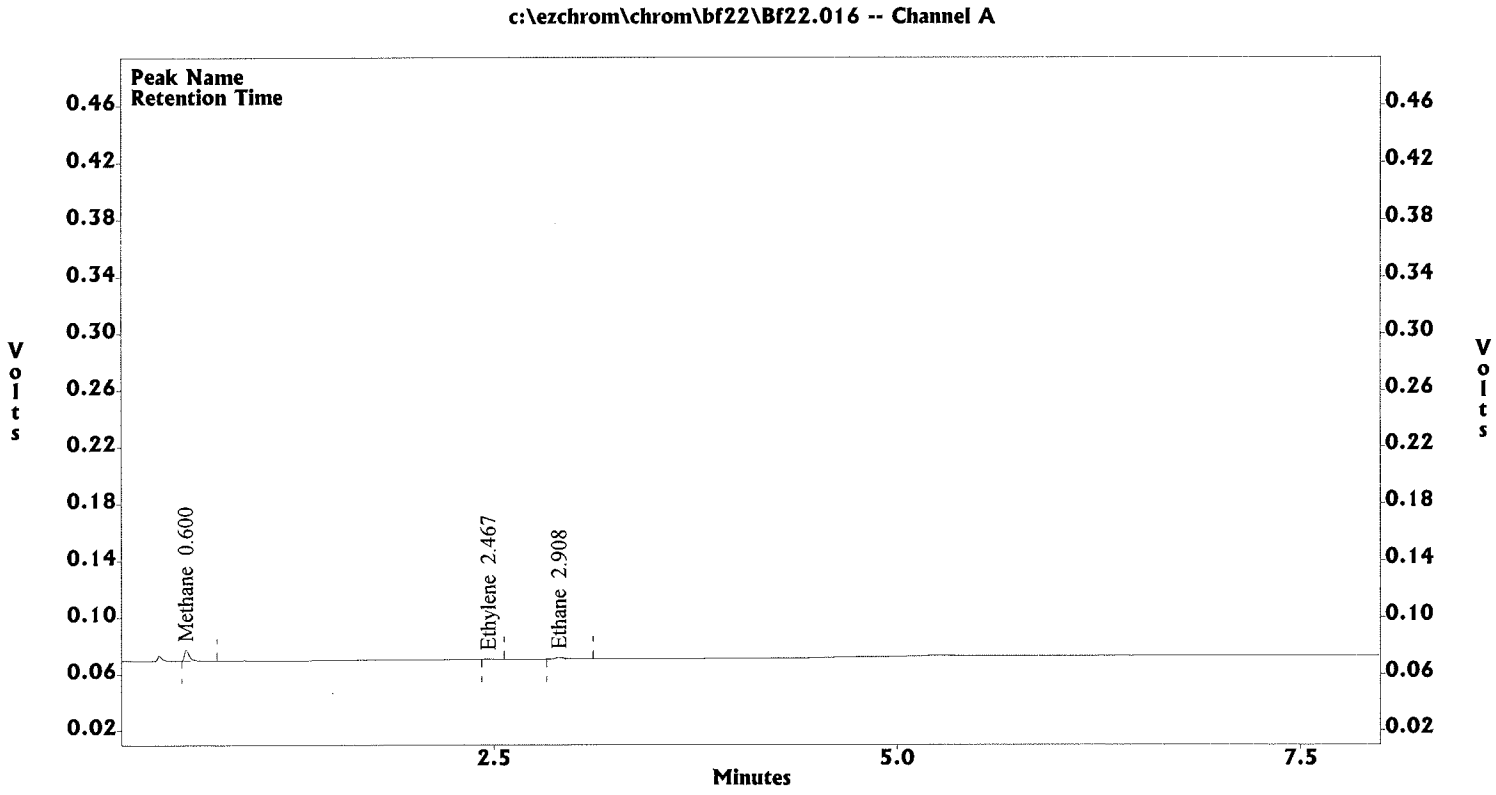
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	0.39J	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	1.2J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.016
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-02
Acquired : Jun 22, 2020 13:52:10
Printed : Jun 22, 2020 14:00:12
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	16580	13975.2	1.186
--	Acetylene	2.050	0	0.0	0.000
2	Ethylene	2.467	1077	9519.0	0.113
3	Ethane	2.908	5077	13110.4	0.387
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW05R-GW061920	Date Analyzed: 06/22/20 14:05
Lab Samp ID: F178-04	Dilution Factor: 1
Lab File ID: BF22017A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

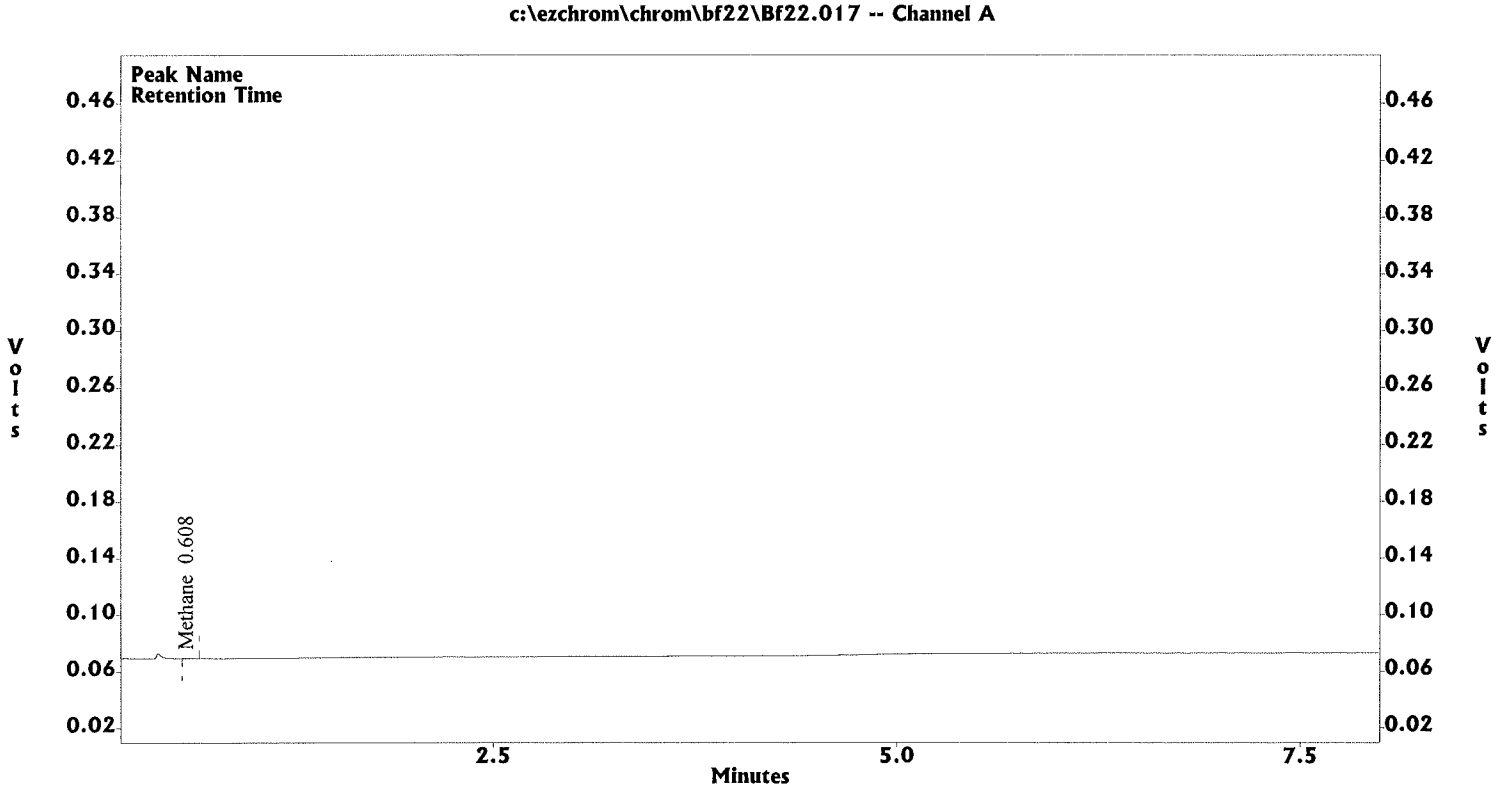
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.017
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-04
Acquired : Jun 22, 2020 14:05:18
Printed : Jun 22, 2020 14:13:20
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	665	13975.2	0.048
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW15S-GW061920	Date Analyzed: 06/22/20 14:17
Lab Samp ID: F178-05	Dilution Factor: 1
Lab File ID: BF22018A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

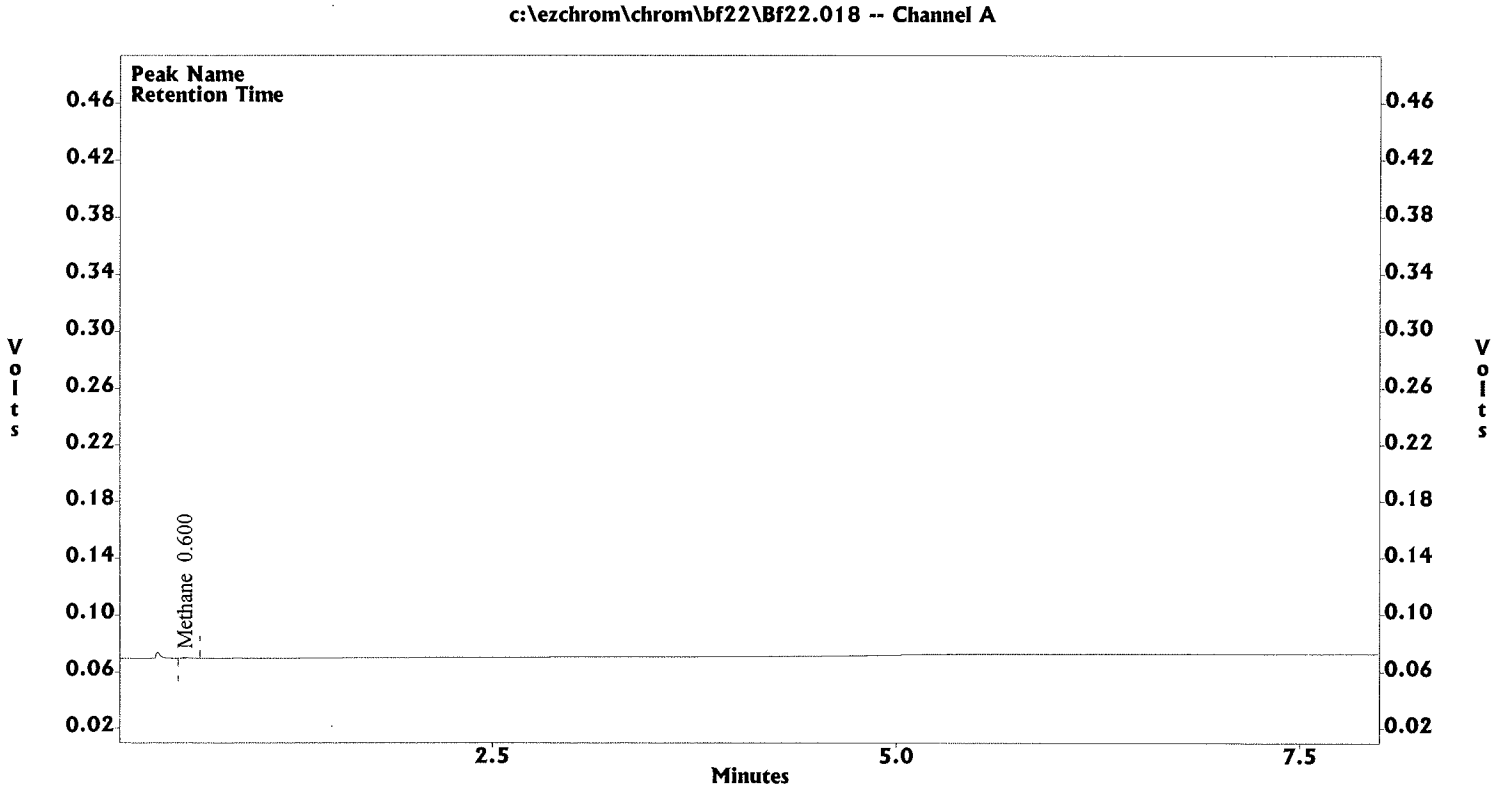
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.018
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-05
Acquired : Jun 22, 2020 14:17:38
Printed : Jun 22, 2020 14:25:39
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	1786	13975.2	0.128
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW15D-GW061920	Date Analyzed: 06/22/20 14:32
Lab Samp ID: F178-07	Dilution Factor: 1
Lab File ID: BF22019A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

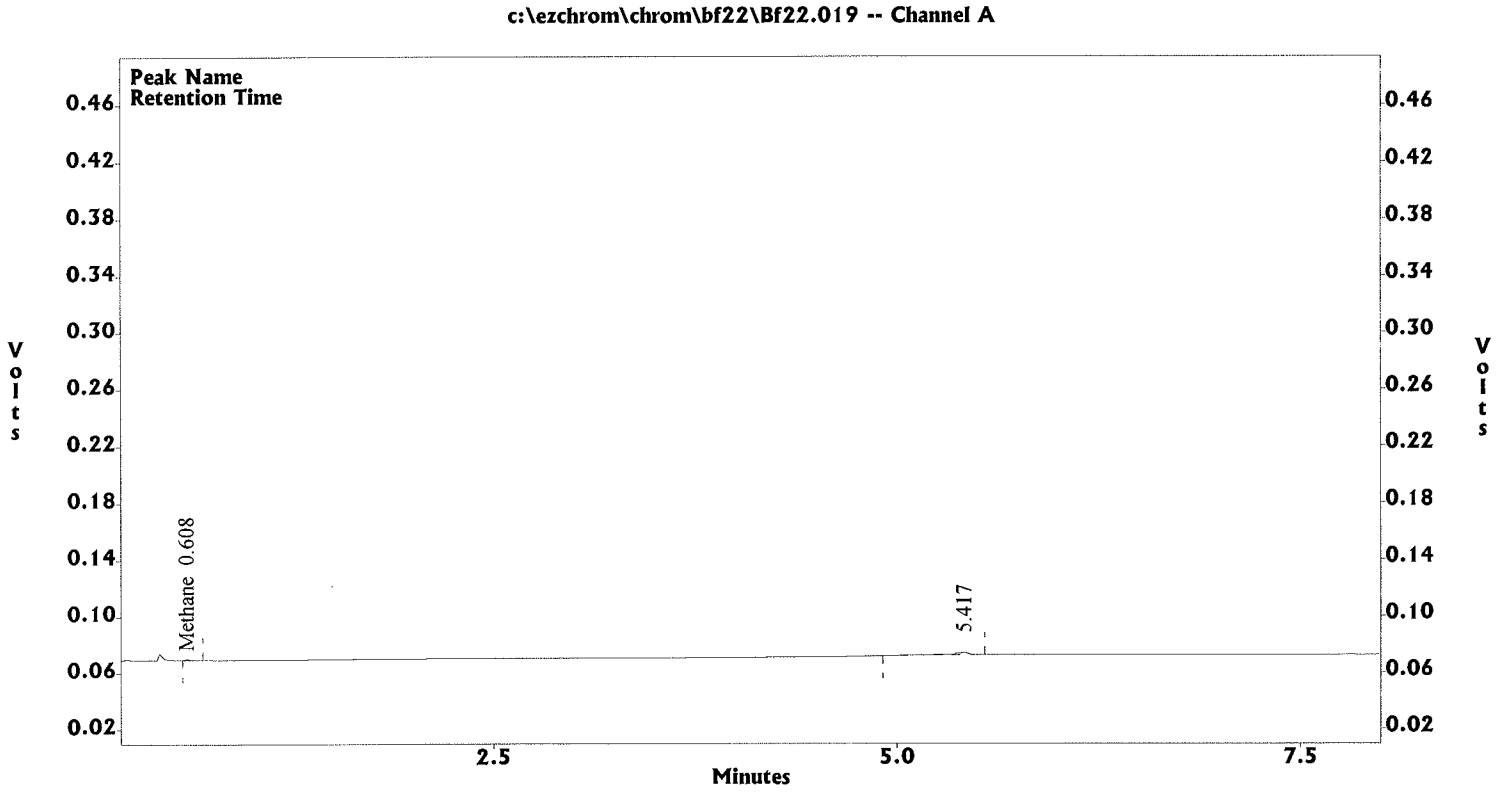
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.019
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-07
Acquired : Jun 22, 2020 14:32:56
Printed : Jun 22, 2020 14:40:58
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	1392	13975.2	0.100
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: FD03-GW061920	Date Analyzed: 06/22/20 14:47
Lab Samp ID: F178-08	Dilution Factor: 1
Lab File ID: BF22020A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

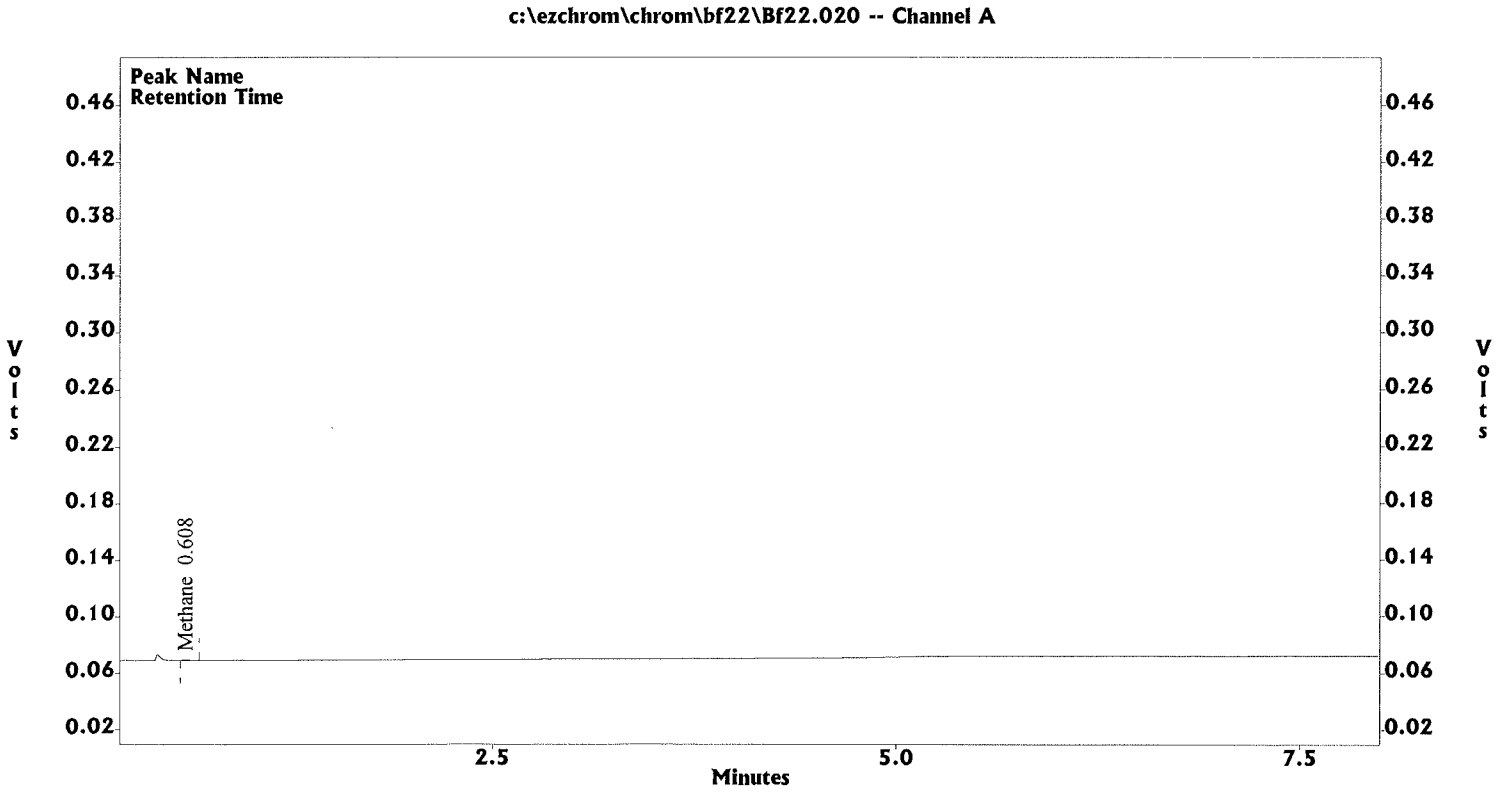
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.020
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-08
Acquired : Jun 22, 2020 14:47:06
Printed : Jun 22, 2020 14:55:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	1368	13975.2	0.098
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW12S-GW061920	Date Analyzed: 06/22/20 15:01
Lab Samp ID: F178-10	Dilution Factor: 1
Lab File ID: BF22021A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

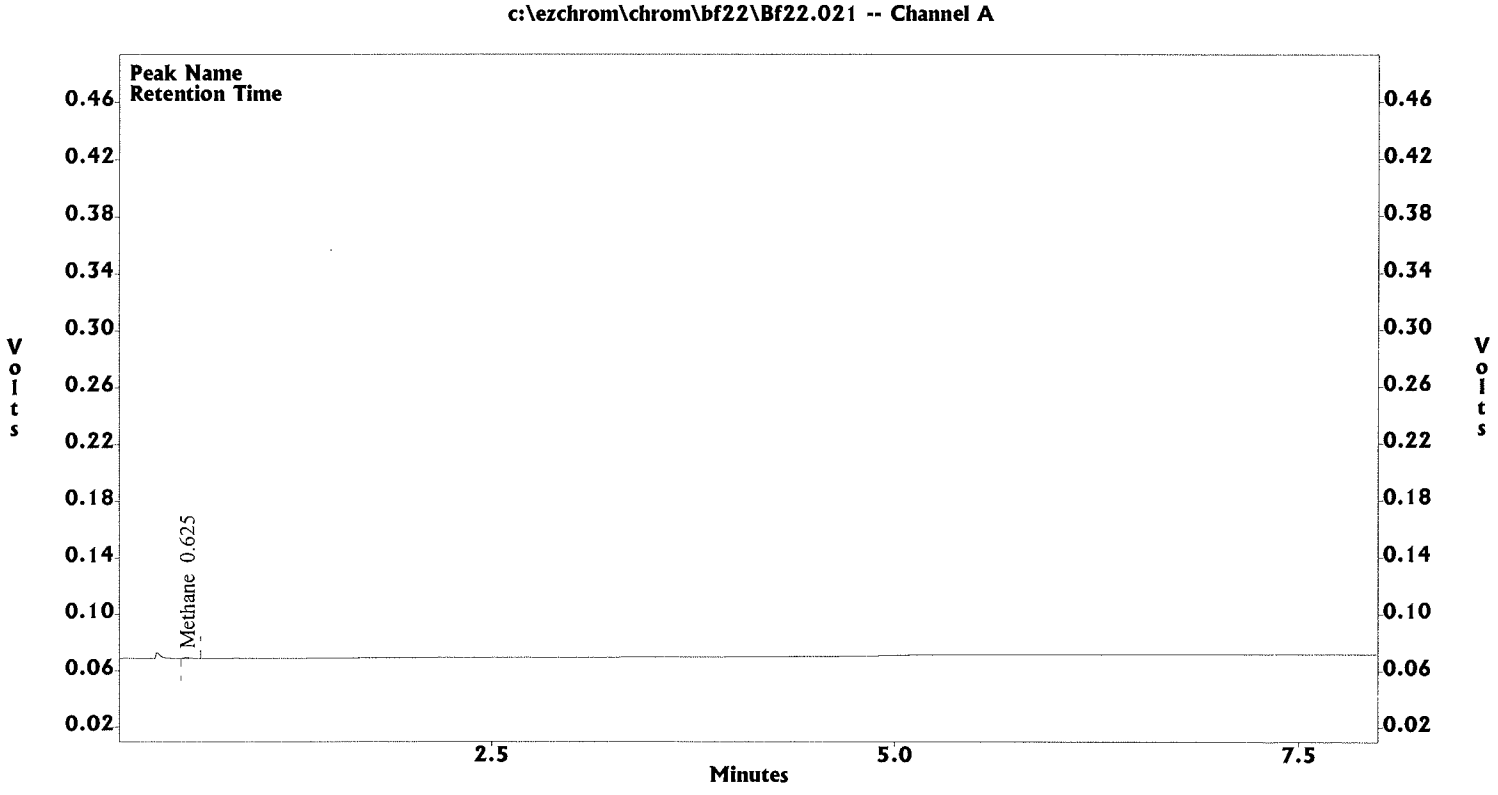
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.021
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-10
Acquired : Jun 22, 2020 15:01:08
Printed : Jun 22, 2020 15:09:09
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1911	13975.2	0.137
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/19/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MW12D-GW061920	Date Analyzed: 06/22/20 15:13
Lab Samp ID: F178-11	Dilution Factor: 1
Lab File ID: BF22022A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22014A	Instrument ID : GCT072

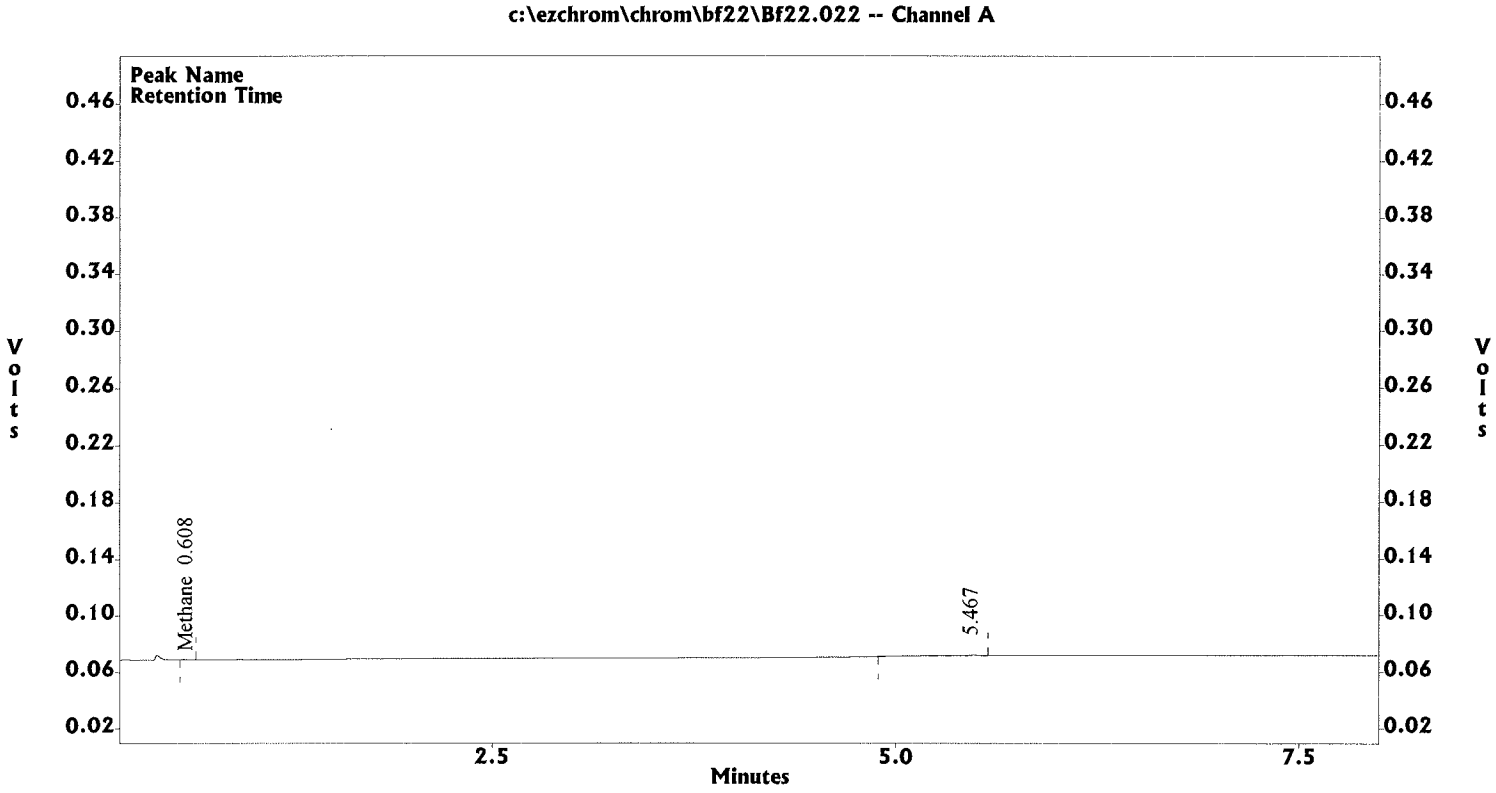
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.022
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F178-11
Acquired : Jun 22, 2020 15:13:30
Printed : Jun 22, 2020 15:21:32
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	652	13975.2	0.047
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/22/20
Batch No. : 20F178	Date Extracted: 06/22/20 10:00
Sample ID: MBLK1W	Date Analyzed: 06/22/20 10:52
Lab Samp ID: DGF013WB	Dilution Factor: 1
Lab File ID: BF22003A	Matrix : WATER
Ext Btch ID: DGF013W	% Moisture : NA
Calib. Ref.: BF22002A	Instrument ID : GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: RSK-175

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: DGF013WB DGF013WL DGF013WC
LAB FILE ID: BF22003A BF22004A BF22005A
DATE EXTRACTED: 06/22/2010:00 06/22/2010:00 06/22/2010:00 DATE COLLECTED: NA
DATE ANALYZED: 06/22/2010:52 06/22/2011:04 06/22/2011:26 DATE RECEIVED: 06/22/20
PREP. BATCH: DGF013W DGF013W DGF013W
CALIB. REF: BF22002A BF22002A BF22002A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	25.8	101	25.5	23.0	90	11	70-140	30
Ethene	ND	23.8	23.6	99	23.8	21.3	89	10	70-140	30
Methane	ND	13.6	14.4	106	13.6	13.2	97	9	70-130	30

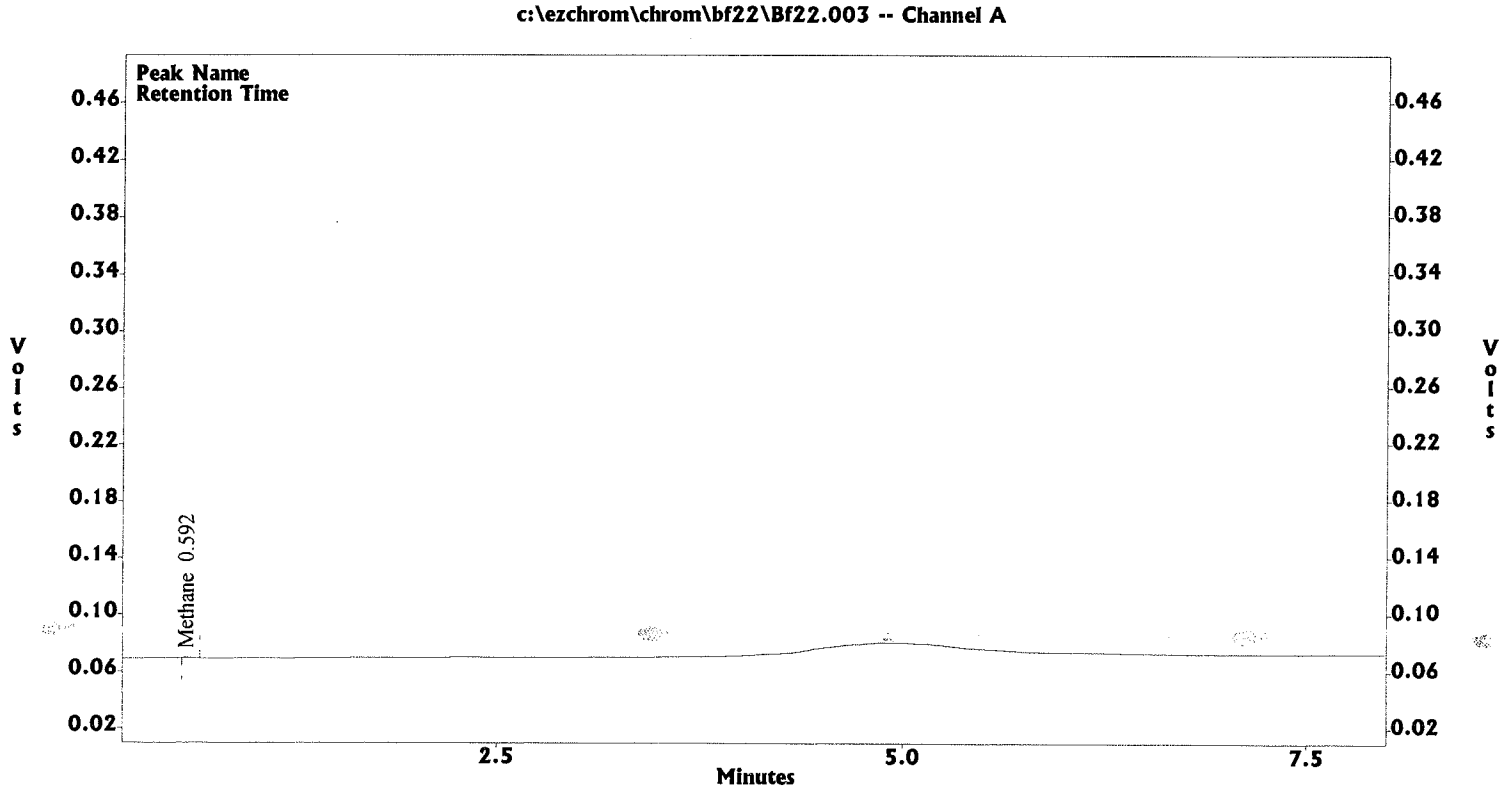
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.003
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WB
Acquired : Jun 22, 2020 10:52:30
Printed : Jun 22, 2020 11:00:32
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.592	971	13975.2	0.069
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000

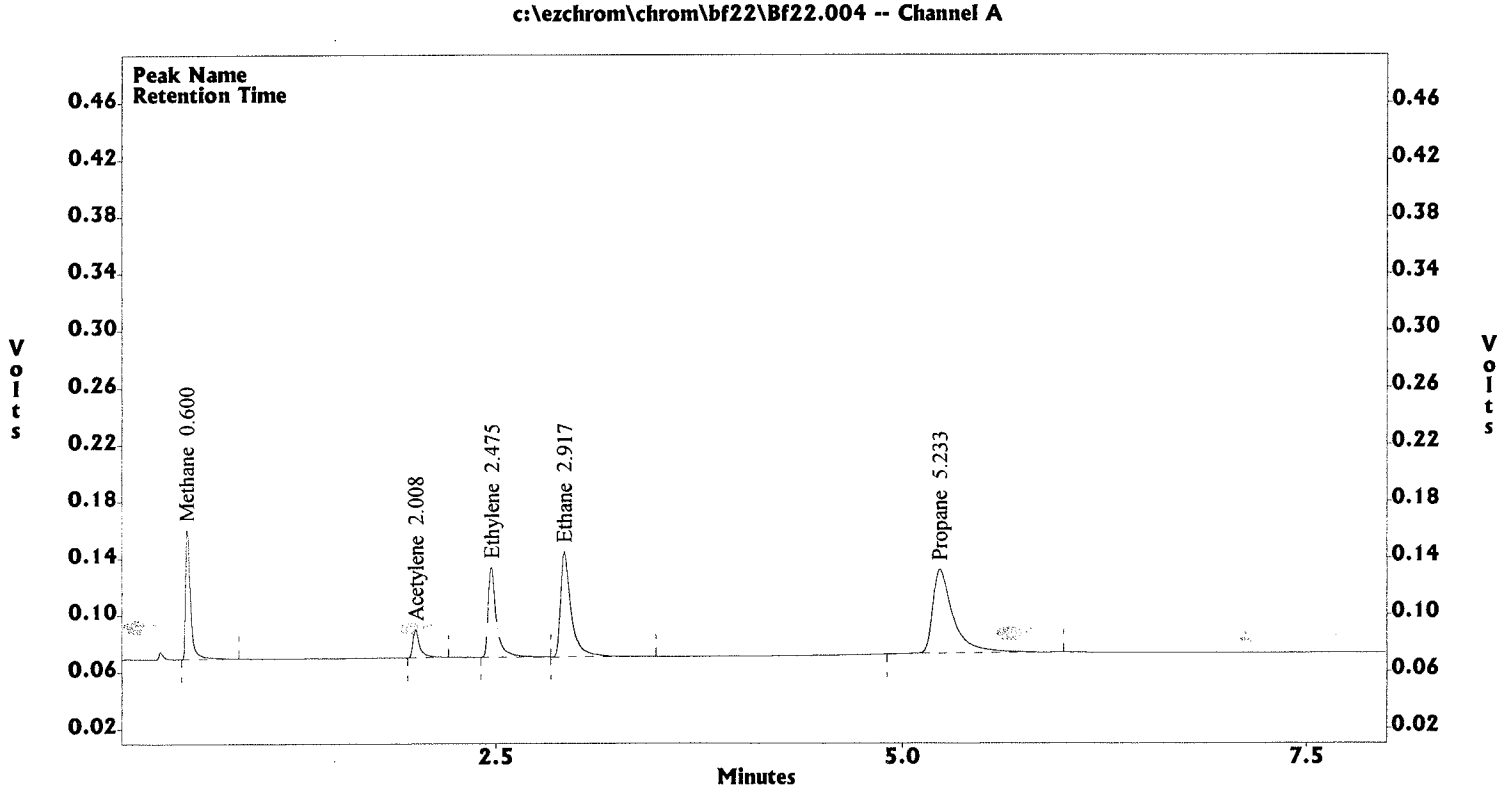


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.004
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WL
Acquired : Jun 22, 2020 11:04:52
Printed : Jun 22, 2020 11:12:53
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	200747	13975.2	14.365
2	Acetylene	2.008	57324	2483.4	23.083
3	Ethylene	2.475	224248	9519.0	23.558
4	Ethane	2.917	338630	13110.4	25.829
5	Propane	5.233	524519	13914.6	37.695

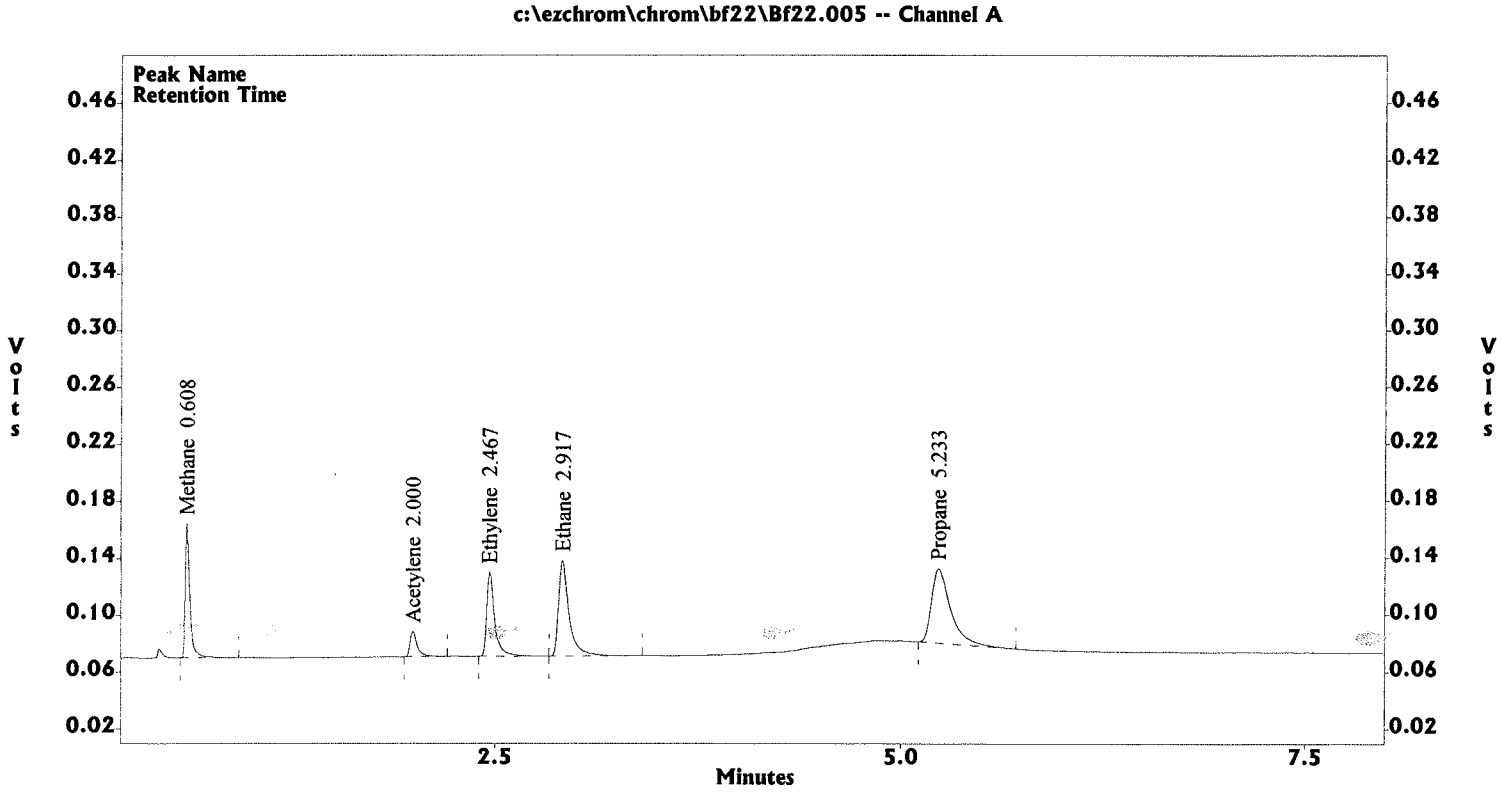


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.005
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF013WC
Acquired : Jun 22, 2020 11:26:54
Printed : Jun 22, 2020 11:34:55
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	184750	13975.2	13.220
2	Acetylene	2.000	55561	2483.4	22.373
3	Ethylene	2.467	202307	9519.0	21.253
4	Ethane	2.917	301862	13110.4	23.025
5	Propane	5.233	430039	13914.6	30.906



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

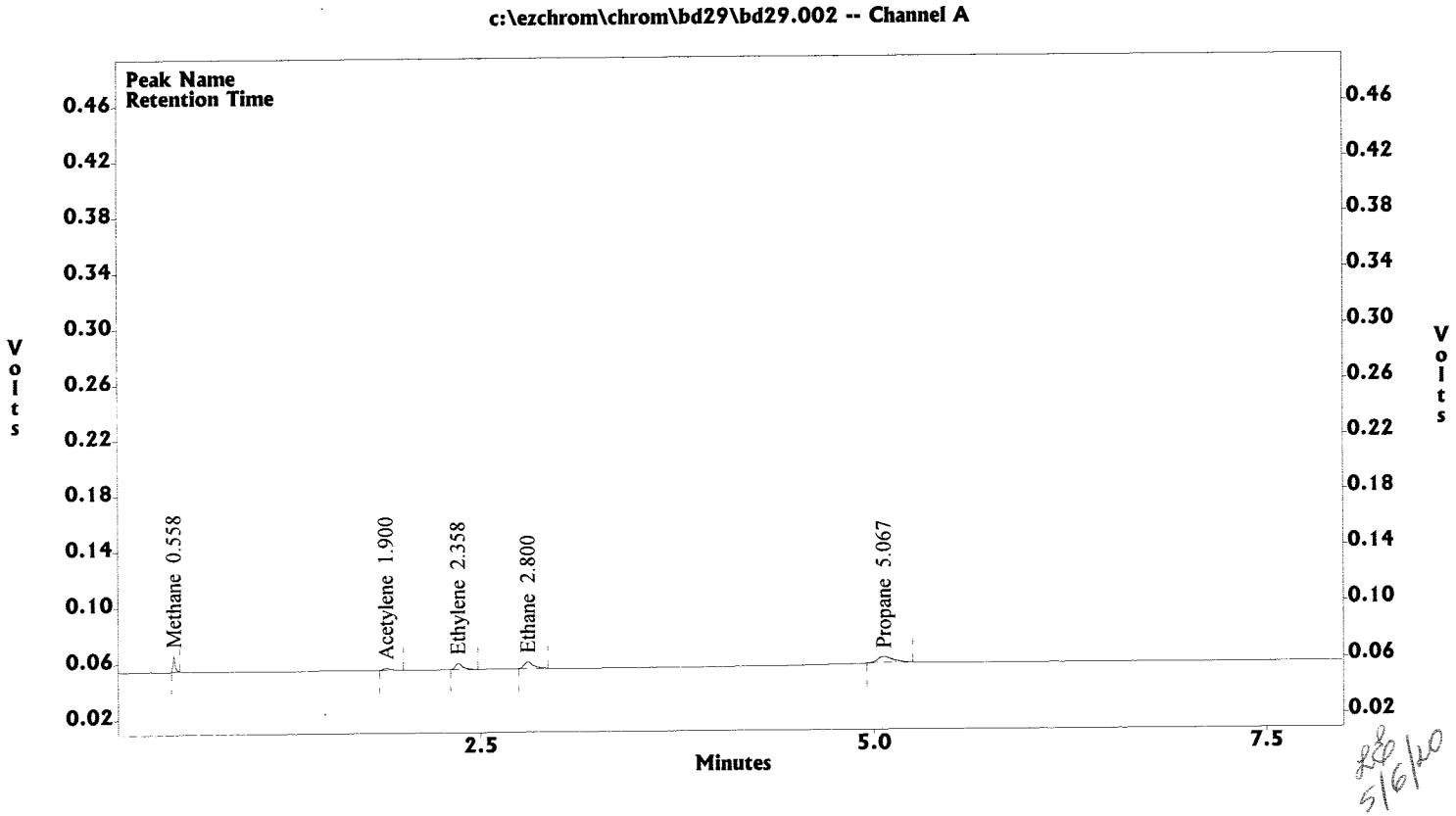
RL 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



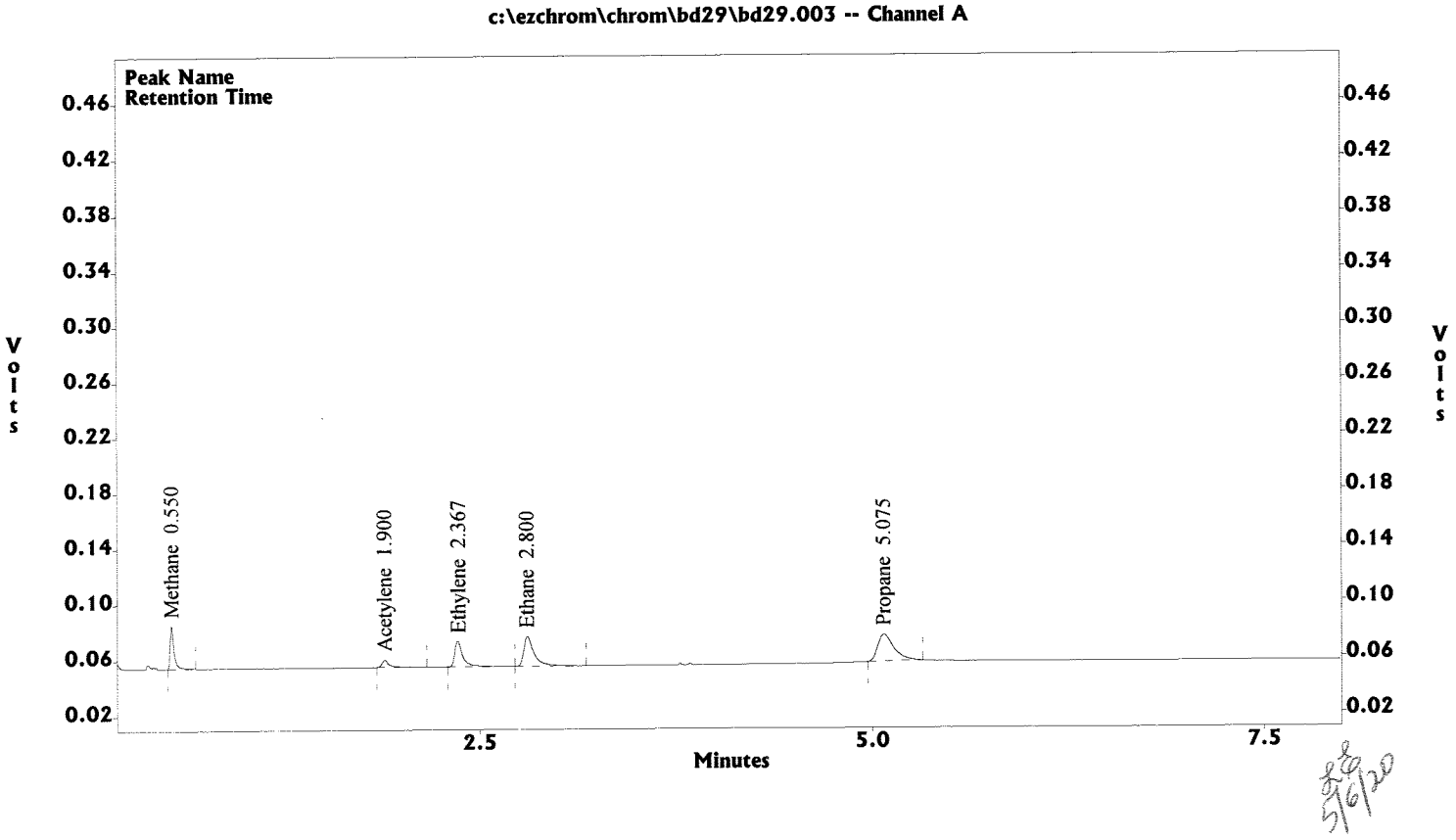
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

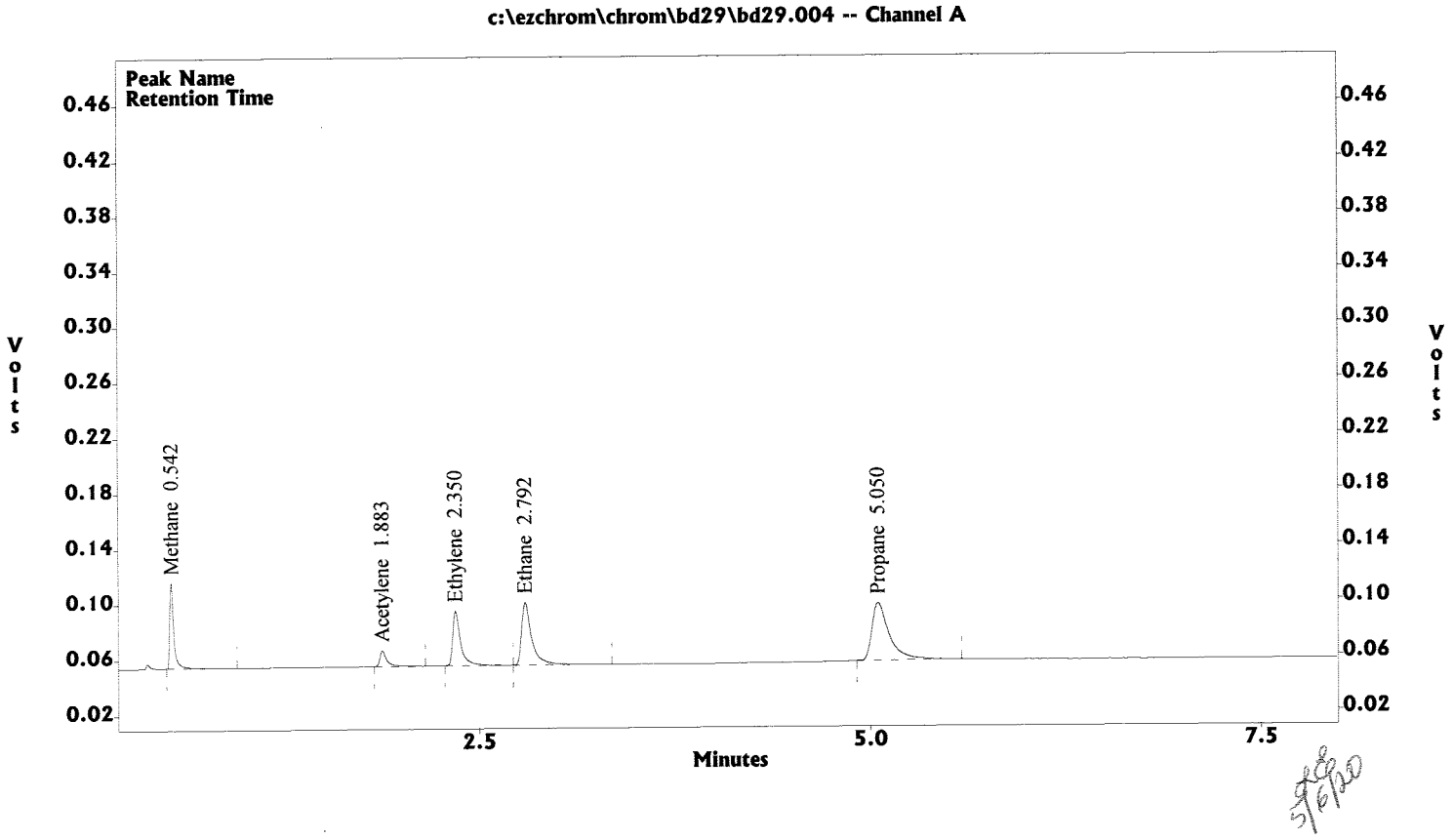


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



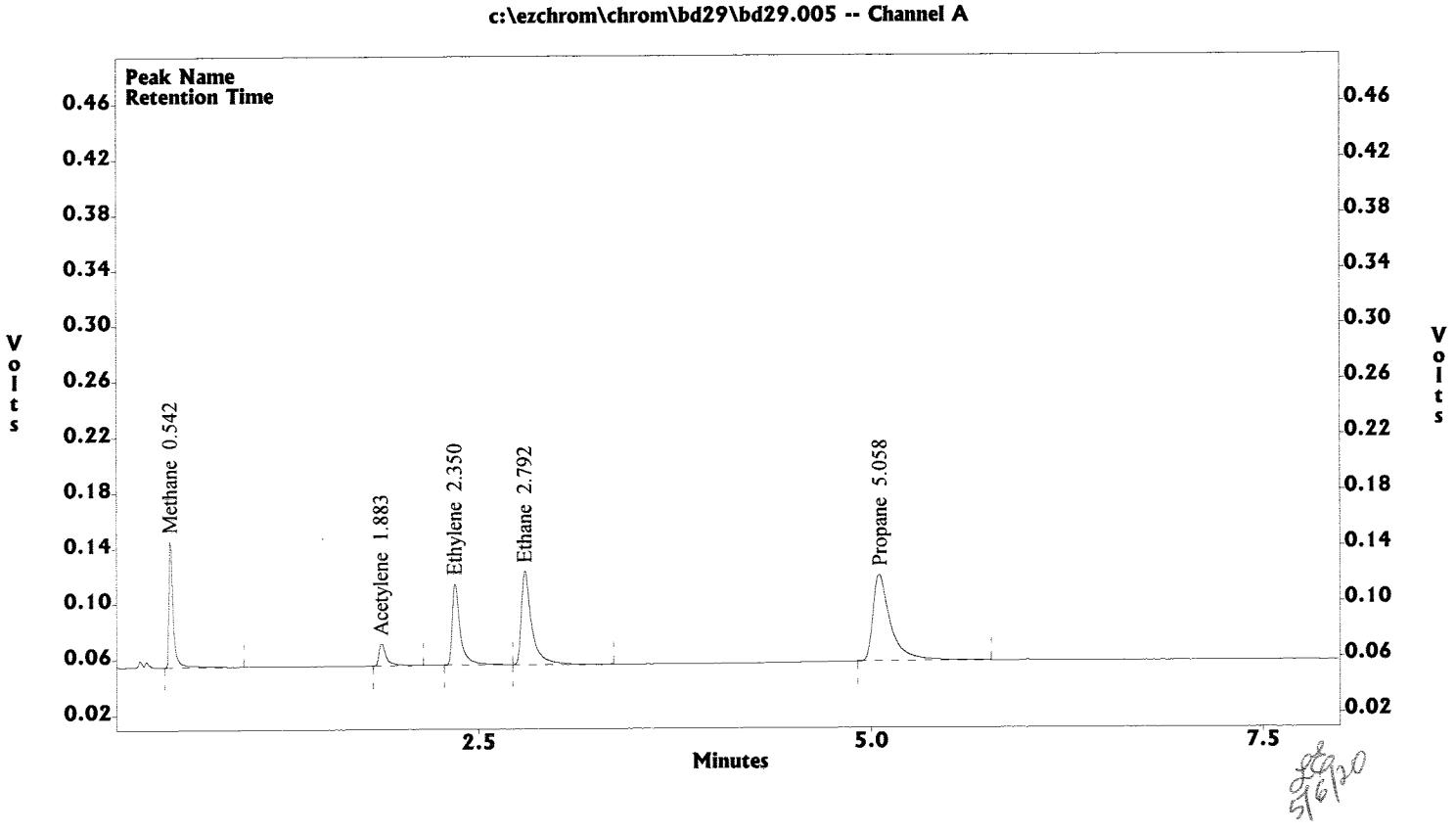
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

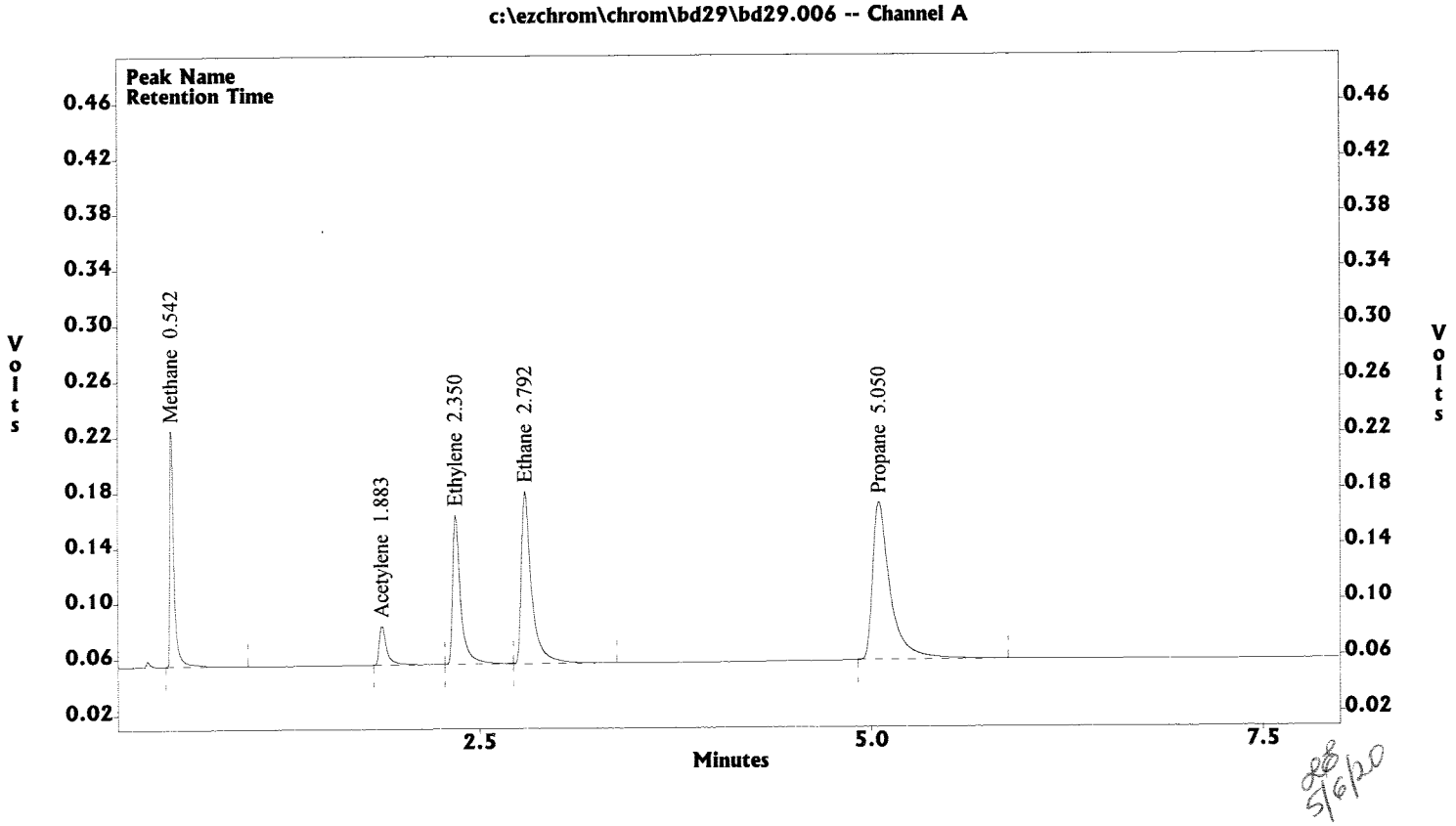


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



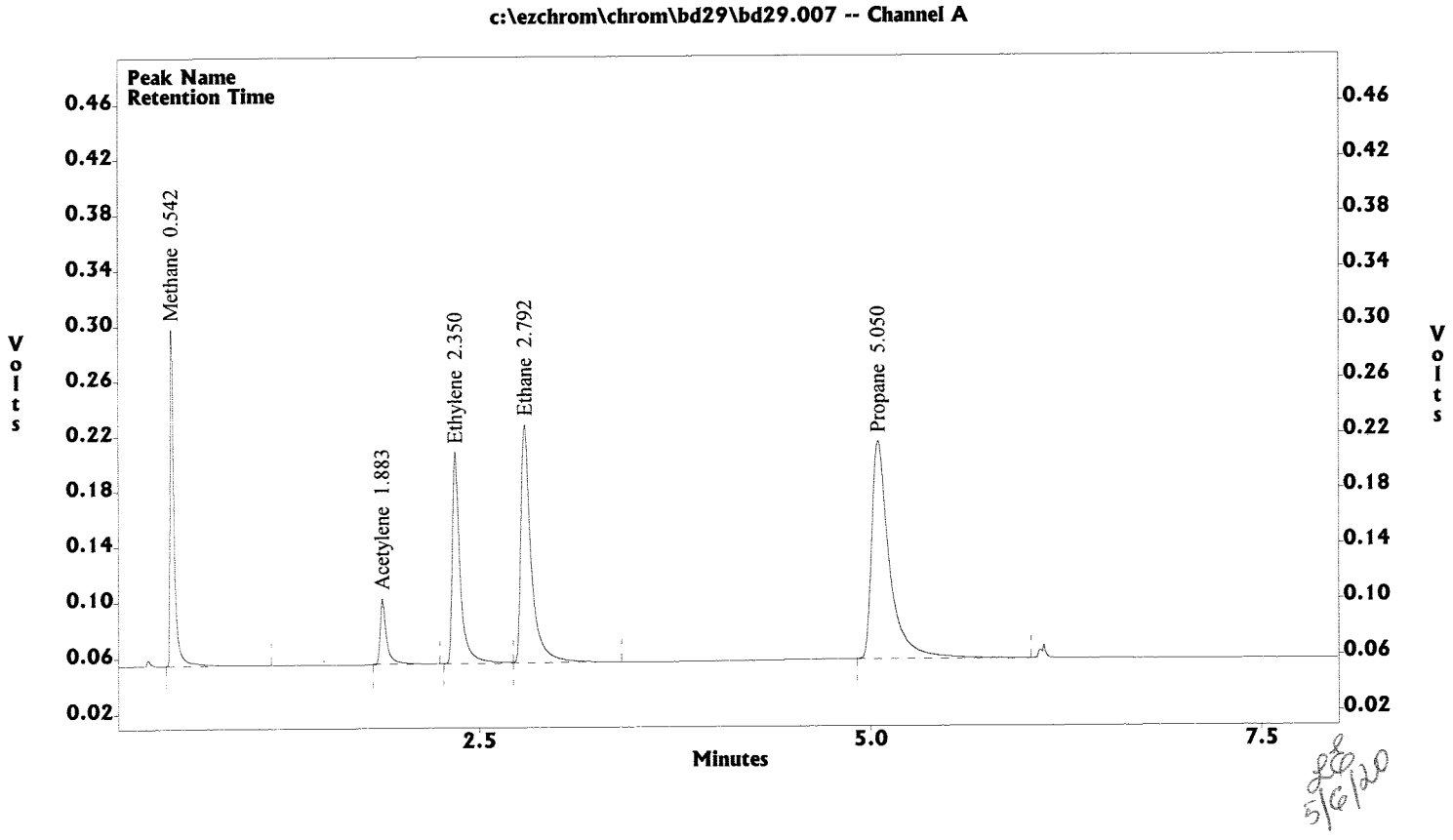
SB 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

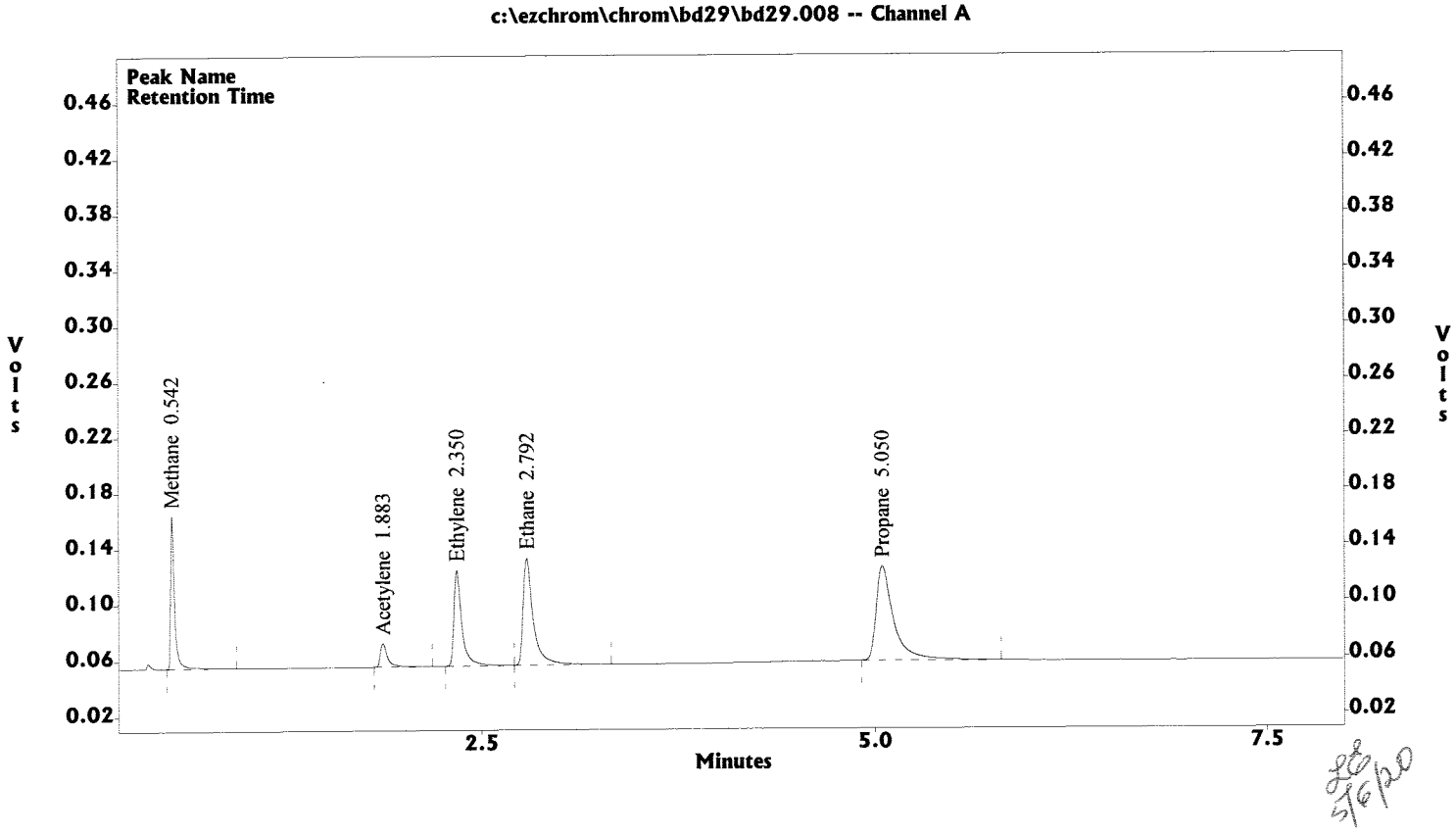
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF22002A 06/22/2020 10:38
CONC UNIT : ppb

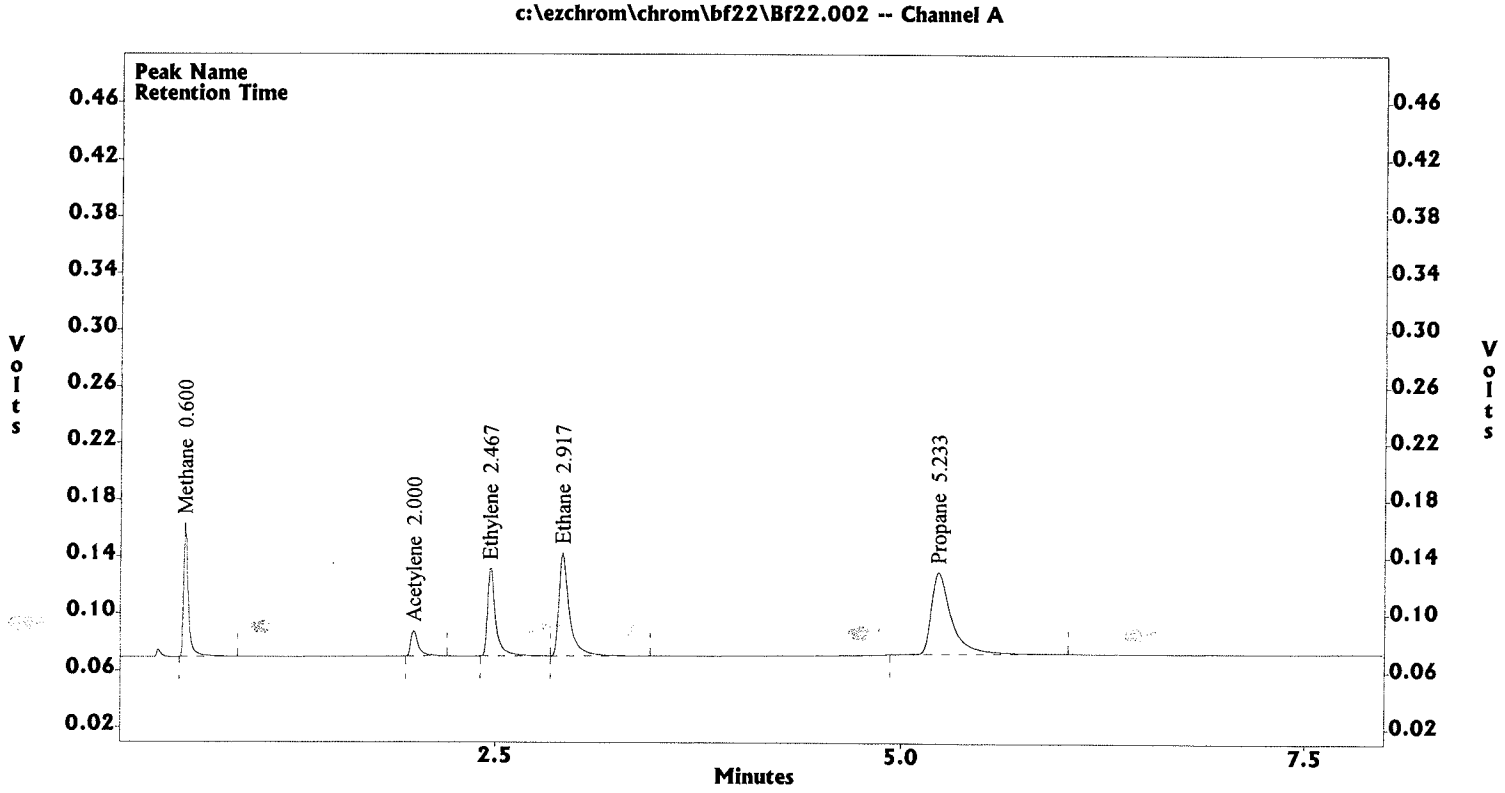
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	196347	14.05	3		15
Acetylene	2.000	1.947	2.053	22.1	2483.4	56226	22.64	2		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	217276	22.83	-4		15
Ethane	2.917	2.879	2.955	25.5	13110.4	327090	24.95	-2		15
Propane	5.233	5.181	5.285	37.4	13914.6	507052	36.44	-3		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.002
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29118
Acquired : Jun 22, 2020 10:38:17
Printed : Jun 22, 2020 10:46:19
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	196347	13975.2	14.050
2	Acetylene	2.000	56226	2483.4	22.641
3	Ethylene	2.467	217276	9519.0	22.826
4	Ethane	2.917	327090	13110.4	24.949
5	Propane	5.233	507052	13914.6	36.440



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF22014A 06/22/2020 13:22
CONC UNIT : ppb

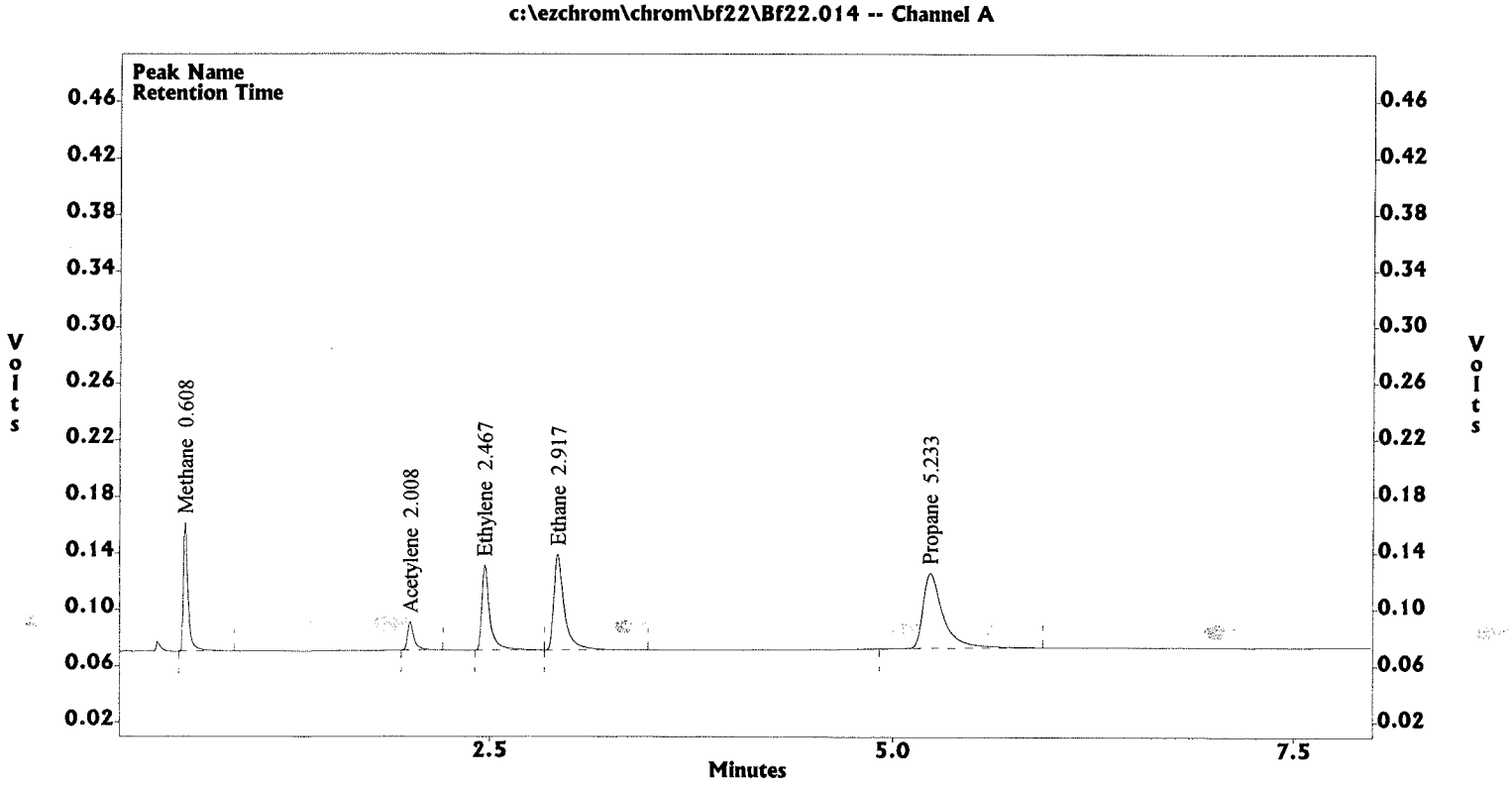
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	184215	13.18	-3		15
Acetylene	2.008	1.955	2.061	22.1	2483.4	56679	22.82	3		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	206862	21.73	-9		15
Ethane	2.917	2.879	2.955	25.5	13110.4	306812	23.40	-8		15
Propane	5.233	5.181	5.285	37.4	13914.6	466691	33.54	-10		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.014
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29119
Acquired : Jun 22, 2020 13:22:00
Printed : Jun 22, 2020 13:30:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	184215	13975.2	13.182
2	Acetylene	2.008	56679	2483.4	22.823
3	Ethylene	2.467	206862	9519.0	21.732
4	Ethane	2.917	306812	13110.4	23.402
5	Propane	5.233	466691	13914.6	33.540



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF22023A 06/22/2020 15:26
CONC UNIT : ppb

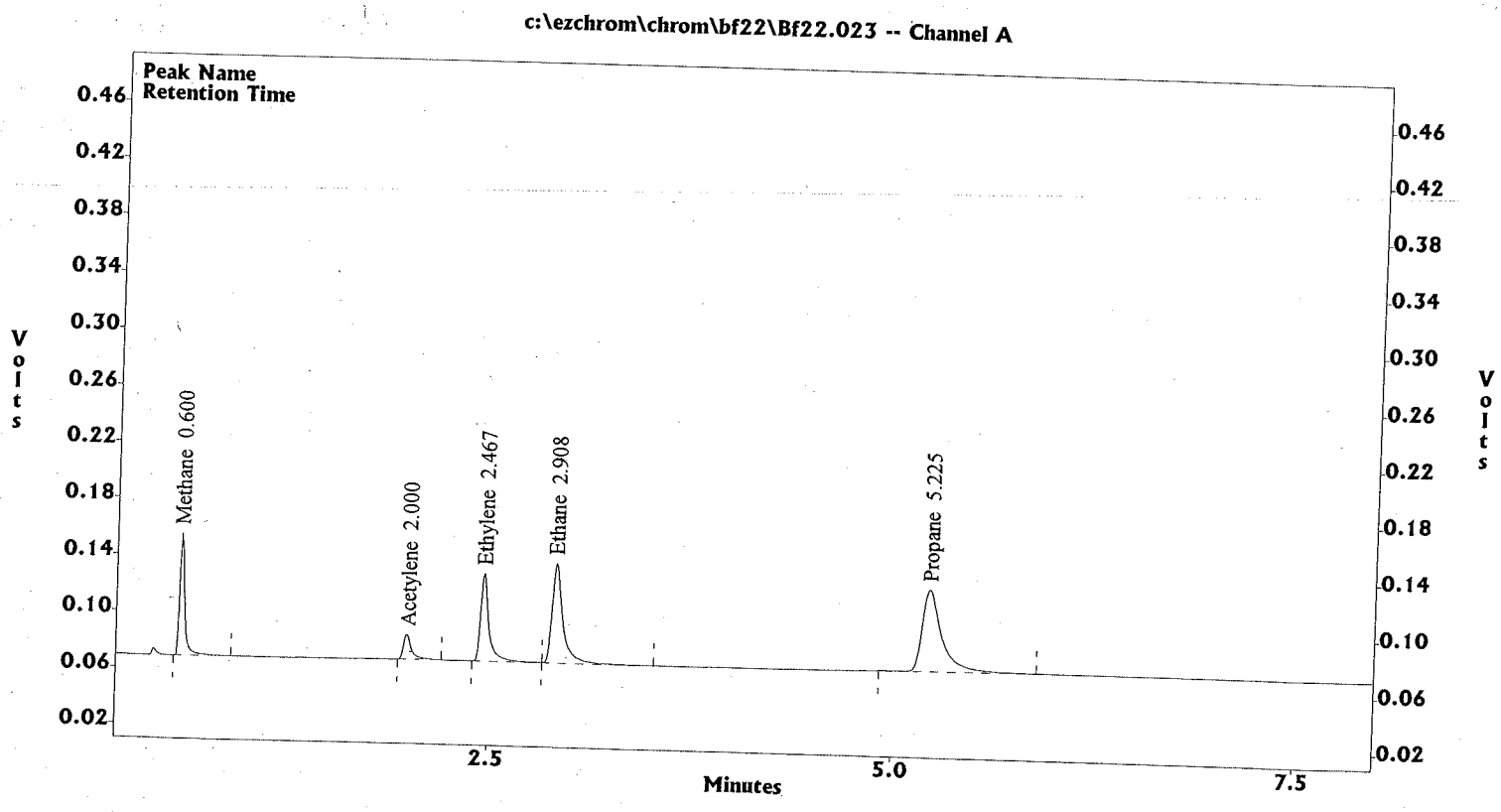
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	190698	13.65	0		15
Acetylene	2.000	1.947	2.053	22.1	2483.4	57523	23.16	5		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	220121	23.12	-3		15
Ethane	2.908	2.870	2.946	25.5	13110.4	329586	25.14	-1		15
Propane	5.225	5.173	5.277	37.4	13914.6	497357	35.74	-4		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf22\Bf22.023
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29120
Acquired : Jun 22, 2020 15:26:01
Printed : Jun 22, 2020 15:34:02
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	190698	13975.2	13.645
2	Acetylene	2.000	57523	2483.4	23.163
3	Ethylene	2.467	220121	9519.0	23.124
4	Ethane	2.908	329586	13110.4	25.139
5	Propane	5.225	497357	13914.6	35.743



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
DISSOLVED GAS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019
Instrument No.: 72
Analytical Sequence: BD29
Method File: DG72D29
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	5558-18-22-01	10 → 500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS
Date: 4/29/20
Disposed By:
Date Disposed:

Batch: bd29.seq

	IB72D2901	dg72d29.met	BD29.001	0	500uL	1
	DG72D2901	dg72d29.met	BD29.002	1	500uL	1
	DG72D2902	dg72d29.met	BD29.003	2	500uL	1
	DG72D2903	dg72d29.met	BD29.004	3	500uL	1
	DG72D2904	dg72d29.met	BD29.005	4	500uL	1
	DG72D2905	dg72d29.met	BD29.006	5	500uL	1
	DG72D2906	dg72d29.met	BD29.007	6	500uL	1
	IDG72D29001	dg72d29.met	BD29.008	0	500uL	1

FINAL

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
DISSOLVED GAS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF013W: F162, F178

Book #: A72-020

Instrument No.: 72

Analytical Sequence: BF22

Method File: DG72D29

Analytical Batch: CDG72D29118

SOP #	Rev. #
☐ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-32-03	200
Temperature (°C)	21	
Data File		

SYRINGES
☐ 500 µL - MSF-02-01-01
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 100 µL - MSF-01-02-13
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC

Date: 6/22/20

Disposed By:

Date Disposed:

Batch: bf22.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F2201	dg72d29.met	BF22.001	500uL	1	
2	CDG72D29118	dg72d29.met	BF22.002	500uL	1	
3	DGF013WB	dg72d29.met	BF22.003	500uL	1	
4	DGF013WL	dg72d29.met	BF22.004	500uL	1	
5	DGF013WC	dg72d29.met	BF22.005	500uL	1	
6	F162-01	dg72d29.met	BF22.006	500uL	1	
7	F162-02	dg72d29.met	BF22.007	500uL	1	
8	F162-04	dg72d29.met	BF22.008	500uL	1	
9	F162-05	dg72d29.met	BF22.009	500uL	1	
10	F162-07	dg72d29.met	BF22.010	500uL	1	
11	F162-08	dg72d29.met	BF22.011	500uL	1	
12	F162-10	dg72d29.met	BF22.012	500uL	1	
13	F162-11	dg72d29.met	BF22.013	500uL	1	
14	CDG72D29119	dg72d29.met	BF22.014	500uL	1	
15	F178-01	dg72d29.met	BF22.015	500uL	1	
16	F178-02	dg72d29.met	BF22.016	500uL	1	
17	F178-04	dg72d29.met	BF22.017	500uL	1	
18	F178-05	dg72d29.met	BF22.018	500uL	1	
19	F178-07	dg72d29.met	BF22.019	500uL	1	
20	F178-08	dg72d29.met	BF22.020	500uL	1	
21	F178-10	dg72d29.met	BF22.021	500uL	1	
22	F178-11	dg72d29.met	BF22.022	500uL	1	
23	CDG72D29120	dg72d29.met	BF22.023	500uL	1	

FINAL

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F178

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SW6020A
METALS BY ICP-MS

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project. Samples associated with Sodium and Vanadium that were not MRL compliant were re-analyzed.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IMF034WB was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF034WL/IMF034WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IMF034WB	1	NA	06/25/2011:48	06/24/2012:21	H6F21018	H6F21015	IMF034W	Method Blank
LCS1W	IMF034WL	1	NA	06/25/2011:51	06/24/2012:21	H6F21019	H6F21015	IMF034W	Lab Control Sample (LCS)
LCD1W	IMF034WC	1	NA	06/25/2011:54	06/24/2012:21	H6F21020	H6F21015	IMF034W	LCS Duplicate
MW13D-GW061820	F178-01	1	NA	06/25/2015:24	06/24/2012:21	H6F21095	H6F21093	IMF034W	Field Sample
MW25C-GW061920	F178-02	1	NA	06/25/2015:26	06/24/2012:21	H6F21096	H6F21093	IMF034W	Field Sample
MW05R-GW061920	F178-04	1	NA	06/25/2015:29	06/24/2012:21	H6F21097	H6F21093	IMF034W	Field Sample
MW15S-GW061920	F178-05	1	NA	06/25/2015:32	06/24/2012:21	H6F21098	H6F21093	IMF034W	Field Sample
MW15D-GW061920	F178-07	1	NA	06/25/2015:34	06/24/2012:21	H6F21099	H6F21093	IMF034W	Field Sample
FD03-GW061920	F178-08	1	NA	06/25/2015:37	06/24/2012:21	H6F21100	H6F21093	IMF034W	Field Sample
MW12S-GW061920	F178-10	1	NA	06/25/2015:39	06/24/2012:21	H6F21101	H6F21093	IMF034W	Field Sample
MW12D-GW061920	F178-11	1	NA	06/25/2015:42	06/24/2012:21	H6F21102	H6F21093	IMF034W	Field Sample
MBLK1W	IMF034WB	1	NA	07/13/2012:11	06/24/2012:21	H6G09017	H6G09015	IMF034W	Method Blank
LCS1W	IMF034WL	1	NA	07/13/2012:14	06/24/2012:21	H6G09018	H6G09015	IMF034W	Lab Control Sample (LCS)
LCD1W	IMF034WC	1	NA	07/13/2012:16	06/24/2012:21	H6G09019	H6G09015	IMF034W	LCS Duplicate
MW13D-GW061820	F178-01N	1	NA	07/13/2012:19	06/24/2012:21	H6G09020	H6G09015	IMF034W	Field Sample
MW25C-GW061920	F178-02N	1	NA	07/13/2012:21	06/24/2012:21	H6G09021	H6G09015	IMF034W	Field Sample
MW05R-GW061920	F178-04N	1	NA	07/13/2012:24	06/24/2012:21	H6G09022	H6G09015	IMF034W	Field Sample
MW15S-GW061920	F178-05N	1	NA	07/13/2012:27	06/24/2012:21	H6G09023	H6G09015	IMF034W	Field Sample
MW15D-GW061920	F178-07N	1	NA	07/13/2012:29	06/24/2012:21	H6G09024	H6G09015	IMF034W	Field Sample
FD03-GW061920	F178-08N	1	NA	07/13/2012:32	06/24/2012:21	H6G09025	H6G09015	IMF034W	Field Sample
MW12S-GW061920	F178-10N	1	NA	07/13/2012:34	06/24/2012:21	H6G09026	H6G09015	IMF034W	Field Sample
MW12D-GW061920	F178-11N	1	NA	07/13/2012:42	06/24/2012:21	H6G09029	H6G09027	IMF034W	Field Sample
MW13D-GW061820	F178-01I	10	NA	07/13/2012:45	06/24/2012:21	H6G09030	H6G09027	IMF034W	Diluted Sample
MW25C-GW061920	F178-02I	10	NA	07/13/2012:47	06/24/2012:21	H6G09031	H6G09027	IMF034W	Diluted Sample
MW05R-GW061920	F178-04I	10	NA	07/13/2012:50	06/24/2012:21	H6G09032	H6G09027	IMF034W	Diluted Sample
MW15S-GW061920	F178-05I	10	NA	07/13/2012:53	06/24/2012:21	H6G09033	H6G09027	IMF034W	Diluted Sample
MW15D-GW061920	F178-07I	10	NA	07/13/2012:55	06/24/2012:21	H6G09034	H6G09027	IMF034W	Diluted Sample
FD03-GW061920	F178-08I	10	NA	07/13/2012:58	06/24/2012:21	H6G09035	H6G09027	IMF034W	Diluted Sample
MW12S-GW061920	F178-10I	10	NA	07/13/2013:00	06/24/2012:21	H6G09036	H6G09027	IMF034W	Diluted Sample
MW12D-GW061920	F178-11I	10	NA	07/13/2013:03	06/24/2012:21	H6G09037	H6G09027	IMF034W	Diluted Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 16:20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW13D-GW061820	Date Analyzed:	06/25/20 15:24
Lab Samp ID:	F178-01	Dilution Factor:	1
Lab File ID:	H6F21095	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	78.7J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.746J	1.00	0.125
Barium	46.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	17.7	1.00	0.100
Cobalt	1.52	1.00	0.100
Copper	1.10J	2.00	0.500
Iron	192	100	25.0
Lead	ND	1.00	0.0500
Manganese	12.3	1.00	0.250
Nickel	50.8	1.00	0.250
Potassium	2490	100	25.0
Selenium	0.835J	1.00	0.150
Silver	0.365J	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	MW13D-GW061820	Date Analyzed:	07/13/20 12:45
Lab Samp ID:	F178-01I	Dilution Factor:	10
Lab File ID:	H6G09030	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	146000	1000	250
Magnesium	51900	1000	250
Sodium	57100	1000	250

Sample ID:	MW13D-GW061820	Date Analyzed:	07/13/20 12:19
Lab Samp ID:	F178-01N	Dilution Factor:	1
Lab File ID:	H6G09020	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.97	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 16:20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW13D-GW061820	Date Analyzed:	06/25/20 15:24
Lab Samp ID:	F178-01	Dilution Factor:	1
Lab File ID:	H6F21095	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	78.7J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.746J	1.00	0.125
Barium	46.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	145000E	100	25.0
Chromium	17.7	1.00	0.100
Cobalt	1.52	1.00	0.100
Copper	1.10J	2.00	0.500
Iron	192	100	25.0
Lead	ND	1.00	0.0500
Magnesium	49700E	100	25.0
Manganese	12.3	1.00	0.250
Nickel	50.8	1.00	0.250
Potassium	2490	100	25.0
Selenium	0.835J	1.00	0.150
Silver	0.365J	1.00	0.100
Sodium	54900E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.48E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 16:20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW13D-GW061820	Date Analyzed:	07/13/20 12:19
Lab Samp ID:	F178-01N	Dilution Factor:	1
Lab File ID:	H6G09020	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	76.1J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.745J	1.00	0.125
Barium	46.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	144000E	100	25.0
Chromium	18.3	1.00	0.100
Cobalt	1.55	1.00	0.100
Copper	ND	2.00	0.500
Iron	195	100	25.0
Lead	0.0596J	1.00	0.0500
Magnesium	49500E	100	25.0
Manganese	12.2	1.00	0.250
Nickel	51.6	1.00	0.250
Potassium	2500	100	25.0
Selenium	0.887J	1.00	0.150
Silver	0.357J	1.00	0.100
Sodium	54000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.97	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/18/20 16:20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW13D-GW061820	Date Analyzed:	07/13/20 12:45
Lab Samp ID:	F178-01I	Dilution Factor:	10
Lab File ID:	H6G09030	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.68J	10.0	1.25
Barium	45.8	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	146000	1000	250
Chromium	18.7	10.0	1.00
Cobalt	1.63J	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	51900	1000	250
Manganese	13.6	10.0	2.50
Nickel	54.3	10.0	2.50
Potassium	2600	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	57100	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.59JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Sample ID: MW25C-GW061920
Lab Samp ID: F178-02
Lab File ID: H6F21096
Ext Btch ID: IMF034W
Calib. Ref.: H6F21093

Date Collected: 06/19/20 11:55
Date Received: 06/20/20
Date Extracted: 06/24/20 12:21
Date Analyzed: 06/25/20 15:26
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.356J	1.00	0.125
Barium	40.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.407J	1.00	0.100
Cobalt	0.520J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37500	100	25.0
Manganese	110	1.00	0.250
Nickel	1.52	1.00	0.250
Potassium	2110	100	25.0
Selenium	1.00	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID: MW25C-GW061920
Lab Samp ID: F178-02I
Lab File ID: H6G09031
Ext Btch ID: IMF034W
Calib. Ref.: H6G09027

Date Analyzed: 07/13/20 12:47
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	118000	1000	250

Sample ID: MW25C-GW061920
Lab Samp ID: F178-02N
Lab File ID: H6G09021
Ext Btch ID: IMF034W
Calib. Ref.: H6G09015

Date Analyzed: 07/13/20 12:21
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Sodium	25500	100	25.0
Vanadium	1.08	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 11:55
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW25C-GW061920	Date Analyzed:	06/25/20 15:26
Lab Samp ID:	F178-02	Dilution Factor:	1
Lab File ID:	H6F21096	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.356J	1.00	0.125
Barium	40.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	118000E	100	25.0
Chromium	0.407J	1.00	0.100
Cobalt	0.520J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37500	100	25.0
Manganese	110	1.00	0.250
Nickel	1.52	1.00	0.250
Potassium	2110	100	25.0
Selenium	1.00	1.00	0.150
Silver	ND	1.00	0.100
Sodium	25700E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.51E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 11:55
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW25C-GW061920	Date Analyzed:	07/13/20 12:21
Lab Samp ID:	F178-02N	Dilution Factor:	1
Lab File ID:	H6G09021	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.371J	1.00	0.125
Barium	39.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	118000E	100	25.0
Chromium	0.416J	1.00	0.100
Cobalt	0.565J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	37100	100	25.0
Manganese	112	1.00	0.250
Nickel	1.55	1.00	0.250
Potassium	2140	100	25.0
Selenium	1.11	1.00	0.150
Silver	ND	1.00	0.100
Sodium	25500	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.08	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 11:55
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW25C-GW061920	Date Analyzed:	07/13/20 12:47
Lab Samp ID:	F178-02I	Dilution Factor:	10
Lab File ID:	H6G09031	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	39.7	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	118000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	38100	1000	250
Manganese	113	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2200	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	26400E	1000	250
Thallium	ND	10.0	1.00
Vanadium	4.65JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW05R-GW061920	Date Analyzed:	06/25/20 15:29
Lab Samp ID:	F178-04	Dilution Factor:	1
Lab File ID:	H6F21097	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	93.3J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.754J	1.00	0.125
Barium	72.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	4.85	1.00	0.100
Cobalt	0.213J	1.00	0.100
Copper	0.604J	2.00	0.500
Iron	42.8J	100	25.0
Lead	ND	1.00	0.0500
Manganese	1.80	1.00	0.250
Nickel	2.79	1.00	0.250
Potassium	2890	100	25.0
Selenium	0.779J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	MW05R-GW061920	Date Analyzed:	07/13/20 12:50
Lab Samp ID:	F178-04I	Dilution Factor:	10
Lab File ID:	H6G09032	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	169000	1000	250
Magnesium	62300	1000	250
Sodium	63800	1000	250

Sample ID:	MW05R-GW061920	Date Analyzed:	07/13/20 12:24
Lab Samp ID:	F178-04N	Dilution Factor:	1
Lab File ID:	H6G09022	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.98	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW05R-GW061920	Date Analyzed:	06/25/20 15:29
Lab Samp ID:	F178-04	Dilution Factor:	1
Lab File ID:	H6F21097	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	93.3J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.754J	1.00	0.125
Barium	72.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	169000E	100	25.0
Chromium	4.85	1.00	0.100
Cobalt	0.213J	1.00	0.100
Copper	0.604J	2.00	0.500
Iron	42.8J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	61500E	100	25.0
Manganese	1.80	1.00	0.250
Nickel	2.79	1.00	0.250
Potassium	2890	100	25.0
Selenium	0.779J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	62500E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.22E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW05R-GW061920	Date Analyzed:	07/13/20 12:24
Lab Samp ID:	F178-04N	Dilution Factor:	1
Lab File ID:	H6G09022	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	91.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.761J	1.00	0.125
Barium	72.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	167000E	100	25.0
Chromium	5.05	1.00	0.100
Cobalt	0.268J	1.00	0.100
Copper	ND	2.00	0.500
Iron	43.2J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	60500E	100	25.0
Manganese	1.75	1.00	0.250
Nickel	2.95	1.00	0.250
Potassium	2880	100	25.0
Selenium	0.872J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	61500E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.98	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW05R-GW061920	Date Analyzed:	07/13/20 12:50
Lab Samp ID:	F178-04I	Dilution Factor:	10
Lab File ID:	H6G09032	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.84J	10.0	1.25
Barium	69.8	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	169000	1000	250
Chromium	4.97J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	62300	1000	250
Manganese	4.19J	10.0	2.50
Nickel	3.02J	10.0	2.50
Potassium	2900	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	63800	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.75JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15S-GW061920	Date Analyzed:	06/25/20 15:32
Lab Samp ID:	F178-05	Dilution Factor:	1
Lab File ID:	H6F21098	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	29.8J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.581J	1.00	0.125
Barium	65.5	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	6.23	1.00	0.100
Cobalt	0.309J	1.00	0.100
Copper	ND	2.00	0.500
Iron	107	100	25.0
Lead	0.0864J	1.00	0.0500
Manganese	3.33	1.00	0.250
Nickel	2.80	1.00	0.250
Potassium	4930	100	25.0
Selenium	2.45	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	MW15S-GW061920	Date Analyzed:	07/13/20 12:53
Lab Samp ID:	F178-05I	Dilution Factor:	10
Lab File ID:	H6G09033	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	167000	1000	250
Magnesium	76600	1000	250
Sodium	180000	1000	250

Sample ID:	MW15S-GW061920	Date Analyzed:	07/13/20 12:27
Lab Samp ID:	F178-05N	Dilution Factor:	1
Lab File ID:	H6G09023	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.57	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15S-GW061920	Date Analyzed:	06/25/20 15:32
Lab Samp ID:	F178-05	Dilution Factor:	1
Lab File ID:	H6F21098	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	29.8J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.581J	1.00	0.125
Barium	65.5	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	169000E	100	25.0
Chromium	6.23	1.00	0.100
Cobalt	0.309J	1.00	0.100
Copper	ND	2.00	0.500
Iron	107	100	25.0
Lead	0.0864J	1.00	0.0500
Magnesium	75100E	100	25.0
Manganese	3.33	1.00	0.250
Nickel	2.80	1.00	0.250
Potassium	4930	100	25.0
Selenium	2.45	1.00	0.150
Silver	ND	1.00	0.100
Sodium	177000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.84E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15S-GW061920	Date Analyzed:	07/13/20 12:27
Lab Samp ID:	F178-05N	Dilution Factor:	1
Lab File ID:	H6G09023	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	25.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.609J	1.00	0.125
Barium	64.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	168000E	100	25.0
Chromium	6.52	1.00	0.100
Cobalt	0.359J	1.00	0.100
Copper	ND	2.00	0.500
Iron	106	100	25.0
Lead	0.0860J	1.00	0.0500
Magnesium	74300E	100	25.0
Manganese	3.34	1.00	0.250
Nickel	2.85	1.00	0.250
Potassium	4950	100	25.0
Selenium	2.50	1.00	0.150
Silver	ND	1.00	0.100
Sodium	175000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.57	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:15
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15S-GW061920	Date Analyzed:	07/13/20 12:53
Lab Samp ID:	F178-05I	Dilution Factor:	10
Lab File ID:	H6G09033	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.52J	10.0	1.25
Barium	62.5	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	167000	1000	250
Chromium	6.12J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	76600	1000	250
Manganese	3.83J	10.0	2.50
Nickel	3.07J	10.0	2.50
Potassium	5020	1000	250
Selenium	2.28J	10.0	1.50
Silver	ND	10.0	1.00
Sodium	180000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.33JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:00
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15D-GW061920	Date Analyzed:	06/25/20 15:34
Lab Samp ID:	F178-07	Dilution Factor:	1
Lab File ID:	H6F21099	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	88.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.513J	1.00	0.125
Barium	46.4	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.74	1.00	0.100
Cobalt	0.215J	1.00	0.100
Copper	ND	2.00	0.500
Iron	103	100	25.0
Lead	0.130J	1.00	0.0500
Manganese	6.73	1.00	0.250
Nickel	2.26	1.00	0.250
Potassium	4040	100	25.0
Selenium	2.61	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	MW15D-GW061920	Date Analyzed:	07/13/20 12:55
Lab Samp ID:	F178-07I	Dilution Factor:	10
Lab File ID:	H6G09034	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	167000	1000	250
Magnesium	65400	1000	250
Sodium	140000	1000	250

Sample ID:	MW15D-GW061920	Date Analyzed:	07/13/20 12:29
Lab Samp ID:	F178-07N	Dilution Factor:	1
Lab File ID:	H6G09024	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.37	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:00
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15D-GW061920	Date Analyzed:	06/25/20 15:34
Lab Samp ID:	F178-07	Dilution Factor:	1
Lab File ID:	H6F21099	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	88.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.513J	1.00	0.125
Barium	46.4	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	166000E	100	25.0
Chromium	1.74	1.00	0.100
Cobalt	0.215J	1.00	0.100
Copper	ND	2.00	0.500
Iron	103	100	25.0
Lead	0.130J	1.00	0.0500
Magnesium	65100E	100	25.0
Manganese	6.73	1.00	0.250
Nickel	2.26	1.00	0.250
Potassium	4040	100	25.0
Selenium	2.61	1.00	0.150
Silver	ND	1.00	0.100
Sodium	137000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.60E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:00
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15D-GW061920	Date Analyzed:	07/13/20 12:29
Lab Samp ID:	F178-07N	Dilution Factor:	1
Lab File ID:	H6G09024	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	70.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.539J	1.00	0.125
Barium	44.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	168000E	100	25.0
Chromium	1.75	1.00	0.100
Cobalt	0.269J	1.00	0.100
Copper	ND	2.00	0.500
Iron	99.9J	100	25.0
Lead	0.120J	1.00	0.0500
Magnesium	64000E	100	25.0
Manganese	6.67	1.00	0.250
Nickel	2.36	1.00	0.250
Potassium	4080	100	25.0
Selenium	2.74	1.00	0.150
Silver	ND	1.00	0.100
Sodium	139000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.37	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:00
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW15D-GW061920	Date Analyzed:	07/13/20 12:55
Lab Samp ID:	F178-07I	Dilution Factor:	10
Lab File ID:	H6G09034	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.42J	10.0	1.25
Barium	43.7	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	167000	1000	250
Chromium	1.79J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	65400	1000	250
Manganese	7.32J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	4110	1000	250
Selenium	2.54J	10.0	1.50
Silver	ND	10.0	1.00
Sodium	140000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.17JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:05
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	FD03-GW061920	Date Analyzed:	06/25/20 15:37
Lab Samp ID:	F178-08	Dilution Factor:	1
Lab File ID:	H6F21100	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	101	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.546J	1.00	0.125
Barium	45.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.62	1.00	0.100
Cobalt	0.207J	1.00	0.100
Copper	ND	2.00	0.500
Iron	105	100	25.0
Lead	0.119J	1.00	0.0500
Manganese	6.37	1.00	0.250
Nickel	2.26	1.00	0.250
Potassium	4080	100	25.0
Selenium	2.71	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	FD03-GW061920	Date Analyzed:	07/13/20 12:58
Lab Samp ID:	F178-08I	Dilution Factor:	10
Lab File ID:	H6G09035	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	170000	1000	250
Magnesium	65900	1000	250
Sodium	142000	1000	250

Sample ID:	FD03-GW061920	Date Analyzed:	07/13/20 12:32
Lab Samp ID:	F178-08N	Dilution Factor:	1
Lab File ID:	H6G09025	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.41	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:05
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	FD03-GW061920	Date Analyzed:	06/25/20 15:37
Lab Samp ID:	F178-08	Dilution Factor:	1
Lab File ID:	H6F21100	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	101	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.546J	1.00	0.125
Barium	45.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	169000E	100	25.0
Chromium	1.62	1.00	0.100
Cobalt	0.207J	1.00	0.100
Copper	ND	2.00	0.500
Iron	105	100	25.0
Lead	0.119J	1.00	0.0500
Magnesium	65700E	100	25.0
Manganese	6.37	1.00	0.250
Nickel	2.26	1.00	0.250
Potassium	4080	100	25.0
Selenium	2.71	1.00	0.150
Silver	ND	1.00	0.100
Sodium	138000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.58E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:05
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	FD03-GW061920	Date Analyzed:	07/13/20 12:32
Lab Samp ID:	F178-08N	Dilution Factor:	1
Lab File ID:	H6G09025	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	70.8J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.538J	1.00	0.125
Barium	46.1	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	168000E	100	25.0
Chromium	1.72	1.00	0.100
Cobalt	0.269J	1.00	0.100
Copper	ND	2.00	0.500
Iron	99.2J	100	25.0
Lead	0.119J	1.00	0.0500
Magnesium	64700E	100	25.0
Manganese	6.51	1.00	0.250
Nickel	2.32	1.00	0.250
Potassium	4120	100	25.0
Selenium	2.79	1.00	0.150
Silver	ND	1.00	0.100
Sodium	139000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.41	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 09:05
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	FD03-GW061920	Date Analyzed:	07/13/20 12:58
Lab Samp ID:	F178-08I	Dilution Factor:	10
Lab File ID:	H6G09035	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.48J	10.0	1.25
Barium	45.6	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	170000	1000	250
Chromium	1.65J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	65900	1000	250
Manganese	7.25J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	4190	1000	250
Selenium	2.81J	10.0	1.50
Silver	ND	10.0	1.00
Sodium	142000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.31JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Sample ID: MW12S-GW061920
Lab Samp ID: F178-10
Lab File ID: H6F21101
Ext Btch ID: IMF034W
Calib. Ref.: H6F21093

Date Collected: 06/19/20 12:40
Date Received: 06/20/20
Date Extracted: 06/24/20 12:21
Date Analyzed: 06/25/20 15:39
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	81.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.635J	1.00	0.125
Barium	68.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	3.43	1.00	0.100
Cobalt	0.390J	1.00	0.100
Copper	0.587J	2.00	0.500
Iron	73.8J	100	25.0
Lead	ND	1.00	0.0500
Manganese	3.08	1.00	0.250
Nickel	4.20	1.00	0.250
Potassium	3950	100	25.0
Selenium	1.84	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID: MW12S-GW061920
Lab Samp ID: F178-10I
Lab File ID: H6G09036
Ext Btch ID: IMF034W
Calib. Ref.: H6G09027

Date Analyzed: 07/13/20 13:00
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	161000	1000	250
Magnesium	74600	1000	250
Sodium	88200	1000	250

Sample ID: MW12S-GW061920
Lab Samp ID: F178-10N
Lab File ID: H6G09026
Ext Btch ID: IMF034W
Calib. Ref.: H6G09015

Date Analyzed: 07/13/20 12:34
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.85	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 12:40
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12S-GW061920	Date Analyzed:	06/25/20 15:39
Lab Samp ID:	F178-10	Dilution Factor:	1
Lab File ID:	H6F21101	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	81.2J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.635J	1.00	0.125
Barium	68.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	161000E	100	25.0
Chromium	3.43	1.00	0.100
Cobalt	0.390J	1.00	0.100
Copper	0.587J	2.00	0.500
Iron	73.8J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	75700E	100	25.0
Manganese	3.08	1.00	0.250
Nickel	4.20	1.00	0.250
Potassium	3950	100	25.0
Selenium	1.84	1.00	0.150
Silver	ND	1.00	0.100
Sodium	86700E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.86E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 12:40
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12S-GW061920	Date Analyzed:	07/13/20 12:34
Lab Samp ID:	F178-10N	Dilution Factor:	1
Lab File ID:	H6G09026	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	125	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.674J	1.00	0.125
Barium	70.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	0.328J	1.00	0.100
Calcium	160000E	100	25.0
Chromium	3.67	1.00	0.100
Cobalt	0.798J	1.00	0.100
Copper	ND	2.00	0.500
Iron	86.4J	100	25.0
Lead	0.348J	1.00	0.0500
Magnesium	74700E	100	25.0
Manganese	5.23	1.00	0.250
Nickel	4.44	1.00	0.250
Potassium	3950	100	25.0
Selenium	1.93	1.00	0.150
Silver	0.129J	1.00	0.100
Sodium	86300E	100	25.0
Thallium	0.300J	1.00	0.100
Vanadium	1.85	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 12:40
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12S-GW061920	Date Analyzed:	07/13/20 13:00
Lab Samp ID:	F178-10I	Dilution Factor:	10
Lab File ID:	H6G09036	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.43J	10.0	1.25
Barium	68.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	161000	1000	250
Chromium	3.59J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	74600	1000	250
Manganese	5.56J	10.0	2.50
Nickel	4.19J	10.0	2.50
Potassium	3980	1000	250
Selenium	2.69J	10.0	1.50
Silver	ND	10.0	1.00
Sodium	88200	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.80JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Sample ID: MW12D-GW061920
Lab Samp ID: F178-11
Lab File ID: H6F21102
Ext Btch ID: IMF034W
Calib. Ref.: H6F21093

Date Collected: 06/19/20 15:35
Date Received: 06/20/20
Date Extracted: 06/24/20 12:21
Date Analyzed: 06/25/20 15:42
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.693J	1.00	0.125
Barium	49.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.88	1.00	0.100
Cobalt	0.164J	1.00	0.100
Copper	ND	2.00	0.500
Iron	26.2J	100	25.0
Lead	0.0991J	1.00	0.0500
Manganese	5.80	1.00	0.250
Nickel	0.331J	1.00	0.250
Potassium	3020	100	25.0
Selenium	1.74	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID: MW12D-GW061920
Lab Samp ID: F178-11I
Lab File ID: H6G09037
Ext Btch ID: IMF034W
Calib. Ref.: H6G09027

Date Analyzed: 07/13/20 13:03
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	144000	1000	250
Magnesium	52900	1000	250
Sodium	77800	1000	250

Sample ID: MW12D-GW061920
Lab Samp ID: F178-11N
Lab File ID: H6G09029
Ext Btch ID: IMF034W
Calib. Ref.: H6G09027

Date Analyzed: 07/13/20 12:42
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Vanadium	1.91	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:35
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12D-GW061920	Date Analyzed:	06/25/20 15:42
Lab Samp ID:	F178-11	Dilution Factor:	1
Lab File ID:	H6F21102	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21093	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.693J	1.00	0.125
Barium	49.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	142000E	100	25.0
Chromium	1.88	1.00	0.100
Cobalt	0.164J	1.00	0.100
Copper	ND	2.00	0.500
Iron	26.2J	100	25.0
Lead	0.0991J	1.00	0.0500
Magnesium	53800E	100	25.0
Manganese	5.80	1.00	0.250
Nickel	0.331J	1.00	0.250
Potassium	3020	100	25.0
Selenium	1.74	1.00	0.150
Silver	ND	1.00	0.100
Sodium	76200E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.11E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:35
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12D-GW061920	Date Analyzed:	07/13/20 12:42
Lab Samp ID:	F178-11N	Dilution Factor:	1
Lab File ID:	H6G09029	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.691J	1.00	0.125
Barium	50.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	142000E	100	25.0
Chromium	1.95	1.00	0.100
Cobalt	0.225J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	29.2J	100	25.0
Lead	0.109J	1.00	0.0500
Magnesium	52300E	100	25.0
Manganese	6.01	1.00	0.250
Nickel	0.341J	1.00	0.250
Potassium	3020	100	25.0
Selenium	1.79	1.00	0.150
Silver	ND	1.00	0.100
Sodium	75100E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.91	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/19/20 15:35
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MW12D-GW061920	Date Analyzed:	07/13/20 13:03
Lab Samp ID:	F178-11I	Dilution Factor:	10
Lab File ID:	H6G09037	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09027	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.44J	10.0	1.25
Barium	48.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	144000	1000	250
Chromium	1.82J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	52900	1000	250
Manganese	6.25J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	3050	1000	250
Selenium	1.58J	10.0	1.50
Silver	ND	10.0	1.00
Sodium	77800	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.75JE	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F178	Date Extracted:	06/24/20 12:21
Sample ID:	MBLK1W	Date Analyzed:	06/25/20 11:48
Lab Samp ID:	IMF034WB	Dilution Factor:	1
Lab File ID:	H6F21018	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6F21015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	ND	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Zinc	ND	20.0	5.00

Sample ID:	MBLK1W	Date Analyzed:	07/13/20 12:11
Lab Samp ID:	IMF034WB	Dilution Factor:	1
Lab File ID:	H6G09017	Matrix:	WATER
Ext Btch ID:	IMF034W	% Moisture:	NA
Calib. Ref.:	H6G09015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Sodium	ND	100	25.0
Vanadium	ND	1.00	0.250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF034WB	IMF034WL	IMF034WC
LAB FILE ID	: H6F21018	H6F21019	H6F21020
DATE PREPARED	: 06/24/20 12:21	06/24/20 12:21	06/24/20 12:21
DATE ANALYZED	: 06/25/20 11:48	06/25/20 11:51	06/25/20 11:54
PREP BATCH	: IMF034W	IMF034W	IMF034W
CALIBRATION REF	: H6F21015	H6F21015	H6F21015

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	3050	102	3000	3050	102	0	80-120	20
Antimony	ND	30	28.7	96	30	28.9	96	1	80-120	20
Arsenic	ND	30	30.2	101	30	30.7	102	2	80-120	20
Barium	ND	30	28.4	95	30	28.5	95	0	80-120	20
Beryllium	ND	30	29.4	98	30	29.8	99	1	80-120	20
Cadmium	ND	30	28.8	96	30	29.1	97	1	80-120	20
Calcium	ND	3000	3060	102	3000	3060	102	0	80-120	20
Chromium	ND	30	31.0	103	30	31.1	104	0	80-120	20
Cobalt	ND	30	31.2	104	30	31.4	105	1	80-120	20
Copper	ND	30	32.2	107	30	32.4	108	1	80-120	20
Iron	ND	3000	3140	105	3000	3160	105	1	80-120	20
Lead	ND	30	30.2	101	30	30.2	101	0	80-120	20
Magnesium	ND	3000	3070	102	3000	3030	101	1	80-120	20
Manganese	ND	30	30.6	102	30	31.1	104	2	80-120	20
Nickel	ND	30	31.9	106	30	31.9	106	0	80-120	20
Potassium	ND	3000	3120	104	3000	3100	103	1	80-120	20
Selenium	ND	30	30.3	101	30	30.6	102	1	80-120	20
Silver	ND	30	30.4	101	30	30.3	101	0	80-120	20
Thallium	ND	30	30.4	101	30	30.6	102	1	80-120	20
Zinc	ND	60	61.2	102	60	61.3	102	0	80-120	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF034WB	IMF034WL	IMF034WC
LAB FILE ID	: H6G09017	H6G09018	H6G09019
DATE PREPARED	: 06/24/20 12:21	06/24/20 12:21	06/24/20 12:21
DATE ANALYZED	: 07/13/20 12:11	07/13/20 12:14	07/13/20 12:16
PREP BATCH	: IMF034W	IMF034W	IMF034W
CALIBRATION REF	: H6G09015	H6G09015	H6G09015

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Sodium	ND	3000	3070	102	3000	3130	104	2	80-120	20
Vanadium	ND	30	31.0	103	30	31.2	104	1	80-120	20

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 06|25|20 11:03

End Date: 06|25|20 16:16

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

CCB 2 Mn > ½ LOQ
CCB 8 Na > ½ LOQ
CCB 9 ↓
CCB 10 ↓

All associated samples >10x blanks concentration levels.
No corrective action taken.

CCB 7 Mn > ½ LOQ
Samples that were not >10x blank concentration level were reran.

Book #: AH6-005
Instrument No.: H6
Analytical Batch: 1H6F21
Analytical Sequence: H6F21
Method File: E6020H63
Micropipette ID: ☐ 142781004
Micropipette ID: ☑ ICP-06
Micropipette ID: ☑ 339362028
Micropipette ID: ☑ GFAA-07
Micropipette ID: ☐ 339342032
Micropipette ID: ☑ 542780515
Micropipette ID: ☐ 542761827
Micropipette ID: ☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	↓ 68-01	MRL2(0.4)	↓ 65-01
S2	↓ 68-02	MRL3(0.1)	↓ 65-02
S3	↓ 69-01	MRL4	NA
S4	↓ 69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	↓ 70-01	Post-Spike 3	NA
ICSA	↓ 66-02	Post-Spike 4	↓
ICSAB	↓ 67-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 06|25|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : METHOD SW6020A
Sequence : IH6F21
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6F21008				H6F21012			H6F21013		
DateAnalyed :		06/25/2011:18				06/25/2011:30			06/25/2011:33		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		30.04	30	2.1	100	0.24621	0	>0	19.736	20	99
Beryllium	T	31.00	30	1.2	103	0.0042732	0	<0.10	20.061	20	100
Boron		27.87	30	3.0	93	0.32167	0	<5.0	14.461	20	72*
Sodium	T	29740	30000	1.4	99	96311	100000	96	99256	100000	99
Magnesium	T	29290	30000	1.8	98	94990	100000	95	97321	100000	97
Aluminum	T	29760	30000	1.8	99	95397	100000	95	99058	100000	99
Silicon		3291	3000	0.7	110	4.1678	0	<20	217.14	200	109
Phosphorus		281.2	300	1.7	94	95232	100000	95	97548	100000	98
Potassium	T	29240	30000	1.2	97	98241	100000	98	101390	100000	101
Calcium	T	29730	30000	1.5	99	97192	100000	97	102080	100000	102
Titanium		297.9	300	0.8	99	2012.5	2000	101	2078.3	2000	104
Vanadium	T	307.6	300	1.1	103	0.097926	0	<0.25	20.194	20	101
Chromium	T	304.1	300	0.6	101	0.29412	0	>0.1	20.328	20	102
Manganese	T	1983	2000	1.8	99	0.26237	0	>0.25	19.376	20	97
Iron	T	30350	30000	0.5	101	99188	100000	99	101260	100000	101
Cobalt	T	303.8	300	2.1	101	0.34887	0	>0.1	19.632	20	98
Nickel	T	310.4	300	1.3	103	0.32363	0	>0.25	20.408	20	102
Copper	T	303.0	300	1.4	101	0.45352	0	<0.50	20.408	20	102
Zinc	T	288.5	300	2.1	96	1.6152	0	<5	21.479	20	107
Arsenic	T	309.9	300	0.7	103	0.085129	0	<0.125	20.294	20	101
Selenium	T	309.9	300	0.2	103	0.17162	0	>0.15	21.026	20	105
Strontium		308.2	300	2.4	103	0.79133	0	<1.0	20.286	20	101
Zirconium		27.28	30	1.7	91	0.085298	0	<2.0	10.426	20	52*
Molybdenum		294.9	300	3.6	98	1937.8	2000	97	2054.2	2000	103
Silver	T	30.55	30	1.8	102	0.014548	0	<0.1	19.077	20	95
Cadmium	T	304.9	300	2.1	102	0.096563	0	<0.1	19.313	20	97
Tin		306.8	300	2.0	102	0.40638	0	>0.2	20.120	20	101
Antimony	T	59.10	60	1.2	98	0.16094	0	<0.25	19.636	20	98
Barium	T	304.4	300	2.0	101	0.40157	0	>0.25	20.410	20	102
Tungsten		32.53	30	1.5	108	0.18236	0	<1.0	19.335	20	97
Mercury		2.928	3	1.1	98	0.0045413	0	<0.1	1.9471	2	97
Thallium	T	318.0	300	2.7	106	0.0056014	0	<0.1	19.196	20	96
Lead	T	316.1	300	2.2	105	0.082878	0	>0.05	19.214	20	96
Uranium		307.3	300	2.2	102	0.0016252	0	<0.1	19.448	20	97

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : METHOD SW6020A
Sequence : IH6F21
Instrument ID: H6

CCV SampleID		: CCV1				CCV2				CCV9				CCV10		
CCV DataFileID		: H6F21015				H6F21025				H6F21093				H6F21103		
CCV DateTime		: 06/25/20 11:38				06/25/20 12:07				06/25/20 15:15				06/25/20 15:45		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD		RESULT	%REC	RSD		RESULT	%REC	RSD
Lithium		25	24.4	97	2.1	24.8	99	1.2		25.1	100	3.9		25.9	104	2.2
Beryllium	T	25	24.8	99	1.8	25.2	101	1.5		24.3	97	4.7		24.7	99	2.1
Boron		50	52.9	106	3.1	53.0	106	2.0		51.9	104	7.2		55.7	111*	1.2
Sodium	T	25000	24800	99	1.4	24900	99	0.8		25500	102	1.0		25500	102	0.2
Magnesium	T	25000	24700	99	2.5	25000	100	2.7		25500	102	3.1		26500	106	1.1
Aluminum	T	25000	25000	100	2.4	25200	101	4.5		25400	102	3.0		26500	106	2.4
Silicon		2500	2500	100	1.5	2470	99	0.6		2560	102	0.8		2520	101	0.9
Phosphorus		250	246	98	0.8	251	100	1.9		254	102	1.8		260	104	2.3
Potassium	T	25000	24900	100	1.0	25400	102	0.8		25300	101	1.1		25400	102	1.2
Calcium	T	25000	24800	99	1.6	24800	99	0.3		25400	102	1.1		25100	100	1.3
Titanium		250	248	99	1.6	252	101	0.8		251	100	2.2		259	104	2.7
Vanadium	T	250	248	99	0.6	255	102	0.3		244	98	1.2		249	100	1.0
Chromium	T	250	249	100	1.2	256	102	0.9		245	98	0.5		249	99	0.8
Manganese	T	1500	1520	101	2.5	1520	102	1.7		1520	101	3.1		1580	106	1.4
Iron	T	25000	25400	101	1.2	25100	100	0.4		25900	104	0.8		25400	101	1.2
Cobalt	T	250	254	102	2.4	252	101	2.0		254	102	2.4		265	106	0.8
Nickel	T	250	254	101	0.7	262	105	0.8		249	100	0.9		253	101	0.3
Copper	T	250	249	100	0.6	258	103	0.5		244	98	1.3		250	100	0.3
Zinc	T	250	245	98	1.2	248	99	1.7		247	99	1.9		253	101	1.8
Arsenic	T	250	250	100	0.8	252	101	0.2		247	99	0.8		252	101	1.2
Selenium	T	250	247	99	1.1	251	101	0.6		247	99	0.4		245	98	0.6
Strontium		250	249	99	0.9	251	100	2.4		249	100	1.8		261	104	1.9
Zirconium		25	24.1	96	0.2	24.3	97	1.6		24.4	98	1.3		25.6	102	2.0
Molybdenum		250	242	97	1.5	240	96	0.6		245	98	2.8		252	101	3.9
Silver	T	25	24.6	98	0.1	24.8	99	0.9		25.1	100	1.5		25.9	104	4.3
Cadmium	T	250	243	97	0.8	247	99	1.2		248	99	1.2		253	101	3.7
Tin		250	248	99	1.1	248	99	1.0		248	99	1.8		259	104	2.6
Antimony	T	50	49.0	98	0.4	49.7	99	1.2		49.8	100	1.7		51.6	103	4.1
Barium	T	500	494	99	2.0	494	99	0.7		503	101	3.0		526	105	3.5
Tungsten		25	24.7	99	1.0	25.1	101	0.9		25.5	102	1.4		26.1	105	4.2
Mercury		2.5	2.47	99	0.9	2.53	101	1.8		2.50	100	1.1		2.56	102	3.1
Thallium	T	250	255	102	1.0	256	102	1.9		255	102	2.1		263	105	2.8
Lead	T	250	254	102	0.4	255	102	1.7		254	102	1.0		263	105	3.5
Uranium		250	248	99	1.3	251	100	1.2		244	98	0.5		258	103	3.2

| Unit: ug/L
| T: Target analyte
|%Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : SW6020A
Sequence : IH6F21
Instrument ID: H6

CB SampleID			: ICB		CCB1		CCB2		CCB9		CCB10	
CB DataFileID			: H6F21009		H6F21016		H6F21026		H6F21094		H6F21104	
CB DateTime			: 06/25/2011:23		06/25/2011:43		06/25/2012:09		06/25/2015:21		06/25/2015:47	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.08	>0	0.1	>0	0.1	>0	0.06	>0	0.2	>0
Beryllium	T	0.10	0.008	<0.10	0.001	<0.10	0.01	<0.10	0.005	<0.10	0.01	<0.10
Boron		5.0	0.04	<5.0	0.3	<5.0	0.4	<5.0	10	>5.0	10	>5.0
Sodium	T	25	2	<25	5	<25	20	<25	90	>25	80	>25
Magnesium	T	25	0.3	<25	2	<25	10	<25	3	<25	10	<25
Aluminum	T	25	0.5	<25	2	<25	10	<25	2	<25	9	<25
Silicon		20	0.9	<20	0.2	<20	1.0	<20	0.3	<20	0.4	<20
Phosphorus		25	0.2	<25	1	<25	0.5	<25	3	<25	3	<25
Potassium	T	25	3	<25	3	<25	8	<25	10	<25	8	<25
Calcium	T	25	0.2	<25	1	<25	5	<25	5	<25	5	<25
Titanium		0.5	0.007	<0.5	0.0007	<0.5	0.1	<0.5	0.01	<0.5	0.1	<0.5
Vanadium	T	0.25	0.07	<0.25	0.09	<0.25	0.1	<0.25	0.2	<0.25	0.2	<0.25
Chromium	T	0.1	0.005	<0.1	0.004	<0.1	0.008	<0.1	0.04	<0.1	0.03	<0.1
Manganese	T	0.25	0.05	<0.25	0.10	<0.25	0.8	>0.25	0.1	<0.25	0.5	>0.25
Iron	T	25	0.5	<25	2	<25	5	<25	2	<25	2	<25
Cobalt	T	0.1	0.008	<0.1	0.01	<0.1	0.1	>0.1	0.02	<0.1	0.09	<0.1
Nickel	T	0.25	0.007	<0.25	0.01	<0.25	0.02	<0.25	0.02	<0.25	0.02	<0.25
Copper	T	0.50	0.02	<0.50	0.009	<0.50	0.04	<0.50	0.09	<0.50	0.07	<0.50
Zinc	T	5	0.03	<5	0.05	<5	0.2	<5	0.2	<5	0.2	<5
Arsenic	T	0.125	0.01	<0.125	0.0010	<0.125	0.04	<0.125	0.04	<0.125	0.04	<0.125
Selenium	T	0.15	0.03	<0.15	0.02	<0.15	0.08	<0.15	0.007	<0.15	0.03	<0.15
Strontium		1.0	0.002	<1.0	0.01	<1.0	0.1	<1.0	0.03	<1.0	0.1	<1.0
Zirconium		2.0	0.0001	<2.0	0.0010	<2.0	0.010	<2.0	0.0007	<2.0	0.005	<2.0
Molybdenum		0.5	0.01	<0.5	0.03	<0.5	0.1	<0.5	0.02	<0.5	0.09	<0.5
Silver	T	0.1	0.002	<0.1	0.004	<0.1	0.01	<0.1	0.003	<0.1	0.009	<0.1
Cadmium	T	0.1	0.02	<0.1	0.02	<0.1	0.1	>0.1	0.01	<0.1	0.09	<0.1
Tin		0.2	0.04	<0.2	0.01	<0.2	0.1	<0.2	0.03	<0.2	0.1	<0.2
Antimony	T	0.25	0.001	<0.25	0.003	<0.25	0.02	<0.25	0.002	<0.25	0.02	<0.25
Barium	T	0.25	0.008	<0.25	0.03	<0.25	0.2	<0.25	0.05	<0.25	0.2	<0.25
Tungsten		1.0	0.007	<1.0	0.004	<1.0	0.02	<1.0	0.004	<1.0	0.009	<1.0
Mercury		0.1	0.008	<0.1	0.002	<0.1	0.01	<0.1	0.0006	<0.1	0.006	<0.1
Thallium	T	0.1	0.04	<0.1	0.03	<0.1	0.2	>0.1	0.02	<0.1	0.1	>0.1
Lead	T	0.05	0.03	<0.05	0.03	<0.05	0.2	>0.05	0.02	<0.05	0.09	>0.05
Uranium		0.1	0.007	<0.1	0.01	<0.1	0.1	>0.1	0.02	<0.1	0.08	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : METHOD SW6020A
Sequence : IH6G09
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6G09008				H6G09012			H6G09013		
DateAnalyed :		07/13/2011:48				07/13/2011:58			07/13/2012:01		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		31.14	30	1.3	104	0.51101	0	>0	20.149	20	101
Beryllium	T	32.07	30	1.8	107	0.0027618	0	<0.10	20.807	20	104
Boron		35.97	30	2.6	120*	1.4642	0	<5.0	23.018	20	115
Sodium	T	30590	30000	1.0	102	100420	100000	100	98932	100000	99
Magnesium	T	29980	30000	2.8	100	98546	100000	99	97699	100000	98
Aluminum	T	30530	30000	2.7	102	99997	100000	100	98962	100000	99
Silicon		3392	3000	0.7	113*	6.4447	0	<20	216.98	200	108
Phosphorus		287.4	300	2.1	96	98985	100000	99	98051	100000	98
Potassium	T	30550	30000	0.4	102	100270	100000	100	101510	100000	102
Calcium	T	30530	30000	0.8	102	101280	100000	101	100420	100000	100
Titanium		306.7	300	1.2	102	2081.5	2000	104	2080.2	2000	104
Vanadium	T	323.1	300	0.6	108	0.061327	0	<0.25	20.782	20	104
Chromium	T	318.2	300	0.3	106	0.34637	0	>0.1	20.811	20	104
Manganese	T	2038	2000	2.0	102	0.33695	0	>0.25	19.567	20	98
Iron	T	31550	30000	0.6	105	102370	100000	102	101980	100000	102
Cobalt	T	315.3	300	2.9	105	0.40704	0	>0.1	19.995	20	100
Nickel	T	320.3	300	0.6	107	0.38261	0	>0.25	20.730	20	104
Copper	T	321.1	300	1.1	107	17.311	0	>0.50	0.17160	20	1*
Zinc	T	296.5	300	1.2	99	2.7893	0	<5	21.366	20	107
Arsenic	T	321.4	300	0.7	107	0.093775	0	<0.125	20.343	20	102
Selenium	T	321.2	300	0.8	107	0.12754	0	<0.15	20.625	20	103
Strontium		321.6	300	1.6	107	0.85000	0	<1.0	20.919	20	105
Zirconium		28.73	30	1.0	96	0.11204	0	<2.0	9.3815	20	47*
Molybdenum		301.8	300	2.2	101	2012.4	2000	101	2033.5	2000	102
Silver	T	30.82	30	2.2	103	0.015623	0	<0.1	19.383	20	97
Cadmium	T	311.8	300	1.5	104	0.13276	0	>0.1	19.775	20	99
Tin		313.7	300	2.0	105	0.39200	0	>0.2	19.868	20	99
Antimony	T	59.61	60	1.5	99	0.16780	0	<0.25	20.034	20	100
Barium	T	307.9	300	1.4	103	0.44088	0	>0.25	20.092	20	100
Tungsten		33.31	30	2.4	111*	0.19535	0	<1.0	18.672	20	93
Mercury		2.982	3	0.5	99	0.0082017	0	<0.1	2.0019	2	100
Thallium	T	316.8	300	1.8	106	0.0049757	0	<0.1	19.098	20	95
Lead	T	316.1	300	1.5	105	0.11947	0	>0.05	19.431	20	97
Uranium		312.3	300	1.0	104	0.0072901	0	<0.1	19.353	20	97

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : METHOD SW6020A
Sequence : IH6G09
Instrument ID: H6

CCV SampleID			CCV1			CCV2			CCV3		
CCV DataFileID			H6G09015			H6G09027			H6G09038		
CCV DateTime			07/13/20 12:06			07/13/20 12:37			07/13/20 13:06		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.9	100	0.9	24.8	99	2.1	25.2	101	1.1
Beryllium	T	25	25.6	102	0.4	25.5	102	1.1	25.7	103	0.4
Boron		50	51.8	104	2.4	56.5	113*	1.1	52.8	106	1.3
Sodium	T	25000	25300	101	0.4	25700	103	1.7	25600	102	1.9
Magnesium	T	25000	24900	100	1.4	25400	102	2.2	25000	100	1.1
Aluminum	T	25000	24800	99	1.9	25100	100	2.1	25100	100	2.0
Silicon		2500	2530	101	1.0	2540	101	1.6	2520	101	2.1
Phosphorus		250	243	97	0.8	247	99	0.1	243	97	1.2
Potassium	T	25000	25400	102	0.2	25500	102	0.2	25400	102	0.8
Calcium	T	25000	25100	101	0.7	25200	101	1.7	25200	101	1.2
Titanium		250	251	100	0.2	250	100	1.0	250	100	1.0
Vanadium	T	250	256	102	0.9	258	103	1.1	257	103	0.4
Chromium	T	250	257	103	1.3	259	104	1.4	258	103	0.6
Manganese	T	1500	1530	102	0.8	1530	102	1.6	1530	102	1.4
Iron	T	25000	25900	103	0.3	25800	103	0.9	26000	104	0.6
Cobalt	T	250	257	103	1.1	256	103	1.5	256	103	1.9
Nickel	T	250	257	103	0.8	260	104	1.4	257	103	0.8
Copper	T	250	246	98	0.8	249	100	1.5	242	97	0.7
Zinc	T	250	252	101	1.2	251	100	0.7	251	100	0.7
Arsenic	T	250	251	100	0.9	253	101	0.6	252	101	0.5
Selenium	T	250	254	102	0.9	253	101	1.1	255	102	1.1
Strontium		250	253	101	1.1	253	101	1.8	260	104	1.2
Zirconium		25	24.8	99	0.5	24.6	99	1.0	25.0	100	0.4
Molybdenum		250	247	99	1.0	244	98	1.0	246	99	0.2
Silver	T	25	24.9	99	1.4	24.5	98	0.4	24.2	97	0.3
Cadmium	T	250	248	99	1.8	246	98	1.0	242	97	0.4
Tin		250	248	99	0.6	247	99	1.2	248	99	0.7
Antimony	T	50	49.2	98	1.4	49.1	98	0.4	48.3	97	0.7
Barium	T	500	499	100	0.7	496	99	1.5	497	99	0.8
Tungsten		25	25.4	101	0.7	25.4	102	0.8	25.1	100	1.1
Mercury		2.5	2.54	102	1.1	2.51	100	0.2	2.48	99	0.5
Thallium	T	250	252	101	1.3	252	101	1.1	252	101	0.9
Lead	T	250	252	101	0.7	253	101	0.8	253	101	0.8
Uranium		250	247	99	0.4	249	100	1.3	248	99	1.3

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F178
Method : SW6020A
Sequence : IH6G09
Instrument ID: H6

		CB SampleID	CCB1	CCB2	CCB3
		: ICB			
CB DataFileID		: H6G09009	H6G09016	H6G09028	H6G09039
CB DateTime		: 07/13/2011:50	07/13/2012:08	07/13/2012:40	07/13/2013:08

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.06	>0	0.04	>0	0.1	>0	0.10	>0
Beryllium	T	0.10	0.005	<0.10	0.003	<0.10	0.004	<0.10	0.002	<0.10
Boron		5.0	0.8	<5.0	0.6	<5.0	3	<5.0	1	<5.0
Sodium	T	25	5	<25	5	<25	30	>25	8	<25
Magnesium	T	25	5	<25	6	<25	8	<25	2	<25
Aluminum	T	25	5	<25	6	<25	4	<25	1	<25
Silicon		20	4	<20	1	<20	1	<20	0.1	<20
Phosphorus		25	1	<25	5	<25	3	<25	4	<25
Potassium	T	25	4	<25	6	<25	7	<25	5	<25
Calcium	T	25	3	<25	3	<25	6	<25	1	<25
Titanium		0.5	0.08	<0.5	0.09	<0.5	0.05	<0.5	0.02	<0.5
Vanadium	T	0.25	0.02	<0.25	0.08	<0.25	0.06	<0.25	0.08	<0.25
Chromium	T	0.1	0.02	<0.1	0.0007	<0.1	0.02	<0.1	0.03	<0.1
Manganese	T	0.25	0.4	>0.25	0.2	<0.25	0.3	>0.25	0.1	<0.25
Iron	T	25	4	<25	4	<25	2	<25	1	<25
Cobalt	T	0.1	0.05	<0.1	0.04	<0.1	0.03	<0.1	0.01	<0.1
Nickel	T	0.25	0.02	<0.25	0.02	<0.25	0.007	<0.25	0.02	<0.25
Copper	T	0.50	6	>0.50	20	>0.50	20	>0.50	20	>0.50
Zinc	T	5	0.08	<5	0.06	<5	0.05	<5	0.03	<5
Arsenic	T	0.125	0.04	<0.125	0.03	<0.125	0.04	<0.125	0.04	<0.125
Selenium	T	0.15	0.05	<0.15	0.02	<0.15	0.02	<0.15	0.03	<0.15
Strontium		1.0	0.05	<1.0	0.04	<1.0	0.1	<1.0	0.02	<1.0
Zirconium		2.0	0.004	<2.0	0.001	<2.0	0.0009	<2.0	0.003	<2.0
Molybdenum		0.5	0.09	<0.5	0.1	<0.5	0.06	<0.5	0.04	<0.5
Silver	T	0.1	0.007	<0.1	0.005	<0.1	0.004	<0.1	0.001	<0.1
Cadmium	T	0.1	0.08	<0.1	0.05	<0.1	0.05	<0.1	0.04	<0.1
Tin		0.2	0.2	<0.2	0.1	<0.2	0.05	<0.2	0.03	<0.2
Antimony	T	0.25	0.01	<0.25	0.01	<0.25	0.01	<0.25	0.004	<0.25
Barium	T	0.25	0.05	<0.25	0.06	<0.25	0.06	<0.25	0.02	<0.25
Tungsten		1.0	0.02	<1.0	0.01	<1.0	0.002	<1.0	0.001	<1.0
Mercury		0.1	0.04	<0.1	0.02	<0.1	0.02	<0.1	0.01	<0.1
Thallium	T	0.1	0.2	>0.1	0.1	>0.1	0.08	<0.1	0.06	<0.1
Lead	T	0.05	0.1	>0.05	0.08	>0.05	0.04	<0.05	0.02	<0.05
Uranium		0.1	0.05	<0.1	0.04	<0.1	0.04	<0.1	0.02	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6F21001.d		1	
2		CalBlk	BLANK		1101	H6F21002.d		1	
3		CalStd	S0		1102	H6F21003.d		1	
4		CalStd	S1		1104	H6F21004.d		2	
5		CalStd	S2		1105	H6F21005.d		3	
6		CalStd	S3		1106	H6F21006.d		4	
7		CalStd	S4		1107	H6F21007.d		5	
8		ICV	ICV		1204	H6F21008.d			1
9		ICB	ICB		1102	H6F21009.d			1
10		LLCCV	MRLF2501 ✓	1/100/10 ppb	1306	H6F21010.d			1
11		LLCCV2	MRLF2502	0.4/40/4 ppb	1307	H6F21011.d			1
12		ICS-A	ICSA		1304	H6F21012.d			1
13		ICSB	ICSAB		1305	H6F21013.d			1
14		Sample	MRLF2503	500 ppb CAT	1207	H6F21014.d			1
15		CCV	CCV1		1206	H6F21015.d			1
16		CCB	CCB1		1102	H6F21016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	H198-01	SM5A-04-03-10	2101	H6F21017.d			1
2		Blank	IMF034WB		2102	H6F21018.d			1
3		LCSW	IMF034WL		2103	H6F21019.d			1
4		LCSW	IMF034WC		2104	H6F21020.d			1
5		Sample	F102-08		2105	H6F21021.d			1
6		Sample	F186-01		2106	H6F21022.d			1
7		LLCCV	MRLF2504	1/100/10 ppb	1306	H6F21023.d			1
8		LLCCV2	MRLF2505	0.4/40/4 ppb	1307	H6F21024.d			1
9		CCV	CCV2		1206	H6F21025.d			1
10		CCB	CCB2 Mn 7 ½ LOQ		1102	H6F21026.d			1
11		Sample	TXF005SB		2107	H6F21027.d			1
12		Sample	F172-01M] ✓		2108	H6F21028.d			1
13		Sample	F172-01S]		2109	H6F21029.d			1
14		Sample	F172-01A		2110	H6F21030.d			1
15		Sample	F172-01		2111	H6F21031.d			1
16		Sample	F172-01J		2112	H6F21032.d			5
17		CCV	CCV3		1206	H6F21033.d			1
18		CCB	CCB3		1102	H6F21034.d			1
19		Sample	F102-10		2201	H6F21035.d			1
20		Sample	F102-11M ✓		2202	H6F21036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	F102-11S ✓		2203	H6F21037.d			1
22		Sample	F102-11A		2204	H6F21038.d			1
23		Sample	F102-11		2205	H6F21039.d			1
24		Sample	F102-11J		2206	H6F21040.d			5
25		Sample	F102-12		2207	H6F21041.d			1
26		CCV	CCV4		1206	H6F21042.d			1
27		CCB	CCB4		1102	H6F21043.d			1
28		Sample	E226-01		2208	H6F21044.d			1
29		Sample	E226-02		2209	H6F21045.d			1
30		Sample	E226-03		2210	H6F21046.d			1
31		Sample	E226-04M		2211	H6F21047.d			1
32		Sample	E226-04S		2212	H6F21048.d			1
33		Sample	E226-04A ✓		2301	H6F21049.d			1
34		Sample	E226-04		2302	H6F21050.d			1
35		Sample	E226-04J		2303	H6F21051.d			5
36		Sample	E226-06		2304	H6F21052.d			1
37		Sample	E226-07		2305	H6F21053.d			1
38		CCV	CCV5		1206	H6F21054.d			1
39		CCB	CCB5		1102	H6F21055.d			1
40		Blank	IMF033WB		2306	H6F21056.d			1
41		LCSW	IMF033WL		2307	H6F21057.d			1
42		LCSW	IMF033WC		2308	H6F21058.d			1
43		Sample	F159-01M		2309	H6F21059.d			10
44		Sample	F159-01S		2310	H6F21060.d			10
45		Sample	F159-01A		2311	H6F21061.d			10
46		Sample	F159-01I		2312	H6F21062.d			10
47		Sample	F159-01J		2401	H6F21063.d			50
48		Sample	F159-02I		2402	H6F21064.d			10
49		CCV	CCV6		1206	H6F21065.d			1
50		CCB	CCB6		1102	H6F21066.d			1
51		Sample	F159-04I		2403	H6F21067.d			10
52		Sample	F159-05I		2404	H6F21068.d			10
53		Sample	F159-06I	Li IS > 120%	2405	H6F21069.d			10
54		Sample	F159-07I	Li IS > 120%	2406	H6F21070.d			10
55		Sample	F159-08I		2407	H6F21071.d			10
56		Sample	F159-09I		2408	H6F21072.d			10
57		Sample	F159-10I		2409	H6F21073.d			10
58		Sample	F159-11I		2410	H6F21074.d			10
59		CCV	CCV7		1206	H6F21075.d			1
60		CCB	CCB7 Mn > ½LOQ		1102	H6F21076.d			1
61		Sample	F159-12I		2411	H6F21077.d			10
62		Sample	F159-13I		2412	H6F21078.d			10
63		Sample	F159-14I		2501	H6F21079.d			10
64		Sample	F159-15I		2502	H6F21080.d			10
65		Sample	F159-16I		2503	H6F21081.d			10
66		Sample	F159-17I		2504	H6F21082.d			10
67		CCV	CCV8		1206	H6F21083.d			1
68		CCB	CCB8 Na > ½LOQ		1102	H6F21084.d			1
69		Sample	F178-01I		2505	H6F21085.d			10
70		Sample	F178-02I		2506	H6F21086.d			10
71		Sample	F178-04I		2507	H6F21087.d			10
72		Sample	F178-05I		2508	H6F21088.d			10

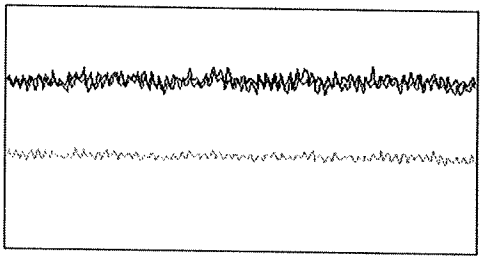
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	F178-07I		2509	H6F21089.d			10
74		Sample	F178-08I		2510	H6F21090.d			10
75		Sample	F178-10I		2511	H6F21091.d			10
76		Sample	F178-11I		2512	H6F21092.d			10
77		CCV	CCV9		1206	H6F21093.d			1
78		CCB	CCB9 Na > ½ LOQ		1102	H6F21094.d			1
79		Sample	F178-01 Na mg ca ↑		3101	H6F21095.d			1
80		Sample	F178-02 ca ↑		3102	H6F21096.d			1
81		Sample	F178-04 Na mg ca ↑		3103	H6F21097.d			1
82		Sample	F178-05 Na mg ca ↑		3104	H6F21098.d			1
83		Sample	F178-07 Na mg ca ↑		3105	H6F21099.d			1
84		Sample	F178-08 Na mg ca ↑		3106	H6F21100.d			1
85		Sample	F178-10 Na mg ca ↑		3107	H6F21101.d			1
86		Sample	F178-11 Na mg ca ↑		3108	H6F21102.d			1
87		CCV	CCV10		1206	H6F21103.d			1
88		CCB	CCB10 Na > ½ LOQ		1102	H6F21104.d			1
89		LLCCV	MRLF2506	1/100/10 ppb Na V ↑	1306	H6F21105.d			1
90		LLCCV2	MRLF2507	0.4/40/4 ppb ↓	1307	H6F21106.d			1
91		LLCCV	MRLF2508	1/100/10 ppb	1306	H6F21107.d			1
92		Sample	F159-06I		2405	H6F21108.d			10
93		Sample	F159-07I		2406	H6F21109.d			10
94		Sample	F159-08I		2407	H6F21110.d			10
95		Sample	F159-10I		2409	H6F21111.d			10
96		CCV	CCV11		1206	H6F21112.d			1
97		CCB	CCB11		1102	H6F21113.d			1
98		LLCCV	MRLF2509	1/100/10 ppb Na V ↑	1306	H6F21114.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-06-25 09:09:56
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



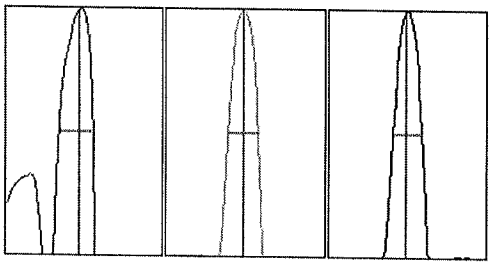
Mass	Range	Count	RSD%	Background
7	10000	6905	3.087	0.250
89	50000	19387	3.428	0.800
205	20000	14183	3.024	3.450

Sampling Period [sec] 0.311
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.207 %
Doubly Charged	70 / 140 1.384 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	6840.79	6.95	0.63	0.76
89	19525.52	89.00	0.56	0.73
205	14163.47	205.00	0.55	0.75

Integration Time [sec] 0.1
Acquisition Time [sec] 22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.8 V	Deflect	13.6 V
Extract 2	-180.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9999
Mass Offset	124	Axis Offset	-0.08

EM

Discriminator	4.1 mV	Analog HV	2394 V	Pulse HV	1544 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	14.99	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.18E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	32.3	°C
Nebulizer Gas(DP)	6.13E+0	kPa
MU./Dil. Gas(DP)	-1.39E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.52E+2	kPa
MU./Dil. Gas(BP)	-2.47E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.96E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.20E+2	Pa
Analyzer Press	6.59E-5	Pa
IG HV	179	V
IG Emission	4.99	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.0	%
TMP Current	2.48	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.18	V
OctP RF (Avg)	204.0	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.97	V
OctP RF(+)	176.2	V
OctP RF(-)	231.5	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.8	V
+U Voltage	406.5	V

Name	Value	Unit
-U Voltage	-412.1	V
V Voltage	1775.4	V
QPRF Fader	1.3	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	610.1	V
-120V	-133.8	V
-720V	-738.3	V
Prefilter Bias	-4.99	V
Pickup Heater I	0.07	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2398	V
Pulse HV	1555	V
EM Gate	-40.3	V
Pulse Gate	335.4	V
EM Entrance	0.2	V
EM HV Gain	-1043.9	V
Inner Pole	-300.3	V
Outer Pole	20.1	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	63.4	V
RF PS +48V	47.5	V
Forward Power	1551	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.50	A
Drain I 2	11.04	A
Drain I 3	10.90	A
Drain I 4	10.21	A
Temp Sensor	2.8	V
Driver I	5.73	A

Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.44	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.97E-1	kPa
ORS AMFC Temp	31.7	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-180.3	V
Omega Bias	-90.1	V
Omega Lens	7.7	V
Cell Entrance	-30.0	V
Cell Exit	-50.2	V
Deflect	13.5	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	30.1	°C
Internal Temp	34.4	°C
+24V	23.6	V
Water Temp	18.8	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

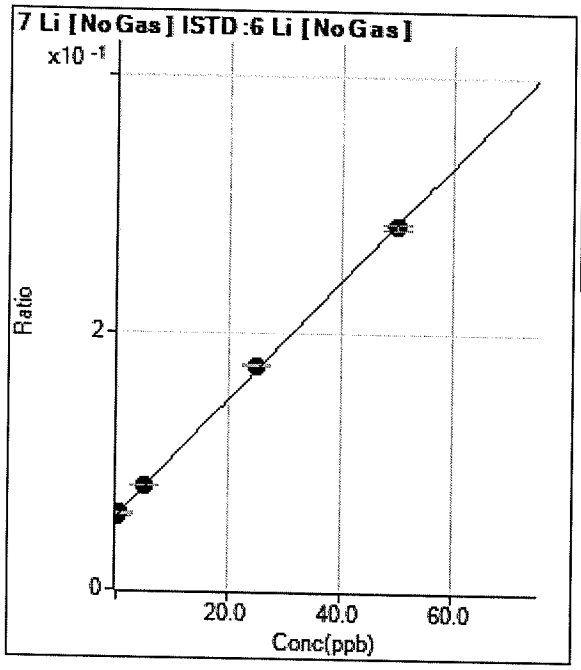
Performance Report History

Sensitivity

Calibration for H6F21114.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b\
Analysis File:	IH6F21.batch.bin
DA Date-Time:	2020-06-25 16:18:17
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

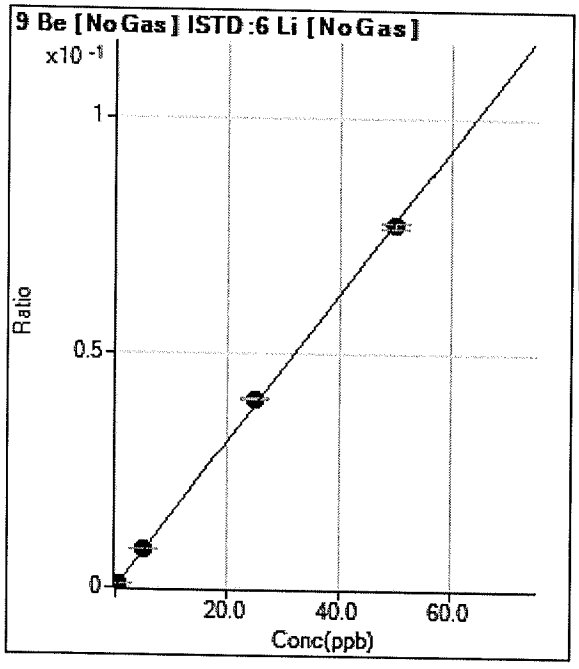
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6F21003.d	S0	2020-06-25 11:03:46
2	H6F21004.d	S1	2020-06-25 11:06:37
3	H6F21005.d	S2	2020-06-25 11:09:28
4	H6F21006.d	S3	2020-06-25 11:12:28
5	H6F21007.d	S4	2020-06-25 11:15:18



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	117190.88	0.0576	P	0.9
2	☐	0.500	0.459	123701.91	0.0597	P	1.6
3	☐	5.000	5.102	166282.04	0.0809	P	0.6
4	☐	25.000	25.757	355217.34	0.1750	P	1.3
5	☐	50.000	49.612	573993.99	0.2838	P	1.8

y = 0.0046 * x + 0.0576
R = 0.9998
DL = 0.3235
BEC = 12.64

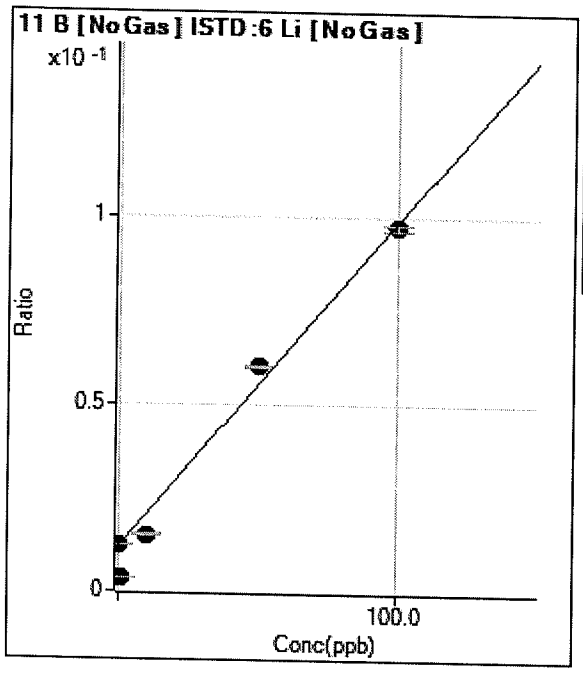
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0000	P	20.9
2	☐	0.500	0.515	1700.11	0.0008	P	6.9
3	☐	5.000	5.160	16561.96	0.0081	P	1.7
4	☐	25.000	25.858	81763.22	0.0403	P	1.4
5	☐	50.000	49.555	156133.15	0.0772	P	1.7

y = 0.0016 * x + 1.9634E-005
R = 0.9998
DL = 0.007892
BEC = 0.01261

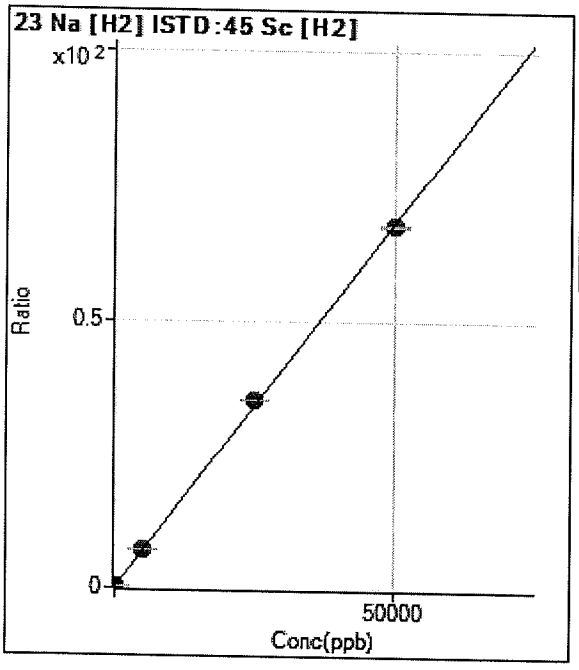
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25020.01	0.0123	P	1.0
2	☐	0.500	-10.260	7106.24	0.0034	P	1.3
3	☐	10.000	3.302	31162.28	0.0152	P	1.2
4	☐	50.000	55.223	121861.78	0.0600	P	1.0
5	☐	100.000	98.112	196481.00	0.0971	P	1.3

y = 8.6462E-004 * x + 0.0123
R = 0.9927
DL = 0.4334
BEC = 14.23

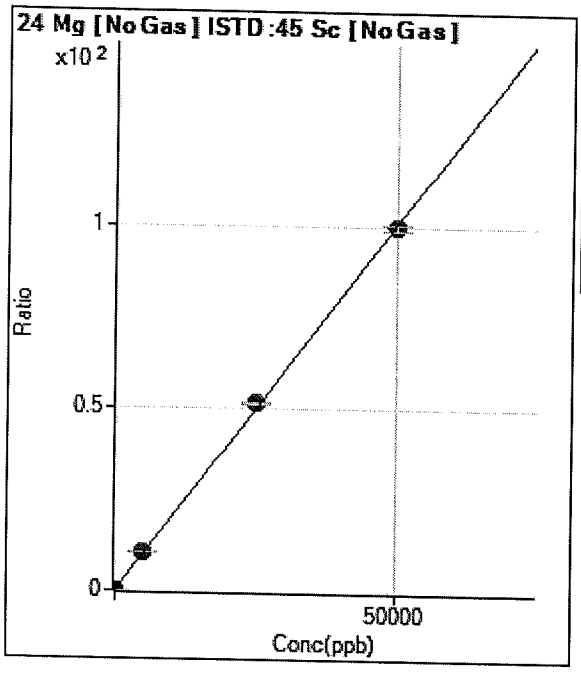
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	403144.53	0.1226	P	1.4
2	☐	50.000	54.872	651407.40	0.1974	P	0.2
3	☐	5000.000	5095.155	23564316.00	7.0630	A	1.6
4	☐	25000.000	25738.074	116040509.33	35.1815	A	0.9
5	☐	50000.000	49621.443	224997056.00	67.7141	A	0.2

y = 0.0014 * x + 0.1226
R = 0.9998
DL = 3.8
BEC = 90.03

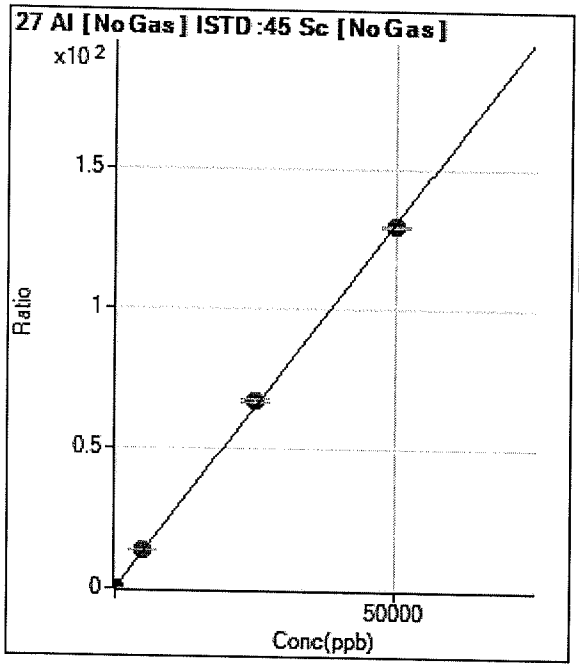
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27602.59	0.0049	P	1.6
2	☐	50.000	54.079	642298.39	0.1134	P	1.1
3	☐	5000.000	5218.517	58684709.33	10.4736	A	1.1
4	☐	25000.000	25687.892	292526016.00	51.5368	A	1.7
5	☐	50000.000	49634.198	560410880.00	99.5749	A	1.5

y = 0.0020 * x + 0.0049
R = 0.9999
DL = 0.1137
BEC = 2.442

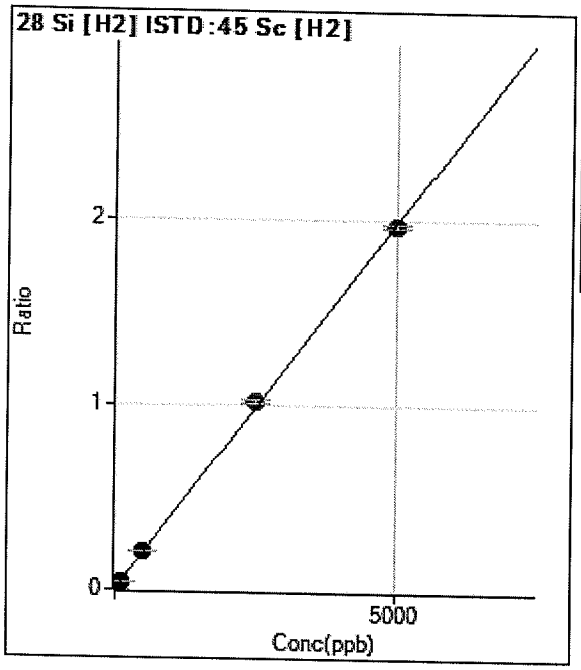
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7942.31	0.0014	P	5.5
2	☐	50.000	53.911	805834.18	0.1423	P	0.3
3	☐	5000.000	5216.013	76359042.19	13.6283	A	1.6
4	☐	25000.000	25728.872	381531194.32	67.2182	A	1.8
5	☐	50000.000	49613.959	729504042.46	129.6181	A	0.8

y = 0.0026 * x + 0.0014
R = 0.9998
DL = 0.08944
BEC = 0.5397

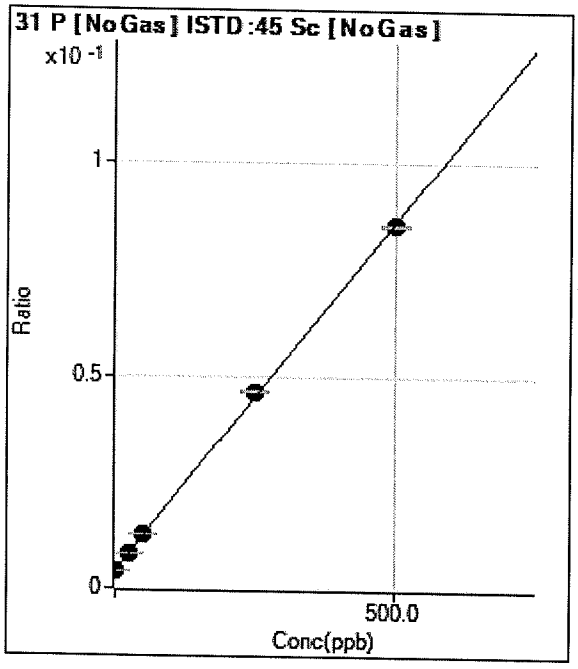
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3711.16	0.0011	P	1.6
2	☐	100.000	102.141	137052.79	0.0415	P	1.0
3	☐	500.000	518.240	687614.29	0.2061	P	0.7
4	☐	2500.000	2574.441	3361877.42	1.0193	A	1.6
5	☐	5000.000	4960.913	6523236.67	1.9632	A	1.0

y = 3.9550E-004 * x + 0.0011
R = 0.9998
DL = 0.1381
BEC = 2.854

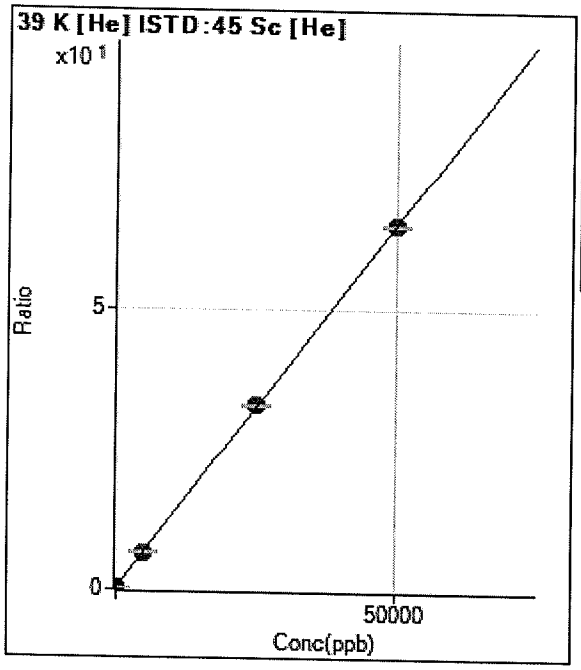
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23453.77	0.0042	P	1.5
2	☐	25.000	24.455	46260.84	0.0082	P	0.5
3	☐	50.000	52.558	71543.60	0.0128	P	1.1
4	☐	250.000	257.432	262946.61	0.0463	P	0.6
5	☐	500.000	496.056	480625.49	0.0854	P	0.5

y = 1.6376E-004 * x + 0.0042
R = 0.9998
DL = 1.116
BEC = 25.41

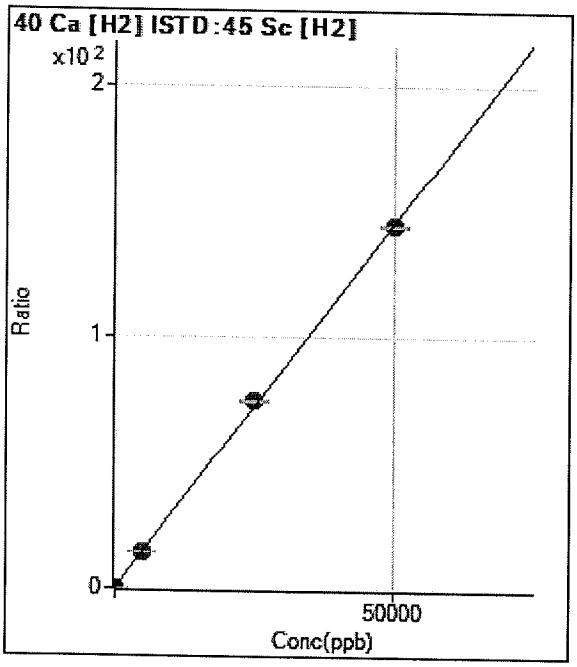
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	117423.82	0.1860	P	2.8
2	☐	50.000	54.502	162462.40	0.2571	P	1.0
3	☐	5000.000	5029.096	4304195.33	6.7411	A	0.8
4	☐	25000.000	25197.546	20965669.33	33.0291	A	0.8
5	☐	50000.000	49898.313	40510873.33	65.2247	A	0.9

y = 0.0013 * x + 0.1860
R = 1.0000
DL = 11.85
BEC = 142.7

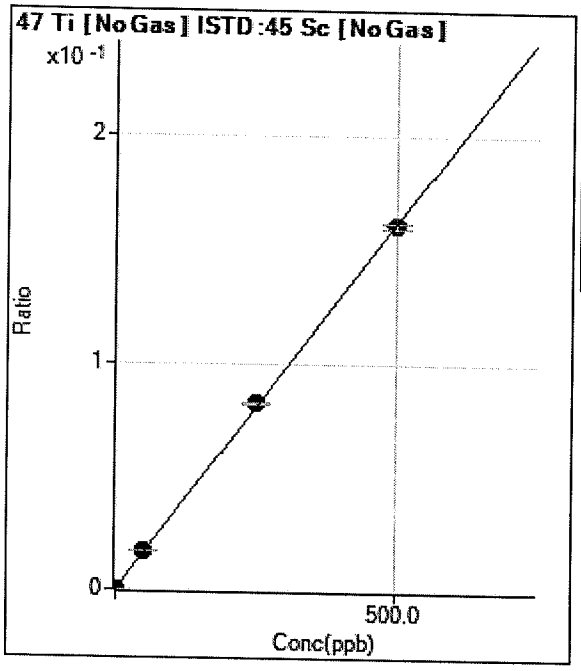
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	137967.66	0.0420	P	1.4
2	☐	50.000	59.821	712745.71	0.2160	P	0.4
3	☐	5000.000	5023.527	48887556.00	14.6527	A	0.8
4	☐	25000.000	25662.625	246317472.00	74.6806	A	1.2
5	☐	50000.000	49666.325	480124352.00	144.4944	A	0.6

y = 0.0029 * x + 0.0420
R = 0.9999
DL = 0.6147
BEC = 14.43

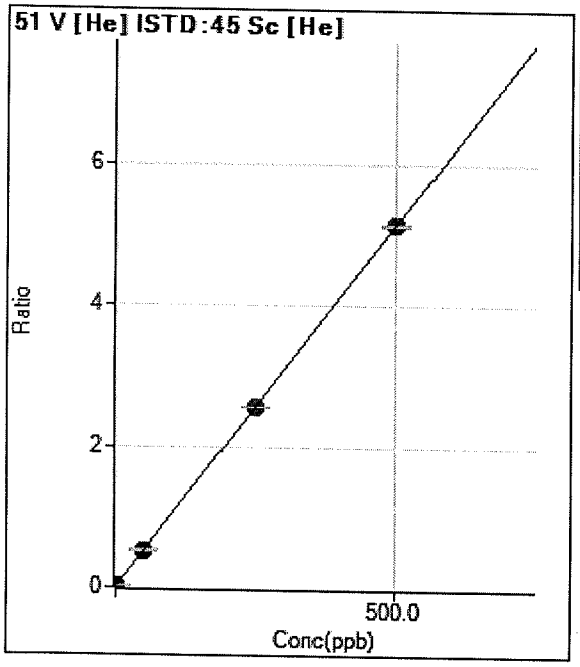
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	319.33	0.0001	P	6.4
2	☐	0.500	0.509	1253.39	0.0002	P	2.4
3	☐	50.000	51.655	93856.34	0.0167	P	0.5
4	☐	250.000	254.822	467781.76	0.0824	P	1.2
5	☐	500.000	497.424	905044.29	0.1608	A	1.4

y = 3.2317E-004 * x + 5.6645E-005
R = 0.9999
DL = 0.03372
BEC = 0.1753

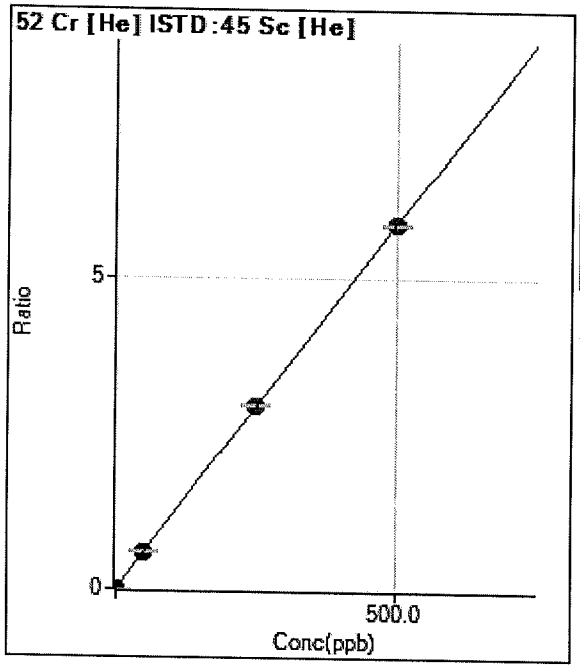
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6825.03	0.0108	P	1.7
2	☐	0.500	0.493	10029.00	0.0159	P	0.8
3	☐	50.000	50.580	338306.70	0.5299	P	0.8
4	☐	250.000	249.493	1631970.62	2.5710	A	0.3
5	☐	500.000	500.196	3194696.00	5.1437	A	0.3

y = 0.0103 * x + 0.0108
R = 1.0000
DL = 0.0548
BEC = 1.054

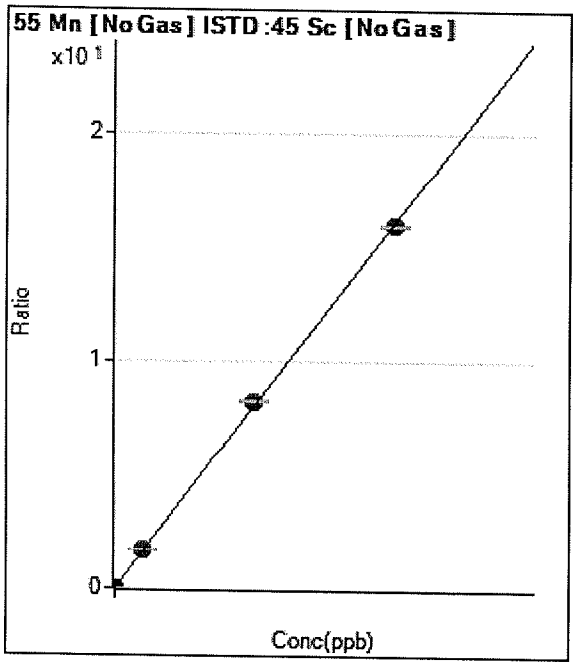
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1205.39	0.0019	P	3.8
2	☐	0.500	0.548	5281.69	0.0084	P	1.9
3	☐	50.000	51.296	386877.52	0.6059	P	0.9
4	☐	250.000	252.109	1885496.08	2.9704	A	0.3
5	☐	500.000	498.816	3649013.17	5.8754	A	0.5

y = 0.0118 * x + 0.0019
R = 1.0000
DL = 0.0185
BEC = 0.1622

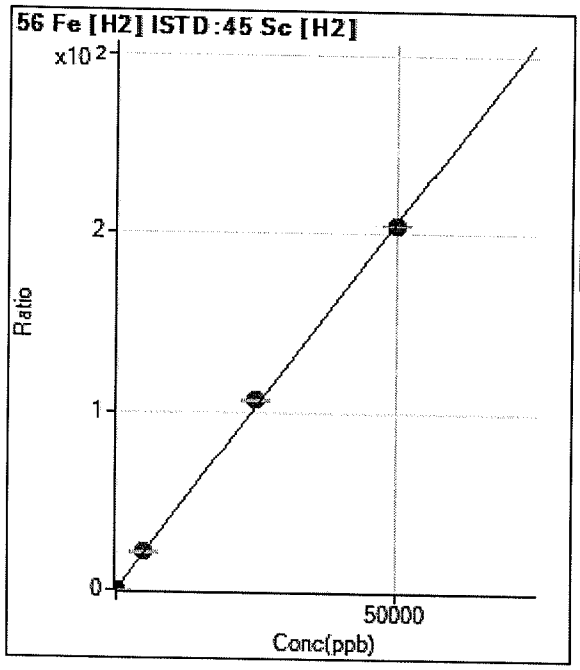
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9682.09	0.0017	P	2.0
2	☐	0.500	0.534	25972.61	0.0046	P	0.7
3	☐	300.000	316.353	9522062.00	1.6994	A	0.2
4	☐	1500.000	1539.111	46892928.00	8.2610	A	1.6
5	☐	3000.000	2978.809	89976746.67	15.9869	A	0.4

y = 0.0054 * x + 0.0017
R = 0.9999
DL = 0.01941
BEC = 0.3202

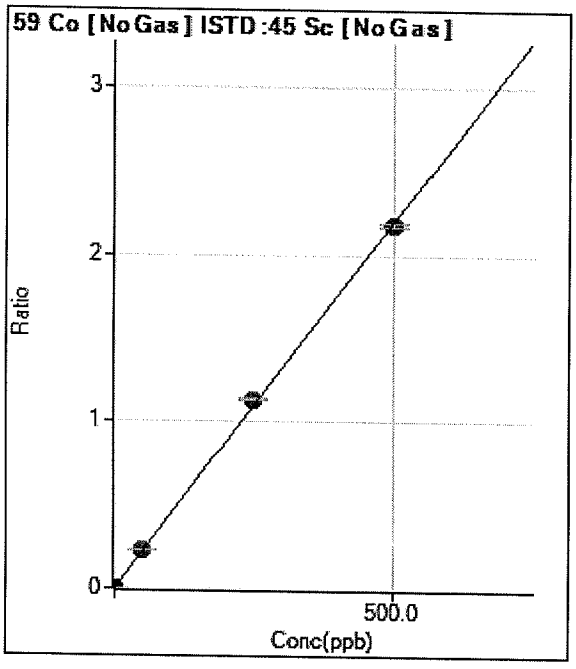
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9916.26	0.0030	P	2.1
2	☐	50.000	55.720	768087.52	0.2327	P	0.9
3	☐	5000.000	5174.539	71176360.00	21.3361	A	2.4
4	☐	25000.000	25876.398	351859349.33	106.6837	A	1.5
5	☐	50000.000	49544.341	678702528.00	204.2596	A	0.1

y = 0.0041 * x + 0.0030
R = 0.9998
DL = 0.04573
BEC = 0.7316

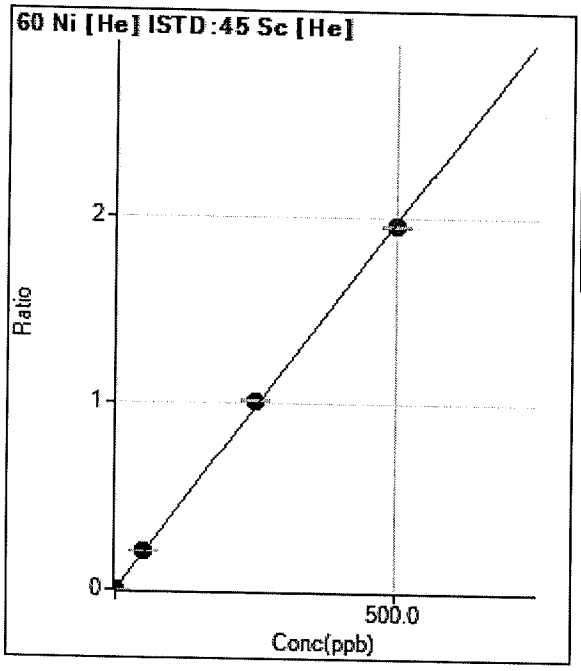
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	224.67	0.0000	P	8.0
2	☐	0.500	0.540	13684.20	0.0024	P	2.4
3	☐	50.000	53.179	1310343.46	0.2339	A	0.7
4	☐	250.000	258.263	6445752.83	1.1356	A	1.5
5	☐	500.000	495.551	12263089.33	2.1789	A	1.0

y = 0.0044 * x + 3.9843E-005
R = 0.9998
DL = 0.002165
BEC = 0.009062

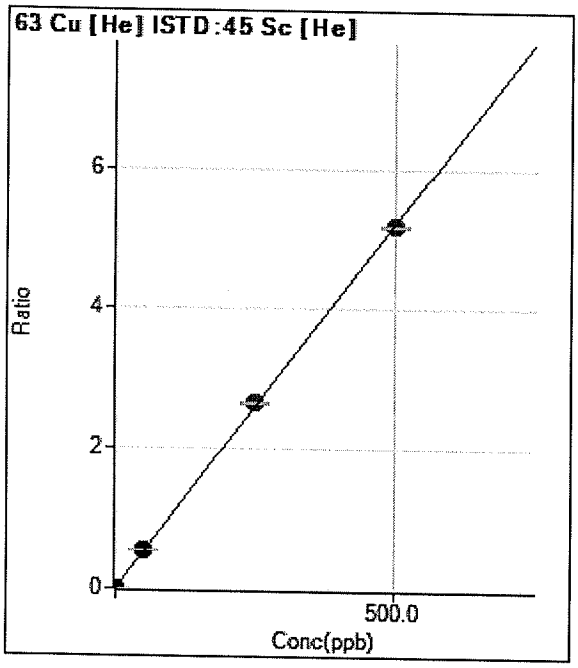
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	126.00	0.0002	P	6.7
2	☐	0.500	0.577	1562.76	0.0025	P	1.3
3	☐	50.000	52.684	132664.23	0.2078	P	0.8
4	☐	250.000	258.280	646059.75	1.0178	P	0.5
5	☐	500.000	495.592	1212860.92	1.9529	A	0.6

y = 0.0039 * x + 1.9956E-004
R = 0.9998
DL = 0.01012
BEC = 0.05065

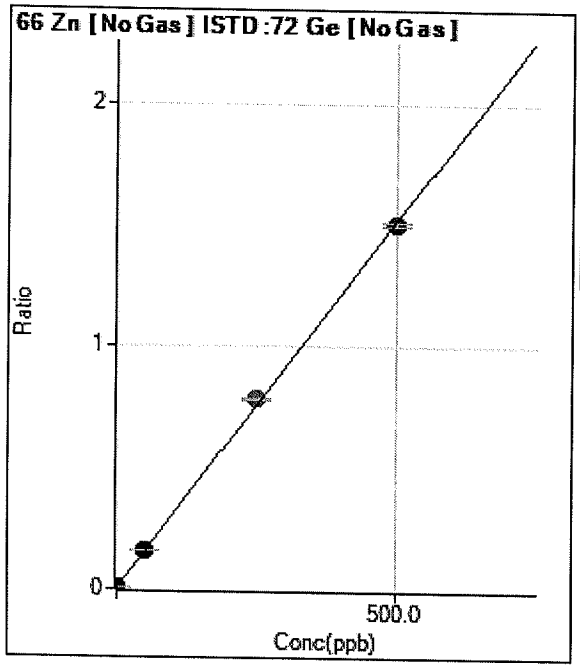
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1466.75	0.0023	P	1.2
2	☐	0.500	0.556	5130.30	0.0081	P	5.0
3	☐	50.000	52.894	353295.84	0.5533	P	0.9
4	☐	250.000	254.755	1685950.04	2.6561	A	0.4
5	☐	500.000	497.333	3218994.25	5.1831	A	0.8

y = 0.0104 * x + 0.0023
R = 0.9999
DL = 0.008099
BEC = 0.2231

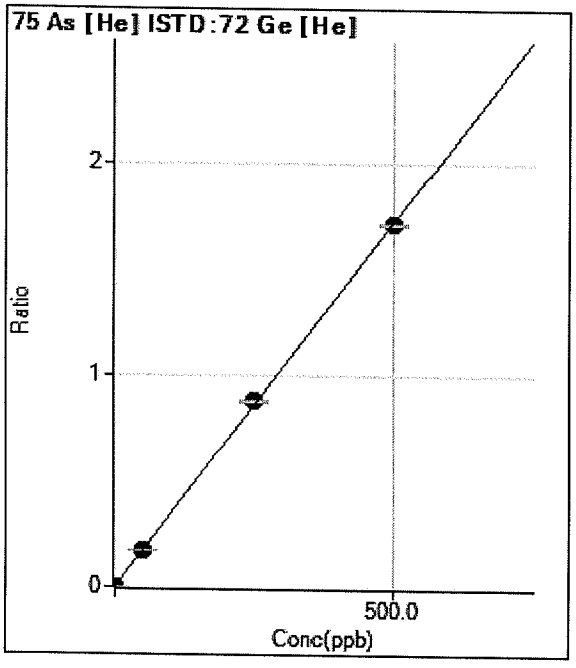
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2046.82	0.0015	P	2.0
2	☐	1.000	1.599	8718.80	0.0063	P	0.4
3	☐	50.000	51.119	215674.20	0.1563	P	0.8
4	☐	250.000	259.298	1075648.46	0.7867	M	1.2
5	☐	500.000	495.238	2022158.00	1.5012	A	0.9

y = 0.0030 * x + 0.0015
R = 0.9997
DL = 0.0301
BEC = 0.4948

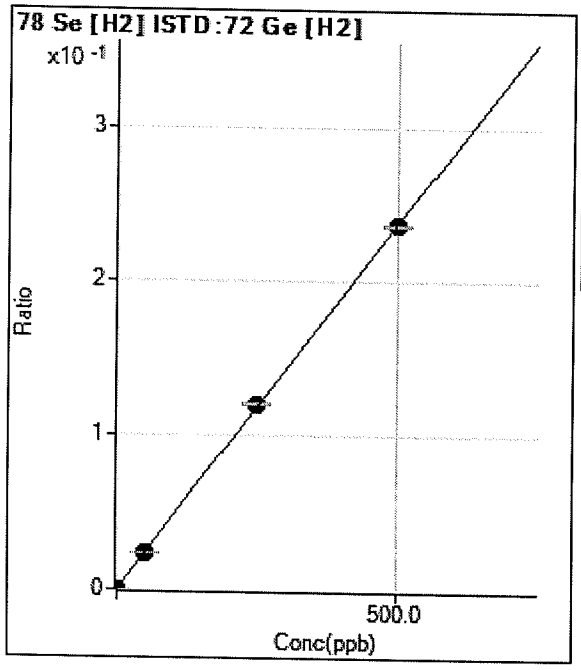
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	339.67	0.0009	P	3.8
2	☐	0.500	0.488	987.70	0.0026	P	2.1
3	☐	50.000	50.241	67301.71	0.1743	P	0.3
4	☐	250.000	255.010	335454.50	0.8811	P	0.5
5	☐	500.000	497.471	645316.21	1.7179	P	0.4

y = 0.0035 * x + 8.9338E-004
R = 0.9999
DL = 0.02921
BEC = 0.2588

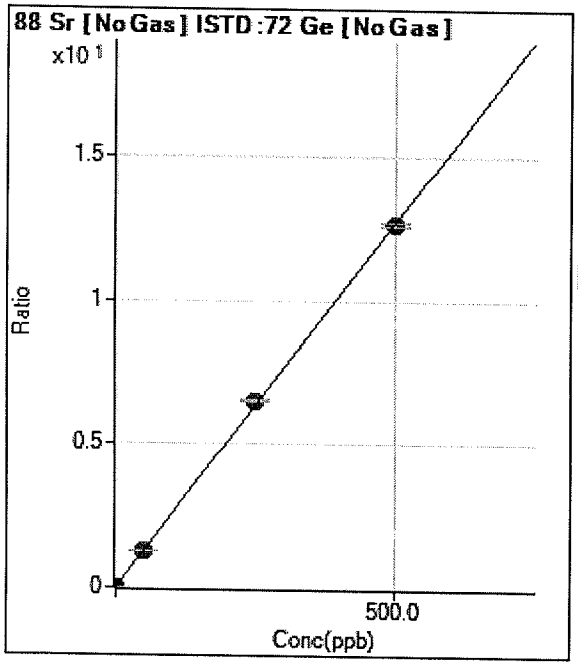
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.67	0.0000	P	22.1
2	☐	0.500	0.487	234.33	0.0003	P	9.4
3	☐	50.000	50.032	22030.64	0.0238	P	2.8
4	☐	250.000	253.585	110585.46	0.1203	P	1.1
5	☐	500.000	498.204	212598.31	0.2364	P	0.7

y = 4.7447E-004 * x + 2.2837E-005
R = 1.0000
DL = 0.03194
BEC = 0.04813

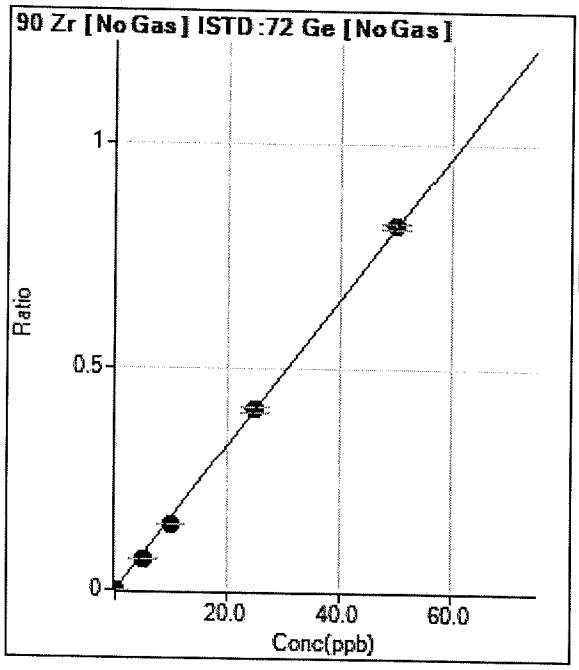
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	606.68	0.0004	P	6.1
2	☐	0.500	0.526	19032.39	0.0138	P	0.4
3	☐	50.000	50.434	1773099.03	1.2849	A	0.9
4	☐	250.000	255.967	8913812.70	6.5195	A	1.2
5	☐	500.000	496.973	17049980.99	12.6576	A	0.9

y = 0.0255 * x + 4.4404E-004
R = 0.9999
DL = 0.003192
BEC = 0.01743

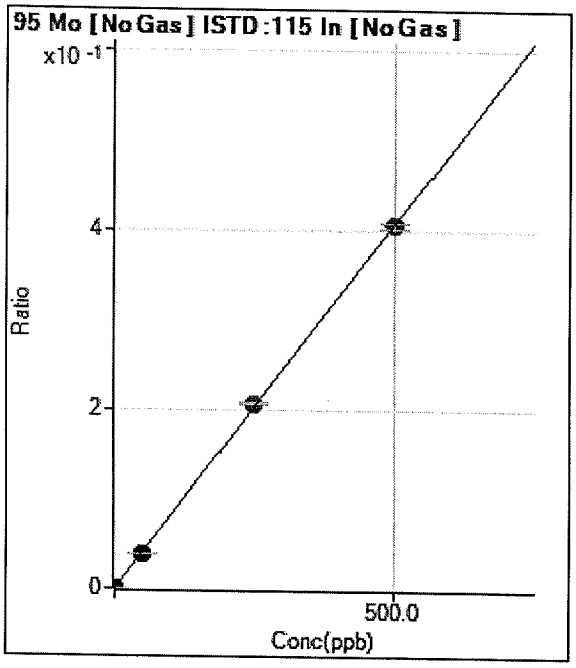
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	183.33	0.0001	P	22.6
2	☐	5.000	4.171	93478.62	0.0680	P	0.7
3	☐	10.000	9.069	203701.57	0.1476	P	0.3
4	☐	25.000	24.952	554959.43	0.4059	P	3.2
5	☐	50.000	50.293	1101876.29	0.8180	A	1.6

y = 0.0163 * x + 1.3433E-004
R = 0.9998
DL = 0.005591
BEC = 0.00826

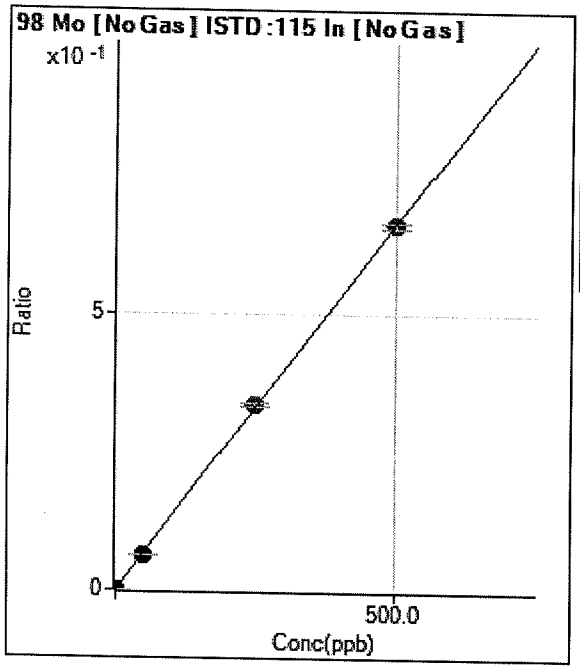
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0000	P	38.9
2	☐	0.500	0.481	3407.10	0.0004	P	0.3
3	☐	50.000	48.498	334306.41	0.0394	P	0.8
4	☐	250.000	253.672	1707899.13	0.2063	A	1.1
5	☐	500.000	498.314	3321880.08	0.4052	A	1.8

y = 8.1323E-004 * x + 4.7334E-006
R = 1.0000
DL = 0.00679
BEC = 0.005821

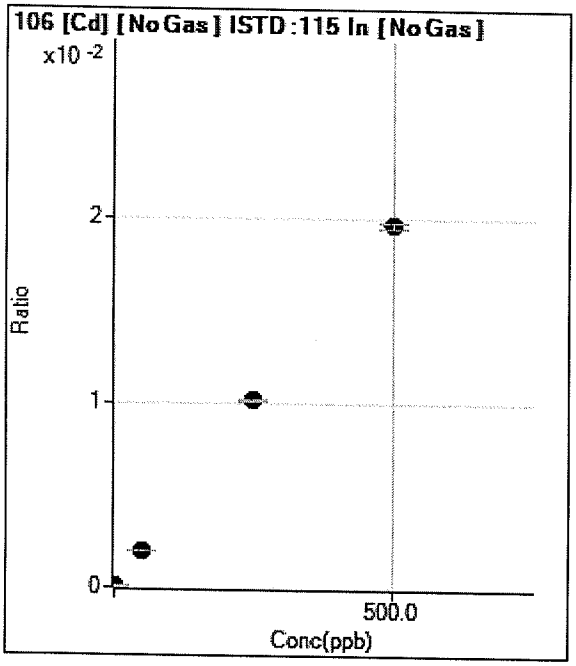
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	73.33	0.0000	P	13.1
2	☐	0.500	0.485	5583.40	0.0006	P	2.3
3	☐	50.000	48.281	540010.38	0.0637	P	0.8
4	☐	250.000	253.422	2768289.19	0.3344	A	1.5
5	☐	500.000	498.461	5391677.01	0.6577	A	1.4

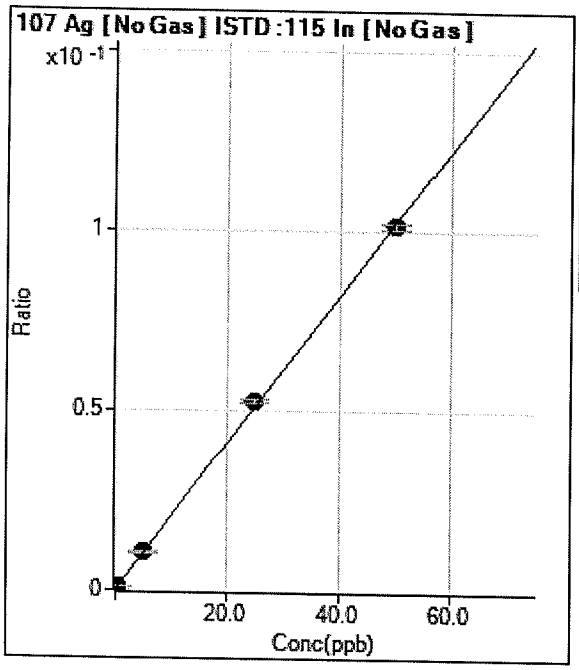
y = 0.0013 * x + 8.6669E-006
R = 1.0000
DL = 0.002583
BEC = 0.006568

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		7.00	0.0000	P	23.4
2	☐	0.500		450.01	0.0001	P	2.6
3	☐	50.000		17052.28	0.0020	P	0.5
4	☐	250.000		84247.00	0.0102	P	1.3
5	☐	500.000		161266.91	0.0197	P	1.9

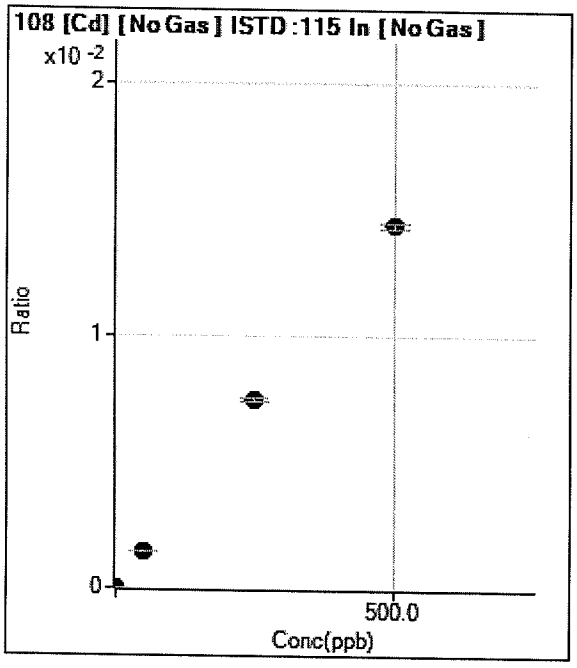
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	55.56	0.0000	P	34.7
2	☐	0.500	0.533	9441.15	0.0011	P	3.8
3	☐	5.000	5.125	88846.73	0.0105	P	0.6
4	☐	25.000	25.766	436098.31	0.0527	P	1.0
5	☐	50.000	49.604	831288.21	0.1014	P	1.4

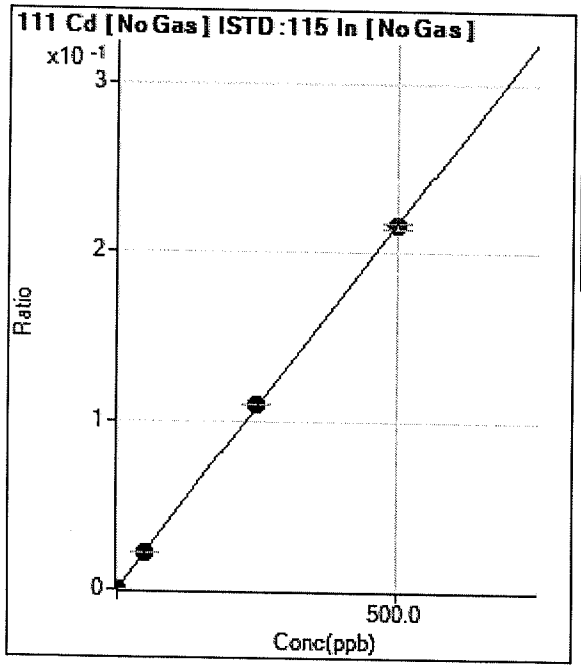
y = 0.0020 * x + 6.5661E-006
R = 0.9998
DL = 0.003348
BEC = 0.003212

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		9.67	0.0000	P	52.7
2	☐	0.500		238.33	0.0000	P	9.4
3	☐	50.000		12482.21	0.0015	P	0.3
4	☐	250.000		61737.49	0.0075	P	1.7
5	☐	500.000		118057.97	0.0144	P	1.4

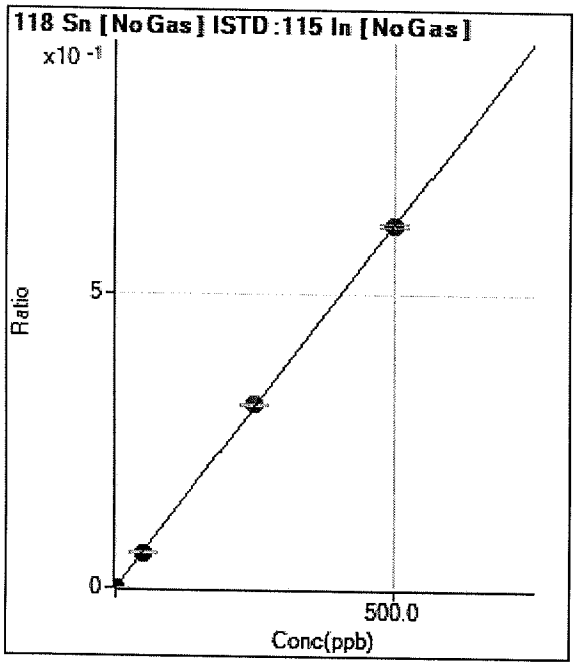
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.97	0.0000	P	11.9
2	☐	0.500	0.533	2018.55	0.0002	P	3.1
3	☐	50.000	49.465	181662.30	0.0214	P	0.2
4	☐	250.000	253.081	907810.04	0.1097	P	0.5
5	☐	500.000	498.513	1770576.85	0.2160	A	1.5

y = 4.3327E-004 * x + 3.6534E-006
R = 1.0000
DL = 0.003011
BEC = 0.008432

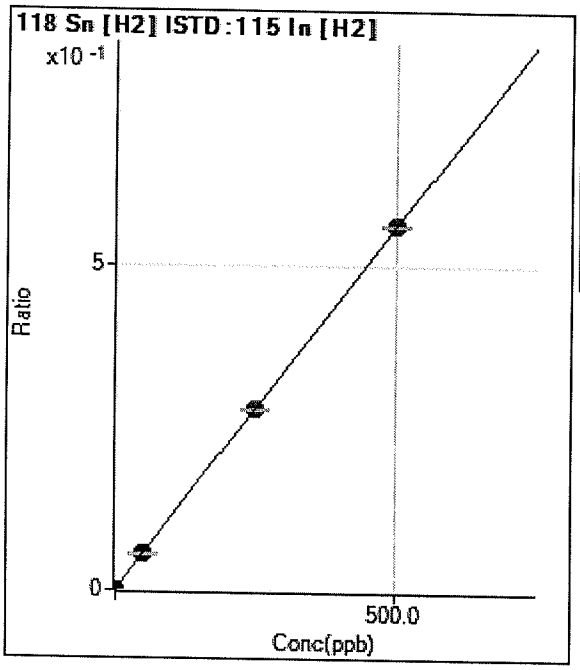
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1021.15	0.0001	P	3.6
2	☐	0.500	0.460	5931.34	0.0007	P	1.0
3	☐	50.000	48.640	509998.18	0.0602	P	0.7
4	☐	250.000	253.164	2588796.29	0.3127	A	1.0
5	☐	500.000	498.554	5047288.27	0.6157	A	1.0

y = 0.0012 * x + 1.2059E-004
R = 1.0000
DL = 0.01047
BEC = 0.09767

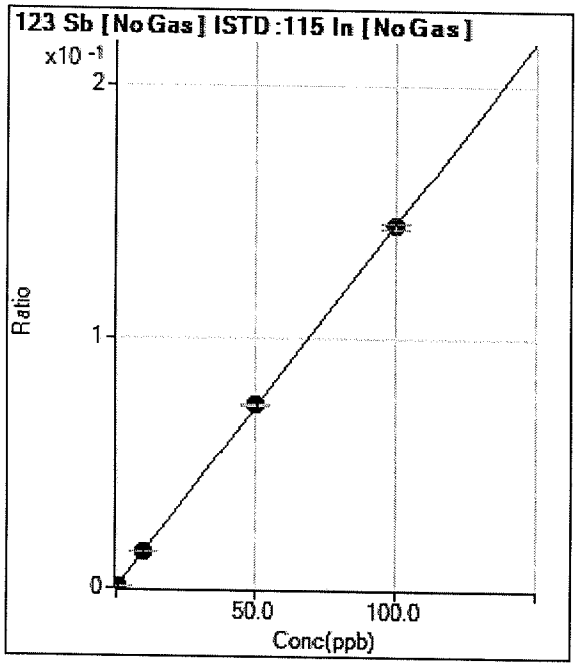
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	752.25	0.0001	P	1.7
2	☐	0.500	0.480	4402.97	0.0006	P	2.5
3	☐	50.000	49.071	375339.92	0.0551	P	0.8
4	☐	250.000	248.599	1867289.02	0.2786	A	0.8
5	☐	500.000	500.793	3694541.94	0.5610	A	0.5

y = 0.0011 * x + 1.0961E-004
R = 1.0000
DL = 0.005055
BEC = 0.09786

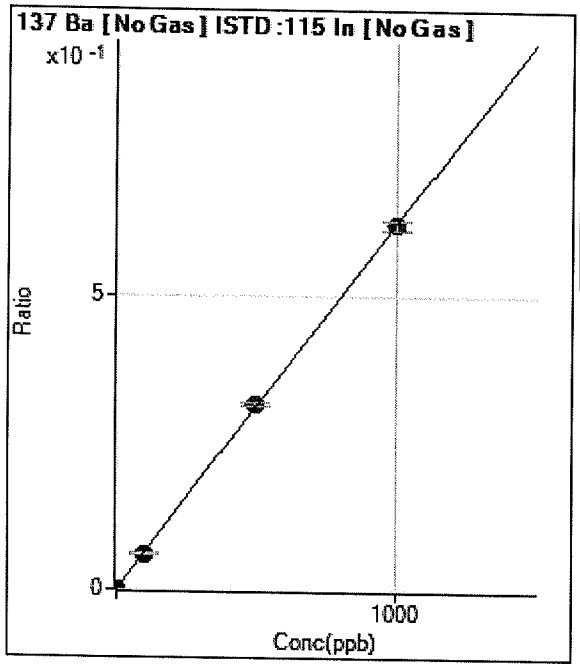
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	118.89	0.0000	P	21.5
2	☐	0.500	0.499	6351.54	0.0007	P	3.1
3	☐	10.000	9.898	121823.88	0.0144	P	0.4
4	☐	50.000	50.521	606950.67	0.0733	P	1.0
5	☐	100.000	99.750	1186526.55	0.1447	A	1.4

y = 0.0015 * x + 1.4012E-005
R = 1.0000
DL = 0.006229
BEC = 0.009657

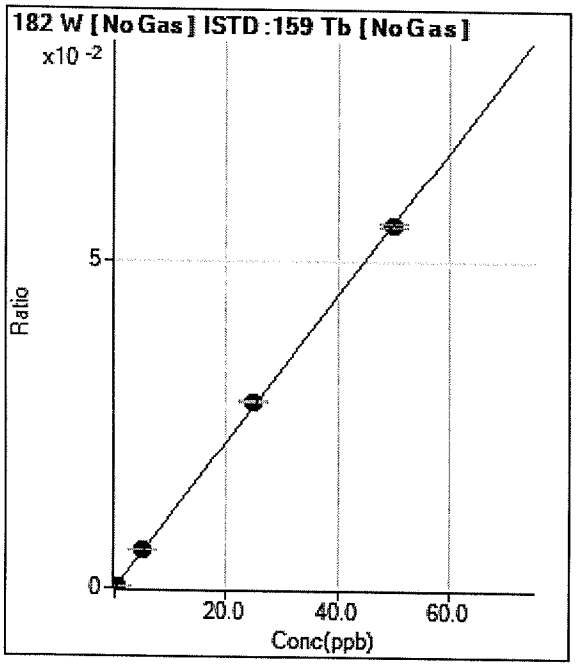
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	97.78	0.0000	P	26.3
2	☐	0.500	0.542	3010.35	0.0003	P	4.3
3	☐	100.000	97.616	515435.02	0.0608	P	0.7
4	☐	500.000	507.976	2619521.43	0.3165	A	2.2
5	☐	1000.000	996.250	5087487.86	0.6206	A	2.3

y = 6.2294E-004 * x + 1.1552E-005
R = 0.9999
DL = 0.01462
BEC = 0.01854

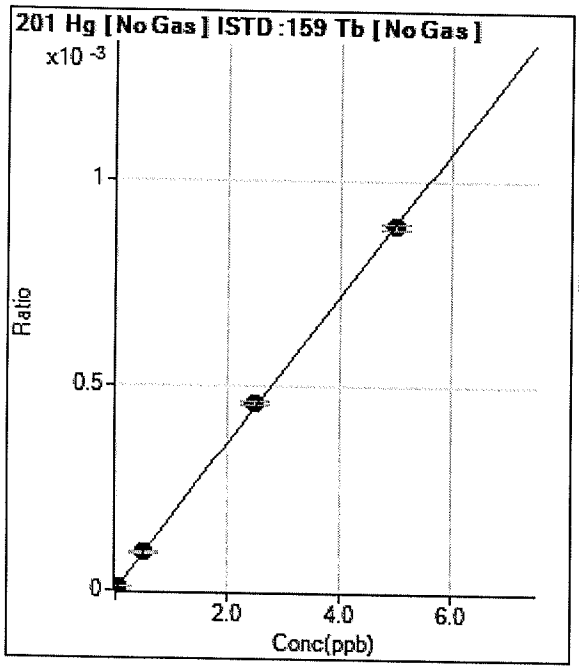
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83.33	0.0000	P	47.7
2	☐	0.500	0.258	3267.10	0.0003	P	4.0
3	☐	5.000	5.250	64852.45	0.0059	P	2.7
4	☐	25.000	25.586	314399.71	0.0285	P	0.9
5	☐	50.000	49.685	616645.21	0.0553	P	1.2

y = 0.0011 * x + 7.5705E-006
R = 0.9999
DL = 0.009728
BEC = 0.006797

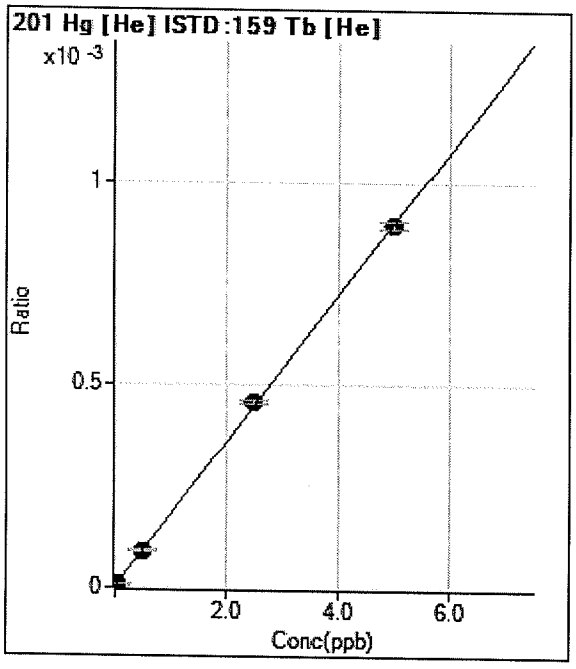
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.83	0.0000	P	13.8
2	☐	0.050	0.049	114.67	0.0000	P	3.5
3	☐	0.500	0.507	1022.04	0.0001	P	2.4
4	☐	2.500	2.555	5054.02	0.0005	P	2.6
5	☐	5.000	4.972	9919.76	0.0009	P	1.8

y = 1.7880E-004 * x + 1.5324E-006
R = 0.9999
DL = 0.003536
BEC = 0.00857

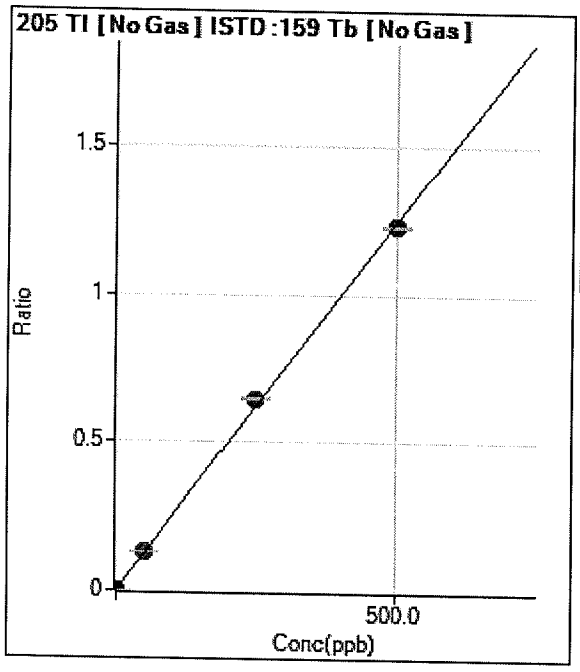
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.67	0.0000	P	33.4
2	☐	0.050	0.048	64.33	0.0000	P	15.7
3	☐	0.500	0.500	554.68	0.0001	P	2.5
4	☐	2.500	2.554	2729.46	0.0005	P	1.4
5	☐	5.000	4.973	5269.94	0.0009	P	2.0

y = 1.7916E-004 * x + 2.2951E-006
R = 0.9999
DL = 0.01282
BEC = 0.01281

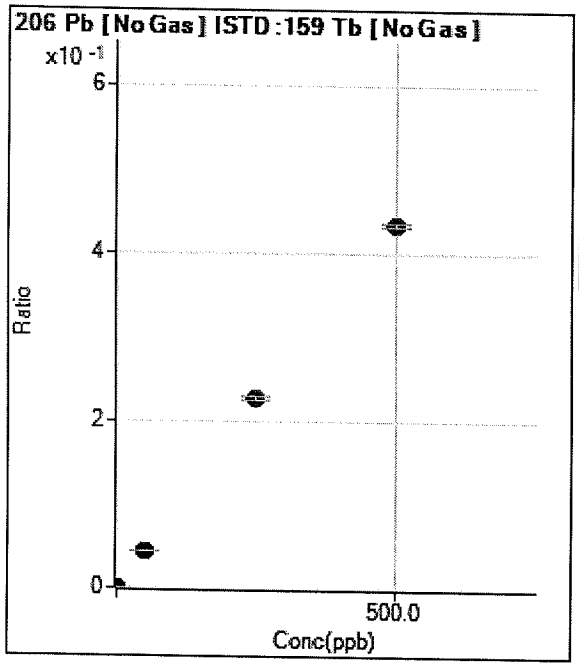
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	517.79	0.0000	P	0.7
2	☐	0.500	0.516	14769.84	0.0013	P	0.9
3	☐	50.000	52.156	1439986.85	0.1300	A	0.9
4	☐	250.000	260.705	7164529.72	0.6496	A	1.1
5	☐	500.000	494.432	13724586.40	1.2320	A	0.9

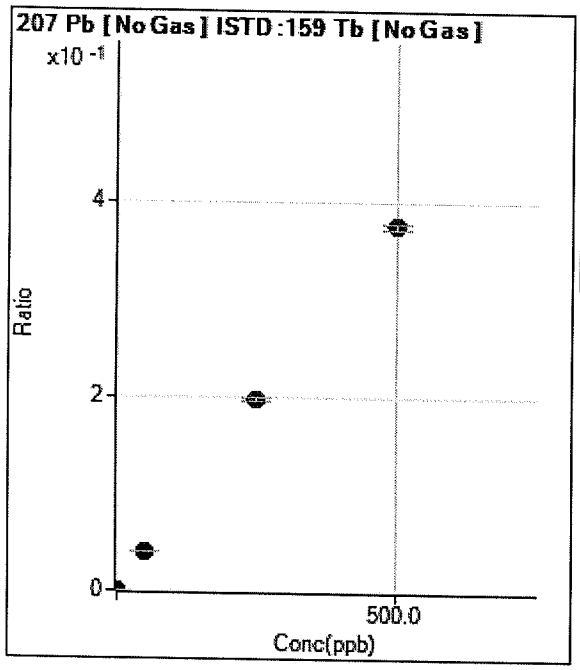
y = 0.0025 * x + 4.7140E-005
R = 0.9996
DL = 0.0003886
BEC = 0.01892

Weight: <None>
Min Conc: 0



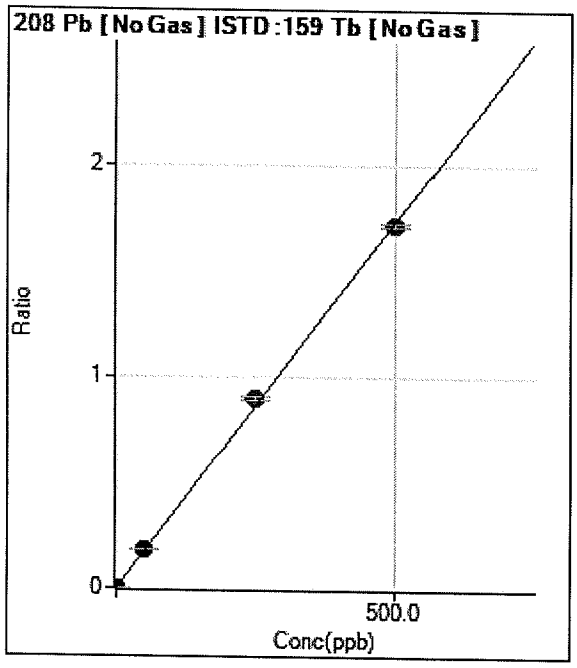
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		293.34	0.0000	P	17.0
2	☐	0.500		5234.45	0.0005	P	5.3
3	☐	50.000		489782.98	0.0442	P	1.0
4	☐	250.000		2501832.83	0.2268	A	1.7
5	☐	500.000		4824010.14	0.4330	A	0.9

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		283.34	0.0000	P	37.5
2	☐	0.500		4634.22	0.0004	P	3.8
3	☐	50.000		434793.93	0.0393	P	1.1
4	☐	250.000		2180983.87	0.1978	A	2.5
5	☐	500.000		4190189.52	0.3762	A	1.8

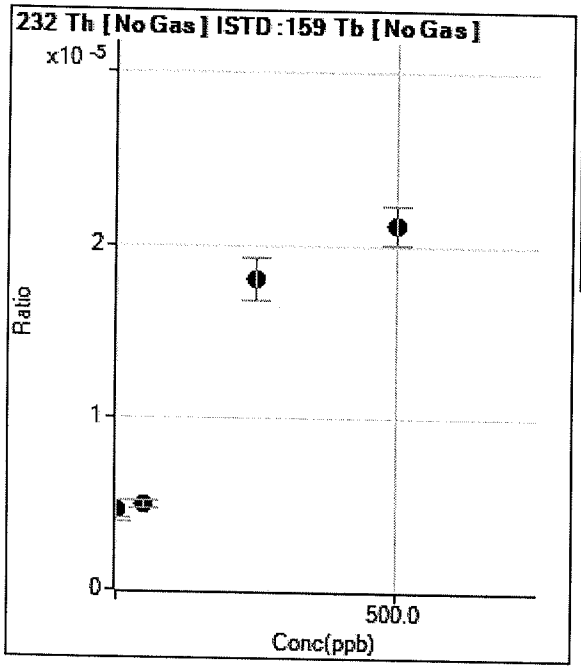
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1213.36	0.0001	P	2.8
2	☐	0.500	0.522	21240.53	0.0019	P	1.2
3	☐	50.000	51.749	1987562.87	0.1794	P	0.5
4	☐	250.000	258.926	9895958.58	0.8973	A	1.9
5	☐	500.000	495.362	19123620.65	1.7166	A	1.2

y = 0.0035 * x + 1.1047E-004
R = 0.9998
DL = 0.002712
BEC = 0.03188

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		50.00	0.0000	P	27.8
2	☐	0.500		51.11	0.0000	P	21.5
3	☐	50.000		54.45	0.0000	P	7.6
4	☐	250.000		198.89	0.0000	P	13.5
5	☐	500.000		235.56	0.0000	P	10.7

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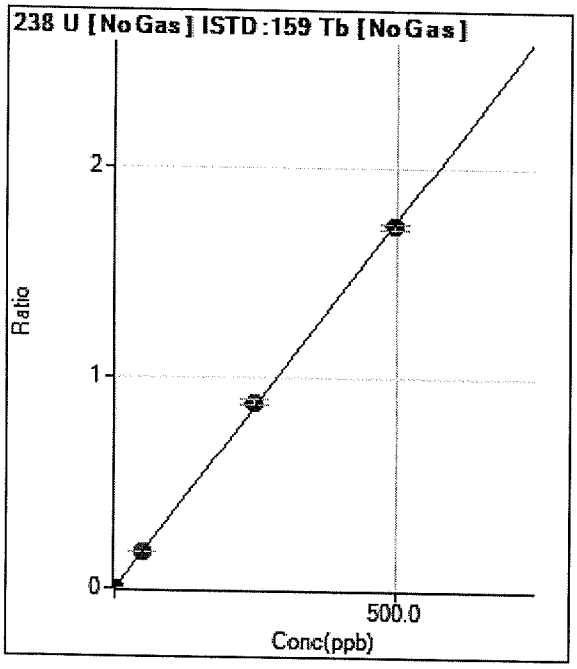


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.34	0.0000	P	14.6
2	☐	0.497	0.508	19644.63	0.0018	P	1.9
3	☐	49.700	50.686	1956179.02	0.1766	A	0.8
4	☐	248.300	254.856	9791882.39	0.8879	A	2.3
5	☐	497.000	493.626	19158700.35	1.7198	A	1.5

y = 0.0035 * x + 3.9506E-006
R = 0.9999
DL = 0.0004962
BEC = 0.001134

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq. Date-Time	2020-06-25 10:15:59
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

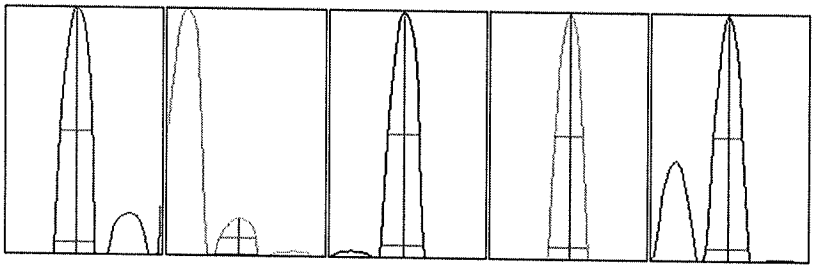
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1959	19594.79			1.680	5.000
24	10.00	9516	95160.25			1.119	5.000
59	10.00	15094	150943.58			1.314	5.000
115	10.00	20765	207648.53			1.099	5.000
208	10.00	10327	103271.65			0.661	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1981	1963	1918	1936	1999
24	9475	9591	9662	9410	9443
59	15008	14901	15176	14986	15401
115	20828	20501	20971	20547	20977
208	10277	10274	10387	10415	10283

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	3410.19	8.90	8.90 - 9.10	
24	15831.08	23.90	23.90 - 24.10	
59	26359.27	58.95	58.90 - 59.10	
115	40320.42	115.05	114.90 - 115.10	
208	19648.72	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.778	0.900	
24	0.65	0.788	0.900	
59	0.60	0.817	0.900	
115	0.54	0.734	0.900	
208	0.56	0.807	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.4 V	Deflect	13.4 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9997	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.04		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.2 mm		

EM

Discriminator	4.1 mV	Analog HV	2394 V	Pulse HV	1544 V

Calibration Standard Report

Sample Name	S0
File Name	H6F21003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:03:46
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	117190.88	1.0
Be	9	6	No Gas	40.00	22.0
B	11	6	No Gas	25020.01	1.8
Na	23	45	H2	403144.53	0.7
Mg	24	45	No Gas	27602.59	0.4
Al	27	45	No Gas	7942.31	4.1
Si	28	45	H2	3711.16	1.7
P	31	45	No Gas	23453.77	1.2
K	39	45	He	117423.82	3.0
Ca	40	45	H2	137967.66	0.6
Ti	47	45	No Gas	319.33	7.0
V	51	45	He	6825.03	1.3
Cr	52	45	He	1205.39	4.2
Mn	55	45	No Gas	9682.09	0.7
Fe	56	45	H2	9916.26	1.8
Co	59	45	No Gas	224.67	8.9
Ni	60	45	He	126.00	7.3
Cu	63	45	He	1466.75	1.0
Zn	66	72	No Gas	2046.82	2.0
As	75	72	He	339.67	2.7
Se	78	72	H2	20.67	22.3
Sr	88	72	No Gas	606.68	6.3
Zr	90	72	No Gas	183.33	22.0
Mo	95	115	No Gas	40.00	38.2
Ag	107	115	No Gas	55.56	34.1
Cd	111	115	No Gas	30.97	13.0
Sn	118	115	No Gas	1021.15	2.4
Sb	123	115	No Gas	118.89	22.8
Ba	137	115	No Gas	97.78	25.8
W	182	159	No Gas	83.33	48.5
Hg	201	159	He	13.67	33.2
Tl	205	159	No Gas	517.79	1.3
Pb	208	159	No Gas	1213.36	2.8
U	238	159	No Gas	43.34	13.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2034107.16	1.1	2024514.1	100.47	60	120	
Sc	45	No Gas	5636245.67	1.4	5611190.83	100.45	60	120	
Sc	45	H2	3287752.00	0.9	3273621	100.43	60	120	
Sc	45	He	631222.02	0.6	627589.54	100.58	60	120	
Ge	72	No Gas	1366163.25	0.9	1369739.92	99.74	60	120	
Ge	72	H2	904704.35	0.8	908196.82	99.62	60	120	
Ge	72	He	380308.42	1.1	384192.24	98.99	60	120	
In	115	No Gas	8470155.55	1.2	8531303.38	99.28	60	120	
Tb	159	No Gas	10985034.01	2.0	11065773.73	99.27	60	120	
Tb	159	He	5955468.83	1.4	5978695.83	99.61	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6F21004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:06:37
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	123701.91	1.1
Be	9	6	No Gas	1700.11	5.6
B	11	6	No Gas	7106.24	2.6
Na	23	45	H2	651407.40	0.6
Mg	24	45	No Gas	642298.39	1.0
Al	27	45	No Gas	805834.18	0.2
Si	28	45	H2	137052.79	1.3
P	31	45	No Gas	46260.84	0.5
K	39	45	He	162462.40	1.6
Ca	40	45	H2	712745.71	0.9
Ti	47	45	No Gas	1253.39	2.5
V	51	45	He	10029.00	0.9
Cr	52	45	He	5281.69	2.0
Mn	55	45	No Gas	25972.61	0.7
Fe	56	45	H2	768087.52	0.4
Co	59	45	No Gas	13684.20	2.5
Ni	60	45	He	1562.76	2.6
Cu	63	45	He	5130.30	4.2
Zn	66	72	No Gas	8718.80	0.3
As	75	72	He	987.70	2.4
Se	78	72	H2	234.33	10.2
Sr	88	72	No Gas	19032.39	0.5
Zr	90	72	No Gas	93478.62	0.6
Mo	95	115	No Gas	3407.10	1.1
Ag	107	115	No Gas	9441.15	3.1
Cd	111	115	No Gas	2018.55	2.7
Sn	118	115	No Gas	5931.34	1.4
Sb	123	115	No Gas	6351.54	2.4
Ba	137	115	No Gas	3010.35	5.0
W	182	159	No Gas	3267.10	4.4
Hg	201	159	He	64.33	15.6
Tl	205	159	No Gas	14769.84	0.6
Pb	208	159	No Gas	21240.53	0.7
U	238	159	No Gas	19644.63	2.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2072086.77	1.3	2024514.1	102.35	60	120	
Sc	45	No Gas	5664811.83	0.1	5611190.83	100.96	60	120	
Sc	45	H2	3300395.92	0.6	3273621	100.82	60	120	
Sc	45	He	632001.94	1.3	627589.54	100.7	60	120	
Ge	72	No Gas	1375241.17	0.2	1369739.92	100.4	60	120	
Ge	72	H2	921814.25	0.7	908196.82	101.5	60	120	
Ge	72	He	383356.18	0.5	384192.24	99.78	60	120	
In	115	No Gas	8612280.04	0.8	8531303.38	100.95	60	120	
Tb	159	No Gas	11074990.12	0.5	11065773.73	100.08	60	120	
Tb	159	He	5951781.50	0.5	5978695.83	99.55	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6F21005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:09:28
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	166282.04	0.2
Be	9	6	No Gas	16561.96	1.8
B	11	6	No Gas	31162.28	1.9
Na	23	45	H2	23564316.00	1.2
Mg	24	45	No Gas	58684709.33	0.6
Al	27	45	No Gas	76359042.19	1.1
Si	28	45	H2	687614.29	0.5
P	31	45	No Gas	71543.60	0.9
K	39	45	He	4304195.33	0.9
Ca	40	45	H2	48887556.00	0.6
Ti	47	45	No Gas	93856.34	1.0
V	51	45	He	338306.70	0.1
Cr	52	45	He	386877.52	0.8
Mn	55	45	No Gas	9522062.00	0.7
Fe	56	45	H2	71176360.00	1.3
Co	59	45	No Gas	1310343.46	0.2
Ni	60	45	He	132664.23	0.2
Cu	63	45	He	353295.84	0.7
Zn	66	72	No Gas	215674.20	0.6
As	75	72	He	67301.71	0.5
Se	78	72	H2	22030.64	2.9
Sr	88	72	No Gas	1773099.03	1.2
Zr	90	72	No Gas	203701.57	0.7
Mo	95	115	No Gas	334306.41	1.5
Ag	107	115	No Gas	88846.73	0.9
Cd	111	115	No Gas	181662.30	0.7
Sn	118	115	No Gas	509998.18	0.2
Sb	123	115	No Gas	121823.88	0.9
Ba	137	115	No Gas	515435.02	0.3
W	182	159	No Gas	64852.45	2.4
Hg	201	159	He	554.68	3.6
Tl	205	159	No Gas	1439986.85	0.4
Pb	208	159	No Gas	1987562.87	0.4
U	238	159	No Gas	1956179.02	1.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2056171.88	0.7	2024514.1	101.56	60	120	
Sc	45	No Gas	5603285.33	0.5	5611190.83	99.86	60	120	
Sc	45	H2	3336608.92	1.2	3273621	101.92	60	120	
Sc	45	He	638514.00	0.7	627589.54	101.74	60	120	
Ge	72	No Gas	1379902.12	0.4	1369739.92	100.74	60	120	
Ge	72	H2	927136.52	0.2	908196.82	102.09	60	120	
Ge	72	He	386116.70	0.3	384192.24	100.5	60	120	
In	115	No Gas	8474926.08	0.7	8531303.38	99.34	60	120	
Tb	159	No Gas	11077407.62	0.6	11065773.73	100.11	60	120	
Tb	159	He	6041452.17	1.4	5978695.83	101.05	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6F21006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:12:28
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	355217.34	0.7
Be	9	6	No Gas	81763.22	1.1
B	11	6	No Gas	121861.78	0.4
Na	23	45	H2	116040509.33	0.5
Mg	24	45	No Gas	292526016.00	0.2
Al	27	45	No Gas	381531194.32	0.5
Si	28	45	H2	3361877.42	0.3
P	31	45	No Gas	262946.61	1.4
K	39	45	He	20965669.33	1.4
Ca	40	45	H2	246317472.00	0.6
Ti	47	45	No Gas	467781.76	0.8
V	51	45	He	1631970.62	0.9
Cr	52	45	He	1885496.08	0.9
Mn	55	45	No Gas	46892928.00	1.3
Fe	56	45	H2	351859349.33	0.3
Co	59	45	No Gas	6445752.83	0.3
Ni	60	45	He	646059.75	0.3
Cu	63	45	He	1685950.04	0.6
Zn	66	72	No Gas	1075648.46	0.4
As	75	72	He	335454.50	0.8
Se	78	72	H2	110585.46	0.9
Sr	88	72	No Gas	8913812.70	0.4
Zr	90	72	No Gas	554959.43	2.7
Mo	95	115	No Gas	1707899.13	1.3
Ag	107	115	No Gas	436098.31	0.1
Cd	111	115	No Gas	907810.04	0.5
Sn	118	115	No Gas	2588796.29	0.4
Sb	123	115	No Gas	606950.67	0.9
Ba	137	115	No Gas	2619521.43	1.3
W	182	159	No Gas	314399.71	1.8
Hg	201	159	He	2729.46	1.0
Tl	205	159	No Gas	7164529.72	0.4
Pb	208	159	No Gas	9895958.58	0.9
U	238	159	No Gas	9791882.39	1.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2029567.76	0.8	2024514.1	100.25	60	120	
Sc	45	No Gas	5677087.83	1.6	5611190.83	101.17	60	120	
Sc	45	H2	3298551.83	1.2	3273621	100.76	60	120	
Sc	45	He	634744.44	0.6	627589.54	101.14	60	120	
Ge	72	No Gas	1367341.83	0.9	1369739.92	99.82	60	120	
Ge	72	H2	918954.34	0.6	908196.82	101.18	60	120	
Ge	72	He	380734.13	0.7	384192.24	99.1	60	120	
In	115	No Gas	8278913.37	0.9	8531303.38	97.04	60	120	
Tb	159	No Gas	11029783.73	1.2	11065773.73	99.67	60	120	
Tb	159	He	5936819.50	1.1	5978695.83	99.3	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6F21007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:15:18
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	573993.99	0.4
Be	9	6	No Gas	156133.15	0.3
B	11	6	No Gas	196481.00	1.3
Na	23	45	H2	224997056.00	0.4
Mg	24	45	No Gas	560410880.00	1.2
Al	27	45	No Gas	729504042.46	0.5
Si	28	45	H2	6523236.67	1.2
P	31	45	No Gas	480625.49	0.4
K	39	45	He	40510873.33	1.4
Ca	40	45	H2	480124352.00	0.9
Ti	47	45	No Gas	905044.29	1.1
V	51	45	He	3194696.00	1.0
Cr	52	45	He	3649013.17	0.3
Mn	55	45	No Gas	89976746.67	0.2
Fe	56	45	H2	678702528.00	0.3
Co	59	45	No Gas	12263089.33	0.9
Ni	60	45	He	1212860.92	0.2
Cu	63	45	He	3218994.25	0.1
Zn	66	72	No Gas	2022158.00	0.6
As	75	72	He	645316.21	0.5
Se	78	72	H2	212598.31	1.0
Sr	88	72	No Gas	17049980.99	0.5
Zr	90	72	No Gas	1101876.29	1.2
Mo	95	115	No Gas	3321880.08	1.0
Ag	107	115	No Gas	831288.21	0.4
Cd	111	115	No Gas	1770576.85	0.7
Sn	118	115	No Gas	5047288.27	0.4
Sb	123	115	No Gas	1186526.55	1.1
Ba	137	115	No Gas	5087487.86	2.1
W	182	159	No Gas	616645.21	2.2
Hg	201	159	He	5269.94	1.1
Tl	205	159	No Gas	13724586.40	0.5
Pb	208	159	No Gas	19123620.65	0.8
U	238	159	No Gas	19158700.35	1.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2023026.08	1.4	2024514.1	99.93	60	120	
Sc	45	No Gas	5628218.67	0.4	5611190.83	100.3	60	120	
Sc	45	H2	3322751.33	0.3	3273621	101.5	60	120	
Sc	45	He	621083.98	0.8	627589.54	98.96	60	120	
Ge	72	No Gas	1347054.71	0.5	1369739.92	98.34	60	120	
Ge	72	H2	899307.83	0.9	908196.82	99.02	60	120	
Ge	72	He	375641.00	0.9	384192.24	97.77	60	120	
In	115	No Gas	8198193.89	1.3	8531303.38	96.1	60	120	
Tb	159	No Gas	11141164.83	1.2	11065773.73	100.68	60	120	
Tb	159	He	5900014.17	0.8	5978695.83	98.68	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6F21008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:18:02
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.041	ppb	2.1	386726.53	30	100.14	90	110	
Be	9	6	No Gas	31.003	ppb	1.2	95998.68	30	103.34	90	110	
B	11	6	No Gas	27.872	ppb	3.0	72349.00	30	92.91	90	110	
Na	23	45	H2	29736.952	ppb	1.4	131528738.67	30000	99.12	90	110	
Mg	24	45	No Gas	29290.953	ppb	1.8	321989834.67	30000	97.64	90	110	
Al	27	45	No Gas	29763.902	ppb	1.8	426065660.32	30000	99.21	90	110	
Si	28	45	H2	3291.175	ppb	0.7	4217712.00	3000	109.71	90	110	
P	31	45	No Gas	281.238	ppb	1.7	275158.61	300	93.75	90	110	
K	39	45	He	29240.198	ppb	1.2	23595494.00	30000	97.47	90	110	
Ca	40	45	H2	29726.208	ppb	1.5	280014378.67	30000	99.09	90	110	
Ti	47	45	No Gas	297.905	ppb	0.8	527831.77	300	99.3	90	110	
V	51	45	He	307.566	ppb	1.1	1951163.58	300	102.52	90	110	
Cr	52	45	He	304.076	ppb	0.6	2207154.00	300	101.36	90	110	
Mn	55	45	No Gas	1983.535	ppb	1.8	58335266.67	2000	99.18	90	110	
Fe	56	45	H2	30349.523	ppb	0.5	405093130.67	30000	101.17	90	110	
Co	59	45	No Gas	303.746	ppb	2.1	7318570.00	300	101.25	90	110	
Ni	60	45	He	310.441	ppb	1.3	753706.35	300	103.48	90	110	
Cu	63	45	He	303.023	ppb	1.4	1946129.71	300	101.01	90	110	
Zn	66	72	No Gas	288.553	ppb	2.1	1159170.00	300	96.18	90	110	
As	75	72	He	309.868	ppb	0.7	398717.84	300	103.29	90	110	
Se	78	72	H2	309.854	ppb	0.2	129616.31	300	103.28	90	110	
Sr	88	72	No Gas	308.190	ppb	2.4	10395062.64	300	102.73	90	110	
Zr	90	72	No Gas	27.278	ppb	1.7	587566.11	30	90.93	90	110	
Mo	95	115	No Gas	294.886	ppb	3.6	1947741.45	300	98.3	90	110	
Ag	107	115	No Gas	30.546	ppb	1.8	507274.04	30	101.82	90	110	
Cd	111	115	No Gas	304.938	ppb	2.1	1073209.45	300	101.65	90	110	
Sn	118	115	No Gas	306.792	ppb	2.0	3078049.39	300	102.26	90	110	
Sb	123	115	No Gas	59.100	ppb	1.2	696628.76	60	98.5	90	110	
Ba	137	115	No Gas	304.401	ppb	2.0	1540332.96	300	101.47	90	110	
W	182	159	No Gas	32.530	ppb	1.5	388962.71	30	108.43	90	110	
Hg	201	159	He	2.881	ppb	2.1	3080.55	3	96.03	90	110	
Tl	205	159	No Gas	318.026	ppb	2.7	8505561.61	300	106.01	90	110	
Pb	208	159	No Gas	316.123	ppb	2.2	11758935.66	300	105.37	90	110	
U	238	159	No Gas	307.259	ppb	2.2	11489949.54	300	102.42	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1987594.26	0.6	2024514.1	98.18	60	120	
Sc	45	No Gas	5479125.67	0.9	5611190.83	97.65	60	120	
Sc	45	H2	3237631.25	1.4	3273621	98.9	60	120	
Sc	45	He	616122.69	0.9	627589.54	98.17	60	120	
Ge	72	No Gas	1324105.58	1.0	1369739.92	96.67	60	120	
Ge	72	H2	881506.25	0.9	908196.82	97.06	60	120	
Ge	72	He	372495.86	0.6	384192.24	96.96	60	120	
In	115	No Gas	8123384.78	1.0	8531303.38	95.22	60	120	
Tb	159	No Gas	10734109.02	0.6	11065773.73	97	60	120	
Tb	159	He	5940588.00	0.6	5978695.83	99.36	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6F21009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:23:02
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	117693.40	0.4	
Be	9	6	No Gas	0.008	ppb	74.1	65.55	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	25217.02	4	
Na	23	45	H2	<0.000	ppb	N/A	396579.50	40	
Mg	24	45	No Gas	0.303	ppb	76.3	30542.92	10	
Al	27	45	No Gas	0.528	ppb	36.0	15459.07	15	
Si	28	45	H2	0.930	ppb	6.3	4932.87	8	
P	31	45	No Gas	<0.000	ppb	N/A	22954.27	10	
K	39	45	He	2.792	ppb	220.9	117448.73	20	
Ca	40	45	H2	0.187	ppb	149.9	140110.14	25	
Ti	47	45	No Gas	<0.000	ppb	N/A	302.00	0.5	
V	51	45	He	<0.000	ppb	N/A	6242.09	0.5	
Cr	52	45	He	0.005	ppb	158.0	1222.72	0.2	
Mn	55	45	No Gas	0.054	ppb	44.3	11141.88	0.2	
Fe	56	45	H2	0.510	ppb	9.0	16865.73	10	
Co	59	45	No Gas	0.008	ppb	61.7	406.00	0.15	
Ni	60	45	He	<0.000	ppb	N/A	107.33	0.2	
Cu	63	45	He	0.018	ppb	20.2	1555.42	0.4	
Zn	66	72	No Gas	0.034	ppb	76.4	2152.17	2	
As	75	72	He	<0.000	ppb	N/A	322.00	0.2	
Se	78	72	H2	0.031	ppb	58.5	34.00	0.2	
Sr	88	72	No Gas	0.002	ppb	82.8	677.80	0.2	
Zr	90	72	No Gas	0.000	ppb	5545.4	183.34	2	
Mo	95	115	No Gas	0.010	ppb	27.6	111.11	0.2	
Ag	107	115	No Gas	0.002	ppb	49.5	88.89	0.08	
Cd	111	115	No Gas	0.018	ppb	15.2	98.00	0.2	
Sn	118	115	No Gas	0.041	ppb	20.2	1438.97	0.2	
Sb	123	115	No Gas	0.001	ppb	83.6	134.45	0.4	
Ba	137	115	No Gas	0.008	ppb	58.8	140.00	0.2	
W	182	159	No Gas	0.007	ppb	44.6	170.00	0.3	
Hg	201	159	He	0.003	ppb	34.8	17.33	0.1	
Tl	205	159	No Gas	0.035	ppb	15.2	1490.09	0.1	
Pb	208	159	No Gas	0.034	ppb	7.6	2536.77	0.1	
U	238	159	No Gas	0.007	ppb	23.3	307.78	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2056847.07	2.3	2024514.1	101.6	60	120	
Sc	45	No Gas	5551361.83	1.6	5611190.83	98.93	60	120	
Sc	45	H2	3296790.42	2.5	3273621	100.71	60	120	
Sc	45	He	619516.71	1.7	627589.54	98.71	60	120	
Ge	72	No Gas	1345517.67	1.0	1369739.92	98.23	60	120	
Ge	72	H2	907795.59	2.7	908196.82	99.96	60	120	
Ge	72	He	380837.36	1.2	384192.24	99.13	60	120	
In	115	No Gas	8424244.14	2.6	8531303.38	98.75	60	120	
Tb	159	No Gas	11090348.17	1.8	11065773.73	100.22	60	120	
Tb	159	He	6042329.17	0.4	5978695.83	101.06	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2501
File Name	H6F21010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:25:38
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.819	ppb	7.1	125055.52	1	81.9	80	120	
Be	9	6	No Gas	0.987	ppb	1.6	3173.69	1	98.7	80	120	
B	11	6	No Gas	1.370	ppb	24.0	27481.27	10	13.7	80	120	> +/- 20%
Na	23	45	H2	101.614	ppb	2.1	860490.31	100	101.61	80	120	
Mg	24	45	No Gas	105.370	ppb	1.4	1196095.29	100	105.37	80	120	
Al	27	45	No Gas	104.478	ppb	2.3	1517176.49	100	104.48	80	120	
Si	28	45	H2	102.717	ppb	1.4	137632.56	100	102.72	80	120	
P	31	45	No Gas	50.871	ppb	3.6	69081.94	50	101.74	80	120	
K	39	45	He	108.370	ppb	4.8	200465.57	100	108.37	80	120	
Ca	40	45	H2	108.063	ppb	0.6	1174425.09	100	108.06	80	120	
Ti	47	45	No Gas	1.084	ppb	4.8	2251.52	1	108.4	80	120	
V	51	45	He	1.000	ppb	4.9	12910.74	1	100	80	120	
Cr	52	45	He	1.131	ppb	2.8	9321.17	1	113.1	80	120	
Mn	55	45	No Gas	1.122	ppb	1.9	42810.88	1	112.2	80	120	
Fe	56	45	H2	109.100	ppb	1.7	1492506.91	100	109.1	80	120	
Co	59	45	No Gas	1.062	ppb	0.8	26050.20	1	106.2	80	120	
Ni	60	45	He	1.149	ppb	2.7	2893.64	1	114.9	80	120	
Cu	63	45	He	1.175	ppb	2.0	8920.26	1	117.5	80	120	
Zn	66	72	No Gas	10.729	ppb	2.0	45999.73	10	107.29	80	120	
As	75	72	He	1.011	ppb	3.4	1663.10	1	101.1	80	120	
Se	78	72	H2	1.067	ppb	4.2	484.34	1	106.7	80	120	
Sr	88	72	No Gas	2.080	ppb	1.0	72304.79	2	104	80	120	
Zr	90	72	No Gas	3.850	ppb	3.0	84922.19	5	77	80	120	> +/- 20%
Mo	95	115	No Gas	0.958	ppb	3.2	6668.34	1	95.8	80	120	
Ag	107	115	No Gas	1.053	ppb	1.3	18372.75	1	105.3	80	120	
Cd	111	115	No Gas	1.011	ppb	1.1	3758.11	1	101.1	80	120	
Sn	118	115	No Gas	1.041	ppb	0.5	11953.22	1	104.1	80	120	
Sb	123	115	No Gas	0.970	ppb	1.4	12092.25	1	97	80	120	
Ba	137	115	No Gas	1.115	ppb	1.3	6008.06	1	111.5	80	120	
W	182	159	No Gas	2.189	ppb	3.9	26845.19	2	109.45	80	120	
Hg	201	159	He	0.217	ppb	0.9	246.50	0.1	217	80	120	> +/- 20%
Tl	205	159	No Gas	1.067	ppb	2.5	29699.74	1	106.7	80	120	
Pb	208	159	No Gas	1.077	ppb	2.5	42174.77	1	107.7	80	120	
U	238	159	No Gas	1.017	ppb	1.6	38931.71	1	101.7	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2038446.52	1.6	2024514.1	100.69	60	120	
Sc	45	No Gas	5530273.00	1.5	5611190.83	98.56	60	120	
Sc	45	H2	3296603.75	1.3	3273621	100.7	60	120	
Sc	45	He	612466.58	0.8	627589.54	97.59	60	120	
Ge	72	No Gas	1353264.75	0.9	1369739.92	98.8	60	120	
Ge	72	H2	915882.81	1.4	908196.82	100.85	60	120	
Ge	72	He	379405.15	0.4	384192.24	98.75	60	120	
In	115	No Gas	8505366.47	1.0	8531303.38	99.7	60	120	
Tb	159	No Gas	10974369.29	1.4	11065773.73	99.17	60	120	
Tb	159	He	5986278.67	0.8	5978695.83	100.13	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2502
File Name	H6F21011.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:28:14
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.341	ppb	62.0	121965.10	0.4	85.25	80	120	
Be	9	6	No Gas	0.366	ppb	6.1	1216.72	0.4	91.5	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	13559.88	0.4	-1653.5	80	120	> +/- 20%
Na	23	45	H2	37.886	ppb	2.7	576314.73	40	94.72	80	120	
Mg	24	45	No Gas	39.701	ppb	1.9	472815.23	40	99.25	80	120	
Al	27	45	No Gas	39.604	ppb	1.3	586520.21	40	99.01	80	120	
K	39	45	He	42.195	ppb	11.9	151239.27	40	105.49	80	120	
Ca	40	45	H2	40.065	ppb	0.7	524269.89	40	100.16	80	120	
Ti	47	45	No Gas	0.389	ppb	3.5	1019.37	0.4	97.25	80	120	
V	51	45	He	0.333	ppb	6.5	8930.91	0.4	83.25	80	120	
Cr	52	45	He	0.386	ppb	2.0	4047.27	0.4	96.5	80	120	
Mn	55	45	No Gas	0.403	ppb	3.1	21715.88	0.4	100.75	80	120	
Fe	56	45	H2	41.091	ppb	1.0	570326.71	40	102.73	80	120	
Co	59	45	No Gas	0.410	ppb	3.2	10296.56	0.4	102.5	80	120	
Ni	60	45	He	0.416	ppb	5.6	1152.71	0.4	104	80	120	
Cu	63	45	He	0.437	ppb	2.6	4313.35	0.4	109.25	80	120	
Zn	66	72	No Gas	4.354	ppb	0.7	19926.61	4	108.85	80	120	
As	75	72	He	0.384	ppb	5.5	839.69	0.4	96	80	120	
Se	78	72	H2	0.406	ppb	7.3	196.33	0.4	101.5	80	120	
Sr	88	72	No Gas	0.391	ppb	2.3	14131.90	0.4	97.75	80	120	
Mo	95	115	No Gas	0.365	ppb	4.2	2598.03	0.4	91.25	80	120	
Ag	107	115	No Gas	0.381	ppb	1.9	6779.52	0.4	95.25	80	120	
Cd	111	115	No Gas	0.377	ppb	3.5	1442.54	0.4	94.25	80	120	
Sn	118	115	No Gas	0.365	ppb	4.3	4929.82	0.4	91.25	80	120	
Sb	123	115	No Gas	0.363	ppb	1.5	4670.84	0.4	90.75	80	120	
Ba	137	115	No Gas	0.423	ppb	6.6	2370.22	0.4	105.75	80	120	
Tl	205	159	No Gas	0.388	ppb	3.4	11309.57	0.4	97	80	120	
Pb	208	159	No Gas	0.408	ppb	1.8	16971.23	0.4	102	80	120	
U	238	159	No Gas	0.379	ppb	1.7	14758.89	0.4	94.75	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2061642.35	1.9	2024514.1	101.83	60	120	
Sc	45	No Gas	5592226.67	0.8	5611190.83	99.66	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	3307857.75	1.0	3273621	101.05	60	120	
Sc	45	He	627448.35	0.5	627589.54	99.98	60	120	
Ge	72	No Gas	1357020.83	0.3	1369739.92	99.07	60	120	
Ge	72	H2	910469.19	0.6	908196.82	100.25	60	120	
Ge	72	He	378528.89	0.2	384192.24	98.53	60	120	
In	115	No Gas	8627630.50	0.8	8531303.38	101.13	60	120	
Tb	159	No Gas	11142352.06	0.8	11065773.73	100.69	60	120	
Tb	159	He	5983577.83	0.4	5978695.83	100.08	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6F21012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:30:49
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.246	ppb	24.2	114068.48	2	-50	50	
Be	9	6	No Gas	0.004	ppb	94.9	51.11	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	23343.80	10	-50	50	
Na	23	45	H2	96310.775	ppb	1.6	437950485.33	100000	80	120	
Mg	24	45	No Gas	94990.087	ppb	0.5	1061328362.67	100000	80	120	
Al	27	45	No Gas	95396.903	ppb	1.1	1388052885.98	100000	80	120	
Si	28	45	H2	4.168	ppb	4.6	9261.75	50	-50	50	
P	31	45	No Gas	95232.171	ppb	0.8	86882397.33	100000	80	120	
K	39	45	He	98241.060	ppb	0.9	78545616.00	100000	80	120	
Ca	40	45	H2	97191.809	ppb	1.4	942930645.33	100000	80	120	
Ti	47	45	No Gas	2012.477	ppb	1.3	3622958.92	2000	80	120	
V	51	45	He	0.098	ppb	11.9	7238.58	1	-50	50	
Cr	52	45	He	0.294	ppb	3.4	3291.06	1	-50	50	
Mn	55	45	No Gas	0.262	ppb	1.4	17409.74	1	-50	50	
Fe	56	45	H2	99187.969	ppb	0.6	1363912362.67	100000	80	120	
Co	59	45	No Gas	0.349	ppb	0.7	8764.15	0.75	-50	50	
Ni	60	45	He	0.324	ppb	4.8	903.36	1	-50	50	
Cu	63	45	He	0.454	ppb	4.3	4317.36	2	-50	50	
Zn	66	72	No Gas	1.615	ppb	1.6	8525.35	20	-50	50	
As	75	72	He	0.085	ppb	7.5	439.68	1	-50	50	
Se	78	72	H2	0.172	ppb	23.4	92.33	1	-50	50	
Sr	88	72	No Gas	0.791	ppb	1.0	27483.74	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.085	ppb	1.9	2030.16	10	-50	50	
Mo	95	115	No Gas	1937.796	ppb	1.3	12729620.05	2000	80	120	
Ag	107	115	No Gas	0.015	ppb	0.9	293.34	0.4	-50	50	
Cd	111	115	No Gas	0.097	ppb	33.7	367.58	1	-50	50	
Sn	118	115	No Gas	0.406	ppb	1.7	5028.74	1	-50	50	
Ba	137	115	No Gas	0.402	ppb	4.8	2113.51	1	-50	50	
W	182	159	No Gas	0.182	ppb	11.4	2320.22	1	-50	50	
Hg	201	159	He	<0.000	ppb	N/A	11.17	0.5	-50	50	
Tl	205	159	No Gas	0.006	ppb	7.6	673.35	0.5	-50	50	
Pb	208	159	No Gas	0.083	ppb	10.6	4382.55	0.5	-50	50	
U	238	159	No Gas	0.002	ppb	62.0	105.55	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1941974.00	1.0	2024514.1	95.92	60	120	
Sc	45	No Gas	5569237.17	1.8	5611190.83	99.25	60	120	
Sc	45	H2	3335315.92	0.6	3273621	101.88	60	120	
Sc	45	He	612526.50	0.5	627589.54	97.6	60	120	
Ge	72	No Gas	1334204.66	1.0	1369739.92	97.41	60	120	
Ge	72	H2	886849.54	1.2	908196.82	97.65	60	120	
Ge	72	He	370309.65	0.8	384192.24	96.39	60	120	
In	115	No Gas	8078936.16	2.8	8531303.38	94.7	60	120	
Tb	159	No Gas	11023290.39	1.9	11065773.73	99.62	60	120	
Tb	159	He	5998156.83	1.0	5978695.83	100.33	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6F21013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:33:26
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.736	ppb	1.7	284981.33	20	80	120	
Be	9	6	No Gas	20.061	ppb	1.0	60364.87	20	80	120	
B	11	6	No Gas	14.461	ppb	2.2	47886.90	20	80	120	> +/- 20%
Na	23	45	H2	99256.130	ppb	1.1	457008938.67	100000	80	120	
Mg	24	45	No Gas	97320.561	ppb	1.3	1102998293.33	100000	80	120	
Al	27	45	No Gas	99057.807	ppb	1.6	1462120724.88	100000	80	120	
Si	28	45	H2	217.145	ppb	1.4	293844.91	200	80	120	
P	31	45	No Gas	97548.269	ppb	1.0	90265920.00	100000	80	120	
K	39	45	He	101386.782	ppb	0.6	82285634.67	100000	80	120	
Ca	40	45	H2	102075.778	ppb	0.8	1002773184.00	100000	80	120	
Ti	47	45	No Gas	2078.297	ppb	1.6	3794734.83	2000	80	120	
V	51	45	He	20.194	ppb	1.1	135562.52	20	80	120	
Cr	52	45	He	20.328	ppb	1.0	150010.89	20	80	120	
Mn	55	45	No Gas	19.376	ppb	2.0	597032.50	20	80	120	
Fe	56	45	H2	101262.926	ppb	0.5	1409895381.33	100000	80	120	
Co	59	45	No Gas	19.632	ppb	1.2	487822.69	20	80	120	
Ni	60	45	He	20.408	ppb	1.1	50119.20	20	80	120	
Cu	63	45	He	20.408	ppb	1.1	133624.65	20	80	120	
Zn	66	72	No Gas	21.479	ppb	0.7	89081.28	20	80	120	
As	75	72	He	20.294	ppb	0.9	26272.51	20	80	120	
Se	78	72	H2	21.026	ppb	1.2	8706.14	20	80	120	
Sr	88	72	No Gas	20.286	ppb	1.4	692347.40	20	80	120	
Zr	90	72	No Gas	10.426	ppb	0.9	227177.74	20	80	120	> +/- 20%
Mo	95	115	No Gas	2054.241	ppb	1.0	13524886.13	2000	80	120	
Ag	107	115	No Gas	19.077	ppb	1.1	315790.31	20	80	120	
Cd	111	115	No Gas	19.313	ppb	0.9	67776.82	20	80	120	
Sn	118	115	No Gas	20.120	ppb	1.6	202118.33	20	80	120	
Sb	123	115	No Gas	19.636	ppb	0.8	230765.38	20	80	120	
Ba	137	115	No Gas	20.410	ppb	1.0	103015.20	20	80	120	
W	182	159	No Gas	19.335	ppb	1.4	239405.44	20	80	120	
Hg	201	159	He	1.992	ppb	1.0	2159.19	2	80	120	
Tl	205	159	No Gas	19.196	ppb	1.4	531926.19	20	80	120	
Pb	208	159	No Gas	19.214	ppb	0.8	741011.02	20	80	120	
U	238	159	No Gas	19.448	ppb	1.0	752909.52	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1930809.69	2.5	2024514.1	95.37	60	120	
Sc	45	No Gas	5648458.17	2.5	5611190.83	100.66	60	120	
Sc	45	H2	3377176.83	0.2	3273621	103.16	60	120	
Sc	45	He	621784.94	0.9	627589.54	99.08	60	120	
Ge	72	No Gas	1338684.29	1.8	1369739.92	97.73	60	120	
Ge	72	H2	870636.58	0.9	908196.82	95.86	60	120	
Ge	72	He	370360.75	0.7	384192.24	96.4	60	120	
In	115	No Gas	8095537.45	1.7	8531303.38	94.89	60	120	
Tb	159	No Gas	11112982.06	2.4	11065773.73	100.43	60	120	
Tb	159	He	6010077.17	0.7	5978695.83	100.52	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6F21015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:38:39
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.365	ppb	2.1	336917.47	25	97.46	90	110	
Be	9	6	No Gas	24.813	ppb	1.8	77223.79	25	99.25	90	110	
B	11	6	No Gas	52.924	ppb	3.1	115965.26	50	105.85	90	110	
Na	23	45	H2	24821.978	ppb	1.4	114667242.67	25000	99.29	90	110	
Mg	24	45	No Gas	24715.715	ppb	2.5	280968320.00	25000	98.86	90	110	
Al	27	45	No Gas	24951.347	ppb	2.4	369362447.83	25000	99.81	90	110	
Si	28	45	H2	2495.163	ppb	1.5	3338471.17	2500	99.81	90	110	
P	31	45	No Gas	245.709	ppb	0.8	251554.21	250	98.28	90	110	
K	39	45	He	24884.038	ppb	1.0	20792409.33	25000	99.54	90	110	
Ca	40	45	H2	24826.625	ppb	1.6	244144064.00	25000	99.31	90	110	
Ti	47	45	No Gas	248.368	ppb	1.6	455099.38	250	99.35	90	110	
V	51	45	He	248.246	ppb	0.6	1630638.79	250	99.3	90	110	
Cr	52	45	He	249.208	ppb	1.2	1871570.04	250	99.68	90	110	
Mn	55	45	No Gas	1518.364	ppb	2.5	46178044.00	1500	101.22	90	110	
Fe	56	45	H2	25364.324	ppb	1.2	353390069.33	25000	101.46	90	110	
Co	59	45	No Gas	253.836	ppb	2.4	6324071.17	250	101.53	90	110	
Ni	60	45	He	253.590	ppb	0.7	637000.10	250	101.44	90	110	
Cu	63	45	He	248.986	ppb	0.6	1654731.58	250	99.59	90	110	
Zn	66	72	No Gas	245.297	ppb	1.2	1025808.11	250	98.12	90	110	
As	75	72	He	250.134	ppb	0.8	332507.06	250	100.05	90	110	
Se	78	72	H2	246.844	ppb	1.1	108554.41	250	98.74	90	110	
Sr	88	72	No Gas	248.725	ppb	0.9	8731039.37	250	99.49	90	110	
Zr	90	72	No Gas	24.087	ppb	0.2	540014.21	25	96.35	90	110	
Mo	95	115	No Gas	242.352	ppb	1.5	1671999.90	250	96.94	90	110	
Ag	107	115	No Gas	24.617	ppb	0.1	426972.84	25	98.47	90	110	
Cd	111	115	No Gas	243.102	ppb	0.8	893578.95	250	97.24	90	110	
Sn	118	115	No Gas	247.865	ppb	1.1	2597360.52	250	99.15	90	110	
Sb	123	115	No Gas	49.041	ppb	0.4	603733.24	50	98.08	90	110	
Ba	137	115	No Gas	493.992	ppb	2.0	2610703.58	500	98.8	90	110	
W	182	159	No Gas	24.701	ppb	1.0	307230.67	25	98.8	90	110	
Hg	201	159	He	2.469	ppb	2.1	2698.12	2.5	98.76	90	110	
Tl	205	159	No Gas	255.138	ppb	1.0	7097758.05	250	102.06	90	110	
Pb	208	159	No Gas	254.096	ppb	0.4	9830883.25	250	101.64	90	110	
U	238	159	No Gas	247.810	ppb	1.3	9637834.89	250	99.12	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1997273.11	1.3	2024514.1	98.65	60	120	
Sc	45	No Gas	5665499.50	0.9	5611190.83	100.97	60	120	
Sc	45	H2	3379527.00	1.2	3273621	103.24	60	120	
Sc	45	He	637419.75	0.6	627589.54	101.57	60	120	
Ge	72	No Gas	1378137.08	0.8	1369739.92	100.61	60	120	
Ge	72	H2	926747.48	1.2	908196.82	102.04	60	120	
Ge	72	He	384745.65	0.4	384192.24	100.14	60	120	
In	115	No Gas	8483281.06	0.3	8531303.38	99.44	60	120	
Tb	159	No Gas	11163869.55	1.0	11065773.73	100.89	60	120	
Tb	159	He	6068049.83	0.2	5978695.83	101.49	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6F21016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:43:44
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	113279.90	0.4	
Be	9	6	No Gas	0.001	ppb	205.9	43.33	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	23975.96	4	
Na	23	45	H2	5.249	ppb	7.7	425692.70	40	
Mg	24	45	No Gas	1.712	ppb	13.9	46393.11	10	
Al	27	45	No Gas	1.608	ppb	12.8	31238.73	15	
Si	28	45	H2	0.173	ppb	44.6	3926.56	8	
P	31	45	No Gas	<0.000	ppb	N/A	22008.76	10	
K	39	45	He	3.078	ppb	167.9	120703.32	20	
Ca	40	45	H2	1.142	ppb	17.6	148548.41	25	
Ti	47	45	No Gas	0.001	ppb	1413.5	316.67	0.5	
V	51	45	He	0.090	ppb	21.1	7454.69	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1180.05	0.2	
Mn	55	45	No Gas	0.097	ppb	8.6	12455.00	0.2	
Fe	56	45	H2	1.936	ppb	2.0	36073.49	10	
Co	59	45	No Gas	0.015	ppb	16.5	580.68	0.15	
Ni	60	45	He	0.011	ppb	69.3	154.00	0.2	
Cu	63	45	He	0.009	ppb	61.4	1536.09	0.4	
Zn	66	72	No Gas	0.054	ppb	35.3	2250.19	2	
As	75	72	He	<0.000	ppb	N/A	343.34	0.2	
Se	78	72	H2	0.022	ppb	85.9	30.33	0.2	
Sr	88	72	No Gas	0.014	ppb	18.8	1071.15	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	160.00	2	
Mo	95	115	No Gas	0.026	ppb	20.6	221.12	0.2	
Ag	107	115	No Gas	0.004	ppb	16.3	122.22	0.08	
Cd	111	115	No Gas	0.018	ppb	4.8	96.60	0.2	
Sn	118	115	No Gas	0.015	ppb	60.9	1188.94	0.2	
Sb	123	115	No Gas	0.003	ppb	68.3	153.33	0.4	
Ba	137	115	No Gas	0.026	ppb	20.1	237.78	0.2	
W	182	159	No Gas	0.004	ppb	29.4	140.00	0.3	
Hg	201	159	He	0.003	ppb	104.7	17.17	0.1	
Tl	205	159	No Gas	0.027	ppb	20.2	1276.73	0.1	
Pb	208	159	No Gas	0.034	ppb	6.1	2540.11	0.1	
U	238	159	No Gas	0.014	ppb	3.0	574.46	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1987774.92	1.4	2024514.1	98.19	60	120	
Sc	45	No Gas	5569285.50	0.9	5611190.83	99.25	60	120	
Sc	45	H2	3280194.75	0.6	3273621	100.2	60	120	
Sc	45	He	635161.67	0.2	627589.54	101.21	60	120	
Ge	72	No Gas	1355072.13	0.4	1369739.92	98.93	60	120	
Ge	72	H2	908263.42	1.1	908196.82	100.01	60	120	
Ge	72	He	385801.93	1.3	384192.24	100.42	60	120	
In	115	No Gas	8582232.02	0.5	8531303.38	100.6	60	120	
Tb	159	No Gas	11137584.00	0.6	11065773.73	100.65	60	120	
Tb	159	He	6050970.00	0.4	5978695.83	101.21	60	120	

Blank Report

Sample Name	IMF034WB
File Name	H6F21018.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:48:54
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	116178.84	0.4	
Be	9	6	No Gas	0.004	ppb	30.8	52.22	0.08	
B	11	6	No Gas	2.992	ppb	5.3	30097.71	4	
Na	23	45	H2	9.567	ppb	5.6	451246.65	40	
Mg	24	45	No Gas	1.347	ppb	7.2	43050.26	10	
Al	27	45	No Gas	1.907	ppb	12.0	36225.21	15	
Si	28	45	H2	1.442	ppb	10.6	5651.82	8	
P	31	45	No Gas	<0.000	ppb	N/A	22316.58	10	
K	39	45	He	3.471	ppb	45.2	122105.27	20	
Ca	40	45	H2	7.981	ppb	1.8	216814.21	25	
Ti	47	45	No Gas	0.027	ppb	61.1	370.01	0.5	
V	51	45	He	<0.000	ppb	N/A	6588.25	0.5	
Cr	52	45	He	0.009	ppb	112.4	1288.06	0.2	
Mn	55	45	No Gas	0.053	ppb	27.3	11346.71	0.2	
Fe	56	45	H2	1.433	ppb	1.1	29684.17	10	
Co	59	45	No Gas	0.002	ppb	43.3	266.00	0.15	
Ni	60	45	He	0.011	ppb	75.9	154.67	0.2	
Cu	63	45	He	0.027	ppb	10.2	1670.10	0.4	
Zn	66	72	No Gas	0.977	ppb	2.6	6088.03	2	
As	75	72	He	<0.000	ppb	N/A	279.00	0.2	
Se	78	72	H2	0.006	ppb	164.5	23.67	0.2	
Sr	88	72	No Gas	0.020	ppb	2.6	1308.96	0.2	
Zr	90	72	No Gas	0.140	ppb	7.0	3290.42	2	
Mo	95	115	No Gas	0.003	ppb	34.7	65.56	0.2	
Ag	107	115	No Gas	0.070	ppb	2.8	1292.29	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	3.59	0.2	
Sn	118	115	No Gas	0.086	ppb	20.4	1964.59	0.2	
Sb	123	115	No Gas	0.002	ppb	123.3	144.44	0.4	
Ba	137	115	No Gas	0.021	ppb	45.4	214.45	0.2	
W	182	159	No Gas	0.008	ppb	66.2	180.00	0.3	
Hg	201	159	He	0.000	ppb	4548.8	14.00	0.1	
Tl	205	159	No Gas	0.004	ppb	87.7	621.13	0.1	
Pb	208	159	No Gas	0.023	ppb	9.7	2113.41	0.1	
U	238	159	No Gas	0.000	ppb	37.1	60.00	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2021711.11	0.1	2024514.1	99.86	60	120	
Sc	45	No Gas	5665312.00	1.8	5611190.83	100.96	60	120	
Sc	45	H2	3326380.00	0.8	3273621	101.61	60	120	
Sc	45	He	640775.58	1.2	627589.54	102.1	60	120	
Ge	72	No Gas	1365813.13	1.5	1369739.92	99.71	60	120	
Ge	72	H2	919199.12	1.0	908196.82	101.21	60	120	
Ge	72	He	386430.57	0.6	384192.24	100.58	60	120	
In	115	No Gas	8665444.33	1.7	8531303.38	101.57	60	120	
Tb	159	No Gas	11030516.23	1.4	11065773.73	99.68	60	120	
Tb	159	He	6074389.17	0.9	5978695.83	101.6	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF034WL
File Name	H6F21019.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 11:51:29
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.165	ppb	2.8	383481.33	30	97.22	85	115	
Be	9	6	No Gas	29.405	ppb	1.1	92186.47	30	98.02	83	121	
B	11	6	No Gas	34.149	ppb	4.1	84169.11	30	113.83	85	115	
Na	23	45	H2	3082.872	ppb	0.7	14451630.00	3000	102.76	85	117	
Mg	24	45	No Gas	3073.921	ppb	1.6	34812137.33	3000	102.46	83	118	
Al	27	45	No Gas	3045.605	ppb	1.9	44894759.33	3000	101.52	84	117	
Si	28	45	H2	2.210	ppb	3.6	6698.28	3000	0.07	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	22334.60	300	-0.41	85	115	FAIL
K	39	45	He	3115.929	ppb	1.2	2689478.25	3000	103.86	87	115	
Ca	40	45	H2	3056.136	ppb	1.6	29860308.00	3000	101.87	87	118	
Ti	47	45	No Gas	29.868	ppb	0.8	54766.93	30	99.56	85	115	
V	51	45	He	30.747	ppb	0.9	206636.17	30	102.49	86	115	
Cr	52	45	He	31.013	ppb	1.6	232429.56	30	103.38	85	116	
Mn	55	45	No Gas	30.591	ppb	1.0	935704.04	30	101.97	87	115	
Fe	56	45	H2	3140.688	ppb	2.0	43302545.33	3000	104.69	87	118	
Co	59	45	No Gas	31.250	ppb	1.4	775256.67	30	104.17	86	115	
Ni	60	45	He	31.856	ppb	0.6	79605.44	30	106.19	85	117	
Cu	63	45	He	32.222	ppb	0.6	214015.58	30	107.41	85	118	
Zn	66	72	No Gas	61.163	ppb	0.1	255982.81	60	101.94	83	119	
As	75	72	He	30.234	ppb	0.6	40696.83	30	100.78	84	116	
Se	78	72	H2	30.253	ppb	0.8	13310.56	30	100.84	80	120	
Sr	88	72	No Gas	30.448	ppb	0.9	1063884.82	30	101.49	85	115	
Zr	90	72	No Gas	0.019	ppb	39.0	603.35	30	0.06	85	115	FAIL
Mo	95	115	No Gas	27.943	ppb	1.4	195113.25	30	93.14	85	115	
Ag	107	115	No Gas	30.381	ppb	1.5	533203.43	30	101.27	85	117	
Cd	111	115	No Gas	28.841	ppb	1.3	107302.84	30	96.14	87	115	
Sn	118	115	No Gas	28.881	ppb	1.4	307162.96	30	96.27	85	115	
Sb	123	115	No Gas	28.703	ppb	1.7	357620.45	30	95.68	85	117	
Ba	137	115	No Gas	28.385	ppb	1.8	151894.21	30	94.62	86	114	
W	182	159	No Gas	0.011	ppb	9.4	223.33	30	0.04	85	115	FAIL
Hg	201	159	He	0.001	ppb	202.0	15.33	2.5	0.04	82	119	FAIL
Tl	205	159	No Gas	30.421	ppb	1.2	846992.35	30	101.4	82	116	
Pb	208	159	No Gas	30.176	ppb	0.3	1169028.78	30	100.59	88	115	
U	238	159	No Gas	29.722	ppb	2.0	1156513.15	30	99.07	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2012462.12	1.8	2024514.1	99.4	60	120	
Sc	45	No Gas	5640605.50	1.9	5611190.83	100.52	60	120	
Sc	45	H2	3343834.83	0.7	3273621	102.14	60	120	
Sc	45	He	633224.08	0.6	627589.54	100.9	60	120	
Ge	72	No Gas	1370991.25	2.2	1369739.92	100.09	60	120	
Ge	72	H2	925785.52	1.4	908196.82	101.94	60	120	
Ge	72	He	386675.48	1.1	384192.24	100.65	60	120	
In	115	No Gas	8583890.88	0.6	8531303.38	100.62	60	120	
Tb	159	No Gas	11168145.95	1.2	11065773.73	100.93	60	120	
Tb	159	He	6101375.83	0.6	5978695.83	102.05	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF034WC
File Name	H6F21020.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 11:54:04
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.442	ppb	3.2	385373.39	30	98.14	85	115	
Be	9	6	No Gas	29.847	ppb	2.5	93414.16	30	99.49	83	121	
B	11	6	No Gas	34.504	ppb	4.0	84643.05	30	115.01	85	115	FAIL
Na	23	45	H2	3059.150	ppb	3.1	14332023.33	3000	101.97	85	117	
Mg	24	45	No Gas	3031.756	ppb	2.2	34460510.00	3000	101.06	83	118	
Al	27	45	No Gas	3054.037	ppb	1.9	45178385.99	3000	101.8	84	117	
Si	28	45	H2	1.657	ppb	9.7	5960.61	3000	0.06	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	22277.18	300	-0.46	85	115	FAIL
K	39	45	He	3103.847	ppb	0.1	2692794.33	3000	103.46	87	115	
Ca	40	45	H2	3057.415	ppb	1.6	29856686.00	3000	101.91	87	118	
Ti	47	45	No Gas	30.201	ppb	1.9	55576.38	30	100.67	85	115	
V	51	45	He	30.525	ppb	1.0	206198.35	30	101.75	86	115	
Cr	52	45	He	31.114	ppb	1.2	234330.53	30	103.71	85	116	
Mn	55	45	No Gas	31.079	ppb	2.0	953941.06	30	103.6	87	115	
Fe	56	45	H2	3155.137	ppb	1.9	43477017.33	3000	105.17	87	118	
Co	59	45	No Gas	31.356	ppb	1.8	780740.58	30	104.52	86	115	
Ni	60	45	He	31.938	ppb	1.4	80198.96	30	106.46	85	117	
Cu	63	45	He	32.398	ppb	0.8	216236.75	30	107.99	85	118	
Zn	66	72	No Gas	61.306	ppb	1.8	257176.51	60	102.18	83	119	
As	75	72	He	30.689	ppb	1.0	41208.02	30	102.3	84	116	
Se	78	72	H2	30.638	ppb	2.6	13428.01	30	102.13	80	120	
Sr	88	72	No Gas	30.746	ppb	0.6	1076623.67	30	102.49	85	115	
Zr	90	72	No Gas	0.010	ppb	17.3	408.68	30	0.03	85	115	FAIL
Mo	95	115	No Gas	28.220	ppb	0.8	197098.88	30	94.07	85	115	
Ag	107	115	No Gas	30.318	ppb	0.9	532160.19	30	101.06	85	117	
Cd	111	115	No Gas	29.070	ppb	1.6	108152.32	30	96.9	87	115	
Sn	118	115	No Gas	29.040	ppb	0.5	308886.85	30	96.8	85	115	
Sb	123	115	No Gas	28.929	ppb	1.0	360457.22	30	96.43	85	117	
Ba	137	115	No Gas	28.489	ppb	0.9	152461.99	30	94.96	86	114	
W	182	159	No Gas	0.008	ppb	26.6	186.67	30	0.03	85	115	FAIL
Hg	201	159	He	0.000	ppb	1200.5	14.00	2.5	0	82	119	FAIL
Tl	205	159	No Gas	30.629	ppb	2.4	852766.48	30	102.1	82	116	
Pb	208	159	No Gas	30.248	ppb	1.2	1171783.33	30	100.83	88	115	
U	238	159	No Gas	29.780	ppb	0.8	1158740.89	30	99.27	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2008677.88	0.9	2024514.1	99.22	60	120	
Sc	45	No Gas	5660672.67	1.0	5611190.83	100.88	60	120	
Sc	45	H2	3342664.33	2.5	3273621	102.11	60	120	
Sc	45	He	636345.19	1.0	627589.54	101.4	60	120	
Ge	72	No Gas	1374049.92	1.1	1369739.92	100.31	60	120	
Ge	72	H2	922596.16	2.1	908196.82	101.59	60	120	
Ge	72	He	385797.69	1.1	384192.24	100.42	60	120	
In	115	No Gas	8586075.25	2.3	8531303.38	100.64	60	120	
Tb	159	No Gas	11168014.56	1.4	11065773.73	100.92	60	120	
Tb	159	He	6009504.00	0.2	5978695.83	100.52	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV2
File Name	H6F21025.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 12:07:00
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.821	ppb	1.2	331147.52	25	99.28	90	110	
Be	9	6	No Gas	25.165	ppb	1.5	76036.07	25	100.66	90	110	
B	11	6	No Gas	52.962	ppb	2.0	112651.98	50	105.92	90	110	
Na	23	45	H2	24855.864	ppb	0.8	111700768.00	25000	99.42	90	110	
Mg	24	45	No Gas	25029.987	ppb	2.7	272945280.00	25000	100.12	90	110	
Al	27	45	No Gas	25177.082	ppb	4.5	357513768.01	25000	100.71	90	110	
Si	28	45	H2	2471.333	ppb	0.6	3216701.83	2500	98.85	90	110	
P	31	45	No Gas	250.733	ppb	1.9	245807.40	250	100.29	90	110	
K	39	45	He	25434.525	ppb	0.8	20365202.67	25000	101.74	90	110	
Ca	40	45	H2	24756.228	ppb	0.3	236827888.00	25000	99.02	90	110	
Ti	47	45	No Gas	251.847	ppb	0.8	442711.95	250	100.74	90	110	
V	51	45	He	255.307	ppb	0.3	1607038.83	250	102.12	90	110	
Cr	52	45	He	255.696	ppb	0.9	1840348.83	250	102.28	90	110	
Mn	55	45	No Gas	1524.567	ppb	1.7	44479225.33	1500	101.64	90	110	
Fe	56	45	H2	25119.623	ppb	0.4	340440202.67	25000	100.48	90	110	
Co	59	45	No Gas	252.424	ppb	2.0	6033090.83	250	100.97	90	110	
Ni	60	45	He	261.993	ppb	0.8	630695.12	250	104.8	90	110	
Cu	63	45	He	258.321	ppb	0.5	1645227.59	250	103.33	90	110	
Zn	66	72	No Gas	248.221	ppb	1.7	997253.75	250	99.29	90	110	
As	75	72	He	252.104	ppb	0.2	326624.32	250	100.84	90	110	
Se	78	72	H2	251.362	ppb	0.6	107456.58	250	100.54	90	110	
Sr	88	72	No Gas	251.174	ppb	2.4	8470879.11	250	100.47	90	110	
Zr	90	72	No Gas	24.345	ppb	1.6	524379.67	25	97.38	90	110	
Mo	95	115	No Gas	239.642	ppb	0.6	1610619.14	250	95.86	90	110	
Ag	107	115	No Gas	24.765	ppb	0.9	418441.86	25	99.06	90	110	
Cd	111	115	No Gas	246.665	ppb	1.2	883213.29	250	98.67	90	110	
Sn	118	115	No Gas	248.204	ppb	1.0	2533800.04	250	99.28	90	110	
Sb	123	115	No Gas	49.686	ppb	1.2	595835.65	50	99.37	90	110	
Ba	137	115	No Gas	493.996	ppb	0.7	2543344.41	500	98.8	90	110	
W	182	159	No Gas	25.141	ppb	0.9	309406.30	25	100.56	90	110	
Hg	201	159	He	2.465	ppb	1.8	2692.62	2.5	98.6	90	110	
Tl	205	159	No Gas	255.928	ppb	1.9	7044644.03	250	102.37	90	110	
Pb	208	159	No Gas	255.207	ppb	1.7	9770166.38	250	102.08	90	110	
U	238	159	No Gas	251.109	ppb	1.2	9663993.79	250	100.44	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1939130.96	0.7	2024514.1	95.78	60	120	
Sc	45	No Gas	5435603.17	0.6	5611190.83	96.87	60	120	
Sc	45	H2	3287253.33	0.4	3273621	100.42	60	120	
Sc	45	He	610872.58	0.5	627589.54	97.34	60	120	
Ge	72	No Gas	1324090.42	0.4	1369739.92	96.67	60	120	
Ge	72	H2	900829.17	0.2	908196.82	99.19	60	120	
Ge	72	He	374981.34	0.4	384192.24	97.6	60	120	
In	115	No Gas	8264232.20	1.1	8531303.38	96.87	60	120	
Tb	159	No Gas	11046281.78	0.7	11065773.73	99.82	60	120	
Tb	159	He	6066266.17	0.7	5978695.83	101.46	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB2
File Name	H6F21026.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 12:09:37
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	112025.71	0.4	
Be	9	6	No Gas	0.012	ppb	40.5	76.67	0.08	
B	11	6	No Gas	0.417	ppb	76.2	24878.65	4	
Na	23	45	H2	16.413	ppb	4.2	475288.17	40	
Mg	24	45	No Gas	12.742	ppb	43.4	165065.86	10	>LOD
Al	27	45	No Gas	12.328	ppb	42.8	182160.74	15	
Si	28	45	H2	0.952	ppb	11.7	4934.21	8	
P	31	45	No Gas	0.533	ppb	123.4	23041.09	10	
K	39	45	He	8.384	ppb	67.6	120863.99	20	
Ca	40	45	H2	4.552	ppb	9.6	180994.05	25	
Ti	47	45	No Gas	0.123	ppb	35.2	522.68	0.5	
V	51	45	He	0.120	ppb	16.8	7391.33	0.5	
Cr	52	45	He	0.008	ppb	53.9	1231.39	0.2	
Mn	55	45	No Gas	0.774	ppb	41.3	31826.85	0.2	>LOD
Fe	56	45	H2	5.103	ppb	9.9	78875.36	10	
Co	59	45	No Gas	0.131	ppb	45.5	3339.81	0.15	
Ni	60	45	He	0.024	ppb	35.1	180.67	0.2	
Cu	63	45	He	0.042	ppb	13.3	1694.11	0.4	
Zn	66	72	No Gas	0.176	ppb	30.7	2714.28	2	
As	75	72	He	0.039	ppb	36.7	388.34	0.2	
Se	78	72	H2	0.080	ppb	7.3	55.33	0.2	
Sr	88	72	No Gas	0.116	ppb	42.2	4537.52	0.2	
Zr	90	72	No Gas	0.010	ppb	35.6	393.34	2	
Mo	95	115	No Gas	0.134	ppb	40.0	960.04	0.2	
Ag	107	115	No Gas	0.013	ppb	43.0	285.56	0.08	
Cd	111	115	No Gas	0.147	ppb	41.0	567.31	0.2	
Sn	118	115	No Gas	0.126	ppb	30.0	2326.88	0.2	
Sb	123	115	No Gas	0.024	ppb	42.8	414.45	0.4	
Ba	137	115	No Gas	0.219	ppb	50.8	1243.40	0.2	>LOD
W	182	159	No Gas	0.018	ppb	62.7	303.34	0.3	
Hg	201	159	He	0.002	ppb	33.9	16.50	0.1	
Tl	205	159	No Gas	0.184	ppb	34.9	5630.26	0.1	>LOD
Pb	208	159	No Gas	0.153	ppb	37.6	7150.86	0.1	>LOD
U	238	159	No Gas	0.122	ppb	42.7	4792.18	0.05	>LOD

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1965432.02	1.1	2024514.1	97.08	60	120	
Sc	45	No Gas	5423260.83	0.8	5611190.83	96.65	60	120	
Sc	45	H2	3278276.83	0.7	3273621	100.14	60	120	
Sc	45	He	613735.71	0.3	627589.54	97.79	60	120	
Ge	72	No Gas	1336084.79	0.3	1369739.92	97.54	60	120	
Ge	72	H2	908877.27	0.9	908196.82	100.07	60	120	
Ge	72	He	377113.58	1.3	384192.24	98.16	60	120	
In	115	No Gas	8434305.77	1.5	8531303.38	98.86	60	120	
Tb	159	No Gas	11165123.72	1.1	11065773.73	100.9	60	120	
Tb	159	He	6042202.33	0.4	5978695.83	101.06	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV9
File Name	H6F21093.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:15:51
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.120	ppb	3.9	343125.64	25	100.48	90	110	
Be	9	6	No Gas	24.316	ppb	4.7	75500.96	25	97.26	90	110	
B	11	6	No Gas	51.860	ppb	7.2	113845.87	50	103.72	90	110	
Na	23	45	H2	25482.692	ppb	1.0	109363496.00	25000	101.93	90	110	
Mg	24	45	No Gas	25523.870	ppb	3.1	272837520.00	25000	102.1	90	110	
Al	27	45	No Gas	25398.588	ppb	3.0	353536434.73	25000	101.59	90	110	
Si	28	45	H2	2561.313	ppb	0.8	3183945.50	2500	102.45	90	110	
P	31	45	No Gas	253.750	ppb	1.8	243599.42	250	101.5	90	110	
K	39	45	He	25336.656	ppb	1.1	20551458.00	25000	101.35	90	110	
Ca	40	45	H2	25375.975	ppb	1.1	231843232.00	25000	101.5	90	110	
Ti	47	45	No Gas	250.805	ppb	2.2	432174.96	250	100.32	90	110	
V	51	45	He	244.078	ppb	1.2	1556703.04	250	97.63	90	110	
Cr	52	45	He	244.700	ppb	0.5	1784248.79	250	97.88	90	110	
Mn	55	45	No Gas	1518.743	ppb	3.1	43432160.00	1500	101.25	90	110	
Fe	56	45	H2	25900.922	ppb	0.8	335258218.67	25000	103.6	90	110	
Co	59	45	No Gas	254.360	ppb	2.4	5959126.50	250	101.74	90	110	
Ni	60	45	He	249.323	ppb	0.9	608035.81	250	99.73	90	110	
Cu	63	45	He	243.892	ppb	1.3	1573672.46	250	97.56	90	110	
Zn	66	72	No Gas	246.976	ppb	1.9	973316.56	250	98.79	90	110	
As	75	72	He	247.140	ppb	0.8	319163.24	250	98.86	90	110	
Se	78	72	H2	247.255	ppb	0.4	103578.73	250	98.9	90	110	
Sr	88	72	No Gas	249.122	ppb	1.8	8241082.45	250	99.65	90	110	
Zr	90	72	No Gas	24.440	ppb	1.3	516381.67	25	97.76	90	110	
Mo	95	115	No Gas	244.666	ppb	2.8	1576724.00	250	97.87	90	110	
Ag	107	115	No Gas	25.081	ppb	1.5	406365.24	25	100.32	90	110	
Cd	111	115	No Gas	247.801	ppb	1.2	850860.57	250	99.12	90	110	
Sn	118	115	No Gas	248.488	ppb	1.8	2432382.33	250	99.4	90	110	
Sb	123	115	No Gas	49.841	ppb	1.7	573165.29	50	99.68	90	110	
Ba	137	115	No Gas	502.953	ppb	3.0	2482844.90	500	100.59	90	110	
W	182	159	No Gas	25.466	ppb	1.4	298802.87	25	101.86	90	110	
Hg	201	159	He	2.479	ppb	1.4	2599.77	2.5	99.16	90	110	
Tl	205	159	No Gas	254.977	ppb	2.1	6691676.40	250	101.99	90	110	
Pb	208	159	No Gas	254.066	ppb	1.0	9273386.46	250	101.63	90	110	
U	238	159	No Gas	244.229	ppb	0.5	8961354.92	250	97.69	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1994471.93	3.0	2024514.1	98.52	60	120	
Sc	45	No Gas	5328891.33	1.1	5611190.83	94.97	60	120	
Sc	45	H2	3139664.08	0.6	3273621	95.91	60	120	
Sc	45	He	618851.54	0.6	627589.54	98.61	60	120	
Ge	72	No Gas	1298786.83	0.2	1369739.92	94.82	60	120	
Ge	72	H2	882726.29	0.5	908196.82	97.2	60	120	
Ge	72	He	373778.52	0.7	384192.24	97.29	60	120	
In	115	No Gas	7924824.34	0.4	8531303.38	92.89	60	120	
Tb	159	No Gas	10531734.58	0.6	11065773.73	95.17	60	120	
Tb	159	He	5823366.17	0.7	5978695.83	97.4	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB9
File Name	H6F21094.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:21:39
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.059	ppb	166.9	118767.08	0.4	
Be	9	6	No Gas	0.005	ppb	110.7	57.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	5356.61	4	
Na	23	45	H2	89.031	ppb	2.1	785916.40	40	>LOD
Mg	24	45	No Gas	3.142	ppb	20.2	62057.65	10	
Al	27	45	No Gas	2.166	ppb	20.6	39149.32	15	
Si	28	45	H2	<0.000	ppb	N/A	3211.71	8	
P	31	45	No Gas	<0.000	ppb	N/A	20765.50	10	
K	39	45	He	11.464	ppb	38.8	128203.53	20	
Ca	40	45	H2	5.261	ppb	5.3	184536.56	25	
Tl	47	45	No Gas	0.010	ppb	61.3	332.00	0.5	
V	51	45	He	<0.000	ppb	N/A	5776.56	0.5	
Cr	52	45	He	<0.000	ppb	N/A	930.70	0.2	
Mn	55	45	No Gas	0.103	ppb	25.9	12592.48	0.2	
Fe	56	45	H2	1.641	ppb	6.1	31514.97	10	
Co	59	45	No Gas	0.019	ppb	24.1	687.35	0.15	
Ni	60	45	He	<0.000	ppb	N/A	89.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	877.36	0.4	
Zn	66	72	No Gas	0.239	ppb	8.8	2952.99	2	
As	75	72	He	<0.000	ppb	N/A	289.00	0.2	
Se	78	72	H2	<0.000	ppb	N/A	17.67	0.2	
Sr	88	72	No Gas	0.028	ppb	25.8	1531.20	0.2	
Zr	90	72	No Gas	0.001	ppb	211.6	193.33	2	
Mo	95	115	No Gas	0.020	ppb	17.2	178.89	0.2	
Ag	107	115	No Gas	0.003	ppb	49.7	110.00	0.08	
Cd	111	115	No Gas	0.013	ppb	45.1	78.84	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	684.46	0.2	
Sb	123	115	No Gas	0.002	ppb	24.1	137.78	0.4	
Ba	137	115	No Gas	0.049	ppb	15.0	354.45	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	36.67	0.3	
Hg	201	159	He	<0.000	ppb	N/A	9.83	0.1	
Tl	205	159	No Gas	0.020	ppb	31.6	1041.16	0.1	
Pb	208	159	No Gas	0.019	ppb	44.4	1894.51	0.1	
U	238	159	No Gas	0.019	ppb	22.7	736.69	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2051892.35	0.6	2024514.1	101.35	60	120	
Sc	45	No Gas	5545088.83	1.0	5611190.83	98.82	60	120	
Sc	45	H2	3222511.17	1.1	3273621	98.44	60	120	
Sc	45	He	638014.67	1.1	627589.54	101.66	60	120	
Ge	72	No Gas	1328794.75	0.5	1369739.92	97.01	60	120	
Ge	72	H2	898632.81	1.8	908196.82	98.95	60	120	
Ge	72	He	383104.73	0.4	384192.24	99.72	60	120	
In	115	No Gas	8414573.16	1.1	8531303.38	98.63	60	120	
Tb	159	No Gas	10753189.02	1.6	11065773.73	97.18	60	120	
Tb	159	He	5819563.67	0.3	5978695.83	97.34	60	120	

Sample Report

Sample Name	F178-01
File Name	H6F21095.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:24:15
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	20.190	20.190	ppb	2.0	285585.69	50	
Be	9	6	No Gas	0.000	0.000	ppb	1249.6	37.78	50	
B	11	6	No Gas	79.122	79.122	ppb	3.8	154004.33	100	
Na	23	45	H2	54907.444	54907.444	ppb	0.7	241935888.00	50000	>LDR
Mg	24	45	No Gas	49674.240	49674.240	ppb	1.6	532860458.67	50000	>LDR
Al	27	45	No Gas	78.707	78.707	ppb	3.1	1106951.10	50000	
Si	28	45	H2	8410.703	8410.703	ppb	0.6	10746484.00	5000	>LDR
P	31	45	No Gas	11.656	11.656	ppb	1.4	32457.86	500	
K	39	45	He	2494.578	2494.578	ppb	1.0	2113412.25	50000	
Ca	40	45	H2	144660.255	144660.255	ppb	0.2	1358906069.33	50000	>LDR
Ti	47	45	No Gas	0.565	0.565	ppb	7.2	1278.73	500	
V	51	45	He	2.479	2.479	ppb	1.1	22287.43	500	
Cr	52	45	He	17.726	17.726	ppb	0.6	129484.71	500	
Mn	55	45	No Gas	12.280	12.280	ppb	0.9	361520.67	3000	
Fe	56	45	H2	192.212	192.212	ppb	0.8	2568800.00	50000	
Co	59	45	No Gas	1.517	1.517	ppb	1.1	35879.82	500	
Ni	60	45	He	50.772	50.772	ppb	0.6	123105.91	500	
Cu	63	45	He	1.099	1.099	ppb	2.8	8467.97	500	
Zn	66	72	No Gas	1.872	1.872	ppb	1.3	9401.26	500	
As	75	72	He	0.746	0.746	ppb	4.2	1283.73	500	
Se	78	72	H2	0.835	0.835	ppb	6.4	370.34	500	
Sr	88	72	No Gas	1077.154	1077.154	ppb	2.1	35993971.90	500	>LDR
Zr	90	72	No Gas	0.025	0.025	ppb	18.2	713.36	50	
Mo	95	115	No Gas	10.175	10.175	ppb	2.2	66391.54	500	
Ag	107	115	No Gas	0.365	0.365	ppb	1.6	6036.94	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	19.42	500	
Sn	118	115	No Gas	0.072	0.072	ppb	14.1	1684.55	500	
Sb	123	115	No Gas	0.068	0.068	ppb	9.5	900.03	100	
Ba	137	115	No Gas	46.800	46.800	ppb	1.6	233884.70	1000	
W	182	159	No Gas	0.054	0.054	ppb	7.0	710.02	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	0.007	0.007	ppb	23.9	691.13	500	
Pb	208	159	No Gas	0.047	0.047	ppb	6.5	2861.24	500	
U	238	159	No Gas	1.520	1.520	ppb	0.7	55793.26	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1908366.18	0.6	2024514.1	94.26	60	120	
Sc	45	No Gas	5346914.33	0.7	5611190.83	95.29	60	120	
Sc	45	H2	3229533.42	1.1	3273621	98.65	60	120	
Sc	45	He	614782.60	0.8	627589.54	97.96	60	120	
Ge	72	No Gas	1311985.21	0.2	1369739.92	95.78	60	120	
Ge	72	H2	884342.08	0.9	908196.82	97.37	60	120	
Ge	72	He	370106.04	1.0	384192.24	96.33	60	120	
In	115	No Gas	8019867.45	0.7	8531303.38	94.01	60	120	
Tb	159	No Gas	10524134.31	1.1	11065773.73	95.11	60	120	
Tb	159	He	5800217.50	0.6	5978695.83	97.01	60	120	

Sample Report

Sample Name	F178-02
File Name	H6F21096.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:26:53
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.526	13.526	ppb	2.3	236484.65	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	24.44	50	
B	11	6	No Gas	40.816	40.816	ppb	1.8	94355.34	100	
Na	23	45	H2	25703.906	25703.906	ppb	1.4	111762960.00	50000	
Mg	24	45	No Gas	37494.580	37494.580	ppb	2.7	403945002.67	50000	
Al	27	45	No Gas	5.018	5.018	ppb	9.0	77933.12	50000	
Si	28	45	H2	8784.198	8784.198	ppb	1.3	11054737.00	5000	>LDR
P	31	45	No Gas	3.025	3.025	ppb	11.9	25010.48	500	
K	39	45	He	2114.345	2114.345	ppb	1.0	1786435.13	50000	
Ca	40	45	H2	118398.044	118398.044	ppb	0.9	1095556053.33	50000	>LDR
Ti	47	45	No Gas	0.389	0.389	ppb	3.7	979.37	500	
V	51	45	He	1.505	1.505	ppb	1.5	15945.26	500	
Cr	52	45	He	0.407	0.407	ppb	4.9	4069.27	500	
Mn	55	45	No Gas	110.459	110.459	ppb	3.0	3192245.17	3000	
Fe	56	45	H2	7.668	7.668	ppb	3.2	110128.51	50000	
Co	59	45	No Gas	0.520	0.520	ppb	1.2	12489.72	500	
Ni	60	45	He	1.522	1.522	ppb	4.1	3761.19	500	
Cu	63	45	He	0.060	0.060	ppb	0.8	1788.12	500	
Zn	66	72	No Gas	2.283	2.283	ppb	1.1	10884.36	500	
As	75	72	He	0.356	0.356	ppb	4.6	783.35	500	
Se	78	72	H2	1.004	1.004	ppb	3.1	439.01	500	
Sr	88	72	No Gas	920.423	920.423	ppb	1.6	30342698.80	500	>LDR
Zr	90	72	No Gas	0.016	0.016	ppb	12.8	520.01	50	
Mo	95	115	No Gas	2.550	2.550	ppb	0.4	16959.67	500	
Ag	107	115	No Gas	0.064	0.064	ppb	3.7	1117.83	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	2.88	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	858.92	500	
Sb	123	115	No Gas	0.052	0.052	ppb	14.8	724.46	100	
Ba	137	115	No Gas	40.599	40.599	ppb	1.9	206441.46	1000	
W	182	159	No Gas	0.029	0.029	ppb	33.4	426.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	337.79	500	
Pb	208	159	No Gas	0.024	0.024	ppb	11.9	2066.74	500	
U	238	159	No Gas	1.362	1.362	ppb	1.3	50605.31	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1982548.65	0.9	2024514.1	97.93	60	120	
Sc	45	No Gas	5371223.17	1.4	5611190.83	95.72	60	120	
Sc	45	H2	3181388.33	1.9	3273621	97.18	60	120	
Sc	45	He	607261.65	0.6	627589.54	96.76	60	120	
Ge	72	No Gas	1294237.96	0.9	1369739.92	94.49	60	120	
Ge	72	H2	879221.71	0.6	908196.82	96.81	60	120	
Ge	72	He	368890.57	0.5	384192.24	96.02	60	120	
In	115	No Gas	8159652.33	0.9	8531303.38	95.64	60	120	
Tb	159	No Gas	10655479.85	0.5	11065773.73	96.29	60	120	
Tb	159	He	5776116.17	0.2	5978695.83	96.61	60	120	

Sample Report

Sample Name	F178-04
File Name	H6F21097.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:29:30
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.283	19.283	ppb	1.6	291293.88	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	34.44	50	
B	11	6	No Gas	179.501	179.501	ppb	2.5	335289.09	100	>LDR
Na	23	45	H2	62456.614	62456.614	ppb	2.9	273411738.67	50000	>LDR
Mg	24	45	No Gas	61529.448	61529.448	ppb	2.7	661697152.00	50000	>LDR
Al	27	45	No Gas	93.299	93.299	ppb	3.2	1314150.74	50000	
Si	28	45	H2	8014.128	8014.128	ppb	3.2	10175301.33	5000	>LDR
P	31	45	No Gas	11.369	11.369	ppb	1.7	32291.46	500	
K	39	45	He	2894.274	2894.274	ppb	0.1	2424486.33	50000	
Ca	40	45	H2	168968.282	168968.282	ppb	1.2	1577344810.67	50000	>LDR
Ti	47	45	No Gas	0.454	0.454	ppb	16.2	1090.72	500	
V	51	45	He	2.223	2.223	ppb	1.6	20590.10	500	
Cr	52	45	He	4.847	4.847	ppb	2.1	36118.82	500	
Mn	55	45	No Gas	1.798	1.798	ppb	2.1	60943.35	3000	
Fe	56	45	H2	42.799	42.799	ppb	0.2	575995.29	50000	
Co	59	45	No Gas	0.213	0.213	ppb	1.3	5242.34	500	
Ni	60	45	He	2.794	2.794	ppb	0.4	6865.73	500	
Cu	63	45	He	0.604	0.604	ppb	5.5	5277.03	500	
Zn	66	72	No Gas	2.048	2.048	ppb	2.7	9973.00	500	
As	75	72	He	0.754	0.754	ppb	1.7	1289.39	500	
Se	78	72	H2	0.779	0.779	ppb	16.2	349.34	500	
Sr	88	72	No Gas	1180.202	1180.202	ppb	2.1	38924080.68	500	>LDR
Zr	90	72	No Gas	0.008	0.008	ppb	63.3	333.34	50	
Mo	95	115	No Gas	1.514	1.514	ppb	1.2	9974.84	500	
Ag	107	115	No Gas	0.090	0.090	ppb	3.1	1544.54	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-27.92	500	
Sn	118	115	No Gas	0.024	0.024	ppb	17.6	1208.94	500	
Sb	123	115	No Gas	0.098	0.098	ppb	5.8	1263.39	100	
Ba	137	115	No Gas	72.793	72.793	ppb	0.7	366152.65	1000	
W	182	159	No Gas	0.025	0.025	ppb	23.5	373.34	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	257.78	500	
Pb	208	159	No Gas	0.010	0.010	ppb	13.7	1526.71	500	
U	238	159	No Gas	1.672	1.672	ppb	0.9	62017.65	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2001756.27	0.4	2024514.1	98.88	60	120	
Sc	45	No Gas	5360970.50	0.4	5611190.83	95.54	60	120	
Sc	45	H2	3209562.00	0.7	3273621	98.04	60	120	
Sc	45	He	612485.54	1.7	627589.54	97.59	60	120	
Ge	72	No Gas	1294803.42	0.8	1369739.92	94.53	60	120	
Ge	72	H2	891263.15	1.3	908196.82	98.14	60	120	
Ge	72	He	368779.32	0.4	384192.24	95.99	60	120	
In	115	No Gas	8072768.39	0.9	8531303.38	94.63	60	120	
Tb	159	No Gas	10635739.86	1.0	11065773.73	96.11	60	120	
Tb	159	He	5723449.33	0.3	5978695.83	95.73	60	120	

Sample Report

Sample Name	F178-05
File Name	H6F21098.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:32:07
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	68.875	68.875	ppb	2.7	732392.54	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	35.56	50	
B	11	6	No Gas	262.507	262.507	ppb	3.6	471535.24	100	>LDR
Na	23	45	H2	177307.553	177307.553	ppb	1.0	777015445.33	50000	>LDR
Mg	24	45	No Gas	75075.498	75075.498	ppb	1.4	801897770.67	50000	>LDR
Al	27	45	No Gas	29.793	29.793	ppb	9.8	422114.86	50000	
Si	28	45	H2	10529.505	10529.505	ppb	1.0	13394804.67	5000	>LDR
P	31	45	No Gas	16.354	16.354	ppb	3.8	36410.95	500	
K	39	45	He	4932.350	4932.350	ppb	0.2	4028817.67	50000	
Ca	40	45	H2	168936.802	168936.802	ppb	0.4	1580112597.33	50000	>LDR
Ti	47	45	No Gas	0.955	0.955	ppb	22.1	1944.85	500	
V	51	45	He	1.844	1.844	ppb	1.9	18107.94	500	
Cr	52	45	He	6.226	6.226	ppb	0.6	45811.70	500	
Mn	55	45	No Gas	3.327	3.327	ppb	1.8	104187.24	3000	
Fe	56	45	H2	106.897	106.897	ppb	1.1	1426778.75	50000	
Co	59	45	No Gas	0.309	0.309	ppb	0.7	7456.71	500	
Ni	60	45	He	2.800	2.800	ppb	2.2	6841.05	500	
Cu	63	45	He	0.364	0.364	ppb	3.1	3727.85	500	
Zn	66	72	No Gas	1.558	1.558	ppb	2.1	7951.66	500	
As	75	72	He	0.581	0.581	ppb	3.1	1061.37	500	
Se	78	72	H2	2.449	2.449	ppb	1.2	1031.37	500	
Sr	88	72	No Gas	1433.940	1433.940	ppb	1.9	46713769.25	500	>LDR
Zr	90	72	No Gas	0.029	0.029	ppb	11.2	770.03	50	
Mo	95	115	No Gas	1.331	1.331	ppb	2.0	8631.69	500	
Ag	107	115	No Gas	0.076	0.076	ppb	5.7	1285.62	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	2.52	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	812.25	500	
Sb	123	115	No Gas	0.073	0.073	ppb	11.7	948.92	100	
Ba	137	115	No Gas	65.540	65.540	ppb	1.2	324297.39	1000	
W	182	159	No Gas	0.012	0.012	ppb	7.7	220.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	196.67	500	
Pb	208	159	No Gas	0.086	0.086	ppb	8.0	4338.07	500	
U	238	159	No Gas	3.910	3.910	ppb	0.5	144245.10	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1971158.35	1.3	2024514.1	97.36	60	120	
Sc	45	No Gas	5323987.00	1.0	5611190.83	94.88	60	120	
Sc	45	H2	3215585.00	0.4	3273621	98.23	60	120	
Sc	45	He	609048.62	0.8	627589.54	97.05	60	120	
Ge	72	No Gas	1279132.88	0.8	1369739.92	93.39	60	120	
Ge	72	H2	870316.83	0.2	908196.82	95.83	60	120	
Ge	72	He	366083.80	1.1	384192.24	95.29	60	120	
In	115	No Gas	7941442.80	1.0	8531303.38	93.09	60	120	
Tb	159	No Gas	10585140.69	0.5	11065773.73	95.66	60	120	
Tb	159	He	5780631.67	0.5	5978695.83	96.69	60	120	

Sample Report

Sample Name	F178-07
File Name	H6F21099.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:34:45
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	41.129	41.129	ppb	2.9	503462.67	50	
Be	9	6	No Gas	0.001	0.001	ppb	111.6	43.33	50	
B	11	6	No Gas	240.030	240.030	ppb	3.4	451539.63	100	>LDR
Na	23	45	H2	136720.850	136720.850	ppb	0.4	601829482.67	50000	>LDR
Mg	24	45	No Gas	65054.516	65054.516	ppb	2.1	695657002.67	50000	>LDR
Al	27	45	No Gas	88.207	88.207	ppb	3.6	1235529.96	50000	
Si	28	45	H2	10029.751	10029.751	ppb	0.7	12813996.00	5000	>LDR
P	31	45	No Gas	24.927	24.927	ppb	1.4	43937.34	500	
K	39	45	He	4035.230	4035.230	ppb	0.9	3299441.58	50000	
Ca	40	45	H2	165689.539	165689.539	ppb	0.3	1556396416.00	50000	>LDR
Ti	47	45	No Gas	1.725	1.725	ppb	10.9	3273.09	500	
V	51	45	He	1.597	1.597	ppb	2.1	16483.23	500	
Cr	52	45	He	1.736	1.736	ppb	1.5	13544.02	500	
Mn	55	45	No Gas	6.733	6.733	ppb	0.9	201752.21	3000	
Fe	56	45	H2	103.087	103.087	ppb	1.0	1382211.79	50000	
Co	59	45	No Gas	0.215	0.215	ppb	2.9	5261.68	500	
Ni	60	45	He	2.263	2.263	ppb	3.3	5523.79	500	
Cu	63	45	He	0.292	0.292	ppb	4.0	3251.06	500	
Zn	66	72	No Gas	2.916	2.916	ppb	3.2	13374.59	500	
As	75	72	He	0.513	0.513	ppb	7.1	956.37	500	
Se	78	72	H2	2.606	2.606	ppb	1.4	1094.38	500	
Sr	88	72	No Gas	1360.033	1360.033	ppb	1.8	44855049.33	500	>LDR
Zr	90	72	No Gas	0.162	0.162	ppb	12.8	3577.28	50	
Mo	95	115	No Gas	0.830	0.830	ppb	4.1	5377.75	500	
Ag	107	115	No Gas	0.080	0.080	ppb	0.2	1351.18	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	12.19	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	921.15	500	
Sb	123	115	No Gas	0.076	0.076	ppb	1.5	980.04	100	
Ba	137	115	No Gas	46.369	46.369	ppb	0.5	228571.77	1000	
W	182	159	No Gas	0.023	0.023	ppb	14.3	350.01	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	415.57	500	
Pb	208	159	No Gas	0.130	0.130	ppb	5.8	5937.24	500	
U	238	159	No Gas	2.980	2.980	ppb	2.2	109893.74	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2054096.25	0.2	2024514.1	101.46	60	120	
Sc	45	No Gas	5330040.00	1.0	5611190.83	94.99	60	120	
Sc	45	H2	3229463.17	0.6	3273621	98.65	60	120	
Sc	45	He	605893.42	0.4	627589.54	96.54	60	120	
Ge	72	No Gas	1295110.46	2.0	1369739.92	94.55	60	120	
Ge	72	H2	869157.19	0.5	908196.82	95.7	60	120	
Ge	72	He	359113.98	0.6	384192.24	93.47	60	120	
In	115	No Gas	7909891.89	0.8	8531303.38	92.72	60	120	
Tb	159	No Gas	10581999.30	0.9	11065773.73	95.63	60	120	
Tb	159	He	5721707.00	0.3	5978695.83	95.7	60	120	

Sample Report

Sample Name	F178-08
File Name	H6F21100.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:37:22
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	40.502	40.502	ppb	0.8	501173.83	50	
Be	9	6	No Gas	0.002	0.002	ppb	134.6	45.55	50	
B	11	6	No Gas	238.584	238.584	ppb	1.4	452238.63	100	>LDR
Na	23	45	H2	138393.903	138393.903	ppb	1.9	603349354.67	50000	>LDR
Mg	24	45	No Gas	65744.745	65744.745	ppb	1.5	702474666.67	50000	>LDR
Al	27	45	No Gas	100.502	100.502	ppb	11.1	1405953.34	50000	
Si	28	45	H2	10074.867	10074.867	ppb	2.3	12748297.67	5000	>LDR
P	31	45	No Gas	23.973	23.973	ppb	3.1	43073.98	500	
K	39	45	He	4080.414	4080.414	ppb	1.9	3312269.00	50000	
Ca	40	45	H2	168734.903	168734.903	ppb	1.1	1569873109.33	50000	>LDR
Ti	47	45	No Gas	1.848	1.848	ppb	17.6	3481.91	500	
V	51	45	He	1.577	1.577	ppb	2.6	16242.94	500	
Cr	52	45	He	1.621	1.621	ppb	1.7	12632.49	500	
Mn	55	45	No Gas	6.374	6.374	ppb	2.7	191326.81	3000	
Fe	56	45	H2	105.028	105.028	ppb	3.5	1394891.00	50000	
Co	59	45	No Gas	0.207	0.207	ppb	2.9	5066.28	500	
Ni	60	45	He	2.264	2.264	ppb	1.1	5487.11	500	
Cu	63	45	He	0.312	0.312	ppb	4.3	3356.42	500	
Zn	66	72	No Gas	3.354	3.354	ppb	3.5	14946.89	500	
As	75	72	He	0.546	0.546	ppb	3.5	1000.37	500	
Se	78	72	H2	2.705	2.705	ppb	4.4	1121.71	500	
Sr	88	72	No Gas	1371.476	1371.476	ppb	1.9	44804287.11	500	>LDR
Zr	90	72	No Gas	0.142	0.142	ppb	4.5	3127.05	50	
Mo	95	115	No Gas	0.834	0.834	ppb	5.7	5467.79	500	
Ag	107	115	No Gas	0.073	0.073	ppb	5.0	1251.17	50	
Cd	111	115	No Gas	0.001	0.001	ppb	268.5	32.75	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	855.58	500	
Sb	123	115	No Gas	0.068	0.068	ppb	7.1	907.81	100	
Ba	137	115	No Gas	45.217	45.217	ppb	1.7	225610.90	1000	
W	182	159	No Gas	0.019	0.019	ppb	10.4	303.33	50	
Hg	201	159	He	0.000	0.000	ppb	3883.5	13.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	421.12	500	
Pb	208	159	No Gas	0.119	0.119	ppb	1.5	5559.39	500	
U	238	159	No Gas	2.907	2.907	ppb	2.6	107970.02	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2068786.29	0.9	2024514.1	102.19	60	120	
Sc	45	No Gas	5326068.50	0.1	5611190.83	94.92	60	120	
Sc	45	H2	3198739.33	0.6	3273621	97.71	60	120	
Sc	45	He	601785.54	0.7	627589.54	95.89	60	120	
Ge	72	No Gas	1282657.08	0.6	1369739.92	93.64	60	120	
Ge	72	H2	859033.04	2.1	908196.82	94.59	60	120	
Ge	72	He	360106.73	0.9	384192.24	93.73	60	120	
In	115	No Gas	8006861.55	0.9	8531303.38	93.85	60	120	
Tb	159	No Gas	10656714.85	0.1	11065773.73	96.3	60	120	
Tb	159	He	5789630.00	0.5	5978695.83	96.84	60	120	

Sample Report

Sample Name	F178-10
File Name	H6F21101.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:39:59
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	51.241	51.241	ppb	3.3	606073.95	50	>LDR
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	38.89	50	
B	11	6	No Gas	262.221	262.221	ppb	4.3	497416.46	100	>LDR
Na	23	45	H2	86710.891	86710.891	ppb	1.4	384529440.00	50000	>LDR
Mg	24	45	No Gas	75721.957	75721.957	ppb	1.6	811049749.33	50000	>LDR
Al	27	45	No Gas	81.164	81.164	ppb	1.6	1139617.43	50000	
Si	28	45	H2	10271.416	10271.416	ppb	1.2	13215824.33	5000	>LDR
P	31	45	No Gas	14.063	14.063	ppb	1.9	34511.47	500	
K	39	45	He	3954.499	3954.499	ppb	1.4	3260333.00	50000	
Ca	40	45	H2	160554.174	160554.174	ppb	1.7	1518825045.33	50000	>LDR
Ti	47	45	No Gas	0.532	0.532	ppb	14.9	1219.39	500	
V	51	45	He	1.857	1.857	ppb	1.1	18233.45	500	
Cr	52	45	He	3.433	3.433	ppb	1.3	25843.00	500	
Mn	55	45	No Gas	3.083	3.083	ppb	0.7	97498.07	3000	
Fe	56	45	H2	73.760	73.760	ppb	2.9	998601.23	50000	
Co	59	45	No Gas	0.390	0.390	ppb	1.8	9369.89	500	
Ni	60	45	He	4.202	4.202	ppb	2.6	10227.17	500	
Cu	63	45	He	0.587	0.587	ppb	5.2	5148.98	500	
Zn	66	72	No Gas	3.057	3.057	ppb	2.5	13830.37	500	
As	75	72	He	0.635	0.635	ppb	2.3	1116.38	500	
Se	78	72	H2	1.843	1.843	ppb	8.3	778.69	500	
Sr	88	72	No Gas	1304.313	1304.313	ppb	0.9	42712584.97	500	>LDR
Zr	90	72	No Gas	0.042	0.042	ppb	42.5	1056.74	50	
Mo	95	115	No Gas	1.016	1.016	ppb	4.7	6702.80	500	
Ag	107	115	No Gas	0.088	0.088	ppb	6.1	1506.76	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	25.32	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	680.02	500	
Sb	123	115	No Gas	0.059	0.059	ppb	9.9	801.14	100	
Ba	137	115	No Gas	68.243	68.243	ppb	1.8	342943.96	1000	
W	182	159	No Gas	0.015	0.015	ppb	43.6	253.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	206.67	500	
Pb	208	159	No Gas	0.015	0.015	ppb	4.4	1751.16	500	
U	238	159	No Gas	2.896	2.896	ppb	2.5	107856.70	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2081737.84	1.5	2024514.1	102.83	60	120	
Sc	45	No Gas	5338551.83	0.9	5611190.83	95.14	60	120	
Sc	45	H2	3252860.17	2.0	3273621	99.37	60	120	
Sc	45	He	610517.79	1.6	627589.54	97.28	60	120	
Ge	72	No Gas	1285735.33	0.6	1369739.92	93.87	60	120	
Ge	72	H2	867819.25	0.6	908196.82	95.55	60	120	
Ge	72	He	361846.52	0.2	384192.24	94.18	60	120	
In	115	No Gas	8064514.64	0.6	8531303.38	94.53	60	120	
Tb	159	No Gas	10686199.57	1.5	11065773.73	96.57	60	120	
Tb	159	He	5824392.83	0.4	5978695.83	97.42	60	120	

Sample Report

Sample Name	F178-11
File Name	H6F21102.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:42:36
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fall	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	27.272	27.272	ppb	1.2	376616.25	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	31.11	50	
B	11	6	No Gas	108.654	108.654	ppb	4.0	219876.23	100	>LDR
Na	23	45	H2	76159.955	76159.955	ppb	2.1	336773088.00	50000	>LDR
Mg	24	45	No Gas	53816.529	53816.529	ppb	2.3	584764842.67	50000	>LDR
Al	27	45	No Gas	24.021	24.021	ppb	1.9	347538.57	50000	
Si	28	45	H2	9377.184	9377.184	ppb	1.7	12029160.00	5000	>LDR
P	31	45	No Gas	10.834	10.834	ppb	2.1	32151.14	500	
K	39	45	He	3019.310	3019.310	ppb	0.5	2492884.00	50000	
Ca	40	45	H2	142382.716	142382.716	ppb	1.1	1342974976.00	50000	>LDR
Ti	47	45	No Gas	0.637	0.637	ppb	14.3	1421.41	500	
V	51	45	He	2.108	2.108	ppb	1.0	19623.36	500	
Cr	52	45	He	1.884	1.884	ppb	2.1	14575.75	500	
Mn	55	45	No Gas	5.805	5.805	ppb	2.3	178026.87	3000	
Fe	56	45	H2	26.247	26.247	ppb	1.0	360725.03	50000	
Co	59	45	No Gas	0.164	0.164	ppb	4.6	4121.29	500	
Ni	60	45	He	0.331	0.331	ppb	4.7	910.03	500	
Cu	63	45	He	0.184	0.184	ppb	3.6	2562.91	500	
Zn	66	72	No Gas	2.154	2.154	ppb	4.7	10533.42	500	
As	75	72	He	0.693	0.693	ppb	3.6	1199.05	500	
Se	78	72	H2	1.739	1.739	ppb	1.7	746.35	500	
Sr	88	72	No Gas	1291.099	1291.099	ppb	3.0	43177502.73	500	>LDR
Zr	90	72	No Gas	0.016	0.016	ppb	45.4	516.69	50	
Mo	95	115	No Gas	0.750	0.750	ppb	6.3	5049.85	500	
Ag	107	115	No Gas	0.069	0.069	ppb	0.4	1217.83	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-3.26	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	934.48	500	
Sb	123	115	No Gas	0.050	0.050	ppb	2.4	713.35	100	
Ba	137	115	No Gas	49.653	49.653	ppb	2.7	254209.75	1000	
W	182	159	No Gas	0.005	0.005	ppb	64.2	146.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	150.00	500	
Pb	208	159	No Gas	0.099	0.099	ppb	4.1	4921.50	500	
U	238	159	No Gas	2.099	2.099	ppb	1.4	79379.29	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2070173.72	1.3	2024514.1	102.26	60	120	
Sc	45	No Gas	5416594.50	0.7	5611190.83	96.53	60	120	
Sc	45	H2	3243011.42	1.4	3273621	99.06	60	120	
Sc	45	He	604851.46	0.1	627589.54	96.38	60	120	
Ge	72	No Gas	1313278.25	0.8	1369739.92	95.88	60	120	
Ge	72	H2	880226.25	0.3	908196.82	96.92	60	120	
Ge	72	He	365009.54	0.9	384192.24	95.01	60	120	
In	115	No Gas	8216214.72	0.9	8531303.38	96.31	60	120	
Tb	159	No Gas	10848179.29	1.2	11065773.73	98.03	60	120	
Tb	159	He	5950830.83	0.7	5978695.83	99.53	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV10
File Name	H6F21103.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:45:13
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.929	ppb	2.2	346325.61	25	103.72	90	110	
Be	9	6	No Gas	24.704	ppb	2.1	75814.65	25	98.82	90	110	
B	11	6	No Gas	55.696	ppb	1.2	119118.03	50	111.39	90	110	> +/- 10%
Na	23	45	H2	25473.843	ppb	0.2	112087760.00	25000	101.9	90	110	
Mg	24	45	No Gas	26476.766	ppb	1.1	276257621.33	25000	105.91	90	110	
Al	27	45	No Gas	26533.556	ppb	2.4	360400807.96	25000	106.13	90	110	
Si	28	45	H2	2517.508	ppb	0.9	3208660.50	2500	100.7	90	110	
P	31	45	No Gas	259.859	ppb	2.3	242898.64	250	103.94	90	110	
K	39	45	He	25382.525	ppb	1.2	20366436.67	25000	101.53	90	110	
Ca	40	45	H2	25078.129	ppb	1.3	234917845.33	25000	100.31	90	110	
Ti	47	45	No Gas	259.351	ppb	2.7	436026.25	250	103.74	90	110	
V	51	45	He	249.238	ppb	1.0	1572265.88	250	99.7	90	110	
Cr	52	45	He	248.745	ppb	0.8	1794127.04	250	99.5	90	110	
Mn	55	45	No Gas	1583.432	ppb	1.4	44197341.33	1500	105.56	90	110	
Fe	56	45	H2	25373.754	ppb	1.2	336741685.33	25000	101.5	90	110	
Co	59	45	No Gas	264.594	ppb	0.8	6051025.67	250	105.84	90	110	
Ni	60	45	He	252.705	ppb	0.3	609642.23	250	101.08	90	110	
Cu	63	45	He	250.212	ppb	0.3	1597011.38	250	100.08	90	110	
Zn	66	72	No Gas	253.462	ppb	1.8	977181.89	250	101.38	90	110	
As	75	72	He	251.583	ppb	1.2	322058.41	250	100.63	90	110	
Se	78	72	H2	244.644	ppb	0.6	103769.31	250	97.86	90	110	
Sr	88	72	No Gas	260.674	ppb	1.9	8436684.11	250	104.27	90	110	
Zr	90	72	No Gas	25.621	ppb	2.0	529592.38	25	102.48	90	110	
Mo	95	115	No Gas	251.881	ppb	3.9	1608366.85	250	100.75	90	110	
Ag	107	115	No Gas	25.891	ppb	4.3	415565.05	25	103.56	90	110	
Cd	111	115	No Gas	253.140	ppb	3.7	861270.12	250	101.26	90	110	
Sn	118	115	No Gas	259.132	ppb	2.6	2514439.34	250	103.65	90	110	
Sb	123	115	No Gas	51.643	ppb	4.1	588391.07	50	103.29	90	110	
Ba	137	115	No Gas	526.142	ppb	3.5	2573833.65	500	105.23	90	110	
W	182	159	No Gas	26.132	ppb	4.2	305554.57	25	104.53	90	110	
Hg	201	159	He	2.461	ppb	0.8	2643.78	2.5	98.44	90	110	
Tl	205	159	No Gas	263.418	ppb	2.8	6892088.61	250	105.37	90	110	
Pb	208	159	No Gas	263.401	ppb	3.5	9582814.10	250	105.36	90	110	
U	238	159	No Gas	257.789	ppb	3.2	9429554.63	250	103.12	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1970195.04	2.2	2024514.1	97.32	60	120	
Sc	45	No Gas	5202024.83	3.5	5611190.83	92.71	60	120	
Sc	45	H2	3218920.17	0.4	3273621	98.33	60	120	
Sc	45	He	612166.31	0.4	627589.54	97.54	60	120	
Ge	72	No Gas	1271115.33	3.0	1369739.92	92.8	60	120	
Ge	72	H2	893786.37	0.8	908196.82	98.41	60	120	
Ge	72	He	370513.93	0.4	384192.24	96.44	60	120	
In	115	No Gas	7861731.43	5.0	8531303.38	92.15	60	120	
Tb	159	No Gas	10509392.08	4.8	11065773.73	94.97	60	120	
Tb	159	He	5964699.67	0.8	5978695.83	99.77	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB10
File Name	H6F21104.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:47:49
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.188	ppb	104.6	120020.92	0.4	
Be	9	6	No Gas	0.011	ppb	60.9	75.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	8169.09	4	
Na	23	45	H2	76.178	ppb	3.9	747530.19	40	>LOD
Mg	24	45	No Gas	10.906	ppb	63.3	148322.08	10	>LOD
Al	27	45	No Gas	9.008	ppb	68.8	138122.22	15	
Si	28	45	H2	0.413	ppb	28.8	4267.34	8	
P	31	45	No Gas	<0.000	ppb	N/A	19910.92	10	
K	39	45	He	8.485	ppb	61.1	125325.00	20	
Ca	40	45	H2	5.152	ppb	11.2	188043.93	25	
Ti	47	45	No Gas	0.112	ppb	51.7	514.01	0.5	
V	51	45	He	0.202	ppb	11.9	8195.12	0.5	
Cr	52	45	He	<0.000	ppb	N/A	978.70	0.2	
Mn	55	45	No Gas	0.496	ppb	72.2	24252.60	0.2	>LOD
Fe	56	45	H2	2.011	ppb	16.8	37306.62	10	
Co	59	45	No Gas	0.089	ppb	69.2	2380.94	0.15	
Ni	60	45	He	<0.000	ppb	N/A	85.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1020.04	0.4	
Zn	66	72	No Gas	0.201	ppb	25.1	2860.97	2	
As	75	72	He	0.038	ppb	33.2	392.68	0.2	
Se	78	72	H2	0.028	ppb	70.2	33.00	0.2	
Sr	88	72	No Gas	0.108	ppb	64.1	4336.45	0.2	
Zr	90	72	No Gas	0.005	ppb	148.3	283.34	2	
Mo	95	115	No Gas	0.091	ppb	48.6	671.13	0.2	
Ag	107	115	No Gas	0.009	ppb	73.1	214.45	0.08	
Cd	111	115	No Gas	0.088	ppb	69.7	357.03	0.2	
Sn	118	115	No Gas	0.106	ppb	54.0	2151.30	0.2	
Sb	123	115	No Gas	0.016	ppb	64.1	312.23	0.4	
Ba	137	115	No Gas	0.179	ppb	68.4	1050.06	0.2	
W	182	159	No Gas	0.009	ppb	74.9	200.00	0.3	
Hg	201	159	He	0.001	ppb	639.6	14.50	0.1	
Tl	205	159	No Gas	0.142	ppb	58.8	4453.19	0.1	>LOD
Pb	208	159	No Gas	0.088	ppb	72.3	4638.21	0.1	
U	238	159	No Gas	0.082	ppb	68.6	3213.91	0.05	>LOD

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2052814.86	0.9	2024514.1	101.4	60	120	
Sc	45	No Gas	5542788.00	0.8	5611190.83	98.78	60	120	
Sc	45	H2	3302357.50	1.2	3273621	100.88	60	120	
Sc	45	He	635883.08	0.5	627589.54	101.32	60	120	
Ge	72	No Gas	1358112.38	0.5	1369739.92	99.15	60	120	
Ge	72	H2	915455.44	1.1	908196.82	100.8	60	120	
Ge	72	He	382922.42	1.1	384192.24	99.67	60	120	
In	115	No Gas	8542709.41	0.3	8531303.38	100.13	60	120	
Tb	159	No Gas	11132640.11	1.0	11065773.73	100.6	60	120	
Tb	159	He	6024596.83	1.0	5978695.83	100.77	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2506
File Name	H6F21105.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:50:24
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.059	ppb	8.8	126037.25	1	105.9	80	120	
Be	9	6	No Gas	0.993	ppb	3.8	3162.58	1	99.3	80	120	
B	11	6	No Gas	1.829	ppb	21.4	28018.99	10	18.29	80	120	> +/- 20%
Na	23	45	H2	174.059	ppb	1.2	1173618.04	100	174.06	80	120	> +/- 20%
Mg	24	45	No Gas	106.340	ppb	3.1	1197572.92	100	106.34	80	120	
Al	27	45	No Gas	104.542	ppb	2.9	1506600.19	100	104.54	80	120	
Si	28	45	H2	104.205	ppb	1.7	138137.64	100	104.2	80	120	
P	31	45	No Gas	51.519	ppb	2.1	69134.20	50	103.04	80	120	
K	39	45	He	115.021	ppb	3.5	209976.14	100	115.02	80	120	
Ca	40	45	H2	111.297	ppb	1.5	1192974.87	100	111.3	80	120	
Ti	47	45	No Gas	1.153	ppb	4.6	2355.54	1	115.3	80	120	
V	51	45	He	1.432	ppb	1.4	15945.93	1	143.2	80	120	> +/- 20%
Cr	52	45	He	1.047	ppb	0.4	8900.89	1	104.7	80	120	
Mn	55	45	No Gas	1.115	ppb	0.8	42268.53	1	111.5	80	120	
Fe	56	45	H2	108.977	ppb	1.3	1475690.34	100	108.98	80	120	
Co	59	45	No Gas	1.063	ppb	2.5	25877.23	1	106.3	80	120	
Ni	60	45	He	1.049	ppb	5.2	2709.60	1	104.9	80	120	
Cu	63	45	He	1.054	ppb	1.7	8313.21	1	105.4	80	120	
Zn	66	72	No Gas	10.582	ppb	1.9	45243.22	10	105.82	80	120	
As	75	72	He	1.065	ppb	4.6	1737.44	1	106.5	80	120	
Se	78	72	H2	0.981	ppb	7.1	442.68	1	98.1	80	120	
Sr	88	72	No Gas	2.096	ppb	1.9	72588.35	2	104.8	80	120	
Zr	90	72	No Gas	3.837	ppb	4.0	84352.50	5	76.74	80	120	> +/- 20%
Mo	95	115	No Gas	0.939	ppb	5.4	6456.02	1	93.9	80	120	
Ag	107	115	No Gas	1.054	ppb	2.9	18155.81	1	105.4	80	120	
Cd	111	115	No Gas	1.008	ppb	1.2	3700.68	1	100.8	80	120	
Sn	118	115	No Gas	0.998	ppb	4.0	11363.81	1	99.8	80	120	
Sb	123	115	No Gas	0.990	ppb	0.5	12182.33	1	99	80	120	
Ba	137	115	No Gas	1.161	ppb	3.1	6172.58	1	116.1	80	120	
W	182	159	No Gas	2.165	ppb	2.4	26464.37	2	108.25	80	120	
Hg	201	159	He	0.225	ppb	7.0	255.67	0.1	225	80	120	> +/- 20%
Tl	205	159	No Gas	1.051	ppb	1.3	29175.15	1	105.1	80	120	
Pb	208	159	No Gas	1.021	ppb	1.1	39899.59	1	102.1	80	120	
U	238	159	No Gas	0.972	ppb	2.2	37088.27	1	97.2	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2018513.99	0.5	2024514.1	99.7	60	120	
Sc	45	No Gas	5487539.17	0.8	5611190.83	97.8	60	120	
Sc	45	H2	3262748.67	1.1	3273621	99.67	60	120	
Sc	45	He	625019.58	0.5	627589.54	99.59	60	120	
Ge	72	No Gas	1348816.62	0.3	1369739.92	98.47	60	120	
Ge	72	H2	906629.08	0.9	908196.82	99.83	60	120	
Ge	72	He	380302.59	1.0	384192.24	98.99	60	120	
In	115	No Gas	8401802.57	0.6	8531303.38	98.48	60	120	
Tb	159	No Gas	10938880.68	1.2	11065773.73	98.85	60	120	
Tb	159	He	6004596.00	0.6	5978695.83	100.43	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2507
File Name	H6F21106.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\H6F21.b
Acq Time	2020-06-25 15:53:01
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.630	ppb	18.5	123110.29	0.4	157.5	80	120	> +/- 20%
Be	9	6	No Gas	0.377	ppb	6.5	1234.50	0.4	94.25	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	14240.54	0.4	-1533.25	80	120	> +/- 20%
Na	23	45	H2	101.891	ppb	2.2	859701.29	40	254.73	80	120	> +/- 20%
Mg	24	45	No Gas	42.588	ppb	2.1	497992.77	40	106.47	80	120	
Al	27	45	No Gas	40.384	ppb	2.1	589393.23	40	100.96	80	120	
K	39	45	He	46.956	ppb	10.0	157268.98	40	117.39	80	120	
Ca	40	45	H2	43.001	ppb	1.5	549342.36	40	107.5	80	120	
Ti	47	45	No Gas	0.423	ppb	5.8	1065.38	0.4	105.75	80	120	
V	51	45	He	0.685	ppb	7.5	11350.70	0.4	171.25	80	120	> +/- 20%
Cr	52	45	He	0.362	ppb	4.4	3927.23	0.4	90.5	80	120	
Mn	55	45	No Gas	0.419	ppb	0.7	21866.11	0.4	104.75	80	120	
Fe	56	45	H2	40.802	ppb	1.5	563105.48	40	102	80	120	
Co	59	45	No Gas	0.410	ppb	1.3	10163.79	0.4	102.5	80	120	
Ni	60	45	He	0.370	ppb	0.4	1054.04	0.4	92.5	80	120	
Cu	63	45	He	0.342	ppb	4.7	3743.85	0.4	85.5	80	120	
Zn	66	72	No Gas	4.278	ppb	2.3	19579.44	4	106.95	80	120	
As	75	72	He	0.395	ppb	7.1	858.36	0.4	98.75	80	120	
Se	78	72	H2	0.382	ppb	4.5	185.00	0.4	95.5	80	120	
Sr	88	72	No Gas	0.427	ppb	1.2	15341.02	0.4	106.75	80	120	
Mo	95	115	No Gas	0.349	ppb	5.4	2442.45	0.4	87.25	80	120	
Ag	107	115	No Gas	0.387	ppb	4.8	6736.16	0.4	96.75	80	120	
Cd	111	115	No Gas	0.379	ppb	0.5	1417.67	0.4	94.75	80	120	
Sn	118	115	No Gas	0.350	ppb	3.0	4671.94	0.4	87.5	80	120	
Sb	123	115	No Gas	0.370	ppb	4.3	4657.50	0.4	92.5	80	120	
Ba	137	115	No Gas	0.459	ppb	3.0	2512.47	0.4	114.75	80	120	
Tl	205	159	No Gas	0.393	ppb	1.6	11289.55	0.4	98.25	80	120	
Pb	208	159	No Gas	0.392	ppb	0.4	16186.40	0.4	98	80	120	
U	238	159	No Gas	0.370	ppb	0.6	14251.63	0.4	92.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2035365.91	1.2	2024514.1	100.54	60	120	
Sc	45	No Gas	5512457.50	0.6	5611190.83	98.24	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	3288960.08	1.5	3273621	100.47	60	120	
Sc	45	He	636156.23	0.1	627589.54	101.37	60	120	
Ge	72	No Gas	1354786.33	0.8	1369739.92	98.91	60	120	
Ge	72	H2	905761.10	0.6	908196.82	99.73	60	120	
Ge	72	He	380126.10	0.4	384192.24	98.94	60	120	
In	115	No Gas	8452631.30	0.3	8531303.38	99.08	60	120	
Tb	159	No Gas	11013159.01	0.5	11065773.73	99.52	60	120	
Tb	159	He	5955856.67	1.0	5978695.83	99.62	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLF2508
File Name	H6F21107.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\F\IH6F21.b
Acq Time	2020-06-25 15:55:36
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6F21002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.160	ppb	9.0	129089.88	1	116	80	120	
Be	9	6	No Gas	0.979	ppb	3.7	3169.25	1	97.9	80	120	
B	11	6	No Gas	1.161	ppb	18.6	27300.93	10	11.61	80	120	> +/- 20%
Na	23	45	H2	166.433	ppb	0.5	1129285.79	100	166.43	80	120	> +/- 20%
Mg	24	45	No Gas	107.004	ppb	2.8	1191052.50	100	107	80	120	
Al	27	45	No Gas	105.440	ppb	1.7	1501973.52	100	105.44	80	120	
Si	28	45	H2	104.564	ppb	0.3	137336.18	100	104.56	80	120	
P	31	45	No Gas	51.787	ppb	3.8	68581.56	50	103.57	80	120	
K	39	45	He	114.286	ppb	5.4	208747.92	100	114.29	80	120	
Ca	40	45	H2	110.647	ppb	0.4	1175967.92	100	110.65	80	120	
Ti	47	45	No Gas	1.071	ppb	4.2	2185.51	1	107.1	80	120	
V	51	45	He	1.448	ppb	1.6	15999.34	1	144.8	80	120	> +/- 20%
Cr	52	45	He	1.060	ppb	4.6	8965.60	1	106	80	120	
Mn	55	45	No Gas	1.116	ppb	2.4	41812.44	1	111.6	80	120	
Fe	56	45	H2	108.321	ppb	1.2	1453394.92	100	108.32	80	120	
Co	59	45	No Gas	1.079	ppb	2.3	25943.31	1	107.9	80	120	
Ni	60	45	He	1.057	ppb	3.0	2720.27	1	105.7	80	120	
Cu	63	45	He	1.062	ppb	1.5	8345.89	1	106.2	80	120	
Zn	66	72	No Gas	10.556	ppb	1.7	44978.35	10	105.56	80	120	
As	75	72	He	1.069	ppb	6.6	1717.78	1	106.9	80	120	
Se	78	72	H2	1.007	ppb	3.7	449.34	1	100.7	80	120	
Sr	88	72	No Gas	2.104	ppb	0.1	72602.90	2	105.2	80	120	
Zr	90	72	No Gas	3.941	ppb	1.2	86321.20	5	78.82	80	120	> +/- 20%
Mo	95	115	No Gas	0.940	ppb	2.5	6526.04	1	94	80	120	
Ag	107	115	No Gas	1.048	ppb	3.2	18230.34	1	104.8	80	120	
Cd	111	115	No Gas	1.016	ppb	2.2	3765.29	1	101.6	80	120	
Sn	118	115	No Gas	0.976	ppb	3.3	11251.48	1	97.6	80	120	
Sb	123	115	No Gas	0.987	ppb	0.2	12274.66	1	98.7	80	120	
Ba	137	115	No Gas	1.138	ppb	1.6	6115.89	1	113.8	80	120	
W	182	159	No Gas	2.083	ppb	1.3	25609.22	2	104.15	80	120	
Hg	201	159	He	0.213	ppb	5.8	240.33	0.1	213	80	120	> +/- 20%
Tl	205	159	No Gas	1.026	ppb	1.4	28653.96	1	102.6	80	120	
Pb	208	159	No Gas	1.025	ppb	2.3	40276.72	1	102.5	80	120	
U	238	159	No Gas	0.975	ppb	2.0	37417.08	1	97.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2052081.58	1.3	2024514.1	101.36	60	120	
Sc	45	No Gas	5424708.50	0.1	5611190.83	96.68	60	120	
Sc	45	H2	3232662.33	0.2	3273621	98.75	60	120	
Sc	45	He	623216.52	1.3	627589.54	99.3	60	120	
Ge	72	No Gas	1343928.04	0.9	1369739.92	98.12	60	120	
Ge	72	H2	897647.15	0.8	908196.82	98.84	60	120	
Ge	72	He	375036.06	1.5	384192.24	97.62	60	120	
In	115	No Gas	8486637.97	0.1	8531303.38	99.48	60	120	
Tb	159	No Gas	11001952.06	0.2	11065773.73	99.42	60	120	
Tb	159	He	5932919.50	0.9	5978695.83	99.23	60	120	

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07/13/20 11:33

End Date: 07/13/20 15:05

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

see analytical sequence

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	H6609
Analytical Sequence:	H6609
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☐ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (LAR)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	79-01	Post-Spike 4	↓
ICSAB	79-02		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 07/13/20

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G09001.d		1	
2		CalBlk	BLANK		1101	H6G09002.d		1	
3		CalStd	S0		1102	H6G09003.d		1	
4		CalStd	S1		1104	H6G09004.d		2	
5		CalStd	S2		1105	H6G09005.d		3	
6		CalStd	S3		1106	H6G09006.d		4	
7		CalStd	S4		1107	H6G09007.d		5	
8		ICV	ICV		1204	H6G09008.d			1
9		ICB	ICB		1102	H6G09009.d			1
10		LLCCV	MRLG1301	1/100/10 ppb Cu↓	1306	H6G09010.d			1
11		LLCCV2	MRLG1302	0.4/40/4 ppb Cu↓	1307	H6G09011.d			1
12		ICS-A	ICSA		1304	H6G09012.d			1
13		ICSB	ICSAB Cu fail		1305	H6G09013.d			1
14		Sample	MRLG1303	500 ppb CAT	1207	H6G09014.d			1
15		CCV	CCV1		1206	H6G09015.d			1
16		CCB	CCB1		1102	H6G09016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF034WB		2101	H6G09017.d			1
2		LCSW	IMF034WL] Cu fail		2102	H6G09018.d			1
3		LCSW	IMF034WC		2103	H6G09019.d			1
4		Sample	F178-01N Na mg ca↑		2104	H6G09020.d			1
5		Sample	F178-02N ca↑		2105	H6G09021.d			1
6		Sample	F178-04N Na mg ca↑		2106	H6G09022.d			1
7		Sample	F178-05N Na mg ca↑		2107	H6G09023.d			1
8		Sample	F178-07N Na mg ca↑		2108	H6G09024.d			1
9		Sample	F178-08N Na mg ca↑		2109	H6G09025.d			1
10		Sample	F178-10N Na mg ca↑		2110	H6G09026.d			1
11		CCV	CCV2		1206	H6G09027.d			1
12		CCB	CCB2		1102	H6G09028.d			1
13		Sample	F178-11N Na mg ca↑		2111	H6G09029.d			1
14		Sample	F178-01I		2112	H6G09030.d			10
15		Sample	F178-02I		2201	H6G09031.d			10
16		Sample	F178-04I		2202	H6G09032.d			10
17		Sample	F178-05I		2203	H6G09033.d			10
18		Sample	F178-07I		2204	H6G09034.d			10
19		Sample	F178-08I		2205	H6G09035.d			10
20		Sample	F178-10I		2206	H6G09036.d			10

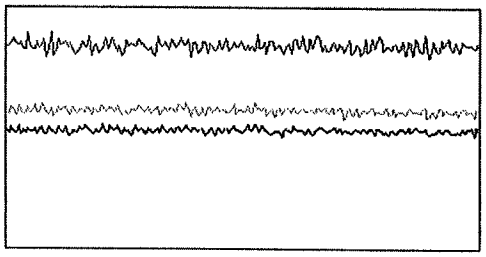
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	F178-11I		2207	H6G09037.d			10
22		CCV	CCV3		1206	H6G09038.d			1
23		CCB	CCB3		1102	H6G09039.d			1
24		Blank	IMF035WB		2208	H6G09040.d			1
25		LCSW	IMF035WL	cu fail	2209	H6G09041.d			1
26		LCSW	IMF035WC		2210	H6G09042.d			1
27		Sample	F183-01I		2211	H6G09043.d			10
28		Sample	F183-02I		2212	H6G09044.d			10
29		Sample	F183-03I		2301	H6G09045.d			10
30		Sample	F183-05I		2302	H6G09046.d			10
31		Sample	F183-06I		2303	H6G09047.d			10
32		Sample	F183-07I		2304	H6G09048.d			10
33		CCV	CCV4		1206	H6G09049.d			1
34		CCB	CCB4		1102	H6G09050.d			1
35		Sample	F183-08M		2305	H6G09051.d			10
36		Sample	F183-08S		2306	H6G09052.d			10
37		Sample	F183-08A		2307	H6G09053.d			10
38		Sample	F183-08I		2308	H6G09054.d			10
39		Sample	F183-08J		2309	H6G09055.d			50
40		Sample	F183-12I		2310	H6G09056.d			10
41		Sample	F183-13I		2311	H6G09057.d			10
42		Sample	F183-14I		2312	H6G09058.d			10
43		Sample	F183-15I		2401	H6G09059.d			10
44		Sample	F183-16I		2402	H6G09060.d			10
45		CCV	CCV5		1206	H6G09061.d			1
46		CCB	CCB5		1102	H6G09062.d			1
47		LLCCV	MRLG1304	1/100/10 ppb mnt cul	1306	H6G09063.d			1
48		LLCCV2	MRLG1305	0.4/40/4 ppb cul	1307	H6G09064.d			1
49		Blank	IMG013WB		2403	H6G09065.d			1
50		LCSW	IMG013WL		2404	H6G09066.d			1
51		LCSW	IMG013WC		2405	H6G09067.d			1
52		Sample	TXG001SB		2406	H6G09068.d			1
53		Sample	TXG002SB		2407	H6G09069.d			1
54		Sample	F232-01		2408	H6G09070.d			1
55		CCV	CCV6		1206	H6G09071.d			1
56		CCB	CCB6		1102	H6G09072.d			1
57		Sample	F232-02		2409	H6G09073.d			1
58		Sample	F232-03		2410	H6G09074.d			1
59		Sample	F232-04		2411	H6G09075.d			1
60		Sample	F232-05		2412	H6G09076.d			1
61		Sample	F232-06M	✓	2501	H6G09077.d			1
62		Sample	F232-06S		2502	H6G09078.d			1
63		Sample	F232-06A		2503	H6G09079.d			1
64		Sample	F232-06		2504	H6G09080.d			1
65		Sample	F232-06J		2505	H6G09081.d			5
66		CCV	CCV7		1206	H6G09082.d			1
67		CCB	CCB7		1102	H6G09083.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-13 08:50:54
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



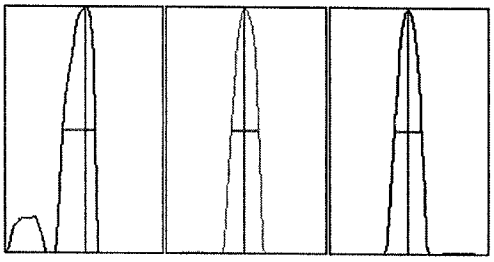
Mass	Range	Count	RSD%	Background
7	5000	4220	2.535	0.050
89	20000	11475	2.211	0.900
205	20000	9825	2.198	2.300

Sampling Period [sec] 0.311
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.149 %
Doubly Charged	70 / 140 1.606 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	4271.11	7.05	0.62	0.75
89	11375.45	89.00	0.54	0.71
205	9909.34	205.00	0.52	0.71

Integration Time [sec] 0.1
Acquisition Time [sec] 22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.06 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	13.8 V
Extract 2	-155.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.6 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.01 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9994		
Mass Offset	125	Axis Offset	-0.01		

EM

Discriminator	4.2 mV	Analog HV	2411 V	Pulse HV	1559 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.06	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.03E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	30.7	°C
Nebulizer Gas(DP)	6.04E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.53E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.98E+1	kPa
S/C Temp (H)	16.4	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.46E+2	Pa
Analyzer Press	7.28E-5	Pa
IG HV	178	V
IG Emission	4.97	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.76	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.6	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.9	V
+U Voltage	11.6	V

Name	Value	Unit
-U Voltage	-17.4	V
V Voltage	52.7	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	610.0	V
-120V	-133.7	V
-720V	-738.5	V
Prefilter Bias	-5.03	V
Pickup Heater I	0.07	A
QP PS +48V	47.6	V
QP PS +48V I	0.00	A
Analog HV	-2415	V
Pulse HV	1570	V
EM Gate	-31.9	V
Pulse Gate	310.5	V
EM Entrance	0.2	V
EM HV Gain	-1061.6	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.8	V
Forward Power	1549	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.43	A
Drain I 2	11.03	A
Drain I 3	10.90	A
Drain I 4	10.22	A
Temp Sensor	2.8	V
Driver I	5.48	A

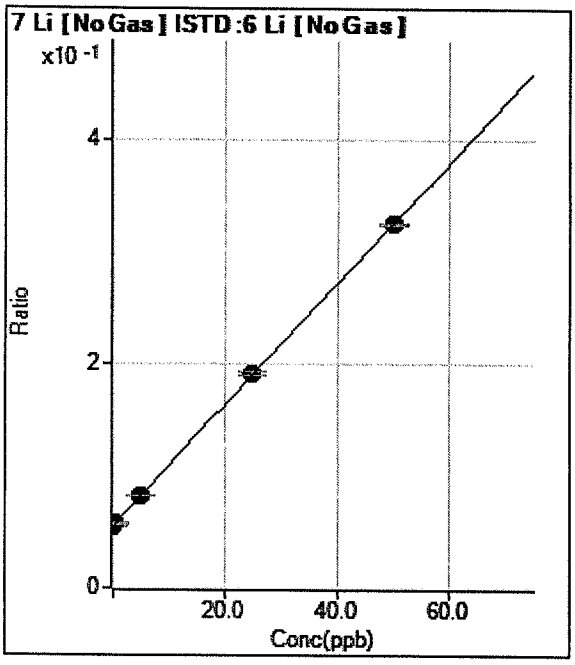
Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	2.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.90E-1	kPa
ORS AMFC Temp	30.5	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-155.3	V
Omega Bias	-80.1	V
Omega Lens	7.9	V
Cell Entrance	-29.9	V
Cell Exit	-50.1	V
Deflect	13.8	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	30.9	°C
Internal Temp	37.0	°C
+24V	23.6	V
Water Temp	18.9	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

Performance Report History

Sensitivity

Batch Folder: D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b\
Analysis File: IH6G09.batch.bin
DA Date-Time: 2020-07-13 15:07:24
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

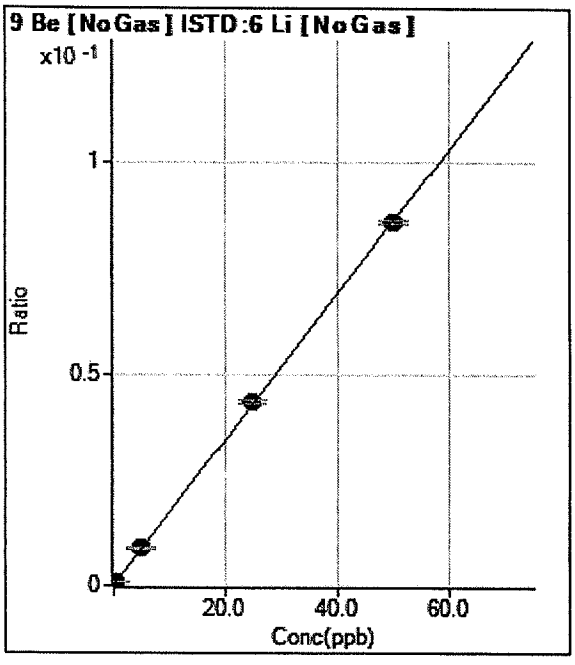
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G09003.d	S0	2020-07-13 11:33:28
2	H6G09004.d	S1	2020-07-13 11:36:19
3	H6G09005.d	S2	2020-07-13 11:39:11
4	H6G09006.d	S3	2020-07-13 11:42:32
5	H6G09007.d	S4	2020-07-13 11:45:22



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	114851.91	0.0550	P	2.5
2	☐	0.500	0.501	119529.28	0.0578	P	0.6
3	☐	5.000	5.059	168893.81	0.0824	P	0.2
4	☐	25.000	25.178	388269.59	0.1912	P	1.1
5	☐	50.000	49.905	659894.28	0.3249	P	0.5

y = 0.0054 * x + 0.0550
R = 1.0000
DL = 0.7658
BEC = 10.18

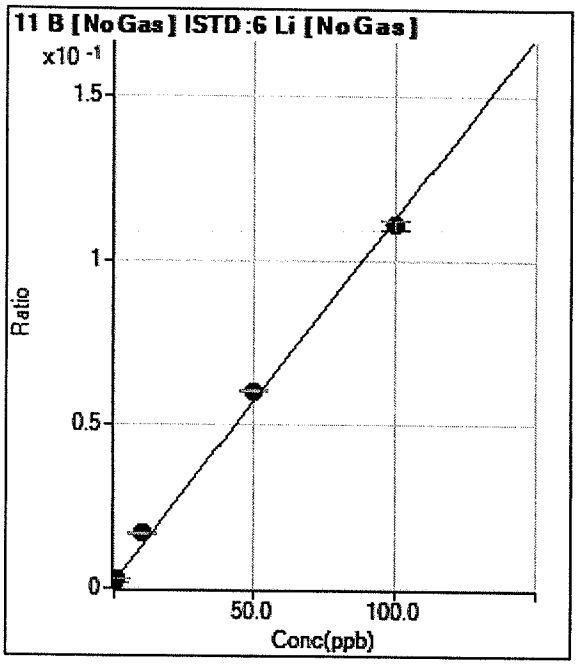
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	72.0
2	☐	0.500	0.502	1805.68	0.0009	P	1.5
3	☐	5.000	5.157	18204.00	0.0089	P	1.4
4	☐	25.000	25.414	88822.17	0.0437	P	1.9
5	☐	50.000	49.778	173994.41	0.0857	P	1.0

y = 0.0017 * x + 7.9992E-006
R = 0.9999
DL = 0.01004
BEC = 0.004648

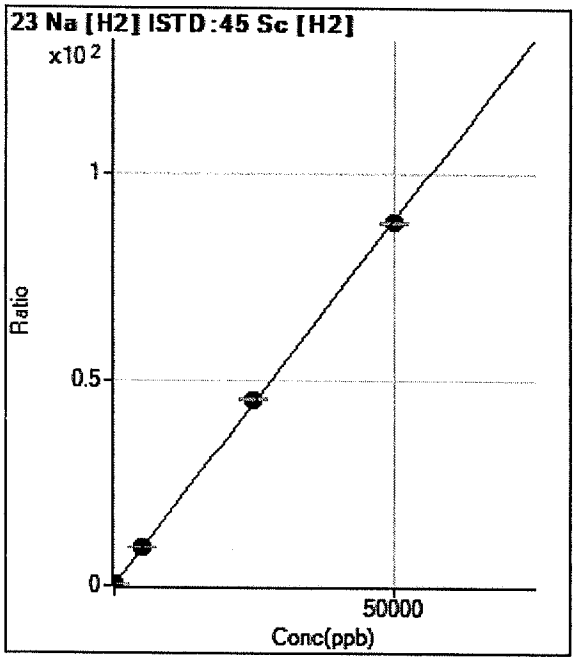
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4149.50	0.0020	P	1.8
2	☐	0.500	0.828	6010.18	0.0029	P	1.8
3	☐	10.000	13.428	34514.48	0.0168	P	1.5
4	☐	50.000	52.492	121940.17	0.0600	P	0.7
5	☐	100.000	98.410	225087.24	0.1108	P	2.5

y = 0.0011 * x + 0.0020
R = 0.9991
DL = 0.09529
BEC = 1.798

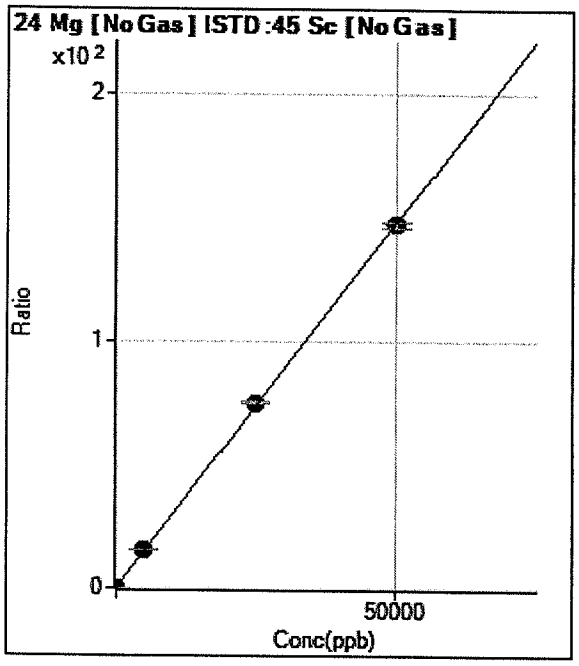
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	362870.27	0.1669	P	0.4
2	☐	50.000	55.293	563661.50	0.2648	P	0.7
3	☐	5000.000	5146.274	20297178.67	9.2799	A	0.8
4	☐	25000.000	25598.357	100187816.00	45.4966	A	1.6
5	☐	50000.000	49686.189	195886202.67	88.1515	A	0.8

y = 0.0018 * x + 0.1669
R = 0.9999
DL = 1.261
BEC = 94.23

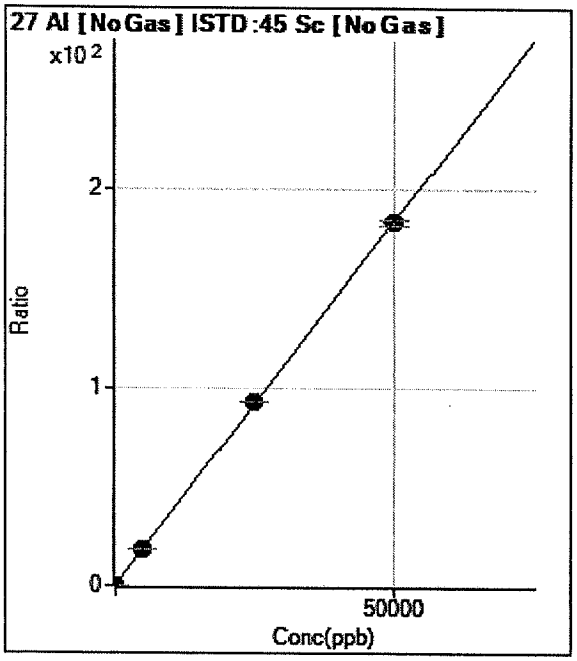
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20416.93	0.0054	P	2.0
2	☐	50.000	53.142	606451.98	0.1629	P	0.6
3	☐	5000.000	5171.022	57115236.00	15.3268	A	0.9
4	☐	25000.000	25372.204	283816010.67	75.1815	A	1.0
5	☐	50000.000	49796.793	555042112.00	147.5498	A	1.9

y = 0.0030 * x + 0.0054
R = 1.0000
DL = 0.1126
BEC = 1.835

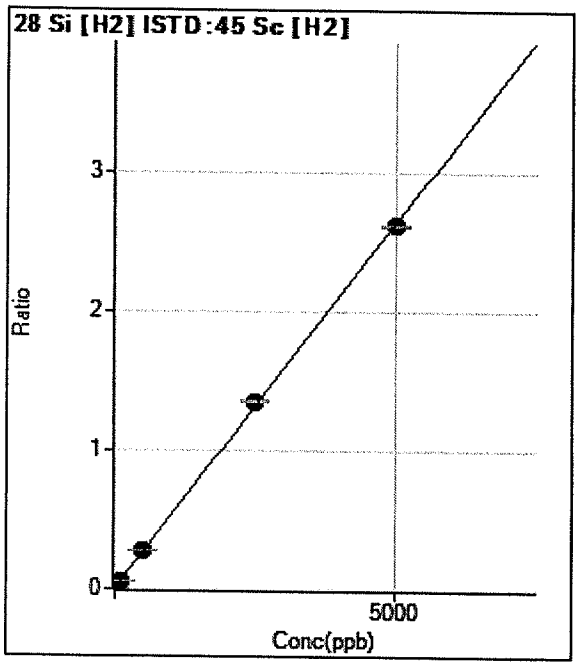
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25333.10	0.0067	P	2.8
2	☐	50.000	52.476	742547.93	0.1995	P	1.4
3	☐	5000.000	5109.539	69950728.96	18.7709	A	0.5
4	☐	25000.000	25323.268	351108514.77	93.0035	A	0.4
5	☐	50000.000	49827.410	688379429.74	182.9921	A	1.6

y = 0.0037 * x + 0.0067
R = 1.0000
DL = 0.155
BEC = 1.836

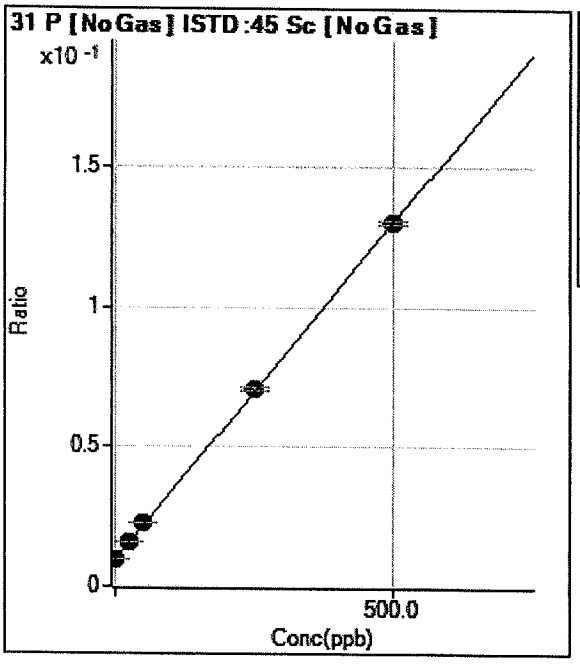
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5509.10	0.0025	P	1.1
2	☐	100.000	103.905	122189.50	0.0574	P	1.1
3	☐	500.000	521.649	608006.56	0.2780	P	1.0
4	☐	2500.000	2563.374	2986323.92	1.3561	A	0.9
5	☐	5000.000	4966.070	5832723.67	2.6248	A	0.5

y = 5.2804E-004 * x + 0.0025
R = 0.9999
DL = 0.1599
BEC = 4.798

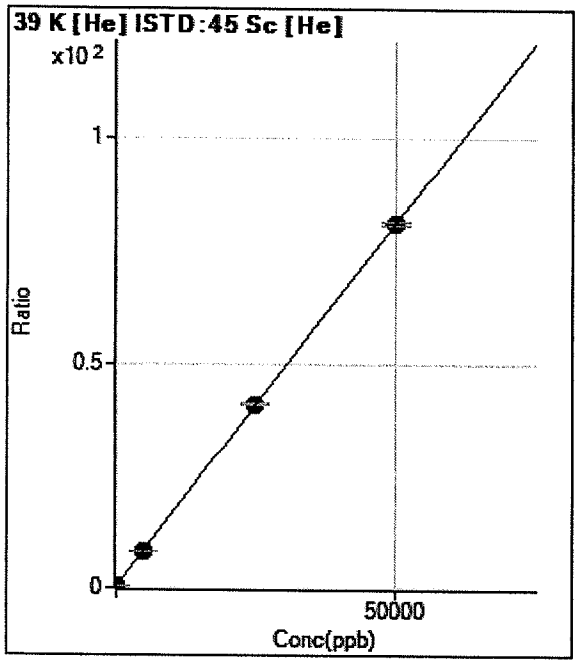
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	35491.92	0.0094	P	1.4
2	☐	25.000	27.020	59547.23	0.0160	P	0.9
3	☐	50.000	55.346	85165.33	0.0229	P	1.0
4	☐	250.000	253.455	267403.70	0.0708	P	1.7
5	☐	500.000	497.637	488946.24	0.1300	P	1.0

y = 2.4219E-004 * x + 0.0094
R = 0.9999
DL = 1.587
BEC = 39.02

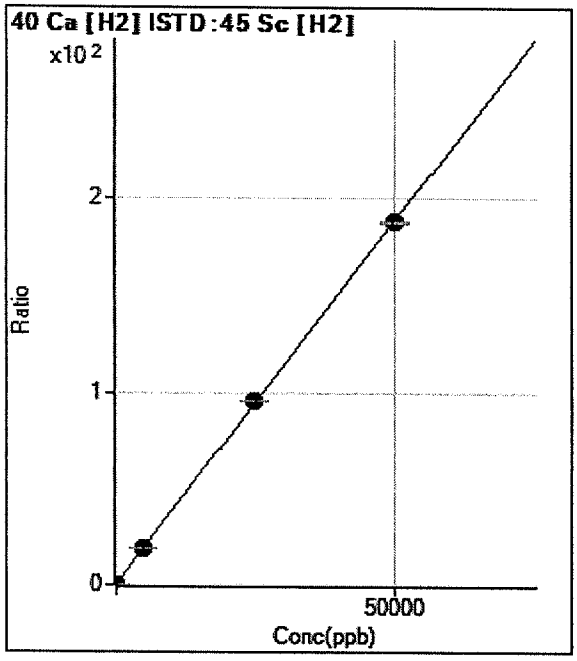
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107013.95	0.2498	P	3.2
2	☐	50.000	51.261	142042.73	0.3328	P	1.6
3	☐	5000.000	4920.698	3547238.83	8.2198	A	2.6
4	☐	25000.000	25175.726	17796262.67	41.0265	A	1.0
5	☐	50000.000	49920.066	35036772.00	81.1044	A	0.9

y = 0.0016 * x + 0.2498
R = 1.0000
DL = 14.98
BEC = 154.2

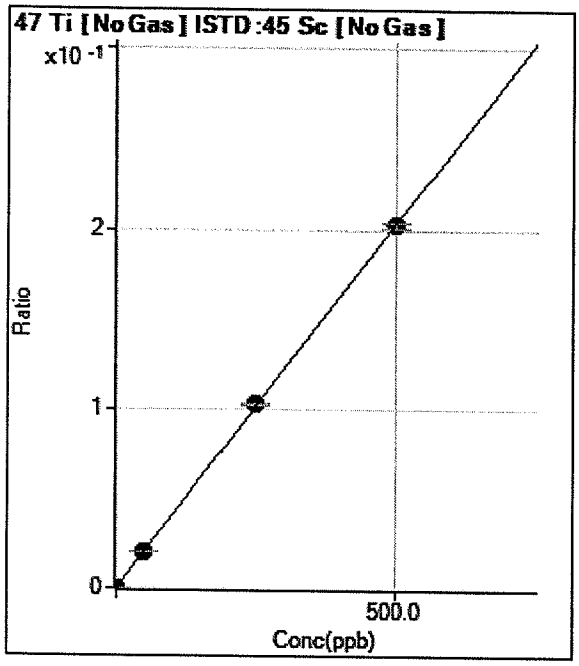
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	131577.24	0.0605	P	0.8
2	☐	50.000	44.723	487506.32	0.2290	P	0.7
3	☐	5000.000	4986.132	41221466.67	18.8464	A	0.6
4	☐	25000.000	25344.409	210412960.00	95.5488	A	0.2
5	☐	50000.000	49829.187	417315946.67	187.7983	A	0.3

y = 0.0038 * x + 0.0605
R = 1.0000
DL = 0.3789
BEC = 16.06

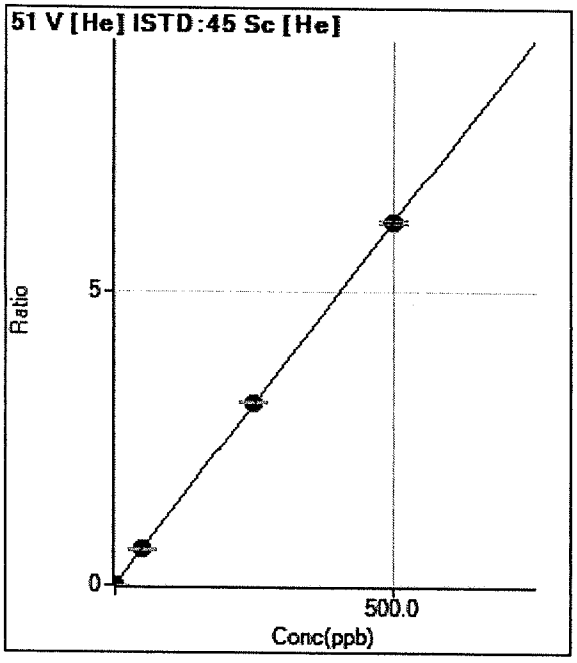
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	342.67	0.0001	P	5.0
2	☐	0.500	0.541	1156.72	0.0003	P	4.4
3	☐	50.000	51.020	77489.53	0.0208	P	0.7
4	☐	250.000	252.449	387048.12	0.1025	P	1.3
5	☐	500.000	498.674	761556.04	0.2024	P	1.5

y = 4.0578E-004 * x + 9.1238E-005
R = 1.0000
DL = 0.03353
BEC = 0.2248

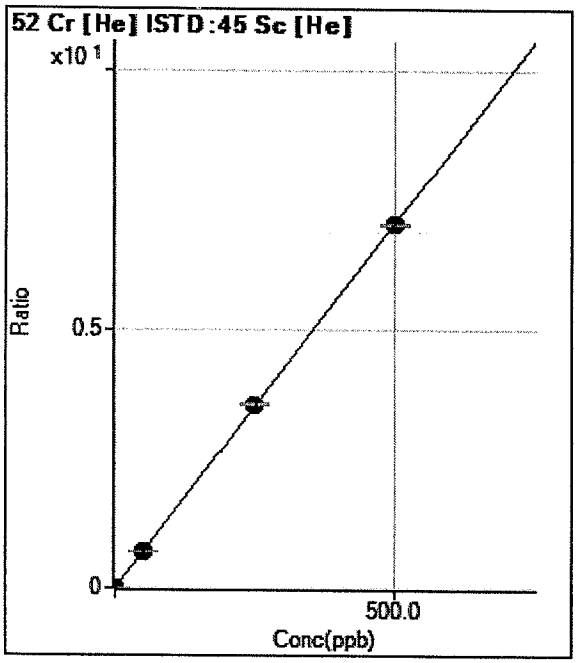
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1023.37	0.0024	P	0.6
2	☐	0.500	0.532	3819.20	0.0090	P	3.8
3	☐	50.000	49.137	262536.09	0.6084	P	2.5
4	☐	250.000	252.181	1350095.08	3.1124	A	0.5
5	☐	500.000	498.996	2659489.42	6.1563	A	0.9

y = 0.0123 * x + 0.0024
R = 1.0000
DL = 0.003656
BEC = 0.1937

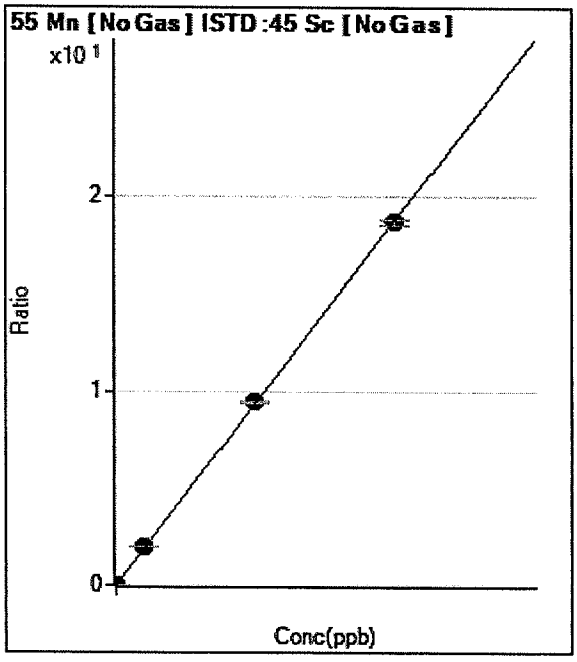
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1138.72	0.0027	P	2.1
2	☐	0.500	0.547	4431.38	0.0104	P	2.0
3	☐	50.000	49.967	305591.73	0.7082	P	2.9
4	☐	250.000	251.923	1544112.67	3.5598	A	0.8
5	☐	500.000	499.042	3045217.25	7.0491	A	0.7

y = 0.0141 * x + 0.0027
R = 1.0000
DL = 0.01205
BEC = 0.1882

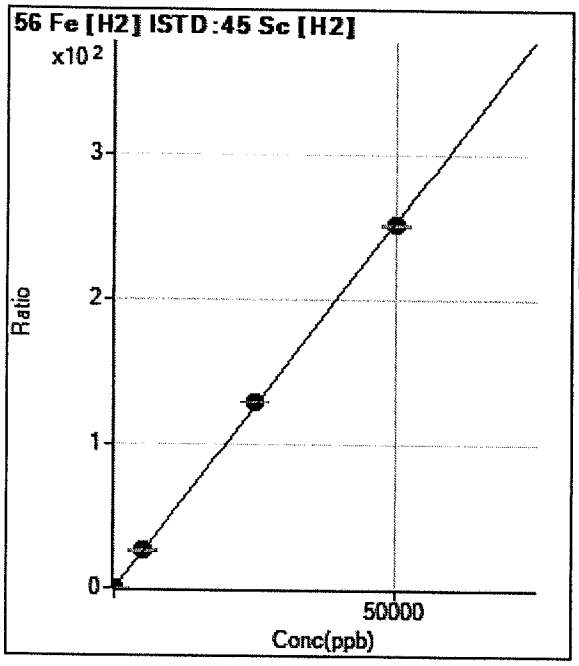
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8196.46	0.0022	P	1.6
2	☐	0.500	0.522	20286.35	0.0054	P	1.8
3	☐	300.000	312.132	7281766.33	1.9540	A	0.4
4	☐	1500.000	1519.948	35889672.00	9.5069	A	1.0
5	☐	3000.000	2988.813	70315725.33	18.6922	A	1.7

y = 0.0063 * x + 0.0022
R = 1.0000
DL = 0.01684
BEC = 0.349

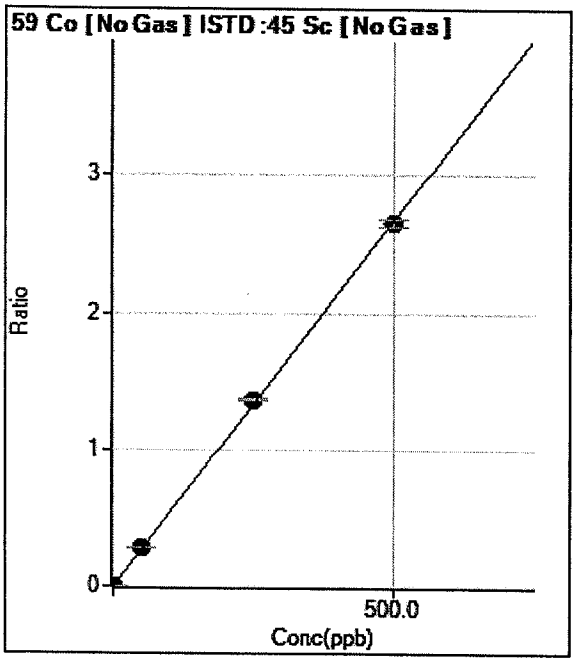
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9630.06	0.0044	P	2.2
2	☐	50.000	55.531	607095.25	0.2852	P	1.1
3	☐	5000.000	5142.368	56874065.33	26.0036	A	1.4
4	☐	25000.000	25621.435	285271626.67	129.5432	A	0.4
5	☐	50000.000	49675.040	558104618.67	251.1552	A	0.4

y = 0.0051 * x + 0.0044
R = 0.9999
DL = 0.05805
BEC = 0.8758

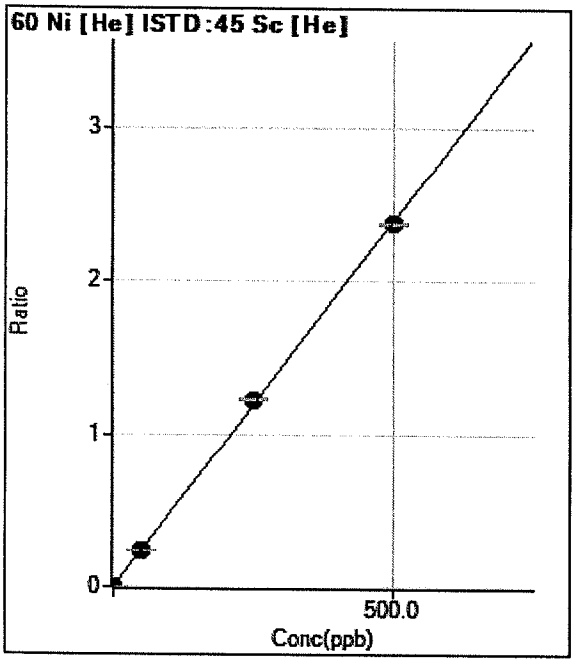
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	249.33	0.0001	P	7.5
2	☐	0.500	0.540	10980.42	0.0029	P	0.4
3	☐	50.000	52.788	1049594.92	0.2817	A	0.6
4	☐	250.000	256.211	5159741.17	1.3668	A	0.8
5	☐	500.000	496.616	9965827.33	2.6492	A	2.0

y = 0.0053 * x + 6.6408E-005
R = 0.9999
DL = 0.00279
BEC = 0.01245

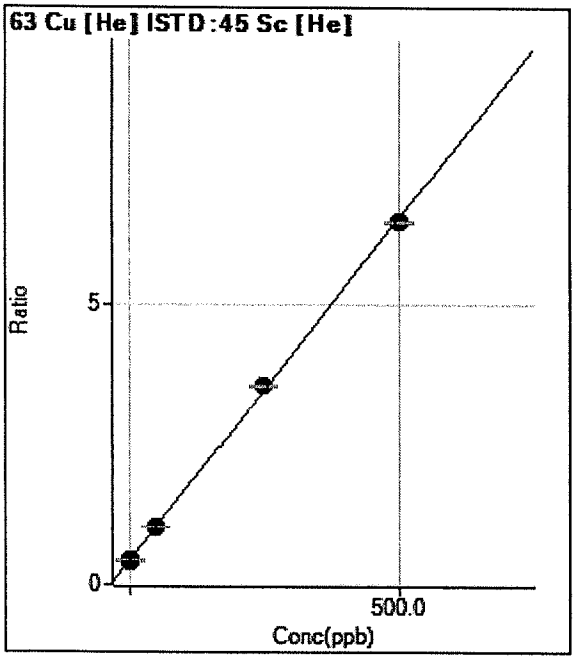
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	78.00	0.0002	P	19.8
2	☐	0.500	0.539	1177.39	0.0028	P	5.0
3	☐	50.000	50.171	103648.45	0.2402	P	3.6
4	☐	250.000	256.535	532397.38	1.2274	P	1.6
5	☐	500.000	496.716	1026621.14	2.3764	P	0.2

y = 0.0048 * x + 1.8199E-004
R = 0.9999
DL = 0.02254
BEC = 0.03804

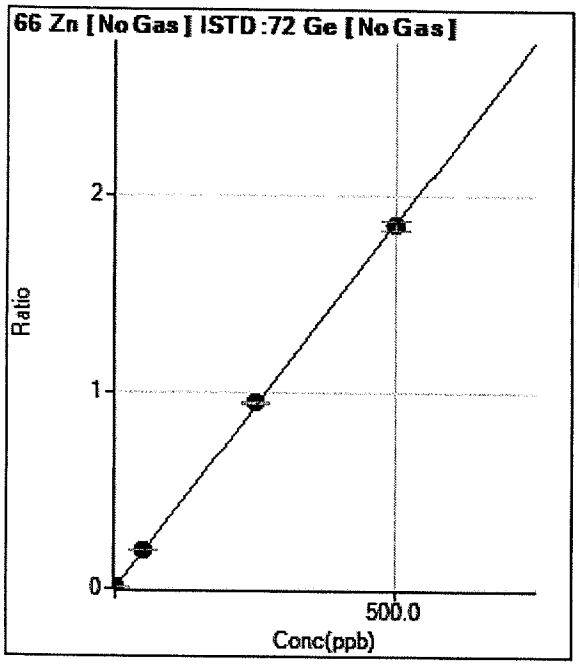
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	180104.80	0.4204	P	0.7
2	☐	0.500	1.995	189784.25	0.4447	P	1.1
3	☐	50.000	49.990	444195.86	1.0294	P	1.3
4	☐	250.000	257.328	1542192.50	3.5554	A	0.8
5	☐	500.000	496.335	2793785.58	6.4671	A	0.4

y = 0.0122 * x + 0.4204
R = 0.9998
DL = 0.6989
BEC = 34.51

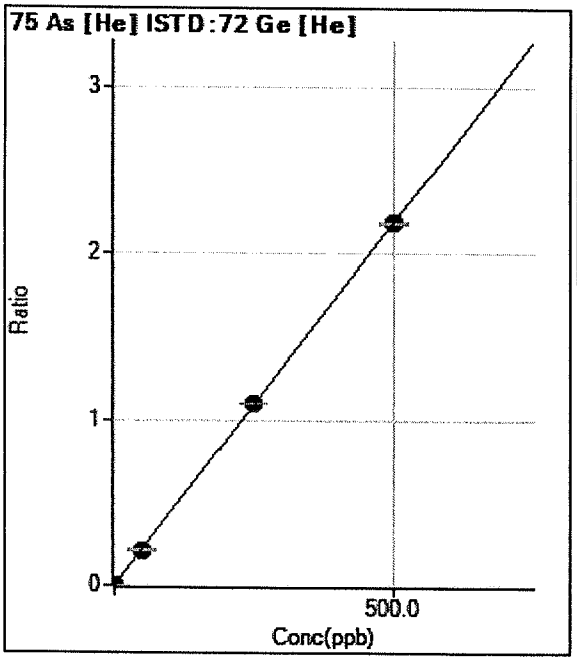
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3095.02	0.0038	P	0.5
2	☐	1.000	0.402	4362.04	0.0053	P	1.9
3	☐	50.000	51.456	159987.91	0.1946	P	0.6
4	☐	250.000	254.853	800577.84	0.9488	P	1.1
5	☐	500.000	497.429	1554448.04	1.8482	A	2.7

y = 0.0037 * x + 0.0038
R = 0.9999
DL = 0.01445
BEC = 1.029

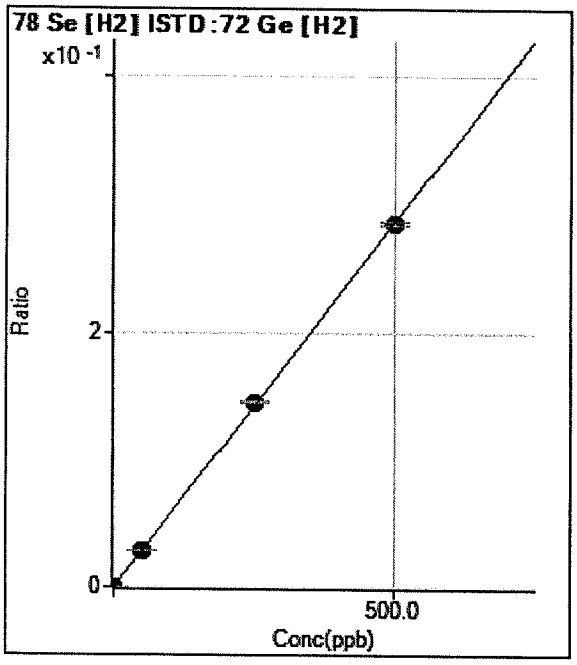
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	114.67	0.0005	P	4.3
2	☐	0.500	0.555	728.69	0.0029	P	2.1
3	☐	50.000	48.453	53552.55	0.2125	P	2.7
4	☐	250.000	251.496	280680.16	1.1010	P	0.2
5	☐	500.000	499.407	555238.33	2.1859	P	0.7

y = 0.0044 * x + 4.6485E-004
R = 1.0000
DL = 0.01384
BEC = 0.1062

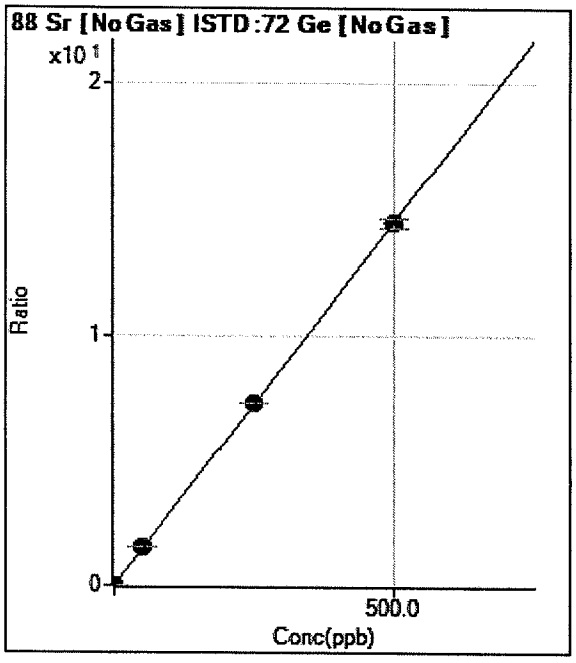
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17.33	0.0000	P	18.2
2	☐	0.500	0.494	185.67	0.0003	P	4.2
3	☐	50.000	50.475	17683.58	0.0289	P	1.0
4	☐	250.000	254.398	88704.77	0.1456	P	0.7
5	☐	500.000	497.754	173614.83	0.2849	P	1.0

y = 5.7232E-004 * x + 2.8971E-005
R = 0.9999
DL = 0.0277
BEC = 0.05062

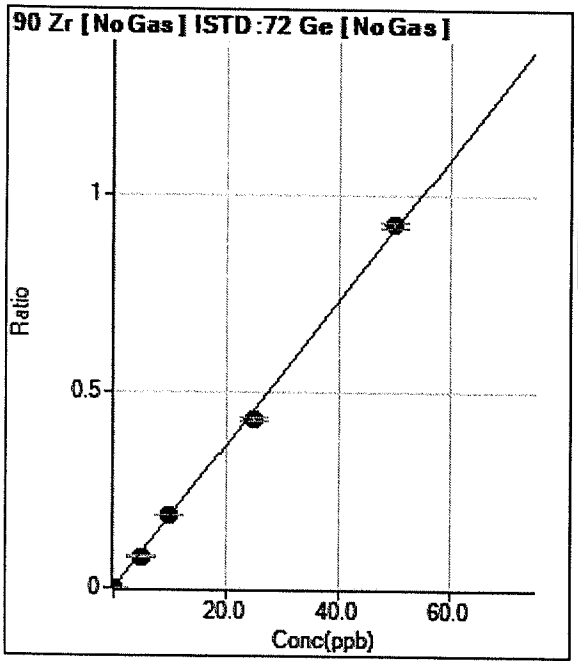
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1526.76	0.0019	P	3.5
2	☐	0.500	0.510	13697.01	0.0167	P	0.9
3	☐	50.000	51.742	1234411.65	1.5015	A	0.6
4	☐	250.000	251.515	6152711.14	7.2915	A	0.6
5	☐	500.000	499.068	12166573.13	14.4662	A	2.6

y = 0.0290 * x + 0.0019
R = 1.0000
DL = 0.006879
BEC = 0.06491

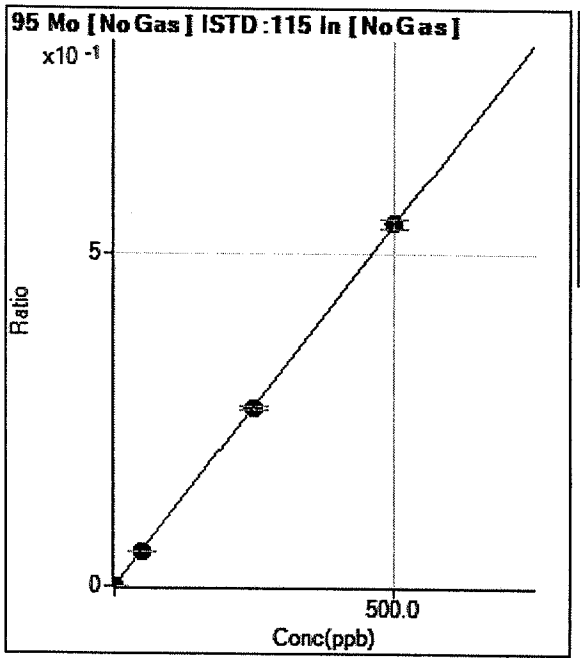
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	126.67	0.0002	P	31.7
2	☐	5.000	4.405	66243.57	0.0806	P	2.3
3	☐	10.000	10.155	152547.43	0.1856	P	1.2
4	☐	25.000	23.671	364787.95	0.4323	P	2.0
5	☐	50.000	50.693	778620.22	0.9257	P	1.8

y = 0.0183 * x + 1.5601E-004
R = 0.9994
DL = 0.008117
BEC = 0.008545

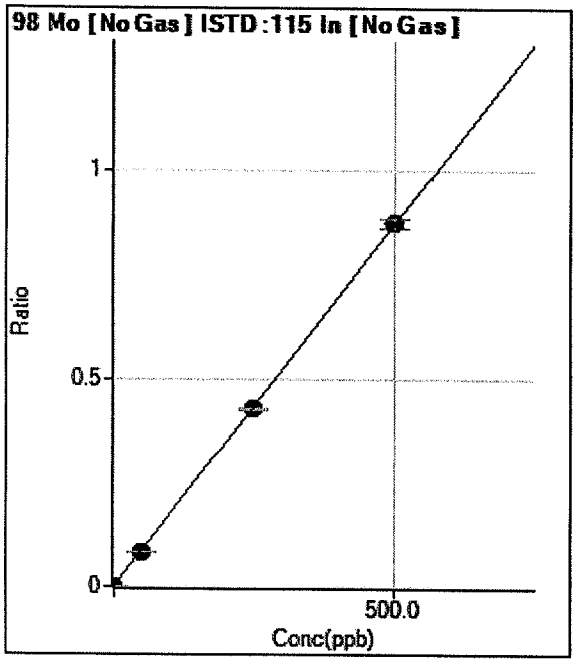
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	11.0
2	☐	0.500	0.481	2355.77	0.0005	P	3.9
3	☐	50.000	47.682	229858.86	0.0517	P	1.1
4	☐	250.000	247.210	1169850.82	0.2680	A	1.6
5	☐	500.000	501.627	2316989.56	0.5438	A	2.4

y = 0.0011 * x + 6.6648E-006
R = 1.0000
DL = 0.002026
BEC = 0.006149

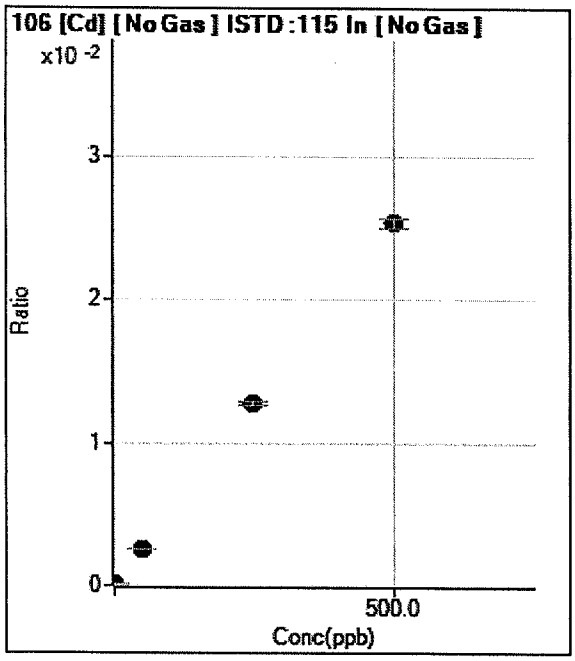
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5274.38	0.0012	P	2.0
2	☐	0.500	0.523	9284.35	0.0021	P	4.0
3	☐	50.000	47.458	371564.39	0.0836	P	0.2
4	☐	250.000	246.091	1870129.02	0.4284	A	1.9
5	☐	500.000	502.209	3719959.85	0.8730	A	2.4

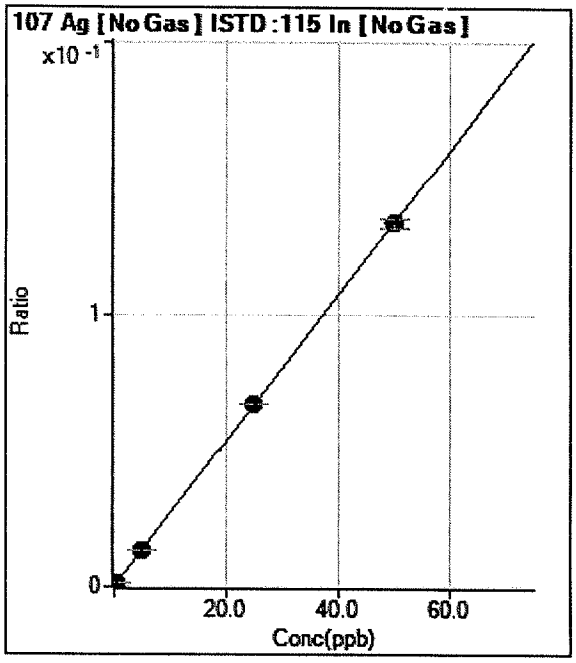
y = 0.0017 * x + 0.0012
R = 0.9999
DL = 0.04007
BEC = 0.6751

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		3.67	0.0000	P	41.8
2	☐	0.500		302.00	0.0001	P	5.7
3	☐	50.000		11428.59	0.0026	P	0.6
4	☐	250.000		55567.47	0.0127	P	2.0
5	☐	500.000		108163.05	0.0254	P	2.7

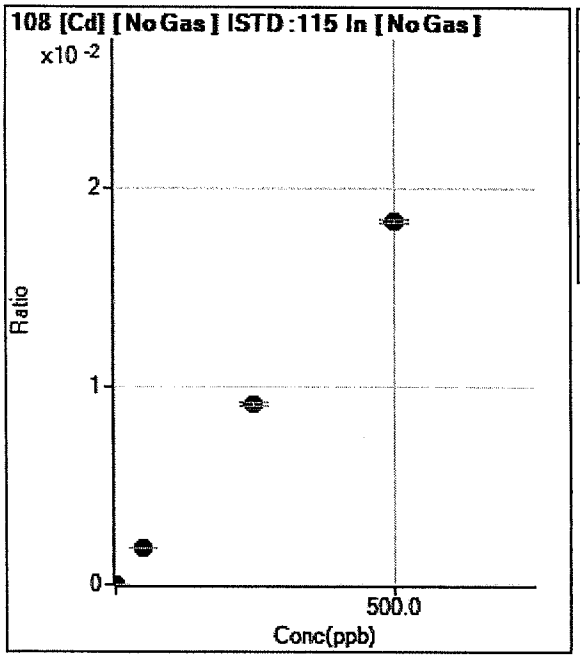
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	52.22	0.0000	P	7.7
2	☐	0.500	0.522	6310.40	0.0014	P	2.0
3	☐	5.000	4.970	59379.37	0.0134	P	1.1
4	☐	25.000	25.162	294951.77	0.0676	P	0.4
5	☐	50.000	49.922	571038.90	0.1340	P	2.8

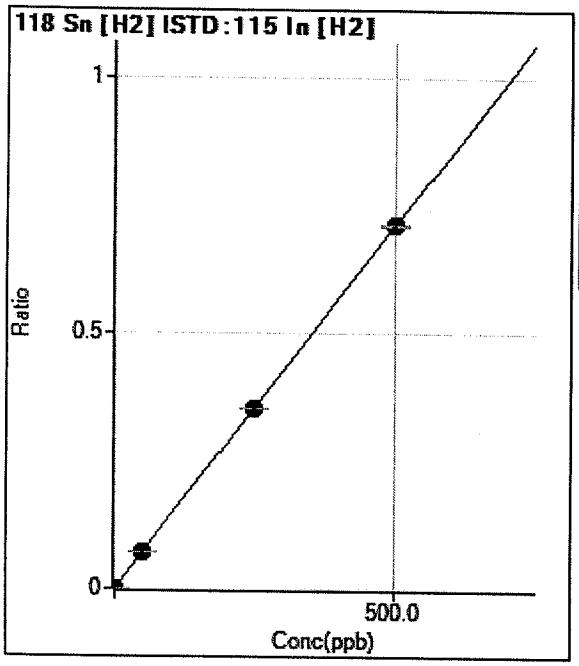
y = 0.0027 * x + 1.1605E-005
R = 1.0000
DL = 0.0009946
BEC = 0.004323

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		4.33	0.0000	P	47.9
2	☐	0.500		156.33	0.0000	P	7.7
3	☐	50.000		8029.10	0.0018	P	0.4
4	☐	250.000		39864.20	0.0091	P	1.3
5	☐	500.000		78038.42	0.0183	P	1.2

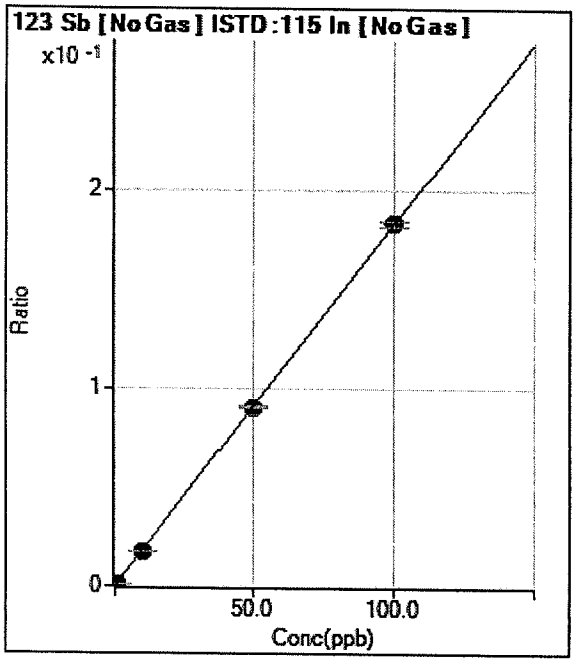
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1525.65	0.0003	P	7.0
2	☐	0.500	0.410	3965.05	0.0009	P	0.7
3	☐	50.000	49.600	311445.78	0.0709	P	0.7
4	☐	250.000	249.843	1537493.20	0.3556	A	0.3
5	☐	500.000	500.119	3032295.30	0.7114	A	0.7

y = 0.0014 * x + 3.4090E-004
R = 1.0000
DL = 0.05028
BEC = 0.2398

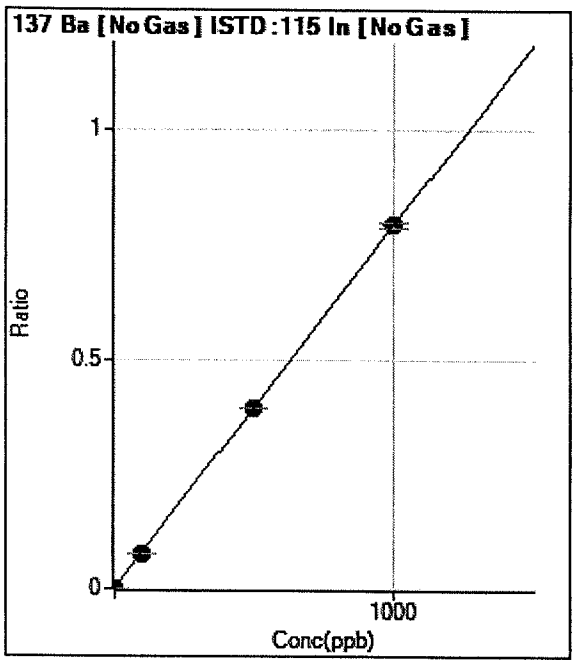
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0000	P	19.5
2	☐	0.500	0.488	4062.85	0.0009	P	1.7
3	☐	10.000	9.640	78297.26	0.0176	P	1.2
4	☐	50.000	49.502	394355.28	0.0903	P	1.4
5	☐	100.000	100.285	779770.89	0.1830	P	1.5

y = 0.0018 * x + 2.0727E-005
R = 1.0000
DL = 0.006655
BEC = 0.01136

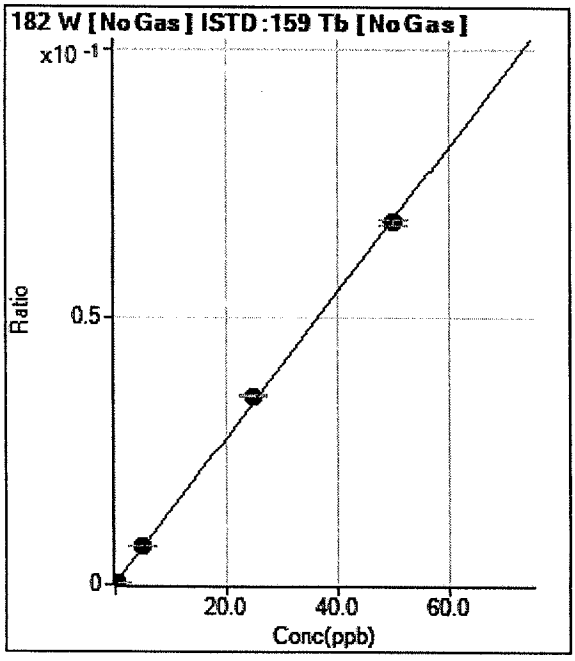
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	120.00	0.0000	P	7.1
2	☐	0.500	0.503	1896.81	0.0004	P	4.9
3	☐	100.000	95.767	337096.26	0.0758	P	1.1
4	☐	500.000	498.355	1721851.18	0.3944	A	0.9
5	☐	1000.000	1001.246	3376659.93	0.7923	A	1.6

y = 7.9131E-004 * x + 2.6658E-005
R = 1.0000
DL = 0.007125
BEC = 0.03369

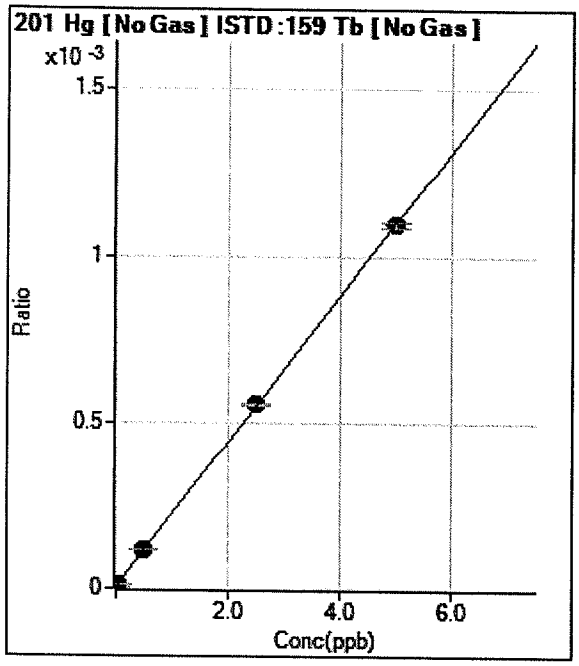
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	70.00	0.0000	P	1.5
2	☐	0.500	0.260	2040.17	0.0004	P	2.5
3	☐	5.000	5.227	39601.96	0.0072	P	2.5
4	☐	25.000	25.791	196434.45	0.0353	P	0.7
5	☐	50.000	49.584	376937.00	0.0678	P	1.5

y = 0.0014 * x + 1.2501E-005
R = 0.9998
DL = 0.000406
BEC = 0.009139

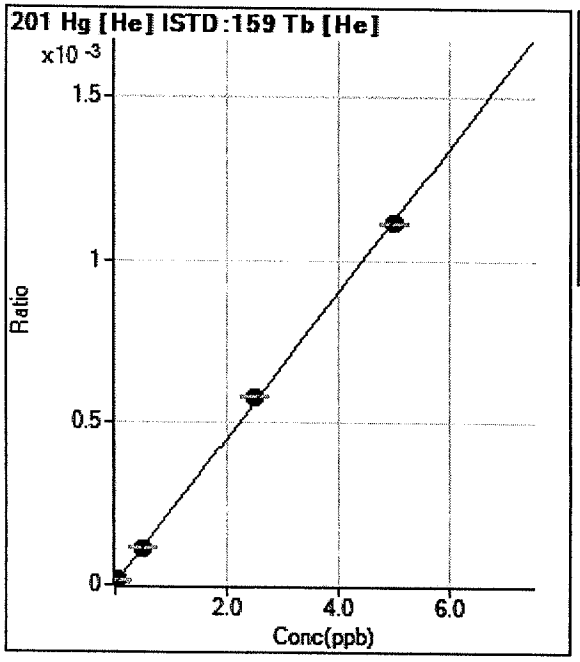
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18.17	0.0000	P	25.1
2	☐	0.050	0.050	78.00	0.0000	P	2.7
3	☐	0.500	0.511	636.85	0.0001	P	0.7
4	☐	2.500	2.526	3095.72	0.0006	P	0.9
5	☐	5.000	4.986	6081.14	0.0011	P	1.8

y = 2.1887E-004 * x + 3.2469E-006
R = 1.0000
DL = 0.01119
BEC = 0.01483

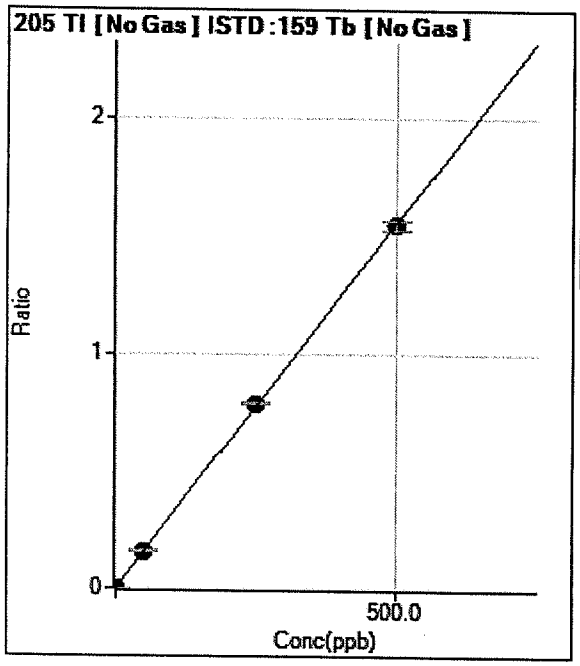
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14.17	0.0000	P	27.5
2	☐	0.050	0.051	61.50	0.0000	P	3.5
3	☐	0.500	0.492	467.34	0.0001	P	3.4
4	☐	2.500	2.575	2392.73	0.0006	P	0.7
5	☐	5.000	4.963	4620.69	0.0011	P	0.9

y = 2.2415E-004 * x + 3.4322E-006
R = 0.9998
DL = 0.01261
BEC = 0.01531

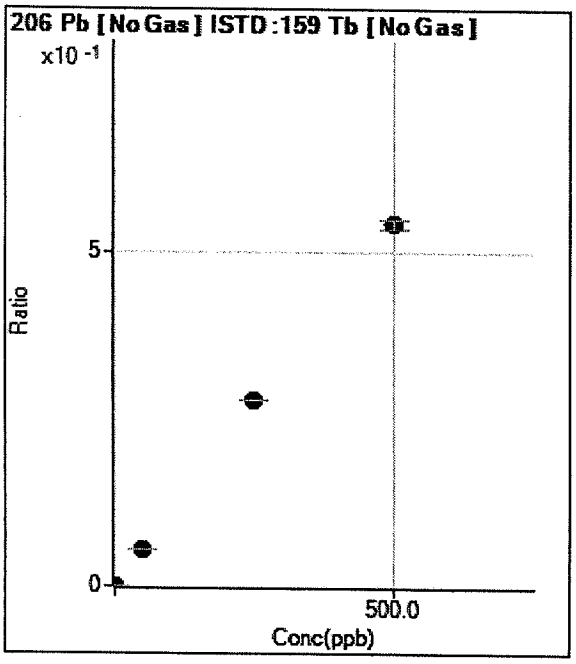
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	907.81	0.0002	P	5.3
2	☐	0.500	0.514	9741.59	0.0018	P	0.3
3	☐	50.000	51.378	883622.36	0.1598	P	0.9
4	☐	250.000	254.040	4395377.60	0.7897	A	0.7
5	☐	500.000	497.842	8595821.32	1.5473	A	3.0

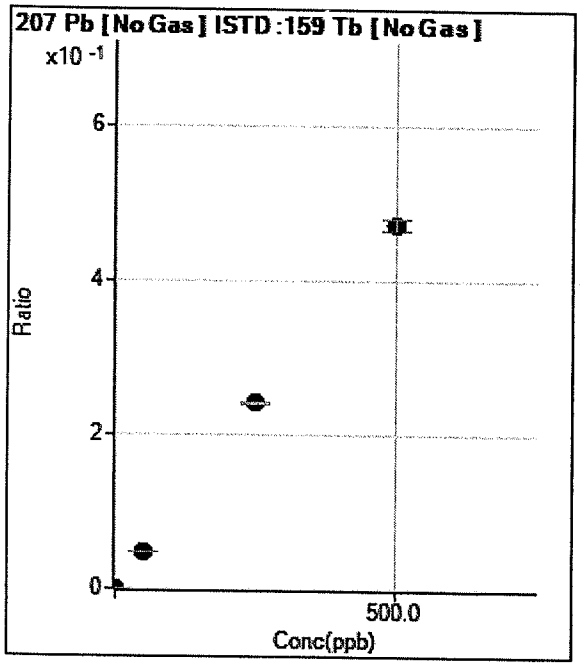
y = 0.0031 * x + 1.6207E-004
R = 0.9999
DL = 0.008234
BEC = 0.05215

Weight: <None>
Min Conc: 0



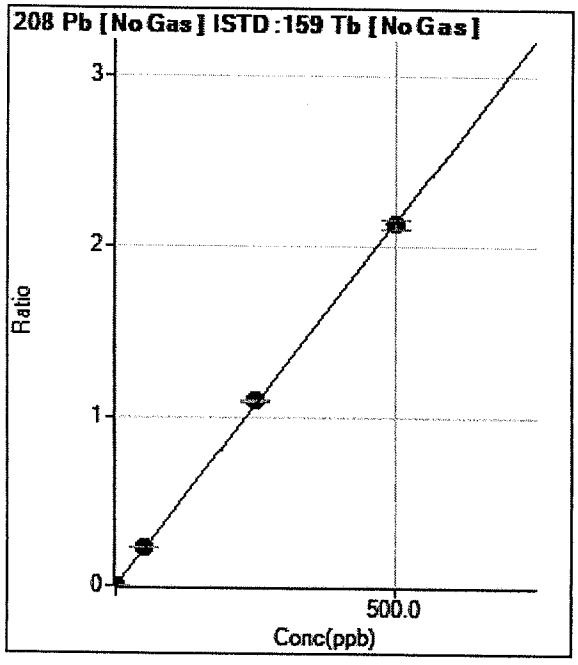
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		400.01	0.0001	P	15.2
2	☐	0.500		3537.18	0.0006	P	2.0
3	☐	50.000		307038.01	0.0555	P	0.5
4	☐	250.000		1547090.97	0.2779	A	0.3
5	☐	500.000		3013677.56	0.5425	A	2.5

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		286.67	0.0001	P	33.9
2	☐	0.500		3133.74	0.0006	P	7.8
3	☐	50.000		267098.27	0.0483	P	1.4
4	☐	250.000		1348017.58	0.2422	A	0.9
5	☐	500.000		2623144.44	0.4722	A	3.3

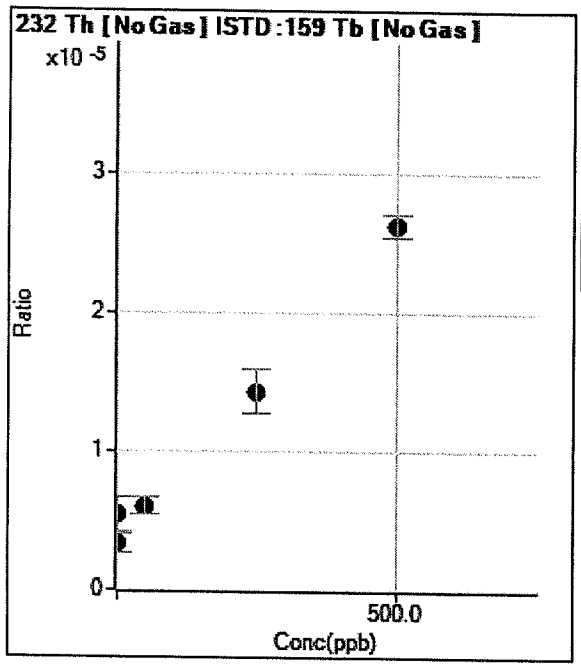
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1436.70	0.0003	P	8.4
2	☐	0.500	0.524	13842.99	0.0025	P	2.1
3	☐	50.000	51.498	1221793.24	0.2210	P	0.4
4	☐	250.000	254.704	6078486.55	1.0920	A	0.5
5	☐	500.000	497.498	11848663.98	2.1328	A	2.4

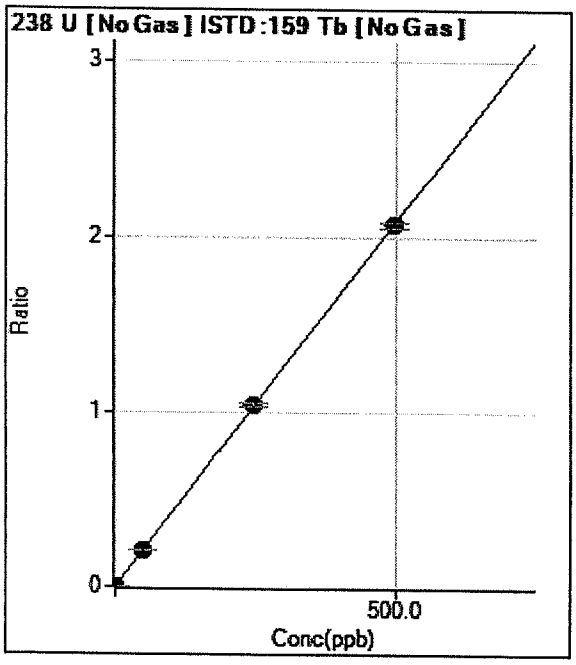
y = 0.0043 * x + 2.5652E-004
R = 0.9999
DL = 0.015
BEC = 0.05984

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		18.89	0.0000	P	43.3
2	☐	0.500		30.00	0.0000	P	48.3
3	☐	50.000		33.33	0.0000	P	19.6
4	☐	250.000		80.00	0.0000	P	21.6
5	☐	500.000		145.56	0.0000	P	6.4

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	41.11	0.0000	P	22.2
2	☐	0.497	0.506	11756.76	0.0021	P	3.7
3	☐	49.700	50.189	1161527.42	0.2101	A	0.5
4	☐	248.300	249.992	5824501.30	1.0465	A	1.5
5	☐	497.000	496.106	11538334.82	2.0768	A	1.9

y = 0.0042 * x + 7.3258E-006
R = 1.0000
DL = 0.001167
BEC = 0.00175

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq. Date-Time	2020-07-13 09:09:00
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

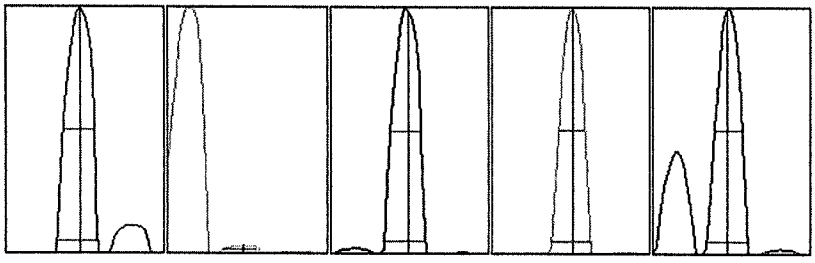
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1646	16460.10			1.469	5.000
24	10.00	5900	58997.89			0.845	5.000
59	10.00	9761	97608.16			0.908	5.000
115	10.00	11847	118469.65			1.088	5.000
208	10.00	5899	58989.09			0.873	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1666	1613	1666	1658	1627
24	5949	5935	5922	5838	5856
59	9679	9765	9895	9682	9782
115	11767	11715	11787	12015	11951
208	5939	5943	5920	5868	5824

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2948.49	8.95	8.90 - 9.10	
24	9883.06	23.95	23.90 - 24.10	
59	17351.21	59.00	58.90 - 59.10	
115	24179.56	115.05	114.90 - 115.10	
208	11347.30	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.777	0.900	
24	0.64	0.787	0.900	
59	0.59	0.781	0.900	
115	0.51	0.731	0.900	
208	0.54	0.782	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.60 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.9 V	Deflect	11.8 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9994	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	-0.01		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.2 mm

EM

Discriminator	4.2 mV	Analog HV	2411 V	Pulse HV	1559 V

Calibration Standard Report

Sample Name	S0
File Name	H6G09003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:33:28
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	114851.91	2.4
Be	9	6	No Gas	18.67	72.1
B	11	6	No Gas	4149.50	2.0
Na	23	45	H2	362870.27	0.2
Mg	24	45	No Gas	20416.93	2.7
Al	27	45	No Gas	25333.10	3.5
Si	28	45	H2	5509.10	0.8
P	31	45	No Gas	35491.92	1.4
K	39	45	He	107013.95	2.9
Ca	40	45	H2	131577.24	0.6
Tl	47	45	No Gas	342.67	5.0
V	51	45	He	1023.37	0.9
Cr	52	45	He	1138.72	2.3
Mn	55	45	No Gas	8196.46	1.8
Fe	56	45	H2	9630.06	2.5
Co	59	45	No Gas	249.33	6.8
Ni	60	45	He	78.00	20.0
Cu	63	45	He	180104.80	0.4
Zn	66	72	No Gas	3095.02	0.4
As	75	72	He	114.67	4.1
Se	78	72	H2	17.33	17.6
Sr	88	72	No Gas	1526.76	3.6
Zr	90	72	No Gas	126.67	31.9
Mo	95	115	No Gas	30.00	11.1
Ag	107	115	No Gas	52.22	7.4
Cd	111	115	No Gas	19.82	29.5
Sn	118	115	No Gas	1522.31	4.6
Sb	123	115	No Gas	93.33	19.9
Ba	137	115	No Gas	120.00	7.3
W	182	159	No Gas	70.00	0.0
Hg	201	159	He	14.17	27.0
Tl	205	159	No Gas	907.81	6.0
Pb	208	159	No Gas	1436.70	8.7
U	238	159	No Gas	41.11	23.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2086463.50	0.9	2097164.59	99.49	60	120	
Sc	45	No Gas	3755815.58	0.7	3750166.75	100.15	60	120	
Sc	45	H2	2174673.56	0.4	2177398.33	99.87	60	120	
Sc	45	He	428412.13	0.3	433199.3	98.89	60	120	
Ge	72	No Gas	811493.96	0.2	624654.15	98.4	60	120	
Ge	72	H2	598818.73	0.8	601667.94	99.53	60	120	
Ge	72	He	246690.87	0.3	249247.67	98.97	60	120	
In	115	No Gas	4500839.08	0.4	4556929.48	98.77	60	120	
Tb	159	No Gas	5600349.78	1.5	5659230.75	98.96	60	120	
Tb	159	He	4131465.33	0.7	4116226.58	100.37	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G09004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:36:19
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Tabla

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	119529.28	0.8
Be	9	6	No Gas	1805.68	2.5
B	11	6	No Gas	6010.18	1.1
Na	23	45	H2	563661.50	0.4
Mg	24	45	No Gas	606451.98	0.7
Al	27	45	No Gas	742547.93	0.8
Si	28	45	H2	122189.50	0.7
P	31	45	No Gas	59547.23	1.4
K	39	45	Ha	142042.73	1.6
Ca	40	45	H2	487506.32	0.0
Ti	47	45	No Gas	1156.72	5.0
V	51	45	He	3819.20	3.2
Cr	52	45	He	4431.38	1.5
Mn	55	45	No Gas	20286.35	2.0
Fe	56	45	H2	607095.25	0.6
Co	59	45	No Gas	10980.42	0.3
Ni	60	45	He	1177.39	4.5
Cu	63	45	He	189784.25	0.9
Zn	66	72	No Gas	4362.04	2.3
As	75	72	He	728.69	3.2
Se	78	72	H2	185.67	4.6
Sr	88	72	No Gas	13697.01	0.6
Zr	90	72	No Gas	66243.57	2.4
Mo	95	115	No Gas	2355.77	3.3
Ag	107	115	No Gas	6310.40	2.6
Cd	111	115	No Gas	1286.71	6.1
Sn	118	115	No Gas	4359.62	2.0
Sb	123	115	No Gas	4062.85	1.5
Ba	137	115	No Gas	1896.81	5.2
W	182	159	No Gas	2040.17	2.0
Hg	201	159	He	61.50	3.5
Tl	205	159	No Gas	9741.59	0.5
Pb	208	159	No Gas	13842.99	1.6
U	238	159	No Gas	11756.76	3.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2069616.70	1.0	2097164.59	98.69	60	120	
Sc	45	No Gas	3723087.67	0.7	3750166.75	99.28	60	120	
Sc	45	H2	2128864.75	0.7	2177398.33	97.77	60	120	
Sc	45	He	426770.57	0.6	433199.3	98.52	60	120	
Ge	72	No Gas	822060.17	0.6	824654.15	99.69	60	120	
Ge	72	H2	595629.79	0.5	601667.94	99	60	120	
Ge	72	He	251753.95	1.4	249247.67	101.01	60	120	
In	115	No Gas	4463426.74	0.7	4556929.48	97.95	60	120	
Tb	159	No Gas	5532260.06	0.6	5659230.75	97.76	60	120	
Tb	159	He	4150044.00	0.2	4116226.58	100.82	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G09005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:39:11
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	168893.81	0.7
Be	9	6	No Gas	18204.00	0.9
B	11	6	No Gas	34514.48	1.6
Na	23	45	H2	20297178.67	0.6
Mg	24	45	No Gas	57115236.00	0.7
Al	27	45	No Gas	69950728.96	0.6
Si	28	45	H2	608006.56	0.6
P	31	45	No Gas	85165.33	0.9
K	39	45	He	3547238.63	3.3
Ca	40	45	H2	41221466.67	0.6
Ti	47	45	No Gas	77489.53	0.5
V	51	45	He	262536.09	3.0
Cr	52	45	He	305591.73	3.1
Mn	55	45	No Gas	7281766.33	0.2
Fe	56	45	H2	56874065.33	0.9
Co	59	45	No Gas	1049594.92	0.8
Ni	60	45	He	103648.45	3.8
Cu	63	45	He	444195.86	1.5
Zn	66	72	No Gas	159987.91	0.3
As	75	72	He	53552.55	3.4
Se	78	72	H2	17683.58	1.5
Sr	88	72	No Gas	1234411.65	0.8
Zr	90	72	No Gas	152547.43	0.4
Mo	95	115	No Gas	229858.86	1.0
Ag	107	115	No Gas	59379.37	0.9
Cd	111	115	No Gas	118079.50	1.1
Sn	118	115	No Gas	329784.62	0.5
Sb	123	115	No Gas	78297.26	1.2
Ba	137	115	No Gas	337096.26	1.2
W	182	159	No Gas	39601.96	3.0
Hg	201	159	He	467.34	4.3
Tl	205	159	No Gas	883622.36	0.8
Pb	208	159	No Gas	1221793.24	0.6
U	238	159	No Gas	1161527.42	0.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2049561.00	0.6	2097164.59	97.73	60	120	
Sc	45	No Gas	3726525.92	0.2	3750166.75	99.37	60	120	
Sc	45	H2	2187255.75	0.5	2177398.33	100.45	60	120	
Sc	45	He	431505.33	1.0	433199.3	99.61	60	120	
Ge	72	No Gas	822137.50	0.9	824654.15	99.69	60	120	
Ge	72	H2	611546.58	1.4	601667.94	101.64	60	120	
Ge	72	He	251978.92	1.0	249247.67	101.1	60	120	
In	115	No Gas	4446685.63	0.3	4556929.48	97.58	60	120	
Tb	159	No Gas	5528484.78	0.5	5659230.75	97.69	60	120	
Tb	159	He	4108268.25	0.9	4116226.58	99.81	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G09006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:42:32
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	388269.59	0.7
Be	9	6	No Gas	88822.17	1.0
B	11	6	No Gas	121940.17	1.0
Na	23	45	H2	100187816.00	1.5
Mg	24	45	No Gas	283816010.67	0.6
Al	27	45	No Gas	351108514.77	0.8
Si	28	45	H2	2986323.92	1.3
P	31	45	No Gas	267403.70	1.6
K	39	45	He	17796262.67	1.0
Ca	40	45	H2	210412960.00	0.9
Ti	47	45	No Gas	387048.12	0.5
V	51	45	He	1350095.08	0.5
Cr	52	45	He	1544112.67	0.2
Mn	55	45	No Gas	35889672.00	0.8
Fe	56	45	H2	285271626.67	0.8
Co	59	45	No Gas	5159741.17	0.5
Ni	60	45	He	532397.38	1.0
Cu	63	45	He	1542192.50	0.2
Zn	66	72	No Gas	800577.84	1.0
As	75	72	He	280680.16	0.4
Se	78	72	H2	88704.77	0.5
Sr	88	72	No Gas	6152711.14	1.1
Zr	90	72	No Gas	364787.95	1.9
Mo	95	115	No Gas	1169850.82	0.6
Ag	107	115	No Gas	294951.77	1.0
Cd	111	115	No Gas	586729.19	0.8
Sn	118	115	No Gas	1679614.90	0.3
Sb	123	115	No Gas	394355.28	0.2
Ba	137	115	No Gas	1721851.18	1.2
W	182	159	No Gas	196434.45	0.8
Hg	201	159	He	2392.73	1.0
Tl	205	159	No Gas	4395377.60	1.0
Pb	208	159	No Gas	6078486.55	1.0
U	238	159	No Gas	5824501.30	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2030818.18	0.9	2097164.59	96.84	60	120	
Sc	45	No Gas	3775288.92	1.0	3750166.75	100.67	60	120	
Sc	45	H2	2202187.00	1.1	2177398.33	101.14	60	120	
Sc	45	He	433788.00	1.0	433199.3	100.14	60	120	
Ge	72	No Gas	843809.73	0.5	824654.15	102.32	60	120	
Ge	72	H2	609126.62	0.2	601667.94	101.24	60	120	
Ge	72	He	254923.33	0.4	249247.67	102.28	60	120	
In	115	No Gas	4366122.79	1.3	4556929.48	95.81	60	120	
Tb	159	No Gas	5566323.53	1.1	5659230.75	98.36	60	120	
Tb	159	He	4121400.08	0.5	4116226.58	100.13	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G09007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:45:22
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	659894.28	0.4
Be	9	6	No Gas	173994.41	0.5
B	11	6	No Gas	225087.24	2.0
Na	23	45	H2	195886202.67	0.8
Mg	24	45	No Gas	555042112.00	0.9
Al	27	45	No Gas	688379429.74	0.4
Si	28	45	H2	5832723.67	0.5
P	31	45	No Gas	488946.24	0.3
K	39	45	He	35036772.00	0.7
Ca	40	45	H2	417315946.67	0.3
Tl	47	45	No Gas	761556.04	0.6
V	51	45	He	2659489.42	0.6
Cr	52	45	He	3045217.25	0.8
Mn	55	45	No Gas	70315725.33	0.6
Fe	56	45	H2	558104618.67	0.4
Co	59	45	No Gas	9965827.33	1.4
Ni	60	45	He	1026621.14	0.4
Cu	63	45	He	2793785.58	0.1
Zn	66	72	No Gas	1554448.04	1.0
As	75	72	He	555238.33	0.0
Se	78	72	H2	173614.83	0.8
Sr	88	72	No Gas	12166573.13	0.5
Zr	90	72	No Gas	778620.22	0.9
Mo	95	115	No Gas	2316989.56	0.9
Ag	107	115	No Gas	571038.90	0.8
Cd	111	115	No Gas	1152974.51	0.6
Sn	118	115	No Gas	3314679.10	1.2
Sb	123	115	No Gas	779770.89	0.7
Ba	137	115	No Gas	3376659.93	1.5
W	182	159	No Gas	376937.00	1.3
Hg	201	159	He	4620.69	1.6
Tl	205	159	No Gas	8595821.32	1.2
Pb	208	159	No Gas	11848663.98	0.6
U	238	159	No Gas	11538334.82	0.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2031063.71	0.5	2097164.59	96.85	60	120	
Sc	45	No Gas	3762252.75	1.2	3750166.75	100.32	60	120	
Sc	45	H2	2222150.33	0.0	2177398.33	102.06	60	120	
Sc	45	He	432002.76	0.4	433199.3	99.72	60	120	
Ge	72	No Gas	841350.38	2.1	824654.15	102.02	60	120	
Ge	72	H2	609385.19	0.3	601667.94	101.28	60	120	
Ge	72	He	254012.99	0.7	249247.67	101.91	60	120	
In	115	No Gas	4262402.19	2.1	4556929.48	93.54	60	120	
Tb	159	No Gas	5557262.83	1.9	5659230.75	98.2	60	120	
Tb	159	He	4140380.50	0.9	4116226.58	100.59	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G09008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:48:07
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	31.140	ppb	1.3	451597.95	30	103.8	90	110	
Be	9	6	No Gas	32.073	ppb	1.8	111577.01	30	106.91	90	110	
B	11	6	No Gas	35.973	ppb	2.6	84438.44	30	119.91	90	110	> +/- 10%
Na	23	45	H2	30593.800	ppb	1.0	118922946.87	30000	101.98	90	110	
Mg	24	45	No Gas	29978.003	ppb	2.8	331790421.33	30000	99.93	90	110	
Al	27	45	No Gas	30529.051	ppb	2.7	418784073.76	30000	101.76	90	110	
Si	28	45	H2	3391.718	ppb	0.7	3924885.08	3000	113.06	90	110	> +/- 10%
P	31	45	No Gas	287.375	ppb	2.1	295242.00	300	95.79	90	110	
K	39	45	He	30550.322	ppb	0.4	21345171.33	30000	101.83	90	110	
Ca	40	45	H2	30530.871	ppb	0.8	251867109.33	30000	101.77	90	110	
Ti	47	45	No Gas	306.689	ppb	1.2	485146.77	300	102.23	90	110	
V	51	45	He	323.123	ppb	0.6	1711419.92	300	107.71	90	110	
Cr	52	45	He	318.212	ppb	0.3	1929627.67	300	106.07	90	110	
Mn	55	45	No Gas	2037.733	ppb	2.0	47600080.00	2000	101.89	90	110	
Fe	56	45	H2	31549.227	ppb	0.6	349100640.00	30000	105.18	90	110	
Co	59	45	No Gas	315.339	ppb	2.9	6282986.33	300	105.11	90	110	
Ni	60	45	He	320.265	ppb	0.6	657675.38	300	106.76	90	110	
Cu	63	45	He	321.047	ppb	1.1	1859211.50	300	107.02	90	110	
Zn	66	72	No Gas	296.541	ppb	1.2	908853.31	300	98.85	90	110	
As	75	72	He	321.355	ppb	0.7	353859.95	300	107.12	90	110	
Se	78	72	H2	321.222	ppb	0.8	111176.53	300	107.07	90	110	
Sr	88	72	No Gas	321.600	ppb	1.6	7679419.98	300	107.2	90	110	
Zr	90	72	No Gas	28.731	ppb	1.0	432203.72	30	95.77	90	110	
Mo	95	115	No Gas	301.777	ppb	2.2	1414616.40	300	100.59	90	110	
Ag	107	115	No Gas	30.817	ppb	2.2	357787.15	30	102.72	90	110	
Cd	111	115	No Gas	311.792	ppb	1.5	728597.96	300	103.93	90	110	
Sn	118	115	No Gas	313.742	ppb	2.0	2105630.12	300	104.58	90	110	
Sb	123	115	No Gas	59.614	ppb	1.5	470417.24	60	99.36	90	110	
Ba	137	115	No Gas	307.873	ppb	1.4	1053651.83	300	102.62	90	110	
W	182	159	No Gas	33.307	ppb	2.4	255067.65	30	111.02	90	110	> +/- 10%
Hg	201	159	He	3.050	ppb	1.4	2815.82	3	101.67	90	110	
Tl	205	159	No Gas	316.760	ppb	1.8	5510914.92	300	105.59	90	110	
Pb	208	159	No Gas	10.148	ppb	1.5	7586442.73	300	105.38	90	110	
U	238	159	No Gas	312.326	ppb	1.0	7317650.27	300	104.11	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2021028.69	1.2	2097164.59	96.37	60	120	
Sc	45	No Gas	3734782.42	0.7	3750166.75	99.59	60	120	
Sc	45	H2	2188474.42	0.7	2177398.33	100.51	60	120	
Sc	45	He	429209.21	0.3	433199.3	99.08	60	120	
Ge	72	No Gas	823668.50	0.7	824654.15	99.88	60	120	
Ge	72	H2	604652.96	0.5	601667.94	100.5	60	120	
Ge	72	He	251551.98	0.9	249247.67	100.92	60	120	
In	115	No Gas	4324546.13	0.3	4556929.48	94.9	60	120	
Tb	159	No Gas	5596965.05	0.5	5659230.75	98.9	60	120	
Tb	159	He	4098587.00	0.5	4116226.58	99.57	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G09009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:50:44
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag	
Li	7	6	No Gas	<0.000	ppb	N/A	115187.55	0.4		
Be	9	6	No Gas	0.005	ppb	14.0	34.44	0.08		
B	11	6	No Gas	0.751	ppb	67.2	5922.40	4		
Na	23	45	H2	4.923	ppb	44.2	388587.04	40		
Mg	24	45	No Gas	5.082	ppb	49.4	75957.29	10		
Al	27	45	No Gas	5.168	ppb	52.5	95332.64	15		
Si	28	45	H2	4.058	ppb	5.2	10349.18	8		
P	31	45	No Gas	<0.000	ppb	N/A	33914.66	10		
K	39	45	He	4.422	ppb	119.8	111538.86	20		
Ca	40	45	H2	3.178	ppb	27.6	160388.14	25		
Ti	47	45	No Gas	0.080	ppb	47.0	459.34	0.5		
V	51	45	He	0.023	ppb	19.0	1162.05	0.5		
Cr	52	45	He	0.016	ppb	63.9	1251.39	0.2		
Mn	55	45	No Gas	0.374	ppb	48.4	16770.16	0.2	>LOD	LY 07/13/20
Fe	56	45	H2	3.720	ppb	26.6	51397.42	10		
Co	59	45	No Gas	0.052	ppb	58.1	1272.74	0.15		
Ni	60	45	He	0.019	ppb	38.5	118.67	0.2		
Cu	63	45	He	<0.000	ppb	N/A	149498.06	0.4		
Zn	66	72	No Gas	0.083	ppb	32.9	3347.08	2		
As	75	72	He	0.042	ppb	47.0	162.33	0.2		
Se	78	72	H2	0.048	ppb	59.3	34.33	0.2		
Sr	88	72	No Gas	0.048	ppb	52.2	2662.50	0.2		
Zr	90	72	No Gas	0.004	ppb	101.9	180.00	2		
Mo	95	115	No Gas	0.091	ppb	36.4	471.12	0.2		
Ag	107	115	No Gas	0.007	ppb	27.7	137.78	0.08		
Cd	111	115	No Gas	0.079	ppb	31.5	210.88	0.2		
Sn	118	115	No Gas	0.178	ppb	20.1	2749.18	0.2		
Sb	123	115	No Gas	0.014	ppb	18.4	208.89	0.4		
Ba	137	115	No Gas	0.050	ppb	55.9	296.67	0.2		
W	182	159	No Gas	0.024	ppb	5.3	256.67	0.3		
Hg	201	159	He	0.019	ppb	5.4	32.33	0.1		
Tl	205	159	No Gas	0.175	ppb	27.3	3932.87	0.1	>LOD	
Pb	208	159	No Gas	0.132	ppb	31.3	4569.24	0.1	>LOD	LY 07/13/20
U	238	159	No Gas	0.054	ppb	44.9	1294.52	0.05	>LOD	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2104233.15	1.5	2097164.59	100.34	60	120	
Sc	45	No Gas	3714222.08	0.8	3750166.75	99.04	60	120	
Sc	45	H2	2213585.42	1.5	2177398.33	101.66	60	120	
Sc	45	He	434016.23	0.8	433199.3	100.19	60	120	
Ge	72	No Gas	811833.15	0.9	824654.15	98.45	60	120	
Ge	72	H2	604771.04	1.2	601667.94	100.52	60	120	
Ge	72	He	249664.49	0.5	249247.67	100.17	60	120	
In	115	No Gas	4483612.36	1.1	4556929.48	98.39	60	120	
Tb	159	No Gas	5578131.30	1.1	5659230.75	98.57	60	120	
Tb	159	He	4144753.67	0.3	4116226.58	100.69	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG1301
File Name	H6G09010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:53:20
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.902	ppb	8.4	123384.46	1	90.2	80	120	
Be	9	6	No Gas	0.995	ppb	7.0	3543.79	1	99.5	80	120	
B	11	6	No Gas	10.985	ppb	3.6	29109.02	10	109.85	80	120	
Na	23	45	H2	103.053	ppb	1.1	763568.00	100	103.05	80	120	
Mg	24	45	No Gas	105.529	ppb	2.0	1169106.79	100	105.53	80	120	
Al	27	45	No Gas	103.819	ppb	2.3	1425999.10	100	103.82	80	120	
Si	28	45	H2	104.393	ppb	1.2	126019.41	100	104.39	80	120	
P	31	45	No Gas	53.309	ppb	0.8	82170.93	50	106.62	80	120	
K	39	45	He	105.483	ppb	6.9	180616.98	100	105.48	80	120	
Ca	40	45	H2	100.946	ppb	0.7	963517.21	100	100.95	80	120	
Ti	47	45	No Gas	1.094	ppb	3.1	1966.14	1	109.4	80	120	
V	51	45	He	1.050	ppb	2.8	6584.92	1	105	80	120	
Cr	52	45	He	1.165	ppb	1.2	8204.45	1	116.5	80	120	
Mn	55	45	No Gas	1.141	ppb	1.3	34246.79	1	114.1	80	120	
Fe	56	45	H2	108.852	ppb	0.3	1212554.83	100	108.85	80	120	
Co	59	45	No Gas	1.074	ppb	1.4	21300.62	1	107.4	80	120	
Ni	60	45	He	1.228	ppb	2.6	2601.58	1	122.8	80	120	> +/- 20%
Cu	63	45	He	<0.000	ppb	N/A	164089.13	1	-313.9	80	120	> +/- 20%
Zn	66	72	No Gas	10.494	ppb	2.0	34794.51	10	104.94	80	120	
As	75	72	He	1.052	ppb	2.7	1266.73	1	105.2	80	120	
Se	78	72	H2	1.054	ppb	10.8	385.01	1	105.4	80	120	
Sr	88	72	No Gas	2.159	ppb	1.6	52489.37	2	107.95	80	120	
Zr	90	72	No Gas	4.005	ppb	3.7	59679.94	5	80.1	80	120	
Mo	95	115	No Gas	0.936	ppb	0.5	4606.35	1	93.6	80	120	
Ag	107	115	No Gas	1.052	ppb	3.2	12796.20	1	105.2	80	120	
Cd	111	115	No Gas	1.017	ppb	1.9	2498.66	1	101.7	80	120	
Sn	118	115	No Gas	0.956	ppb	2.0	8214.79	1	95.6	80	120	
Sb	123	115	No Gas	0.948	ppb	1.8	7894.61	1	94.8	80	120	
Ba	137	115	No Gas	1.016	ppb	7.9	3747.21	1	101.8	80	120	
W	182	159	No Gas	2.122	ppb	0.2	16310.56	2	106.1	80	120	
Hg	201	159	He	0.086	ppb	1.1	93.83	0.1	86	80	120	
Tl	205	159	No Gas	1.068	ppb	0.4	19480.74	1	106.8	80	120	
Pb	208	159	No Gas	1.070	ppb	1.4	27098.36	1	107	80	120	
U	238	159	No Gas	0.994	ppb	1.5	23321.08	1	99.4	80	120	

130%
IH 7/21/20

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2058820.36	0.9	2097164.59	98.17	60	120	
Sc	45	No Gas	3674711.25	0.9	3750166.75	97.99	60	120	
Sc	45	H2	2185681.17	0.1	2177398.33	100.38	60	120	
Sc	45	He	429369.29	0.3	433199.3	99.12	60	120	
Ge	72	No Gas	814345.38	0.9	824654.15	98.75	60	120	
Ge	72	H2	608772.31	0.5	601667.94	101.18	60	120	
Ge	72	He	253780.26	1.0	249247.67	101.82	60	120	
In	115	No Gas	4510078.52	0.6	4556929.48	98.97	60	120	
Tb	159	No Gas	5593857.14	0.5	5659230.75	98.84	60	120	
Tb	159	He	4145296.75	0.8	4116226.58	100.71	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G09012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H8G09.b
Acq Time	2020-07-13 11:58:31
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.511	ppb	24.5	115205.10	2	-50	50	
Be	9	6	No Gas	0.003	ppb	138.2	25.55	0.4	-50	50	
B	11	6	No Gas	1.464	ppb	23.3	7181.85	10	-50	50	
Na	23	45	H2	100418.870	ppb	0.7	396834357.33	100000	80	120	
Mg	24	45	No Gas	98546.002	ppb	0.5	1099336981.33	100000	80	120	
Al	27	45	No Gas	99996.687	ppb	1.2	1382781339.39	100000	80	120	
Si	28	45	H2	6.445	ppb	5.0	13234.37	50	-50	50	
P	31	45	No Gas	98984.914	ppb	0.8	90304029.33	100000	80	120	
K	39	45	He	100266.020	ppb	0.6	70446645.33	100000	80	120	
Ca	40	45	H2	101278.908	ppb	0.4	850894933.33	100000	80	120	
Ti	47	45	No Gas	2081.498	ppb	0.5	3180323.67	2000	80	120	
V	51	45	He	0.061	ppb	19.4	1362.73	1	-50	50	
Cr	52	45	He	0.346	ppb	4.8	3269.06	1	-50	50	
Mn	55	45	No Gas	0.337	ppb	18.8	16124.22	1	-50	50	
Fe	56	45	H2	102370.911	ppb	0.3	1153992021.33	100000	80	120	
Co	59	45	No Gas	0.407	ppb	1.8	8422.60	0.75	-50	50	> +/- 20% LY 07/13/20
Ni	60	45	He	0.383	ppb	5.0	871.38	1	-50	50	
Cu	63	45	He	<0.000	ppb	N/A	90741.82	2	-50	50	> +/- 20%
Zn	66	72	No Gas	2.789	ppb	2.0	11840.50	20	-50	50	
As	75	72	He	0.094	ppb	7.5	219.67	1	-50	50	
Se	78	72	H2	0.128	ppb	22.3	61.67	1	-50	50	
Sr	88	72	No Gas	0.850	ppb	2.3	22173.89	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.112	ppb	29.9	1840.17	10	-50	50	
Mo	95	115	No Gas	2012.412	ppb	0.7	9260165.19	2000	80	120	
Ag	107	115	No Gas	0.016	ppb	17.9	227.78	0.4	-50	50	
Cd	111	115	No Gas	0.133	ppb	34.5	321.75	1	-50	50	
Sn	118	115	No Gas	0.392	ppb	13.4	4012.84	1	-50	50	
Ba	137	115	No Gas	0.441	ppb	4.6	1593.43	1	-50	50	
W	182	159	No Gas	0.195	ppb	5.5	1560.10	1	-50	50	
Hg	201	159	He	0.005	ppb	107.4	18.67	0.5	-50	50	
Tl	205	159	No Gas	0.005	ppb	394.6	987.82	0.5	-50	50	
Pb	208	159	No Gas	0.119	ppb	4.1	4288.09	0.5	-50	50	
U	238	159	No Gas	0.007	ppb	83.6	210.00	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1992995.62	1.9	2097164.59	95.03	60	120	
Sc	45	No Gas	3765134.25	2.6	3750166.75	100.4	60	120	
Sc	45	H2	2229602.75	0.6	2177398.33	102.4	60	120	
Sc	45	He	433138.73	1.2	433199.3	99.99	60	120	
Ge	72	No Gas	836369.79	1.3	824654.15	101.42	60	120	
Ge	72	H2	604808.27	0.6	601667.94	100.52	60	120	
Ge	72	He	250976.77	0.5	249247.67	100.69	60	120	
In	115	No Gas	4245294.52	2.2	4556929.48	93.16	60	120	
Tb	159	No Gas	5579726.72	1.2	5659230.75	98.6	60	120	
Tb	159	He	4120646.42	0.7	4116226.56	100.11	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G09013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:01:08
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.149	ppb	1.6	325872.80	20	80	120	
Be	9	6	No Gas	20.807	ppb	0.6	71161.69	20	80	120	
B	11	6	No Gas	23.018	ppb	1.1	54537.84	20	80	120	
Na	23	45	H2	98931.898	ppb	0.2	398096106.67	100000	80	120	
Mg	24	45	No Gas	97699.149	ppb	1.1	1120446549.33	100000	80	120	
Al	27	45	No Gas	98962.225	ppb	1.1	1406698805.70	100000	80	120	
Si	28	45	H2	216.981	ppb	0.2	265858.08	200	80	120	
P	31	45	No Gas	98051.033	ppb	1.5	91954176.00	100000	80	120	
K	39	45	He	101513.515	ppb	1.3	71176064.00	100000	80	120	
Ca	40	45	H2	100424.789	ppb	0.6	859088085.33	100000	80	120	
Ti	47	45	No Gas	2080.238	ppb	0.5	3267199.08	2000	80	120	
V	51	45	He	20.782	ppb	0.3	111815.52	20	80	120	
Cr	52	45	He	20.811	ppb	0.2	128162.41	20	80	120	
Mn	55	45	No Gas	19.567	ppb	0.4	481959.32	20	80	120	
Fe	56	45	H2	101976.757	ppb	0.2	1170486669.33	100000	80	120	
Co	59	45	No Gas	19.995	ppb	0.5	413010.86	20	80	120	
Ni	60	45	He	20.730	ppb	0.3	42945.46	20	80	120	
Cu	63	45	He	0.172	ppb	232.2	182618.63	20	80	120	> +/- 20%
Zn	66	72	No Gas	21.366	ppb	0.7	69067.80	20	80	120	
As	75	72	He	20.343	ppb	0.2	22302.05	20	80	120	
Se	78	72	H2	20.625	ppb	1.2	7196.25	20	80	120	
Sr	88	72	No Gas	20.919	ppb	1.1	505856.89	20	80	120	
Zr	90	72	No Gas	9.381	ppb	3.0	142598.39	20	80	120	> +/- 20%
Mo	95	115	No Gas	2033.550	ppb	1.8	9474949.07	2000	80	120	
Ag	107	115	No Gas	19.383	ppb	0.8	223715.94	20	80	120	
Cd	111	115	No Gas	19.775	ppb	0.1	45950.92	20	80	120	
Sn	118	115	No Gas	19.868	ppb	0.7	133900.91	20	80	120	
Sb	123	115	No Gas	20.034	ppb	1.7	157186.94	20	80	120	
Ba	137	115	No Gas	20.092	ppb	1.5	68448.50	20	80	120	
W	182	159	No Gas	18.672	ppb	1.9	144627.62	20	80	120	
Hg	201	159	He	2.016	ppb	0.4	1885.31	2	80	120	
Tl	205	159	No Gas	19.096	ppb	1.8	337302.70	20	80	120	
Pb	208	159	No Gas	19.431	ppb	2.2	473505.54	20	80	120	
U	238	159	No Gas	19.353	ppb	1.6	459192.52	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1986840.84	1.5	2097164.59	94.74	60	120	
Sc	45	No Gas	3870016.42	2.0	3750166.75	103.2	60	120	
Sc	45	H2	2270223.25	0.7	2177398.33	104.26	60	120	
Sc	45	He	432247.64	0.5	433199.3	99.78	60	120	
Ge	72	No Gas	831765.40	0.3	824654.15	100.86	60	120	
Ge	72	H2	608316.38	0.2	601667.94	101.11	60	120	
Ge	72	He	249216.76	0.5	249247.67	99.99	60	120	
In	115	No Gas	4298473.66	1.3	4556929.46	94.33	60	120	
Tb	159	No Gas	5667725.47	0.8	5659230.75	100.15	60	120	
Tb	159	He	4140043.92	0.6	4116226.56	100.58	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G09015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:06:21
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.948	ppb	0.9	376303.58	25	99.79	90	110	
Be	9	6	No Gas	25.570	ppb	0.4	87184.86	25	102.28	90	110	
B	11	6	No Gas	51.831	ppb	2.4	117532.37	50	103.66	90	110	
Na	23	45	H2	25254.713	ppb	0.4	99697760.00	25000	101.02	90	110	
Mg	24	45	No Gas	24923.040	ppb	1.4	282338485.33	25000	99.69	90	110	
Al	27	45	No Gas	24814.389	ppb	1.9	348451281.47	25000	99.26	90	110	
Si	28	45	H2	2525.233	ppb	1.0	2967180.42	2500	101.01	90	110	
P	31	45	No Gas	243.158	ppb	0.8	261240.84	250	97.26	90	110	
K	39	45	He	25388.703	ppb	0.2	17972601.33	25000	101.55	90	110	
Ca	40	45	H2	25142.862	ppb	0.7	210529568.00	25000	100.57	90	110	
Ti	47	45	No Gas	251.069	ppb	0.2	389805.69	250	100.43	90	110	
V	51	45	He	256.214	ppb	0.9	1373677.21	250	102.49	90	110	
Cr	52	45	He	257.001	ppb	1.3	1577522.71	250	102.8	90	110	
Mn	55	45	No Gas	1528.111	ppb	0.8	36539536.00	1500	101.87	90	110	
Fe	56	45	H2	25865.456	ppb	0.3	290459360.00	25000	103.46	90	110	
Co	59	45	No Gas	256.624	ppb	1.1	5233850.67	250	102.65	90	110	
Ni	60	45	He	257.366	ppb	0.8	534932.63	250	102.95	90	110	
Cu	63	45	He	246.203	ppb	0.8	1485603.29	250	98.48	90	110	
Zn	66	72	No Gas	252.397	ppb	1.2	802530.23	250	100.96	90	110	
As	75	72	He	251.152	ppb	0.9	281534.31	250	100.46	90	110	
Se	78	72	H2	253.948	ppb	0.9	89923.47	250	101.58	90	110	
Sr	88	72	No Gas	252.748	ppb	1.1	6257541.00	250	101.1	90	110	
Zr	90	72	No Gas	24.774	ppb	0.5	386400.69	25	99.1	90	110	
Mo	95	115	No Gas	247.086	ppb	1.0	1187360.20	250	98.83	90	110	
Ag	107	115	No Gas	24.861	ppb	1.4	295885.71	25	99.44	90	110	
Cd	111	115	No Gas	247.596	ppb	1.8	593042.60	250	99.04	90	110	
Sn	118	115	No Gas	248.021	ppb	0.6	1706819.93	250	99.21	90	110	
Sb	123	115	No Gas	49.191	ppb	1.4	397902.56	50	98.38	90	110	
Ba	137	115	No Gas	499.342	ppb	0.7	1752125.03	500	99.87	90	110	
W	182	159	No Gas	25.369	ppb	0.7	195117.17	25	101.48	90	110	
Hg	201	159	He	2.559	ppb	1.8	2385.90	2.5	102.36	90	110	
Tl	205	159	No Gas	252.108	ppb	1.3	4404819.96	250	100.84	90	110	
Pb	208	159	No Gas	252.345	ppb	0.7	6080571.95	250	100.94	90	110	
U	238	159	No Gas	247.396	ppb	0.4	5820339.35	250	98.96	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1980858.94	2.2	2097164.59	94.45	60	120	
Sc	45	No Gas	3822725.17	1.6	3750166.75	101.93	60	120	
Sc	45	H2	2221034.25	0.1	2177398.33	102	60	120	
Sc	45	He	434425.64	0.8	433199.3	100.28	60	120	
Ge	72	No Gas	853985.44	1.1	824654.15	103.56	60	120	
Ge	72	H2	618617.48	1.1	601667.94	102.82	60	120	
Ge	72	He	256053.63	0.8	249247.67	102.73	60	120	
In	115	No Gas	4433613.62	2.2	4556929.48	97.29	60	120	
Tb	159	No Gas	5620251.03	1.5	5659230.75	99.31	60	120	
Tb	159	He	4135516.50	1.0	4116226.58	100.47	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G09016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:08:58
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag	
Li	7	6	No Gas	<0.000	ppb	N/A	112410.43	0.4		
Be	9	6	No Gas	0.003	ppb	142.4	26.67	0.08		
B	11	6	No Gas	0.566	ppb	53.3	5354.37	4		
Na	23	45	H2	5.272	ppb	11.3	391801.14	40		
Mg	24	45	No Gas	6.075	ppb	46.8	89025.70	10		
Al	27	45	No Gas	6.324	ppb	45.7	113843.45	15		
Si	28	45	H2	1.241	ppb	7.4	7091.14	8		
P	31	45	No Gas	<0.000	ppb	N/A	31913.96	10		
K	39	45	He	5.931	ppb	96.3	113640.47	20		
Ca	40	45	H2	2.986	ppb	2.3	159557.38	25		
Ti	47	45	No Gas	0.093	ppb	40.4	492.01	0.5		
V	51	45	He	0.078	ppb	18.8	1470.08	0.5		
Cr	52	45	He	0.001	ppb	1095.8	1168.72	0.2		
Mn	55	45	No Gas	0.246	ppb	63.2	14149.72	0.2	>LOD	LY 07/13/20
Fe	56	45	H2	3.540	ppb	4.6	49657.40	10		
Co	59	45	No Gas	0.040	ppb	60.1	1056.72	0.15		
Ni	60	45	He	0.018	ppb	35.5	114.00	0.2		
Cu	63	45	He	<0.000	ppb	N/A	88937.29	0.4		
Zn	66	72	No Gas	0.061	ppb	75.7	3341.08	2		
As	75	72	He	0.033	ppb	45.8	155.67	0.2		
Se	78	72	H2	0.024	ppb	104.7	26.00	0.2		
Sr	88	72	No Gas	0.035	ppb	53.8	2392.44	0.2		
Zr	90	72	No Gas	<0.000	ppb	N/A	113.33	2		
Mo	95	115	No Gas	0.114	ppb	41.4	600.02	0.2		
Ag	107	115	No Gas	0.005	ppb	37.5	112.22	0.08		
Cd	111	115	No Gas	0.048	ppb	51.2	140.75	0.2		
Sn	118	115	No Gas	0.105	ppb	49.1	2317.99	0.2		
Sb	123	115	No Gas	0.014	ppb	37.5	214.45	0.4		
Ba	137	115	No Gas	0.056	ppb	60.6	325.56	0.2		
W	182	159	No Gas	0.012	ppb	10.9	166.67	0.3		
Hg	201	159	He	0.011	ppb	17.9	24.67	0.1		
Tl	205	159	No Gas	0.102	ppb	41.6	2729.21	0.1	>LOD	LY 07/13/20
Pb	208	159	No Gas	0.082	ppb	34.9	3453.52	0.1		
U	238	159	No Gas	0.038	ppb	48.4	957.82	0.05		

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2050492.90	2.0	2097164.59	97.77	60	120	
Sc	45	No Gas	3819987.75	2.3	3750166.75	101.86	60	120	
Sc	45	H2	2223679.58	0.7	2177398.33	102.13	60	120	
Sc	45	He	438049.57	0.5	433199.3	101.12	60	120	
Ge	72	No Gas	827714.58	2.4	824654.15	100.37	60	120	
Ge	72	H2	612309.40	0.7	601667.94	101.77	60	120	
Ge	72	He	254712.94	0.7	249247.67	102.19	60	120	
In	115	No Gas	4631430.51	1.6	4556929.48	101.63	60	120	
Tb	159	No Gas	5708633.80	1.4	5659230.75	100.87	60	120	
Tb	159	He	4202854.08	1.5	4116226.58	102.1	60	120	

Blank Report

Sample Name	IMF034WB
File Name	H6G09017.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:11:33
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.015	ppb	405.4	110195.21	0.4	
Be	9	6	No Gas	0.001	ppb	35.4	21.11	0.08	
B	11	6	No Gas	3.566	ppb	0.9	11859.44	4	
Na	23	45	H2	<0.000	ppb	N/A	364551.73	40	
Mg	24	45	No Gas	2.015	ppb	22.2	42754.02	10	
Al	27	45	No Gas	1.141	ppb	33.2	40981.46	15	
Si	28	45	H2	0.694	ppb	29.3	6342.11	8	
P	31	45	No Gas	<0.000	ppb	N/A	35203.86	10	
K	39	45	He	4.228	ppb	106.7	110362.01	20	
Ca	40	45	H2	<0.000	ppb	N/A	101493.26	25	
Ti	47	45	No Gas	0.036	ppb	28.7	397.34	0.5	
V	51	45	He	0.170	ppb	6.7	1928.80	0.5	
Cr	52	45	He	0.006	ppb	192.3	1181.39	0.2	
Mn	55	45	No Gas	0.055	ppb	55.8	9467.28	0.2	
Fe	56	45	H2	1.954	ppb	2.4	31297.77	10	
Co	59	45	No Gas	0.005	ppb	57.0	350.67	0.15	
Ni	60	45	He	<0.000	ppb	N/A	61.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	124199.98	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2197.51	2	
As	75	72	He	0.062	ppb	23.4	179.33	0.2	
Se	78	72	H2	0.007	ppb	309.3	19.33	0.2	
Sr	88	72	No Gas	0.004	ppb	104.1	1594.54	0.2	
Zr	90	72	No Gas	0.001	ppb	227.3	146.67	2	
Mo	95	115	No Gas	0.042	ppb	11.1	236.67	0.2	
Ag	107	115	No Gas	0.003	ppb	34.4	88.89	0.08	
Cd	111	115	No Gas	0.012	ppb	34.5	48.45	0.2	
Sn	118	115	No Gas	0.067	ppb	2.8	2000.16	0.2	
Sb	123	115	No Gas	0.005	ppb	51.0	138.89	0.4	
Ba	137	115	No Gas	0.003	ppb	127.5	131.11	0.2	
W	182	159	No Gas	0.006	ppb	22.0	116.67	0.3	
Hg	201	159	He	0.004	ppb	130.6	17.83	0.1	
Tl	205	159	No Gas	0.023	ppb	26.2	1311.18	0.1	
Pb	208	159	No Gas	0.027	ppb	13.6	2084.52	0.1	
U	238	159	No Gas	0.006	ppb	8.9	186.67	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1998813.83	1.6	2097164.59	95.31	60	120	
Sc	45	No Gas	3754575.17	2.4	3750166.75	100.12	60	120	
Sc	45	H2	2187515.75	0.7	2177398.33	100.46	60	120	
Sc	45	He	429964.23	0.4	433199.3	99.25	60	120	
Ge	72	No Gas	803173.81	1.6	824654.15	97.4	60	120	
Ge	72	H2	588641.29	0.6	601667.94	97.83	60	120	
Ge	72	He	244061.96	1.3	249247.67	97.92	60	120	
In	115	No Gas	4522942.12	1.1	4556929.48	99.25	60	120	
Tb	159	No Gas	5628151.44	1.3	5659230.75	99.45	60	120	
Tb	159	He	4150343.33	1.4	4116226.58	100.83	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF034WL
File Name	H6G09018.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:14:07
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.627	ppb	3.5	434649.91	30	98.76	85	115	
Be	9	6	No Gas	30.369	ppb	3.3	105548.41	30	101.23	83	121	
B	11	6	No Gas	40.275	ppb	3.8	93967.34	30	134.25	85	115	FAIL
Na	23	45	H2	3068.219	ppb	0.6	12654454.00	3000	102.27	85	117	
Mg	24	45	No Gas	3056.335	ppb	1.4	34654749.33	3000	101.88	83	118	
Al	27	45	No Gas	3013.503	ppb	1.3	42348609.37	3000	100.45	84	117	
Si	28	45	H2	3.258	ppb	1.9	9612.65	3000	0.11	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	33922.70	300	-0.79	85	115	FAIL
K	39	45	He	3103.929	ppb	1.6	2312335.92	3000	103.46	87	115	
Ca	40	45	H2	3042.663	ppb	0.8	26040482.00	3000	101.42	87	118	
Ti	47	45	No Gas	29.870	ppb	0.9	46702.72	30	99.57	85	115	
V	51	45	He	30.983	ppb	1.5	168474.06	30	103.28	86	115	
Cr	52	45	He	31.508	ppb	1.8	196101.94	30	105.03	85	116	
Mn	55	45	No Gas	30.661	ppb	1.2	741648.85	30	102.2	87	115	
Fe	56	45	H2	3150.642	ppb	0.8	36004569.33	3000	105.02	87	118	
Co	59	45	No Gas	31.355	ppb	1.5	639917.73	30	104.52	86	115	
Ni	60	45	He	32.081	ppb	2.3	67324.30	30	106.94	85	117	
Cu	63	45	He	15.416	ppb	5.5	266502.87	30	51.39	85	118	FAIL
Zn	66	72	No Gas	62.308	ppb	1.6	197508.84	60	103.85	83	119	
As	75	72	He	30.546	ppb	0.6	34447.49	30	101.82	84	116	
Se	78	72	H2	30.776	ppb	0.5	11008.49	30	102.59	80	120	
Sr	88	72	No Gas	30.877	ppb	2.4	754233.58	30	102.92	85	115	
Zr	90	72	No Gas	0.018	ppb	23.3	410.01	30	0.06	85	115	FAIL
Mo	95	115	No Gas	27.961	ppb	1.6	138177.29	30	93.2	85	115	
Ag	107	115	No Gas	29.856	ppb	1.0	365325.87	30	99.52	85	117	
Cd	111	115	No Gas	28.938	ppb	1.7	71292.16	30	96.46	87	115	
Sn	118	115	No Gas	28.678	ppb	1.8	204261.55	30	95.59	85	115	
Sb	123	115	No Gas	28.585	ppb	1.5	237789.49	30	95.28	85	117	
Ba	137	115	No Gas	28.155	ppb	1.4	101670.46	30	93.85	86	114	
W	182	159	No Gas	0.009	ppb	61.8	140.00	30	0.03	85	115	FAIL
Hg	201	159	He	0.007	ppb	50.0	20.67	2.5	0.28	82	119	FAIL
Tl	205	159	No Gas	30.096	ppb	1.1	532018.57	30	100.32	82	116	
Pb	208	159	No Gas	30.189	ppb	1.4	736127.13	30	100.63	88	115	
U	238	159	No Gas	29.130	ppb	0.8	692353.58	30	97.1	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2018874.06	1.0	2097164.59	96.27	60	120	
Sc	45	No Gas	3824162.25	1.3	3750166.75	101.97	60	120	
Sc	45	H2	2259796.83	1.3	2177398.33	103.78	60	120	
Sc	45	He	438222.03	1.1	433199.3	101.16	60	120	
Ge	72	No Gas	840992.56	1.3	824654.15	101.98	60	120	
Ge	72	H2	623946.63	0.5	601667.94	103.7	60	120	
Ge	72	He	256812.72	0.3	249247.67	103.04	60	120	
In	115	No Gas	4557398.16	1.4	4556929.48	100.01	60	120	
Tb	159	No Gas	5677779.77	2.1	5659230.75	100.33	60	120	
Tb	159	He	4152335.83	0.6	4116226.58	100.88	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF034WC
File Name	H6G09019.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:16:42
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.090	ppb	2.9	436631.11	30	100.3	85	115	
Be	9	6	No Gas	30.669	ppb	2.9	105841.53	30	102.23	83	121	
B	11	6	No Gas	41.367	ppb	4.4	95732.03	30	137.89	85	115	FAIL
Na	23	45	H2	3126.233	ppb	1.8	12712829.33	3000	104.21	85	117	
Mg	24	45	No Gas	3039.302	ppb	1.8	34530972.00	3000	101.31	83	118	
Al	27	45	No Gas	3053.586	ppb	2.4	43002526.86	3000	101.79	84	117	
Si	28	45	H2	2.330	ppb	13.1	8389.87	3000	0.08	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	33558.47	300	-0.95	85	115	FAIL
K	39	45	He	3119.492	ppb	0.7	2334037.67	3000	103.98	87	115	
Ca	40	45	H2	3083.381	ppb	1.1	26033084.67	3000	102.78	87	118	
Ti	47	45	No Gas	30.432	ppb	1.1	47667.97	30	101.44	85	115	
V	51	45	He	31.214	ppb	0.5	170505.66	30	104.05	86	115	
Cr	52	45	He	31.862	ppb	0.7	199204.72	30	106.21	85	116	
Mn	55	45	No Gas	31.160	ppb	1.5	755031.52	30	103.87	87	115	
Fe	56	45	H2	3192.726	ppb	1.9	35993410.67	3000	106.42	87	118	
Co	59	45	No Gas	31.525	ppb	1.7	644667.56	30	105.08	86	115	
Ni	60	45	He	31.622	ppb	0.7	66669.71	30	105.41	85	117	
Cu	63	45	He	15.369	ppb	1.9	267474.80	30	51.23	85	118	FAIL
Zn	66	72	No Gas	62.974	ppb	0.3	202074.81	60	104.96	83	119	
As	75	72	He	30.583	ppb	0.7	34952.12	30	101.94	84	116	
Se	78	72	H2	31.686	ppb	0.6	11231.34	30	105.62	80	120	
Sr	88	72	No Gas	30.612	ppb	1.2	757148.22	30	102.04	85	115	
Zr	90	72	No Gas	0.008	ppb	42.5	250.00	30	0.03	85	115	FAIL
Mo	95	115	No Gas	28.367	ppb	1.2	140497.81	30	94.56	85	115	
Ag	107	115	No Gas	30.146	ppb	0.9	369719.74	30	100.49	85	117	
Cd	111	115	No Gas	29.050	ppb	2.2	71731.88	30	96.83	87	115	
Sn	118	115	No Gas	28.805	ppb	1.5	205631.77	30	96.02	85	115	
Sb	123	115	No Gas	28.484	ppb	1.5	237486.64	30	94.95	85	117	
Ba	137	115	No Gas	28.304	ppb	1.4	102436.55	30	94.35	86	114	
W	182	159	No Gas	0.017	ppb	53.0	206.67	30	0.06	85	115	FAIL
Hg	201	159	He	0.008	ppb	43.7	21.83	2.5	0.32	82	119	FAIL
Tl	205	159	No Gas	30.087	ppb	2.6	531236.00	30	100.29	82	116	
Pb	208	159	No Gas	30.351	ppb	1.2	739279.64	30	101.17	88	115	
U	238	159	No Gas	29.497	ppb	1.2	700319.92	30	98.32	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2004961.60	0.5	2097164.59	95.6	60	120	
Sc	45	No Gas	3831703.83	1.2	3750166.75	102.17	60	120	
Sc	45	H2	2229545.33	1.3	2177398.33	102.39	60	120	
Sc	45	He	440189.06	0.3	433199.3	101.61	60	120	
Ge	72	No Gas	851485.92	1.6	824654.15	103.25	60	120	
Ge	72	H2	618346.12	0.9	601667.94	102.77	60	120	
Ge	72	He	260253.43	0.7	249247.67	104.42	60	120	
In	115	No Gas	4568102.49	1.2	4556929.48	100.25	60	120	
Tb	159	No Gas	5671035.75	0.6	5659230.75	100.21	60	120	
Tb	159	He	4176485.25	0.4	4116226.58	101.46	60	120	

Sample Report

Sample Name	F178-01N
File Name	H6G09020.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:19:17
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	20.334	20.334	ppb	3.0	320069.54	50	
Be	9	6	No Gas	0.008	0.008	ppb	84.2	42.22	50	
B	11	6	No Gas	83.861	83.861	ppb	3.9	183794.52	100	
Na	23	45	H2	53993.899	53993.899	ppb	1.2	216944181.33	50000	>LDR
Mg	24	45	No Gas	49485.752	49485.752	ppb	1.6	552775925.33	50000	>LDR
Al	27	45	No Gas	76.136	76.136	ppb	1.2	1079445.03	50000	
Si	28	45	H2	8350.976	8350.976	ppb	2.0	9993216.00	5000	>LDR
P	31	45	No Gas	11.133	11.133	ppb	3.9	45779.25	500	
K	39	45	He	2501.537	2501.537	ppb	0.5	1862502.96	50000	
Ca	40	45	H2	144368.119	144368.119	ppb	1.5	1232121898.67	50000	>LDR
Ti	47	45	No Gas	0.669	0.669	ppb	2.7	1366.73	500	
V	51	45	He	1.966	1.966	ppb	0.7	11532.85	500	
Cr	52	45	He	18.257	18.257	ppb	0.4	112770.82	500	
Mn	55	45	No Gas	12.151	12.151	ppb	0.6	294639.96	3000	
Fe	56	45	H2	194.657	194.657	ppb	1.8	2239100.75	50000	
Co	59	45	No Gas	1.552	1.552	ppb	1.5	31453.61	500	
Ni	60	45	He	51.602	51.602	ppb	0.6	106967.50	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	117905.11	500	
Zn	66	72	No Gas	1.168	1.168	ppb	2.6	6863.74	500	
As	75	72	He	0.745	0.745	ppb	3.2	943.36	500	
Se	78	72	H2	0.887	0.887	ppb	3.5	331.67	500	
Sr	88	72	No Gas	1095.387	1095.387	ppb	2.2	26756602.83	500	>LDR
Zr	90	72	No Gas	0.027	0.027	ppb	17.2	546.68	50	
Mo	95	115	No Gas	10.133	10.133	ppb	0.6	48812.51	500	
Ag	107	115	No Gas	0.357	0.357	ppb	1.8	4312.93	50	
Cd	111	115	No Gas	0.001	0.001	ppb	1615.9	21.00	500	
Sn	118	115	No Gas	0.021	0.021	ppb	28.1	1644.55	500	
Sb	123	115	No Gas	0.082	0.082	ppb	2.4	756.69	100	
Ba	137	115	No Gas	46.690	46.690	ppb	0.5	164211.23	1000	
W	182	159	No Gas	0.064	0.064	ppb	11.4	563.34	50	
Hg	201	159	He	0.004	0.004	ppb	125.6	18.00	5	
Tl	205	159	No Gas	0.009	0.009	ppb	71.2	1060.05	500	
Pb	208	159	No Gas	0.060	0.060	ppb	11.9	2873.47	500	
U	238	159	No Gas	1.527	1.527	ppb	0.8	35939.28	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1939710.56	0.9	2097164.59	92.49	60	120	
Sc	45	No Gas	3769294.58	1.6	3750166.75	100.51	60	120	
Sc	45	H2	2265210.83	1.0	2177398.33	104.03	60	120	
Sc	45	He	432996.63	0.6	433199.3	99.95	60	120	
Ge	72	No Gas	842709.59	0.4	824654.15	102.19	60	120	
Ge	72	H2	618145.08	0.7	601667.94	102.74	60	120	
Ge	72	He	253171.18	0.7	249247.67	101.57	60	120	
In	115	No Gas	4441324.21	1.5	4556929.48	97.46	60	120	
Tb	159	No Gas	5615018.25	1.9	5659230.75	99.22	60	120	
Tb	159	He	4119071.83	0.6	4116226.58	100.07	60	120	

Sample Report

Sample Name	F178-02N
File Name	H6G09021.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:21:53
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.331	13.331	ppb	0.8	254043.22	50	
Be	9	6	No Gas	0.002	0.002	ppb	212.4	21.11	50	
B	11	6	No Gas	48.522	48.522	ppb	2.2	111225.33	100	
Na	23	45	H2	25484.603	25484.603	ppb	1.4	101559754.67	50000	
Mg	24	45	No Gas	37095.063	37095.063	ppb	1.7	421101173.33	50000	
Al	27	45	No Gas	3.437	3.437	ppb	8.9	74149.61	50000	
Si	28	45	H2	8733.637	8733.637	ppb	0.9	10346240.33	5000	>LDR
P	31	45	No Gas	4.175	4.175	ppb	15.8	40066.30	500	
K	39	45	He	2140.093	2140.093	ppb	0.9	1579258.75	50000	
Ca	40	45	H2	117827.365	117827.365	ppb	0.9	995527360.00	50000	>LDR
Ti	47	45	No Gas	0.598	0.598	ppb	4.0	1279.39	500	
V	51	45	He	1.082	1.082	ppb	1.8	6684.96	500	
Cr	52	45	He	0.416	0.416	ppb	6.2	3625.15	500	
Mn	55	45	No Gas	111.576	111.576	ppb	1.6	2681432.92	3000	
Fe	56	45	H2	7.797	7.797	ppb	1.0	98314.54	50000	
Co	59	45	No Gas	0.565	0.565	ppb	1.4	11789.10	500	
Ni	60	45	He	1.550	1.550	ppb	1.8	3229.05	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	105218.59	500	
Zn	66	72	No Gas	1.618	1.618	ppb	4.1	8243.18	500	
As	75	72	He	0.371	0.371	ppb	5.4	525.01	500	
Se	78	72	H2	1.108	1.108	ppb	4.7	408.01	500	
Sr	88	72	No Gas	936.224	936.224	ppb	1.7	22797964.09	500	>LDR
Zr	90	72	No Gas	0.017	0.017	ppb	35.1	400.01	50	
Mo	95	115	No Gas	2.550	2.550	ppb	1.7	12485.86	500	
Ag	107	115	No Gas	0.069	0.069	ppb	8.3	887.81	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	15.15	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	857.81	500	
Sb	123	115	No Gas	0.059	0.059	ppb	14.3	582.23	100	
Ba	137	115	No Gas	39.896	39.896	ppb	0.8	142378.43	1000	
W	182	159	No Gas	0.032	0.032	ppb	14.3	320.01	50	
Hg	201	159	He	0.002	0.002	ppb	226.8	16.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	801.14	500	
Pb	208	159	No Gas	0.026	0.026	ppb	13.5	2107.85	500	
U	238	159	No Gas	1.342	1.342	ppb	0.9	32127.61	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1998297.38	1.7	2097164.59	95.29	60	120	
Sc	45	No Gas	3830581.75	1.5	3750166.75	102.14	60	120	
Sc	45	H2	2242325.50	0.8	2177398.33	102.98	60	120	
Sc	45	He	424986.20	0.3	433199.3	98.1	60	120	
Ge	72	No Gas	840044.25	1.1	824654.15	101.87	60	120	
Ge	72	H2	615361.69	0.7	601667.94	102.28	60	120	
Ge	72	He	251391.92	1.1	249247.67	100.86	60	120	
In	115	No Gas	4506021.93	0.7	4556929.48	98.88	60	120	
Tb	159	No Gas	5711723.52	0.5	5659230.75	100.93	60	120	
Tb	159	He	4164130.33	0.3	4116226.58	101.16	60	120	

Sample Report

Sample Name	F178-04N
File Name	H6G09022.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:24:29
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.738	19.738	ppb	0.3	322132.29	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	12.22	50	
B	11	6	No Gas	177.286	177.286	ppb	3.0	394515.96	100	>LDR
Na	23	45	H2	61539.258	61539.258	ppb	0.8	246111829.33	50000	>LDR
Mg	24	45	No Gas	60488.067	60488.067	ppb	0.9	687290730.67	50000	>LDR
Al	27	45	No Gas	91.227	91.227	ppb	1.9	1310707.97	50000	
Si	28	45	H2	7938.492	7938.492	ppb	1.4	9458278.33	5000	>LDR
P	31	45	No Gas	13.306	13.306	ppb	8.2	48576.70	500	
K	39	45	He	2883.383	2883.383	ppb	0.7	2106100.96	50000	
Ca	40	45	H2	167005.468	167005.468	ppb	1.0	1419012906.67	50000	>LDR
Ti	47	45	No Gas	0.544	0.544	ppb	5.7	1196.05	500	
V	51	45	He	1.983	1.983	ppb	1.7	11489.48	500	
Cr	52	45	He	5.050	5.050	ppb	1.8	31662.51	500	
Mn	55	45	No Gas	1.752	1.752	ppb	2.0	50374.57	3000	
Fe	56	45	H2	43.223	43.223	ppb	0.6	502762.56	50000	
Co	59	45	No Gas	0.268	0.268	ppb	3.7	5739.21	500	
Ni	60	45	He	2.952	2.952	ppb	0.4	6124.04	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	100700.02	500	
Zn	66	72	No Gas	1.557	1.557	ppb	1.3	8124.43	500	
As	75	72	He	0.761	0.761	ppb	4.3	950.03	500	
Se	78	72	H2	0.872	0.872	ppb	5.3	323.33	500	
Sr	88	72	No Gas	1204.016	1204.016	ppb	1.9	29575899.94	500	>LDR
Zr	90	72	No Gas	0.007	0.007	ppb	27.9	236.67	50	
Mo	95	115	No Gas	1.521	1.521	ppb	3.0	7448.76	500	
Ag	107	115	No Gas	0.085	0.085	ppb	3.9	1081.15	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-19.53	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1061.16	500	
Sb	123	115	No Gas	0.108	0.108	ppb	5.1	982.26	100	
Ba	137	115	No Gas	72.278	72.278	ppb	1.6	257376.10	1000	
W	182	159	No Gas	0.032	0.032	ppb	11.1	323.34	50	
Hg	201	159	He	0.004	0.004	ppb	27.5	17.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	675.58	500	
Pb	208	159	No Gas	0.013	0.013	ppb	42.0	1786.72	500	
U	238	159	No Gas	1.699	1.699	ppb	1.4	40558.12	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1991128.75	1.7	2097164.59	94.94	60	120	
Sc	45	No Gas	3834286.75	2.2	3750166.75	102.24	60	120	
Sc	45	H2	2254987.50	0.1	2177398.33	103.56	60	120	
Sc	45	He	428063.21	0.8	433199.3	98.81	60	120	
Ge	72	No Gas	847473.83	0.5	824654.15	102.77	60	120	
Ge	72	H2	612034.91	0.7	601667.94	101.72	60	120	
Ge	72	He	250321.16	0.3	249247.67	100.43	60	120	
In	115	No Gas	4497509.23	0.9	4556929.48	98.7	60	120	
Tb	159	No Gas	5695693.10	2.4	5659230.75	100.64	60	120	
Tb	159	He	4145271.08	0.6	4116226.58	100.71	60	120	

Sample Report

Sample Name	F178-05N
File Name	H6G09023.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:27:05
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	75.063	75.063	ppb	0.5	902577.36	50	>LDR
Be	9	6	No Gas	0.001	0.001	ppb	201.5	20.00	50	
B	11	6	No Gas	255.841	255.841	ppb	1.8	558047.51	100	>LDR
Na	23	45	H2	175451.802	175451.802	ppb	1.3	704424704.00	50000	>LDR
Mg	24	45	No Gas	74282.082	74282.082	ppb	1.1	829026538.67	50000	>LDR
Al	27	45	No Gas	25.184	25.184	ppb	2.2	373797.72	50000	
Si	28	45	H2	10484.357	10484.357	ppb	1.5	12551423.00	5000	>LDR
P	31	45	No Gas	18.290	18.290	ppb	6.1	52264.06	500	
K	39	45	He	4948.860	4948.860	ppb	0.7	3536724.17	50000	
Ca	40	45	H2	167839.366	167839.366	ppb	1.0	1433107754.67	50000	>LDR
Ti	47	45	No Gas	0.810	0.810	ppb	4.4	1582.09	500	
V	51	45	He	1.569	1.569	ppb	3.9	9303.16	500	
Cr	52	45	He	6.523	6.523	ppb	0.6	40545.86	500	
Mn	55	45	No Gas	3.337	3.337	ppb	0.4	86809.82	3000	
Fe	56	45	H2	105.739	105.739	ppb	0.6	1221509.50	50000	
Co	59	45	No Gas	0.359	0.359	ppb	1.3	7465.38	500	
Ni	60	45	He	2.848	2.848	ppb	1.2	5907.95	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	77888.69	500	
Zn	66	72	No Gas	1.328	1.328	ppb	3.6	7305.97	500	
As	75	72	He	0.609	0.609	ppb	1.1	779.02	500	
Se	78	72	H2	2.497	2.497	ppb	2.2	880.70	500	
Sr	88	72	No Gas	1464.499	1464.499	ppb	1.9	35493676.37	500	>LDR
Zr	90	72	No Gas	0.020	0.020	ppb	17.4	433.35	50	
Mo	95	115	No Gas	1.350	1.350	ppb	0.7	6493.81	500	
Ag	107	115	No Gas	0.074	0.074	ppb	2.7	927.81	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	9.19	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	795.58	500	
Sb	123	115	No Gas	0.081	0.081	ppb	19.1	741.13	100	
Ba	137	115	No Gas	63.971	63.971	ppb	0.7	223690.04	1000	
W	182	159	No Gas	0.013	0.013	ppb	29.8	170.00	50	
Hg	201	159	He	0.001	0.001	ppb	317.1	15.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	531.12	500	
Pb	208	159	No Gas	0.086	0.086	ppb	2.7	3539.09	500	
U	238	159	No Gas	3.955	3.955	ppb	0.8	93790.52	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1958076.28	2.8	2097164.59	93.37	60	120	
Sc	45	No Gas	3766326.33	1.7	3750166.75	100.43	60	120	
Sc	45	H2	2266205.08	1.0	2177398.33	104.08	60	120	
Sc	45	He	427898.05	0.2	433199.3	98.78	60	120	
Ge	72	No Gas	836176.15	0.4	824654.15	101.4	60	120	
Ge	72	H2	604124.16	1.5	601667.94	100.41	60	120	
Ge	72	He	248851.34	1.6	249247.67	99.84	60	120	
In	115	No Gas	4416826.96	1.5	4556929.48	96.93	60	120	
Tb	159	No Gas	5663309.78	1.1	5659230.75	100.07	60	120	
Tb	159	He	4141992.00	1.1	4116226.58	100.63	60	120	

Sample Report

Sample Name	F178-07N
File Name	H6G09024.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:29:41
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	41.443	41.443	ppb	1.8	555221.19	50	
Be	9	6	No Gas	0.009	0.009	ppb	43.6	45.55	50	
B	11	6	No Gas	236.525	236.525	ppb	3.3	524308.83	100	>LDR
Na	23	45	H2	139025.419	139025.419	ppb	1.1	554156245.33	50000	>LDR
Mg	24	45	No Gas	63973.243	63973.243	ppb	1.0	720015061.33	50000	>LDR
Al	27	45	No Gas	70.248	70.248	ppb	0.4	1005409.15	50000	
Si	28	45	H2	10050.353	10050.353	ppb	0.7	11942957.67	5000	>LDR
P	31	45	No Gas	26.198	26.198	ppb	3.4	59983.08	500	
K	39	45	He	4078.961	4078.961	ppb	0.2	2921995.67	50000	
Ca	40	45	H2	168185.568	168185.568	ppb	1.2	1425440085.33	50000	>LDR
Ti	47	45	No Gas	1.210	1.210	ppb	12.0	2208.85	500	
V	51	45	He	1.367	1.367	ppb	1.9	8202.45	500	
Cr	52	45	He	1.751	1.751	ppb	0.5	11669.63	500	
Mn	55	45	No Gas	6.668	6.668	ppb	1.0	166672.14	3000	
Fe	56	45	H2	99.858	99.858	ppb	0.4	1145635.38	50000	
Co	59	45	No Gas	0.269	0.269	ppb	0.3	5705.86	500	
Ni	60	45	He	2.362	2.362	ppb	0.7	4892.21	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	78237.27	500	
Zn	66	72	No Gas	2.406	2.406	ppb	2.4	10484.72	500	
As	75	72	He	0.539	0.539	ppb	4.0	700.02	500	
Se	78	72	H2	2.736	2.736	ppb	1.3	964.37	500	
Sr	88	72	No Gas	1433.522	1433.522	ppb	1.8	34203869.75	500	>LDR
Zr	90	72	No Gas	0.140	0.140	ppb	2.5	2233.53	50	
Mo	95	115	No Gas	0.848	0.848	ppb	3.3	4116.19	500	
Ag	107	115	No Gas	0.080	0.080	ppb	2.1	1008.93	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	11.06	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	844.47	500	
Sb	123	115	No Gas	0.088	0.088	ppb	10.3	807.80	100	
Ba	137	115	No Gas	44.703	44.703	ppb	1.1	157380.14	1000	
W	182	159	No Gas	0.024	0.024	ppb	23.4	260.01	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	534.46	500	
Pb	208	159	No Gas	0.120	0.120	ppb	5.5	4350.30	500	
U	238	159	No Gas	2.874	2.874	ppb	1.9	68045.99	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1988777.59	1.3	2097164.59	94.83	60	120	
Sc	45	No Gas	3798145.25	1.5	3750166.75	101.28	60	120	
Sc	45	H2	2249449.42	0.9	2177398.33	103.31	60	120	
Sc	45	He	426171.09	0.3	433199.3	98.38	60	120	
Ge	72	No Gas	823137.46	1.9	824654.15	99.82	60	120	
Ge	72	H2	604579.83	0.6	601667.94	100.48	60	120	
Ge	72	He	247791.18	0.9	249247.67	99.42	60	120	
In	115	No Gas	4445985.06	2.4	4556929.48	97.57	60	120	
Tb	159	No Gas	5654279.91	2.4	5659230.75	99.91	60	120	
Tb	159	He	4143599.83	0.1	4116226.58	100.67	60	120	

Sample Report

Sample Name	F178-08N
File Name	H6G09025.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:32:17
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	42.126	42.126	ppb	1.8	570618.24	50	
Be	9	6	No Gas	0.009	0.009	ppb	15.4	47.78	50	
B	11	6	No Gas	240.504	240.504	ppb	1.0	540860.55	100	>LDR
Na	23	45	H2	138672.837	138672.837	ppb	1.3	554558762.67	50000	>LDR
Mg	24	45	No Gas	64652.669	64652.669	ppb	1.1	727116352.00	50000	>LDR
Al	27	45	No Gas	70.841	70.841	ppb	2.2	1012807.59	50000	
Si	28	45	H2	10102.583	10102.583	ppb	0.7	12045016.33	5000	>LDR
P	31	45	No Gas	26.341	26.341	ppb	8.0	60057.44	500	
K	39	45	He	4121.826	4121.826	ppb	1.6	2945266.50	50000	
Ca	40	45	H2	168428.484	168428.484	ppb	0.3	1432310400.00	50000	>LDR
Ti	47	45	No Gas	1.289	1.289	ppb	8.5	2330.87	500	
V	51	45	He	1.412	1.412	ppb	3.0	8420.59	500	
Cr	52	45	He	1.724	1.724	ppb	1.6	11484.81	500	
Mn	55	45	No Gas	6.505	6.505	ppb	1.4	162674.50	3000	
Fe	56	45	H2	99.169	99.169	ppb	0.8	1141528.08	50000	
Co	59	45	No Gas	0.269	0.269	ppb	3.8	5699.86	500	
Ni	60	45	He	2.318	2.318	ppb	4.2	4793.51	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	74161.23	500	
Zn	66	72	No Gas	1.812	1.812	ppb	2.2	8852.22	500	
As	75	72	He	0.538	0.538	ppb	5.9	705.69	500	
Se	78	72	H2	2.788	2.788	ppb	3.5	989.04	500	
Sr	88	72	No Gas	1401.747	1401.747	ppb	0.9	34138368.64	500	>LDR
Zr	90	72	No Gas	0.139	0.139	ppb	7.9	2266.87	50	
Mo	95	115	No Gas	0.857	0.857	ppb	3.7	4188.44	500	
Ag	107	115	No Gas	0.077	0.077	ppb	9.6	976.70	50	
Cd	111	115	No Gas	0.000	0.000	ppb	3924.3	20.55	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	854.48	500	
Sb	123	115	No Gas	0.083	0.083	ppb	13.0	767.80	100	
Ba	137	115	No Gas	46.085	46.085	ppb	1.6	163374.74	1000	
W	182	159	No Gas	0.023	0.023	ppb	25.0	250.00	50	
Hg	201	159	He	0.003	0.003	ppb	144.5	16.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	527.79	500	
Pb	208	159	No Gas	0.119	0.119	ppb	2.3	4350.31	500	
U	238	159	No Gas	2.971	2.971	ppb	1.4	70724.48	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2017876.09	2.9	2097164.59	96.22	60	120	
Sc	45	No Gas	3796210.92	2.9	3750166.75	101.23	60	120	
Sc	45	H2	2256933.42	1.0	2177398.33	103.65	60	120	
Sc	45	He	425258.81	0.2	433199.3	98.17	60	120	
Ge	72	No Gas	840288.77	1.8	824654.15	101.9	60	120	
Ge	72	H2	608848.77	0.2	601667.94	101.19	60	120	
Ge	72	He	250181.09	0.7	249247.67	100.37	60	120	
In	115	No Gas	4477902.54	2.6	4556929.48	98.27	60	120	
Tb	159	No Gas	5683450.88	2.0	5659230.75	100.43	60	120	
Tb	159	He	4091522.92	0.5	4116226.58	99.4	60	120	

Sample Report

Sample Name	F178-10N
File Name	H6G09026.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:34:54
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	53.285	53.285	ppb	0.4	703481.73	50	>LDR
Be	9	6	No Gas	0.041	0.041	ppb	70.7	162.22	50	
B	11	6	No Gas	261.584	261.584	ppb	1.3	597260.72	100	>LDR
Na	23	45	H2	86270.990	86270.990	ppb	0.9	345556352.00	50000	>LDR
Mg	24	45	No Gas	74721.316	74721.316	ppb	0.8	848980224.00	50000	>LDR
Al	27	45	No Gas	125.033	125.033	ppb	20.1	1791452.27	50000	
Si	28	45	H2	10189.049	10189.049	ppb	0.5	12162149.67	5000	>LDR
P	31	45	No Gas	29.726	29.726	ppb	20.4	63913.94	500	
K	39	45	He	3950.148	3950.148	ppb	0.3	2851402.67	50000	
Ca	40	45	H2	160316.684	160316.684	ppb	0.2	1364901461.33	50000	>LDR
Ti	47	45	No Gas	1.352	1.352	ppb	24.3	2460.90	500	
V	51	45	He	1.851	1.851	ppb	0.9	10815.60	500	
Cr	52	45	He	3.674	3.674	ppb	1.4	23388.60	500	
Mn	55	45	No Gas	5.225	5.225	ppb	19.8	133997.45	3000	
Fe	56	45	H2	86.408	86.408	ppb	6.9	996942.33	50000	
Co	59	45	No Gas	0.798	0.798	ppb	21.4	16636.55	500	
Ni	60	45	He	4.437	4.437	ppb	1.2	9182.42	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	75972.51	500	
Zn	66	72	No Gas	2.854	2.854	ppb	7.1	12313.60	500	
As	75	72	He	0.674	0.674	ppb	1.3	856.36	500	
Se	78	72	H2	1.927	1.927	ppb	7.8	699.35	500	
Sr	88	72	No Gas	1310.453	1310.453	ppb	0.8	32475475.38	500	>LDR
Zr	90	72	No Gas	0.075	0.075	ppb	22.8	1310.07	50	
Mo	95	115	No Gas	1.638	1.638	ppb	18.6	8020.28	500	
Ag	107	115	No Gas	0.129	0.129	ppb	14.6	1608.99	50	
Cd	111	115	No Gas	0.328	0.328	ppb	52.4	819.51	500	
Sn	118	115	No Gas	0.208	0.208	ppb	87.0	2974.83	500	
Sb	123	115	No Gas	0.139	0.139	ppb	28.7	1233.39	100	
Ba	137	115	No Gas	69.985	69.985	ppb	0.8	249099.25	1000	
W	182	159	No Gas	0.056	0.056	ppb	39.8	516.68	50	
Hg	201	159	He	0.004	0.004	ppb	106.6	17.67	5	
Tl	205	159	No Gas	0.300	0.300	ppb	43.7	6335.14	500	
Pb	208	159	No Gas	0.348	0.348	ppb	53.7	10141.91	500	
U	238	159	No Gas	3.327	3.327	ppb	7.1	80667.68	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2049906.99	3.3	2097164.59	97.75	60	120	
Sc	45	No Gas	3834371.33	2.1	3750166.75	102.25	60	120	
Sc	45	H2	2259504.75	0.4	2177398.33	103.77	60	120	
Sc	45	He	428934.68	1.1	433199.3	99.02	60	120	
Ge	72	No Gas	855012.44	1.5	824654.15	103.68	60	120	
Ge	72	H2	617567.94	0.8	601667.94	102.64	60	120	
Ge	72	He	250667.24	0.5	249247.67	100.57	60	120	
In	115	No Gas	4495734.72	0.7	4556929.48	98.66	60	120	
Tb	159	No Gas	5787235.88	0.7	5659230.75	102.26	60	120	
Tb	159	He	4148966.08	0.3	4116226.58	100.8	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV2
File Name	H6G09027.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:37:30
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.829	ppb	2.1	391628.44	25	99.32	90	110	
Be	9	6	No Gas	25.520	ppb	1.1	90870.09	25	102.08	90	110	
B	11	6	No Gas	56.483	ppb	1.1	133348.94	50	112.97	90	110	> +/- 10%
Na	23	45	H2	25672.999	ppb	1.7	101166714.67	25000	102.69	90	110	
Mg	24	45	No Gas	25423.723	ppb	2.2	287552576.00	25000	101.69	90	110	
Al	27	45	No Gas	25123.685	ppb	2.1	352194381.42	25000	100.49	90	110	
Si	28	45	H2	2537.048	ppb	1.6	2975907.92	2500	101.48	90	110	
P	31	45	No Gas	246.637	ppb	0.1	264038.39	250	98.65	90	110	
K	39	45	He	25493.453	ppb	0.2	17728350.67	25000	101.97	90	110	
Ca	40	45	H2	25187.775	ppb	1.7	210537738.67	25000	100.75	90	110	
Ti	47	45	No Gas	250.071	ppb	1.0	387649.60	250	100.03	90	110	
V	51	45	He	257.966	ppb	1.1	1358652.54	250	103.19	90	110	
Cr	52	45	He	258.999	ppb	1.4	1561712.67	250	103.6	90	110	
Mn	55	45	No Gas	1530.428	ppb	1.6	36536568.00	1500	102.03	90	110	
Fe	56	45	H2	25772.277	ppb	0.9	288921578.67	25000	103.09	90	110	
Co	59	45	No Gas	256.475	ppb	1.5	5222214.50	250	102.59	90	110	
Ni	60	45	He	260.061	ppb	1.4	530979.81	250	104.02	90	110	
Cu	63	45	He	249.206	ppb	1.5	1474965.87	250	99.68	90	110	
Zn	66	72	No Gas	250.703	ppb	0.7	800951.71	250	100.28	90	110	
As	75	72	He	252.817	ppb	0.6	278622.45	250	101.13	90	110	
Se	78	72	H2	252.726	ppb	1.1	89007.38	250	101.09	90	110	
Sr	88	72	No Gas	253.377	ppb	1.8	6303380.31	250	101.35	90	110	
Zr	90	72	No Gas	24.626	ppb	1.0	385950.15	25	98.5	90	110	
Mo	95	115	No Gas	243.821	ppb	1.0	1189452.66	250	97.53	90	110	
Ag	107	115	No Gas	24.536	ppb	0.4	296458.10	25	98.14	90	110	
Cd	111	115	No Gas	246.187	ppb	1.0	598678.62	250	98.47	90	110	
Sn	118	115	No Gas	246.641	ppb	1.2	1722982.09	250	98.66	90	110	
Sb	123	115	No Gas	49.144	ppb	0.4	403570.04	50	98.29	90	110	
Ba	137	115	No Gas	496.165	ppb	1.5	1767060.00	500	99.23	90	110	
W	182	159	No Gas	25.394	ppb	0.8	199536.68	25	101.58	90	110	
Hg	201	159	He	2.593	ppb	2.1	2437.74	2.5	103.72	90	110	
Tl	205	159	No Gas	252.435	ppb	1.1	4506152.88	250	100.97	90	110	
Pb	208	159	No Gas	253.019	ppb	0.8	6229467.39	250	101.21	90	110	
U	238	159	No Gas	249.164	ppb	1.3	5989325.87	250	99.67	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2068596.56	0.8	2097164.59	98.64	60	120	
Sc	45	No Gas	3816557.58	0.9	3750166.75	101.77	60	120	
Sc	45	H2	2217430.42	1.3	2177398.33	101.84	60	120	
Sc	45	He	426769.75	1.0	433199.3	98.52	60	120	
Ge	72	No Gas	858121.84	0.5	824654.15	104.06	60	120	
Ge	72	H2	615251.21	0.3	601667.94	102.26	60	120	
Ge	72	He	251734.13	0.3	249247.67	101	60	120	
In	115	No Gas	4500190.02	0.6	4556929.48	98.75	60	120	
Tb	159	No Gas	5742740.47	1.4	5659230.75	101.48	60	120	
Tb	159	He	4169623.83	0.9	4116226.58	101.3	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB2
File Name	H6G09028.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:40:07
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.105	ppb	32.0	117076.58	0.4	
Be	9	6	No Gas	0.004	ppb	107.0	31.11	0.08	
B	11	6	No Gas	2.877	ppb	15.5	10877.57	4	
Na	23	45	H2	33.340	ppb	2.0	507177.87	40	
Mg	24	45	No Gas	7.821	ppb	35.3	109447.47	10	
Al	27	45	No Gas	3.589	ppb	42.0	76228.74	15	
Si	28	45	H2	1.225	ppb	4.9	7139.84	8	
P	31	45	No Gas	<0.000	ppb	N/A	33466.92	10	
K	39	45	He	6.622	ppb	92.5	113603.57	20	
Ca	40	45	H2	6.301	ppb	7.8	189142.17	25	
Ti	47	45	No Gas	0.050	ppb	52.1	428.01	0.5	
V	51	45	He	0.056	ppb	7.9	1340.73	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1043.37	0.2	
Mn	55	45	No Gas	0.281	ppb	36.6	15093.20	0.2	>LOQ LY 07/13/20
Fe	56	45	H2	1.558	ppb	8.5	27625.94	10	
Co	59	45	No Gas	0.033	ppb	55.3	932.70	0.15	
Ni	60	45	He	0.007	ppb	35.1	93.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	97615.67	0.4	
Zn	66	72	No Gas	0.054	ppb	64.1	3346.41	2	
As	75	72	He	0.039	ppb	15.2	161.67	0.2	
Se	78	72	H2	0.023	ppb	32.4	25.67	0.2	
Sr	88	72	No Gas	0.112	ppb	31.1	4261.81	0.2	
Zr	90	72	No Gas	0.001	ppb	254.1	143.33	2	
Mo	95	115	No Gas	0.059	ppb	52.9	324.45	0.2	
Ag	107	115	No Gas	0.004	ppb	38.2	107.78	0.08	
Cd	111	115	No Gas	0.051	ppb	27.5	147.68	0.2	
Sn	118	115	No Gas	0.053	ppb	41.9	1936.81	0.2	
Sb	123	115	No Gas	0.011	ppb	33.3	184.44	0.4	
Ba	137	115	No Gas	0.064	ppb	49.7	355.56	0.2	
W	182	159	No Gas	0.002	ppb	314.1	86.67	0.3	
Hg	201	159	He	0.009	ppb	81.5	23.33	0.1	
Tl	205	159	No Gas	0.075	ppb	41.1	2286.89	0.1	
Pb	208	159	No Gas	0.045	ppb	52.8	2587.89	0.1	
U	238	159	No Gas	0.036	ppb	49.1	916.71	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2104938.61	1.0	2097164.59	100.37	60	120	
Sc	45	No Gas	3841956.42	2.2	3750166.75	102.45	60	120	
Sc	45	H2	2245163.17	0.5	2177398.33	103.11	60	120	
Sc	45	He	436054.87	0.4	433199.3	100.66	60	120	
Ge	72	No Gas	833578.79	1.6	824654.15	101.08	60	120	
Ge	72	H2	613230.13	0.3	601667.94	101.92	60	120	
Ge	72	He	254455.94	0.7	249247.67	102.09	60	120	
In	115	No Gas	4608872.99	1.4	4556929.48	101.14	60	120	
Tb	159	No Gas	5788524.91	1.3	5659230.75	102.28	60	120	
Tb	159	He	4204343.25	1.0	4116226.58	102.14	60	120	

Sample Report

Sample Name	F178-11N
File Name	H6G09029.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:42:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	28.687	28.687	ppb	1.5	419659.04	50	
Be	9	6	No Gas	0.000	0.000	ppb	1352.0	16.67	50	
B	11	6	No Gas	112.993	112.993	ppb	1.7	253597.50	100	>LDR
Na	23	45	H2	75097.709	75097.709	ppb	0.4	305005365.33	50000	>LDR
Mg	24	45	No Gas	52252.936	52252.936	ppb	1.2	596849728.00	50000	>LDR
Al	27	45	No Gas	20.359	20.359	ppb	4.0	314260.03	50000	
Si	28	45	H2	9340.661	9340.661	ppb	0.3	11303678.00	5000	>LDR
P	31	45	No Gas	11.736	11.736	ppb	11.7	47365.87	500	
K	39	45	He	3016.062	3016.062	ppb	1.4	2225701.67	50000	
Ca	40	45	H2	142230.976	142230.976	ppb	0.4	1227617493.33	50000	>LDR
Ti	47	45	No Gas	0.725	0.725	ppb	9.8	1486.08	500	
V	51	45	He	1.910	1.910	ppb	1.6	11249.28	500	
Cr	52	45	He	1.951	1.951	ppb	0.9	13094.25	500	
Mn	55	45	No Gas	6.014	6.014	ppb	1.1	153373.07	3000	
Fe	56	45	H2	29.153	29.153	ppb	1.4	347750.09	50000	
Co	59	45	No Gas	0.225	0.225	ppb	2.8	4886.22	500	
Ni	60	45	He	0.341	0.341	ppb	3.5	786.69	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	74570.83	500	
Zn	66	72	No Gas	0.895	0.895	ppb	3.1	6038.68	500	
As	75	72	He	0.691	0.691	ppb	6.2	881.36	500	
Se	78	72	H2	1.788	1.788	ppb	1.1	647.69	500	
Sr	88	72	No Gas	1314.992	1314.992	ppb	1.2	32272149.83	500	>LDR
Zr	90	72	No Gas	0.019	0.019	ppb	49.6	423.35	50	
Mo	95	115	No Gas	0.812	0.812	ppb	0.3	3976.16	500	
Ag	107	115	No Gas	0.071	0.071	ppb	3.3	911.14	50	
Cd	111	115	No Gas	0.013	0.013	ppb	71.4	50.68	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	992.26	500	
Sb	123	115	No Gas	0.057	0.057	ppb	3.2	561.13	100	
Ba	137	115	No Gas	50.824	50.824	ppb	1.1	180425.36	1000	
W	182	159	No Gas	0.010	0.010	ppb	48.0	146.67	50	
Hg	201	159	He	0.006	0.006	ppb	53.6	19.83	5	
Tl	205	159	No Gas	0.004	0.004	ppb	485.9	993.38	500	
Pb	208	159	No Gas	0.109	0.109	ppb	10.1	4103.60	500	
U	238	159	No Gas	2.176	2.176	ppb	0.5	51577.15	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1997037.33	1.9	2097164.59	95.23	60	120	
Sc	45	No Gas	3854448.42	1.7	3750166.75	102.78	60	120	
Sc	45	H2	2290643.08	0.8	2177398.33	105.2	60	120	
Sc	45	He	433470.28	0.7	433199.3	100.06	60	120	
Ge	72	No Gas	846606.02	1.8	824654.15	102.66	60	120	
Ge	72	H2	615624.40	0.3	601667.94	102.32	60	120	
Ge	72	He	252717.09	0.4	249247.67	101.39	60	120	
In	115	No Gas	4483866.03	2.2	4556929.48	98.4	60	120	
Tb	159	No Gas	5657229.36	1.9	5659230.75	99.96	60	120	
Tb	159	He	4165425.67	0.7	4116226.58	101.2	60	120	

Sample Report

Sample Name	F178-01I
File Name	H6G09030.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:45:19
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.337	2.134	ppb	10.0	137804.01	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	8.89	50	
B	11	6	No Gas	141.239	14.124	ppb	1.4	36448.31	100	
Na	23	45	H2	57129.718	5712.972	ppb	1.1	23001004.67	50000	
Mg	24	45	No Gas	51888.930	5188.893	ppb	1.0	59137398.67	50000	
Al	27	45	No Gas	77.632	7.763	ppb	1.8	135526.57	50000	
Si	28	45	H2	8447.056	844.706	ppb	0.9	1003335.50	5000	
P	31	45	No Gas	41.829	4.183	ppb	35.8	40212.07	500	
K	39	45	He	2595.415	259.542	ppb	3.4	290034.83	50000	
Ca	40	45	H2	146466.467	14646.647	ppb	1.2	123567461.33	50000	
Ti	47	45	No Gas	0.724	0.072	ppb	26.9	463.34	500	
V	51	45	He	5.588	0.559	ppb	2.8	4016.59	500	
Cr	52	45	He	18.690	1.869	ppb	1.7	12571.10	500	
Mn	55	45	No Gas	13.575	1.357	ppb	1.8	41026.75	3000	
Fe	56	45	H2	215.591	21.559	ppb	3.8	253719.82	50000	
Co	59	45	No Gas	1.629	0.163	ppb	0.5	3595.81	500	
Ni	60	45	He	54.251	5.425	ppb	0.8	11310.69	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	120421.61	500	
Zn	66	72	No Gas	0.544	0.054	ppb	73.4	3437.10	500	
As	75	72	He	1.678	0.168	ppb	12.9	307.33	500	
Se	78	72	H2	0.989	0.099	ppb	29.9	53.67	500	
Sr	88	72	No Gas	1122.078	112.208	ppb	2.4	2785116.77	500	
Zr	90	72	No Gas	0.015	0.001	ppb	237.9	156.67	50	
Mo	95	115	No Gas	9.924	0.992	ppb	3.5	4965.37	500	
Ag	107	115	No Gas	0.349	0.035	ppb	6.3	483.34	50	
Cd	111	115	No Gas	0.028	0.003	ppb	114.0	27.33	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1252.28	500	
Sb	123	115	No Gas	0.092	0.009	ppb	22.7	172.22	100	
Ba	137	115	No Gas	45.823	4.582	ppb	0.4	16763.02	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	650.02	500	
Pb	208	159	No Gas	0.032	0.003	ppb	64.5	1530.04	500	
U	238	159	No Gas	1.569	0.157	ppb	5.0	3759.47	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2070036.73	2.1	2097164.59	98.71	60	120	
Sc	45	No Gas	3845064.50	2.2	3750166.75	102.53	60	120	
Sc	45	H2	2236892.58	1.1	2177398.33	102.73	60	120	
Sc	45	He	432780.24	0.2	433199.3	99.9	60	120	
Ge	72	No Gas	855980.04	0.8	824654.15	103.8	60	120	
Ge	72	H2	626318.50	0.8	601667.94	104.1	60	120	
Ge	72	He	256304.91	0.7	249247.67	102.83	60	120	
In	115	No Gas	4589248.39	1.5	4556929.48	100.71	60	120	
Tb	159	No Gas	5662330.89	1.3	5659230.75	100.05	60	120	
Tb	159	He	4187191.33	0.9	4116226.58	101.72	60	120	

Sample Report

Sample Name	F178-02I
File Name	H6G09031.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:47:53
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.455	1.345	ppb	1.5	129341.10	50	
Be	9	6	No Gas	0.003	0.000	ppb	1023.8	17.78	50	
B	11	6	No Gas	93.009	9.301	ppb	2.8	25477.55	100	
Na	23	45	H2	26424.485	2642.449	ppb	1.2	10781978.00	50000	
Mg	24	45	No Gas	38148.450	3814.845	ppb	3.6	43595614.67	50000	
Al	27	45	No Gas	28.684	2.868	ppb	42.8	66610.46	50000	
Si	28	45	H2	8647.974	864.797	ppb	0.5	1021671.31	5000	
P	31	45	No Gas	39.733	3.973	ppb	26.7	40139.22	500	
K	39	45	He	2199.686	219.969	ppb	1.6	257377.34	50000	
Ca	40	45	H2	118242.177	11824.218	ppb	0.3	99253957.33	50000	
Ti	47	45	No Gas	2.410	0.241	ppb	86.1	727.40	500	
V	51	45	He	4.649	0.465	ppb	4.0	3448.44	500	
Cr	52	45	He	0.339	0.034	ppb	16.9	1332.07	500	
Mn	55	45	No Gas	112.594	11.259	ppb	3.0	279837.27	3000	
Fe	56	45	H2	8.247	0.825	ppb	4.5	19132.04	50000	
Co	59	45	No Gas	0.799	0.080	ppb	9.0	1899.47	500	
Ni	60	45	He	1.707	0.171	ppb	10.0	424.01	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	117082.79	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2831.63	500	
As	75	72	He	1.006	0.101	ppb	9.9	229.67	500	
Se	78	72	H2	1.174	0.117	ppb	31.5	59.33	500	
Sr	88	72	No Gas	938.764	93.876	ppb	2.1	2303082.06	500	
Zr	90	72	No Gas	0.029	0.003	ppb	103.7	176.67	50	
Mo	95	115	No Gas	2.739	0.274	ppb	8.2	1396.74	500	
Ag	107	115	No Gas	0.078	0.008	ppb	25.1	150.00	50	
Cd	111	115	No Gas	0.217	0.022	ppb	40.0	74.07	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1088.94	500	
Sb	123	115	No Gas	0.123	0.012	ppb	27.0	198.89	100	
Ba	137	115	No Gas	39.726	3.973	ppb	1.0	14595.97	1000	
W	182	159	No Gas	0.075	0.008	ppb	28.9	130.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.67	5	
Tl	205	159	No Gas	0.150	0.015	ppb	91.6	1187.84	500	
Pb	208	159	No Gas	0.106	0.011	ppb	96.4	1718.94	500	
U	238	159	No Gas	1.525	0.153	ppb	7.2	3678.33	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2075267.19	0.8	2097164.59	98.96	60	120	
Sc	45	No Gas	3855249.17	0.8	3750166.75	102.8	60	120	
Sc	45	H2	2224973.92	0.8	2177398.33	102.18	60	120	
Sc	45	He	424636.87	0.8	433199.3	98.02	60	120	
Ge	72	No Gas	845781.38	0.9	824654.15	102.56	60	120	
Ge	72	H2	617439.63	0.5	601667.94	102.62	60	120	
Ge	72	He	253732.85	0.5	249247.67	101.8	60	120	
In	115	No Gas	4604211.42	1.4	4556929.48	101.04	60	120	
Tb	159	No Gas	5697865.75	0.8	5659230.75	100.68	60	120	
Tb	159	He	4199163.92	0.6	4116226.58	102.01	60	120	

Sample Report

Sample Name	F178-04I
File Name	H6G09032.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:50:28
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	20.044	2.004	ppb	9.4	135301.10	50	
Be	9	6	No Gas	0.029	0.003	ppb	151.5	26.67	50	
B	11	6	No Gas	213.307	21.331	ppb	2.1	52555.99	100	
Na	23	45	H2	63848.749	6384.875	ppb	0.7	25636607.33	50000	
Mg	24	45	No Gas	62345.484	6234.548	ppb	2.3	70677042.67	50000	
Al	27	45	No Gas	126.977	12.698	ppb	26.0	203715.12	50000	
Si	28	45	H2	7857.404	785.740	ppb	1.6	932667.88	5000	
P	31	45	No Gas	58.355	5.836	ppb	36.3	41525.33	500	
K	39	45	He	2898.651	289.865	ppb	1.4	313866.01	50000	
Ca	40	45	H2	169127.516	16912.752	ppb	1.2	142513194.67	50000	
Tl	47	45	No Gas	1.429	0.143	ppb	32.4	570.01	500	
V	51	45	He	5.751	0.575	ppb	6.8	4135.96	500	
Cr	52	45	He	4.967	0.497	ppb	3.3	4219.99	500	
Mn	55	45	No Gas	4.195	0.419	ppb	34.9	18347.61	3000	
Fe	56	45	H2	59.967	5.997	ppb	1.5	77650.49	50000	
Co	59	45	No Gas	0.571	0.057	ppb	48.1	1413.43	500	
Ni	60	45	He	3.018	0.302	ppb	1.9	709.35	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	109759.52	500	
Zn	66	72	No Gas	0.146	0.015	ppb	294.7	3269.73	500	
As	75	72	He	1.836	0.184	ppb	3.7	323.67	500	
Se	78	72	H2	0.939	0.094	ppb	23.7	51.00	500	
Sr	88	72	No Gas	1214.724	121.472	ppb	1.5	2978822.73	500	
Zr	90	72	No Gas	0.012	0.001	ppb	100.2	150.00	50	
Mo	95	115	No Gas	1.965	0.196	ppb	21.6	1005.60	500	
Ag	107	115	No Gas	0.134	0.013	ppb	27.4	217.78	50	
Cd	111	115	No Gas	0.284	0.028	ppb	75.8	90.29	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1193.39	500	
Sb	123	115	No Gas	0.180	0.018	ppb	16.1	245.56	100	
Ba	137	115	No Gas	69.801	6.980	ppb	1.4	25448.22	1000	
W	182	159	No Gas	0.057	0.006	ppb	66.6	116.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.33	5	
Tl	205	159	No Gas	0.131	0.013	ppb	193.8	1165.62	500	
Pb	208	159	No Gas	0.100	0.010	ppb	243.4	1721.17	500	
U	238	159	No Gas	1.837	0.184	ppb	8.7	4467.50	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2053944.17	2.3	2097164.59	97.94	60	120	
Sc	45	No Gas	3824181.42	1.6	3750166.75	101.97	60	120	
Sc	45	H2	2234602.75	1.4	2177398.33	102.63	60	120	
Sc	45	He	436386.04	1.7	433199.3	100.74	60	120	
Ge	72	No Gas	845567.71	1.1	824654.15	102.54	60	120	
Ge	72	H2	616072.69	1.0	601667.94	102.39	60	120	
Ge	72	He	255172.36	1.4	249247.67	102.38	60	120	
In	115	No Gas	4585023.92	1.0	4556929.48	100.62	60	120	
Tb	159	No Gas	5758542.97	1.0	5659230.75	101.75	60	120	
Tb	159	He	4209566.17	1.9	4116226.58	102.27	60	120	

Sample Report

Sample Name	F178-05I
File Name	H6G09033.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:53:04
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	74.230	7.423	ppb	2.6	195956.52	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	10.00	50	
B	11	6	No Gas	285.896	28.590	ppb	4.0	69187.73	100	
Na	23	45	H2	179542.962	17954.296	ppb	1.7	71726656.00	50000	
Mg	24	45	No Gas	76619.277	7661.928	ppb	1.9	86733349.33	50000	
Al	27	45	No Gas	17.685	1.769	ppb	12.2	50572.41	50000	
Si	28	45	H2	10276.280	1027.628	ppb	1.4	1223479.34	5000	
P	31	45	No Gas	52.592	5.259	ppb	22.7	40950.93	500	
K	39	45	He	5021.480	502.148	ppb	2.0	458498.54	50000	
Ca	40	45	H2	167310.631	16731.063	ppb	0.8	141612373.33	50000	
Ti	47	45	No Gas	0.819	0.082	ppb	27.1	475.34	500	
V	51	45	He	5.329	0.533	ppb	4.5	3864.55	500	
Cr	52	45	He	6.118	0.612	ppb	3.2	4872.20	500	
Mn	55	45	No Gas	3.827	0.383	ppb	1.1	17475.15	3000	
Fe	56	45	H2	108.830	10.883	ppb	1.5	133425.37	50000	
Co	59	45	No Gas	0.344	0.034	ppb	3.3	954.03	500	
Ni	60	45	He	3.073	0.307	ppb	11.7	712.69	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	100743.67	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2468.89	500	
As	75	72	He	1.522	0.152	ppb	13.3	286.33	500	
Se	78	72	H2	2.280	0.228	ppb	25.1	98.67	500	
Sr	88	72	No Gas	1468.265	146.827	ppb	2.2	3613297.08	500	
Zr	90	72	No Gas	0.009	0.001	ppb	386.0	146.67	50	
Mo	95	115	No Gas	1.277	0.128	ppb	16.6	666.69	500	
Ag	107	115	No Gas	0.066	0.007	ppb	29.7	134.44	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	17.72	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	831.14	500	
Sb	123	115	No Gas	0.109	0.011	ppb	44.3	186.67	100	
Ba	137	115	No Gas	62.549	6.255	ppb	2.0	22893.47	1000	
W	182	159	No Gas	0.048	0.005	ppb	50.9	110.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	370.01	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1104.47	500	
U	238	159	No Gas	3.830	0.383	ppb	1.4	9282.41	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2058761.22	1.3	2097164.59	98.17	60	120	
Sc	45	No Gas	3819417.33	1.0	3750166.75	101.85	60	120	
Sc	45	H2	2244482.17	1.1	2177398.33	103.08	60	120	
Sc	45	He	431293.80	0.5	433199.3	99.56	60	120	
Ge	72	No Gas	848736.46	0.3	824654.15	102.92	60	120	
Ge	72	H2	619421.19	1.1	601667.94	102.95	60	120	
Ge	72	He	253291.30	0.5	249247.67	101.62	60	120	
In	115	No Gas	4601028.33	1.2	4556929.48	100.97	60	120	
Tb	159	No Gas	5763530.74	0.7	5659230.75	101.84	60	120	
Tb	159	He	4197388.25	1.1	4116226.58	101.97	60	120	

Sample Report

Sample Name	F178-07I
File Name	H6G09034.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:55:39
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	43.650	4.365	ppb	2.9	159834.15	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	12.22	50	
B	11	6	No Gas	270.443	27.044	ppb	3.2	64844.00	100	
Na	23	45	H2	139782.309	13978.231	ppb	1.2	55723417.33	50000	
Mg	24	45	No Gas	65427.684	6542.768	ppb	1.5	73687714.67	50000	
Al	27	45	No Gas	65.490	6.549	ppb	5.9	116922.33	50000	
Si	28	45	H2	9787.867	978.787	ppb	1.4	1161366.66	5000	
P	31	45	No Gas	58.691	5.869	ppb	29.3	41281.87	500	
K	39	45	He	4114.211	411.421	ppb	2.4	392941.71	50000	
Ca	40	45	H2	166859.071	16685.907	ppb	0.6	140717749.33	50000	
Ti	47	45	No Gas	1.502	0.150	ppb	26.2	577.34	500	
V	51	45	He	5.170	0.517	ppb	1.6	3759.19	500	
Cr	52	45	He	1.794	0.179	ppb	5.4	2226.18	500	
Mn	55	45	No Gas	7.321	0.732	ppb	1.5	25684.76	3000	
Fe	56	45	H2	100.960	10.096	ppb	1.6	124042.27	50000	
Co	59	45	No Gas	0.270	0.027	ppb	6.2	800.02	500	
Ni	60	45	He	2.388	0.239	ppb	0.3	568.01	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	95833.76	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2918.32	500	
As	75	72	He	1.421	0.142	ppb	7.1	273.33	500	
Se	78	72	H2	2.541	0.254	ppb	9.8	107.67	500	
Sr	88	72	No Gas	1411.764	141.176	ppb	1.5	3468094.65	500	
Zr	90	72	No Gas	0.123	0.012	ppb	72.1	323.34	50	
Mo	95	115	No Gas	0.790	0.079	ppb	10.5	425.56	500	
Ag	107	115	No Gas	0.074	0.007	ppb	12.3	145.56	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	12.83	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	814.47	500	
Sb	123	115	No Gas	0.124	0.012	ppb	24.0	200.00	100	
Ba	137	115	No Gas	43.653	4.365	ppb	2.2	16062.15	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	10.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	431.12	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1182.24	500	
U	238	159	No Gas	2.923	0.292	ppb	0.8	7026.46	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2032008.80	1.8	2097164.59	96.89	60	120	
Sc	45	No Gas	3799441.50	2.2	3750166.75	101.31	60	120	
Sc	45	H2	2236240.75	0.7	2177398.33	102.7	60	120	
Sc	45	He	428908.31	0.6	433199.3	99.01	60	120	
Ge	72	No Gas	847054.92	1.9	824654.15	102.72	60	120	
Ge	72	H2	617469.11	0.6	601667.94	102.63	60	120	
Ge	72	He	251518.97	0.2	249247.67	100.91	60	120	
In	115	No Gas	4615209.29	1.6	4556929.48	101.28	60	120	
Tb	159	No Gas	5707822.41	1.7	5659230.75	100.86	60	120	
Tb	159	He	4151871.92	0.0	4116226.58	100.87	60	120	

Sample Report

Sample Name	F178-08I
File Name	H6G09035.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:58:14
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	42.445	4.245	ppb	4.8	160223.09	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	15.56	50	
B	11	6	No Gas	271.692	27.169	ppb	3.7	65841.97	100	
Na	23	45	H2	142466.820	14246.682	ppb	1.1	56597654.67	50000	
Mg	24	45	No Gas	65895.450	6589.545	ppb	1.3	75186077.33	50000	
Al	27	45	No Gas	73.416	7.342	ppb	13.3	129812.47	50000	
Si	28	45	H2	10054.863	1005.486	ppb	1.2	1189024.92	5000	
P	31	45	No Gas	48.459	4.846	ppb	31.9	40882.73	500	
K	39	45	He	4190.961	419.096	ppb	1.6	400468.93	50000	
Ca	40	45	H2	169951.019	16995.102	ppb	0.3	142849301.33	50000	
Ti	47	45	No Gas	1.397	0.140	ppb	27.6	569.34	500	
V	51	45	He	5.309	0.531	ppb	7.3	3854.55	500	
Cr	52	45	He	1.653	0.165	ppb	2.5	2152.84	500	
Mn	55	45	No Gas	7.251	0.725	ppb	7.4	25858.54	3000	
Fe	56	45	H2	123.682	12.368	ppb	2.0	149225.66	50000	
Co	59	45	No Gas	0.277	0.028	ppb	28.3	825.36	500	
Ni	60	45	He	2.340	0.234	ppb	7.4	561.34	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	91013.57	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2818.96	500	
As	75	72	He	1.480	0.148	ppb	5.1	280.67	500	
Se	78	72	H2	2.806	0.281	ppb	4.1	118.00	500	
Sr	88	72	No Gas	1421.405	142.141	ppb	1.7	3496946.04	500	
Zr	90	72	No Gas	0.119	0.012	ppb	34.4	316.67	50	
Mo	95	115	No Gas	0.888	0.089	ppb	11.2	470.01	500	
Ag	107	115	No Gas	0.066	0.007	ppb	35.0	133.34	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.56	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	850.03	500	
Sb	123	115	No Gas	0.106	0.011	ppb	12.6	183.34	100	
Ba	137	115	No Gas	45.609	4.561	ppb	2.5	16616.20	1000	
W	182	159	No Gas	0.077	0.008	ppb	82.0	133.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	565.58	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1342.26	500	
U	238	159	No Gas	2.944	0.294	ppb	3.7	7159.88	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2054470.38	1.9	2097164.59	97.96	60	120	
Sc	45	No Gas	3849410.17	1.3	3750166.75	102.65	60	120	
Sc	45	H2	2228797.75	0.9	2177398.33	102.36	60	120	
Sc	45	He	431265.94	0.3	433199.3	99.55	60	120	
Ge	72	No Gas	848348.54	1.4	824654.15	102.87	60	120	
Ge	72	H2	622509.69	0.8	601667.94	103.46	60	120	
Ge	72	He	252256.44	0.4	249247.67	101.21	60	120	
In	115	No Gas	4570794.69	2.4	4556929.48	100.3	60	120	
Tb	159	No Gas	5775945.60	0.2	5659230.75	102.06	60	120	
Tb	159	He	4154030.58	0.7	4116226.58	100.92	60	120	

Sample Report

Sample Name	F178-10I
File Name	H6G09036.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:00:49
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	53.518	5.352	ppb	2.3	170171.28	50	
Be	9	6	No Gas	0.014	0.001	ppb	581.2	21.11	50	
B	11	6	No Gas	289.743	28.974	ppb	1.1	68971.33	100	
Na	23	45	H2	88221.711	8822.171	ppb	0.5	35195821.33	50000	
Mg	24	45	No Gas	74615.928	7461.593	ppb	1.3	84481229.33	50000	
Al	27	45	No Gas	118.289	11.829	ppb	72.0	192464.99	50000	
Si	28	45	H2	10026.500	1002.650	ppb	0.6	1185862.25	5000	
P	31	45	No Gas	59.809	5.981	ppb	36.3	41626.16	500	
K	39	45	He	3982.537	398.254	ppb	2.1	384843.88	50000	
Ca	40	45	H2	160747.555	16074.755	ppb	0.2	135139776.00	50000	
Ti	47	45	No Gas	1.604	0.160	ppb	77.4	598.03	500	
V	51	45	He	5.797	0.580	ppb	4.1	4101.95	500	
Cr	52	45	He	3.593	0.359	ppb	1.7	3325.07	500	
Mn	55	45	No Gas	5.562	0.556	ppb	64.5	21675.92	3000	
Fe	56	45	H2	217.971	21.797	ppb	83.8	255384.99	50000	
Co	59	45	No Gas	0.792	0.079	ppb	81.7	1876.13	500	
Ni	60	45	He	4.195	0.419	ppb	3.1	941.37	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	88121.33	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2988.35	500	
As	75	72	He	1.431	0.143	ppb	12.9	276.67	500	
Se	78	72	H2	2.690	0.269	ppb	44.9	112.33	500	
Sr	88	72	No Gas	1327.740	132.774	ppb	1.1	3255848.27	500	
Zr	90	72	No Gas	0.068	0.007	ppb	72.8	236.67	50	
Mo	95	115	No Gas	1.727	0.173	ppb	80.3	890.18	500	
Ag	107	115	No Gas	0.116	0.012	ppb	63.4	195.56	50	
Cd	111	115	No Gas	0.435	0.043	ppb	200.6	128.60	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1021.22	500	
Sb	123	115	No Gas	0.144	0.014	ppb	129.5	215.56	100	
Ba	137	115	No Gas	68.443	6.844	ppb	3.4	24878.32	1000	
W	182	159	No Gas	0.076	0.008	ppb	169.1	133.34	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.50	5	
Tl	205	159	No Gas	0.205	0.020	ppb	461.2	1316.18	500	
Pb	208	159	No Gas	0.492	0.049	ppb	243.7	2721.93	500	
U	238	159	No Gas	3.437	0.344	ppb	29.8	8375.21	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2026240.28	2.0	2097164.59	96.62	60	120	
Sc	45	No Gas	3819696.83	2.1	3750166.75	101.85	60	120	
Sc	45	H2	2229129.75	0.7	2177398.33	102.38	60	120	
Sc	45	He	430086.97	0.6	433199.3	99.28	60	120	
Ge	72	No Gas	845632.17	1.0	824654.15	102.54	60	120	
Ge	72	H2	614186.85	0.1	601667.94	102.08	60	120	
Ge	72	He	253738.83	1.2	249247.67	101.8	60	120	
In	115	No Gas	4569772.79	1.7	4556929.48	100.28	60	120	
Tb	159	No Gas	5780841.02	1.1	5659230.75	102.15	60	120	
Tb	159	He	4164411.75	1.6	4116226.58	101.17	60	120	

Sample Report

Sample Name	F178-11I
File Name	H6G09037.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:03:24
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	28.931	2.893	ppb	3.9	142743.01	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	8.89	50	
B	11	6	No Gas	146.789	14.679	ppb	2.6	36798.14	100	
Na	23	45	H2	77759.396	7775.940	ppb	0.7	30970542.00	50000	
Mg	24	45	No Gas	52936.952	5293.695	ppb	0.6	60455464.00	50000	
Al	27	45	No Gas	14.528	1.453	ppb	59.6	46339.65	50000	
Si	28	45	H2	9237.259	923.726	ppb	0.7	1089598.00	5000	
P	31	45	No Gas	35.784	3.578	ppb	50.1	39719.99	500	
K	39	45	He	3048.710	304.871	ppb	2.7	320378.22	50000	
Ca	40	45	H2	143713.846	14371.385	ppb	0.8	120461877.33	50000	
Ti	47	45	No Gas	0.812	0.081	ppb	21.8	478.01	500	
V	51	45	He	5.751	0.575	ppb	6.8	4084.61	500	
Cr	52	45	He	1.816	0.182	ppb	7.8	2250.18	500	
Mn	55	45	No Gas	6.255	0.625	ppb	1.5	23473.44	3000	
Fe	56	45	H2	24.859	2.486	ppb	1.1	37771.41	50000	
Co	59	45	No Gas	0.161	0.016	ppb	3.1	586.01	500	
Ni	60	45	He	0.137	0.014	ppb	60.3	106.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	84921.74	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2554.24	500	
As	75	72	He	1.441	0.144	ppb	18.5	277.00	500	
Se	78	72	H2	1.577	0.158	ppb	6.6	73.67	500	
Sr	88	72	No Gas	1320.837	132.084	ppb	1.5	3257371.68	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	126.67	50	
Mo	95	115	No Gas	0.732	0.073	ppb	1.8	396.67	500	
Ag	107	115	No Gas	0.060	0.006	ppb	20.3	127.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	2.38	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	781.13	500	
Sb	123	115	No Gas	0.076	0.008	ppb	66.6	158.89	100	
Ba	137	115	No Gas	48.430	4.843	ppb	0.8	17795.53	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	321.12	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1163.36	500	
U	238	159	No Gas	2.058	0.206	ppb	1.8	5029.93	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2019084.71	1.0	2097164.59	96.28	60	120	
Sc	45	No Gas	3852648.25	2.5	3750166.75	102.73	60	120	
Sc	45	H2	2222313.42	0.7	2177398.33	102.06	60	120	
Sc	45	He	430852.88	0.2	433199.3	99.46	60	120	
Ge	72	No Gas	850372.77	1.5	824654.15	103.12	60	120	
Ge	72	H2	617810.00	1.1	601667.94	102.68	60	120	
Ge	72	He	252984.09	0.7	249247.67	101.5	60	120	
In	115	No Gas	4611485.38	2.8	4556929.48	101.2	60	120	
Tb	159	No Gas	5788455.33	2.2	5659230.75	102.28	60	120	
Tb	159	He	4195949.25	0.8	4116226.58	101.94	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6G09038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:06:00
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.208	ppb	1.1	378395.43	25	100.83	90	110	
Be	9	6	No Gas	25.701	ppb	0.4	87473.11	25	102.8	90	110	
B	11	6	No Gas	52.770	ppb	1.3	119370.08	50	105.54	90	110	
Na	23	45	H2	25572.650	ppb	1.9	100142997.33	25000	102.29	90	110	
Mg	24	45	No Gas	25033.800	ppb	1.1	282189056.00	25000	100.14	90	110	
Al	27	45	No Gas	25051.164	ppb	2.0	349990274.78	25000	100.2	90	110	
Si	28	45	H2	2518.184	ppb	2.1	2935301.17	2500	100.73	90	110	
P	31	45	No Gas	242.534	ppb	1.2	259396.69	250	97.01	90	110	
K	39	45	He	25428.082	ppb	0.8	17656700.00	25000	101.71	90	110	
Ca	40	45	H2	25242.176	ppb	1.2	209685776.00	25000	100.97	90	110	
Ti	47	45	No Gas	249.796	ppb	1.0	385920.33	250	99.92	90	110	
V	51	45	He	256.933	ppb	0.4	1351293.92	250	102.77	90	110	
Cr	52	45	He	257.744	ppb	0.6	1551964.04	250	103.1	90	110	
Mn	55	45	No Gas	1529.327	ppb	1.4	36387873.33	1500	101.96	90	110	
Fe	56	45	H2	26035.032	ppb	0.6	290062666.67	25000	104.14	90	110	
Co	59	45	No Gas	256.350	ppb	1.9	5202273.17	250	102.54	90	110	
Ni	60	45	He	256.927	ppb	0.8	523870.19	250	102.77	90	110	
Cu	63	45	He	242.276	ppb	0.7	1436917.04	250	96.91	90	110	
Zn	66	72	No Gas	250.881	ppb	0.7	781325.37	250	100.35	90	110	
As	75	72	He	252.489	ppb	0.5	274677.81	250	101	90	110	
Se	78	72	H2	254.801	ppb	1.1	88902.10	250	101.92	90	110	
Sr	88	72	No Gas	260.030	ppb	1.2	6305786.55	250	104.01	90	110	
Zr	90	72	No Gas	24.951	ppb	0.4	381168.24	25	99.8	90	110	
Mo	95	115	No Gas	246.348	ppb	0.2	1195912.90	250	98.54	90	110	
Ag	107	115	No Gas	24.155	ppb	0.3	290443.56	25	96.62	90	110	
Cd	111	115	No Gas	242.391	ppb	0.4	586602.44	250	96.96	90	110	
Sn	118	115	No Gas	247.507	ppb	0.7	1720586.70	250	99	90	110	
Sb	123	115	No Gas	48.310	ppb	0.7	394797.95	50	96.62	90	110	
Ba	137	115	No Gas	496.871	ppb	0.8	1760883.33	500	99.37	90	110	
W	182	159	No Gas	25.055	ppb	1.1	196212.69	25	100.22	90	110	
Hg	201	159	He	2.482	ppb	0.8	2335.05	2.5	99.28	90	110	
Tl	205	159	No Gas	251.591	ppb	0.9	4476156.21	250	100.64	90	110	
Pb	208	159	No Gas	252.512	ppb	0.8	6196655.80	250	101	90	110	
U	238	159	No Gas	248.083	ppb	1.3	5944275.32	250	99.23	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1977522.48	2.3	2097164.59	94.3	60	120	
Sc	45	No Gas	3804115.50	1.4	3750166.75	101.44	60	120	
Sc	45	H2	2203550.17	0.9	2177398.33	101.2	60	120	
Sc	45	He	426142.90	0.7	433199.3	98.37	60	120	
Ge	72	No Gas	836446.79	1.1	824654.15	101.43	60	120	
Ge	72	H2	609563.40	1.1	601667.94	101.31	60	120	
Ge	72	He	248492.97	0.5	249247.67	99.7	60	120	
In	115	No Gas	4478350.71	1.2	4556929.48	98.28	60	120	
Tb	159	No Gas	5723455.61	1.1	5659230.75	101.13	60	120	
Tb	159	He	4171716.83	0.2	4116226.58	101.35	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6G09039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:08:37
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.096	ppb	101.3	113238.63	0.4	
Be	9	6	No Gas	0.002	ppb	144.6	23.33	0.08	
B	11	6	No Gas	1.144	ppb	29.8	6624.91	4	
Na	23	45	H2	7.598	ppb	11.5	405301.53	40	
Mg	24	45	No Gas	1.655	ppb	50.4	39866.07	10	
Al	27	45	No Gas	1.400	ppb	55.0	45823.22	15	
Si	28	45	H2	0.125	ppb	44.3	5842.56	8	
P	31	45	No Gas	<0.000	ppb	N/A	32436.45	10	
K	39	45	He	4.792	ppb	87.2	113469.01	20	
Ca	40	45	H2	1.384	ppb	17.7	147710.72	25	
Ti	47	45	No Gas	0.024	ppb	52.1	390.01	0.5	
V	51	45	He	0.080	ppb	21.1	1487.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	988.04	0.2	
Mn	55	45	No Gas	0.123	ppb	40.8	11410.82	0.2	
Fe	56	45	H2	1.120	ppb	5.3	22678.79	10	
Co	59	45	No Gas	0.012	ppb	52.9	510.68	0.15	
Ni	60	45	He	0.021	ppb	61.5	123.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	61835.97	0.4	
Zn	66	72	No Gas	0.030	ppb	159.0	3259.72	2	
As	75	72	He	0.042	ppb	41.9	164.67	0.2	
Se	78	72	H2	0.032	ppb	35.4	29.00	0.2	
Sr	88	72	No Gas	0.021	ppb	55.6	2070.17	0.2	
Zr	90	72	No Gas	0.003	ppb	336.6	170.00	2	
Mo	95	115	No Gas	0.039	ppb	30.8	225.56	0.2	
Ag	107	115	No Gas	0.001	ppb	42.1	71.11	0.08	
Cd	111	115	No Gas	0.044	ppb	42.6	129.76	0.2	
Sn	118	115	No Gas	0.030	ppb	29.3	1783.46	0.2	
Sb	123	115	No Gas	0.004	ppb	43.4	131.11	0.4	
Ba	137	115	No Gas	0.021	ppb	26.1	200.00	0.2	
W	182	159	No Gas	0.001	ppb	51.8	83.33	0.3	
Hg	201	159	He	0.006	ppb	96.3	19.50	0.1	
Tl	205	159	No Gas	0.058	ppb	46.7	1965.72	0.1	
Pb	208	159	No Gas	0.016	ppb	72.8	1875.62	0.1	
U	238	159	No Gas	0.016	ppb	20.5	427.79	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2037785.08	1.3	2097164.59	97.17	60	120	
Sc	45	No Gas	3868524.25	2.2	3750166.75	103.16	60	120	
Sc	45	H2	2247822.00	1.1	2177398.33	103.23	60	120	
Sc	45	He	440531.21	1.2	433199.3	101.69	60	120	
Ge	72	No Gas	830477.17	2.0	824654.15	100.71	60	120	
Ge	72	H2	614550.19	0.5	601667.94	102.14	60	120	
Ge	72	He	254615.71	1.3	249247.67	102.15	60	120	
In	115	No Gas	4643758.50	1.7	4556929.48	101.91	60	120	
Tb	159	No Gas	5779236.99	1.5	5659230.75	102.12	60	120	
Tb	159	He	4165388.83	0.8	4116226.58	101.19	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG1304
File Name	H6G09063.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 14:14:02
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.081	ppb	8.2	122981.47	1	108.1	80	120	
Be	9	6	No Gas	1.032	ppb	2.5	3601.58	1	103.2	80	120	
B	11	6	No Gas	11.018	ppb	2.5	28628.03	10	110.18	80	120	
Na	23	45	H2	103.586	ppb	1.7	768355.52	100	103.59 ✓	80	120	
Mg	24	45	No Gas	111.467	ppb	5.8	1261702.87	100	111.47 ✓	80	120	
Al	27	45	No Gas	106.957	ppb	1.9	1501395.87	100	106.96	80	120	
Si	28	45	H2	100.480	ppb	1.3	121932.65	100	100.48	80	120	
P	31	45	No Gas	50.095	ppb	1.8	81101.26	50	100.19	80	120	
K	39	45	He	109.398	ppb	6.2	182861.31	100	109.4	80	120	
Ca	40	45	H2	103.961	ppb	1.9	991803.08	100	103.96 ✓	80	120	
Ti	47	45	No Gas	1.104	ppb	6.6	2026.15	1	110.4	80	120	
V	51	45	He	1.148	ppb	0.4	7085.16	1	114.8 ✓	80	120	
Cr	52	45	He	1.120	ppb	3.1	7909.62	1	112	80	120	
Mn	55	45	No Gas	1.312	ppb	15.1	39047.74	1	131.2	80	120	> +/- 20%
Fe	56	45	H2	109.482	ppb	0.8	1223846.75	100	109.48	80	120	
Co	59	45	No Gas	1.076	ppb	1.1	21809.41	1	107.6	80	120	
Ni	60	45	He	1.210	ppb	8.4	2556.24	1	121	80	120	~~> +/- 20%~~
Cu	63	45	He	<0.000	ppb	N/A	54261.82	1	-2410.8	80	120	> +/- 20%
Zn	66	72	No Gas	10.303	ppb	1.9	34876.04	10	103.03	80	120	
As	75	72	He	1.064	ppb	3.8	1291.73	1	106.4	80	120	
Se	78	72	H2	1.025	ppb	9.3	375.67	1	102.5	80	120	
Sr	88	72	No Gas	2.219	ppb	4.2	54924.65	2	110.95	80	120	
Zr	90	72	No Gas	3.967	ppb	1.7	60242.14	5	79.34	80	120	> +/- 20%
Mo	95	115	No Gas	0.973	ppb	4.5	4809.76	1	97.3	80	120	
Ag	107	115	No Gas	1.034	ppb	2.7	12636.03	1	103.4	80	120	
Cd	111	115	No Gas	1.053	ppb	2.4	2597.82	1	105.3	80	120	
Sn	118	115	No Gas	0.886	ppb	3.8	7758.97	1	88.6	80	120	
Sb	123	115	No Gas	0.958	ppb	2.3	8016.90	1	95.8	80	120	
Ba	137	115	No Gas	1.054	ppb	3.4	3900.59	1	105.4	80	120	
W	182	159	No Gas	2.073	ppb	3.3	16193.76	2	103.65	80	120	
Hg	201	159	He	0.079	ppb	1.7	86.83	0.1	79	80	120	> +/- 20%
Tl	205	159	No Gas	1.019	ppb	1.6	18936.58	1	101.9	80	120	
Pb	208	159	No Gas	1.026	ppb	4.0	26465.62	1	102.6	80	120	
U	238	159	No Gas	0.989	ppb	2.9	23580.44	1	98.9	80	120	

7/13/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2019596.46	0.3	2097164.59	96.3	60	120	
Sc	45	No Gas	3757638.50	0.5	3750166.75	100.2	60	120	
Sc	45	H2	2193536.08	0.8	2177398.33	100.74	60	120	
Sc	45	He	428249.84	0.3	433199.3	98.86	60	120	
Ge	72	No Gas	830007.69	0.7	824654.15	100.65	60	120	
Ge	72	H2	610499.06	1.1	601667.94	101.47	60	120	
Ge	72	He	252191.86	0.8	249247.67	101.18	60	120	
In	115	No Gas	4532525.40	1.1	4556929.48	99.46	60	120	
Tb	159	No Gas	5687170.61	0.6	5659230.75	100.49	60	120	
Tb	159	He	4104572.67	0.3	4116226.58	99.72	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SM5A-04-04-10

ALL SAMPLES PH<2

Book #: EIM-081
Batch: IHF034W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.4 °C		93.8 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	↓ -06-26	0.15
MS	SAME SPIKE SOLN AND VOL AS LCS 1,2	
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1
pH Strip (0-14)	HC998032	N/A
Digestate Location	METALS	
Extract Location	N/A	
☑ Reagent Water ID:	SWIA-08-25-05	
☑ Thermometer ID:	192272442/E14	
☑ Pipette ID:	742766331	
☐ Pipette ID:		
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: CK/MC
Standard Added By: CK Witnessed By: MC
Extract Rcvd By: W Checked By: MC

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF034W01	IMF034WB	50	ml	6/24/20 9:53	50	50	50	1	
20IMF034W02	IMF034WL	50	ml	6/24/20 9:53	50	50	50	1	
20IMF034W03	IMF034WC	50	ml	6/24/20 9:53	50	50	50	1	
20IMF034W04	E226-01	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W05	E226-02	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W06	E226-03	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W07	E226-04	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W08	E226-04M	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W09	E226-04S	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W10	E226-06	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W11	E226-07	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W12	F102-08	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W13	F102-10	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W14	F102-11	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W15	F102-11M	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W16	F102-11S	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W17	F102-12	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W18	F178-01	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W19	F178-02	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W20	F178-04	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W21	F178-05	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W22	F178-07	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W23	F178-08	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W24	F178-10	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W25	F178-11	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W26	F186-01	50	ml	6/24/20 9:53	50	50	50	1	TOTAL
20IMF034W27	TXF005SB	10	ml	6/24/20 9:53	50	50	50	5	TCLP
20IMF034W28	F172-01	10	ml	6/24/20 9:53	50	50	50	5	TCLP
20IMF034W29	F172-01M	10	ml	6/24/20 10:38	50	50	50	5	TCLP
20IMF034W30	F172-01S	10	ml	6/24/20 10:38	50	50	50	5	TCLP

CK

6/24/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/24/20 12:21 Prepared By: CKaing/MCande

☑ Digestion Ended @ 6/24/20 14:41 Checked By: CK/MC

Comments: Date 6/24/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGF023WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGF023WL/HGF023WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Mercury was within MS QC limits in F178-01M/F178-01S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F178
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGF023WB	1	NA	06/26/2016:24	06/26/2010:41	M47F018049	M47F018	20HGF023W	Method Blank
LCS1W	HGF023WL	1	NA	06/26/2016:26	06/26/2010:41	M47F018050	M47F018	20HGF023W	Lab Control Sample (LCS)
LCD1W	HGF023WC	1	NA	06/26/2016:28	06/26/2010:41	M47F018051	M47F018	20HGF023W	LCS Duplicate
MW13D-GW061820	F178-01	1	NA	06/26/2017:11	06/26/2010:41	M47F018069	M47F018	20HGF023W	Field Sample
MW13D-GW061820MS	F178-01M	1	NA	06/26/2017:20	06/26/2010:41	M47F018073	M47F018	20HGF023W	Matrix Spike Sample (MS)
MW13D-GW061820MSD	F178-01S	1	NA	06/26/2017:22	06/26/2010:41	M47F018074	M47F018	20HGF023W	MS Duplicate (MSD)
MW25C-GW061920	F178-02	1	NA	06/26/2017:24	06/26/2010:41	M47F018075	M47F018	20HGF023W	Field Sample
MW05R-GW061920	F178-04	1	NA	06/26/2017:26	06/26/2010:41	M47F018076	M47F018	20HGF023W	Field Sample
MW15S-GW061920	F178-05	1	NA	06/26/2017:29	06/26/2010:41	M47F018077	M47F018	20HGF023W	Field Sample
MW15D-GW061920	F178-07	1	NA	06/26/2017:31	06/26/2010:41	M47F018078	M47F018	20HGF023W	Field Sample
FD03-GW061920	F178-08	1	NA	06/26/2017:33	06/26/2010:41	M47F018079	M47F018	20HGF023W	Field Sample
MW12S-GW061920	F178-10	1	NA	06/26/2017:36	06/26/2010:41	M47F018080	M47F018	20HGF023W	Field Sample
MW12D-GW061920	F178-11	1	NA	06/26/2017:38	06/26/2010:41	M47F018081	M47F018	20HGF023W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGF023WB	ND	1	NA	0.500	0.100	06/26/2016:24	06/26/2010:41	M47F018049	M47F018	20HGF023W	NA	NA
LCS1W	HGF023WL	2.36	1	NA	0.500	0.100	06/26/2016:26	06/26/2010:41	M47F018050	M47F018	20HGF023W	NA	NA
LCD1W	HGF023WC	2.43	1	NA	0.500	0.100	06/26/2016:28	06/26/2010:41	M47F018051	M47F018	20HGF023W	NA	NA
MW13D-GW061820	F178-01	ND	1	NA	0.500	0.100	06/26/2017:11	06/26/2010:41	M47F018069	M47F018	20HGF023W	06/18/2016:20	06/20/20
MW13D-GW061820MS	F178-01M	2.50	1	NA	0.500	0.100	06/26/2017:20	06/26/2010:41	M47F018073	M47F018	20HGF023W	06/18/2016:20	06/20/20
MW13D-GW061820MSD	F178-01S	2.44	1	NA	0.500	0.100	06/26/2017:22	06/26/2010:41	M47F018074	M47F018	20HGF023W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02	ND	1	NA	0.500	0.100	06/26/2017:24	06/26/2010:41	M47F018075	M47F018	20HGF023W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04	ND	1	NA	0.500	0.100	06/26/2017:26	06/26/2010:41	M47F018076	M47F018	20HGF023W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05	ND	1	NA	0.500	0.100	06/26/2017:29	06/26/2010:41	M47F018077	M47F018	20HGF023W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07	ND	1	NA	0.500	0.100	06/26/2017:31	06/26/2010:41	M47F018078	M47F018	20HGF023W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08	ND	1	NA	0.500	0.100	06/26/2017:33	06/26/2010:41	M47F018079	M47F018	20HGF023W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10	ND	1	NA	0.500	0.100	06/26/2017:36	06/26/2010:41	M47F018080	M47F018	20HGF023W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11	ND	1	NA	0.500	0.100	06/26/2017:38	06/26/2010:41	M47F018081	M47F018	20HGF023W	06/19/2015:35	06/20/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGF023WB	HGF023WL	HGF023WC
LAB FILE ID	: M47F018049	M47F018050	M47F018051
DATE PREPARED	: 06/26/2010:41	06/26/2010:41	06/26/2010:41
DATE ANALYZED	: 06/26/2016:24	06/26/2016:26	06/26/2016:28
PREP BATCH	: 20HGF023W	20HGF023W	20HGF023W
CALIBRATION REF	: M47F018	M47F018	M47F018

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.36	94	2.50	2.43	97	3	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW13D-GW061820	MW13D-GW061820MS	MW13D-GW061820MSD
LAB SAMPLE ID	: F178-01	F178-01M	F178-01S
LAB FILE ID	: M47F018069	M47F018073	M47F018074
DATE PREPARED	: 06/26/2010:41	06/26/2010:41	06/26/2010:41
DATE ANALYZED	: 06/26/2017:11	06/26/2017:20	06/26/2017:22
PREP BATCH	: 20HGF023W	20HGF023W	20HGF023W
CALIBRATION REF	: M47F018	M47F018	M47F018

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.50	100	2.50	2.44	98	2	80-120	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 6/26/20 Start Time: 14:30

End Date: 6/26/20 End Time: 17:43

Comments:

QC OK

Book #:	A47-121
Instrument No.:	47
Analytical Sequence/Batch:	M47F018
Method File:	HG1
Micropipette ID:	☑ 339342032
Micropipette ID:	☑ HG-03
Micropipette ID:	☑ 742781062
Micropipette ID:	☑ HG-06
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	BLANK
S2	SM3B-19-21-07
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-19-21-08
LCS	
Analytical Spike	
	SM3B-19-21-09 TV 3ug/L

Analyzed By: MC

Date: 6/26/20

Disposed By:

Date:

"M47F018"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47F018001	STD01REP1	0	42662		06/26/2014:30	1
M47F018002	STD02REP1	.2	75673		06/26/2014:32	1
M47F018003	STD03REP1	.5	133344		06/26/2014:34	1
M47F018004	STD04REP1	1	214135		06/26/2014:36	1
M47F018005	STD05REP1	2	390836		06/26/2014:38	1
M47F018006	STD06REP1	5	897340		06/26/2014:40	1
M47F018007	ICV	2.04	392694	0	06/26/2014:46	1
M47F018008	ICB	-.005	43679	0	06/26/2014:49	1
M47F018009	MRLF2601	.522	133664	0	06/26/2014:52	1
M47F018010	CCV1	2.04	393841	0	06/26/2014:54	1
M47F018011	CCB1	.009	46022	0	06/26/2014:57	1
M47F018012	HGF022WB	.015	47051	0	06/26/2014:59	1
M47F018013	HGF022WL	2.4	454395	0	06/26/2015:01	1
M47F018014	HGF022WC	2.37	449212	0	06/26/2015:03	1
M47F018015	H198-01	.132	67066	0	06/26/2015:05	1
M47F018016	F170-02A	2.65	497228	0	06/26/2015:07	1
M47F018017	F170-02	-.033	38807	0	06/26/2015:10	1
M47F018018	F170-02J	-.008	43044	0	06/26/2015:12	5
M47F018019	F170-02M	2.18	417712	0	06/26/2015:14	1
M47F018020	F170-02S	2.2	420067	0	06/26/2015:16	1
M47F018021	F170-03	-.021	40966	0	06/26/2015:19	1
M47F018022	CCV2	2.02	390523	0	06/26/2015:21	1
M47F018023	CCB2	-.022	40725	0	06/26/2015:23	1
M47F018024	F170-04	-.069	32618	0	06/26/2015:25	1
M47F018025	F170-05	-.016	41785	0	06/26/2015:29	1
M47F018026	F170-06	-.024	40396	0	06/26/2015:31	1
M47F018027	WTF007SB	-.072	32232	0	06/26/2015:33	1
M47F018028	F516-01	-.107	26238	0	06/26/2015:35	1
M47F018029	F516-02	-.103	26836	0	06/26/2015:37	1
M47F018030	F516-03	.034	50313	0	06/26/2015:40	1
M47F018031	F516-04	-.026	40075	0	06/26/2015:42	1
M47F018032	F516-06	-.027	39806	0	06/26/2015:44	1
M47F018033	F516-07	-.022	40666	0	06/26/2015:47	1
M47F018034	CCV3	2.05	395627	0	06/26/2015:49	1
M47F018035	CCB3	-.004	43859	0	06/26/2015:51	1
M47F018036	F516-05A	2.93	545510	0	06/26/2015:53	1
M47F018037	F516-05	-.07	32469	0	06/26/2015:56	1
M47F018038	F516-05J	-.06	34202	0	06/26/2015:58	5
M47F018039	F516-05M	.135	67557	0	06/26/2016:00	1
M47F018040	F516-05S	.713	166391	0	06/26/2016:03	1
M47F018041	TXF006SB	.067	55851	0	06/26/2016:05	1
M47F018042	F191-01A	3.17	585740	0	06/26/2016:08	1
M47F018043	F191-01	.102	61945	0	06/26/2016:10	1
M47F018044	F191-01J	.043	51799	0	06/26/2016:13	5
M47F018045	F191-01M	2.53	476216	0	06/26/2016:15	1
M47F018046	CCV4	2.05	394475	0	06/26/2016:17	1
M47F018047	CCB4	-.016	41818	0	06/26/2016:19	1
M47F018048	F191-01S	2.49	469696	0	06/26/2016:22	1
M47F018049	HGF023WB	-.01	42750	0	06/26/2016:24	1
M47F018050	HGF023WL	2.36	448260	0	06/26/2016:26	1
M47F018051	HGF023WC	2.43	460610	0	06/26/2016:28	1
M47F018052	F167-01	-.115	24885	0	06/26/2016:31	1
M47F018053	F167-03	-.023	40476	0	06/26/2016:33	1
M47F018054	F167-04A	2.71	507176	0	06/26/2016:35	1
M47F018055	F167-04	-.051	35725	0	06/26/2016:37	1
M47F018056	F167-04J	-.023	40515	0	06/26/2016:39	5
M47F018057	F167-04M	2.11	405535	0	06/26/2016:42	1
M47F018058	CCV5	1.97	381370	0	06/26/2016:44	1
M47F018059	CCB5	.005	45348	0	06/26/2016:47	1
M47F018060	F167-04S	2.15	412204	0	06/26/2016:49	1
M47F018061	F167-05	-.043	37105	0	06/26/2016:51	1
M47F018062	F167-06	-.021	40905	0	06/26/2016:54	1
M47F018063	F167-07	-.116	24706	0	06/26/2016:56	1
M47F018064	F167-08	-.113	25099	0	06/26/2016:58	1
M47F018065	F167-09	-.016	41781	0	06/26/2017:01	1
M47F018066	F167-10	.02	47811	0	06/26/2017:03	1
M47F018067	F167-11	-.026	40106	0	06/26/2017:05	1
M47F018068	F178-01A	3.03	562349	0	06/26/2017:08	1
M47F018069	F178-01	-.034	38633	0	06/26/2017:11	1
M47F018070	CCV6	1.97	381615	0	06/26/2017:13	1
M47F018071	CCB6	.019	47697	0	06/26/2017:15	1
M47F018072	F178-01J	.021	48097	0	06/26/2017:18	5
M47F018073	F178-01M	2.5	472066	0	06/26/2017:20	1

M47F018074	F178-01S	2.44	461382	0	06/26/2017:22	1
M47F018075	F178-02	-.026	40000	0	06/26/2017:24	1
M47F018076	F178-04	-.024	40329	0	06/26/2017:26	1
M47F018077	F178-05	.007	45686	0	06/26/2017:29	1
M47F018078	F178-07	.01	46201	0	06/26/2017:31	1
M47F018079	F178-08	.052	53376	0	06/26/2017:33	1
M47F018080	F178-10	.026	48890	0	06/26/2017:36	1
M47F018081	F178-11	-.022	40676	0	06/26/2017:38	1
M47F018082	CCV7	1.95	377620	0	06/26/2017:40	1
M47F018083	CCB7	-.074	31838	0	06/26/2017:43	1
**********	**********	**********	**********	**********	**********	***
EMAXlfid	EMAXlsid	Xint	Yint	rrf	adatetime	DF
M47F018000		0	0	0	06/26/2017:43	1
M47F018001	BLANK	-.2603324	44496.26	.9999527	06/26/2017:43	1

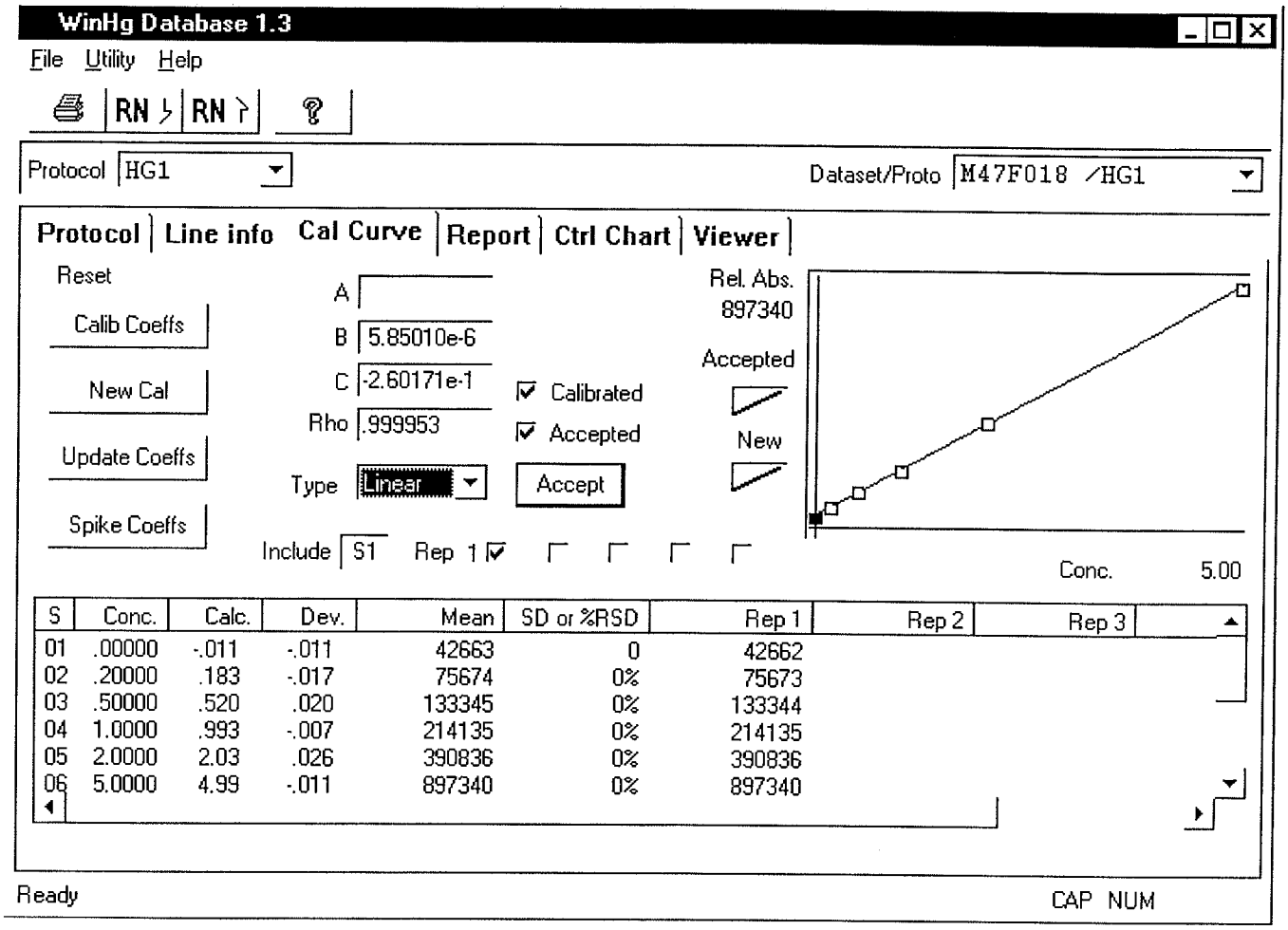
M47F018

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLF2601	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGF022WB		1.0000	1.0000	
7	HGF022WL		1.0000	1.0000	
8	HGF022WC		1.0000	1.0000	
9	H198-01	BDH QC CHECK	1.0000	1.0000	
10	F170-02A		1.0000	1.0000	
11	F170-02		1.0000	1.0000	
12	F170-02J	5X	1.0000	1.0000	
13	F170-02M		1.0000	1.0000	
14	F170-02S		1.0000	1.0000	
15	F170-03		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F170-04		1.0000	1.0000	
19	F170-05		1.0000	1.0000	
20	F170-06		1.0000	1.0000	
21	WTF007SB	STLC	1.0000	1.0000	
22	F516-01	STLC	1.0000	1.0000	
23	F516-02	STLC	1.0000	1.0000	
24	F516-03	STLC	1.0000	1.0000	
25	F516-04	STLC	1.0000	1.0000	
26	F516-06	STLC	1.0000	1.0000	
27	F516-07	STLC	1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F516-05A	STLC	1.0000	1.0000	
31	F516-05	STLC	1.0000	1.0000	
32	F516-05J	5X STLC	1.0000	1.0000	
33	F516-05M	STLC	1.0000	1.0000	
34	F516-05S	STLC	1.0000	1.0000	
35	TXF006SB	TCLP	1.0000	1.0000	
36	F191-01A	TCLP	1.0000	1.0000	
37	F191-01	TCLP	1.0000	1.0000	
38	F191-01J	5X TCLP	1.0000	1.0000	
39	F191-01M	TCLP	1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	F191-01S	TCLP	1.0000	1.0000	
43	HGF023WB		1.0000	1.0000	
44	HGF023WL		1.0000	1.0000	

NT 6/26/20

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	HGF023WC		1.0000	1.0000	
2	F167-01		1.0000	1.0000	
3	F167-03		1.0000	1.0000	
4	F167-04A		1.0000	1.0000	
5	F167-04		1.0000	1.0000	
6	F167-04J	5X	1.0000	1.0000	
7	F167-04M		1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	F167-04S		1.0000	1.0000	
11	F167-05		1.0000	1.0000	
12	F167-06		1.0000	1.0000	
13	F167-07		1.0000	1.0000	
14	F167-08		1.0000	1.0000	
15	F167-09		1.0000	1.0000	
16	F167-10		1.0000	1.0000	
17	F167-11		1.0000	1.0000	
18	F178-01A		1.0000	1.0000	
19	F178-01		1.0000	1.0000	
20	CCV6		1.0000	1.0000	
21	CCB6		1.0000	1.0000	
22	F178-01J	5X	1.0000	1.0000	
23	F178-01M		1.0000	1.0000	
24	F178-01S		1.0000	1.0000	
25	F178-02		1.0000	1.0000	
26	F178-04		1.0000	1.0000	
27	F178-05		1.0000	1.0000	
28	F178-07		1.0000	1.0000	
29	F178-08		1.0000	1.0000	
30	F178-10		1.0000	1.0000	
31	F178-11		1.0000	1.0000	
32	CCV7		1.0000	1.0000	
33	CCB7		1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	

NT 6/26/20


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47F018 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 5.85010e-6
C -2.60171e-1
Rho .999953
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
897340
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.011 -.011 42663 0 42662
02 .20000 .183 -.017 75674 0% 75673
03 .50000 .520 .020 133345 0% 133344
04 1.0000 .993 -.007 214135 0% 214135
05 2.0000 2.03 .026 390836 0% 390836
06 5.0000 4.99 -.011 897340 0% 897340
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1		14:30:05 26 Jun 20			HG
Hg	.000	ppb	42662						
*** Standard: 2 Rep: 1				Seq: 2		14:32:16 26 Jun 20			HG
Hg	.200	ppb	75673						
*** Standard: 3 Rep: 1				Seq: 3		14:34:25 26 Jun 20			HG
Hg	.500	ppb	133344						
*** Standard: 4 Rep: 1				Seq: 4		14:36:34 26 Jun 20			HG
Hg	1.00	ppb	214135						
*** Standard: 5 Rep: 1				Seq: 5		14:38:43 26 Jun 20			HG
Hg	2.00	ppb	390836						
*** Standard: 6 Rep: 1				Seq: 6		14:40:58 26 Jun 20			HG
Hg	5.00	ppb	897340						
*** Sample ID: ICV				Seq: 7		14:46:46 26 Jun 20			HG
Hg	2.04	ppb	392694						
*** Sample ID: ICB				Seq: 8		14:49:04 26 Jun 20			HG
Hg	-.005	ppb	43679						
*** Sample ID: MRLF2601				Seq: 9		14:52:13 26 Jun 20			HG
			0.5						
Hg	.522	ppb	133664						
*** Sample ID: CCV1				Seq: 10		14:54:52 26 Jun 20			HG
Hg	2.04	ppb	393841						
*** Sample ID: CCB1				Seq: 11		14:57:01 26 Jun 20			HG
Hg	.009	ppb	46022						
*** Sample ID: HGF022WB				Seq: 12		14:59:10 26 Jun 20			HG
Hg	.015	ppb	47051						
*** Sample ID: HGF022WL				Seq: 13		15:01:22 26 Jun 20			HG
Hg	2.40	ppb	454395						
*** Sample ID: HGF022WC				Seq: 14		15:03:33 26 Jun 20			HG
Hg	2.37	ppb	449212						
*** Sample ID: H198-01				Seq: 15		15:05:43 26 Jun 20			HG
			BDH QC CHECK						
Hg	.132	ppb	67066						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F170-02A				Seq: 16	15:07:54 26 Jun 20	HG		
Hg	2.65	ppb	497228					
*** Sample ID: F170-02				Seq: 17	15:10:05 26 Jun 20	HG		
Hg	-.033	ppb	38807					
*** Sample ID: F170-02J				Seq: 18	15:12:27 26 Jun 20	HG		
			5X					
Hg	-.008	ppb	43044					
*** Sample ID: F170-02M				Seq: 19	15:14:36 26 Jun 20	HG		
Hg	2.18	ppb	417712					
*** Sample ID: F170-02S				Seq: 20	15:16:47 26 Jun 20	HG		
Hg	2.20	ppb	420067					
*** Sample ID: F170-03				Seq: 21	15:19:25 26 Jun 20	HG		
Hg	-.021	ppb	40966					
*** Sample ID: CCV2				Seq: 22	15:21:36 26 Jun 20	HG		
Hg	2.02	ppb	390523					
*** Sample ID: CCB2				Seq: 23	15:23:45 26 Jun 20	HG		
Hg	-.022	ppb	40725					
*** Sample ID: F170-04				Seq: 24	15:25:58 26 Jun 20	HG		
Hg	-.069	ppb	32618					
*** Sample ID: F170-05				Seq: 25	15:29:03 26 Jun 20	HG		
Hg	-.016	ppb	41785					
*** Sample ID: F170-06				Seq: 26	15:31:13 26 Jun 20	HG		
Hg	-.024	ppb	40396					
*** Sample ID: WTF007SB				Seq: 27	15:33:23 26 Jun 20	HG		
			STLC					
Hg	-.072	ppb	32232					
*** Sample ID: F516-01				Seq: 28	15:35:33 26 Jun 20	HG		
			STLC					
Hg	-.107	ppb	26238					
*** Sample ID: F516-02				Seq: 29	15:37:44 26 Jun 20	HG		
			STLC					
Hg	-.103	ppb	26836					
*** Sample ID: F516-03				Seq: 30	15:40:02 26 Jun 20	HG		
			STLC					
Hg	.034	ppb	50313					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F516-04				Seq: 31	15:42:14 26 Jun 20	HG		
			STLC					
Hg	-.026	ppb	40075					
*** Sample ID: F516-06				Seq: 32	15:44:53 26 Jun 20	HG		
			STLC					
Hg	-.027	ppb	39806					
*** Sample ID: F516-07				Seq: 33	15:47:01 26 Jun 20	HG		
			STLC					
Hg	-.022	ppb	40666					
*** Sample ID: CCV3				Seq: 34	15:49:14 26 Jun 20	HG		
Hg	2.05	ppb	395627					
*** Sample ID: CCB3				Seq: 35	15:51:24 26 Jun 20	HG		
Hg	-.004	ppb	43859					
*** Sample ID: F516-05A				Seq: 36	15:53:52 26 Jun 20	HG		
			STLC					
Hg	2.93	ppb	545510					
*** Sample ID: F516-05				Seq: 37	15:56:06 26 Jun 20	HG		
			STLC					
Hg	-.070	ppb	32469					
*** Sample ID: F516-05J				Seq: 38	15:58:24 26 Jun 20	HG		
			5X STLC					
Hg	-.060	ppb	34202					
*** Sample ID: F516-05M				Seq: 39	16:00:34 26 Jun 20	HG		
			STLC					
Hg	.135	ppb	67557					
*** Sample ID: F516-05S				Seq: 40	16:03:14 26 Jun 20	HG		
			STLC					
Hg	.713	ppb	166391					
*** Sample ID: TXF006SB				Seq: 41	16:05:54 26 Jun 20	HG		
			TCLP					
Hg	.067	ppb	55851					
*** Sample ID: F191-01A				Seq: 42	16:08:17 26 Jun 20	HG		
			TCLP					
Hg	3.17	ppb	585740					
*** Sample ID: F191-01				Seq: 43	16:10:48 26 Jun 20	HG		
			TCLP					
Hg	.102	ppb	61945					
*** Sample ID: F191-01J				Seq: 44	16:13:06 26 Jun 20	HG		
			5X TCLP					
Hg	.043	ppb	51799					
*** Sample ID: F191-01M				Seq: 45	16:15:15 26 Jun 20	HG		
			TCLP					
Hg	2.53	ppb	476216					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	16:17:35 26 Jun 20	HG		
Hg	2.05	ppb	394475					
*** Sample ID: CCB4				Seq: 47	16:19:56 26 Jun 20	HG		
Hg	-.016	ppb	41818					
*** Sample ID: F191-01S				Seq: 48	16:22:07 26 Jun 20	HG		
Hg	2.49	ppb	469696 TCLP					
*** Sample ID: HGF023WB				Seq: 49	16:24:29 26 Jun 20	HG		
Hg	-.010	ppb	42750					
*** Sample ID: HGF023WL				Seq: 50	16:26:42 26 Jun 20	HG		
Hg	2.36	ppb	448260					
*** Sample ID: HGF023WC				Seq: 51	16:28:53 26 Jun 20	HG		
Hg	2.43	ppb	460610					
*** Sample ID: F167-01				Seq: 52	16:31:05 26 Jun 20	HG		
Hg	-.115	ppb	24885					
*** Sample ID: F167-03				Seq: 53	16:33:13 26 Jun 20	HG		
Hg	-.023	ppb	40476					
*** Sample ID: F167-04A				Seq: 54	16:35:22 26 Jun 20	HG		
Hg	2.71	ppb	507176					
*** Sample ID: F167-04				Seq: 55	16:37:50 26 Jun 20	HG		
Hg	-.051	ppb	35725					
*** Sample ID: F167-04J				Seq: 56	16:39:59 26 Jun 20	HG		
Hg	-.023	ppb	40515 5X					
*** Sample ID: F167-04M				Seq: 57	16:42:38 26 Jun 20	HG		
Hg	2.11	ppb	405535					
*** Sample ID: CCV5				Seq: 58	16:44:52 26 Jun 20	HG		
Hg	1.97	ppb	381370					
*** Sample ID: CCB5				Seq: 59	16:47:13 26 Jun 20	HG		
Hg	.005	ppb	45348					
*** Sample ID: F167-04S				Seq: 60	16:49:42 26 Jun 20	HG		
Hg	2.15	ppb	412204					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F167-05				Seq: 61		16:51:58 26 Jun 20			HG
Hg	-.043	ppb	37105						
*** Sample ID: F167-06				Seq: 62		16:54:28 26 Jun 20			HG
Hg	-.021	ppb	40905						
*** Sample ID: F167-07				Seq: 63		16:56:37 26 Jun 20			HG
Hg	-.116	ppb	24706						
*** Sample ID: F167-08				Seq: 64		16:58:47 26 Jun 20			HG
Hg	-.113	ppb	25099						
*** Sample ID: F167-09				Seq: 65		17:01:09 26 Jun 20			HG
Hg	-.016	ppb	41781						
*** Sample ID: F167-10				Seq: 66		17:03:31 26 Jun 20			HG
Hg	.020	ppb	47811						
*** Sample ID: F167-11				Seq: 67		17:05:42 26 Jun 20			HG
Hg	-.026	ppb	40106						
*** Sample ID: F178-01A				Seq: 68		17:08:13 26 Jun 20			HG
Hg	3.03	ppb	562349						
*** Sample ID: F178-01				Seq: 69		17:11:07 26 Jun 20			HG
Hg	-.034	ppb	38633						
*** Sample ID: CCV6				Seq: 70		17:13:16 26 Jun 20			HG
Hg	1.97	ppb	381615						
*** Sample ID: CCB6				Seq: 71		17:15:47 26 Jun 20			HG
Hg	.019	ppb	47697						
*** Sample ID: F178-01J				Seq: 72		17:18:00 26 Jun 20			HG
			5X						
Hg	.021	ppb	48097						
*** Sample ID: F178-01M				Seq: 73		17:20:10 26 Jun 20			HG
Hg	2.50	ppb	472066						
*** Sample ID: F178-01S				Seq: 74		17:22:22 26 Jun 20			HG
Hg	2.44	ppb	461382						
*** Sample ID: F178-02				Seq: 75		17:24:42 26 Jun 20			HG
Hg	-.026	ppb	40000						

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F178-04				Seq: 76		17:26:52 26 Jun 20			HG
Hg	-.024	ppb	40329						
*** Sample ID: F178-05				Seq: 77		17:29:13 26 Jun 20			HG
Hg	.007	ppb	45686						
*** Sample ID: F178-07				Seq: 78		17:31:36 26 Jun 20			HG
Hg	.010	ppb	46201						
*** Sample ID: F178-08				Seq: 79		17:33:48 26 Jun 20			HG
Hg	.052	ppb	53376						
*** Sample ID: F178-10				Seq: 80		17:36:03 26 Jun 20			HG
Hg	.026	ppb	48890						
*** Sample ID: F178-11				Seq: 81		17:38:14 26 Jun 20			HG
Hg	-.022	ppb	40676						
*** Sample ID: CCV7				Seq: 82		17:40:45 26 Jun 20			HG
Hg	1.95	ppb	377620						
*** Sample ID: CCB7				Seq: 83		17:43:31 26 Jun 20			HG
Hg	-.074	ppb	31838						

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28619010

Aqua Regia Prep. Vessel Lot#: N/A

All samples PH<2

Maximum amount of KMnO4 was added.

Book #: E47-116

Batch No.: HGF023W

Matrix: water

SOP #	Rev. #
☒ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-21-07	50	0.2, 0.5, 1, 2.5
CCV	↓	↓	2
ICV	SM3B-19-21-08	↓	2
LCS/MS	↓	↓	2.5
Reagent	**ID / Lot #**		
HNO_3	SWA-009-02-08		
HCl	N/A		
H_2SO_4	SMA-08-24-05		
$KMnO_4$	SMSB-04-14-04		
$K_2S_2O_8$	SMSB-04-13-04		
$NH_2OH \cdot HCl \cdot NaCl$	SMSD-04-15-01		
$SnCl_2$	SMSB-04-14-03		
Silica Sand	N/A		
Reagent Water	RWI-19-003		
pH strip 0-14	HC863463		
Digestor ID/ Temp (°C)	B / 95.2		
Thermometer ID/LOC:	192272438 / B12		
Thermometer ID/LOC:			
Pipette ID:	MG-06, 742781062, MG-03, 339342032		
☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder			
☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder			
☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder			

Prepared By: MC

Standard Added By: MC Witnessed By: NT

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGF023W01	HGF023WB	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W02	HGF023WL	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W03	HGF023WC	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W04	F167-01	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W05	F167-03	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W06	F167-04	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W07	F167-04M	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W08	F167-04S	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W09	F167-05	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W10	F167-06	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W11	F167-07	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W12	F167-08	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W13	F167-09	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W14	F167-10	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W15	F167-11	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W16	F178-01	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W17	F178-01M	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W18	F178-01S	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W19	F178-02	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W20	F178-04	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W21	F178-05	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W22	F178-07	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W23	F178-08	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W24	F178-10	50	ml	6/26/20 9:26	80	50	80	1	
20HGF023W25	F178-11	50	ml	6/26/20 9:26	80	50	80	1	

MC
6/26/2020

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/26/20 10:41

☑ Digestion Ended @ 6/26/20 12:48

Prepared By: MCande

Checked By: MC

Comments:

Date 6/26/2020

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F178

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD E300.0
CHLORIDE

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Chloride was not detected in ICF033WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF033WL/ICF033WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD E300.0
SULFATE

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF033WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF033WL/ICF033WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RESULTS

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF033WB	ND	1	NA	0.2	0.05	06/24/2010:55	NA	AF31-03	AF31-01	ICF033W	NA	NA
LCS1W	ICF033WL	1.91	1	NA	0.2	0.05	06/24/2011:12	NA	AF31-04	AF31-01	ICF033W	NA	NA
LCD1W	ICF033WC	1.95	1	NA	0.2	0.05	06/24/2011:29	NA	AF31-05	AF31-01	ICF033W	NA	NA
MW13D-GW061820	F178-01J	210	200	NA	40	10	06/25/2002:37	NA	AF31-55	AF31-49	ICF033W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02I	86.7	20	NA	4	1	06/25/2002:54	NA	AF31-56	AF31-49	ICF033W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04J	275	100	NA	20	5	06/25/2003:45	NA	AF31-59	AF31-49	ICF033W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05J	378	200	NA	40	10	06/25/2004:53	NA	AF31-63	AF31-61	ICF033W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07J	310	200	NA	40	10	06/25/2005:27	NA	AF31-65	AF31-61	ICF033W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08J	313	200	NA	40	10	06/25/2006:01	NA	AF31-67	AF31-61	ICF033W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10J	281	200	NA	40	10	06/25/2006:36	NA	AF31-69	AF31-61	ICF033W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11J	196	100	NA	20	5	06/25/2007:10	NA	AF31-71	AF31-61	ICF033W	06/19/2015:35	06/20/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : DO

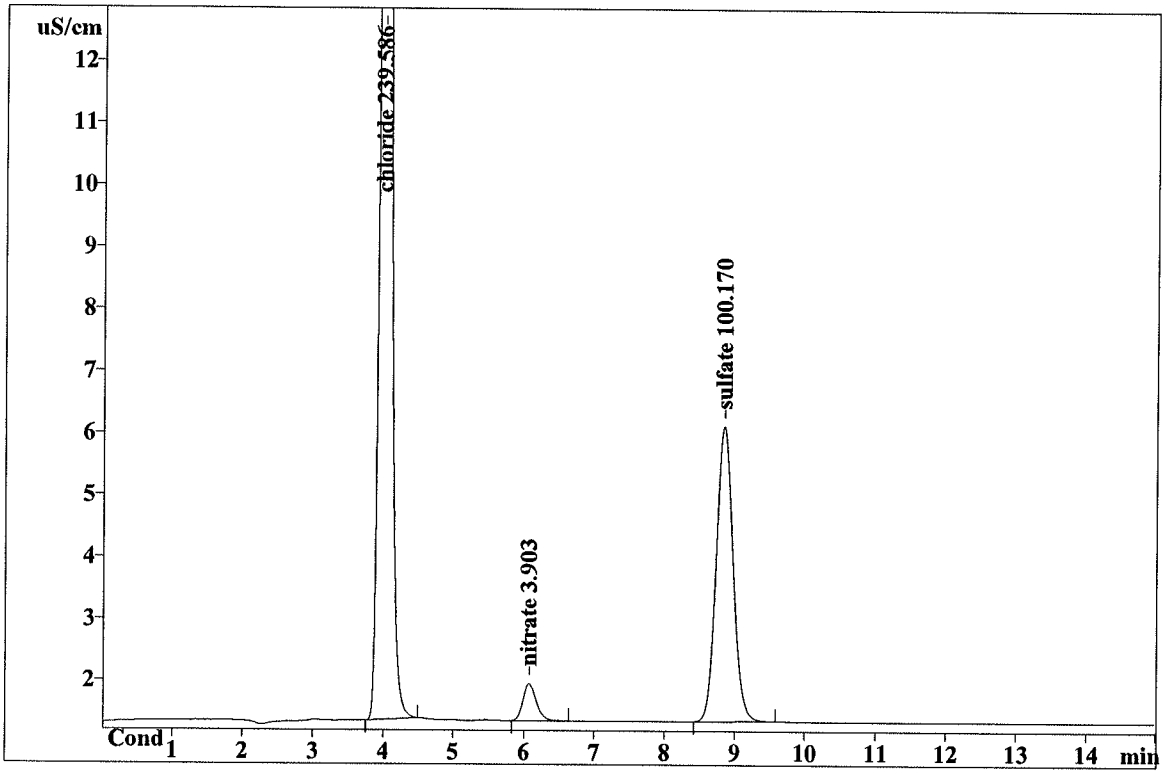
CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF033WB	ND	1	NA	0.5	0.13	06/24/2010:55	NA	AF31-03	AF31-01	ICF033W	NA	NA
LCS1W	ICF033WL	4.66	1	NA	0.5	0.13	06/24/2011:12	NA	AF31-04	AF31-01	ICF033W	NA	NA
LCD1W	ICF033WC	4.68	1	NA	0.5	0.13	06/24/2011:29	NA	AF31-05	AF31-01	ICF033W	NA	NA
MW13D-GW061820	F178-01I	100	20	NA	10	2.6	06/25/2000:37	NA	AF31-48	AF31-37	ICF033W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02I	133	20	NA	10	2.6	06/25/2002:54	NA	AF31-56	AF31-49	ICF033W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04I	98.5	20	NA	10	2.6	06/25/2003:28	NA	AF31-58	AF31-49	ICF033W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05I	139	20	NA	10	2.6	06/25/2004:02	NA	AF31-60	AF31-49	ICF033W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07I	147	20	NA	10	2.6	06/25/2005:10	NA	AF31-64	AF31-61	ICF033W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08I	143	20	NA	10	2.6	06/25/2005:44	NA	AF31-66	AF31-61	ICF033W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10I	114	20	NA	10	2.6	06/25/2006:19	NA	AF31-68	AF31-61	ICF033W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11I	160	20	NA	10	2.6	06/25/2006:53	NA	AF31-70	AF31-61	ICF033W	06/19/2015:35	06/20/20

Report date: 6/25/2020 12:03:43 PM
Printed by: TWangc

Ident: AF31-48 F178-01I DF=20
Analysis from: 6/25/2020 12:37:27 AM
File: _2020-06-25_00-37.chw Last save: 6/25/2020 12:52:24 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159400

SAMPLE: METHOD300/9056/4110B
:
Vial number: 48
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.99	27.08	253.304	239.586	chloride
2	6.07	0.60	7.879	3.903	nitrate
3	8.83	4.76	80.163	100.170	sulfate ✓
3	15.00	32.45	341.346	343.659	

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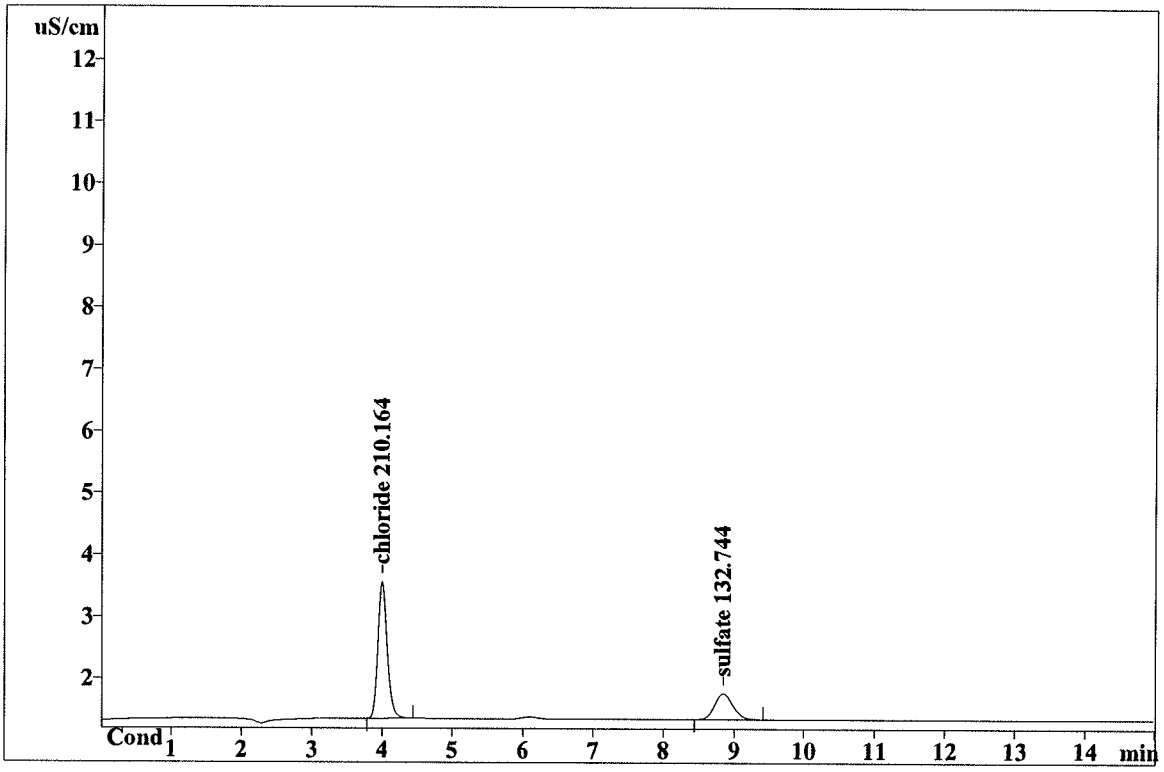
Report date: 6/25/2020 12:03:48 PM
Printed by: TWangc

Ident: AF31-55 F178-01J DF=200
Analysis from: 6/25/2020 2:37:00 AM
File: _2020-06-25_02-37.chw Last save: 6/25/2020 2:51:57 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159407

SAMPLE: METHOD300/9056/4110B
:
Vial number: 55
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.99	2.20	20.452	210.164	chloride ✓
2	8.84	0.42	7.460	132.744	sulfate
2	15.00	2.62	27.912	342.908	

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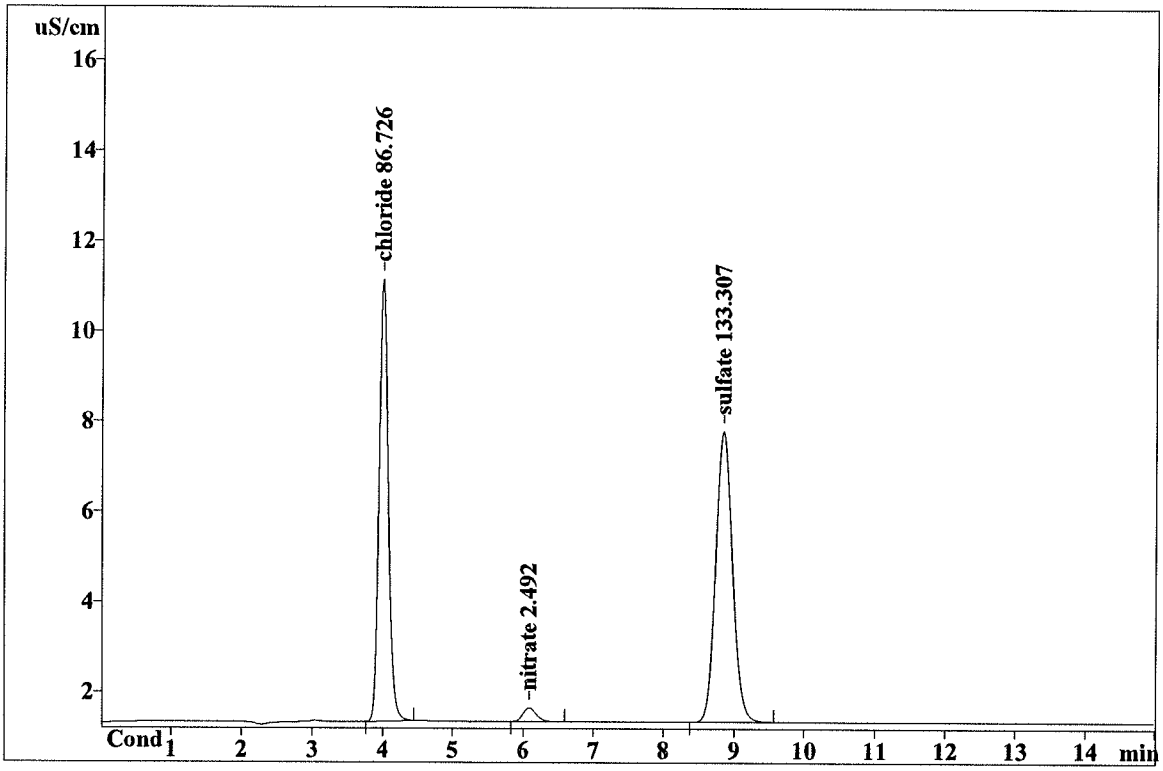
Report date: 6/30/2020 7:09:12 PM
Printed by: TWangc

Ident: AF31-56 F178-02I DF=20
Analysis from: 6/25/2020 2:54:05 AM
File: _2020-06-25_02-54.chw Last save: 6/25/2020 4:57:22 PM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159408

SAMPLE: METHOD300/9056/4110B
:
Vial number: 56
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.99	9.80	90.455	86.726	chloride ✓
2	6.09	0.31	4.138	2.492	nitrate
3	8.84	6.44	107.887	133.307	sulfate ✓
3	15.00	16.54	202.480	222.525	

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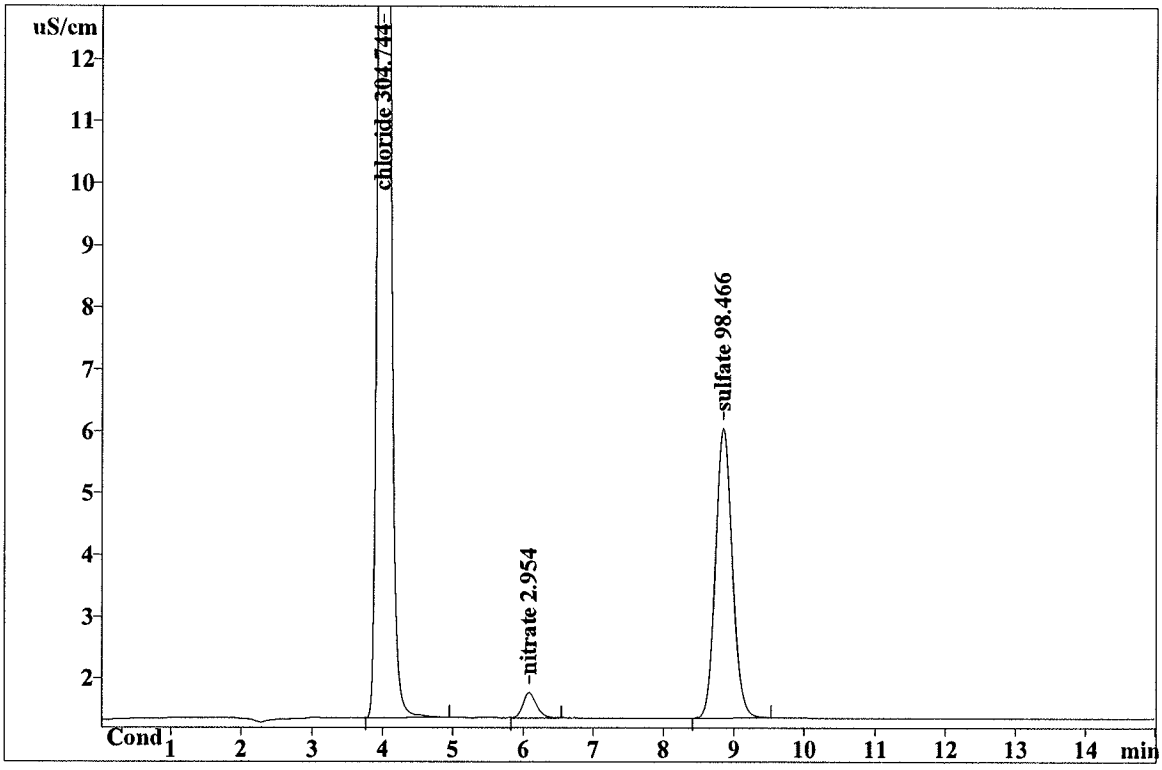
Report date: 6/25/2020 12:04:02 PM
Printed by: TWangc

Ident: AF31-58 F178-04I DF=20
Analysis from: 6/25/2020 3:28:14 AM
File: _2020-06-25_03-28.chw Last save: 6/25/2020 3:43:11 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159410

SAMPLE: METHOD300/9056/4110B
:
Vial number: 58
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	34.08	322.720	304.744	chloride
2	6.08	0.40	5.363	2.954	nitrate
3	8.84	4.69	78.737	98.466	sulfate ✓
3	15.00	39.18	406.820	406.164	

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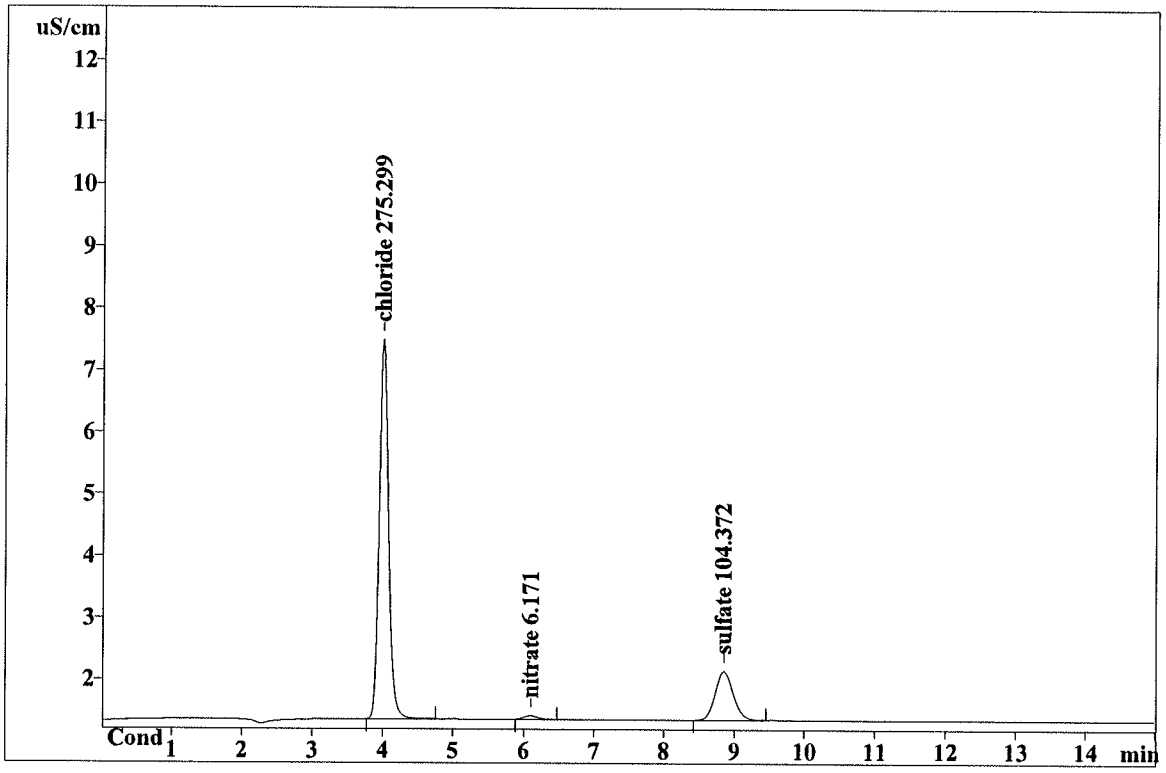
Report date: 6/25/2020 12:04:07 PM
Printed by: TWangc

Ident: AF31-59 F178-04J DF=100
Analysis from: 6/25/2020 3:45:19 AM
File: _2020-06-25_03-45.chw Last save: 6/25/2020 4:00:16 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159411

SAMPLE: METHOD300/9056/4110B
:
Vial number: 59
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	6.13	56.720	275.299	chloride ✓
2	6.10	0.06	0.803	6.171	nitrate
3	8.85	0.79	13.819	104.372	sulfate
3	15.00	6.98	71.342	385.842	

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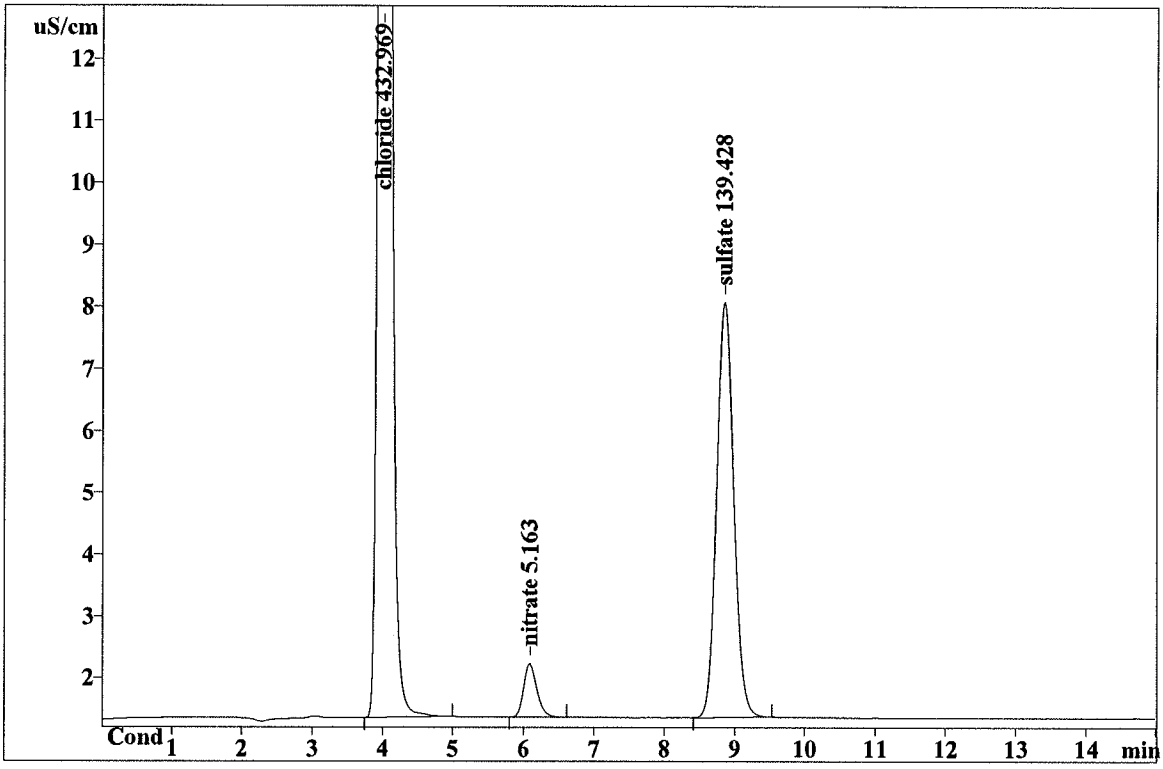
Report date: 6/25/2020 12:04:13 PM
Printed by: TWangc

Ident: AF31-60 F178-05I DF=20
Analysis from: 6/25/2020 4:02:23 AM
File: _2020-06-25_04-02.chw Last save: 6/25/2020 4:17:20 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159412

SAMPLE: METHOD300/9056/4110B
:
Vial number: 60
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	48.14	459.323	432.969	chloride
2	6.09	0.86	11.220	5.163	nitrate
3	8.85	6.70	113.008	139.428	sulfate ✓
3	15.00	55.71	583.552	577.560	

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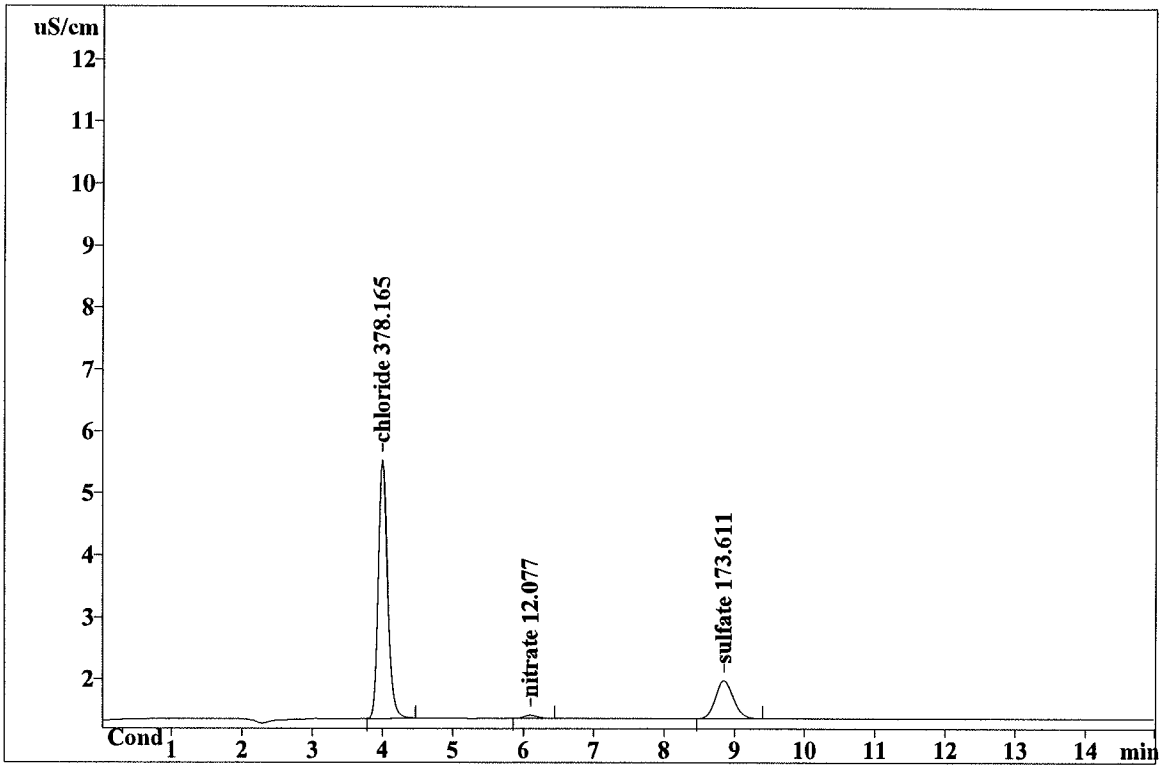
Report date: 6/25/2020 12:04:21 PM
Printed by: TWangc

Ident: AF31-63 F178-05J DF=200
Analysis from: 6/25/2020 4:53:37 AM
File: _2020-06-25_04-53.chw Last save: 6/25/2020 5:08:34 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159415

SAMPLE: METHOD300/9056/4110B
:
Vial number: 63
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	4.16	38.350	378.165	chloride
2	6.10	0.05	0.733	12.077	nitrate
3	8.85	0.62	10.879	173.611	sulfate
3	15.00	4.83	49.962	563.853	

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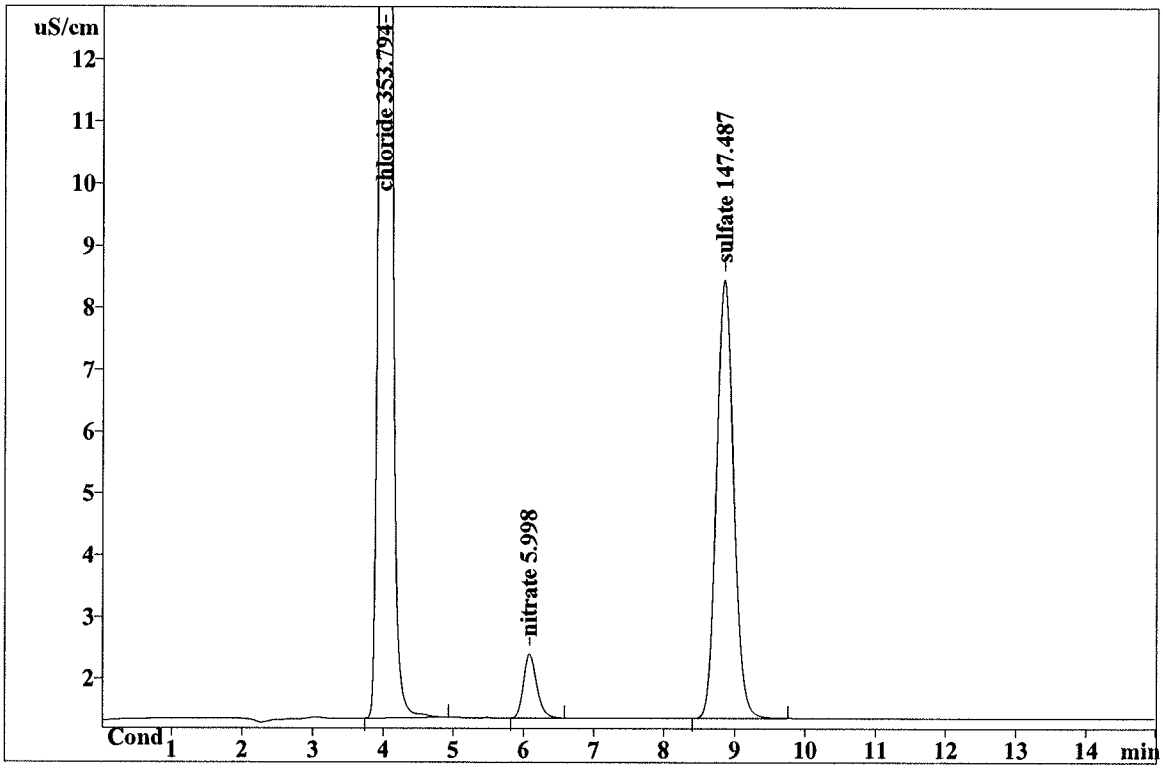
METROHM LTD

Report date: 6/25/2020 12:04:26 PM
Printed by: TWangc

Ident: AF31-64 F178-07I DF=20
Analysis from: 6/25/2020 5:10:42 AM
File: _2020-06-25_05-10.chw Last save: 6/25/2020 5:25:39 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159416

SAMPLE: METHOD300/9056/4110B
:
Vial number: 64
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	39.27	374.975	353.794	chloride
2	6.08	1.03	13.433	5.998	nitrate
3	8.84	7.09	119.751	147.487	sulfate ✓
3	15.00	47.40	508.159	507.280	

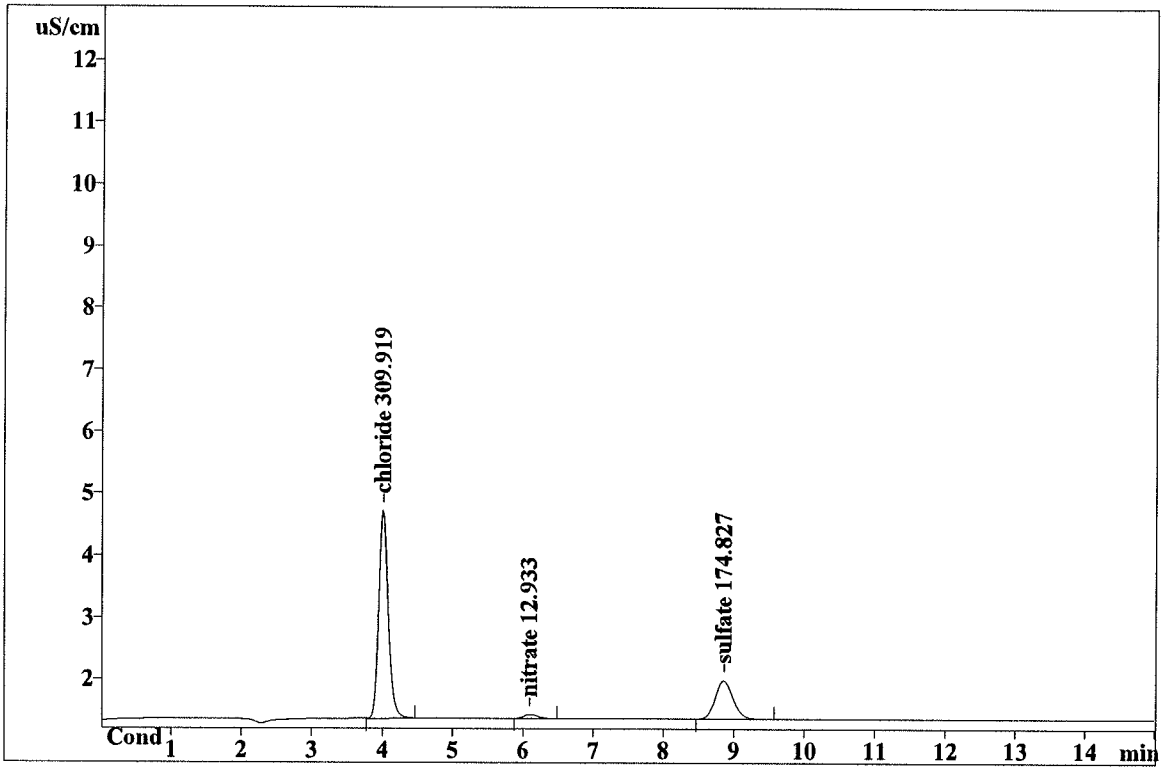
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 12:04:31 PM
Printed by: TWangc

Ident: AF31-65 F178-07J DF=200
Analysis from: 6/25/2020 5:27:46 AM
File: _2020-06-25_05-27.chw Last save: 6/25/2020 5:42:43 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159417

SAMPLE: METHOD300/9056/4110B
:
Vial number: 65
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	3.35	31.079	309.919	chloride ✓
2	6.10	0.07	0.960	12.933	nitrate
3	8.85	0.62	10.981	174.827	sulfate
3	15.00	4.04	43.020	497.678	

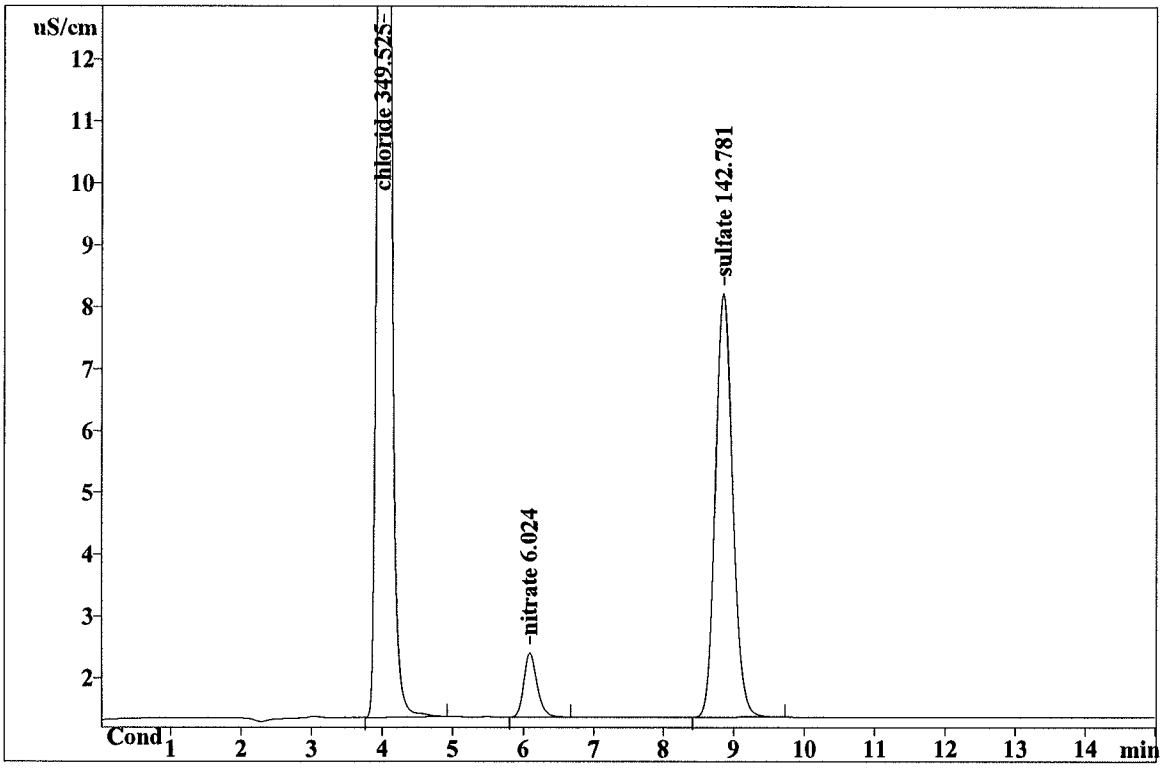
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 12:04:36 PM
Printed by: TWangc

Ident: AF31-66 F178-08I DF=20
Analysis from: 6/25/2020 5:44:51 AM
File: _2020-06-25_05-44.chw Last save: 6/25/2020 5:59:48 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159418

SAMPLE: METHOD300/9056/4110B
:
Vial number: 66
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	38.79	370.427	349.525	chloride
2	6.09	1.03	13.502	6.024	nitrate
3	8.85	6.86	115.814	142.781	sulfate ✓
3	15.00	46.68	499.743	498.331	

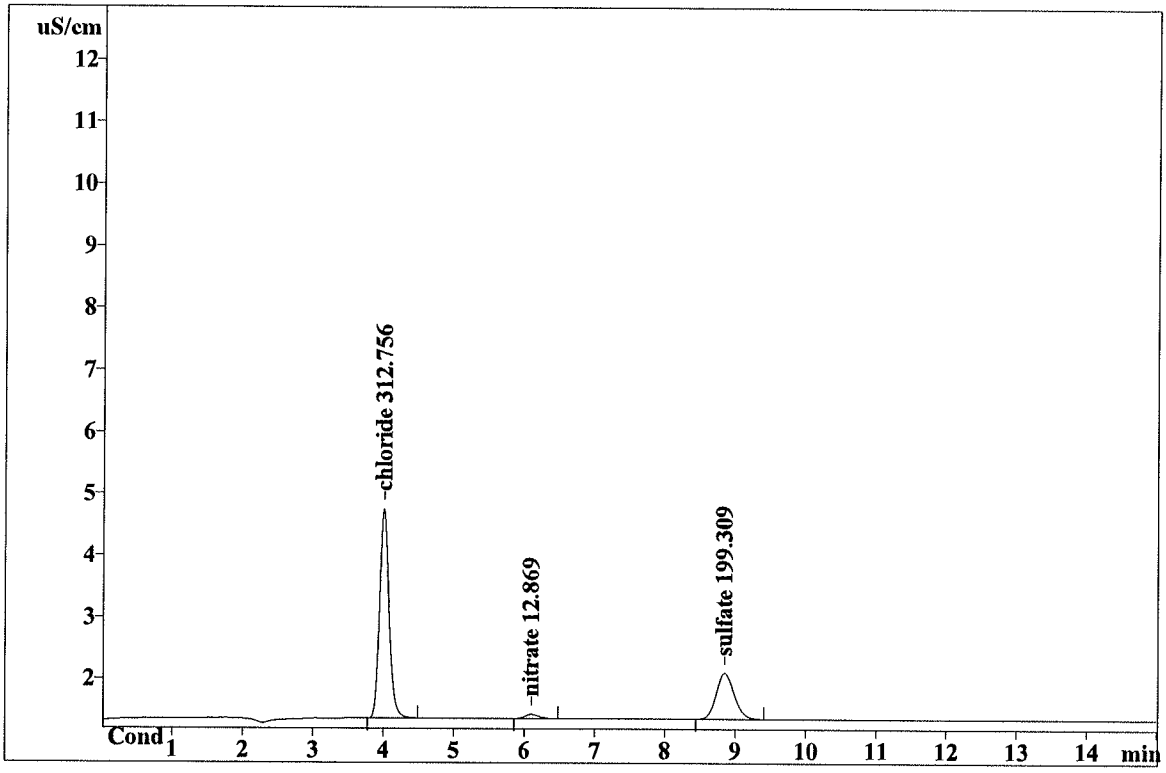
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 12:04:41 PM
Printed by: TWangc

Ident: AF31-67 F178-08J DF=200
Analysis from: 6/25/2020 6:01:56 AM
File: _2020-06-25_06-01.chw Last save: 6/25/2020 6:16:53 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159419

SAMPLE: METHOD300/9056/4110B
:
Vial number: 67
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	3.39	31.382	312.756	chloride ✓
2	6.11	0.07	0.943	12.869	nitrate
3	8.85	0.75	13.030	199.309	sulfate
3	15.00	4.20	45.354	524.935	

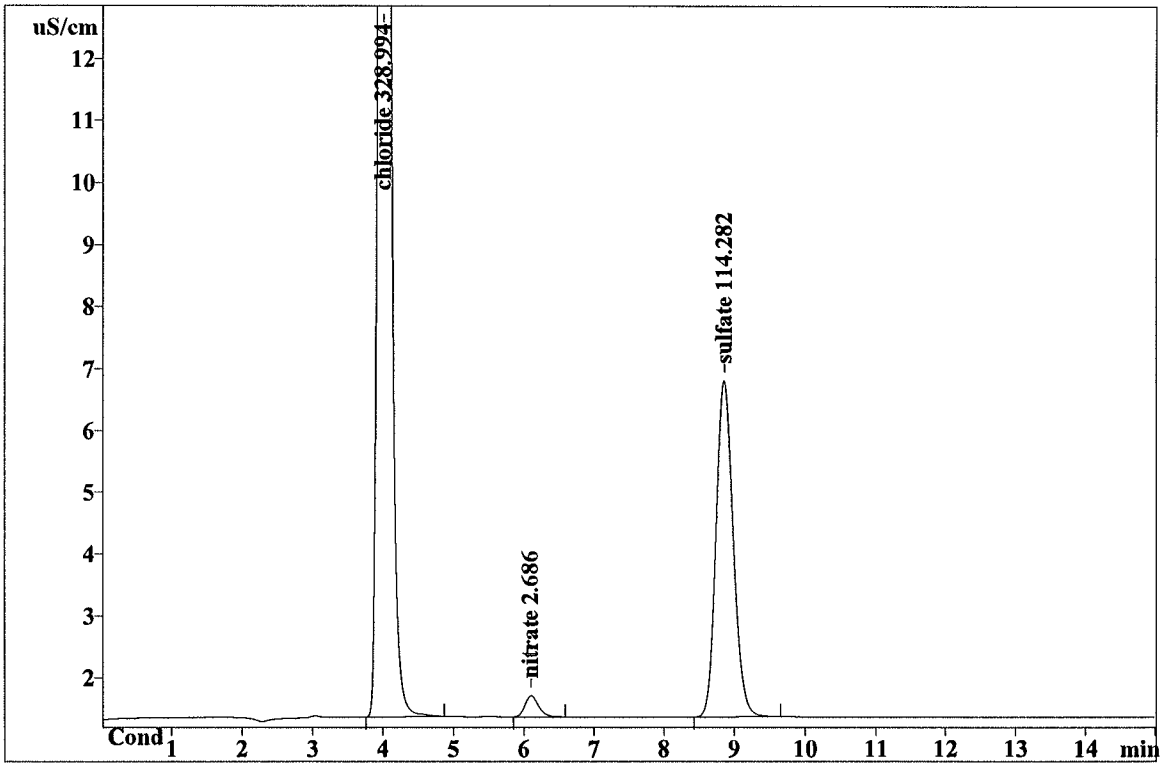
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 12:04:46 PM
Printed by: TWangc

Ident: AF31-68 F178-10I DF=20
Analysis from: 6/25/2020 6:19:01 AM
File: _2020-06-25_06-19.chw Last save: 6/25/2020 6:33:58 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159420

SAMPLE: METHOD300/9056/4110B
:
Vial number: 68
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	36.20	348.554	328.994	chloride
2	6.10	0.34	4.651	2.686	nitrate
3	8.85	5.44	91.969	114.282	sulfate
3	15.00	41.98	445.174	445.961	

This report has been created by IC Net
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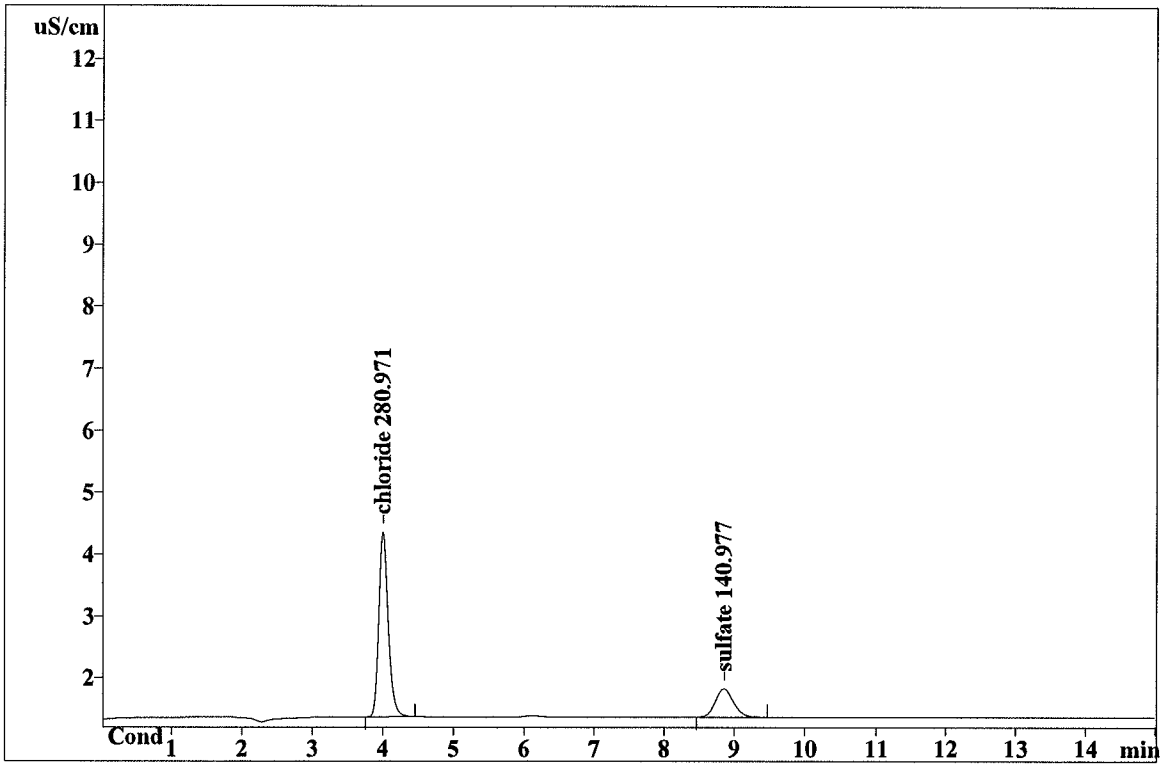
Report date: 6/25/2020 12:04:57 PM
Printed by: TWangc

Ident: AF31-69 F178-10J DF=200
Analysis from: 6/25/2020 6:36:05 AM
File: _2020-06-25_06-36.chw Last save: 6/25/2020 6:51:02 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159421

SAMPLE: METHOD300/9056/4110B
:
Vial number: 69
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	2.98	27.995	280.971	chloride
2	8.85	0.46	8.149	140.977	sulfate
2	15.00	3.44	36.145	421.949	

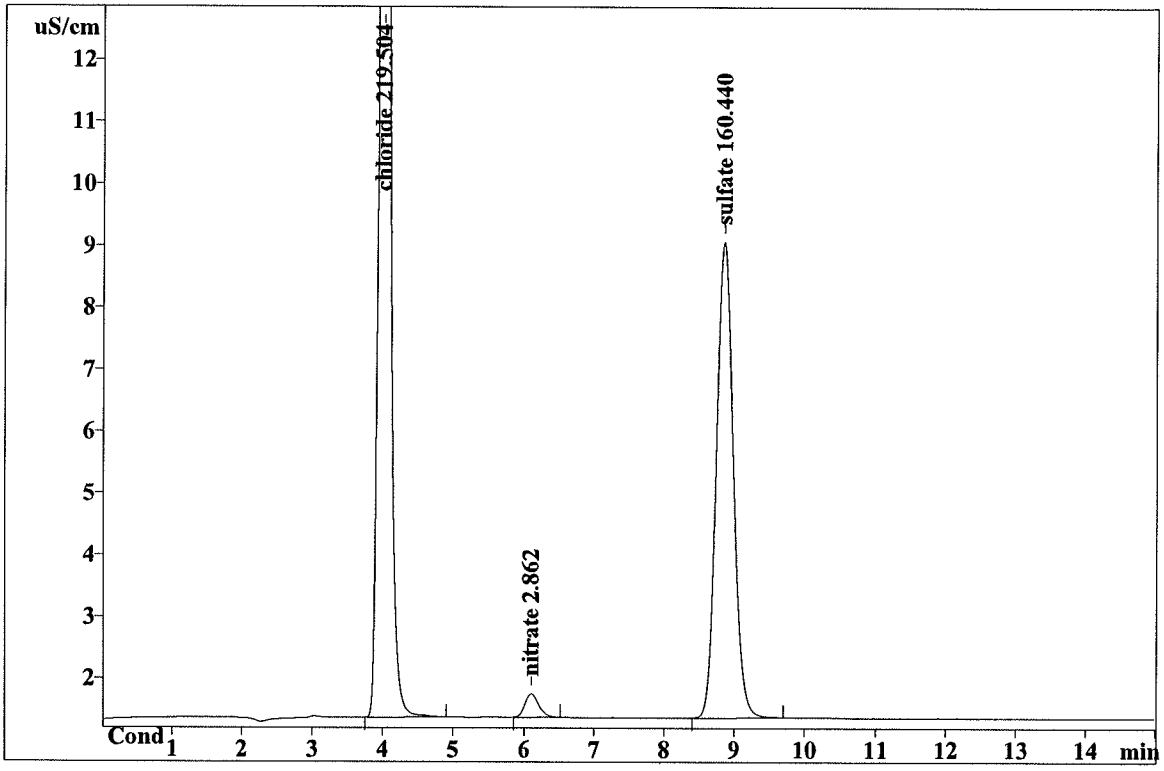
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 12:05:02 PM
Printed by: TWangc

Ident: AF31-70 F178-11I DF=20
Analysis from: 6/25/2020 6:53:10 AM
File: _2020-06-25_06-53.chw Last save: 6/25/2020 7:08:07 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159422

SAMPLE: METHOD300/9056/4110B
:
Vial number: 70
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	24.19	231.910	219.504	chloride
2	6.10	0.38	5.120	2.862	nitrate
3	8.84	7.70	130.588	160.440	sulfate ✓
3	15.00	32.27	367.618	382.806	

This report has been created by IC Net
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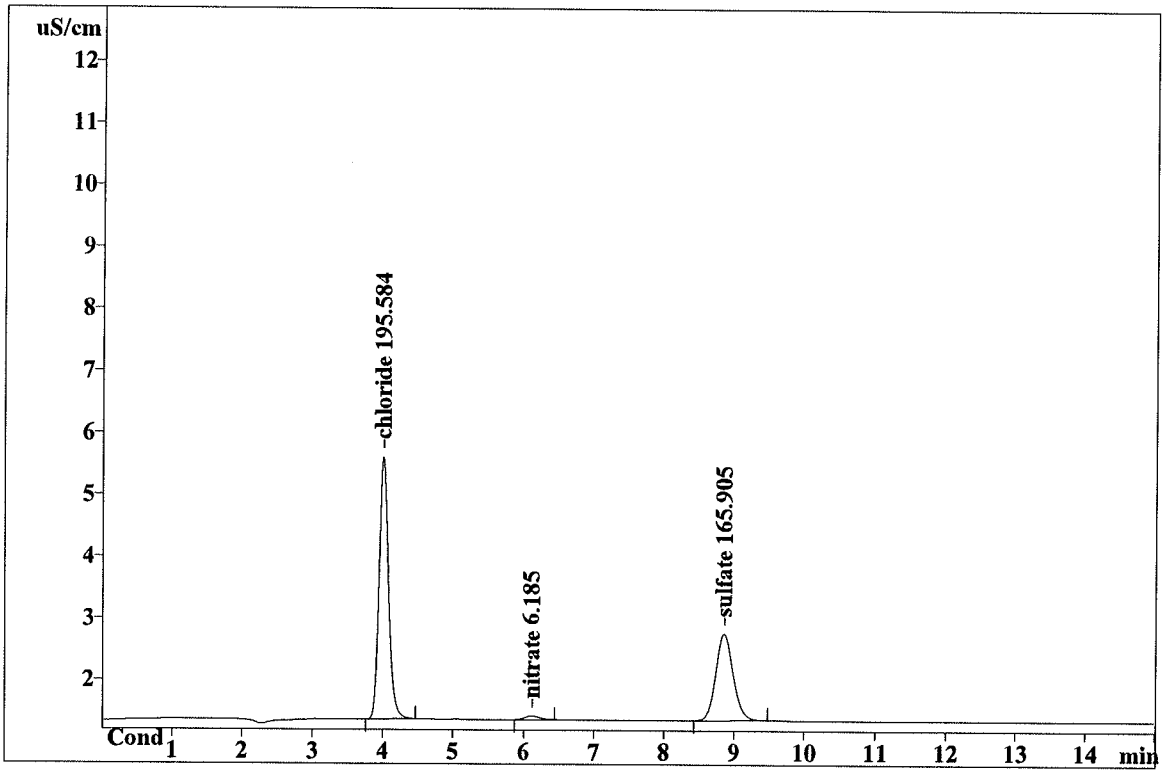
Report date: 6/25/2020 12:05:08 PM
Printed by: TWangc

Ident: AF31-71 F178-11J DF=100
Analysis from: 6/25/2020 7:10:15 AM
File: _2020-06-25_07-10.chw Last save: 6/25/2020 7:25:12 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159423

SAMPLE: METHOD300/9056/4110B
:
Vial number: 71
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.00	4.24	39.735	195.584	chloride ✓
2	6.11	0.06	0.810	6.185	nitrate
3	8.85	1.40	24.115	165.905	sulfate
3	15.00	5.70	64.661	367.673	

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF033WB	ICF033WL	ICF033WC
LAB FILE ID :	AF31-03	AF31-04	AF31-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/24/2010:55	06/24/2011:12	06/24/2011:29
PREP BATCH :	ICF033W	ICF033W	ICF033W
CALIBRATION REF:	AF31-01	AF31-01	AF31-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.91	95	2	1.95	98	2	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF033WB	ICF033WL	ICF033WC
LAB FILE ID :	AF31-03	AF31-04	AF31-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/24/2010:55	06/24/2011:12	06/24/2011:29
PREP BATCH :	ICF033W	ICF033W	ICF033W
CALIBRATION REF:	AF31-01	AF31-01	AF31-01

ACCESSION:

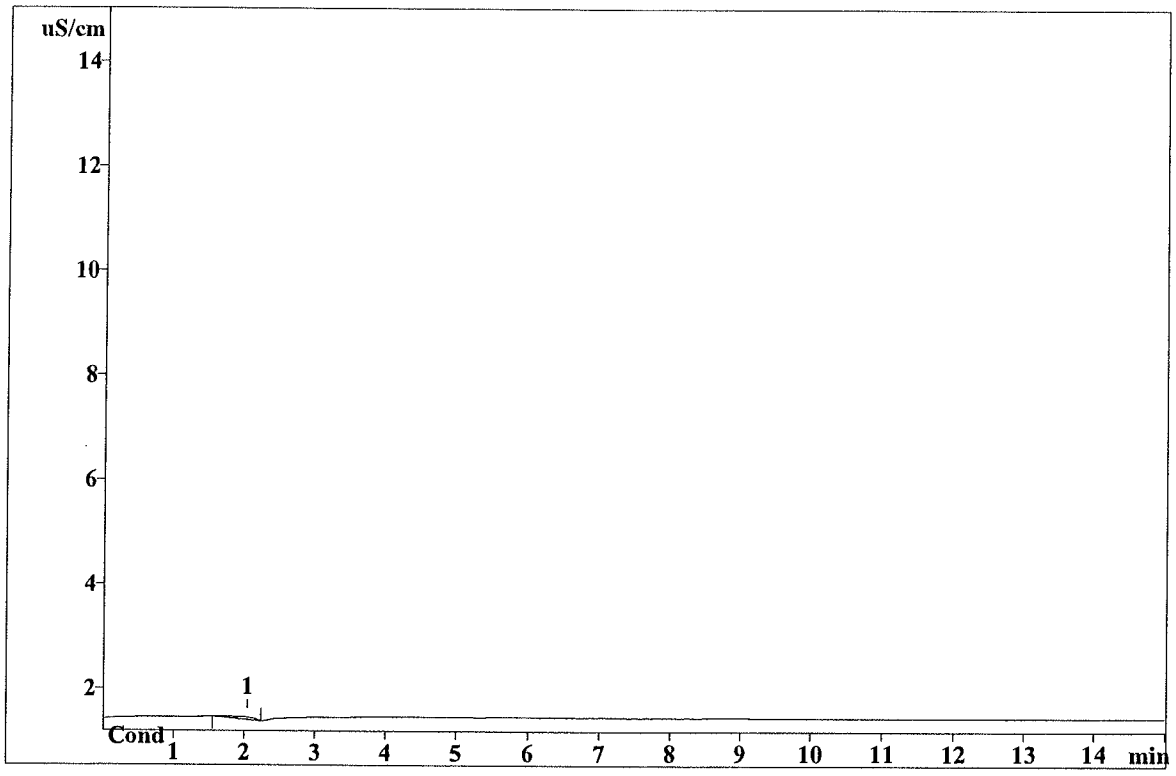
PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.66	93	5	4.68	94	0	87-112	20

QC DATA

Report date: 6/25/2020 11:37:25 AM
Printed by: TWangc

Ident: AF31-03 ICF033WB
Analysis from: 6/24/2020 10:55:43 AM
File: _2020-06-24_10-55.chw Last save: 6/24/2020 11:10:40 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159355

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.03	0.04	1.086	0.000	

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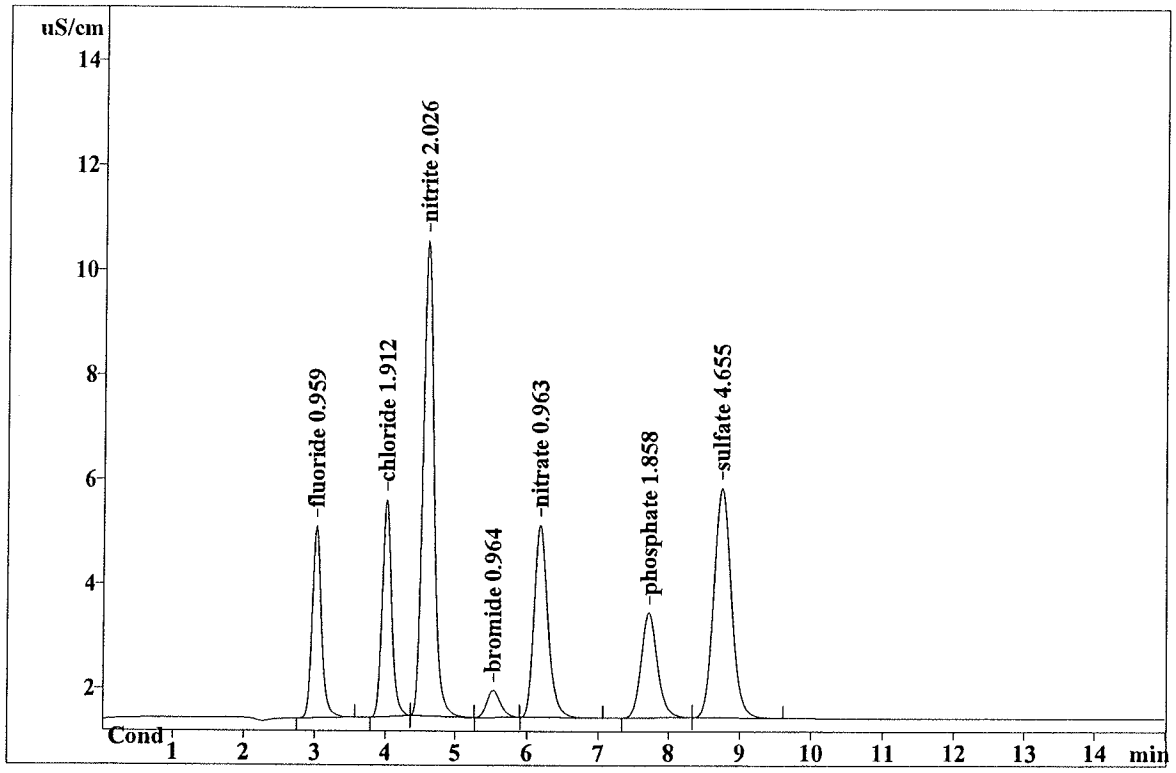
Report date: 6/25/2020 11:37:37 AM
Printed by: TWangc

Ident: AF31-04 ICF033WL
Analysis from: 6/24/2020 11:12:48 AM
File: _2020-06-24_11-12.chw Last save: 6/24/2020 11:27:45 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159356

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.67	33.322	0.959	fluoride
2	4.00	4.15	38.804	1.912	chloride
3	4.58	9.09	98.430	2.026	nitrite
4	5.53	0.51	6.829	0.964	bromide
5	6.17	3.68	48.587	0.963	nitrate
6	7.71	2.01	32.537	1.858	phosphate
7	8.74	4.39	74.252	4.655	sulfate
7	15.00	27.51	332.760	13.337	

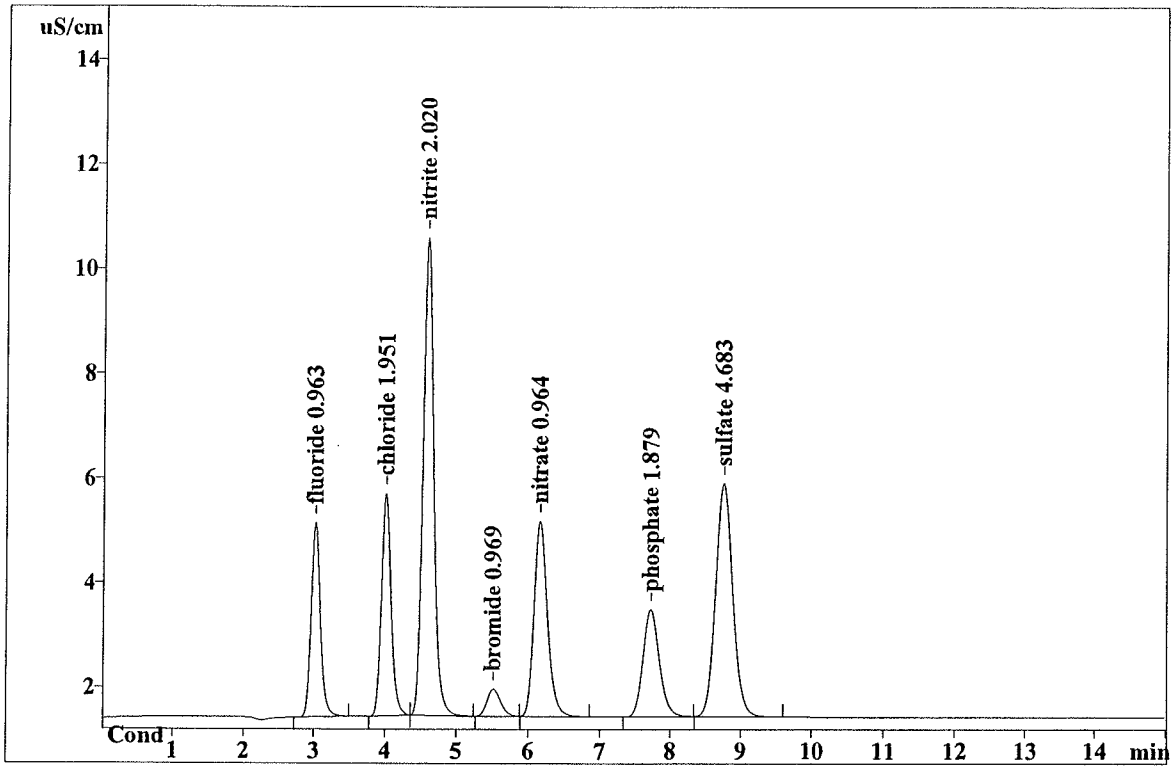
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:37:46 AM
Printed by: TWangc

Ident: AF31-05 ICF033WC
Analysis from: 6/24/2020 11:29:53 AM
File: _2020-06-24_11-29.chw Last save: 6/24/2020 11:44:50 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159357

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	3.72	33.453	0.963	fluoride
2	4.00	4.26	39.624	1.951	chloride
3	4.58	9.14	98.124	2.020	nitrite
4	5.52	0.52	6.882	0.969	bromide
5	6.16	3.73	48.620	0.964	nitrate
6	7.72	2.05	32.947	1.879	phosphate
7	8.75	4.45	74.715	4.683	sulfate
7	15.00	27.89	334.365	13.428	

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INITIAL CALIBRATION(S)

IC Result Check FormVersion : B24/AB25(2020)

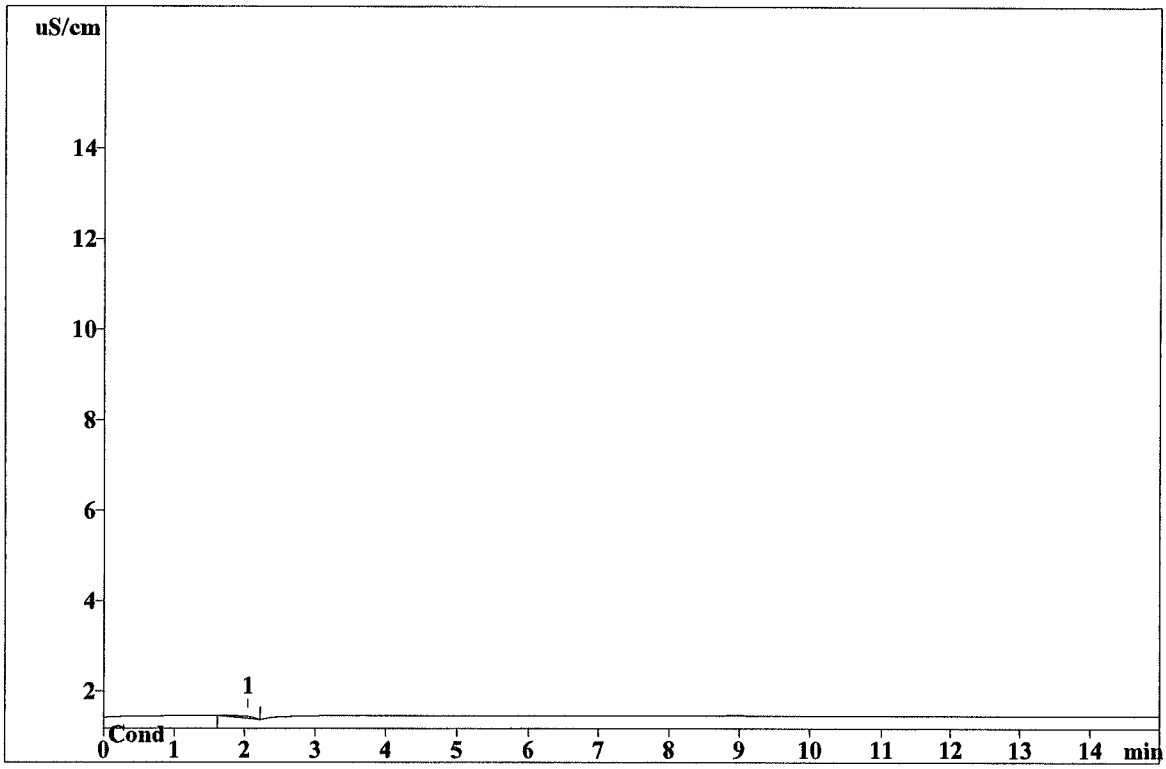
LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AB25-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-47	1
AB25-03	S1	OCFIBNPS	0	0.130932	0.0736569	0.0777071	0.262476	0.0835989	0.194145	0.268643	_2020-02-24_21-04	1
AB25-04	S2	OCFIBNPS	0	0.164605	0.106859	0.111126	0.294912	0.119582	0.213056	0.302238	_2020-02-24_21-21	1
AB25-05	S3	OCFIBNPS	0	0.23743	0.182756	0.194941	0.367787	0.19938	0.278602	0.370165	_2020-02-24_21-39	1
AB25-06	S4	OCFIBNPS	0	0.479227	0.467048	0.463725	0.590591	0.467839	0.473997	0.59173	_2020-02-24_21-56	1
AB25-07	S5	OCFIBNPS	0	0.907337	0.953599	0.917912	0.969488	0.952213	0.838299	0.964092	_2020-02-24_22-13	1
AB25-08	S6	OCFIBNPS	0	1.8697	1.99933	1.99949	1.79754	2.02739	1.75229	1.79408	_2020-02-24_22-30	1
AB25-09	S7	OCFIBNPS	0	5.06077	5.12498	5.1581	4.61476	5.46023	5.09961	4.62219	_2020-02-24_22-47	1
AB25-10	S8	OCFIBNPS	0	10.5296	9.94178	9.92699	9.72349	11.2469	11.2045	9.69729	_2020-02-24_23-04	1
AB25-11	S9	OCFIBNPS	0	21.5568	18.5889	21.4357	20.229	22.8079	23.7145	20.2396	_2020-02-24_23-21	1
AB25-12	ICV	OCFIBNPS	0%*	95.1%	96.9%	100.8%	97.7%	98.3%	91.5%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	OCFIBNPS	0%*	91.8%	98.3%	95.5%	98.1%	97%	88.2%*	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:19:29 PM
Printed by: LDip

Ident: AB25-02 S0
Analysis from: 2/24/2020 8:47:50 PM
File: _2020-02-24_20-47.chw Last save: 2/25/2020 12:15:05 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155970

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.891	0.000	

This report has been created by IC Net
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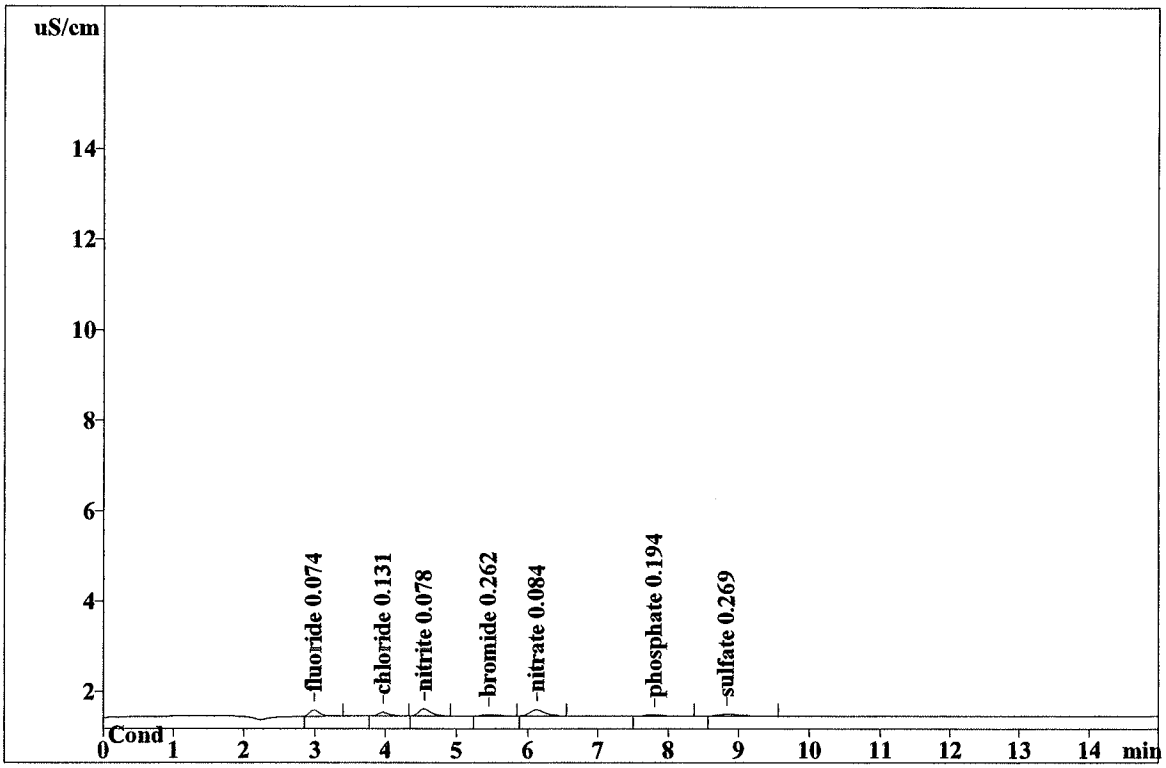
Report date: 2/25/2020 12:20:02 PM
Printed by: LDip

Ident: AB25-03 S1
Analysis from: 2/24/2020 9:04:55 PM
File: _2020-02-24_21-04.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155971

SAMPLE: METHOD300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.14	1.336	0.074	fluoride
2	3.96	0.08	0.852	0.131	chloride
3	4.54	0.16	1.770	0.078	nitrite
4	5.45	0.03	0.395	0.262	bromide
5	6.12	0.14	1.964	0.084	nitrate
6	7.79	0.02	0.341	0.194	phosphate
7	8.84	0.04	0.849	0.269	sulfate
7	15.00	0.60	7.507	1.091	

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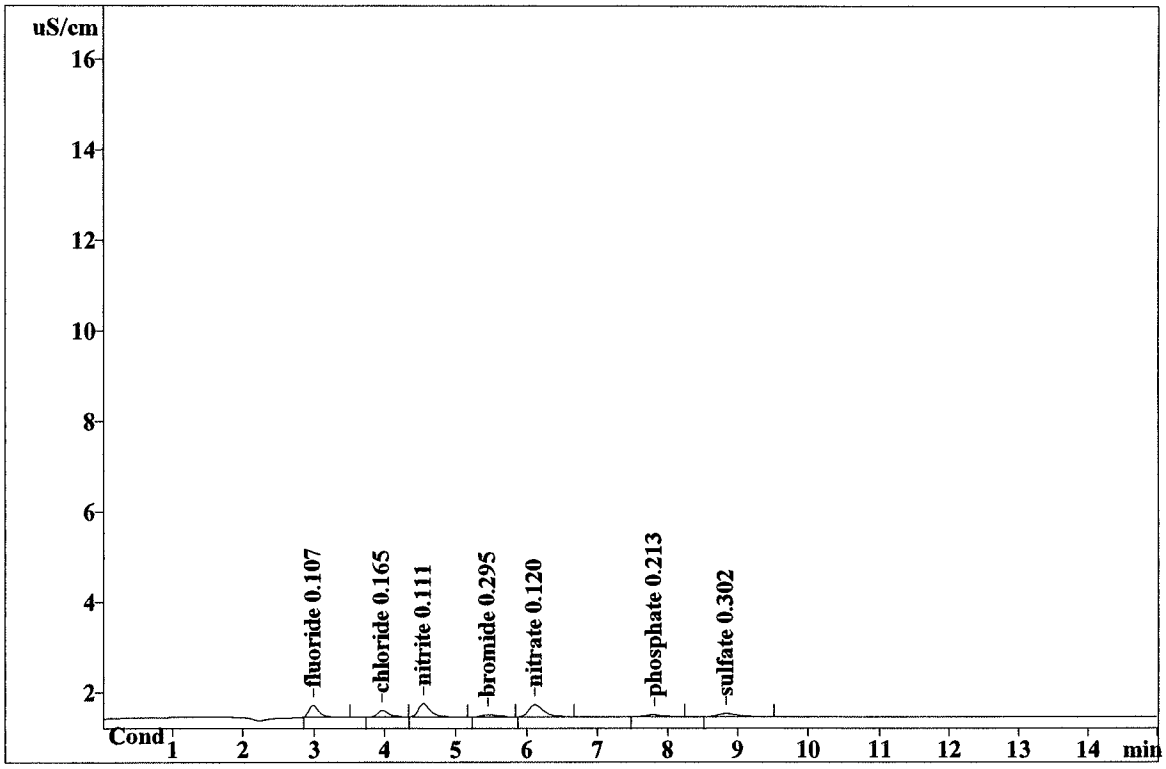
3/26/20

Report date: 2/25/2020 12:20:17 PM
Printed by: LDip

Ident: AB25-04 S2
Analysis from: 2/24/2020 9:21:59 PM
File: _2020-02-24_21-21.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155972

SAMPLE: METHOD300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.26	2.535	0.107	fluoride
2	3.96	0.15	1.570	0.165	chloride
3	4.54	0.29	3.428	0.111	nitrite
4	5.45	0.05	0.692	0.295	bromide
5	6.12	0.26	3.872	0.120	nitrate
6	7.79	0.04	0.707	0.213	phosphate
7	8.84	0.07	1.412	0.302	sulfate
7	15.00	1.13	14.215	1.312	

This report has been created by IC Net
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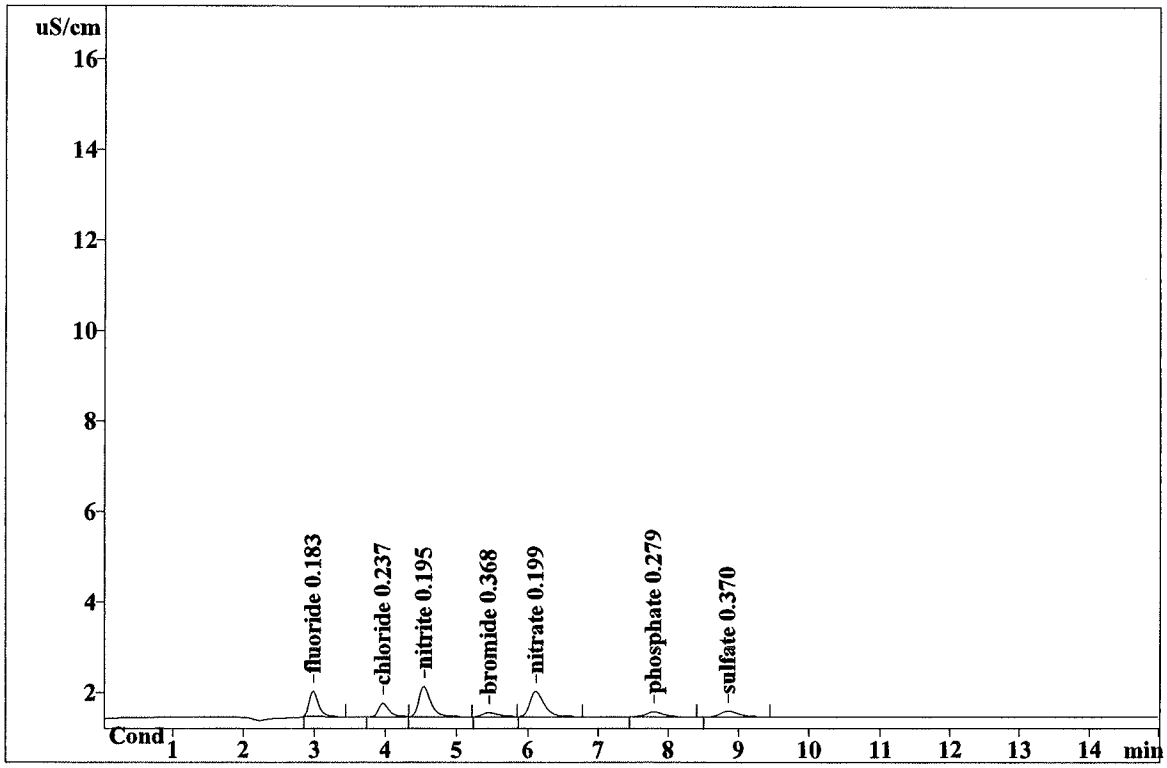
Report date: 2/25/2020 12:20:25 PM
Printed by: LDip

Ident: AB25-05 S3
Analysis from: 2/24/2020 9:39:04 PM
File: _2020-02-24_21-39.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155973

SAMPLE: METHOD300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

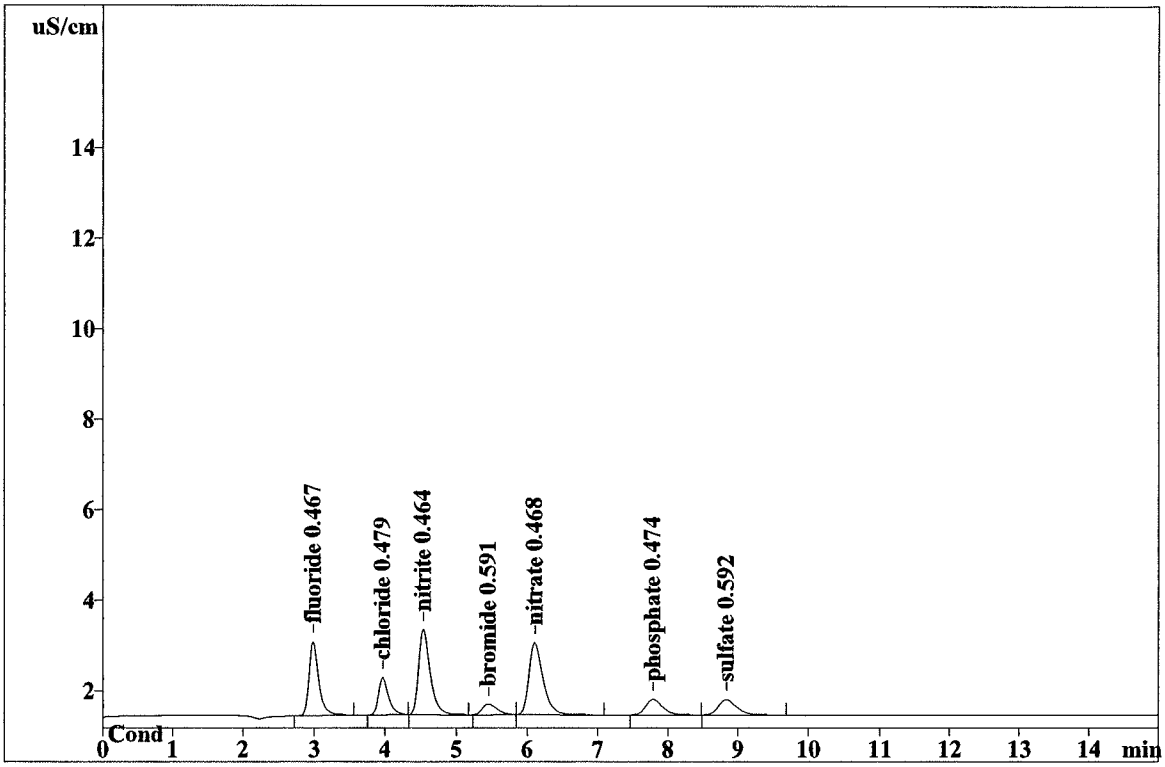
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.56	5.276	0.183	fluoride
2	3.97	0.30	3.121	0.237	chloride
3	4.54	0.67	7.587	0.195	nitrite
4	5.45	0.09	1.361	0.368	bromide
5	6.12	0.56	8.103	0.199	nitrate
6	7.80	0.11	1.975	0.279	phosphate
7	8.85	0.13	2.548	0.370	sulfate
7	15.00	2.43	29.971	1.831	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:38 PM
Printed by: LDip

Ident: AB25-06 S4
Analysis from: 2/24/2020 9:56:09 PM
File: _2020-02-24_21-56.chw Last save: 2/25/2020 12:15:06 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155974

SAMPLE: METHOD300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	1.64	15.542	0.467	fluoride
2	3.97	0.82	8.273	0.479	chloride
3	4.54	1.89	20.923	0.464	nitrite
4	5.45	0.24	3.406	0.591	bromide
5	6.11	1.59	22.337	0.468	nitrate
6	7.79	0.34	5.757	0.474	phosphate
7	8.83	0.34	6.256	0.592	sulfate
7	15.00	6.86	82.494	3.534	

This report has been created by IC Net
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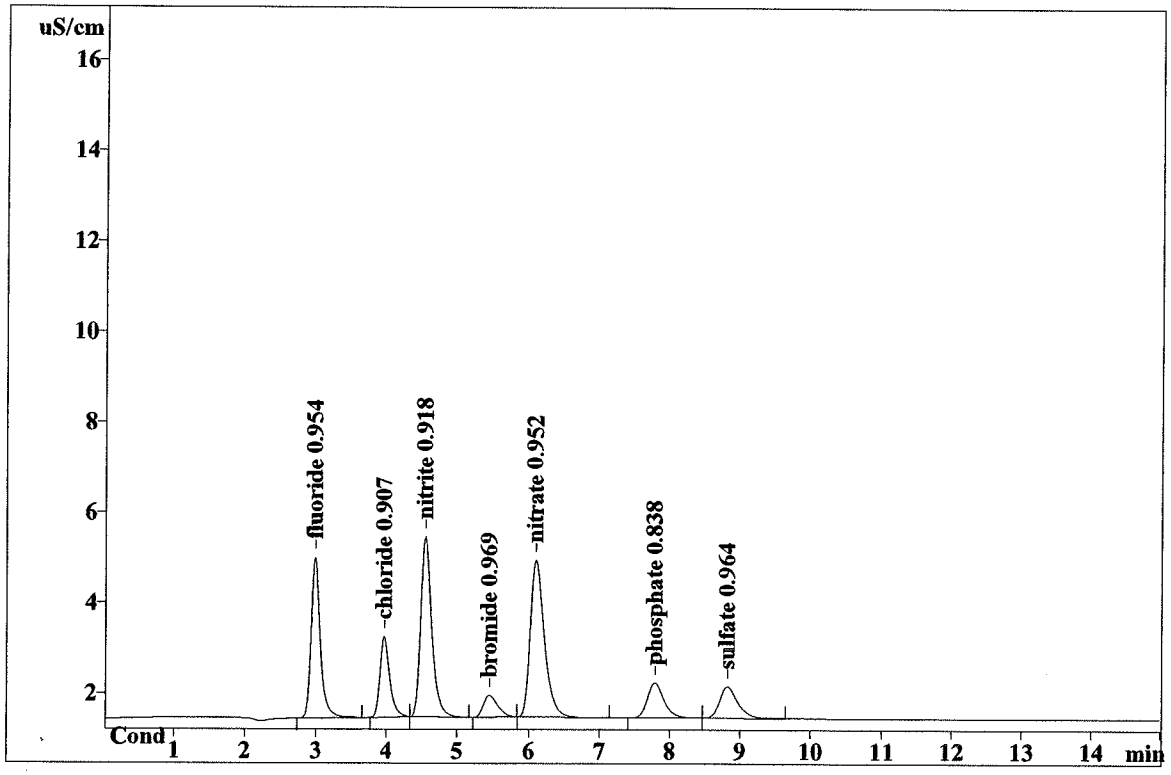
Report date: 2/25/2020 12:20:46 PM
Printed by: LDip

Ident: AB25-07 S5
Analysis from: 2/24/2020 10:13:14 PM
File: _2020-02-24_22-13.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155975

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.55	33.112	0.954	fluoride
2	3.96	1.78	17.395	0.907	chloride
3	4.54	3.97	43.459	0.918	nitrite
4	5.44	0.48	6.884	0.969	bromide
5	6.10	3.47	48.019	0.952	nitrate
6	7.78	0.78	12.807	0.838	phosphate
7	8.82	0.70	12.486	0.964	sulfate
7	15.00	14.72	174.163	6.503	

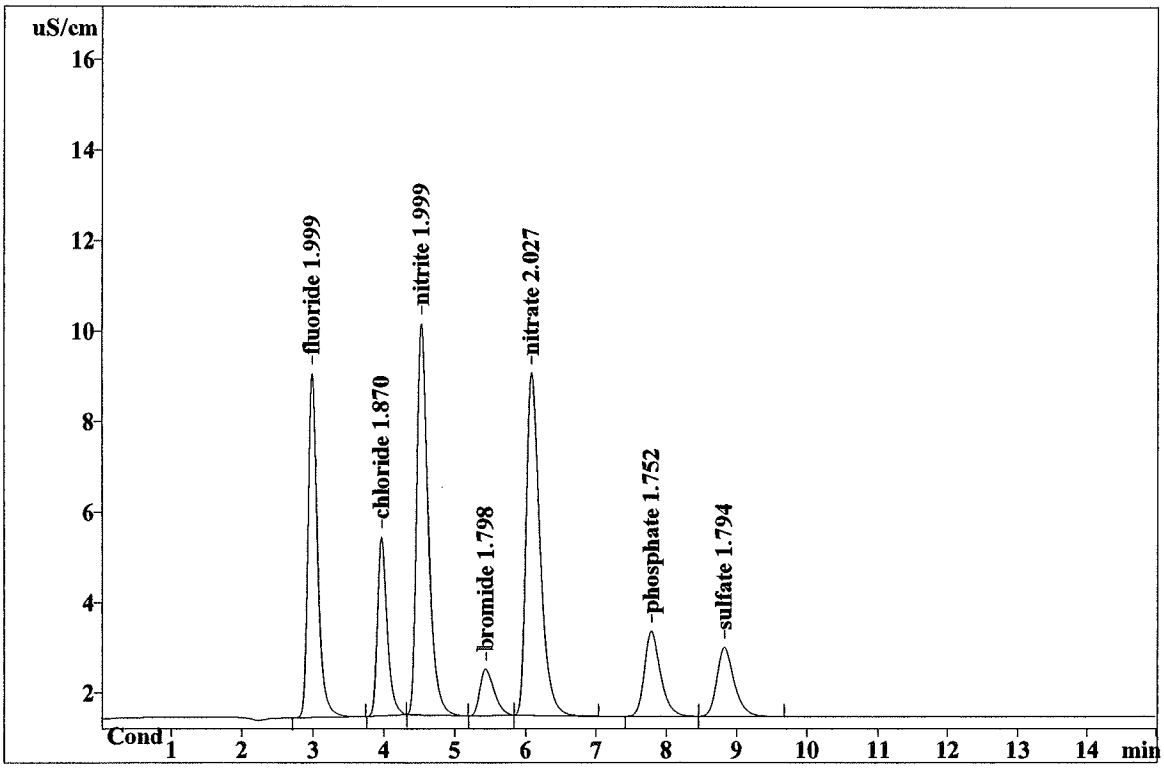
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:51 PM
Printed by: LDip

Ident: AB25-08 S6
Analysis from: 2/24/2020 10:30:19 PM
File: _2020-02-24_22-30.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155976

SAMPLE: METHOD300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	7.62	70.876	1.999	fluoride
2	3.96	3.97	37.900	1.870	chloride
3	4.54	8.67	97.125	1.999	nitrite
4	5.44	1.03	14.483	1.798	bromide
5	6.09	7.58	105.026	2.027	nitrate
6	7.78	1.88	30.496	1.752	phosphate
7	8.82	1.52	26.375	1.794	sulfate
7	15.00	32.27	382.281	13.240	

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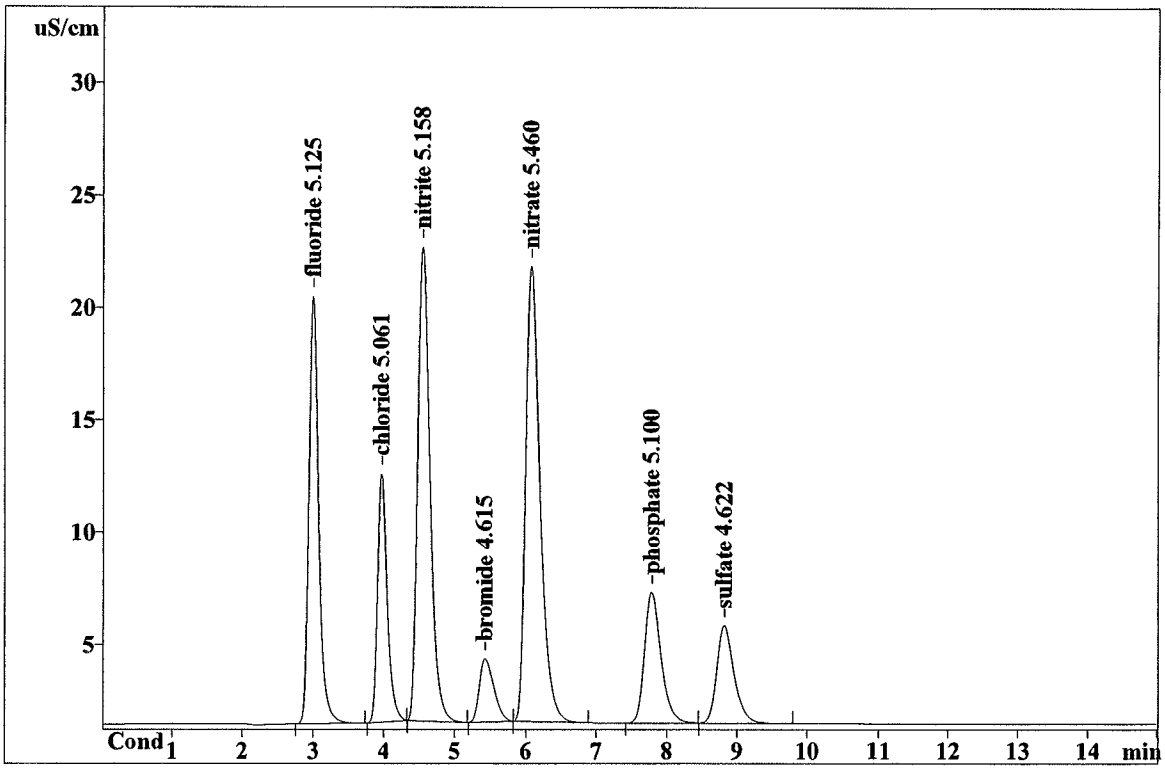
METROHM LTD

Report date: 2/25/2020 12:20:59 PM
Printed by: LDip

Ident: AB25-09 S7
Analysis from: 2/24/2020 10:47:23 PM
File: _2020-02-24_22-47.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155977

SAMPLE: METHOD300/9056/4110B
: 5.0 PPM
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

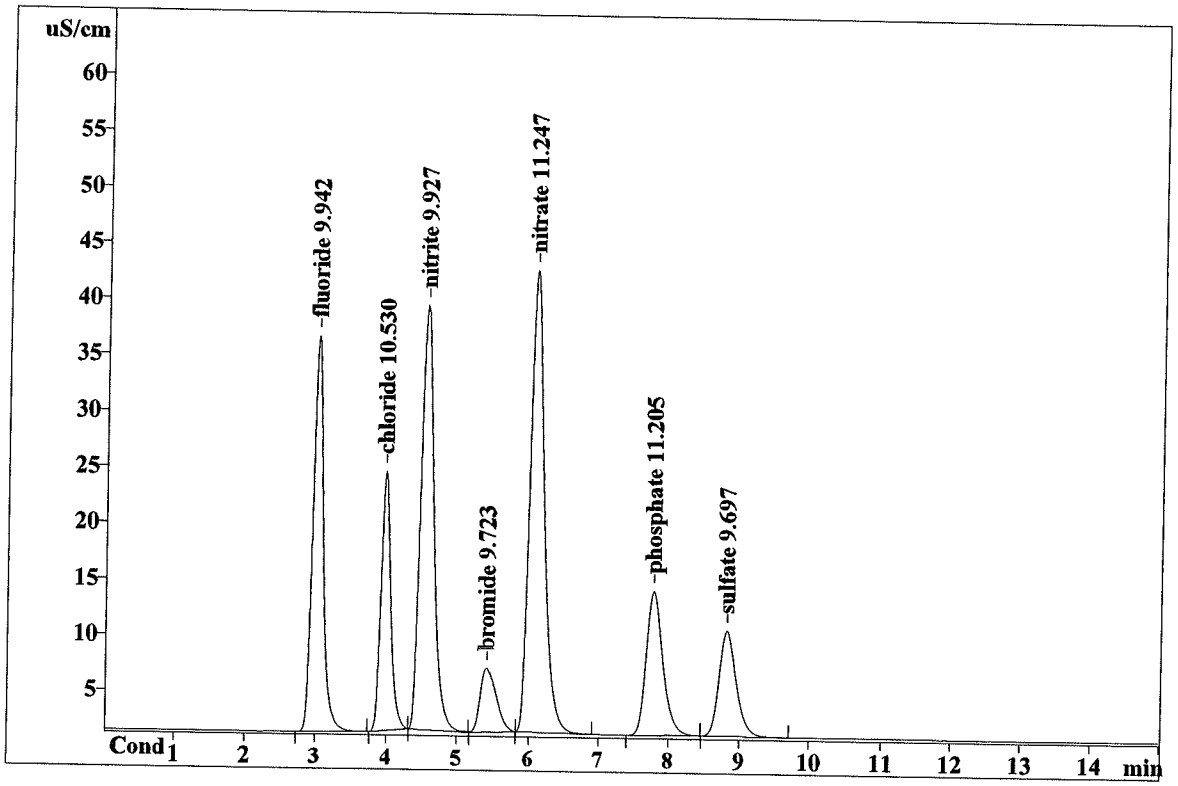


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	19.07	183.749	5.125	fluoride
2	3.96	11.09	105.892	5.061	chloride
3	4.54	21.13	253.850	5.158	nitrite
4	5.43	2.84	40.339	4.615	bromide
5	6.07	20.29	287.039	5.460	nitrate
6	7.78	5.85	95.279	5.100	phosphate
7	8.82	4.37	73.698	4.622	sulfate
7	15.00	84.64	1039.846	35.141	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:21:07 PM		
Printed by:	LDip		
Ident:	AB25-10 S8		
Analysis from:	2/24/2020 11:04:28 PM		
File:	_2020-02-24_23-04.chw	Last save:	2/25/2020 12:15:06 PM
Method:	ICD0-B24.mtw	Last save:	2/24/2020 9:54:01 PM
Run operator:	LDip		
Analysis number:	155978		
SAMPLE:	METHOD300/9056/4110B		
:	10.0 PPM		
Vial number:	10		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	35.35	357.692	9.942	fluoride
2	3.96	23.13	222.415	10.530	chloride
3	4.54	37.88	490.473	9.927	nitrite
4	5.41	5.69	87.226	9.723	bromide
5	6.06	41.27	593.856	11.247	nitrate
6	7.77	12.84	213.432	11.205	phosphate
7	8.81	9.41	158.621	9.697	sulfate
7	15.00	165.57	2123.716	72.271	

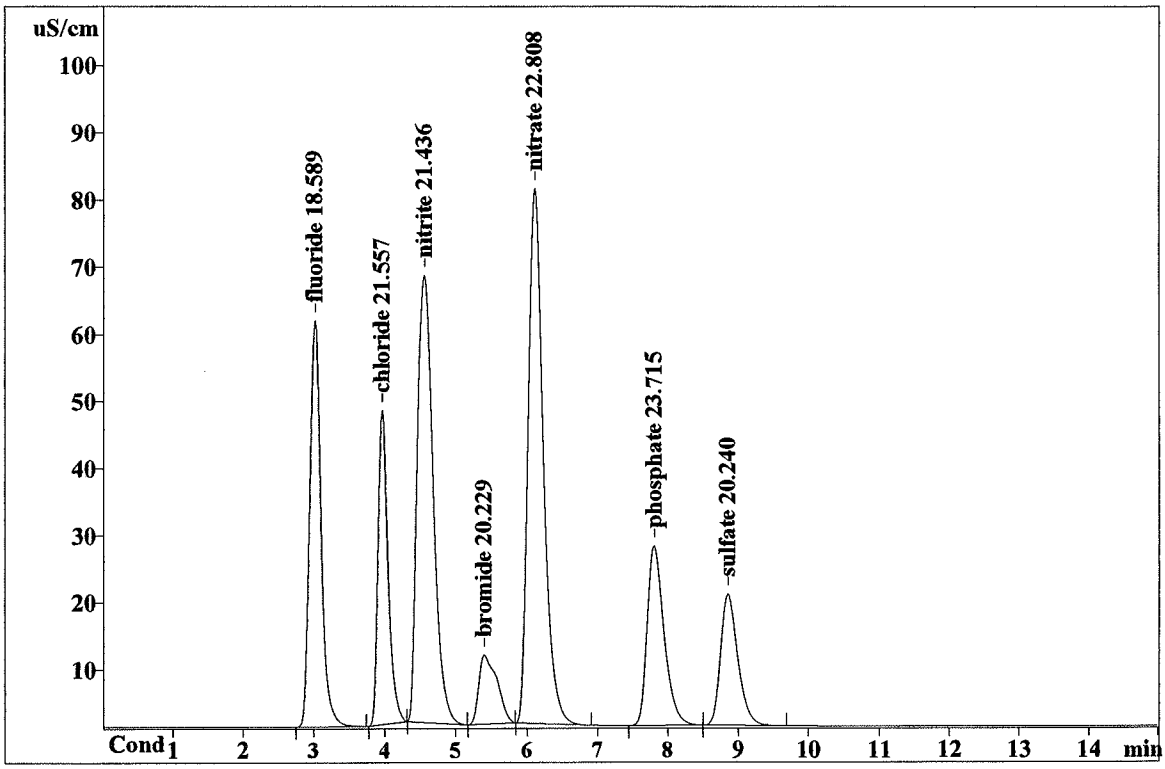
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:13 PM
Printed by: LDip

Ident: AB25-11 S9
Analysis from: 2/24/2020 11:21:33 PM
File: _2020-02-24_23-21.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155979

SAMPLE: METHOD300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	60.60	669.957	18.589	fluoride
2	3.96	46.92	457.371	21.557	chloride
3	4.55	66.71	1061.515	21.436	nitrite
4	5.40	10.32	183.643	20.229	bromide
5	6.11	79.75	1206.835	22.808	nitrate
6	7.80	26.69	455.548	23.715	phosphate
7	8.85	19.55	335.027	20.240	sulfate
7	15.00	310.55	4369.897	148.572	

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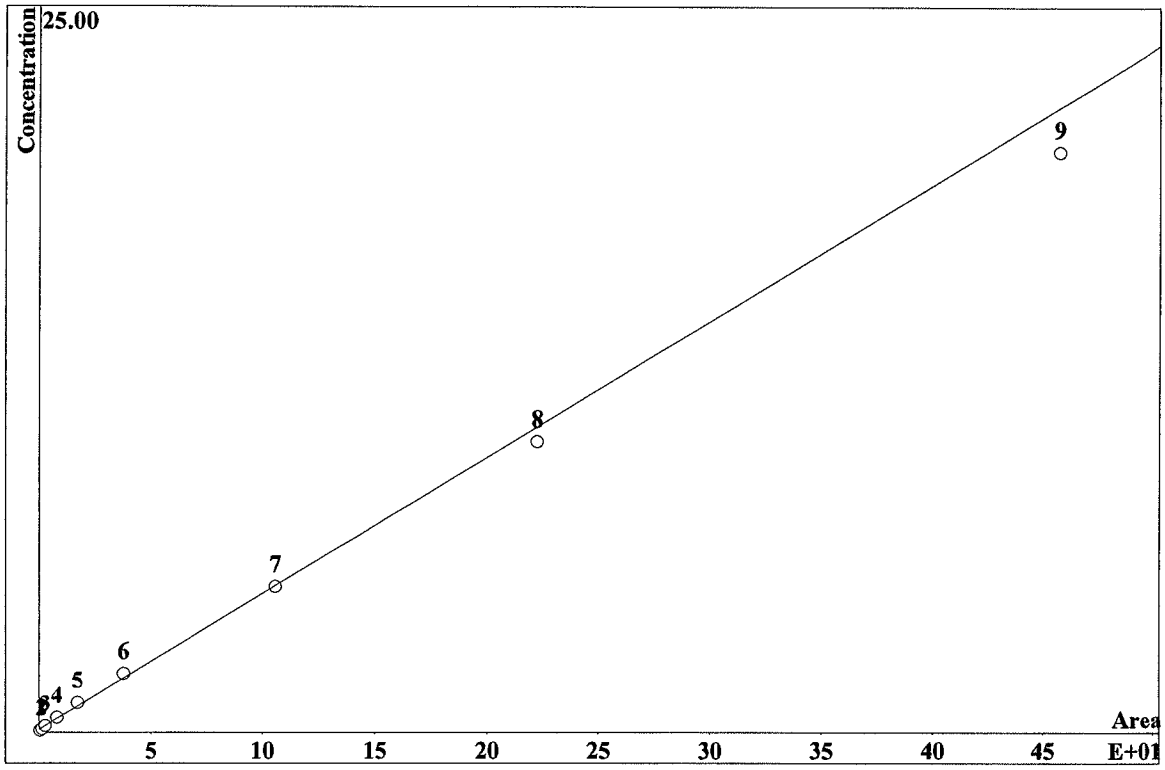
CALIBRATION OF COMPONENT chloride

Method: ICD0-B24.mtw
Equation: Q = 0.0469332·A + 0.0909434
RSD: 7.233 %
Correlation coefficient: 0.998906

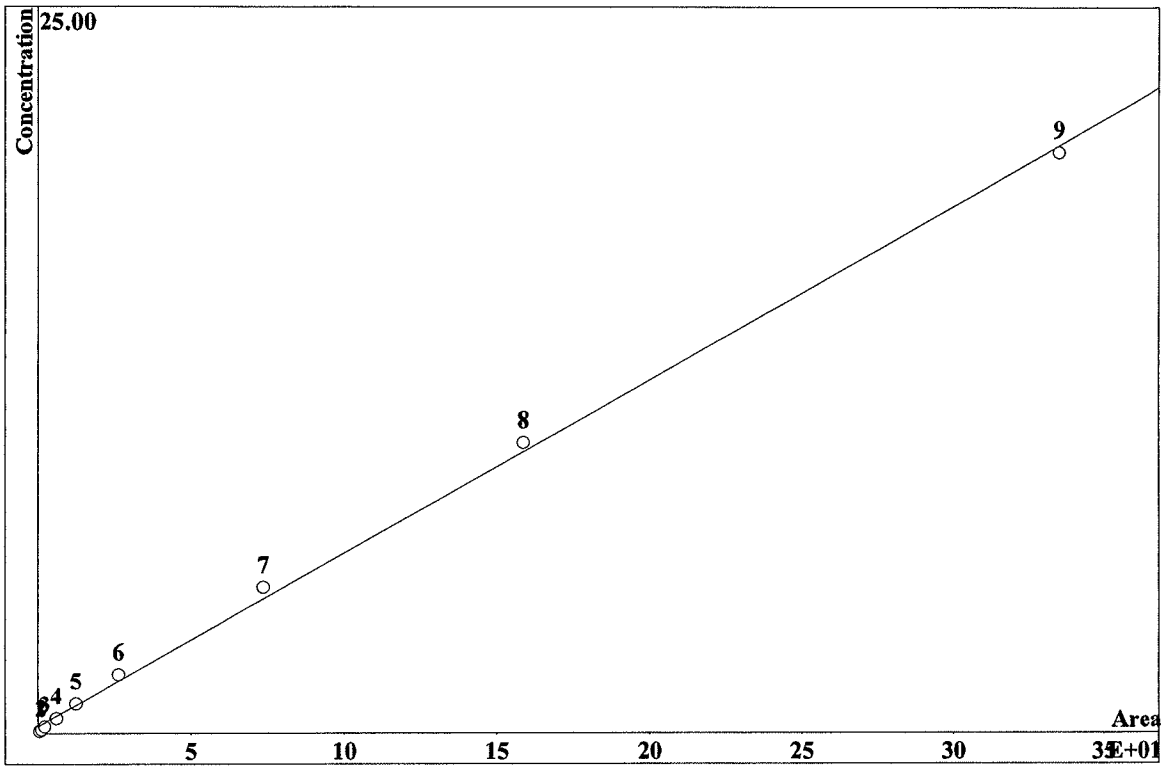


K3 = 0 K2 = 0 K1 = 0.0469332 K0 = 0.0909434
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.08183	0.852	0.05	1	3.96	Yes	_2020-02-24_2□
2	0.1492	1.57	0.1	1	3.96	Yes	_2020-02-24_2□
3	0.3042	3.121	0.2	1	3.96	Yes	_2020-02-24_2□
4	0.8241	8.273	0.5	1	3.96	Yes	_2020-02-24_2□
5	1.778	17.39	1	1	3.96	Yes	_2020-02-24_2□
6	3.966	37.9	2	1	3.96	Yes	_2020-02-24_2□
7	11.09	105.9	5	1	3.96	Yes	_2020-02-24_2□
8	23.13	222.4	10	1	3.96	No	_2020-02-24_2
9	46.92	457.4	20	1	3.96	No	_2020-02-24_2

CALIBRATION OF COMPONENT sulfate

Method: ICD0-B24.mtw
Equation: Q = 0.0597613·A + 0.217884
RSD: 5.948 %
Correlation coefficient: 0.999363



K3 = 0 K2 = 0 K1 = 0.0597613 K0 = 0.217884
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.04145	0.8494	0.05	1	8.83	Yes	_2020-02-24_2□
2	0.07188	1.412	0.1	1	8.83	Yes	_2020-02-24_2□
3	0.1354	2.548	0.2	1	8.83	Yes	_2020-02-24_2□
4	0.3422	6.256	0.5	1	8.83	Yes	_2020-02-24_2□
5	0.6991	12.49	1	1	8.83	Yes	_2020-02-24_2□
6	1.523	26.37	2	1	8.83	Yes	_2020-02-24_2□
7	4.368	73.7	5	1	8.83	Yes	_2020-02-24_2□
8	9.407	158.6	10	1	8.83	Yes	_2020-02-24_2
9	19.55	335	20	1	8.83	Yes	_2020-02-24_2

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : B24/AB25(2020)

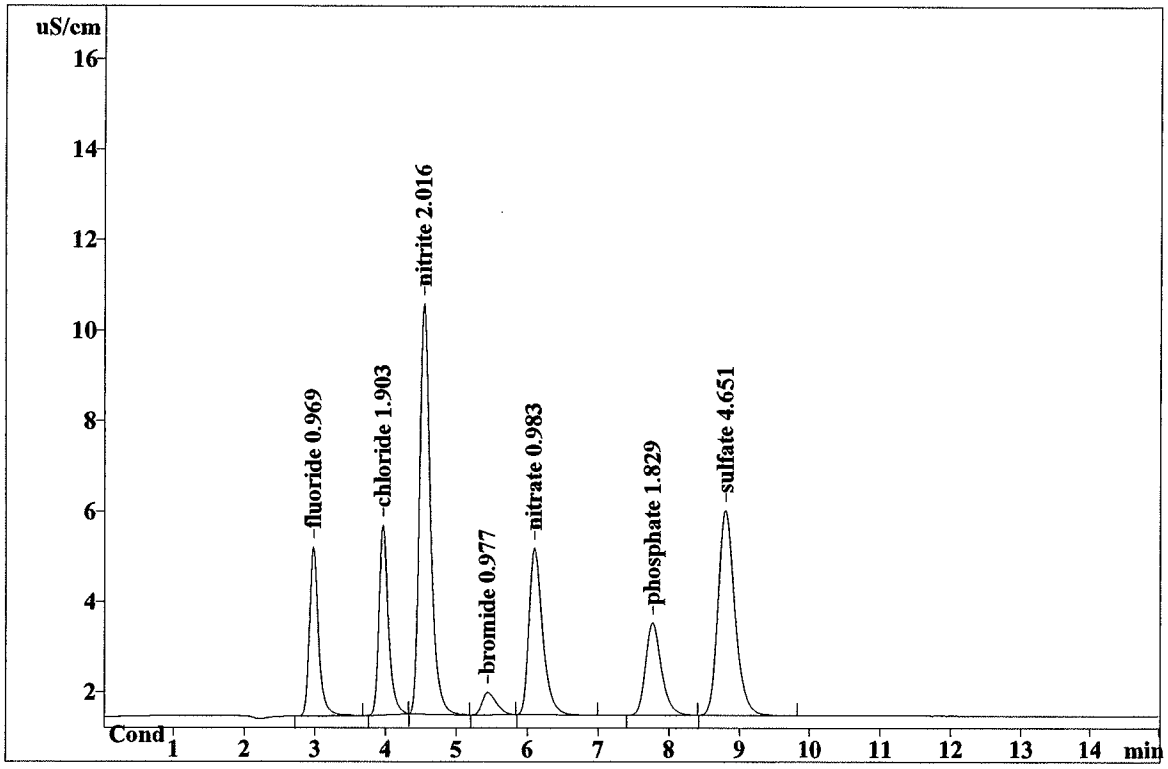
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AB25-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-12	ICV	PINOFCBS	91.5%	100.8%	98.3%	0%*	96.9%	95.1%	97.7%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	PINOFCBS	88.2%*	95.5%	97%	0%*	98.3%	91.8%	98.1%	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:21:18 PM
Printed by: LDip

Ident: AB25-12 ICV
Analysis from: 2/24/2020 11:38:38 PM
File: _2020-02-24_23-38.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155980

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	3.75	33.675	0.969	fluoride
2	3.96	4.21	38.609	1.903	chloride
3	4.53	9.07	97.933	2.016	nitrite
4	5.44	0.50	6.951	0.977	bromide
5	6.10	3.69	49.671	0.983	nitrate
6	7.76	2.05	31.988	1.829	phosphate
7	8.80	4.54	74.179	4.651	sulfate
7	15.00	27.80	333.006	13.328	

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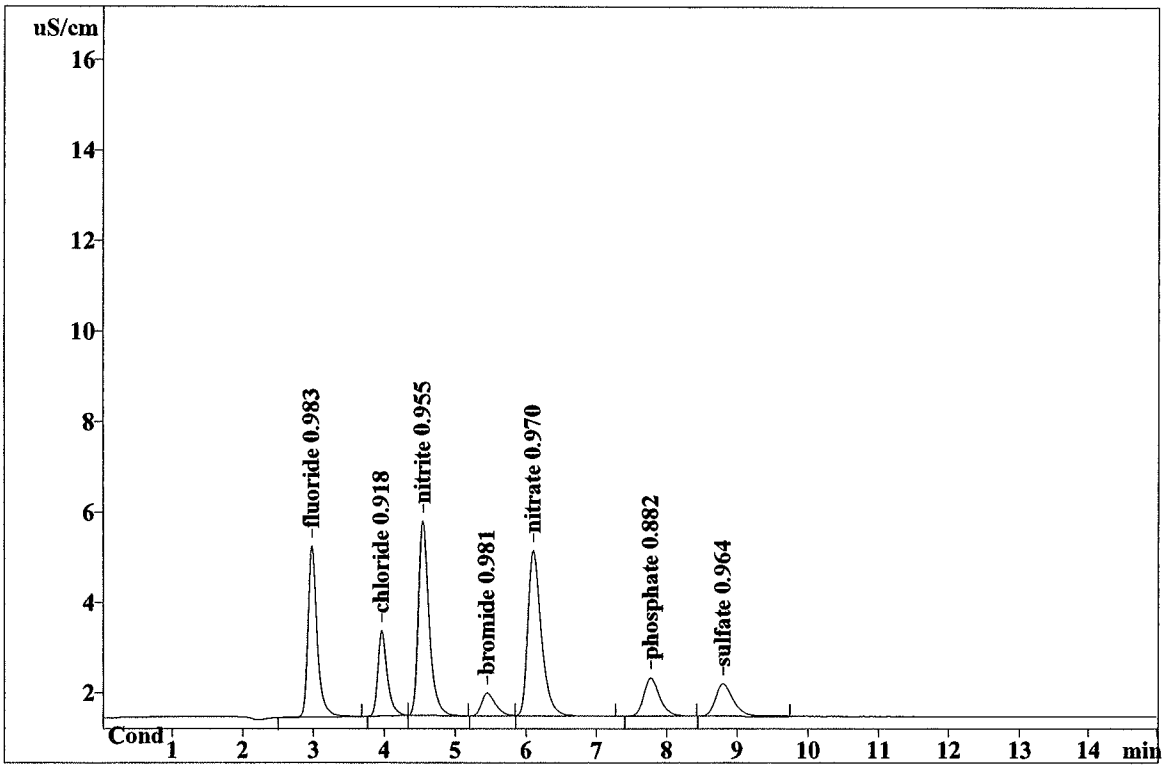
Report date: 2/25/2020 12:21:23 PM
Printed by: LDip

Ident: AB25-13 ICV1
Analysis from: 2/24/2020 11:55:43 PM
File: _2020-02-24_23-55.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155981

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

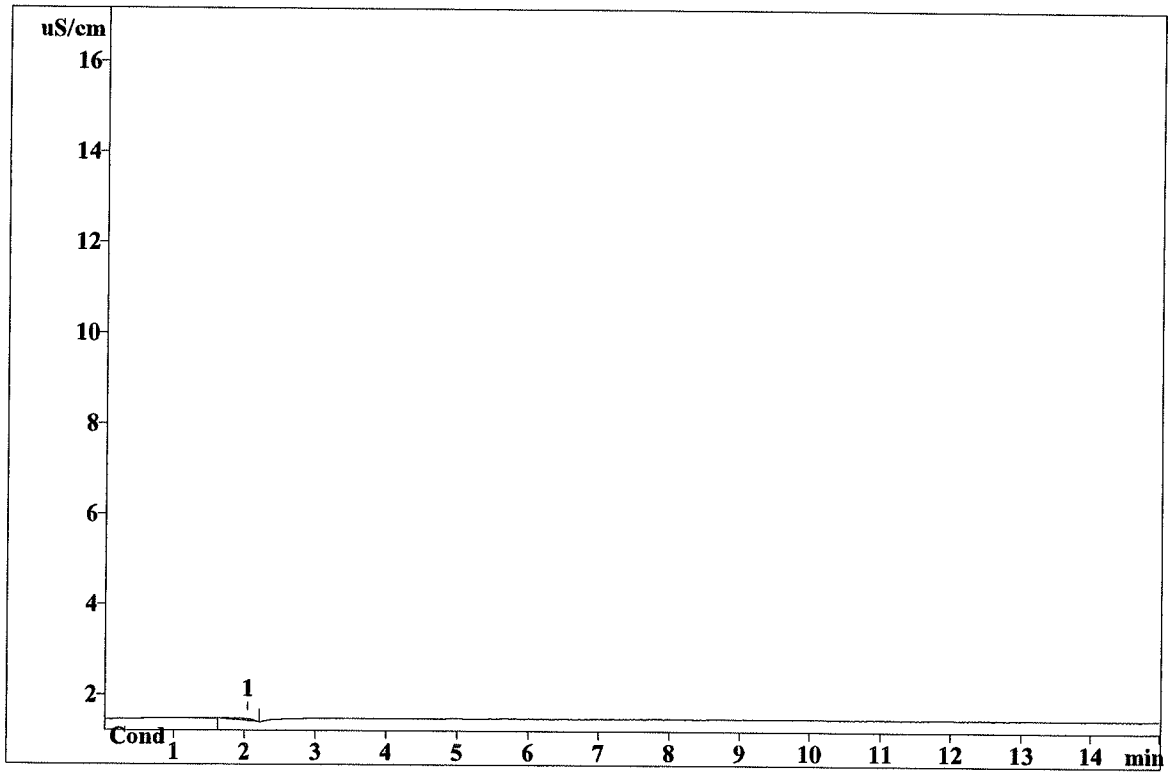


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.79	34.158	0.983	fluoride
2	3.96	1.88	17.616	0.918	chloride
3	4.54	4.31	45.313	0.955	nitrite
4	5.45	0.51	6.985	0.981	bromide
5	6.10	3.65	48.958	0.970	nitrate
6	7.77	0.85	13.652	0.882	phosphate
7	8.80	0.72	12.482	0.964	sulfate
7	15.00	15.70	179.164	6.652	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:21:29 PM	
Printed by:	LDip	
Ident:	AB25-14 ICB	
Analysis from:	2/25/2020 12:12:47 AM	
File:	_2020-02-25_00-12.chw	Last save: 2/25/2020 12:15:07 PM
Method:	ICD0-B24.mtw	Last save: 2/24/2020 9:54:01 PM
Run operator:	LDip	
Analysis number:	155982	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	14	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.898	0.000	

This report has been created by IC Net
METROHM LTD

DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F178
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF31-01	CCV745	95	06/24/2010:21
AF31-13	CCV747	104.8	06/24/2013:46
AF31-49	CCV753	99.3	06/25/2000:54
AF31-61	CCV755	96.1	06/25/2004:19
AF31-72	CCV757	96.4	06/25/2007:27

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F178
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF31-01	CCV745	93.2	06/24/2010:21
AF31-13	CCV747	94.7	06/24/2013:46
AF31-37	CCV751	93.2	06/24/2021:29
AF31-49	CCV753	96.3	06/25/2000:54
AF31-61	CCV755	92.2	06/25/2004:19
AF31-72	CCV757	92.9	06/25/2007:27

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : B24/AB25(2020)

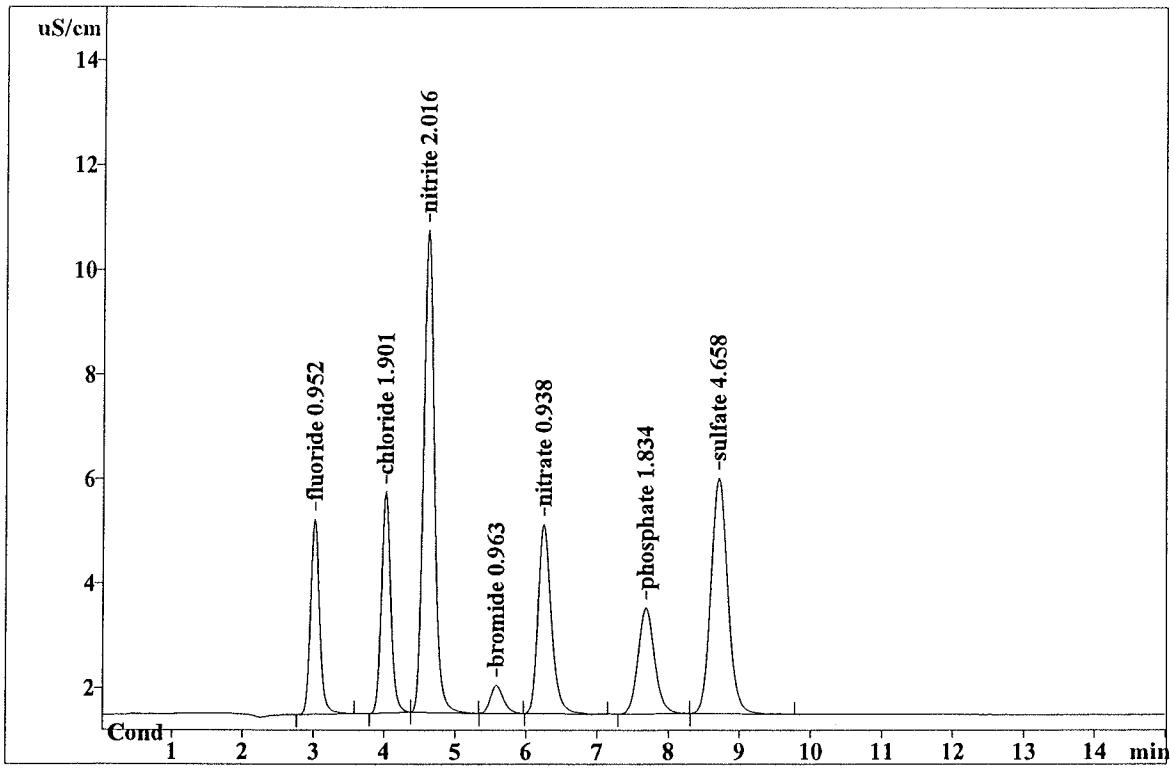
LFID	LSID	Selection	bromide	chloride	fluoride	iodide	sulfate	phosphate	nitrite	nitrate	RawNetID	DF
AF31-01	CCV745	BCFOSPIN	96.3%	95%	95.2%	0%*	93.2%	91.7%	100.8%	93.8%	_2020-06-24_10-21	1
AF31-02	CCB745	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_10-38	1
AF31-13	CCV747	BCFOSPIN	98.2%	104.8%	97.3%	0%*	94.7%	93.5%	102.5%	94.9%	_2020-06-24_13-46	1
AF31-14	CCB747	BCFOSPIN	0	0.110798	0	0	0	0	0	0	_2020-06-24_14-03	1
AF31-25	CCV749	BCFOSPIN	97.4%	96.9%	97.2%	0%*	93.9%	93.5%	102.5%	94.2%	_2020-06-24_17-41	1
AF31-26	CCB749	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_18-21	1
AF31-37	CCV751	BCFOSPIN	97.4%	96.4%	96.9%	0%*	93.2%	94.2%	102.8%	94.5%	_2020-06-24_21-29	1
AF31-38	CCB751	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-24_21-46	1
AF31-49	CCV753	BCFOSPIN	97.5%	99.3%	97.3%	0%*	96.3%	93%	102.8%	94.2%	_2020-06-25_00-54	1
AF31-50	CCB753	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_01-11	1
AF31-61	CCV755	BCFOSPIN	97.5%	96.1%	96.4%	0%*	92.2%	92.9%	102.3%	93.8%	_2020-06-25_04-19	1
AF31-62	CCB755	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_04-36	1
AF31-72	CCV757	BCFOSPIN	97.7%	96.4%	97.1%	0%*	92.9%	93.2%	102.5%	94.1%	_2020-06-25_07-27	1
AF31-73	CCB757	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-25_07-44	1

Report date: 6/25/2020 11:36:40 AM
Printed by: TWangc

Ident: AF31-01 CCV745
Analysis from: 6/24/2020 10:21:33 AM
File: _2020-06-24_10-21.chw Last save: 6/24/2020 10:36:30 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159353

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

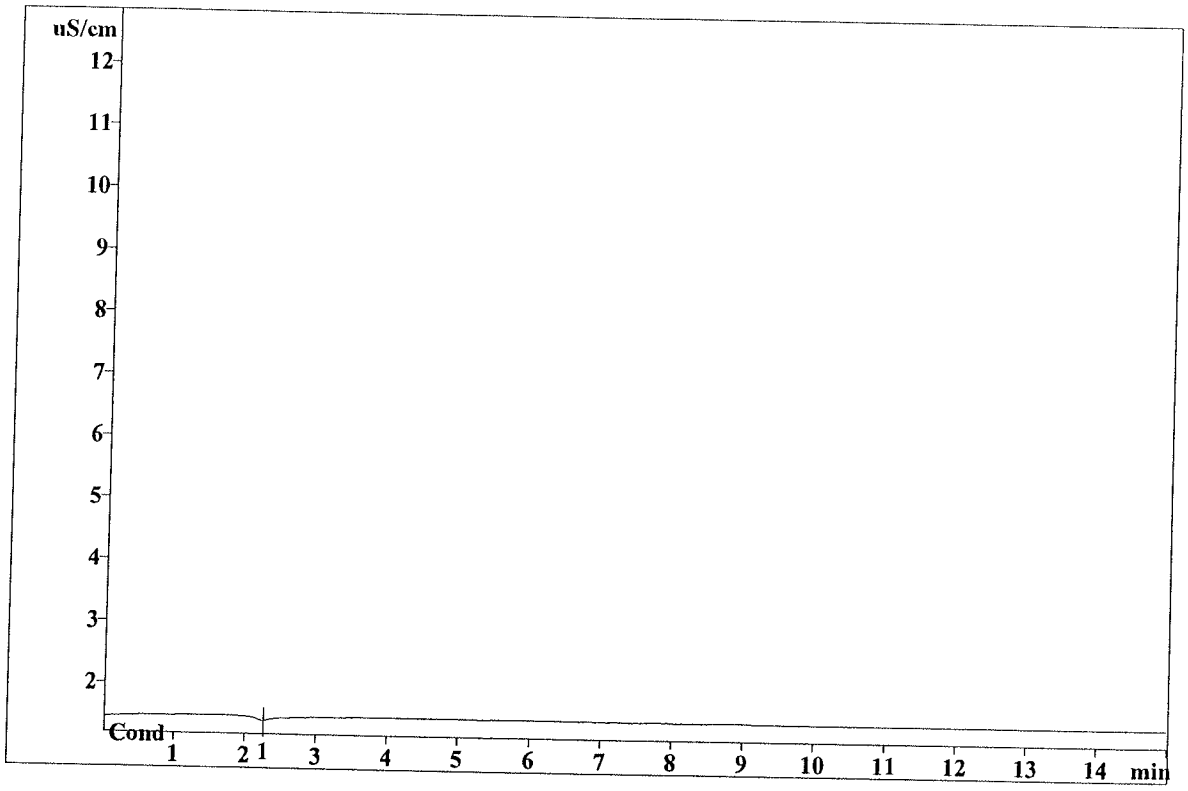


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.73	33.046	0.952	fluoride
2	4.01	4.22	38.560	1.901	chloride
3	4.61	9.21	97.955	2.016	nitrite
4	5.58	0.53	6.827	0.963	bromide
5	6.25	3.61	47.277	0.938	nitrate
6	7.68	2.02	32.081	1.834	phosphate
7	8.70	4.49	74.298	4.658	sulfate
7	15.00	27.82	330.044	13.262	

This report has been created by IC Net
METROHM LTD

Report date:	6/25/2020 11:37:06 AM	
Printed by:	TWangc	
Ident:	AF31-02 CCB745	
Analysis from:	6/24/2020 10:38:38 AM	
File:	_2020-06-24_10-38.chw	Last save: 6/24/2020 10:53:35 AM
Modified!		
Method:	ICD0-B24.mtw	Last save: 6/24/2020 10:23:36 AM
Run operator:	TWangc	
Analysis number:	159354	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	2	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.28	-0.00	-0.000	0.000	

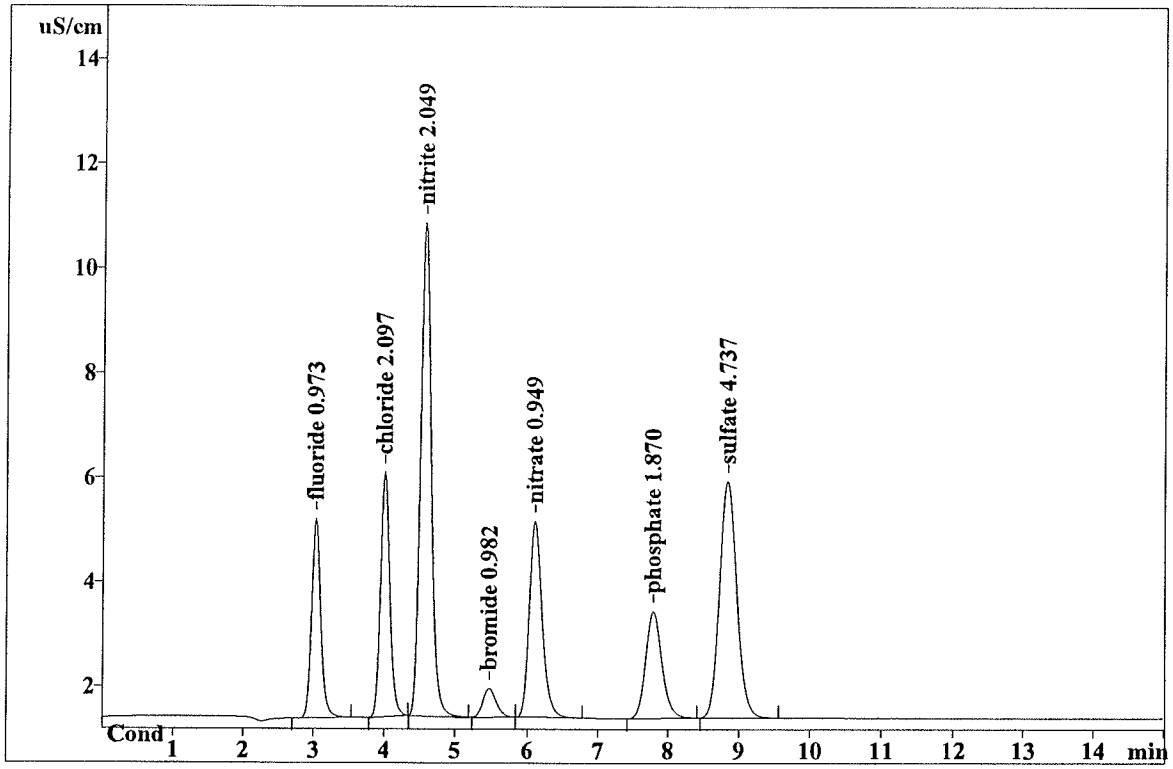
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:37:55 AM
Printed by: TWangc

Ident: AF31-13 CCV747
Analysis from: 6/24/2020 1:46:36 PM
File: _2020-06-24_13-46.chw Last save: 6/24/2020 2:01:33 PM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159365

SAMPLE: METHOD300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

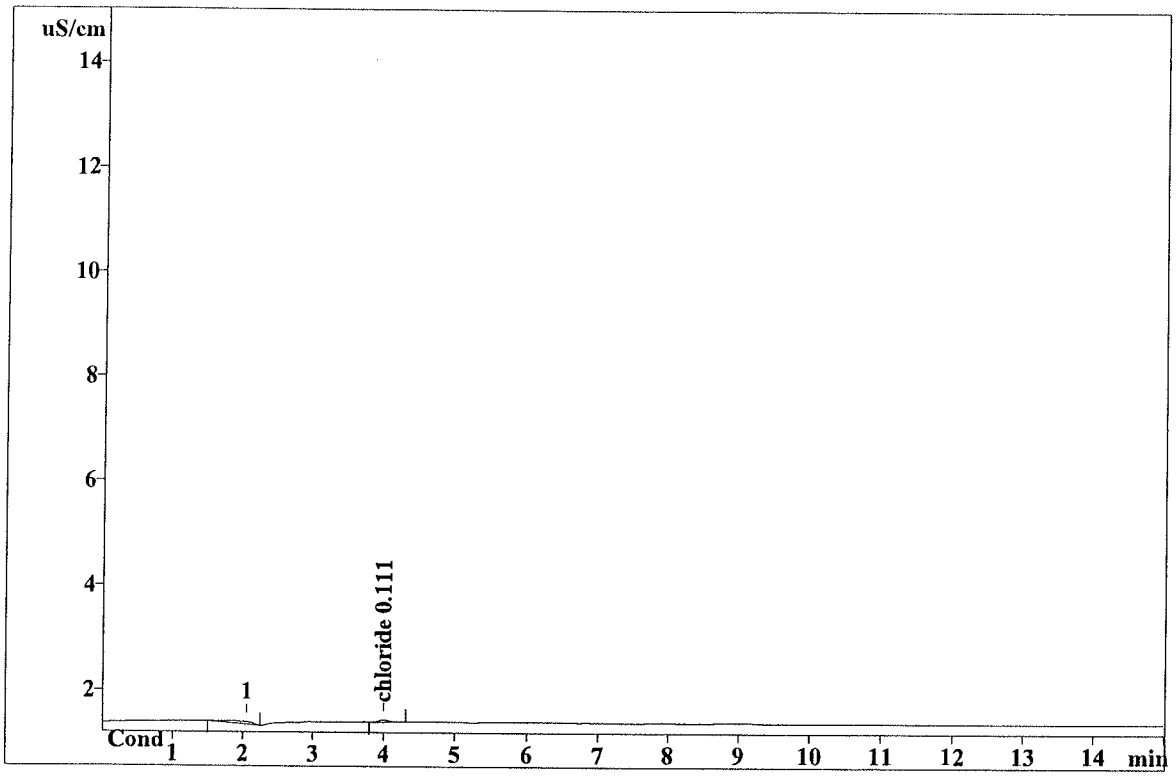


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.81	33.817	0.973	fluoride
2	4.00	4.67	42.734	2.097	chloride
3	4.56	9.43	99.584	2.049	nitrite
4	5.47	0.55	7.002	0.982	bromide
5	6.10	3.75	47.835	0.949	nitrate
6	7.79	2.04	32.772	1.870	phosphate
7	8.83	4.52	75.615	4.737	sulfate
7	15.00	28.77	339.359	13.656	

This report has been created by IC Net
METROHM LTD

Report date:	6/25/2020 11:45:43 AM	
Printed by:	TWangc	
Ident:	AF31-14 CCB747	
Analysis from:	6/24/2020 2:03:41 PM	
File:	_2020-06-24_14-03.chw	Last save: 6/25/2020 11:38:36 AM
Modified!		
Method:	ICD0-B24.mtw	Last save: 6/24/2020 10:23:36 AM
Run operator:	TWangc	
Analysis number:	159366	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	14	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

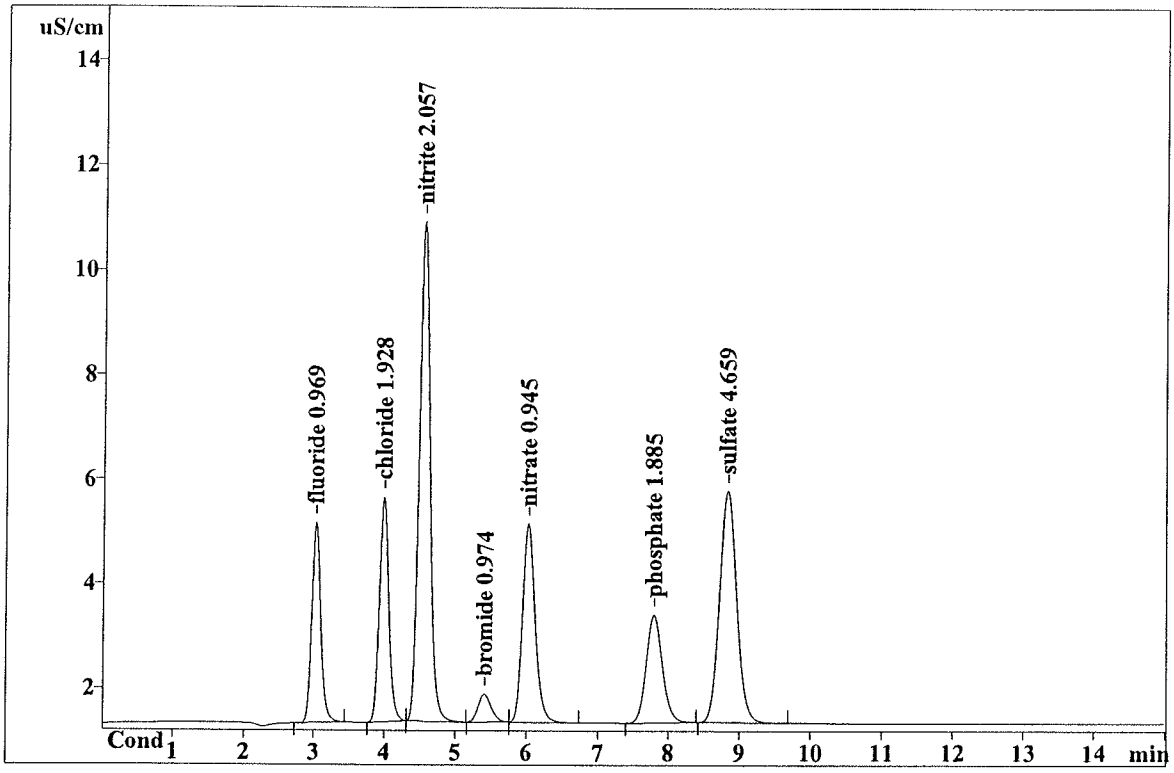
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.05	0.05	1.332	0.000	
2	4.00	0.04	0.423	0.111	chloride
2	15.00	0.09	1.755	0.111	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:06 AM
Printed by: TWangc

Ident: AF31-37 CCV751
Analysis from: 6/24/2020 9:29:35 PM
File: _2020-06-24_21-29.chw Last save: 6/24/2020 9:44:32 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159389

SAMPLE: METHOD300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

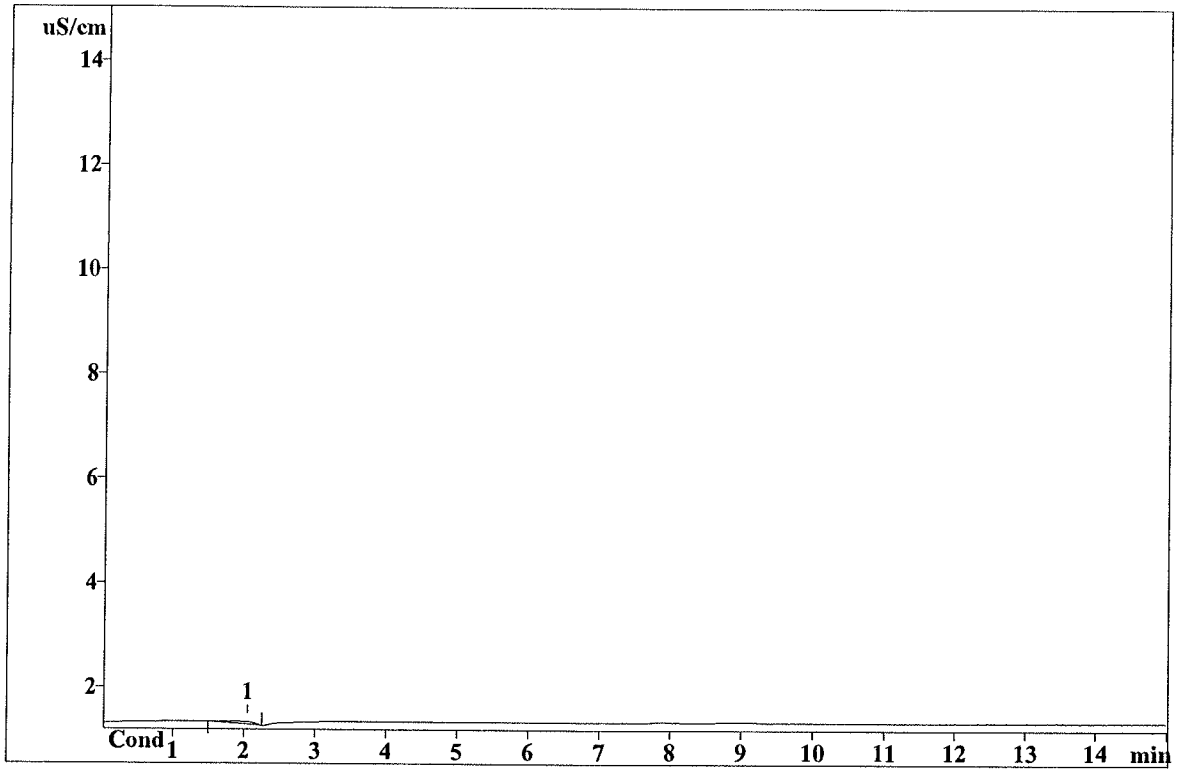
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.83	33.686	0.969	fluoride
2	3.98	4.30	39.140	1.928	chloride
3	4.53	9.55	99.972	2.057	nitrite
4	5.41	0.53	6.929	0.974	bromide
5	6.02	3.80	47.647	0.945	nitrate
6	7.79	2.06	33.057	1.885	phosphate
7	8.82	4.44	74.316	4.659	sulfate
7	15.00	28.51	334.746	13.418	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:18 AM
Printed by: TWangc

Ident: AF31-38 CCB751
Analysis from: 6/24/2020 9:46:40 PM
File: _2020-06-24_21-46.chw Last save: 6/24/2020 10:01:37 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159390

SAMPLE: METHOD300/9056/4110B
:
Vial number: 38
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

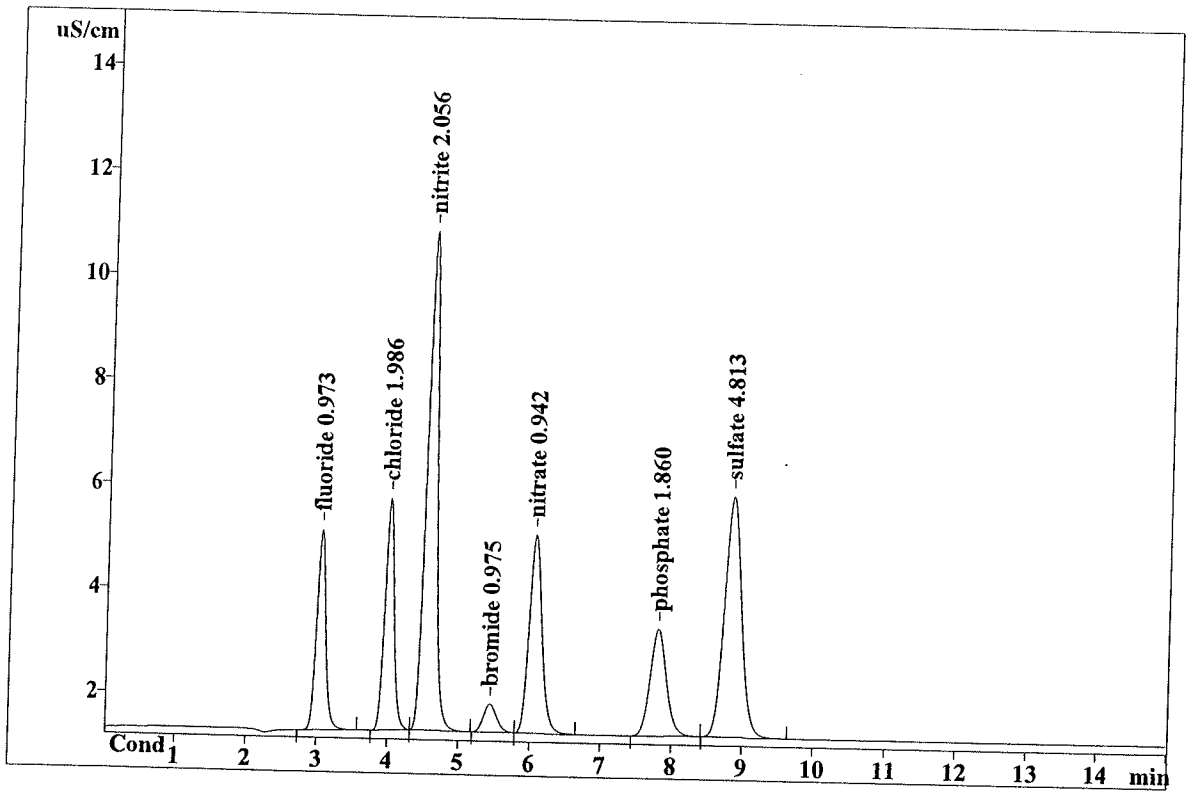


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.06	0.04	1.273	0.000	

This report has been created by IC Net
METROHM LTD

Report date:	6/25/2020 11:39:30 AM	
Printed by:	TWangc	
Ident:	AF31-49 CCV753	
Analysis from:	6/25/2020 12:54:32 AM	
File:	_2020-06-25_00-54.chw	Last save: 6/25/2020 1:09:28 AM
Modified!		
Method:	ICD0-B24.mtw	Last save: 6/24/2020 10:23:36 AM
Run operator:	TWangc	
Analysis number:	159401	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	49	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

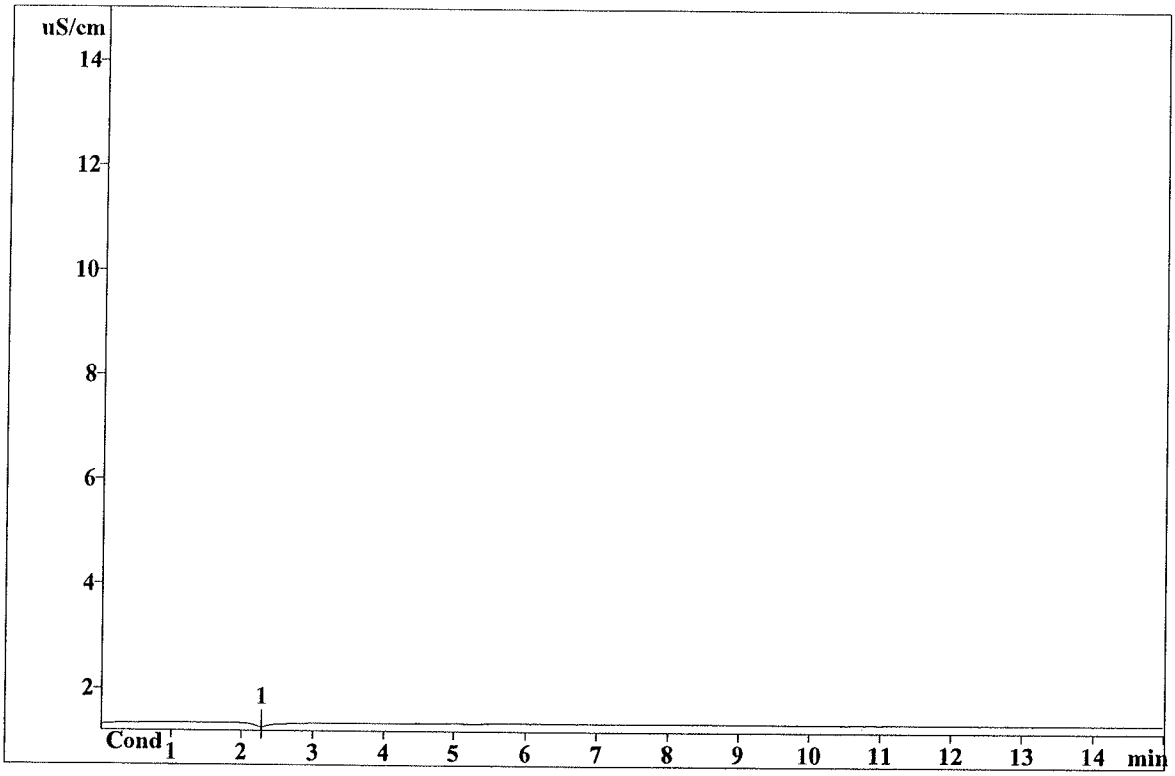
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.03	3.83	33.814	0.973	fluoride
2	3.99	4.43	40.382	1.986	chloride
3	4.55	9.55	99.939	2.056	nitrite
4	5.44	0.53	6.937	0.975	bromide
5	6.05	3.78	47.499	0.942	nitrate
6	7.80	2.03	32.588	1.860	phosphate
7	8.83	4.59	76.899	4.813	sulfate
7	15.00	28.75	338.059	13.607	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:46 AM
Printed by: TWangc

Ident: AF31-50 CCB753
Analysis from: 6/25/2020 1:11:36 AM
File: _2020-06-25_01-11.chw Last save: 6/25/2020 1:26:33 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159402

SAMPLE: METHOD300/9056/4110B
:
Vial number: 50
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

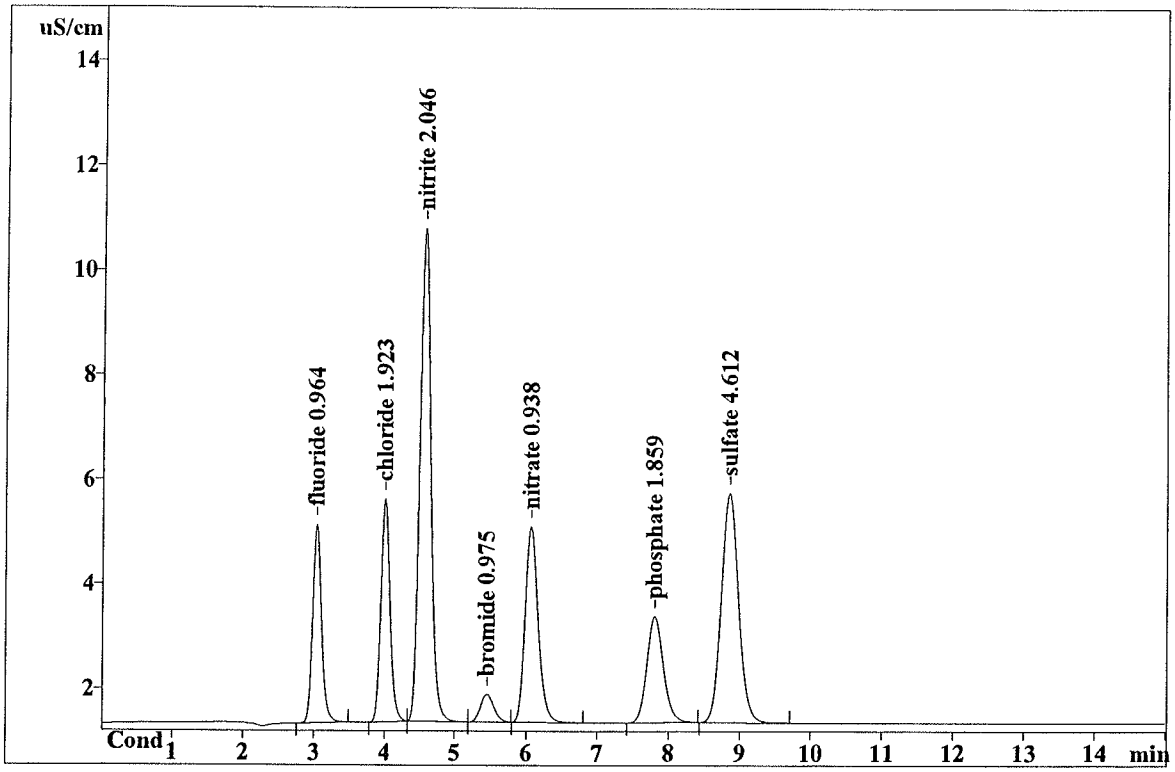
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.28	0.00	0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:39:59 AM
Printed by: TWangc

Ident: AF31-61 CCV755
Analysis from: 6/25/2020 4:19:28 AM
File: _2020-06-25_04-19.chw Last save: 6/25/2020 4:34:25 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159413

SAMPLE: METHOD300/9056/4110B
:
Vial number: 61
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

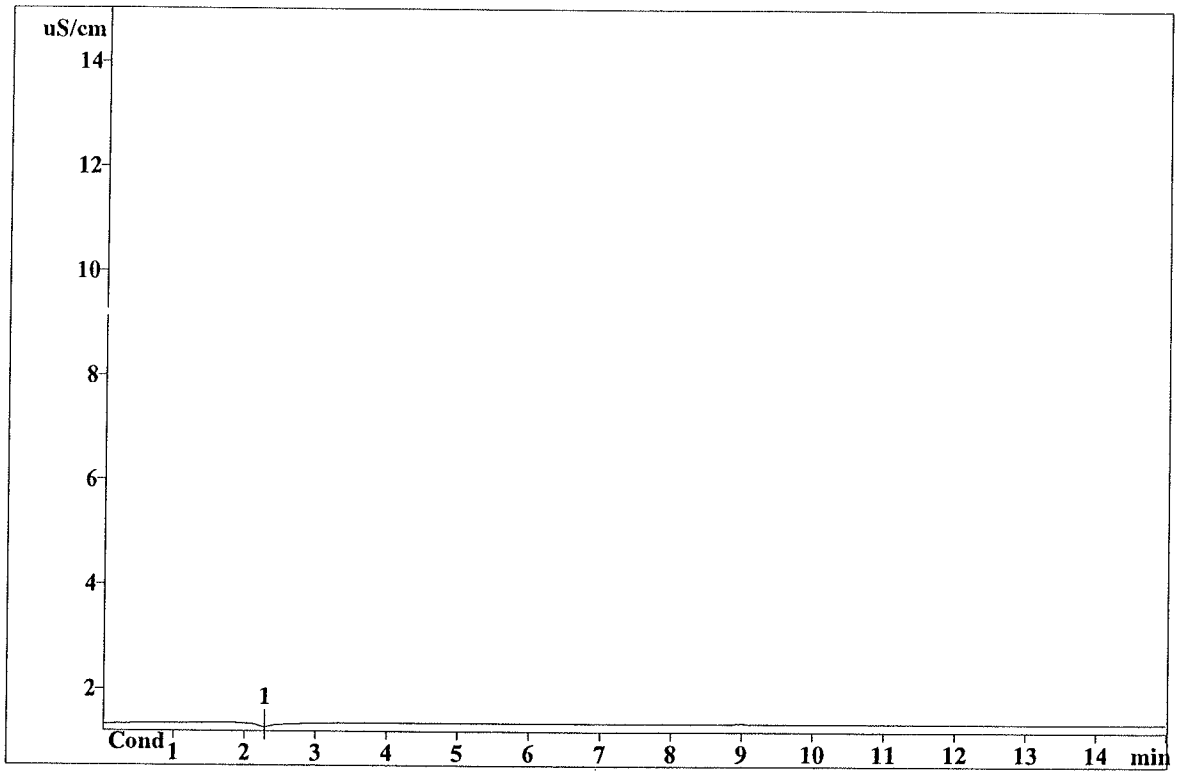
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.04	3.78	33.487	0.964	fluoride
2	4.00	4.25	39.035	1.923	chloride
3	4.56	9.44	99.453	2.046	nitrite
4	5.45	0.53	6.930	0.975	bromide
5	6.06	3.73	47.246	0.938	nitrate
6	7.80	2.02	32.558	1.859	phosphate
7	8.84	4.37	73.536	4.612	sulfate
7	15.00	28.13	332.245	13.317	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:40:14 AM
Printed by: TWangc

Ident: AF31-62 CCB755
Analysis from: 6/25/2020 4:36:32 AM
File: _2020-06-25_04-36.chw Last save: 6/25/2020 4:51:29 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159414

SAMPLE: METHOD300/9056/4110B
:
Vial number: 62
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.29	-0.00	-0.000	0.000	

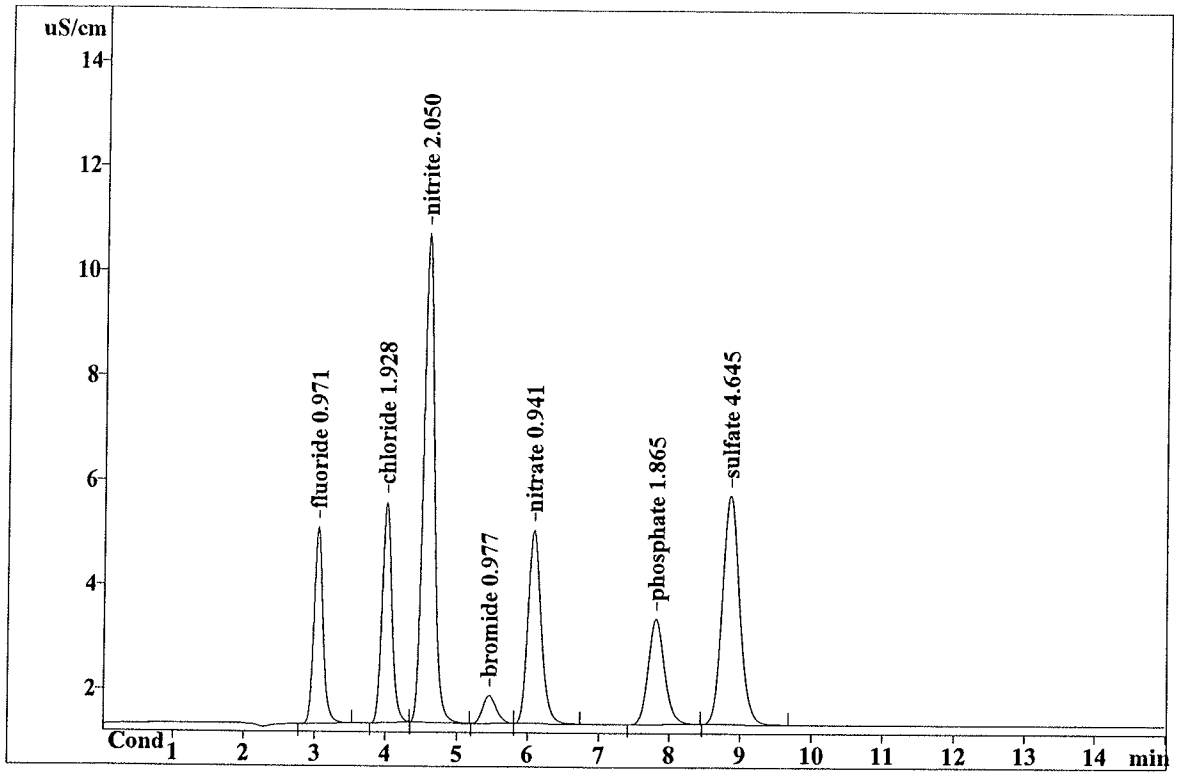
This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:40:25 AM
Printed by: TWangc

Ident: AF31-72 CCV757
Analysis from: 6/25/2020 7:27:20 AM
File: _2020-06-25_07-27.chw Last save: 6/25/2020 7:42:17 AM

Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159424

SAMPLE: METHOD300/9056/4110B
:
Vial number: 72
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

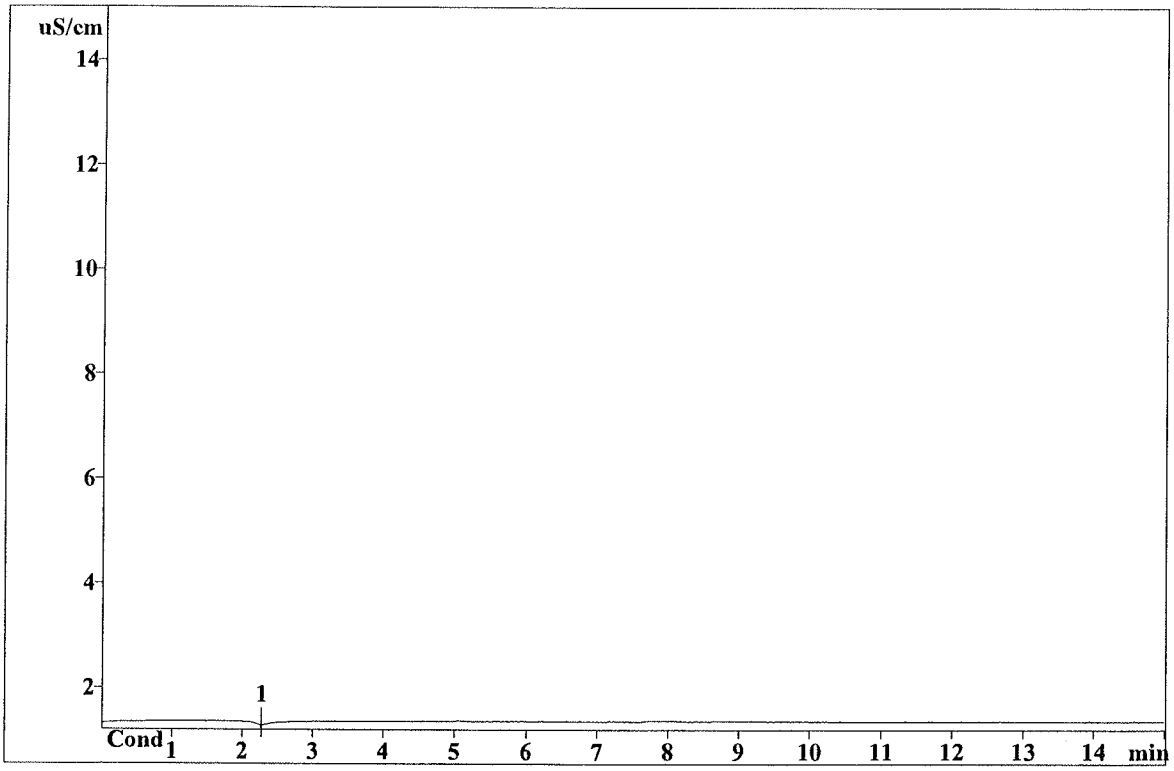
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.04	3.76	33.735	0.971	fluoride
2	4.00	4.22	39.132	1.928	chloride
3	4.56	9.34	99.642	2.050	nitrite
4	5.46	0.53	6.948	0.977	bromide
5	6.08	3.70	47.411	0.941	nitrate
6	7.81	2.02	32.671	1.865	phosphate
7	8.85	4.39	74.075	4.645	sulfate
7	15.00	27.95	333.613	13.375	

This report has been created by IC Net
METROHM LTD

Report date: 6/25/2020 11:40:38 AM
Printed by: TWangc

Ident: AF31-73 CCB757
Analysis from: 6/25/2020 7:44:24 AM
File: _2020-06-25_07-44.chw Last save: 6/25/2020 7:59:21 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/24/2020 10:23:36 AM
Run operator: TWangc
Analysis number: 159425

SAMPLE: METHOD300/9056/4110B
:
Vial number: 73
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	Concentrations (ppm)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (ppm)
F	10
Cl	5
NO_2	10
Br	20
NO_3	2
PO_4	5
SO_4	20

Book #:	AD0-067
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AB25
Method File:	ICD0 - B24. mtw
Analytical Batch:	N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-11-42-03
ICV	SW3B-11-42-01
~~CCV~~ ICV1	SW3B-11-43-01
LCS	—
MS	—

Filters Lot #:	Snap Seal Containers Lot #:
0.45 µm:	4 oz: 04119002
0.2 µm:	1.5 oz:

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION — Expiration Date: 03/20/20

Std ID	Aliquot	Final Vol*
SPZ-01-07-01	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 03/21/20

Std ID	Aliquot	Final Vol*
SPZ-01-22-02	100 mL	1 L

* Reagent Water ID: SWIA-08-21-09

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LO

Date: 2/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-02-24_20-30.chw	ICD0-B24.mtw	AB25-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_20-47.chw	ICD0-B24.mtw	AB25-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_21-04.chw	ICD0-B24.mtw	AB25-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD300/9056/4110B	0.05 PPM
2020-02-24_21-21.chw	ICD0-B24.mtw	AB25-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD300/9056/4110B	0.1 PPM
2020-02-24_21-39.chw	ICD0-B24.mtw	AB25-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD300/9056/4110B	0.2 PPM
2020-02-24_21-56.chw	ICD0-B24.mtw	AB25-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD300/9056/4110B	0.5 PPM
2020-02-24_22-13.chw	ICD0-B24.mtw	AB25-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD300/9056/4110B	1.0 PPM
2020-02-24_22-30.chw	ICD0-B24.mtw	AB25-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD300/9056/4110B	2.0 PPM
2020-02-24_22-47.chw	ICD0-B24.mtw	AB25-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD300/9056/4110B	5.0 PPM
2020-02-24_23-04.chw	ICD0-B24.mtw	AB25-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD300/9056/4110B	10.0 PPM
2020-02-24_23-21.chw	ICD0-B24.mtw	AB25-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD300/9056/4110B	20.0 PPM
2020-02-24_23-38.chw	ICD0-B24.mtw	AB25-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-02-24_23-55.chw	ICD0-B24.mtw	AB25-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1.0 PPM
2020-02-25_00-12.chw	ICD0-B24.mtw	AB25-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL LP 02/25/20

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF31
Method File:	ICD0 - B24.mtw
Analytical Batch:	ICF033W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	———
ICV	———
CCV	SW3B-13—09-02
LCS	SW3B-13—09-03
MS	Scp refer to LCS parent ID

Filters Lot #: Snap Seal Containers Lot #:

0.45 µm: 00191103 4 oz:

~~0.2~~ 0.22 µm: 91478103 1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 7/19/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 7/22/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SW1A-009-03-03

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LD

Date: 6/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-24_10-21.chw	ICD0-B24.mtw	AF31-01 CCV745	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_10-38.chw	ICD0-B24.mtw	AF31-02 CCB745	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_10-55.chw	ICD0-B24.mtw	AF31-03 ICF033WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-12.chw	ICD0-B24.mtw	AF31-04 ICF033WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-29.chw	ICD0-B24.mtw	AF31-05 ICF033WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_11-46.chw	ICD0-B24.mtw	AF31-06 F190-03	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-04.chw	ICD0-B24.mtw	AF31-07 F193-04	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-21.chw	ICD0-B24.mtw	AF31-08 F193-02	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_12-38.chw	ICD0-B24.mtw	AF31-09 F190-01I DF=2	9	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_12-55.chw	ICD0-B24.mtw	AF31-10 F190-04	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-12.chw	ICD0-B24.mtw	AF31-11 F195-01I DF=5	11	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-29.chw	ICD0-B24.mtw	AF31-12 F193-03	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_13-46.chw	ICD0-B24.mtw	AF31-13 CCV747	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-03.chw	ICD0-B24.mtw	AF31-14 CCB747	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-20.chw	ICD0-B24.mtw	AF31-15 F190-02	15	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-37.chw	ICD0-B24.mtw	AF31-16 F193-04I DF=2	16	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_14-54.chw	ICD0-B24.mtw	AF31-17 F193-02I DF=5	17	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_15-12.chw	ICD0-B24.mtw	AF31-18 F193-03I DF=5	18	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_15-29.chw	ICD0-B24.mtw	AF31-19 F195-01J DF=2	19	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_15-46.chw	ICD0-B24.mtw	AF31-20 F193-04J DF=5	20	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_16-03.chw	ICD0-B24.mtw	AF31-21 F193-02J DF=10	21	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_16-20.chw	ICD0-B24.mtw	AF31-22 F193-03J DF=10	22	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-06.chw	ICD0-B24.mtw	AF31-23 F193-04JM DF=5	23	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-24.chw	ICD0-B24.mtw	AF31-24 F193-04JD DF=5	24	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_17-41.chw	ICD0-B24.mtw	AF31-25 CCV749	25	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-21.chw	ICD0-B24.mtw	AF31-26 CCB749	26	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-38.chw	ICD0-B24.mtw	AF31-27 F193-04JS DF=5	27	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_18-55.chw	ICD0-B24.mtw	AF31-28 F193-04K DF=20	28	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-12.chw	ICD0-B24.mtw	AF31-29 F193-04KD DF=20	29	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-30.chw	ICD0-B24.mtw	AF31-30 F193-04KM DF=20	30	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_19-47.chw	ICD0-B24.mtw	AF31-31 F193-04KS DF=20	31	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-04.chw	ICD0-B24.mtw	AF31-32 F193-02K DF=20	32	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-21.chw	ICD0-B24.mtw	AF31-33 F193-03K DF=20	33	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-38.chw	ICD0-B24.mtw	AF31-34 F190-01J DF=20	34	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_20-55.chw	ICD0-B24.mtw	AF31-35 F190-01K DF=200	35	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_21-12.chw	ICD0-B24.mtw	AF31-36 F190-02R	36	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	STRONG ODOR
_2020-06-24_21-29.chw	ICD0-B24.mtw	AF31-37 CCV751	37	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_21-46.chw	ICD0-B24.mtw	AF31-38 CCB751	38	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-03.chw	ICD0-B24.mtw	AF31-39 F190-03I DF=5	39	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-20.chw	ICD0-B24.mtw	AF31-40 F190-03J DF=100	40	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-37.chw	ICD0-B24.mtw	AF31-41 F190-04I DF=20	41	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_22-54.chw	ICD0-B24.mtw	AF31-42 F193-02T DF=100	42	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-12.chw	ICD0-B24.mtw	AF31-43 F193-03T DF=100	43	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-29.chw	ICD0-B24.mtw	AF31-44 F162-04I DF=50	44	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-24_23-46.chw	ICD0-B24.mtw	AF31-45 F159-02I DF=100	45	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-03.chw	ICD0-B24.mtw	AF31-46 F159-06I DF=100	46	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-20.chw	ICD0-B24.mtw	AF31-47 F159-15I DF=400	47	1.0	400.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
_2020-06-25_00-37.chw	ICD0-B24.mtw	AF31-48 F178-01I DF=20	48	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_00-54.chw	ICD0-B24.mtw	AF31-49 CCV753	49	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-11.chw	ICD0-B24.mtw	AF31-50 CCB753	50	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-28.chw	ICD0-B24.mtw	AF31-51 F193-04T DF=50	51	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_01-45.chw	ICD0-B24.mtw	AF31-52 F193-04TD DF=50	52	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-02.chw	ICD0-B24.mtw	AF31-53 F193-04TM DF=50	53	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-19.chw	ICD0-B24.mtw	AF31-54 F193-04TS DF=50	54	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-37.chw	ICD0-B24.mtw	AF31-55 F178-01J DF=200	55	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_02-54.chw	ICD0-B24.mtw	AF31-56 F178-02I DF=20	56	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_03-11.chw	ICD0-B24.mtw	AF31-57 F178-02J DF=50	57	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_03-28.chw	ICD0-B24.mtw	AF31-58 F178-04I DF=20	58	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-25_03-45.chw	ICD0-B24.mtw	AF31-59 F178-04J DF=100	59	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-02.chw	ICD0-B24.mtw	AF31-60 F178-05I DF=20	60	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-19.chw	ICD0-B24.mtw	AF31-61 CCV755	61	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-36.chw	ICD0-B24.mtw	AF31-62 CCB755	62	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_04-53.chw	ICD0-B24.mtw	AF31-63 F178-05J DF=200	63	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-10.chw	ICD0-B24.mtw	AF31-64 F178-07I DF=20	64	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-27.chw	ICD0-B24.mtw	AF31-65 F178-07J DF=200	65	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_05-44.chw	ICD0-B24.mtw	AF31-66 F178-08I DF=20	66	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-01.chw	ICD0-B24.mtw	AF31-67 F178-08J DF=200	67	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-19.chw	ICD0-B24.mtw	AF31-68 F178-10I DF=20	68	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-36.chw	ICD0-B24.mtw	AF31-69 F178-10J DF=200	69	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_06-53.chw	ICD0-B24.mtw	AF31-70 F178-11I DF=20	70	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-10.chw	ICD0-B24.mtw	AF31-71 F178-11J DF=100	71	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-27.chw	ICD0-B24.mtw	AF31-72 CCV757	72	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-25_07-44.chw	ICD0-B24.mtw	AF31-73 CCB757	73	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column:	METROSEP A SUPP 5
		Column size:	100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
06/03/14

RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D0 (761 IC) IC column: METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**2.99**	2.90	3.08	**0.090**
CHLORIDE	**3.96**	3.86	4.07	**0.104**
NITRITE	**4.54**	4.38	4.70	**0.159**
BROMIDE	**5.44**	5.11	5.76	**0.329**
NITRATE	**6.10**	5.68	6.52	**0.420**
PHOSPHATE	**7.79**	7.26	8.31	**0.528**
SULFATE	**8.83**	8.03	9.63	**0.797**

ICD0-B24.mtw

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SM2320B
TOTAL ALKALINITY

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF013WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF013WL/ALF013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF013WB	ND	1	NA	5	5	06/24/2021:00	NA	20E5F0827	20E5F08	ALF013W	NA	NA
LCS1W	ALF013WL	74.4	1	NA	5	5	06/24/2021:07	NA	20E5F0828	20E5F08	ALF013W	NA	NA
LCD1W	ALF013WC	75.4	1	NA	5	5	06/24/2021:14	NA	20E5F0829	20E5F08	ALF013W	NA	NA
MW13D-GW061820	F178-01	241	1	NA	5	5	06/24/2021:22	NA	20E5F0830	20E5F08	ALF013W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02	236	1	NA	5	5	06/24/2021:29	NA	20E5F0831	20E5F08	ALF013W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04	315	1	NA	5	5	06/24/2021:39	NA	20E5F0832	20E5F08	ALF013W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05	368	1	NA	5	5	06/24/2021:47	NA	20E5F0833	20E5F08	ALF013W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07	350	1	NA	5	5	06/24/2021:54	NA	20E5F0834	20E5F08	ALF013W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08	364	1	NA	5	5	06/24/2022:04	NA	20E5F0835	20E5F08	ALF013W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10	341	1	NA	5	5	06/24/2022:12	NA	20E5F0836	20E5F08	ALF013W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11	276	1	NA	5	5	06/24/2022:20	NA	20E5F0837	20E5F08	ALF013W	06/19/2015:35	06/20/20
MW12D-GW061920DUP	F178-11D	286	1	NA	5	5	06/24/2022:29	NA	20E5F0838	20E5F08	ALF013W	06/19/2015:35	06/20/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALF013WB	ALF013WL	ALF013WC
LAB FILE ID :	20E5F0827	20E5F0828	20E5F0829
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/24/2021:00	06/24/2021:07	06/24/2021:14
PREP BATCH :	ALF013W	ALF013W	ALF013W
CALIBRATION REF:	20E5F08	20E5F08	20E5F08

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	74.4	98	75.8	75.4	99	1	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : METHOD SM2320B

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID	: MW12D-GW061920	MW12D-GW061920DUP
LAB SAMPLE ID	: F178-11	F178-11D
LAB FILE ID	: 20E5F0837	20E5F0838
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/24/2022:20	06/24/2022:29
PREP BATCH	: ALF013W	ALF013W
CALIBRATION REF:	20E5F083	20E5F083

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
ALKALINITY	276	286	4	20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1166 **Analytical Batch#** 20E5F08

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F08	06/24/20	5:18 PM	7.94	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F08	06/24/20	5:25 PM	8.26	.00	1.39	-1.00	.00	55.34	55.34	.00	.00	
3	ALF012WB	20E5F08	06/24/20	5:32 PM	6.58	.00	.08	.13	.00	1.43	1.43	.00	.00	
4	ALF012WL	20E5F08	06/24/20	5:39 PM	9.05	1.16	1.83	-1.00	46.14	72.91	.00	53.55	19.36	
5	ALF012WC	20E5F08	06/24/20	5:46 PM	9.08	1.21	1.88	-1.00	48.07	74.78	.00	53.42	21.36	
6	F162-01	20E5F08	06/24/20	5:54 PM	7.38	.00	6.93	-1.00	.00	275.81	275.81	.00	.00	FOR REANALYSIS
7	F162-02	20E5F08	06/24/20	6:01 PM	7.42	.00	7.06	-1.00	.00	280.91	280.91	.00	.00	
8	F162-04	20E5F08	06/24/20	6:10 PM	7.46	.00	6.62	-1.00	.00	263.62	263.62	.00	.00	
9	F162-05	20E5F08	06/24/20	6:18 PM	7.54	.00	8.09	-1.00	.00	321.79	321.79	.00	.00	
10	F162-07	20E5F08	06/24/20	6:26 PM	7.35	.00	6.83	-1.00	.00	271.75	271.75	.00	.00	
11	F162-08	20E5F08	06/24/20	6:33 PM	7.51	.00	5.74	-1.00	.00	228.47	228.47	.00	.00	
12	F162-10	20E5F08	06/24/20	6:42 PM	7.57	.00	5.92	-1.00	.00	235.49	235.49	.00	.00	
13	F162-11	20E5F08	06/24/20	6:50 PM	7.59	.00	6.20	-1.00	.00	246.83	246.83	.00	.00	
14	F164-01	20E5F08	06/24/20	6:57 PM	8.04	.00	4.69	-1.00	.00	186.62	186.62	.00	.00	
15	F167-01	20E5F08	06/24/20	7:11 PM	7.53	.00	24.53	-1.00	.00	976.44	976.44	.00	.00	
16	F167-03	20E5F08	06/24/20	7:18 PM	7.12	.00	6.34	-1.00	.00	252.35	252.35	.00	.00	
17	F167-04	20E5F08	06/24/20	7:25 PM	6.65	.00	2.82	-1.00	.00	112.39	112.39	.00	.00	
18	F167-04D	20E5F08	06/24/20	7:33 PM	6.77	.00	4.28	-1.00	.00	170.34	170.34	.00	.00	

Analyzed by: LO / TK Reviewed by: TK Date: 06/25/20

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Run Number 1166 **Analytical Batch#** 20E5F08

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F167-05	20E5F08	06/24/20	7:41 PM	7.49	.00	10.74	-1.00	.00	427.31	427.31	.00	.00	FOR REANALYSIS
20	F167-06	20E5F08	06/24/20	7:51 PM	6.79	.00	11.24	-1.00	.00	447.35	447.35	.00	.00	
21	F167-07	20E5F08	06/24/20	8:03 PM	7.52	.00	20.95	-1.00	.00	833.68	833.68	.00	.00	
22	F167-08	20E5F08	06/24/20	8:22 PM	7.62	.00	32.33	-1.00	.00	1,286.57	1,286.57	.00	.00	
23	F167-09	20E5F08	06/24/20	8:31 PM	7.89	.00	11.70	-1.00	.00	465.84	465.84	.00	.00	
24	F167-10	20E5F08	06/24/20	8:37 PM	7.20	.00	4.03	-1.00	.00	160.56	160.56	.00	.00	
25	F167-11	20E5F08	06/24/20	8:46 PM	7.25	.00	5.80	-1.00	.00	230.70	230.70	.00	.00	
26	RINSE	20E5F08	06/24/20	8:53 PM	6.85	.00	.09	.13	.00	1.69	1.69	.00	.00	
27	ALF013WB	20E5F08	06/24/20	9:00 PM	6.30	.00	.06	.11	.00	.80 ✓	.80	.00	.00	
28	ALF013WL	20E5F08	06/24/20	9:07 PM	9.05	1.15	1.87	-1.00	45.62	74.38 ✓	.00	57.52	16.86	
29	ALF013WC	20E5F08	06/24/20	9:14 PM	9.05	1.16	1.90	-1.00	46.31	75.44 ✓	.00	58.25	17.18	
30	F178-01	20E5F08	06/24/20	9:22 PM	7.70	.00	6.06	-1.00	.00	241.18	241.18	.00	.00	
31	F178-02	20E5F08	06/24/20	9:29 PM	7.84	.00	5.94	-1.00	.00	236.49	236.49	.00	.00	
32	F178-04	20E5F08	06/24/20	9:39 PM	7.54	.00	7.91	-1.00	.00	314.65	314.65	.00	.00	
33	F178-05	20E5F08	06/24/20	9:47 PM	7.51	.00	9.24	-1.00	.00	367.76	367.76	.00	.00	
34	F178-07	20E5F08	06/24/20	9:54 PM	7.47	.00	8.79	-1.00	.00	349.89	349.89	.00	.00	
35	F178-08	20E5F08	06/24/20	10:04 PM	7.50	.00	9.15	-1.00	.00	364.17	364.17	.00	.00	
36	F178-10	20E5F08	06/24/20	10:12 PM	7.69	.00	8.57	-1.00	.00	340.98	340.98	.00	.00	
37	F178-11	20E5F08	06/24/20	10:20 PM	7.67	.00	6.94	-1.00	.00	276.06	276.06	.00	.00	
38	F178-11D	20E5F08	06/24/20	10:29 PM	7.71	.00	7.19	-1.00	.00	286.31 ✓	286.31	.00	.00	

Analyzed by: LC / TK Reviewed by: TK Date: 06/25/20

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REPORT ID: 20F178

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Run Number 1166 **Analytical Batch#** **20E5F08**

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
39	F186-01	20E5F08	06/24/20	10:37 PM	7.74	.00	8.60	-1.00	.00	342.26	342.26	.00	.00	
40	RINSE	20E5F08	06/24/20	10:46 PM	8.29	.00	.23	.28	.00	7.52	7.52	.00	.00	

Analyzed by: LD / TK Reviewed by: TK Date: 06/25/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

REPORT ID: 20F178

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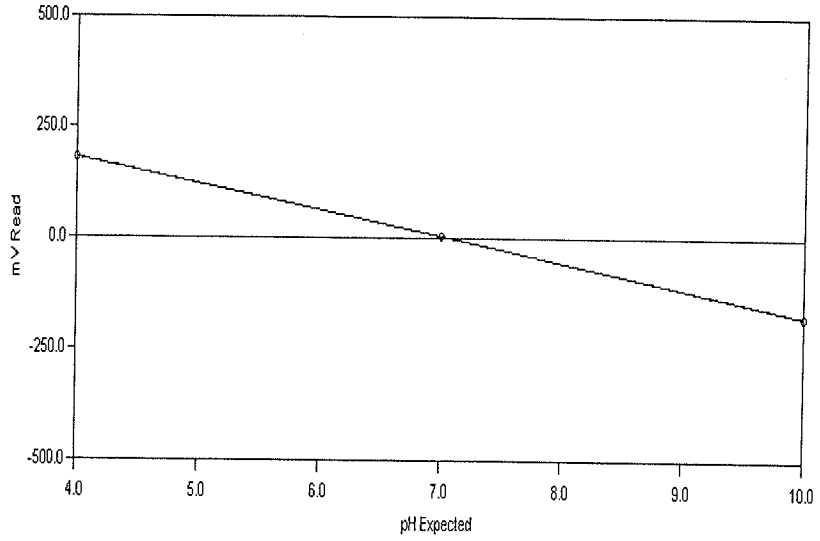
PC-TitratION PLUS
Calibration Report

Calibration Record # 824



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/24/2020
Channel	1	Time	5:15 PM
Probe Type	pH	Temperature	298.93 K 25.78 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.365	CorrCoeff	1.0000
Intercept	2.273	Equation: Y = (-59.365) X + (2.273)	

Calibration Validity **True** Operator

	Result	Minimum	Maximum
Slope	-59.365	-65.00	-53.00
Intercept	2.273	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	180.41
	7.00	2.19
	10.00	-175.78

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PC-Titrate For Windows

Running List Report

Order Number - 20E5F08

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF012WB	6	.00	25.00
5	PH-ALK	ALF012WL	7	.00	25.00
6	PH-ALK	ALF012WC	8	.00	25.00
7	PH-ALK	F162-01	9	.00	25.00
8	PH-ALK	F162-02	10	.00	25.00
9	PH-ALK	F162-04	11	.00	25.00
10	PH-ALK	F162-05	12	.00	25.00
11	PH-ALK	F162-07	13	.00	25.00
12	PH-ALK	F162-08	14	.00	25.00
13	PH-ALK	F162-10	15	.00	25.00
14	PH-ALK	F162-11	16	.00	25.00
15	PH-ALK	F164-01	17	.00	25.00
16	PH-ALK	F167-01	18	.00	25.00
17	PH-ALK	F167-03	19	.00	25.00
18	PH-ALK	F167-04	20	.00	25.00
19	PH-ALK	F167-04D	21	.00	25.00
20	PH-ALK	F167-05	22	.00	25.00
21	PH-ALK	F167-06	23	.00	25.00
22	PH-ALK	F167-07	24	.00	25.00
23	PH-ALK	F167-08	25	.00	25.00
24	PH-ALK	F167-09	26	.00	25.00
25	PH-ALK	F167-10	27	.00	25.00
26	PH-ALK	F167-11	28	.00	25.00
27	PH-ALK	RINSE	29	.00	25.00
28	PH-ALK	ALF013WB	30	.00	25.00
29	PH-ALK	ALF013WL	31	.00	25.00
30	PH-ALK	ALF013WC	32	.00	25.00
31	PH-ALK	F178-01	33	.00	25.00
32	PH-ALK	F178-02	34	.00	25.00
33	PH-ALK	F178-04	35	.00	25.00
34	PH-ALK	F178-05	36	.00	25.00
35	PH-ALK	F178-07	37	.00	25.00
36	PH-ALK	F178-08	38	.00	25.00
37	PH-ALK	F178-10	39	.00	25.00
38	PH-ALK	F178-11	40	.00	25.00
39	PH-ALK	F178-11D	41	.00	25.00
40	PH-ALK	F186-01	42	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW

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Running List Report

Order Number - 20E5F08

	Schedule	Sample Id	Vial	Weight	Volume
41	PH-ALK	RINSE	43	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW
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EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☑ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Reagent Water: RWI-19-003

Comments:

Book#: AAL-043

Instrument No.: ☐ 53 ☑ E5

Analytical Batch: 20E5F08

Analytical Sequence: ALF012/ALF013

SOP #	Rev. #
☑ EMAX-2320B	6
☐ EMAX-	

STANDARDS ID		Conc. (mg/L)
0.02N HCL	SWRI-02-20-03 ~~SWRI-02-24-10~~ L2 6/24/20	0.0199N ~~0.02~~
LCS	SWI-02-05-02	75.8
MS/MSD	NA	NA
ICV	NA	NA

pH Buffer	ID
pH 4	SWI-02-05-21
pH 7	SWI-02-05-22
pH 10	SWI-02-05-23
pH 8.0 (Check)	SWI-02-05-19
pH Strip	HC998032

Analyzed By: LD / TK

Date: 6/24/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF008WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF008WL. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF008WB	ND	1	NA	10	10	06/24/2017:34	NA	20TDF00801	20TDF008	TDF008W	NA	NA
LCS1W	TDF008WL	974	1	NA	10	10	06/24/2017:34	NA	20TDF00802	20TDF008	TDF008W	NA	NA
MW13D-GW061820	F178-01	858	1	NA	10	10	06/24/2017:34	NA	20TDF00803	20TDF008	TDF008W	06/18/2016:20	06/20/20
MW13D-GW061820DUP	F178-01D	866	1	NA	10	10	06/24/2017:34	NA	20TDF00804	20TDF008	TDF008W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02	620	1	NA	10	10	06/24/2017:34	NA	20TDF00805	20TDF008	TDF008W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04	996	1	NA	10	10	06/24/2017:34	NA	20TDF00806	20TDF008	TDF008W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05	1240	1	NA	10	10	06/24/2017:34	NA	20TDF00807	20TDF008	TDF008W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07	1230	1	NA	10	10	06/24/2017:34	NA	20TDF00808	20TDF008	TDF008W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08	1120	1	NA	10	10	06/24/2017:34	NA	20TDF00809	20TDF008	TDF008W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10	1090	1	NA	10	10	06/24/2017:34	NA	20TDF00810	20TDF008	TDF008W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11	905	1	NA	10	10	06/24/2017:34	NA	20TDF00811	20TDF008	TDF008W	06/19/2015:35	06/20/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	TDF008WB	TDF008WL
LAB FILE ID :	20TDF00801	20TDF00802
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/24/2017:34	06/24/2017:34
PREP BATCH :	TDF008W	TDF008W
CALIBRATION REF:	20TDF008	20TDF008

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	974	97	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR	1	1
SAMPLE ID	MW13D-GW061820	MW13D-GW061820DUP
LAB SAMPLE ID	F178-01	F178-01D
LAB FILE ID	20TDF00803	20TDF00804
DATE PREPARED	NA	NA
DATE ANALYZED	06/24/2017:34	06/24/2017:34
PREP BATCH	TDF008W	TDF008W
CALIBRATION REF	20TDF008	20TDF008

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Total Dissolved Solids	858	866	1	20

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF008

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF00801	TDF008WB	100	B	90.6008	90.6012	6/25/20 15:56	90.601	6/25/20 18:00			0.2	0.2	2	ND
20TDF00802	TDF008WL	20	L	21.12044	21.1396	6/25/20 15:56	21.13992	6/25/20 18:00			0.32	19.48	974	974
20TDF00803	F178-01	20	1	20.92616	20.9431	6/25/20 15:57	20.94331	6/25/20 18:00			0.21	17.15	857.5	858
20TDF00804	F178-01D	20	2	21.8848	21.9025	6/25/20 15:57	21.90211	6/25/20 18:01			0.39	17.31	865.5	866
20TDF00805	F178-02	100	3	95.4868	95.5486	6/25/20 15:57	95.5488	6/25/20 18:01			0.2	62	620	620
20TDF00806	F178-04	20	4	20.82968	20.8497	6/25/20 15:58	20.84961	6/25/20 18:02			0.09	19.93	996.5	996
20TDF00807	F178-05	20	5	21.75025	21.7746	6/25/20 15:58	21.77507	6/25/20 18:02			0.47	24.82	1241	1240
20TDF00808	F178-07	20	6	21.05858	21.083	6/25/20 15:58	21.0832	6/25/20 18:03			0.2	24.62	1231	1230
20TDF00809	F178-08	20	7	21.05887	21.081	6/25/20 15:59	21.08128	6/25/20 18:03			0.28	22.41	1120.5	1120
20TDF00810	F178-10	20	8	21.83475	21.8566	6/25/20 15:59	21.85665	6/25/20 18:03			0.05	21.9	1095	1090
20TDF00811	F178-11	20	9	21.55986	21.5777	6/25/20 15:59	21.57795	6/25/20 18:04			0.25	18.09	904.5	905
20TDF00812	F183-01	20	10	20.69328	20.7154	6/25/20 15:59	20.71584	6/25/20 18:04			0.44	22.56	1128	1130
20TDF00813	F183-02	20	11	21.61477	21.634	6/25/20 16:00	21.6342	6/25/20 18:04			0.2	19.43	971.5	971
20TDF00814	F183-03	50	12	42.28841	42.32246	6/25/20 16:00	42.32292	6/25/20 18:05			0.46	34.51	690.2	690
20TDF00815	F183-05	20	13	21.55661	21.57549	6/25/20 16:01	21.5754	6/25/20 18:05			0.09	18.79	939.5	939
20TDF00816	F183-06	50	14	43.27364	43.30807	6/25/20 16:01	43.30807	6/25/20 18:06			0	34.43	688.6	689
20TDF00817	F183-07	20	15	21.59881	21.6168	6/25/20 16:01	21.61698	6/25/20 18:06			0.18	18.17	908.5	909
20TDF00818	F183-08	20	16	21.20076	21.22335	6/25/20 16:02	21.22341	6/25/20 18:06			0.06	22.65	1132.5	1130
20TDF00819	F183-08D	20	17	20.93352	20.95691	6/25/20 16:02	20.95666	6/25/20 18:07			0.25	23.14	1157	1160
20TDF00820	F183-12	20	18	20.90815	20.92776	6/25/20 16:02	20.92782	6/25/20 18:07			0.06	19.67	983.5	984
20TDF00821	F183-13	20	19	21.15918	21.17947	6/25/20 16:03	21.1791	6/25/20 18:07			0.37	19.92	996	996
20TDF00822	F183-14	100	20	89.3619	89.4219	6/25/20 16:03	89.4221	6/25/20 18:08			0.2	60.2	602	602
20TDF00823	F183-15	50	21	42.45414	42.49228	6/25/20 16:03	42.49205	6/25/20 18:08			0.23	37.91	758.2	758
20TDF00824	F183-16	50	22	41.76929	41.80826	6/25/20 16:04	41.80866	6/25/20 18:08			0.4	39.37	787.4	787

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 17:33	PASSED
5	4.9997	6/24/20 17:34	PASSED
100	99.9995	6/24/20 17:34	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 17:58	PASSED
5	4.9996	6/24/20 17:58	PASSED
100	99.9994	6/24/20 17:58	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/25/20 15:55	PASSED
5	4.9998	6/25/20 15:55	PASSED
100	99.9995	6/25/20 15:55	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/25/20 18:09	PASSED
5	4.9998	6/25/20 18:09	PASSED
100	99.9992	6/25/20 18:09	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-19-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF008WB	2	ND	MB Passed
TDF008WL	974	1000	%R=97
#N/A	#N/A	#N/A	#N/A
F178-01D	865.5	857.5	%D=1
F183-08D	1157	1132.5	%D=2

Oven Drying Thermometer ID: 3078

Evaporating			
☑ Start	6/24/2020 18:45	Temp	90 °C
☑ End	6/25/2020 13:18	Temp	90 °C
1st Drying			
☑ Start	6/25/20 14:02	Temp	180 °C
☑ End	6/25/20 15:02	Temp	180 °C
2nd Drying			
☑ Start	6/25/20 16:15	Temp	180 °C
☑ End	6/25/20 17:15	Temp	180 °C
Final Drying			
☐ Start		Temp	°C
☐ End		Temp	°C

Notes:

SOP

Analyzedby: YAquin/NHando

Checked by: TK

☑ EMAX-2540C Rev. 9 Date: 06/26/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 642780221

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of eight(8) water samples were received on 06/20/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAG002WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAG002WL/NAG002WC were within LCS limits. Refer to LCS summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG002WB	ND	1	NA	0.05	0.01	07/08/2016:17	NA	20NAG00210	20NAG002	NAG002W	NA	NA
LCS1W	NAG002WL	0.515	1	NA	0.05	0.01	07/08/2016:18	NA	20NAG00211	20NAG002	NAG002W	NA	NA
LCD1W	NAG002WC	0.522	1	NA	0.05	0.01	07/08/2016:18	NA	20NAG00212	20NAG002	NAG002W	NA	NA
MW13D-GW061820	F178-01I	3.10	5	NA	0.25	0.05	07/08/2016:18	NA	20NAG00213	20NAG002	NAG002W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02I	1.98	5	NA	0.25	0.05	07/08/2016:18	NA	20NAG00214	20NAG002	NAG002W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04I	2.40	5	NA	0.25	0.05	07/08/2016:18	NA	20NAG00215	20NAG002	NAG002W	06/19/2015:15	06/20/20
MW15S-GW061920	F178-05I	3.24	5	NA	0.25	0.05	07/08/2016:19	NA	20NAG00216	20NAG002	NAG002W	06/19/2009:15	06/20/20
MW15D-GW061920	F178-07I	3.11	5	NA	0.25	0.05	07/08/2016:19	NA	20NAG00217	20NAG002	NAG002W	06/19/2009:00	06/20/20
FD03-GW061920	F178-08I	2.35	5	NA	0.25	0.05	07/08/2016:19	NA	20NAG00218	20NAG002	NAG002W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10I	2.35	5	NA	0.25	0.05	07/08/2016:19	NA	20NAG00219	20NAG002	NAG002W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11I	2.25	5	NA	0.25	0.05	07/08/2016:20	NA	20NAG00222	20NAG002	NAG002W	06/19/2015:35	06/20/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F178
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAG002WB	NAG002WL	NAG002WC
LAB FILE ID	: 20NAG00210	20NAG00211	20NAG00212
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 07/08/2016:17	07/08/2016:18	07/08/2016:18
PREP BATCH	: NAG002W	NAG002W	NAG002W
CALIBRATION REF	: 20NAG002	20NAG002	20NAG002

ACCESSION:

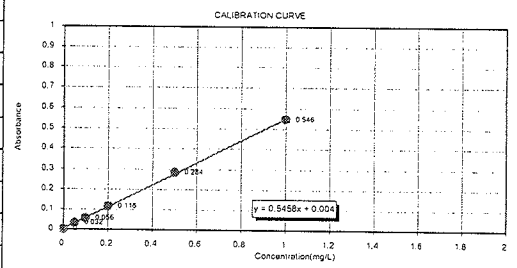
PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.515	103	0.500	0.522	104	1	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAG00201	S0	0	543nm	0	7/8/20 15:25	-0.00740146	ND
20NAG00202	S1	0.05	543nm	0.032	7/8/20 15:25	0.051226277	102
20NAG00203	S2	0.1	543nm	0.056	7/8/20 15:26	0.09519708	95
20NAG00204	S3	0.2	543nm	0.116	7/8/20 15:26	0.205124088	103
20NAG00205	S4	0.5	543nm	0.284	7/8/20 15:26	0.512919708	103
20NAG00206	S5	1	543nm	0.546	7/8/20 15:26	0.992934307	99
20NAG00207	NO2-N Std Check	0.5	543nm	0.282	7/8/20 15:26	0.509255474	102
20NAG00208	ICV	0.5	543nm	0.257	7/8/20 15:26	0.463452555	93
20NAG00209	ICB	0	543nm	0	7/8/20 15:26	-0.00740146	ND
20NAG00220	CCV1	0.5	543nm	0.269	7/8/20 16:19	0.485437956	97
20NAG00221	CCB1	0	543nm	0.001	7/8/20 16:20	-0.005569343	ND
20NAG00230	CCV2	0.5	543nm	0.263	7/8/20 16:21	0.474445255	95
20NAG00231	CCB2	0	543nm	0.003	7/8/20 16:22	-0.001905109	ND

Reduction Time	Coloring Time
7/8/20 14:26	7/8/20 14:27
7/8/20 14:30	7/8/20 14:31
7/8/20 14:32	7/8/20 14:33
7/8/20 14:35	7/8/20 14:36
7/8/20 14:38	7/8/20 14:39
7/8/20 14:41	7/8/20 14:42
NA	7/8/20 14:42
7/8/20 14:44	7/8/20 14:45
7/8/20 14:49	7/8/20 14:50

InstrumentID: H9



$$FC = [(A * CF) - Y] * DF$$

CF= 1.832116788

Y=	0.00740	r=	0.999780
DL Water(mg/L)	0.01	DL Soil(mg/Kg)	0.1
LOD Water(mg/L)	0.02	LOD Soil(mg/Kg)	0.2
LOQ Water(mg/L)	0.05	LOQ Soil(mg/Kg)	0.5

SOP

☑ EMAX-4500-NO3E Rev. 5

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-17-02	ICAL CCV (mg/L)	10	07/08/20
SW2B-30-17-03	ICV LCS MS Std (mg/L)	10	07/08/20
SW2B-30-17-04	NO2 CHK	10	07/08/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-56-50-01	NH4Cl-EDTA Soln	**	01/07/21
SWP1-56-49-03	HCl	1N	07/07/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	7/8/20 15:15
S1	0.1	20	7/8/20 15:15
S2	0.2	20	7/8/20 15:15
S3	0.4	20	7/8/20 15:15
S4	1	20	7/8/20 15:15
S5	2	20	7/8/20 15:15
ICV	1	20	7/8/20 15:15
CCV	1	20	7/8/20 15:15
NO2 CHK	1	20	7/8/20 15:15
LCS EV	1	20	7/8/20 15:15
MS EV	1	20	7/8/20 15:15

MicropipetteID: 842750082 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-56

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00210	NAG002WB	ND	ND	MB Passed
20NAG00211	NAG002WL	0.515	0.5	%R=103
20NAG00212	NAG002WC	0.522	0.5	%R=104

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00227	F210-08I	0.92		
20NAG00229	F210-08IM	3.54	2.5	%R=105

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAG00227	F210-08I	0.92		5
20NAG00228	F210-08ID	0.96	0.92	

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.01	7/8/20 9:45
SW1-02-05-11	7.01	7	7/8/20 9:46
SW1-02-05-12	10.02	9.99	7/8/20 9:47
SW1-02-05-08	Check Std (7.96)	7.99	7/8/20 9:48

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

Reviewed by: VD 07/08/20

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAG00210	NAG002WB	ND		mg/L	20	ml	NA	20	543nm	0.001 a	7/8/20 16:17	0	1		-0.00557	1		VDuran	5.77	8.52	7/8/20 14:52	7/8/20 14:53
20NAG00211	NAG002WL	0.515		mg/L	20	ml	NA	20	543nm	0.285 a	7/8/20 16:18	0	1		0.514752	1		VDuran	5.77	8.52	7/8/20 14:55	7/8/20 14:56
20NAG00212	NAG002WC	0.522		mg/L	20	ml	NA	20	543nm	0.289 a	7/8/20 16:18	0	1		0.52208	1		VDuran	5.77	8.52	7/8/20 14:58	7/8/20 14:59
20NAG00213	F178-01I	3.096		mg/L	20	ml	NA	20	543nm	0.342 a	7/8/20 16:18	0	5		3.095912	5		VDuran	1.41	8.51	7/8/20 15:01	7/8/20 15:02
20NAG00214	F178-02I	1.978		mg/L	20	ml	NA	20	543nm	0.22 a	7/8/20 16:18	0	5		1.978321	5		VDuran	1.41	8.55	7/8/20 15:04	7/8/20 15:05
20NAG00215	F178-04I	2.4		mg/L	20	ml	NA	20	543nm	0.266 a	7/8/20 16:18	0	5		2.399708	5		VDuran	1.5	8.49	7/8/20 15:07	7/8/20 15:08
20NAG00216	F178-05I	3.242		mg/L	20	ml	NA	20	543nm	0.358 a	7/8/20 16:19	0	5		3.242482	5		VDuran	1.44	8.53	7/8/20 15:10	7/8/20 15:11
20NAG00217	F178-07I	3.114		mg/L	20	ml	NA	20	543nm	0.344 a	7/8/20 16:19	0	5		3.114234	5		VDuran	1.55	8.55	7/8/20 15:13	7/8/20 15:14
20NAG00218	F178-08I	2.345		mg/L	20	ml	NA	20	543nm	0.26 a	7/8/20 16:19	0	5		2.344745	5		VDuran	1.53	8.55	7/8/20 15:16	7/8/20 15:17
20NAG00219	F178-10I	2.354		mg/L	20	ml	NA	20	543nm	0.261 a	7/8/20 16:19	0	5		2.353905	5		VDuran	1.42	8.5	7/8/20 15:19	7/8/20 15:20
20NAG00220	CCV1	0.485		mg/L	20	ml	NA	20	543nm	0.269 a	7/8/20 16:19	0	1		0.485438	1		VDuran			7/8/20 15:22	7/8/20 15:23
20NAG00221	CCB1	ND		mg/L	20	ml	NA	20	543nm	0.001 a	7/8/20 16:20	0	1		-0.00557	1		VDuran			7/8/20 15:27	7/8/20 15:28
20NAG00222	F178-11I	2.253		mg/L	20	ml	NA	20	543nm	0.25 a	7/8/20 16:20	0	5		2.253139	5		VDuran	1.48	8.54	7/8/20 15:30	7/8/20 15:31
20NAG00223	F210-01I	3.591		mg/L	20	ml	NA	20	543nm	0.396 a	7/8/20 16:20	0	5		3.590584	5		VDuran	1.44	8.56	7/8/20 15:33	7/8/20 15:34
20NAG00224	F210-04I	1.557		mg/L	20	ml	NA	20	543nm	0.174 a	7/8/20 16:20	0	5		1.556934	5		VDuran	1.52	8.52	7/8/20 15:36	7/8/20 15:37
20NAG00225	F210-05I	2.519		mg/L	20	ml	NA	20	543nm	0.279 a	7/8/20 16:20	0	5		2.518796	5		VDuran	1.51	8.55	7/8/20 15:39	7/8/20 15:40
20NAG00226	F210-07I	1.859		mg/L	20	ml	NA	20	543nm	0.207 a	7/8/20 16:21	0	5		1.859234	5		VDuran	1.47	8.56	7/8/20 15:42	7/8/20 15:43
20NAG00227	F210-08I	0.916		mg/L	20	ml	NA	20	543nm	0.104 a	7/8/20 16:21	0	5		0.915693	5		VDuran	1.47	8.55	7/8/20 15:45	7/8/20 15:46
20NAG00228	F210-08ID	0.961		mg/L	20	ml	NA	20	543nm	0.109 a	7/8/20 16:21	0	5		0.961496	5		VDuran	1.47	8.55	7/8/20 15:49	7/8/20 15:50
20NAG00229	F210-08IM	3.536		mg/L	20	ml	NA	20	543nm	0.39 a	7/8/20 16:21	0	5		3.53562	5		VDuran	1.47	8.55	7/8/20 15:52	7/8/20 15:53
20NAG00230	CCV2	0.474		mg/L	20	ml	NA	20	543nm	0.263 a	7/8/20 16:21	0	1		0.474445	1		VDuran			7/8/20 15:55	7/8/20 15:56
20NAG00231	CCB2	ND		mg/L	20	ml	NA	20	543nm	0.003 a	7/8/20 16:22	0	1		-0.00191	1		VDuran			7/8/20 16:04	7/8/20 16:05

Reviewed by: VD

Date: 07/02/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F178

METHOD SW9060
TOC

A total of eight(8) water samples were received on 06/20/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Organic Carbon was not detected in TCG003WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. TCG003WL/TCG003WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Total Organic Carbon was within MS QC limits in F178-05M/F178-05S. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F178

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG003WB	ND	1	NA	1.00	0.250	07/10/2018:07	NA	TCG004-05	TCG004-02	TCG003W	NA	NA
LCS1W	TCG003WL	24.5	1	NA	1.00	0.250	07/10/2018:23	NA	TCG004-06	TCG004-02	TCG003W	NA	NA
LCD1W	TCG003WC	24.7	1	NA	1.00	0.250	07/10/2018:39	NA	TCG004-07	TCG004-02	TCG003W	NA	NA
MW13D-GW061820	F178-01	0.399J	1	NA	1.00	0.250	07/10/2022:40	NA	TCG004-22	TCG004-14	TCG003W	06/18/2016:20	06/20/20
MW25C-GW061920	F178-02	0.332J	1	NA	1.00	0.250	07/10/2022:55	NA	TCG004-23	TCG004-14	TCG003W	06/19/2011:55	06/20/20
MW05R-GW061920	F178-04	0.479J	1	NA	1.00	0.250	07/10/2023:10	NA	TCG004-24	TCG004-14	TCG003W	06/19/2015:15	06/20/20
MW15D-GW061920	F178-07	0.594J	1	NA	1.00	0.250	07/10/2023:25	NA	TCG004-25	TCG004-14	TCG003W	06/19/2009:00	06/20/20
MW15S-GW061920	F178-05	0.637J	1	NA	1.00	0.250	07/11/2000:25	NA	TCG004-28	TCG004-26	TCG003W	06/19/2009:15	06/20/20
MW15S-GW061920DUP	F178-05D	0.705J	1	NA	1.00	0.250	07/11/2000:40	NA	TCG004-29	TCG004-26	TCG003W	06/19/2009:15	06/20/20
MW15S-GW061920MS	F178-05M	24.0	1	NA	1.00	0.250	07/11/2000:56	NA	TCG004-30	TCG004-26	TCG003W	06/19/2009:15	06/20/20
MW15S-GW061920MSD	F178-05S	24.2	1	NA	1.00	0.250	07/11/2001:13	NA	TCG004-31	TCG004-26	TCG003W	06/19/2009:15	06/20/20
FD03-GW061920	F178-08	0.700J	1	NA	1.00	0.250	07/11/2001:28	NA	TCG004-32	TCG004-26	TCG003W	06/19/2009:05	06/20/20
MW12S-GW061920	F178-10	0.678J	1	NA	1.00	0.250	07/11/2001:43	NA	TCG004-33	TCG004-26	TCG003W	06/19/2012:40	06/20/20
MW12D-GW061920	F178-11	0.410J	1	NA	1.00	0.250	07/11/2001:58	NA	TCG004-34	TCG004-26	TCG003W	06/19/2015:35	06/20/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	TCG003WB	TCG003WL	TCG003WC		
LAB FILE ID:	TCG004-05	TCG004-06	TCG004-07		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/10/2018:07	07/10/2018:23	07/10/2018:39	DATE RECEIVED:	NA
PREP. BATCH:	TCG003W	TCG003W	TCG003W		
CALIB. REF:	TCG004-02	TCG004-02	TCG004-02		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.5	98	25	24.7	99	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW15S-GW061920				
LAB SAMP ID:	F178-05	F178-05M	F178-05S		
LAB FILE ID:	TCG004-28	TCG004-30	TCG004-31		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	06/19/20 09:15
DATE ANALYZED:	07/11/2000:25	07/11/2000:56	07/11/2001:13	DATE RECEIVED:	06/20/20
PREP. BATCH:	TCG003W	TCG003W	TCG003W		
CALIB. REF:	TCG004-26	TCG004-26	TCG004-26		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	0.637J	25	24	93	25	24.2	94	1	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F178
METHOD: SW9060

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MW15S-GW061920			
EMAX SAMP ID:	F178-05	F178-05D		
LAB FILE ID:	TCG004-28	TCG004-29		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	06/19/20 09:15
DATE ANALYZED:	07/11/2000:25	07/11/2000:40	DATE RECEIVED:	06/20/20
PREP. BATCH:	TCG003W	TCG003W		
CALIB. REF:	TCG004-26	TCG004-26		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Total Organic Carbon	0.637J	0.705J	NA	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
TOC

	Date	Time
Start	07/10/20	14:39
End	07/11/20	03:12

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☐ Sample was filtered. Filter ID:

Comments: TCG003W : 20F176
20F162
20F178
20F182
20F195

Reagent Water ID #: RWI-19-003
pH Strips Lot #: 14C995432
2 M HCl SWP1-50-38-02

Book #: A62-039
Instrument No.: 62
Micropipette ID: ☐ 439350020
Micropipette ID: ☐ 539360056
Micropipette ID: ☐ 642780221
Micropipette ID: ☐
Analytical Sequence: TCG004
Method File: TCG004
Analytical Batch: TCG003W

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RWI-19-003	0
S1	SWIB-01-18-03	1
S2	↓	5
S3		10
S4		40
S5	↓	50
S6	—	—
ICV/LCS	SWIB-01-18-05	25
CCV	SWIB-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WZ
Date: 07/10/20

	Type	Analysis	Sample Name	Sample ID	Dilution	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG004-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG004-02	1.000	NPOC:25.20 mg/L	
3	Unknown	NPOC	ICB	TCG004-03	1.000	NPOC:0.06831 mg	
4	Unknown	NPOC	HCO3/CO3	TCG004-04	1.000	NPOC:0.1329 mg/	
5	Unknown	NPOC	TCG003WB	TCG004-05	1.000	NPOC:0.2234 mg/	
6	Unknown	NPOC	TCG003WL	TCG004-06	1.000	NPOC:24.53 mg/L	
7	Unknown	NPOC	TCG003WC	TCG004-07	1.000	NPOC:24.66 mg/L	
8	Unknown	NPOC	F186-01	TCG004-08	1.000	NPOC:0.9313 mg/	PH<2
9	Unknown	NPOC	F162-01	TCG004-09	1.000	NPOC:0.4777 mg/	PH<2
10	Unknown	NPOC	F162-01D	TCG004-10	1.000	NPOC:0.4459 mg/	PH<2
11	Unknown	NPOC	F162-01M	TCG004-11	1.000	NPOC:24.46 mg/L	PH<2
12	Unknown	NPOC	F162-01S	TCG004-12	1.000	NPOC:24.37 mg/L	PH<2
13	Unknown	NPOC	F162-02	TCG004-13	1.000	NPOC:0.7161 mg/	PH<2
14	Control	NPOC	CCV1	TCG004-14	1.000	NPOC:24.26 mg/L	
15	Unknown	NPOC	CCB1	TCG004-15	1.000	NPOC:0.1567 mg/	
16	Unknown	NPOC	F162-04	TCG004-16	1.000	NPOC:0.2785 mg/	PH<2
17	Unknown	NPOC	F162-05	TCG004-17	1.000	NPOC:1.100 mg/L	PH<2
18	Unknown	NPOC	F162-07	TCG004-18	1.000	NPOC:0.8970 mg/	PH<2
19	Unknown	NPOC	F162-08	TCG004-19	1.000	NPOC:1.792 mg/L	PH<2
20	Unknown	NPOC	F162-10	TCG004-20	1.000	NPOC:2.148 mg/L	PH<2
21	Unknown	NPOC	F162-11	TCG004-21	1.000	NPOC:7.946 mg/L	PH<2
22	Unknown	NPOC	F178-01	TCG004-22	1.000	NPOC:0.3988 mg/	PH<2
23	Unknown	NPOC	F178-02	TCG004-23	1.000	NPOC:0.3320 mg/	PH<2
24	Unknown	NPOC	F178-04	TCG004-24	1.000	NPOC:0.4791 mg/	PH<2
25	Unknown	NPOC	F178-07	TCG004-25	1.000	NPOC:0.5941 mg/	PH<2
26	Control	NPOC	CCV2	TCG004-26	1.000	NPOC:24.63 mg/L	
27	Unknown	NPOC	CCB2	TCG004-27	1.000	NPOC:0.1405 mg/	
28	Unknown	NPOC	F178-05	TCG004-28	1.000	NPOC:0.6371 mg/	PH<2
29	Unknown	NPOC	F178-05D	TCG004-29	1.000	NPOC:0.7048 mg/	PH<2
30	Unknown	NPOC	F178-05M	TCG004-30	1.000	NPOC:23.97 mg/L	PH<2
31	Unknown	NPOC	F178-05S	TCG004-31	1.000	NPOC:24.19 mg/L	PH<2
32	Unknown	NPOC	F178-08	TCG004-32	1.000	NPOC:0.7004 mg/	PH<2
33	Unknown	NPOC	F178-10	TCG004-33	1.000	NPOC:0.6784 mg/	PH<2
34	Unknown	NPOC	F178-11	TCG004-34	1.000	NPOC:0.4101 mg/	PH<2
35	Unknown	NPOC	F182-01	TCG004-35	1.000	NPOC:1.271 mg/L	PH<2
36	Unknown	NPOC	F195-01	TCG004-36	1.000	NPOC:0.6992 mg/	PH<2
37	Control	NPOC	CCV3	TCG004-37	1.000	NPOC:24.30 mg/L	
38	Unknown	NPOC	CCB3	TCG004-38	1.000	NPOC:0.1689 mg/	
39							
40							
41							
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W2 7/15/20

Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

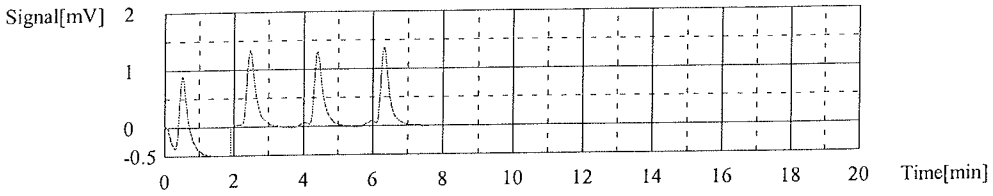
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG004-01
Cal. Curve:	TCG004.2020_07_10_14_31_07.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.022	50uL	1	*******		07/10/20 02:39:30 PM
2	2.321	50uL	1	*******		07/10/20 02:41:34 PM
3	2.261	50uL	1	*******		07/10/20 02:43:38 PM
4	2.088	50uL	1	*******		07/10/20 02:45:43 PM

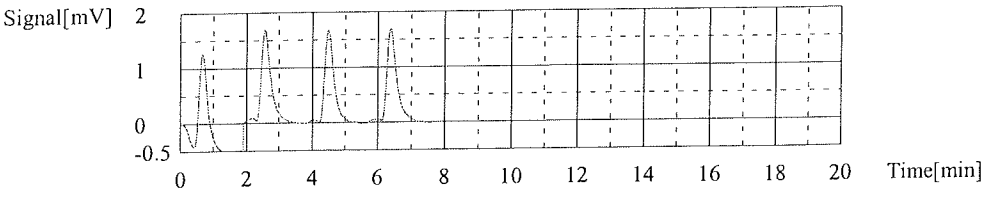
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 2.173



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.094	50uL	1	*******		07/10/20 02:54:28 PM
2	3.480	50uL	1	*******		07/10/20 02:56:32 PM
3	3.269	50uL	1	*******		07/10/20 02:58:37 PM
4	3.385	50uL	1	*******		07/10/20 03:00:41 PM

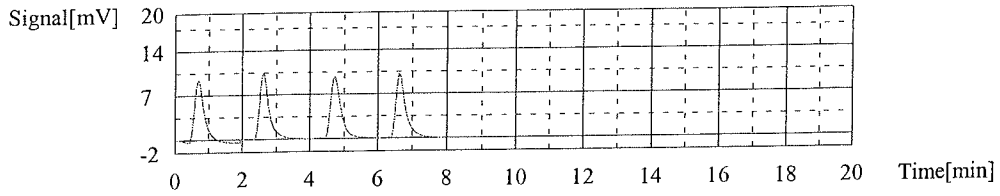
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 3.307



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.35	50uL	1	*******		07/10/20 03:09:28 PM
2	20.57	50uL	1	*******		07/10/20 03:11:44 PM
3	20.35	50uL	1	*******		07/10/20 03:13:50 PM
4	20.47	50uL	1	*******		07/10/20 03:15:54 PM

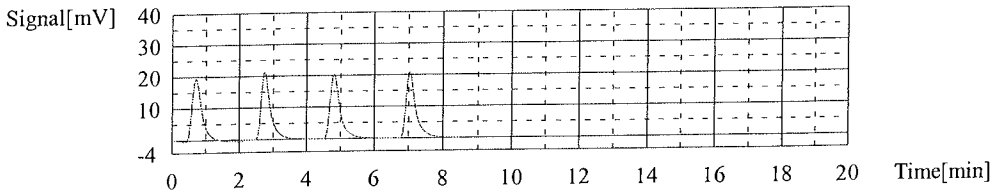
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.44



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	42.13	50uL	1	*******		07/10/20 03:24:53 PM
2	41.94	50uL	1	*******		07/10/20 03:27:06 PM
3	42.30	50uL	1	*******		07/10/20 03:29:31 PM
4	41.83	50uL	1	*******		07/10/20 03:31:46 PM

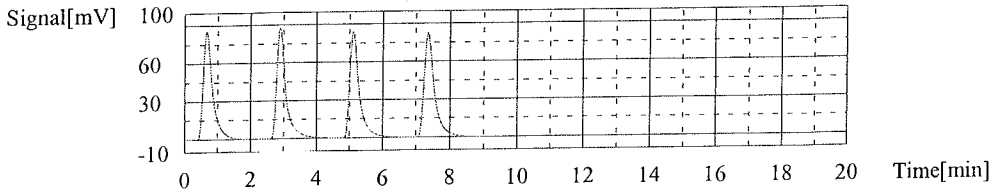
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 42.05



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	175.7	50uL	1	*******		07/10/20 03:40:51 PM
2	175.5	50uL	1	*******		07/10/20 03:43:14 PM
3	175.1	50uL	1	*******		07/10/20 03:45:38 PM
4	176.7	50uL	1	*******		07/10/20 03:48:03 PM

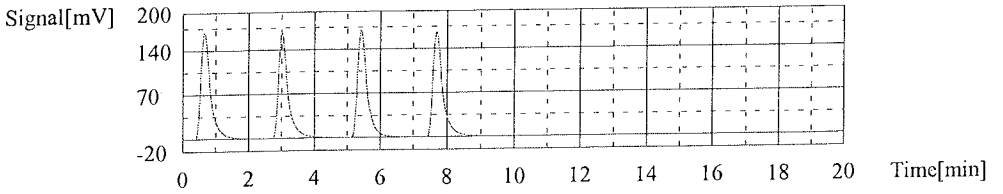
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 175.8



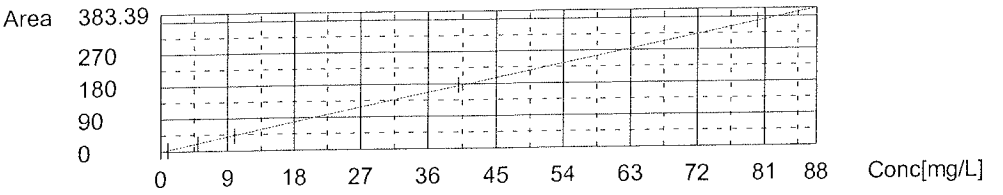
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	351.1	50uL	1	*******		07/10/20 03:57:19 PM
2	347.7	50uL	1	*******		07/10/20 03:59:53 PM
3	349.2	50uL	1	*******		07/10/20 04:02:21 PM
4	343.2	50uL	1	*******		07/10/20 04:04:57 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 347.8



Slope: 4.357
Intercept 0.000
r^2 0.999869



Control Sample

Sample Name: ICV
Sample ID: TCG004-02
Method: TCG004.tpl
Chk. Result Control value: 25.20 / Control exceeds range!

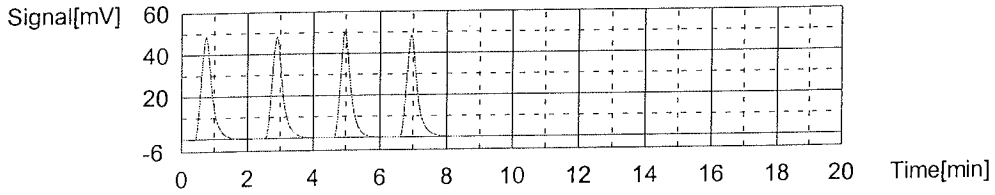
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:25.20 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.0	25.48mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:14:08 PM
2	109.6	25.16mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:16:23 PM
3	108.4	24.88mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:18:31 PM
4	110.1	25.27mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:20:53 PM

Mean Area 109.8
Mean Conc. 25.20mg/L



Sample

Sample Name: ICB
Sample ID: TCG004-03
Origin: TCG004.cal
Chk. Result

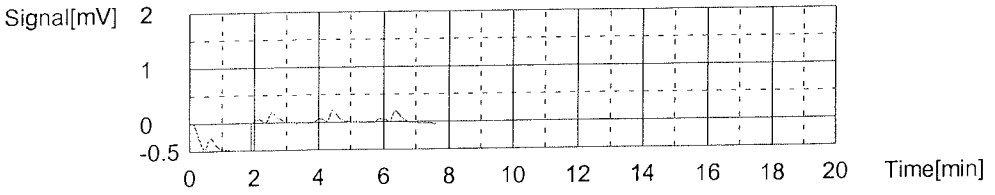
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.06831 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2862	0.06569mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:43:12 PM
2	0.2885	0.06622mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:45:17 PM
3	0.3009	0.06907mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:47:21 PM
4	0.3149	0.07228mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:49:26 PM

Mean Area 0.2976
Mean Conc. 0.06831mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG004-04
Origin: TCG004.cal
Chk. Result

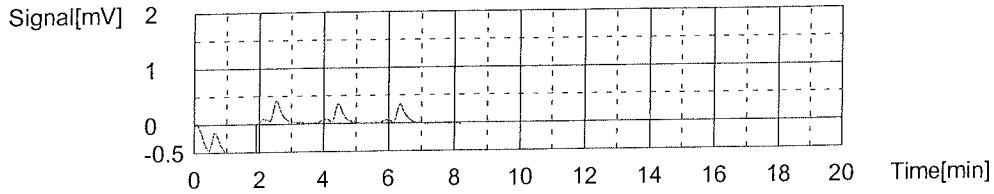
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1329 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4990	0.1145mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 04:58:13 PM
2	0.7677	0.1762mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:00:18 PM
3	0.5301	0.1217mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:02:22 PM
4	0.5198	0.1193mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 05:04:27 PM

Mean Area 0.5792
Mean Conc. 0.1329mg/L



Sample

Sample Name: TCG003WB
Sample ID: TCG004-05
Origin: TCG004.cal
Chk. Result

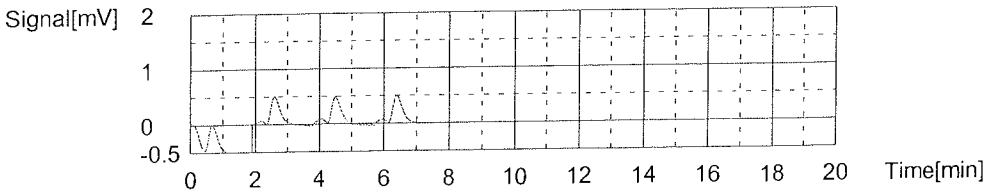
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2234 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8199	0.1882mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:01:11 PM
2	1.124	0.2580mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:03:16 PM
3	1.034	0.2373mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:05:20 PM
4	0.9160	0.2103mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:07:24 PM

Mean Area 0.9735
Mean Conc. 0.2234mg/L



Sample

Sample Name: TCG003WL
Sample ID: TCG004-06
Origin: TCG004.cal
Chk. Result

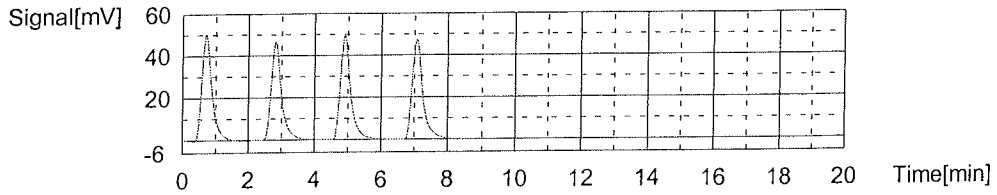
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.53 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.3	24.63mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:16:12 PM
2	103.8	23.83mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:18:28 PM
3	108.1	24.81mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:20:48 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:23:12 PM

Mean Area 106.9
Mean Conc. 24.53mg/L



Sample

Sample Name: TCG003WC
Sample ID: TCG004-07
Origin: TCG004.cal
Chk. Result

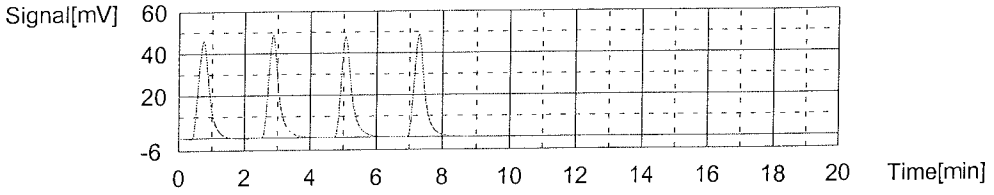
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.66 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.7	24.49mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:32:11 PM
2	107.7	24.72mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:34:34 PM
3	107.2	24.61mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:36:57 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:39:20 PM

Mean Area 107.5
Mean Conc. 24.66mg/L



Sample

Sample Name: F186-01
Sample ID: TCG004-08
Origin: TCG004.cal
Chk. Result

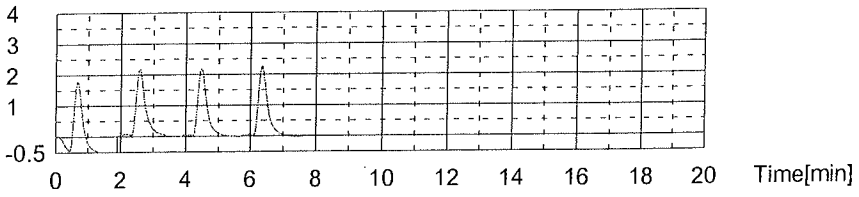
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.9313 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.678	0.8442mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:48:06 PM
2	4.109	0.9431mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:50:11 PM
3	4.069	0.9340mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:52:15 PM
4	4.373	1.004mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 06:54:20 PM

Mean Area 4.057
Mean Conc. 0.9313mg/L



Sample

Sample Name: F162-01
Sample ID: TCG004-09
Origin: TCG004.cal
Chk. Result

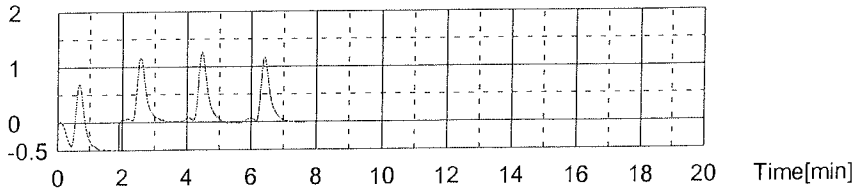
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4777 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.848	0.4242mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:03:06 PM
2	2.102	0.4825mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:05:10 PM
3	2.269	0.5208mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:07:15 PM
4	2.105	0.4832mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:09:20 PM

Mean Area 2.081
Mean Conc. 0.4777mg/L



Sample

Sample Name: F162-01D
Sample ID: TCG004-10
Origin: TCG004.cal
Chk. Result

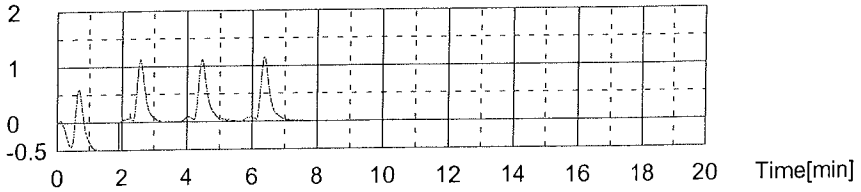
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4459 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.854	0.4256mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:18:06 PM
2	1.910	0.4384mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:20:10 PM
3	2.094	0.4806mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:22:15 PM
4	1.913	0.4391mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:24:20 PM

Mean Area 1.943
Mean Conc. 0.4459mg/L



Sample

Sample Name: F162-01M
Sample ID: TCG004-11
Origin: TCG004.cal
Chk. Result

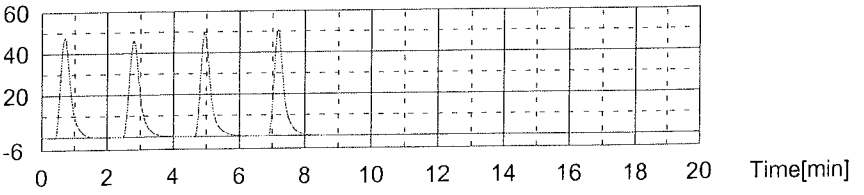
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.46 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.9	24.54mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:33:17 PM
2	105.9	24.31mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:35:37 PM
3	107.0	24.56mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:38:02 PM
4	106.5	24.45mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:40:21 PM

Mean Area 106.6
Mean Conc. 24.46mg/L



Sample

Sample Name: F162-01S
Sample ID: TCG004-12
Origin: TCG004.cal
Chk. Result

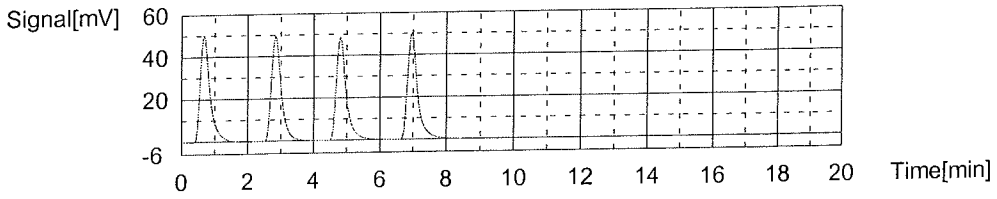
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.37 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.8	24.28mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:49:20 PM
2	106.4	24.42mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:51:30 PM
3	104.3	23.94mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:53:47 PM
4	108.2	24.84mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 07:56:12 PM

Mean Area 106.2
Mean Conc. 24.37mg/L



Sample

Sample Name: F162-02
Sample ID: TCG004-13
Origin: TCG004.cal
Chk. Result

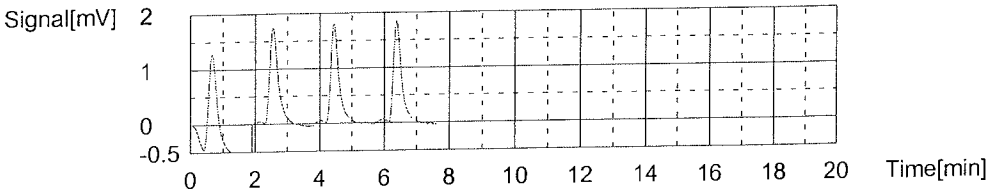
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7161 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.035	0.6966mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:04:58 PM
2	3.199	0.7343mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:07:02 PM
3	3.195	0.7334mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:09:07 PM
4	3.050	0.7001mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:11:11 PM

Mean Area 3.120
Mean Conc. 0.7161mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG004-14
Method: TCG004.tpl
Chk. Result Control value: 24.26 / Control exceeds range!

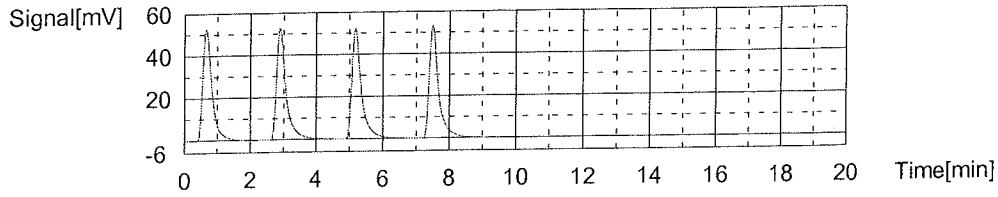
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.26 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.9	24.31mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:20:18 PM
2	106.2	24.38mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:22:45 PM
3	104.8	24.05mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:25:15 PM
4	105.8	24.28mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:27:40 PM

Mean Area 105.7
Mean Conc. 24.26mg/L



Sample

Sample Name: CCB1
Sample ID: TCG004-15
Origin: TCG004.cal
Chk. Result

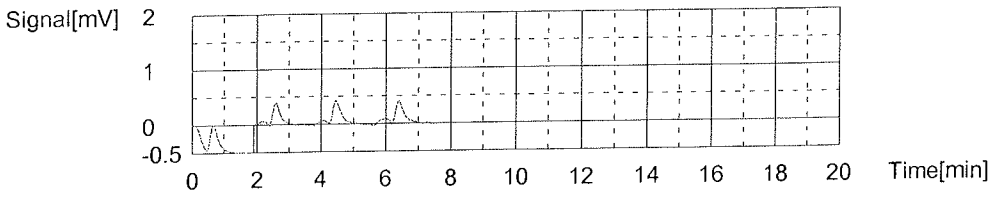
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1567 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6672	0.1531mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:49:17 PM
2	0.6356	0.1459mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:51:21 PM
3	0.7782	0.1786mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:53:26 PM
4	0.6501	0.1492mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 08:55:30 PM

Mean Area 0.6828
Mean Conc. 0.1567mg/L



Sample

Sample Name: F162-04
Sample ID: TCG004-16
Origin: TCG004.cal
Chk. Result

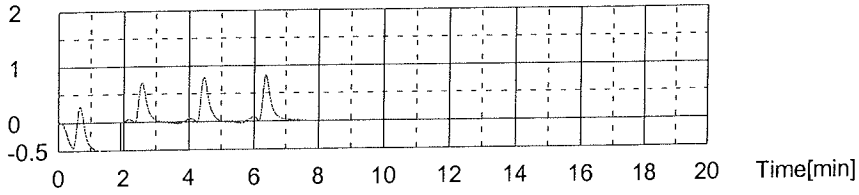
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2785 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.140	0.2617mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:04:17 PM
2	1.146	0.2630mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:06:21 PM
3	1.370	0.3145mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:08:26 PM
4	1.198	0.2750mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:10:30 PM

Mean Area 1.214
Mean Conc. 0.2785mg/L



Sample

Sample Name: F162-05
Sample ID: TCG004-17
Origin: TCG004.cal
Chk. Result

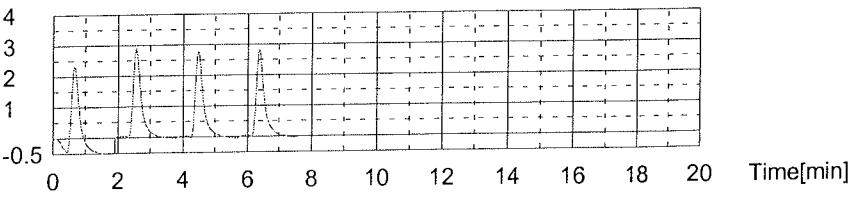
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.100 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.812	1.105mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:19:17 PM
2	4.829	1.108mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:21:21 PM
3	4.743	1.089mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:23:26 PM
4	4.779	1.097mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:25:30 PM

Mean Area 4.791
Mean Conc. 1.100mg/L



Sample

Sample Name: F162-07
Sample ID: TCG004-18
Origin: TCG004.cal
Chk. Result

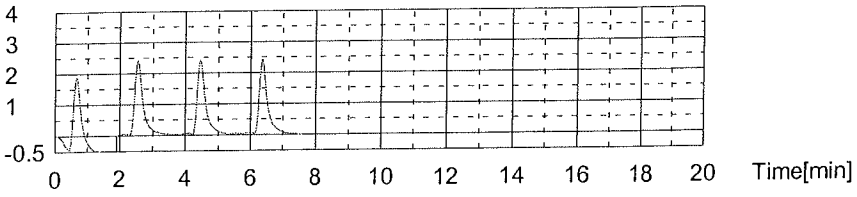
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.8970 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.682	0.8451mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:34:16 PM
2	3.965	0.9101mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:36:21 PM
3	3.953	0.9073mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:38:25 PM
4	4.031	0.9252mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:40:30 PM

Mean Area 3.908
Mean Conc. 0.8970mg/L



Sample

Sample Name: F162-08
Sample ID: TCG004-19
Origin: TCG004.cal
Chk. Result

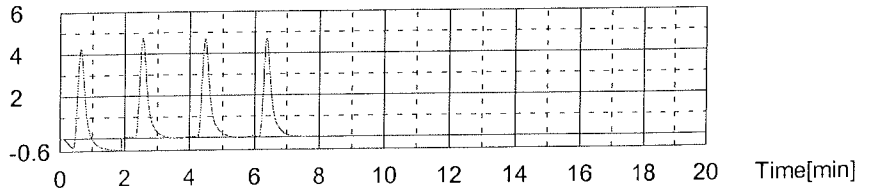
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.792 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.551	1.733mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:49:16 PM
2	7.646	1.755mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:51:21 PM
3	8.039	1.845mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:53:25 PM
4	7.997	1.836mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 09:55:30 PM

Mean Area 7.808
Mean Conc. 1.792mg/L



Sample

Sample Name: F162-10
Sample ID: TCG004-20
Origin: TCG004.cal
Chk. Result

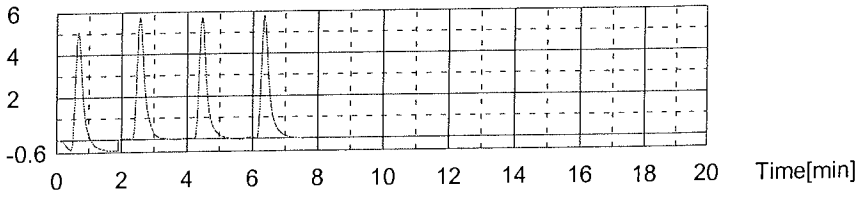
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.148 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.923	2.048mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:04:16 PM
2	9.532	2.188mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:06:21 PM
3	9.637	2.212mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:08:25 PM
4	9.341	2.144mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:10:30 PM

Mean Area 9.358
Mean Conc. 2.148mg/L



Sample

Sample Name: F162-11
Sample ID: TCG004-21
Origin: TCG004.cal
Chk. Result

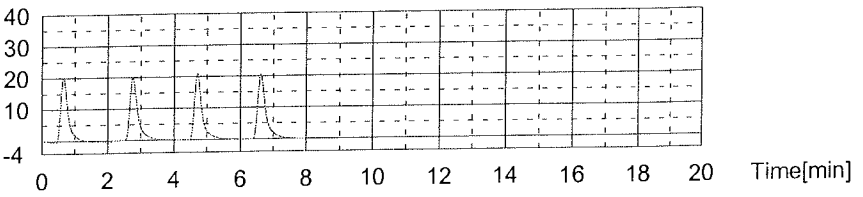
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:7.946 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.00	7.804mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:19:29 PM
2	34.45	7.907mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:21:36 PM
3	34.79	7.985mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:23:41 PM
4	35.24	8.089mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:25:51 PM

Mean Area 34.62
Mean Conc. 7.946mg/L



Sample

Sample Name: F178-01
Sample ID: TCG004-22
Origin: TCG004.cal
Chk. Result

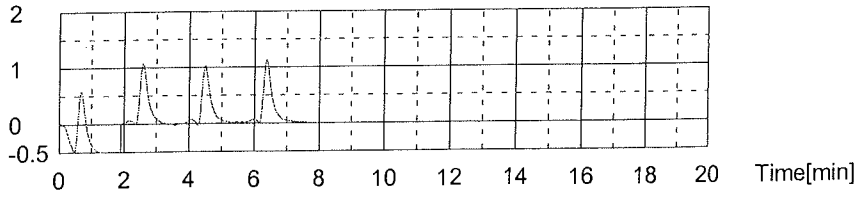
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3988 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.661	0.3813mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:34:37 PM
2	1.720	0.3948mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:36:42 PM
3	1.674	0.3842mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:38:46 PM
4	1.894	0.4347mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:40:51 PM

Mean Area 1.737
Mean Conc. 0.3988mg/L



Sample

Sample Name: F178-02
Sample ID: TCG004-23
Origin: TCG004.cal
Chk. Result

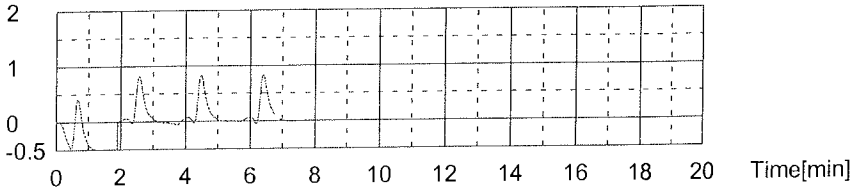
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3320 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.333	0.3060mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:49:31 PM
2	1.444	0.3314mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:51:36 PM
3	1.460	0.3351mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:53:40 PM
4	1.548	0.3553mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 10:55:45 PM

Mean Area 1.446
Mean Conc. 0.3320mg/L



Sample

Sample Name: F178-04
Sample ID: TCG004-24
Origin: TCG004.cal
Chk. Result

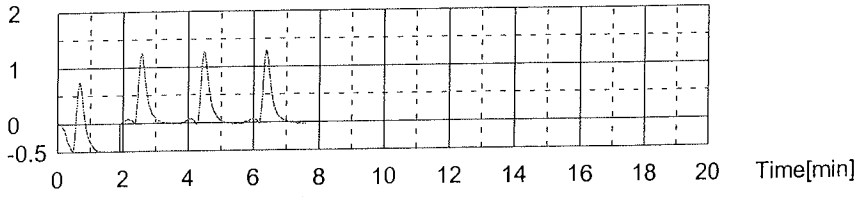
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4791 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.029	0.4657mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:04:31 PM
2	1.922	0.4412mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:06:36 PM
3	2.244	0.5151mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:08:40 PM
4	2.154	0.4944mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:10:45 PM

Mean Area 2.087
Mean Conc. 0.4791mg/L



Sample

Sample Name: F178-07
Sample ID: TCG004-25
Origin: TCG004.cal
Chk. Result

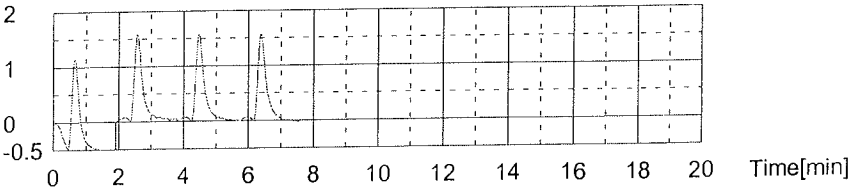
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5941 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.480	0.5692mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:19:31 PM
2	2.565	0.5887mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:21:36 PM
3	2.603	0.5975mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:23:40 PM
4	2.705	0.6209mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:25:45 PM

Mean Area 2.588
Mean Conc. 0.5941mg/L



Control Sample

Sample Name: CCV2
Sample ID: TCG004-26
Method: TCG004.tpl
Chk. Result Control value: 24.63 / Control exceeds range!

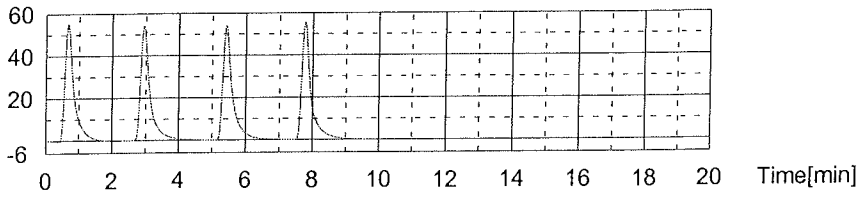
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.63 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.6	24.70mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:34:53 PM
2	107.8	24.74mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:37:31 PM
3	107.1	24.58mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:40:03 PM
4	106.8	24.51mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/10/20 11:42:47 PM

Mean Area 107.3
Mean Conc. 24.63mg/L



Sample

Sample Name: CCB2
Sample ID: TCG004-27
Origin: TCG004.cal
Chk. Result

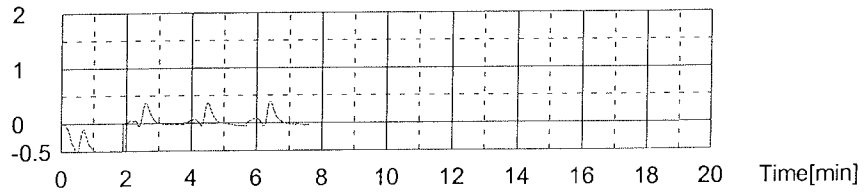
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1405 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6340	0.1455mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:04:23 AM
2	0.5839	0.1340mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:06:27 AM
3	0.5717	0.1312mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:08:32 AM
4	0.6583	0.1511mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:10:37 AM

Mean Area 0.6120
Mean Conc. 0.1405mg/L



Sample

Sample Name: F178-05
Sample ID: TCG004-28
Origin: TCG004.cal
Chk. Result

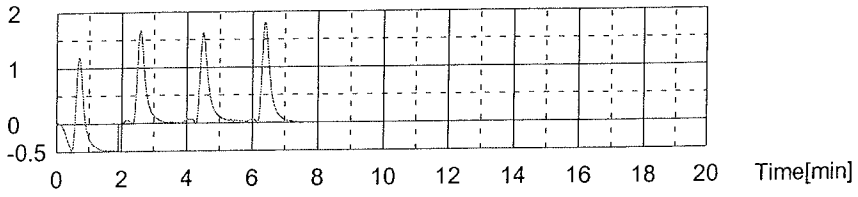
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6371 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.522	0.5789mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:19:23 AM
2	2.866	0.6578mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:21:27 AM
3	2.694	0.6184mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:23:32 AM
4	3.021	0.6934mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:25:37 AM

Mean Area 2.776
Mean Conc. 0.6371mg/L



Sample

Sample Name: F178-05D
Sample ID: TCG004-29
Origin: TCG004.cal
Chk. Result

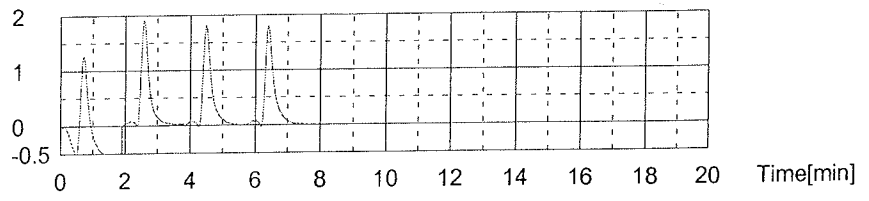
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7048 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.026	0.6946mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:34:23 AM
2	3.126	0.7175mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:36:27 AM
3	2.897	0.6650mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:38:32 AM
4	3.234	0.7423mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:40:36 AM

Mean Area 3.071
Mean Conc. 0.7048mg/L



Sample

Sample Name: F178-05M
Sample ID: TCG004-30
Origin: TCG004.cal
Chk. Result

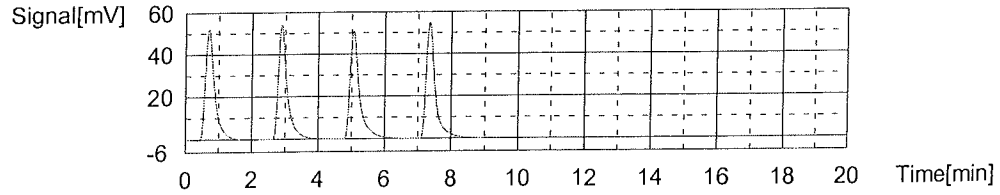
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.97 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.6	24.01mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:49:39 AM
2	104.3	23.94mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:51:59 AM
3	103.7	23.80mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:54:28 AM
4	105.1	24.12mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 12:56:58 AM

Mean Area 104.4
Mean Conc. 23.97mg/L



Sample

Sample Name: F178-05S
Sample ID: TCG004-31
Origin: TCG004.cal
Chk. Result

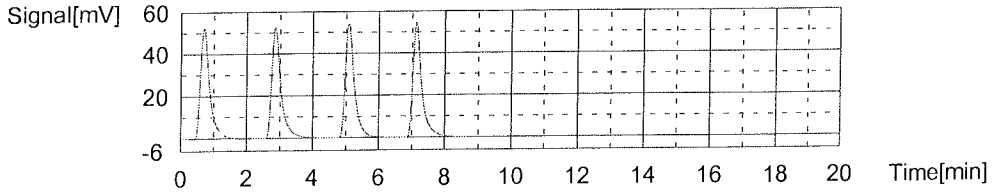
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.19 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.2	24.15mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:06:00 AM
2	104.9	24.08mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:08:23 AM
3	106.0	24.33mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:10:36 AM
4	105.5	24.22mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:13:01 AM

Mean Area 105.4
Mean Conc. 24.19mg/L



Sample

Sample Name: F178-08
Sample ID: TCG004-32
Origin: TCG004.cal
Chk. Result

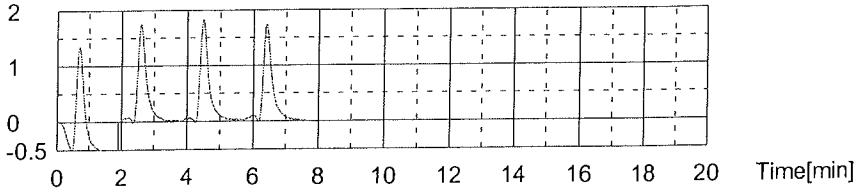
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7004 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.099	0.7113mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:21:49 AM
2	2.911	0.6682mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:23:53 AM
3	3.081	0.7072mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:25:58 AM
4	3.114	0.7148mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:28:02 AM

Mean Area 3.051
Mean Conc. 0.7004mg/L



Sample

Sample Name: F178-10
Sample ID: TCG004-33
Origin: TCG004.cal
Chk. Result

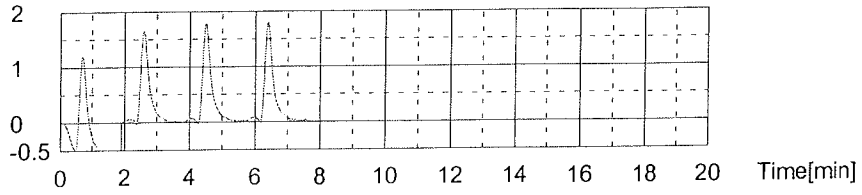
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6784 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.698	0.6193mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:36:49 AM
2	2.892	0.6638mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:38:54 AM
3	3.251	0.7462mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:40:59 AM
4	2.981	0.6842mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:43:03 AM

Mean Area 2.956
Mean Conc. 0.6784mg/L



Sample

Sample Name: F178-11
Sample ID: TCG004-34
Origin: TCG004.cal
Chk. Result

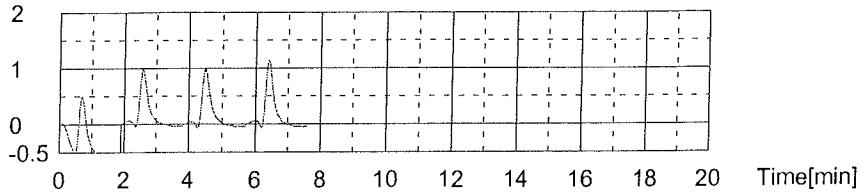
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4101 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.584	0.3636mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:51:49 AM
2	1.748	0.4012mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:53:54 AM
3	1.839	0.4221mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:55:59 AM
4	1.976	0.4536mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 01:58:03 AM

Mean Area 1.787
Mean Conc. 0.4101mg/L



Sample

Sample Name: F182-01
Sample ID: TCG004-35
Origin: TCG004.cal
Chk. Result

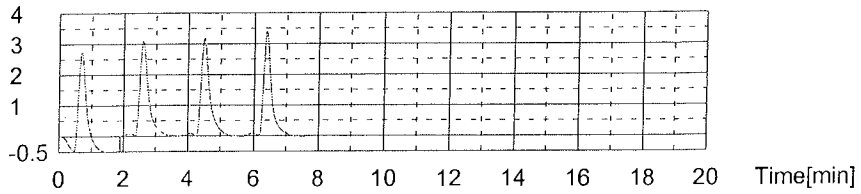
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.271 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.506	1.264mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:06:50 AM
2	5.547	1.273mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:08:55 AM
3	5.714	1.312mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:11:00 AM
4	5.384	1.236mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:13:04 AM

Mean Area 5.538
Mean Conc. 1.271mg/L



Sample

Sample Name: F195-01
Sample ID: TCG004-36
Origin: TCG004.cal
Chk. Result

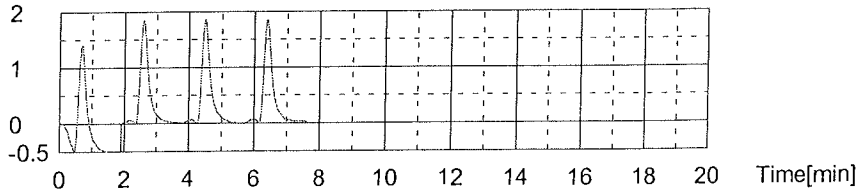
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6992 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.880	0.6611mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:21:51 AM
2	3.049	0.6998mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:23:56 AM
3	3.190	0.7322mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:26:01 AM
4	3.065	0.7035mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:28:05 AM

Mean Area 3.046
Mean Conc. 0.6992mg/L



Control Sample

Sample Name: CCV3
Sample ID: TCG004-37
Method: TCG004.tpl
Chk. Result Control value: 24.30 / Control exceeds range!

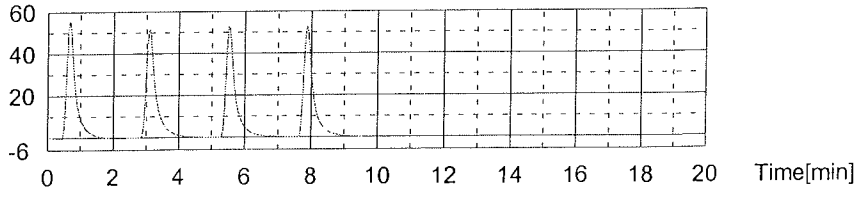
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.30 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.1	24.81mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:37:21 AM
2	106.4	24.42mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:39:58 AM
3	103.6	23.78mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:42:29 AM
4	105.4	24.19mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 02:45:03 AM

Mean Area 105.9
Mean Conc. 24.30mg/L



Sample

Sample Name: CCB3
Sample ID: TCG004-38
Origin: TCG004.cal
Chk. Result

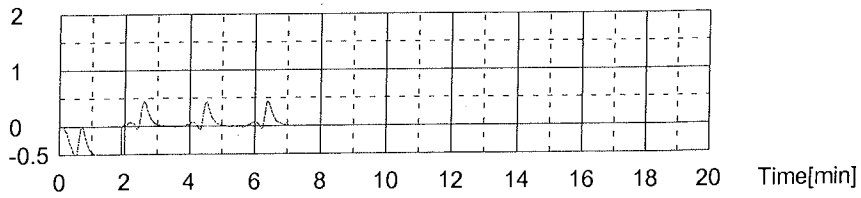
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1689 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8021	0.1841mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:06:36 AM
2	0.6762	0.1552mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:08:41 AM
3	0.7488	0.1719mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:10:45 AM
4	0.7163	0.1644mg/L	50uL	1		TCG004.2020_07_10_14_31_07.cal	07/11/20 03:12:50 AM

Mean Area 0.7359
Mean Conc. 0.1689mg/L



EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-07-2020
EMAX Batch No.: 20F179

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/20/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
TB46-GW061720	F179-01	06/17/20	WATER	VOCS BY 8260C
EB32-GW061720	F179-02	06/17/20	WATER	VOCS BY 8260C
EB33-GW061820	F179-03	06/18/20	WATER	VOCS BY 8260C
EB34-SB061820	F179-04	06/18/20	WATER	VOCS BY 8260C
EB35-GW061820	F179-05	06/18/20	WATER	VOCS BY 8260C

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX LABORATORIES, INC.
1835 W. 205th Street, Torrance, CA 90501
Tel #: 310-618-8889 Fax #: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: 238824
SAMPLE STORAGE
EMAX CONTROL NO. * 20F179
PROJECT CODE:

CLIENT CDM Smith
PROJECT SLC VA
COORDINATOR Cherie Zakowski
TEL 720-264-1109 FAX EMAIL ZakowskiCA@cdmsmith.com
SEND REPORT TO
COMPANY CDM Smith
ADDRESS 555 17th St. Ste 500
Denver CO 80201
EMAX PM Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaOH
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H_2SO_4
O=	

ANALYSIS REQUIRED: VOC; % Soil Moisture; VOC

TAT
- ☐ Rush ____hrs.
- ☐ Rush ____days
- ☐ 7 days
- ☒ 14 days
- ☐ 21 days
- ☐ 30 days
- ☐ ____days
- ☐

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE IC	IC	HC	COMMENTS
1	TB42-GW061720		6/17/20	1600	3		VOA					X	
2	EB32-GW061720		"	1630	3		"					X	
3	EB33-GW061820		6/18/20	1200	3		"					X	
4	EB34-SB061820		"	1520	3		"					X	
5	EB35-GW061820		"	1620	3		"					X	
6													
7													
8													
9													
10													

Instructions
Please cc: millerjc@cdmsmith.com w/ lab acknowledgments

Cooler #	Temp. (°C)	Sample #s
1	3.7 °C	

SAMPLER Jc Miller
COURIER/AIRBILL FedEx

RELINQUISHED BY	Date	Time	RECEIVED BY
	6/19/20	1500	6/22/2020 @ 10:55

NOTE: Turn-around-time (TAT) for samples shall not begin until all discrepancies have been resolved. For samples received and discrepancies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associated with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Type of Delivery	Airbill / Tracking Number	ECN 20F179
☒ Fedex ☐ UPS ☐ GSO ☐ Others	3940 4267 6113	Recipient Rosie
☐ EMAX Courier ☐ Client Delivery		Date 06/20/22 Time 10:55

COC INSPECTION

☒ Client Name	☒ Client PM/FC	☒ Sampler Name	☒ Sampling Date/Time	☒ Sample ID	☐ Matrix
☒ Address	☒ Tel # / Fax #	☐ Courier Signature	☒ Analysis Required	☒ Preservative (if any)	☒ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☒ Cooler	☐ Box	☐ Other		
Condition	☒ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☒ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☒ Cooler 1 3.7 °C	☐ Cooler 2 _____ °C	☐ Cooler 3 _____ °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 192381464	*B - S/N* _____	(C) *S/N* 20029175 6	*D - S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1-3	D3	Label reads TB46-GW 061720	R1 - label
			COC reads TB42-GW 061720	

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS:

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☒ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling maria Rivera
Date 06/22/20 6/22/20

SRF
Date 6/22/20

PM
Date 6/22/20

Raman Singh

From: Miller, Joseph C. <millerjc@cdmsmith.com>
Sent: Monday, June 22, 2020 11:44 AM
To: Raman Singh; Zakowski, Cherie
Cc: Smith, Nathan T.; Leslie, Karla L.
Subject: Re: VA SLC; 20F179 discrepancy

Should be TB46-GW061720.

Sorry about that.

-Joe

Get Outlook for iOS

From: Raman Singh <RSingh@emaxlabs.com>
Sent: Monday, June 22, 2020 11:56 AM
To: Zakowski, Cherie
Cc: Miller, Joseph C.; Smith, Nathan T.; Leslie, Karla L.
Subject: VA SLC; 20F179 discrepancy

Hi Cherie,

Attached is the COC and SRFs for SDG 20F179. Could you please confirm the Sample ID for sample #1: COC= TB42-GW061720 vs. Label= TB46-GW061720

Thanks!

Raman Singh | *Project Manager*
EMAX Laboratories, Inc.
1835 W 205th Street, Torrance, CA 90501
Tel: 310-618-8889 x 119
RSingh@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com.

Note:
EMAX will be closed for the following holidays.

Independence Day: 07/03/20

Sealed 3.7
ORIGIN ID:NPHA (513) 602-1619
CDM SMITH
555 17TH ST STE 1100
VER, CO 80202
D STATES US
SHIP DATE: 19JUN20
ACTWGT: 11.20 LB
CAD: 6998084/SSF02110
DIMS: 11x11x9 IN
BILL THIRD PARTY
PLE RECIEVING
LABORATORIES
V 205TH ST
TORRA CA 90501
(310) 618-8889
DEPT:
FedEx
Express
REL#
3786346
SATURDAY 12:00P
PRIORITY OVERNIGHT
TRK# 0201 3940 4267 6113
AHS
90501
CA-US LAX
WO HHRA

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F179

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F179

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of five(5) water samples were received on 06/20/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VO01F16B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VO01F16L/VO01F16C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F179
Instrument ID : 01

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VO01F16B	1	NA	06/26/2014:40	06/26/2014:40	RFV334	REV203	VO01F16	Method Blank
LCS1W	VO01F16L	1	NA	06/26/2013:19	06/26/2013:19	RFV331	REV203	VO01F16	Lab Control Sample (LCS)
LCD1W	VO01F16C	1	NA	06/26/2013:45	06/26/2013:45	RFV332	REV203	VO01F16	LCS Duplicate
TB46-GW061720	F179-01	1	NA	06/26/2017:21	06/26/2017:21	RFV340	REV203	VO01F16	Field Sample
EB32-GW061720	F179-02	1	NA	06/26/2017:49	06/26/2017:49	RFV341	REV203	VO01F16	Field Sample
EB33-GW061820	F179-03	1	NA	06/26/2018:15	06/26/2018:15	RFV342	REV203	VO01F16	Field Sample
EB34-SB061820	F179-04	1	NA	06/26/2018:42	06/26/2018:42	RFV343	REV203	VO01F16	Field Sample
EB35-GW061820	F179-05	1	NA	06/26/2019:09	06/26/2019:09	RFV344	REV203	VO01F16	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/17/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F179	Date Extracted: 06/26/20 17:21
Sample ID: TB46-GW061720	Date Analyzed: 06/26/20 17:21
Lab Samp ID: F179-01	Dilution Factor: 1
Lab File ID: RFV340	Matrix : WATER
Ext Btch ID: VO01F16	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.65	10.00	96.5	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV340.D Vial: 13
Acq On : 26 Jun 2020 5:21 pm Operator: VLu
Sample : 20F179-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

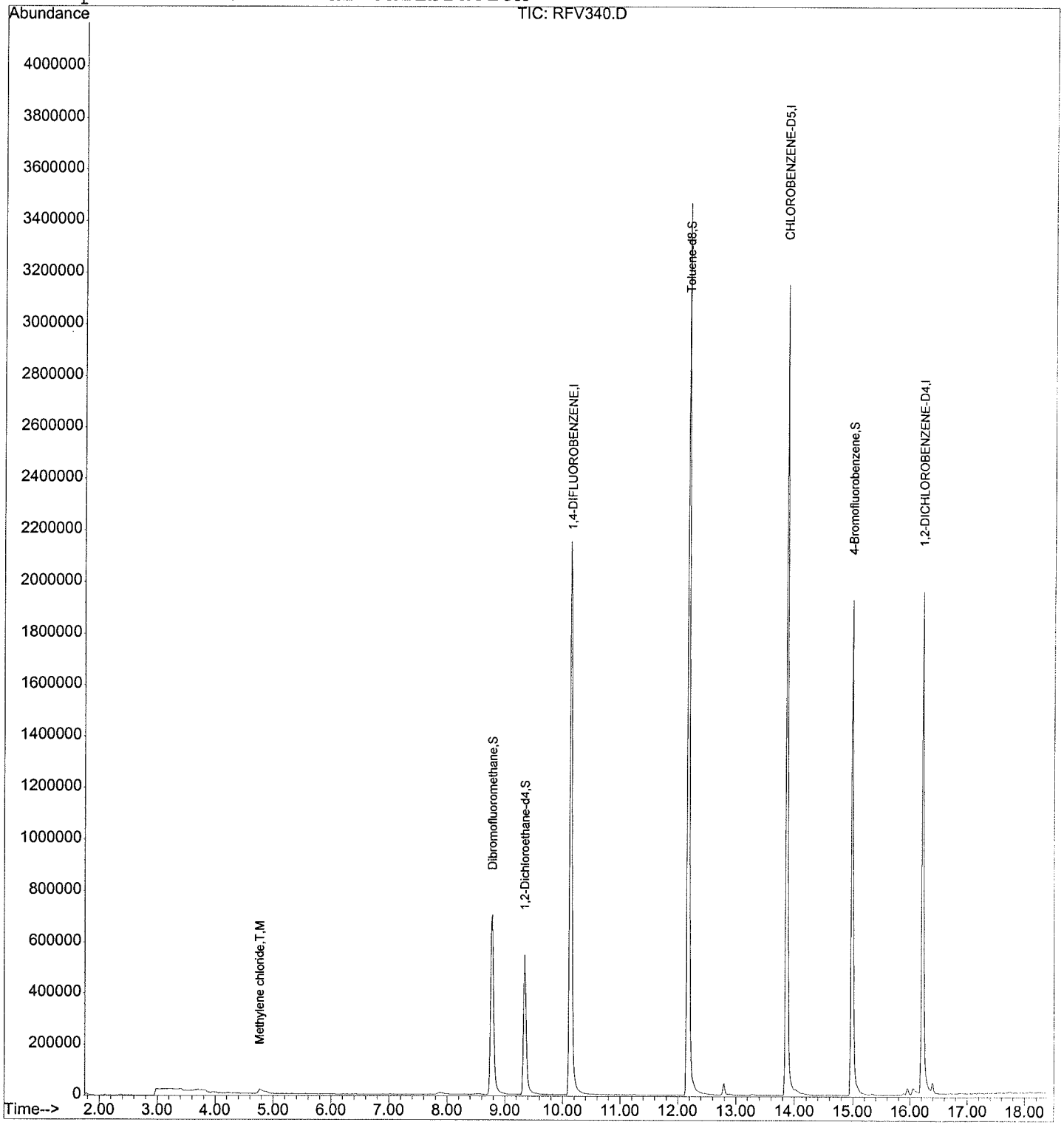
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2948778	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.86	117	2424322	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	757447	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	851806	10.26	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.60%		
38) 1,2-Dichloroethane-d4	9.34	65	578679	10.47	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.70%		
54) Toluene-d8	12.17	98	3183171	9.65	ug/l	0.00
Spiked Amount 10.000			Recovery =	96.50%		
74) 4-Bromofluorobenzene	14.98	95	956939	10.57	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.70%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	28809	0.24	ug/l	96

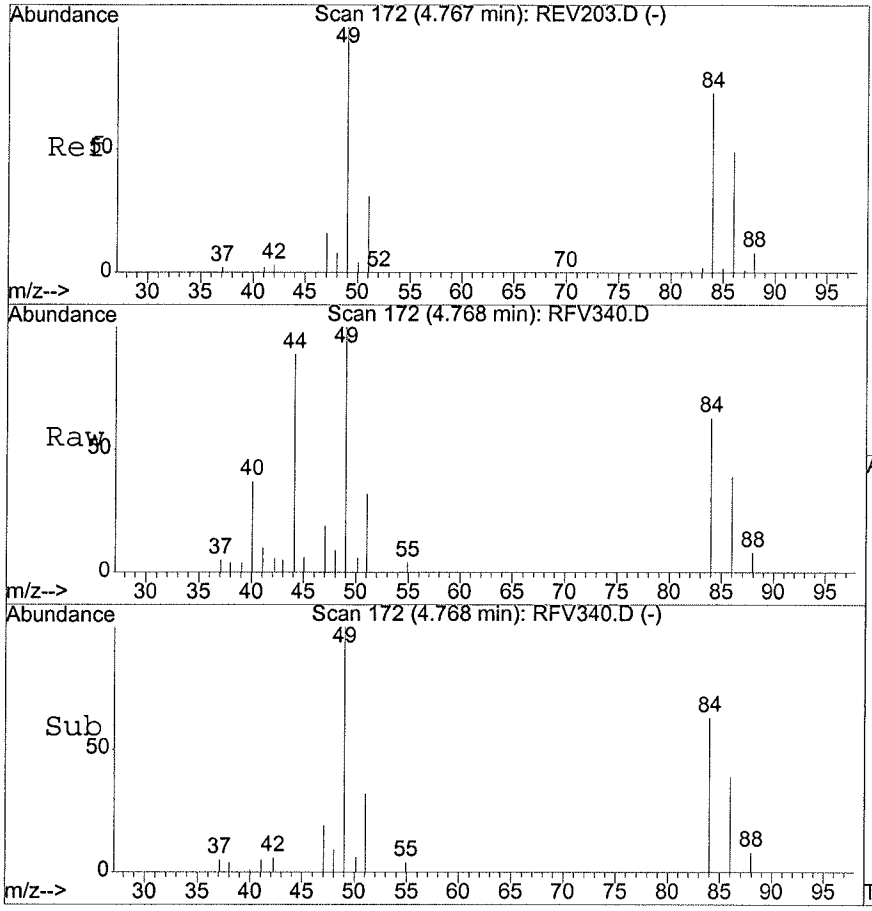
(#) = qualifier out of range (m) = manual integration
RFV340.D VO01E13.M Mon Jun 29 11:08:20 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV340.D Vial: 13
Acq On : 26 Jun 2020 5:21 pm Operator: VLu
Sample : 20F179-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

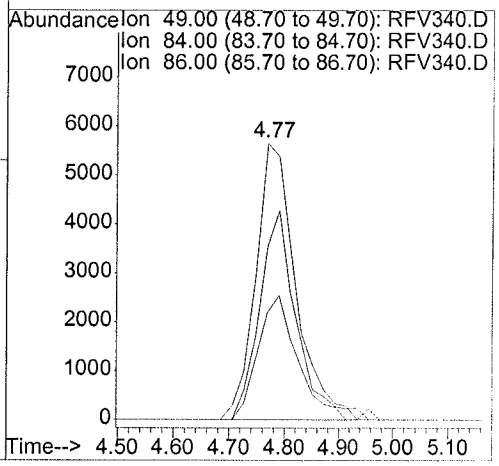




#18
Methylene chloride
Concen: 0.24 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV340.D
Acq: 26 Jun 2020 5:21 pm

Tgt Ion: 49 Resp: 28809

Ion	Ratio	Lower	Upper
49	100		
84	69.9	43.3	103.3
86	44.0	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV340.D Vial: 13
Acq On : 26 Jun 2020 5:21 pm Operator: VLu
Sample : 20F179-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2948721	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2413989	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	748194	10.00	ug/l	0.00

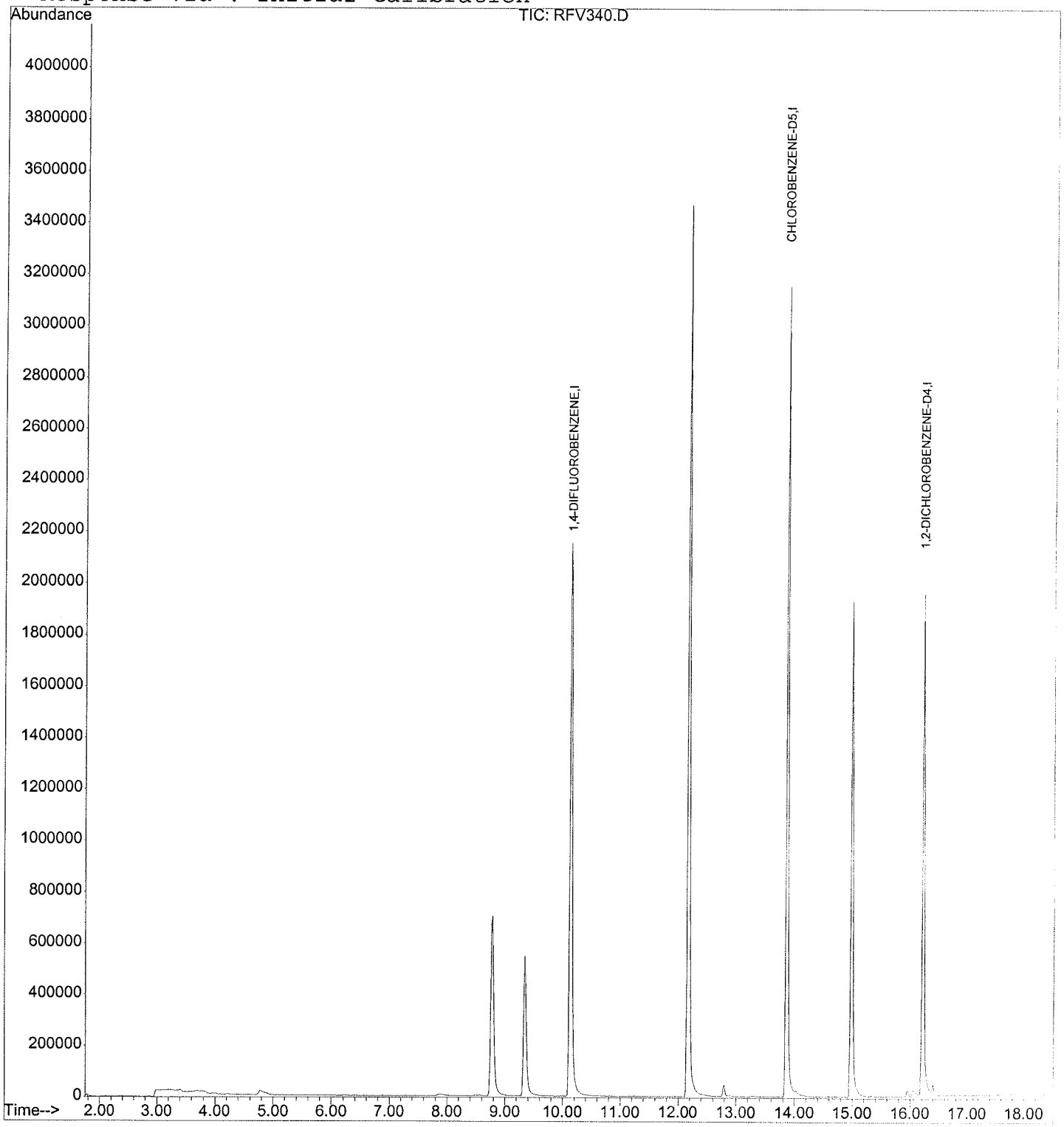
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV340.D VO01E14.M Mon Jun 29 09:49:35 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV340.D Vial: 13
Acq On : 26 Jun 2020 5:21 pm Operator: VLu
Sample : 20F179-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/17/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F179	Date Extracted:	06/26/20 17:49
Sample ID:	EB32-GW061720	Date Analyzed:	06/26/20 17:49
Lab Samp ID:	F179-02	Dilution Factor:	1
Lab File ID:	RFV341	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.80	10.00	98.0	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV341.D Vial: 14
Acq On : 26 Jun 2020 5:49 pm Operator: VLu
Sample : 20F179-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

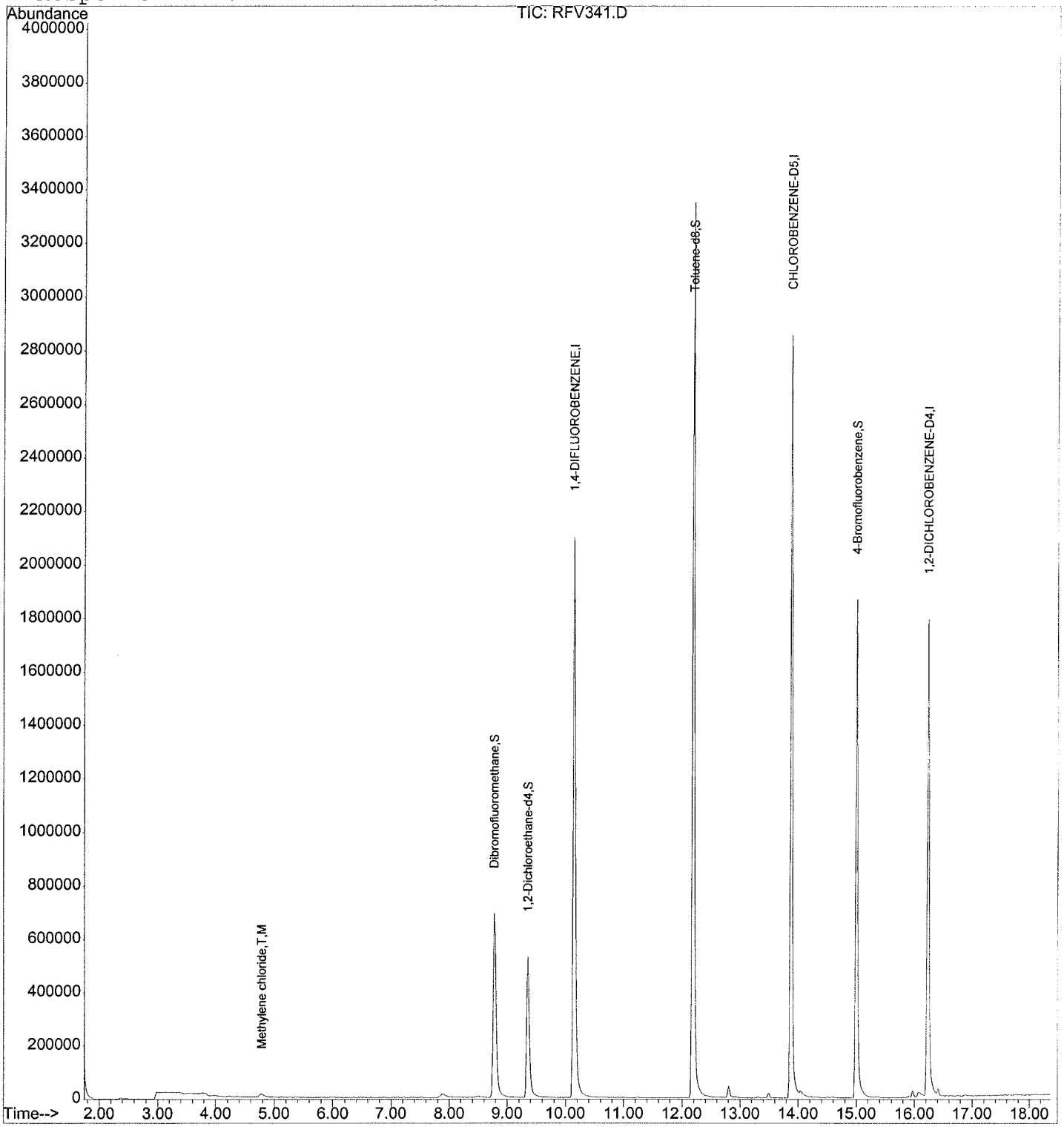
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2796522	10.00	ug/l	0.01
53) CHLOROBENZENE-D5	13.87	117	2291333	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	706896	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	817325	10.38	ug/l	0.01
Spiked Amount 10.000			Recovery =	103.80%		
38) 1,2-Dichloroethane-d4	9.35	65	551501	10.52	ug/l	0.01
Spiked Amount 10.000			Recovery =	105.20%		
54) Toluene-d8	12.18	98	3055983	9.80	ug/l	0.01
Spiked Amount 10.000			Recovery =	98.00%		
74) 4-Bromofluorobenzene	15.00	95	896796	10.61	ug/l	0.01
Spiked Amount 10.000			Recovery =	106.10%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	21303	0.19	ug/l	95

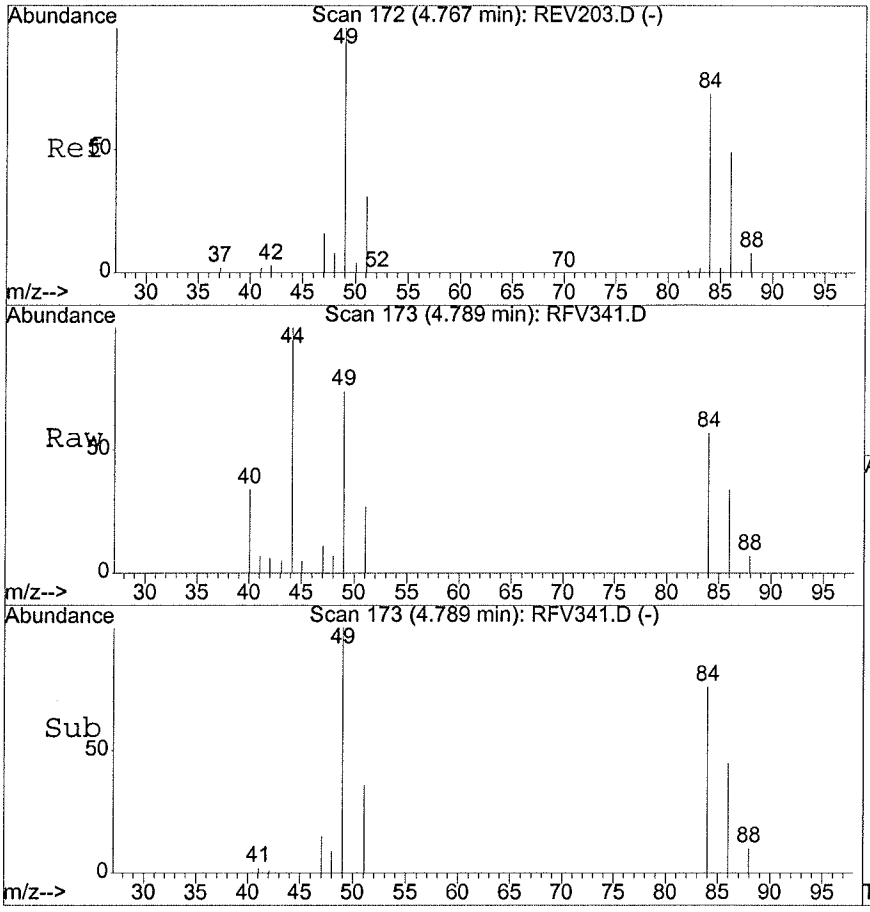
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV341.D Vial: 14
Acq On : 26 Jun 2020 5:49 pm Operator: VLu
Sample : 20F179-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

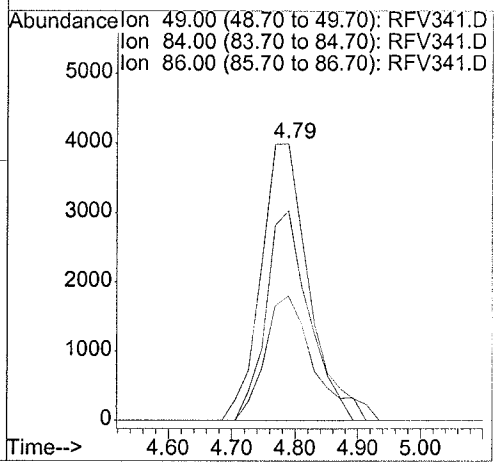




#18
Methylene chloride
Concen: 0.19 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV341.D
Acq: 26 Jun 2020 5:49 pm

Tgt Ion: 49 Resp: 21303

Ion	Ratio	Lower	Upper
49	100		
84	69.3	43.3	103.3
86	43.3	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV341.D Vial: 14
Acq On : 26 Jun 2020 5:49 pm Operator: VLu
Sample : 20F179-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2796464	10.00	ug/l	0.01
3) CHLOROBENZENE-D5	13.87	117	2283878	10.00	ug/l	0.01
4) 1,2-DICHLOROBENZENE-D4	16.23	152	700582	10.00	ug/l	0.01

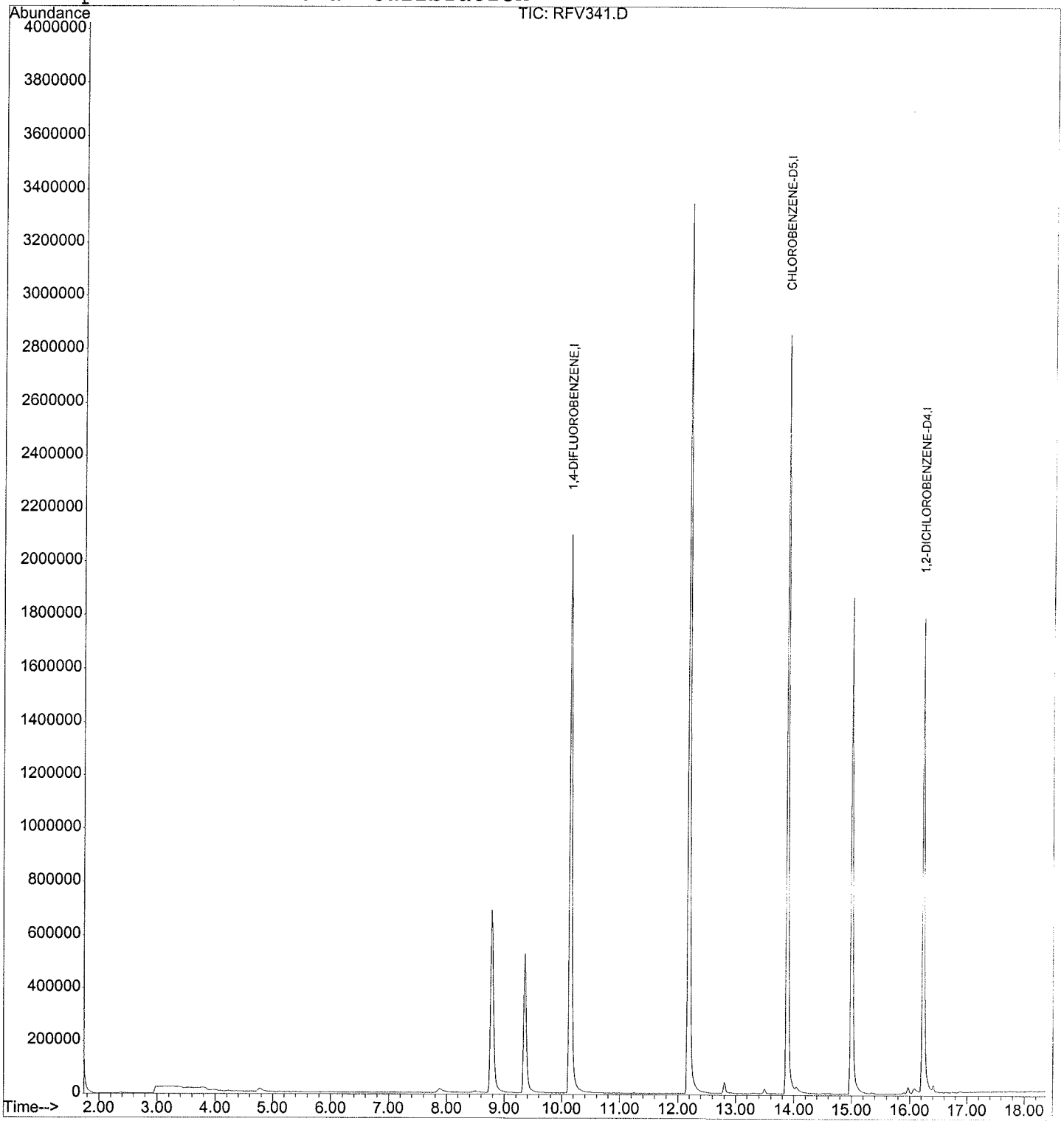
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV341.D VO01E14.M Mon Jun 29 09:49:45 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV341.D Vial: 14
Acq On : 26 Jun 2020 5:49 pm Operator: VLu
Sample : 20F179-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected	: 06/18/20
Project	: VA SALT LAKE CITY	Date Received	: 06/20/20
Batch No.	: 20F179	Date Extracted	: 06/26/20 18:15
Sample ID	: EB33-GW061820	Date Analyzed	: 06/26/20 18:15
Lab Samp ID	: F179-03	Dilution Factor	: 1
Lab File ID	: RFV342	Matrix	: WATER
Ext Btch ID	: VO01F16	% Moisture	: NA
Calib. Ref.	: REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.90	10.00	99.0	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV342.D Vial: 15
Acq On : 26 Jun 2020 6:15 pm Operator: VLu
Sample : 20F179-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:09 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

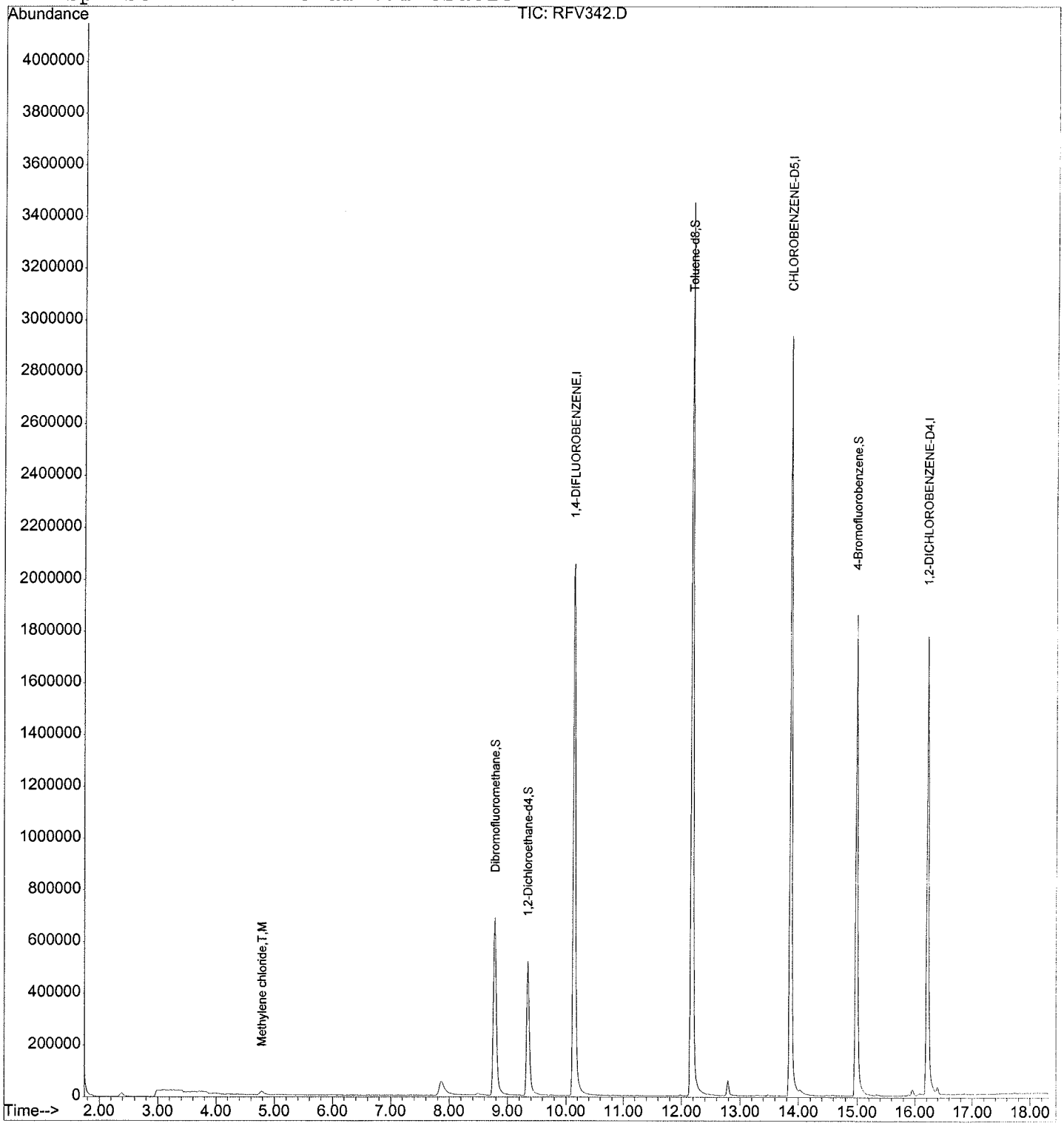
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2886824	10.00	ug/l	0.01
53) CHLOROBENZENE-D5	13.86	117	2350614	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	717335	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	825033	10.15	ug/l	0.01
Spiked Amount 10.000			Recovery =	101.50%		
38) 1,2-Dichloroethane-d4	9.34	65	553481	10.23	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.30%		
54) Toluene-d8	12.17	98	3168157	9.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.00%		
74) 4-Bromofluorobenzene	14.98	95	917064	10.69	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.90%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	23544	0.20	ug/l	93

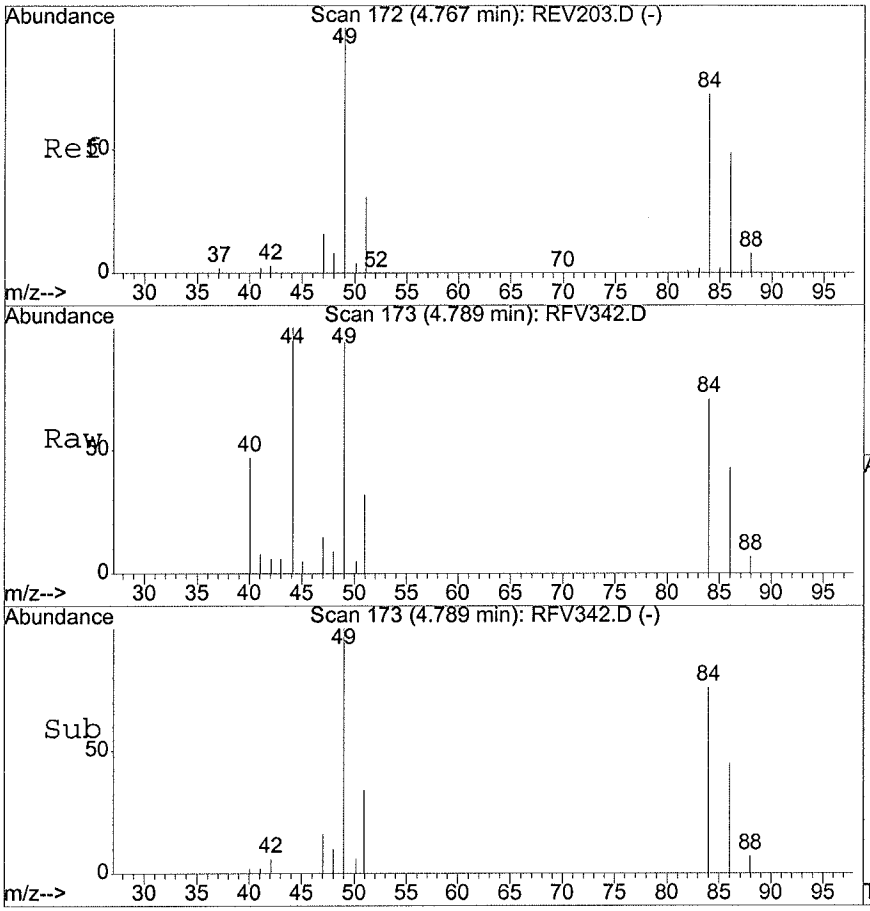
(#) = qualifier out of range (m) = manual integration
RFV342.D VO01E13.M Mon Jun 29 11:09:27 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV342.D Vial: 15
Acq On : 26 Jun 2020 6:15 pm Operator: VLu
Sample : 20F179-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:09 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

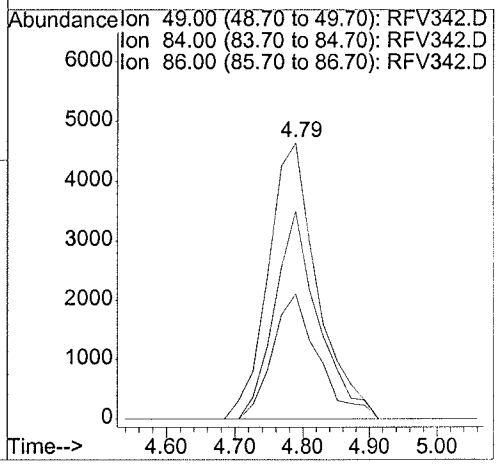




#18
Methylene chloride
Concen: 0.20 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV342.D
Acq: 26 Jun 2020 6:15 pm

Tgt Ion: 49 Resp: 23544

Ion	Ratio	Lower	Upper
49	100		
84	67.4	43.3	103.3
86	42.2	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV342.D Vial: 15
Acq On : 26 Jun 2020 6:15 pm Operator: VLu
Sample : 20F179-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:49 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2865044	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2344390	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	707583	10.00	ug/l	0.00

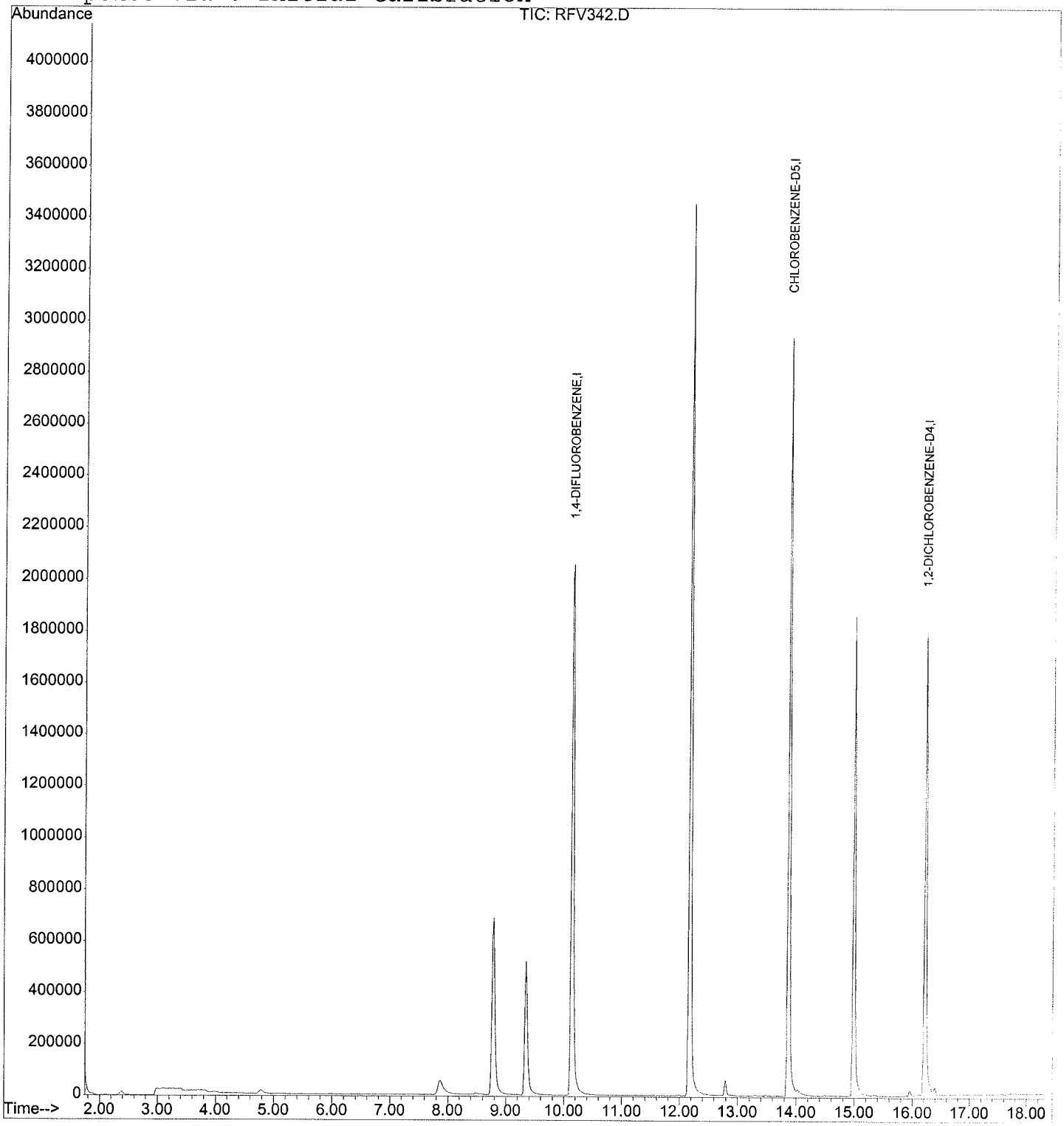
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV342.D VO01E14.M Mon Jun 29 09:49:53 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV342.D Vial: 15
Acq On : 26 Jun 2020 6:15 pm Operator: VLu
Sample : 20F179-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:49 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/18/20
Project	: VA SALT LAKE CITY	Date Received:	06/20/20
Batch No.	: 20F179	Date Extracted:	06/26/20 18:42
Sample ID:	EB34-SB061820	Date Analyzed:	06/26/20 18:42
Lab Samp ID:	F179-04	Dilution Factor:	1
Lab File ID:	RFV343	Matrix	: WATER
Ext Btch ID:	VO01F16	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-130
BROMOFLUOROBENZENE	10.4	10.00	104	70-130
TOLUENE-D8	9.72	10.00	97.2	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV343.D Vial: 16
Acq On : 26 Jun 2020 6:42 pm Operator: VLu
Sample : 20F179-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:09 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

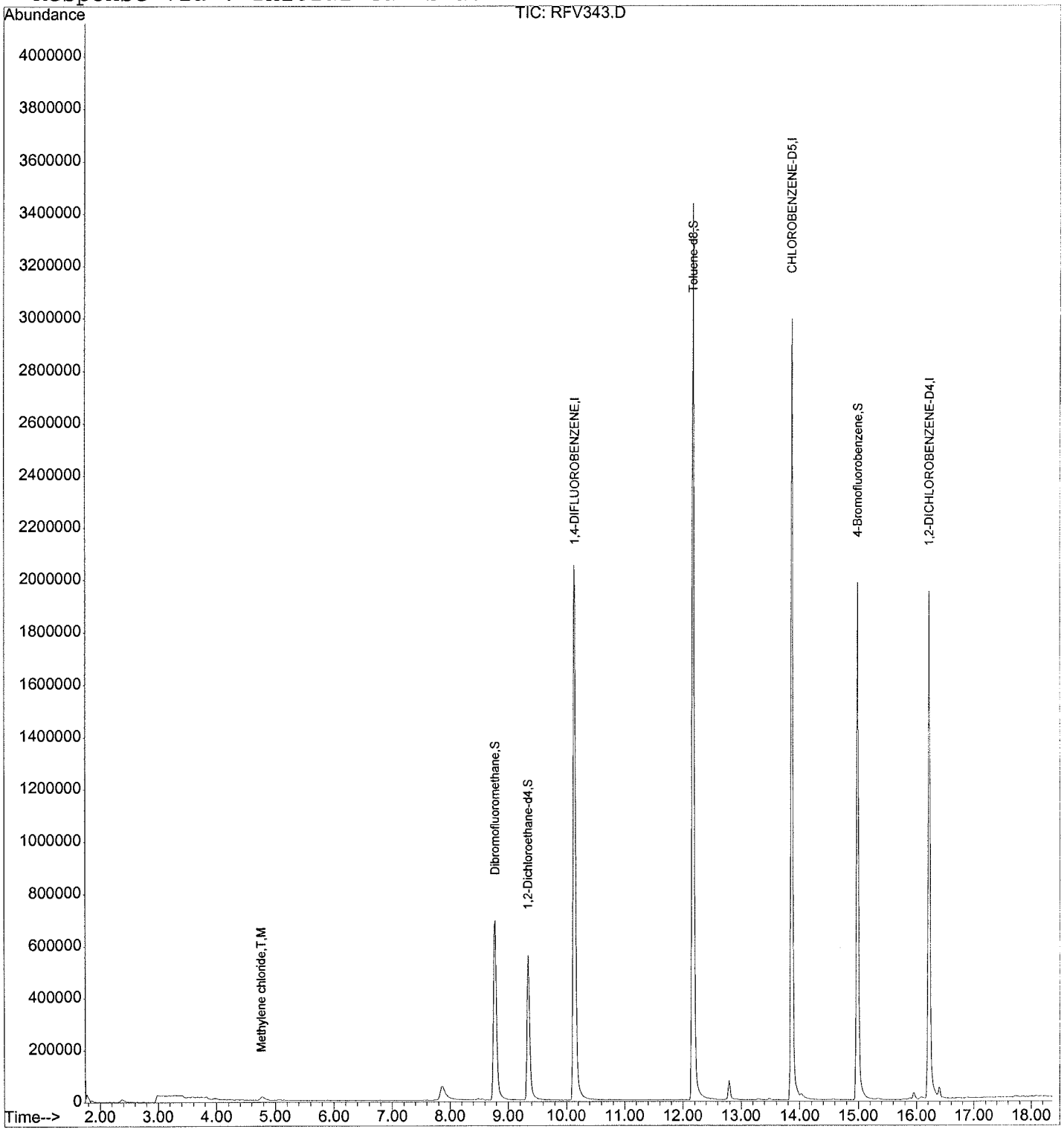
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2841495	10.00	ug/l	0.01
53) CHLOROBENZENE-D5	13.86	117	2371758	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	761275	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	845883	10.58	ug/l	0.01
Spiked Amount 10.000			Recovery =	105.80%		
38) 1,2-Dichloroethane-d4	9.34	65	578113	10.85	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.50%		
54) Toluene-d8	12.17	98	3137784	9.72	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.20%		
74) 4-Bromofluorobenzene	14.98	95	946657	10.40	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.00%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	20817	0.18	ug/l	94

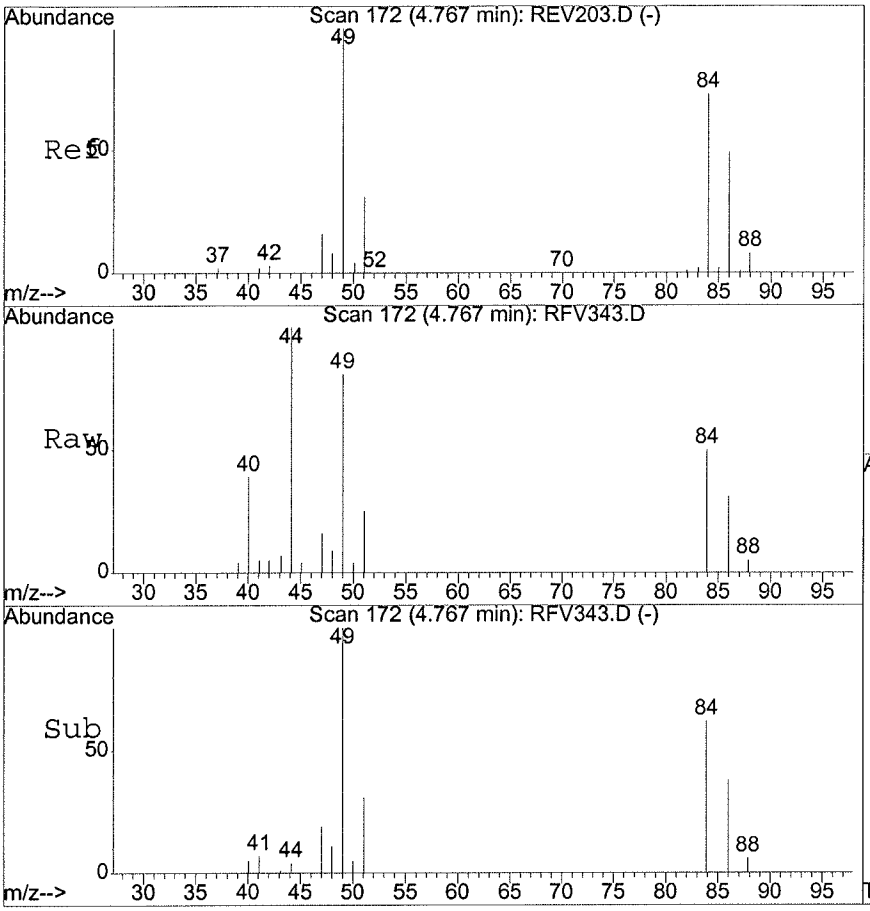
(#) = qualifier out of range (m) = manual integration
RFV343.D VO01E13.M Mon Jun 29 11:09:54 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV343.D Vial: 16
Acq On : 26 Jun 2020 6:42 pm Operator: VLu
Sample : 20F179-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:09 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

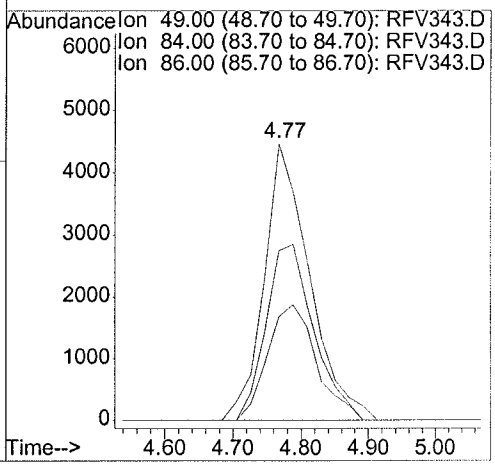




#18
Methylene chloride
Concen: 0.18 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV343.D
Acq: 26 Jun 2020 6:42 pm

Tgt Ion: 49 Resp: 20817

Ion	Ratio	Lower	Upper
49	100		
84	67.0	43.3	103.3
86	45.1	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV343.D Vial: 16
Acq On : 26 Jun 2020 6:42 pm Operator: VLu
Sample : 20F179-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

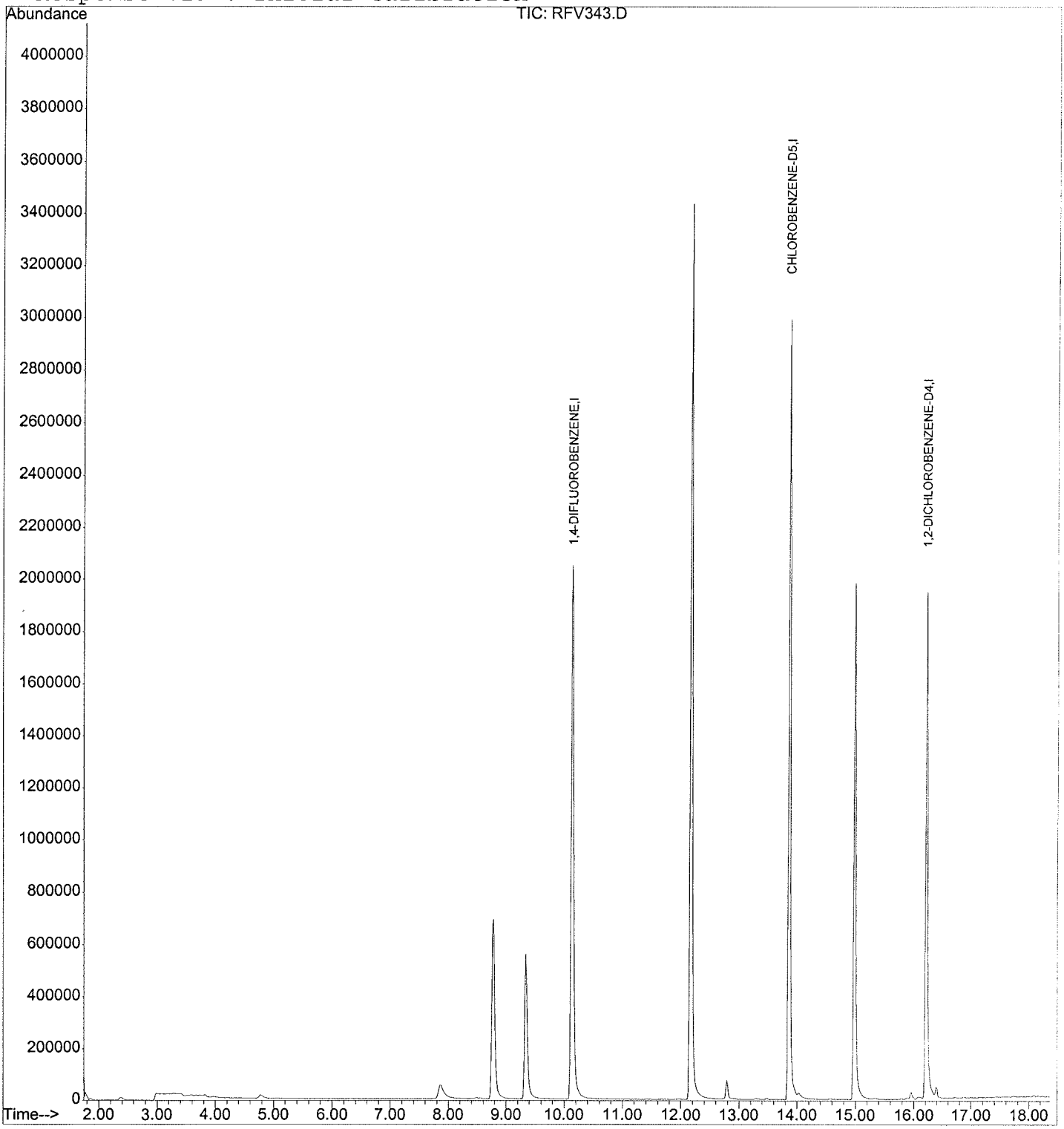
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2811011	10.00	ug/l	0.01
3) CHLOROBENZENE-D5	13.86	117	2368445	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	749990	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV343.D VO01E14.M Mon Jun 29 09:50:00 2020 Page 1

Data File : D:\HPCHEM\1\DATA\20F26\RFV343.D Vial: 16
Acq On : 26 Jun 2020 6:42 pm Operator: VLu
Sample : 20F179-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:38 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/18/20
Project : VA SALT LAKE CITY	Date Received: 06/20/20
Batch No. : 20F179	Date Extracted: 06/26/20 19:09
Sample ID: EB35-GW061820	Date Analyzed: 06/26/20 19:09
Lab Samp ID: F179-05	Dilution Factor: 1
Lab File ID: RFV344	Matrix : WATER
Ext Btch ID: VOO1F16	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.93	10.00	99.3	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VOO1E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV344.D Vial: 17
Acq On : 26 Jun 2020 7:09 pm Operator: VLu
Sample : 20F179-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:10 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

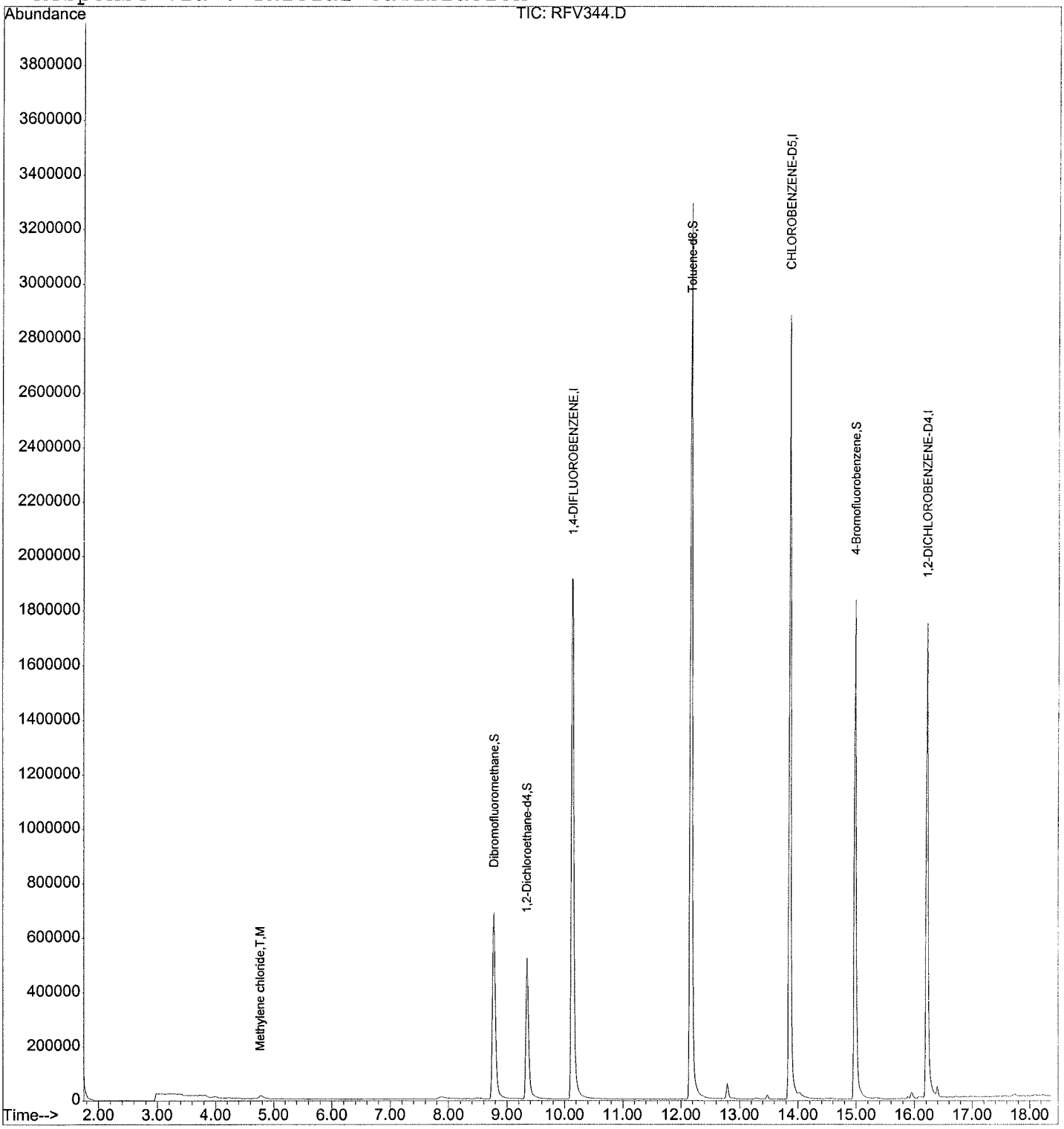
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2733287	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.86	117	2237782	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	691098	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	806326	10.48	ug/l	0.02
Spiked Amount 10.000			Recovery =	104.80%		
38) 1,2-Dichloroethane-d4	9.34	65	545306	10.64	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.40%		
54) Toluene-d8	12.17	98	3026074	9.93	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.30%		
74) 4-Bromofluorobenzene	14.98	95	884046	10.70	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.00%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	18271	0.16	ug/l	96

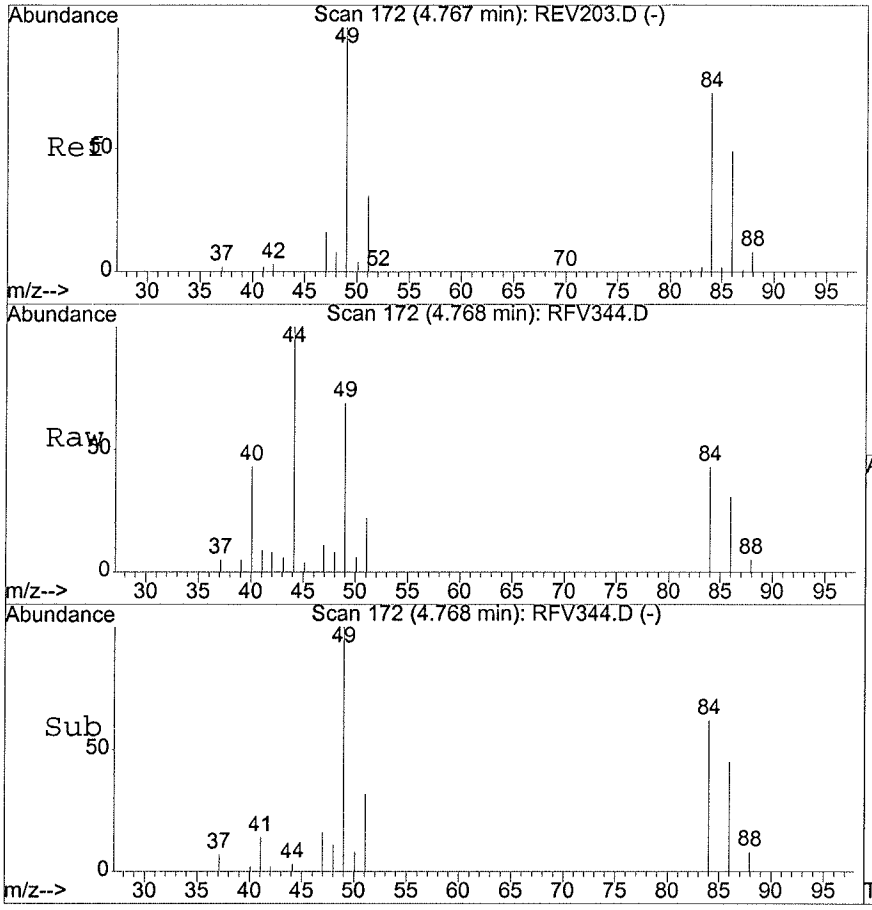
(#) = qualifier out of range (m) = manual integration
RFV344.D VO01E13.M Mon Jun 29 11:10:28 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV344.D Vial: 17
Acq On : 26 Jun 2020 7:09 pm Operator: VLu
Sample : 20F179-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 11:10 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

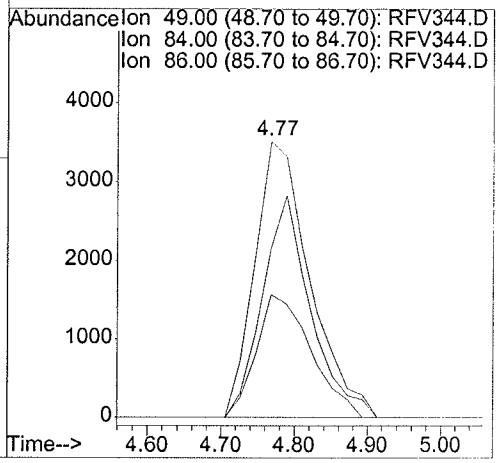




#18
Methylene chloride
Concen: 0.16 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV344.D
Acq: 26 Jun 2020 7:09 pm

Tgt Ion: 49 Resp: 18271

Ion	Ratio	Lower	Upper
49	100		
84	70.3	43.3	103.3
86	44.4	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV344.D Vial: 17
Acq On : 26 Jun 2020 7:09 pm Operator: VLu
Sample : 20F179-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2707865	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2234856	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	681461	10.00	ug/l	0.00

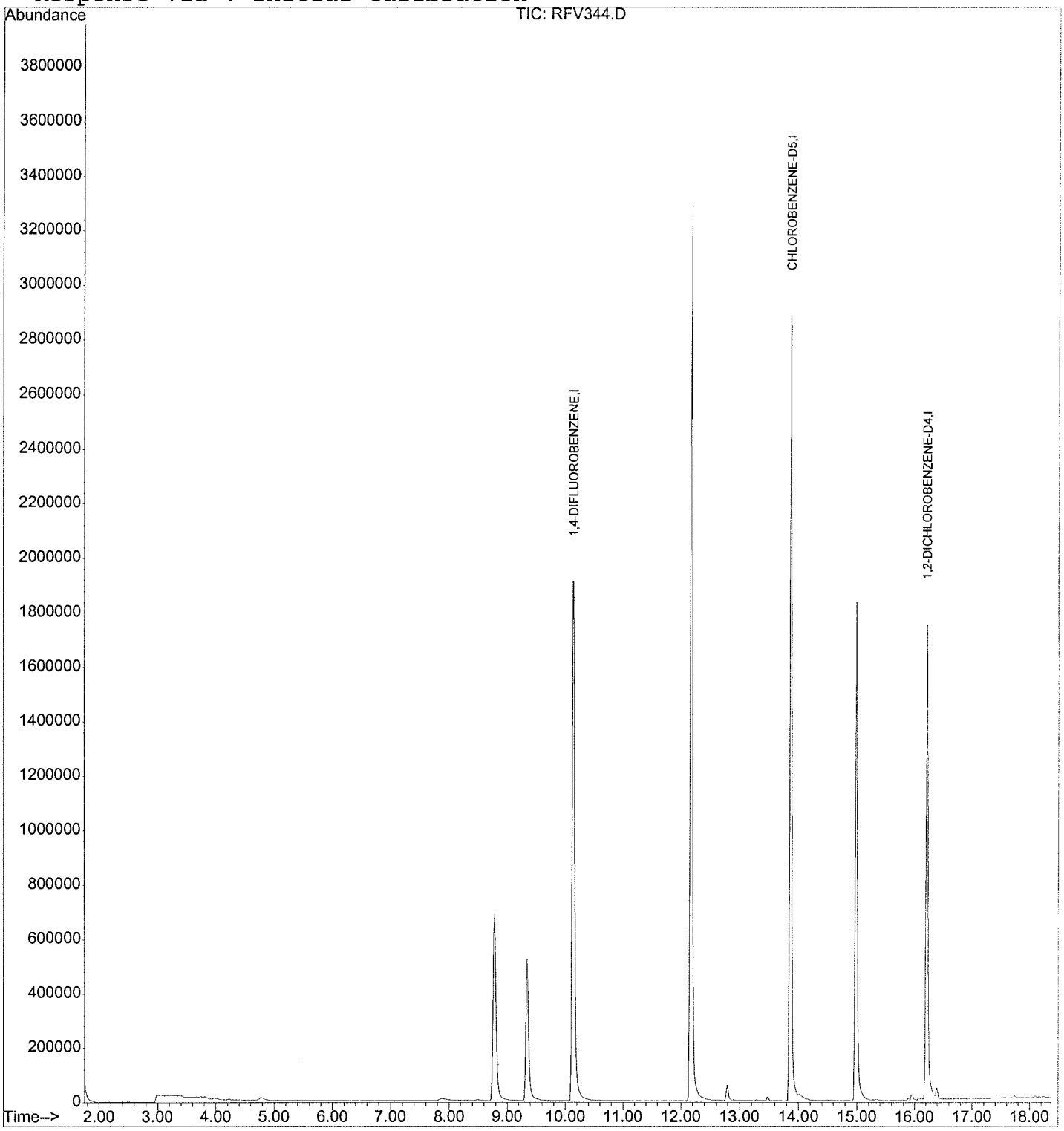
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV344.D VO01E14.M Mon Jun 29 09:50:08 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV344.D Vial: 17
Acq On : 26 Jun 2020 7:09 pm Operator: VLu
Sample : 20F179-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:50 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/26/20
Batch No.	: 20F179	Date Extracted:	06/26/20 14:40
Sample ID:	MBLK1W	Date Analyzed:	06/26/20 14:40
Lab Samp ID:	VO01F16B	Dilution Factor:	1
Lab File ID:	RFV334	Matrix :	WATER
Ext Btch ID:	VO01F16	% Moisture :	NA
Calib. Ref.:	REV203	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.5	10.00	105	70-130
TOLUENE-D8	9.82	10.00	98.2	70-130
DIBROMOFLUOROMETHANE	10.1	10.00	101	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F179
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: V001F16B V001F16L V001F16C
LAB FILE ID: RFV334 RFV331 RFV332
DATE EXTRACTED: 06/26/2014:40 06/26/2013:19 06/26/2013:45 DATE COLLECTED: NA
DATE ANALYZED: 06/26/2014:40 06/26/2013:19 06/26/2013:45 DATE RECEIVED: 06/26/20
PREP. BATCH: V001F16 V001F16 V001F16
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.85	98	10.0	10.1	101	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.9	109	10.0	10.7	107	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.5	105	10.0	10.5	105	0	80-119	20
1,1-Dichloroethane	ND	10.0	10.5	105	10.0	10.4	104	1	77-125	20
1,1-Dichloroethene	ND	10.0	9.17	92	10.0	9.18	92	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	11.1	111	10.0	11.1	111	0	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	10.8	108	10.0	10.7	107	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	11.0	110	10.0	10.8	108	2	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.7	107	10.0	10.3	103	3	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.4	104	10.0	10.5	105	1	80-119	20
1,2-Dichloroethane	ND	10.0	10.9	109	10.0	11.0	110	0	73-128	20
1,2-Dichloropropane	ND	10.0	10.7	107	10.0	10.9	109	2	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.7	107	10.0	10.7	107	0	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.6	106	10.0	10.6	106	0	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.5	105	10.0	10.4	104	0	79-118	20
2-Butanone	ND	50.0	53.6	107	50.0	53.2	106	1	56-143	20
2-Hexanone	ND	50.0	54.5	109	50.0	53.4	107	2	57-139	20
Acetone	ND	50.0	50.6	101	50.0	49.2	98	3	39-160	20
Benzene	ND	10.0	11.1	111	10.0	11.2	112	1	79-120	20
Bromochloromethane	ND	10.0	10.7	107	10.0	10.8	108	1	78-120	20
Bromodichloromethane	ND	10.0	11.3	113	10.0	11.4	114	1	79-125	20
Bromoform	ND	10.0	12.3	123	10.0	12.0	120	3	66-130	20
Bromomethane	ND	10.0	9.93	99	10.0	9.95	100	0	53-141	20
Carbon Disulfide	ND	10.0	10.4	104	10.0	10.0	100	4	64-133	20
Carbon Tetrachloride	ND	10.0	10.4	104	10.0	10.5	105	0	72-136	20
Chlorobenzene	ND	10.0	10.6	106	10.0	10.7	107	2	82-118	20
Chloroethane	ND	10.0	9.97	100	10.0	10.1	101	1	60-138	20
Chloroform	ND	10.0	10.5	105	10.0	10.5	105	1	79-124	20
Chloromethane	ND	10.0	11.2	112	10.0	11.0	110	1	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.2	102	10.0	10.3	103	0	78-123	20
Dibromochloromethane	ND	10.0	11.3	113	10.0	11.0	110	2	74-126	20
Dichlorodifluoromethane	ND	10.0	8.06	81	10.0	7.78	78	4	32-152	20
Ethylbenzene	ND	10.0	9.74	97	10.0	9.88	99	1	79-121	20
Isopropylbenzene	ND	10.0	10.6	106	10.0	10.5	105	1	72-131	20
m,p-Xylene	ND	20.0	19.9	100	20.0	20.1	101	1	80-121	20
4-Methyl-2-Pentanone	ND	50.0	57.0	114	50.0	56.7	113	1	67-130	20
Methylene Chloride	ND	10.0	10.4	104	10.0	10.6	106	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.56	96	10.0	9.58	96	0	71-124	20
o-Xylene	ND	10.0	10.1	101	10.0	10.2	102	1	78-122	20
Styrene	ND	10.0	10.5	105	10.0	10.5	105	0	78-123	20
Tetrachloroethene	ND	10.0	10.2	102	10.0	9.86	99	3	74-129	20
Toluene	ND	10.0	10.2	102	10.0	10.0	100	2	80-121	20
Trans-1,2-DCE	ND	10.0	9.59	96	10.0	9.78	98	2	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.7	117	10.0	11.8	118	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.8	108	10.0	10.8	108	0	73-127	20
TCE	ND	10.0	10.5	105	10.0	10.5	105	0	79-123	20
Trichlorofluoromethane	ND	10.0	12.1	121	10.0	11.5	115	5	65-141	20
Vinyl Chloride	ND	10.0	10.4	104	10.0	9.98	100	4	58-137	20
1,2-Dibromoethane	ND	10.0	10.9	109	10.0	10.7	107	1	77-121	20
Vinyl Acetate	ND	10.0	9.76	98	10.0	9.78	98	0	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.50	95	10.0	9.39	94	1	70-136	20
Methyl Acetate	ND	10.0	11.2	112	10.0	11.0	110	2	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.7	107	70-130
Bromofluorobenzene	10.0	10.4	104	10.0	10.4	104	70-130
Toluene-d8	10.0	9.80	98	10.0	9.84	98	70-130
Dibromofluoromethane	10.0	10.3	103	10.0	10.5	105	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

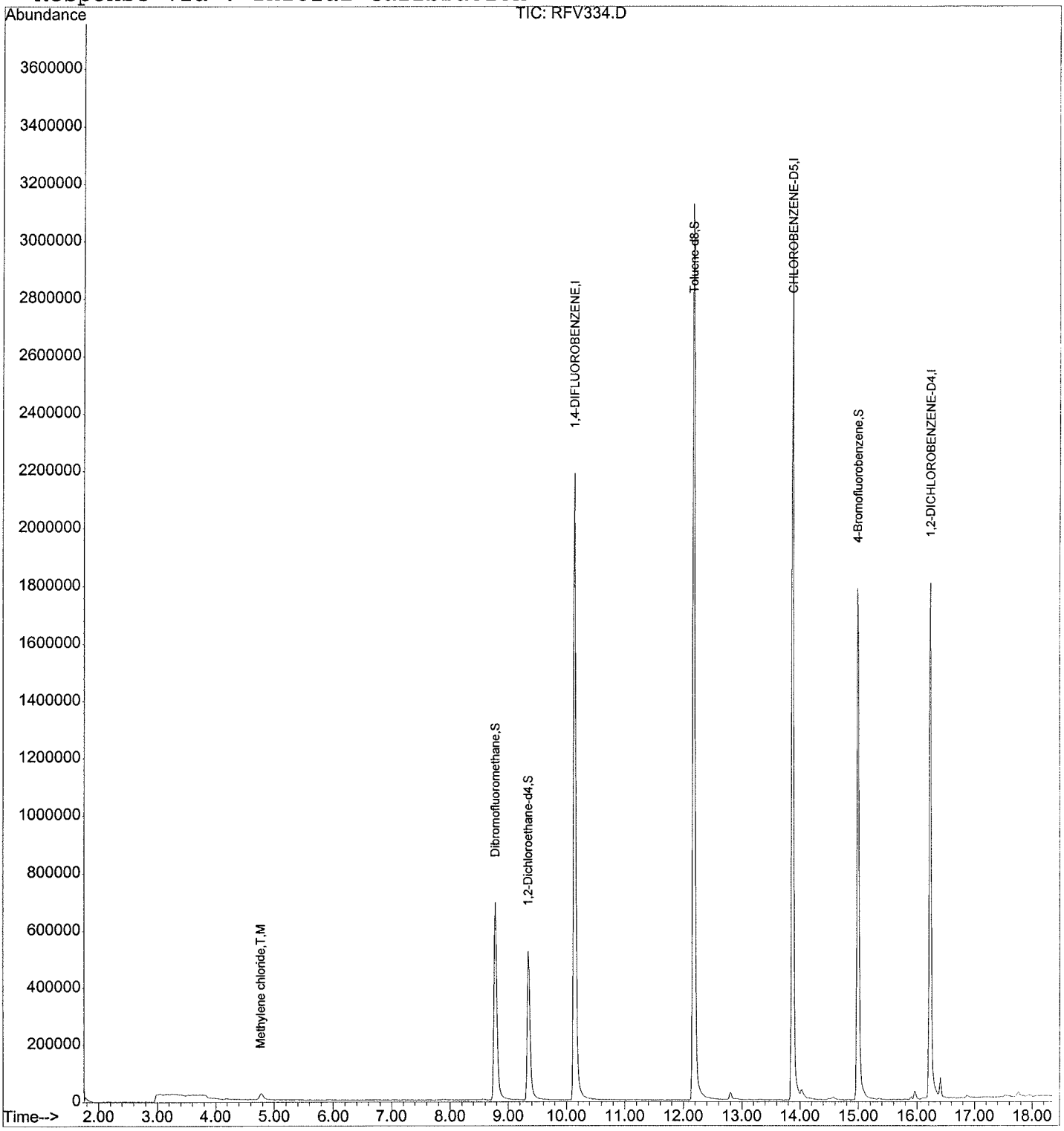
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2909618	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.87	117	2370401	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	753121	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	824004	10.06	ug/l	0.02
Spiked Amount 10.000			Recovery = 100.60%			
38) 1,2-Dichloroethane-d4	9.34	65	556414	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.00%			
54) Toluene-d8	12.17	98	3166940	9.82	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.20%			
74) 4-Bromofluorobenzene	14.98	95	949802	10.55	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.50%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	33113	0.28	ug/l	93

(#) = qualifier out of range (m) = manual integration

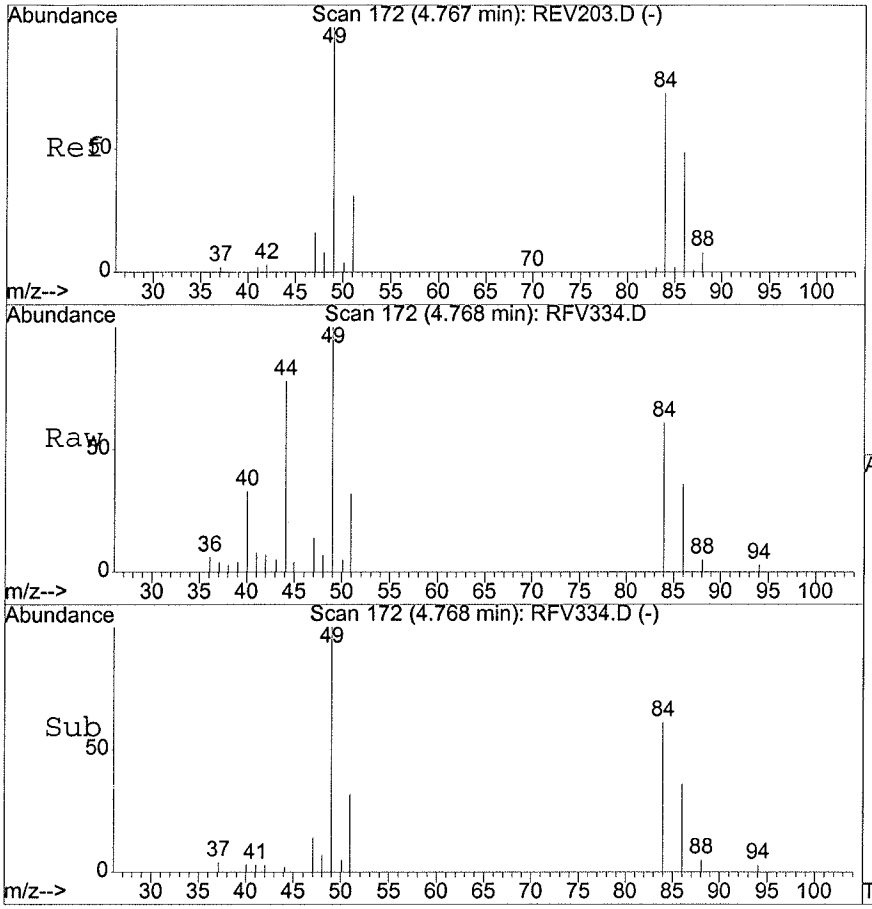
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



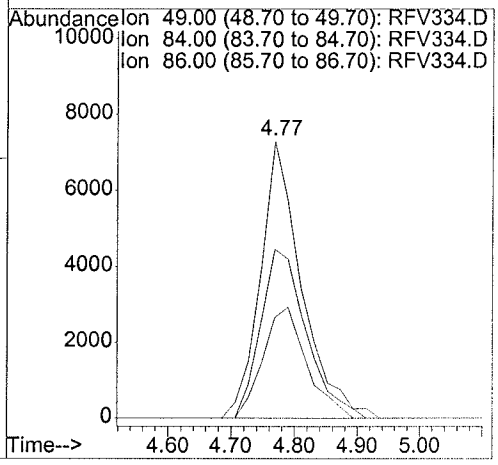
RFV334.D VO01E13.M Mon Jun 29 10:22:35 2020 Page 2



#18
Methylene chloride
Concen: 0.28 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV334.D
Acq: 26 Jun 2020 2:40 pm

Tgt Ion: 49 Resp: 33113

Ion	Ratio	Lower	Upper
49	100		
84	67.6	43.3	103.3
86	42.4	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2909558	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.87	117	2367293	10.00	ug/l	0.02
4) 1,2-DICHLOROBENZENE-D4	16.23	152	753146	10.00	ug/l	0.02

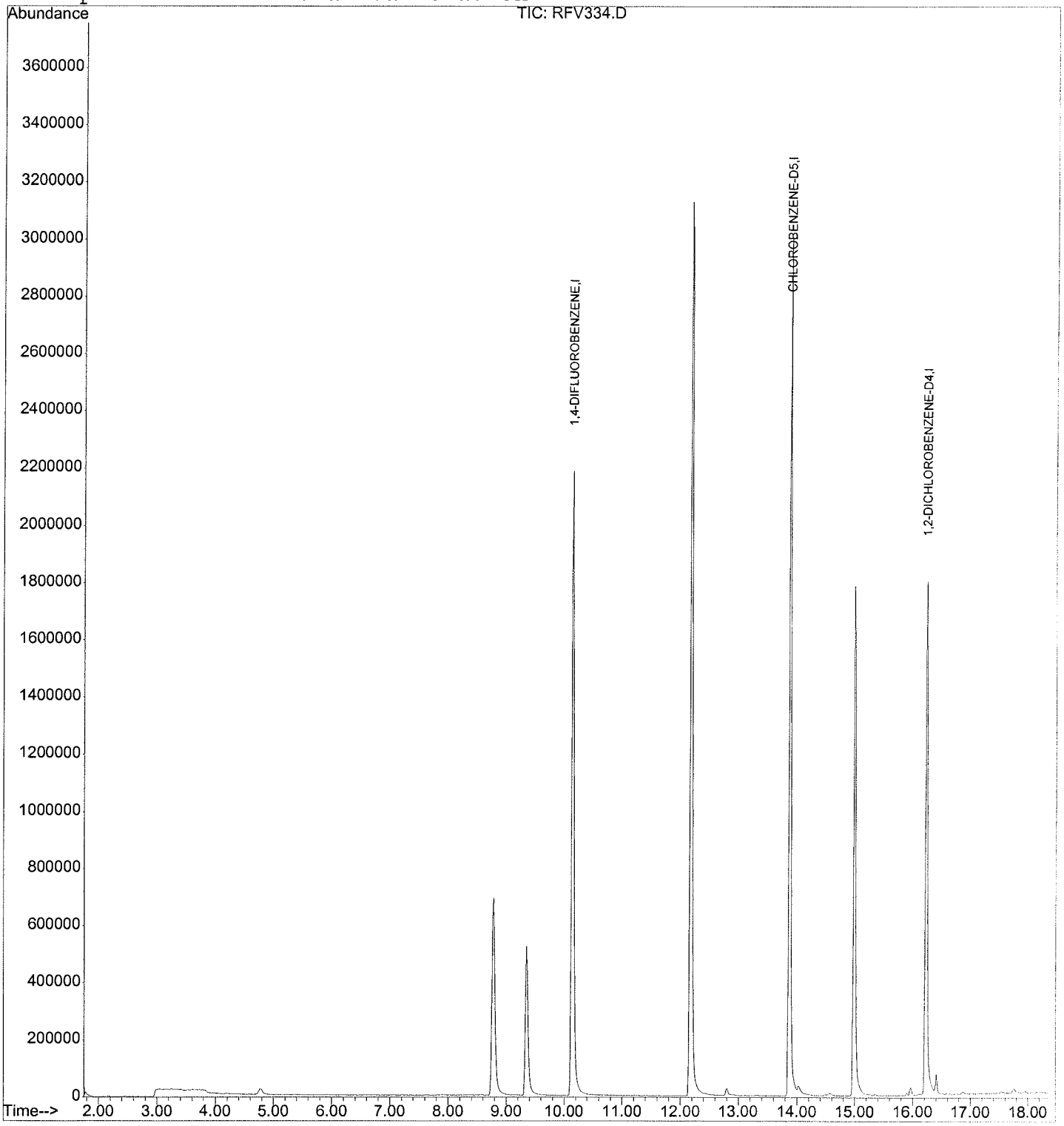
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV334.D VO01E14.M Mon Jun 29 09:47:01 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV334.D Vial: 7
Acq On : 26 Jun 2020 2:40 pm Operator: VLu
Sample : VO01F16B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:46 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2754474	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2296743	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	765264	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	802344	10.35	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.50%			
38) 1,2-Dichloroethane-d4	9.34	65	544991	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.60%			
54) Toluene-d8	12.17	98	3063789	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.00%			
74) 4-Bromofluorobenzene	14.97	95	953797	10.43	ug/l	-0.02
Spiked Amount 10.000			Recovery = 104.30%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	682859	8.06	ug/l	98
4) Chloromethane	2.10	50	1130959	11.17	ug/l	98
5) Vinyl chloride	2.24	62	1030332	10.38	ug/l	98
7) Bromomethane	2.63	94	657051	9.93	ug/l	98
8) Chloroethane	2.76	64	548207	9.97	ug/l	99
9) Dichlorofluoromethane	3.08	67	1504350	11.09	ug/l	99
10) Trichlorofluoromethane	3.14	101	1110718	12.08	ug/l	100
11) Acrolein	3.70	56	242976	50.86	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	548164	9.50	ug/l	98
13) Acetone	3.95	43	473273	50.60	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1233901	9.17	ug/l	98
15) Iodomethane	4.10	142	1523136	10.02	ug/l	98
16) Carbon disulfide	4.20	76	3076512	10.42	ug/l	100
17) Methyl acetate	4.54	43	276637	11.23	ug/l	100
18) Methylene chloride	4.77	49	1176768	10.38	ug/l	98
19) tert-Butyl alcohol	5.10	59	644803	251.36	ug/l	99
20) Acrylonitrile	5.23	53	589218	51.42	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1133887	9.56	ug/l	96
22) trans-1,2-Dichloroethene	5.33	61	1276102	9.59	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1694636	10.51	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2824741	10.06	ug/l	100
27) tert-Butyl ethyl ether (ET	7.45	59	1868329	9.21	ug/l	99
28) 2-Butanone	7.75	43	800134	53.58	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	954602	10.22	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1066883	10.46	ug/l	99
31) Tetrahydrofurane	8.27	42	82750	8.65	ug/l	87
32) Bromochloromethane	8.20	49	714568	10.73	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.47	83	1394911	10.47	ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1046983	9.85	ug/l	99
36)	Cyclohexane	8.84	84	1941724	12.83	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1580236	10.10	ug/l	100
39)	1,1-Dichloropropene	9.03	110	456637	10.12	ug/l	100
40)	Carbon tetrachloride	9.00	119	931104	10.44	ug/l	98
41)	Benzene	9.34	78	3639294	11.05	ug/l	99
42)	1,2-Dichloroethane	9.46	62	676126	10.93	ug/l	100
44)	Trichloroethene	10.45	130	1058883	10.51	ug/l	99
45)	Methylcyclohexane	10.79	83	2384911	14.04	ug/l	100
46)	1,2-Dichloropropane	10.82	63	954737	10.74	ug/l	99
47)	1,4-Dioxane	10.97	88	58600	193.30	ug/l	100
48)	Dibromomethane	10.94	93	358887	10.65	ug/l	98
49)	Bromodichloromethane	11.22	83	980494	11.33	ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	235539	8.57	ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1297240	11.66	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2208735	57.04	ug/l	100
55)	Toluene	12.26	91	3672728	10.21	ug/l	100
56)	Ethyl methacrylate	12.67	69	676097	10.55	ug/l	99
57)	trans-1,3-Dichloropropene	12.58	75	917608	10.82	ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	506843	10.53	ug/l	99
59)	Tetrachloroethene	12.91	164	800739	10.18	ug/l	99
60)	1,3-Dichloropropane	13.00	76	979585	10.62	ug/l	100
61)	2-Hexanone	13.07	43	1416298	54.55	ug/l	100
62)	Dibromochloromethane	13.25	129	673806	11.26	ug/l	99
63)	1,2-Dibromoethane	13.37	107	524105	10.85	ug/l	98
64)	1-Chlorohexane	13.87	91	1585794	9.74	ug/l	99
65)	Chlorobenzene	13.89	112	2384073	10.56	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	777176	10.75	ug/l	100
67)	Ethylbenzene	13.99	91	4149242	9.74	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6035701	19.92	ug/l	98
69)	o-Xylene	14.48	91	2938658	10.11	ug/l	98
70)	Styrene	14.49	104	2515803	10.50	ug/l	100
72)	Bromoform	14.69	173	317724	12.33	ug/l	99
73)	Isopropylbenzene	14.80	105	4242211	10.61	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	605705	10.92	ug/l	98
76)	Bromobenzene	15.10	156	856676	10.95	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	121404	10.95	ug/l	97
78)	1,2,3-Trichloropropane	15.13	110	151543	11.28	ug/l	100
79)	n-Propylbenzene	15.17	91	4902227	10.60	ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3027553	10.73	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

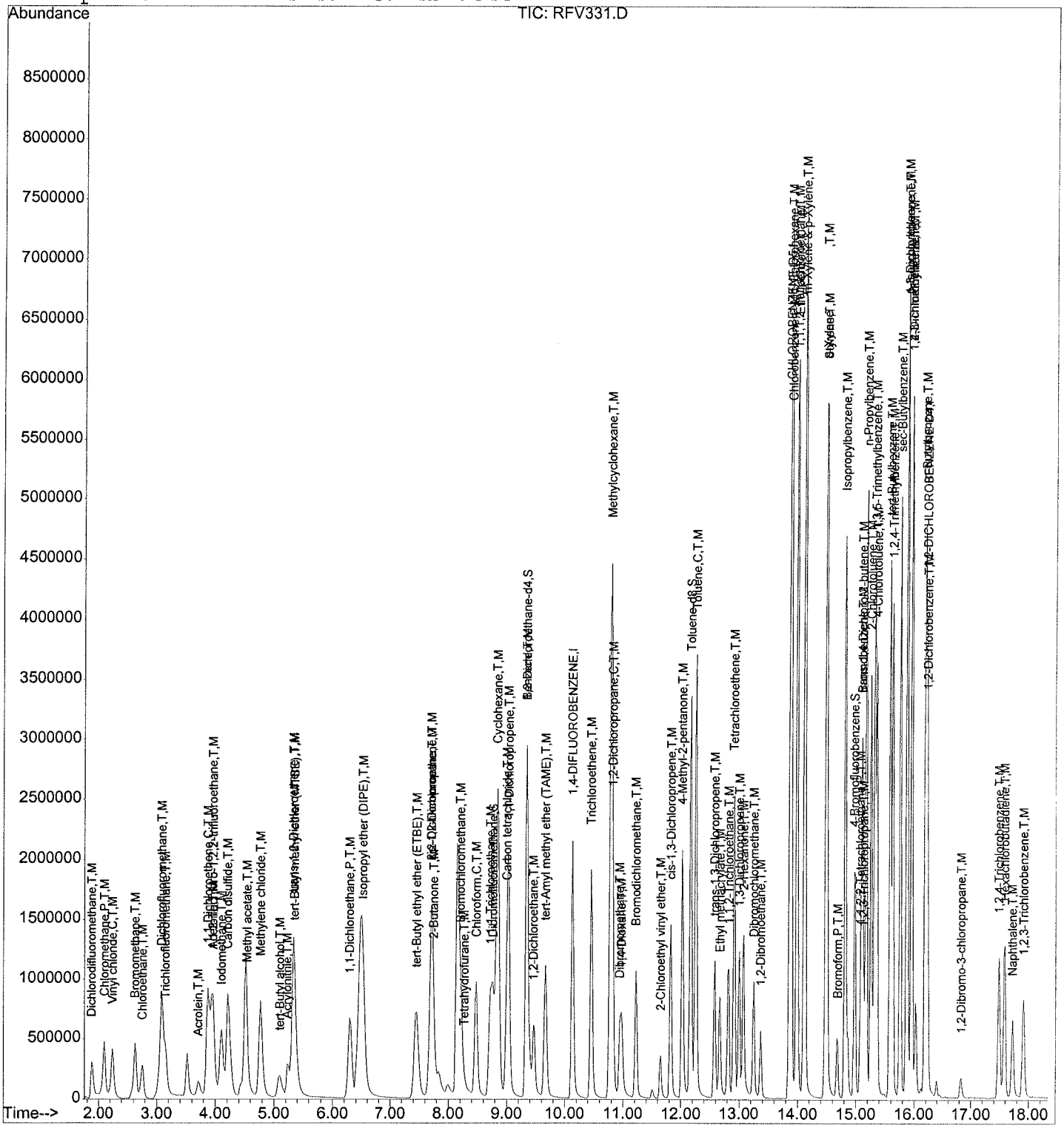
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2405690	10.84	ug/l	100
82)	4-Chlorotoluene	15.35	91	2813480	10.71	ug/l	100
83)	tert-Butylbenzene	15.57	134	794968	10.43	ug/l	72
84)	1,2,4-Trimethylbenzene	15.62	105	2989379	10.96	ug/l	98
85)	sec-Butylbenzene	15.75	105	4528844	10.78	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3378240	10.55	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1549492	10.63	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1483887	10.47	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2493945	9.96	ug/l	99
90)	n-Butylbenzene	16.18	91	2972973	10.23	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1243728	10.41	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	69701	10.67	ug/l	96
93)	1,2,4-Trichlorobenzene	17.48	180	636570	10.84	ug/l	99
94)	Hexachlorobutadiene	17.59	225	447451	9.98	ug/l	100
95)	Naphthalene	17.72	128	873159	11.23	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	487661	11.09	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

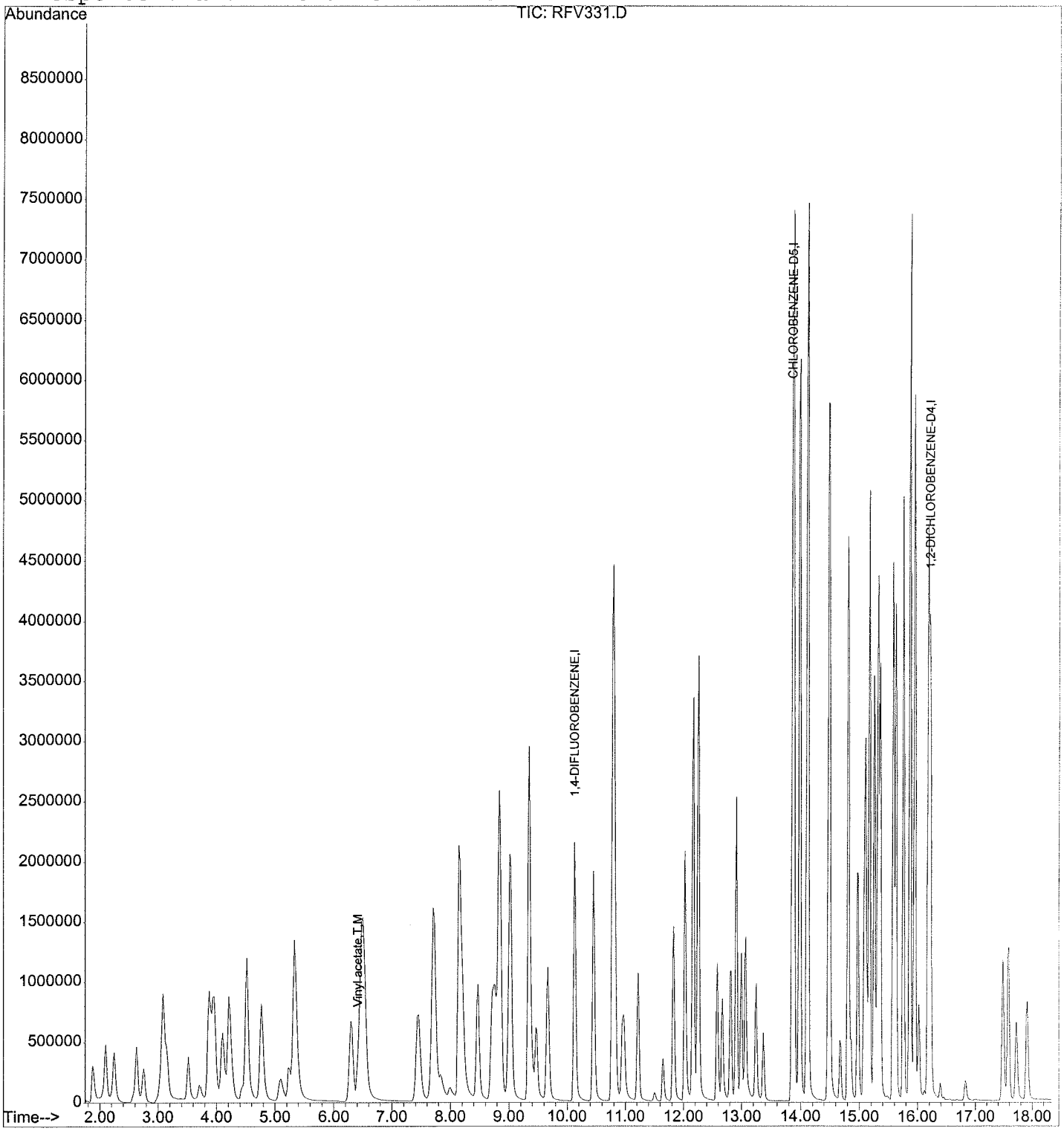
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2754421	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2286492	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	765289	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	883890	9.76	ug/l	94

(#) = qualifier out of range (m) = manual integration
RFV331.D VO01E14.M Mon Jun 29 09:46:29 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV331.D Vial: 4
Acq On : 26 Jun 2020 1:19 pm Operator: VLu
Sample : VO01F16L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2682669	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2269858	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	763929	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	794381	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.20%			
38) 1,2-Dichloroethane-d4	9.32	65	539389	10.73	ug/l	-0.01
Spiked Amount 10.000			Recovery = 107.30%			
54) Toluene-d8	12.17	98	3040191	9.84	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.40%			
74) 4-Bromofluorobenzene	14.97	95	954368	10.45	ug/l	-0.01
Spiked Amount 10.000			Recovery = 104.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	641827	7.78	ug/l	98
4) Chloromethane	2.10	50	1087010	11.02	ug/l	98
5) Vinyl chloride	2.24	62	964515	9.98	ug/l	98
7) Bromomethane	2.63	94	641265	9.95	ug/l	100
8) Chloroethane	2.76	64	540123	10.09	ug/l	99
9) Dichlorofluoromethane	3.08	67	1438440	10.88	ug/l	99
10) Trichlorofluoromethane	3.14	101	1032142	11.52	ug/l	100
11) Acrolein	3.71	56	238778	51.32	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	527610	9.39	ug/l	98
13) Acetone	3.96	43	447909	49.17	ug/l	100
14) 1,1-Dichloroethene	3.87	61	1202542	9.18	ug/l	99
15) Iodomethane	4.10	142	1494519	10.09	ug/l	98
16) Carbon disulfide	4.21	76	2878960	10.01	ug/l	100
17) Methyl acetate	4.54	43	263911	11.00	ug/l	100
18) Methylene chloride	4.77	49	1165628	10.56	ug/l	99
19) tert-Butyl alcohol	5.10	59	611797	244.87	ug/l	99
20) Acrylonitrile	5.23	53	580713	52.03	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1106812	9.58	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1267092	9.78	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1638779	10.43	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	2792125	10.21	ug/l	99
27) tert-Butyl ethyl ether (ET	7.45	59	1830798	9.27	ug/l	99
28) 2-Butanone	7.75	43	773680	53.19	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	933977	10.27	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1029872	10.37	ug/l	99
31) Tetrahydrofurane	8.27	42	81305	8.72	ug/l	86
32) Bromochloromethane	8.20	49	700307	10.80	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.47	83	1368129	10.55 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1041857	10.06 ug/l	99
36)	Cyclohexane	8.84	84	1909924	12.96 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1531610	10.05 ug/l	100
39)	1,1-Dichloropropene	9.03	110	443585	10.10 ug/l	99
40)	Carbon tetrachloride	9.00	119	908041	10.46 ug/l	99
41)	Benzene	9.34	78	3592946	11.20 ug/l	100
42)	1,2-Dichloroethane	9.46	62	661739	10.99 ug/l	99
44)	Trichloroethene	10.45	130	1032262	10.52 ug/l	99
45)	Methylcyclohexane	10.79	83	2400063	14.51 ug/l	99
46)	1,2-Dichloropropane	10.82	63	947272	10.94 ug/l	100
47)	1,4-Dioxane	10.97	88	58517	198.20 ug/l	98
48)	Dibromomethane	10.94	93	355975	10.84 ug/l	98
49)	Bromodichloromethane	11.22	83	960269	11.40 ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	237201	8.86 ug/l	98
51)	cis-1,3-Dichloropropene	11.83	75	1276842	11.79 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2136838	56.66 ug/l	100
55)	Toluene	12.26	91	3570526	10.04 ug/l	100
56)	Ethyl methacrylate	12.67	69	659133	10.40 ug/l	99
57)	trans-1,3-Dichloropropene	12.58	75	904204	10.78 ug/l	98
58)	1,1,2-Trichloroethane	12.82	97	500354	10.52 ug/l	98
59)	Tetrachloroethene	12.91	164	766787	9.86 ug/l	98
60)	1,3-Dichloropropane	13.00	76	968477	10.63 ug/l	100
61)	2-Hexanone	13.07	43	1369605	53.37 ug/l	99
62)	Dibromochloromethane	13.25	129	652905	11.04 ug/l	99
63)	1,2-Dibromoethane	13.37	107	511185	10.71 ug/l	98
64)	1-Chlorohexane	13.87	91	1561582	9.70 ug/l	98
65)	Chlorobenzene	13.89	112	2396584	10.74 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	766681	10.73 ug/l	99
67)	Ethylbenzene	13.99	91	4157360	9.88 ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6032847	20.14 ug/l	98
69)	o-Xylene	14.48	91	2931988	10.21 ug/l	99
70)	Styrene	14.49	104	2491623	10.53 ug/l	100
72)	Bromoform	14.69	173	308565	11.99 ug/l	99
73)	Isopropylbenzene	14.80	105	4190739	10.50 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	593862	10.73 ug/l	100
76)	Bromobenzene	15.10	156	844043	10.81 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	119963	10.84 ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	144565	10.78 ug/l	98
79)	n-Propylbenzene	15.17	91	4757166	10.30 ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	3024257	10.74 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

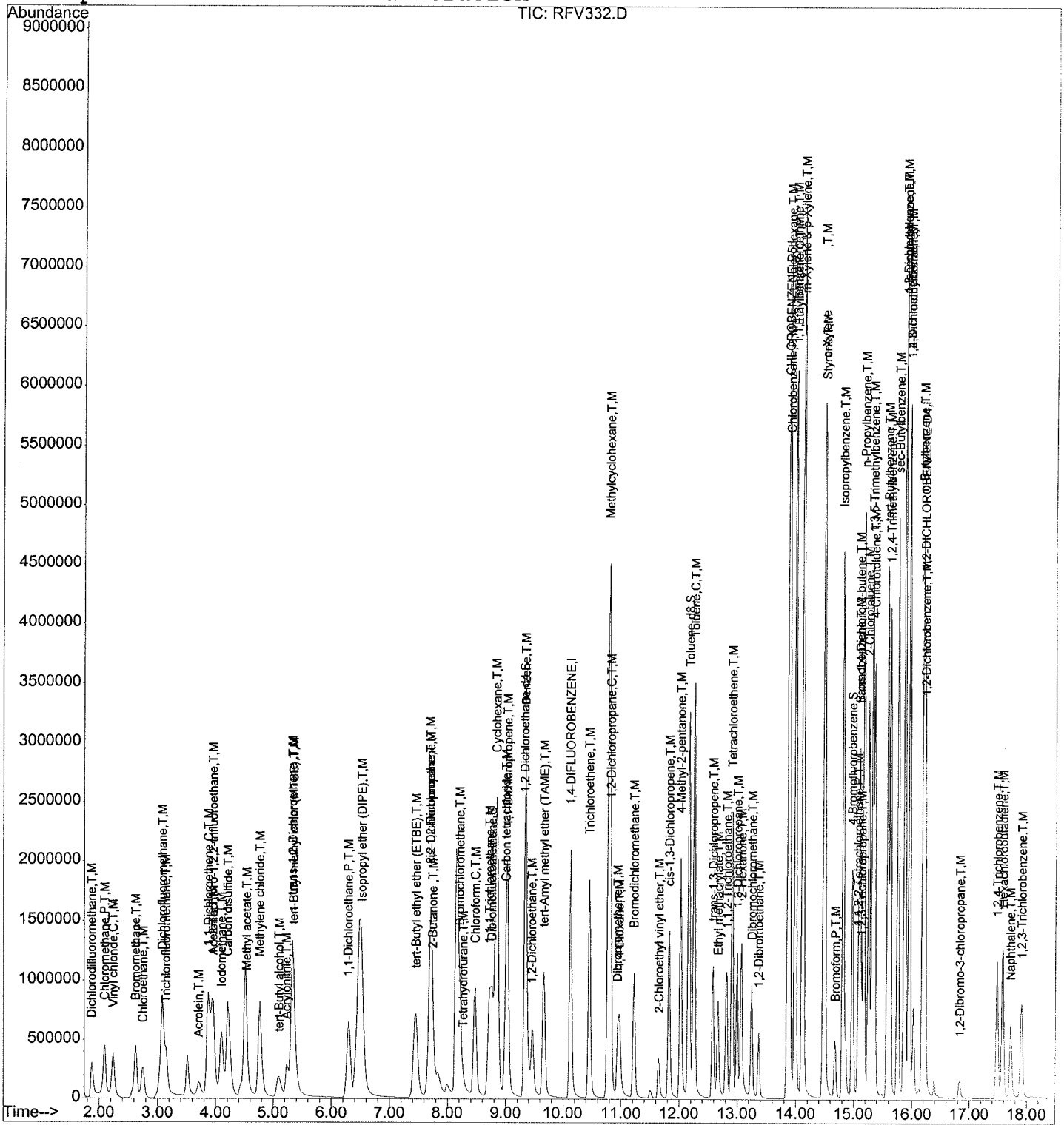
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2340157	10.56	ug/l	100
82)	4-Chlorotoluene	15.35	91	2815239	10.73	ug/l	100
83)	tert-Butylbenzene	15.57	134	808249	10.63	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	2932338	10.77	ug/l	99
85)	sec-Butylbenzene	15.75	105	4469701	10.66	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3305658	10.34	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1548961	10.65	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1474356	10.43	ug/l	98
89)	1,2,3-Trimethylbenzene	15.94	105	2443130	9.77	ug/l	98
90)	n-Butylbenzene	16.18	91	3020428	10.41	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1254793	10.52	ug/l	98
92)	1,2-Dibromo-3-chloropropan	16.83	157	67233	10.31	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	627516	10.70	ug/l	98
94)	Hexachlorobutadiene	17.59	225	453634	10.14	ug/l	98
95)	Naphthalene	17.72	128	845448	10.90	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	487716	11.11	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

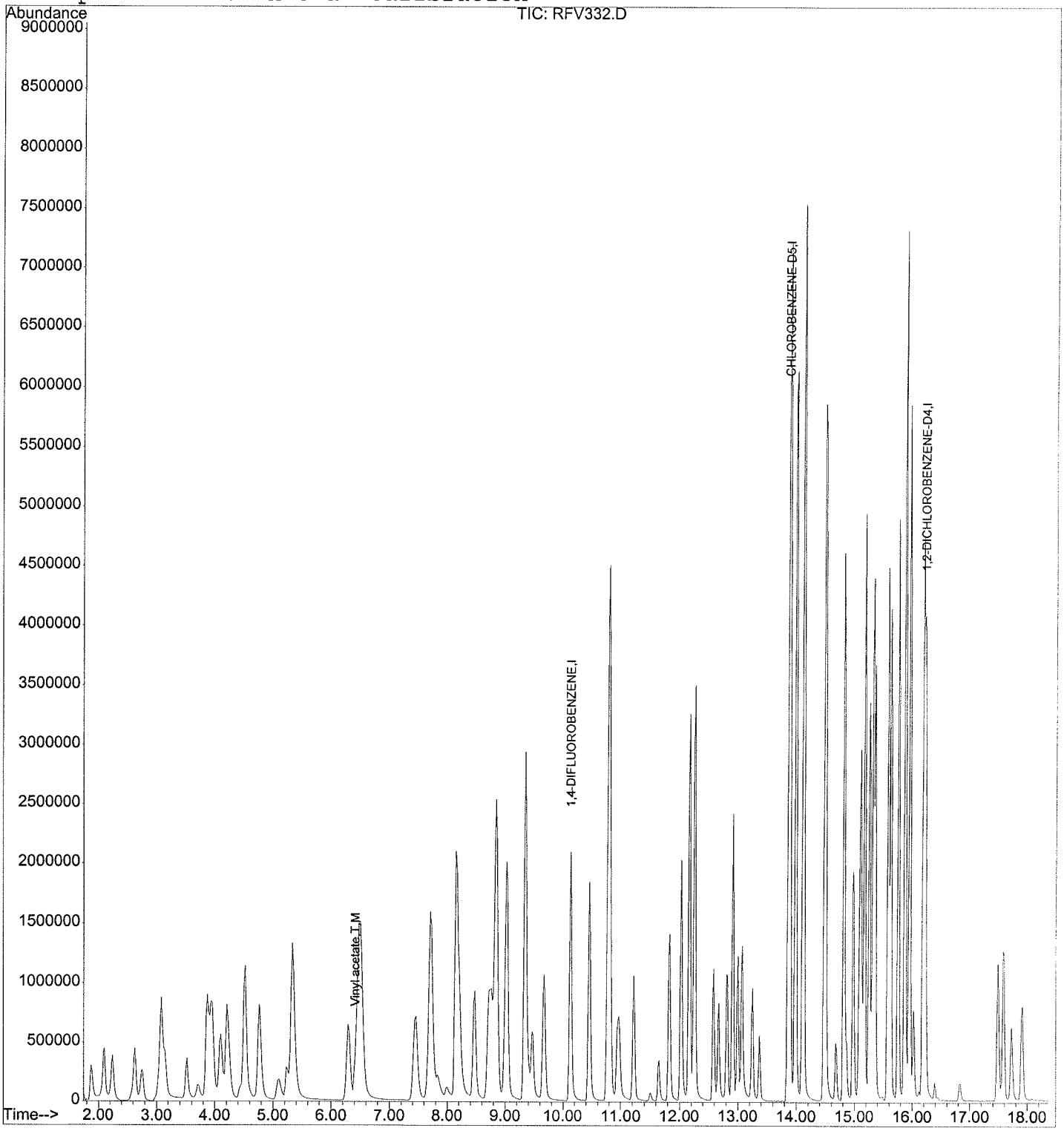
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2682617	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2257533	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	763906	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	863270	9.78	ug/l	94

(#) = qualifier out of range (m) = manual integration
RFV332.D VO01E14.M Mon Jun 29 09:46:39 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV332.D Vial: 5
Acq On : 26 Jun 2020 1:45 pm Operator: VLu
Sample : VO01F16C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 15:03 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV197 BFB Injection Date : 05/13/20
Instrument ID: 01 BFB Injection Time : 13:15
GC Column:RX-624SLIMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.92
75	30.0 - 60.0% of mass 95	44.02
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.87
173	Less than 2.0% of mass 174	0.26(0.3)1
174	Greater than 50% of mass 95	74.01
175	5.0 - 9.0% of mass 174	5.02(6.8)1
176	95.0 - 101.0% of mass 174	72.36(97.8)1
177	5.0 - 9.0% of mass 176	4.84(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VO01E131	REV198	05/13/20	14:04
2	VSTD0.5	VO01E132	REV199	05/13/20	14:30
3	VSTD01	VO01E133	REV200	05/13/20	14:57
4	VSTD02	VO01E134	REV201	05/13/20	15:24
5	VSTD05	VO01E135	REV202	05/13/20	15:52
6	VSTD010	VO01E136	REV203	05/13/20	16:20
7	VSTD020	VO01E137	REV204	05/13/20	16:47
8	VSTD030	VO01E138	REV205	05/13/20	17:14
9	VSTD050	VO01E139	REV206	05/13/20	17:40
10	VSTD100	VO01E1310	REV207	05/13/20	18:06
11	VSTD010	IVO01E1301	REV210	05/13/20	19:32

SA 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :VO01E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	0.279	0.287	0.314	0.330	0.310	0.314	0.312	0.312	0.311	0.308	5.00	1.8755
	4	Chloromethane	0.329	0.363	0.370	0.359	0.386	0.373	0.365	0.367	0.374	0.388	0.368	4.47	2.1028
	5	Vinyl chloride	------	0.315	0.341	0.342	0.391	0.378	0.365	0.371	0.361	0.380	0.360	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	0.229	0.234	0.243	0.274	0.260	0.234	0.207	------	------	0.240	9.04	2.6334
	8	Chloroethane	0.191	0.210	0.199	0.211	0.221	0.211	0.195	0.186	0.172	------	0.200	7.77	2.7503
	9	Dichlorofluoromethane	0.549	0.506	0.521	0.506	0.511	0.491	0.479	0.468	0.467	0.429	0.493	6.83	3.0785
	10	Trichlorofluoromethane	------	0.297	0.322	0.326	0.351	0.350	0.344	0.340	0.342	0.331	0.334	5.09	3.1384
5	11	Acrolein	------	------	0.019	0.015	0.018	0.018	0.018	0.017	0.017	0.018	0.017	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.213	0.210	0.209	0.210	0.215	0.210	0.210	0.214	0.204	0.199	0.209	2.31	3.9533
5	13	Acetone	------	------	0.037	0.033	0.033	0.034	0.035	0.034	0.031	0.034	0.034	5.07	3.9396
	14	1,1-Dichloroethene	0.482	0.485	0.490	0.502	0.510	0.496	0.491	0.498	0.471	0.460	0.488	3.02	3.8575
	15	Iodomethane	0.537	0.547	0.546	0.565	0.571	0.559	0.553	0.558	0.545	0.541	0.552	2.01	4.0970
	16	Carbon disulfide	------	0.957	1.012	1.034	1.129	1.105	1.101	1.104	1.099	1.109	1.072	5.38	4.2052
	17	Methyl acetate	------	------	------	0.075	0.080	0.094	0.094	0.089	0.090	0.104	0.089	10.51	4.5295
	18	Methylene chloride	------	------	0.465	0.432	0.415	0.406	0.403	0.399	0.385	0.389	0.412	6.33	4.7623
25	19	tert-Butyl alcohol	0.010	0.009	0.008	0.008	0.009	0.010	0.010	0.010	0.010	------	0.009	7.49	5.0916
5	20	Acrylonitrile	------	------	------	0.033	0.037	0.042	0.044	0.044	0.043	0.048	0.042	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	0.461	0.421	0.427	0.407	0.425	0.446	0.438	0.424	0.411	0.447	0.431	3.93	5.3508
	22	trans-1,2-Dichloroethene	0.488	0.469	0.478	0.490	0.503	0.491	0.481	0.487	0.477	0.464	0.483	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	0.568	0.567	0.588	0.590	0.608	0.594	0.586	0.594	0.575	0.583	0.586	2.19	6.2859
	25	Isopropyl ether (DIPE)	1.016	0.993	1.010	1.016	1.020	1.042	1.058	1.036	0.990	1.015	1.020	2.05	6.5067
25	26	2-Butanol	------	------	0.006	0.007	0.009	0.011	0.011	0.011	0.011	------	0.010	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	0.869	0.787	0.719	0.722	0.721	0.719	0.693	0.675	0.718	0.736	7.93	7.4358
5	28	2-Butanone	------	------	------	0.042	0.049	0.057	0.058	0.057	0.056	0.061	0.054	11.88	7.7369
	29	cis-1,2-Dichloroethene	0.333	0.329	0.341	0.343	0.352	0.340	0.341	0.351	0.332	0.329	0.339	2.44	7.7105
	30	2,2-Dichloropropane	0.371	0.382	0.372	0.376	0.385	0.369	0.367	0.376	0.358	0.345	0.370	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	0.025	0.034	0.038	0.038	0.036	0.034	0.039	0.035	13.54	8.2605
	32	Bromochloromethane	0.246	0.234	0.245	0.244	0.251	0.247	0.243	0.242	0.233	0.233	0.242	2.67	8.1958
	33	Chloroform	0.495	0.496	0.476	0.477	0.491	0.486	0.483	0.488	0.468	0.475	0.484	1.90	8.4582
	34	Dibromofluoromethane	------	0.239	0.265	0.267	0.291	0.314	0.295	0.290	0.283	0.288	0.281	7.67	8.7575
	35	1,1,1-Trichloroethane	0.337	0.364	0.369	0.380	0.386	0.381	0.410	0.413	0.406	0.416	0.386	6.62	8.7151
	36	Cyclohexane	0.487	0.574	0.554	0.553	0.585	0.543	0.557	0.560	0.535	0.547	0.549	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	0.575	0.562	0.571	0.562	0.585	0.583	0.578	0.565	0.536	0.566	0.568	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	0.158	0.177	0.179	0.193	0.207	0.202	0.194	0.184	0.192	0.187	7.96	9.3301
	39	1,1-Dichloropropene	0.142	0.157	0.167	0.170	0.174	0.170	0.169	0.169	0.162	0.157	0.164	5.84	9.0216
	40	Carbon tetrachloride	0.296	0.302	0.312	0.328	0.340	0.334	0.334	0.338	0.330	0.323	0.324	4.73	8.9979
	41	Benzene	1.203	1.193	1.182	1.221	1.240	1.181	1.211	1.190	1.140	------	1.196	2.37	9.3400
	42	1,2-Dichloroethane	0.208	0.218	0.226	0.226	0.228	0.231	0.233	0.229	0.219	0.227	0.225	3.25	9.4644
	43	2,2,4-Trimethylpentane	1.263	1.570	1.553	1.636	1.804	1.733	1.659	1.708	1.608	------	1.615	9.56	9.6131
	44	Trichloroethene	0.343	0.354	0.364	0.373	0.385	0.373	0.375	0.369	0.367	0.354	0.366	3.40	10.4521
	45	Methylcyclohexane	0.466	0.592	0.624	0.636	0.675	0.652	0.653	0.639	0.626	0.604	0.617	9.40	10.7779
	46	1,2-Dichloropropane	0.325	0.310	0.323	0.337	0.337	0.335	0.333	0.320	0.308	0.299	0.323	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	8.66	10.9626
	48	Dibromomethane	0.112	0.112	0.121	0.119	0.128	0.129	0.127	0.126	0.122	0.127	0.122	5.25	10.9408

SA
5/18/20

49	Bromodichloromethane	0.281	0.293	0.293	0.308	0.327	0.326	0.329	0.332	0.322	0.329	0.314	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	0.081	0.084	0.094	0.102	0.106	0.107	0.106	0.119	0.100	12.71	11.6445
51	cis-1,3-Dichloropropene	0.361	0.358	0.375	0.386	0.417	0.422	0.435	0.428	0.423	0.433	0.404	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	0.126	0.128	0.139	0.154	0.155	0.149	0.146	0.128	0.141	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	1.297	1.244	1.372	1.440	1.413	1.401	------	------	1.361	5.54	12.1609
55	Toluene	1.539	1.614	1.579	1.633	1.635	1.546	1.576	1.611	1.361	------	1.566	5.39	12.2491
56	Ethyl methacrylate	------	------	0.249	0.256	0.274	0.287	0.288	0.285	0.281	0.314	0.279	7.24	12.6645
57	trans-1,3-Dichloropropene	------	0.320	0.326	0.356	0.368	0.373	0.389	0.391	0.383	0.420	0.369	8.70	12.5765
58	1,1,2-Trichloroethane	0.206	0.203	0.204	0.211	0.213	0.213	0.210	0.211	0.205	0.220	0.210	2.49	12.8112
59	Tetrachloroethene	0.331	0.332	0.344	0.352	0.357	0.339	0.342	0.350	0.340	0.339	0.343	2.48	12.9104
60	1,3-Dichloropropane	0.377	0.385	0.400	0.403	0.407	0.411	0.408	0.411	0.393	0.422	0.402	3.31	12.9963
5 61	2-Hexanone	------	------	0.086	0.096	0.106	0.121	0.126	0.124	0.121	0.124	0.113	13.31	13.0643
62	Dibromochloromethane	0.218	0.227	0.245	0.250	0.270	0.274	0.277	0.281	0.269	0.294	0.260	9.43	13.2480
63	1,2-Dibromoethane	0.180	0.184	0.204	0.205	0.221	0.221	0.221	0.221	0.213	0.234	0.210	8.30	13.3709
64	1-Chlorohexane	0.709	0.704	0.703	0.714	0.735	0.698	0.709	0.724	0.686	------	0.709	2.00	13.8731
65	Chlorobenzene	0.944	0.986	0.998	1.006	1.013	0.983	0.983	0.997	0.940	------	0.983	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	0.289	0.286	0.310	0.326	0.330	0.326	0.326	0.326	0.315	0.314	0.315	5.03	13.9766
67	Ethylbenzene	1.774	1.822	1.857	1.889	1.963	1.856	1.892	1.779	------	------	1.854	3.39	13.9825
2 68	m-Xylene & p-Xylene	1.283	1.326	1.323	1.357	1.407	1.365	1.302	1.192	------	------	1.319	4.89	14.1102
69	o-Xylene	1.277	1.242	1.292	1.286	1.330	1.289	1.281	1.294	1.096	------	1.265	5.32	14.4803
70	Styrene	0.987	1.001	1.036	1.047	1.095	1.060	1.084	1.093	0.983	------	1.043	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	0.266	0.293	0.306	0.347	0.359	0.371	0.386	0.367	------	0.337	12.81	14.6766
73	Isopropylbenzene	5.246	5.155	5.143	5.373	5.510	5.118	5.195	5.059	------	------	5.225	2.85	14.8062
74	4-Bromofluorobenzene	------	1.008	1.119	1.112	1.262	1.257	1.249	1.316	1.184	1.254	1.196	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	0.666	0.695	0.718	0.712	0.746	0.753	0.736	0.757	0.699	0.764	0.725	4.41	15.0724
76	Bromobenzene	0.945	0.965	1.021	1.036	1.080	1.033	1.025	1.075	1.007	1.039	1.022	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	0.139	0.152	0.142	0.134	0.139	0.146	0.151	0.143	0.157	0.145	5.11	15.1055
78	1,2,3-Trichloropropane	0.154	0.162	0.175	0.172	0.183	0.183	0.182	0.185	0.171	0.190	0.176	6.36	15.1317
79	n-Propylbenzene	5.875	5.876	6.026	6.300	6.554	6.127	6.181	5.411	------	------	6.044	5.63	15.1746
80	1,3,5-Trimethylbenzene	3.697	3.626	3.666	3.769	3.882	3.758	3.722	3.898	3.154	------	3.686	5.94	15.3145
81	2-Chlorotoluene	2.611	2.772	2.839	3.058	3.006	3.003	2.977	3.111	2.725	------	2.900	5.87	15.2503
82	4-Chlorotoluene	3.139	3.507	3.500	3.504	3.619	3.457	3.434	3.574	3.169	------	3.434	4.90	15.3556
83	tert-Butylbenzene	0.956	0.965	1.003	1.037	1.081	0.993	0.991	1.044	0.958	0.927	0.996	4.73	15.5759
84	1,2,4-Trimethylbenzene	3.539	3.450	3.568	3.584	3.818	3.527	3.662	3.787	3.134	------	3.563	5.65	15.6238
85	sec-Butylbenzene	5.127	5.462	5.451	5.694	5.873	5.510	5.628	5.172	------	------	5.490	4.58	15.7540
86	p-Isopropyltoluene	3.935	3.983	4.133	4.264	4.389	4.184	4.240	4.345	------	------	4.184	3.86	15.8724
87	1,3-Dichlorobenzene	1.815	1.776	1.894	1.960	2.025	1.969	1.945	2.023	1.903	1.735	1.905	5.27	15.8721
88	1,4-Dichlorobenzene	1.959	1.897	1.840	1.874	1.940	1.827	1.899	1.911	1.781	1.585	1.851	5.83	15.9491
89	1,2,3-Trimethylbenzene	3.244	3.167	3.297	3.384	3.462	3.296	3.317	3.352	2.935	------	3.273	4.63	15.9463
90	n-Butylbenzene	3.662	3.624	3.720	3.867	4.084	3.888	3.939	4.124	3.284	------	3.799	6.84	16.1833
91	1,2-Dichlorobenzene	1.646	1.536	1.586	1.559	1.607	1.527	1.549	1.585	1.507	1.511	1.561	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	0.069	0.066	0.082	0.087	0.093	0.094	0.090	0.102	0.085	14.58	16.8220
93	1,2,4-Trichlorobenzene	0.667	0.677	0.725	0.737	0.792	0.783	0.840	0.848	0.799	0.808	0.768	8.26	17.4892
94	Hexachlorobutadiene	0.537	0.550	0.581	0.594	0.641	0.589	0.624	0.628	0.583	0.530	0.586	6.55	17.5766
95	Naphthalene	0.976	0.886	0.915	0.912	1.038	1.023	1.094	1.109	1.049	1.156	1.016	9.03	17.7262
96	1,2,3-Trichlorobenzene	0.516	0.524	0.568	0.560	0.611	0.582	0.610	0.614	0.572	0.590	0.575	6.00	17.9113

Spike Amount = Nominal Amount * M
Ave_%RSD : 6.1 Max_%RSD : 22.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
26	2-Butanol	-0.01634	0.01139	0.9993

SL
5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :V001E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	91	93	102	107	101	102	101	101	101	3.5	5.00	1.8755
	4	Chloromethane	89	99	101	98	105	101	99	100	102	105	2.9	4.47	2.1028
	5	Vinyl chloride	------	88	95	95	109	105	101	103	100	106	5.2	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	95	98	101	114	108	98	86	------	------	6.7	9.04	2.6334
	8	Chloroethane	96	105	100	106	110	106	98	93	86	------	6.1	7.77	2.7503
	9	Dichlorofluoromethane	111	103	106	103	104	100	97	95	95	87	5.3	6.83	3.0785
	10	Trichlorofluoromethane	------	89	96	98	105	105	103	102	102	99	3.9	5.09	3.1384
5	11	Acrolein	------	------	112	88	106	106	106	100	100	106	5.9	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	102	100	100	100	103	100	100	102	98	95	1.6	2.31	3.9533
5	13	Acetone	------	------	109	97	97	100	103	100	91	100	3.3	5.07	3.9396
	14	1,1-Dichloroethene	99	99	100	103	105	102	101	102	97	94	2.3	3.02	3.8575
	15	Iodomethane	97	99	99	102	103	101	100	101	99	98	1.6	2.01	4.0970
	16	Carbon disulfide	------	89	94	96	105	103	103	103	103	103	4.4	5.38	4.2052
	17	Methyl acetate	------	------	------	84	90	106	106	100	101	117	7.9	10.51	4.5295
	18	Methylene chloride	------	------	113	105	101	99	98	97	93	94	4.7	6.33	4.7623
25	19	tert-Butyl alcohol	111	100	89	89	100	111	111	111	111	------	8.6	7.49	5.0916
5	20	Acrylonitrile	------	------	------	79	88	100	105	105	102	114	8.5	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	107	98	99	94	99	103	102	98	95	104	3.2	3.93	5.3508
	22	trans-1,2-Dichloroethene	101	97	99	101	104	102	100	101	99	96	1.9	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	97	97	100	101	104	101	100	101	98	99	1.6	2.19	6.2859
	25	Isopropyl ether (DIPE)	100	97	99	100	100	102	104	102	97	100	1.5	2.05	6.5067
25	26	2-Butanol	------	------	112	90	92	105	104	97	100	------	6	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	118	107	98	98	98	98	94	92	98	5.6	7.93	7.4358
5	28	2-Butanone	------	------	------	78	91	106	107	106	104	113	9.5	11.88	7.7369
	29	cis-1,2-Dichloroethene	98	97	101	101	104	100	101	104	98	97	2	2.44	7.7105
	30	2,2-Dichloropropane	100	103	101	102	104	100	99	102	97	93	2.2	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	71	97	109	109	103	97	111	9.4	13.54	8.2605
	32	Bromochloromethane	102	97	101	101	104	102	100	100	96	96	2.1	2.67	8.1958
	33	Chloroform	102	102	98	99	101	100	100	101	97	98	1.6	1.90	8.4582
	34	Dibromofluoromethane	------	85	94	95	104	112	105	103	101	102	5.8	7.67	8.7575
	35	1,1,1-Trichloroethane	87	94	96	98	100	99	106	107	105	108	5.2	6.62	8.7151
	36	Cyclohexane	89	105	101	101	107	99	101	102	97	100	3.2	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	101	99	101	99	103	103	102	99	94	100	1.8	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	84	95	96	103	111	108	104	98	103	6.1	7.96	9.3301
	39	1,1-Dichloropropene	87	96	102	104	106	104	103	103	99	96	4.5	5.84	9.0216
	40	Carbon tetrachloride	91	93	96	101	105	103	103	104	102	100	3.8	4.73	8.9979
	41	Benzene	101	100	99	102	104	99	101	99	95	------	1.7	2.37	9.3400
	42	1,2-Dichloroethane	92	97	100	100	101	103	104	102	97	101	2.4	3.25	9.4644
	43	2,2,4-Trimethylpentane	78	97	96	101	112	107	103	106	100	------	6.4	9.56	9.6131
	44	Trichloroethene	94	97	99	102	105	102	102	101	100	97	2.6	3.40	10.4521
	45	Methylcyclohexane	76	96	101	103	109	106	106	104	101	98	6.1	9.40	10.7779
	46	1,2-Dichloropropane	101	96	100	104	104	104	103	99	95	93	3.3	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	100	100	100	100	100	100	100	0	8.66	10.9626
	48	Dibromomethane	92	92	99	98	105	106	104	103	100	104	4.2	5.25	10.9408

Fa 8260 C
Sa
5/18/20

49	Bromodichloromethane	89	93	93	98	104	104	105	106	103	105	5.2	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	81	84	94	102	106	107	106	119	10.1	12.71	11.6445
51	cis-1,3-Dichloropropene	89	89	93	96	103	104	108	106	105	107	6.7	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	89	91	99	109	110	106	104	91	7.4	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	95	91	101	106	104	103	------	------	4.4	5.54	12.1609
55	Toluene	98	103	101	104	104	99	101	103	87	------	3.6	5.39	12.2491
56	Ethyl methacrylate	------	------	89	92	98	103	103	102	101	113	5.3	7.24	12.6645
57	trans-1,3-Dichloropropene	------	87	88	96	100	101	105	106	104	114	6.5	8.70	12.5765
58	1,1,2-Trichloroethane	98	97	97	100	101	101	100	100	98	105	1.9	2.49	12.8112
59	Tetrachloroethene	97	97	100	103	104	99	100	102	99	99	1.9	2.48	12.9104
60	1,3-Dichloropropane	94	96	100	100	101	102	101	102	98	105	2.6	3.31	12.9963
5 61	2-Hexanone	------	------	76	85	94	107	112	110	107	110	11.3	13.31	13.0643
62	Dibromochloromethane	84	87	94	96	104	105	107	108	103	113	7.9	9.43	13.2480
63	1,2-Dibromoethane	86	88	97	98	105	105	105	105	101	111	6.6	8.30	13.3709
64	1-Chlorohexane	100	99	99	101	104	98	100	102	97	------	1.4	2.00	13.8731
65	Chlorobenzene	96	100	102	102	103	100	100	101	96	------	1.9	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	92	91	98	103	105	103	103	103	100	100	3.8	5.03	13.9766
67	Ethylbenzene	96	98	100	102	106	100	102	96	------	------	2.5	3.39	13.9825
2 68	m-Xylene & p-Xylene	97	101	100	103	107	103	99	90	------	------	3.4	4.89	14.1102
69	o-Xylene	101	98	102	102	105	102	101	102	87	------	3.4	5.32	14.4803
70	Styrene	95	96	99	100	105	102	104	105	94	------	3.5	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	79	87	91	103	107	110	115	109	------	10.8	12.81	14.6766
73	Isopropylbenzene	100	99	98	103	105	98	99	97	------	------	2.2	2.85	14.8062
74	4-Bromofluorobenzene	------	84	94	93	106	105	104	110	99	105	6.7	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	92	96	99	98	103	104	102	104	96	105	3.7	4.41	15.0724
76	Bromobenzene	92	94	100	101	106	101	100	105	99	102	3	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	96	105	98	92	96	101	104	99	108	4.1	5.11	15.1055
78	1,2,3-Trichloropropane	88	92	99	98	104	104	103	105	97	108	5.1	6.36	15.1317
79	n-Propylbenzene	97	97	100	104	108	101	102	90	------	------	4.1	5.63	15.1746
80	1,3,5-Trimethylbenzene	100	98	99	102	105	102	101	106	86	------	3.7	5.94	15.3145
81	2-Chlorotoluene	90	96	98	105	104	104	103	107	94	------	5	5.87	15.2503
82	4-Chlorotoluene	91	102	102	102	105	101	100	104	92	------	3.6	4.90	15.3556
83	tert-Butylbenzene	96	97	101	104	109	100	99	105	96	93	3.7	4.73	15.5759
84	1,2,4-Trimethylbenzene	99	97	100	101	107	99	103	106	88	------	3.8	5.65	15.6238
85	sec-Butylbenzene	93	99	99	104	107	100	103	94	------	------	3.4	4.58	15.7540
86	p-Isopropyltoluene	94	95	99	102	105	100	101	104	------	------	3	3.86	15.8724
87	1,3-Dichlorobenzene	95	93	99	103	106	103	102	106	100	91	4.2	5.27	15.8721
88	1,4-Dichlorobenzene	106	102	99	101	105	99	103	103	96	86	4	5.83	15.9491
89	1,2,3-Trimethylbenzene	99	97	101	103	106	101	101	102	90	------	3.2	4.63	15.9463
90	n-Butylbenzene	96	95	98	102	108	102	104	109	86	------	5.3	6.84	16.1833
91	1,2-Dichlorobenzene	105	98	102	100	103	98	99	102	97	97	2.3	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	81	78	96	102	109	111	106	120	11.6	14.58	16.8220
93	1,2,4-Trichlorobenzene	87	88	94	96	103	102	109	110	104	105	6.9	8.26	17.4892
94	Hexachlorobutadiene	92	94	99	101	109	101	106	107	99	90	5	6.55	17.5766
95	Naphthalene	96	87	90	90	102	101	108	109	103	114	7.4	9.03	17.7262
96	1,2,3-Trichlorobenzene	90	91	99	97	106	101	106	107	99	103	4.6	6.00	17.9113

For 8260C
SCA
5/18/20

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
Total Cpnds : 96

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	1.84	0.181	A	2	A	B
3	T	Dichlorodifluoromethane	85	1.88	0.185	A	1	A	B
4	T	Chloromethane	50	2.11	0.208	A	1	A	B
5	T	Vinyl chloride	62	2.25	0.222	A	1	A	B
6	T	2-Chloro-1,1,1-trifluoroethane	118	2.36	0.233	A	2	A	B
7	T	Bromomethane	94	2.63	0.260	A	1	A	B
8	T	Chloroethane	64	2.75	0.271	A	1	A	B
9	T	Dichlorofluoromethane	67	3.08	0.304	A	1	A	B
10	T	Trichlorofluoromethane	101	3.14	0.310	A	1	A	B
11	T	Acrolein	56	3.71	0.366	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	3.95	0.391	A	1	A	B
13	T	Acetone	43	3.93	0.389	A	1	A	B
14	T	1,1-Dichloroethene	61	3.85	0.380	A	2	A	B
15	T	Iodomethane	142	4.10	0.405	A	1	A	B
16	T	Carbon disulfide	76	4.20	0.415	A	1	A	B
17	T	Methyl acetate	43	4.52	0.446	A	1	A	B
18	T	Methylene chloride	49	4.77	0.471	A	2	A	B
19	T	tert-Butyl alcohol	59	5.08	0.502	A	1	A	B
20	T	Acrylonitrile	53	5.23	0.516	A	2	A	B
21	T	tert-Butyl methyl ether (MTBE)	73	5.35	0.528	A	1	A	B
22	T	trans-1,2-Dichloroethene	61	5.31	0.524	A	2	A	B
23	T	Vinyl acetate	86	6.29	0.621	A	1	A	B
24	T	1,1-Dichloroethane	63	6.29	0.621	A	2	A	B
25	T	Isopropyl ether (DIPE)	45	6.50	0.642	A	1	A	B
26	T	2-Butanol	45	8.29	0.818	L	1	A	B
27	T	tert-Butyl ethyl ether (ETBE)	59	7.43	0.734	A	1	A	B
28	T	2-Butanone	43	7.72	0.763	A	1	A	B
29	T	cis-1,2-Dichloroethene	96	7.70	0.761	A	2	A	B
30	T	2,2-Dichloropropane	77	7.68	0.759	A	2	A	B
31	T	Tetrahydrofurane	42	8.27	0.816	A	2	A	B
32	T	Bromochloromethane	49	8.20	0.810	A	2	A	B
33	T	Chloroform	83	8.47	0.837	A	2	A	B
34	S	Dibromofluoromethane	111	8.76	0.865	A	2	A	B
35	T	1,1,1-Trichloroethane	97	8.72	0.861	A	2	A	B
36	T	Cyclohexane	84	8.84	0.873	A	1	A	B
37	T	tert-Amyl methyl ether (TAME)	73	9.67	0.955	A	1	A	B
38	S	1,2-Dichloroethane-d4	65	9.34	0.922	A	1	A	B
39	T	1,1-Dichloropropene	110	9.03	0.892	A	1	A	B
40	T	Carbon tetrachloride	119	9.00	0.889	A	1	A	B
41	T	Benzene	78	9.34	0.922	A	2	A	B
42	T	1,2-Dichloroethane	62	9.47	0.936	A	1	A	B
43	T	2,2,4-Trimethylpentane	57	9.62	0.950	A	1	A	B
44	T	Trichloroethene	130	10.47	1.034	A	3	A	B
45	T	Methylcyclohexane	83	10.79	1.066	A	2	A	B
46	T	1,2-Dichloropropane	63	10.82	1.069	A	1	A	B
47	T	1,4-Dioxane	88	10.97	1.083	A	1	A	B
48	T	Dibromomethane	93	10.95	1.082	A	2	A	B
49	T	Bromodichloromethane	83	11.22	1.108	A	1	A	B
50	T	2-Chloroethyl vinyl ether	63	11.65	1.151	A	2	A	B
51	T	cis-1,3-Dichloropropene	75	11.83	1.168	A	1	A	B
52	T	4-Methyl-2-pentanone	43	12.04	1.189	A	3	A	B

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53	I	CHLOROBENZENE-D5	117	13.87	1.000	A	2	A	B
54	S	Toluene-d8	98	12.17	0.877	A	1	A	B
55	T	Toluene	91	12.26	0.884	A	1	A	B
56	T	Ethyl methacrylate	69	12.67	0.914	A	1	A	B
57	T	trans-1,3-Dichloropropene	75	12.58	0.907	A	1	A	B
58	T	1,1,2-Trichloroethane	97	12.82	0.924	A	2	A	B
59	T	Tetrachloroethene	164	12.92	0.932	A	3	A	B
60	T	1,3-Dichloropropane	76	13.01	0.938	A	1	A	B
61	T	2-Hexanone	43	13.07	0.942	A	1	A	B
62	T	Dibromochloromethane	129	13.26	0.956	A	1	A	B
63	T	1,2-Dibromoethane	107	13.38	0.965	A	1	A	B
64	T	1-Chlorohexane	91	13.89	1.001	A	1	A	B
65	P,M	Chlorobenzene	112	13.90	1.002	A	1	A	B
66	T	1,1,1,2-Tetrachloroethane	131	13.99	1.009	A	1	A	B
67	T	Ethylbenzene	91	13.99	1.009	A	1	A	B
68	T	m-Xylene & p-Xylene	91	14.12	1.018	A	1	A	B
69	T	o-Xylene	91	14.49	1.045	A	1	A	B
70	T	Styrene	104	14.51	1.046	A	2	A	B
71	I	1,2-DICHLOROBENZENE-D4	152	16.23	1.000	A	1	A	B
72	T	Bromoform	173	14.69	0.905	A	2	A	B
73	T	Isopropylbenzene	105	14.82	0.913	A	3	A	B
74	S	4-Bromofluorobenzene	95	14.98	0.923	A	2	A	B
75	T	1,1,2,2-Tetrachloroethane	83	15.09	0.930	A	1	A	B
76	T	Bromobenzene	156	15.12	0.932	A	1	A	B
77	T	trans-1,4-Dichloro-2-butene	53	15.12	0.932	A	1	A	B
78	T	1,2,3-Trichloropropane	110	15.14	0.933	A	1	A	B
79	T	n-Propylbenzene	91	15.19	0.936	A	2	A	B
80	T	1,3,5-Trimethylbenzene	105	15.32	0.944	A	2	A	B
81	T	2-Chlorotoluene	91	15.26	0.941	A	1	A	B
82	T	4-Chlorotoluene	91	15.37	0.947	A	1	A	B
83	T	tert-Butylbenzene	134	15.59	0.961	A	1	A	B
84	T	1,2,4-Trimethylbenzene	105	15.63	0.963	A	1	A	B
85	T	sec-Butylbenzene	105	15.77	0.972	A	1	A	B
86	T	p-Isopropyltoluene	119	15.89	0.979	A	2	A	B
87	T	1,3-Dichlorobenzene	146	15.89	0.979	A	2	A	B
88	T	1,4-Dichlorobenzene	146	15.96	0.984	A	2	A	B
89	T	1,2,3-Trimethylbenzene	105	15.96	0.984	A	2	A	B
90	T	n-Butylbenzene	91	16.20	0.998	A	2	A	B
91	T	1,2-Dichlorobenzene	146	16.24	1.001	A	1	A	B
92	T	1,2-Dibromo-3-chloropropane	157	16.83	1.037	A	1	A	B
93	T	1,2,4-Trichlorobenzene	180	17.50	1.078	A	2	A	B
94	T	Hexachlorobutadiene	225	17.60	1.085	A	1	A	B
95	T	Naphthalene	128	17.74	1.093	A	1	A	B
96	T	1,2,3-Trichlorobenzene	180	17.93	1.105	A	2	A	B

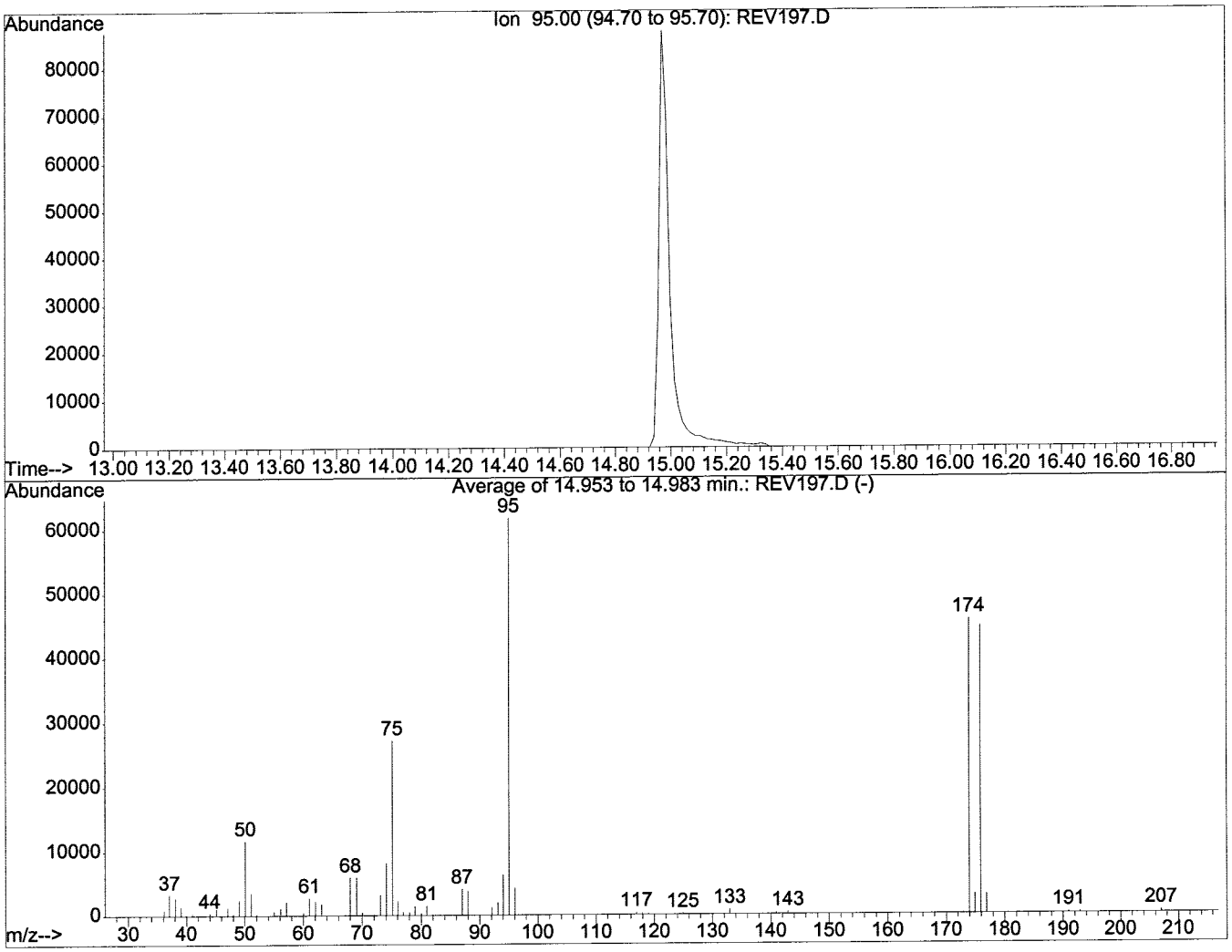
Qual A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E13.M Thu May 14 17:49:40 2020

SA 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV197.D
Acq On : 13 May 2020 1:15 pm
Sample : BFB01E09
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 784, 785, 786; Background Corrected with Scan 780

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	11689	PASS
75	95	30	60	44.0	27197	PASS
95	95	100	100	100.0	61784	PASS
96	95	5	9	6.9	4244	PASS
173	174	0.00	2	0.3	158	PASS
174	95	50	100	74.0	45728	PASS
175	174	5	9	6.8	3104	PASS
176	174	95	101	97.8	44709	PASS
177	176	5	9	6.7	2988	PASS

REV197.D VO01E13.M Thu May 14 13:47:25 2020

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.11	114	3270533	10.00	ug/l	-0.01
53) CHLOROBENZENE-D5	13.86	117	2740871	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	908656	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	16459	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
38) 1,2-Dichloroethane-d4	9.34	65	11364	0.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.90%			
54) Toluene-d8	12.17	98	67086	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
74) 4-Bromofluorobenzene	14.98	95	21655	0.20	ug/l	0.00
Spiked Amount 10.000			Recovery = 2.00%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	22668	0.23	ug/l	92
4) Chloromethane	2.10	50	32279	0.27	ug/l	97
5) Vinyl chloride	2.24	62	25870	0.22	ug/l	76
7) Bromomethane	2.63	94	19066	0.24	ug/l	95
8) Chloroethane	2.75	64	18789	0.29	ug/l	88
9) Dichlorofluoromethane	3.08	67	53832	0.33	ug/l	94
10) Trichlorofluoromethane	3.12	101	25369	0.23	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	20869	0.30	ug/l	97
13) Acetone	3.96	43	30015	2.70	ug/l	93
14) 1,1-Dichloroethene	3.85	61	47304	0.30	ug/l	99
15) Iodomethane	4.08	142	52641	0.29	ug/l	99
16) Carbon disulfide	4.21	76	72219	0.21	ug/l	94
18) Methylene chloride	4.77	49	63196	0.47	ug/l	98
19) tert-Butyl alcohol	5.10	59	23329	7.66	ug/l	95
20) Acrylonitrile	5.35	53	10949	0.80	ug/l	94
21) tert-Butyl methyl ether (M	5.35	73	45230	0.32	ug/l	83
22) trans-1,2-Dichloroethene	5.33	61	47913	0.30	ug/l	99
24) 1,1-Dichloroethane	6.29	63	55757	0.29	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	99671	0.30	ug/l	98
26) 2-Butanol	8.41	45	7304	16.31	ug/l	92
27) tert-Butyl ethyl ether (ET	7.43	59	101325	0.42	ug/l	100
28) 2-Butanone	7.87	43	12838	0.72	ug/l	85
29) cis-1,2-Dichloroethene	7.73	96	32701	0.29	ug/l	99
30) 2,2-Dichloropropane	7.68	77	36397	0.30	ug/l	98
32) Bromochloromethane	8.20	49	24151	0.31	ug/l	94
33) Chloroform	8.45	83	48567	0.31	ug/l	99
35) 1,1,1-Trichloroethane	8.70	97	33033	0.26	ug/l	96

(#) = qualifier out of range (m) = manual integration
REV198.D VO01E13.M Thu May 14 18:33:45 2020 SY 5/18/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
36)	Cyclohexane	8.82	84	47768	0.27	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	56376	0.30	ug/l	95
39)	1,1-Dichloropropene	9.03	110	13938	0.26	ug/l	91
40)	Carbon tetrachloride	8.98	119	29051	0.27	ug/l	100
41)	Benzene	9.34	78	118043	0.30	ug/l	99
42)	1,2-Dichloroethane	9.47	62	20435	0.28	ug/l	100
43)	2,2,4-Trimethylpentane	9.61	57	123917	0.23	ug/l	98
44)	Trichloroethene	10.45	130	33621	0.28	ug/l	97
45)	Methylcyclohexane	10.78	83	45764	0.23	ug/l	97
46)	1,2-Dichloropropane	10.81	63	31886	0.30	ug/l	94
48)	Dibromomethane	10.94	93	10957	0.27	ug/l	97
49)	Bromodichloromethane	11.22	83	27597	0.27	ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	35404	0.27	ug/l	92
52)	4-Methyl-2-pentanone	12.04	43	57455	1.25	ug/l	94
55)	Toluene	12.26	91	126512	0.29	ug/l	98
56)	Ethyl methacrylate	12.69	69	17953	0.23	ug/l	94
57)	trans-1,3-Dichloropropene	12.60	75	24125	0.24	ug/l	89
58)	1,1,2-Trichloroethane	12.82	97	16953	0.30	ug/l	95
59)	Tetrachloroethene	12.91	164	27179	0.29	ug/l	97
60)	1,3-Dichloropropane	13.00	76	30998	0.28	ug/l	98
61)	2-Hexanone	13.12	43	27987	0.90	ug/l	98
62)	Dibromochloromethane	13.25	129	17947	0.25	ug/l	96
63)	1,2-Dibromoethane	13.38	107	14771	0.26	ug/l	97
64)	1-Chlorohexane	13.87	91	58338	0.30	ug/l	98
65)	Chlorobenzene	13.89	112	77628	0.29	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	23752	0.28	ug/l	96
67)	Ethylbenzene	13.99	91	145845	0.29	ug/l	98
68)	m-Xylene & p-Xylene	14.11	91	211064	0.58	ug/l	97
69)	o-Xylene	14.48	91	104965	0.30	ug/l	98
70)	Styrene	14.51	104	81176	0.28	ug/l	99
72)	Bromoform	14.69	173	7623	0.25	ug/l	90
73)	Isopropylbenzene	14.80	105	143013	0.30	ug/l	98
75)	1,1,2,2-Tetrachloroethane	15.07	83	18146	0.28	ug/l	92
76)	Bromobenzene	15.12	156	25767	0.28	ug/l	96
77)	trans-1,4-Dichloro-2-buten	15.12	53	2899	0.22	ug/l	81
78)	1,2,3-Trichloropropane	15.13	110	4197	0.26	ug/l	92
79)	n-Propylbenzene	15.18	91	160139	0.29	ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	100775	0.30	ug/l	100
81)	2-Chlorotoluene	15.25	91	71165	0.27	ug/l	91
82)	4-Chlorotoluene	15.37	91	85562	0.27	ug/l	94
83)	tert-Butylbenzene	15.57	134	26062	0.29	ug/l	74

(#) = qualifier out of range (m) = manual integration
SU 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
84)	1,2,4-Trimethylbenzene	15.63	105	96484	0.30	ug/l	99
85)	sec-Butylbenzene	15.75	105	139764	0.28	ug/l	100
86)	p-Isopropyltoluene	15.87	119	107256	0.28	ug/l	98
87)	1,3-Dichlorobenzene	15.87	146	49471	0.29	ug/l	100
88)	1,4-Dichlorobenzene	15.96	146	53403	0.32	ug/l	97
89)	1,2,3-Trimethylbenzene	15.95	105	88433	0.30	ug/l	98
90)	n-Butylbenzene	16.18	91	99838	0.29	ug/l	98
91)	1,2-Dichlorobenzene	16.23	146	44881	0.32	ug/l	100
93)	1,2,4-Trichlorobenzene	17.50	180	18180	0.26	ug/l	98
94)	Hexachlorobutadiene	17.57	225	14649	0.28	ug/l	94
95)	Naphthalene	17.74	128	26599	0.29	ug/l	94
96)	1,2,3-Trichlorobenzene	17.93	180	14059	0.27	ug/l	96

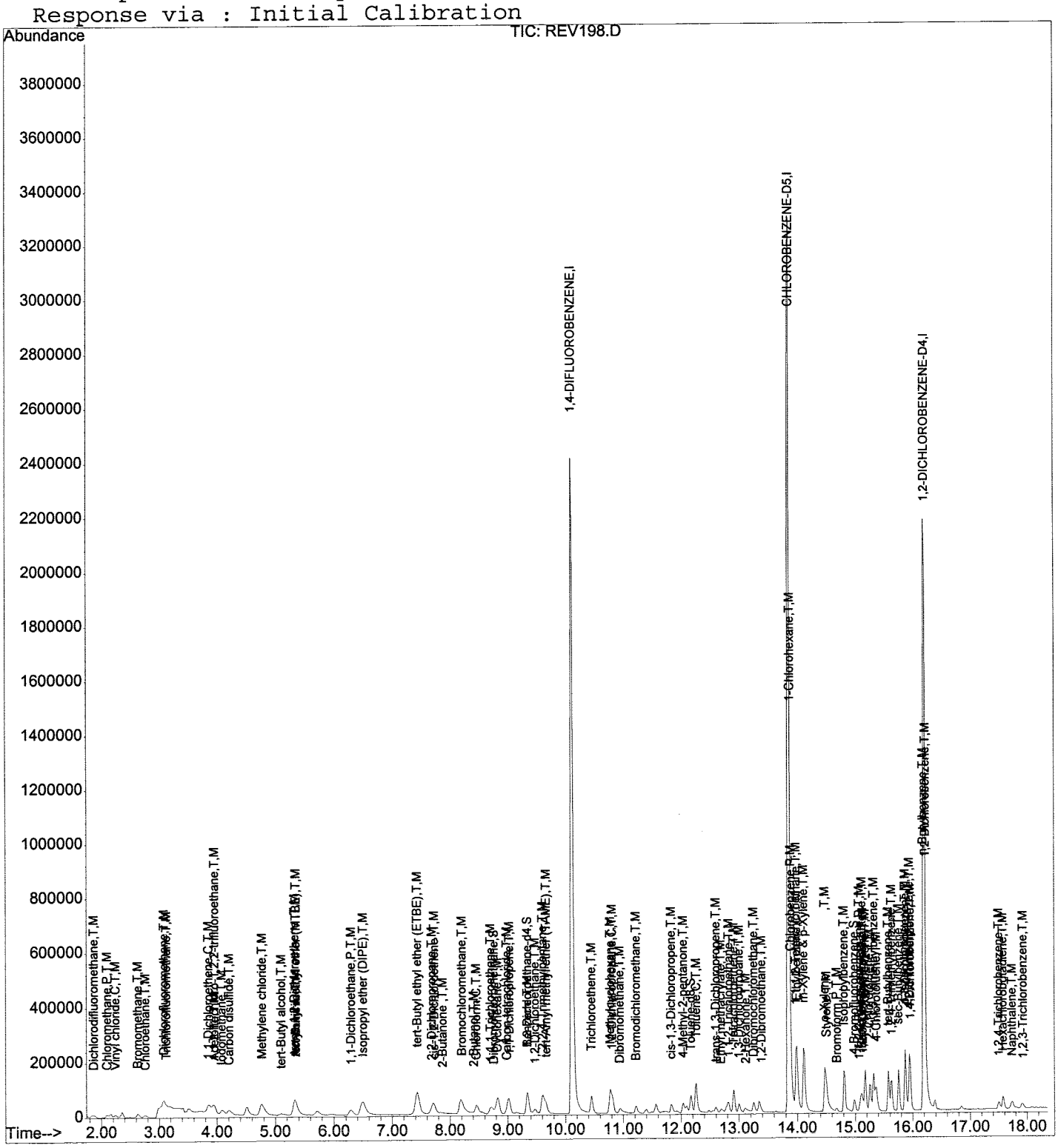
SU 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3170172	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2635786	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	902237	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	37869	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
38) 1,2-Dichloroethane-d4	9.34	65	25025	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
54) Toluene-d8	12.17	98	148562	0.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.10%		
74) 4-Bromofluorobenzene	14.98	95	45459	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	44207	0.45	ug/l	98
4) Chloromethane	2.10	50	57568	0.49	ug/l	94
5) Vinyl chloride	2.25	62	49863	0.44	ug/l	86
7) Bromomethane	2.63	94	36265	0.48	ug/l	95
8) Chloroethane	2.75	64	33299	0.53	ug/l	98
9) Dichlorofluoromethane	3.08	67	80273	0.51	ug/l	95
10) Trichlorofluoromethane	3.14	101	47142	0.45	ug/l	98
11) Acrolein	3.73	56	17573	3.20	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	33258	0.50	ug/l	98
13) Acetone	3.96	43	35871	3.33	ug/l	91
14) 1,1-Dichloroethene	3.87	61	76917	0.50	ug/l	99
15) Iodomethane	4.10	142	86763	0.50	ug/l	99
16) Carbon disulfide	4.21	76	151665	0.45	ug/l	97
18) Methylene chloride	4.77	49	85076	0.65	ug/l	99
19) tert-Butyl alcohol	5.12	59	34279	11.61	ug/l	97
20) Acrylonitrile	5.33	53	18306	1.39	ug/l	90
21) tert-Butyl methyl ether (M	5.35	73	66802	0.49	ug/l	90
22) trans-1,2-Dichloroethene	5.33	61	74369	0.49	ug/l	99
24) 1,1-Dichloroethane	6.29	63	89856	0.48	ug/l	97
25) Isopropyl ether (DIPE)	6.52	45	157460	0.49	ug/l	99
26) 2-Butanol	8.39	45	22966	20.71	ug/l	96
27) tert-Butyl ethyl ether (ET	7.45	59	137822	0.59	ug/l	100
28) 2-Butanone	7.85	43	23543	1.37	ug/l	94
29) cis-1,2-Dichloroethene	7.73	96	52219	0.49	ug/l	96
30) 2,2-Dichloropropane	7.70	77	60616	0.52	ug/l	98
32) Bromochloromethane	8.20	49	37024	0.48	ug/l	99
33) Chloroform	8.48	83	78573	0.51	ug/l	98

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 Page 1

SU 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
35)	1,1,1-Trichloroethane	8.72	97	57642	0.47 ug/l	98
36)	Cyclohexane	8.84	84	91053	0.52 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	89116	0.49 ug/l	98
39)	1,1-Dichloropropene	9.03	110	24897	0.48 ug/l	95
40)	Carbon tetrachloride	9.00	119	47850	0.47 ug/l	99
41)	Benzene	9.34	78	189099	0.50 ug/l	99
42)	1,2-Dichloroethane	9.47	62	34621	0.49 ug/l	94
43)	2,2,4-Trimethylpentane	9.61	57	248870	0.49 ug/l	100
44)	Trichloroethene	10.45	130	56130	0.48 ug/l	98
45)	Methylcyclohexane	10.78	83	93888	0.48 ug/l	99
46)	1,2-Dichloropropane	10.82	63	49135	0.48 ug/l	98
48)	Dibromomethane	10.94	93	17822	0.46 ug/l	97
49)	Bromodichloromethane	11.22	83	46459	0.47 ug/l	99
50)	2-Chloroethyl vinyl ether	11.67	63	11010	0.35 ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	56723	0.44 ug/l	97
52)	4-Methyl-2-pentanone	12.04	43	97150	2.18 ug/l	95
55)	Toluene	12.26	91	212747	0.52 ug/l	98
56)	Ethyl methacrylate	12.69	69	29579	0.40 ug/l	98
57)	trans-1,3-Dichloropropene	12.60	75	42111	0.43 ug/l	88
58)	1,1,2-Trichloroethane	12.82	97	26812	0.49 ug/l	99
59)	Tetrachloroethene	12.91	164	43804	0.49 ug/l	98
60)	1,3-Dichloropropane	13.00	76	50738	0.48 ug/l	99
61)	2-Hexanone	13.10	43	48952	1.64 ug/l	93
62)	Dibromochloromethane	13.25	129	29957	0.44 ug/l	99
63)	1,2-Dibromoethane	13.37	107	24216	0.44 ug/l	97
64)	1-Chlorohexane	13.87	91	92746	0.50 ug/l	96
65)	Chlorobenzene	13.89	112	129949	0.50 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.98	131	37723	0.45 ug/l	92
67)	Ethylbenzene	13.99	91	240142	0.49 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	349554	1.01 ug/l	98
69)	o-Xylene	14.48	91	163669	0.49 ug/l	99
70)	Styrene	14.51	104	131895	0.48 ug/l	98
72)	Bromoform	14.69	173	11980	0.39 ug/l	96
73)	Isopropylbenzene	14.80	105	232550	0.49 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	31354	0.48 ug/l	99
76)	Bromobenzene	15.10	156	43525	0.47 ug/l	97
77)	trans-1,4-Dichloro-2-buten	15.12	53	6293	0.48 ug/l	61
78)	1,2,3-Trichloropropane	15.13	110	7317	0.46 ug/l	79
79)	n-Propylbenzene	15.17	91	265056	0.49 ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	163567	0.49 ug/l	97
81)	2-Chlorotoluene	15.25	91	125070	0.48 ug/l	95

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 SU 5/18/20 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	4-Chlorotoluene	15.35	91	158201	0.51	ug/l	99
83)	tert-Butylbenzene	15.57	134	43543	0.48	ug/l	73
84)	1,2,4-Trimethylbenzene	15.63	105	155637	0.48	ug/l	100
85)	sec-Butylbenzene	15.75	105	246395	0.50	ug/l	98
86)	p-Isopropyltoluene	15.87	119	179658	0.48	ug/l	97
87)	1,3-Dichlorobenzene	15.87	146	80120	0.47	ug/l	98
88)	1,4-Dichlorobenzene	15.96	146	85582	0.51	ug/l	96
89)	1,2,3-Trimethylbenzene	15.94	105	142868	0.48	ug/l	96
90)	n-Butylbenzene	16.18	91	163480	0.48	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	69303	0.49	ug/l	94
92)	1,2-Dibromo-3-chloropropan	16.83	157	2667	0.35	ug/l	91
93)	1,2,4-Trichlorobenzene	17.50	180	30556	0.44	ug/l	98
94)	Hexachlorobutadiene	17.57	225	24796	0.47	ug/l	98
95)	Naphthalene	17.74	128	39961	0.44	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	23629	0.46	ug/l	94

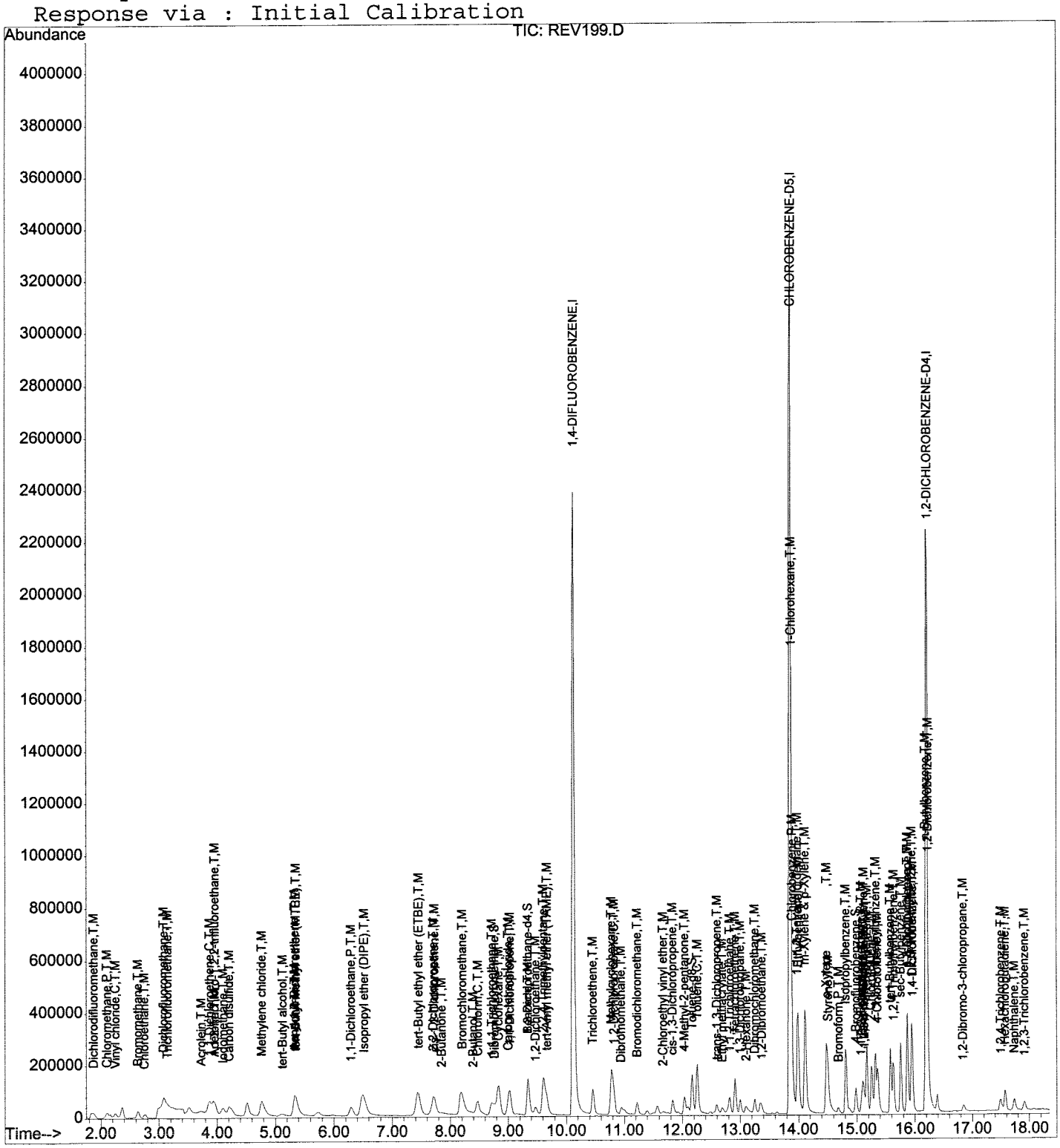
SU 5/18/20

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:57 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3247102	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2673432	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	922687	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	86000	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
38) 1,2-Dichloroethane-d4	9.34	65	57394	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
54) Toluene-d8	12.17	98	346613	0.95	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.50%		
74) 4-Bromofluorobenzene	14.98	95	103247	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	93211	0.93	ug/l	98
4) Chloromethane	2.10	50	120062	1.01	ug/l	94
5) Vinyl chloride	2.24	62	110651	0.95	ug/l	95
7) Bromomethane	2.64	94	75832	0.97	ug/l	97
8) Chloroethane	2.75	64	64560	1.00	ug/l	98
9) Dichlorofluoromethane	3.08	67	169088	1.06	ug/l	99
10) Trichlorofluoromethane	3.14	101	104545	0.96	ug/l	97
11) Acrolein	3.71	56	30725	5.46	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	67741	1.00	ug/l	99
13) Acetone	3.96	43	60789	5.51	ug/l	97
14) 1,1-Dichloroethene	3.85	61	158974	1.00	ug/l	98
15) Iodomethane	4.10	142	177172	0.99	ug/l	99
16) Carbon disulfide	4.21	76	328630	0.94	ug/l	97
17) Methyl acetate	4.56	43	18464	0.64	ug/l	94
18) Methylene chloride	4.77	49	150980	1.13	ug/l	99
19) tert-Butyl alcohol	5.10	59	68958	22.80	ug/l	95
20) Acrylonitrile	5.29	53	46419	3.44	ug/l	95
21) tert-Butyl methyl ether (M	5.35	73	138637	0.99	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	155219	0.99	ug/l	99
24) 1,1-Dichloroethane	6.29	63	190956	1.00	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	328018	0.99	ug/l	100
26) 2-Butanol	8.35	45	50538	28.01	ug/l	90
27) tert-Butyl ethyl ether (ET	7.43	59	255647	1.07	ug/l	98
28) 2-Butanone	7.81	43	63659	3.62	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	110618	1.00	ug/l	98
30) 2,2-Dichloropropane	7.68	77	120645	1.00	ug/l	99
31) Tetrahydrofurane	8.31	42	7526	0.67	ug/l #	58

(#) = qualifier out of range (m) = manual integration

SM 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	79542	1.01 ug/l	99
33)	Chloroform	8.45	83	154549	0.98 ug/l	97
35)	1,1,1-Trichloroethane	8.72	97	119696	0.95 ug/l	99
36)	Cyclohexane	8.84	84	179772	1.01 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	185571	1.01 ug/l	97
39)	1,1-Dichloropropene	9.03	110	54165	1.02 ug/l	97
40)	Carbon tetrachloride	9.00	119	101375	0.96 ug/l	98
41)	Benzene	9.34	78	383654	0.99 ug/l	100
42)	1,2-Dichloroethane	9.47	62	73244	1.00 ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	504350	0.96 ug/l	99
44)	Trichloroethene	10.45	130	118147	0.99 ug/l	99
45)	Methylcyclohexane	10.78	83	202512	1.01 ug/l	99
46)	1,2-Dichloropropane	10.82	63	104806	1.00 ug/l	99
47)	1,4-Dioxane	10.98	88	5164	14.45 ug/l	98
48)	Dibromomethane	10.94	93	39252	0.99 ug/l	97
49)	Bromodichloromethane	11.22	83	95093	0.93 ug/l	98
50)	2-Chloroethyl vinyl ether	11.66	63	26452	0.82 ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	121910	0.93 ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	205168	4.49 ug/l	99
55)	Toluene	12.26	91	422220	1.01 ug/l	100
56)	Ethyl methacrylate	12.67	69	66500	0.89 ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	87034	0.88 ug/l	98
58)	1,1,2-Trichloroethane	12.82	97	54566	0.97 ug/l	99
59)	Tetrachloroethene	12.91	164	92069	1.01 ug/l	99
60)	1,3-Dichloropropane	13.00	76	106827	1.00 ug/l	98
61)	2-Hexanone	13.09	43	115271	3.81 ug/l	99
62)	Dibromochloromethane	13.25	129	65456	0.94 ug/l	99
63)	1,2-Dibromoethane	13.37	107	54525	0.97 ug/l	95
64)	1-Chlorohexane	13.87	91	187894	0.99 ug/l	98
65)	Chlorobenzene	13.89	112	266680	1.01 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	82840	0.98 ug/l	99
67)	Ethylbenzene	13.99	91	496364	1.00 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	707521	2.01 ug/l	99
69)	o-Xylene	14.48	91	345540	1.02 ug/l	98
70)	Styrene	14.49	104	276993	0.99 ug/l	99
72)	Bromoform	14.69	173	27051	0.87 ug/l	98
73)	Isopropylbenzene	14.80	105	474532	0.98 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	66248	0.99 ug/l	93
76)	Bromobenzene	15.10	156	94162	1.00 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.11	53	13979	1.05 ug/l	70
78)	1,2,3-Trichloropropane	15.13	110	16160	1.00 ug/l	91

(#) = qualifier out of range (m) = manual integration
REV200.D VO01E13.M Thu May 14 18:34:07 2020 SY 5/18/20 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	555994	1.00	ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	338291	0.99	ug/l	98
81)	2-Chlorotoluene	15.25	91	261974	0.98	ug/l	95
82)	4-Chlorotoluene	15.35	91	322900	1.02	ug/l	97
83)	tert-Butylbenzene	15.57	134	92579	1.01	ug/l	73
84)	1,2,4-Trimethylbenzene	15.62	105	329231	1.00	ug/l	99
85)	sec-Butylbenzene	15.75	105	503002	0.99	ug/l	99
86)	p-Isopropyltoluene	15.87	119	381382	0.99	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	174793	0.99	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	169737	0.99	ug/l	97
89)	1,2,3-Trimethylbenzene	15.94	105	304224	1.01	ug/l	97
90)	n-Butylbenzene	16.18	91	343211	0.98	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	146373	1.02	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.83	157	6354	0.81	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	66885	0.94	ug/l	99
94)	Hexachlorobutadiene	17.57	225	53609	0.99	ug/l	98
95)	Naphthalene	17.74	128	84410	0.90	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	52401	0.99	ug/l	99

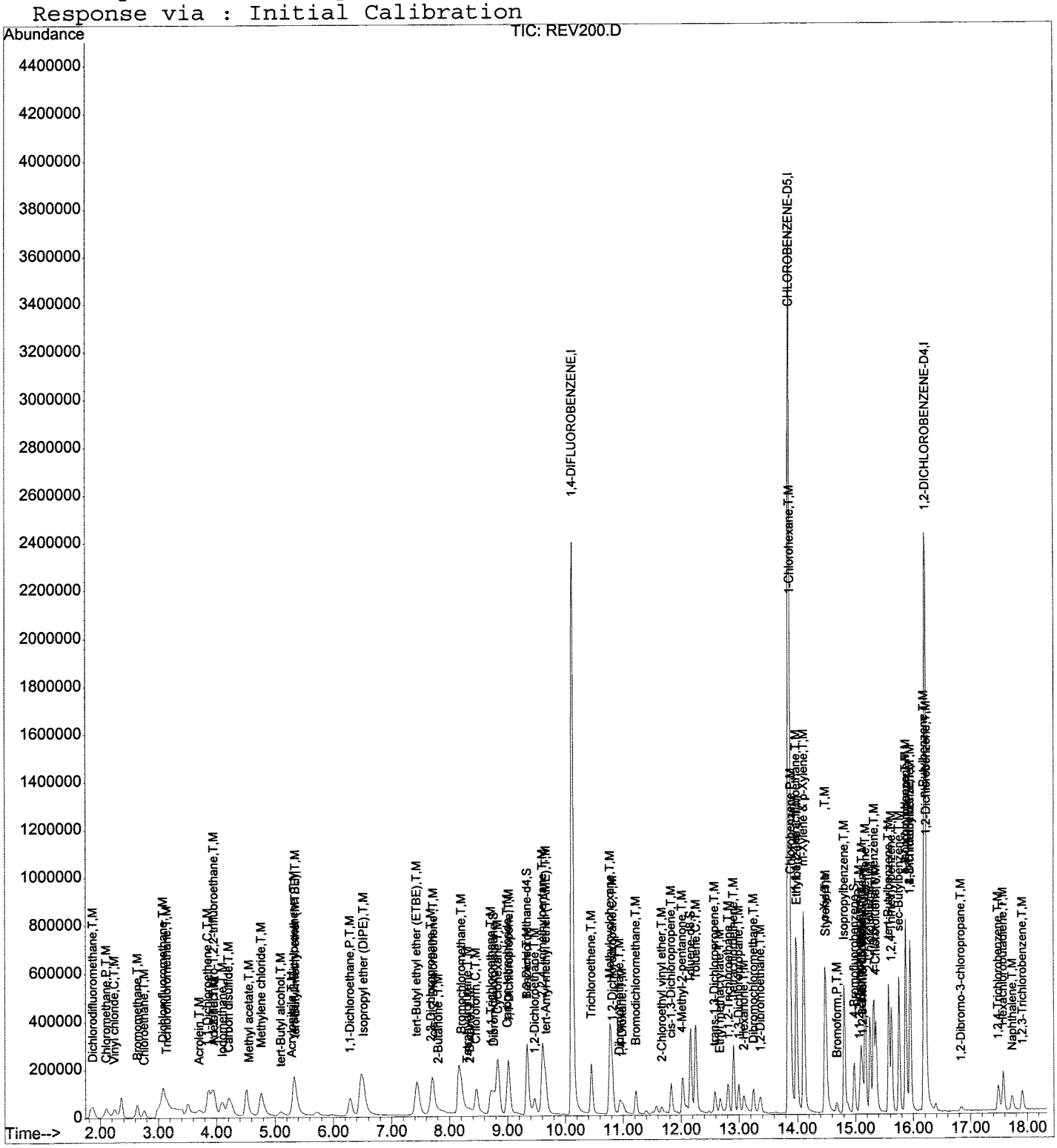
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3186295	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2617335	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	907050	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	170417	1.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	19.00%		
38) 1,2-Dichloroethane-d4	9.33	65	114229	1.91	ug/l	-0.01
Spiked Amount 10.000			Recovery =	19.10%		
54) Toluene-d8	12.17	98	651399	1.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	18.30%		
74) 4-Bromofluorobenzene	14.97	95	201707	1.86	ug/l	-0.01
Spiked Amount 10.000			Recovery =	18.60%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	199914	2.04	ug/l	100
4) Chloromethane	2.11	50	228761	1.95	ug/l	100
5) Vinyl chloride	2.25	62	217850	1.90	ug/l	96
7) Bromomethane	2.63	94	155081	2.03	ug/l	98
8) Chloroethane	2.76	64	134628	2.12	ug/l	97
9) Dichlorofluoromethane	3.08	67	322611	2.06	ug/l	100
10) Trichlorofluoromethane	3.14	101	207989	1.96	ug/l	99
11) Acrolein	3.71	56	48905	8.85	ug/l	82
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	133835	2.01	ug/l	99
13) Acetone	3.96	43	105132	9.72	ug/l	99
14) 1,1-Dichloroethene	3.87	61	319620	2.05	ug/l	99
15) Iodomethane	4.10	142	360356	2.05	ug/l	100
16) Carbon disulfide	4.21	76	658774	1.93	ug/l	98
17) Methyl acetate	4.56	43	47946	1.68	ug/l	99
18) Methylene chloride	4.77	49	275056	2.10	ug/l	99
19) tert-Butyl alcohol	5.10	59	133828	45.10	ug/l	100
20) Acrylonitrile	5.27	53	104099	7.85	ug/l	97
21) tert-Butyl methyl ether (M	5.35	73	259484	1.89	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	312283	2.03	ug/l	99
24) 1,1-Dichloroethane	6.29	63	376193	2.02	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	647378	1.99	ug/l	98
26) 2-Butanol	8.33	45	111378	45.04	ug/l	93
27) tert-Butyl ethyl ether (ET	7.43	59	458361	1.95	ug/l	99
28) 2-Butanone	7.79	43	133416	7.72	ug/l	97
29) cis-1,2-Dichloroethene	7.70	96	218592	2.02	ug/l	99
30) 2,2-Dichloropropane	7.68	77	239726	2.03	ug/l	100
31) Tetrahydrofurane	8.29	42	15926	1.44	ug/l	72

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	155633	2.02 ug/l	99
33)	Chloroform	8.45	83	304210	1.97 ug/l	98
35)	1,1,1-Trichloroethane	8.72	97	242170	1.97 ug/l	99
36)	Cyclohexane	8.84	84	352317	2.01 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	358332	1.98 ug/l	99
39)	1,1-Dichloropropene	9.01	110	108557	2.08 ug/l	99
40)	Carbon tetrachloride	9.00	119	208927	2.03 ug/l	98
41)	Benzene	9.34	78	778215	2.04 ug/l	100
42)	1,2-Dichloroethane	9.46	62	144248	2.02 ug/l	98
43)	2,2,4-Trimethylpentane	9.61	57	1042829	2.03 ug/l	100
44)	Trichloroethene	10.45	130	237462	2.04 ug/l	100
45)	Methylcyclohexane	10.78	83	405427	2.06 ug/l	100
46)	1,2-Dichloropropane	10.81	63	214759	2.09 ug/l	99
47)	1,4-Dioxane	10.98	88	11622	33.14 ug/l	97
48)	Dibromomethane	10.94	93	75637	1.94 ug/l	97
49)	Bromodichloromethane	11.22	83	196150	1.96 ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	53304	1.68 ug/l	97
51)	cis-1,3-Dichloropropene	11.83	75	246163	1.91 ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	407706	9.10 ug/l	100
55)	Toluene	12.24	91	854968	2.09 ug/l	99
56)	Ethyl methacrylate	12.67	69	134023	1.83 ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	186145	1.93 ug/l	97
58)	1,1,2-Trichloroethane	12.81	97	110314	2.01 ug/l	99
59)	Tetrachloroethene	12.91	164	184441	2.06 ug/l	99
60)	1,3-Dichloropropane	13.00	76	211019	2.01 ug/l	99
61)	2-Hexanone	13.07	43	251126	8.49 ug/l	100
62)	Dibromochloromethane	13.25	129	130626	1.92 ug/l	100
63)	1,2-Dibromoethane	13.37	107	107090	1.95 ug/l	98
64)	1-Chlorohexane	13.87	91	373573	2.01 ug/l	99
65)	Chlorobenzene	13.89	112	526855	2.05 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	170716	2.07 ug/l	99
67)	Ethylbenzene	13.97	91	988864	2.04 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	1420704	4.11 ug/l	99
69)	o-Xylene	14.48	91	673059	2.03 ug/l	100
70)	Styrene	14.49	104	548157	2.01 ug/l	98
72)	Bromoform	14.67	173	55465	1.82 ug/l	99
73)	Isopropylbenzene	14.80	105	974630	2.06 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	129096	1.96 ug/l	96
76)	Bromobenzene	15.10	156	187880	2.03 ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	25769	1.96 ug/l	88
78)	1,2,3-Trichloropropane	15.13	110	31155	1.96 ug/l	96

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	1142923	2.08	ug/l	99
80)	1,3,5-Trimethylbenzene	15.31	105	683742	2.05	ug/l	99
81)	2-Chlorotoluene	15.25	91	554801	2.11	ug/l	99
82)	4-Chlorotoluene	15.35	91	635588	2.04	ug/l	98
83)	tert-Butylbenzene	15.57	134	188074	2.08	ug/l	75
84)	1,2,4-Trimethylbenzene	15.62	105	650244	2.01	ug/l	99
85)	sec-Butylbenzene	15.75	105	1032858	2.07	ug/l	99
86)	p-Isopropyltoluene	15.87	119	773598	2.04	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	355583	2.06	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	339893	2.02	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	613803	2.07	ug/l	98
90)	n-Butylbenzene	16.18	91	701545	2.04	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	282786	2.00	ug/l	97
92)	1,2-Dibromo-3-chloropropan	16.82	157	12013	1.55	ug/l	89
93)	1,2,4-Trichlorobenzene	17.48	180	133623	1.92	ug/l	99
94)	Hexachlorobutadiene	17.57	225	107771	2.03	ug/l	98
95)	Naphthalene	17.72	128	165357	1.79	ug/l	98
96)	1,2,3-Trichlorobenzene	17.91	180	101595	1.95	ug/l	98

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

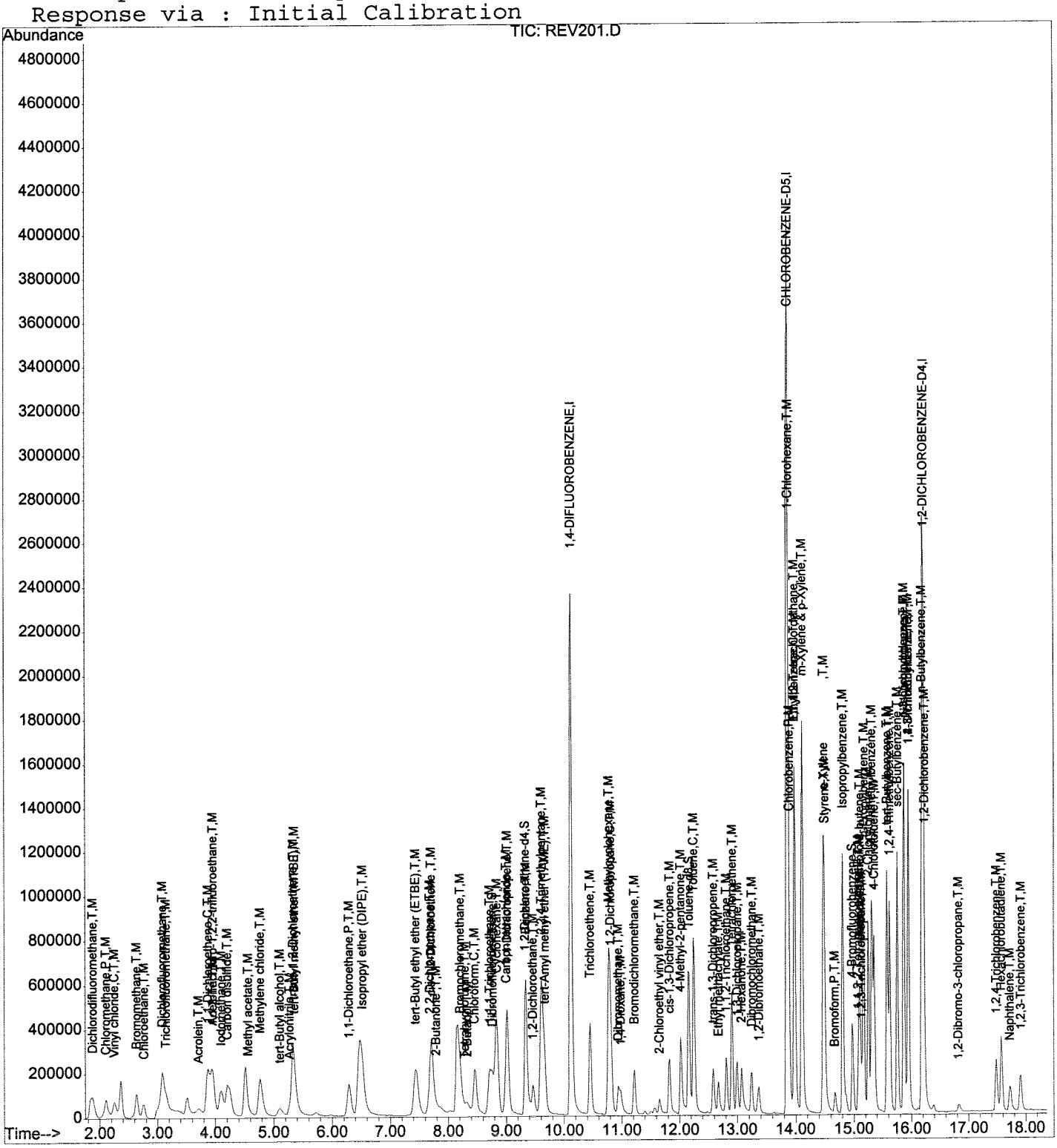
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D
Acq On : 13 May 2020 3:24 pm
Sample : VO01E134
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3068168	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2568523	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	879227	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	446817	5.17	ug/l	0.00
Spiked Amount 10.000			Recovery =	51.70%		
38) 1,2-Dichloroethane-d4	9.33	65	296517	5.16	ug/l	-0.01
Spiked Amount 10.000			Recovery =	51.60%		
54) Toluene-d8	12.15	98	1761756	5.04	ug/l	-0.01
Spiked Amount 10.000			Recovery =	50.40%		
74) 4-Bromofluorobenzene	14.97	95	554791	5.28	ug/l	-0.01
Spiked Amount 10.000			Recovery =	52.80%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	506812	5.37	ug/l	98
4) Chloromethane	2.11	50	592582	5.25	ug/l	100
5) Vinyl chloride	2.25	62	600511	5.43	ug/l	99
7) Bromomethane	2.63	94	419992	5.70	ug/l	100
8) Chloroethane	2.76	64	339374	5.54	ug/l	99
9) Dichlorofluoromethane	3.08	67	783268	5.18	ug/l	100
10) Trichlorofluoromethane	3.14	101	538831	5.26	ug/l	98
11) Acrolein	3.70	56	137854	25.91	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	329748	5.13	ug/l	100
13) Acetone	3.93	43	254309	24.41	ug/l	100
14) 1,1-Dichloroethene	3.85	61	781704	5.22	ug/l	100
15) Iodomethane	4.10	142	876246	5.17	ug/l	100
16) Carbon disulfide	4.20	76	1732715	5.27	ug/l	99
17) Methyl acetate	4.54	43	123272	4.49	ug/l	99
18) Methylene chloride	4.77	49	636836	5.04	ug/l	100
19) tert-Butyl alcohol	5.08	59	346905	121.40	ug/l	100
20) Acrylonitrile	5.25	53	286592	22.45	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	651856	4.93	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	771966	5.21	ug/l	100
24) 1,1-Dichloroethane	6.29	63	933361	5.20	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	1565266	5.00	ug/l	100
26) 2-Butanol	8.31	45	351213	114.86	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1108262	4.91	ug/l	100
28) 2-Butanone	7.75	43	378494	22.75	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	539988	5.19	ug/l	100
30) 2,2-Dichloropropane	7.68	77	590879	5.20	ug/l	99
31) Tetrahydrofurane	8.27	42	51619	4.84	ug/l	95

(#) = qualifier out of range (m) = manual integration

SU 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.18	49	384291	5.18	ug/l	99
33)	Chloroform	8.45	83	752620	5.07	ug/l	99
35)	1,1,1-Trichloroethane	8.70	97	592851	5.01	ug/l	100
36)	Cyclohexane	8.84	84	896678	5.32	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	897060	5.15	ug/l	99
39)	1,1-Dichloropropene	9.01	110	267353	5.32	ug/l	99
40)	Carbon tetrachloride	9.00	119	521272	5.25	ug/l	99
41)	Benzene	9.34	78	1901912	5.18	ug/l	100
42)	1,2-Dichloroethane	9.46	62	350508	5.09	ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	2767817	5.59	ug/l	100
44)	Trichloroethene	10.45	130	591124	5.27	ug/l	99
45)	Methylcyclohexane	10.78	83	1034744	5.47	ug/l	100
46)	1,2-Dichloropropane	10.81	63	517549	5.23	ug/l	99
47)	1,4-Dioxane	10.97	88	32881	97.37	ug/l	99
48)	Dibromomethane	10.94	93	196998	5.25	ug/l	99
49)	Bromodichloromethane	11.22	83	500906	5.20	ug/l	98
50)	2-Chloroethyl vinyl ether	11.65	63	143987	4.70	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	639392	5.16	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	1067954	24.76	ug/l	100
55)	Toluene	12.24	91	2099951	5.22	ug/l	100
56)	Ethyl methacrylate	12.67	69	351968	4.91	ug/l	97
57)	trans-1,3-Dichloropropene	12.57	75	472240	4.98	ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	273166	5.07	ug/l	99
59)	Tetrachloroethene	12.91	164	458690	5.21	ug/l	99
60)	1,3-Dichloropropane	13.00	76	522545	5.07	ug/l	99
61)	2-Hexanone	13.06	43	683543	23.54	ug/l	100
62)	Dibromochloromethane	13.25	129	346328	5.18	ug/l	100
63)	1,2-Dibromoethane	13.37	107	283853	5.25	ug/l	99
64)	1-Chlorohexane	13.87	91	943461	5.18	ug/l	100
65)	Chlorobenzene	13.89	112	1300326	5.15	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	424095	5.24	ug/l	99
67)	Ethylbenzene	13.98	91	2520635	5.29	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	3614787	10.67	ug/l	100
69)	o-Xylene	14.48	91	1707881	5.26	ug/l	99
70)	Styrene	14.49	104	1405832	5.25	ug/l	100
72)	Bromoform	14.67	173	152702	5.16	ug/l	99
73)	Isopropylbenzene	14.80	105	2422335	5.27	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	327943	5.15	ug/l	100
76)	Bromobenzene	15.10	156	474715	5.28	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	58989	4.63	ug/l	97
78)	1,2,3-Trichloropropane	15.13	110	80450	5.21	ug/l	96

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.16	91	2881270	5.42	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	1706508	5.27	ug/l	100
81)	2-Chlorotoluene	15.25	91	1321281	5.18	ug/l	98
82)	4-Chlorotoluene	15.35	91	1590984	5.27	ug/l	99
83)	tert-Butylbenzene	15.57	134	475222	5.43	ug/l	74
84)	1,2,4-Trimethylbenzene	15.62	105	1678254	5.36	ug/l	99
85)	sec-Butylbenzene	15.75	105	2581945	5.35	ug/l	99
86)	p-Isopropyltoluene	15.87	119	1929357	5.24	ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	890179	5.32	ug/l	100
88)	1,4-Dichlorobenzene	15.94	146	852945	5.24	ug/l	100
89)	1,2,3-Trimethylbenzene	15.94	105	1522078	5.29	ug/l	100
90)	n-Butylbenzene	16.18	91	1795599	5.38	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	706630	5.15	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	36201	4.82	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	348169	5.16	ug/l	98
94)	Hexachlorobutadiene	17.57	225	281905	5.47	ug/l	100
95)	Naphthalene	17.72	128	456263	5.11	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	268571	5.32	ug/l	99

SU 5/18/20

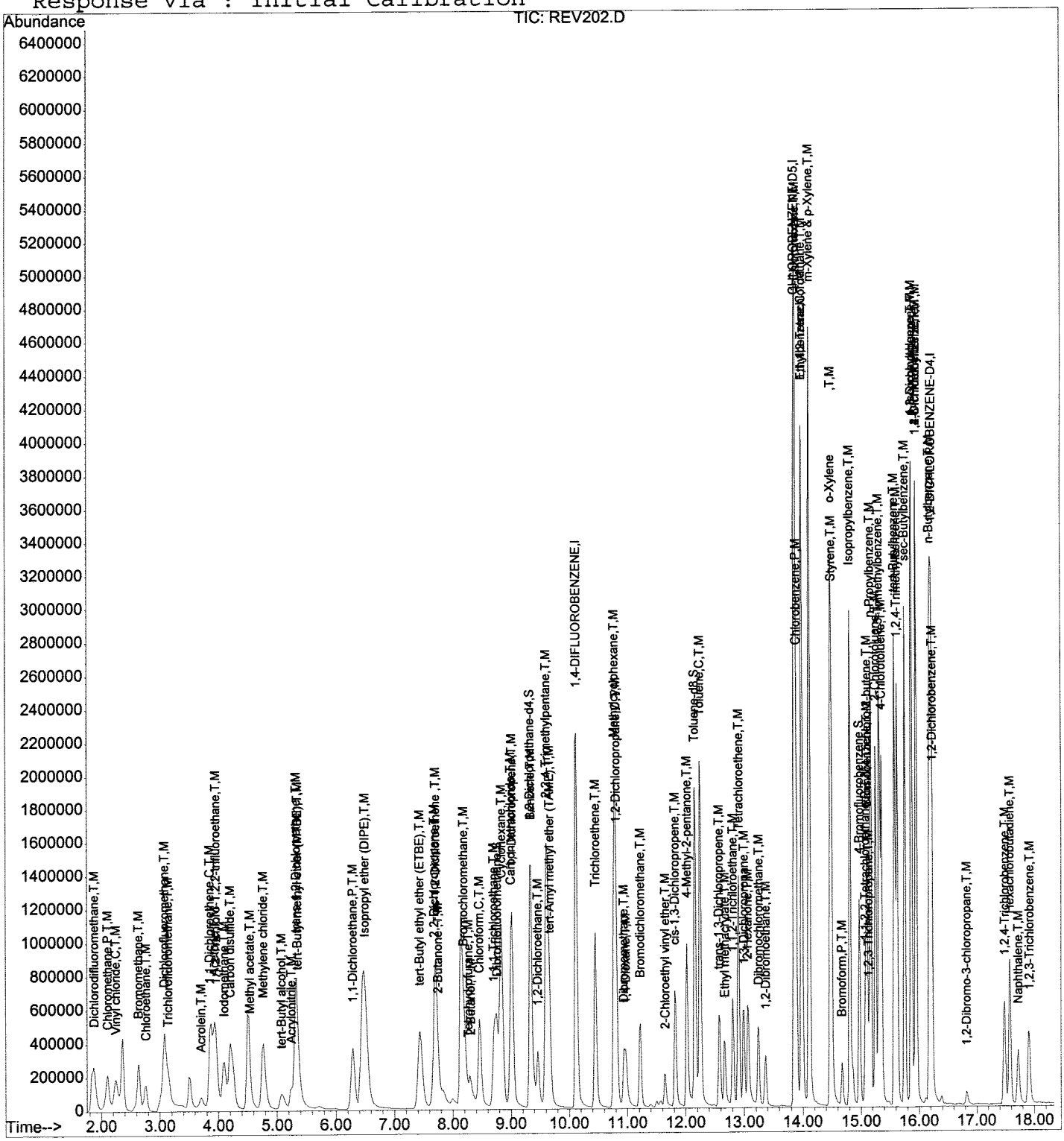
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3167387	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.87	117	2685414	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	938720	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	993253	11.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.40%		
38) 1,2-Dichloroethane-d4	9.34	65	656685	11.06	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.60%		
54) Toluene-d8	12.17	98	3866037	10.58	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.80%		
74) 4-Bromofluorobenzene	14.98	95	1180395	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	981849	10.08	ug/l	100
4) Chloromethane	2.11	50	1182341	10.16	ug/l	100
5) Vinyl chloride	2.25	62	1196903	10.48	ug/l	100
7) Bromomethane	2.63	94	824161	10.84	ug/l	100
8) Chloroethane	2.75	64	668881	10.58	ug/l	100
9) Dichlorofluoromethane	3.08	67	1556421	9.98	ug/l	100
10) Trichlorofluoromethane	3.14	101	1108586	10.48	ug/l	100
11) Acrolein	3.71	56	280483	51.06	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	666223	10.05	ug/l	100
13) Acetone	3.93	43	542441	50.44	ug/l	100
14) 1,1-Dichloroethene	3.85	61	1570988	10.16	ug/l	100
15) Iodomethane	4.10	142	1769760	10.12	ug/l	100
16) Carbon disulfide	4.20	76	3499947	10.31	ug/l	100
17) Methyl acetate	4.52	43	297519	10.50	ug/l	100
18) Methylene chloride	4.77	49	1284809	9.85	ug/l	100
19) tert-Butyl alcohol	5.08	59	798979	270.85	ug/l	100
20) Acrylonitrile	5.23	53	658986	50.01	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1411462	10.34	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1555305	10.17	ug/l	100
24) 1,1-Dichloroethane	6.29	63	1882548	10.15	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3300430	10.22	ug/l	100
26) 2-Butanol	8.29	45	892519	261.78	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2283239	9.79	ug/l	100
28) 2-Butanone	7.72	43	897015	52.23	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	1075506	10.02	ug/l	100
30) 2,2-Dichloropropane	7.68	77	1169852	9.98	ug/l	100
31) Tetrahydrofurane	8.27	42	119830	10.89	ug/l	100

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.20	49	781851	10.21	ug/l	100
33)	Chloroform	8.47	83	1539774	10.05	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1205417	9.86	ug/l	100
36)	Cyclohexane	8.84	84	1721201	9.89	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1845114	10.25	ug/l	100
39)	1,1-Dichloropropene	9.03	110	538098	10.37	ug/l	100
40)	Carbon tetrachloride	9.00	119	1059221	10.33	ug/l	100
41)	Benzene	9.34	78	3741497	9.88	ug/l	100
42)	1,2-Dichloroethane	9.47	62	731073	10.28	ug/l	100
43)	2,2,4-Trimethylpentane	9.62	57	5488288	10.73	ug/l	100
44)	Trichloroethene	10.47	130	1181673	10.20	ug/l	100
45)	Methylcyclohexane	10.79	83	2066215	10.58	ug/l	100
46)	1,2-Dichloropropane	10.82	63	1060172	10.37	ug/l	100
47)	1,4-Dioxane	10.97	88	72346	207.53	ug/l	100
48)	Dibromomethane	10.95	93	409460	10.56	ug/l	100
49)	Bromodichloromethane	11.22	83	1034032	10.39	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	322016	10.19	ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1338031	10.46	ug/l	100
52)	4-Methyl-2-pentanone	12.04	43	2431087	54.60	ug/l	100
55)	Toluene	12.26	91	4152375	9.87	ug/l	100
56)	Ethyl methacrylate	12.67	69	770340	10.28	ug/l	100
57)	trans-1,3-Dichloropropene	12.58	75	1001116	10.09	ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	572207	10.16	ug/l	100
59)	Tetrachloroethene	12.92	164	909641	9.89	ug/l	100
60)	1,3-Dichloropropane	13.01	76	1103037	10.23	ug/l	100
61)	2-Hexanone	13.07	43	1624022	53.49	ug/l	100
62)	Dibromochloromethane	13.26	129	734730	10.50	ug/l	100
63)	1,2-Dibromoethane	13.38	107	592704	10.49	ug/l	100
64)	1-Chlorohexane	13.89	91	1873736	9.84	ug/l	100
65)	Chlorobenzene	13.90	112	2639229	10.00	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.99	131	875621	10.36	ug/l	100
67)	Ethylbenzene	13.99	91	4985455	10.01	ug/l	100
68)	m-Xylene & p-Xylene	14.12	91	7330631	20.69	ug/l	100
69)	o-Xylene	14.49	91	3462673	10.19	ug/l	100
70)	Styrene	14.51	104	2846005	10.16	ug/l	100
72)	Bromoform	14.69	173	336685	10.65	ug/l	100
73)	Isopropylbenzene	14.82	105	4804245	9.80	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.09	83	706426	10.39	ug/l	100
76)	Bromobenzene	15.12	156	969879	10.10	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.12	53	130204	9.58	ug/l	100
78)	1,2,3-Trichloropropane	15.14	110	171536	10.41	ug/l	100

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D
Acq On : 13 May 2020 4:20 pm
Sample : VO01E136
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.19	91	5751258	10.14	ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3527307	10.19	ug/l	100
81)	2-Chlorotoluene	15.26	91	2819407	10.36	ug/l	100
82)	4-Chlorotoluene	15.37	91	3245399	10.07	ug/l	100
83)	tert-Butylbenzene	15.59	134	932120	9.97	ug/l	100
84)	1,2,4-Trimethylbenzene	15.63	105	3310630	9.90	ug/l	100
85)	sec-Butylbenzene	15.77	105	5172032	10.04	ug/l	100
86)	p-Isopropyltoluene	15.89	119	3927374	10.00	ug/l	100
87)	1,3-Dichlorobenzene	15.89	146	1848020	10.34	ug/l	100
88)	1,4-Dichlorobenzene	15.96	146	1715478	9.87	ug/l	100
89)	1,2,3-Trimethylbenzene	15.96	105	3094271	10.07	ug/l	100
90)	n-Butylbenzene	16.20	91	3649801	10.23	ug/l	100
91)	1,2-Dichlorobenzene	16.24	146	1433728	9.78	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.83	157	81338	10.15	ug/l	100
93)	1,2,4-Trichlorobenzene	17.50	180	735466	10.21	ug/l	100
94)	Hexachlorobutadiene	17.60	225	553020	10.06	ug/l	100
95)	Naphthalene	17.74	128	960056	10.07	ug/l	100
96)	1,2,3-Trichlorobenzene	17.93	180	545979	10.12	ug/l	100

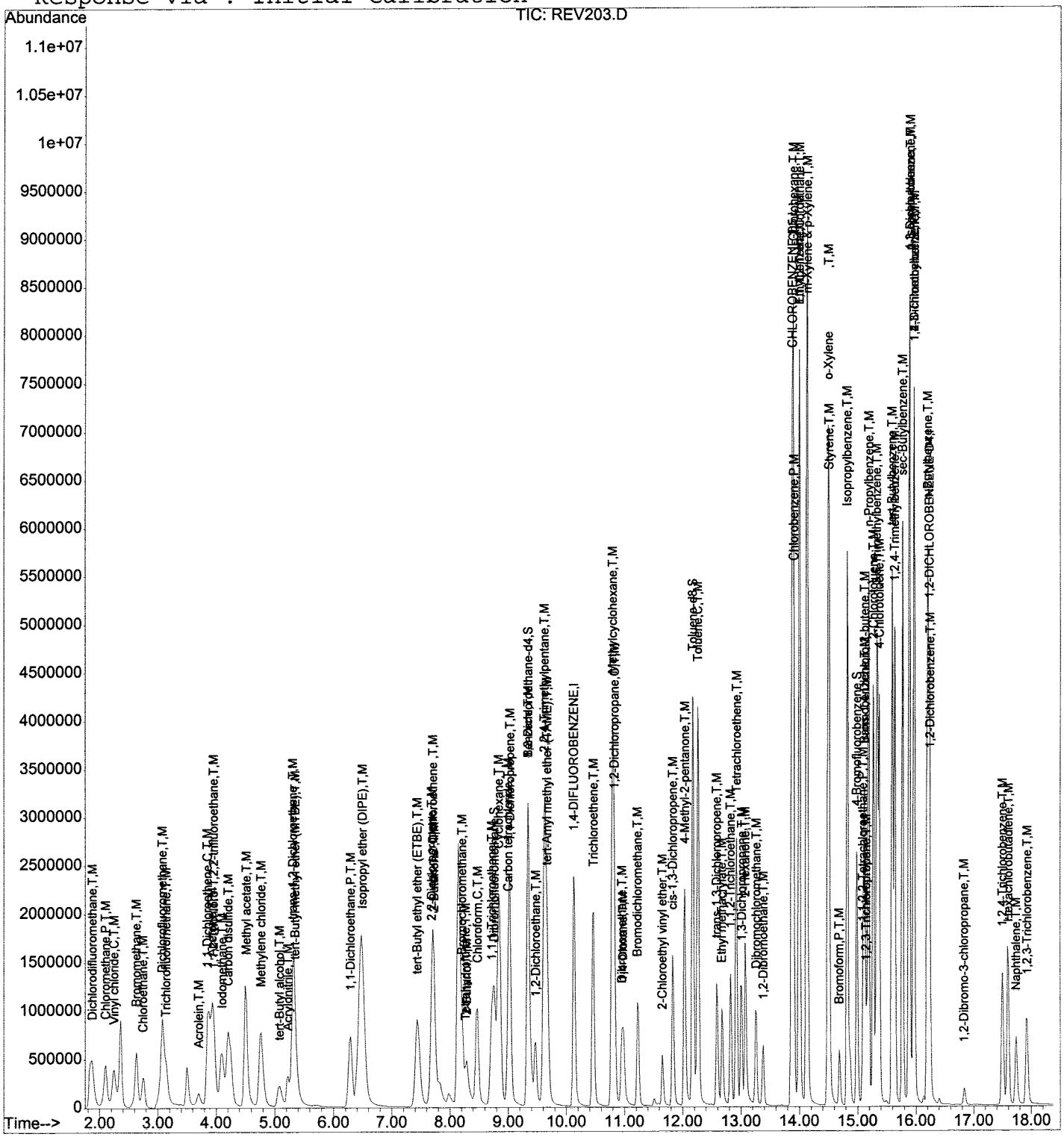
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3182543	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2678062	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	936569	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1880478	20.99	ug/l	0.00
Spiked Amount 10.000			Recovery =	209.90%		
38) 1,2-Dichloroethane-d4	9.32	65	1288229	21.59	ug/l	-0.01
Spiked Amount 10.000			Recovery =	215.90%		
54) Toluene-d8	12.15	98	7569793	20.77	ug/l	-0.01
Spiked Amount 10.000			Recovery =	207.70%		
74) 4-Bromofluorobenzene	14.97	95	2338620	20.89	ug/l	-0.01
Spiked Amount 10.000			Recovery =	208.90%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	1998148	20.41	ug/l	99
4) Chloromethane	2.11	50	2325987	19.89	ug/l	99
5) Vinyl chloride	2.25	62	2323224	20.25	ug/l	99
7) Bromomethane	2.63	94	1488642	19.48	ug/l	99
8) Chloroethane	2.75	64	1238755	19.51	ug/l	99
9) Dichlorofluoromethane	3.08	67	3046413	19.43	ug/l	100
10) Trichlorofluoromethane	3.14	101	2191412	20.62	ug/l	99
11) Acrolein	3.71	56	562100	101.84	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	1339436	20.10	ug/l	99
13) Acetone	3.93	43	1108442	102.57	ug/l	98
14) 1,1-Dichloroethene	3.87	61	3122522	20.09	ug/l	100
15) Iodomethane	4.10	142	3519510	20.03	ug/l	99
16) Carbon disulfide	4.21	76	7009690	20.54	ug/l	100
17) Methyl acetate	4.54	43	595262	20.91	ug/l	99
18) Methylene chloride	4.77	49	2564333	19.57	ug/l	99
19) tert-Butyl alcohol	5.08	59	1634918	551.60	ug/l	100
20) Acrylonitrile	5.23	53	1408295	106.36	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	2786059	20.32	ug/l	99
22) trans-1,2-Dichloroethene	5.33	61	3063263	19.93	ug/l	99
24) 1,1-Dichloroethane	6.29	63	3732915	20.03	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	6732312	20.75	ug/l	100
26) 2-Butanol	8.29	45	1828437	518.82	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	4574261	19.53	ug/l	100
28) 2-Butanone	7.72	43	1835472	106.37	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	2168474	20.10	ug/l	100
30) 2,2-Dichloropropane	7.70	77	2338863	19.85	ug/l	100
31) Tetrahydrofurane	8.27	42	240698	21.77	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D
Acq On : 13 May 2020 4:47 pm
Sample : VO01E137
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.20	49	1546357	20.10 ug/l	99
33) Chloroform	8.45	83	3074501	19.98 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	2611987	21.26 ug/l	94
36) Cyclohexane	8.84	84	3547352	20.29 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	3677301	20.34 ug/l	100
39) 1,1-Dichloropropene	9.03	110	1077442	20.67 ug/l	99
40) Carbon tetrachloride	9.00	119	2123420	20.61 ug/l	100
41) Benzene	9.34	78	7706690	20.25 ug/l	100
42) 1,2-Dichloroethane	9.46	62	1480291	20.72 ug/l	100
43) 2,2,4-Trimethylpentane	9.62	57	10559536	20.54 ug/l	100
44) Trichloroethene	10.45	130	2388345	20.52 ug/l	100
45) Methylcyclohexane	10.78	83	4154051	21.17 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2120613	20.65 ug/l	100
47) 1,4-Dioxane	10.95	88	146941	419.51 ug/l	99
48) Dibromomethane	10.94	93	808725	20.76 ug/l	99
49) Bromodichloromethane	11.22	83	2097141	20.98 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	677307	21.33 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	2768892	21.55 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	4919602	109.96 ug/l	99
55) Toluene	12.24	91	8439015	20.12 ug/l	99
56) Ethyl methacrylate	12.66	69	1540328	20.60 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2086191	21.09 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	1124048	20.02 ug/l	100
59) Tetrachloroethene	12.91	164	1832883	19.98 ug/l	100
60) 1,3-Dichloropropane	13.00	76	2183646	20.31 ug/l	99
61) 2-Hexanone	13.06	43	3370336	111.32 ug/l	99
62) Dibromochloromethane	13.25	129	1485763	21.30 ug/l	100
63) 1,2-Dibromoethane	13.37	107	1184644	21.03 ug/l	99
64) 1-Chlorohexane	13.87	91	3797027	20.00 ug/l	99
65) Chlorobenzene	13.89	112	5266132	20.00 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	1745026	20.69 ug/l	100
67) Ethylbenzene	13.97	91	10131853	20.41 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	13945469	39.46 ug/l	98
69) o-Xylene	14.48	91	6861711	20.25 ug/l	100
70) Styrene	14.49	104	5804762	20.78 ug/l	99
72) Bromoform	14.67	173	694516	22.02 ug/l	100
73) Isopropylbenzene	14.80	105	9730818	19.89 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	1378338	20.31 ug/l	99
76) Bromobenzene	15.10	156	1919633	20.05 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	272937	20.12 ug/l	97
78) 1,2,3-Trichloropropane	15.13	110	341841	20.78 ug/l	100

(#) = qualifier out of range (m) = manual integration

5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	11578541	20.46	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	6971891	20.20	ug/l	100
81)	2-Chlorotoluene	15.25	91	5576205	20.53	ug/l	99
82)	4-Chlorotoluene	15.35	91	6432235	20.00	ug/l	99
83)	tert-Butylbenzene	15.57	134	1856231	19.91	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	6859128	20.55	ug/l	99
85)	sec-Butylbenzene	15.75	105	10541362	20.50	ug/l	100
86)	p-Isopropyltoluene	15.87	119	7941541	20.27	ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	3644189	20.43	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	3557043	20.52	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	6212747	20.27	ug/l	100
90)	n-Butylbenzene	16.18	91	7377784	20.73	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	2901035	19.84	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	174288	21.79	ug/l	100
93)	1,2,4-Trichlorobenzene	17.48	180	1573315	21.89	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1168258	21.29	ug/l	100
95)	Naphthalene	17.72	128	2049737	21.55	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1141986	21.22	ug/l	100

Sa 5/18/20

(#) = qualifier out of range (m) = manual integration

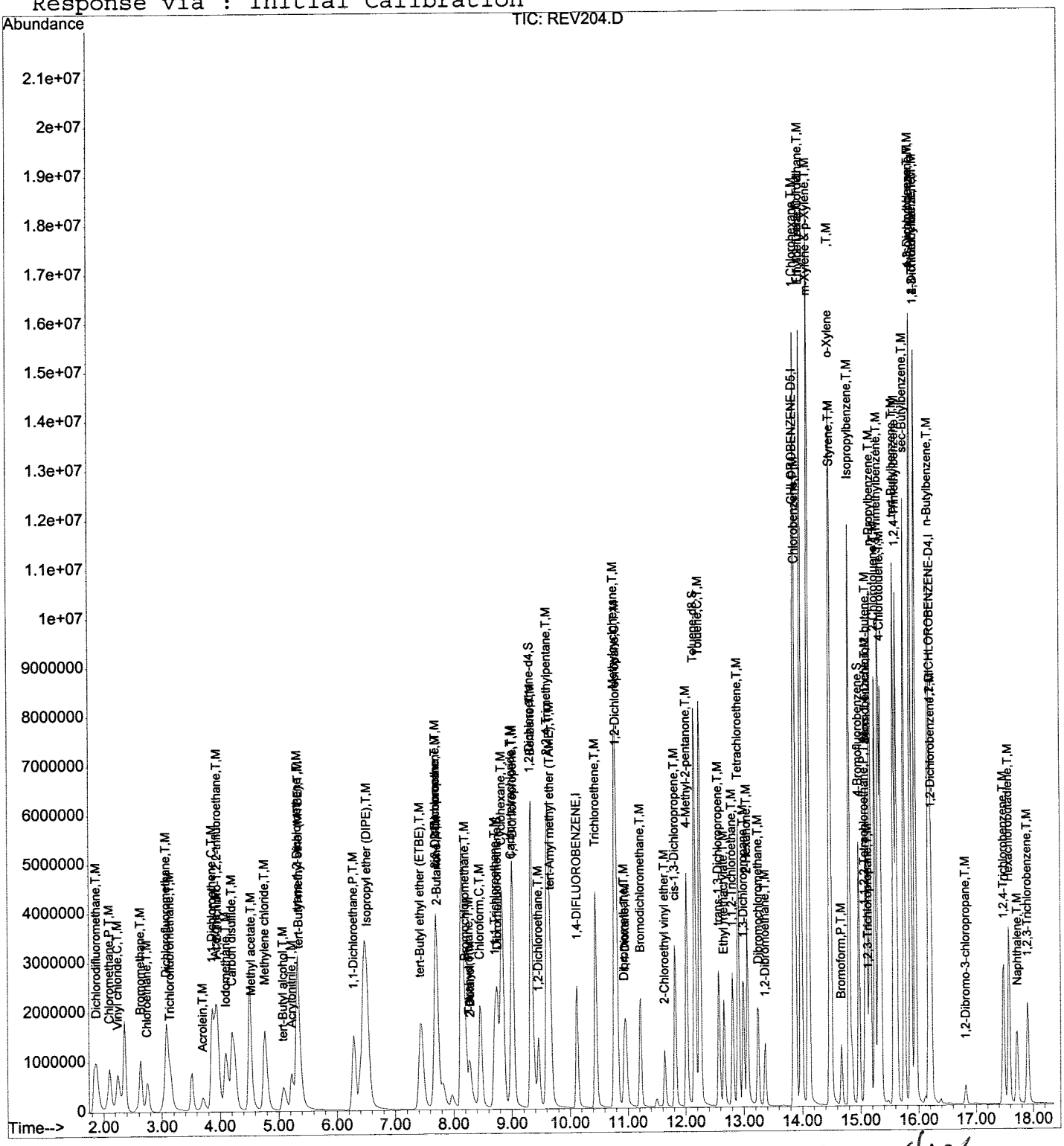
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D
Acq On : 13 May 2020 4:47 pm
Sample : VO01E137
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3096634	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2554592	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	862320	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	2698043	30.96	ug/l	-0.01
Spiked Amount 10.000			Recovery =	309.60%		
38) 1,2-Dichloroethane-d4	9.33	65	1798985	30.99	ug/l	-0.01
Spiked Amount 10.000			Recovery =	309.90%		
54) Toluene-d8	12.15	98	10740206	30.89	ug/l	-0.01
Spiked Amount 10.000			Recovery =	308.90%		
74) 4-Bromofluorobenzene	14.97	95	3403768	33.02	ug/l	-0.01
Spiked Amount 10.000			Recovery =	330.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	2897044	30.41	ug/l	100
4) Chloromethane	2.10	50	3412463	29.98	ug/l	99
5) Vinyl chloride	2.25	62	3449445	30.91	ug/l	100
7) Bromomethane	2.63	94	1926536	25.91	ug/l	100
8) Chloroethane	2.75	64	1723670	27.90	ug/l	100
9) Dichlorofluoromethane	3.08	67	4343157	28.47	ug/l	99
10) Trichlorofluoromethane	3.14	101	3159000	30.56	ug/l	99
11) Acrolein	3.70	56	783974	145.97	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	1988674	30.67	ug/l	99
13) Acetone	3.93	43	1567085	149.03	ug/l	99
14) 1,1-Dichloroethene	3.85	61	4627877	30.60	ug/l	100
15) Iodomethane	4.10	142	5180142	30.30	ug/l	100
16) Carbon disulfide	4.20	76	10252462	30.88	ug/l	100
17) Methyl acetate	4.52	43	828838	29.92	ug/l	99
18) Methylene chloride	4.77	49	3706868	29.08	ug/l	99
19) tert-Butyl alcohol	5.08	59	2281663	791.16	ug/l	99
20) Acrylonitrile	5.23	53	2038109	158.19	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	3938132	29.52	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	4525972	30.26	ug/l	99
24) 1,1-Dichloroethane	6.29	63	5521859	30.45	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	9627906	30.49	ug/l	100
26) 2-Butanol	8.27	45	2527526	731.05	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	6441656	28.26	ug/l	100
28) 2-Butanone	7.72	43	2670603	159.06	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	3261005	31.06	ug/l	98
30) 2,2-Dichloropropane	7.70	77	3492021	30.46	ug/l	100
31) Tetrahydrofurane	8.25	42	335319	31.16	ug/l	99

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	2252313	30.09 ug/l	99
33) Chloroform	8.45	83	4532185	30.27 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	3833308	32.07 ug/l	95
36) Cyclohexane	8.84	84	5202996	30.58 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	5249152	29.83 ug/l	100
39) 1,1-Dichloropropene	9.01	110	1569661	30.95 ug/l	100
40) Carbon tetrachloride	9.00	119	3139048	31.32 ug/l	100
41) Benzene	9.34	78	11053787	29.86 ug/l	100
42) 1,2-Dichloroethane	9.46	62	2122967	30.53 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	15867817	31.73 ug/l	100
44) Trichloroethene	10.45	130	3428358	30.27 ug/l	100
45) Methylcyclohexane	10.78	83	5937114	31.09 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2973181	29.76 ug/l	99
47) 1,4-Dioxane	10.95	88	214599	629.67 ug/l	99
48) Dibromomethane	10.94	93	1172558	30.94 ug/l	98
49) Bromodichloromethane	11.21	83	3084990	31.72 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	992684	32.12 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	3972967	31.78 ug/l	100
52) 4-Methyl-2-pentanone	12.02	43	6910110	158.74 ug/l	99
55) Toluene	12.24	91	12347445	30.86 ug/l	99
56) Ethyl methacrylate	12.66	69	2186278	30.66 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2996543	31.75 ug/l	100
58) 1,1,2-Trichloroethane	12.81	97	1619105	30.23 ug/l	99
59) Tetrachloroethene	12.91	164	2680006	30.62 ug/l	99
60) 1,3-Dichloropropane	12.98	76	3147529	30.69 ug/l	100
61) 2-Hexanone	13.06	43	4767662	165.08 ug/l	98
62) Dibromochloromethane	13.24	129	2154157	32.37 ug/l	99
63) 1,2-Dibromoethane	13.37	107	1694224	31.54 ug/l	99
64) 1-Chlorohexane	13.87	91	5545249	30.62 ug/l	100
65) Chlorobenzene	13.89	112	7640289	30.42 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.98	131	2499661	31.08 ug/l	100
67) Ethylbenzene	13.98	91	13633368	28.79 ug/l	97
68) m-Xylene & p-Xylene	14.11	91	18268724	54.20 ug/l	89
69) o-Xylene	14.48	91	9920435	30.69 ug/l	100
70) Styrene	14.49	104	8379889	31.46 ug/l	99
72) Bromoform	14.67	173	998157	34.37 ug/l	100
73) Isopropylbenzene	14.80	105	13086936	29.05 ug/l	97
75) 1,1,2,2-Tetrachloroethane	15.07	83	1959221	31.36 ug/l	100
76) Bromobenzene	15.10	156	2781747	31.55 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	391876	31.37 ug/l	99
78) 1,2,3-Trichloropropane	15.13	110	477791	31.55 ug/l	100

(#) = qualifier out of range (m) = manual integration
REV205.D VO01E13.M Thu May 14 18:36:40 2020 SY 5/18/20 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.18	91	13997621	26.86	ug/l	92
80)	1,3,5-Trimethylbenzene	15.31	105	10084275	31.73	ug/l	100
81)	2-Chlorotoluene	15.25	91	8048367	32.18	ug/l	98
82)	4-Chlorotoluene	15.35	91	9245029	31.22	ug/l	100
83)	tert-Butylbenzene	15.57	134	2699922	31.45	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	9797004	31.88	ug/l	99
85)	sec-Butylbenzene	15.75	105	13380886	28.27	ug/l	95
86)	p-Isopropyltoluene	15.87	119	11241032	31.16	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	5233107	31.86	ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	4944171	30.97	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	8671658	30.73	ug/l	99
90)	n-Butylbenzene	16.18	91	10667864	32.56	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	4099793	30.45	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	243048	33.01	ug/l	99
93)	1,2,4-Trichlorobenzene	17.49	180	2193270	33.14	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1625625	32.18	ug/l	99
95)	Naphthalene	17.72	128	2869688	32.76	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1588500	32.06	ug/l	100

Su 5/18/20

(#) = qualifier out of range (m) = manual integration
REV205.D VO01E13.M Thu May 14 18:36:40 2020 Page 3

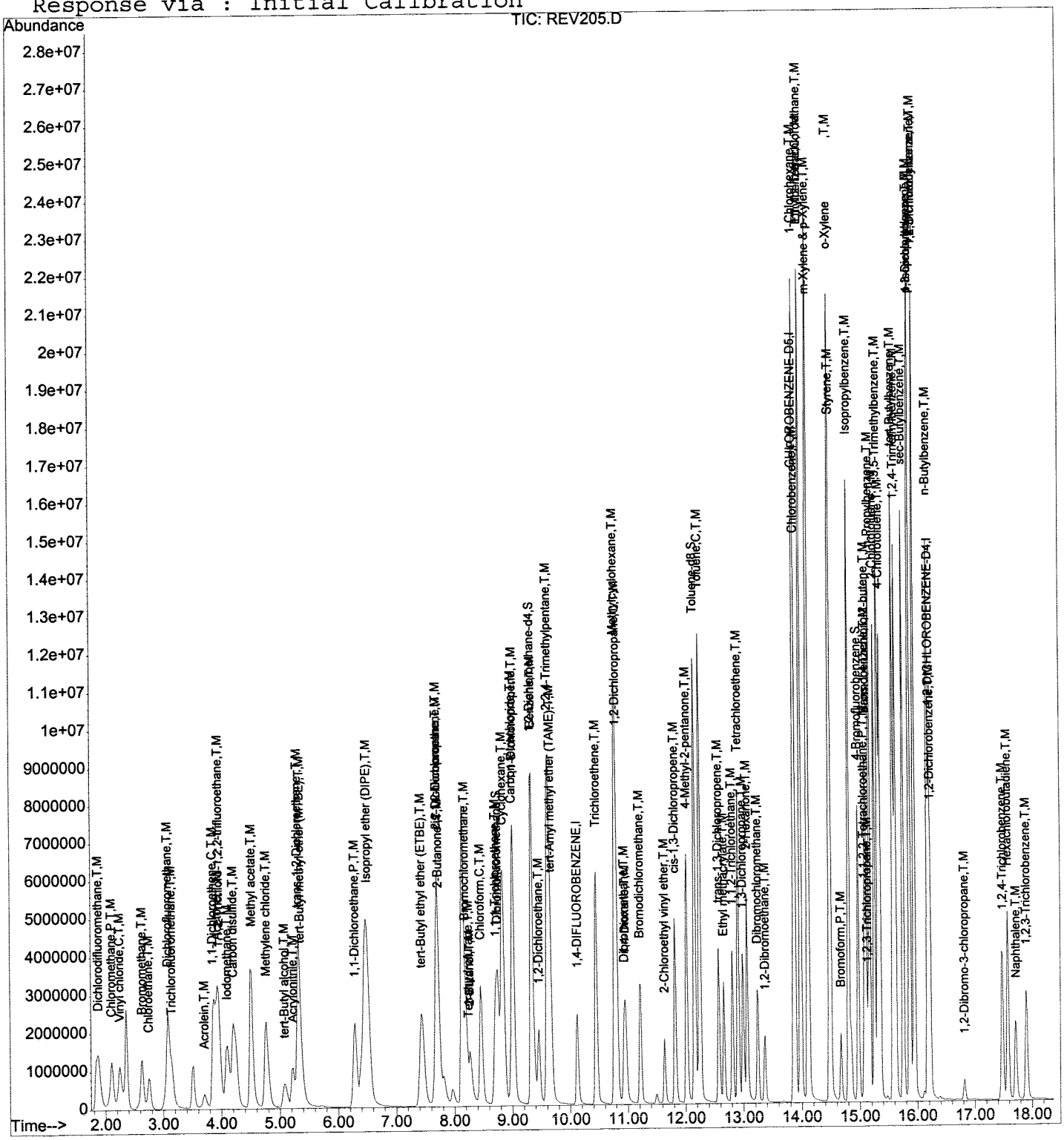
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3150156	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2611192	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.20	152	901049	10.00	ug/l	-0.03
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	4465266	50.36	ug/l	-0.01
Spiked Amount 10.000			Recovery =	503.60%		
38) 1,2-Dichloroethane-d4	9.33	65	2900379	49.12	ug/l	-0.01
Spiked Amount 10.000			Recovery =	491.20%		
54) Toluene-d8	12.15	98	16440098	46.25	ug/l	-0.01
Spiked Amount 10.000			Recovery =	462.50%		
74) 4-Bromofluorobenzene	14.97	95	5334374	49.52	ug/l	-0.01
Spiked Amount 10.000			Recovery =	495.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	4908013	50.64	ug/l	100
4) Chloromethane	2.10	50	5894461	50.91	ug/l	99
5) Vinyl chloride	2.24	62	5690849	50.12	ug/l	99
7) Bromomethane	2.63	94	2636932	34.86	ug/l	99
8) Chloroethane	2.74	64	2701585	42.98	ug/l	100
9) Dichlorofluoromethane	3.08	67	7358611	47.42	ug/l	100
10) Trichlorofluoromethane	3.12	101	5388767	51.24	ug/l	99
11) Acrolein	3.71	56	1312815	240.29	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	3216191	48.76	ug/l	100
13) Acetone	3.94	43	2479926	231.84	ug/l	100
14) 1,1-Dichloroethene	3.85	61	7411335	48.18	ug/l	99
15) Iodomethane	4.10	142	8576834	49.32	ug/l	99
16) Carbon disulfide	4.21	76	17310985	51.25	ug/l	100
17) Methyl acetate	4.52	43	1417314	50.30	ug/l	99
18) Methylene chloride	4.75	49	6064325	46.77	ug/l	99
19) tert-Butyl alcohol	5.08	59	3752185	1278.95	ug/l	99
20) Acrylonitrile	5.21	53	3406355	259.90	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	6480793	47.76	ug/l	99
22) trans-1,2-Dichloroethene	5.31	61	7519203	49.42	ug/l	99
24) 1,1-Dichloroethane	6.29	63	9051617	49.07	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	15594435	48.55	ug/l	100
26) 2-Butanol	8.27	45	4434529	1250.44	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	10634323	45.86	ug/l	100
28) 2-Butanone	7.73	43	4397913	257.49	ug/l	99
29) cis-1,2-Dichloroethene	7.71	96	5227128	48.94	ug/l	100
30) 2,2-Dichloropropane	7.71	77	5636752	48.34	ug/l	100
31) Tetrahydrofurane	8.25	42	538206	49.17	ug/l	98

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.18	49	3662643	48.11	ug/l	100
33)	Chloroform	8.45	83	7371090	48.39	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	6392327	52.56	ug/l	99
36)	Cyclohexane	8.84	84	8420160	48.65	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	8435107	47.13	ug/l	100
39)	1,1-Dichloropropene	9.01	110	2559117	49.60	ug/l	99
40)	Carbon tetrachloride	9.00	119	5202905	51.03	ug/l	100
41)	Benzene	9.34	78	17956135	47.68	ug/l	100
42)	1,2-Dichloroethane	9.46	62	3451270	48.79	ug/l	99
43)	2,2,4-Trimethylpentane	9.62	57	25329094	49.79	ug/l	100
44)	Trichloroethene	10.45	130	5780585	50.18	ug/l	100
45)	Methylcyclohexane	10.78	83	9854254	50.72	ug/l	99
46)	1,2-Dichloropropane	10.81	63	4843612	47.65	ug/l	99
47)	1,4-Dioxane	10.95	88	337303	972.89	ug/l	99
48)	Dibromomethane	10.94	93	1923801	49.90	ug/l	100
49)	Bromodichloromethane	11.21	83	5074290	51.29	ug/l	99
50)	2-Chloroethyl vinyl ether	11.64	63	1663108	52.90	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	6657180	52.34	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	11507992	259.87	ug/l	100
55)	Toluene	12.24	91	17773741	43.46	ug/l	89
56)	Ethyl methacrylate	12.66	69	3666534	50.30	ug/l	100
57)	trans-1,3-Dichloropropene	12.57	75	4995826	51.79	ug/l	100
58)	1,1,2-Trichloroethane	12.81	97	2670877	48.79	ug/l	99
59)	Tetrachloroethene	12.91	164	4440492	49.64	ug/l	99
60)	1,3-Dichloropropane	12.98	76	5128104	48.91	ug/l	99
61)	2-Hexanone	13.06	43	7899490	267.60	ug/l	98
62)	Dibromochloromethane	13.24	129	3510442	51.61	ug/l	100
63)	1,2-Dibromoethane	13.37	107	2783751	50.69	ug/l	99
64)	1-Chlorohexane	13.87	91	8957593	48.39	ug/l	99
65)	Chlorobenzene	13.89	112	12267173	47.78	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	4119024	50.10	ug/l	100
67)	Ethylbenzene	13.98	91	16483338	34.05	ug/l	76
68)	m-Xylene & p-Xylene	14.11	91	21093164	61.22	ug/l	65
69)	o-Xylene	14.48	91	14312232	43.32	ug/l	92
70)	Styrene	14.49	104	12831033	47.12	ug/l	97
72)	Bromoform	14.67	173	1655066	54.54	ug/l	99
73)	Isopropylbenzene	14.80	105	16741851	35.56	ug/l	85
75)	1,1,2,2-Tetrachloroethane	15.07	83	3151339	48.27	ug/l	100
76)	Bromobenzene	15.10	156	4535634	49.23	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	644992	49.42	ug/l	98
78)	1,2,3-Trichloropropane	15.13	110	768220	48.55	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

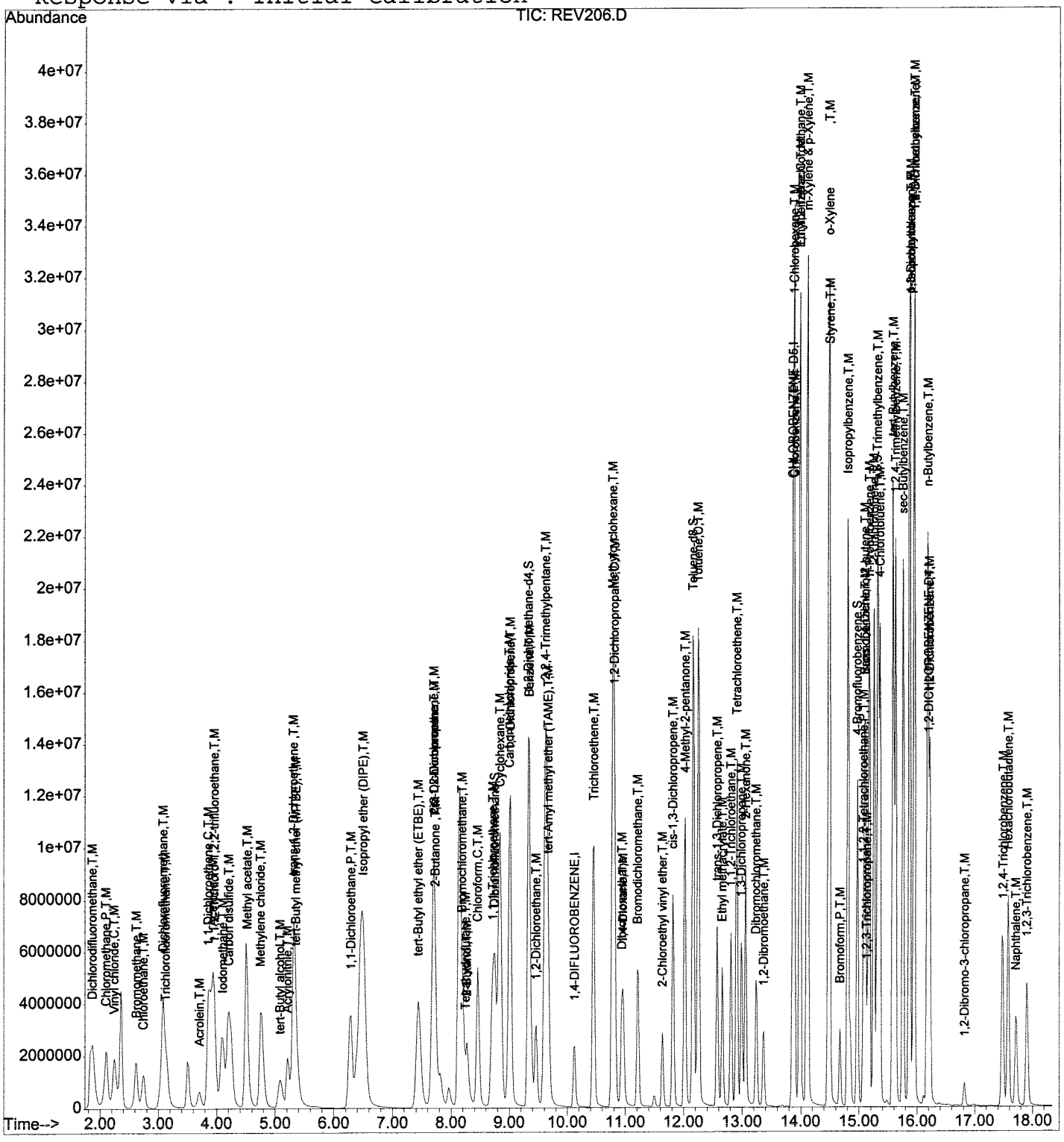
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.18	91	16572053	30.43	ug/l	73
80)	1,3,5-Trimethylbenzene	15.31	105	14210237	42.79	ug/l	90
81)	2-Chlorotoluene	15.25	91	12277228	46.98	ug/l	97
82)	4-Chlorotoluene	15.35	91	14276500	46.15	ug/l	98
83)	tert-Butylbenzene	15.57	134	4317113	48.13	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	14119313	43.98	ug/l	91
85)	sec-Butylbenzene	15.75	105	17685886	35.75	ug/l	85
86)	p-Isopropyltoluene	15.87	119	15062222	39.95	ug/l	89
87)	1,3-Dichlorobenzene	15.87	146	8574730	49.97	ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	8022440	48.09	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	13222336	44.84	ug/l	97
90)	n-Butylbenzene	16.18	91	14794710	43.22	ug/l	87
91)	1,2-Dichlorobenzene	16.21	146	6791254	48.27	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	405016	52.64	ug/l	99
93)	1,2,4-Trichlorobenzene	17.49	180	3599170	52.04	ug/l	99
94)	Hexachlorobutadiene	17.57	225	2628209	49.80	ug/l	99
95)	Naphthalene	17.71	128	4726401	51.64	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	2578361	49.80	ug/l	99

(#) = qualifier out of range (m) = manual integration SG 5/18/20
REV206.D VO01E13.M Thu May 14 18:36:54 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3172256	10.00 ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2530086	10.00 ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	853058	10.00 ug/l	-0.01
System Monitoring Compounds					
34) Dibromofluoromethane	8.75	111	9126720	102.22 ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1022.20%	
38) 1,2-Dichloroethane-d4	9.33	65	6102438	102.62 ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1026.20%	
54) Toluene-d8	12.15	98	23741109	68.94 ug/l	-0.01
Spiked Amount 10.000			Recovery	= 689.40%	
74) 4-Bromofluorobenzene	14.97	95	10693146	104.85 ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1048.50%	
Target Compounds					Qvalue
3) Dichlorodifluoromethane	1.87	85	9880249	101.24 ug/l	100
4) Chloromethane	2.10	50	12304782	105.54 ug/l	99
5) Vinyl chloride	2.24	62	12041039	105.32 ug/l	100
7) Bromomethane	2.60	94	2873546	37.72 ug/l	97
8) Chloroethane	2.71	64	3704181	58.52 ug/l	98
9) Dichlorofluoromethane	3.06	67	13600393	87.03 ug/l	99
10) Trichlorofluoromethane	3.12	101	10510039	99.24 ug/l	99
11) Acrolein	3.71	56	2788761	506.88 ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.93	151	6300937	94.87 ug/l	100
13) Acetone	3.93	43	5353116	496.96 ug/l	100
14) 1,1-Dichloroethene	3.85	61	14588987	94.18 ug/l	99
15) Iodomethane	4.08	142	17152390	97.94 ug/l	100
16) Carbon disulfide	4.21	76	35178512	103.42 ug/l	100
17) Methyl acetate	4.52	43	3295745	116.15 ug/l	99
18) Methylene chloride	4.75	49	12333062	94.45 ug/l	99
19) tert-Butyl alcohol	5.10	59	9299908	3147.83 ug/l	99
20) Acrylonitrile	5.21	53	7646437	579.36 ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	14195388	103.88 ug/l	98
22) trans-1,2-Dichloroethene	5.31	61	14713873	96.04 ug/l	98
24) 1,1-Dichloroethane	6.27	63	18508258	99.64 ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	32187001	99.51 ug/l	100
26) 2-Butanol	8.29	45	11109580	3089.49 ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	22779979	97.56 ug/l	100
28) 2-Butanone	7.73	43	9623231	559.49 ug/l	98
29) cis-1,2-Dichloroethene	7.70	96	10429986	96.98 ug/l	98
30) 2,2-Dichloropropane	7.70	77	10936733	93.14 ug/l	100
31) Tetrahydrofurane	8.25	42	1226824	111.30 ug/l	99

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
32)	Bromochloromethane	8.18	49	7381914	96.28 ug/l		99
33)	Chloroform	8.45	83	15083674	98.34 ug/l		100
35)	1,1,1-Trichloroethane	8.72	97	13185211	107.67 ug/l		95
36)	Cyclohexane	8.84	84	17351991	99.55 ug/l		97
37)	tert-Amyl methyl ether (TA	9.67	73	17949425	99.58 ug/l		99
39)	1,1-Dichloropropene	9.01	110	4973623	95.72 ug/l		99
40)	Carbon tetrachloride	9.00	119	10237967	99.71 ug/l		100
41)	Benzene	9.34	78	27379124	72.19 ug/l		88
42)	1,2-Dichloroethane	9.46	62	7208190	101.20 ug/l		99
43)	2,2,4-Trimethylpentane	9.62	57	36292611	70.84 ug/l		95
44)	Trichloroethene	10.45	130	11234629	96.84 ug/l		100
45)	Methylcyclohexane	10.78	83	19166853	97.97 ug/l		99
46)	1,2-Dichloropropane	10.81	63	9483875	92.66 ug/l		97
47)	1,4-Dioxane	10.95	88	760347	2177.82 ug/l		99
48)	Dibromomethane	10.94	93	4030480	103.82 ug/l		98
49)	Bromodichloromethane	11.21	83	10434033	104.73 ug/l		99
50)	2-Chloroethyl vinyl ether	11.64	63	3770775	119.11 ug/l		99
51)	cis-1,3-Dichloropropene	11.81	75	13724340	107.15 ug/l		99
52)	4-Methyl-2-pentanone	12.02	43	20313007	455.51 ug/l		87
55)	Toluene	12.24	91	24571394	62.01 ug/l		78
56)	Ethyl methacrylate	12.66	69	7939909	112.42 ug/l		99
57)	trans-1,3-Dichloropropene	12.57	75	10635398	113.79 ug/l		100
58)	1,1,2-Trichloroethane	12.81	97	5573989	105.10 ug/l		99
59)	Tetrachloroethene	12.91	164	8564407	98.80 ug/l		99
60)	1,3-Dichloropropane	13.00	76	10664648	104.98 ug/l		99
61)	2-Hexanone	13.06	43	15630741	546.47 ug/l		92
62)	Dibromochloromethane	13.25	129	7448855	113.02 ug/l		99
63)	1,2-Dibromoethane	13.37	107	5918931	111.24 ug/l		99
64)	1-Chlorohexane	13.87	91	14403522	80.30 ug/l		94
65)	Chlorobenzene	13.89	112	17855295	71.78 ug/l		83
66)	1,1,1,2-Tetrachloroethane	13.98	131	7939976	99.67 ug/l		100
67)	Ethylbenzene	13.99	91	20952504	44.67 ug/l		46
68)	m-Xylene & p-Xylene	14.11	91	25586512	76.64 ug/l	#	56
69)	o-Xylene	14.48	91	18864582	58.93 ug/l		68
70)	Styrene	14.49	104	18203697	68.99 ug/l		73
72)	Bromoform	14.67	173	3607425	125.55 ug/l		100
73)	Isopropylbenzene	14.80	105	20898068	46.89 ug/l		57
75)	1,1,2,2-Tetrachloroethane	15.07	83	6520414	105.49 ug/l		100
76)	Bromobenzene	15.10	156	8861957	101.60 ug/l		100
77)	trans-1,4-Dichloro-2-buten	15.10	53	1342756	108.66 ug/l		90
78)	1,2,3-Trichloropropane	15.13	110	1617705	107.99 ug/l		98

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
79)	n-Propylbenzene	15.16	91	20335903	39.44	ug/l	#	41
80)	1,3,5-Trimethylbenzene	15.31	105	17042971	54.21	ug/l		64
81)	2-Chlorotoluene	15.25	91	15897140	64.25	ug/l		66
82)	4-Chlorotoluene	15.35	91	20195058	68.95	ug/l		78
83)	tert-Butylbenzene	15.57	134	7910197	93.14	ug/l		99
84)	1,2,4-Trimethylbenzene	15.62	105	17915851	58.94	ug/l	#	59
85)	sec-Butylbenzene	15.75	105	20135698	43.00	ug/l		49
86)	p-Isopropyltoluene	15.87	119	18632144	52.20	ug/l		67
87)	1,3-Dichlorobenzene	15.87	146	14803713	91.12	ug/l		95
88)	1,4-Dichlorobenzene	15.94	146	13517560	85.60	ug/l		95
89)	1,2,3-Trimethylbenzene	15.94	105	16966497	60.77	ug/l		72
90)	n-Butylbenzene	16.18	91	18156476	56.02	ug/l		69
91)	1,2-Dichlorobenzene	16.23	146	12888716	96.76	ug/l		99
92)	1,2-Dibromo-3-chloropropan	16.82	157	871457	119.63	ug/l		100
93)	1,2,4-Trichlorobenzene	17.48	180	6892033	105.26	ug/l		99
94)	Hexachlorobutadiene	17.57	225	4518805	90.43	ug/l		99
95)	Naphthalene	17.72	128	9861623	113.81	ug/l		100
96)	1,2,3-Trichlorobenzene	17.90	180	5033779	102.69	ug/l		100

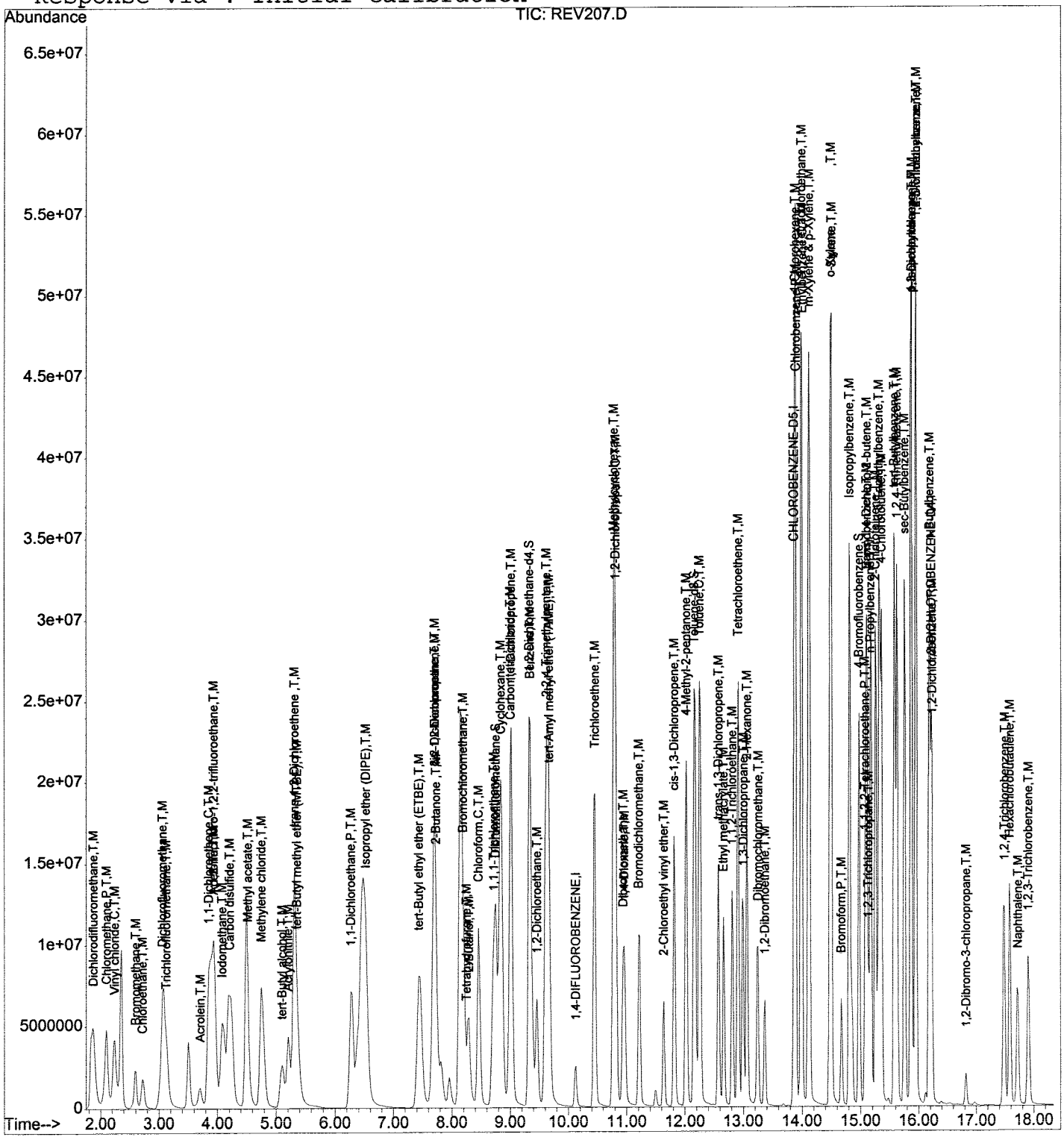
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/13/20 14:04
Spike Amount :10 PPB
CC/CV File :REV210
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/13/20 18:06
HPChem Method :V001E13
Date_Time :05/13/20 19:32

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	3245262	1	1	10.125	10.123	0				
	2	Chlorotrifluoroethylene												
	3	Dichlorodifluoromethane	8.366	-16.3	835274	0.257	0.308	1.872	1.875	5.00				
	4	Chloromethane	9.736	-2.6	1161255	0.358	0.368	2.100	2.103	4.47				
	5	Vinyl chloride	9.364	-6.4	1095208	0.337	0.360	2.242	2.246	6.66				
	6	2-Chloro-1,1,1-trifluoroethane												
	7	Bromomethane	8.136	-18.6	634004	0.195	0.240	2.627	2.633	9.04				
	8	Chloroethane	8.800	-12.0	569814	0.176	0.200	2.755	2.750	7.77				
	9	Dichlorofluoromethane	10.125	1.3	1618676	0.499	0.493	3.081	3.079	6.83				
	10	Trichlorofluoromethane	10.512	5.1	1138894	0.351	0.334	3.143	3.138	5.09				
5	11	Acrolein	52.346	4.7	294623	0.018	0.017	3.706	3.705	6.10				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.147	-8.5	621550	0.192	0.209	3.955	3.953	2.31				
5	13	Acetone	46.579	-6.8	513288	0.032	0.034	3.935	3.940	5.07				
	14	1,1-Dichloroethene	8.849	-11.5	1402362	0.432	0.488	3.851	3.858	3.02				
	15	Iodomethane	10.032	0.3	1797370	0.554	0.552	4.101	4.097	2.01				
	16	Carbon disulfide	10.453	4.5	3637274	1.121	1.072	4.205	4.205	5.38				
	17	Methyl acetate	9.958	-0.4	289063	0.089	0.089	4.539	4.530	10.51				
	18	Methylene chloride	9.434	-5.7	1260186	0.388	0.412	4.768	4.762	6.33				
25	19	tert-Butyl alcohol	259.049	3.6	782946	0.010	0.009	5.080	5.092	7.49				
5	20	Acrylonitrile	47.874	-4.3	646391	0.040	0.042	5.226	5.229	12.27				
	21	tert-Butyl methyl ether (MTBE)	9.158	-8.4	1280291	0.395	0.431	5.351	5.351	3.93				
	22	trans-1,2-Dichloroethene	9.389	-6.1	1471529	0.453	0.483	5.309	5.322	2.38				
	23	Vinyl acetate												
	24	1,1-Dichloroethane	9.718	-2.8	1846659	0.569	0.586	6.288	6.286	2.19				
	25	Isopropyl ether (DIPE)	9.251	-7.5	3061053	0.943	1.020	6.496	6.507	2.05				
25	26	2-Butanol	210.055	-16.0	723313	0.009	0.010	8.288	8.299	22.94	-0.0163	0.0114		0.9993
	27	tert-Butyl ethyl ether (ETBE)	8.820	-11.8	2106808	0.649	0.736	7.434	7.436	7.93				
5	28	2-Butanone	50.815	1.6	894131	0.055	0.054	7.725	7.737	11.88				
	29	cis-1,2-Dichloroethene	9.783	-2.2	1076415	0.332	0.339	7.704	7.710	2.44				
	30	2,2-Dichloropropane	9.719	-2.8	1167450	0.360	0.370	7.704	7.694	3.19				
	31	Tetrahydrofurane	10.374	3.7	116974	0.036	0.035	8.267	8.260	13.54				
	32	Bromochloromethane	10.096	1.0	791869	0.244	0.242	8.183	8.196	2.67				
	33	Chloroform	9.751	-2.5	1530083	0.471	0.484	8.454	8.458	1.90				
	34	Dibromofluoromethane	11.024	10.2	1006917	0.310	0.281	8.762	8.757	7.67				
	35	1,1,1-Trichloroethane	9.405	-6.0	1178265	0.363	0.386	8.718	8.715	6.62				
	36	Cyclohexane	9.738	-2.6	1736396	0.535	0.549	8.836	8.835	4.79				
	37	tert-Amyl methyl ether (TAME)	9.347	-6.5	1723573	0.531	0.568	9.665	9.666	2.47				
	38	1,2-Dichloroethane-d4	11.056	10.6	672576	0.207	0.187	9.325	9.330	7.96				
	39	1,1-Dichloropropene	9.996	-0.0	531339	0.164	0.164	9.014	9.022	5.84				
	40	Carbon tetrachloride	9.974	-0.3	1047641	0.323	0.324	8.999	8.998	4.73				
	41	Benzene	10.521	5.2	4082361	1.258	1.196	9.340	9.340	2.37				
	42	1,2-Dichloroethane	10.128	1.3	738000	0.227	0.225	9.458	9.464	3.25				
	43	2,2,4-Trimethylpentane	9.483	-5.2	4970151	1.532	1.615	9.621	9.613	9.56				
	44	Trichloroethene	10.018	0.2	1188904	0.366	0.366	10.450	10.452	3.40				
	45	Methylcyclohexane	11.361	13.6	2273785	0.701	0.617	10.776	10.778	9.40				
	46	1,2-Dichloropropane	9.981	-0.2	1045127	0.322	0.323	10.806	10.811	4.19				
20	47	1,4-Dioxane	197.868	-1.1	70672	0.001	0.001	10.969	10.963	8.66				
	48	Dibromomethane	10.271	2.7	407944	0.126	0.122	10.939	10.941	5.25				
	49	Bromodichloromethane	10.577	5.8	1078052	0.332	0.314	11.220	11.216	5.97				
	50	2-Chloroethyl vinyl ether	10.164	1.6	329168	0.101	0.100	11.635	11.644	12.71				
	51	cis-1,3-Dichloropropene	10.785	7.8	1413137	0.435	0.404	11.813	11.820	7.53				
5	52	4-Methyl-2-pentanone	53.518	7.0	2441493	0.150	0.141	12.020	12.022	8.42				
	53	CHLOROBENZENE-D5	10.000	0	2655474	1	1	13.856	13.858	0				
	54	Toluene-d8	10.999	10.0	3975687	1.497	1.361	12.153	12.161	5.54				
	55	Toluene	9.910	-0.9	4121322	1.552	1.566	12.242	12.249	5.39				
	56	Ethyl methacrylate	10.474	4.7	776375	0.292	0.279	12.657	12.665	7.24				
	57	trans-1,3-Dichloropropene	10.380	3.8	1018200	0.383	0.369	12.568	12.576	8.70				
	58	1,1,2-Trichloroethane	10.256	2.6	570900	0.215	0.210	12.805	12.811	2.49				
	59	Tetrachloroethene	10.022	0.2	911745	0.343	0.343	12.909	12.910	2.48				
	60	1,3-Dichloropropane	10.449	4.5	1114078	0.420	0.402	12.997	12.996	3.31				
5	61	2-Hexanone	53.644	7.3	1610450	0.121	0.113	13.057	13.064	13.31				
	62	Dibromochloromethane	10.571	5.7	731261	0.275	0.260	13.249	13.248	9.43				
	63	1,2-Dibromoethane	10.453	4.5	583740	0.220	0.210	13.368	13.371	8.30				
	64	1-Chlorohexane	9.612	-3.9	1809636	0.681	0.709	13.871	13.873	2.00				
	65	Chlorobenzene	10.194	1.9	2661607	1.002	0.983	13.886	13.888	2.60				
	66	1,1,1,2-Tetrachloroethane	10.188	1.9	851850	0.321	0.315	13.975	13.977	5.03				
	67	Ethylbenzene	9.552	-4.5	4702397	1.771	1.854	13.975	13.983	3.39				
2	68	m-Xylene & p-Xylene	19.973	-0.1	6998409	1.318	1.319	14.108	14.110	4.89				
	69	o-Xylene	10.064	0.6	3381380	1.273	1.265	14.478	14.480	5.32				
	70	Styrene	10.357	3.6	2868256	1.080	1.043	14.493	14.498	4.25				
	71	1,2-DICHLOROBENZENE-D4	10.000	0	957151	1	1	16.211	16.211	0				
	72	Bromoform	10.870	8.7	350438	0.366	0.337	14.671	14.677	12.81				
	73	Isopropylbenzene	9.458	-5.4	4730111	4.942	5.225	14.804	14.806	2.85				
	74	4-Bromofluorobenzene	10.785	7.9	1234188	1.289	1.196	14.967	14.972	8.21				
	75	1,1,2,2-Tetrachloroethane	9.945	-0.5	689734	0.721	0.725	15.071	15.072	4.41				
	76	Bromobenzene	10.179	1.8	996200	1.041	1.022	15.100	15.104	4.15				
	77	trans-1,4-Dichloro-2-butene	9.923	-0.8	137577	0.144	0.145	15.100	15.106	5.11				
	78	1,2,3-Trichloropropane	10.537	5.4	177107	0.185	0.176	15.130	15.132	6.36				
	79	n-Propylbenzene	9.908	-0.9	5731622	5.988	6.044	15.174	15.175	5.63				
	80	1,3,5-Trimethylbenzene	9.858	-1.4	3477829	3.634	3.686	15.308	15.314	5.94				
	81	2-Chlorotoluene	9.875	-1.2	2741409	2.864	2.900	15.248	15.250	5.87				
	82	4-Chlorotoluene	9.872	-1.3	3244216	3.389	3.434	15.352	15.356	4.90				
	83	tert-Butylbenzene	9.674	-3.3	921806	0.963	0.996	15.574	15.576	4.73				
	84	1,2,4-Trimethylbenzene	10.181	1.8	3472310	3.628	3.563	15.619	15.624	5.65				
	85	sec-Butylbenzene	9.851	-1.5	5175831	5.408	5.490	15.752	15.754	4.58				
	86	p-Isopropyltoluene	9.866	-1.3	3951312	4.128	4.184	15.870	15.872	3.86				
	87	1,3-Dichlorobenzene	10.138	1.4	1848134	1.931	1.905	15.870	15.872	5.27				
	88	1,4-Dichlorobenzene	9.759	-2.4	1729312	1.807	1.851	15.944	15.949	5.83				
	89	1,2,3-Trimethylbenzene	9.252	-7.5	2898244	3.028	3.273	15.944	15.946	4.63				
	90	n-Butylbenzene	10.081	0.8	3665738	3.830	3.799	16.181	16.183	6.84				
	91	1,2-Dichlorobenzene	9.849	-1.5	1471950	1.538	1.561	16.226	16.226	2.86				
	92	1,2-Dibromo-3-chloropropane	10.061	0.6	82234	0.086	0.085	16.818	16.822	14.58				
	93	1,2,4-Trichlorobenzene	10.156	1.6	746168	0.780	0.768	17.485	17.489	8.26				
	94	Hexachlorobutadiene	9.641	-3.6	540537	0.565	0.586	17.588	17.577	6.55				
	95	Naphthalene	10.322	3.2	1003542	1.048	1.016	17.721	17.726	9.03				
	96	1,2,3-Trichlorobenzene	9.906	-0.9	544806	0.569	0.575	17.914	17.911	6.00				

Spike Amount = Nominal Amount * M

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	0.00
3	T,M	Dichlorodifluoromethane	10.000	8.366	16.3	85	0.00
4	P,T,M	Chloromethane	10.000	9.736	2.6	98	0.00
5	C,T,M	Vinyl chloride	10.000	9.364	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	0.00
7	T,M	Bromomethane	10.000	8.136	18.6	77	0.00
8	T,M	Chloroethane	10.000	8.800	12.0	85	0.00
9	T,M	Dichlorofluoromethane	10.000	10.125	-1.3	104	0.00
10	T,M	Trichlorofluoromethane	10.000	10.512	-5.1	103	0.00
11	T,M	Acrolein	50.000	52.346	-4.7	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.147	8.5	93	0.00
13	T,M	Acetone	50.000	46.579	6.8	95	0.00
14	C,T,M	1,1-Dichloroethene	10.000	8.849	11.5	89	0.00
15	T,M	Iodomethane	10.000	10.032	-0.3	102	0.00
16	T,M	Carbon disulfide	10.000	10.453	-4.5	104	0.00
17	T,M	Methyl acetate	10.000	9.958	0.4	97	0.02
18	T,M	Methylene chloride	10.000	9.434	5.7	98	0.00
19	T,M	tert-Butyl alcohol	250.000	259.049	-3.6	98	0.00
20	T,M	Acrylonitrile	50.000	47.874	4.3	98	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.158	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.389	6.1	95	0.00
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.718	2.8	98	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	9.251	7.5	93	0.00
26	T,M	2-Butanol	250.000	210.055	16.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	8.820	11.8	92	0.00
28	T,M	2-Butanone	50.000	50.815	-1.6	100	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	9.783	2.2	100	0.00
30	T,M	2,2-Dichloropropane	10.000	9.719	2.8	100	0.02
31	T,M	Tetrahydrofurane	10.000	10.374	-3.7	98	0.00
32	T,M	Bromochloromethane	10.000	10.096	-1.0	101	-0.02
33	C,T,M	Chloroform	10.000	9.751	2.5	99	-0.02
34	S	Dibromofluoromethane	10.000	11.024	-10.2	101	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.405	6.0	98	0.00
36	T,M	Cyclohexane	10.000	9.738	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.347	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	10.000	11.056	-10.6	102	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.996	0.0	99	-0.01
40	T,M	Carbon tetrachloride	10.000	9.974	0.3	99	0.00
41	T,M	Benzene	10.000	10.521	-5.2	109	0.00

(#) = Out of Range

S 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.128	-1.3	101	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	9.483	5.2	91	0.00
44	T,M	Trichloroethene	10.000	10.018	-0.2	101	-0.01
45	T,M	Methylcyclohexane	10.000	11.361	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.981	0.2	99	-0.01
47	T,M	1,4-Dioxane	200.000	197.868	1.1	98	0.00
48	T,M	Dibromomethane	10.000	10.271	-2.7	100	-0.01
49	T,M	Bromodichloromethane	10.000	10.577	-5.8	104	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	10.164	-1.6	102	-0.01
51	T,M	cis-1,3-Dichloropropene	10.000	10.785	-7.9	106	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	53.518	-7.0	100	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	-0.01
54	S	Toluene-d8	10.000	10.999	-10.0	103	-0.01
55	C,T,M	Toluene	10.000	9.910	0.9	99	-0.01
56	T,M	Ethyl methacrylate	10.000	10.473	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	10.380	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.256	-2.6	100	-0.01
59	T,M	Tetrachloroethene	10.000	10.022	-0.2	100	-0.01
60	T,M	1,3-Dichloropropane	10.000	10.449	-4.5	101	-0.01
61	T,M	2-Hexanone	50.000	53.644	-7.3	99	-0.01
62	T,M	Dibromochloromethane	10.000	10.571	-5.7	100	-0.01
63	T,M	1,2-Dibromoethane	10.000	10.453	-4.5	98	-0.01
64	T,M	1-Chlorohexane	10.000	9.612	3.9	97	-0.01
65	P,M	Chlorobenzene	10.000	10.194	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.188	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	10.000	9.552	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	19.974	0.1	95	-0.01
69	T,M	o-Xylene	10.000	10.064	-0.6	98	-0.01
70	T,M	Styrene	10.000	10.357	-3.6	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	102	-0.01
72	P,T,M	Bromoform	10.000	10.870	-8.7	104	-0.01
73	T,M	Isopropylbenzene	10.000	9.458	5.4	98	-0.01
74	S	4-Bromofluorobenzene	10.000	10.785	-7.9	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.945	0.5	98	-0.01
76	T,M	Bromobenzene	10.000	10.179	-1.8	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.923	0.8	106	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.537	-5.4	103	-0.01
79	T,M	n-Propylbenzene	10.000	9.908	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	9.858	1.4	99	-0.01

(#) = Out of Range

5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	9.875	1.3	97	-0.01
82	T,M	4-Chlorotoluene	10.000	9.872	1.3	100	-0.01
83	T,M	tert-Butylbenzene	10.000	9.674	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.181	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	10.000	9.850	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.867	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	10.138	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.760	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	9.252	7.5	94	-0.01
90	T,M	n-Butylbenzene	10.000	10.081	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.849	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	10.061	-0.6	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.156	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.641	3.6	98	-0.01
95	T,M	Naphthalene	10.000	10.322	-3.2	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	9.906	0.9	100	-0.01

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.108	0.0	0#	0.00
3	T,M	Dichlorodifluoromethane	0.308	0.257	16.6	85	0.00
4	P,T,M	Chloromethane	0.368	0.358	2.7	98	0.00
5	C,T,M	Vinyl chloride	0.360	0.337	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.295	0.0	0#	0.00
7	T,M	Bromomethane	0.240	0.195	18.7	77	0.00
8	T,M	Chloroethane	0.200	0.176	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.493	0.499	-1.2	104	0.00
10	T,M	Trichlorofluoromethane	0.334	0.351	-5.1	103	0.00
11	T,M	Acrolein	0.017	0.018	-5.9	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.192	8.1	93	0.00
13	T,M	Acetone	0.034	0.032	5.9	95	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.432	11.5	89	0.00
15	T,M	Iodomethane	0.552	0.554	-0.4	102	0.00
16	T,M	Carbon disulfide	1.072	1.121	-4.6	104	0.00
17	T,M	Methyl acetate	0.089	0.089	0.0	97	0.02
18	T,M	Methylene chloride	0.412	0.388	5.8	98	0.00
19	T,M	tert-Butyl alcohol	0.009	0.010	-11.1	98	0.00
20	T,M	Acrylonitrile	0.042	0.040	4.8	98	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.395	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.453	6.2	95	0.00
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	-0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.569	2.9	98	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	0.943	7.5	93	0.00
26	T,M	2-Butanol	0.010	0.009	10.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.649	11.8	92	0.00
28	T,M	2-Butanone	0.054	0.055	-1.9	100	0.00
29	T,M	cis-1,2-Dichloroethene	0.339	0.332	2.1	100	0.00
30	T,M	2,2-Dichloropropane	0.370	0.360	2.7	100	0.02
31	T,M	Tetrahydrofurane	0.035	0.036	-2.9	98	0.00
32	T,M	Bromochloromethane	0.242	0.244	-0.8	101	-0.02
33	C,T,M	Chloroform	0.484	0.471	2.7	99	-0.02
34	S	Dibromofluoromethane	0.281	0.310	-10.3	101	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.363	6.0	98	0.00
36	T,M	Cyclohexane	0.549	0.535	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.531	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.207	-10.7	102	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.164	0.0	99	-0.01
40	T,M	Carbon tetrachloride	0.324	0.323	0.3	99	0.00
41	T,M	Benzene	1.196	1.258	-5.2	109	0.00

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.227	-0.9	101	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	1.532	5.1	91	0.00
44	T,M	Trichloroethene	0.366	0.366	0.0	101	-0.01
45	T,M	Methylcyclohexane	0.617	0.701	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.322	0.3	99	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	98	0.00
48	T,M	Dibromomethane	0.122	0.126	-3.3	100	-0.01
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	104	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.101	-1.0	102	-0.01
51	T,M	cis-1,3-Dichloropropene	0.404	0.435	-7.7	106	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.150	-6.4	100	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	99	-0.01
54	S	Toluene-d8	1.361	1.497	-10.0	103	-0.01
55	C,T,M	Toluene	1.566	1.552	0.9	99	-0.01
56	T,M	Ethyl methacrylate	0.279	0.292	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	0.369	0.383	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	0.210	0.215	-2.4	100	-0.01
59	T,M	Tetrachloroethene	0.343	0.343	0.0	100	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.420	-4.5	101	-0.01
61	T,M	2-Hexanone	0.113	0.121	-7.1	99	-0.01
62	T,M	Dibromochloromethane	0.260	0.275	-5.8	100	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.220	-4.8	98	-0.01
64	T,M	1-Chlorohexane	0.709	0.681	3.9	97	-0.01
65	P,M	Chlorobenzene	0.983	1.002	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.321	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	1.854	1.771	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.318	0.1	95	-0.01
69	T,M	o-Xylene	1.265	1.273	-0.6	98	-0.01
70	T,M	Styrene	1.043	1.080	-3.5	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	102	-0.01
72	P,T,M	Bromoform	0.337	0.366	-8.6	104	-0.01
73	T,M	Isopropylbenzene	5.225	4.942	5.4	98	-0.01
74	S	4-Bromofluorobenzene	1.196	1.289	-7.8	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.721	0.6	98	-0.01
76	T,M	Bromobenzene	1.022	1.041	-1.9	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.144	0.7	106	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.185	-5.1	103	-0.01
79	T,M	n-Propylbenzene	6.044	5.988	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.634	1.4	99	-0.01

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.864	1.2	97	-0.01
82	T,M	4-Chlorotoluene	3.434	3.389	1.3	100	-0.01
83	T,M	tert-Butylbenzene	0.996	0.963	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.628	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	5.490	5.408	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.128	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.931	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.807	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.028	7.5	94	-0.01
90	T,M	n-Butylbenzene	3.799	3.830	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.538	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.086	-1.2	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.780	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.565	3.6	98	-0.01
95	T,M	Naphthalene	1.016	1.048	-3.1	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.569	1.0	100	-0.01

SUS 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3245262	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2655474	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	957151	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1006917	11.02	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.20%		
38) 1,2-Dichloroethane-d4	9.32	65	672576	11.06	ug/l	-0.01
Spiked Amount 10.000			Recovery =	110.60%		
54) Toluene-d8	12.15	98	3975687	11.00	ug/l	-0.01
Spiked Amount 10.000			Recovery =	110.00%		
74) 4-Bromofluorobenzene	14.97	95	1234188	10.79	ug/l	-0.01
Spiked Amount 10.000			Recovery =	107.90%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	835274	8.37	ug/l	100
4) Chloromethane	2.10	50	1161255	9.74	ug/l	100
5) Vinyl chloride	2.24	62	1095208	9.36	ug/l	99
7) Bromomethane	2.63	94	634004	8.14	ug/l	100
8) Chloroethane	2.75	64	569814	8.80	ug/l	99
9) Dichlorofluoromethane	3.08	67	1618676	10.13	ug/l	100
10) Trichlorofluoromethane	3.14	101	1138894	10.51	ug/l	100
11) Acrolein	3.71	56	294623	52.35	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	621550	9.15	ug/l	99
13) Acetone	3.93	43	513288	46.58	ug/l	99
14) 1,1-Dichloroethene	3.85	61	1402362	8.85	ug/l	99
15) Iodomethane	4.10	142	1797370	10.03	ug/l	100
16) Carbon disulfide	4.21	76	3637274	10.45	ug/l	100
17) Methyl acetate	4.54	43	289063	9.96	ug/l	99
18) Methylene chloride	4.77	49	1260186	9.43	ug/l	99
19) tert-Butyl alcohol	5.08	59	782946	259.05	ug/l	100
20) Acrylonitrile	5.23	53	646391	47.87	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1280291	9.16	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1471529	9.39	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1846659	9.72	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	3061053	9.25	ug/l	100
26) 2-Butanol	8.29	45	723313	210.06	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2106808	8.82	ug/l	99
28) 2-Butanone	7.73	43	894131	50.81	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	1076415	9.78	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1167450	9.72	ug/l	100
31) Tetrahydrofurane	8.27	42	116974	10.37	ug/l	97

(#) = qualifier out of range (m) = manual integration
REV210.D VO01E13.M Thu May 14 18:32:30 2020 Page 1

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	791869	10.10 ug/l	98
33) Chloroform	8.45	83	1530083	9.75 ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	1178265	9.40 ug/l	99
36) Cyclohexane	8.84	84	1736396	9.74 ug/l	99
37) tert-Amyl methyl ether (TA	9.67	73	1723573	9.35 ug/l	100
39) 1,1-Dichloropropene	9.01	110	531339	10.00 ug/l	99
40) Carbon tetrachloride	9.00	119	1047641	9.97 ug/l	100
41) Benzene	9.34	78	4082361	10.52 ug/l	100
42) 1,2-Dichloroethane	9.46	62	738000	10.13 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	4970151	9.48 ug/l	100
44) Trichloroethene	10.45	130	1188904	10.02 ug/l	100
45) Methylcyclohexane	10.78	83	2273785	11.36 ug/l	98
46) 1,2-Dichloropropane	10.81	63	1045127	9.98 ug/l	100
47) 1,4-Dioxane	10.97	88	70672	197.87 ug/l	99
48) Dibromomethane	10.94	93	407944	10.27 ug/l	99
49) Bromodichloromethane	11.22	83	1078052	10.58 ug/l	100
50) 2-Chloroethyl vinyl ether	11.64	63	329168	10.16 ug/l	98
51) cis-1,3-Dichloropropene	11.81	75	1413137	10.78 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	2441493	53.52 ug/l	100
55) Toluene	12.24	91	4121322	9.91 ug/l	100
56) Ethyl methacrylate	12.66	69	776375	10.47 ug/l	98
57) trans-1,3-Dichloropropene	12.57	75	1018200	10.38 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	570900	10.26 ug/l	100
59) Tetrachloroethene	12.91	164	911745	10.02 ug/l	99
60) 1,3-Dichloropropane	13.00	76	1114078	10.45 ug/l	99
61) 2-Hexanone	13.06	43	1610450	53.64 ug/l	100
62) Dibromochloromethane	13.25	129	731261	10.57 ug/l	100
63) 1,2-Dibromoethane	13.37	107	583740	10.45 ug/l	99
64) 1-Chlorohexane	13.87	91	1809636	9.61 ug/l	99
65) Chlorobenzene	13.89	112	2661607	10.19 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	851850	10.19 ug/l	100
67) Ethylbenzene	13.97	91	4702397	9.55 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	6998409	19.97 ug/l	100
69) o-Xylene	14.48	91	3381380	10.06 ug/l	100
70) Styrene	14.49	104	2868256	10.36 ug/l	100
72) Bromoform	14.67	173	350438	10.87 ug/l	99
73) Isopropylbenzene	14.80	105	4730111	9.46 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	689734	9.95 ug/l	99
76) Bromobenzene	15.10	156	996200	10.18 ug/l	99
77) trans-1,4-Dichloro-2-buten	15.10	53	137577	9.92 ug/l	91
78) 1,2,3-Trichloropropane	15.13	110	177107	10.54 ug/l	96

(#) = qualifier out of range (m) = manual integration

SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	5731622	9.91	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	3477829	9.86	ug/l	100
81)	2-Chlorotoluene	15.25	91	2741409	9.88	ug/l	99
82)	4-Chlorotoluene	15.35	91	3244216	9.87	ug/l	99
83)	tert-Butylbenzene	15.57	134	921806	9.67	ug/l	74
84)	1,2,4-Trimethylbenzene	15.62	105	3472310	10.18	ug/l	99
85)	sec-Butylbenzene	15.75	105	5175831	9.85	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3951312	9.87	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1848134	10.14	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	1729312	9.76	ug/l	100
89)	1,2,3-Trimethylbenzene	15.94	105	2898244	9.25	ug/l	100
90)	n-Butylbenzene	16.18	91	3665738	10.08	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1471950	9.85	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	82234	10.06	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	746168	10.16	ug/l	100
94)	Hexachlorobutadiene	17.59	225	540537	9.64	ug/l	99
95)	Naphthalene	17.72	128	1003542	10.32	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	544806	9.91	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

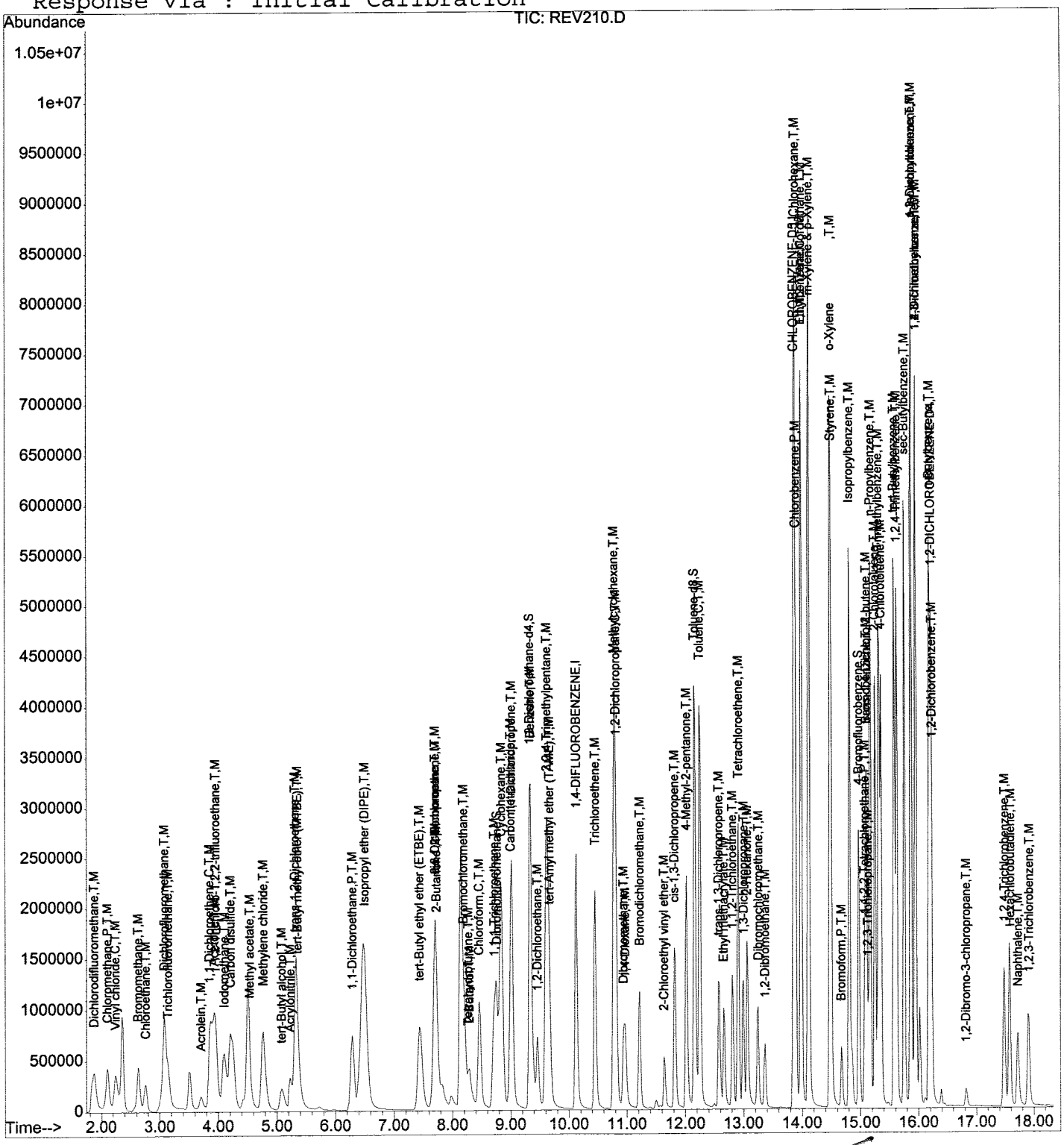
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV212 BFB Injection Date : 05/14/20
Instrument ID: 01 BFB Injection Time : 16:40
GC Column:RXI-624SILMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.28
75	30.0 - 60.0% of mass 95	42.92
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.98
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	81.50
175	5.0 - 9.0% of mass 174	5.64(6.9)1
176	95.0 - 101.0% of mass 174	77.50(95.1)1
177	5.0 - 9.0% of mass 176	5.13(6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD01	V001E141	REV213	05/14/20	17:31
2	VSTD02	V001E142	REV214	05/14/20	17:59
3	VSTD05	V001E143	REV215	05/14/20	18:26
4	VSTD010	V001E144	REV216	05/14/20	18:53
5	VSTD020	V001E145	REV217	05/14/20	19:20
6	VSTD030	V001E146	REV218	05/14/20	19:48
7	VSTD010	IV001E1401	REV219	05/14/20	20:17

SU 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :VO01E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	0.165	0.239	0.259	0.305	0.356	0.350	0.279	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

Ave_%RSD : 26.1 Max_%RSD : 26.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
2	Vinyl acetate	-0.02369	0.35322	0.9980

SM
5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :V001E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	114	101	87	93	104	101	6.7	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

For 8260 C

SM

5/18/20

Compound List Report 01

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
Total Cpnds : 4

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Vinyl acetate	43	6.41	0.633	L	1	A	B
3	I	CHLOROBENZENE-D5	117	13.86	1.000	A	2	A	B
4	I	1,2-DICHLOROBENZENE-D4	152	16.21	1.000	A	1	A	B

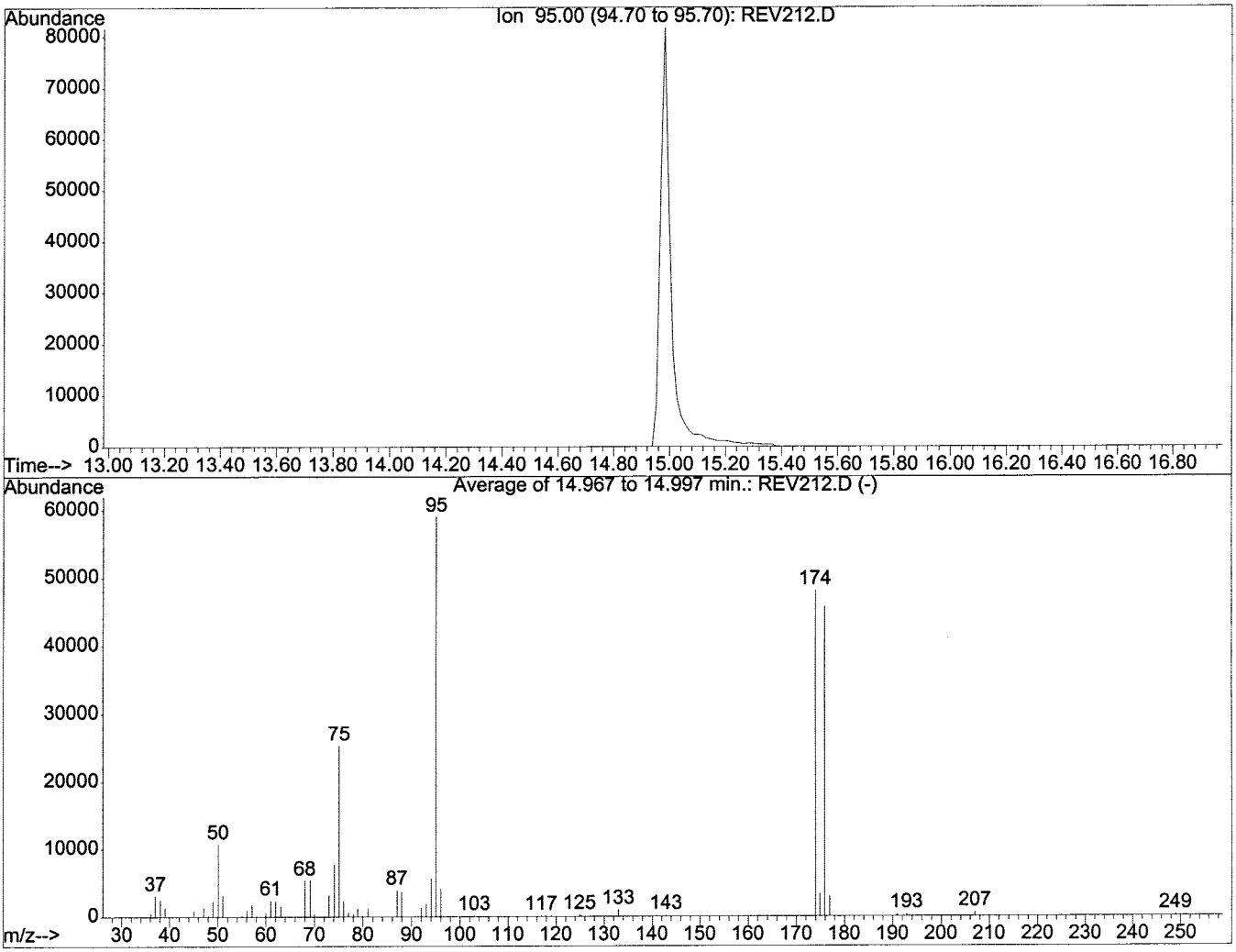
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E14.M Fri May 15 11:55:17 2020

SM
5/18/20

Data File : D:\HPCHEM\1\DATA\20E14\REV212.D
Acq On : 14 May 2020 4:40 pm
Sample : BFB01E10
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 782

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	10796	PASS
75	95	30	60	42.9	25347	PASS
95	95	100	100	100.0	59053	PASS
96	95	5	9	7.0	4122	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.5	48131	PASS
175	174	5	9	6.9	3328	PASS
176	174	95	101	95.1	45768	PASS
177	176	5	9	6.6	3031	PASS

SU 5/18/20

REV212.D VO01E14.M Fri May 15 11:35:24 2020

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3326579	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2719976	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	925504	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.48	43	54933	1.14	ug/l	97

SM
5/18/20

(#) = qualifier out of range (m) = manual integration
REV213.D VO01E14.M Fri May 15 11:52:36 2020 Page 1

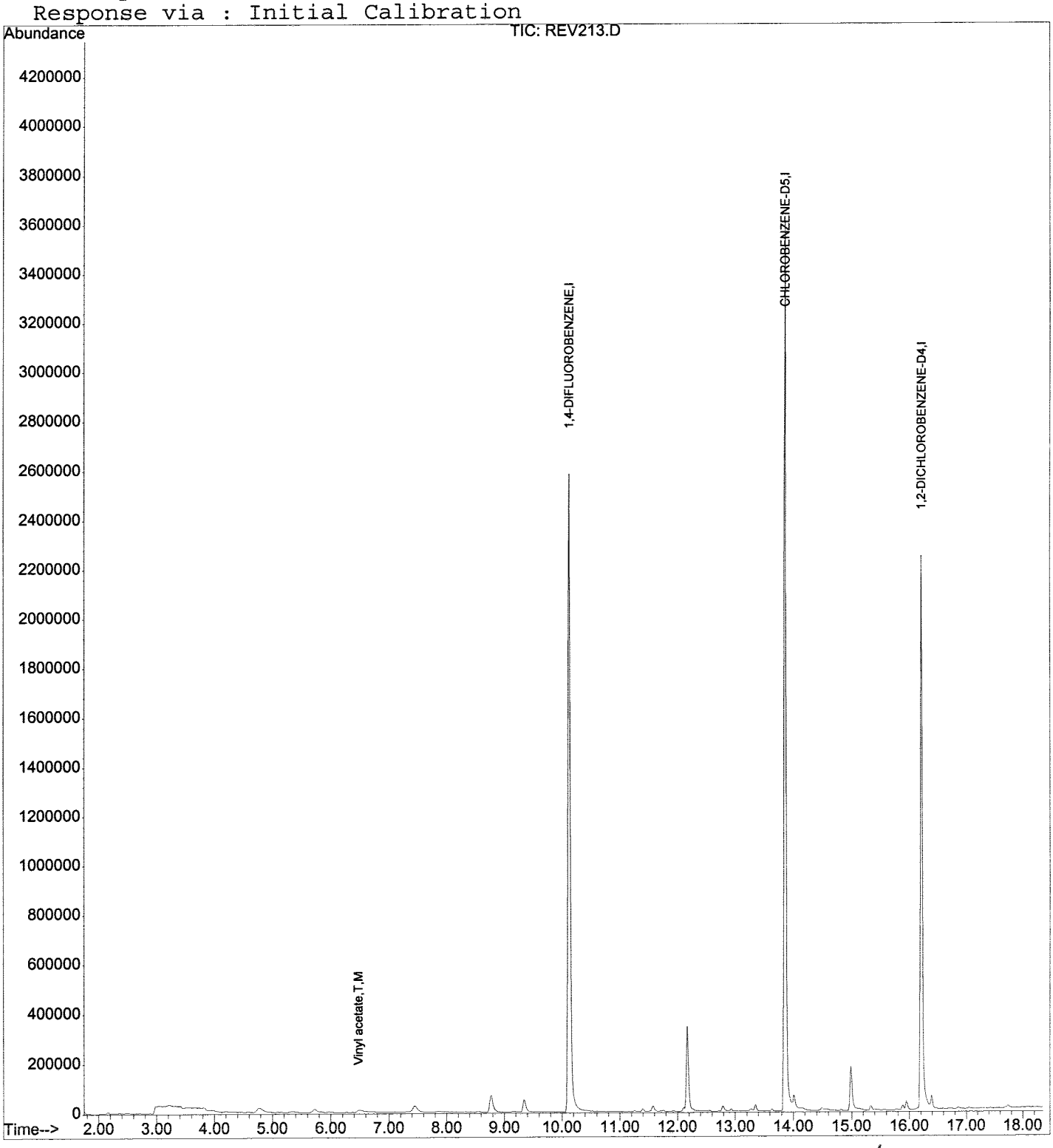
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3246029	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2751412	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	957167	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.45	43	154840	2.02	ug/l	100

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

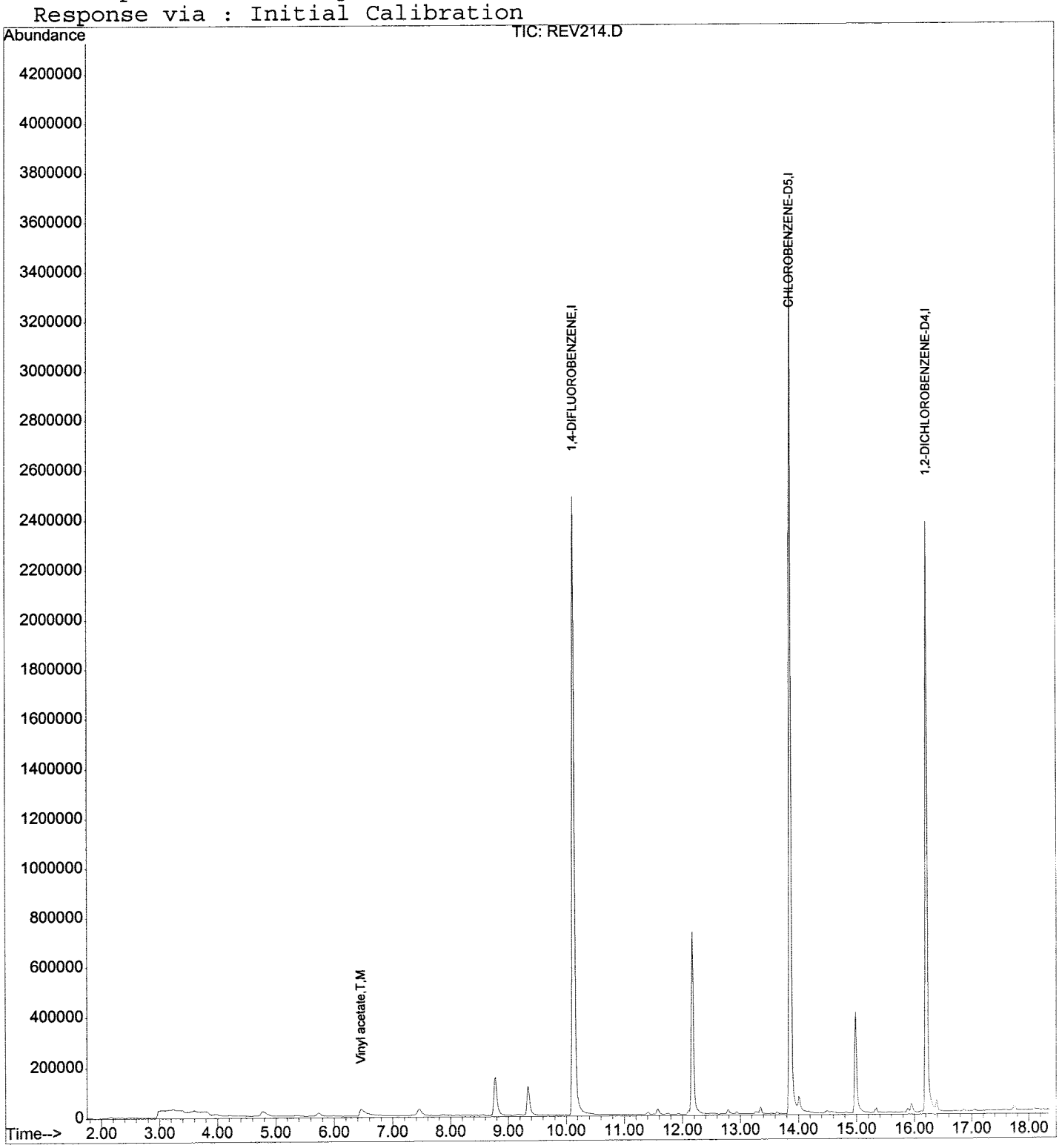
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D Vial: 4
Acq On : 14 May 2020 6:26 pm Operator: VLu
Sample : VO01E143 Inst : 01
Misc : 5.0ppb Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3257045	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2685056	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	920046	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.43	43	422325	4.34	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

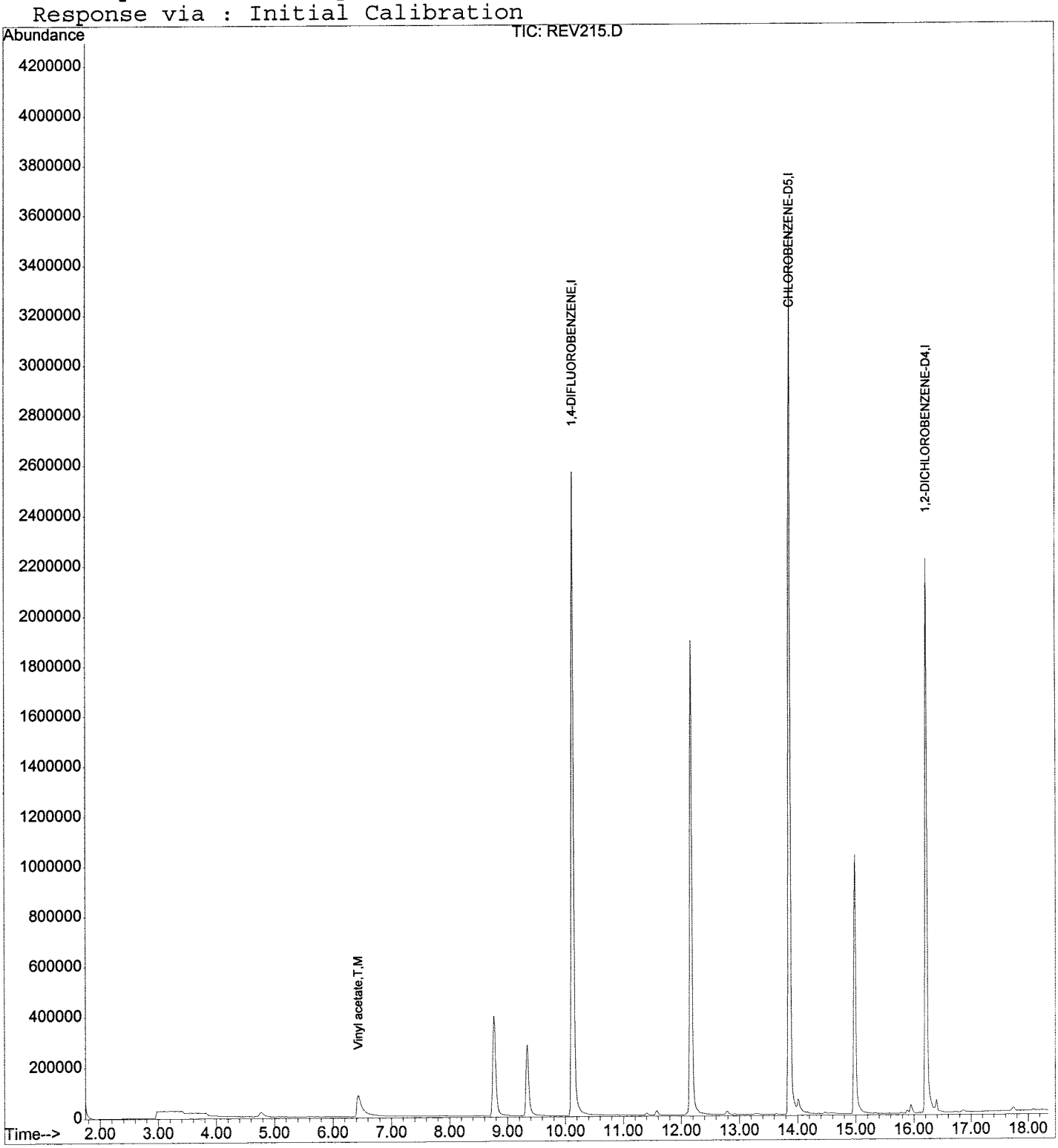
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D
Acq On : 14 May 2020 6:26 pm
Sample : VO01E143
Misc : 5.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 4
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3148628	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2661281	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	903830	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.41	43	958998	9.29	ug/l	100

(#) = qualifier out of range (m) = manual integration

REV216.D VO01E14.M Fri May 15 11:52:20 2020

SA 5/18/20

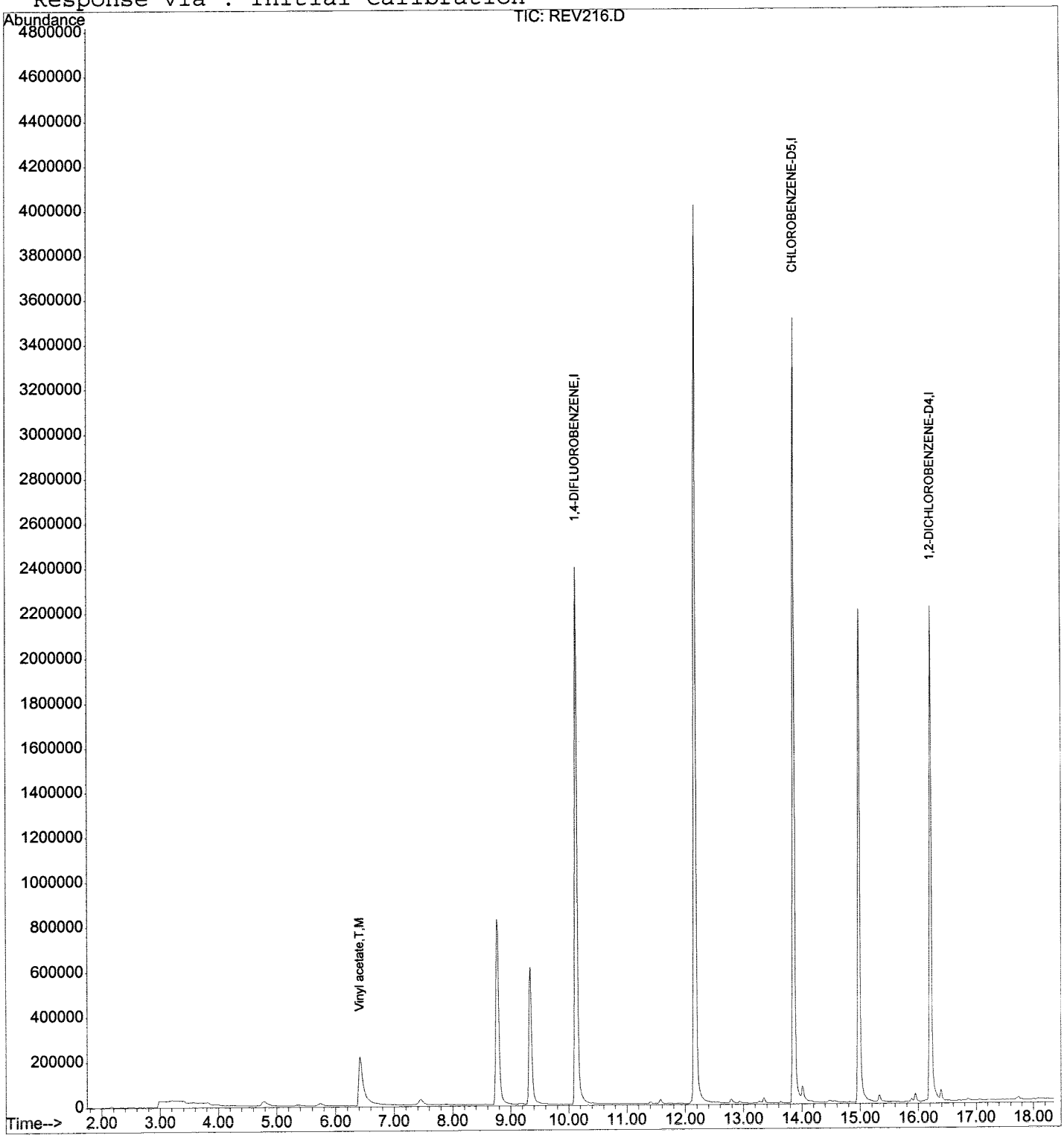
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3034475	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2602560	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	894519	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.39	43	2157955	20.80	ug/l	100

Su 5/18/20

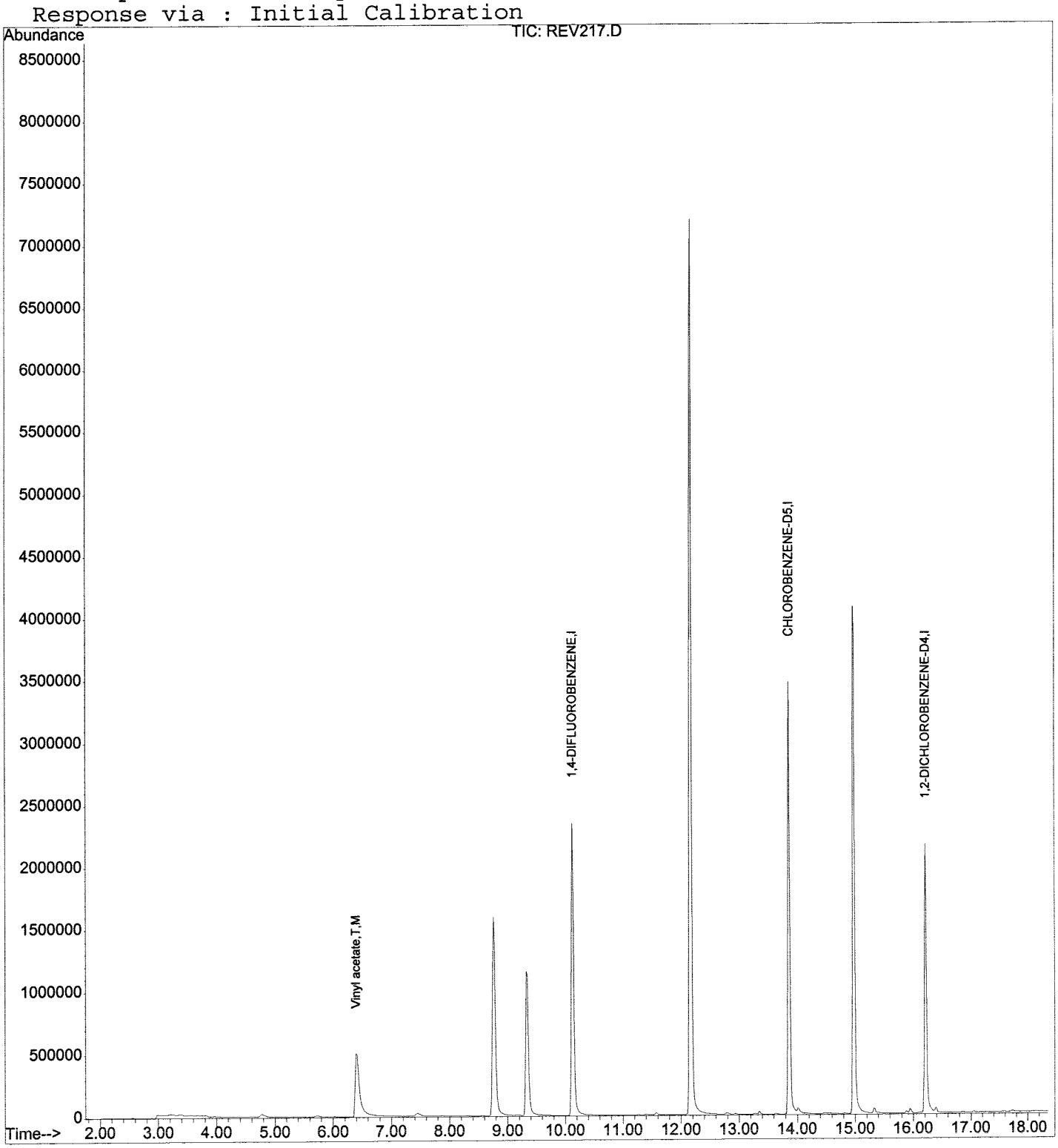
(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3111434	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2585038	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	902599	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.39	43	3267501	30.40	ug/l	100

(#) = qualifier out of range (m) = manual integration
REV218.D VO01E14.M Fri May 15 11:54:05 2020 Page 1

5/18/20

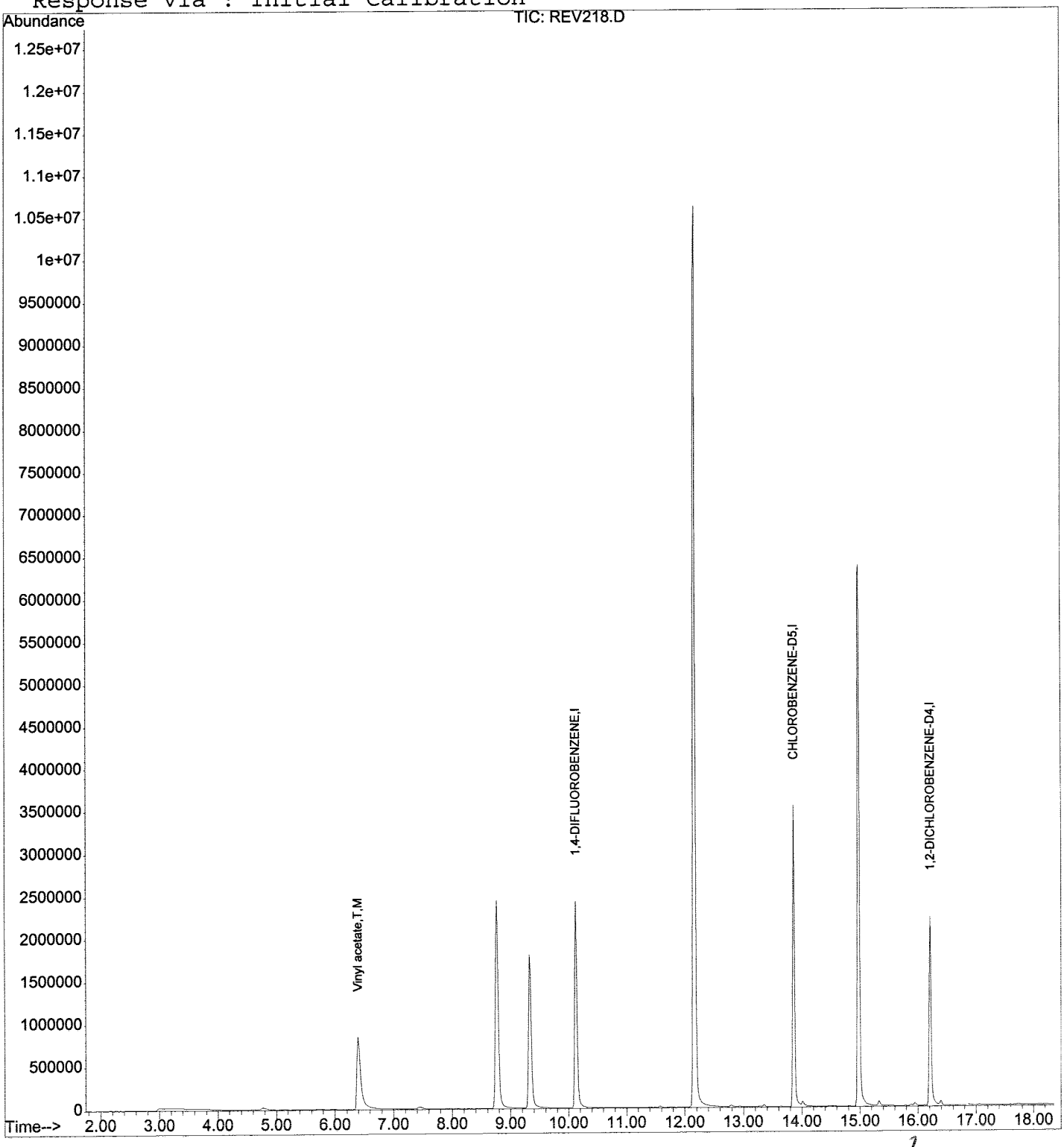
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/14/20 17:31
Spike Amount :10 PPB
CC/CV File :REV219
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/14/20 19:48
HPChem Method :V001E14
Date_Time :05/14/20 20:17

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-DIFLUOROBENZENE	10.000	0	3074649	1	1	10.124	10.125	0				
2	Vinyl acetate	9.844	-1.6	996265	0.324	0.279	6.413	6.427	26.14	-0.0237	0.3532		0.9980
3	CHLOROBENZENE-D5	10.000	0	2594947	1	1	13.856	13.857	0				
4	1,2-DICHLOROBENZENE-D4	10.000	0	883852	1	1	16.211	16.211	0				

SU
5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	98	0.00
2	T,M	Vinyl acetate	10.000	9.844	1.6	104	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	98	0.00

SA 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00
2	T,M	Vinyl acetate	0.279	0.324	-16.1	104	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	98	0.00

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3074649	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2594947	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	883852	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	996265	9.84	ug/l	100

5/18/20

(#) = qualifier out of range (m) = manual integration

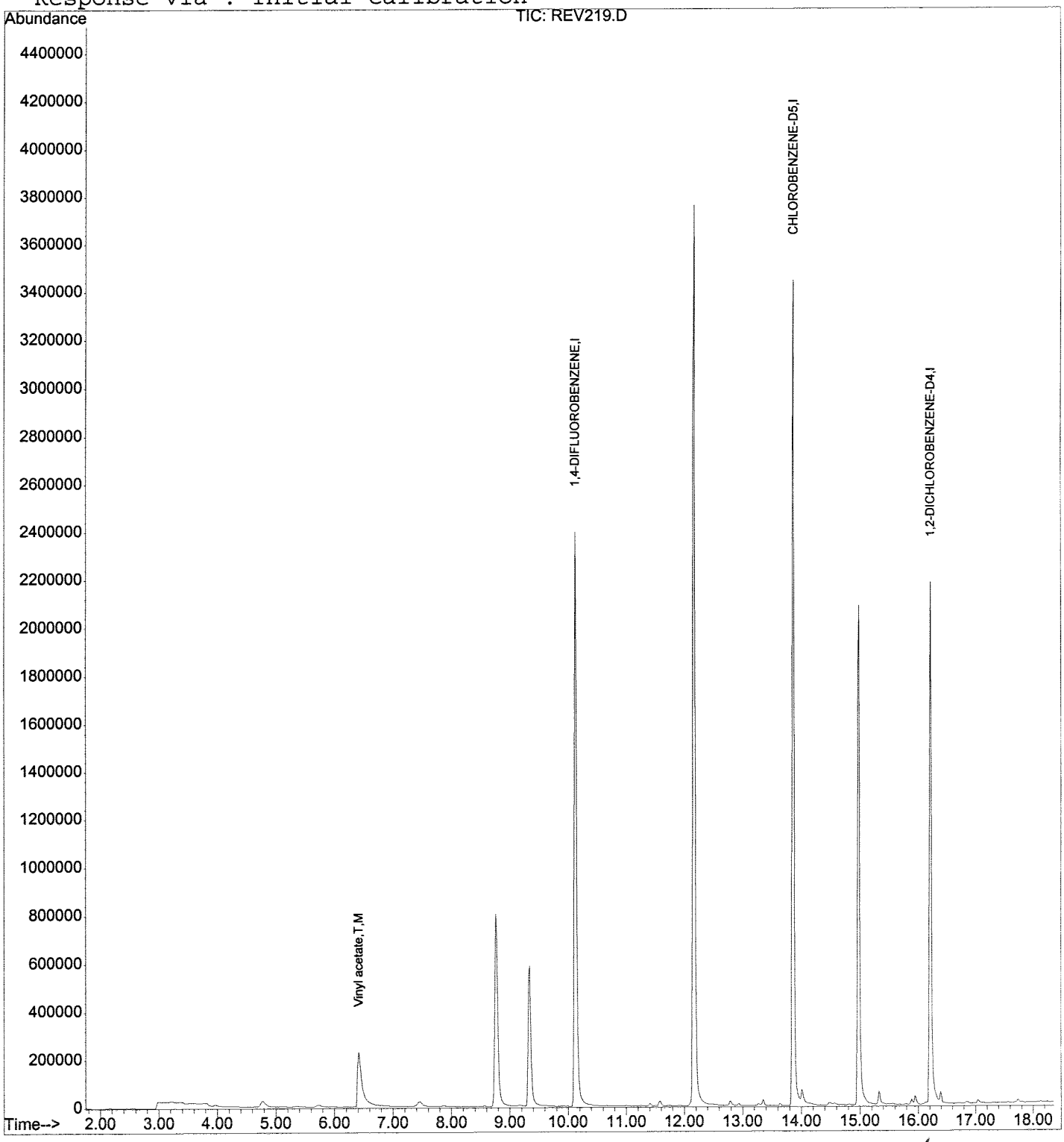
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SU 5/18/20

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F179
Lab File ID: RFV328 BFB Injection Date : 06/26/20
Instrument ID: 01 BFB Injection Time : 11:53
GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.36
75	30.0 - 60.0% of mass 95	45.60
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.36
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	79.20
175	5.0 - 9.0% of mass 174	5.99(7.6)1
176	95.0 - 101.0% of mass 174	77.78(98.2)1
177	5.0 - 9.0% of mass 176	5.76(7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV001E1324	RFV330	06/26/20	12:52
2	MBLK1W	V001F16B	RFV334	06/26/20	14:40
3	LCS1W	V001F16L	RFV331	06/26/20	13:19
4	LCD1W	V001F16C	RFV332	06/26/20	13:45
5	TB46-GW061720	F179-01	RFV340	06/26/20	17:21
6	EB32-GW061720	F179-02	RFV341	06/26/20	17:49
7	EB33-GW061820	F179-03	RFV342	06/26/20	18:15
8	EB34-SB061820	F179-04	RFV343	06/26/20	18:42
9	EB35-GW061820	F179-05	RFV344	06/26/20	19:09

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F179
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	2873956	10.13	2329188	13.86	765795	16.21
2	MBLK1W	2909618	10.14	2370401	13.87	753121	16.23
3	LCS1W	2754474	10.12	2296743	13.86	765264	16.21
4	LCD1W	2682669	10.12	2269858	13.86	763929	16.21
5	TB46-GW061720	2948778	10.14	2424322	13.86	757447	16.21
6	EB32-GW061720	2796522	10.14	2291333	13.87	706896	16.23
7	EB33-GW061820	2886824	10.14	2350614	13.86	717335	16.21
8	EB34-SB061820	2841495	10.14	2371758	13.86	761275	16.21
9	EB35-GW061820	2733287	10.14	2237782	13.86	691098	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

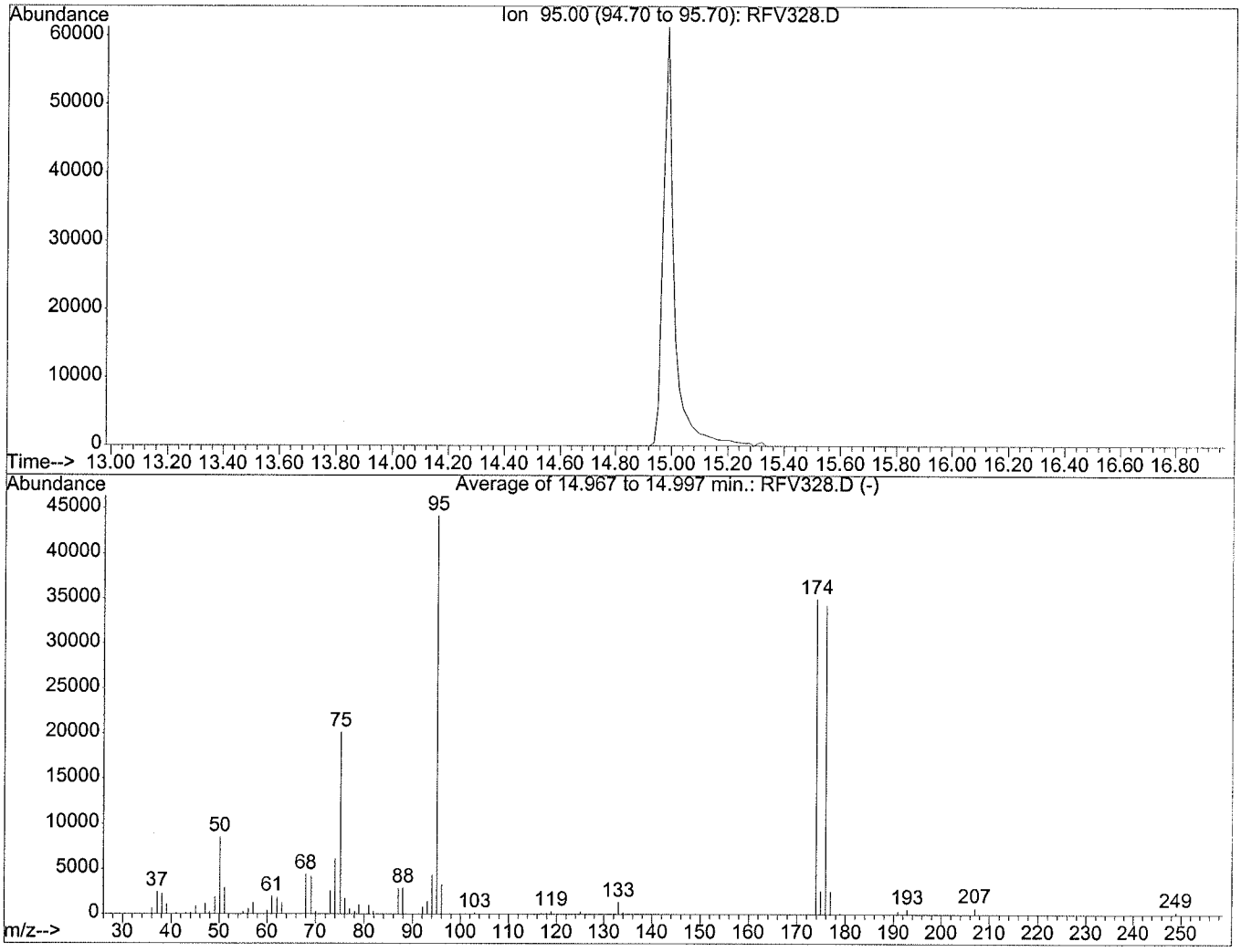
Project: VA SALT LAKE CITY
SDG No: 20F179
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	2861192	10.13	2329333	13.86	765824	16.21
2	MBLK1W	2909558	10.14	2367293	13.87	753146	16.23
3	LCS1W	2754421	10.12	2286492	13.86	765289	16.21
4	LCD1W	2682617	10.12	2257533	13.86	763906	16.21
5	TB46-GW061720	2948721	10.14	2413989	13.86	748194	16.21
6	EB32-GW061720	2796464	10.14	2283878	13.87	700582	16.23
7	EB33-GW061820	2865044	10.14	2344390	13.86	707583	16.21
8	EB34-SB061820	2811011	10.14	2368445	13.86	749990	16.21
9	EB35-GW061820	2707865	10.14	2234856	13.86	681461	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F26\RFV328.D
Acq On : 26 Jun 2020 11:53 am
Sample : BFB01F16
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 780

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8551	PASS
75	95	30	60	45.6	20139	PASS
95	95	100	100	100.0	44168	PASS
96	95	5	9	7.4	3250	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.2	34981	PASS
175	174	5	9	7.6	2644	PASS
176	174	95	101	98.2	34352	PASS
177	176	5	9	7.4	2546	PASS

RFV328.D VO01E13.M Mon Jun 29 10:20:30 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	8.714	12.9	78	0.00
4	P,T,M	Chloromethane	10.000	8.871	11.3	79	0.00
5	C,T,M	Vinyl chloride	10.000	9.463	5.4	82	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	9.414	5.9	79	0.00
8	T,M	Chloroethane	10.000	11.029	-10.3	95	0.01
9	T,M	Dichlorofluoromethane	10.000	9.590	4.1	87	0.00
10	T,M	Trichlorofluoromethane	10.000	10.536	-5.4	91	-0.02
11	T,M	Acrolein	50.000	53.859	-7.7	96	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.856	11.4	80	0.00
13	T,M	Acetone	50.000	50.506	-1.0	91	0.00
14	C,T,M	1,1-Dichloroethene	10.000	8.465	15.4	76	0.02
15	T,M	Iodomethane	10.000	7.992	20.1#	72	0.00
16	T,M	Carbon disulfide	10.000	9.168	8.3	81	0.00
17	T,M	Methyl acetate	10.000	9.864	1.4	85	0.02
18	T,M	Methylene chloride	10.000	9.229	7.7	85	0.00
19	T,M	tert-Butyl alcohol	250.000	219.563	12.2	74	0.00
20	T,M	Acrylonitrile	50.000	49.878	0.2	91	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.401	6.0	82	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	8.790	12.1	78	0.02
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.661	3.4	86	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	9.901	1.0	88	0.00
26	T,M	2-Butanol	250.000	215.930	13.6	74	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.195	8.0	85	0.00
28	T,M	2-Butanone	50.000	50.899	-1.8	88	0.02
29	T,M	cis-1,2-Dichloroethene	10.000	9.382	6.2	85	0.00
30	T,M	2,2-Dichloropropane	10.000	10.021	-0.2	91	0.02
31	T,M	Tetrahydrofurane	10.000	9.004	10.0	75	0.00
32	T,M	Bromochloromethane	10.000	9.616	3.8	85	0.00
33	C,T,M	Chloroform	10.000	9.666	3.3	87	0.00
34	S	Dibromofluoromethane	10.000	10.162	-1.6	83	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.352	6.5	86	0.00
36	T,M	Cyclohexane	10.000	11.130	-11.3	102	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.781	2.2	87	0.00
38	S	1,2-Dichloroethane-d4	10.000	10.098	-1.0	83	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.263	7.4	81	-0.01
40	T,M	Carbon tetrachloride	10.000	9.686	3.1	85	0.00
41	T,M	Benzene	10.000	9.641	3.6	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	9.692	3.1	86	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	9.440	5.6	84	-0.01
45	T,M	Methylcyclohexane	10.000	11.474	-14.7	98	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.905	1.0	87	-0.01
47	T,M	1,4-Dioxane	200.000	170.546	14.7	75	0.00
48	T,M	Dibromomethane	10.000	9.374	6.3	81	-0.01
49	T,M	Bromodichloromethane	10.000	10.032	-0.3	88	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	6.825	31.8#	61	0.00
51	T,M	cis-1,3-Dichloropropene	10.000	9.892	1.1	86	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	52.935	-5.9	88	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	87	-0.01
54	S	Toluene-d8	10.000	9.878	1.2	81	-0.01
55	C,T,M	Toluene	10.000	9.473	5.3	83	-0.01
56	T,M	Ethyl methacrylate	10.000	8.992	10.1	76	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	9.893	1.1	85	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.041	-0.4	86	-0.01
59	T,M	Tetrachloroethene	10.000	9.144	8.6	80	-0.01
60	T,M	1,3-Dichloropropane	10.000	9.741	2.6	83	-0.01
61	T,M	2-Hexanone	50.000	51.826	-3.7	84	-0.01
62	T,M	Dibromochloromethane	10.000	10.317	-3.2	85	-0.01
63	T,M	1,2-Dibromoethane	10.000	9.616	3.8	79	-0.01
64	T,M	1-Chlorohexane	10.000	9.349	6.5	82	-0.01
65	P,M	Chlorobenzene	10.000	9.771	2.3	85	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.113	-1.1	85	-0.01
67	C,T,M	Ethylbenzene	10.000	9.295	7.1	81	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	18.844	5.8	79	-0.01
69	T,M	o-Xylene	10.000	9.646	3.5	82	-0.01
70	T,M	Styrene	10.000	9.712	2.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	82	-0.01
72	P,T,M	Bromoform	10.000	10.866	-8.7	83	-0.01
73	T,M	Isopropylbenzene	10.000	10.168	-1.7	85	-0.01
74	S	4-Bromofluorobenzene	10.000	10.452	-4.5	81	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.256	-2.6	81	-0.01
76	T,M	Bromobenzene	10.000	10.336	-3.4	83	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.802	2.0	84	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.422	-4.2	82	-0.01
79	T,M	n-Propylbenzene	10.000	10.205	-2.1	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	10.271	-2.7	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.183	-1.8	80	-0.01
82	T,M	4-Chlorotoluene	10.000	10.175	-1.8	82	-0.01
83	T,M	tert-Butylbenzene	10.000	10.008	-0.1	82	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.187	-1.9	84	-0.01
85	T,M	sec-Butylbenzene	10.000	10.193	-1.9	83	-0.01
86	T,M	p-Isopropyltoluene	10.000	10.099	-1.0	82	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	10.111	-1.1	80	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.797	2.0	81	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	10.212	-2.1	83	-0.01
90	T,M	n-Butylbenzene	10.000	9.938	0.6	79	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.714	2.9	81	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.458	5.4	76	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.241	-2.4	82	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.737	2.6	79	-0.01
95	T,M	Naphthalene	10.000	10.246	-2.5	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.441	-4.4	84	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	91	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.268	13.0	78	0.00
4	P,T,M	Chloromethane	0.368	0.326	11.4	79	0.00
5	C,T,M	Vinyl chloride	0.360	0.341	5.3	82	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.226	5.8	79	0.00
8	T,M	Chloroethane	0.200	0.220	-10.0	95	0.01
9	T,M	Dichlorofluoromethane	0.493	0.472	4.3	87	0.00
10	T,M	Trichlorofluoromethane	0.334	0.352	-5.4	91	-0.02
11	T,M	Acrolein	0.017	0.019	-11.8	96	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.185	11.5	80	0.00
13	T,M	Acetone	0.034	0.034	0.0	91	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.413	15.4	76	0.02
15	T,M	Iodomethane	0.552	0.441	20.1#	72	0.00
16	T,M	Carbon disulfide	1.072	0.983	8.3	81	0.00
17	T,M	Methyl acetate	0.089	0.088	1.1	85	0.02
18	T,M	Methylene chloride	0.412	0.380	7.8	85	0.00
19	T,M	tert-Butyl alcohol	0.009	0.008	11.1	74	0.00
20	T,M	Acrylonitrile	0.042	0.042	0.0	91	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.405	6.0	82	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.425	12.0	78	0.02
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	0.00
24	P,T,M	1,1-Dichloroethane	0.586	0.566	3.4	86	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.010	1.0	88	0.00
26	T,M	2-Butanol	0.010	0.009	10.0	74	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.677	8.0	85	0.00
28	T,M	2-Butanone	0.054	0.055	-1.9	88	0.02
29	T,M	cis-1,2-Dichloroethene	0.339	0.318	6.2	85	0.00
30	T,M	2,2-Dichloropropane	0.370	0.371	-0.3	91	0.02
31	T,M	Tetrahydrofurane	0.035	0.031	11.4	75	0.00
32	T,M	Bromochloromethane	0.242	0.232	4.1	85	0.00
33	C,T,M	Chloroform	0.484	0.467	3.5	87	0.00
34	S	Dibromofluoromethane	0.281	0.286	-1.8	83	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.361	6.5	86	0.00
36	T,M	Cyclohexane	0.549	0.612	-11.5	102	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.556	2.1	87	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.189	-1.1	83	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.152	7.3	81	-0.01
40	T,M	Carbon tetrachloride	0.324	0.314	3.1	85	0.00
41	T,M	Benzene	1.196	1.153	3.6	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.218	3.1	86	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.345	5.7	84	-0.01
45	T,M	Methylcyclohexane	0.617	0.708	-14.7	98	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.320	0.9	87	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	75	0.00
48	T,M	Dibromomethane	0.122	0.115	5.7	81	-0.01
49	T,M	Bromodichloromethane	0.314	0.315	-0.3	88	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.068	32.0#	61	0.00
51	T,M	cis-1,3-Dichloropropene	0.404	0.399	1.2	86	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.149	-5.7	88	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	87	-0.01
54	S	Toluene-d8	1.361	1.345	1.2	81	-0.01
55	C,T,M	Toluene	1.566	1.484	5.2	83	-0.01
56	T,M	Ethyl methacrylate	0.279	0.251	10.0	76	0.00
57	T,M	trans-1,3-Dichloropropene	0.369	0.365	1.1	85	0.00
58	T,M	1,1,2-Trichloroethane	0.210	0.210	0.0	86	-0.01
59	T,M	Tetrachloroethene	0.343	0.313	8.7	80	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.391	2.7	83	-0.01
61	T,M	2-Hexanone	0.113	0.117	-3.5	84	-0.01
62	T,M	Dibromochloromethane	0.260	0.269	-3.5	85	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.202	3.8	79	-0.01
64	T,M	1-Chlorohexane	0.709	0.663	6.5	82	-0.01
65	P,M	Chlorobenzene	0.983	0.961	2.2	85	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.318	-1.0	85	-0.01
67	C,T,M	Ethylbenzene	1.854	1.723	7.1	81	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.243	5.8	79	-0.01
69	T,M	o-Xylene	1.265	1.220	3.6	82	-0.01
70	T,M	Styrene	1.043	1.013	2.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	82	-0.01
72	P,T,M	Bromoform	0.337	0.366	-8.6	83	-0.01
73	T,M	Isopropylbenzene	5.225	5.313	-1.7	85	-0.01
74	S	4-Bromofluorobenzene	1.196	1.250	-4.5	81	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.743	-2.5	81	-0.01
76	T,M	Bromobenzene	1.022	1.057	-3.4	83	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.142	2.1	84	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.183	-4.0	82	-0.01
79	T,M	n-Propylbenzene	6.044	6.167	-2.0	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.786	-2.7	82	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.953	-1.8	80	-0.01
82	T,M	4-Chlorotoluene	3.434	3.494	-1.7	82	-0.01
83	T,M	tert-Butylbenzene	0.996	0.996	0.0	82	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.630	-1.9	84	-0.01
85	T,M	sec-Butylbenzene	5.490	5.596	-1.9	83	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.225	-1.0	82	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.926	-1.1	80	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.814	2.0	81	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.342	-2.1	83	-0.01
90	T,M	n-Butylbenzene	3.799	3.776	0.6	79	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.517	2.8	81	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.081	4.7	76	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.786	-2.3	82	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.570	2.7	79	-0.01
95	T,M	Naphthalene	1.016	1.041	-2.5	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.600	-4.3	84	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2873956	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2329188	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	765795	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	821963	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.60%			
38) 1,2-Dichloroethane-d4	9.33	65	543980	10.10	ug/l	-0.01
Spiked Amount 10.000			Recovery = 101.00%			
54) Toluene-d8	12.16	98	3131807	9.88	ug/l	-0.01
Spiked Amount 10.000			Recovery = 98.80%			
74) 4-Bromofluorobenzene	14.97	95	956931	10.45	ug/l	-0.01
Spiked Amount 10.000			Recovery = 104.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	770474	8.71	ug/l	98
4) Chloromethane	2.10	50	937037	8.87	ug/l	98
5) Vinyl chloride	2.25	62	980144	9.46	ug/l	98
7) Bromomethane	2.63	94	649677	9.41	ug/l	100
8) Chloroethane	2.76	64	632442	11.03	ug/l	98
9) Dichlorofluoromethane	3.08	67	1357672	9.59	ug/l	100
10) Trichlorofluoromethane	3.12	101	1010922	10.54	ug/l	99
11) Acrolein	3.71	56	268458	53.86	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	532908	8.86	ug/l	99
13) Acetone	3.93	43	492877	50.51	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1188051	8.47	ug/l	99
15) Iodomethane	4.10	142	1268089	7.99	ug/l	98
16) Carbon disulfide	4.20	76	2825151	9.17	ug/l	100
17) Methyl acetate	4.54	43	253582	9.86	ug/l	99
18) Methylene chloride	4.77	49	1091778	9.23	ug/l	98
19) tert-Butyl alcohol	5.08	59	587678	219.56	ug/l	100
20) Acrylonitrile	5.23	53	596391	49.88	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1163894	9.40	ug/l	99
22) trans-1,2-Dichloroethene	5.33	61	1220016	8.79	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1625707	9.66	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	2901362	9.90	ug/l	99
26) 2-Butanol	8.29	45	659783	215.93	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1945203	9.20	ug/l	100
28) 2-Butanone	7.75	43	793131	50.90	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	914117	9.38	ug/l	98
30) 2,2-Dichloropropane	7.70	77	1066050	10.02	ug/l	99
31) Tetrahydrofurane	8.27	42	89919	9.00	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.20	49	667949	9.62	ug/l	97
33)	Chloroform	8.47	83	1343194	9.67	ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1037621	9.35	ug/l	99
36)	Cyclohexane	8.84	84	1757633	11.13	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1597186	9.78	ug/l	100
39)	1,1-Dichloropropene	9.02	110	436027	9.26	ug/l	100
40)	Carbon tetrachloride	9.00	119	901041	9.69	ug/l	98
41)	Benzene	9.34	78	3312896	9.64	ug/l	100
42)	1,2-Dichloroethane	9.46	62	625426	9.69	ug/l	100
44)	Trichloroethene	10.45	130	992215	9.44	ug/l	99
45)	Methylcyclohexane	10.78	83	2033687	11.47	ug/l	99
46)	1,2-Dichloropropane	10.81	63	918497	9.91	ug/l	99
47)	1,4-Dioxane	10.97	88	53944	170.55	ug/l	98
48)	Dibromomethane	10.94	93	329693	9.37	ug/l	99
49)	Bromodichloromethane	11.22	83	905494	10.03	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	195736	6.82	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	1147882	9.89	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2138607	52.93	ug/l	99
55)	Toluene	12.24	91	3455435	9.47	ug/l	100
56)	Ethyl methacrylate	12.67	69	584680	8.99	ug/l	98
57)	trans-1,3-Dichloropropene	12.58	75	851258	9.89	ug/l	98
58)	1,1,2-Trichloroethane	12.81	97	490268	10.04	ug/l	99
59)	Tetrachloroethene	12.91	164	729700	9.14	ug/l	99
60)	1,3-Dichloropropane	13.00	76	910952	9.74	ug/l	100
61)	2-Hexanone	13.06	43	1364677	51.83	ug/l	100
62)	Dibromochloromethane	13.25	129	626002	10.32	ug/l	100
63)	1,2-Dibromoethane	13.37	107	471048	9.62	ug/l	97
64)	1-Chlorohexane	13.87	91	1543840	9.35	ug/l	99
65)	Chlorobenzene	13.89	112	2237683	9.77	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	741684	10.11	ug/l	99
67)	Ethylbenzene	13.98	91	4013728	9.30	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	5791278	18.84	ug/l	98
69)	o-Xylene	14.48	91	2842678	9.65	ug/l	99
70)	Styrene	14.49	104	2358998	9.71	ug/l	100
72)	Bromoform	14.67	173	280269	10.87	ug/l	99
73)	Isopropylbenzene	14.81	105	4068394	10.17	ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	569084	10.26	ug/l	99
76)	Bromobenzene	15.10	156	809338	10.34	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	108733	9.80	ug/l	93
78)	1,2,3-Trichloropropane	15.13	110	140164	10.42	ug/l	98
79)	n-Propylbenzene	15.18	91	4722875	10.20	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

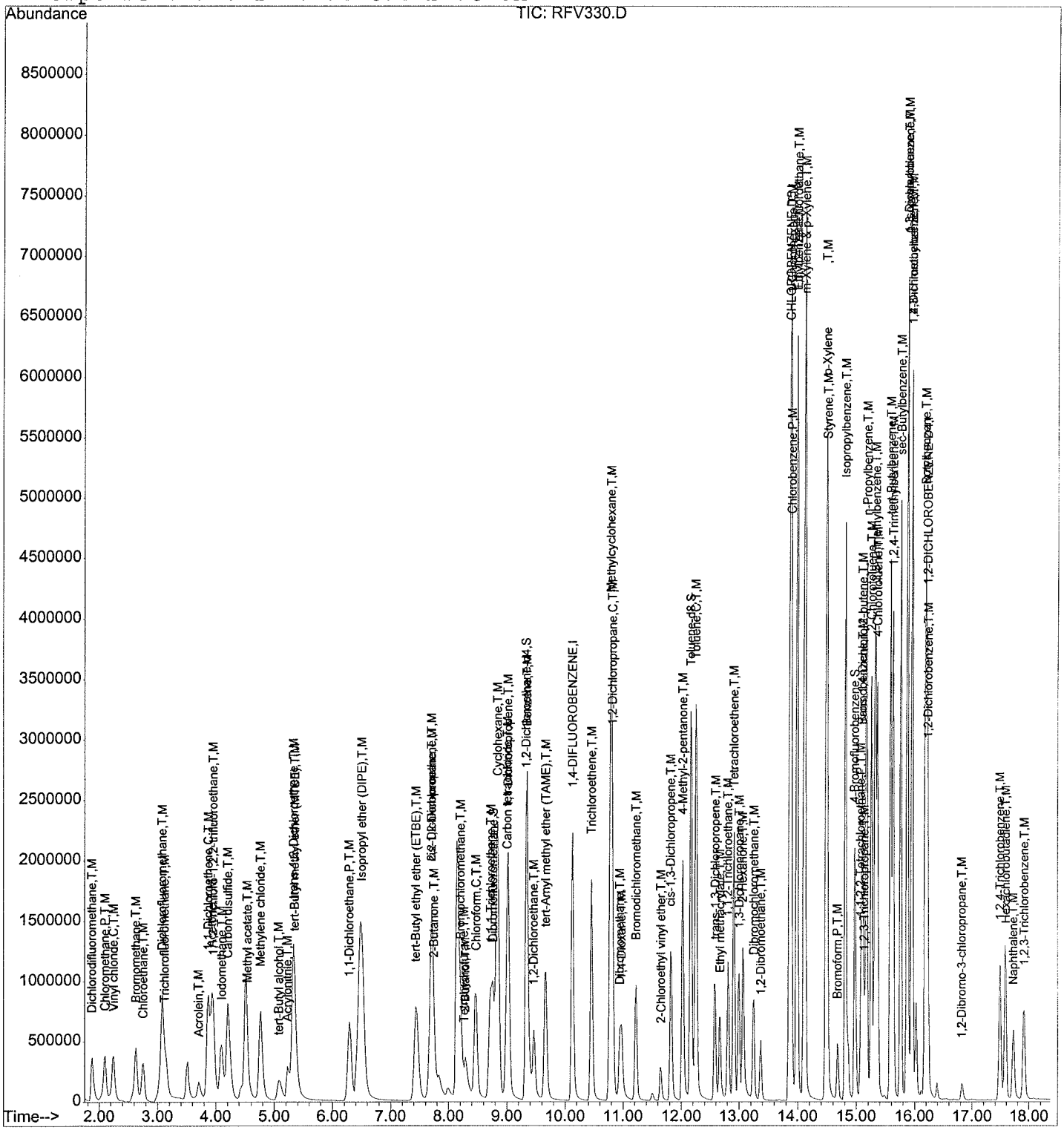
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.32	105	2899128	10.27	ug/l	99
81)	2-Chlorotoluene	15.25	91	2261774	10.18	ug/l	99
82)	4-Chlorotoluene	15.35	91	2675429	10.18	ug/l	99
83)	tert-Butylbenzene	15.58	134	762983	10.01	ug/l	73
84)	1,2,4-Trimethylbenzene	15.62	105	2779792	10.19	ug/l	99
85)	sec-Butylbenzene	15.75	105	4285060	10.19	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3235740	10.10	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1474706	10.11	ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	1388945	9.80	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	2559397	10.21	ug/l	99
90)	n-Butylbenzene	16.18	91	2891434	9.94	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1161554	9.71	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	61849	9.46	ug/l	97
93)	1,2,4-Trichlorobenzene	17.49	180	601994	10.24	ug/l	99
94)	Hexachlorobutadiene	17.59	225	436779	9.74	ug/l	99
95)	Naphthalene	17.72	128	796950	10.25	ug/l	100
96)	1,2,3-Trichlorobenzene	17.92	180	459454	10.44	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 10:19 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Vinyl acetate	10.000	8.850	11.5	86	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	88	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	91	0.00
2	T,M	Vinyl acetate	10.000	8.850	11.5	86	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	88	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:45 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

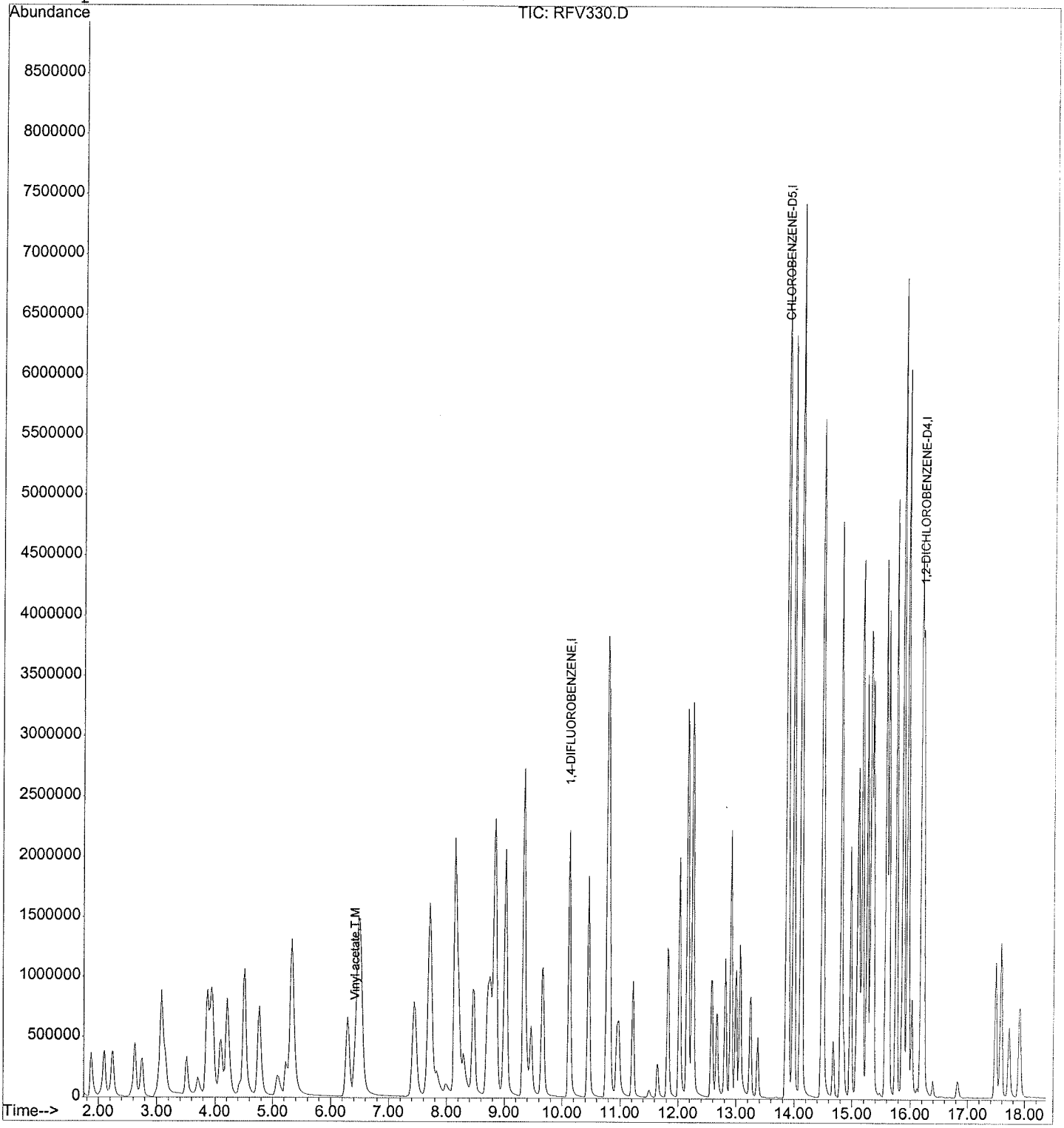
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2861192	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2329333	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	765824	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	826632	8.85	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV330.D VO01E14.M Mon Jun 29 09:46:21 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFV330.D Vial: 3
Acq On : 26 Jun 2020 12:52 pm Operator: VLu
Sample : CVO01E1324 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 9:45 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/26/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A01-063

BATCH CV001E1324

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01	RFV328	BFB01F16 ✓							11:53
02	29	STD CHK							
03	30	CV001E1324 ✓							
04	31	V001F16L ✓							
05	32	↓ C ✓							
06	33	RINSE							
07	34	V001F16B ✓	25 mL						
08	35	20F220-04 ✓		1.0	✓	✓			
09	36	↓ -01 ✓			✓	✓			
10	37	20F221-01 ✓			✓	✓			
11	38	↓ -02 ✓			✓	✓			
12	39	PV-003-02-18 ✓							
13	40	20F179-01 ✓	25 mL	1.0	✓	✓			
14	41	-02 ✓			✓	✓			
15	42	-03 ✓			✓	✓			
16	43	-04 ✓			✓	✓			
17	44	-05 ✓			✓	✓			
18	45	20F178-03 ✓			✓	✓			
19	46	-06 ✓			✓	✓			
20	47	-09 ✓			✓	✓			
21	48	-12 ✓			✓	✓			
22	49	-01 ✓			✓	✓			
23	50	-02 ✓			✓	✓			
24	51	-04 ✓			✓	✓			
25	52	-05 ✓			✓	✓			
26	53	↓ -07 ✓	↓	↓	✓	✓			23:20
27	54	RINSE							
28	55	↓							
29									
30									VL 6/29/20

Instrument No.	01	
INITIAL CALIBRATION REFERENCE		
DATE	5/13/20 / 5/14/20	
ICAL ID	V001E13 / V001E14	
STANDARDS		
NAME	ID	Amount (µl) / Conc. (mg/L)
DCC 8260 Ref-AA	SVI-34-08-03	5
	-42-02	5
DCC 4add	-13-01	1
DCC GAS	-38-01	1
DCC CS_2	-05-01	1
BFB	-26-03	1
IS/SURR.	-40-01	5
ICV/LCS 8260 Ref-AA	-20-01	5
	-47-03	5
ICV/LCS 3add	-48-01	5
ICV/LCS GAS	-42-01	1
ICV/LCS CS_2	SVI-33-74-01	1
		50/2501 1250
Data File Folder	20F26	
	LOT #	Syringe Lot #
pH strip	HC863463	MSV-02-01-05-1
Chlorine strip	002214	↓ -02-01-07-5
Methanol		↓ -01-04-16
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		
Electronic Data Archival Location		Date
HPCHEM_VOA/TO01		

Comments:

Analyzed By: VL

Date Disposed: 6/29/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/13/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V001E136

	Sample Prep ID	Data File Name	Lab Sample ID	(mL) Sample Amount (*)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes 8260	Notes ket-AA	Notes TBA
01	REV197	BFB01E09 ✓		A / B	NA	NA	NA				13:15
02	98	V001E131 ✓		0.03/0.15					0.3	1.5	7.5 ppb
03	99	2 ✓		0.05/0.25					0.5	2.5	12.5
04	200	3 ✓		0.1/0.5					1.0	5.0	25
05	01	4 ✓		0.2/1.0					2.0	10	50
06	02	5 ✓		0.5/2.5					5.0	25	125
07	03	6 ✓		1.0/5.0					10	50	250
08	04	7 ✓		2.0/10					20	100	500
09	05	8 ✓		3.0/15					30	150	750
10	06	9 ✓		5.0/25					50	250	1250
11	07	10 ✓		10/50					100	500	2500
12	08	RINSE									
13	09										
14	10	IV001E1301 ✓							10	50	250 ppb
15	11	RINSE									19:58
16									(A): GAS, CS_2, 4add, 224-TMP		
17									(B): 8260, ket-AA		
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30									VL 5/14/20		

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20
ICAL ID	V001E13

STANDARDS

NAME	ID	Amount (ul)	Conc. (mg/L)
DCC 8260 ket-AA 4add	SV1-34-31-02 / -34-20-03	*	50/1250 250
DCC GAS	-34-13-01 / -34-32-01		25016250 250
DCC CS_2	-33-97-01		250
DCC 224-TMP	-34-33-03		250
BFB	-34-27-01	1	50
IS/SURR. IS	-34-23-02	5	50
IS/SURR. SS	-34-01-01	*	250
ICV/LCS 8260 ket-AA	-34-20-01	5	50/1250
ICV/LCS ket-AA	-34-11-01	5	250
ICV/LCS 3add 2but	-33-50-01 / -25-19-05	5 / 6.25	50 1000
ICV/LCS GAS	-34-10-03	1	250
ICV/LCS CS_2	-33-74-01	1	250
ICV/LCS 224-TMP	-34-05-02	5	50
Data File Folder	20E13		

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RWS-19-001	-01-03-12
Sand		N01-C5916

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: (*) varied amount

Analyzed By: VL

Date Disposed: 5/14/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/14/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V001E144

	Sample Prep ID	Data File Name	Lab Sample ID	(*) Sample Amount (mL)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		REV212	BFB01E10 ✓		NA	NA	NA		16:40
02		13	V001E141 ✓	0.5					1.0 ppb
03		14	2 ✓	1.0					2.0 ppb
04		15	3 ✓	2.5					5.0 ppb
05		16	4 ✓	5.0					10 ppb
06		17	5 ✓	10					20 ppb
07		18	6 ✓	15					30 ppb
08		19	IV001E1401 ✓						10 ppb
09		20	RINSE						20:17
10									
11									
12									
13									
14									
15									
16									
17									
18									
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21									
22									
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26									
27									
28									
29									
30									

VL 5/15/20

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/14/20
ICAL ID	V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC	SVI-34-34-03	*	50
BFB	-27-01	1	50
IS/SURR. IS	-23-02	5	50
ICV/LCS	-35-01	5	50
ICV/LCS			
ICV/LCS			
ICV/LCS			
Data File Folder			

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RWS-19-001	N01-C5916
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: ** vinyl acetate ICAL ** method of analysis V001E14 same parameters as V001E13 **

Analyzed By: VL

Date Disposed: 5/15/20 Disposed By: VL

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 08-04-2020
EMAX Batch No.: 20F183

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/23/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW17S-GW062120	F183-01	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW17D-GW062120	F183-02	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW06-GW062120	F183-03	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB14-GW062220	F183-04	06/22/20	WATER	VOCS BY 8260C
MW16S-GW062120	F183-05	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
MW16D-GW062120	F183-06	06/21/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
MW04-GW062120	F183-07	06/21/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
MW08A-GW062120	F183-08	06/21/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
TB13-GW062220	F183-09	06/22/20	WATER	VOCS BY 8260C
TB15-GW062220	F183-10	06/22/20	WATER	VOCS BY 8260C
EB01-GW062120	F183-11	06/21/20	WATER	VOCS BY 8260C
MW01S-GW062120	F183-12	06/21/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
FD01-GW062120	F183-13	06/21/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
MW08C-GW062220	F183-14	06/22/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
MW08B-GW062220	F183-15	06/22/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
FD02-GW062220	F183-16	06/22/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB16-GW062220	F183-17	06/22/20	WATER	VOCS BY 8260C
MW08A-GW062120DUP	F183-08D	06/21/20	WATER	NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS
MW08A-GW062120MS	F183-08M	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ORGANIC CARBON
MW08A-GW062120MSD	F183-08S	06/21/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC TOTAL ORGANIC CARBON

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F183
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/ Mercury / 6020A / 7470; Chloride/ Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW17S-GW062120		6/21/20	1250	3			GW		VOCs, 1,4-Dioxane, Metals	
2	MW17D-GW062120		6/21/20	1525	3			GW		VOCs, 1,4-Dioxane, Metals	
3	MW06-GW062120		6/21/20	1200	3			GW		VOCs, 1,4-Dioxane, Metals	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	4.5	#9 4.2°C
2	2.7	
3	2.6	
4	5.0	
5	2.6	
6	2.3	
7	4.7	
8	2.1	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL — RECEIVED BY
Emma Pfaff	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	PO NUMBER:	EMAX CONTROL NO. 20F183
		SAMPLE STORAGE	PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicc@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE		PRESERVATIVE CODE	
DW=Drinking Water		IC = Ice	
GW=Ground Water		HC = HCl	
WW=Waste Water		HN=HNO3	
SD=Solid Waste SL=Sludge		SH=NaO3	
SS=Soil/ Sediment		ST=Na2S2O3	
WP=Wipes PP=Pure Products		ZA=Zinc Acetate	
AR=Air		HS=H2SO4	
O=			

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; Cr(VI) / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48__ hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 22
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW17S-GW062120		6/21/20	1250	10		C	GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Cr(VI), Nitrate Nitrite, Alkalinity, TOC	
2	MW17D-GW062120		6/21/20	1525	10			GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Cr(VI), Nitrate Nitrite, Alkalinity, TOC	
3	MW06-GW062120		6/21/20	1200	10			GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Cr(VI), Nitrate Nitrite, Alkalinity, TOC	
4	TB14-GW062220		6/22/20	0905	2			GW		VOCs	
5											
6											
7											
8											
9											
10											

Instructions	Cooler #	Temp. (°C)	Sample #s

SAMPLER: Cherie Zakowski

COURIER/AIRBILL:

RELINQUISHED BY	Date	Time	RECEIVED BY
Cherie Zakowski	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	PO NUMBER:	EMAX CONTROL NO. 20F183
		SAMPLE STORAGE	PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicc@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; Metals/ mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW16S-GW062120		6/21/20	0930	3			GW		X X X	
2	MW16D-GW062120		6/21/20	1040	3			GW		X X X	
3	MW04-GW062120		6/21/20	1000	3			GW		X X X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER: Emma Pat

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pat	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

COURIER/AIRBILL

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:

SAMPLE STORAGE

EMAX CONTROL NO.

PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; Metals / 6020A 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
* 1	MW08A-GW062120		6/21/20	1630	9			GW	ms/msd	X (VOCs), X (Alkalinity/TDS)	ms/msd
* 2											
* 3											
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

8

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pratt	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE
EMAX CONTROL NO. 20F183
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE: DW=Drinking Water; GW=Ground Water; WW=Waste Water; SD=Solid Waste SL=Sludge; SS=Soil/ Sediment; WP=Wipes PP=Pure Products; AR=Air; O=
PRESERVATIVE CODE: IC = Ice; HC = HCl; HN=HNO3; SH=NaO3; ST=Na2S2O3; ZA=Zinc Acetate; HS=H2SO4

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases: MEE / RSK-175; Metals/ Mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
8 • 1	MW08A-GW062120		6/21/20	1630	30			GW	md msd	VOCs, 1,4-Dioxane, Gases, Metals, Chloride, Sulfate, Nitrate Nitrite, TOC	ms/msd
9 • 2	TB13-GW062220		6/22/20	0900	2			GW		VOCs	
• 3											
• 4											
• 5											
• 6											
• 7											
• 8											
• 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gamma Pat	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is resposible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F183
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cheine Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; Metals / 6020A 7470 mercury; Chloride Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT: ☐ Rush __24__hrs. ☐ Rush __48_hrs ☐ Rush_72_hrs ☐ 7 days ☒ ~~14 days~~ ER ☒ 21 days

LAB	SAMPLE ID (CLIENT)	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW16S-GW062120		6/21/20	0930	10			GW		VOCs, Gases MEE, Metals, Chloride Sulfate, Nitrate Nitrite, TOC	
2	MW16D-GW062120		6/21/20	1040	10			GW		VOCs, Gases MEE, Metals, Chloride Sulfate, Nitrate Nitrite, TOC	
3	MW04-GW062120		6/21/20	1000	10			GW		VOCs, Gases MEE, Metals, Chloride Sulfate, Nitrate Nitrite, TOC	
4	TB15-GW062220		6/22/20	0910	2			GW		VOCs	
5	EB01-GW062120		6/21/20	1700	3			GW		VOCs	
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Pratt	6/22/20	1000	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20P193
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals / mercury / 6020A / 7470; Chloride / Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
12 • 1	MW01S-GW062120		6/21/20	1000	2			GW		X	
13 • 2	FD01-GW062120		6/21/20	1015	2			GW		X	
16 • 3	FD02-GW062220		6/22/20	1010	16			GW		X X X X X X X	
• 4											
• 5											
• 6											
• 7											
• 8											
• 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Emma Rott	6/22/20	1500	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

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		SAMPLE STORAGE	PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicc@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; Chromat sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9R
- ☒ 21 days

	SAMPLE ID		SAMPLING			CONTAINER			MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
LAB	CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE				
15 • 1	MW08B-GW062220		6/22/20	1000	10			GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Chromat sulfate, Nitrate Nitrite, Alkalinity, TOC	
14 • 2	MW08C-GW062220		6/22/20	1020	10			GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Chromat sulfate, Nitrate Nitrite, Alkalinity, TOC	
• 3											
• 4											
• 5											
• 6											
• 7											
• 8											
• 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Rott	6/22/20	1500	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

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1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F193
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
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SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane / 8270DSIM; Gases MEE / RSK-175; Metals / Mercury 6020A / 7470; Chromium VI / 300; Sulfate / SM4500; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT:
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW01S-GW062120		6/21/20	1000	13			GW		X X X X X X X X	no 1,4-Dioxane included
2	FD01-GW062120		6/21/20	1015	13			GW		X X X X X X X X	no 1,4-Dioxane included
3	MW08C-GW062220		6/22/20	1020	3			GW		X	
4	MW08B-GW062220		6/22/20	1000	3			GW		X	
5	FD02-GW062220		6/22/20	1010	3			GW		X	
6	TB16-GW062220		6/22/20	1300	2			GW		X	
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gimma Rit	6/22/20	1500	
	06/23/20	0950	Jenessa Nakagawa

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 20F183
☑ Fedex ☐ UPS ☐ GSO ☐ Others	394097399925	Recipient Jenessa Nakagawa
☐ EMAX Courier ☐ Client Delivery		Date 06/23/2020 Time 0950

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☑ Rad screening required		

Note: Corrections are not initialed/dated.

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 _____ °C	☑ Cooler 2 _____ °C	☑ Cooler 3 _____ °C	☑ Cooler 4 _____ °C	☑ Cooler 5 _____ °C
	☑ Cooler 6 _____ °C	☑ Cooler 7 _____ °C	☑ Cooler 8 _____ °C	☑ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	A - S/N 192381464	B - S/N _____	C - S/N 200291756	D - S/N 140252067	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
3	27	D22	Packed in same bubble bag as Sample #3	PM-COC
8	104	D22	Packed in same bag as Sample #8	PM-COC
16	103	D3	Label reads FD02-GW	PM-COC
12, 13		D11	Received 13 containers, including 2-1L for 1,4 Dioxane.	

6/23/20

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: Sample #8, bottle #113 for Alk/TDS is 1/2 full

Inform PM of issues

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	Label illegible; water damage
D23	_____
D24	_____

☐ **Continue to next page.**

Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling: Jenessa Nakagawa — Date 06/23/2020 — 6/23/20

SRF — Date 6/23/20

PM — Date 06/23/20

Raman Singh

From: Rott, Emilie A. <rottea@cdmsmith.com>
Sent: Wednesday, June 24, 2020 5:18 AM
To: Raman Singh
Cc: Zakowski, Cherie; Leslie, Karla L.
Subject: RE: SLC VA Plume - Samples Shipment

Hi Raman –

Yes, we would like to proceed with the 1,4-dioxane analysis for those samples.

Thank you,
Emma

From: Raman Singh <RSingh@emaxlabs.com>
Sent: Tuesday, June 23, 2020 2:30 PM
To: Rott, Emilie A. <rottea@cdmsmith.com>
Cc: Zakowski, Cherie <ZakowskiCA@cdmsmith.com>; Leslie, Karla L. <lesliekl@cdmsmith.com>
Subject: RE: SLC VA Plume - Samples Shipment
Importance: High

Hi Emma/Cherie,

Attached is the COC and SRFs for SDG 20F183 for the shipment below. For Sample #12 (MW01S-GW062120) and Sample #13 (FD01-GW062120), one COC indicates 1,4-Dioxane is not included but they are then listed on another COC (with Sample#16) requesting 1,4-Dioxane. The respective amber bottles were received. Would you like to proceed with 1,4-Dioxane analysis?

Thanks!

Raman Singh | *Project Manager*
EMAX Laboratories, Inc.
1835 W 205th Street, Torrance, CA 90501
Tel: 310-618-8889 x 119
RSingh@emaxlabs.com

EMAX is interested in your feedback; please provide your comments to: customerservice@emaxlabs.com.

Note:
EMAX will be closed for the following holidays.

Independence Day: 07/03/20

From: Rott, Emilie A. [mailto:rottea@cdmsmith.com]
Sent: Monday, June 22, 2020 8:14 PM
To: Raman Singh <RSingh@emaxlabs.com>
Cc: Zakowski, Cherie <ZakowskiCA@cdmsmith.com>; Leslie, Karla L. <lesliekl@cdmsmith.com>
Subject: SLC VA Plume - Samples Shipment

Hi Raman,

I wanted to let you know that we shipped 9 coolers today. The tracking numbers are as following:

- 394097399925
- 394097388836
- 394097399947
- 394097399958
- 394097399969
- 394097399970
- 394109180610
- 394109051091
- 394108878645

I have also attached photos of the associated COCs. Please let me know if you find any discrepancies upon arrival!

Thank you,

Emma Rott
CDM Smith
555 17th St., Suite 500, Denver, CO 80202
Office: 303.383.2438
Cell: 406.241.3259
rottea@cdmsmith.com

Do Not Lift Using This Tag
1 CX 14 V 14
ORIGIN ID:NPHA (406) 241-3259
CDM SMITH
555 17TH ST STE 1100
DENVER, CO 80202
UNITED STATES US
SHIP DATE: 22JUN20
ACTWGT: 41.25 LB
CAD: 6997117/SSF02110
DIMS: 25x14x14 IN
BILL THIRD PARTY
TO EMAX LABORATORIES INC
ATTN: SAMPLE RECEIVING
1835 WEST 205TH STREET
TORRANCE CA 90501
(406) 241-3259
REF: 238824-6495-F3048-05SAMPL
INV:
PO:
DEPT:
FedEx
Express
4 of 6
MPS# 0263 3940 9739 9958
Mstr# 3940 9739 9925
0201
WZ HHRA
TUE - 23 JUN 10:30A
PRIORITY OVERNIGHT
AHS
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F183

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of seventeen(17) water samples were received on 06/23/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All project calibration requirements were satisfied except for Chloroethane was detected biased high(%D=25.5) in CCV(data file ID RFV357). However, note that Chloroethane was not detected in any of the associated field samples. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, three(3) method blanks were analyzed. VO01F17B, VO01F18B and VO01G02B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, three(3) sets of LCS/LCD were analyzed. VO01F17L/VO01F17C, VO01F18L/VO01F18C and VO01G02L/VO01G02C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following was noted: F183-08M/F183-08S - RPD for Vinyl Acetate, (RPD=21*), was >RPD limit. The rest of the analytes were in control. Refer to Matrix QC summary form for details.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Instrument ID : 01

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	VO01F17B	1	NA	06/29/2013:21	06/29/2013:21	RFV361	REV203	VO01F17	Method Blank
LCS1W	VO01F17L	1	NA	06/29/2012:01	06/29/2012:01	RFV358	REV203	VO01F17	Lab Control Sample (LCS)
LCD1W	VO01F17C	1	NA	06/29/2012:28	06/29/2012:28	RFV359	REV203	VO01F17	LCS Duplicate
TB14-GW062220	F183-04	1	NA	06/29/2017:05	06/29/2017:05	RFV368	REV203	VO01F17	Field Sample
TB13-GW062220	F183-09	1	NA	06/29/2017:31	06/29/2017:31	RFV369	REV203	VO01F17	Field Sample
TB15-GW062220	F183-10	1	NA	06/29/2018:25	06/29/2018:25	RFV371	REV203	VO01F17	Field Sample
EB01-GW062120	F183-11	1	NA	06/29/2018:52	06/29/2018:52	RFV372	REV203	VO01F17	Field Sample
TB16-GW062220	F183-17	1	NA	06/29/2019:21	06/29/2019:21	RFV373	REV203	VO01F17	Field Sample
MW17S-GW062120	F183-01	1	NA	06/29/2019:49	06/29/2019:49	RFV374	REV203	VO01F17	Field Sample
MW17D-GW062120	F183-02	1	NA	06/29/2020:16	06/29/2020:16	RFV375	REV203	VO01F17	Field Sample
MW06-GW062120	F183-03	1	NA	06/29/2020:44	06/29/2020:44	RFV376	REV203	VO01F17	Field Sample
MW16S-GW062120	F183-05	1	NA	06/29/2021:11	06/29/2021:11	RFV377	REV203	VO01F17	Field Sample
MW16D-GW062120	F183-06	1	NA	06/29/2021:39	06/29/2021:39	RFV378	REV203	VO01F17	Field Sample
MW04-GW062120	F183-07	1	NA	06/29/2022:07	06/29/2022:07	RFV379	REV203	VO01F17	Field Sample
MBLK2W	VO01F18B	1	NA	06/30/2014:26	06/30/2014:26	RFV386	REV203	VO01F18	Method Blank
LCS2W	VO01F18L	1	NA	06/30/2013:06	06/30/2013:06	RFV383	REV203	VO01F18	Lab Control Sample (LCS)
LCD2W	VO01F18C	1	NA	06/30/2013:33	06/30/2013:33	RFV384	REV203	VO01F18	LCS Duplicate
MW08A-GW062120	F183-08	1	NA	06/30/2018:02	06/30/2018:02	RFV394	REV203	VO01F18	Field Sample
MW08A-GW062120MS	F183-08M	1	NA	06/30/2018:59	06/30/2018:59	RFV395	REV203	VO01F18	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	1	NA	06/30/2019:26	06/30/2019:26	RFV396	REV203	VO01F18	MS Duplicate (MSD)
MW01S-GW062120	F183-12	1	NA	06/30/2020:21	06/30/2020:21	RFV398	REV203	VO01F18	Field Sample
FD01-GW062120	F183-13	1	NA	06/30/2020:48	06/30/2020:48	RFV399	REV203	VO01F18	Field Sample
MW08C-GW062220	F183-14	1	NA	06/30/2021:16	06/30/2021:16	RFV400	REV203	VO01F18	Field Sample
MW08B-GW062220	F183-15	1	NA	06/30/2021:43	06/30/2021:43	RFV401	REV203	VO01F18	Field Sample
FD02-GW062220	F183-16	1	NA	06/30/2022:10	06/30/2022:10	RFV402	REV203	VO01F18	Field Sample
MBLK3W	VO01G02B	1	NA	07/02/2012:16	07/02/2012:16	RGV028	REV203	VO01G02	Method Blank
LCS3W	VO01G02L	1	NA	07/02/2010:55	07/02/2010:55	RGV025	REV203	VO01G02	Lab Control Sample (LCS)
LCD3W	VO01G02C	1	NA	07/02/2011:22	07/02/2011:22	RGV026	REV203	VO01G02	LCS Duplicate
MW01S-GW062120DL	F183-12I	5	NA	07/02/2012:43	07/02/2012:43	RGV029	REV203	VO01G02	Diluted Sample
FD01-GW062120DL	F183-13I	5	NA	07/02/2013:10	07/02/2013:10	RGV030	REV203	VO01G02	Diluted Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 19:49
Sample ID: MW17S-GW062120	Date Analyzed: 06/29/20 19:49
Lab Samp ID: F183-01	Dilution Factor: 1
Lab File ID: RFV374	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.7	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	0.91J	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.56	10.00	95.6	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV374.D Vial: 19
Acq On : 29 Jun 2020 7:49 pm Operator: VLu
Sample : 20F183-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:18 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

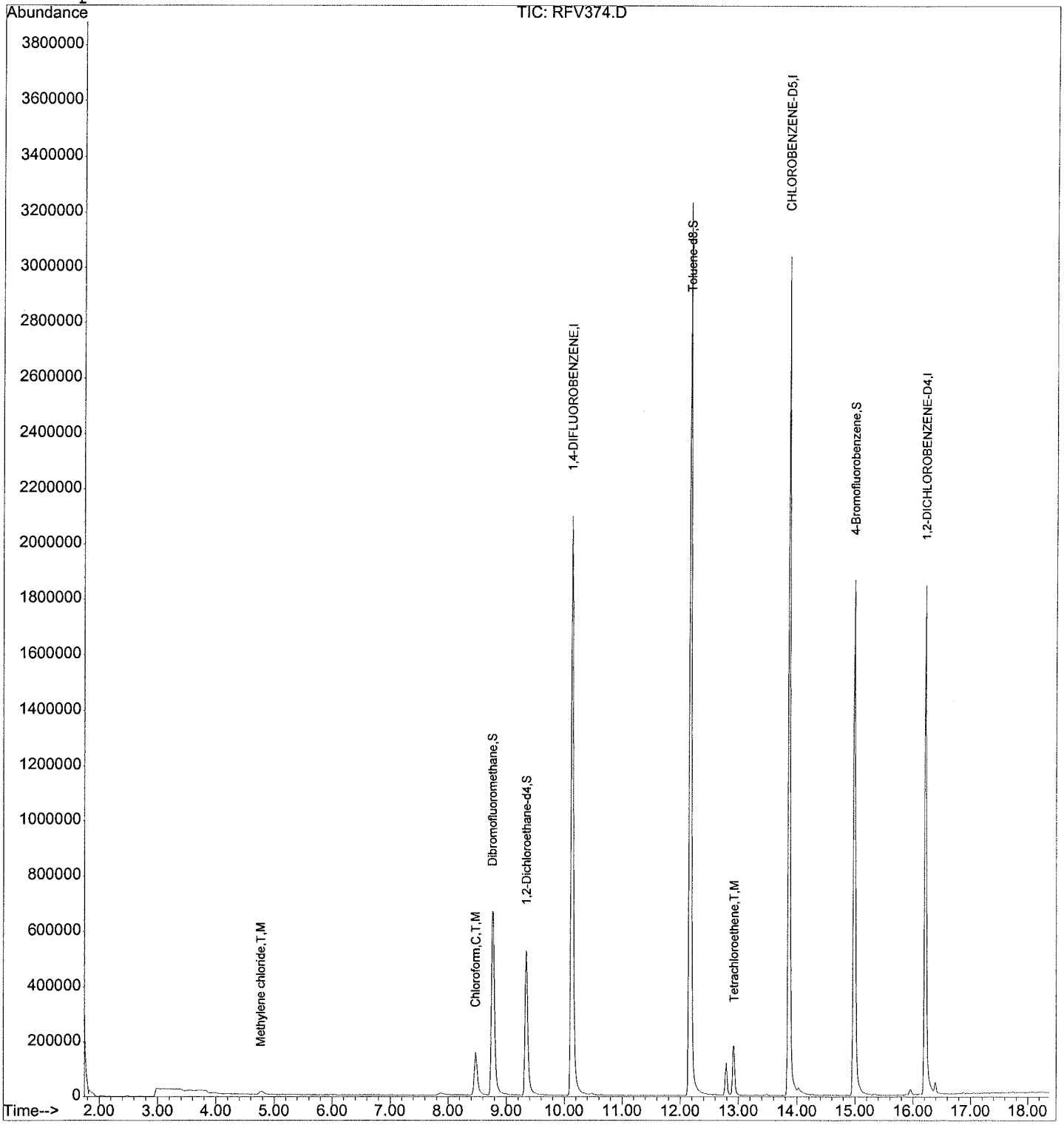
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2771556	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2298885	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	713443	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	826586	10.60	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.00%			
38) 1,2-Dichloroethane-d4	9.34	65	571311	11.00	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.00%			
54) Toluene-d8	12.17	98	2990413	9.56	ug/l	0.00
Spiked Amount 10.000			Recovery = 95.60%			
74) 4-Bromofluorobenzene	14.98	95	919347	10.78	ug/l	0.00
Spiked Amount 10.000			Recovery = 107.80%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	21001	0.18	ug/l	92
33) Chloroform	8.47	83	231018	1.72	ug/l	99
59) Tetrachloroethene	12.92	164	71860	0.91	ug/l	97

(#) = qualifier out of range (m) = manual integration
RFV374.D VO01E13.M Tue Jun 30 11:18:48 2020 Page 1

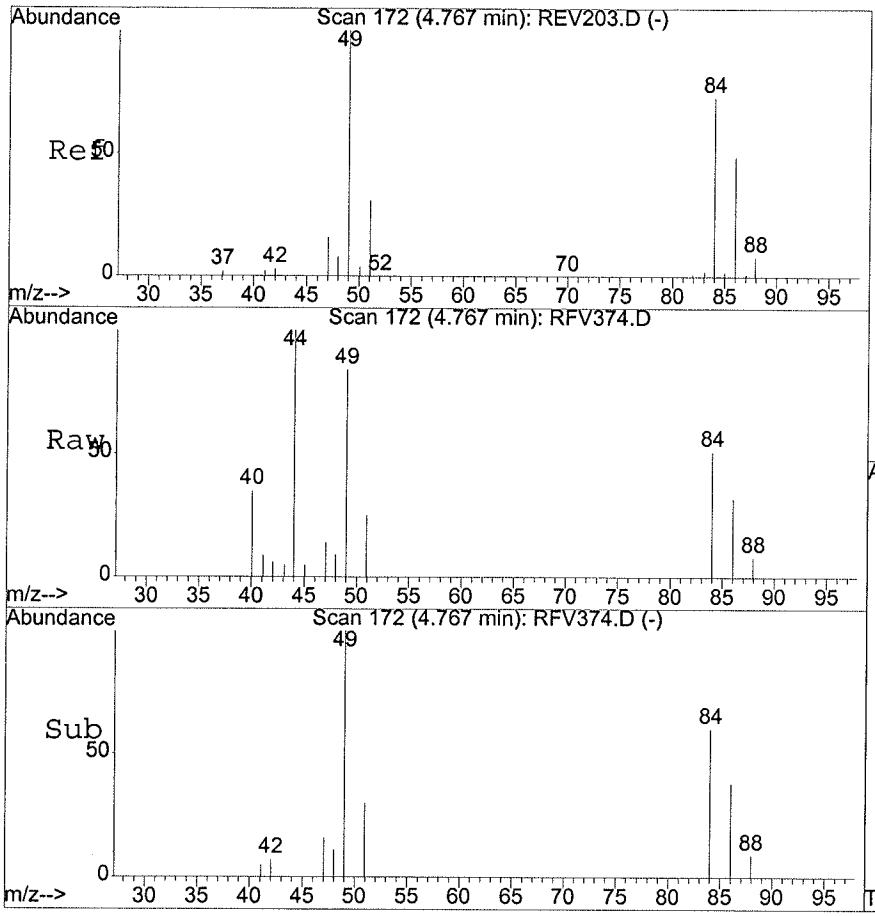
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV374.D Vial: 19
Acq On : 29 Jun 2020 7:49 pm Operator: VLu
Sample : 20F183-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:18 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



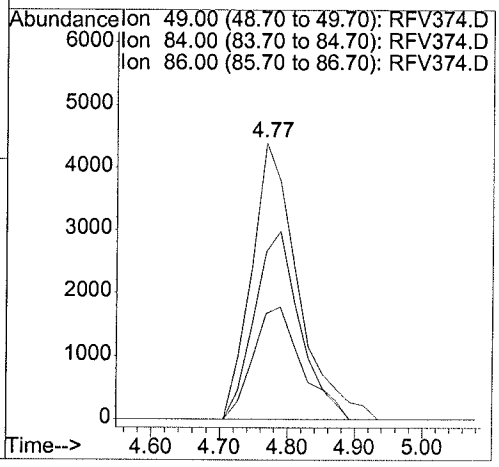
RFV374.D VO01E13.M Tue Jun 30 11:18:49 2020 Page 2

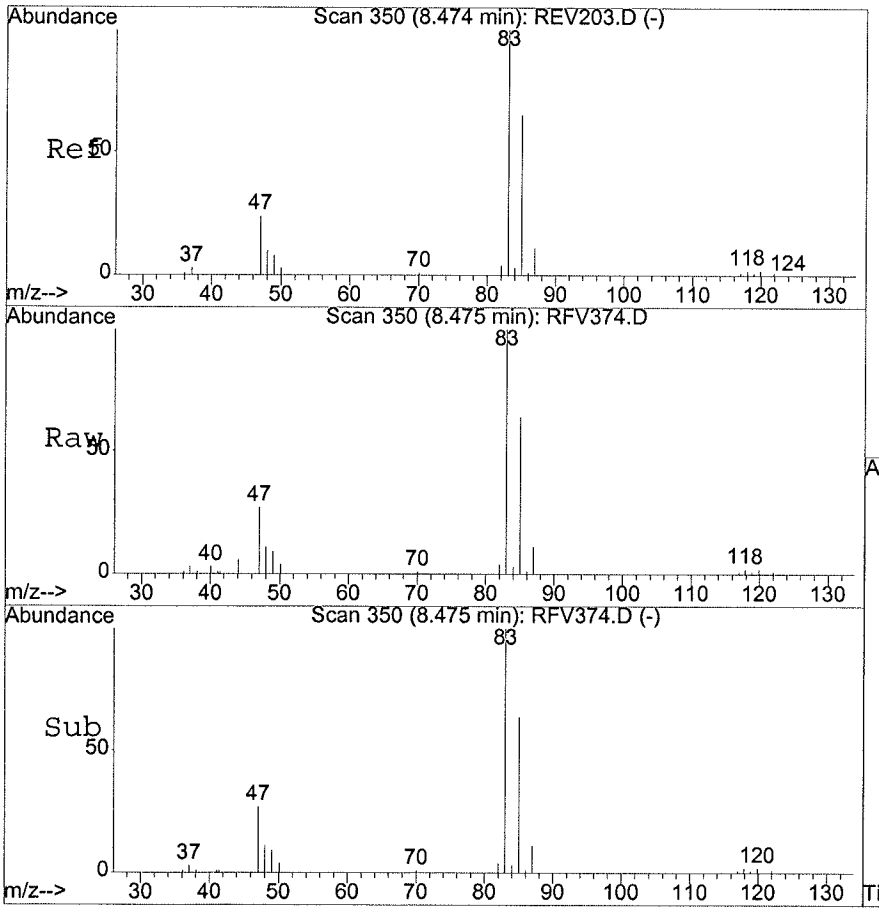


#18
Methylene chloride
Concen: 0.18 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV374.D
Acq: 29 Jun 2020 7:49 pm

Tgt Ion: 49 Resp: 21001

Ion	Ratio	Lower	Upper
49	100		
84	66.6	43.3	103.3
86	42.5	17.1	77.1

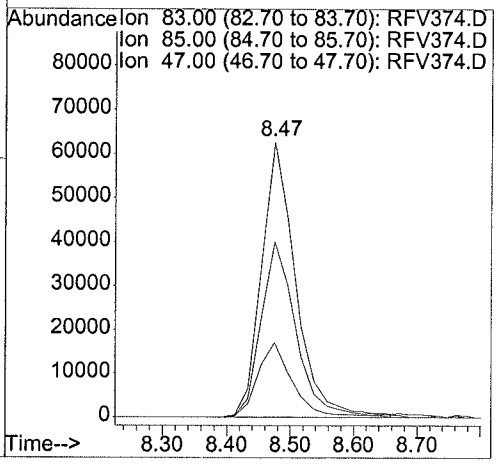


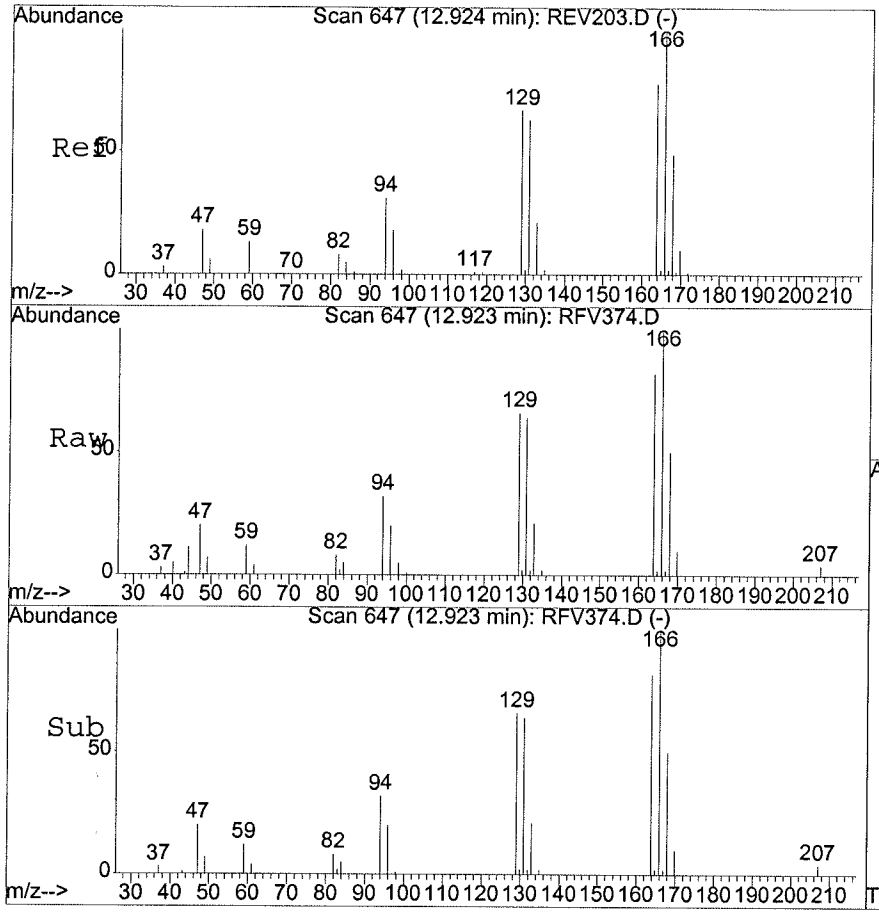


#33
Chloroform
Concen: 1.72 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV374.D
Acq: 29 Jun 2020 7:49 pm

Tgt Ion: 83 Resp: 231018

Ion	Ratio	Lower	Upper
83	100		
85	65.6	35.3	95.3
47	27.7	0.0	57.1

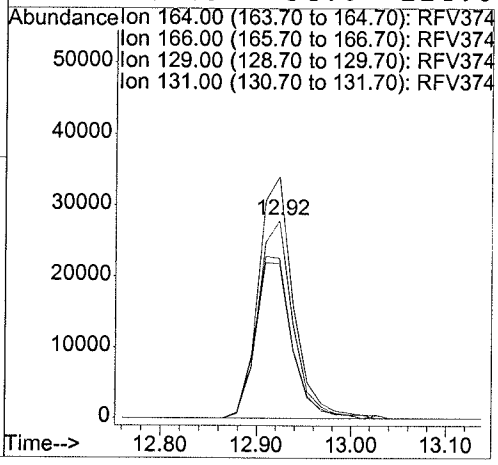




#59
Tetrachloroethene
Concen: 0.91 ug/l
RT: 12.92 min Scan# 647
Delta R.T. -0.00 min
Lab File: RFV374.D
Acq: 29 Jun 2020 7:49 pm

Tgt Ion:164 Resp: 71860

Ion	Ratio	Lower	Upper
164	100		
166	123.0	99.2	159.2
129	87.0	59.7	119.7
131	82.9	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV374.D Vial: 19
Acq On : 29 Jun 2020 7:49 pm Operator: VLu
Sample : 20F183-01 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2771503	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2286573	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	713467	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV374.D VO01E14.M Tue Jun 30 10:34:37 2020 Page 1

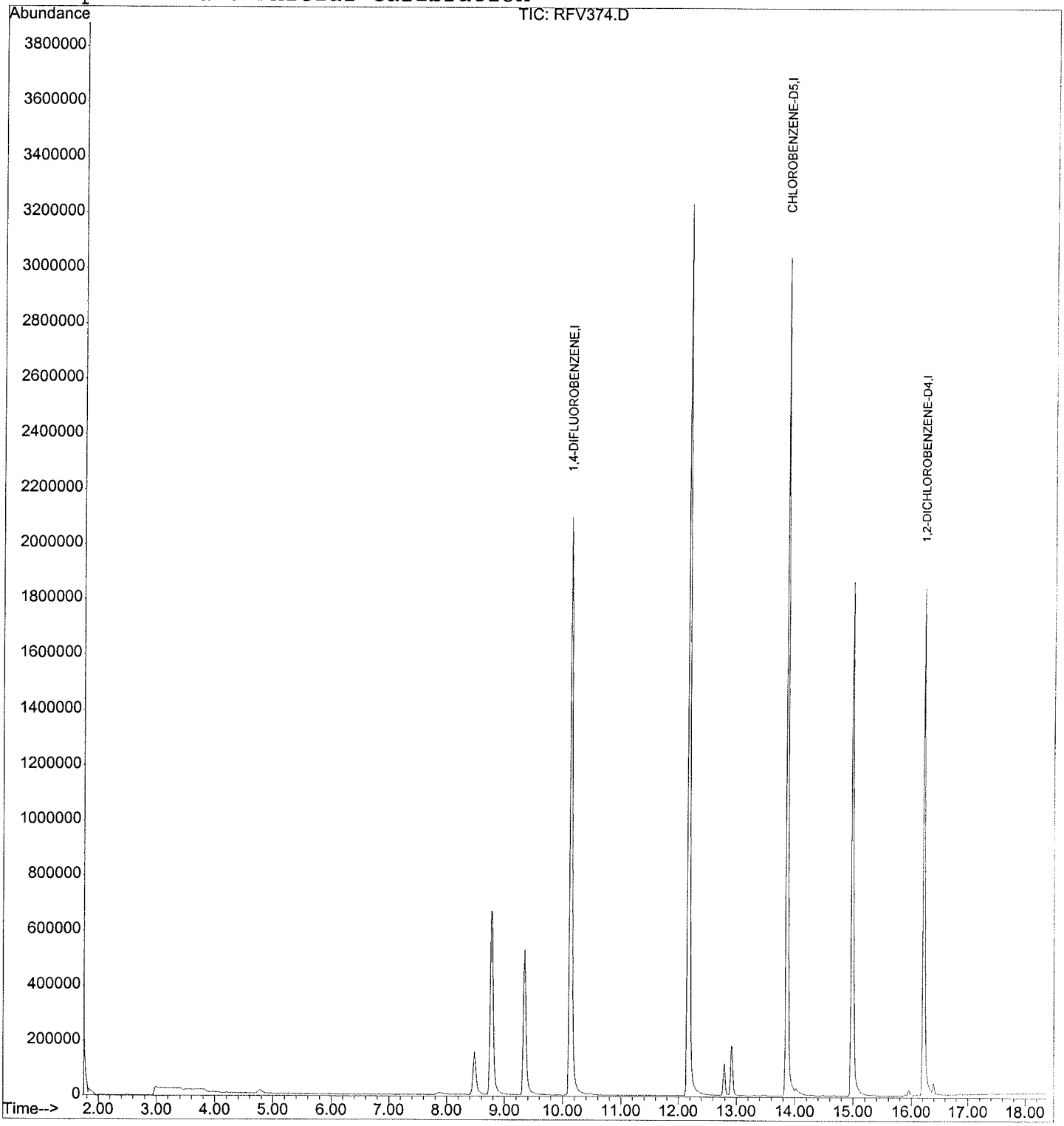
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV374.D
Acq On : 29 Jun 2020 7:49 pm
Sample : 20F183-01 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020

Vial: 19
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/21/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/29/20 20:16
Sample ID:	MW17D-GW062120	Date Analyzed:	06/29/20 20:16
Lab Samp ID:	F183-02	Dilution Factor:	1
Lab File ID:	RFV375	Matrix	: WATER
Ext Btch ID:	VO01F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.23J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.5	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	2.5	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.88	10.00	98.8	70-130
DIBROMOFLUOROMETHANE	10.8	10.00	108	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV375.D Vial: 20
Acq On : 29 Jun 2020 8:16 pm Operator: VLu
Sample : 20F183-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

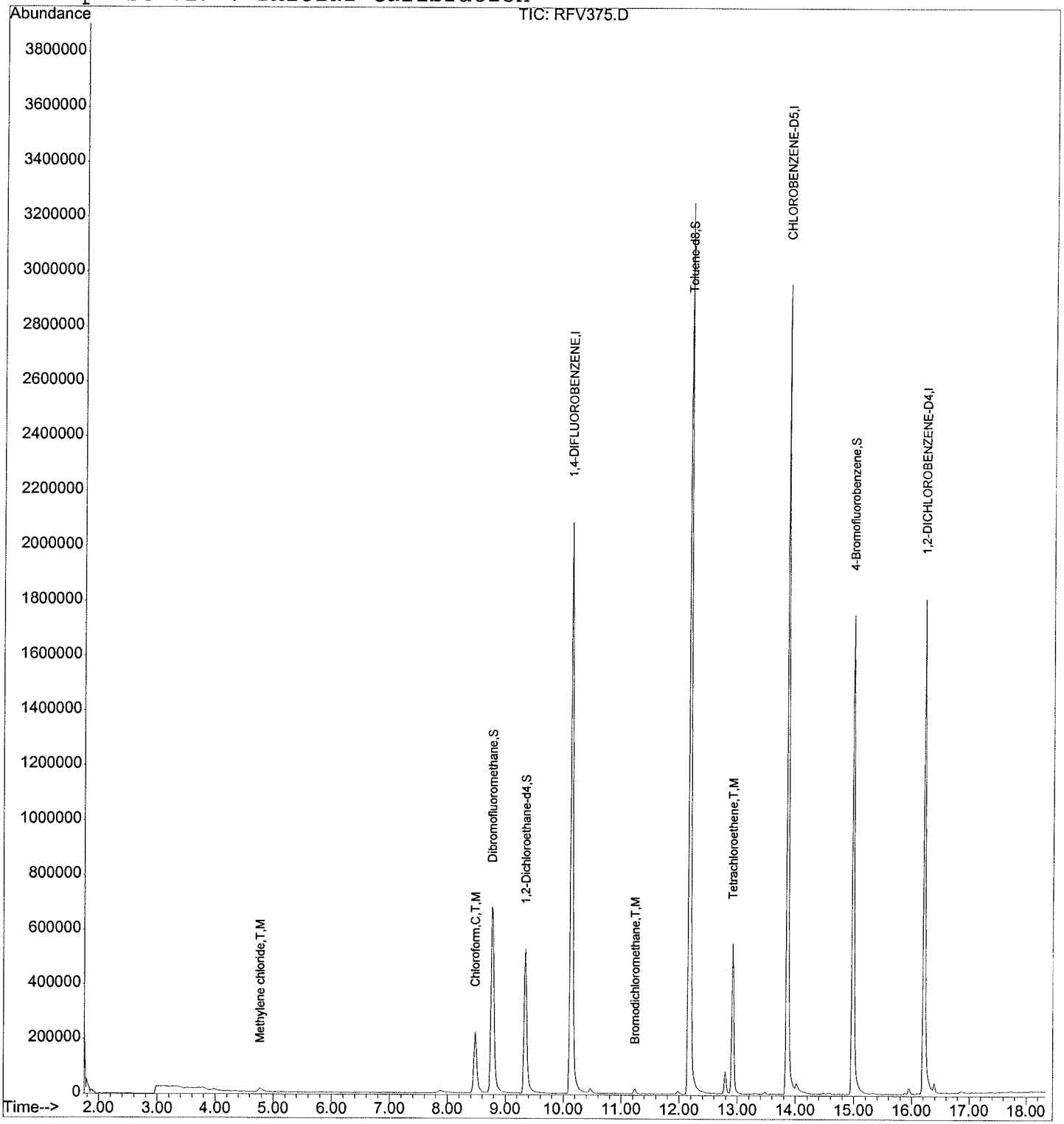
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2720925	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2244688	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	710344	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	824651	10.77	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.70%		
38) 1,2-Dichloroethane-d4	9.34	65	559884	10.98	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.80%		
54) Toluene-d8	12.17	98	3019644	9.88	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.80%		
74) 4-Bromofluorobenzene	14.98	95	903563	10.64	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.40%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	19566	0.17	ug/l	96
33) Chloroform	8.48	83	331117	2.52	ug/l	99
49) Bromodichloromethane	11.24	83	19922	0.23	ug/l	90
59) Tetrachloroethene	12.91	164	195413	2.54	ug/l	98

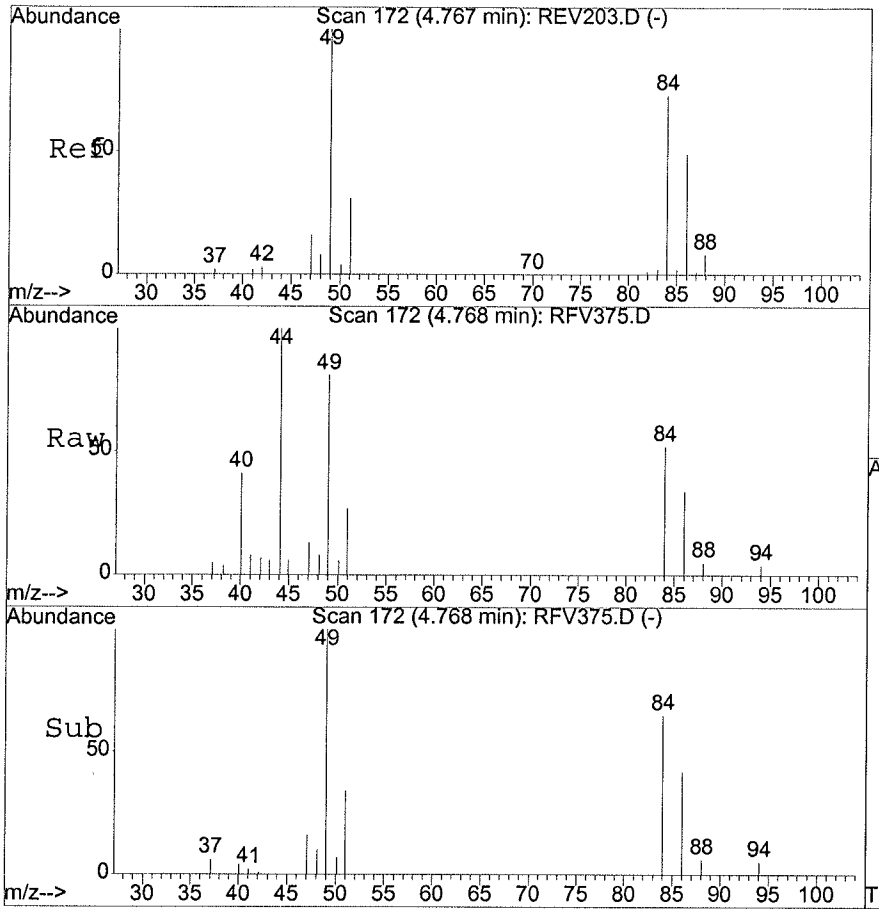
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV375.D Vial: 20
Acq On : 29 Jun 2020 8:16 pm Operator: VLu
Sample : 20F183-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:19 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

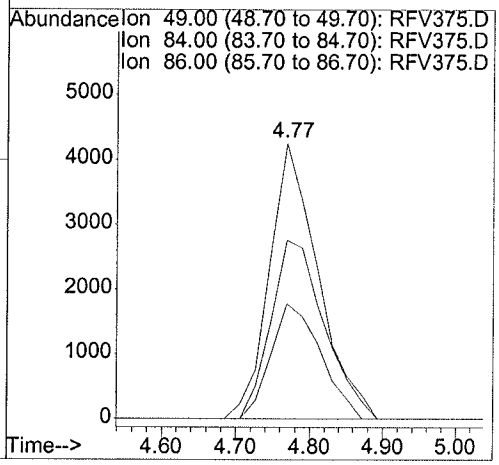


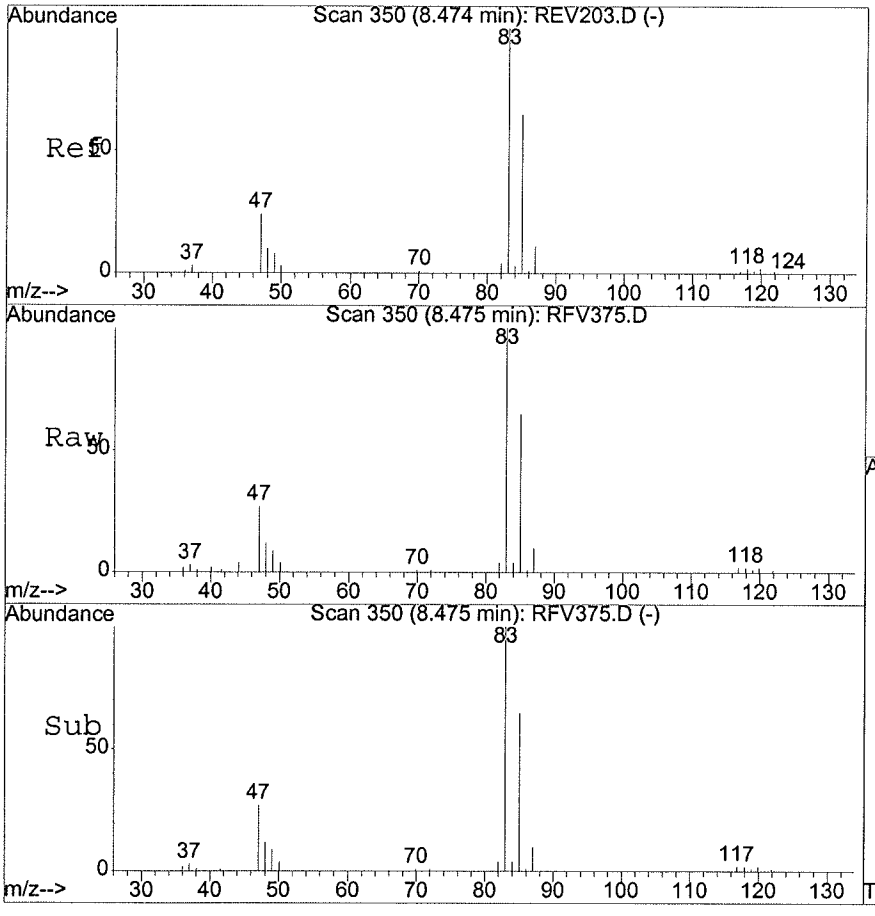


#18
Methylene chloride
Concen: 0.17 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV375.D
Acq: 29 Jun 2020 8:16 pm

Tgt Ion: 49 Resp: 19566

Ion	Ratio	Lower	Upper
49	100		
84	71.2	43.3	103.3
86	42.7	17.1	77.1

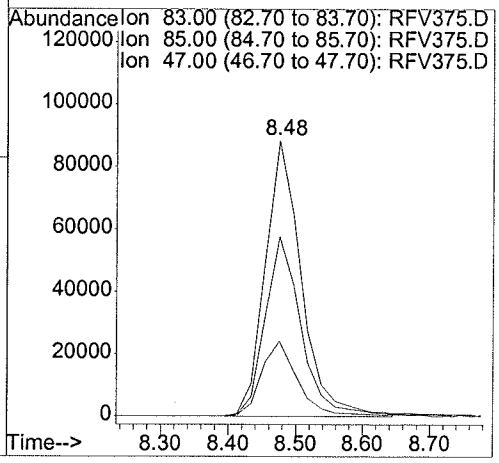


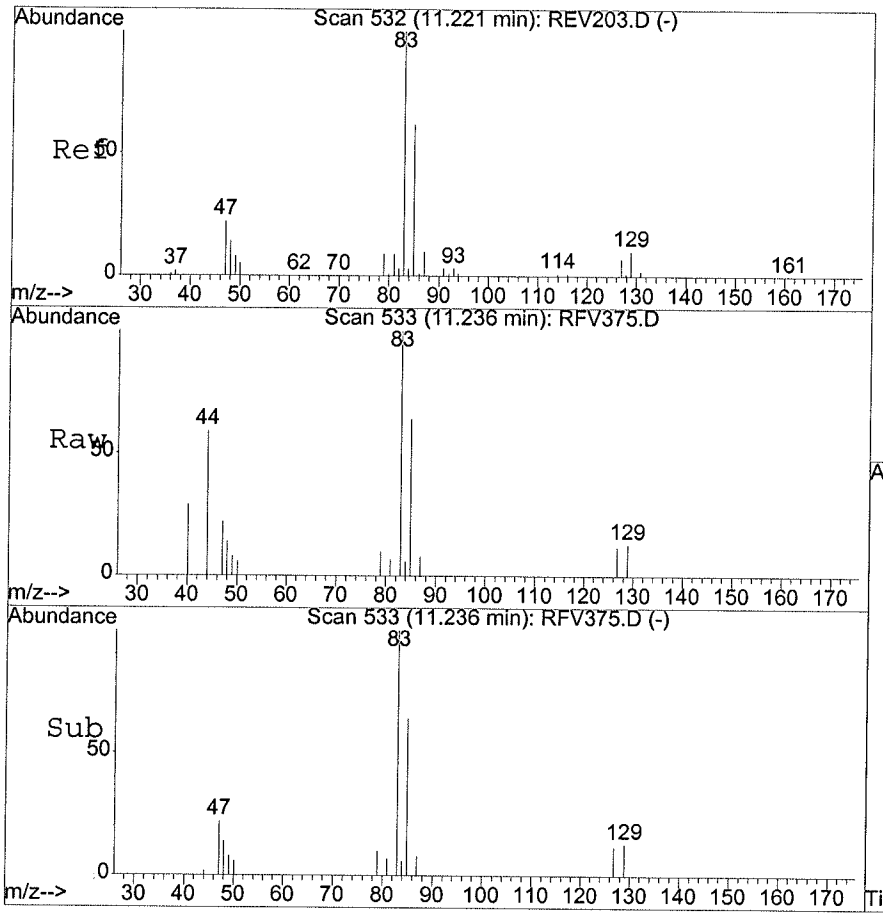


#33
Chloroform
Concen: 2.52 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV375.D
Acq: 29 Jun 2020 8:16 pm

Tgt Ion: 83 Resp: 331117

Ion	Ratio	Lower	Upper
83	100		
85	64.1	35.3	95.3
47	27.3	0.0	57.1

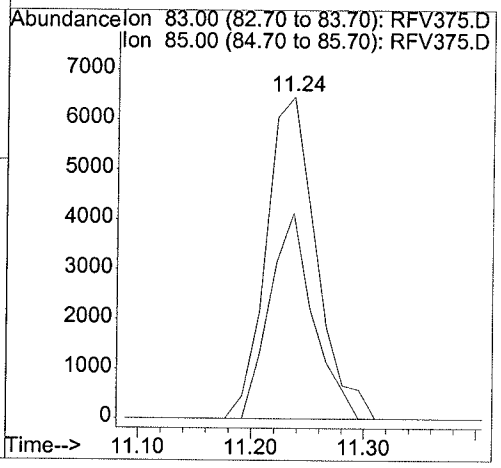


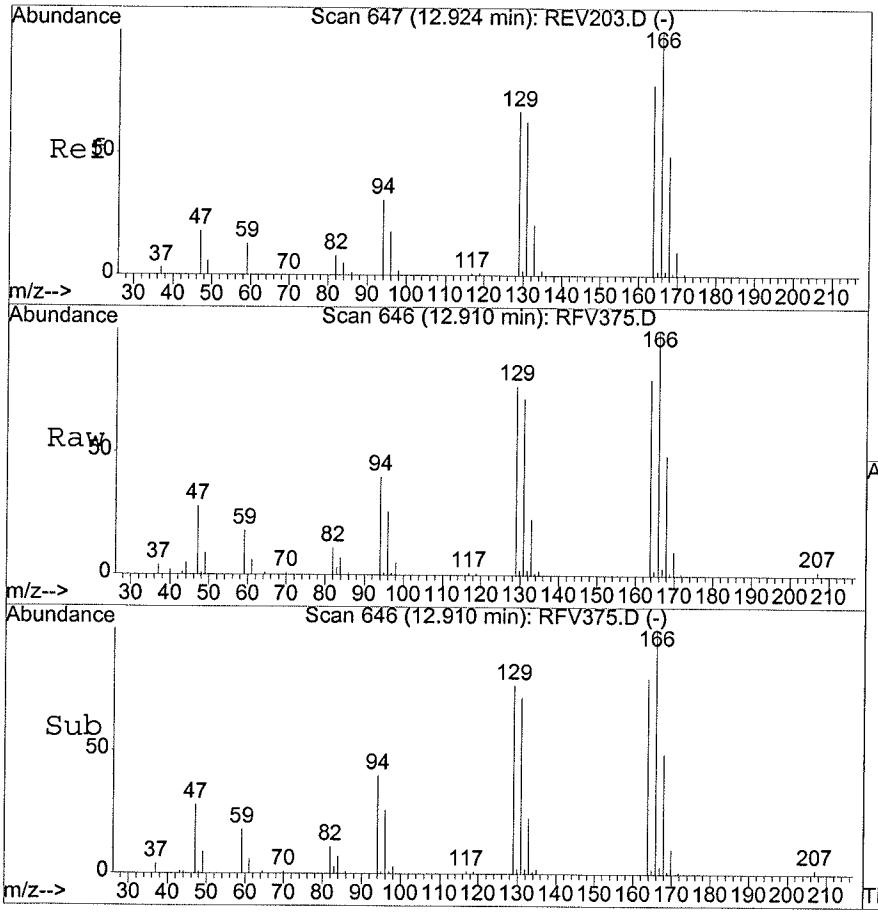


#49
Bromodichloromethane
Concen: 0.23 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.02 min
Lab File: RFV375.D
Acq: 29 Jun 2020 8:16 pm

Tgt Ion: 83 Resp: 19922

Ion	Ratio	Lower	Upper
83	100		
85	55.8	33.3	93.3

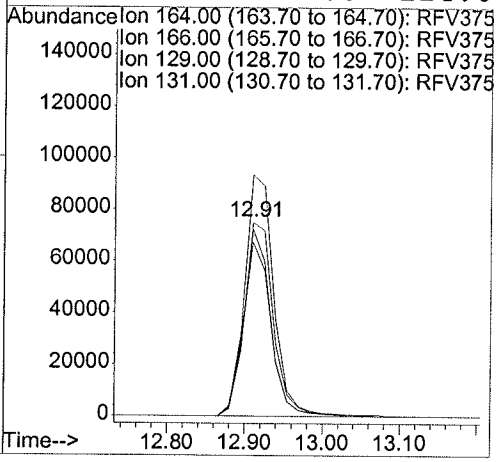




#59
Tetrachloroethene
Concen: 2.54 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RFV375.D
Acq: 29 Jun 2020 8:16 pm

Tgt Ion:164 Resp: 195413

Ion	Ratio	Lower	Upper
164	100		
166	125.1	99.2	159.2
129	90.3	59.7	119.7
131	85.4	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV375.D Vial: 20
Acq On : 29 Jun 2020 8:16 pm Operator: VLu
Sample : 20F183-02 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2720872	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2229786	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	710321	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV375.D VO01E14.M Tue Jun 30 10:34:46 2020 Page 1

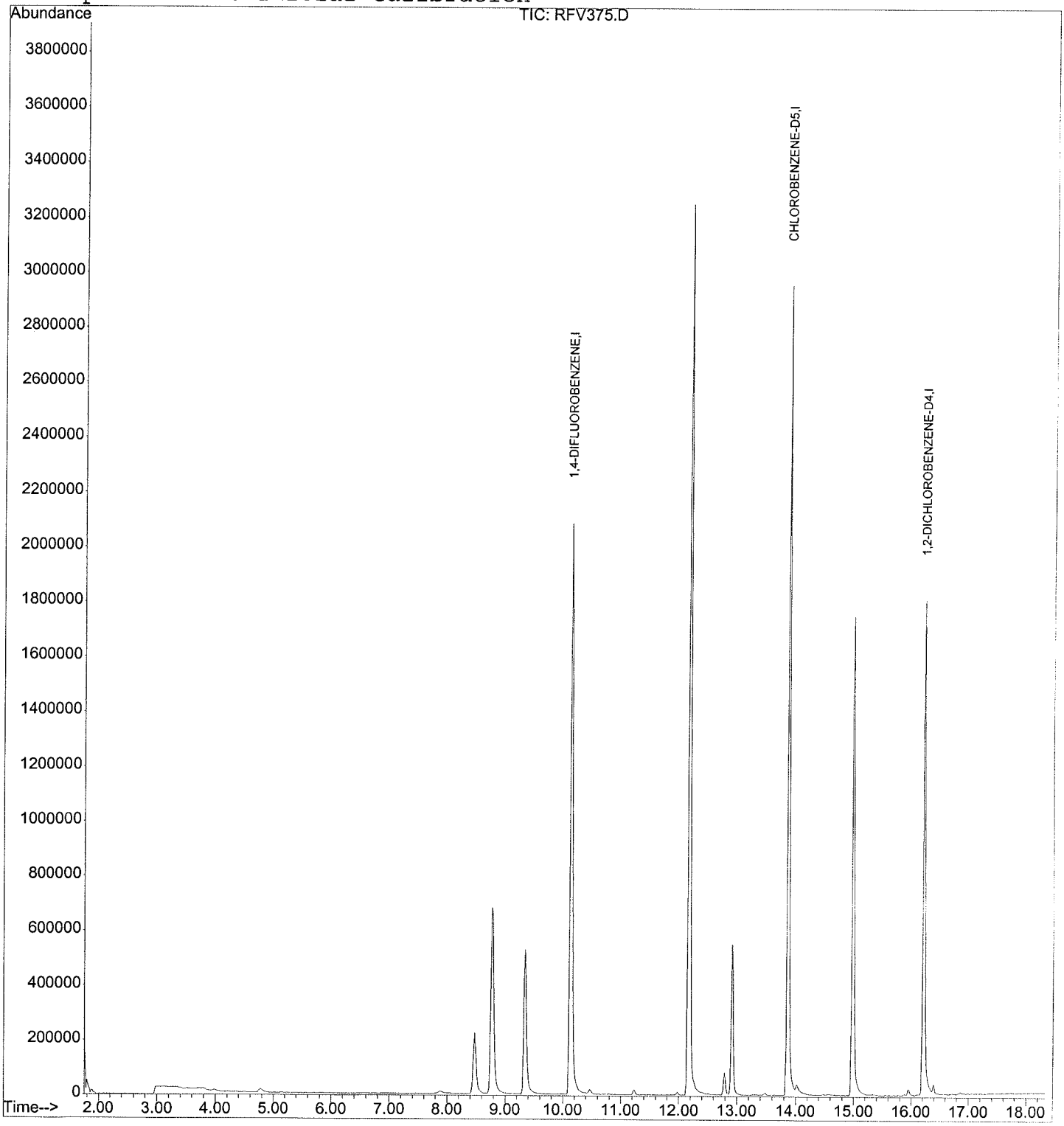
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV375.D
Acq On : 29 Jun 2020 8:16 pm
Sample : 20F183-02 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020

Vial: 20
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 20:44
Sample ID: MW06-GW062120	Date Analyzed: 06/29/20 20:44
Lab Samp ID: F183-03	Dilution Factor: 1
Lab File ID: RFV376	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.35J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.8	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	0.23J	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.77	10.00	97.7	70-130
DIBROMOFLUOROMETHANE	10.8	10.00	108	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV376.D Vial: 21
Acq On : 29 Jun 2020 8:44 pm Operator: VLu
Sample : 20F183-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:19 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

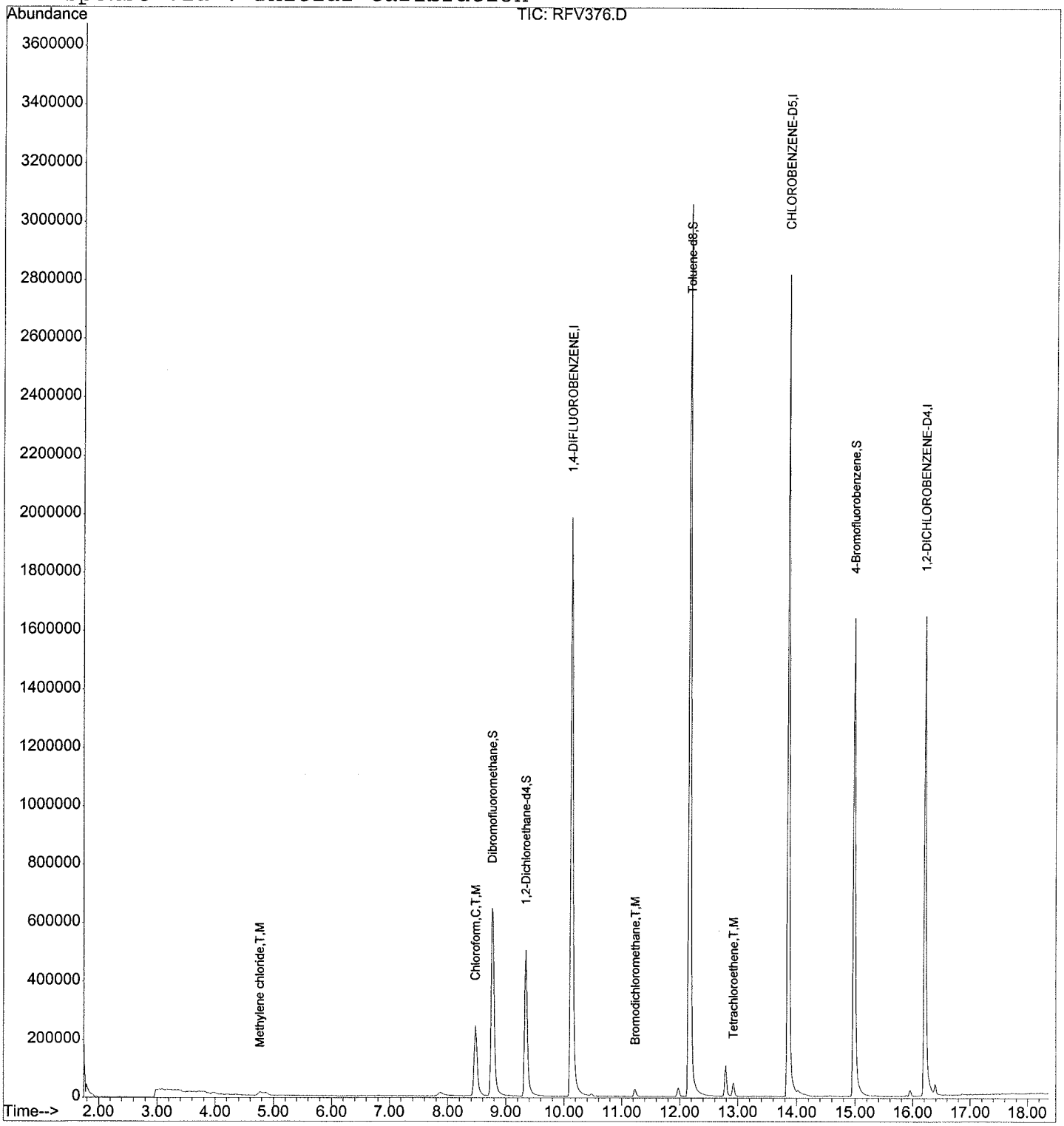
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2604201	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2155775	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	652870	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	788368	10.76	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.60%		
38) 1,2-Dichloroethane-d4	9.34	65	542711	11.12	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.20%		
54) Toluene-d8	12.17	98	2866292	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery =	97.70%		
74) 4-Bromofluorobenzene	14.98	95	841644	10.78	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.80%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	19729	0.18	ug/l	94
33) Chloroform	8.48	83	358606	2.85	ug/l	99
49) Bromodichloromethane	11.24	83	28479	0.35	ug/l	96
59) Tetrachloroethene	12.92	164	16883	0.23	ug/l	98

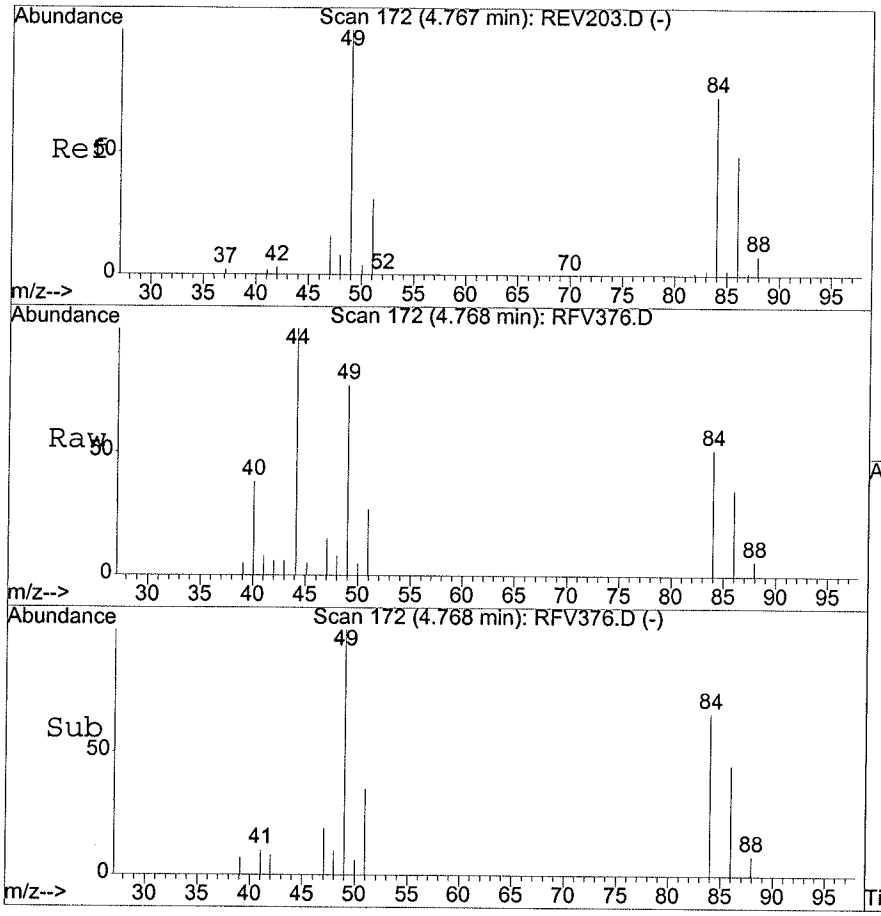
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV376.D Vial: 21
Acq On : 29 Jun 2020 8:44 pm Operator: VLu
Sample : 20F183-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:19 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

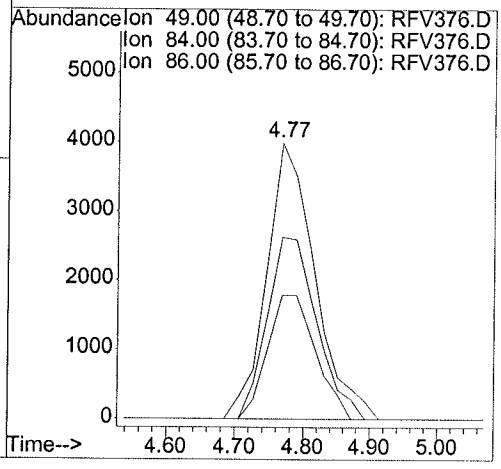


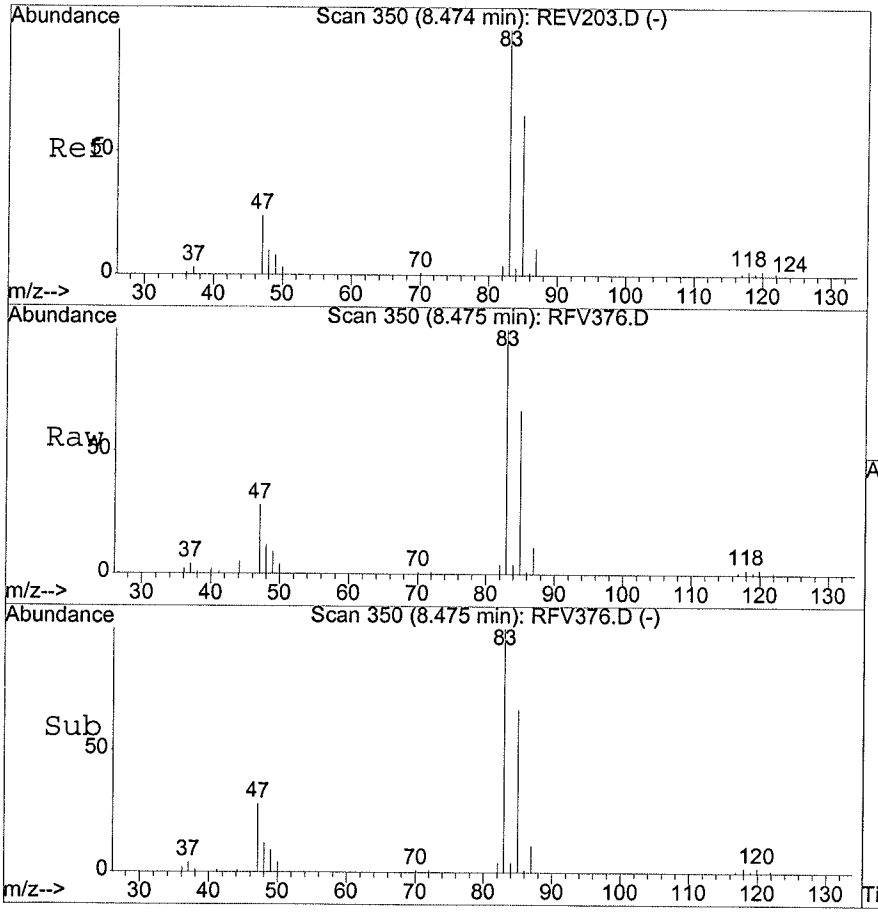


#18
Methylene chloride
Concen: 0.18 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV376.D
Acq: 29 Jun 2020 8:44 pm

Tgt Ion: 49 Resp: 19729

Ion	Ratio	Lower	Upper
49	100		
84	67.6	43.3	103.3
86	44.6	17.1	77.1

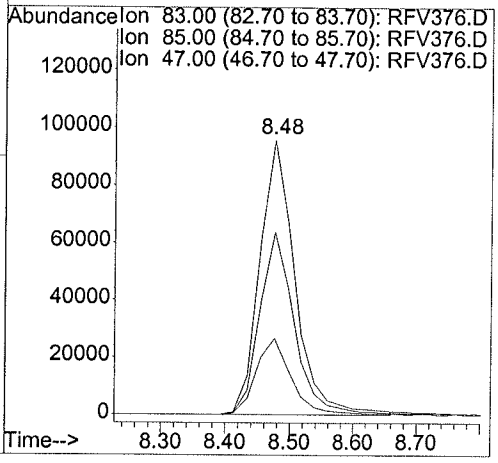


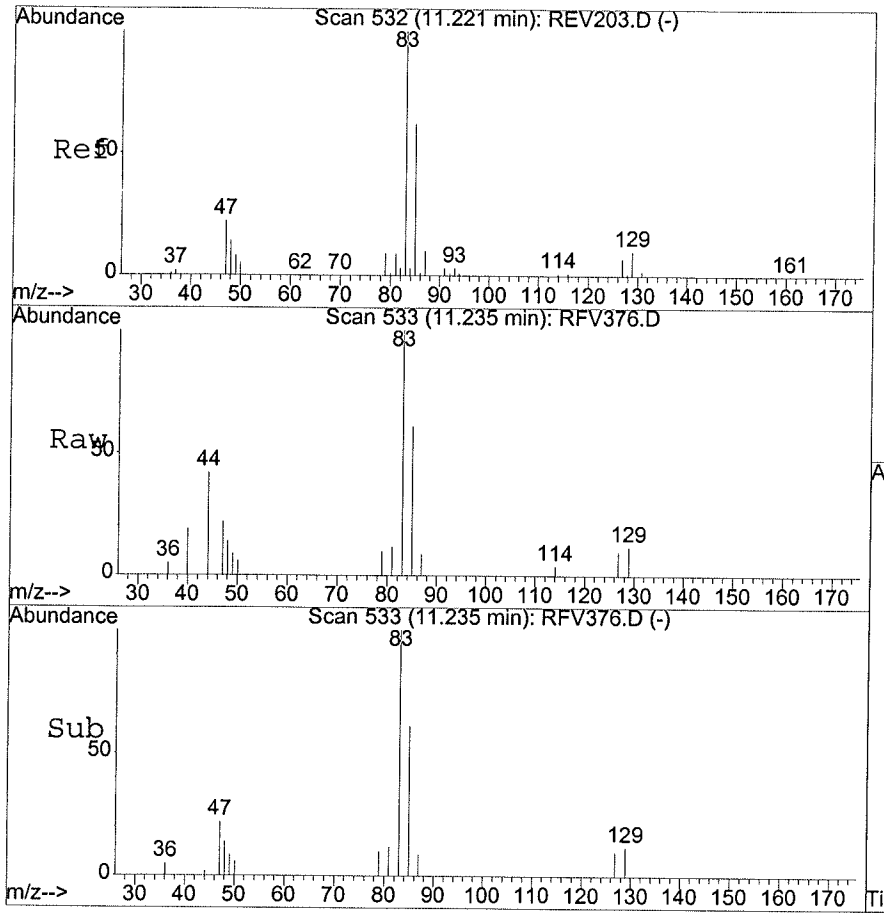


#33
Chloroform
Concen: 2.85 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV376.D
Acq: 29 Jun 2020 8:44 pm

Tgt Ion: 83 Resp: 358606

Ion	Ratio	Lower	Upper
83	100		
85	65.4	35.3	95.3
47	28.0	0.0	57.1

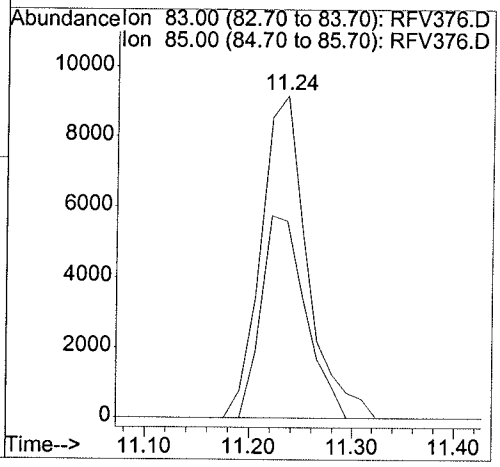


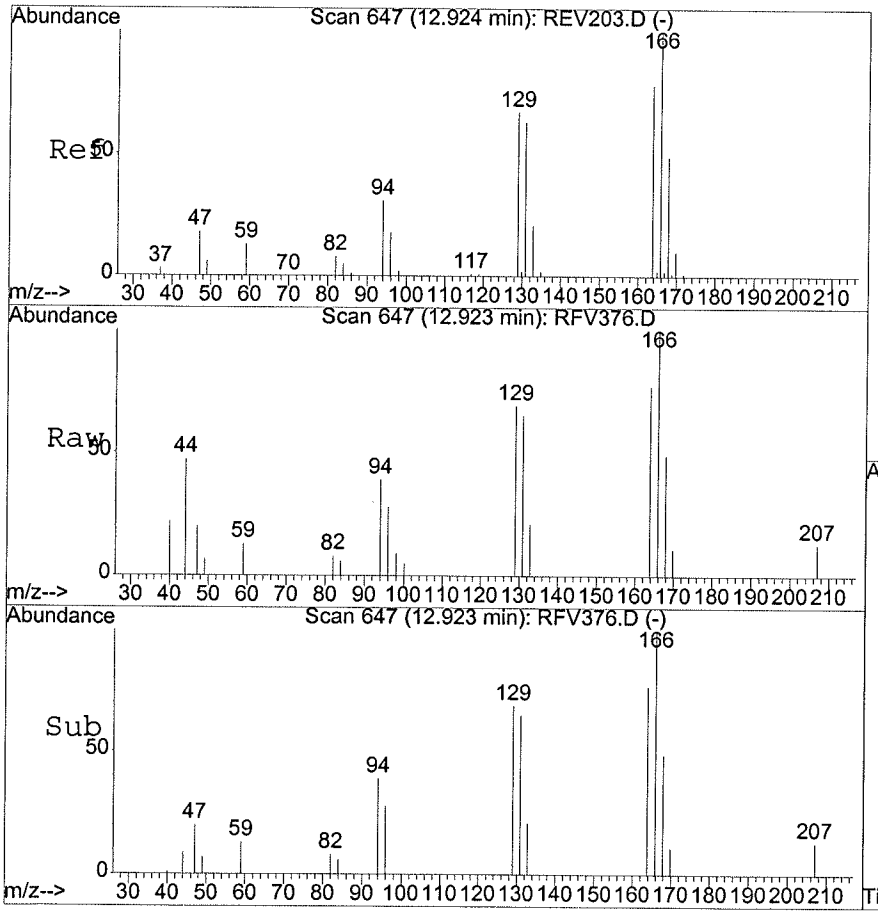


#49
Bromodichloromethane
Concen: 0.35 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV376.D
Acq: 29 Jun 2020 8:44 pm

Tgt Ion: 83 Resp: 28479

Ion	Ratio	Lower	Upper
83	100		
85	60.3	33.3	93.3

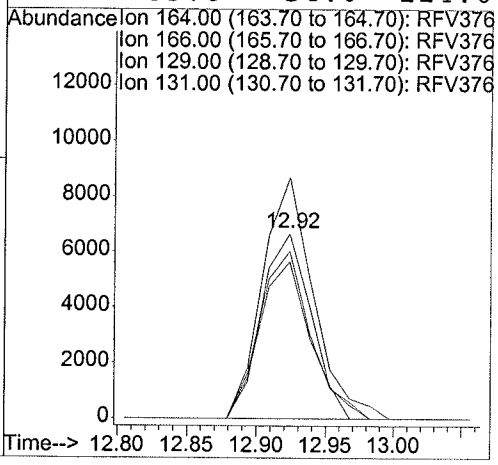




#59
Tetrachloroethene
Concen: 0.23 ug/l
RT: 12.92 min Scan# 647
Delta R.T. -0.00 min
Lab File: RFV376.D
Acq: 29 Jun 2020 8:44 pm

Tgt Ion:164 Resp: 16883

Ion	Ratio	Lower	Upper
164	100		
166	131.7	99.2	159.2
129	91.6	59.7	119.7
131	83.8	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV376.D Vial: 21
Acq On : 29 Jun 2020 8:44 pm Operator: VLu
Sample : 20F183-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2604151	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2143887	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	652851	10.00	ug/l	0.00

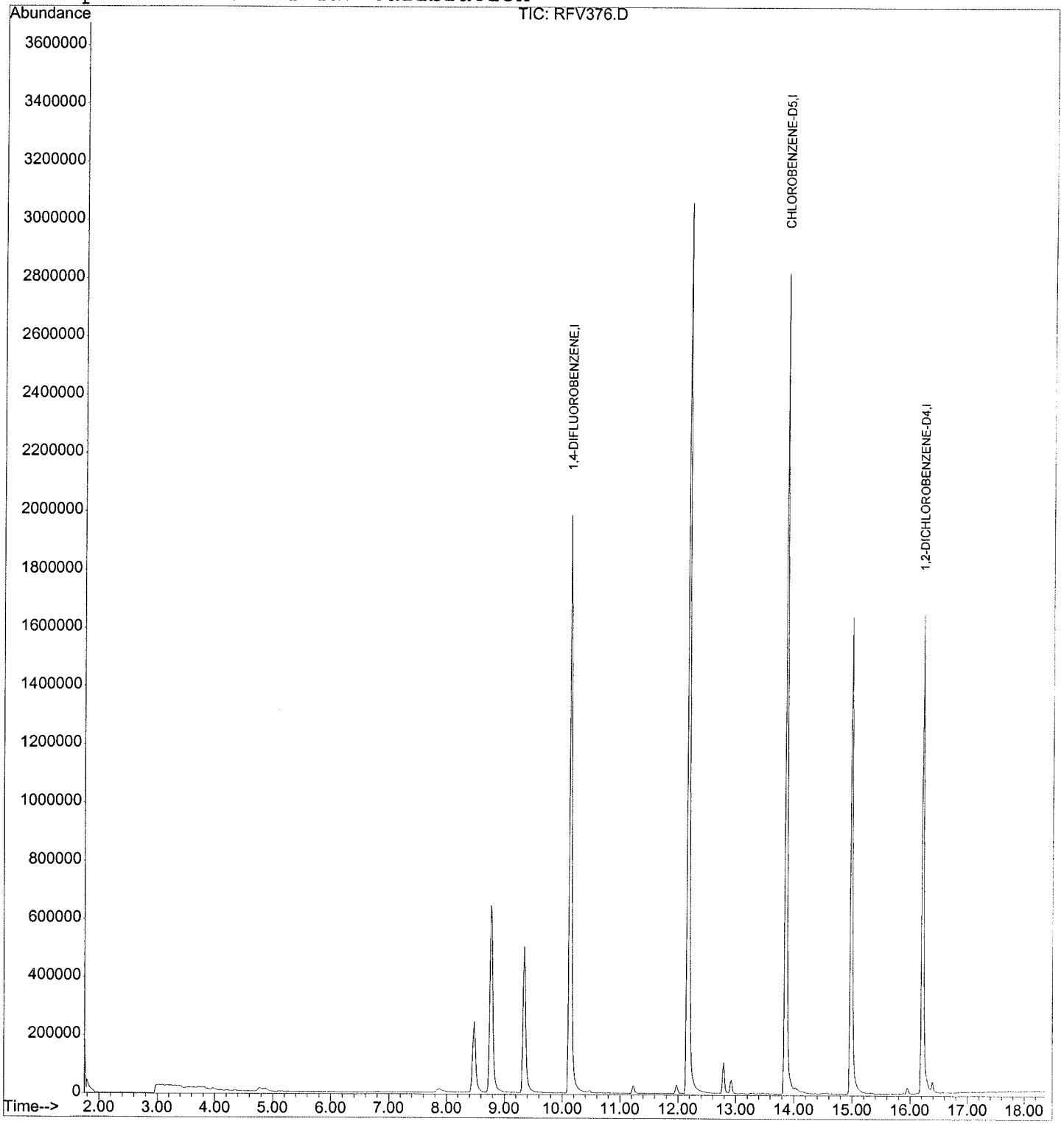
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV376.D VO01E14.M Tue Jun 30 10:34:57 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV376.D Vial: 21
Acq On : 29 Jun 2020 8:44 pm Operator: VLu
Sample : 20F183-03 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/22/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/29/20 17:05
Sample ID:	TB14-GW062220	Date Analyzed:	06/29/20 17:05
Lab Samp ID:	F183-04	Dilution Factor:	1
Lab File ID:	RFV368	Matrix	: WATER
Ext Btch ID:	VO01F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	9.95	10.00	99.5	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	10.3	10.00	103	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV368.D Vial: 13
Acq On : 29 Jun 2020 5:05 pm Operator: VLu
Sample : 20F183-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:15 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2705236	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2131161	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	622737	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	774125	10.17	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.70%			
38) 1,2-Dichloroethane-d4	9.34	65	504628	9.95	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.50%			
54) Toluene-d8	12.17	98	2986116	10.29	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.90%			
74) 4-Bromofluorobenzene	14.98	95	816399	10.97	ug/l	0.00
Spiked Amount 10.000			Recovery = 109.70%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	28446	0.26	ug/l	93

(#) = qualifier out of range (m) = manual integration
RFV368.D VO01E13.M Tue Jun 30 11:15:19 2020 Page 1

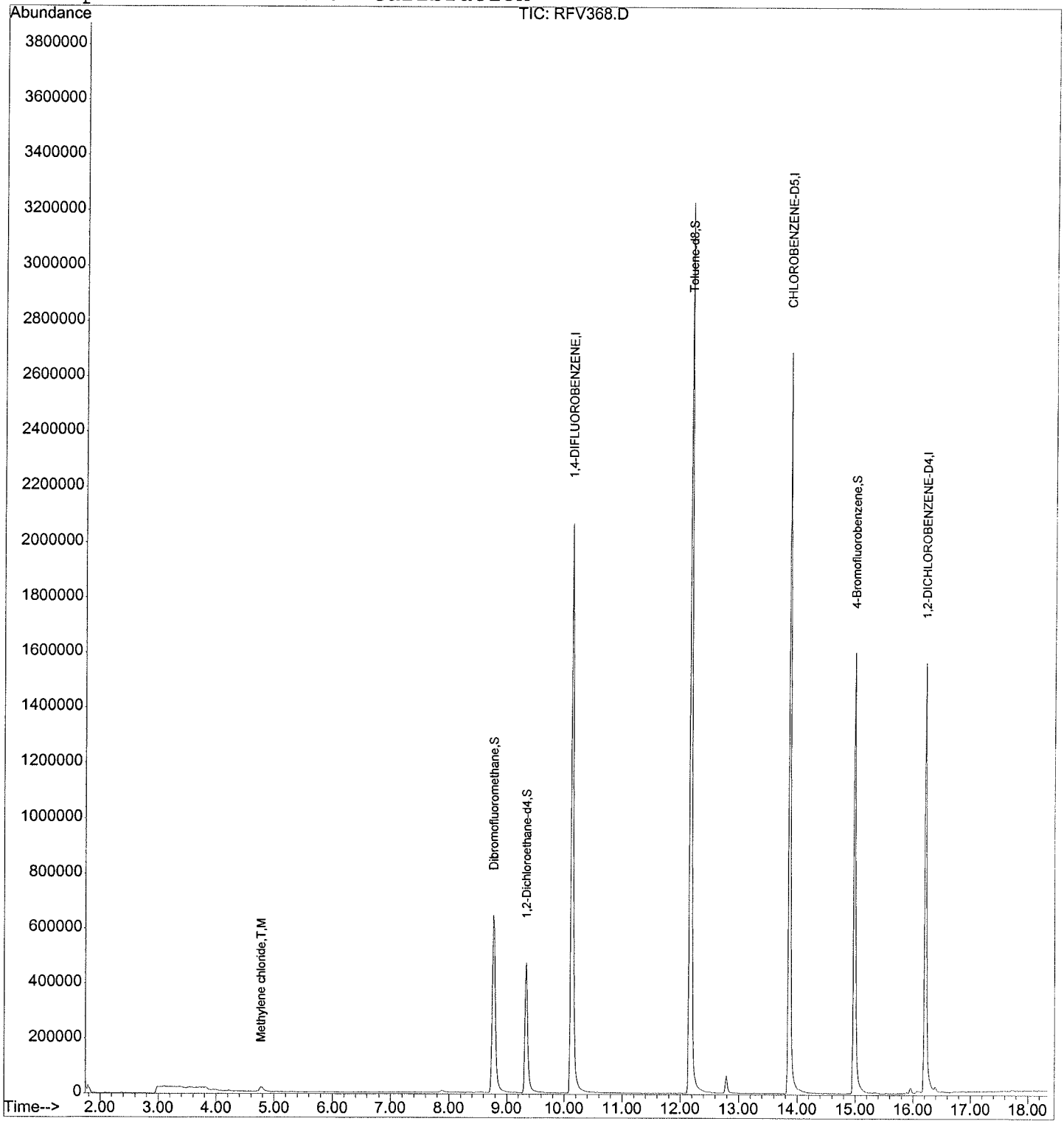
Quantitation Report

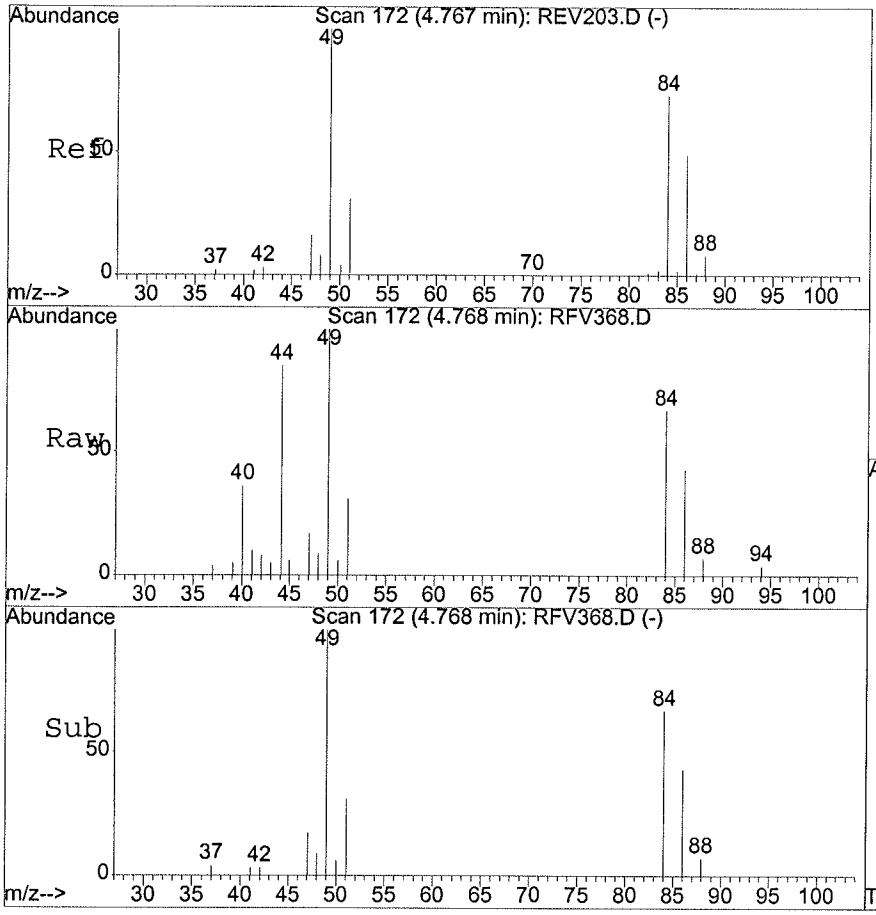
Data File : D:\HPCHEM\1\DATA\20F29\RFV368.D
Acq On : 29 Jun 2020 5:05 pm
Sample : 20F183-04 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 11:15 2020

Vial: 13
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

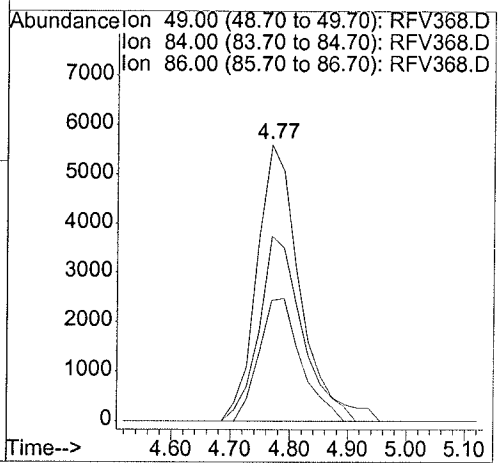




#18
Methylene chloride
Concen: 0.26 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV368.D
Acq: 29 Jun 2020 5:05 pm

Tgt Ion: 49 Resp: 28446

Ion	Ratio	Lower	Upper
49	100		
84	66.5	43.3	103.3
86	43.0	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV368.D Vial: 13
Acq On : 29 Jun 2020 5:05 pm Operator: VLu
Sample : 20F183-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2705183	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2119198	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	622719	10.00	ug/l	0.00

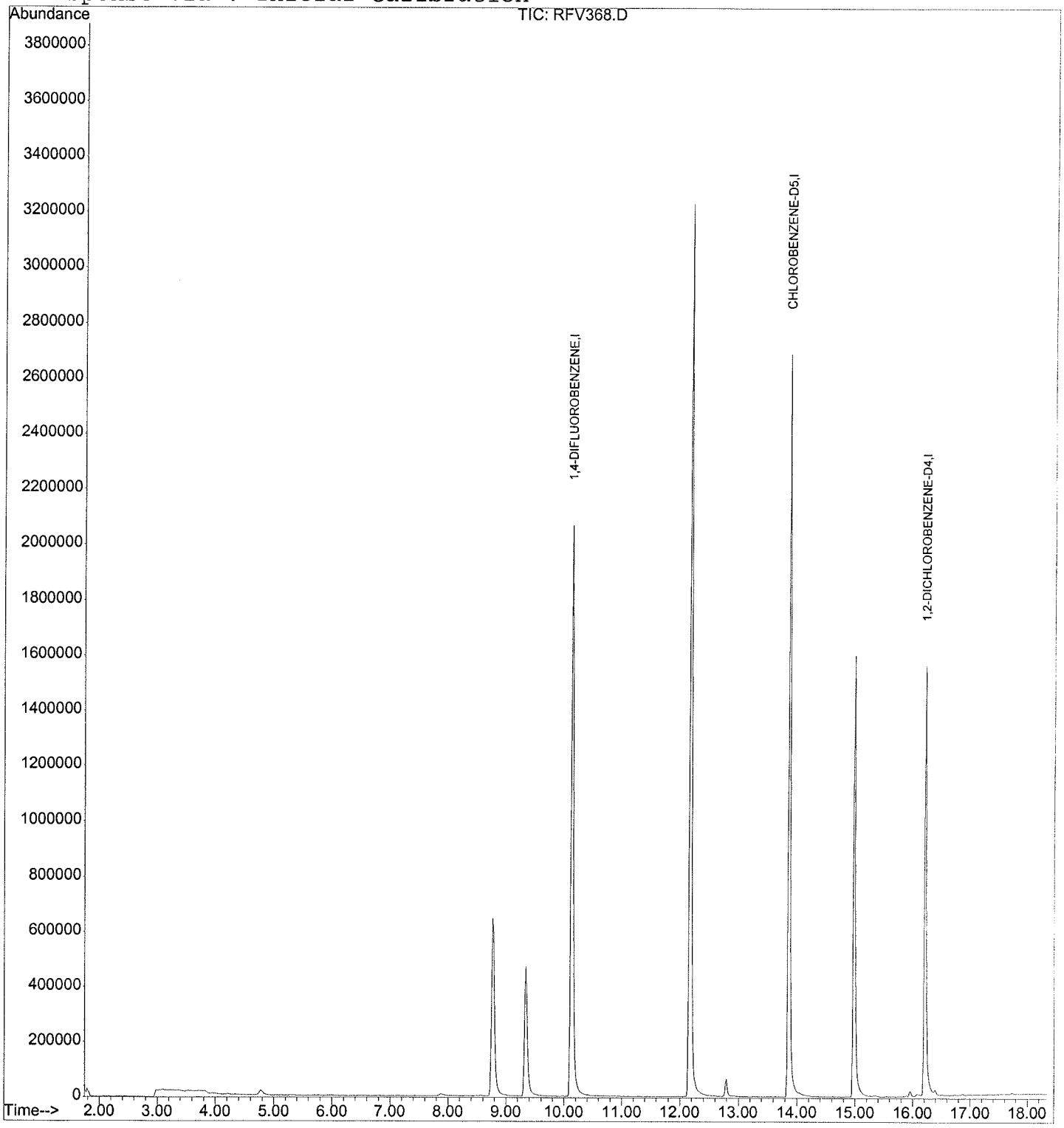
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV368.D VO01E14.M Tue Jun 30 10:33:57 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV368.D Vial: 13
Acq On : 29 Jun 2020 5:05 pm Operator: VLu
Sample : 20F183-04 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:33 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 21:11
Sample ID: MW16S-GW062120	Date Analyzed: 06/29/20 21:11
Lab Samp ID: F183-05	Dilution Factor: 1
Lab File ID: RFV377	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.33J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.17J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	6.2	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	25	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.18J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
BROMOFLUOROBENZENE	10.8	10.00	108	70-130
TOLUENE-D8	9.84	10.00	98.4	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV377.D Vial: 22
Acq On : 29 Jun 2020 9:11 pm Operator: VLu
Sample : 20F183-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:20 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

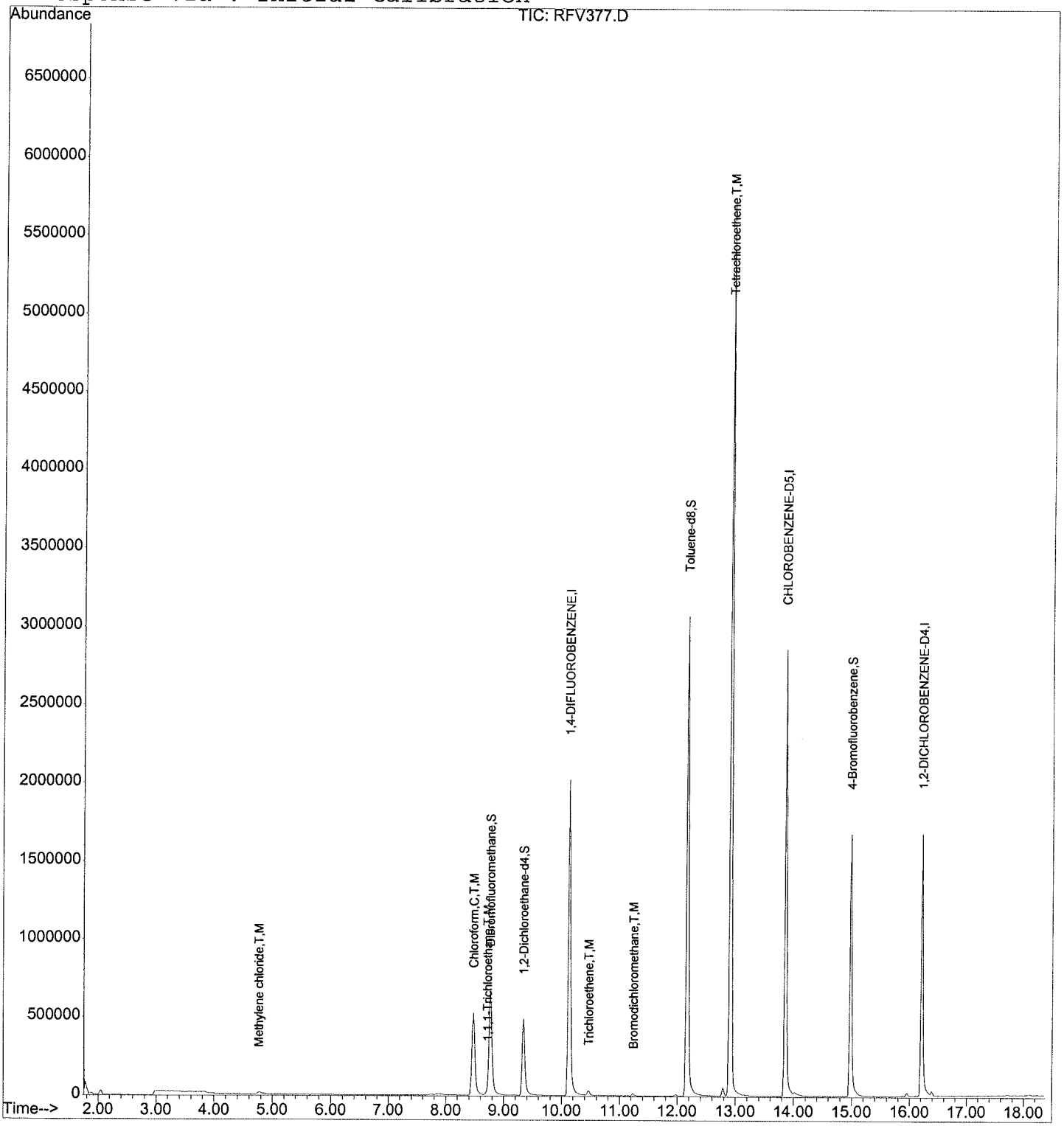
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2613759	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2161140	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	667235	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	778107	10.58	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.80%		
38) 1,2-Dichloroethane-d4	9.34	65	524492	10.71	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.10%		
54) Toluene-d8	12.17	98	2893233	9.84	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.40%		
74) 4-Bromofluorobenzene	14.98	95	863212	10.82	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.20%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	21280	0.20	ug/l	95
33) Chloroform	8.47	83	787978	6.24	ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	33512	0.33	ug/l	97
44) Trichloroethene	10.47	130	17561	0.18	ug/l	96
49) Bromodichloromethane	11.24	83	13998	0.17	ug/l	94
59) Tetrachloroethene	12.91	164	1825756	24.66	ug/l	99

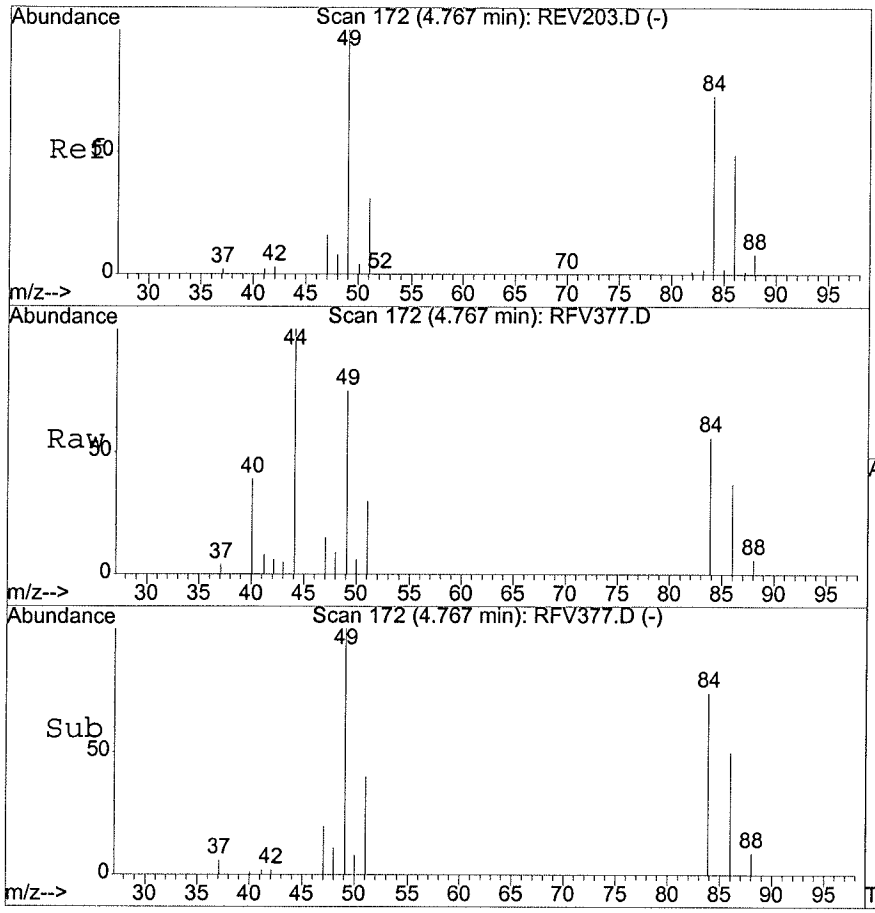
(#) = qualifier out of range (m) = manual integration
RFV377.D VO01E13.M Tue Jun 30 11:20:40 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV377.D Vial: 22
Acq On : 29 Jun 2020 9:11 pm Operator: VLu
Sample : 20F183-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:20 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

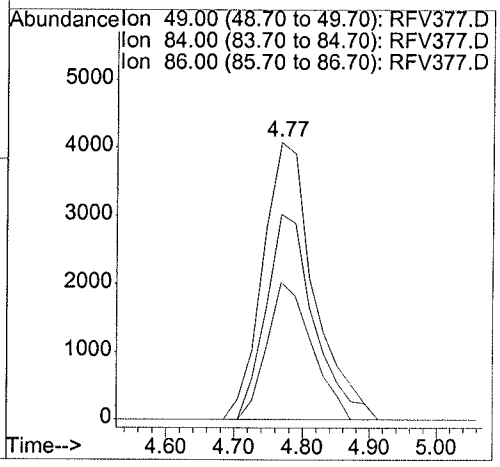


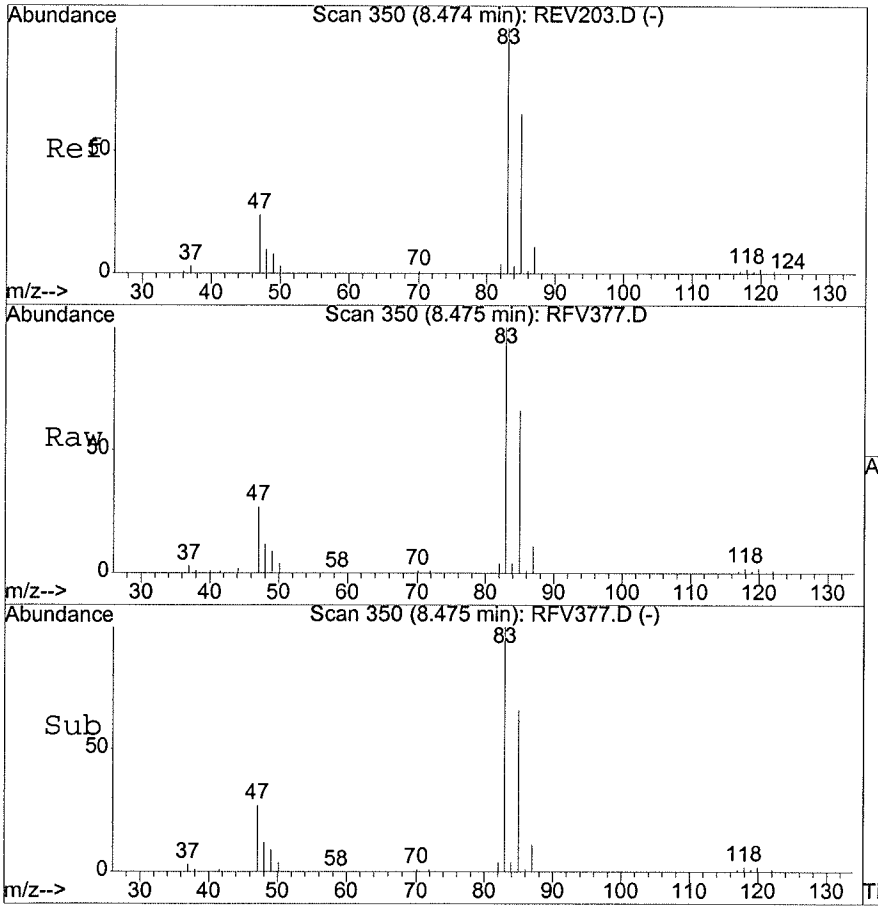


#18
Methylene chloride
Concen: 0.20 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion: 49 Resp: 21280

Ion	Ratio	Lower	Upper
49	100		
84	69.6	43.3	103.3
86	43.5	17.1	77.1

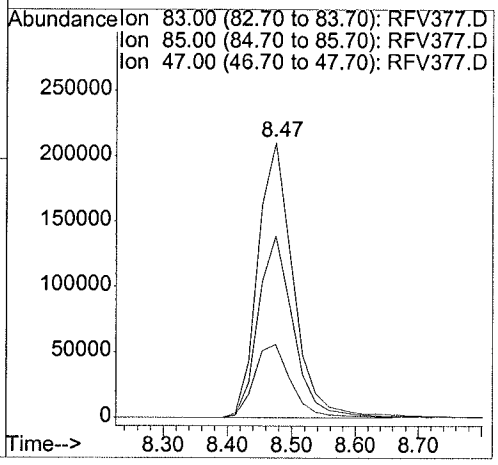


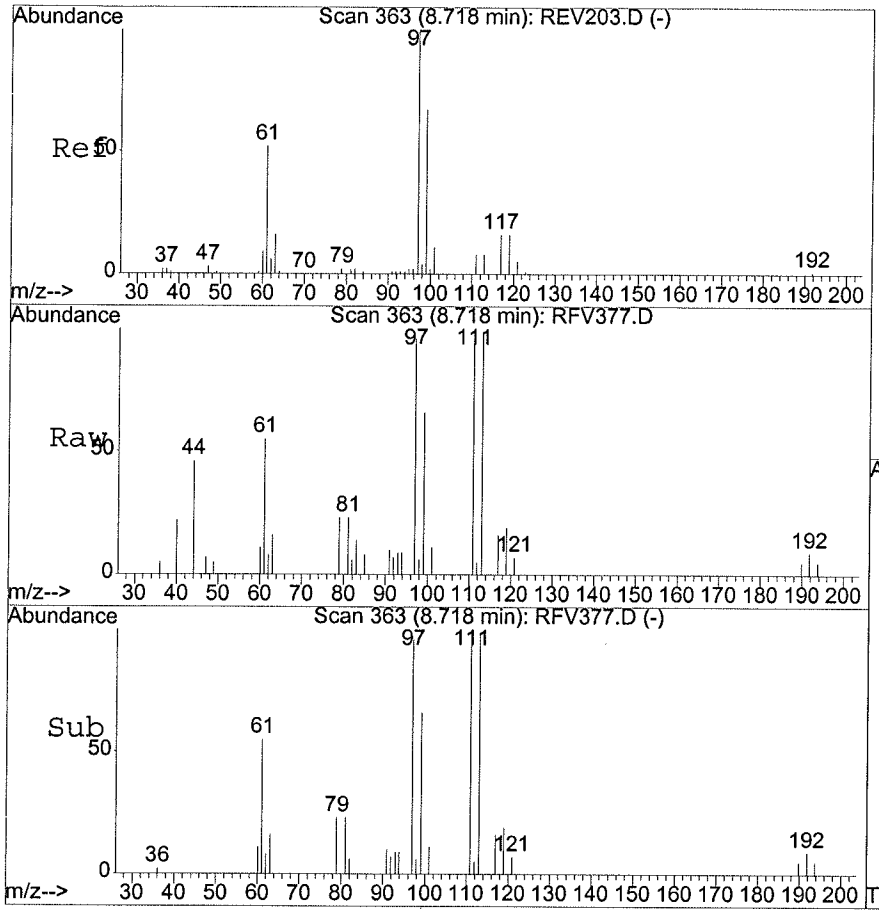


#33
Chloroform
Concen: 6.24 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion: 83 Resp: 787978

Ion	Ratio	Lower	Upper
83	100		
85	65.5	35.3	95.3
47	28.6	0.0	57.1

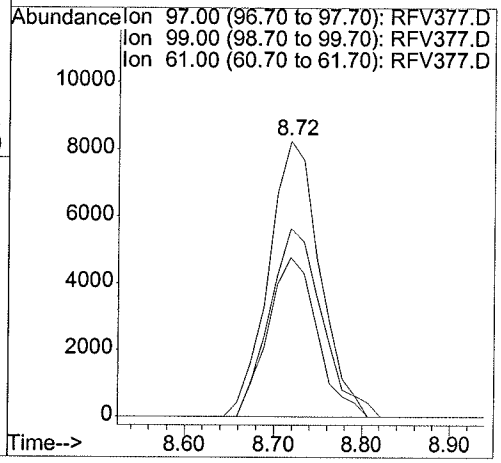


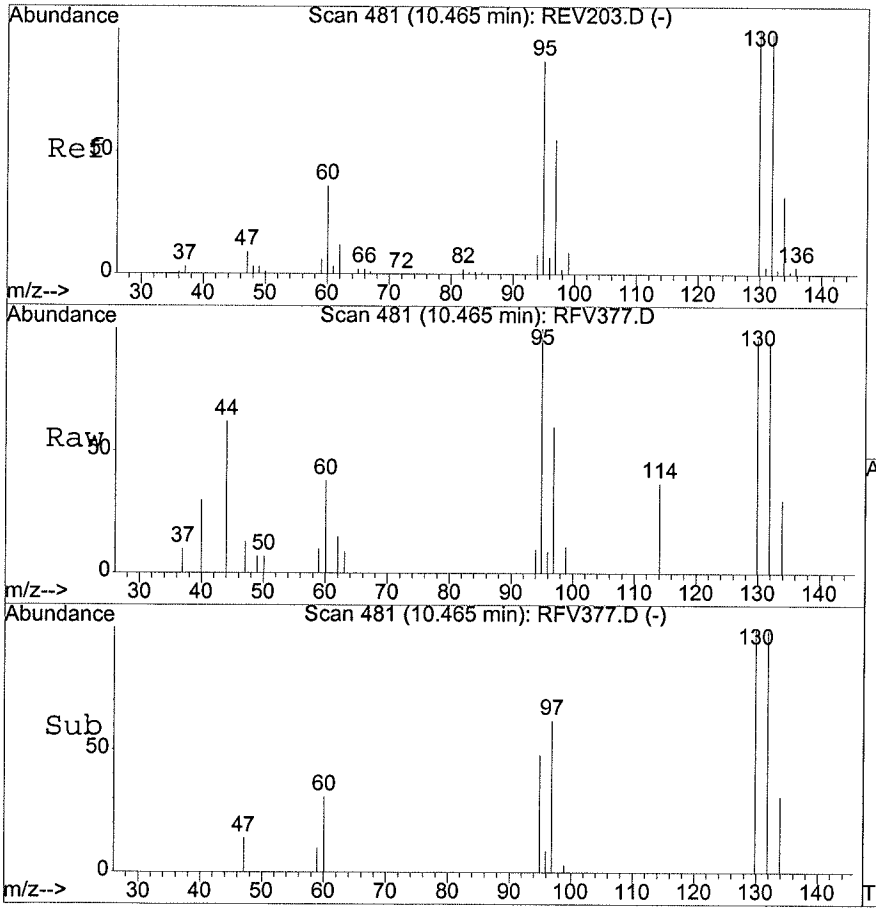


#35
1,1,1-Trichloroethane
Concen: 0.33 ug/l
RT: 8.72 min Scan# 363
Delta R.T. -0.00 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion: 97 Resp: 33512

Ion	Ratio	Lower	Upper
97	100		
99	68.2	36.2	96.2
61	55.2	22.1	82.1

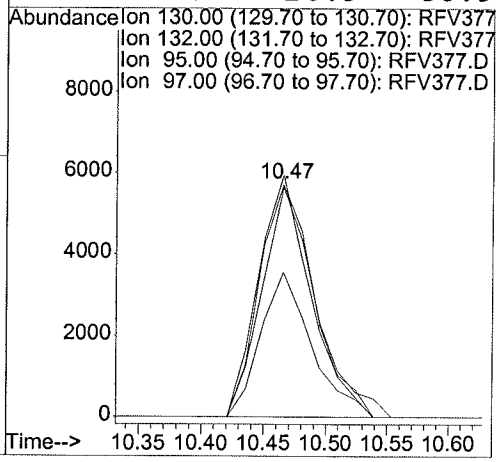


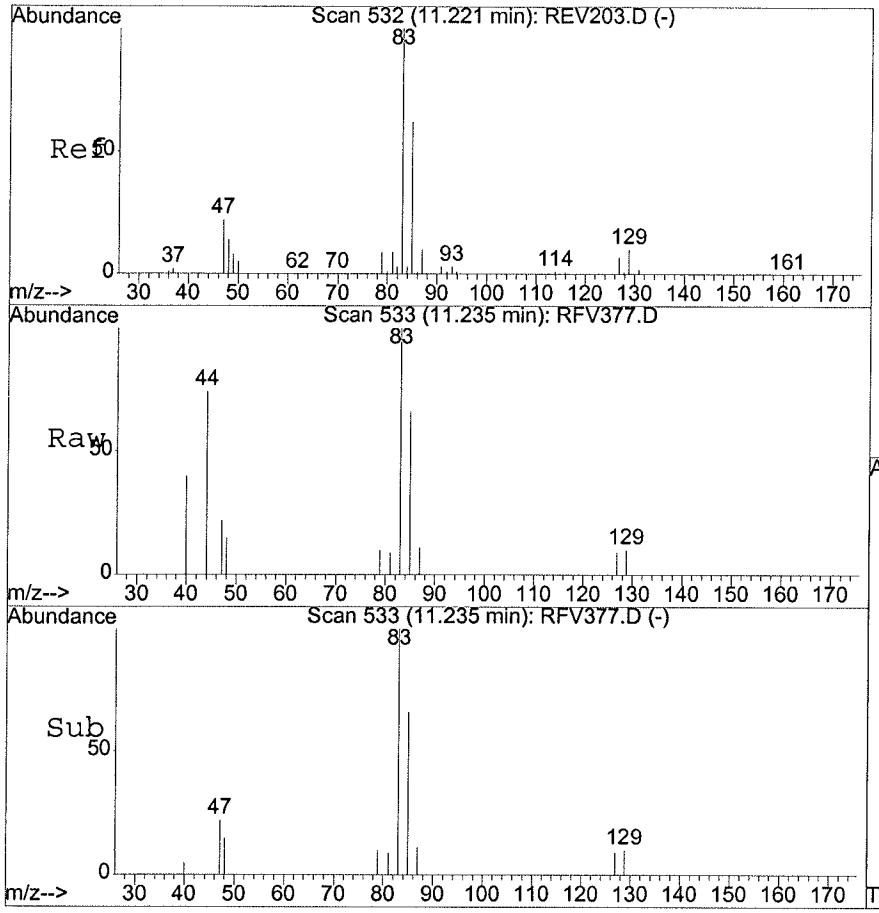


#44
Trichloroethene
Concen: 0.18 ug/l
RT: 10.47 min Scan# 481
Delta R.T. -0.00 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion:130 Resp: 17561

Ion	Ratio	Lower	Upper
130	100		
132	97.1	66.3	126.3
95	98.4	59.7	119.7
97	57.7	26.9	86.9

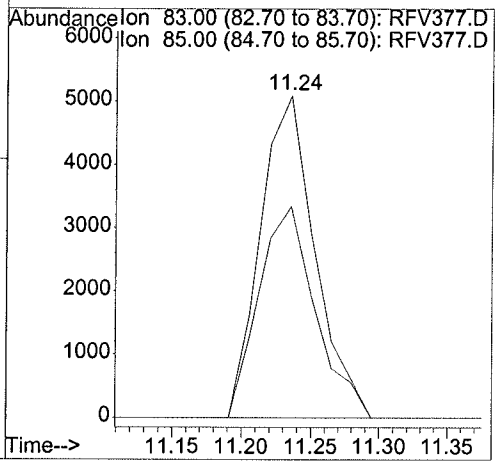


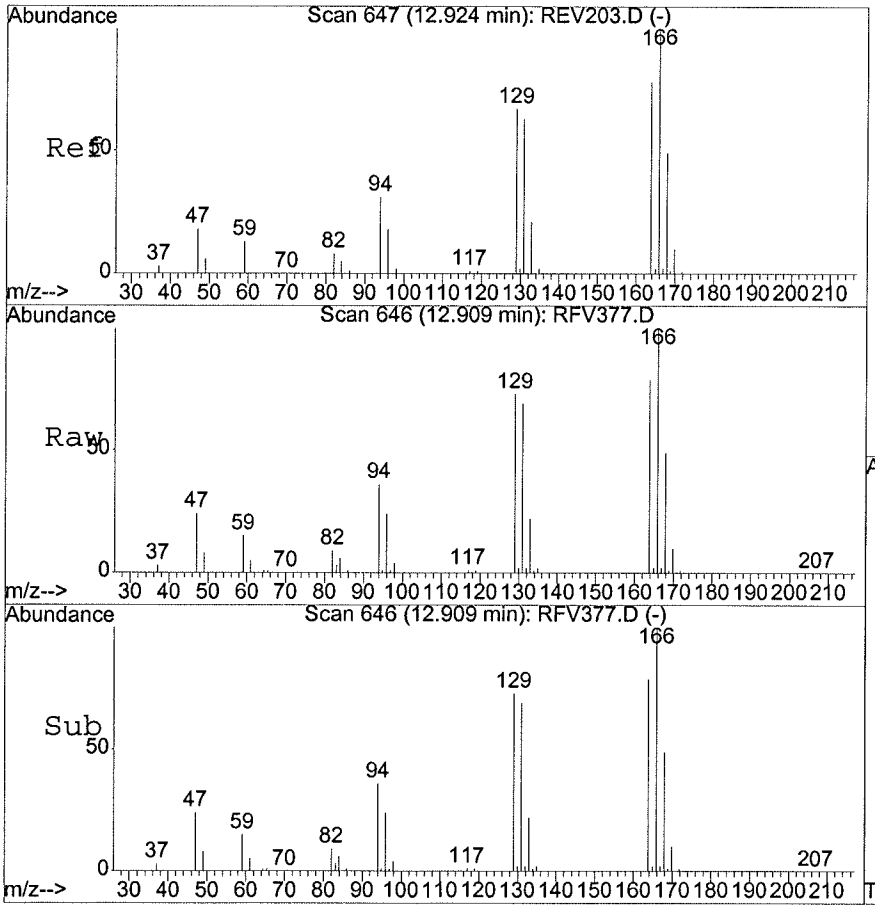


#49
Bromodichloromethane
Concen: 0.17 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion: 83 Resp: 13998

Ion	Ratio	Lower	Upper
83	100		
85	68.0	33.3	93.3

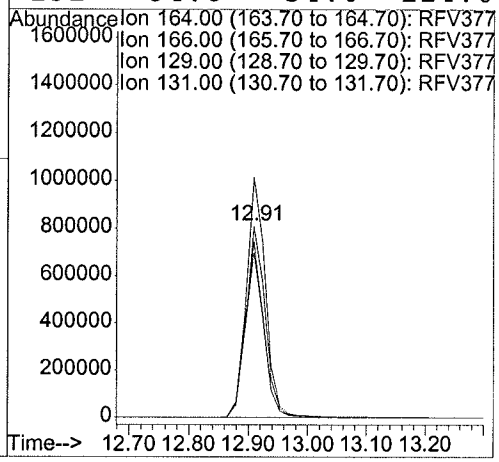




#59
Tetrachloroethene
Concen: 24.66 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RFV377.D
Acq: 29 Jun 2020 9:11 pm

Tgt Ion:164 Resp: 1825756

Ion	Ratio	Lower	Upper
164	100		
166	126.3	99.2	159.2
129	89.8	59.7	119.7
131	84.8	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV377.D Vial: 22
Acq On : 29 Jun 2020 9:11 pm Operator: VLu
Sample : 20F183-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2613709	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2148116	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	667213	10.00	ug/l	0.00

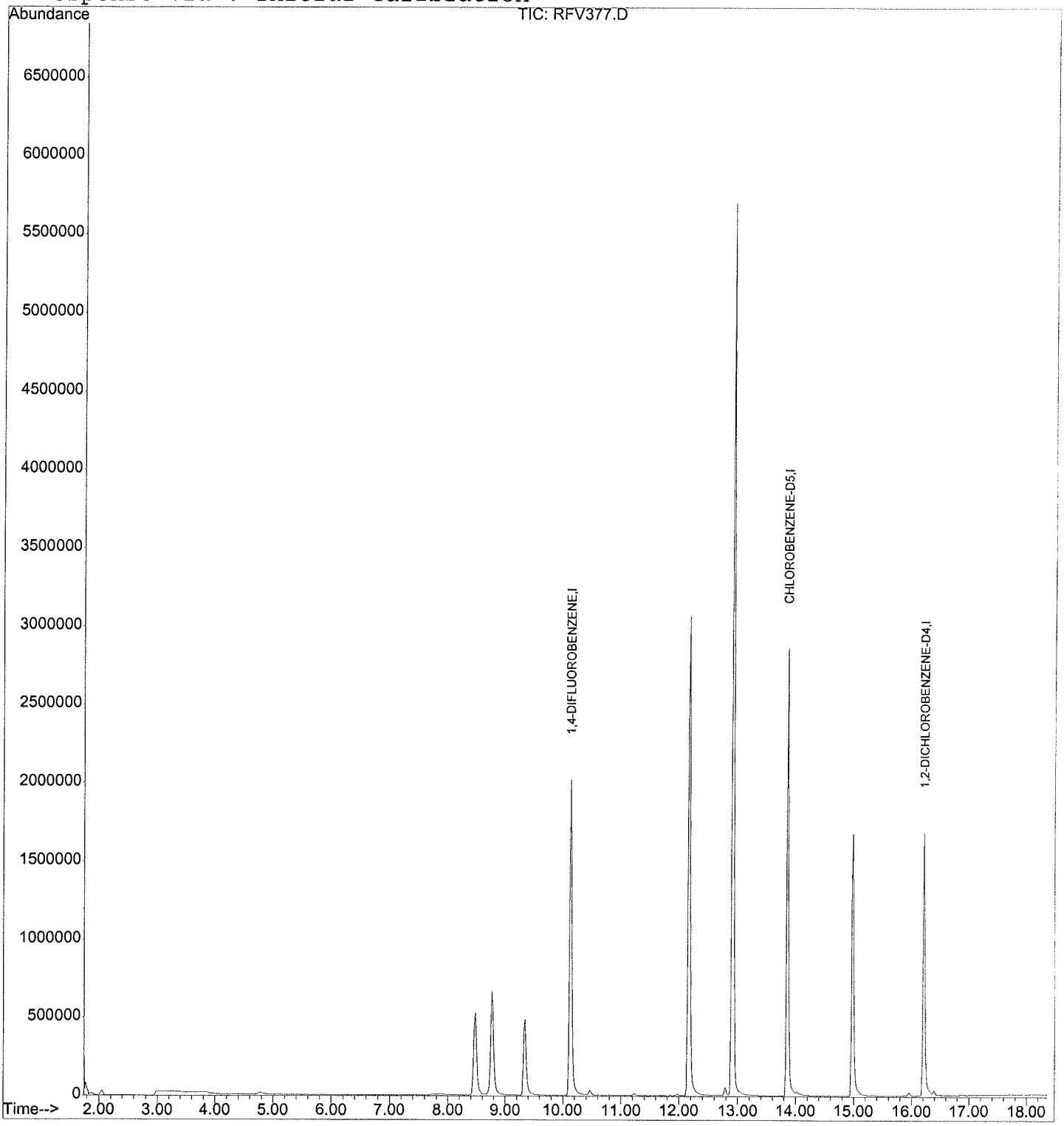
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV377.D VO01E14.M Tue Jun 30 10:35:04 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV377.D Vial: 22
Acq On : 29 Jun 2020 9:11 pm Operator: VLu
Sample : 20F183-05 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 21:39
Sample ID: MW16D-GW062120	Date Analyzed: 06/29/20 21:39
Lab Samp ID: F183-06	Dilution Factor: 1
Lab File ID: RFV378	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.9	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.83	10.00	98.3	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV378.D Vial: 23
Acq On : 29 Jun 2020 9:39 pm Operator: VLu
Sample : 20F183-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

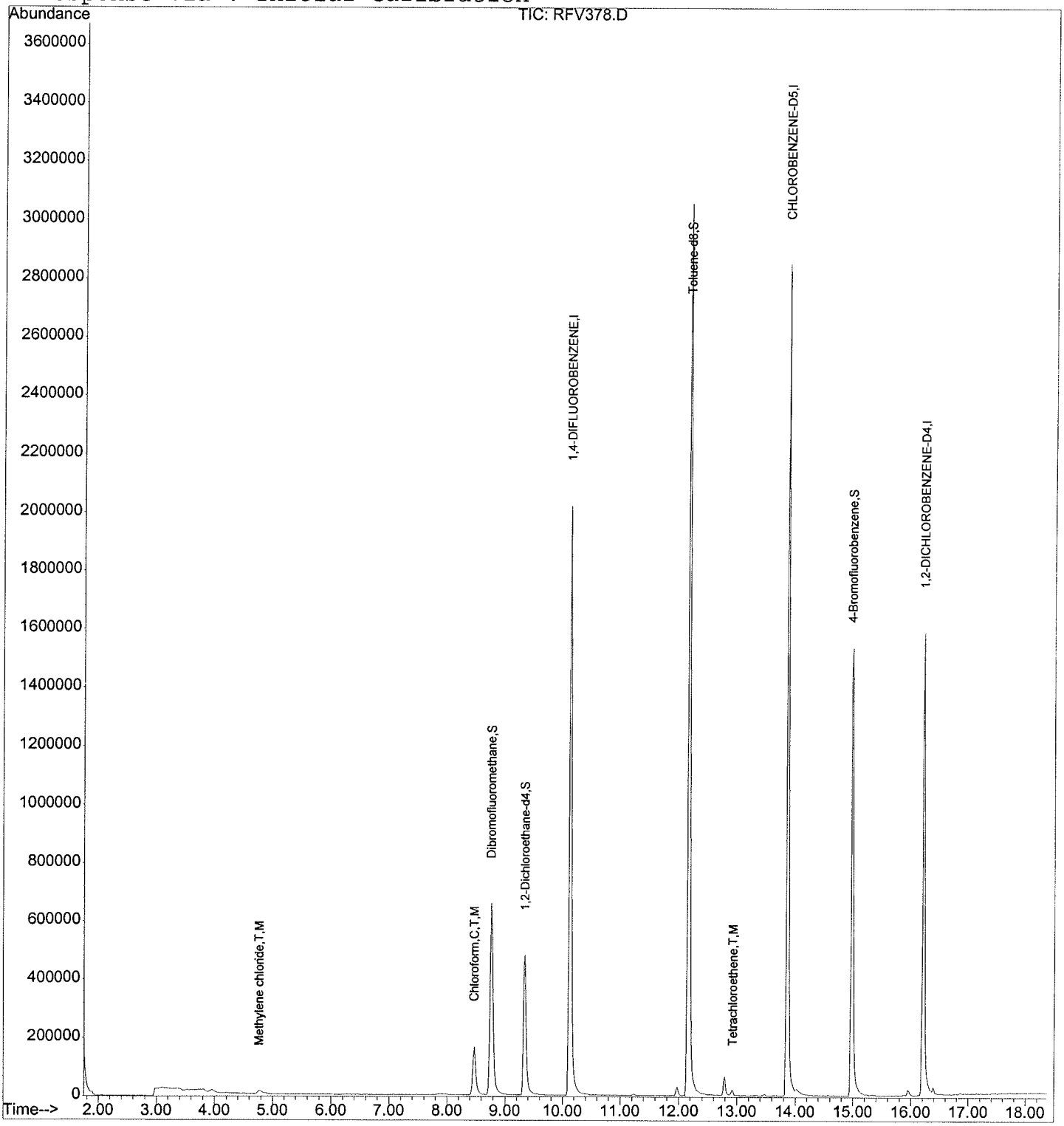
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2611426	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2175153	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	660250	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	772392	10.51	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.10%		
38) 1,2-Dichloroethane-d4	9.34	65	527456	10.78	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.80%		
54) Toluene-d8	12.17	98	2911648	9.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.30%		
74) 4-Bromofluorobenzene	14.97	95	842390	10.67	ug/l	-0.01
Spiked Amount 10.000			Recovery =	106.70%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	20371	0.19	ug/l	93
33) Chloroform	8.47	83	244132	1.93	ug/l	99
59) Tetrachloroethene	12.92	164	7515	0.10	ug/l	90

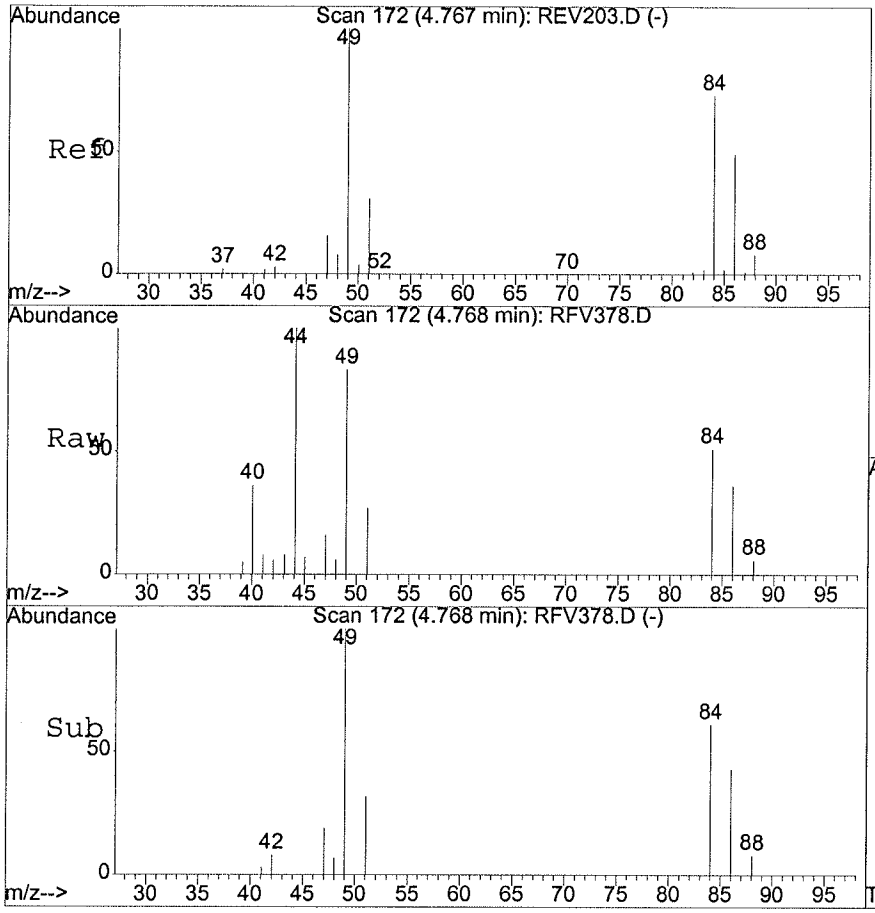
(#) = qualifier out of range (m) = manual integration
RFV378.D VO01E13.M Tue Jun 30 11:21:15 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV378.D Vial: 23
Acq On : 29 Jun 2020 9:39 pm Operator: VLu
Sample : 20F183-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

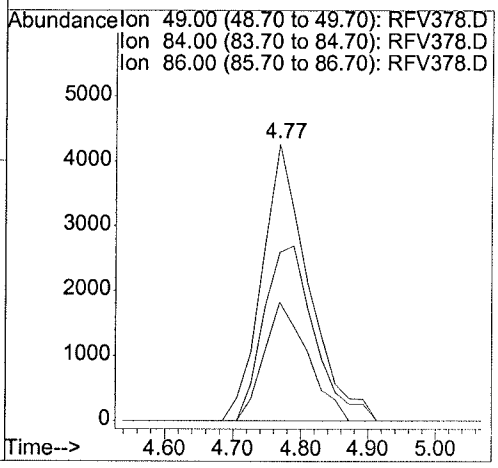


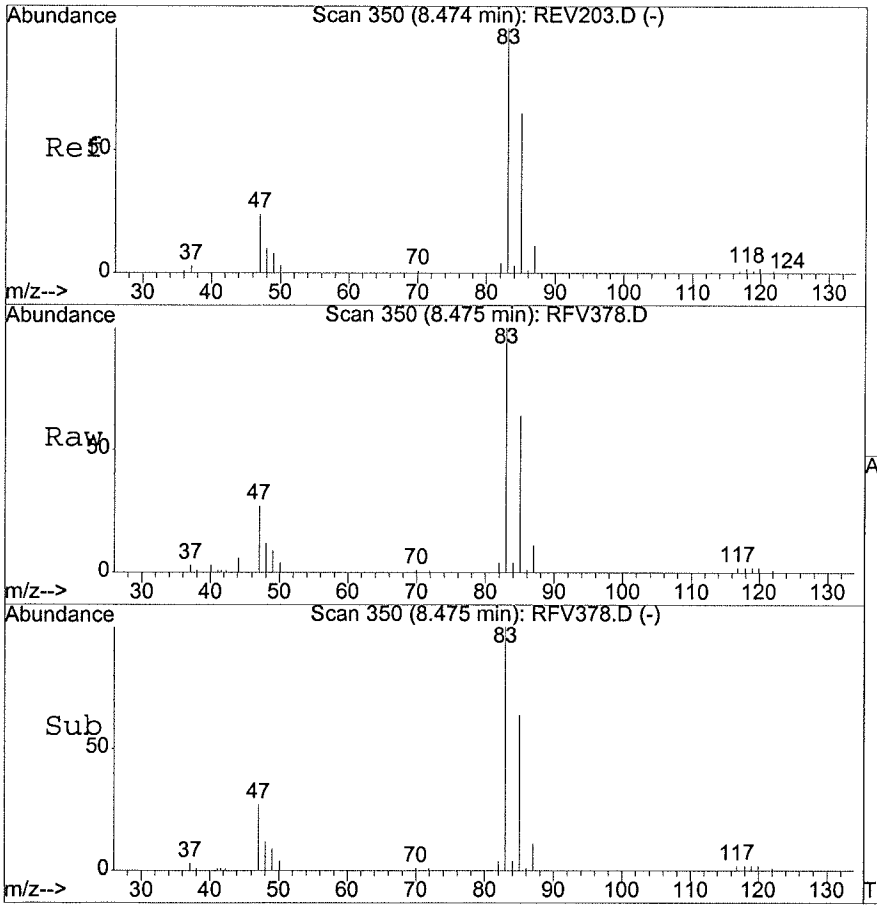


#18
Methylene chloride
Concen: 0.19 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV378.D
Acq: 29 Jun 2020 9:39 pm

Tgt Ion: 49 Resp: 20371

Ion	Ratio	Lower	Upper
49	100		
84	69.1	43.3	103.3
86	40.3	17.1	77.1

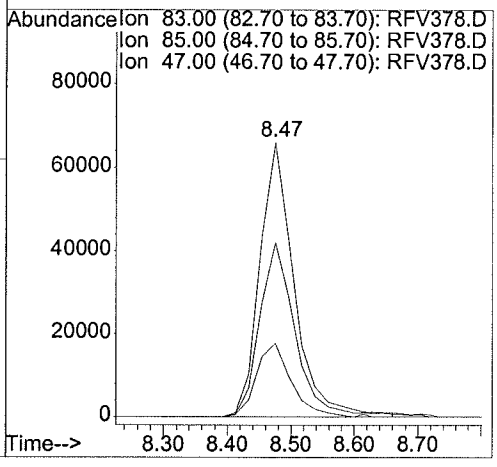


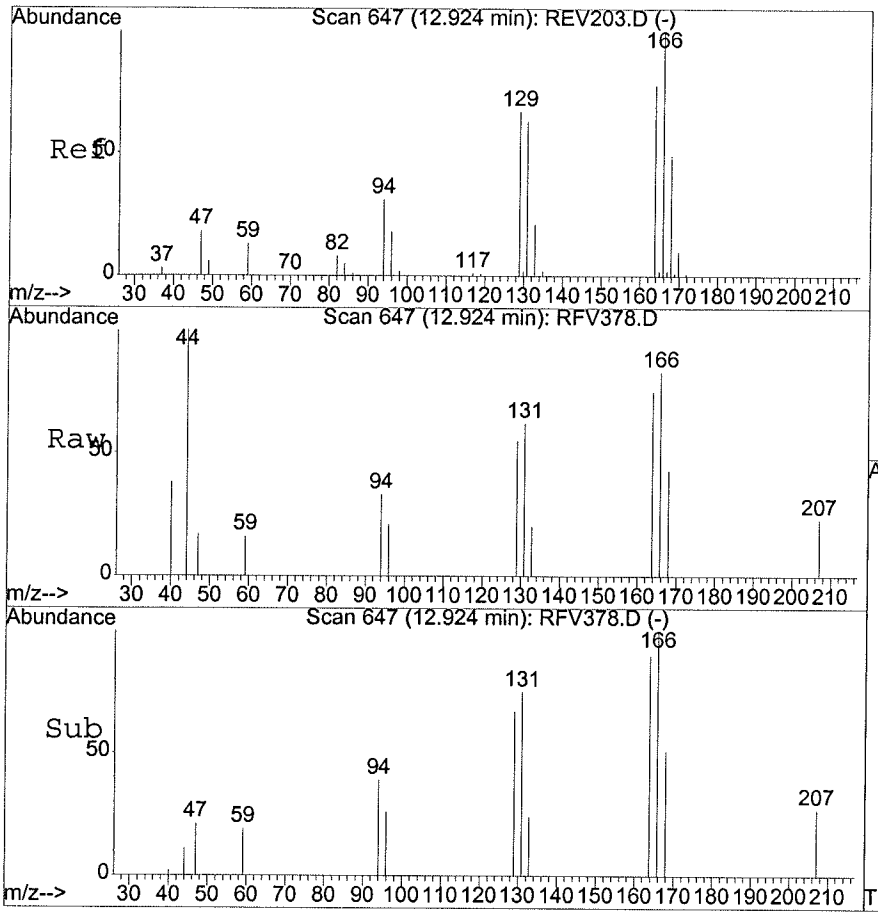


#33
Chloroform
Concen: 1.93 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV378.D
Acq: 29 Jun 2020 9:39 pm

Tgt Ion: 83 Resp: 244132

Ion	Ratio	Lower	Upper
83	100		
85	65.8	35.3	95.3
47	28.0	0.0	57.1

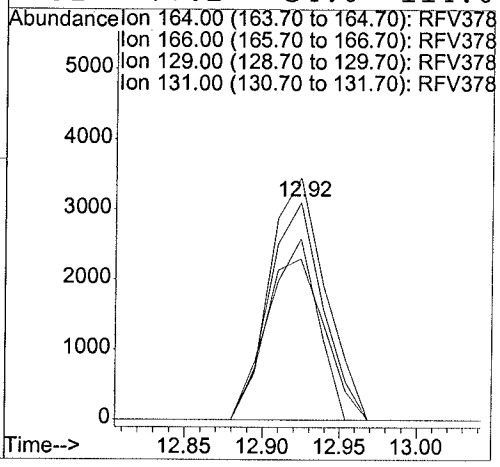




#59
Tetrachloroethene
Concen: 0.10 ug/l
RT: 12.92 min Scan# 647
Delta R.T. 0.00 min
Lab File: RFV378.D
Acq: 29 Jun 2020 9:39 pm

Tgt Ion:164 Resp: 7515

Ion	Ratio	Lower	Upper
164	100		
166	115.6	99.2	159.2
129	81.6	59.7	119.7
131	77.2	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV378.D Vial: 23
Acq On : 29 Jun 2020 9:39 pm Operator: VLu
Sample : 20F183-06 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2611485	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2156937	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	660231	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV378.D VO01E14.M Tue Jun 30 10:35:10 2020 Page 1

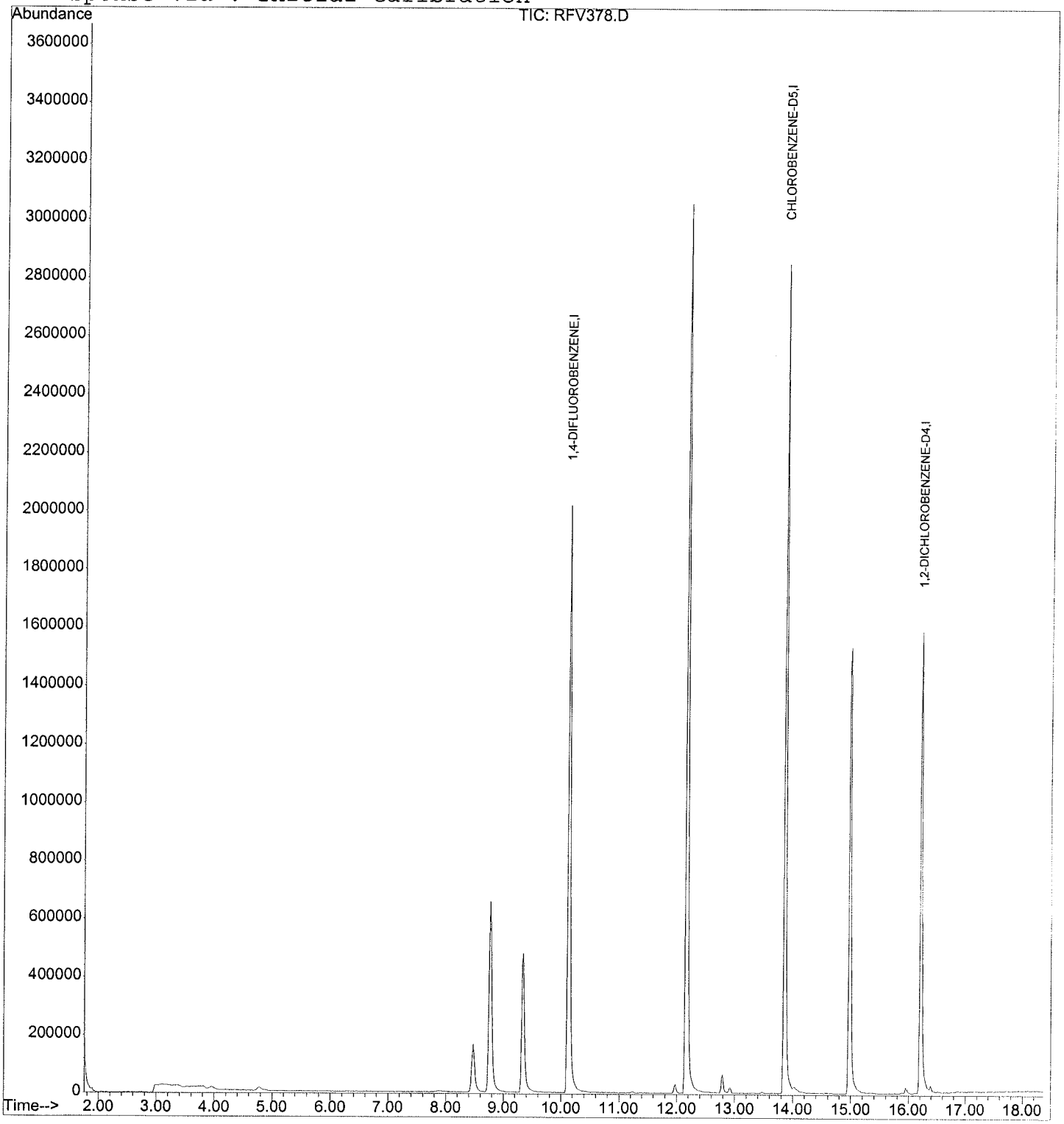
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV378.D
Acq On : 29 Jun 2020 9:39 pm
Sample : 20F183-06 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020

Vial: 23
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 22:07
Sample ID: MW04-GW062120	Date Analyzed: 06/29/20 22:07
Lab Samp ID: F183-07	Dilution Factor: 1
Lab File ID: RFV379	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	3.8J	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.41J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.7	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.11J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	53	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.27J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.1	10.00	111	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.87	10.00	98.7	70-130
DIBROMOFLUOROMETHANE	10.7	10.00	107	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV379.D Vial: 24
Acq On : 29 Jun 2020 10:07 pm Operator: VLu
Sample : 20F183-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

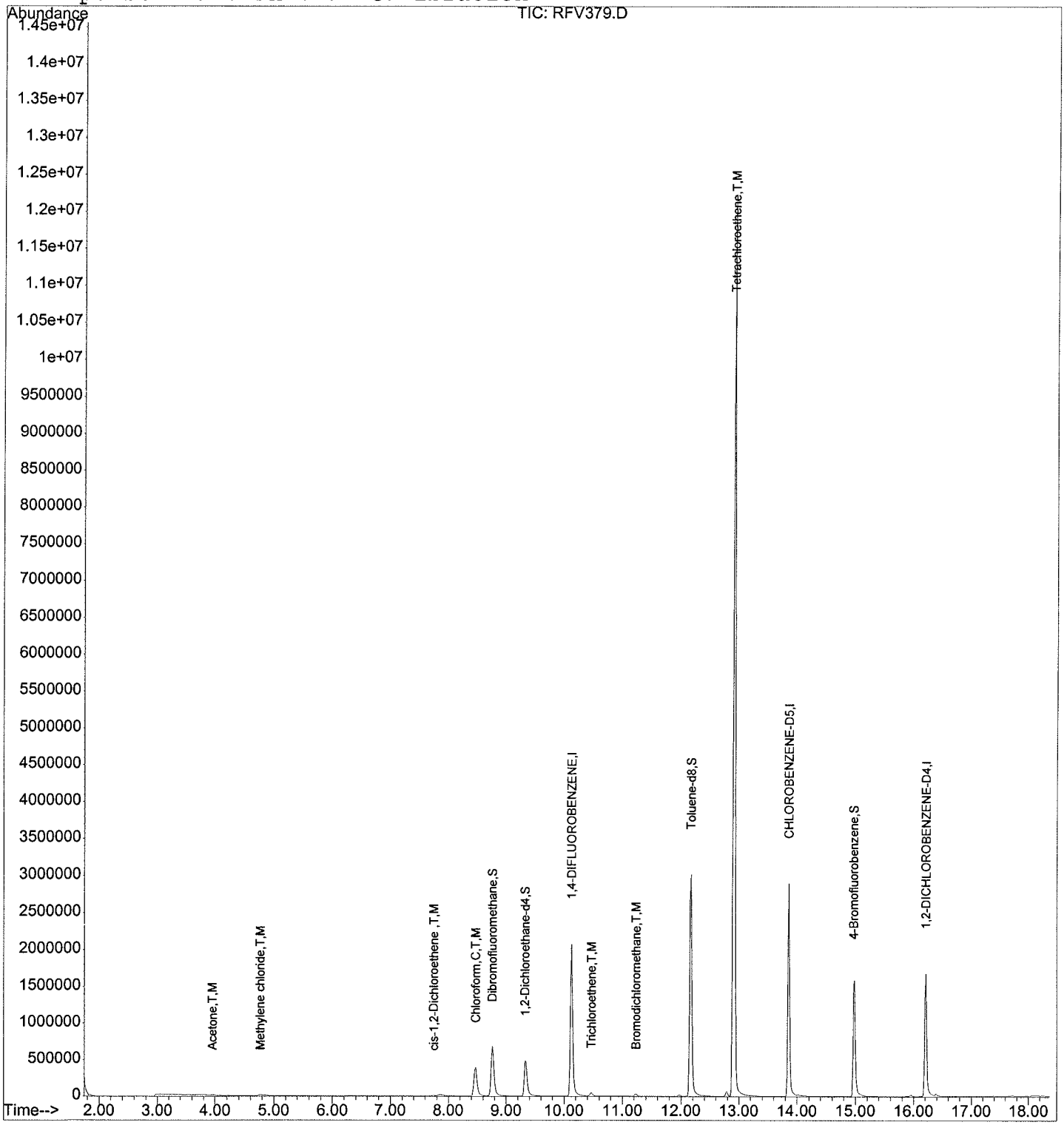
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2644239	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2185713	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	687373	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	796590	10.70	ug/l	0.00
Spiked Amount 10.000			Recovery = 107.00%			
38) 1,2-Dichloroethane-d4	9.32	65	548843	11.07	ug/l	-0.02
Spiked Amount 10.000			Recovery = 110.70%			
54) Toluene-d8	12.17	98	2935919	9.87	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.70%			
74) 4-Bromofluorobenzene	14.97	95	876705	10.67	ug/l	-0.02
Spiked Amount 10.000			Recovery = 106.70%			
Target Compounds						Qvalue
13) Acetone	3.96	43	34229	3.81	ug/l	95
18) Methylene chloride	4.77	49	23016	0.21	ug/l	91
29) cis-1,2-Dichloroethene	7.75	96	9799	0.11	ug/l	98
33) Chloroform	8.47	83	602361	4.71	ug/l	99
44) Trichloroethene	10.46	130	26351	0.27	ug/l	98
49) Bromodichloromethane	11.23	83	34055	0.41	ug/l	97
59) Tetrachloroethene	12.91	164	3949906	52.75	ug/l	98

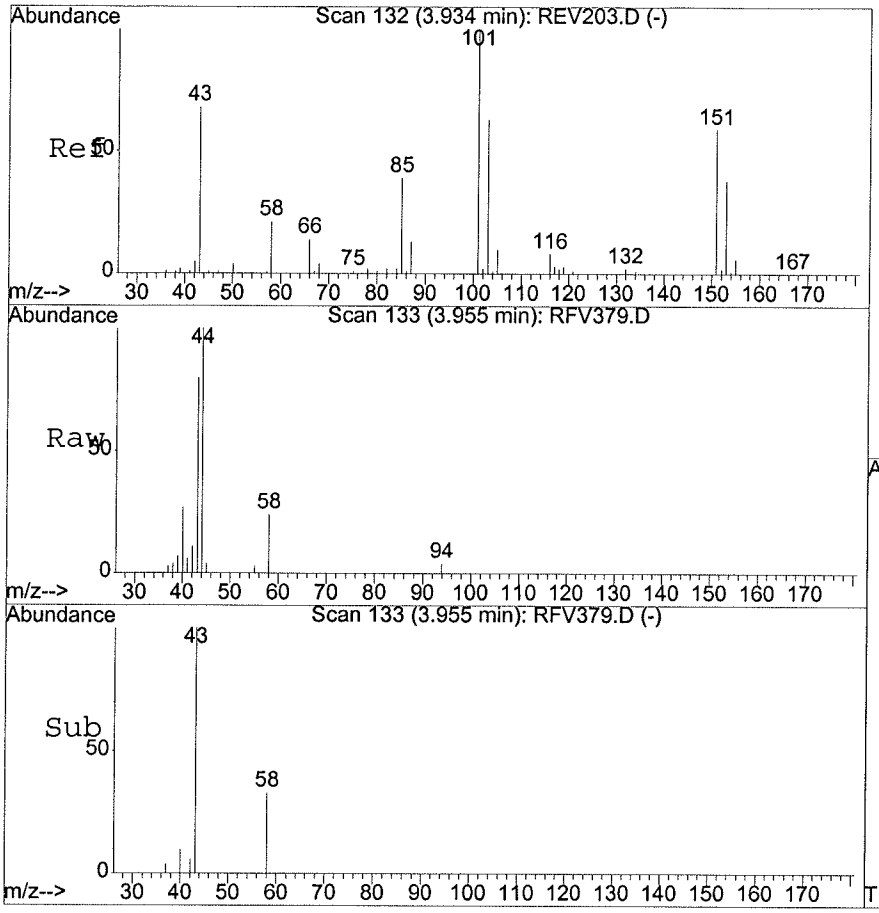
(#) = qualifier out of range (m) = manual integration
RFV379.D VO01E13.M Tue Jun 30 11:22:11 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV379.D Vial: 24
Acq On : 29 Jun 2020 10:07 pm Operator: VLu
Sample : 20F183-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

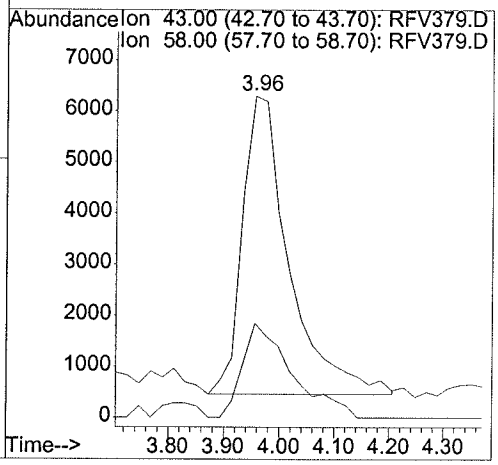


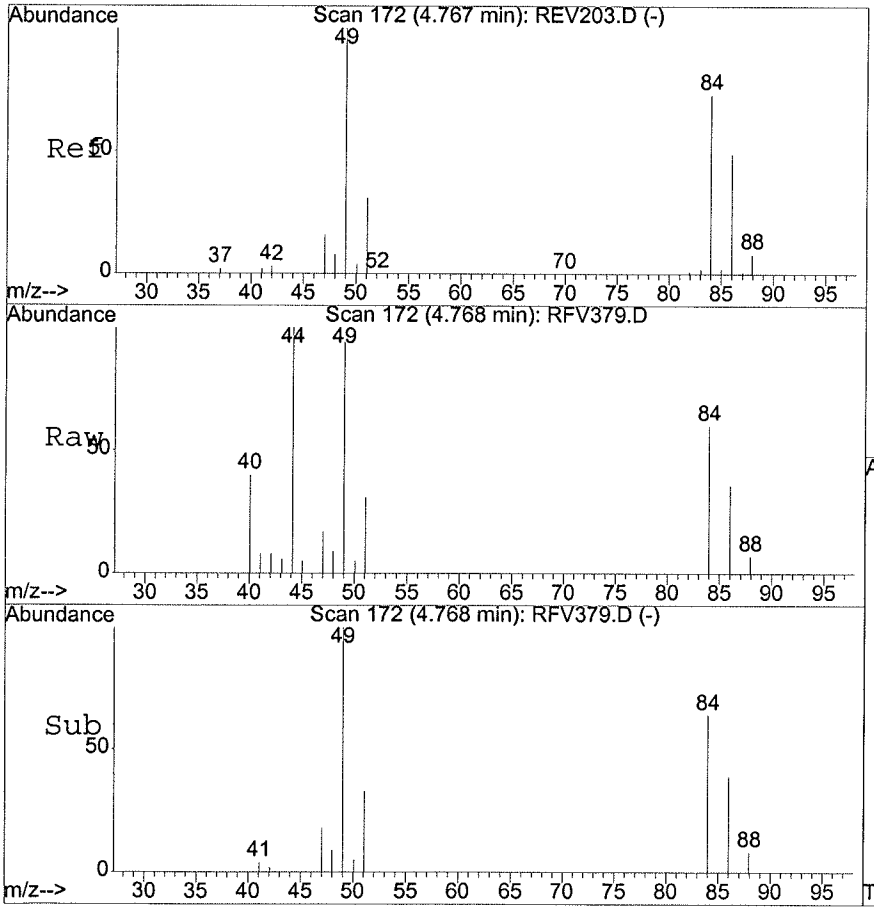


#13
Acetone
Concen: 3.81 ug/l
RT: 3.96 min Scan# 133
Delta R.T. 0.02 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion: 43 Resp: 34229

Ion	Ratio	Lower	Upper
43	100		
58	33.8	0.9	60.9

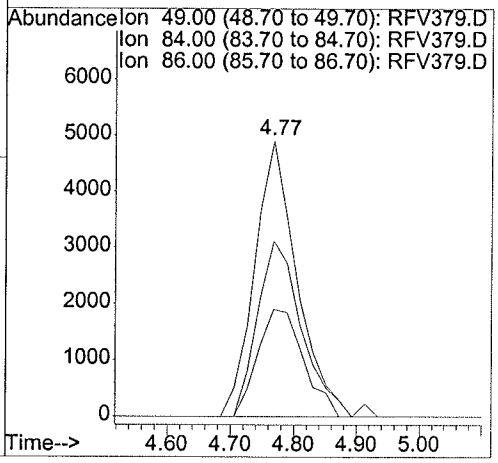


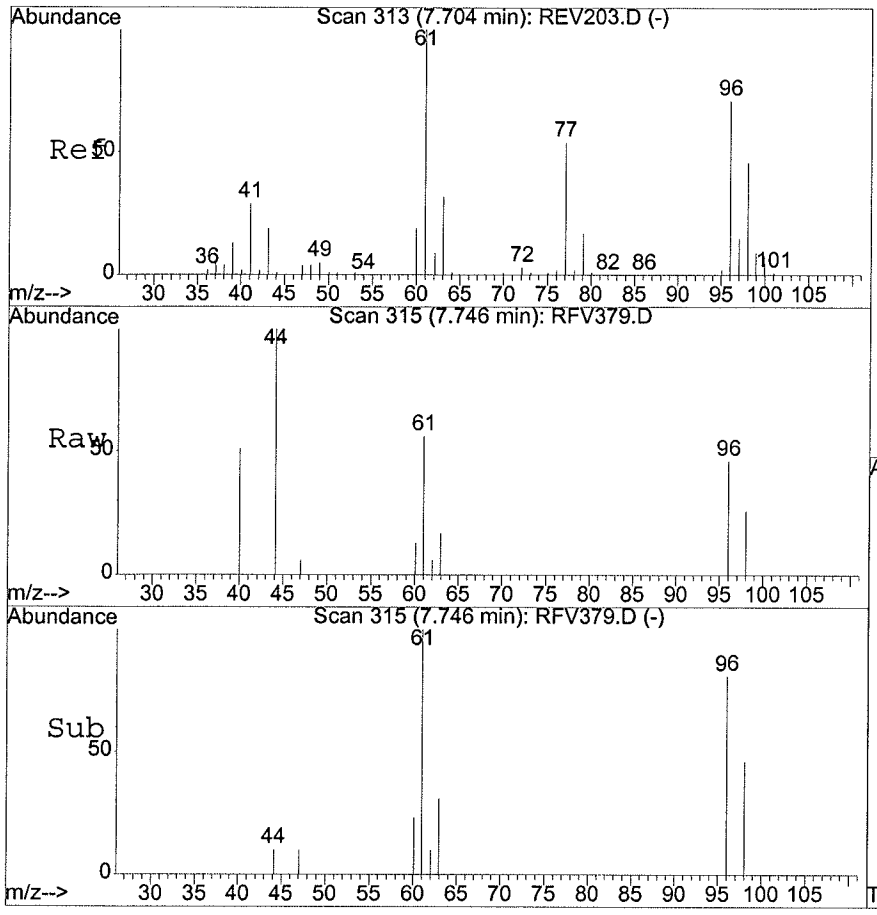


#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion: 49 Resp: 23016

Ion	Ratio	Lower	Upper
49	100		
84	65.4	43.3	103.3
86	41.4	17.1	77.1

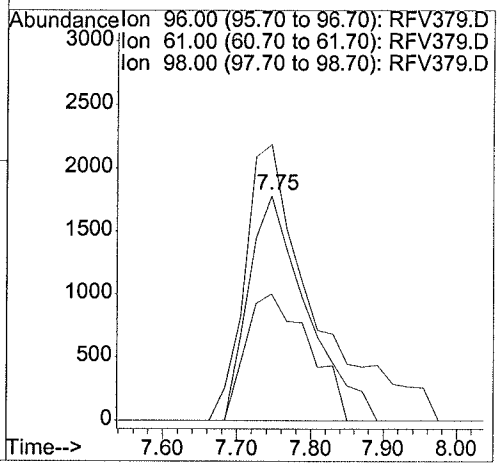


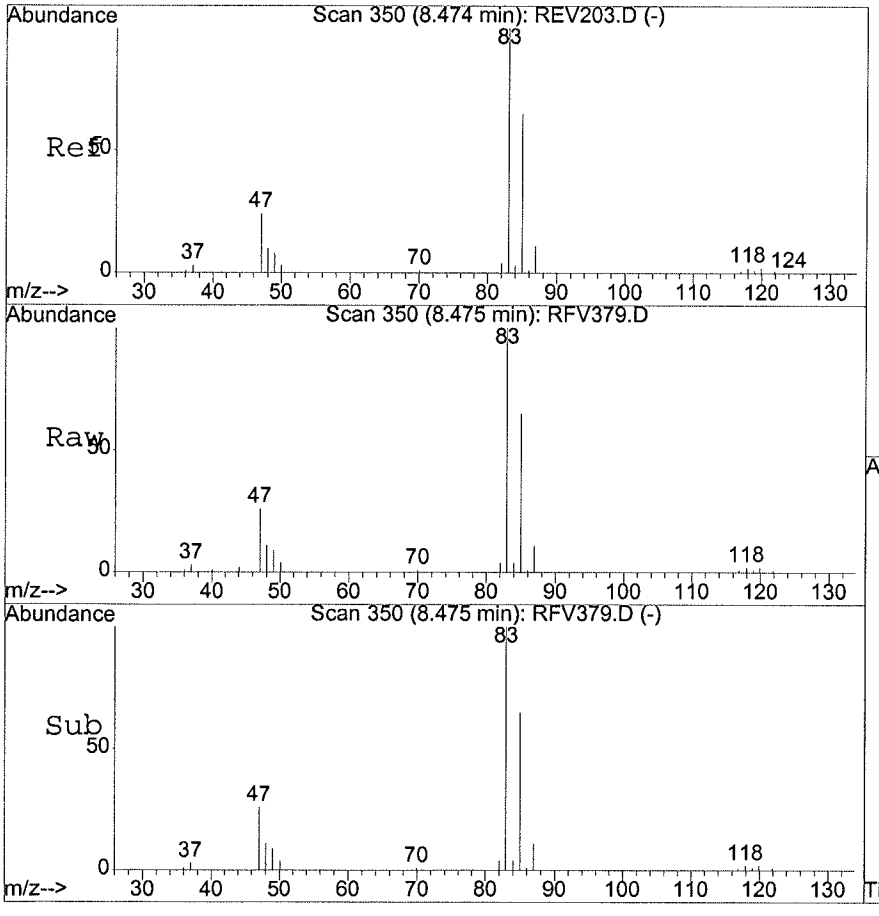


#29
cis-1,2-Dichloroethene
Concen: 0.11 ug/l
RT: 7.75 min Scan# 315
Delta R.T. 0.04 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion: 96 Resp: 9799

Ion	Ratio	Lower	Upper
96	100		
61	146.5	117.3	177.3
98	61.2	35.2	95.2

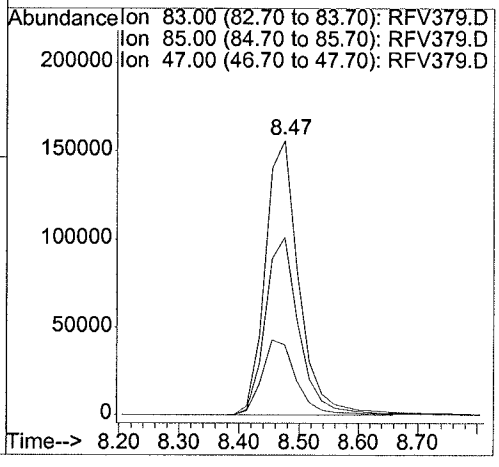


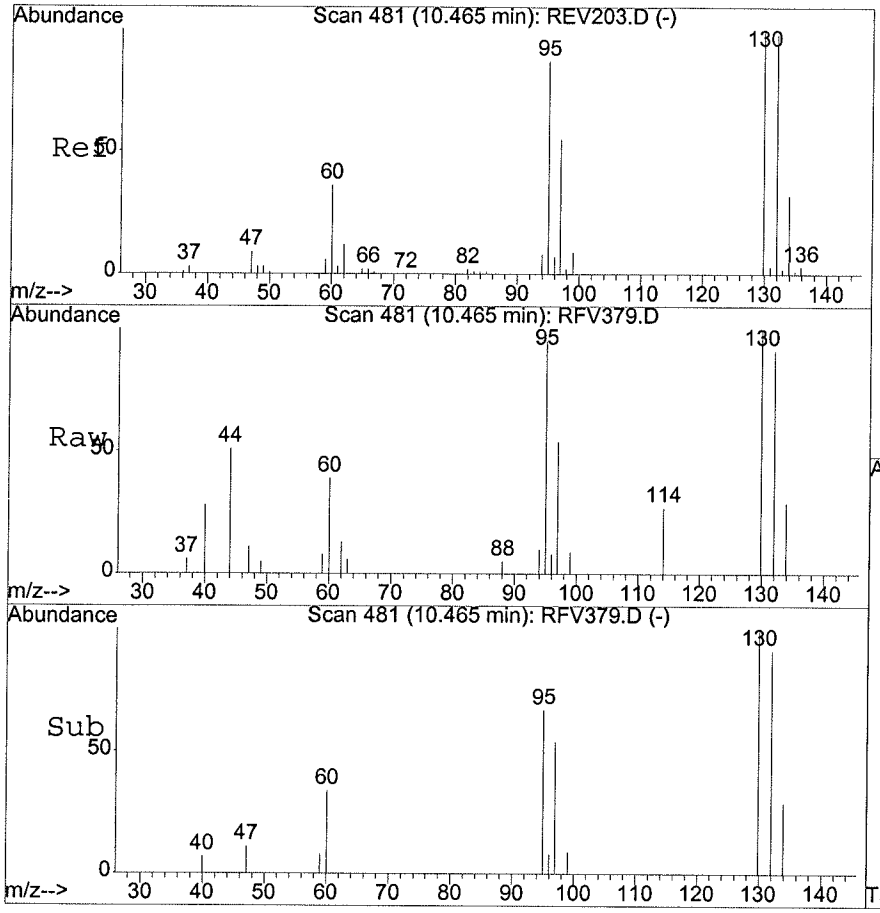


#33
Chloroform
Concen: 4.71 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion: 83 Resp: 602361

Ion	Ratio	Lower	Upper
83	100		
85	65.9	35.3	95.3
47	28.7	0.0	57.1

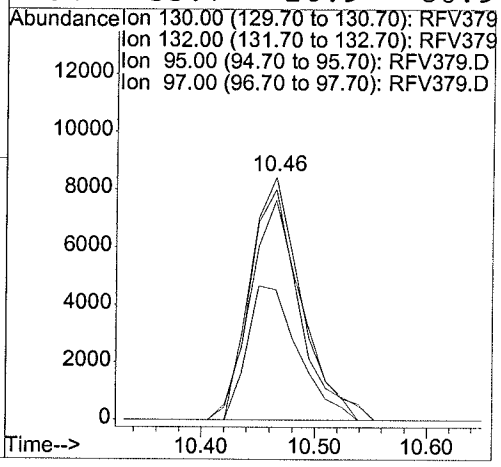


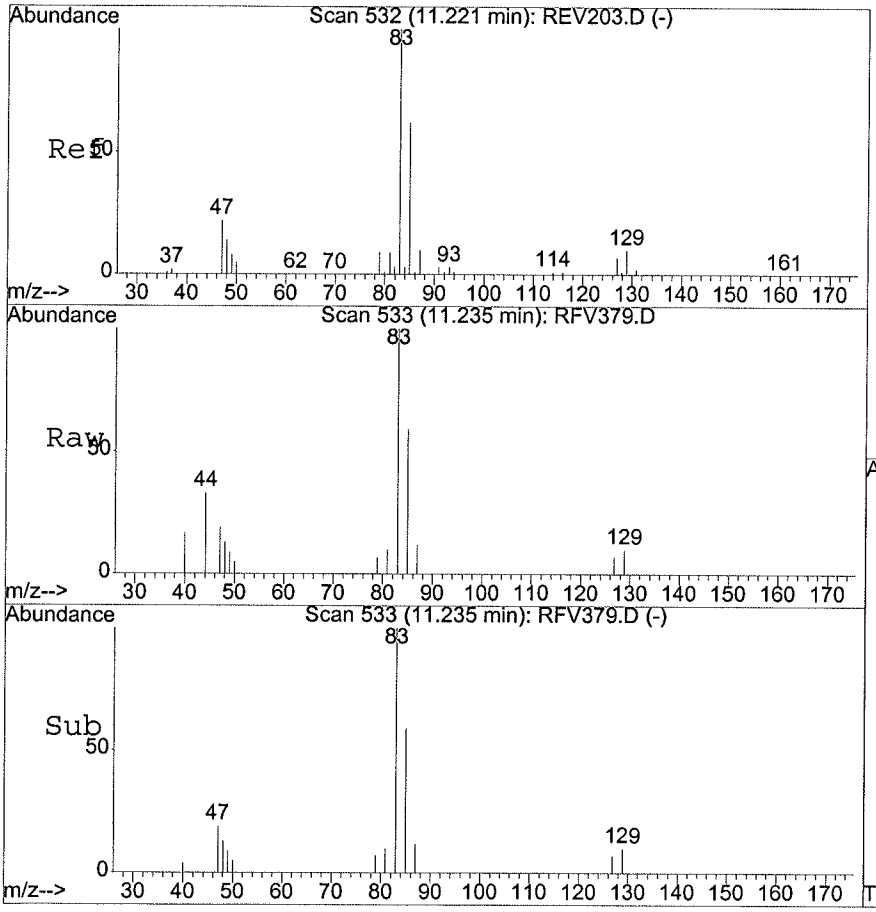


#44
Trichloroethene
Concen: 0.27 ug/l
RT: 10.46 min Scan# 481
Delta R.T. -0.00 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion:130 Resp: 26351

Ion	Ratio	Lower	Upper
130	100		
132	93.4	66.3	126.3
95	91.4	59.7	119.7
97	55.7	26.9	86.9

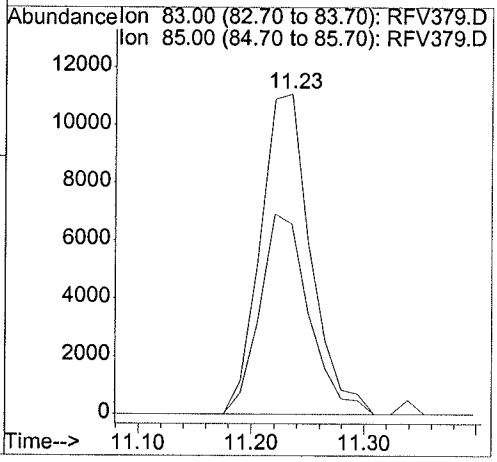


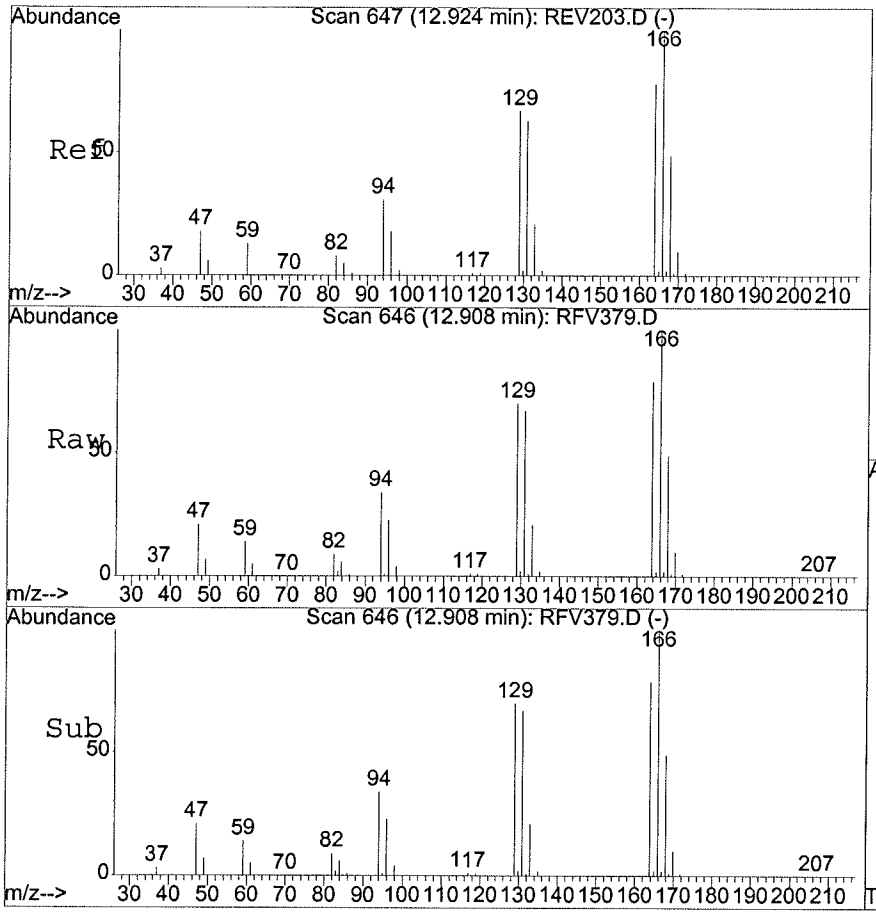


#49
Bromodichloromethane
Concen: 0.41 ug/l
RT: 11.23 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion: 83 Resp: 34055

Ion	Ratio	Lower	Upper
83	100		
85	61.3	33.3	93.3

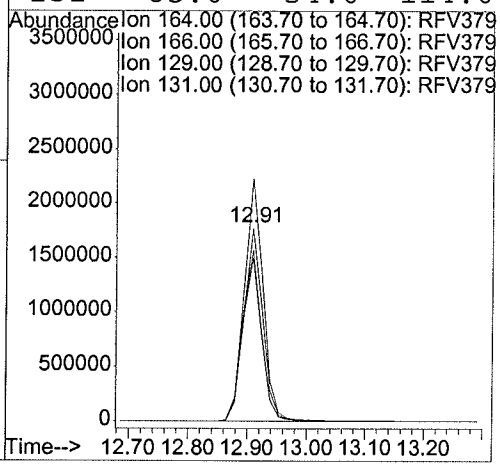




#59
Tetrachloroethene
Concen: 52.75 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.02 min
Lab File: RFV379.D
Acq: 29 Jun 2020 10:07 pm

Tgt Ion:164 Resp: 3949906

Ion	Ratio	Lower	Upper
164	100		
166	125.8	99.2	159.2
129	89.6	59.7	119.7
131	85.0	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV379.D Vial: 24
Acq On : 29 Jun 2020 10:07 pm Operator: VLu
Sample : 20F183-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:35 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2644188	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2155378	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	687396	10.00	ug/l	0.00

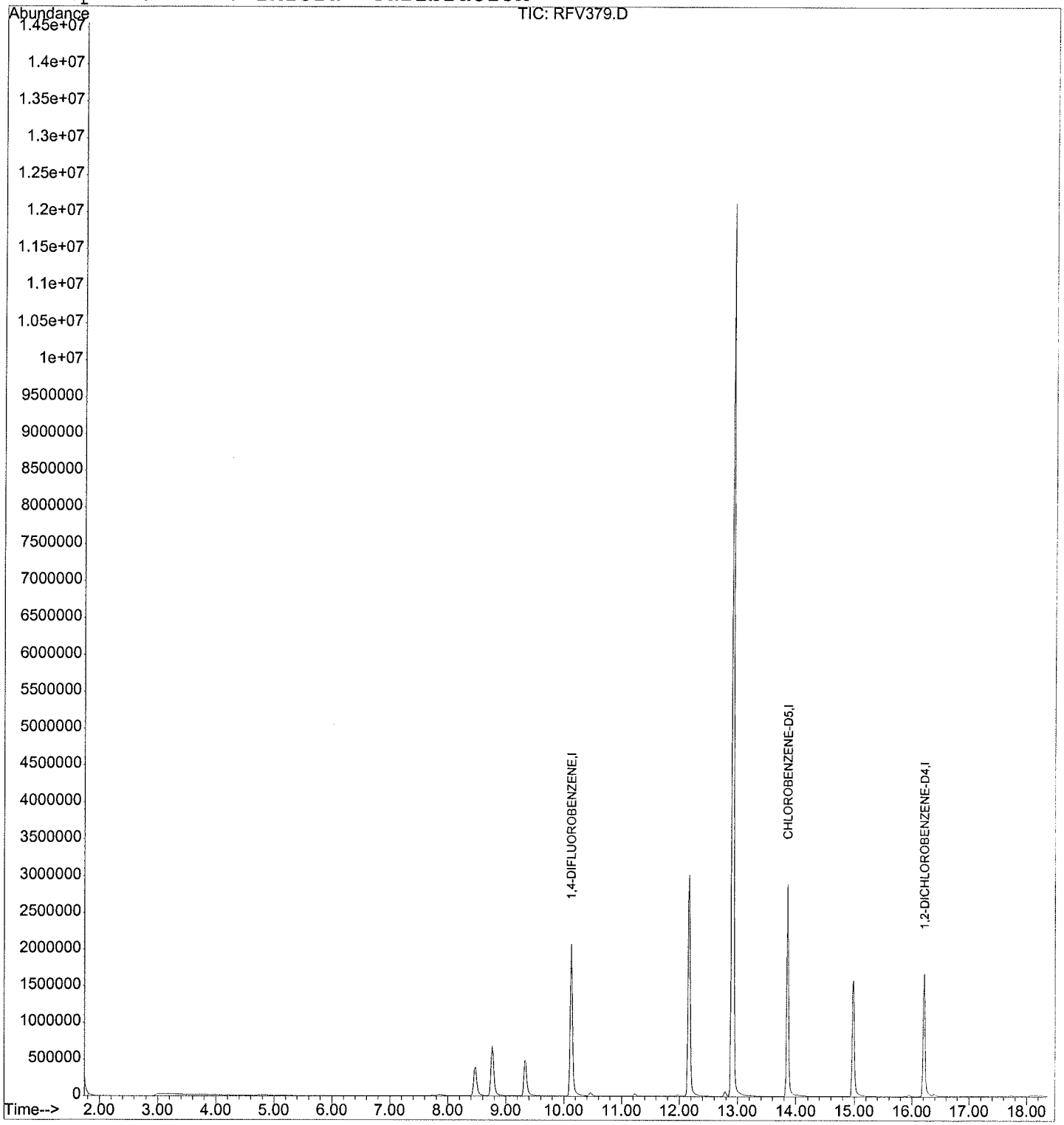
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV379.D VO01E14.M Tue Jun 30 10:35:17 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV379.D Vial: 24
Acq On : 29 Jun 2020 10:07 pm Operator: VLu
Sample : 20F183-07 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:35 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/30/20 18:02
Sample ID: MW08A-GW062120	Date Analyzed: 06/30/20 18:02
Lab Samp ID: F183-08	Dilution Factor: 1
Lab File ID: RFV394	Matrix : WATER
Ext Btch ID: VO01F18	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.55J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.51J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.2	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.17J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	0.19J	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	55	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.40J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.4	10.00	104	70-130
TOLUENE-D8	9.80	10.00	98.0	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV394.D Vial: 14
Acq On : 30 Jun 2020 6:02 pm Operator: VLu
Sample : 20F183-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:37 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

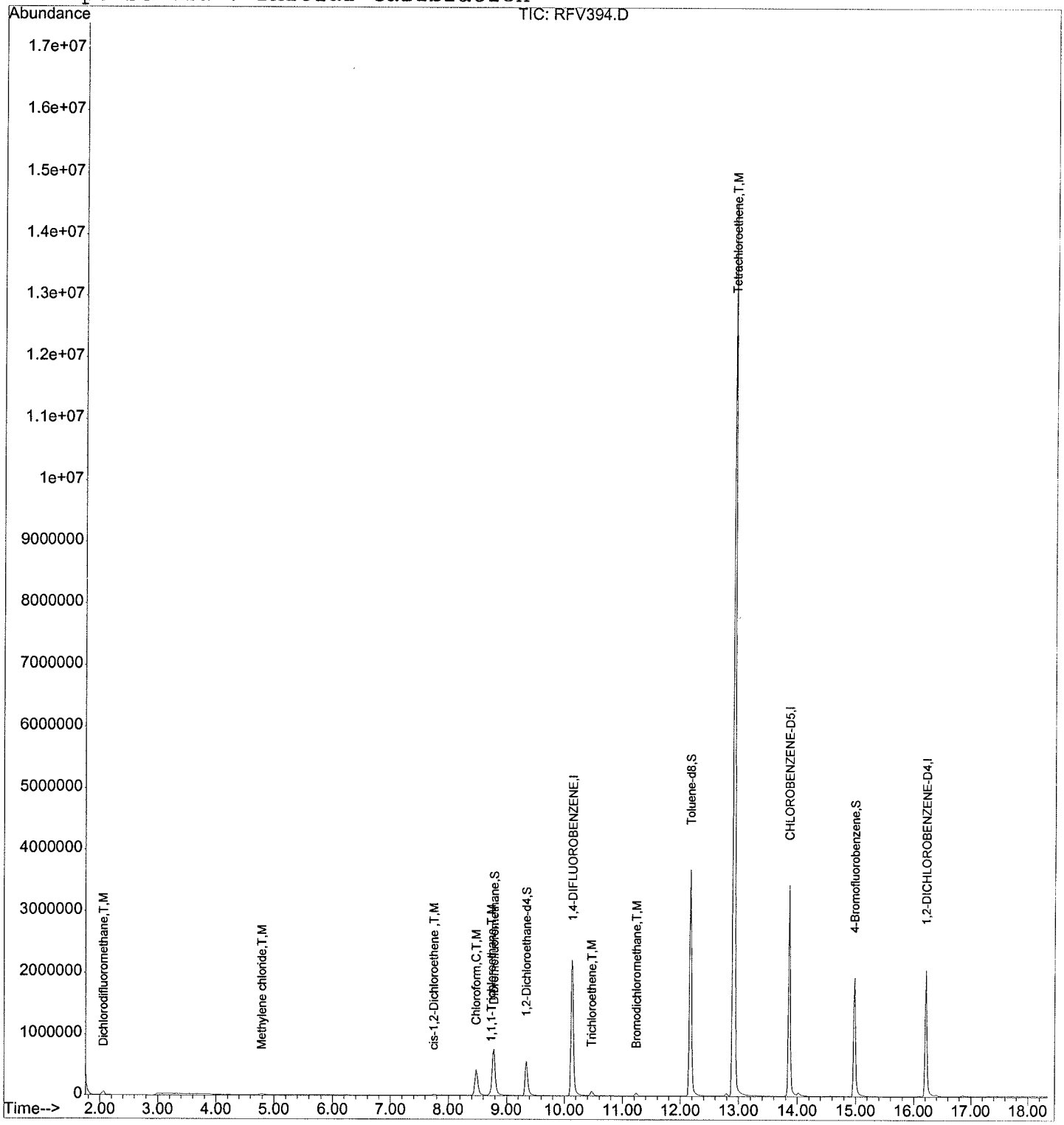
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	3021803	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.86	117	2526213	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	789716	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	890089	10.47	ug/l	0.02
Spiked Amount 10.000			Recovery =	104.70%		
38) 1,2-Dichloroethane-d4	9.34	65	593002	10.47	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.70%		
54) Toluene-d8	12.17	98	3368841	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.00%		
74) 4-Bromofluorobenzene	14.98	95	983528	10.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	2.06	85	17569	0.19	ug/l	96
18) Methylene chloride	4.79	49	26513	0.21	ug/l	91
29) cis-1,2-Dichloroethene	7.75	96	17510	0.17	ug/l	94
33) Chloroform	8.48	83	610392	4.18	ug/l	99
35) 1,1,1-Trichloroethane	8.73	97	64015	0.55	ug/l	97
44) Trichloroethene	10.47	130	44641	0.40	ug/l	97
49) Bromodichloromethane	11.24	83	48594	0.51	ug/l	97
59) Tetrachloroethene	12.91	164	4792560	55.37	ug/l	98

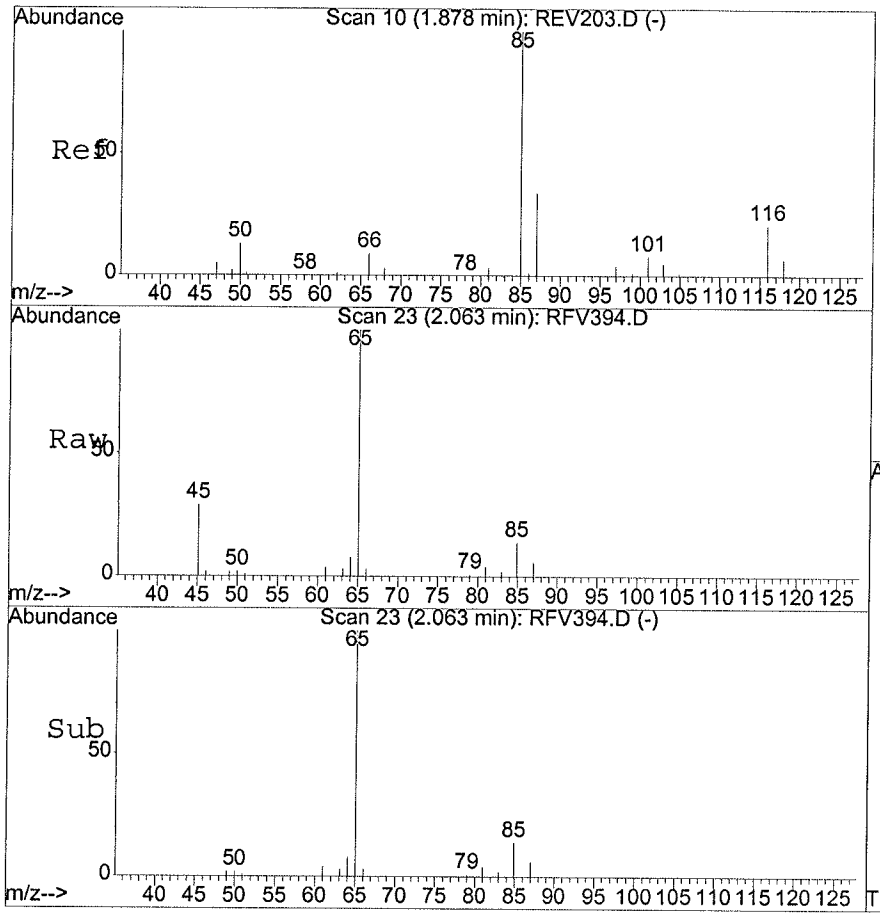
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV394.D Vial: 14
Acq On : 30 Jun 2020 6:02 pm Operator: VLu
Sample : 20F183-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:37 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

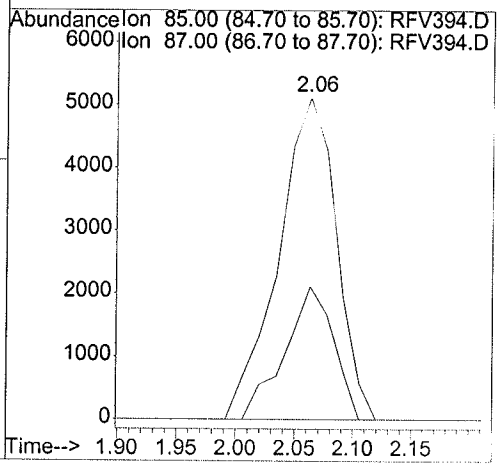


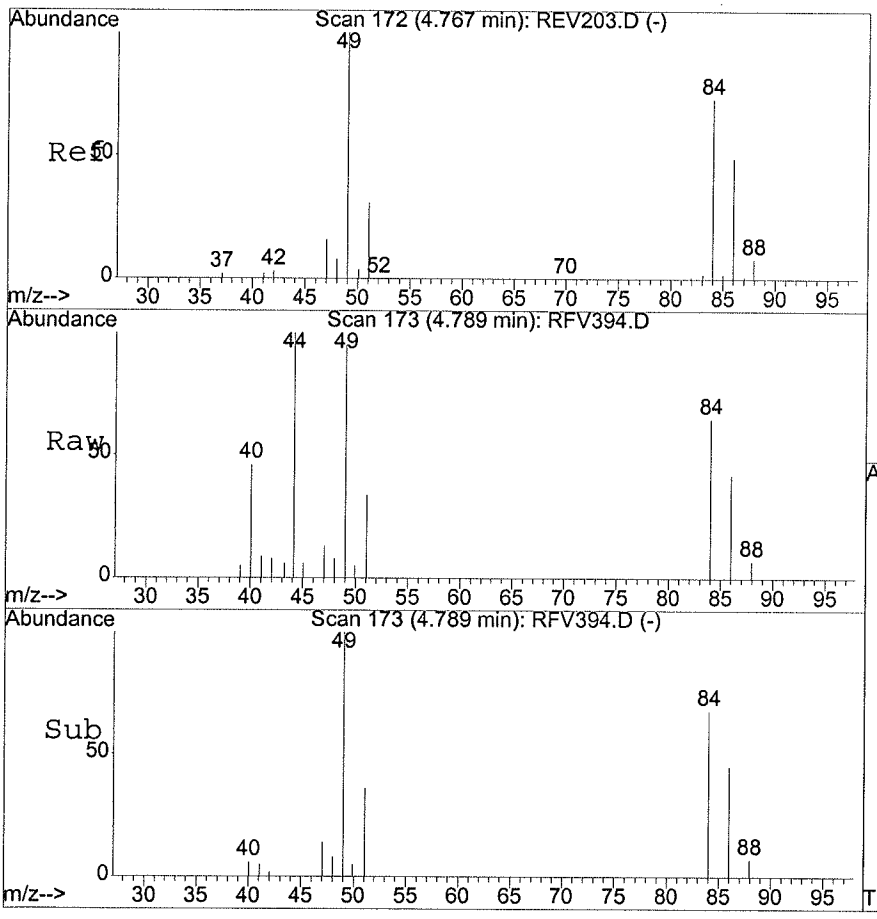


#3
Dichlorodifluoromethane
Concen: 0.19 ug/l
RT: 2.06 min Scan# 23
Delta R.T. 0.18 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 85 Resp: 17569

Ion	Ratio	Lower	Upper
85	100		
87	34.9	2.4	62.4

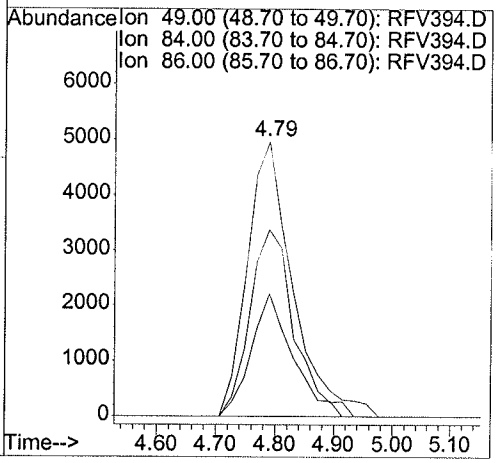


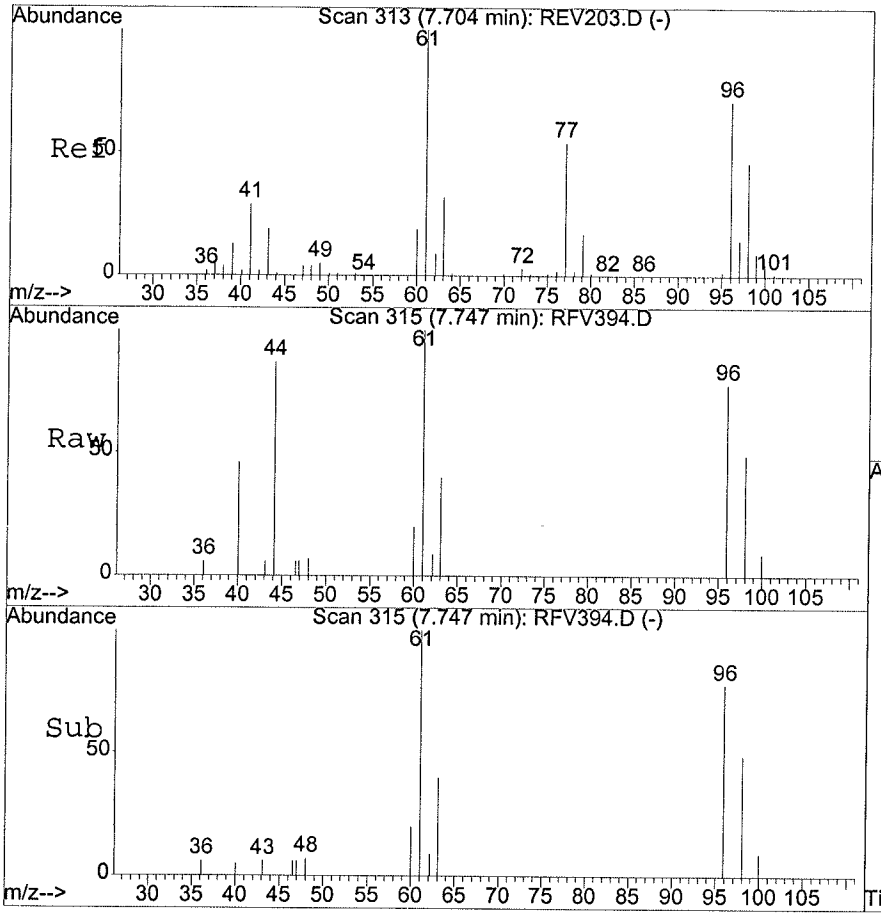


#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 49 Resp: 26513

Ion	Ratio	Lower	Upper
49	100		
84	66.5	43.3	103.3
86	40.6	17.1	77.1

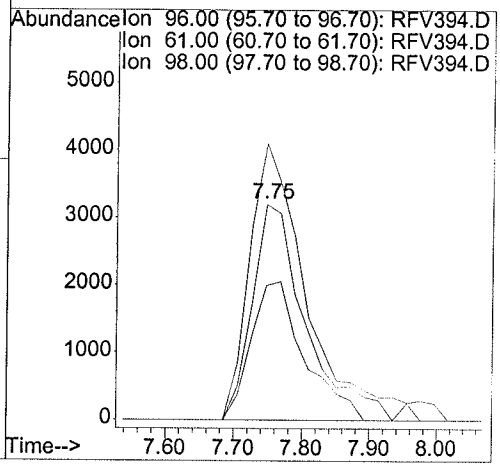


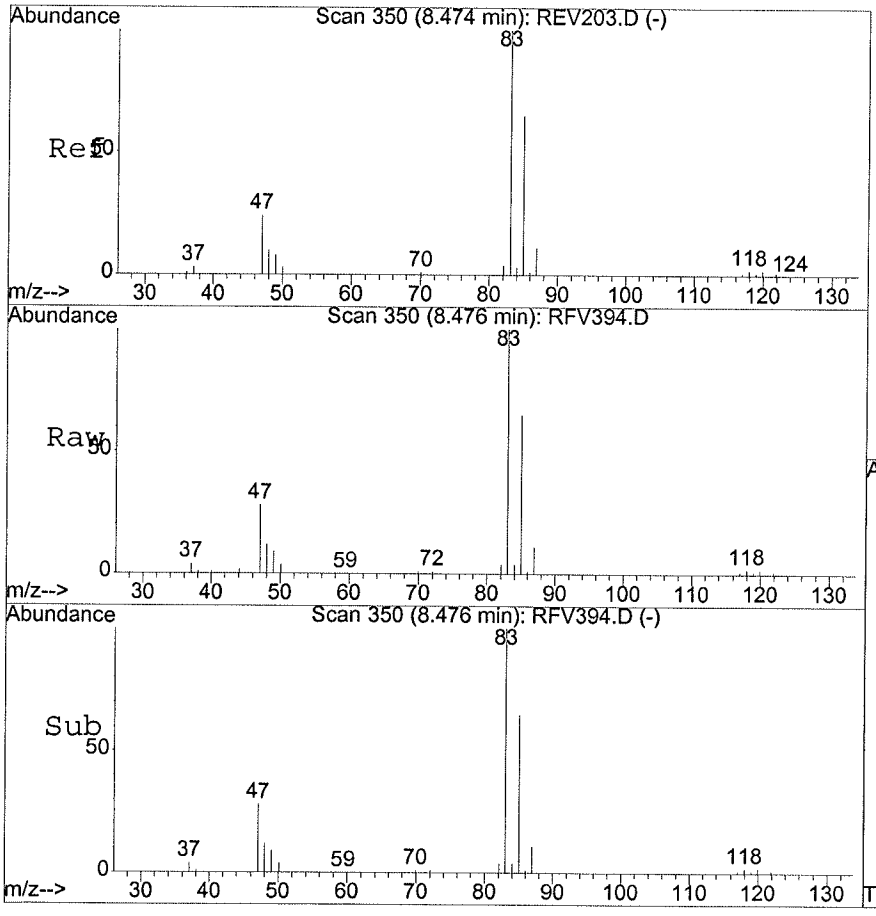


#29
cis-1,2-Dichloroethene
Concen: 0.17 ug/l
RT: 7.75 min Scan# 315
Delta R.T. 0.04 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 96 Resp: 17510

Ion	Ratio	Lower	Upper
96	100		
61	136.7	117.3	177.3
98	64.0	35.2	95.2

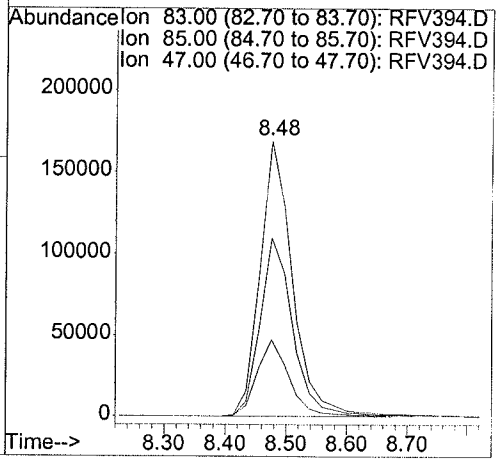


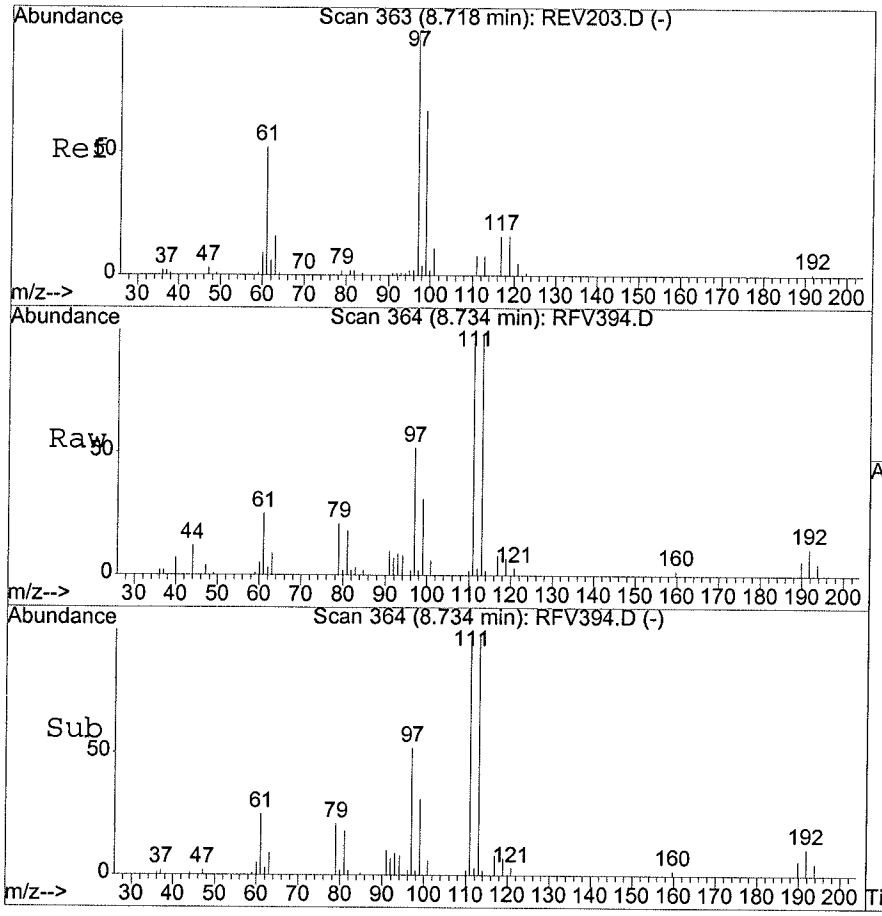


#33
Chloroform
Concen: 4.18 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 83 Resp: 610392

Ion	Ratio	Lower	Upper
83	100		
85	65.6	35.3	95.3
47	29.0	0.0	57.1

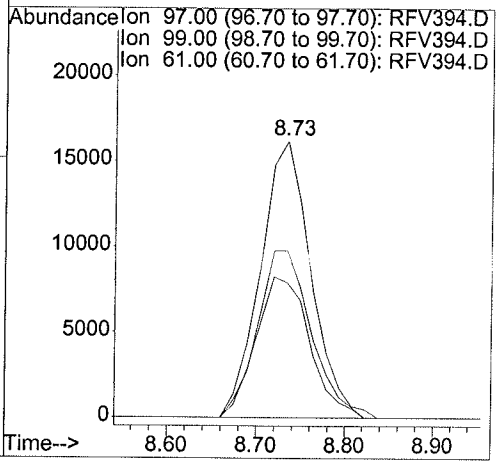


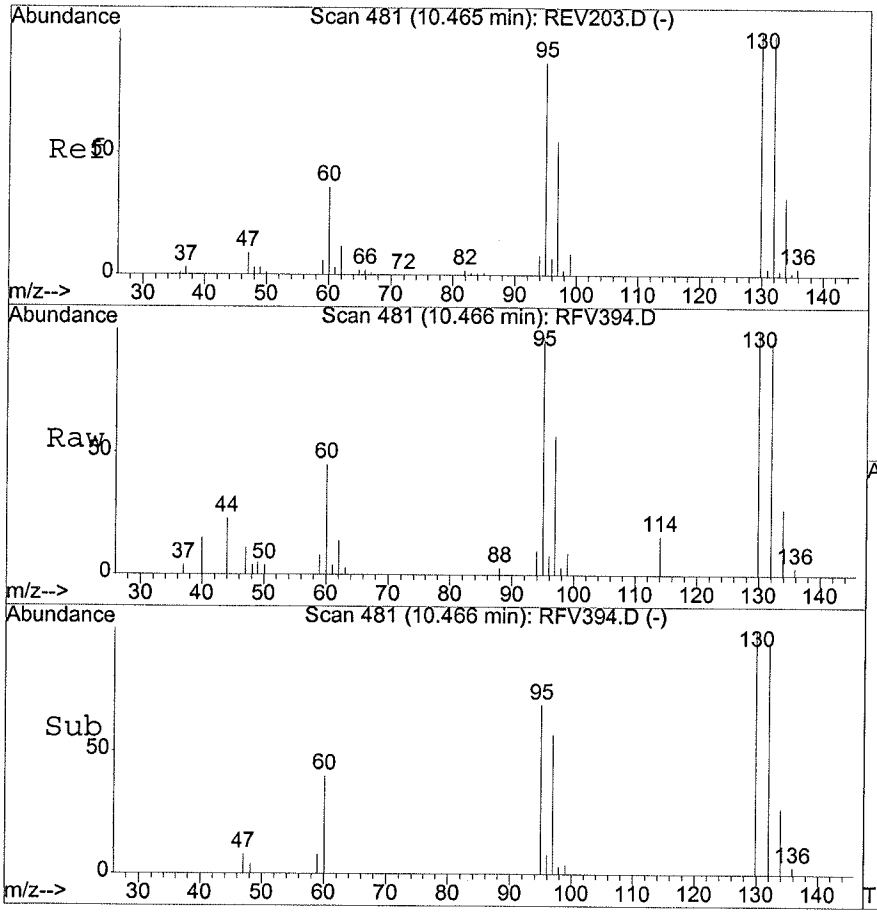


#35
1,1,1-Trichloroethane
Concen: 0.55 ug/l
RT: 8.73 min Scan# 364
Delta R.T. 0.02 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 97 Resp: 64015

Ion	Ratio	Lower	Upper
97	100		
99	63.7	36.2	96.2
61	54.0	22.1	82.1

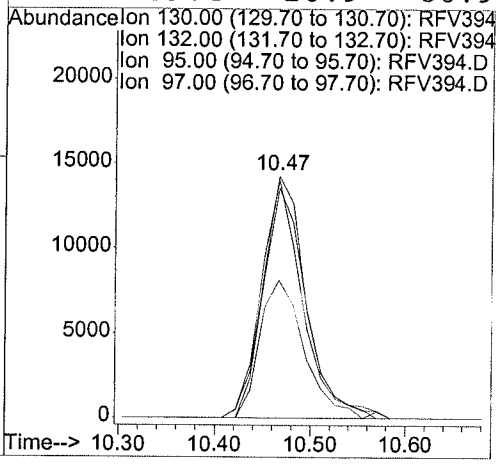


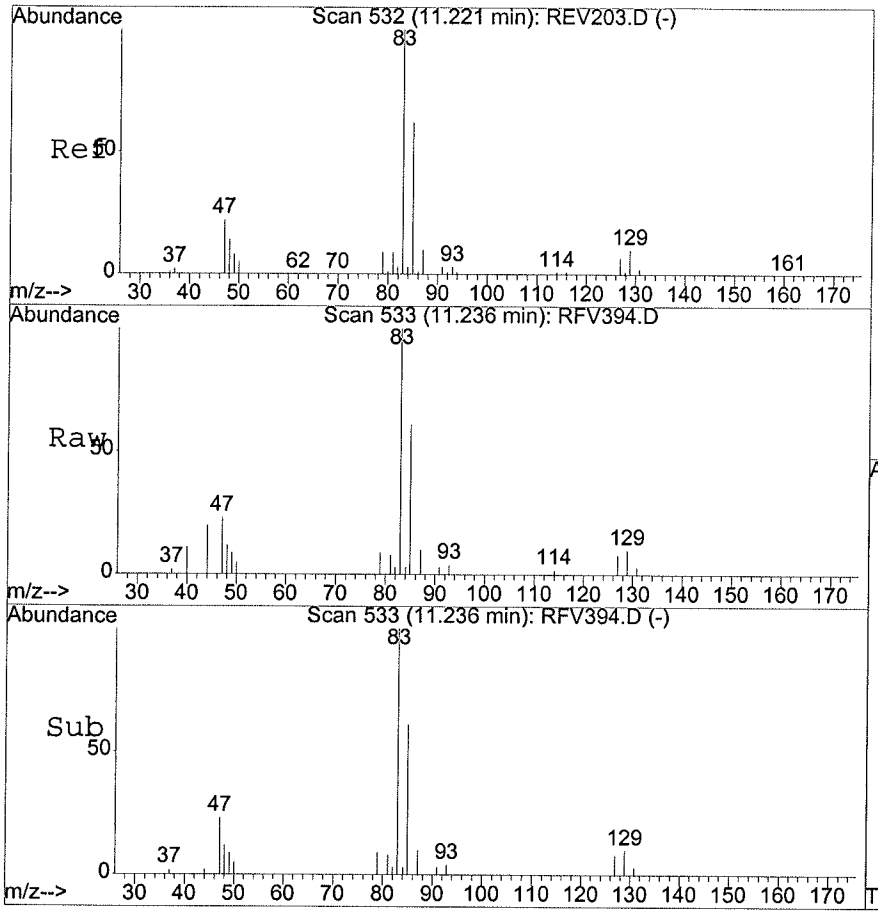


#44
Trichloroethene
Concen: 0.40 ug/l
RT: 10.47 min Scan# 481
Delta R.T. 0.00 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion:130 Resp: 44641

Ion	Ratio	Lower	Upper
130	100		
132	95.3	66.3	126.3
95	95.0	59.7	119.7
97	59.4	26.9	86.9

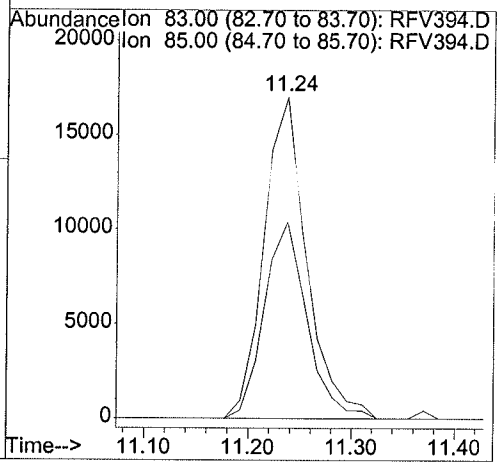


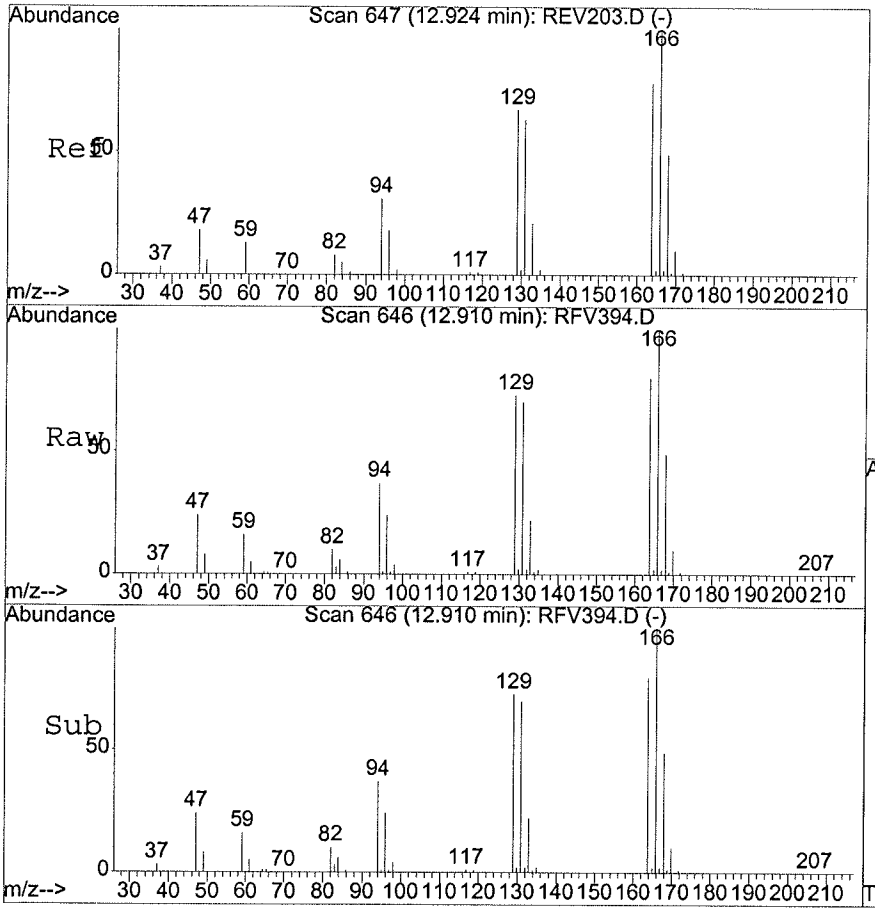


#49
Bromodichloromethane
Concen: 0.51 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.02 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion: 83 Resp: 48594

Ion	Ratio	Lower	Upper
83	100		
85	61.0	33.3	93.3

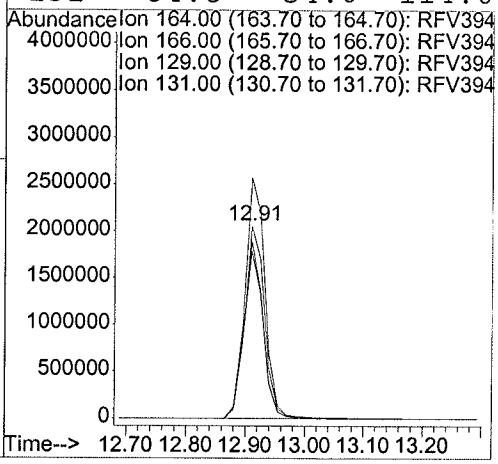




#59
Tetrachloroethene
Concen: 55.37 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RFV394.D
Acq: 30 Jun 2020 6:02 pm

Tgt Ion:164 Resp: 4792560

Ion	Ratio	Lower	Upper
164	100		
166	126.2	99.2	159.2
129	89.2	59.7	119.7
131	84.8	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV394.D Vial: 14
Acq On : 30 Jun 2020 6:02 pm Operator: VLu
Sample : 20F183-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:45 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	3021745	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2511032	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	789742	10.00	ug/l	0.00

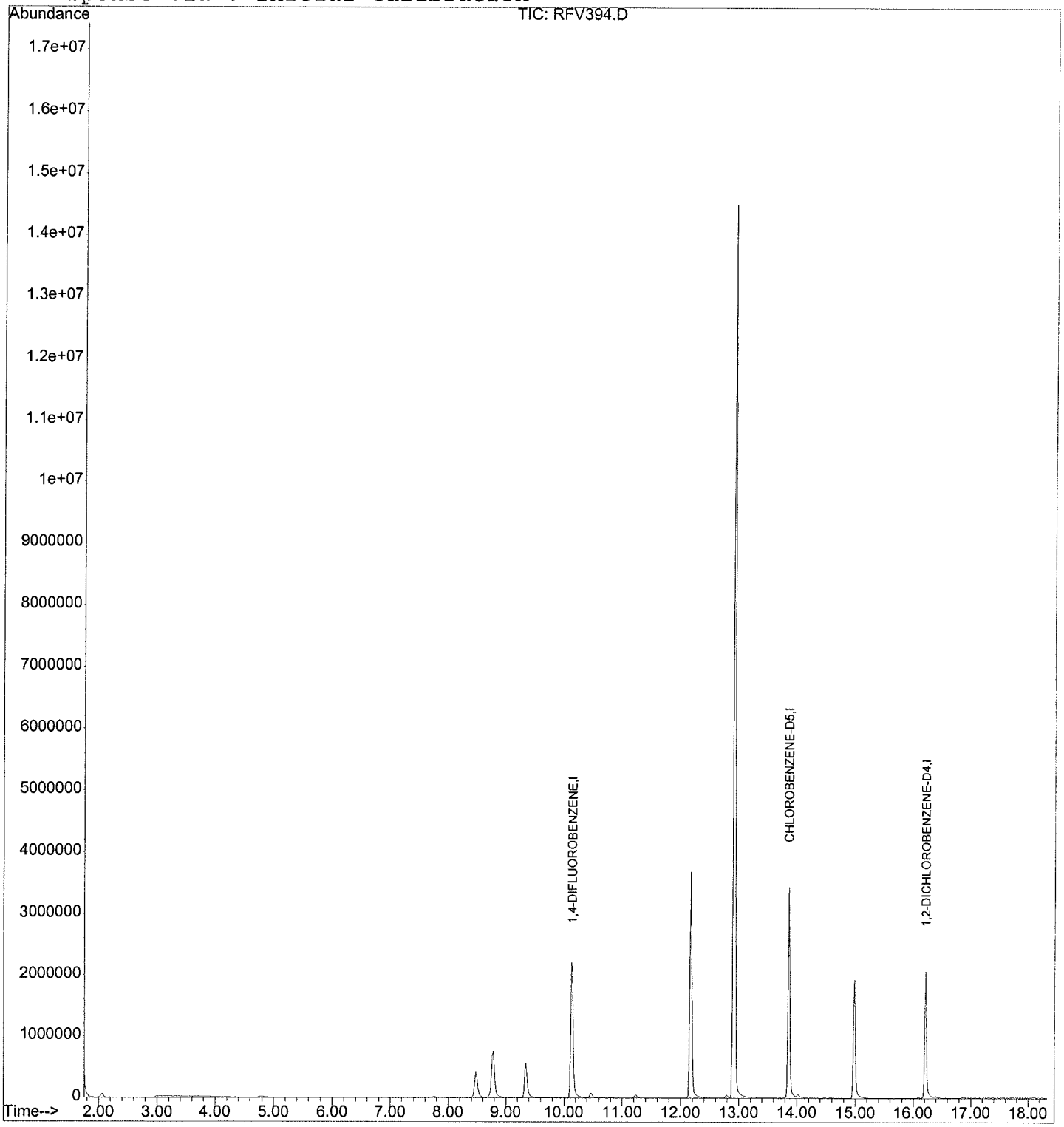
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV394.D VO01E14.M Wed Jul 01 09:45:38 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV394.D Vial: 14
Acq On : 30 Jun 2020 6:02 pm Operator: VLu
Sample : 20F183-08 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:45 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/22/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 17:31
Sample ID: TB13-GW062220	Date Analyzed: 06/29/20 17:31
Lab Samp ID: F183-09	Dilution Factor: 1
Lab File ID: RFV369	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.9	10.00	109	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV369.D Vial: 14
Acq On : 29 Jun 2020 5:31 pm Operator: VLu
Sample : 20F183-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:16 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

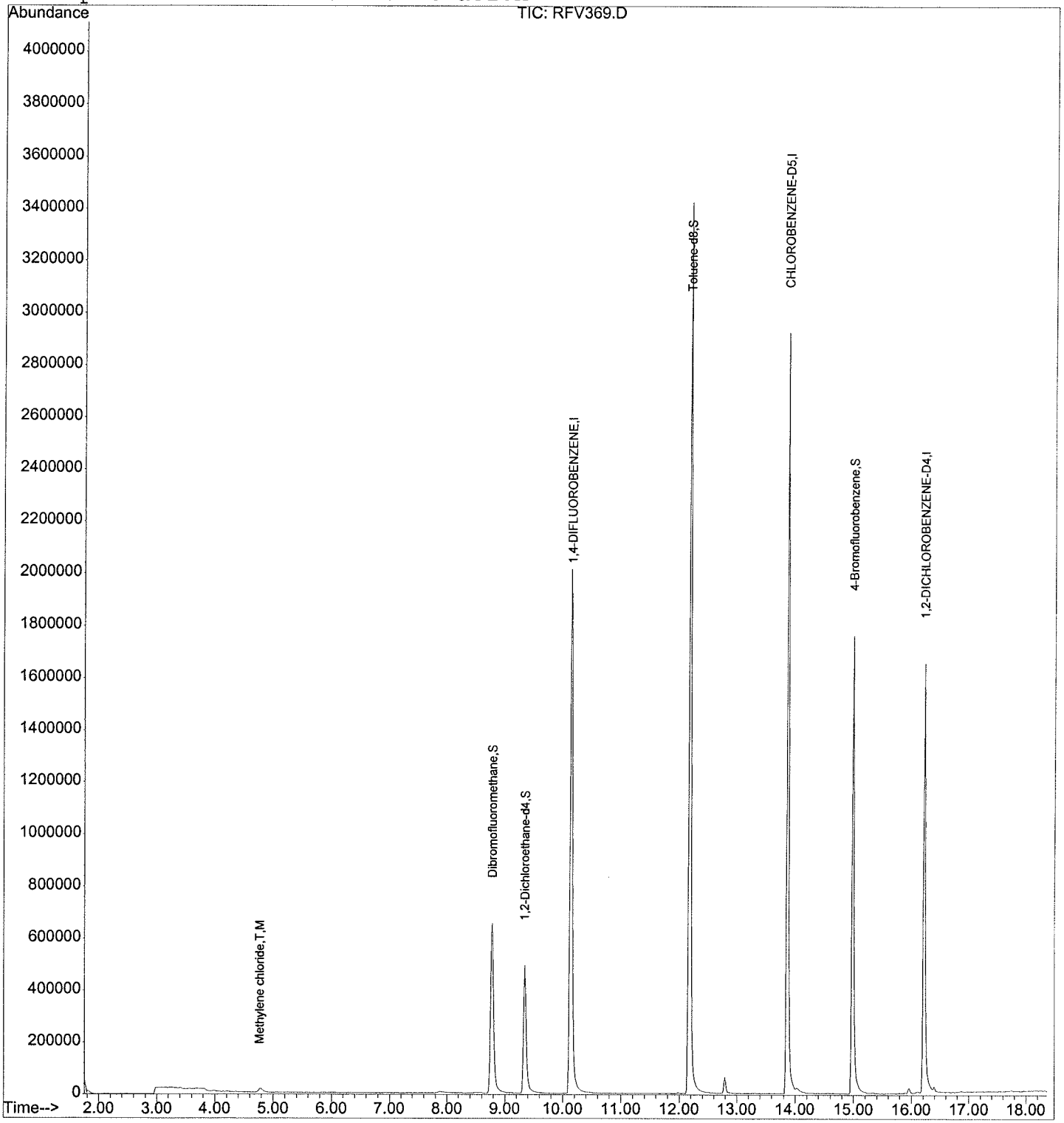
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2759975	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.86	117	2267073	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	665820	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	795933	10.25	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.50%		
38) 1,2-Dichloroethane-d4	9.34	65	527447	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.00%		
54) Toluene-d8	12.17	98	3087878	10.01	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.10%		
74) 4-Bromofluorobenzene	14.98	95	869333	10.92	ug/l	0.00
Spiked Amount 10.000			Recovery =	109.20%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	23468	0.21	ug/l	95

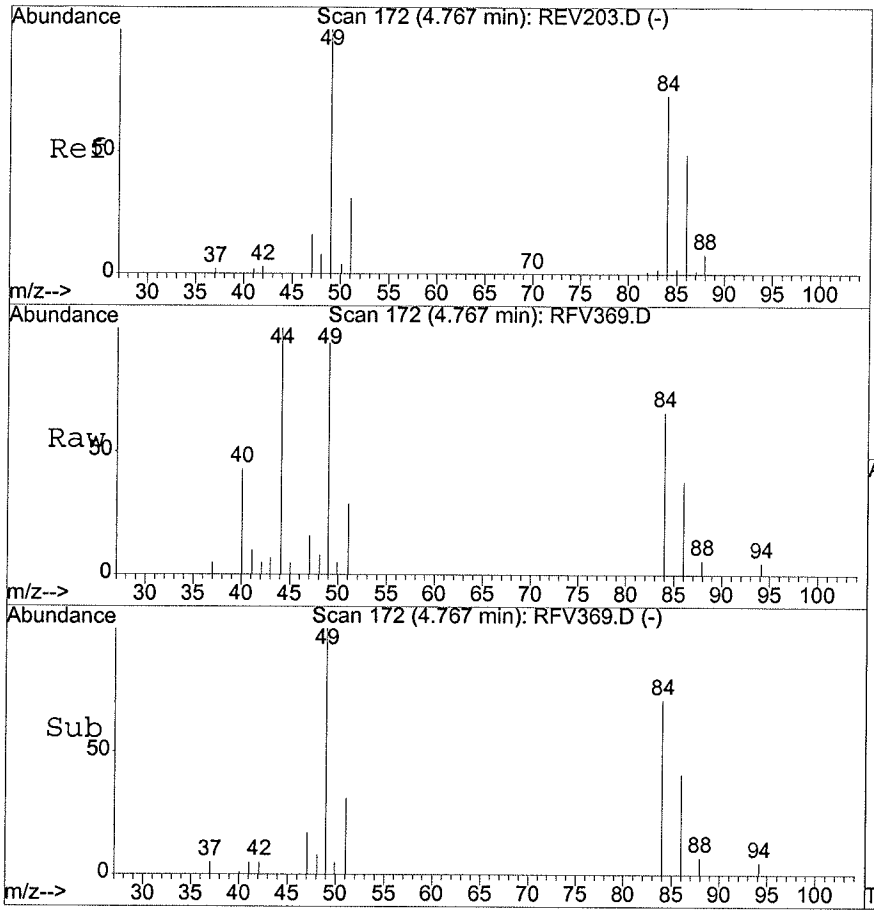
(#) = qualifier out of range (m) = manual integration
RFV369.D VO01E13.M Tue Jun 30 11:16:42 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV369.D Vial: 14
Acq On : 29 Jun 2020 5:31 pm Operator: VLu
Sample : 20F183-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:16 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

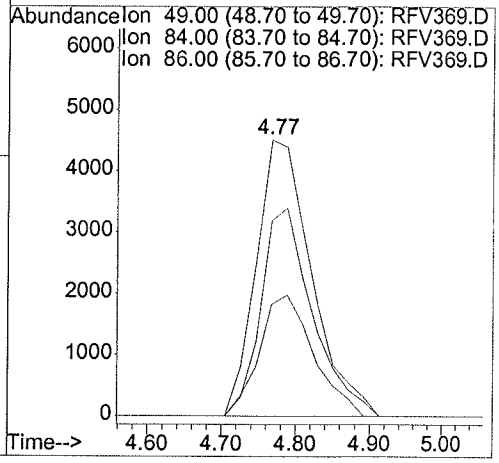




#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. -0.00 min
Lab File: RFV369.D
Acq: 29 Jun 2020 5:31 pm

Tgt Ion: 49 Resp: 23468

Ion	Ratio	Lower	Upper
49	100		
84	70.2	43.3	103.3
86	43.1	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV369.D Vial: 14
Acq On : 29 Jun 2020 5:31 pm Operator: VLu
Sample : 20F183-09 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2759922	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2257203	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	665801	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV369.D VO01E14.M Tue Jun 30 10:34:06 2020 Page 1

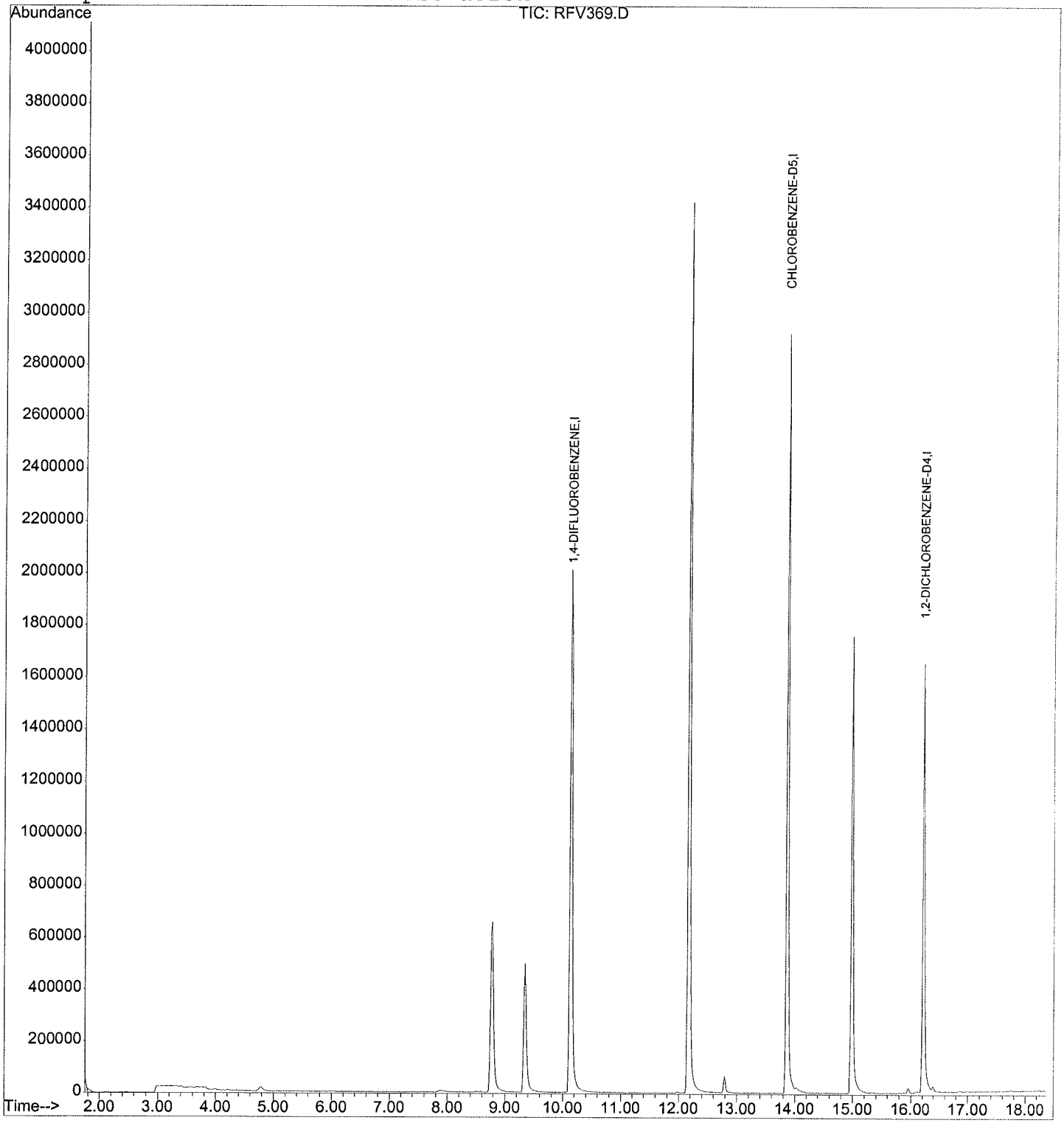
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV369.D
Acq On : 29 Jun 2020 5:31 pm
Sample : 20F183-09 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/22/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/29/20 18:25
Sample ID:	TB15-GW062220	Date Analyzed:	06/29/20 18:25
Lab Samp ID:	F183-10	Dilution Factor:	1
Lab File ID:	RFV371	Matrix	: WATER
Ext Btch ID:	VO01F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.87	10.00	98.7	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV371.D Vial: 16
Acq On : 29 Jun 2020 6:25 pm Operator: VLu
Sample : 20F183-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

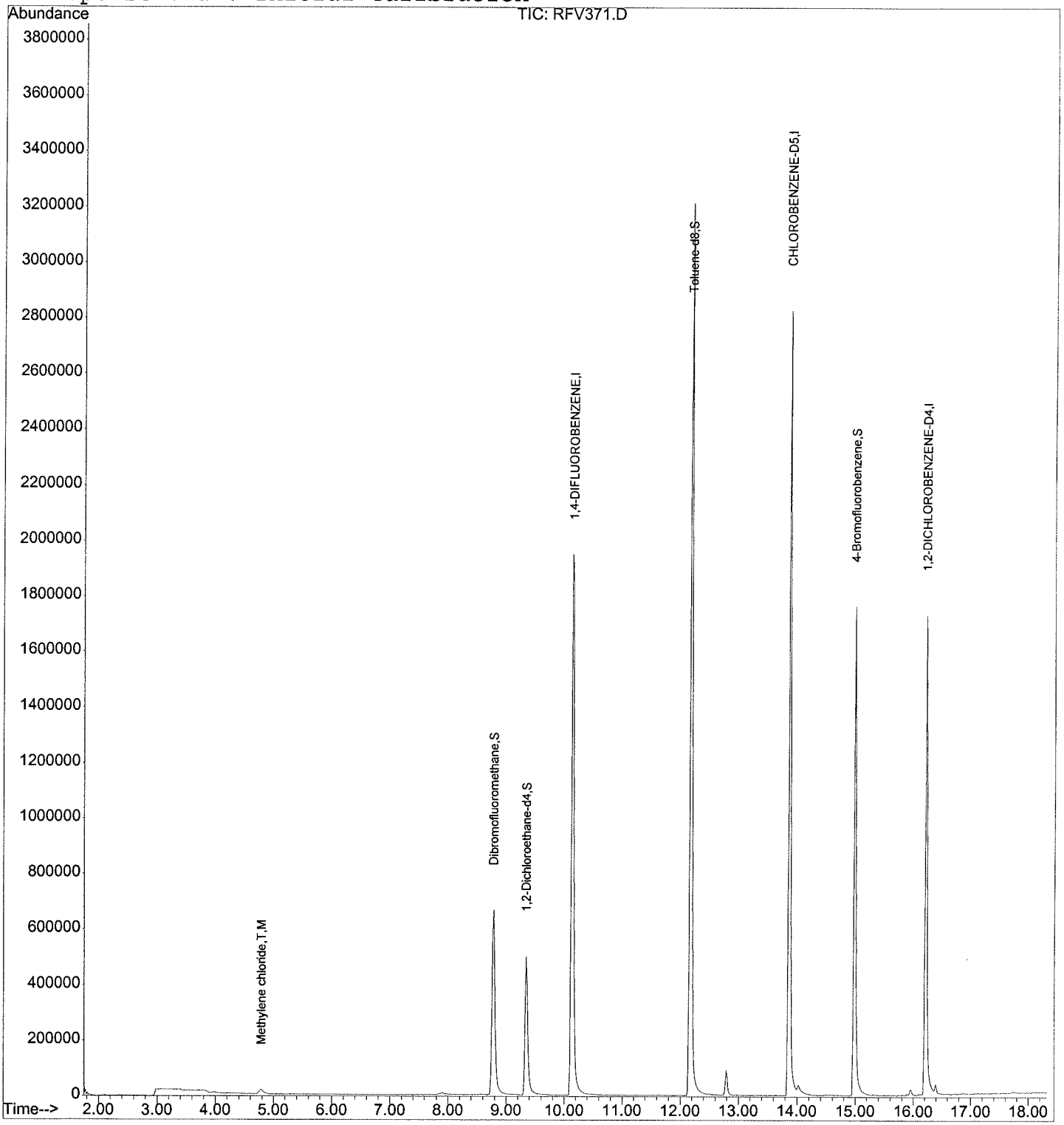
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2709287	10.00	ug/l	0.02
53) CHLOROBENZENE-D5	13.86	117	2209541	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	686997	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	788839	10.34	ug/l	0.02
Spiked Amount 10.000			Recovery =	103.40%		
38) 1,2-Dichloroethane-d4	9.34	65	534138	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.20%		
54) Toluene-d8	12.17	98	2969200	9.87	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.70%		
74) 4-Bromofluorobenzene	14.98	95	880680	10.72	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.20%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	26312	0.24	ug/l	99

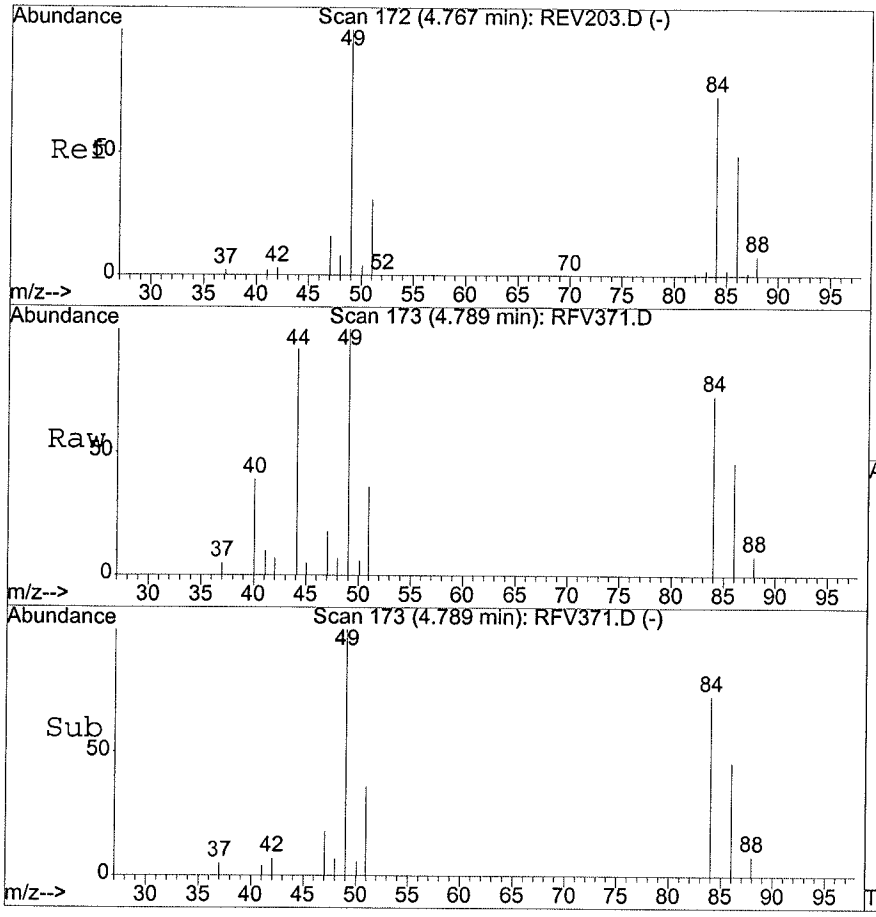
(#) = qualifier out of range (m) = manual integration
RFV371.D VO01E13.M Tue Jun 30 11:17:09 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV371.D Vial: 16
Acq On : 29 Jun 2020 6:25 pm Operator: VLu
Sample : 20F183-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

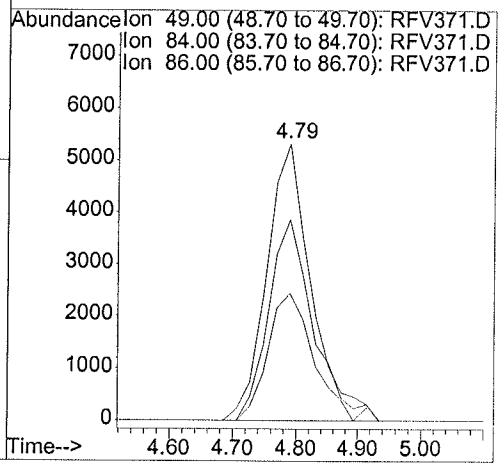




#18
Methylene chloride
Concen: 0.24 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV371.D
Acq: 29 Jun 2020 6:25 pm

Tgt Ion: 49 Resp: 26312

Ion	Ratio	Lower	Upper
49	100		
84	72.5	43.3	103.3
86	47.6	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV371.D Vial: 16
Acq On : 29 Jun 2020 6:25 pm Operator: VLu
Sample : 20F183-10 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.14	114	2686552	10.00	ug/l	0.02
3) CHLOROBENZENE-D5	13.86	117	2203042	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	677958	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV371.D VO01E14.M Tue Jun 30 10:34:15 2020 Page 1

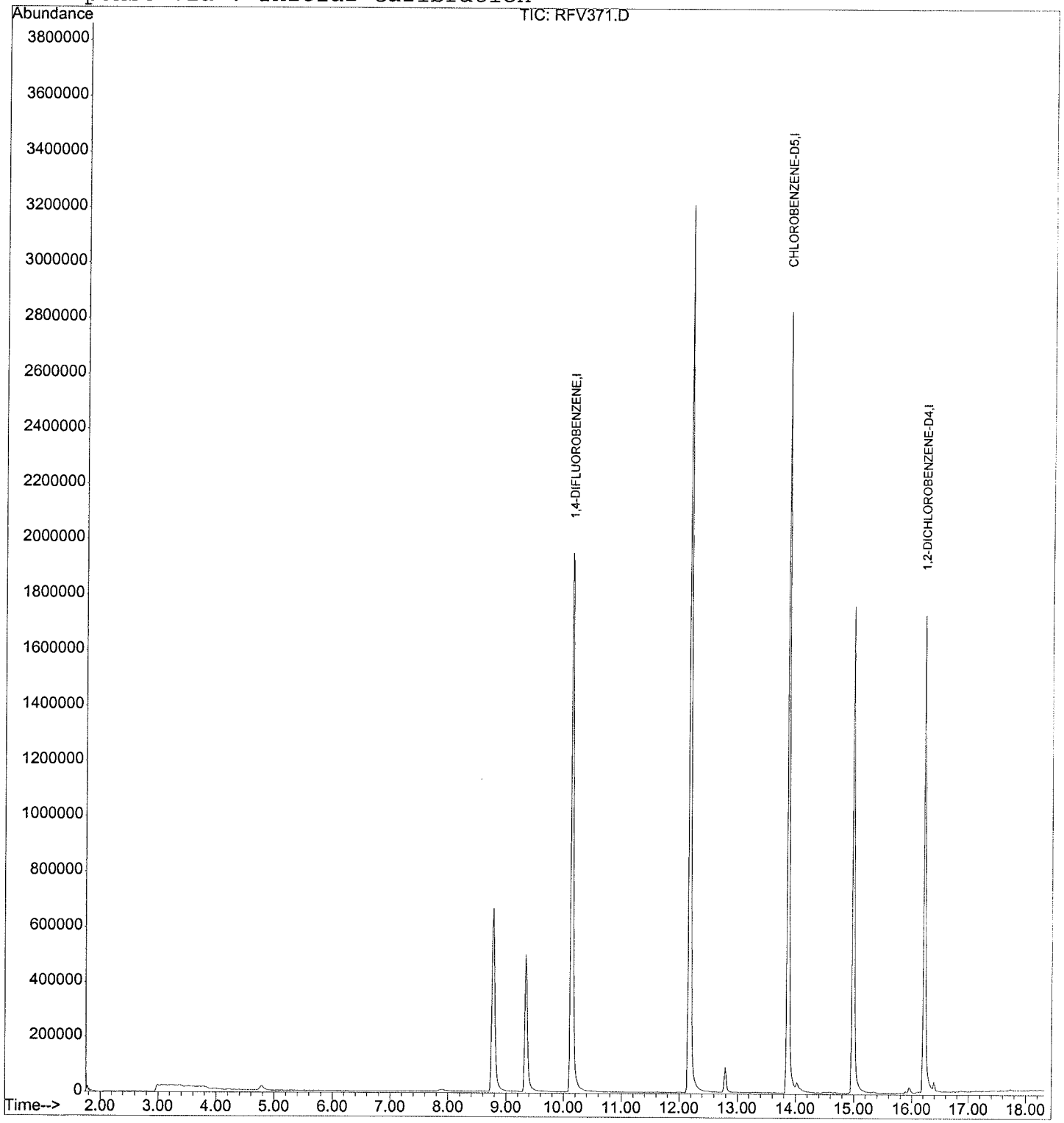
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV371.D
Acq On : 29 Jun 2020 6:25 pm
Sample : 20F183-10 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020

Vial: 16
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/29/20 18:52
Sample ID: EB01-GW062120	Date Analyzed: 06/29/20 18:52
Lab Samp ID: F183-11	Dilution Factor: 1
Lab File ID: RFV372	Matrix : WATER
Ext Btch ID: VO01F17	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.6	10.00	106	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	9.77	10.00	97.7	70-130
DIBROMOFLUOROMETHANE	10.5	10.00	105	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV372.D
Acq On : 29 Jun 2020 6:52 pm
Sample : 20F183-11 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020

Vial: 17
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

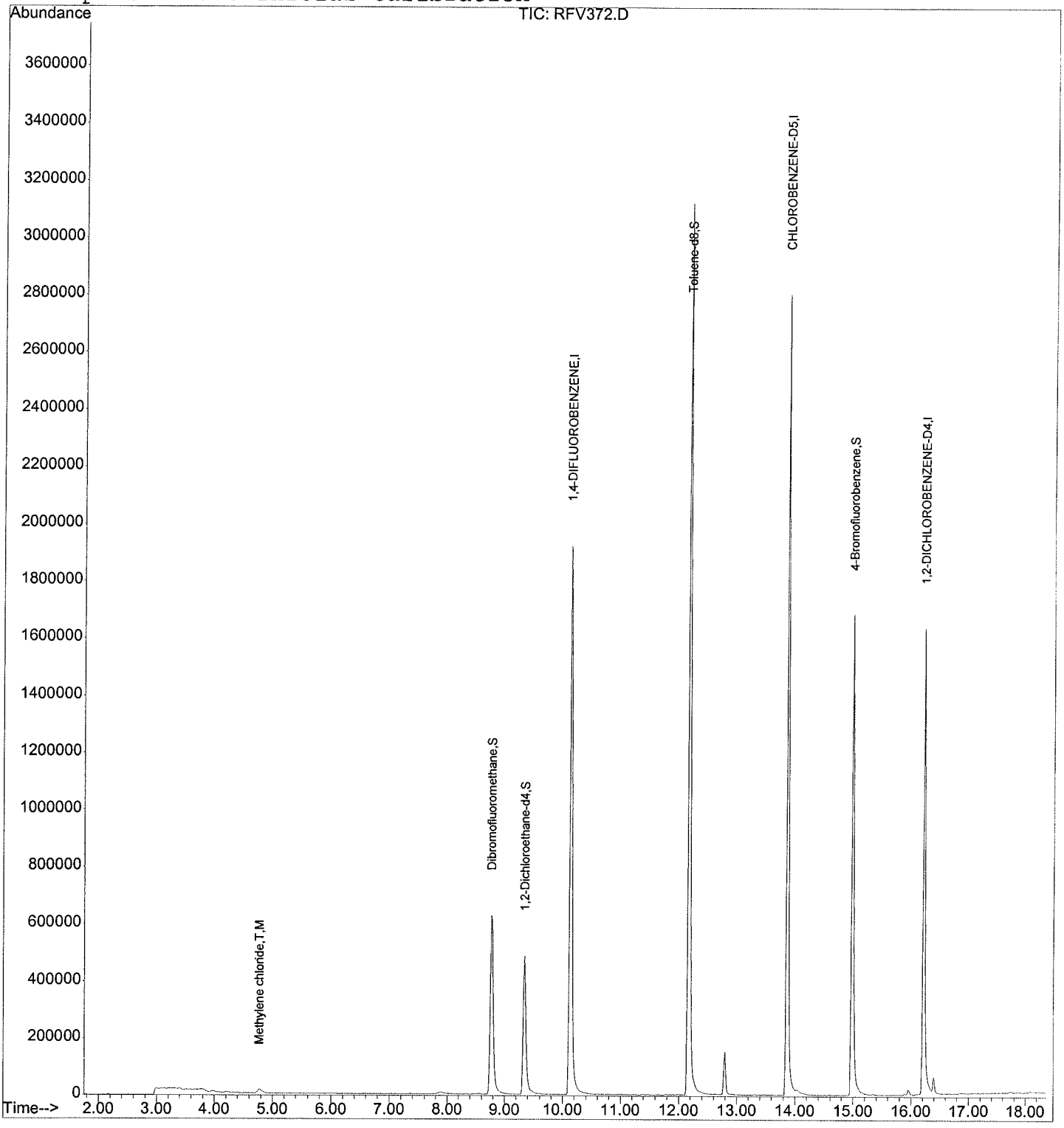
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2600005	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2154505	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	639699	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	769861	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.20%			
38) 1,2-Dichloroethane-d4	9.34	65	516380	10.60	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.00%			
54) Toluene-d8	12.17	98	2864980	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.70%			
74) 4-Bromofluorobenzene	14.98	95	844676	11.04	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.40%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	22368	0.21	ug/l	91

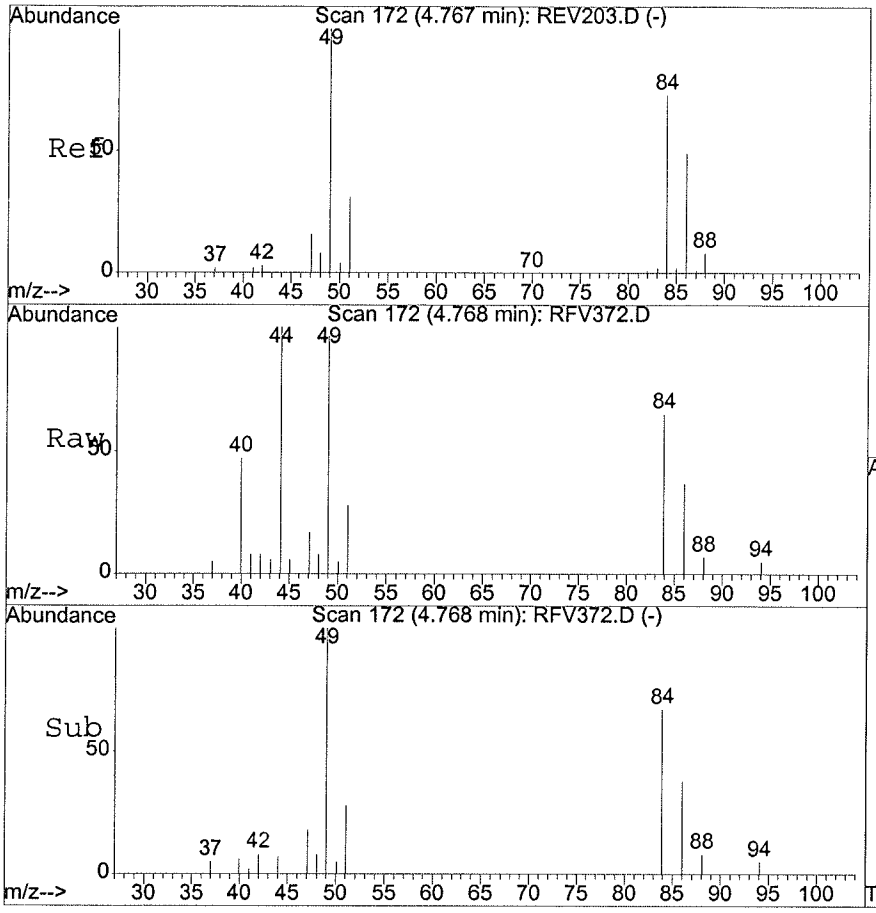
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV372.D Vial: 17
Acq On : 29 Jun 2020 6:52 pm Operator: VLu
Sample : 20F183-11 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

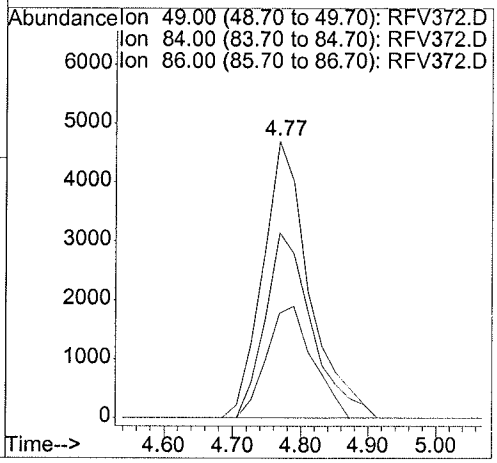




#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV372.D
Acq: 29 Jun 2020 6:52 pm

Tgt Ion: 49 Resp: 22368

Ion	Ratio	Lower	Upper
49	100		
84	67.2	43.3	103.3
86	40.1	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV372.D Vial: 17
Acq On : 29 Jun 2020 6:52 pm Operator: VLu
Sample : 20F183-11 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2599954	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2143367	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	639720	10.00	ug/l	0.00

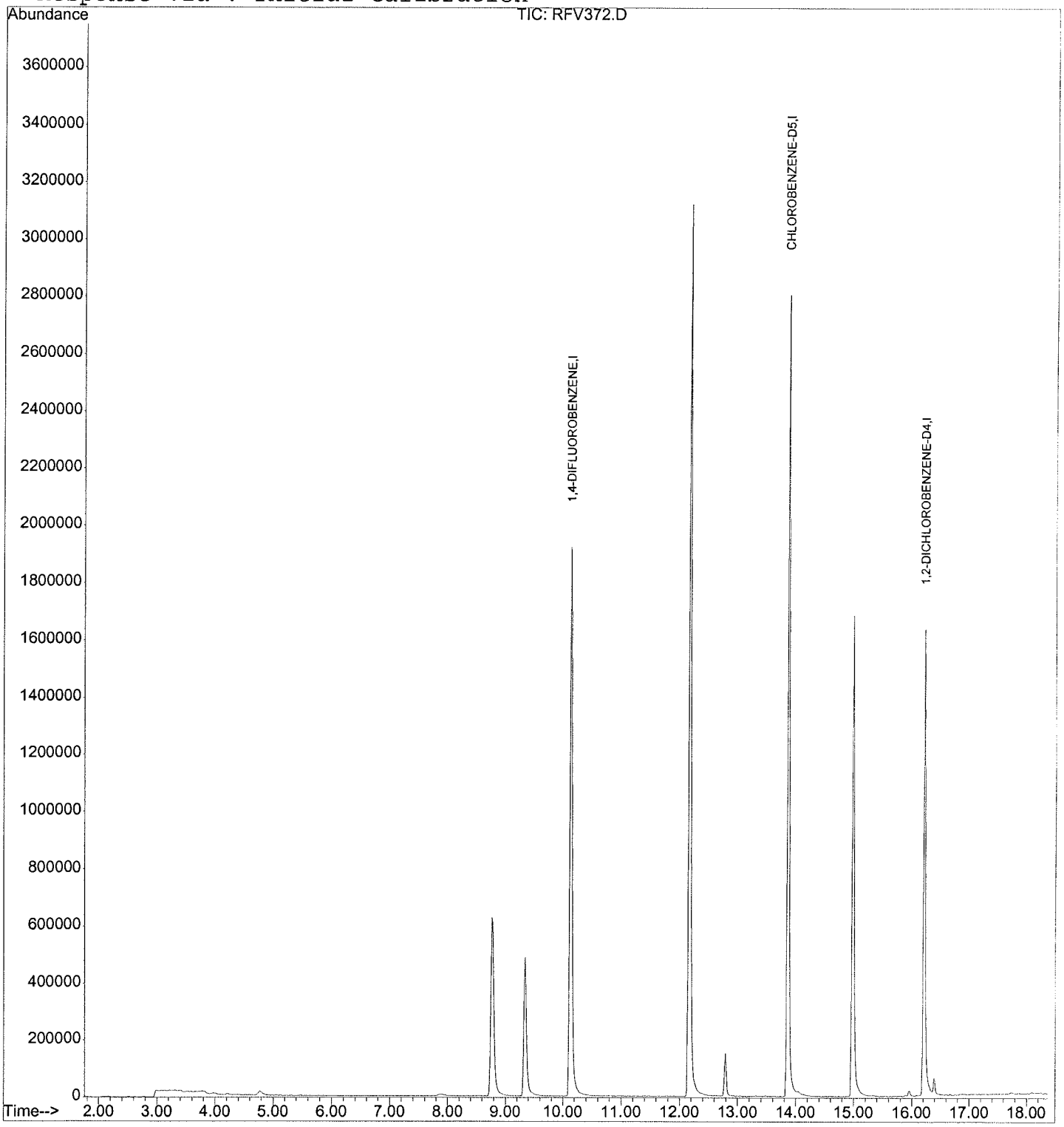
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV372.D VO01E14.M Tue Jun 30 10:34:21 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV372.D Vial: 17
Acq On : 29 Jun 2020 6:52 pm Operator: VLu
Sample : 20F183-11 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/21/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/30/20 20:21 # 07/02/20 12:43
Sample ID:	MW01S-GW062120	Date Analyzed:	06/30/20 20:21 # 07/02/20 12:43
Lab Samp ID:	F183-12 #F183-12I	Dilution Factor:	1 # 5
Lab File ID:	RFV398 #RGV029	Matrix	: WATER
Ext Btch ID:	VO01F18 #VO01G02	% Moisture	: NA
Calib. Ref.:	REV203 #REV203	Instrument ID	: T-001

	PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
	1,1,1-TRICHLOROETHANE	ND	1.0	0.10
	1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
	1,1,2-TRICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHENE	ND	1.0	0.10
	1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
	1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
	1,2-DICHLOROBENZENE	ND	1.0	0.10
	1,2-DICHLOROETHANE	ND	1.0	0.10
	1,2-DICHLOROPROPANE	ND	1.0	0.10
	1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
	1,3-DICHLOROBENZENE	ND	1.0	0.11
	1,4-DICHLOROBENZENE	ND	1.0	0.10
	2-BUTANONE	ND	20	2.5
	2-HEXANONE	ND	20	2.5
	ACETONE	ND	20	2.5
	BENZENE	ND	1.0	0.10
	BROMOCHLOROMETHANE	ND	1.0	0.11
	BROMODICHLOROMETHANE	0.33J	1.0	0.10
	BROMOFORM	ND	1.0	0.15
	BROMOMETHANE	ND	1.0	0.16
	CARBON DISULFIDE	ND	1.0	0.25
	CARBON TETRACHLORIDE	ND	1.0	0.10
	CHLOROBENZENE	ND	1.0	0.10
	CHLOROETHANE	ND	1.0	0.27
	CHLOROFORM	4.0	1.0	0.10
	CHLOROMETHANE	ND	1.0	0.15
	CIS-1,2-DICHLOROETHYLENE	0.47J	1.0	0.10
	DIBROMOCHLOROMETHANE	ND	1.0	0.10
	DICHLORODIFLUOROMETHANE	ND	1.0	0.15
	ETHYLBENZENE	ND	1.0	0.10
	ISOPROPYLBENZENE	ND	1.0	0.10
	M,P-XYLENE	ND	2.0	0.21
	4-METHYL-2-PENTANONE	ND	20	2.5
	METHYLENE CHLORIDE	ND	2.0	0.50
	TERT-BUTYL METHYL ETHER	ND	1.0	0.13
	O-XYLENE	ND	1.0	0.10
	STYRENE	ND	1.0	0.25
#	TETRACHLOROETHENE	160	5.0	0.76
	TOLUENE	ND	1.0	0.10
	TRANS-1,2-DCE	ND	1.0	0.10
	CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
	TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
	TCE	1.0	1.0	0.10
	TRICHLOROFLUOROMETHANE	ND	1.0	0.15
	VINYL CHLORIDE	ND	1.0	0.12
	1,2-DIBROMOETHANE	ND	1.0	0.10
	VINYL ACETATE	ND	2.0	0.25
	TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
	METHYL ACETATE	ND	2.0	0.25

	SURROGATE PARAMETERS	RESULTS	SPK AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-130
	BROMOFLUOROBENZENE	10.3	10.00	103	70-130
	TOLUENE-D8	10.1	10.00	101	70-130
	DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130
#	1,2-DICHLOROETHANE-D4	53.5	50.00	107	70-130
#	BROMOFLUOROBENZENE	51.2	50.00	102	70-130
#	TOLUENE-D8	49.9	50.00	99.7	70-130
#	DIBROMOFLUOROMETHANE	51.5	50.00	103	70-130

Members of the Associated File
Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/30/20 20:21
Sample ID: MW01S-GW062120	Date Analyzed: 06/30/20 20:21
Lab Samp ID: F183-12	Dilution Factor: 1
Lab File ID: RFV398	Matrix : WATER
Ext Btch ID: V001F18	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.33J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.0	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.47J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	150E	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	1.0	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-130
BROMOFLUOROBENZENE	10.3	10.00	103	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV398.D Vial: 18
Acq On : 30 Jun 2020 8:21 pm Operator: VLu
Sample : 20F183-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

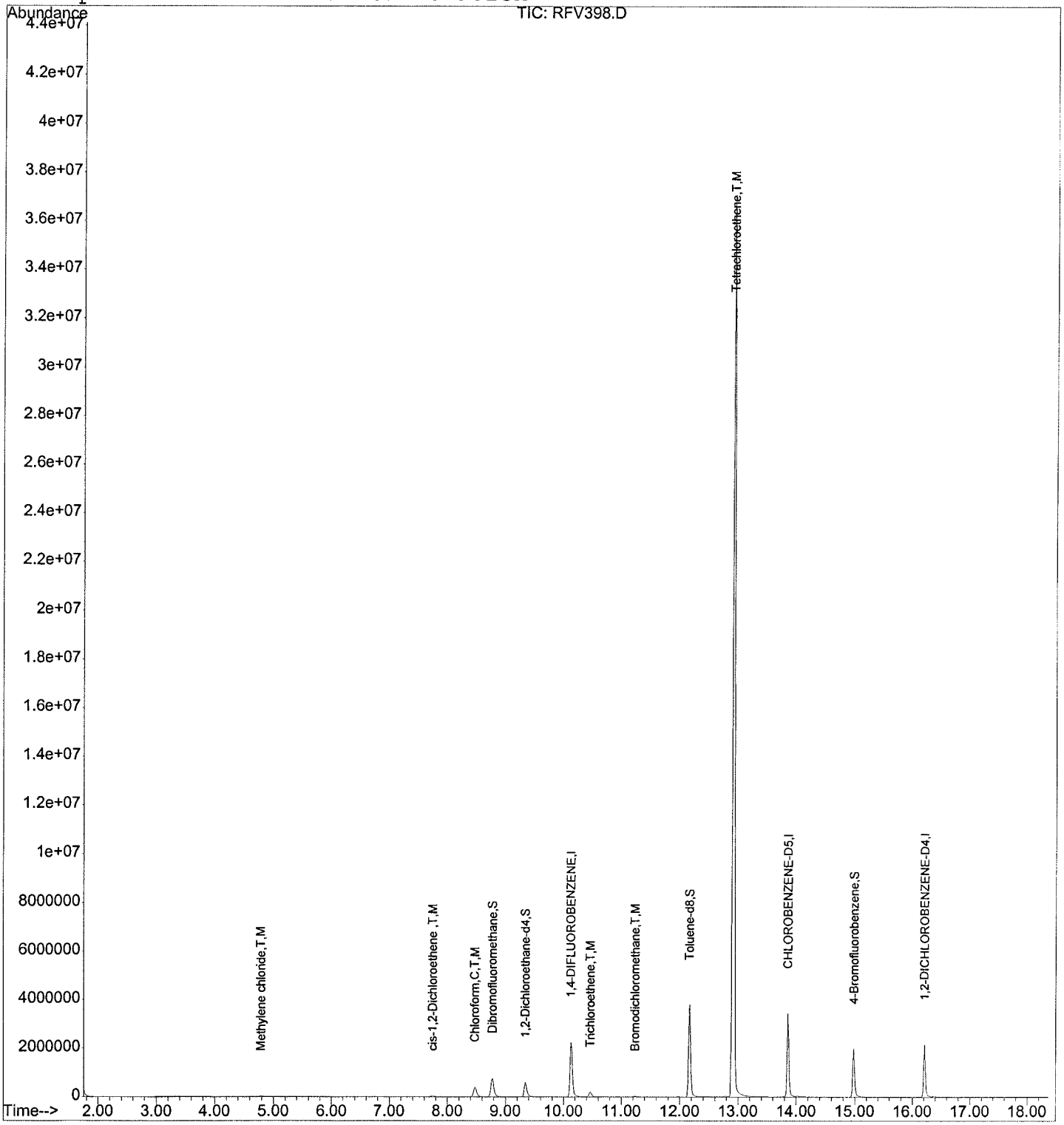
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3044134	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2495225	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	814115	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	908720	10.61	ug/l	0.01
Spiked Amount 10.000			Recovery =	106.10%		
38) 1,2-Dichloroethane-d4	9.34	65	621204	10.89	ug/l	0.00
Spiked Amount 10.000			Recovery =	108.90%		
54) Toluene-d8	12.17	98	3442594	10.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.40%		
74) 4-Bromofluorobenzene	14.98	95	997708	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	44086	0.35	ug/l	99
29) cis-1,2-Dichloroethene	7.75	96	48255	0.47	ug/l	94
33) Chloroform	8.48	83	593124	4.03	ug/l	99
44) Trichloroethene	10.46	130	114208	1.03	ug/l	97
49) Bromodichloromethane	11.23	83	31958	0.33	ug/l	97
59) Tetrachloroethene	12.91	164	13165879	154.01	ug/l E	95

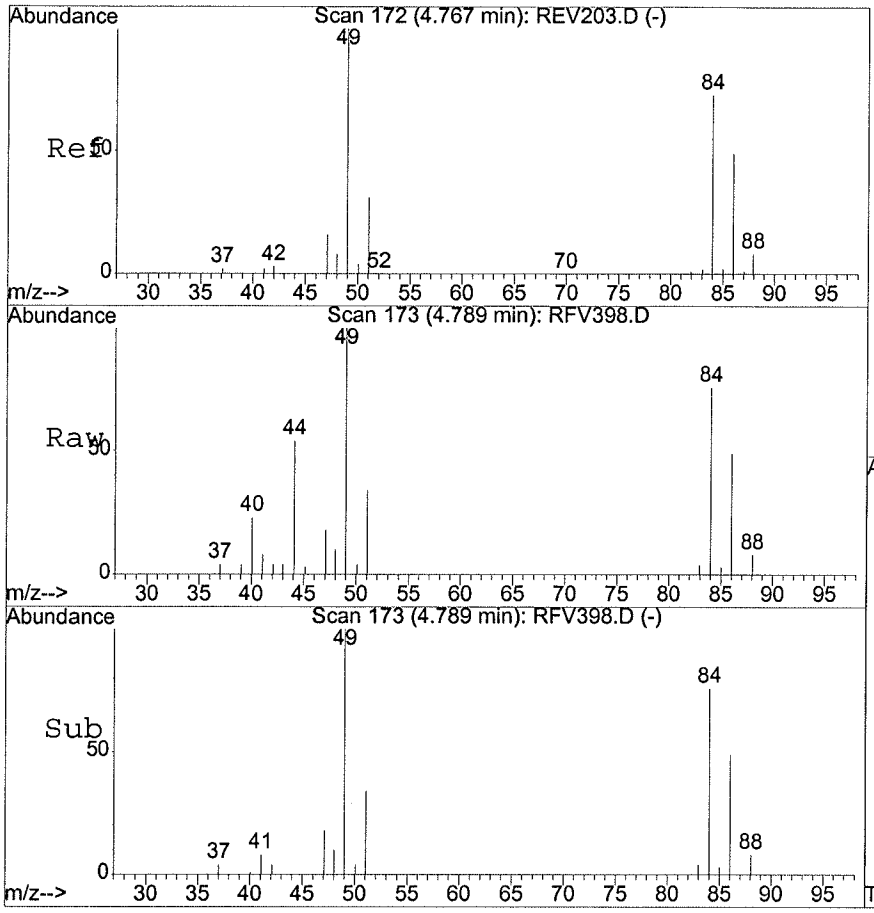
(#) = qualifier out of range (m) = manual integration
RFV398.D VO01E13.M Wed Jul 01 10:42:46 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV398.D Vial: 18
Acq On : 30 Jun 2020 8:21 pm Operator: VLu
Sample : 20F183-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:42 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

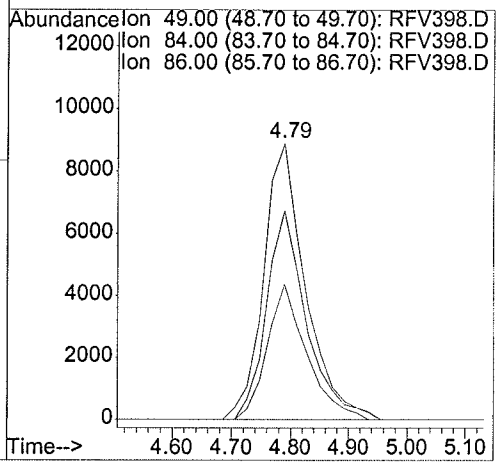


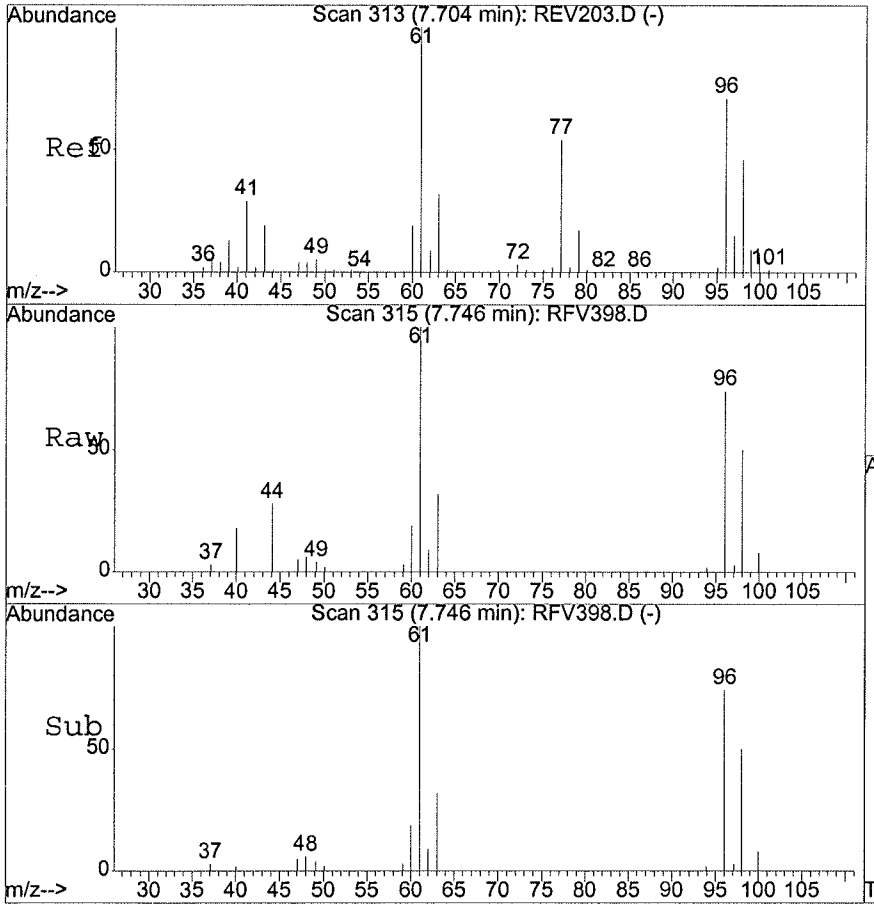


#18
Methylene chloride
Concen: 0.35 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion: 49 Resp: 44086

Ion	Ratio	Lower	Upper
49	100		
84	72.8	43.3	103.3
86	46.4	17.1	77.1

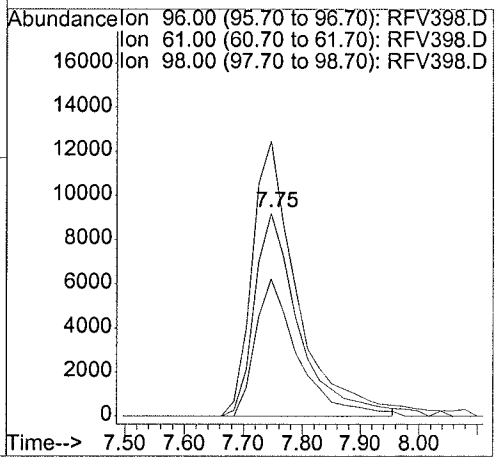


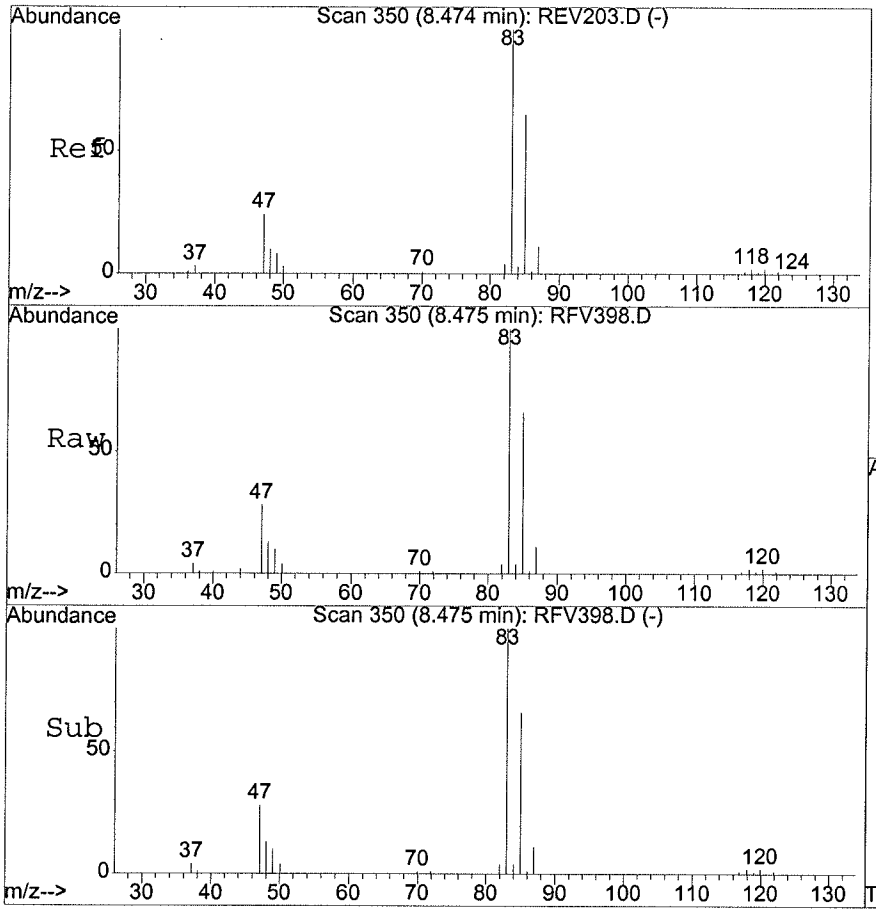


#29
cis-1,2-Dichloroethene
Concen: 0.47 ug/l
RT: 7.75 min Scan# 315
Delta R.T. 0.04 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion: 96 Resp: 48255

Ion	Ratio	Lower	Upper
96	100		
61	137.1	117.3	177.3
98	64.6	35.2	95.2

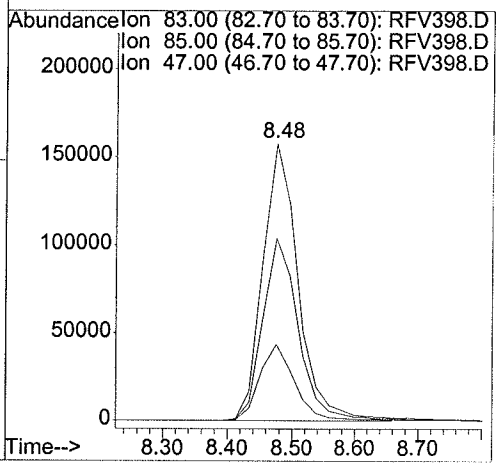


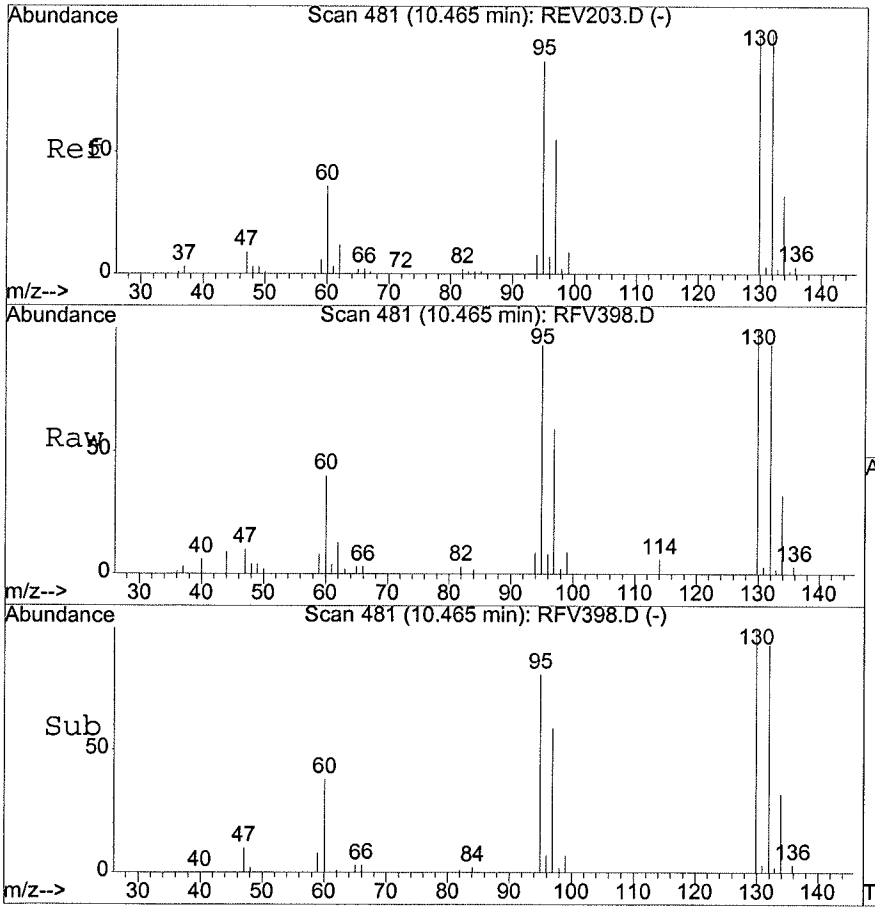


#33
Chloroform
Concen: 4.03 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion: 83 Resp: 593124

Ion	Ratio	Lower	Upper
83	100		
85	66.5	35.3	95.3
47	27.5	0.0	57.1

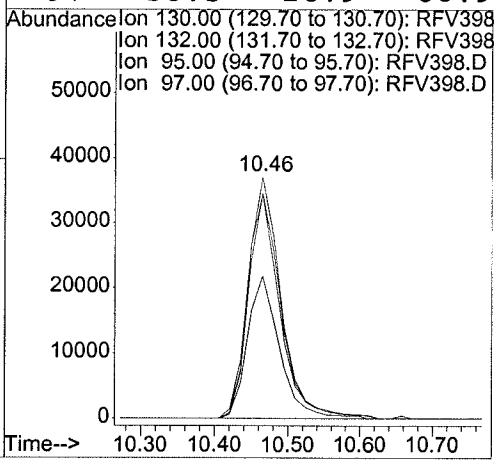


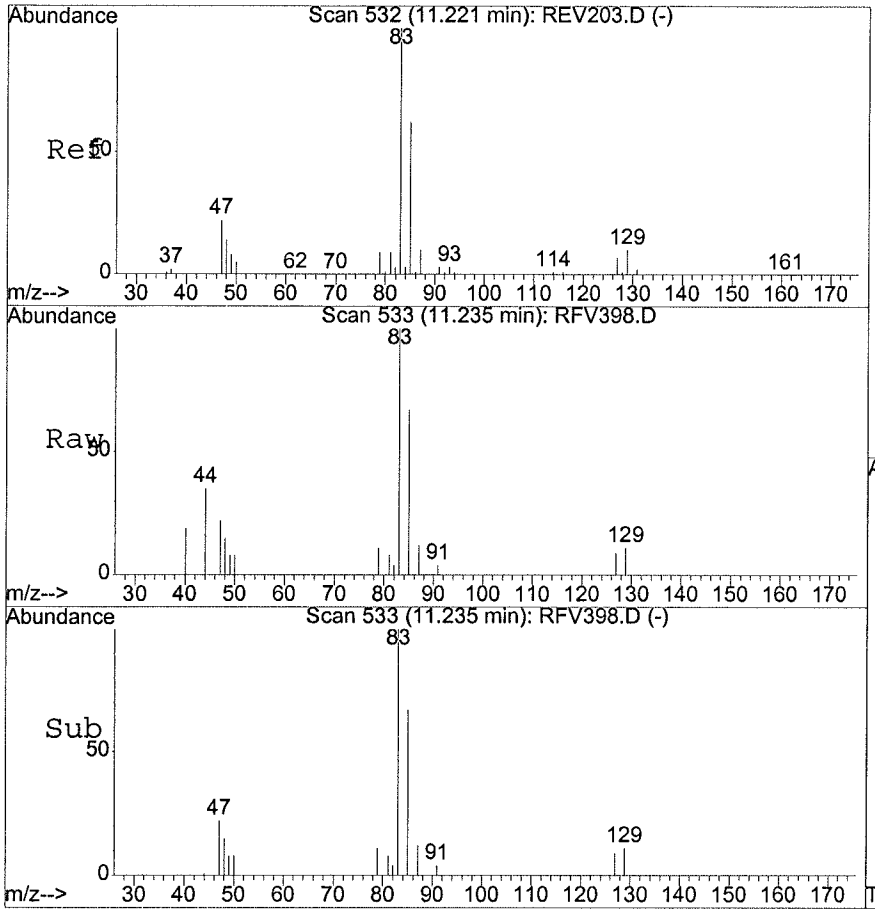


#44
Trichloroethene
Concen: 1.03 ug/l
RT: 10.46 min Scan# 481
Delta R.T. -0.00 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion:130 Resp: 114208

Ion	Ratio	Lower	Upper
130	100		
132	92.8	66.3	126.3
95	93.4	59.7	119.7
97	58.5	26.9	86.9

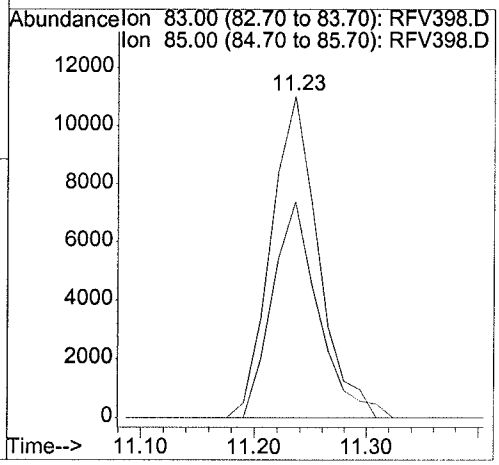


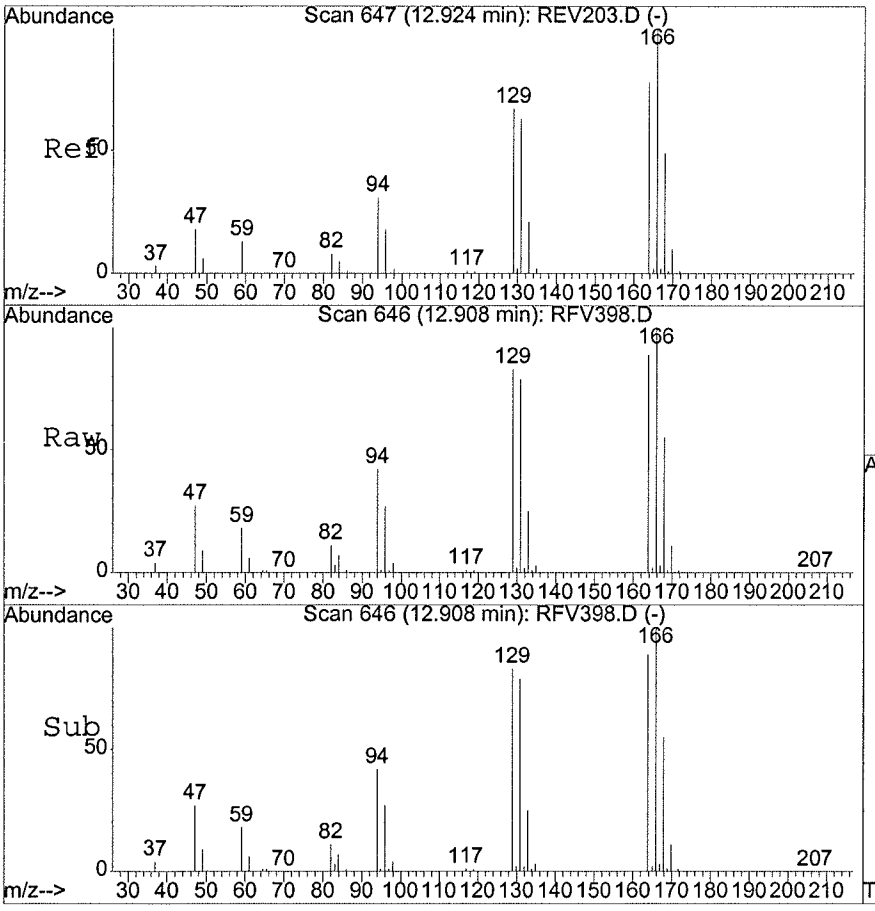


#49
Bromodichloromethane
Concen: 0.33 ug/l
RT: 11.23 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion: 83 Resp: 31958

Ion	Ratio	Lower	Upper
83	100		
85	65.6	33.3	93.3

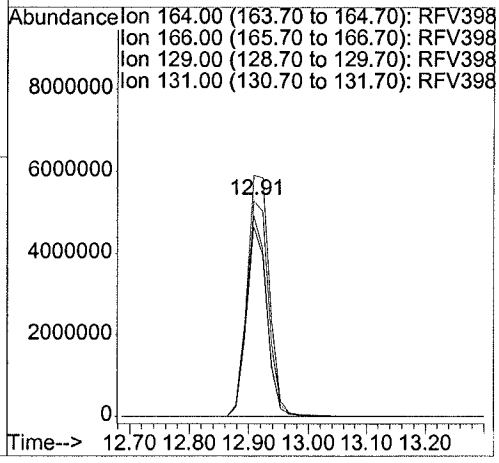




#59
Tetrachloroethene
Concen: 154.01 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.02 min
Lab File: RFV398.D
Acq: 30 Jun 2020 8:21 pm

Tgt Ion:164 Resp:13165879

Ion	Ratio	Lower	Upper
164	100		
166	117.7	99.2	159.2
129	88.8	59.7	119.7
131	84.5	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV398.D Vial: 18
Acq On : 30 Jun 2020 8:21 pm Operator: VLu
Sample : 20F183-12 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3044202	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2483515	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	814142	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV398.D VO01E14.M Wed Jul 01 09:46:00 2020 Page 1

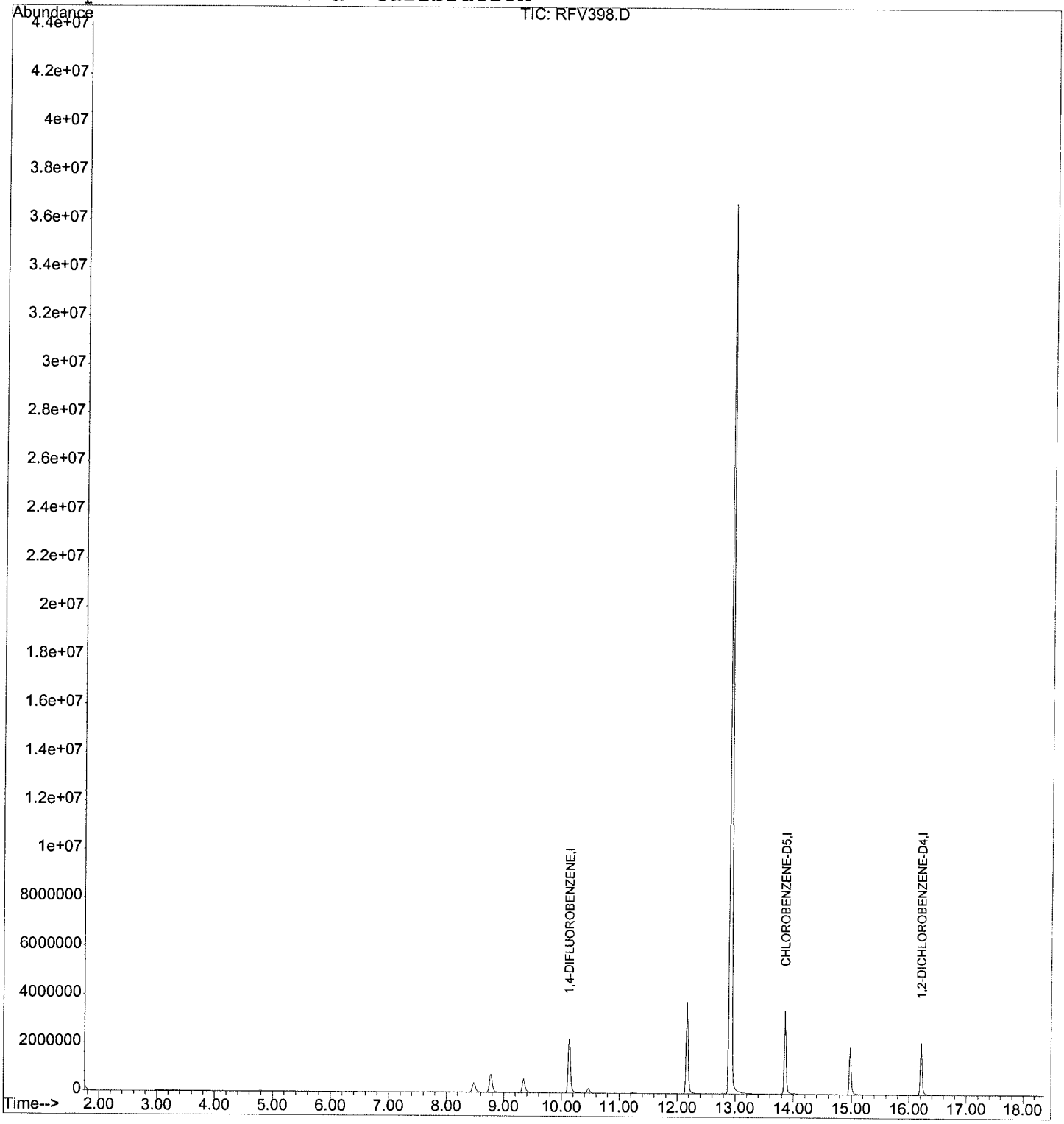
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV398.D
Acq On : 30 Jun 2020 8:21 pm
Sample : 20F183-12 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020

Vial: 18
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected	: 06/21/20
Project	: VA SALT LAKE CITY	Date Received	: 06/23/20
Batch No.	: 20F183	Date Extracted	: 07/02/20 12:43
Sample ID	: MW01S-GW062120DL	Date Analyzed	: 07/02/20 12:43
Lab Samp ID	: F183-12I	Dilution Factor	: 5
Lab File ID	: RGV029	Matrix	: WATER
Ext Btch ID	: VO01G02	% Moisture	: NA
Calib. Ref.	: REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	0.50
1,1,2,2-TETRACHLOROETHANE	ND	5.0	0.55
1,1,2-TRICHLOROETHANE	ND	5.0	0.51
1,1-DICHLOROETHANE	ND	5.0	0.50
1,1-DICHLOROETHENE	ND	5.0	0.50
1,2,3-TRICHLOROBENZENE	ND	5.0	0.75
1,2,4-TRICHLOROBENZENE	ND	5.0	0.76
1,2,4-TRIMETHYLBENZENE	ND	5.0	0.54
1,2-DIBROMO-3-CHLOROPROPANE	ND	10	1.2
1,2-DICHLOROBENZENE	ND	5.0	0.50
1,2-DICHLOROETHANE	ND	5.0	0.50
1,2-DICHLOROPROPANE	ND	5.0	0.50
1,3,5-TRIMETHYLBENZENE	ND	5.0	0.62
1,3-DICHLOROBENZENE	ND	5.0	0.54
1,4-DICHLOROBENZENE	ND	5.0	0.50
2-BUTANONE	ND	100	12
2-HEXANONE	ND	100	12
ACETONE	ND	100	12
BENZENE	ND	5.0	0.50
BROMOCHLOROMETHANE	ND	5.0	0.57
BROMODICHLOROMETHANE	ND	5.0	0.50
BROMOFORM	ND	5.0	0.75
BROMOMETHANE	ND	5.0	0.82
CARBON DISULFIDE	ND	5.0	1.2
CARBON TETRACHLORIDE	ND	5.0	0.50
CHLOROBENZENE	ND	5.0	0.50
CHLOROETHANE	ND	5.0	1.3
CHLOROFORM	4.1J	5.0	0.50
CHLOROMETHANE	ND	5.0	0.75
CIS-1,2-DICHLOROETHYLENE	ND	5.0	0.50
DIBROMOCHLOROMETHANE	ND	5.0	0.50
DICHLORODIFLUOROMETHANE	ND	5.0	0.75
ETHYLBENZENE	ND	5.0	0.50
ISOPROPYLBENZENE	ND	5.0	0.50
M,P-XYLENE	ND	10	1.1
4-METHYL-2-PENTANONE	ND	100	12
METHYLENE CHLORIDE	ND	10	2.5
TERT-BUTYL METHYL ETHER	ND	5.0	0.66
O-XYLENE	ND	5.0	0.50
STYRENE	ND	5.0	1.2
TETRACHLOROETHENE	160	5.0	0.76
TOLUENE	ND	5.0	0.50
TRANS-1,2-DCE	ND	5.0	0.50
CIS-1,3-DICHLOROPROPENE	ND	5.0	0.50
TRANS-1,3-DICHLOROPROPENE	ND	5.0	0.57
TCE	0.97J	5.0	0.50
TRICHLOROFLUOROMETHANE	ND	5.0	0.75
VINYL CHLORIDE	ND	5.0	0.58
1,2-DIBROMOETHANE	ND	5.0	0.52
VINYL ACETATE	ND	10	1.2
TRICHLOROTRIFLUOROETHANE	ND	5.0	0.75
METHYL ACETATE	ND	10	1.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	53.5	50.00	107	70-130
BROMOFLUOROBENZENE	51.2	50.00	102	70-130
TOLUENE-D8	49.9	50.00	99.7	70-130
DIBROMOFLUOROMETHANE	51.5	50.00	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV029.D Vial: 7
Acq On : 2 Jul 2020 12:43 pm Operator: VLu
Sample : 20F183-12I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:41 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

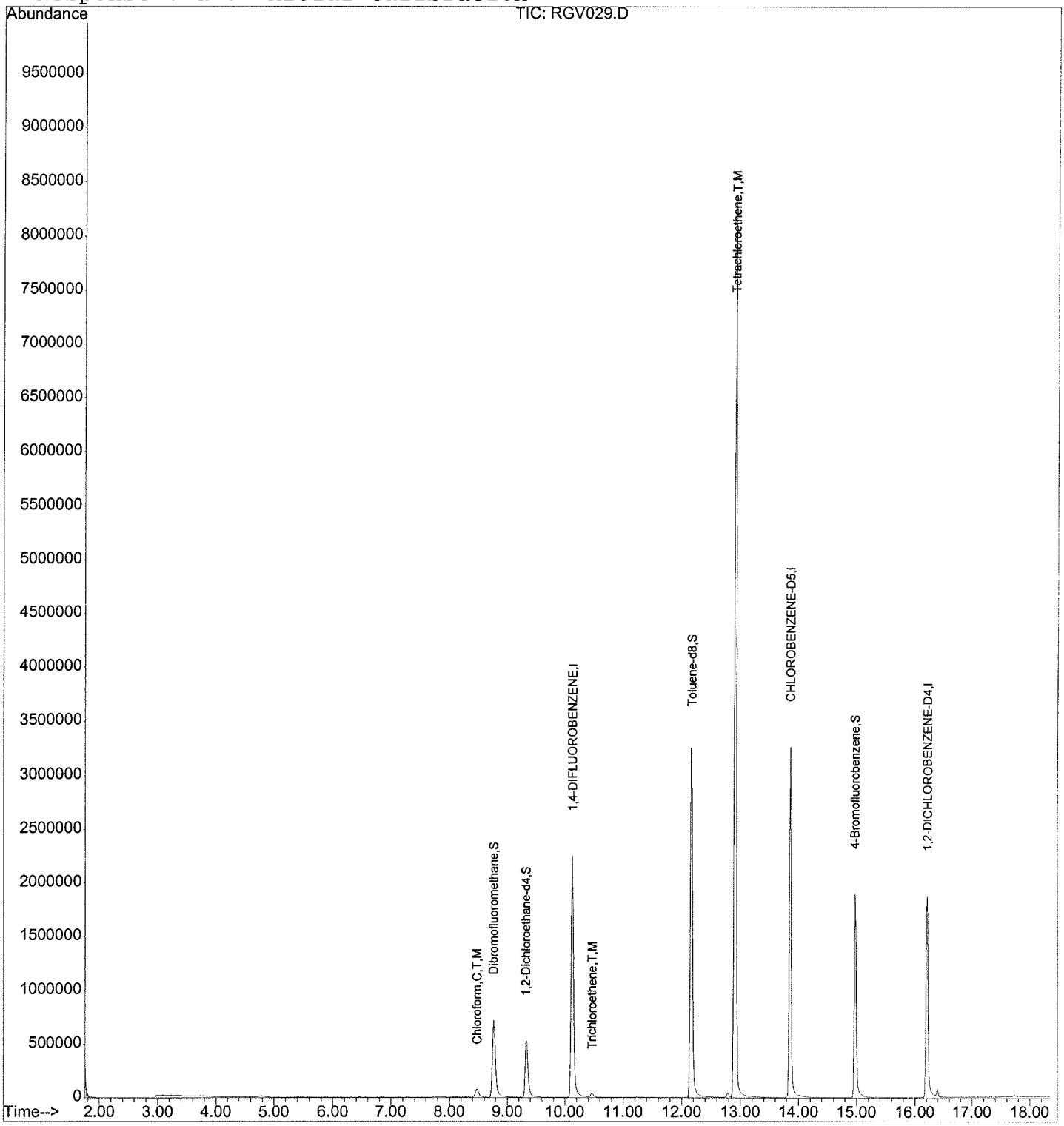
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3003380	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2480892	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	800598	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	871468	10.31	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.10%			
38) 1,2-Dichloroethane-d4	9.32	65	602043	10.69	ug/l	-0.02
Spiked Amount 10.000			Recovery = 106.90%			
54) Toluene-d8	12.17	98	3367036	9.97	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.70%			
74) 4-Bromofluorobenzene	14.97	95	980457	10.24	ug/l	-0.02
Spiked Amount 10.000			Recovery = 102.40%			
Target Compounds						Qvalue
33) Chloroform	8.47	83	119277	0.82	ug/l	98
44) Trichloroethene	10.46	130	21204	0.19	ug/l	97
59) Tetrachloroethene	12.91	164	2731138	32.13	ug/l	99

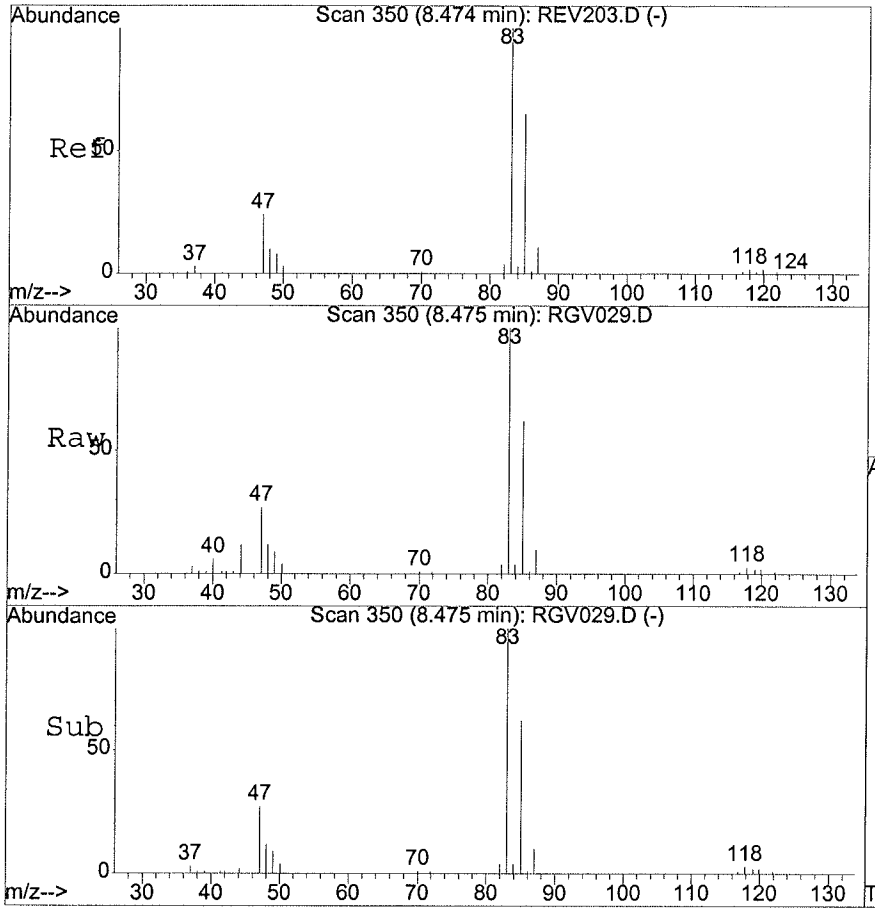
(#) = qualifier out of range (m) = manual integration
RGV029.D VO01E13.M Mon Jul 06 13:41:20 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV029.D Vial: 7
Acq On : 2 Jul 2020 12:43 pm Operator: VLu
Sample : 20F183-12I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:41 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

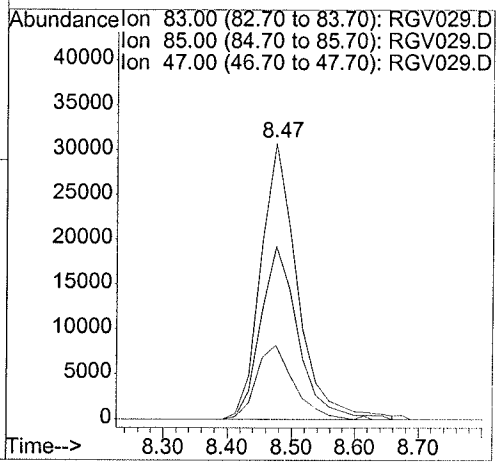


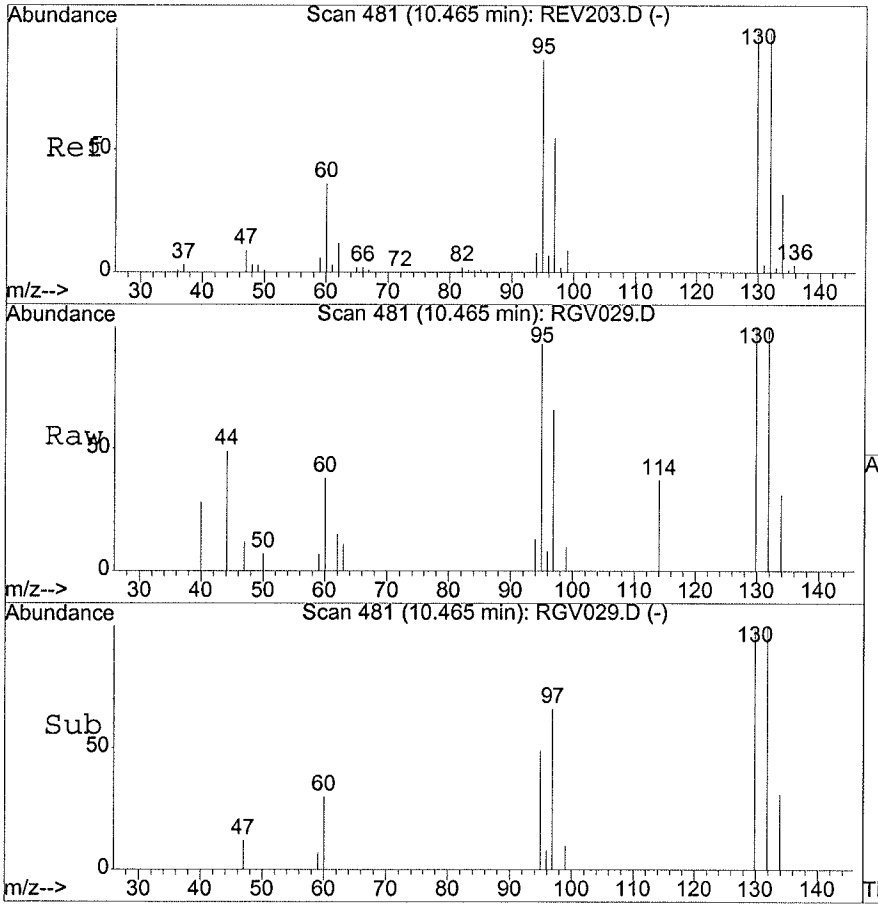


#33
Chloroform
Concen: 0.82 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RGV029.D
Acq: 2 Jul 2020 12:43 pm

Tgt Ion: 83 Resp: 119277

Ion	Ratio	Lower	Upper
83	100		
85	64.0	35.3	95.3
47	28.1	0.0	57.1

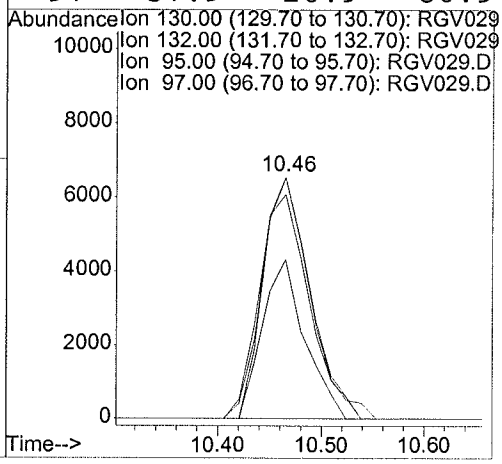


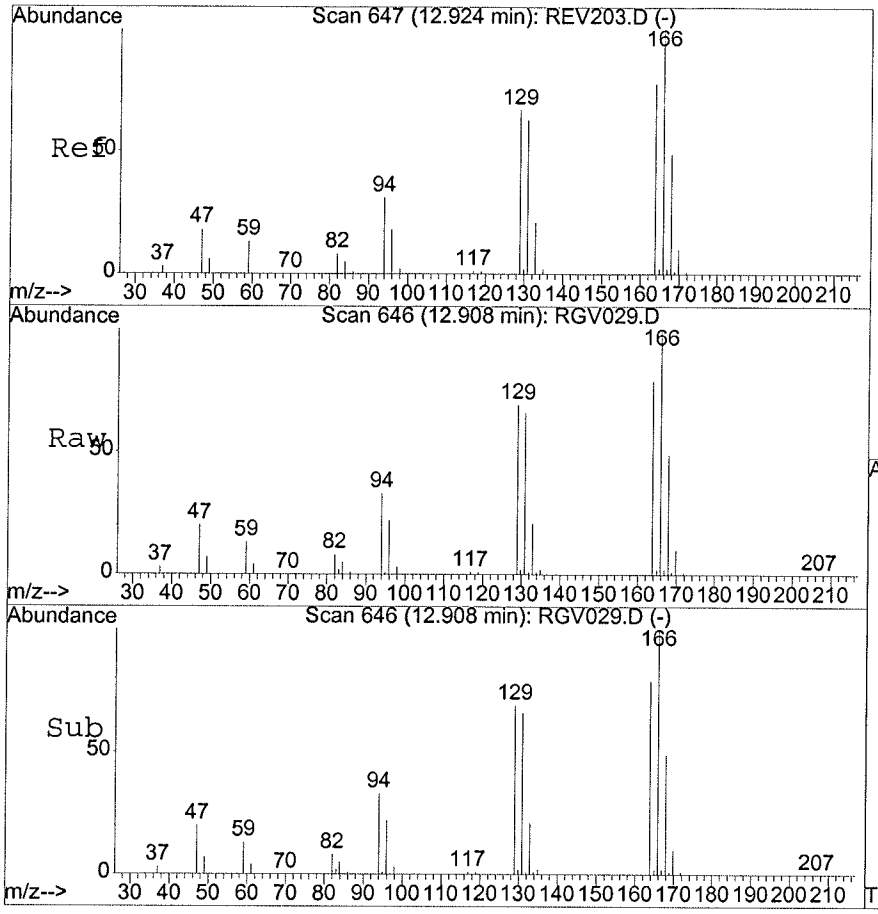


#44
Trichloroethene
Concen: 0.19 ug/l
RT: 10.46 min Scan# 481
Delta R.T. -0.00 min
Lab File: RGV029.D
Acq: 2 Jul 2020 12:43 pm

Tgt Ion:130 Resp: 21204

Ion	Ratio	Lower	Upper
130	100		
132	96.5	66.3	126.3
95	96.0	59.7	119.7
97	57.9	26.9	86.9

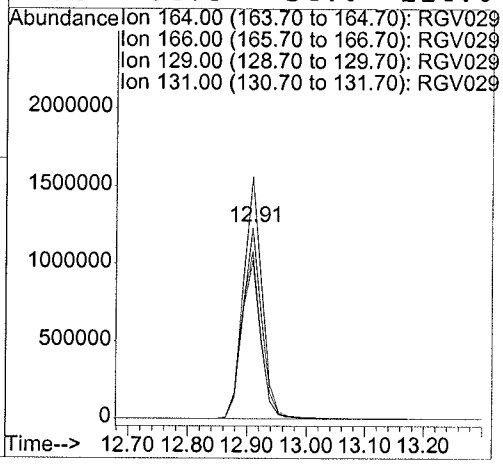




#59
Tetrachloroethene
Concen: 32.13 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.02 min
Lab File: RGV029.D
Acq: 2 Jul 2020 12:43 pm

Tgt Ion:164 Resp: 2731138

Ion	Ratio	Lower	Upper
164	100		
166	126.5	99.2	159.2
129	89.4	59.7	119.7
131	84.8	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV029.D Vial: 7
Acq On : 2 Jul 2020 12:43 pm Operator: VLu
Sample : 20F183-12I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 9:53 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3003448	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2477467	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	800625	10.00	ug/l	0.00

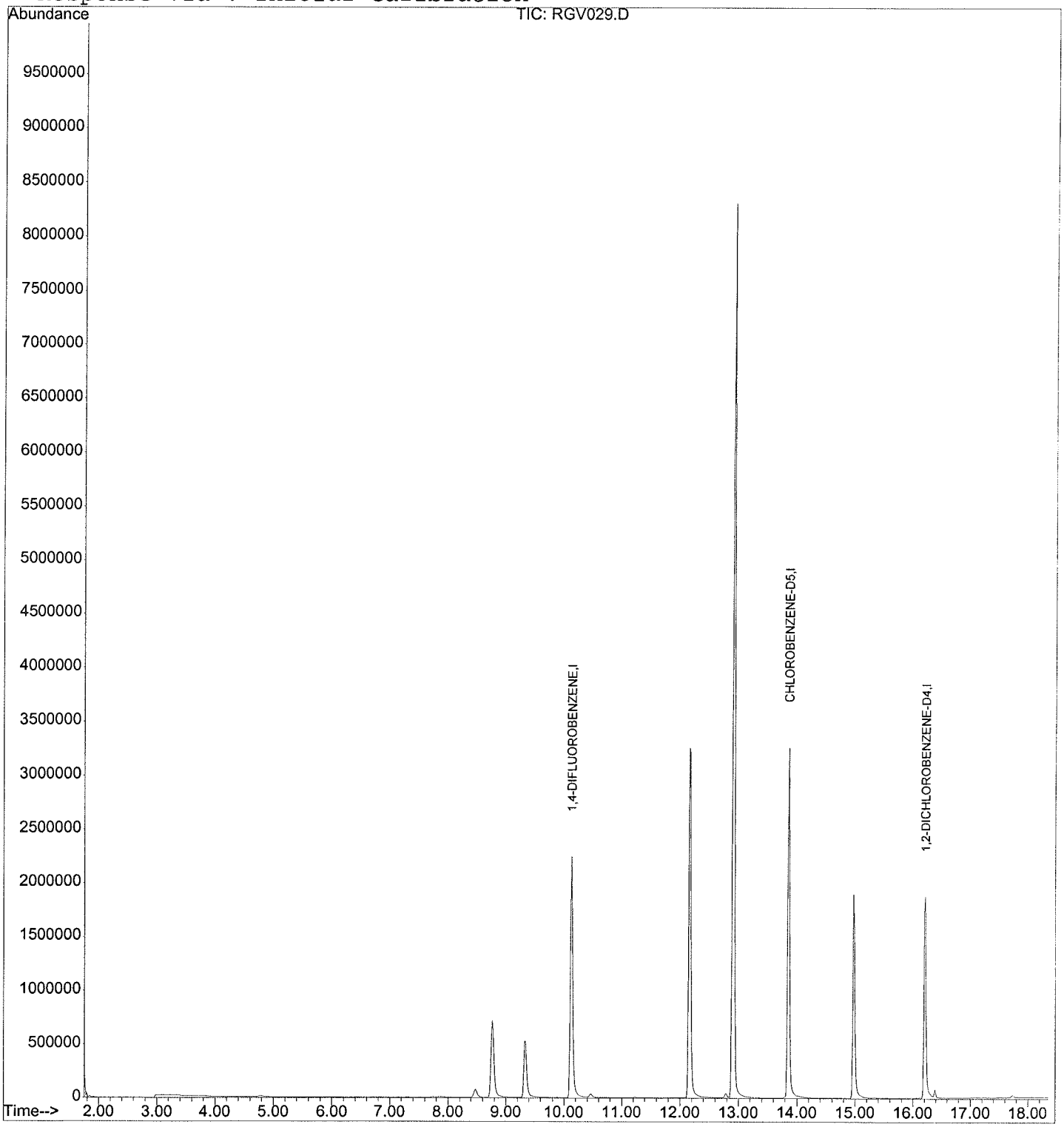
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RGV029.D VO01E14.M Mon Jul 06 12:31:50 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV029.D Vial: 7
Acq On : 2 Jul 2020 12:43 pm Operator: VLu
Sample : 20F183-12I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 9:53 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183
Sample ID: FD01-GW062120
Lab Samp ID: F183-13 #F183-13I
Lab File ID: RFV399 #RGV030
Ext Btch ID: VO01F18 #VO01G02
Calib. Ref.: REV203 #REV203

Date Collected: 06/21/20
Date Received: 06/23/20
Date Extracted: 06/30/20 20:48 # 07/02/20 13:10
Date Analyzed: 06/30/20 20:48 # 07/02/20 13:10
Dilution Factor: 1 # 5
Matrix : WATER
% Moisture : NA
Instrument ID : T-001

	PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
	1,1,1-TRICHLOROETHANE	ND	1.0	0.10
	1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
	1,1,2-TRICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHANE	ND	1.0	0.10
	1,1-DICHLOROETHENE	ND	1.0	0.10
	1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
	1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
	1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
	1,2-DICHLOROBENZENE	ND	1.0	0.10
	1,2-DICHLOROETHANE	ND	1.0	0.10
	1,2-DICHLOROPROPANE	ND	1.0	0.10
	1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
	1,3-DICHLOROBENZENE	ND	1.0	0.11
	1,4-DICHLOROBENZENE	ND	1.0	0.10
	2-BUTANONE	ND	20	2.5
	2-HEXANONE	ND	20	2.5
	ACETONE	ND	20	2.5
	BENZENE	ND	1.0	0.10
	BROMOCHLOROMETHANE	ND	1.0	0.11
	BROMODICHLOROMETHANE	0.33J	1.0	0.10
	BROMOFORM	ND	1.0	0.15
	BROMOMETHANE	ND	1.0	0.16
	CARBON DISULFIDE	ND	1.0	0.25
	CARBON TETRACHLORIDE	ND	1.0	0.10
	CHLOROBENZENE	ND	1.0	0.10
	CHLOROETHANE	ND	1.0	0.27
	CHLOROFORM	4.0	1.0	0.10
	CHLOROMETHANE	ND	1.0	0.15
	CIS-1,2-DICHLOROETHYLENE	0.48J	1.0	0.10
	DIBROMOCHLOROMETHANE	ND	1.0	0.10
	DICHLORODIFLUOROMETHANE	ND	1.0	0.15
	ETHYLBENZENE	ND	1.0	0.10
	ISOPROPYLBENZENE	ND	1.0	0.10
	M,P-XYLENE	ND	2.0	0.21
	4-METHYL-2-PENTANONE	ND	20	2.5
	METHYLENE CHLORIDE	ND	2.0	0.50
	TERT-BUTYL METHYL ETHER	ND	1.0	0.13
	O-XYLENE	ND	1.0	0.10
	STYRENE	ND	1.0	0.25
#	TETRACHLOROETHENE	150	5.0	0.76
	TOLUENE	ND	1.0	0.10
	TRANS-1,2-DCE	ND	1.0	0.10
	CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
	TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
	TCE	1.0	1.0	0.10
	TRICHLOROFLUOROMETHANE	ND	1.0	0.15
	VINYL CHLORIDE	ND	1.0	0.12
	1,2-DIBROMOETHANE	ND	1.0	0.10
	VINYL ACETATE	ND	2.0	0.25
	TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
	METHYL ACETATE	ND	2.0	0.25

	SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
	1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
	BROMOFLUOROBENZENE	10.4	10.00	104	70-130
	TOLUENE-D8	10.1	10.00	101	70-130
	DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130
#	1,2-DICHLOROETHANE-D4	51.1	50.00	102	70-130
#	BROMOFLUOROBENZENE	50.9	50.00	102	70-130
#	TOLUENE-D8	50.9	50.00	102	70-130
#	DIBROMOFLUOROMETHANE	51.7	50.00	103	70-130

Members of the Associated File
Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/30/20 20:48
Sample ID: FD01-GW062120	Date Analyzed: 06/30/20 20:48
Lab Samp ID: F183-13	Dilution Factor: 1
Lab File ID: RFV399	Matrix : WATER
Ext Btch ID: VO01F18	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.33J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.0	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.48J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	160E	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	1.0	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
BROMOFLUOROBENZENE	10.4	10.00	104	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV399.D Vial: 19
Acq On : 30 Jun 2020 8:48 pm Operator: VLu
Sample : 20F183-13 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:40 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

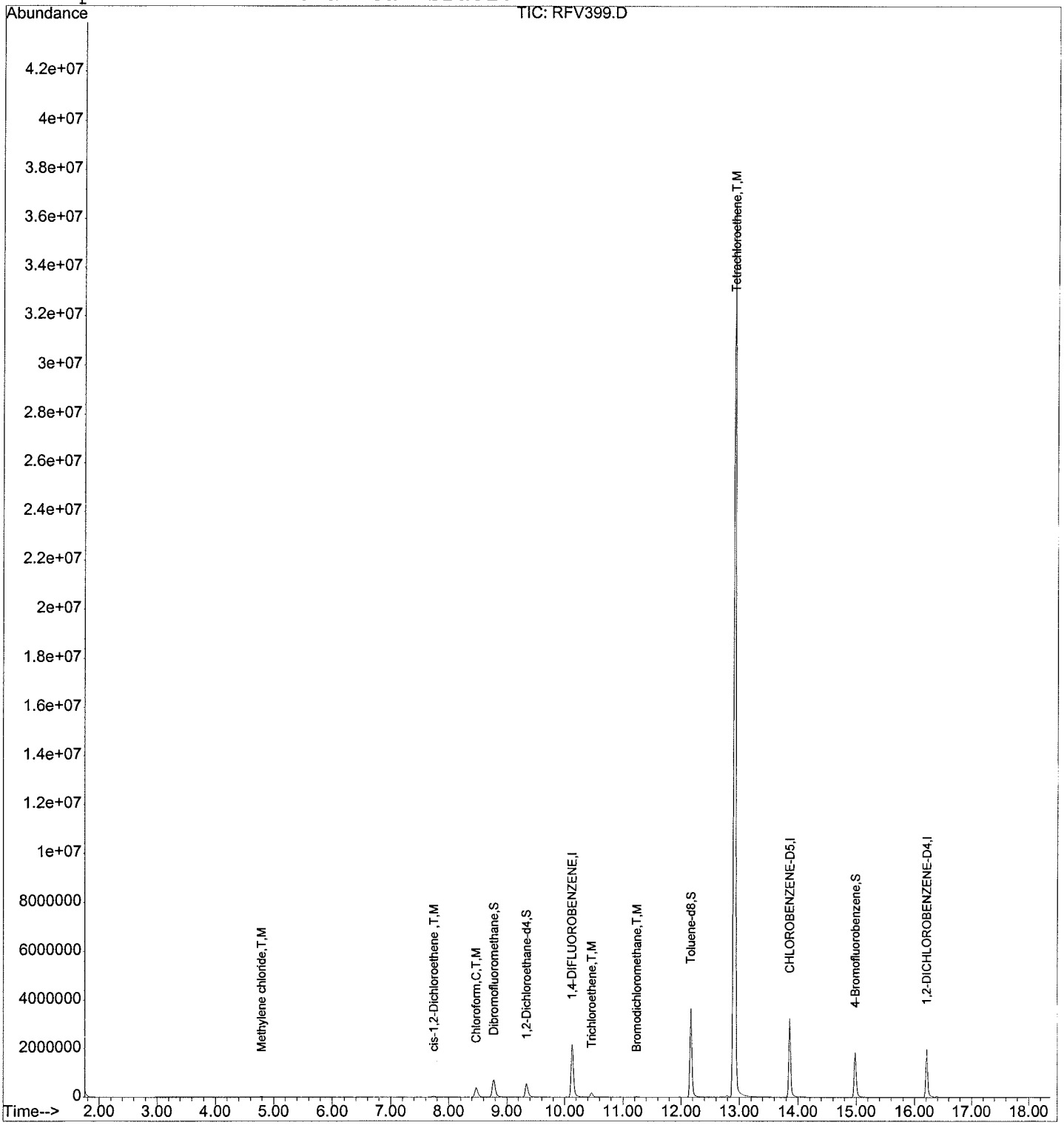
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2927222	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2394427	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	760601	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	855034	10.38	ug/l	0.01
Spiked Amount 10.000			Recovery =	103.80%		
38) 1,2-Dichloroethane-d4	9.34	65	587346	10.70	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.00%		
54) Toluene-d8	12.17	98	3300578	10.13	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.30%		
74) 4-Bromofluorobenzene	14.98	95	941876	10.36	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.60%		
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	44186	0.37	ug/l	93
29) cis-1,2-Dichloroethene	7.75	96	47259	0.48	ug/l	92
33) Chloroform	8.47	83	565470	4.00	ug/l	99
44) Trichloroethene	10.46	130	110114	1.03	ug/l	98
49) Bromodichloromethane	11.23	83	30609	0.33	ug/l	89
59) Tetrachloroethene	12.91	164	12825911	156.35	ug/l E	96

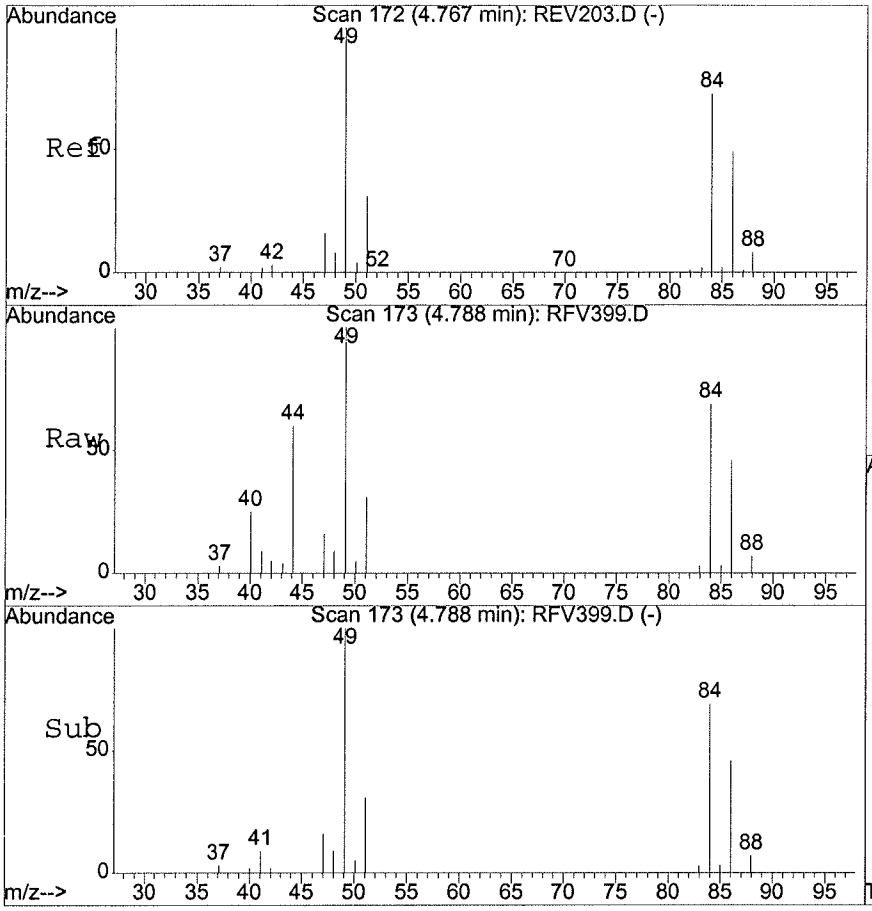
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV399.D Vial: 19
Acq On : 30 Jun 2020 8:48 pm Operator: VLu
Sample : 20F183-13 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:40 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

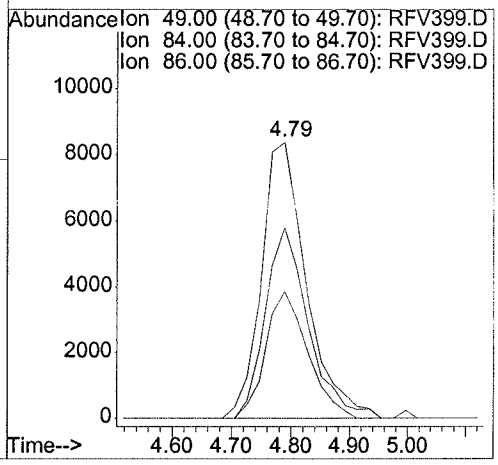


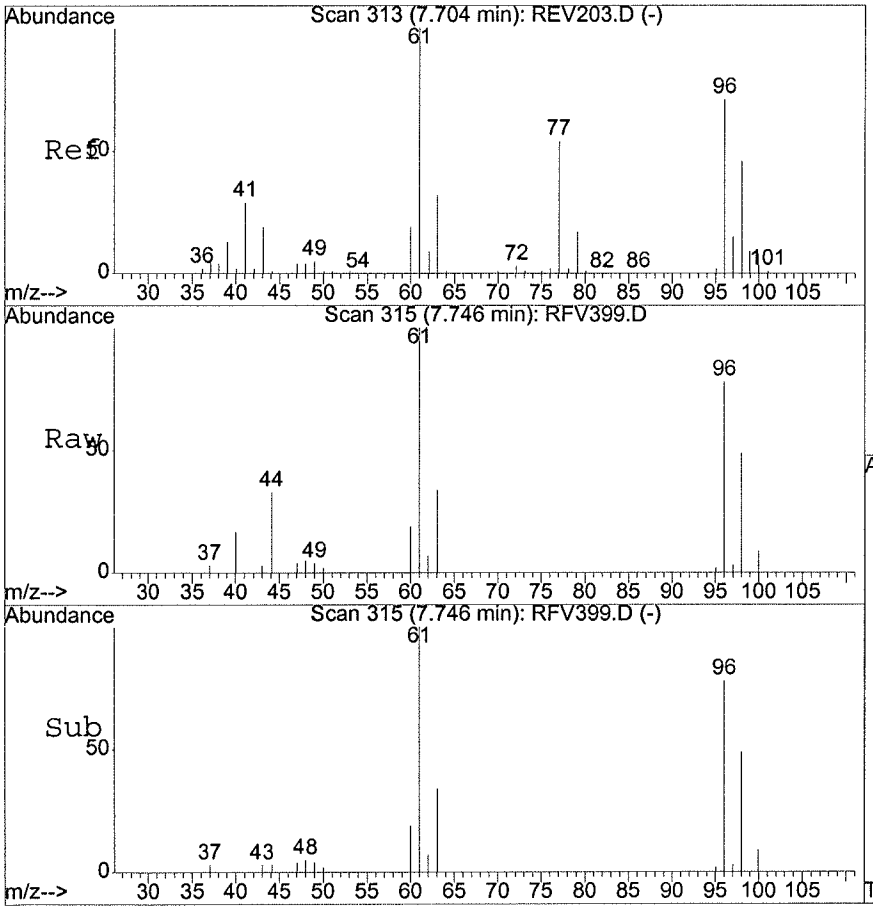


#18
Methylene chloride
Concen: 0.37 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion: 49 Resp: 44186

Ion	Ratio	Lower	Upper
49	100		
84	66.4	43.3	103.3
86	43.1	17.1	77.1

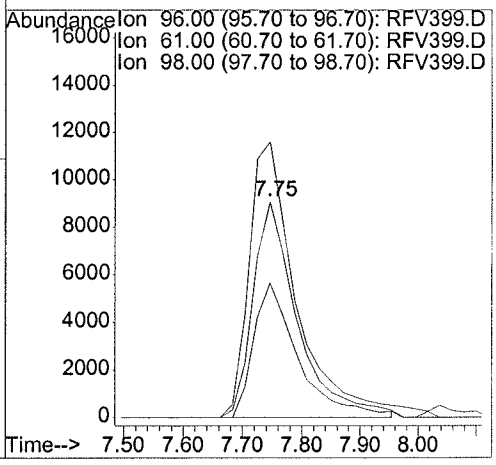


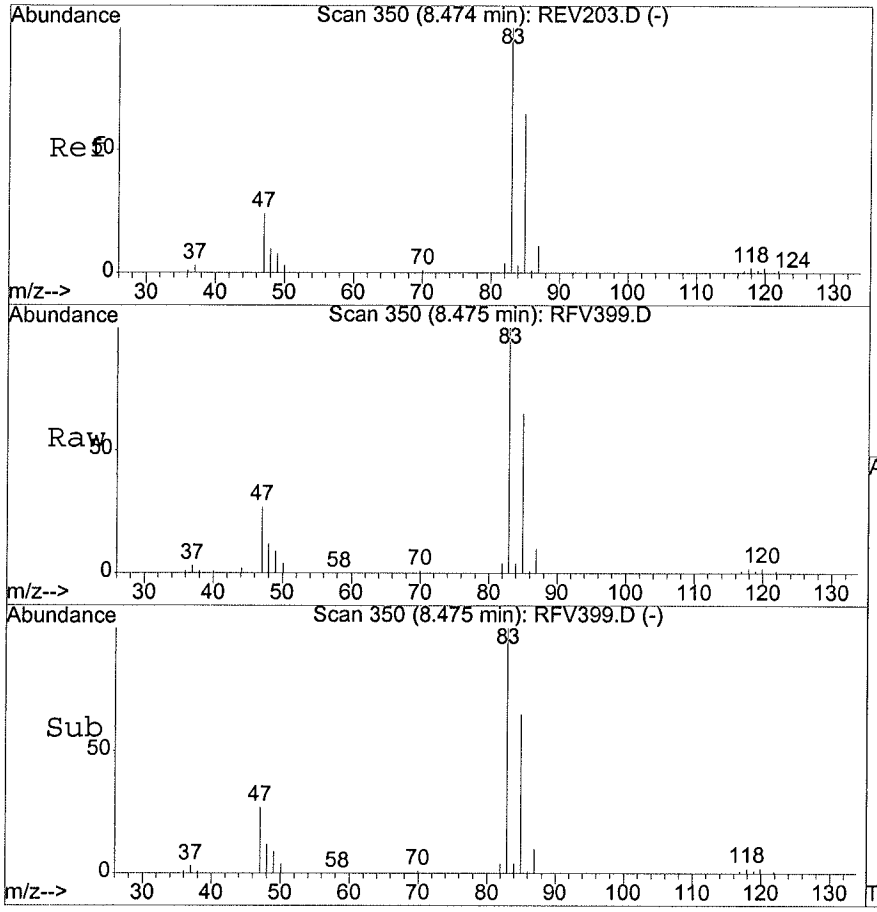


#29
cis-1,2-Dichloroethene
Concen: 0.48 ug/l
RT: 7.75 min Scan# 315
Delta R.T. 0.04 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion: 96 Resp: 47259

Ion	Ratio	Lower	Upper
96	100		
61	135.0	117.3	177.3
98	61.8	35.2	95.2

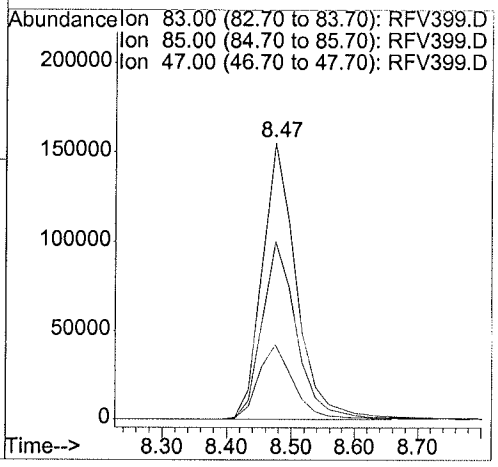


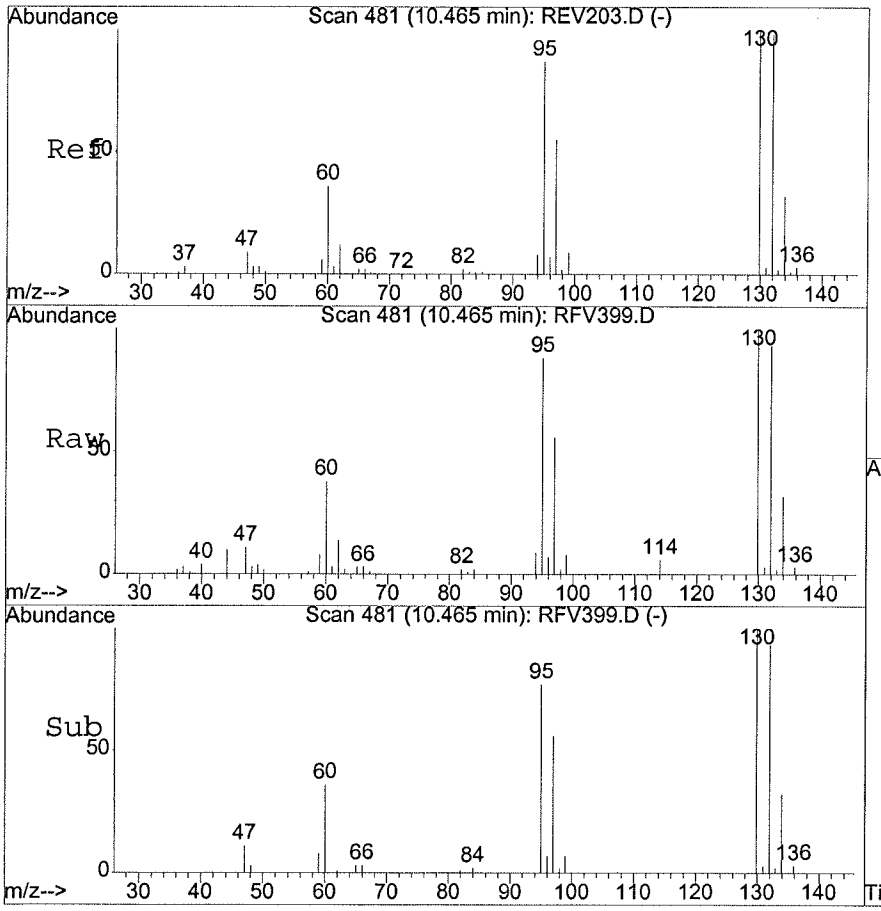


#33
Chloroform
Concen: 4.00 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion: 83 Resp: 565470

Ion	Ratio	Lower	Upper
83	100		
85	65.0	35.3	95.3
47	27.9	0.0	57.1

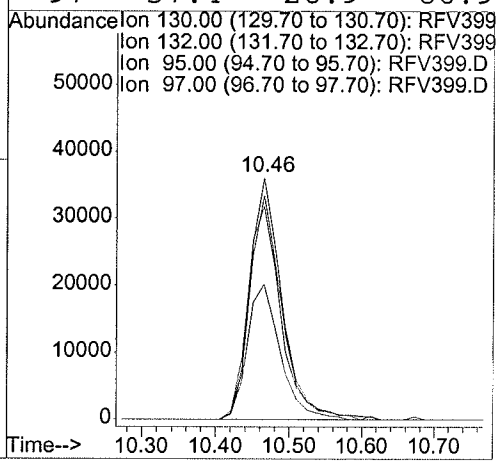


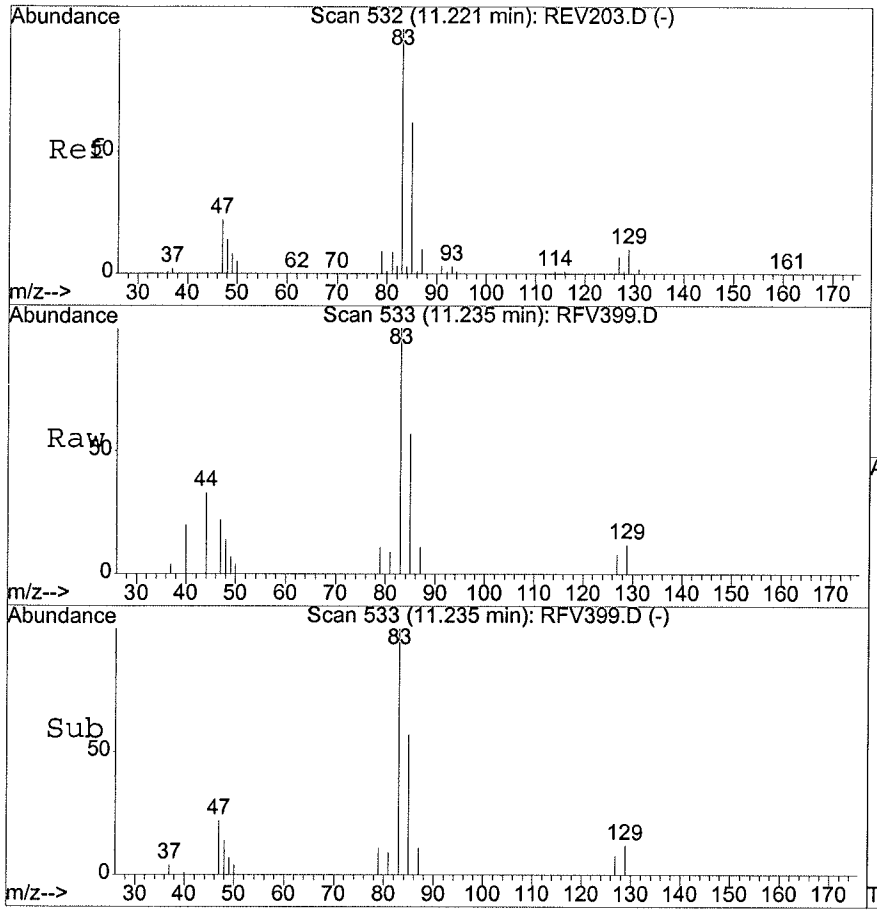


#44
Trichloroethene
Concen: 1.03 ug/l
RT: 10.46 min Scan# 481
Delta R.T. -0.00 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion:130 Resp: 110114

Ion	Ratio	Lower	Upper
130	100		
132	92.8	66.3	126.3
95	91.8	59.7	119.7
97	57.4	26.9	86.9

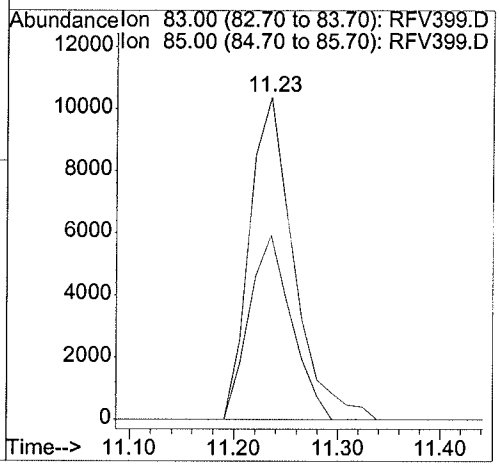


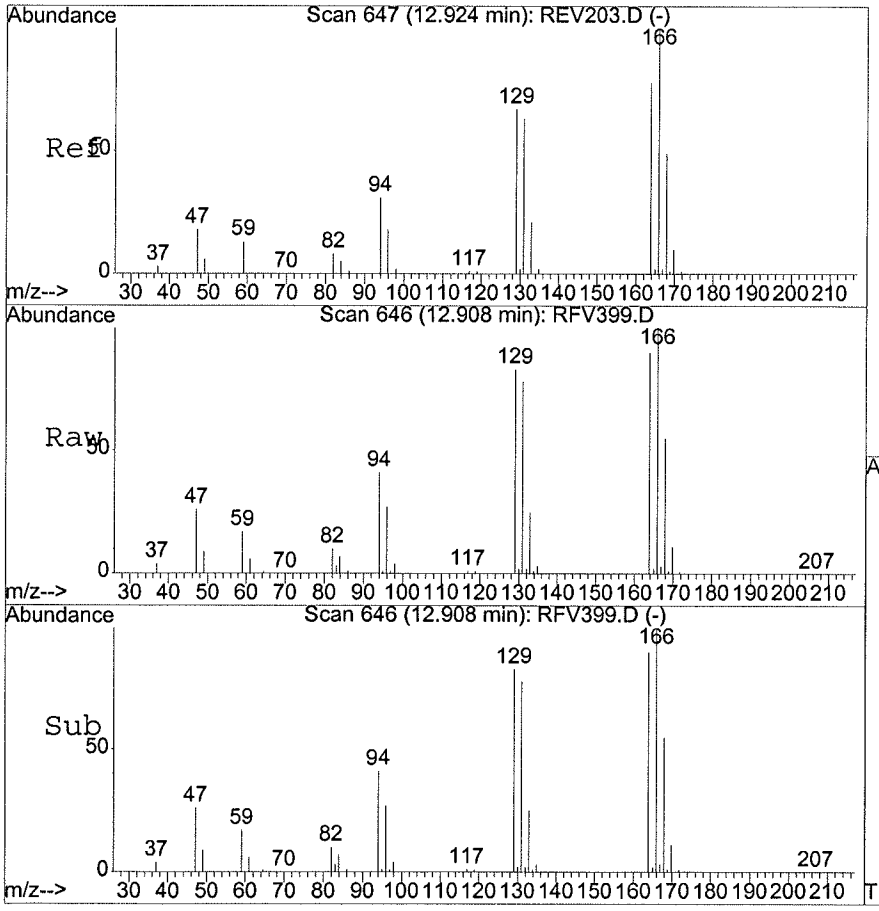


#49
Bromodichloromethane
Concen: 0.33 ug/l
RT: 11.23 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion: 83 Resp: 30609

Ion	Ratio	Lower	Upper
83	100		
85	54.9	33.3	93.3

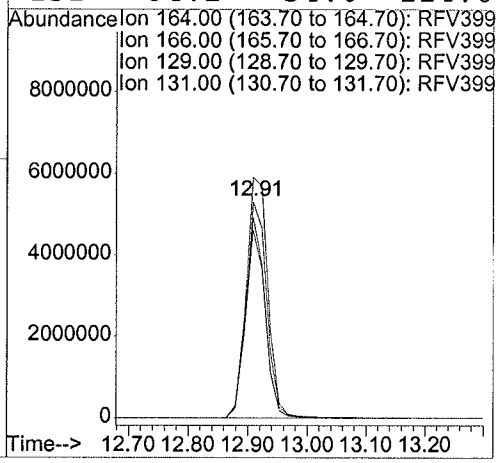




#59
Tetrachloroethene
Concen: 156.35 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.02 min
Lab File: RFV399.D
Acq: 30 Jun 2020 8:48 pm

Tgt Ion:164 Resp:12825911

Ion	Ratio	Lower	Upper
164	100		
166	119.0	99.2	159.2
129	88.9	59.7	119.7
131	84.2	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV399.D Vial: 19
Acq On : 30 Jun 2020 8:48 pm Operator: VLu
Sample : 20F183-13 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2927288	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2380252	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	760626	10.00	ug/l	0.00

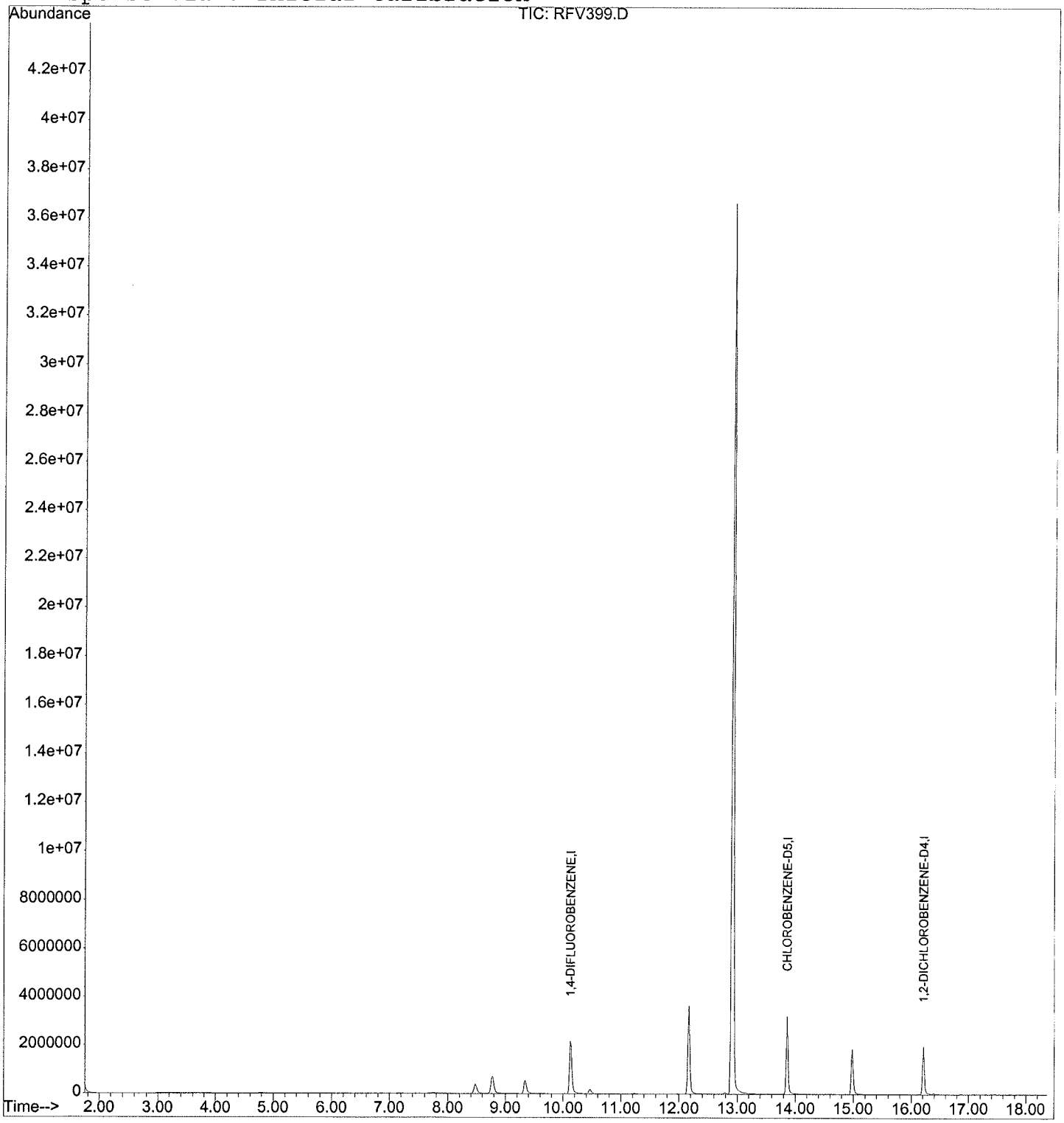
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV399.D VO01E14.M Wed Jul 01 09:46:06 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV399.D Vial: 19
Acq On : 30 Jun 2020 8:48 pm Operator: VLu
Sample : 20F183-13 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 07/02/20 13:10
Sample ID: FD01-GW062120DL	Date Analyzed: 07/02/20 13:10
Lab Samp ID: F183-13I	Dilution Factor: 5
Lab File ID: RGV030	Matrix : WATER
Ext Btch ID: VO01G02	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5.0	0.50
1,1,2,2-TETRACHLOROETHANE	ND	5.0	0.55
1,1,2-TRICHLOROETHANE	ND	5.0	0.51
1,1-DICHLOROETHANE	ND	5.0	0.50
1,1-DICHLOROETHENE	ND	5.0	0.50
1,2,3-TRICHLOROBENZENE	ND	5.0	0.75
1,2,4-TRICHLOROBENZENE	ND	5.0	0.76
1,2,4-TRIMETHYLBENZENE	ND	5.0	0.54
1,2-DIBROMO-3-CHLOROPROPANE	ND	10	1.2
1,2-DICHLOROBENZENE	ND	5.0	0.50
1,2-DICHLOROETHANE	ND	5.0	0.50
1,2-DICHLOROPROPANE	ND	5.0	0.50
1,3,5-TRIMETHYLBENZENE	ND	5.0	0.62
1,3-DICHLOROBENZENE	ND	5.0	0.54
1,4-DICHLOROBENZENE	ND	5.0	0.50
2-BUTANONE	ND	100	12
2-HEXANONE	ND	100	12
ACETONE	ND	100	12
BENZENE	ND	5.0	0.50
BROMOCHLOROMETHANE	ND	5.0	0.57
BROMODICHLOROMETHANE	ND	5.0	0.50
BROMOFORM	ND	5.0	0.75
BROMOMETHANE	ND	5.0	0.82
CARBON DISULFIDE	ND	5.0	1.2
CARBON TETRACHLORIDE	ND	5.0	0.50
CHLOROBENZENE	ND	5.0	0.50
CHLOROETHANE	ND	5.0	1.3
CHLOROFORM	3.9J	5.0	0.50
CHLOROMETHANE	ND	5.0	0.75
CIS-1,2-DICHLOROETHYLENE	ND	5.0	0.50
DIBROMOCHLOROMETHANE	ND	5.0	0.50
DICHLORODIFLUOROMETHANE	ND	5.0	0.75
ETHYLBENZENE	ND	5.0	0.50
ISOPROPYLBENZENE	ND	5.0	0.50
M,P-XYLENE	ND	10	1.1
4-METHYL-2-PENTANONE	ND	100	12
METHYLENE CHLORIDE	ND	10	2.5
TERT-BUTYL METHYL ETHER	ND	5.0	0.66
O-XYLENE	ND	5.0	0.50
STYRENE	ND	5.0	1.2
TETRACHLOROETHENE	150	5.0	0.76
TOLUENE	ND	5.0	0.50
TRANS-1,2-DCE	ND	5.0	0.50
CIS-1,3-DICHLOROPROPENE	ND	5.0	0.50
TRANS-1,3-DICHLOROPROPENE	ND	5.0	0.57
TCE	0.91J	5.0	0.50
TRICHLOROFLUOROMETHANE	ND	5.0	0.75
VINYL CHLORIDE	ND	5.0	0.58
1,2-DIBROMOETHANE	ND	5.0	0.52
VINYL ACETATE	ND	10	1.2
TRICHLOROTRIFLUOROETHANE	ND	5.0	0.75
METHYL ACETATE	ND	10	1.2

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	51.1	50.00	102	70-130
BROMOFLUOROBENZENE	50.9	50.00	102	70-130
TOLUENE-D8	50.9	50.00	102	70-130
DIBROMOFLUOROMETHANE	51.7	50.00	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV030.D Vial: 8
Acq On : 2 Jul 2020 1:10 pm Operator: VLu
Sample : 20F183-13I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:40 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

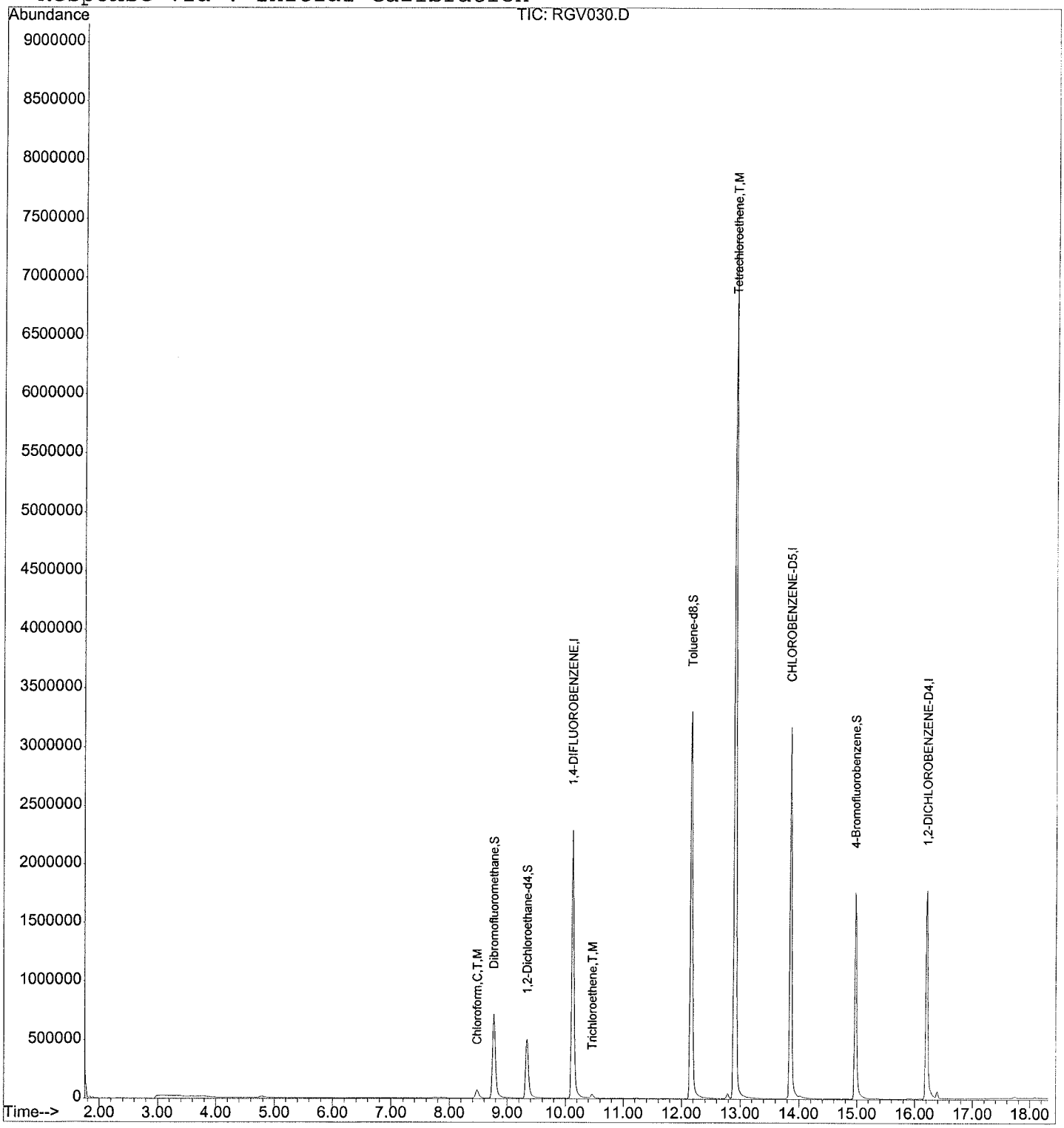
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2964636	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2408790	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	769775	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	862030	10.33	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.30%			
38) 1,2-Dichloroethane-d4	9.34	65	567469	10.21	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.10%			
54) Toluene-d8	12.17	98	3340836	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.90%			
74) 4-Bromofluorobenzene	14.97	95	936096	10.17	ug/l	-0.01
Spiked Amount 10.000			Recovery = 101.70%			
Target Compounds						Qvalue
33) Chloroform	8.48	83	112251	0.78	ug/l	98
44) Trichloroethene	10.47	130	19793	0.18	ug/l	99
59) Tetrachloroethene	12.91	164	2547837	30.87	ug/l	98

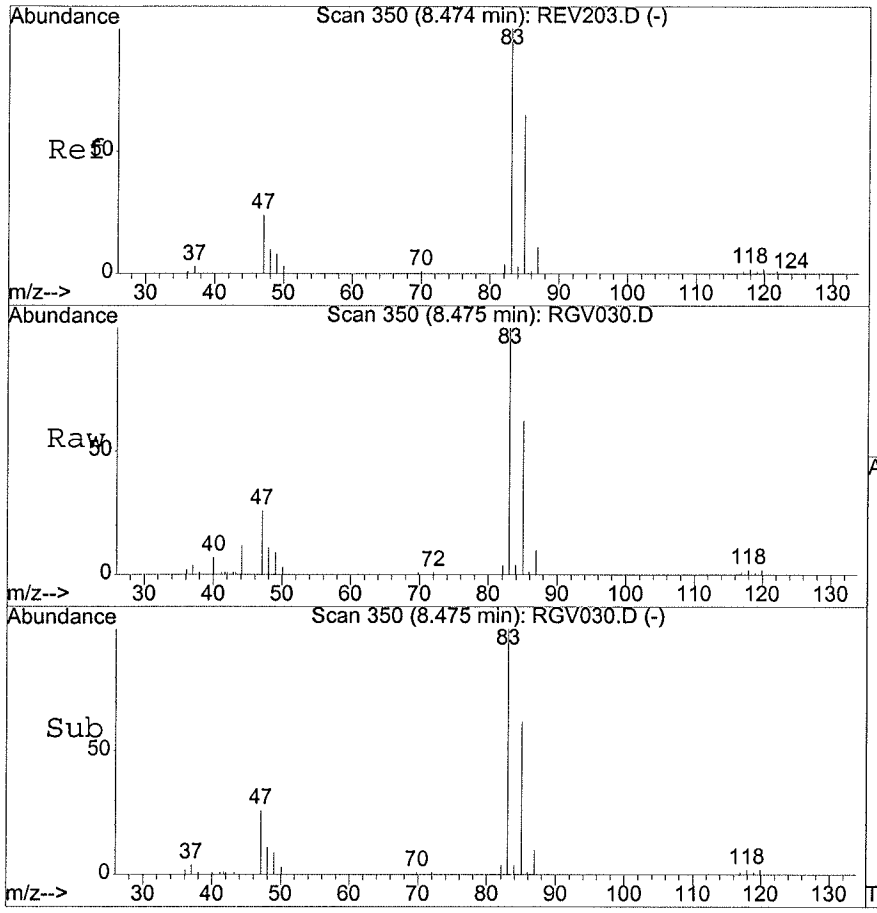
(#) = qualifier out of range (m) = manual integration
RGV030.D VO01E13.M Mon Jul 06 13:41:04 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV030.D Vial: 8
Acq On : 2 Jul 2020 1:10 pm Operator: VLu
Sample : 20F183-13I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:40 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

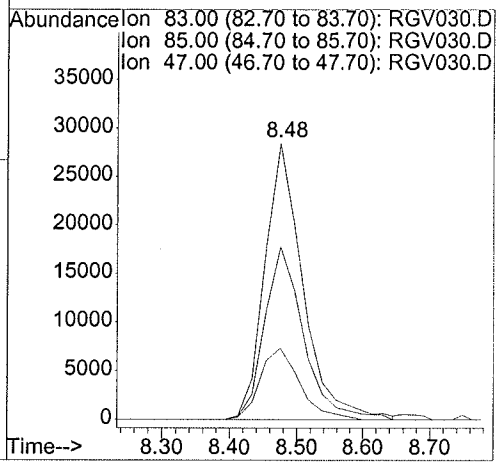


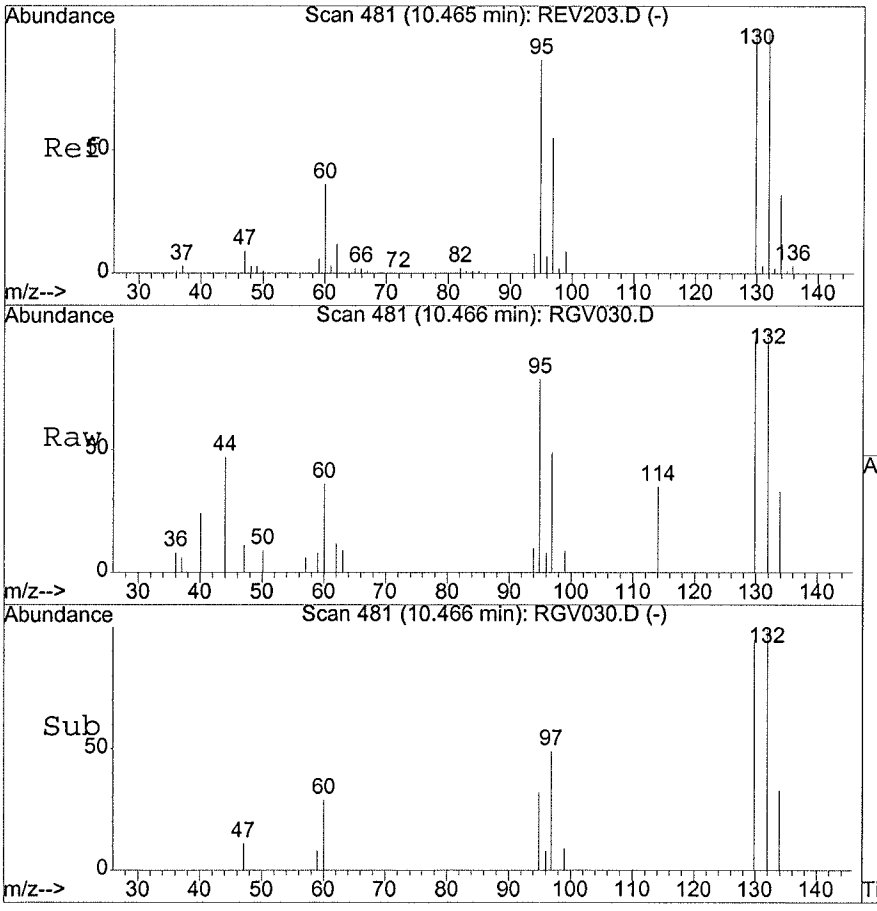


#33
Chloroform
Concen: 0.78 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RGV030.D
Acq: 2 Jul 2020 1:10 pm

Tgt Ion: 83 Resp: 112251

Ion	Ratio	Lower	Upper
83	100		
85	64.0	35.3	95.3
47	28.5	0.0	57.1

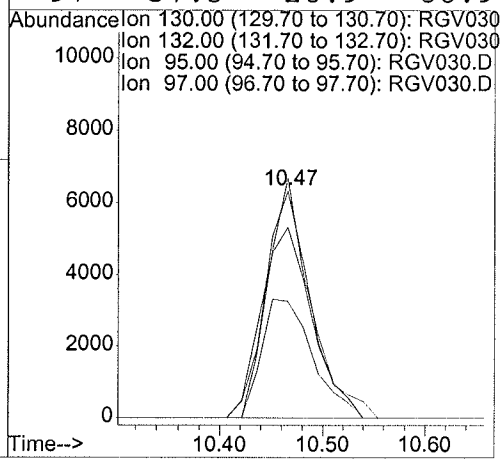


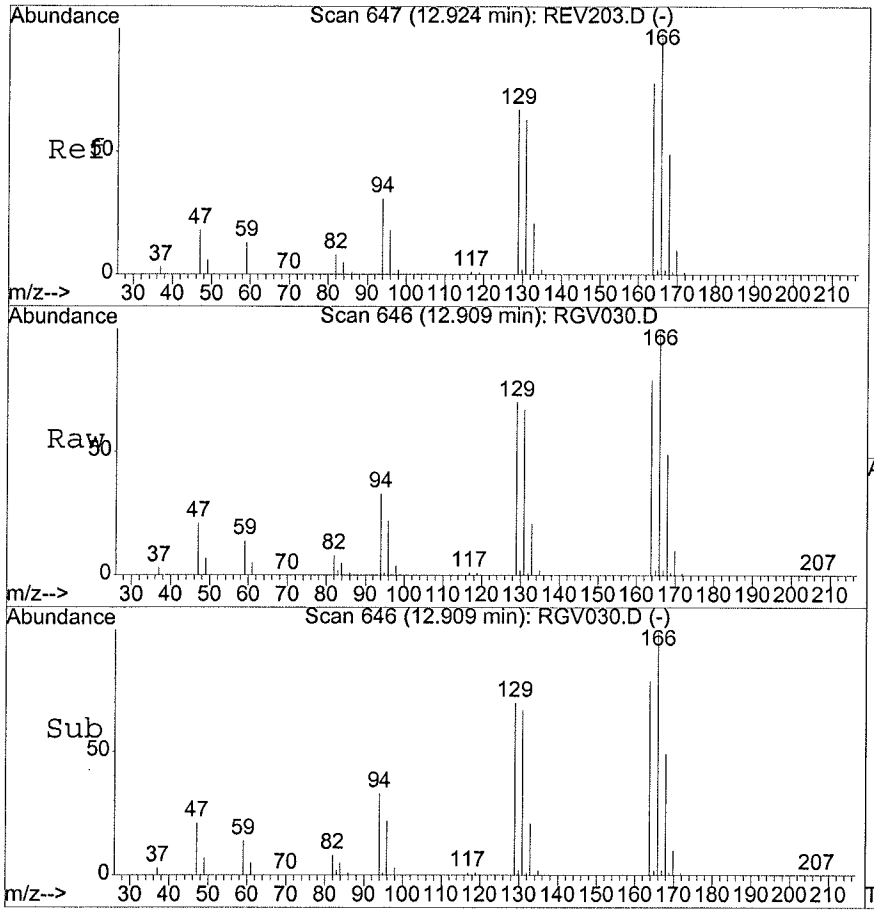


#44
Trichloroethene
Concen: 0.18 ug/l
RT: 10.47 min Scan# 481
Delta R.T. 0.00 min
Lab File: RGV030.D
Acq: 2 Jul 2020 1:10 pm

Tgt Ion:130 Resp: 19793

Ion	Ratio	Lower	Upper
130	100		
132	94.6	66.3	126.3
95	91.4	59.7	119.7
97	57.3	26.9	86.9

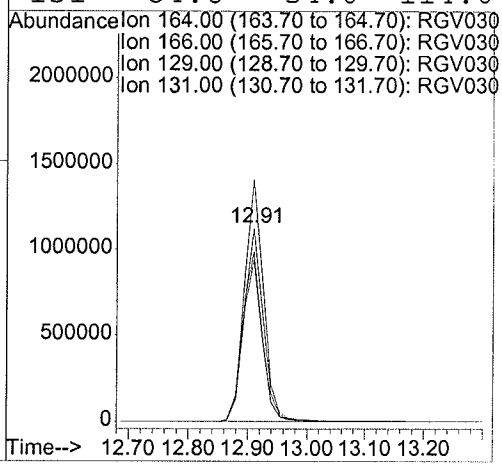




#59
Tetrachloroethene
Concen: 30.87 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RGV030.D
Acq: 2 Jul 2020 1:10 pm

Tgt Ion:164 Resp: 2547837

Ion	Ratio	Lower	Upper
164	100		
166	125.6	99.2	159.2
129	89.4	59.7	119.7
131	84.6	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV030.D Vial: 8
Acq On : 2 Jul 2020 1:10 pm Operator: VLu
Sample : 20F183-13I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 9:53 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2964702	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2408719	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	769801	10.00	ug/l	0.00

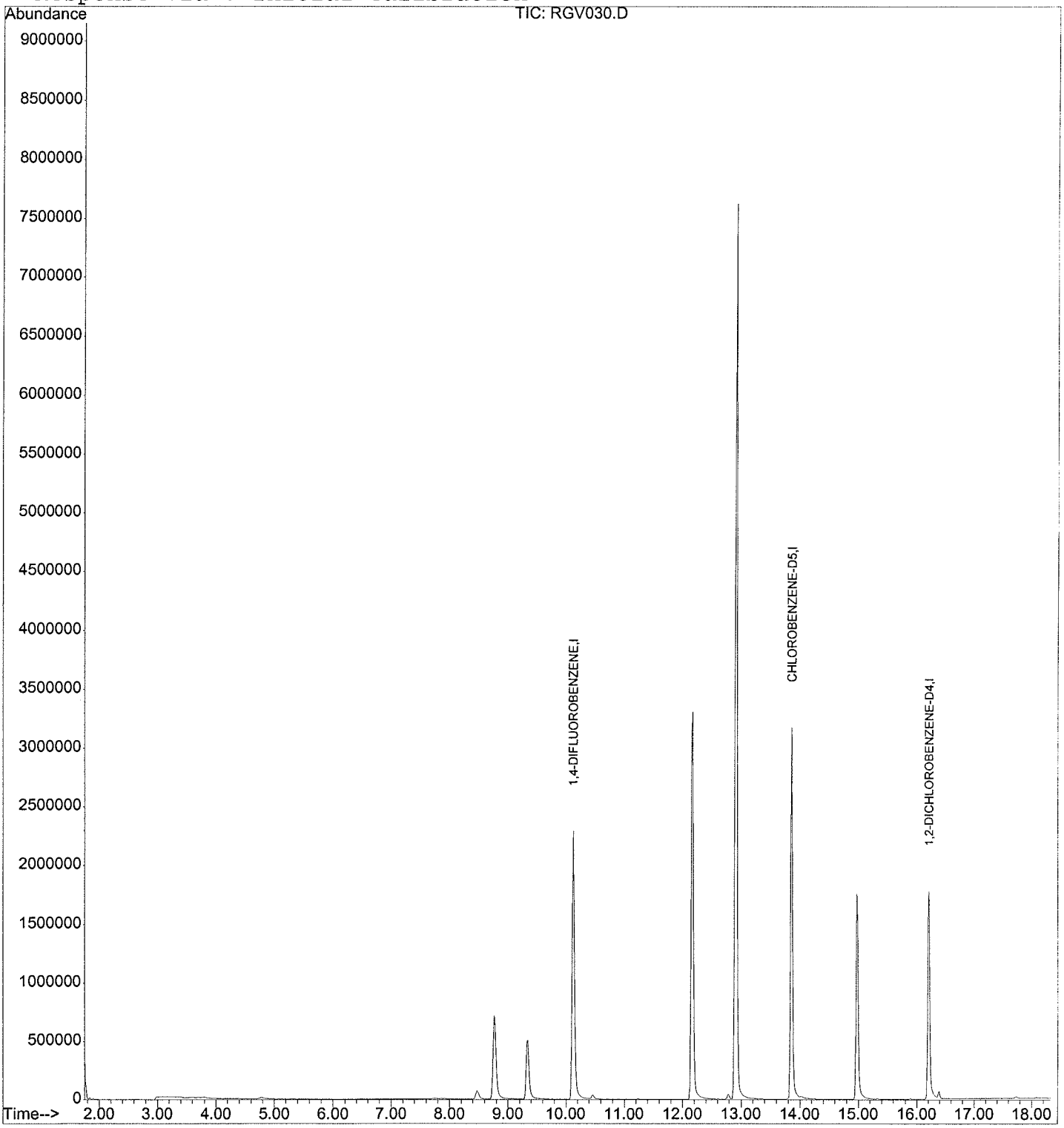
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RGV030.D VO01E14.M Mon Jul 06 13:35:01 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV030.D Vial: 8
Acq On : 2 Jul 2020 1:10 pm Operator: VLu
Sample : 20F183-13I 5.0mL Inst : 01
Misc : DF=5.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 9:53 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected	: 06/22/20
Project	: VA SALT LAKE CITY	Date Received	: 06/23/20
Batch No.	: 20F183	Date Extracted	: 06/30/20 21:16
Sample ID	: MW08C-GW062220	Date Analyzed	: 06/30/20 21:16
Lab Samp ID	: F183-14	Dilution Factor	: 1
Lab File ID	: RFV400	Matrix	: WATER
Ext Btch ID	: VO01F18	% Moisture	: NA
Calib. Ref.	: REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	4.3J	20	2.5
BENZENE	0.13J	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	0.15J	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.8	10.00	108	70-130
BROMOFLUOROBENZENE	10.4	10.00	104	70-130
TOLUENE-D8	9.90	10.00	99.0	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV400.D Vial: 20
Acq On : 30 Jun 2020 9:16 pm Operator: VLu
Sample : 20F183-14 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:48 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2953245	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2419962	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	751674	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	858188	10.32	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.20%			
38) 1,2-Dichloroethane-d4	9.34	65	598924	10.82	ug/l	0.00
Spiked Amount 10.000			Recovery = 108.20%			
54) Toluene-d8	12.17	98	3259814	9.90	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.00%			
74) 4-Bromofluorobenzene	14.98	95	935131	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.10%			
Target Compounds						Qvalue
13) Acetone	3.98	43	42782	4.27	ug/l	96
18) Methylene chloride	4.79	49	20817	0.17	ug/l	99
33) Chloroform	8.48	83	20708	0.15	ug/l	95
41) Benzene	9.36	78	45355	0.13	ug/l	90

(#) = qualifier out of range (m) = manual integration
RFV400.D VO01E13.M Wed Jul 01 10:48:28 2020 Page 1

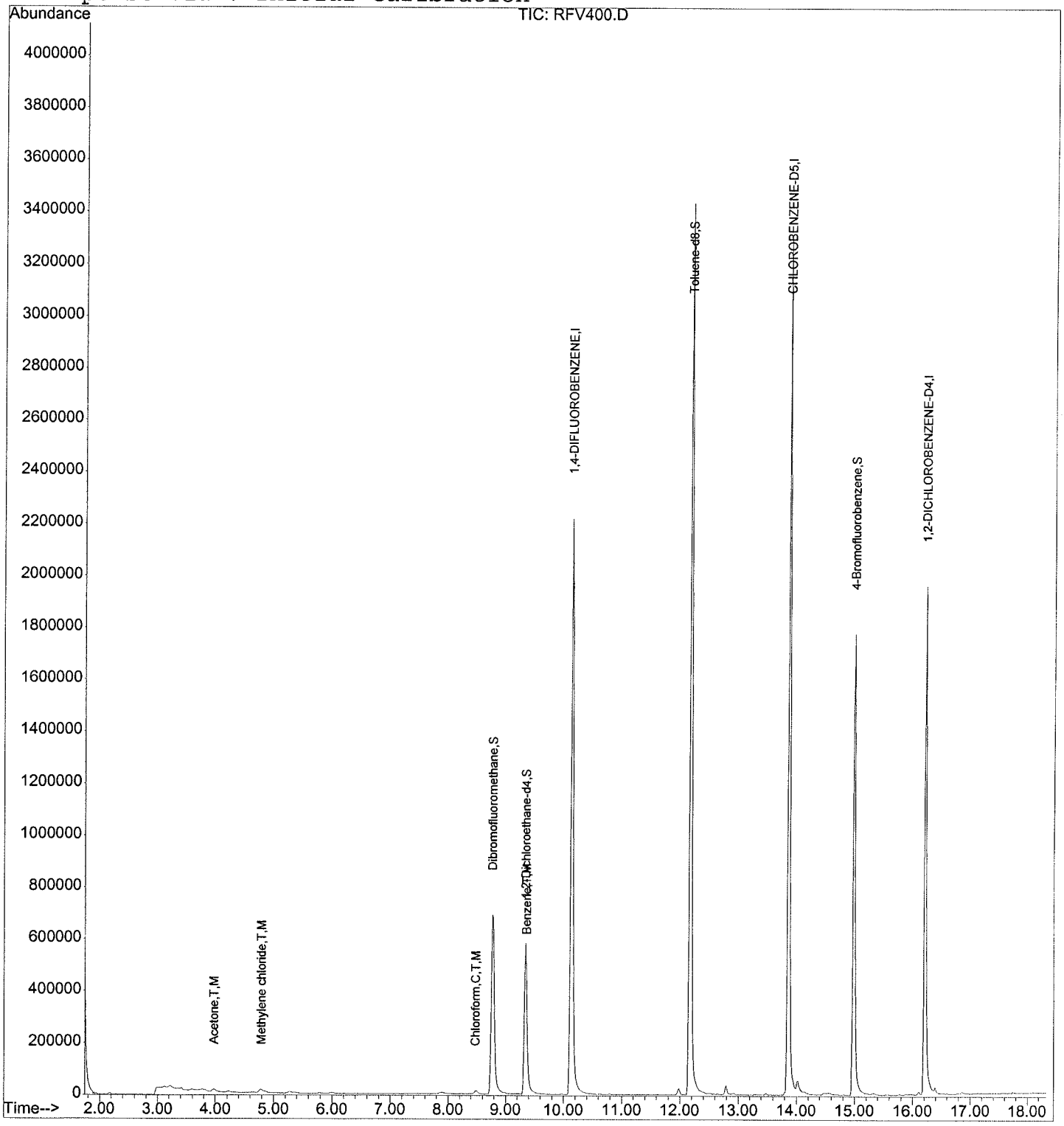
Quantitation Report

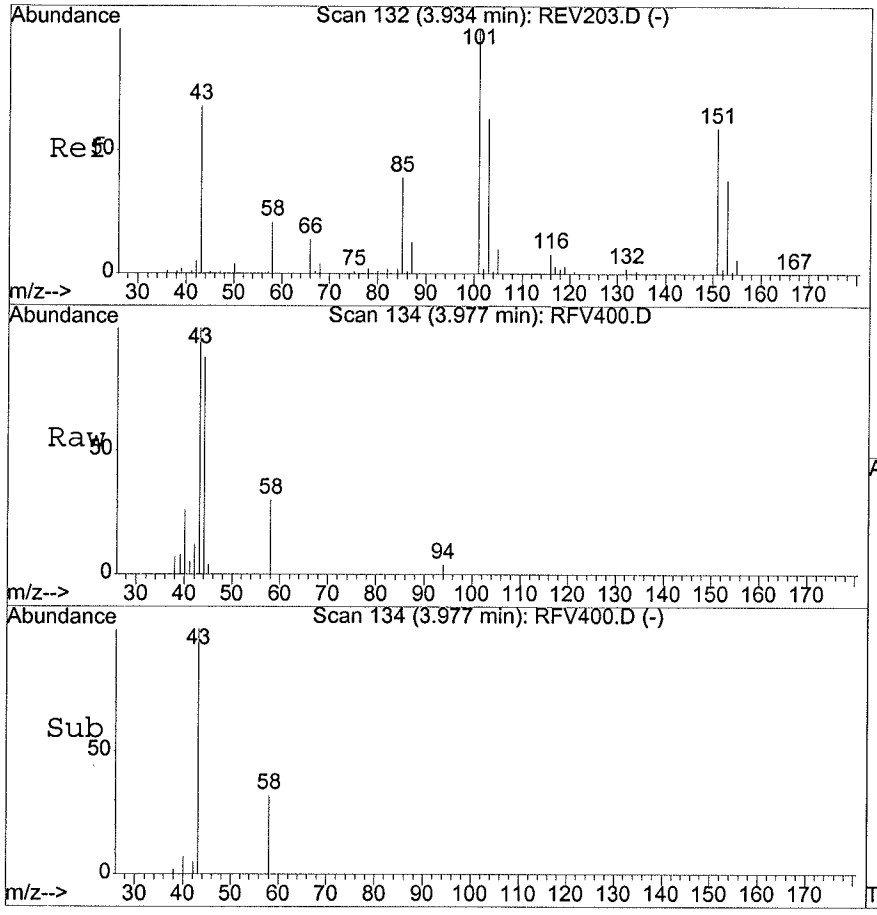
Data File : D:\HPCHEM\1\DATA\20F30\RFV400.D
Acq On : 30 Jun 2020 9:16 pm
Sample : 20F183-14 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jul 1 10:48 2020

Vial: 20
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

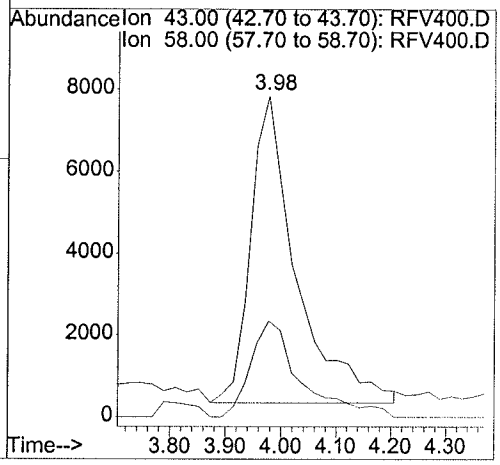


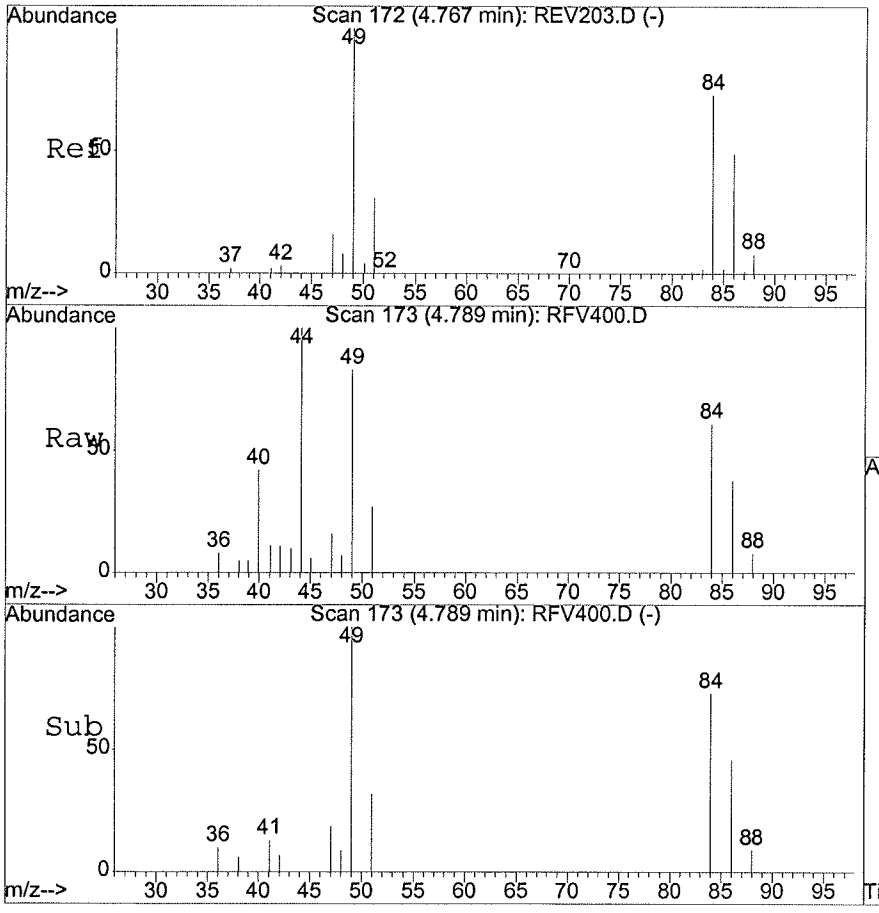


#13
Acetone
Concen: 4.27 ug/l
RT: 3.98 min Scan# 134
Delta R.T. 0.04 min
Lab File: RFV400.D
Acq: 30 Jun 2020 9:16 pm

Tgt Ion: 43 Resp: 42782

Ion	Ratio	Lower	Upper
43	100		
58	32.9	0.9	60.9

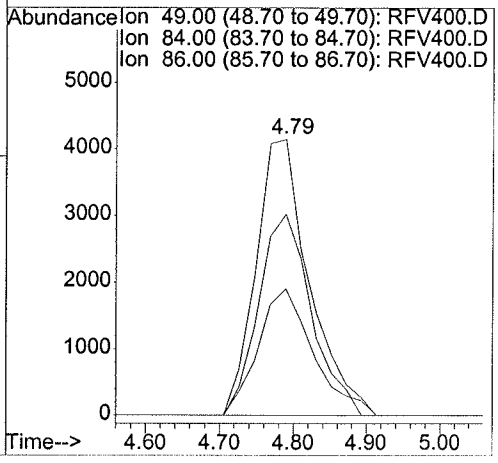


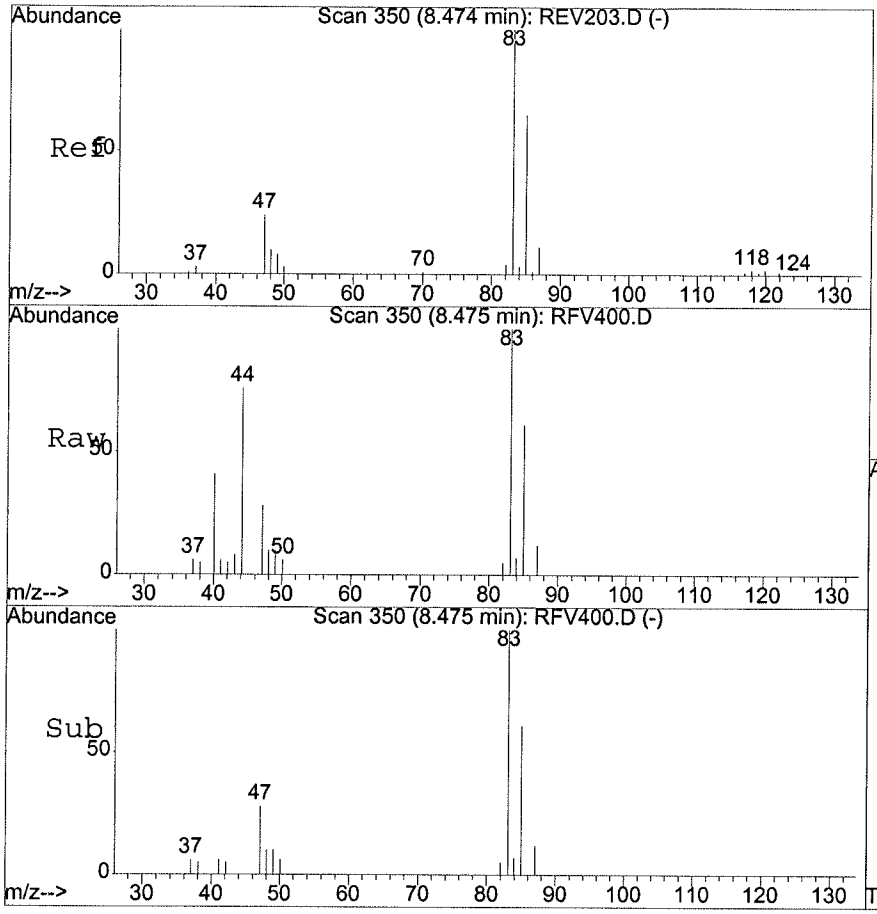


#18
Methylene chloride
Concen: 0.17 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RFV400.D
Acq: 30 Jun 2020 9:16 pm

Tgt Ion: 49 Resp: 20817

Ion	Ratio	Lower	Upper
49	100		
84	72.1	43.3	103.3
86	47.7	17.1	77.1

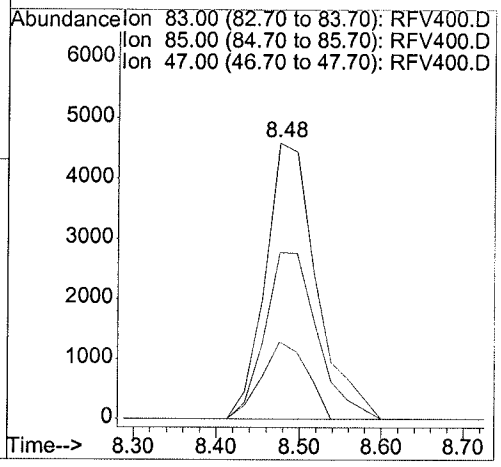


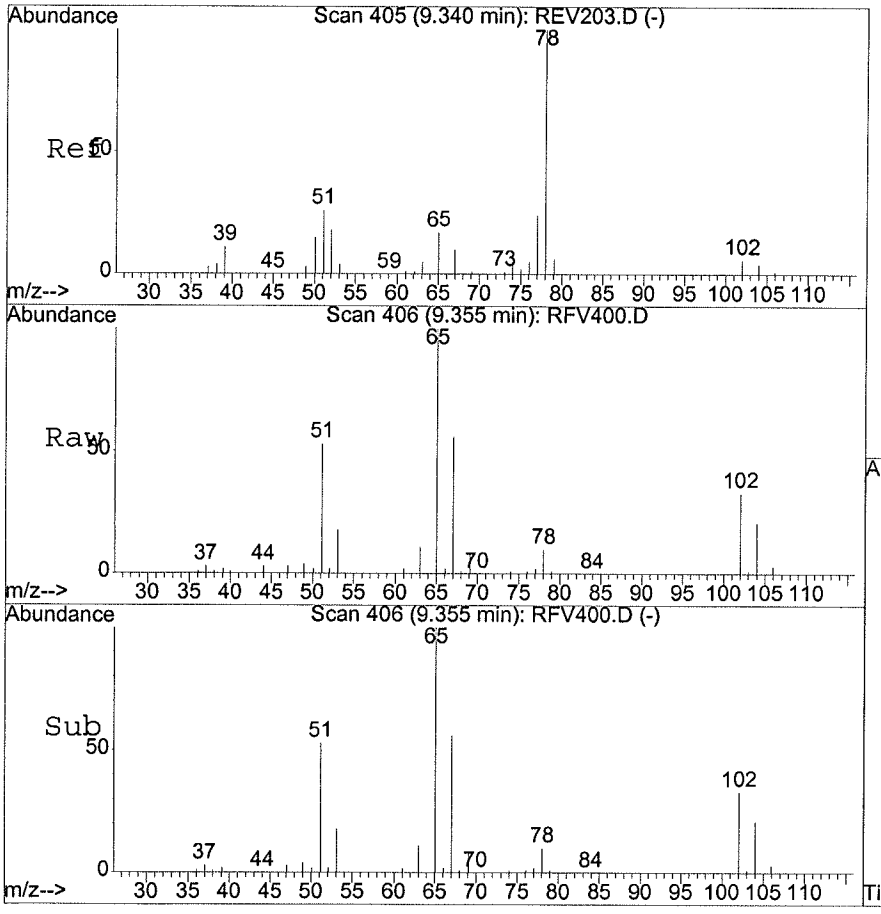


#33
Chloroform
Concen: 0.15 ug/l
RT: 8.48 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV400.D
Acq: 30 Jun 2020 9:16 pm

Tgt Ion: 83 Resp: 20708

Ion	Ratio	Lower	Upper
83	100		
85	62.2	35.3	95.3
47	23.8	0.0	57.1

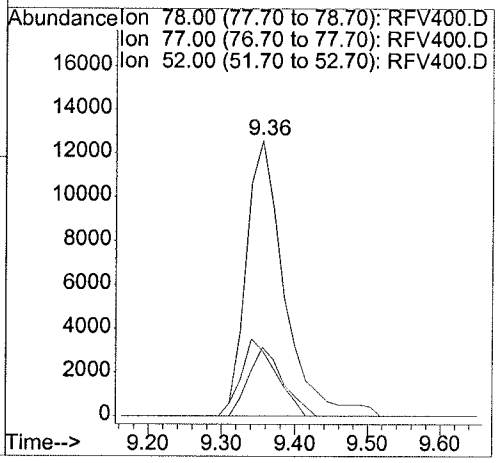




#41
Benzene
Concen: 0.13 ug/l
RT: 9.36 min Scan# 406
Delta R.T. 0.02 min
Lab File: RFV400.D
Acq: 30 Jun 2020 9:16 pm

Tgt Ion: 78 Resp: 45355

Ion	Ratio	Lower	Upper
78	100		
77	22.3	0.0	54.0
52	25.3	0.0	47.2



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV400.D Vial: 20
Acq On : 30 Jun 2020 9:16 pm Operator: VLu
Sample : 20F183-14 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2953188	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2404657	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	751649	10.00	ug/l	0.00

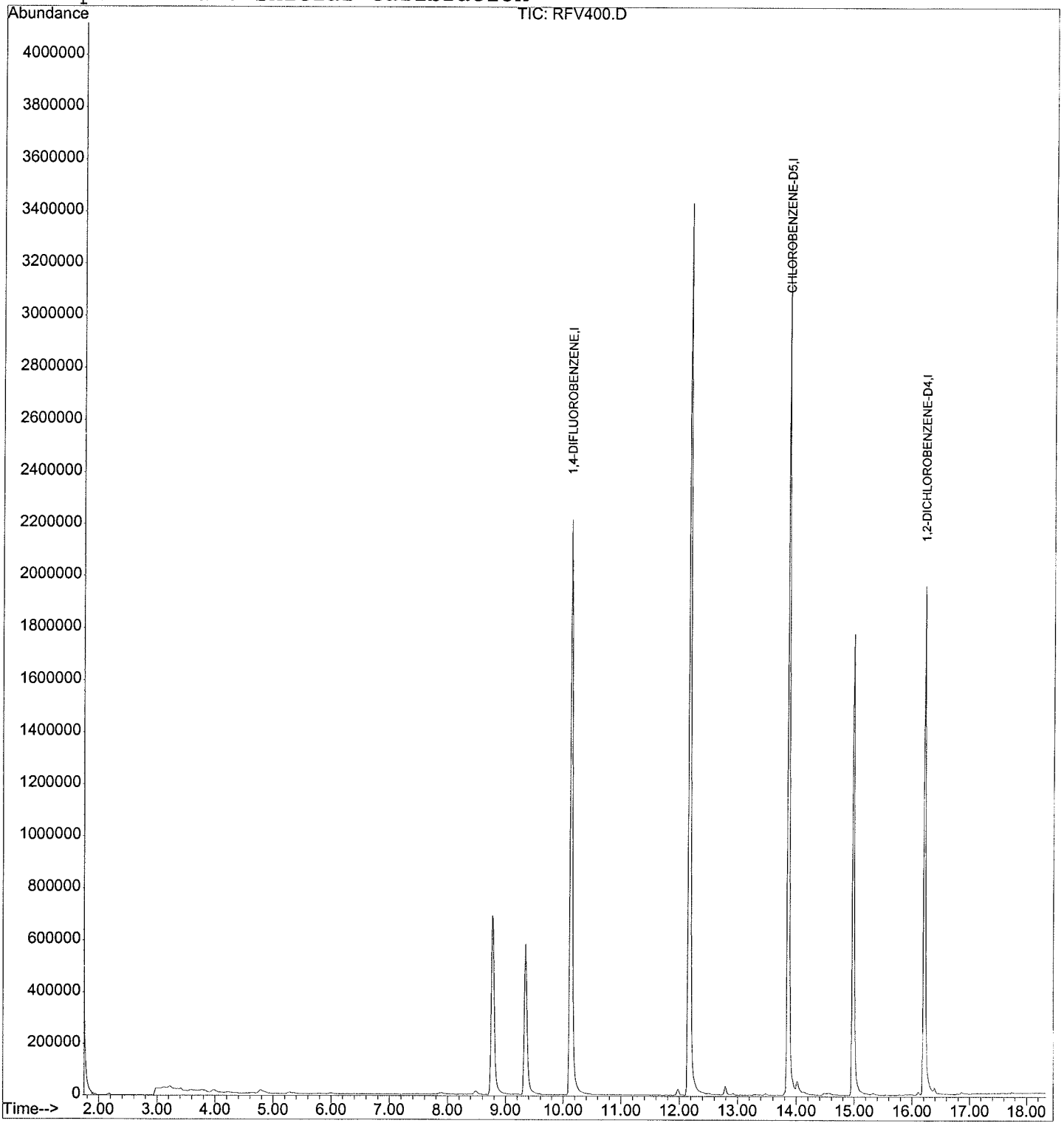
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV400.D VO01E14.M Wed Jul 01 09:52:41 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV400.D Vial: 20
Acq On : 30 Jun 2020 9:16 pm Operator: VLu
Sample : 20F183-14 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:46 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/22/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/30/20 21:43
Sample ID:	MW08B-GW062220	Date Analyzed:	06/30/20 21:43
Lab Samp ID:	F183-15	Dilution Factor:	1
Lab File ID:	RFV401	Matrix	: WATER
Ext Btch ID:	VO01F18	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.15J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.7	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	4.4	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.7	10.00	107	70-130
BROMOFLUOROBENZENE	10.2	10.00	102	70-130
TOLUENE-D8	9.83	10.00	98.3	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV401.D Vial: 21
Acq On : 30 Jun 2020 9:43 pm Operator: VLu
Sample : 20F183-15 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:48 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

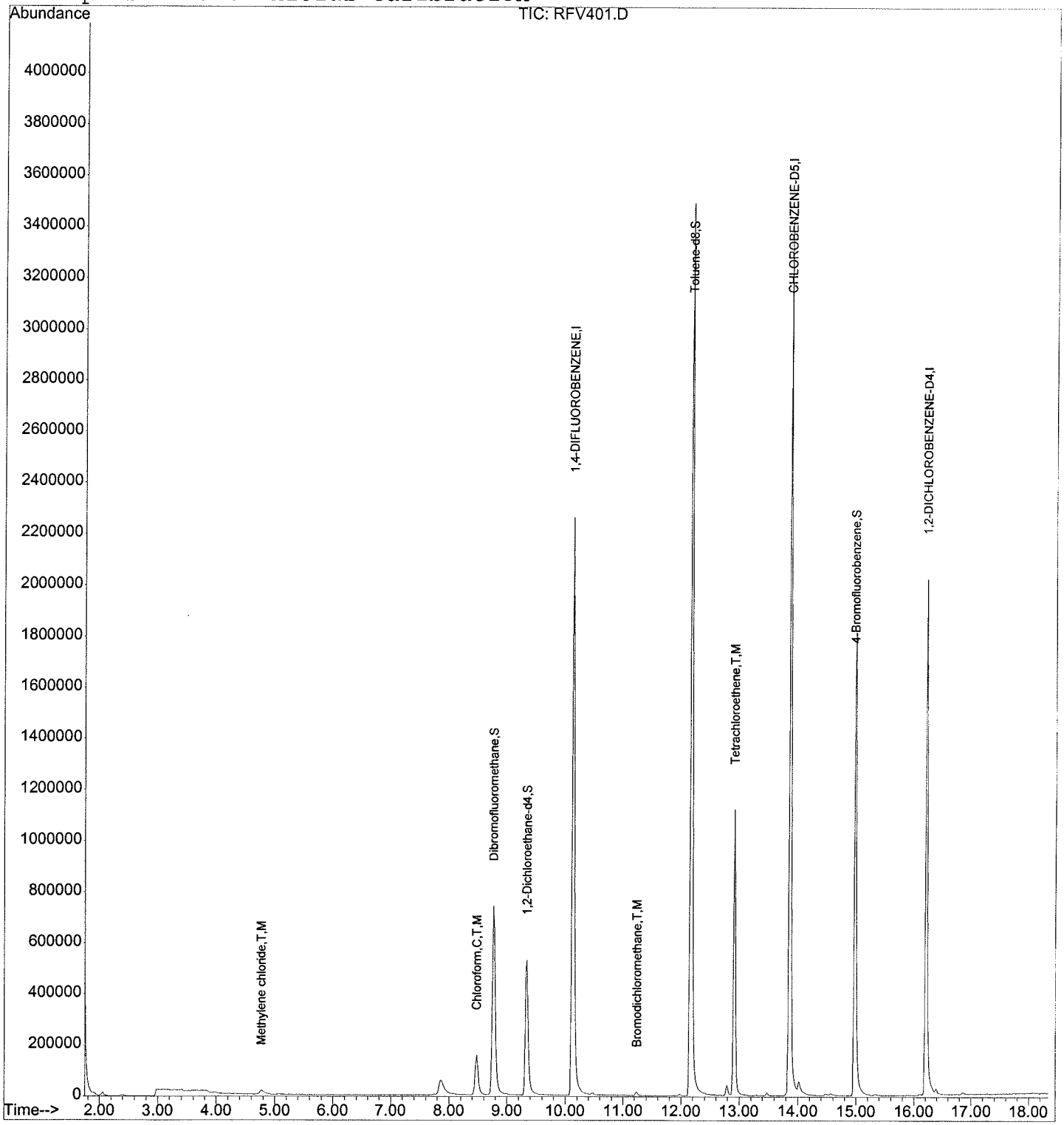
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2942382	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2477441	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	784716	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	877749	10.60	ug/l	0.00
Spiked Amount 10.000			Recovery =	106.00%		
38) 1,2-Dichloroethane-d4	9.34	65	591067	10.72	ug/l	0.00
Spiked Amount 10.000			Recovery =	107.20%		
54) Toluene-d8	12.17	98	3315452	9.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.30%		
74) 4-Bromofluorobenzene	14.97	95	954493	10.17	ug/l	-0.01
Spiked Amount 10.000			Recovery =	101.70%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	25137	0.21	ug/l	97
33) Chloroform	8.47	83	237480	1.67	ug/l	98
49) Bromodichloromethane	11.24	83	14160	0.15	ug/l	99
59) Tetrachloroethene	12.91	164	377387	4.45	ug/l	98

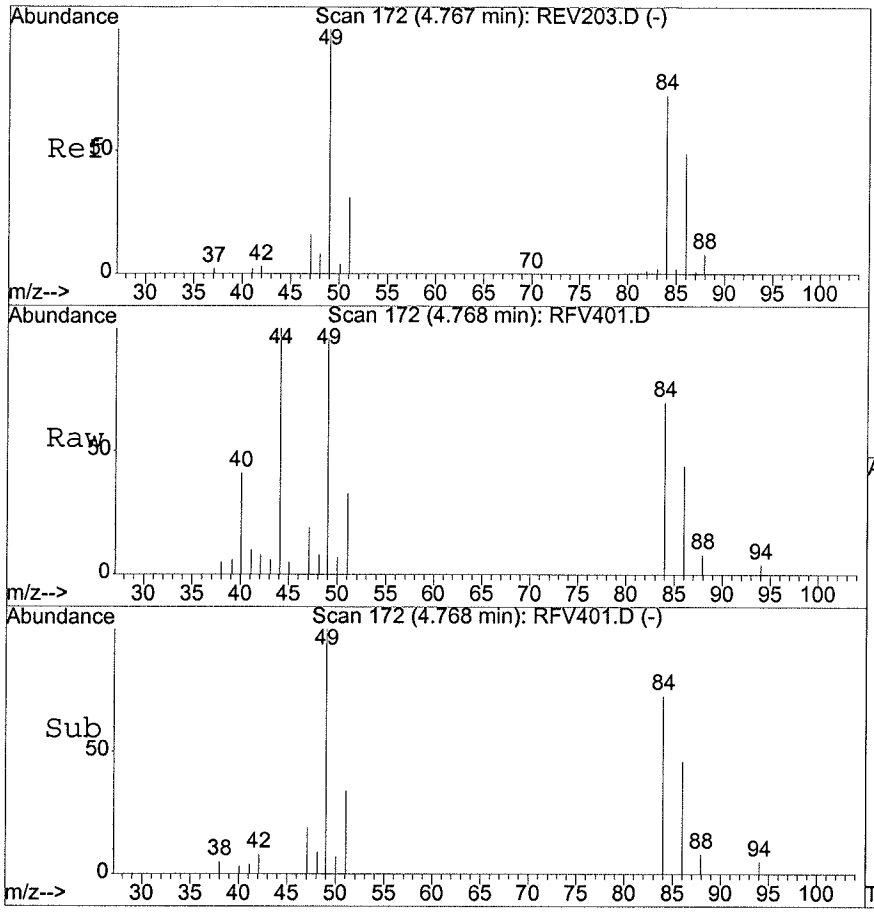
(#) = qualifier out of range (m) = manual integration
RFV401.D VO01E13.M Wed Jul 01 10:49:00 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV401.D Vial: 21
Acq On : 30 Jun 2020 9:43 pm Operator: VLu
Sample : 20F183-15 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:48 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

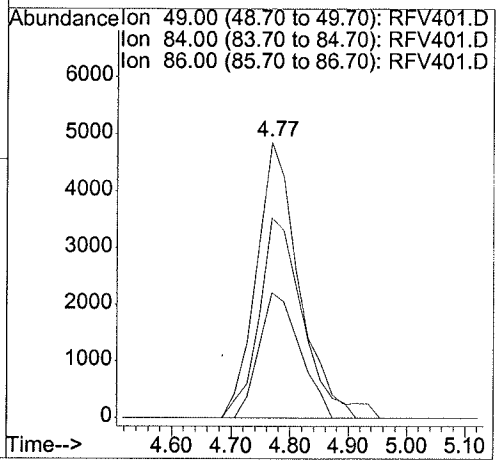


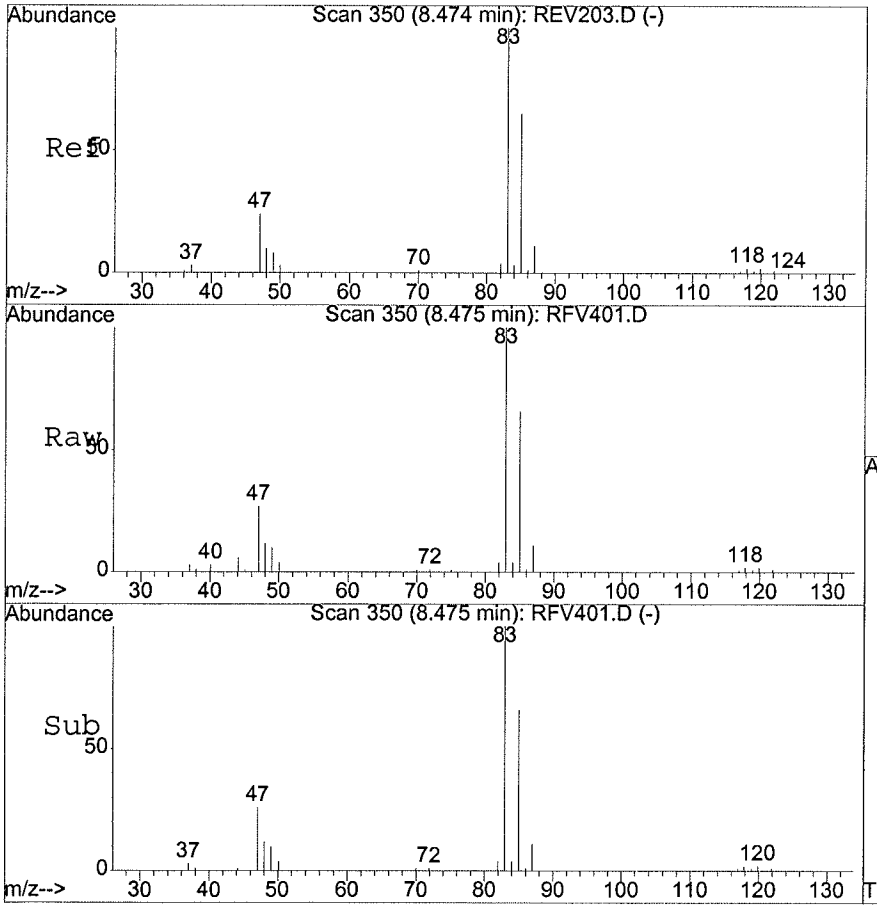


#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV401.D
Acq: 30 Jun 2020 9:43 pm

Tgt Ion: 49 Resp: 25137

Ion	Ratio	Lower	Upper
49	100		
84	72.3	43.3	103.3
86	42.8	17.1	77.1

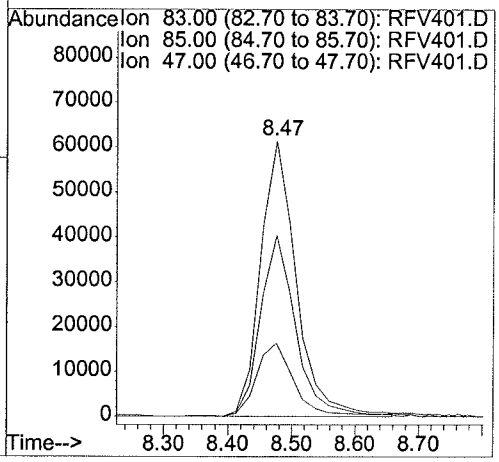


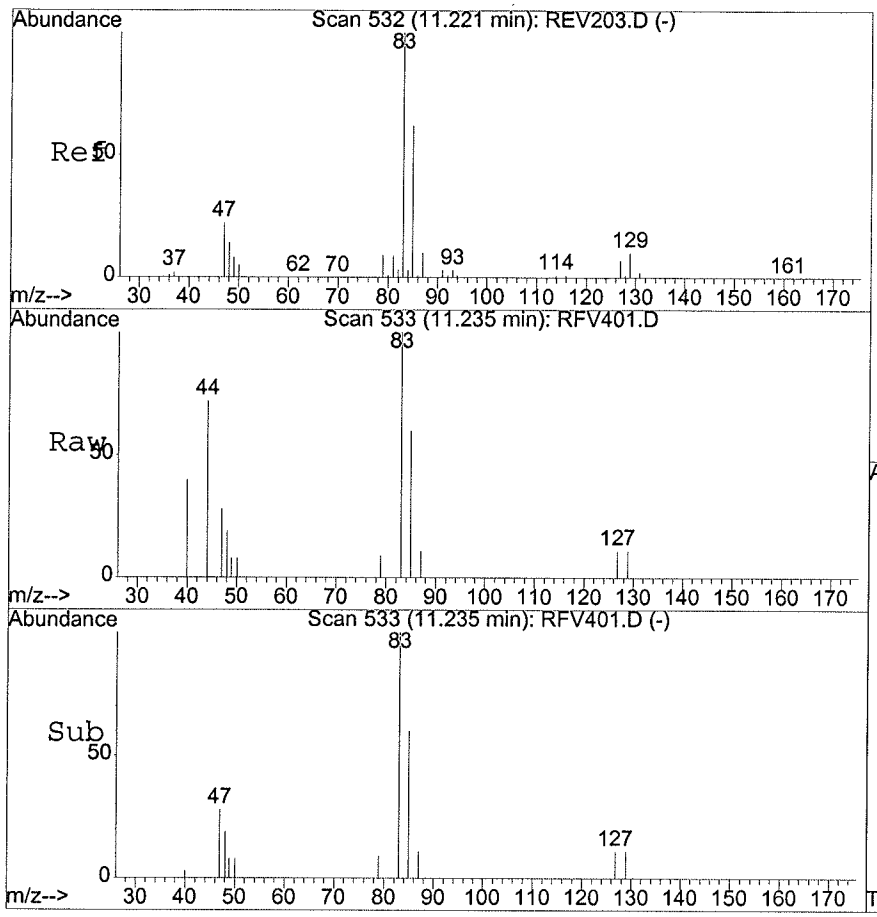


#33
Chloroform
Concen: 1.67 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV401.D
Acq: 30 Jun 2020 9:43 pm

Tgt Ion: 83 Resp: 237480

Ion	Ratio	Lower	Upper
83	100		
85	66.1	35.3	95.3
47	28.6	0.0	57.1

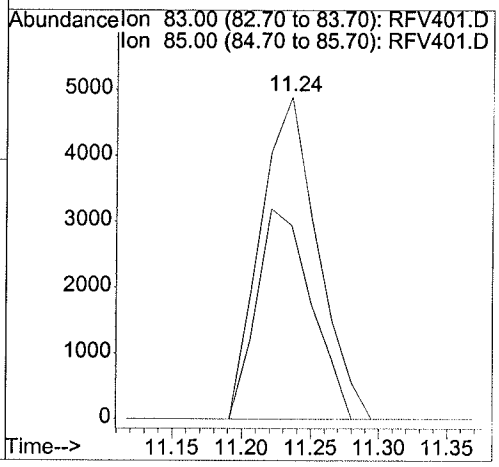


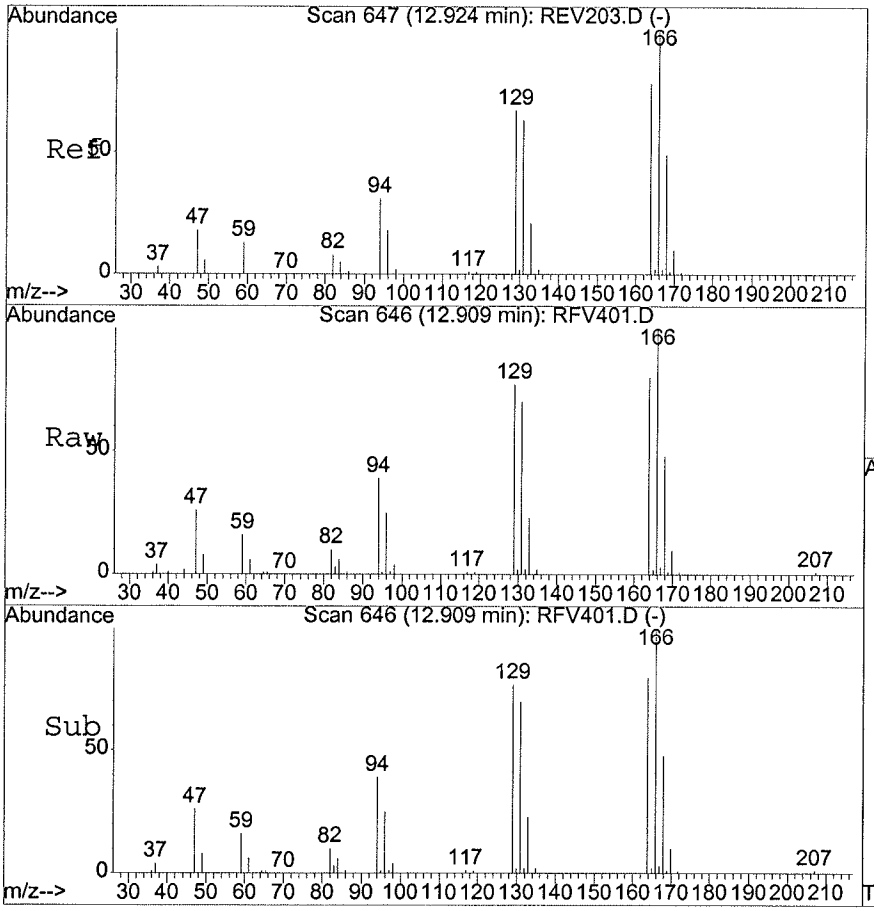


#49
Bromodichloromethane
Concen: 0.15 ug/l
RT: 11.24 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV401.D
Acq: 30 Jun 2020 9:43 pm

Tgt Ion: 83 Resp: 14160

Ion	Ratio	Lower	Upper
83	100		
85	62.7	33.3	93.3

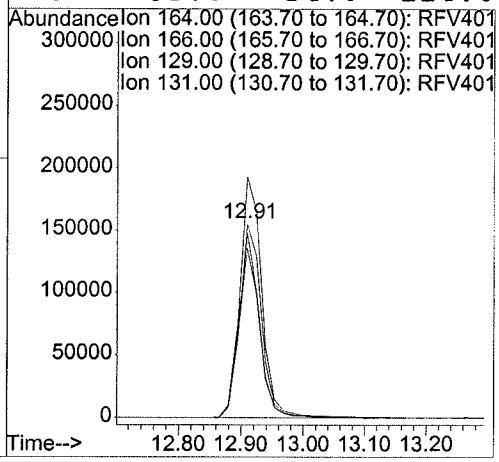




#59
Tetrachloroethene
Concen: 4.45 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.01 min
Lab File: RFV401.D
Acq: 30 Jun 2020 9:43 pm

Tgt Ion:164 Resp: 377387

Ion	Ratio	Lower	Upper
164	100		
166	125.7	99.2	159.2
129	90.0	59.7	119.7
131	85.0	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV401.D Vial: 21
Acq On : 30 Jun 2020 9:43 pm Operator: VLu
Sample : 20F183-15 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2942325	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2458135	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	784742	10.00	ug/l	0.00

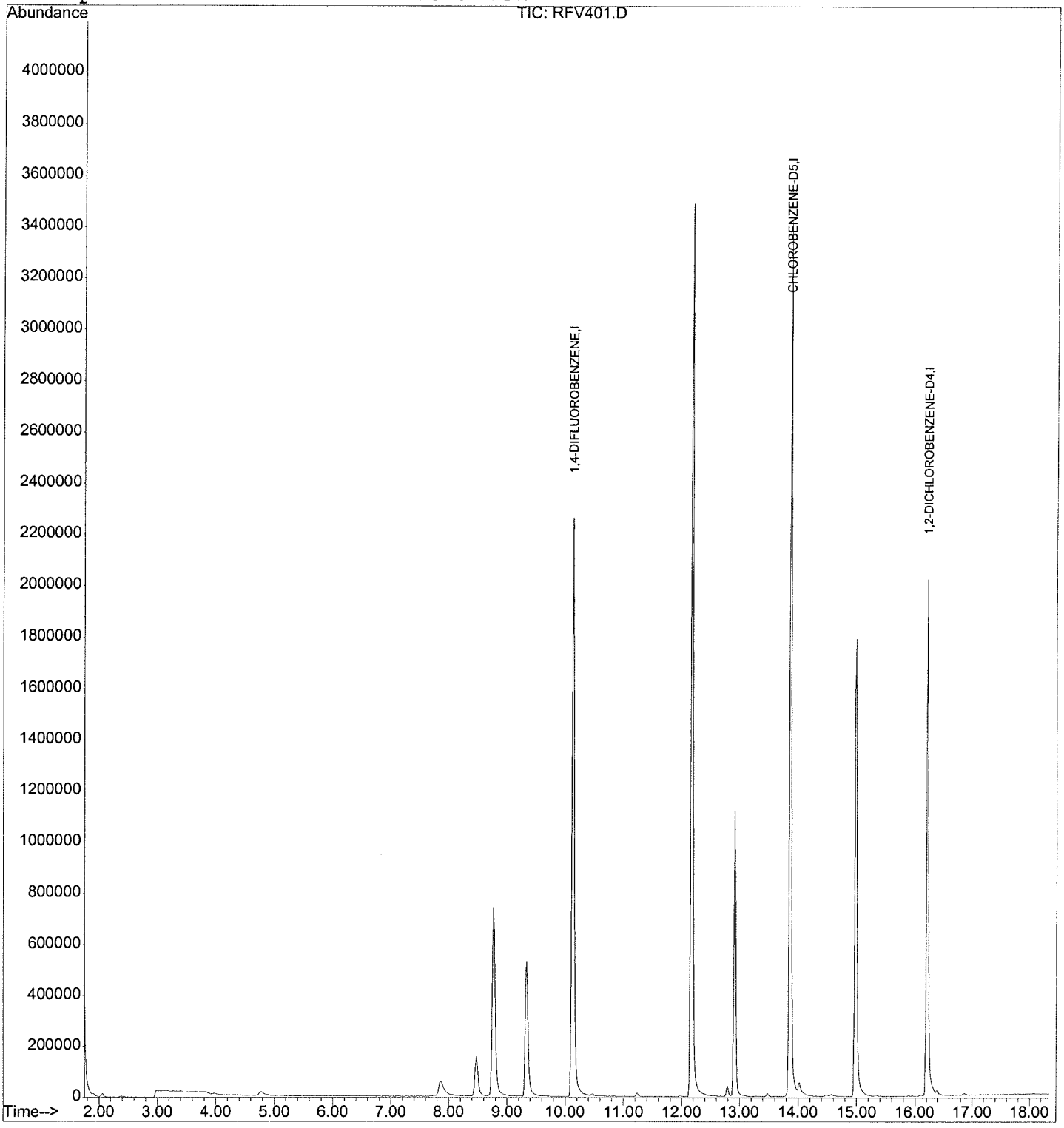
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV401.D VO01E14.M Wed Jul 01 09:46:19 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV401.D Vial: 21
Acq On : 30 Jun 2020 9:43 pm Operator: VLu
Sample : 20F183-15 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/22/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/30/20 22:10
Sample ID:	FD02-GW062220	Date Analyzed:	06/30/20 22:10
Lab Samp ID:	F183-16	Dilution Factor:	1
Lab File ID:	RFV402	Matrix	: WATER
Ext Btch ID:	VO01F18	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	2.8J	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.17J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	1.7	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	4.7	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.0	10.00	110	70-130
BROMOFLUOROBENZENE	10.1	10.00	101	70-130
TOLUENE-D8	9.99	10.00	99.9	70-130
DIBROMOFLUOROMETHANE	10.6	10.00	106	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV402.D Vial: 22
Acq On : 30 Jun 2020 10:10 pm Operator: VLu
Sample : 20F183-16 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:49 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

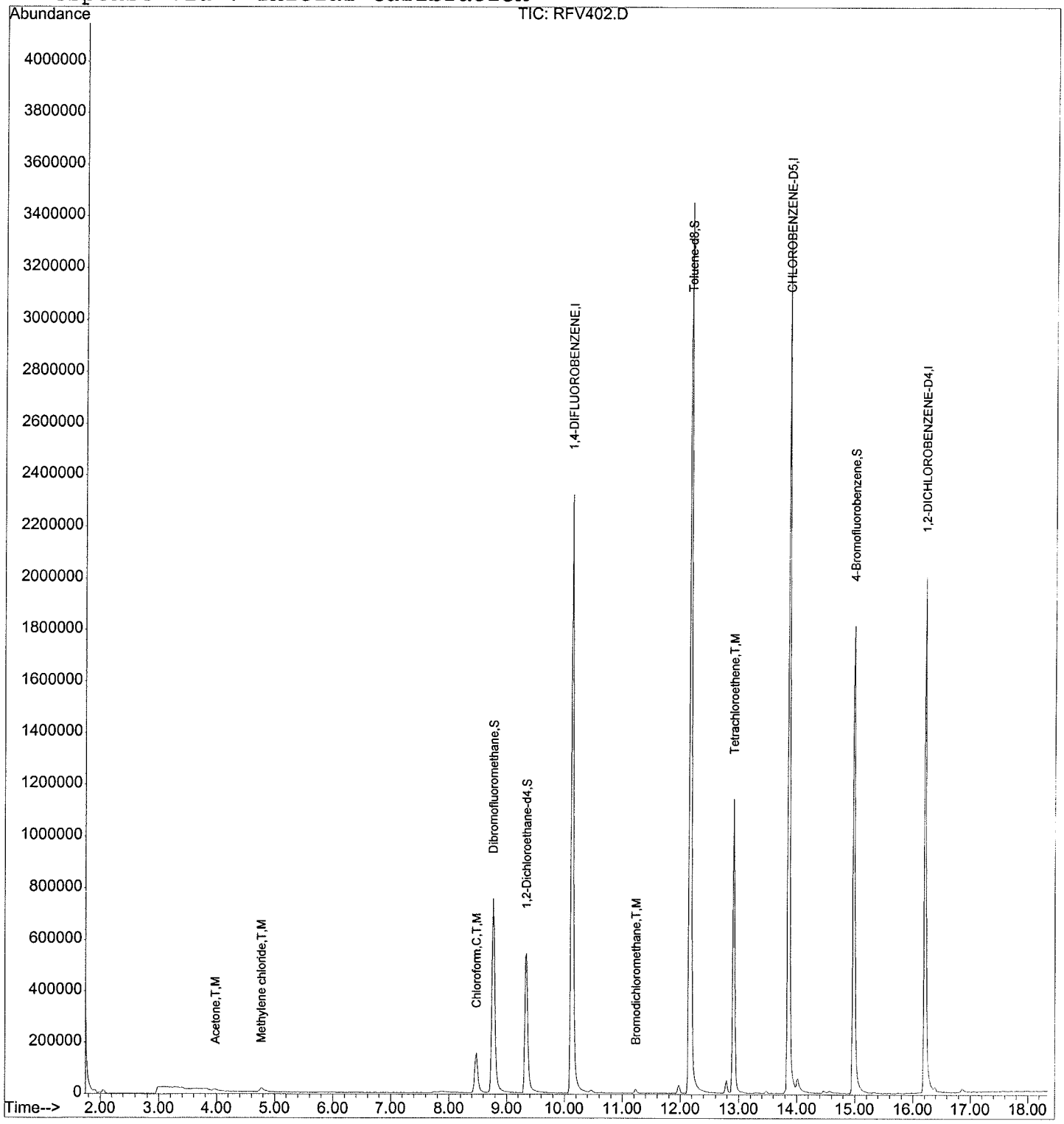
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2961578	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2452923	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	794225	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	880290	10.56	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.60%			
38) 1,2-Dichloroethane-d4	9.34	65	612629	11.04	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.40%			
54) Toluene-d8	12.17	98	3336179	9.99	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.90%			
74) 4-Bromofluorobenzene	14.98	95	962003	10.13	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.30%			
Target Compounds						Qvalue
13) Acetone	3.98	43	28072	2.79	ug/l	96
18) Methylene chloride	4.77	49	25726	0.21	ug/l	90
33) Chloroform	8.47	83	239113	1.67	ug/l	97
49) Bromodichloromethane	11.23	83	15592	0.17	ug/l	100
59) Tetrachloroethene	12.91	164	394691	4.70	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFV402.D VO01E13.M Wed Jul 01 10:49:39 2020 Page 1

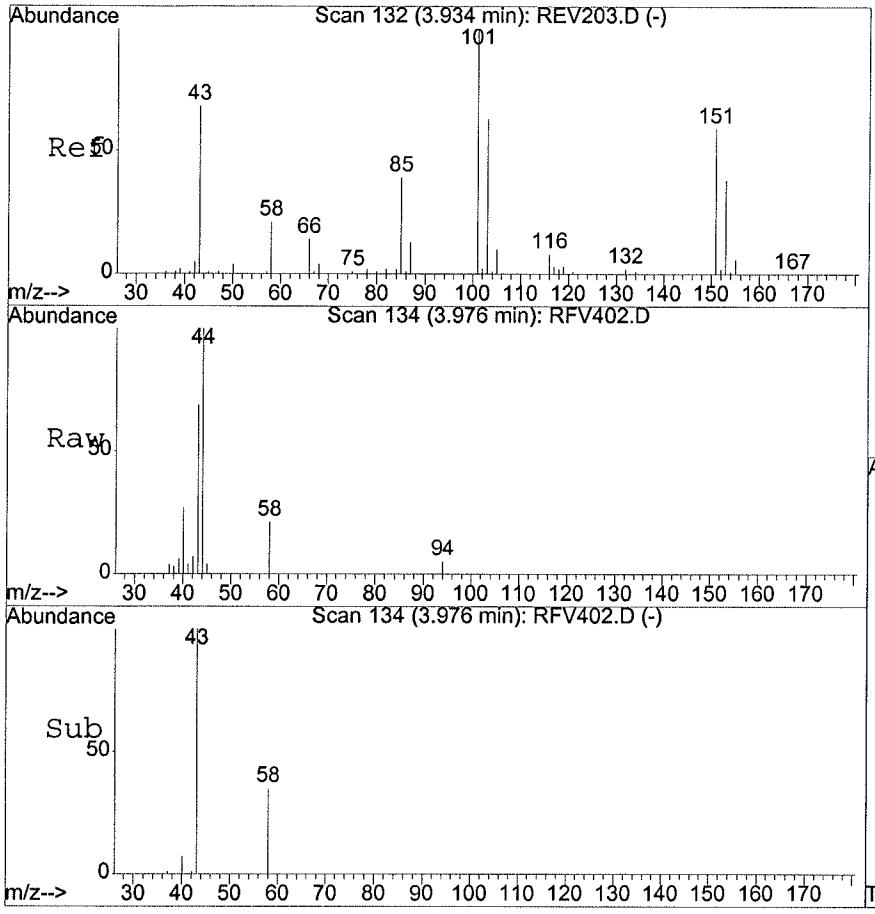
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV402.D Vial: 22
Acq On : 30 Jun 2020 10:10 pm Operator: VLu
Sample : 20F183-16 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:49 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



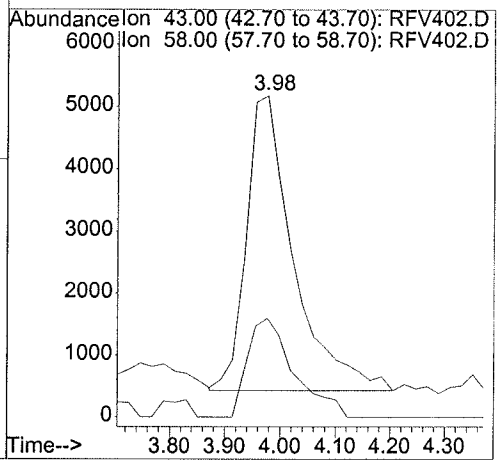
RFV402.D VO01E13.M Wed Jul 01 10:49:41 2020 Page 2

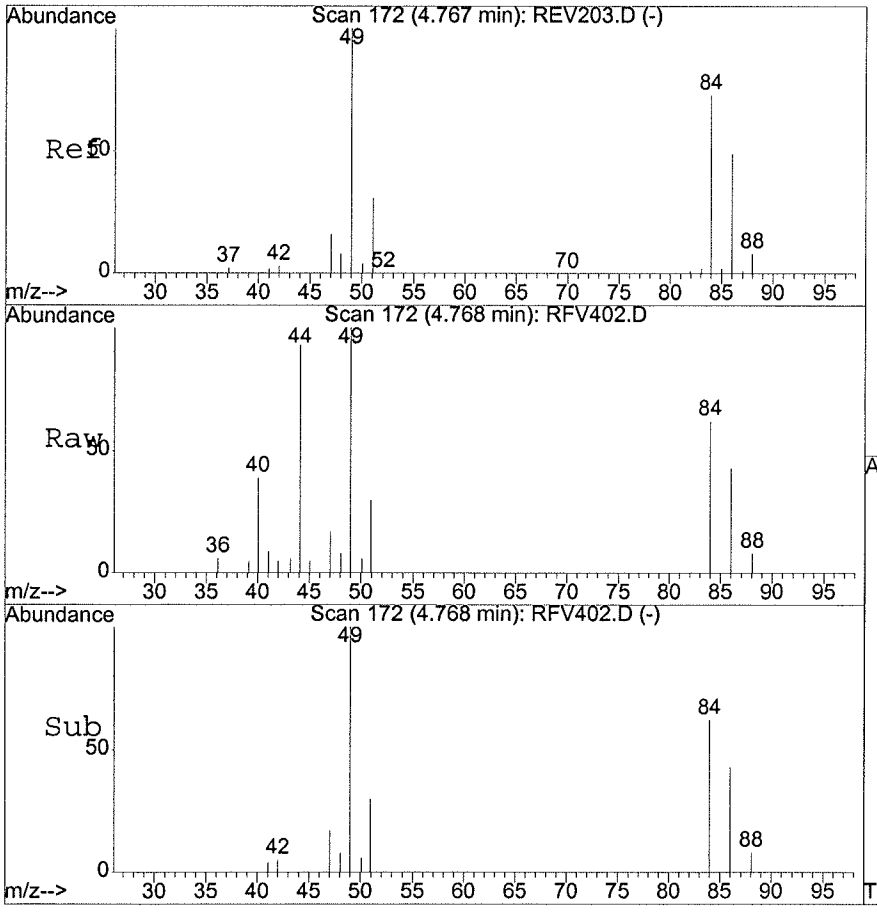


#13
Acetone
Concen: 2.79 ug/l
RT: 3.98 min Scan# 134
Delta R.T. 0.04 min
Lab File: RFV402.D
Acq: 30 Jun 2020 10:10 pm

Tgt Ion: 43 Resp: 28072

Ion	Ratio	Lower	Upper
43	100		
58	33.1	0.9	60.9

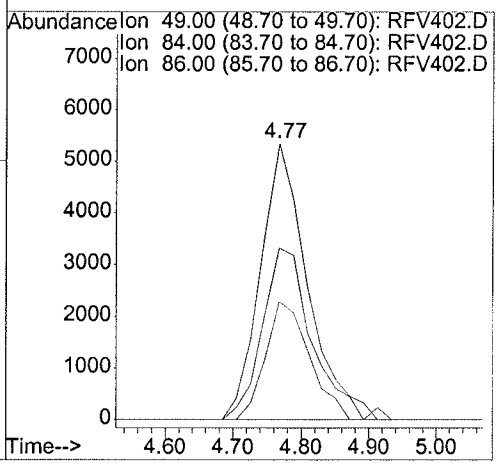


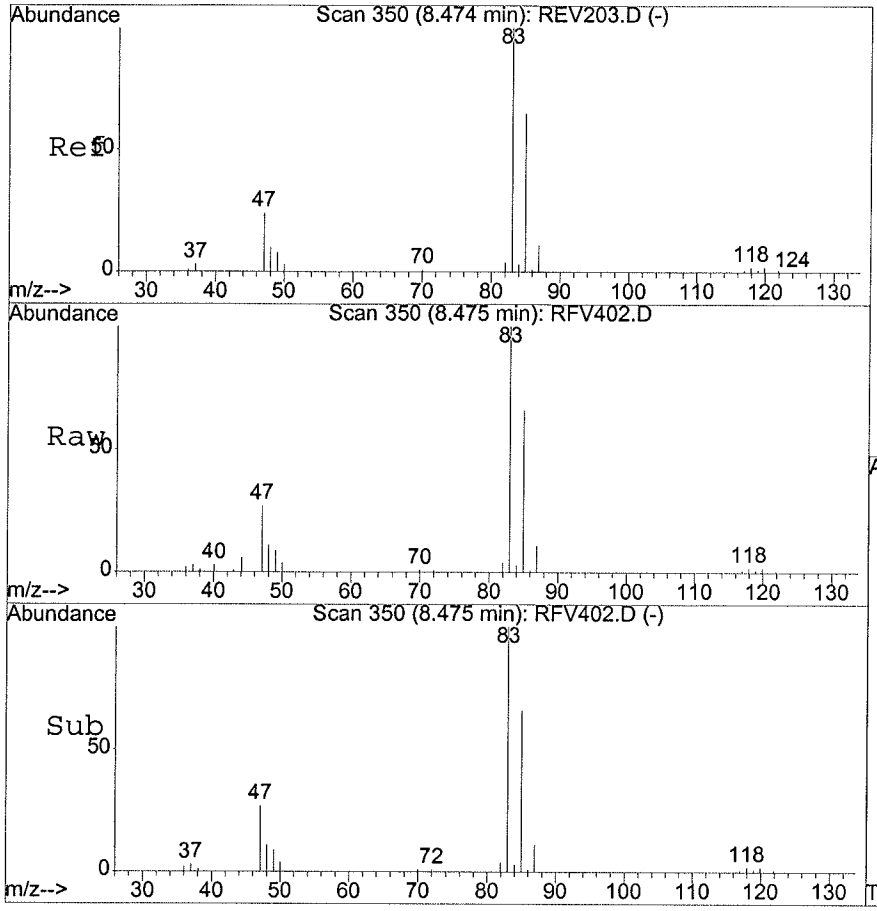


#18
Methylene chloride
Concen: 0.21 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV402.D
Acq: 30 Jun 2020 10:10 pm

Tgt Ion: 49 Resp: 25726

Ion	Ratio	Lower	Upper
49	100		
84	65.5	43.3	103.3
86	39.9	17.1	77.1

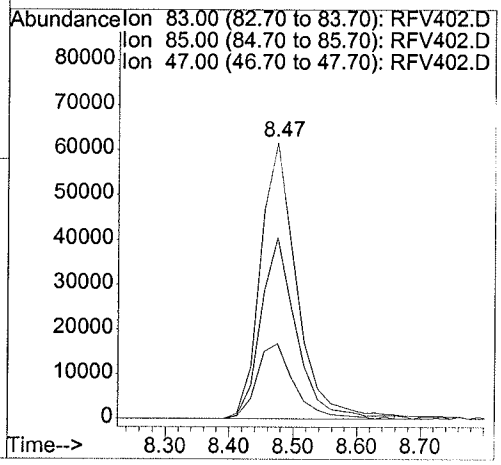


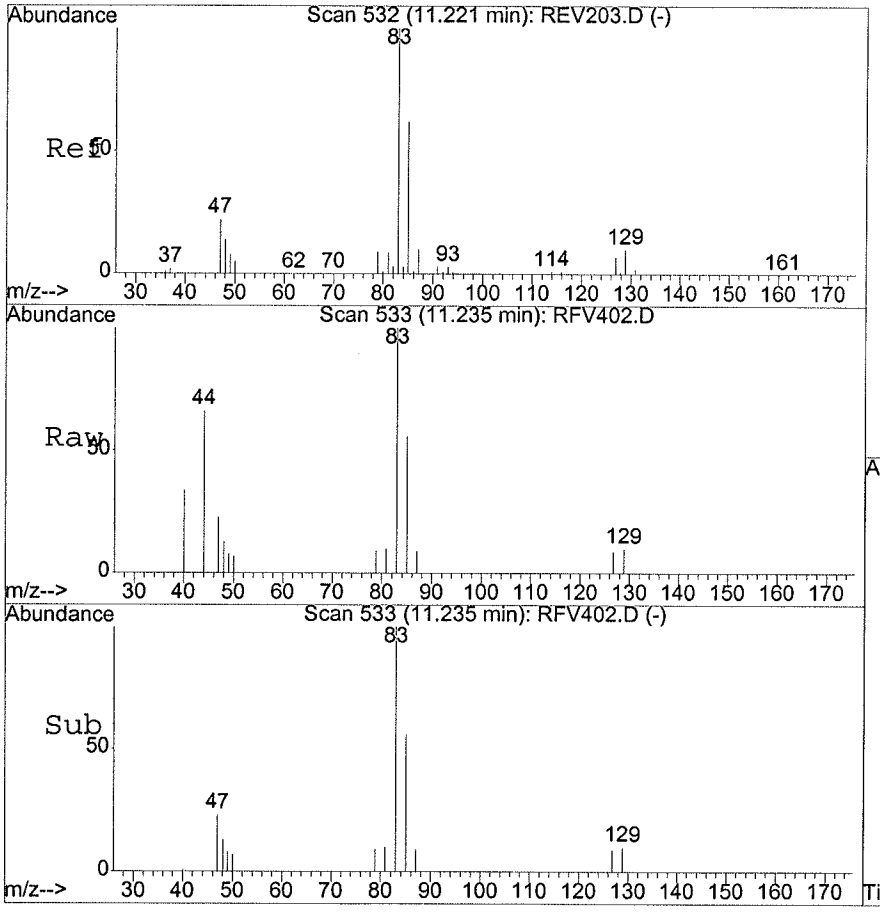


#33
Chloroform
Concen: 1.67 ug/l
RT: 8.47 min Scan# 350
Delta R.T. 0.00 min
Lab File: RFV402.D
Acq: 30 Jun 2020 10:10 pm

Tgt Ion: 83 Resp: 239113

Ion	Ratio	Lower	Upper
83	100		
85	66.7	35.3	95.3
47	29.4	0.0	57.1

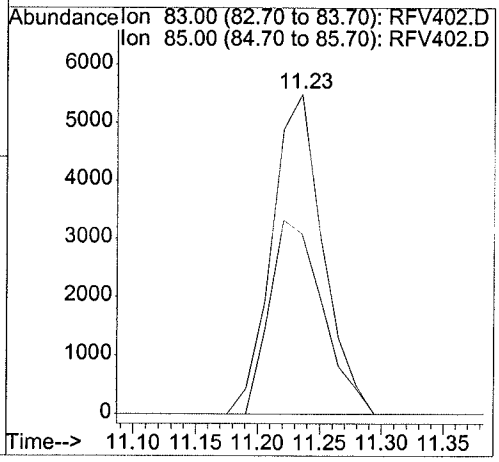


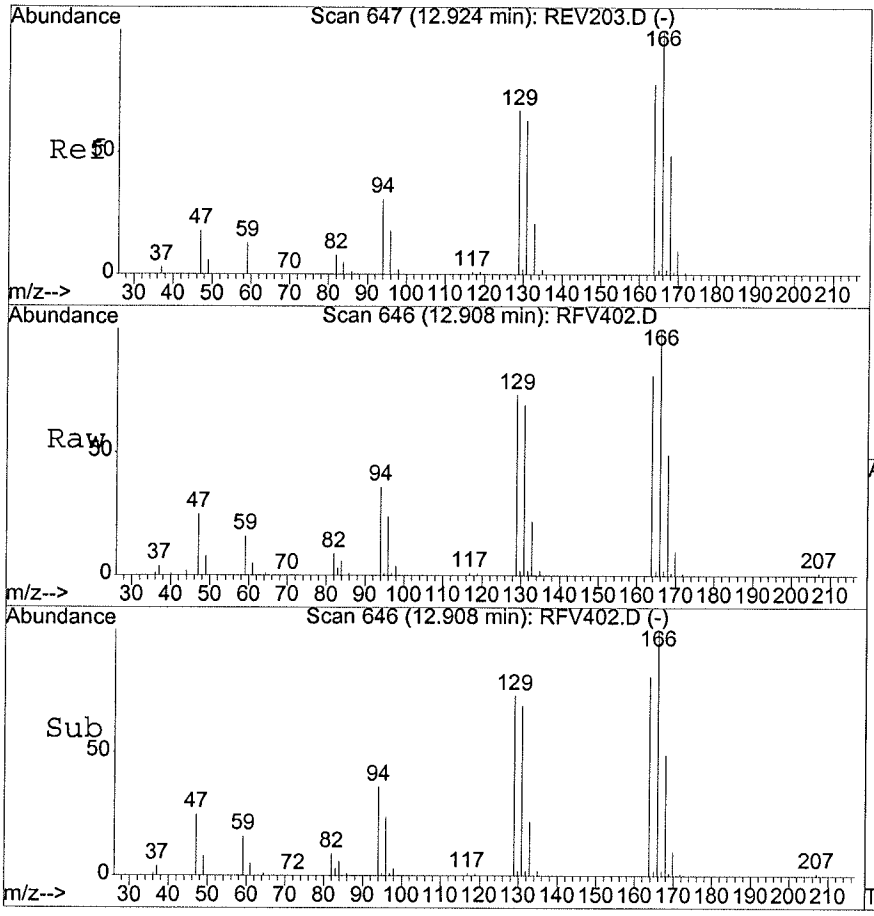


#49
Bromodichloromethane
Concen: 0.17 ug/l
RT: 11.23 min Scan# 533
Delta R.T. 0.01 min
Lab File: RFV402.D
Acq: 30 Jun 2020 10:10 pm

Tgt Ion: 83 Resp: 15592

Ion	Ratio	Lower	Upper
83	100		
85	63.1	33.3	93.3

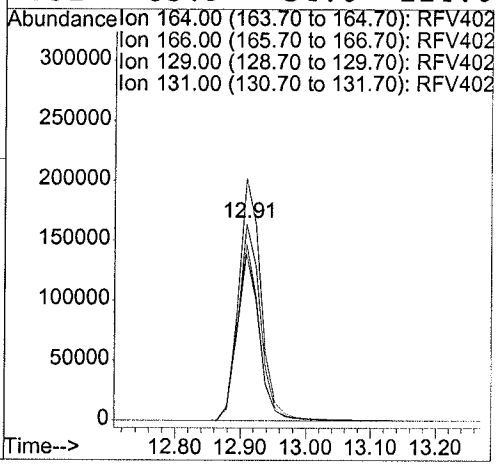




#59
Tetrachloroethene
Concen: 4.70 ug/l
RT: 12.91 min Scan# 646
Delta R.T. -0.02 min
Lab File: RFV402.D
Acq: 30 Jun 2020 10:10 pm

Tgt Ion:164 Resp: 394691

Ion	Ratio	Lower	Upper
164	100		
166	124.9	99.2	159.2
129	88.4	59.7	119.7
131	83.9	54.0	114.0



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV402.D Vial: 22
Acq On : 30 Jun 2020 10:10 pm Operator: VLu
Sample : 20F183-16 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2961639	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2433900	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	794251	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV402.D VO01E14.M Wed Jul 01 09:46:25 2020 Page 1

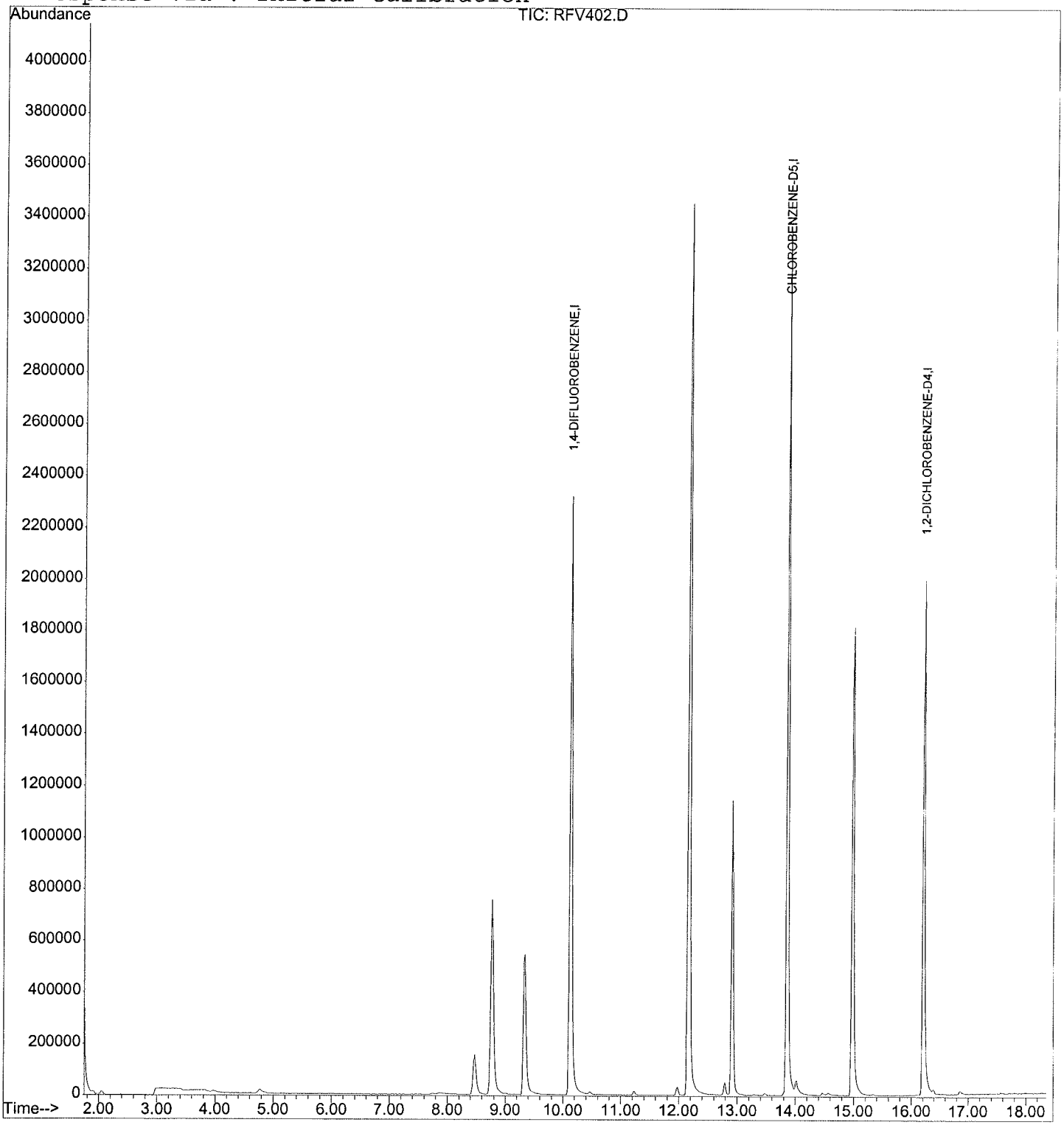
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV402.D
Acq On : 30 Jun 2020 10:10 pm
Sample : 20F183-16 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jul 1 9:36 2020

Vial: 22
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/22/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/29/20 19:21
Sample ID:	TB16-GW062220	Date Analyzed:	06/29/20 19:21
Lab Samp ID:	F183-17	Dilution Factor:	1
Lab File ID:	RFV373	Matrix	: WATER
Ext Btch ID:	VO01F17	% Moisture	: NA
Calib. Ref.:	REV203	Instrument ID	: T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.2	10.00	102	70-130
BROMOFLUOROBENZENE	10.6	10.00	106	70-130
TOLUENE-D8	9.82	10.00	98.2	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV373.D Vial: 18
Acq On : 29 Jun 2020 7:21 pm Operator: VLu
Sample : 20F183-17 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

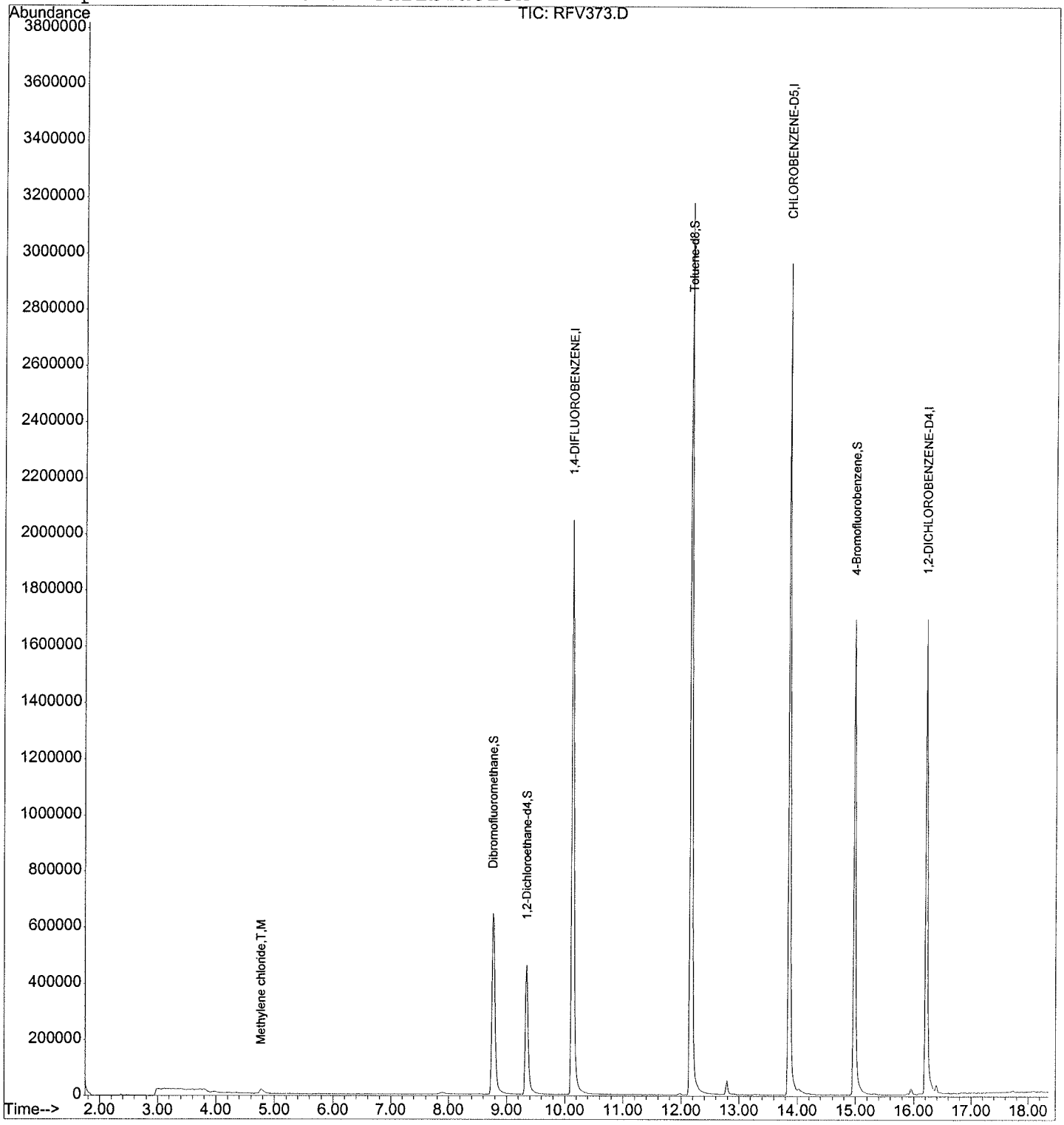
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2686424	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2212405	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	677978	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	787402	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.10%			
38) 1,2-Dichloroethane-d4	9.34	65	511336	10.15	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.50%			
54) Toluene-d8	12.17	98	2955977	9.82	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.20%			
74) 4-Bromofluorobenzene	14.98	95	861373	10.63	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.30%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	24149	0.22	ug/l	96

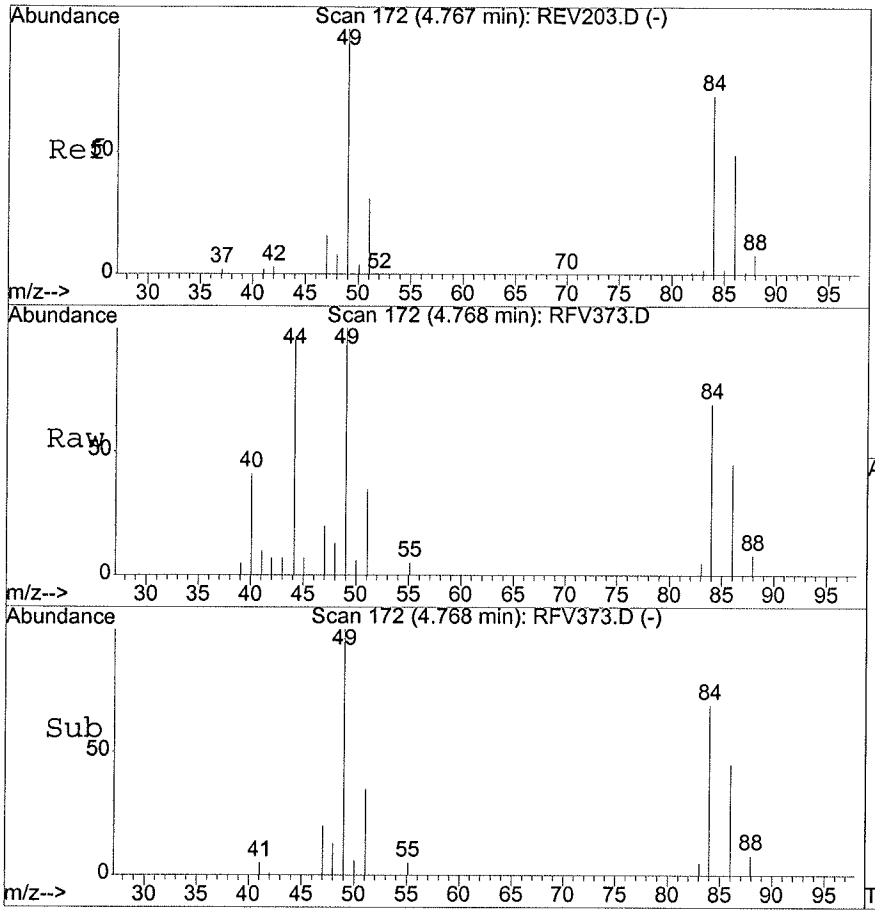
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV373.D Vial: 18
Acq On : 29 Jun 2020 7:21 pm Operator: VLu
Sample : 20F183-17 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:17 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

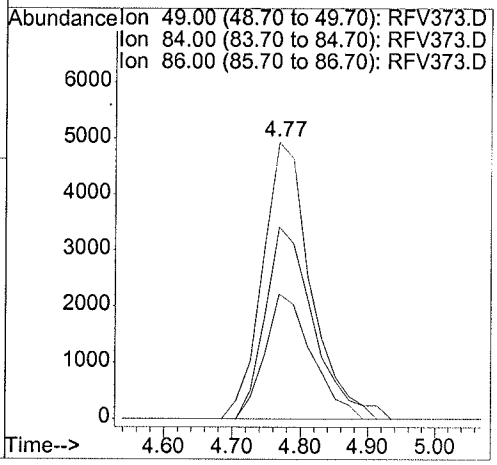




#18
Methylene chloride
Concen: 0.22 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV373.D
Acq: 29 Jun 2020 7:21 pm

Tgt Ion: 49 Resp: 24149

Ion	Ratio	Lower	Upper
49	100		
84	70.2	43.3	103.3
86	43.9	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV373.D Vial: 18
Acq On : 29 Jun 2020 7:21 pm Operator: VLu
Sample : 20F183-17 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2686372	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2197420	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	677955	10.00	ug/l	0.00

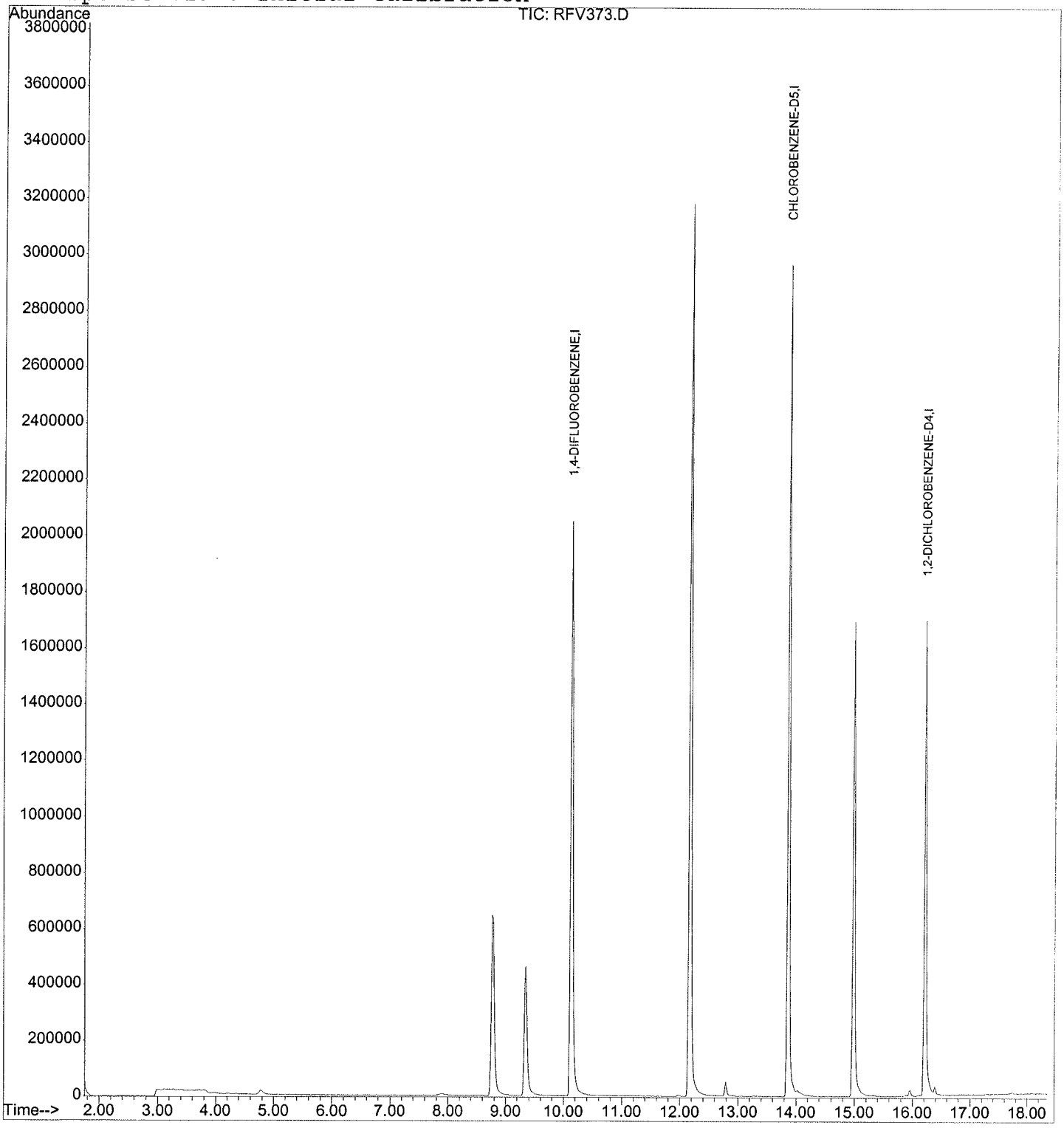
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV373.D VO01E14.M Tue Jun 30 10:34:30 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV373.D Vial: 18
Acq On : 29 Jun 2020 7:21 pm Operator: VLu
Sample : 20F183-17 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:34 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	06/29/20
Batch No.	: 20F183	Date Extracted:	06/29/20 13:21
Sample ID:	MBLK1W	Date Analyzed:	06/29/20 13:21
Lab Samp ID:	VO01F17B	Dilution Factor:	1
Lab File ID:	RFV361	Matrix :	WATER
Ext Btch ID:	VO01F17	% Moisture :	NA
Calib. Ref.:	REV203	Instrument ID :	T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.5	10.00	105	70-130
BROMOFLUOROBENZENE	10.7	10.00	107	70-130
TOLUENE-D8	9.96	10.00	99.6	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VO01F17B VO01F17L VO01F17C
LAB FILE ID: RFV361 RFV358 RFV359
DATE EXTRACTED: 06/29/2013:21 06/29/2012:01 06/29/2012:28 DATE COLLECTED: NA
DATE ANALYZED: 06/29/2013:21 06/29/2012:01 06/29/2012:28 DATE RECEIVED: 06/29/20
PREP. BATCH: VO01F17 VO01F17 VO01F17
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.4	104	10.0	10.3	103	1	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	11.4	114	10.0	11.4	114	0	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.9	109	10.0	10.8	108	1	80-119	20
1,1-Dichloroethane	ND	10.0	10.9	109	10.0	10.5	105	4	77-125	20
1,1-Dichloroethene	ND	10.0	9.59	96	10.0	9.40	94	2	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	11.0	110	10.0	11.1	111	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	10.8	108	10.0	10.9	109	1	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	11.3	113	10.0	11.0	110	3	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	10.7	107	10.0	11.0	110	3	62-138	20
1,2-Dichlorobenzene	ND	10.0	10.5	105	10.0	10.6	106	0	80-119	20
1,2-Dichloroethane	ND	10.0	11.3	113	10.0	11.2	112	1	73-128	20
1,2-Dichloropropane	ND	10.0	11.1	111	10.0	10.9	109	1	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	11.3	113	10.0	10.9	109	4	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.9	109	10.0	10.7	107	2	80-119	20
1,4-Dichlorobenzene	ND	10.0	10.8	108	10.0	10.5	105	2	79-118	20
2-Butanone	ND	50.0	55.8	112	50.0	57.6	115	3	56-143	20
2-Hexanone	ND	50.0	55.6	111	50.0	58.5	117	5	57-139	20
Acetone	ND	50.0	52.2	104	50.0	53.8	108	3	39-160	20
Benzene	ND	10.0	11.3	113	10.0	11.0	110	3	79-120	20
Bromochloromethane	ND	10.0	11.2	112	10.0	11.0	110	1	78-120	20
Bromodichloromethane	ND	10.0	11.6	116	10.0	11.5	115	0	79-125	20
Bromoform	ND	10.0	12.7	127	10.0	12.7	127	0	66-130	20
Bromomethane	ND	10.0	10.6	106	10.0	10.1	101	5	53-141	20
Carbon Disulfide	ND	10.0	10.7	107	10.0	10.3	103	4	64-133	20
Carbon Tetrachloride	ND	10.0	11.1	111	10.0	10.7	107	4	72-136	20
Chlorobenzene	ND	10.0	10.8	108	10.0	10.8	108	0	82-118	20
Chloroethane	ND	10.0	10.6	106	10.0	10.5	105	1	60-138	20
Chloroform	ND	10.0	10.7	107	10.0	10.5	105	2	79-124	20
Chloromethane	ND	10.0	11.7	117	10.0	11.6	116	1	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	10.4	104	10.0	10.4	104	0	78-123	20
Dibromochloromethane	ND	10.0	11.6	116	10.0	11.7	117	1	74-126	20
Dichlorodifluoromethane	ND	10.0	8.33	83	10.0	7.98	80	4	32-152	20
Ethylbenzene	ND	10.0	10.0	100	10.0	9.94	99	1	79-121	20
Isopropylbenzene	ND	10.0	11.1	111	10.0	10.5	105	6	72-131	20
m,p-Xylene	ND	20.0	20.6	103	20.0	20.3	102	1	80-121	20
4-Methyl-2-Pentanone	ND	50.0	58.4	117	50.0	59.8	120	2	67-130	20
Methylene Chloride	ND	10.0	10.6	106	10.0	10.4	104	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	10.1	101	10.0	10.1	101	0	71-124	20
o-Xylene	ND	10.0	10.6	106	10.0	10.4	104	2	78-122	20
Styrene	ND	10.0	10.8	108	10.0	10.8	108	0	78-123	20
Tetrachloroethene	ND	10.0	10.3	103	10.0	10.2	102	1	74-129	20
Toluene	ND	10.0	10.6	106	10.0	10.4	104	2	80-121	20
Trans-1,2-DCE	ND	10.0	10.2	102	10.0	9.80	98	4	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.8	118	10.0	11.9	119	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	11.3	113	10.0	11.2	112	1	73-127	20
TCE	ND	10.0	10.7	107	10.0	10.5	105	1	79-123	20
Trichlorofluoromethane	ND	10.0	12.6	126	10.0	12.1	121	4	65-141	20
Vinyl Chloride	ND	10.0	11.2	112	10.0	10.6	106	6	58-137	20
1,2-Dibromoethane	ND	10.0	11.2	112	10.0	11.2	112	0	77-121	20
Vinyl Acetate	ND	10.0	10.9	109	10.0	10.4	104	5	54-146	20
Trichlorotrifluoroethane	ND	10.0	9.73	97	10.0	9.69	97	0	70-136	20
Methyl Acetate	ND	10.0	11.5	115	10.0	11.6	116	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.5	105	10.0	10.4	104	70-130
Bromofluorobenzene	10.0	10.5	105	10.0	10.3	103	70-130
Toluene-d8	10.0	9.86	99	10.0	9.77	98	70-130
Dibromofluoromethane	10.0	10.4	104	10.0	10.3	103	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/30/20
Batch No. : 20F183	Date Extracted: 06/30/20 14:26
Sample ID: MBLK2W	Date Analyzed: 06/30/20 14:26
Lab Samp ID: VO01F18B	Dilution Factor: 1
Lab File ID: RFV386	Matrix : WATER
Ext Btch ID: VO01F18	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.1	10.00	101	70-130
BROMOFLUOROBENZENE	11.0	10.00	110	70-130
TOLUENE-D8	9.80	10.00	98.0	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK2W
LAB SAMP ID: V001F18B V001F18L V001F18C
LAB FILE ID: RFV386 RFV383 RFV384
DATE EXTRACTED: 06/30/2014:26 06/30/2013:06 06/30/2013:33 DATE COLLECTED: NA
DATE ANALYZED: 06/30/2014:26 06/30/2013:06 06/30/2013:33 DATE RECEIVED: 06/30/20
PREP. BATCH: V001F18 V001F18 V001F18
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.71	97	10.0	9.61	96	1	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.1	101	10.0	9.97	100	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	9.83	98	10.0	9.60	96	2	80-119	20
1,1-Dichloroethane	ND	10.0	10.0	100	10.0	9.80	98	2	77-125	20
1,1-Dichloroethene	ND	10.0	9.32	93	10.0	9.23	92	1	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.99	100	10.0	10.1	101	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.85	99	10.0	9.81	98	0	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	10.2	102	10.0	9.96	100	2	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	9.38	94	10.0	9.47	95	1	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.60	96	10.0	9.62	96	0	80-119	20
1,2-Dichloroethane	ND	10.0	10.3	103	10.0	10.3	103	1	73-128	20
1,2-Dichloropropane	ND	10.0	9.87	99	10.0	10.1	101	3	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.2	102	10.0	10.1	101	1	75-124	20
1,3-Dichlorobenzene	ND	10.0	10.2	102	10.0	10.0	100	1	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.62	96	10.0	9.63	96	0	79-118	20
2-Butanone	ND	50.0	49.8	100	50.0	48.8	98	2	56-143	20
2-Hexanone	ND	50.0	48.3	97	50.0	47.5	95	2	57-139	20
Acetone	ND	50.0	47.2	94	50.0	47.9	96	1	39-160	20
Benzene	ND	10.0	10.5	105	10.0	10.5	105	0	79-120	20
Bromochloromethane	ND	10.0	10.5	105	10.0	10.4	104	0	78-120	20
Bromodichloromethane	ND	10.0	10.8	108	10.0	10.8	108	0	79-125	20
Bromoform	ND	10.0	11.6	116	10.0	11.3	113	2	66-130	20
Bromomethane	ND	10.0	9.07	91	10.0	8.66	87	5	53-141	20
Carbon Disulfide	ND	10.0	10.6	106	10.0	10.1	101	5	64-133	20
Carbon Tetrachloride	ND	10.0	10.2	102	10.0	10.2	102	1	72-136	20
Chlorobenzene	ND	10.0	10.0	100	10.0	9.99	100	0	82-118	20
Chloroethane	ND	10.0	9.43	94	10.0	8.89	89	6	60-138	20
Chloroform	ND	10.0	9.92	99	10.0	9.90	99	0	79-124	20
Chloromethane	ND	10.0	10.1	101	10.0	9.55	95	6	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	9.79	98	10.0	9.60	96	2	78-123	20
Dibromochloromethane	ND	10.0	10.3	103	10.0	10.2	102	1	74-126	20
Dichlorodifluoromethane	ND	10.0	6.85	68	10.0	6.48	65	6	32-152	20
Ethylbenzene	ND	10.0	9.23	92	10.0	9.08	91	2	79-121	20
Isopropylbenzene	ND	10.0	10.1	101	10.0	9.90	99	2	72-131	20
m,p-Xylene	ND	20.0	19.2	96	20.0	18.7	94	2	80-121	20
4-Methyl-2-Pentanone	ND	50.0	51.9	104	50.0	51.5	103	1	67-130	20
Methylene Chloride	ND	10.0	9.79	98	10.0	9.76	98	0	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.50	95	10.0	9.49	95	0	71-124	20
o-Xylene	ND	10.0	9.66	97	10.0	9.50	95	2	78-122	20
Styrene	ND	10.0	9.65	97	10.0	9.56	96	1	78-123	20
Tetrachloroethene	ND	10.0	9.48	95	10.0	9.59	96	1	74-129	20
Toluene	ND	10.0	9.54	95	10.0	9.50	95	0	80-121	20
Trans-1,2-DCE	ND	10.0	9.55	95	10.0	9.47	95	1	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.1	111	10.0	11.0	110	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	9.88	99	10.0	9.62	96	3	73-127	20
TCE	ND	10.0	10.1	101	10.0	9.95	100	2	79-123	20
Trichlorofluoromethane	ND	10.0	10.9	109	10.0	10.2	102	6	65-141	20
Vinyl Chloride	ND	10.0	9.52	95	10.0	8.89	89	7	58-137	20
1,2-Dibromoethane	ND	10.0	10.1	101	10.0	9.95	99	1	77-121	20
Vinyl Acetate	ND	10.0	10.2	102	10.0	8.65	87	16	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.98	90	10.0	9.04	90	1	70-136	20
Methyl Acetate	ND	10.0	9.92	99	10.0	9.72	97	2	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.6	106	70-130
Bromofluorobenzene	10.0	10.2	102	10.0	10.1	101	70-130
Toluene-d8	10.0	9.76	98	10.0	9.60	96	70-130
Dibromofluoromethane	10.0	10.4	104	10.0	10.4	104	70-130

Vinyl Acetate: ICAL ID V001E14
ICAL MID PT: REV216

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 07/02/20
Batch No. : 20F183	Date Extracted: 07/02/20 12:16
Sample ID: MBLK3W	Date Analyzed: 07/02/20 12:16
Lab Samp ID: VO01G02B	Dilution Factor: 1
Lab File ID: RGV028	Matrix : WATER
Ext Btch ID: VO01G02	% Moisture : NA
Calib. Ref.: REV203	Instrument ID : T-001

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.3	10.00	103	70-130
BROMOFLUOROBENZENE	10.0	10.00	100	70-130
TOLUENE-D8	9.85	10.00	98.5	70-130
DIBROMOFLUOROMETHANE	10.0	10.00	100	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK3W
LAB SAMP ID: VO01G02B VO01G02L VO01G02C
LAB FILE ID: RGV028 RGV025 RGV026
DATE EXTRACTED: 07/02/2012:16 07/02/2010:55 07/02/2011:22 DATE COLLECTED: NA
DATE ANALYZED: 07/02/2012:16 07/02/2010:55 07/02/2011:22 DATE RECEIVED: 07/02/20
PREP. BATCH: VO01G02 VO01G02 VO01G02
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	9.64	96	10.0	9.81	98	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	10.1	101	10.0	10.1	101	0	71-121	20
1,1,2-Trichloroethane	ND	10.0	10.1	101	10.0	10.2	102	1	80-119	20
1,1-Dichloroethane	ND	10.0	10.0	100	10.0	10.0	100	0	77-125	20
1,1-Dichloroethene	ND	10.0	9.04	90	10.0	9.29	93	3	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.73	97	10.0	9.87	99	1	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.56	96	10.0	9.71	97	2	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	9.56	96	10.0	10.1	101	5	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	9.79	98	10.0	9.56	96	2	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.35	93	10.0	9.62	96	3	80-119	20
1,2-Dichloroethane	ND	10.0	10.4	104	10.0	10.5	105	1	73-128	20
1,2-Dichloropropane	ND	10.0	10.1	101	10.0	10.3	103	3	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	9.66	97	10.0	10.0	100	4	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.67	97	10.0	9.77	98	1	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.21	92	10.0	9.78	98	6	79-118	20
2-Butanone	ND	50.0	51.0	102	50.0	49.1	98	4	56-143	20
2-Hexanone	ND	50.0	50.5	101	50.0	48.2	96	5	57-139	20
Acetone	ND	50.0	48.2	96	50.0	47.0	94	3	39-160	20
Benzene	ND	10.0	10.3	103	10.0	10.5	105	1	79-120	20
Bromochloromethane	ND	10.0	10.5	105	10.0	10.5	105	0	78-120	20
Bromodichloromethane	ND	10.0	11.0	110	10.0	11.0	110	0	79-125	20
Bromoform	ND	10.0	11.1	111	10.0	11.2	112	1	66-130	20
Bromomethane	ND	10.0	8.67	87	10.0	8.76	88	1	53-141	20
Carbon Disulfide	ND	10.0	10.5	105	10.0	10.7	107	2	64-133	20
Carbon Tetrachloride	ND	10.0	10.1	101	10.0	10.3	103	2	72-136	20
Chlorobenzene	ND	10.0	9.93	99	10.0	10.2	102	3	82-118	20
Chloroethane	ND	10.0	8.63	86	10.0	8.83	88	2	60-138	20
Chloroform	ND	10.0	9.83	98	10.0	10.1	101	3	79-124	20
Chloromethane	ND	10.0	9.47	95	10.0	9.71	97	3	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	9.60	96	10.0	9.74	97	1	78-123	20
Dibromochloromethane	ND	10.0	10.5	105	10.0	10.6	106	0	74-126	20
Dichlorodifluoromethane	ND	10.0	6.92	69	10.0	6.73	67	3	32-152	20
Ethylbenzene	ND	10.0	9.28	93	10.0	9.45	95	2	79-121	20
Isopropylbenzene	ND	10.0	9.53	95	10.0	9.82	98	3	72-131	20
m,p-Xylene	ND	20.0	18.7	94	20.0	19.4	97	4	80-121	20
4-Methyl-2-Pentanone	ND	50.0	54.4	109	50.0	51.5	103	5	67-130	20
Methylene Chloride	ND	10.0	9.57	96	10.0	9.78	98	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.86	99	10.0	9.76	98	1	71-124	20
o-Xylene	ND	10.0	9.69	97	10.0	9.89	99	2	78-122	20
Styrene	ND	10.0	9.77	98	10.0	10.1	101	3	78-123	20
Tetrachloroethene	ND	10.0	9.49	95	10.0	9.96	100	5	74-129	20
Toluene	ND	10.0	9.74	97	10.0	9.96	100	2	80-121	20
Trans-1,2-DCE	ND	10.0	9.46	95	10.0	9.79	98	3	75-124	20
cis-1,3-Dichloropropene	ND	10.0	11.1	111	10.0	11.0	110	1	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	10.1	101	10.0	9.95	100	2	73-127	20
TCE	ND	10.0	9.92	99	10.0	10.3	103	4	79-123	20
Trichlorofluoromethane	ND	10.0	10.3	103	10.0	10.4	104	1	65-141	20
Vinyl Chloride	ND	10.0	8.85	89	10.0	9.29	93	5	58-137	20
1,2-Dibromoethane	ND	10.0	10.5	105	10.0	10.2	102	3	77-121	20
Vinyl Acetate	ND	10.0	9.45	95	10.0	9.25	93	2	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.78	88	10.0	9.14	91	4	70-136	20
Methyl Acetate	ND	10.0	10.0	100	10.0	10.2	102	1	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.6	106	10.0	10.3	103	70-130
Bromofluorobenzene	10.0	9.78	98	10.0	10.1	101	70-130
Toluene-d8	10.0	9.72	97	10.0	10.0	100	70-130
Dibromofluoromethane	10.0	10.3	103	10.0	10.2	102	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MW08A-GW062120
LAB SAMP ID: F183-08 F183-08M F183-08S
LAB FILE ID: RFV394 RFV395 RFV396
DATE EXTRACTED: 06/30/2018:02 06/30/2018:59 06/30/2019:26 DATE COLLECTED: 06/21/20
DATE ANALYZED: 06/30/2018:02 06/30/2018:59 06/30/2019:26 DATE RECEIVED: 06/23/20
PREP. BATCH: VO01F18 VO01F18 VO01F18
CALIB. REF: REV203 REV203 REV203

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	0.549J	10.0	10.1	96	10.0	10.2	97	1	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	9.24	92	10.0	9.94	99	7	71-121	20
1,1,2-Trichloroethane	ND	10.0	9.11	91	10.0	9.53	95	5	80-119	20
1,1-Dichloroethane	ND	10.0	9.92	99	10.0	9.94	99	0	77-125	20
1,1-Dichloroethene	ND	10.0	9.28	93	10.0	9.40	94	1	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	9.33	93	10.0	9.93	99	6	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.23	92	10.0	9.87	99	7	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	10.2	102	10.0	9.94	99	3	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	8.13	81	10.0	9.27	93	13	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.50	95	10.0	9.54	95	0	80-119	20
1,2-Dichloroethane	ND	10.0	9.98	100	10.0	10.5	105	5	73-128	20
1,2-Dichloropropane	ND	10.0	9.87	99	10.0	10.4	104	5	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	10.4	104	10.0	9.97	100	4	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.97	100	10.0	9.92	99	0	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.65	97	10.0	9.69	97	0	79-118	20
2-Butanone	ND	50.0	40.4	81	50.0	46.5	93	14	56-143	20
2-Hexanone	ND	50.0	40.3	81	50.0	46.5	93	14	57-139	20
Acetone	ND	50.0	38.0	76	50.0	42.2	84	11	39-160	20
Benzene	ND	10.0	10.4	104	10.0	10.3	103	1	79-120	20
Bromochloromethane	ND	10.0	10.1	101	10.0	10.5	105	4	78-120	20
Bromodichloromethane	0.512J	10.0	10.9	104	10.0	11.3	108	3	79-125	20
Bromoform	ND	10.0	10.2	102	10.0	10.8	108	6	66-130	20
Bromomethane	ND	10.0	9.47	95	10.0	8.78	88	7	53-141	20
Carbon Disulfide	ND	10.0	9.17	92	10.0	10.4	104	13	64-133	20
Carbon Tetrachloride	ND	10.0	10.1	101	10.0	10.2	102	0	72-136	20
Chlorobenzene	ND	10.0	9.98	100	10.0	10.1	101	1	82-118	20
Chloroethane	ND	10.0	9.53	95	10.0	8.79	88	8	60-138	20
Chloroform	4.18	10.0	14.2	101	10.0	14.1	100	1	79-124	20
Chloromethane	ND	10.0	10.5	105	10.0	9.68	97	9	50-139	20
cis-1,2-Dichloroethylene	0.171J	10.0	9.61	94	10.0	9.89	97	3	78-123	20
Dibromochloromethane	ND	10.0	9.58	96	10.0	10.1	101	6	74-126	20
Dichlorodifluoromethane	0.189J	10.0	7.40	72	10.0	7.13	69	4	32-152	20
Ethylbenzene	ND	10.0	9.34	93	10.0	9.24	92	1	79-121	20
Isopropylbenzene	ND	10.0	10.2	102	10.0	9.87	99	3	72-131	20
m,p-Xylene	ND	20.0	18.7	93	20.0	18.4	92	1	80-121	20
4-Methyl-2-Pentanone	ND	50.0	45.1	90	50.0	51.5	103	13	67-130	20
Methylene Chloride	ND	10.0	9.61	96	10.0	9.86	99	3	74-124	20
tert-Butyl Methyl Ether	ND	10.0	8.50	85	10.0	9.38	94	10	71-124	20
o-Xylene	ND	10.0	9.82	98	10.0	9.69	97	1	78-122	20
Styrene	ND	10.0	9.68	97	10.0	9.75	97	1	78-123	20
Tetrachloroethene	55.4	10.0	66.8	114	10.0	65.4	100	2	74-129	20
Toluene	ND	10.0	9.69	97	10.0	9.64	96	1	80-121	20
Trans-1,2-DCE	ND	10.0	9.68	97	10.0	9.68	97	0	75-124	20
cis-1,3-Dichloropropene	ND	10.0	10.2	102	10.0	10.8	108	5	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	9.05	90	10.0	9.61	96	6	73-127	20
TCE	0.404J	10.0	10.4	100	10.0	10.4	99	0	79-123	20
Trichlorofluoromethane	ND	10.0	11.6	116	10.0	10.6	106	9	65-141	20
Vinyl Chloride	ND	10.0	9.87	99	10.0	9.04	90	9	58-137	20
1,2-Dibromoethane	ND	10.0	9.16	92	10.0	9.75	98	6	77-121	20
Vinyl Acetate	ND	10.0	7.72	77	10.0	9.55	96	21*	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.86	89	10.0	8.98	90	1	70-136	20
Methyl Acetate	ND	10.0	8.65	87	10.0	9.56	96	10	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	10.2	102	10.0	10.5	105	70-130
Bromofluorobenzene	10.0	10.3	103	10.0	10.2	102	70-130
Toluene-d8	10.0	10.1	101	10.0	9.80	98	70-130
Dibromofluoromethane	10.0	10.2	102	10.0	10.4	104	70-130

Vinyl Acetate: ICAL ID VO01E14
ICAL MID PT: REV216

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:09 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

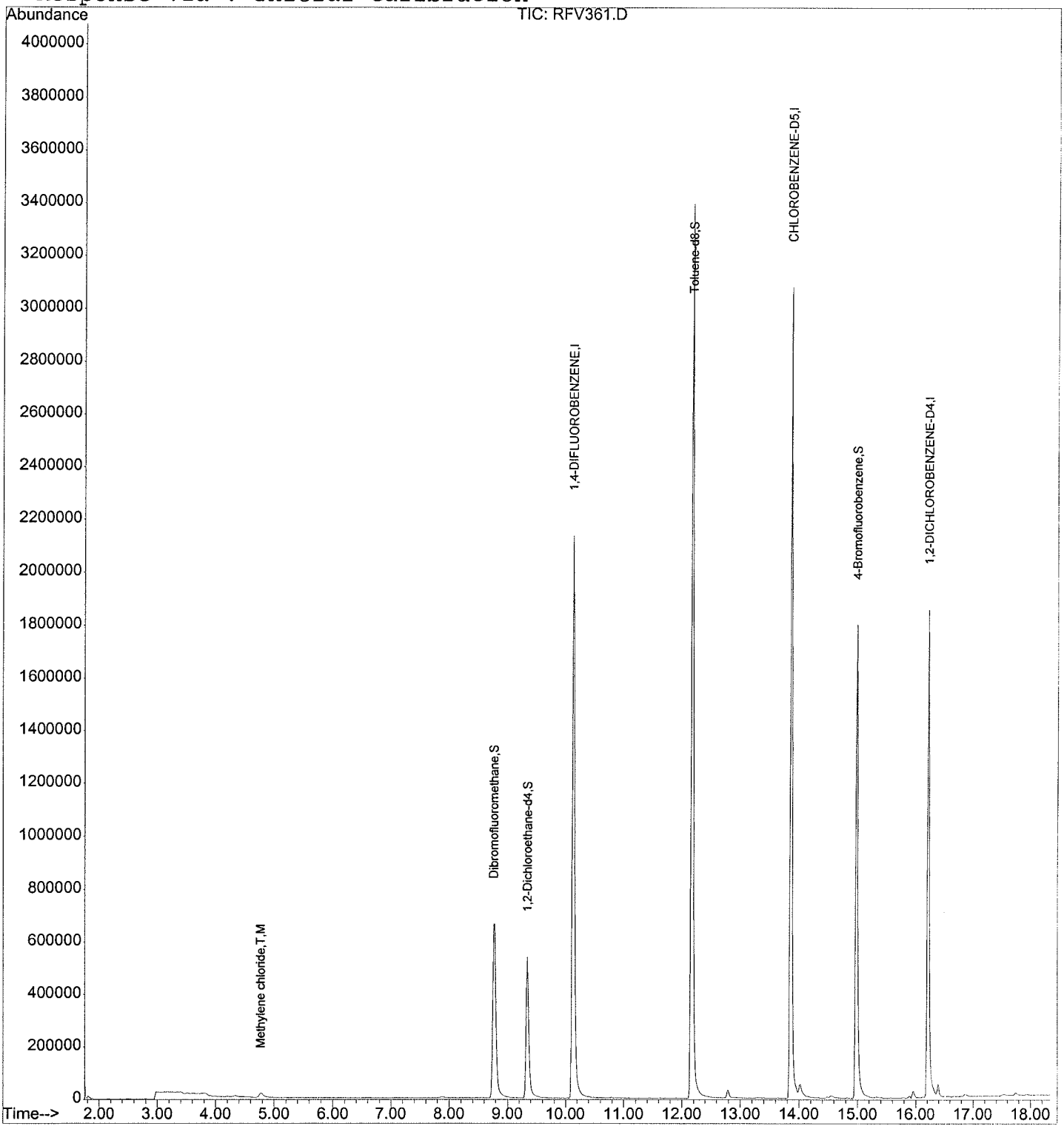
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2857990	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2329130	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	729540	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	816961	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery = 101.60%			
38) 1,2-Dichloroethane-d4	9.34	65	561827	10.49	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.90%			
54) Toluene-d8	12.17	98	3158683	9.96	ug/l	0.00
Spiked Amount 10.000			Recovery = 99.60%			
74) 4-Bromofluorobenzene	14.98	95	930862	10.67	ug/l	0.00
Spiked Amount 10.000			Recovery = 106.70%			
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	26093	0.22	ug/l	97

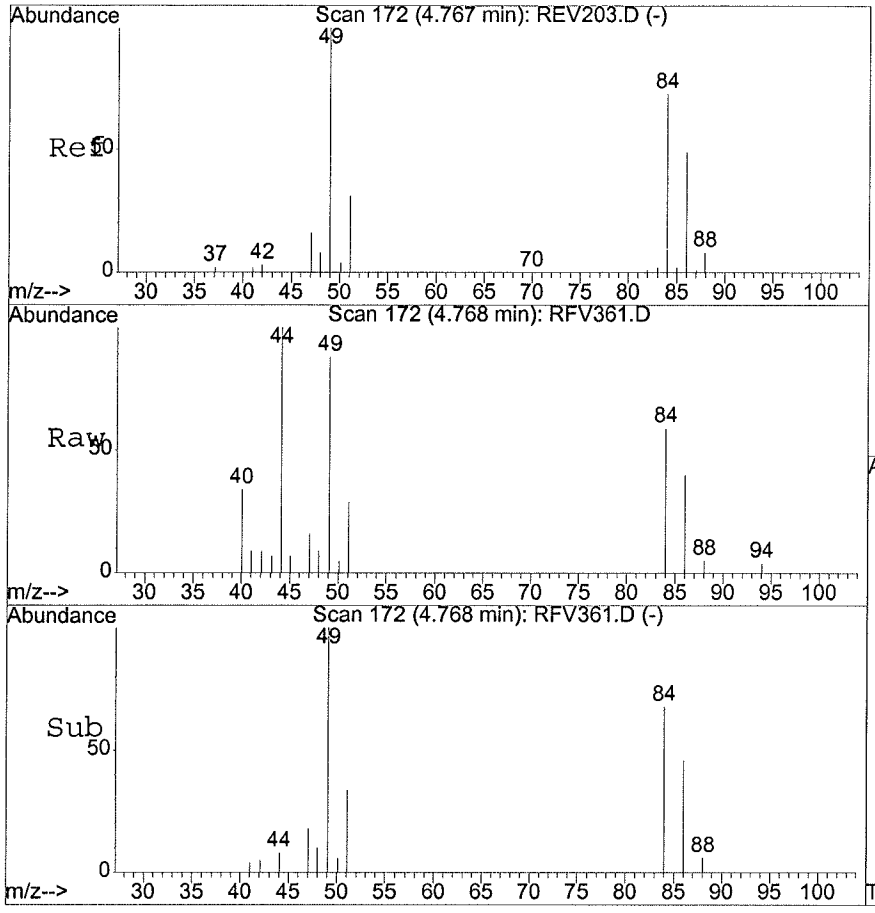
(#) = qualifier out of range (m) = manual integration
RFV361.D VO01E13.M Tue Jun 30 11:09:35 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:09 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

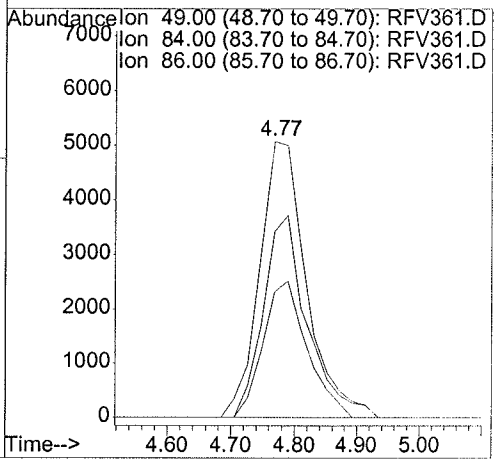




#18
Methylene chloride
Concen: 0.22 ug/l
RT: 4.77 min Scan# 172
Delta R.T. 0.00 min
Lab File: RFV361.D
Acq: 29 Jun 2020 1:21 pm

Tgt Ion: 49 Resp: 26093

Ion	Ratio	Lower	Upper
49	100		
84	69.0	43.3	103.3
86	46.6	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D Vial: 6
Acq On : 29 Jun 2020 1:21 pm Operator: VLu
Sample : VO01F17B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2858050	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2313332	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	729518	10.00	ug/l	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV361.D VO01E14.M Tue Jun 30 10:32:57 2020 Page 1

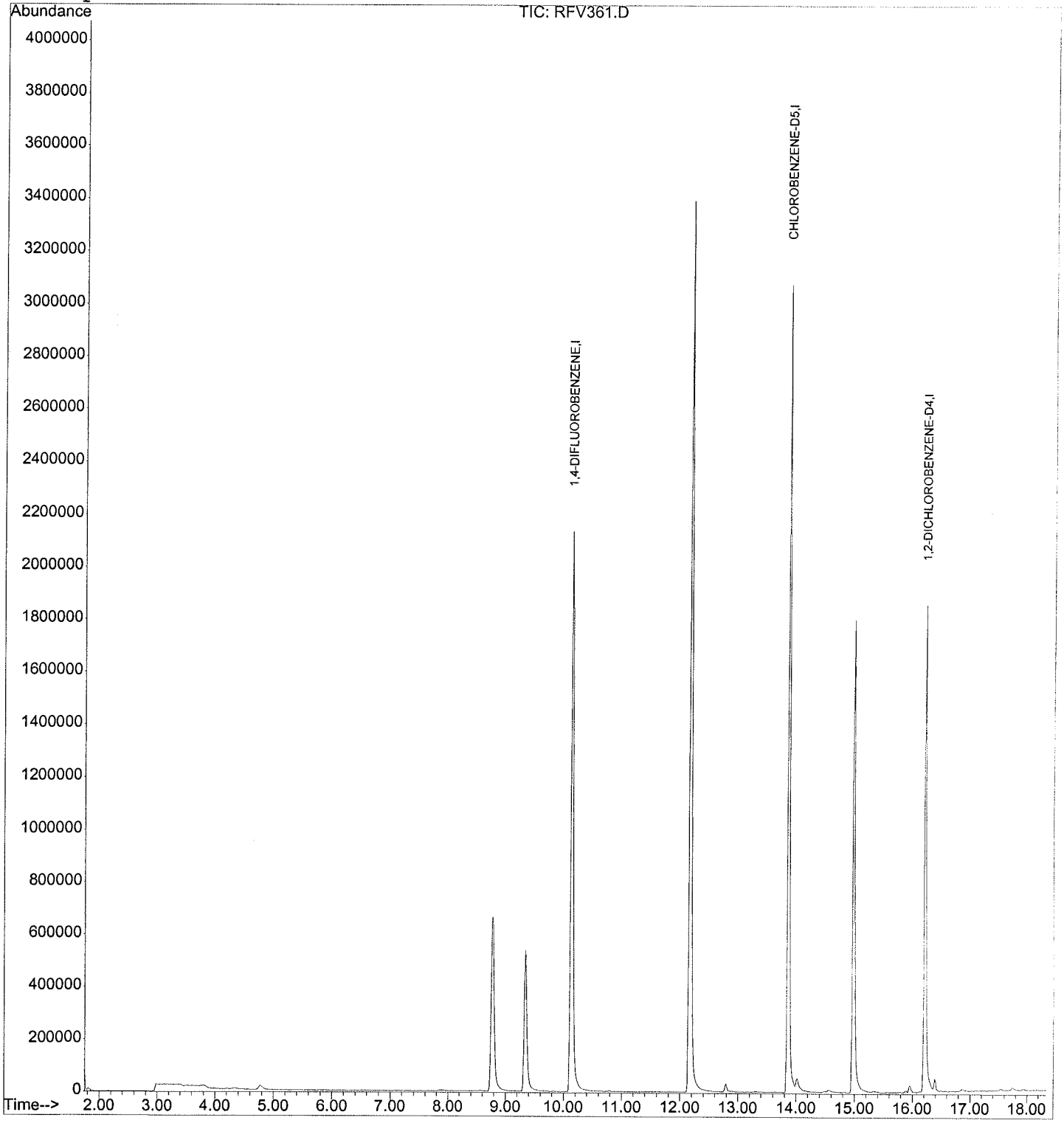
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV361.D
Acq On : 29 Jun 2020 1:21 pm
Sample : VO01F17B 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2775829	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2289223	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	758157	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	813342	10.41	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.10%			
38) 1,2-Dichloroethane-d4	9.32	65	547407	10.52	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.20%			
54) Toluene-d8	12.17	98	3073180	9.86	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.60%			
74) 4-Bromofluorobenzene	14.97	95	953543	10.52	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.20%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	711188	8.33	ug/l	97
4) Chloromethane	2.10	50	1189129	11.66	ug/l	98
5) Vinyl chloride	2.24	62	1117605	11.17	ug/l	98
7) Bromomethane	2.63	94	707987	10.62	ug/l	99
8) Chloroethane	2.76	64	588180	10.62	ug/l	98
9) Dichlorofluoromethane	3.08	67	1585081	11.59	ug/l	100
10) Trichlorofluoromethane	3.14	101	1171369	12.64	ug/l	99
11) Acrolein	3.71	56	266188	55.29	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	565305	9.73	ug/l	99
13) Acetone	3.96	43	491745	52.17	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1300044	9.59	ug/l	98
15) Iodomethane	4.10	142	1560711	10.18	ug/l	98
16) Carbon disulfide	4.21	76	3181134	10.69	ug/l	100
17) Methyl acetate	4.54	43	284965	11.48	ug/l	99
18) Methylene chloride	4.77	49	1205585	10.55	ug/l	97
19) tert-Butyl alcohol	5.08	59	673766	260.63	ug/l	98
20) Acrylonitrile	5.23	53	620992	53.77	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1205659	10.08	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1373467	10.25	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1778885	10.94	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2951383	10.43	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	1946879	9.53	ug/l	100
28) 2-Butanone	7.75	43	840066	55.82	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	978254	10.39	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1152388	11.22	ug/l	99
31) Tetrahydrofurane	8.25	42	87272	9.05	ug/l	92
32) Bromochloromethane	8.20	49	748303	11.15	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.47	83	1437187	10.71 ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1117426	10.43 ug/l	99
36)	Cyclohexane	8.84	84	1843381	12.09 ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1614070	10.23 ug/l	100
39)	1,1-Dichloropropene	9.03	110	486796	10.71 ug/l	99
40)	Carbon tetrachloride	9.00	119	998091	11.11 ug/l	99
41)	Benzene	9.34	78	3757213	11.32 ug/l	100
42)	1,2-Dichloroethane	9.46	62	704605	11.31 ug/l	99
44)	Trichloroethene	10.45	130	1084879	10.69 ug/l	99
45)	Methylcyclohexane	10.78	83	2353203	13.75 ug/l	99
46)	1,2-Dichloropropane	10.82	63	990636	11.06 ug/l	100
47)	1,4-Dioxane	10.97	88	61548	201.46 ug/l	99
48)	Dibromomethane	10.94	93	366006	10.77 ug/l	98
49)	Bromodichloromethane	11.22	83	1007169	11.55 ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	232580	8.40 ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1325089	11.82 ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	2278046	58.38 ug/l	99
55)	Toluene	12.26	91	3797167	10.59 ug/l	100
56)	Ethyl methacrylate	12.67	69	688437	10.77 ug/l	97
57)	trans-1,3-Dichloropropene	12.58	75	958954	11.34 ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	523431	10.91 ug/l	99
59)	Tetrachloroethene	12.91	164	804798	10.26 ug/l	99
60)	1,3-Dichloropropane	13.00	76	1024170	11.14 ug/l	100
61)	2-Hexanone	13.07	43	1439771	55.63 ug/l	100
62)	Dibromochloromethane	13.25	129	692952	11.62 ug/l	99
63)	1,2-Dibromoethane	13.37	107	538955	11.19 ug/l	98
64)	1-Chlorohexane	13.87	91	1663075	10.25 ug/l	98
65)	Chlorobenzene	13.89	112	2441274	10.85 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.97	131	800717	11.11 ug/l	100
67)	Ethylbenzene	13.99	91	4257375	10.03 ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6220571	20.59 ug/l	98
69)	o-Xylene	14.48	91	3075893	10.62 ug/l	99
70)	Styrene	14.49	104	2575040	10.79 ug/l	100
72)	Bromoform	14.69	173	324729	12.72 ug/l	100
73)	Isopropylbenzene	14.82	105	4389691	11.08 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	627685	11.43 ug/l	99
76)	Bromobenzene	15.10	156	875369	11.29 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	126595	11.53 ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	153939	11.56 ug/l	100
79)	n-Propylbenzene	15.17	91	5012666	10.94 ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3166458	11.33 ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

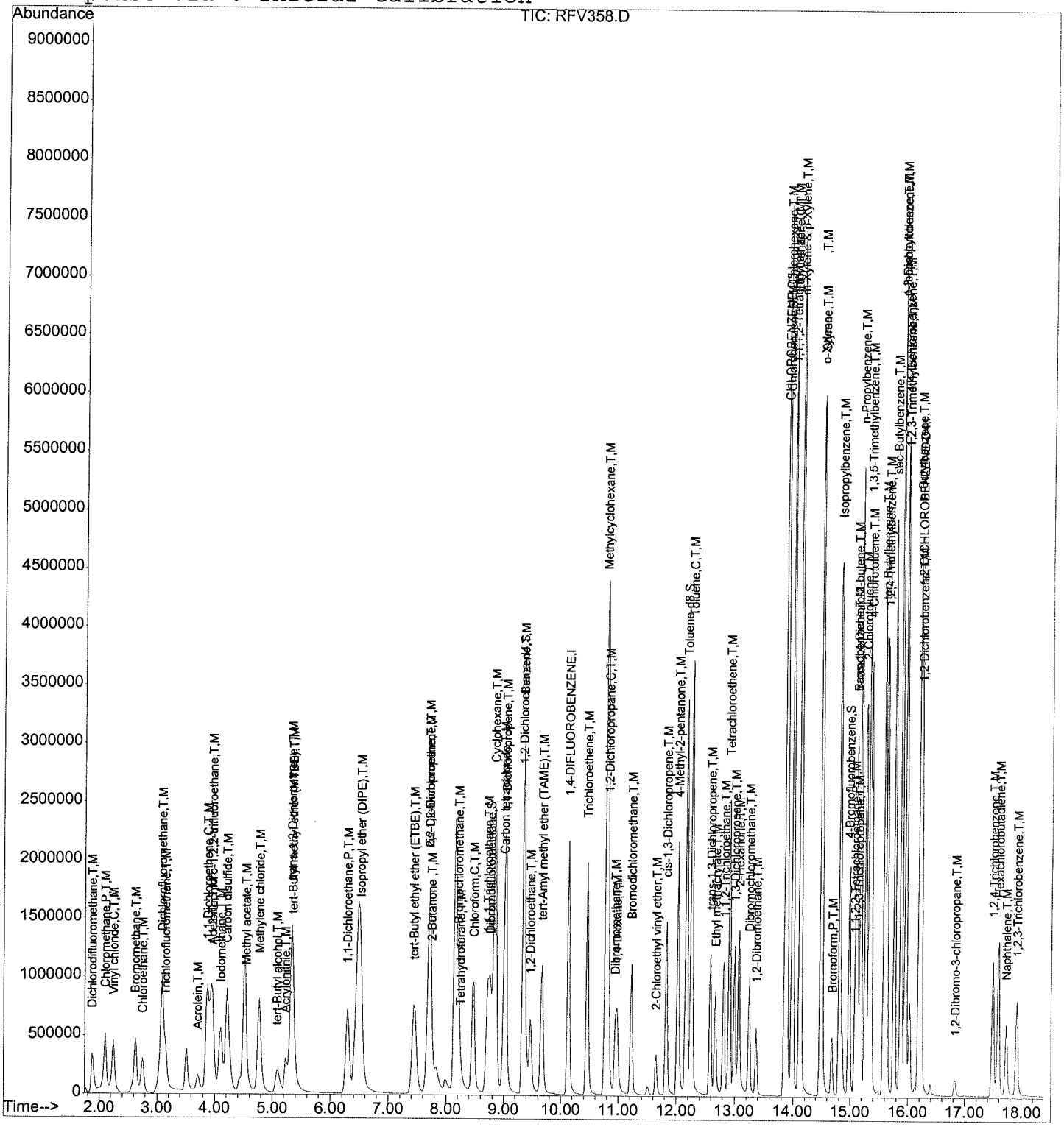
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81)	2-Chlorotoluene	15.26	91	2499200	11.37 ug/l	99
82)	4-Chlorotoluene	15.35	91	2897964	11.13 ug/l	100
83)	tert-Butylbenzene	15.59	134	821477	10.88 ug/l	99
84)	1,2,4-Trimethylbenzene	15.63	105	3040994	11.26 ug/l	99
85)	sec-Butylbenzene	15.75	105	4639055	11.15 ug/l	100
86)	p-Isopropyltoluene	15.87	119	3443649	10.86 ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1577648	10.93 ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1508954	10.75 ug/l	99
89)	1,2,3-Trimethylbenzene	15.96	105	2534520	10.21 ug/l	99
90)	n-Butylbenzene	16.18	91	3008585	10.45 ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1248020	10.54 ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	68995	10.66 ug/l	96
93)	1,2,4-Trichlorobenzene	17.48	180	629755	10.82 ug/l	100
94)	Hexachlorobutadiene	17.59	225	465108	10.47 ug/l	100
95)	Naphthalene	17.72	128	831906	10.80 ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	478672	10.99 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D
Acq On : 29 Jun 2020 12:01 pm
Sample : VO01F17L
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jun 29 17:39 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

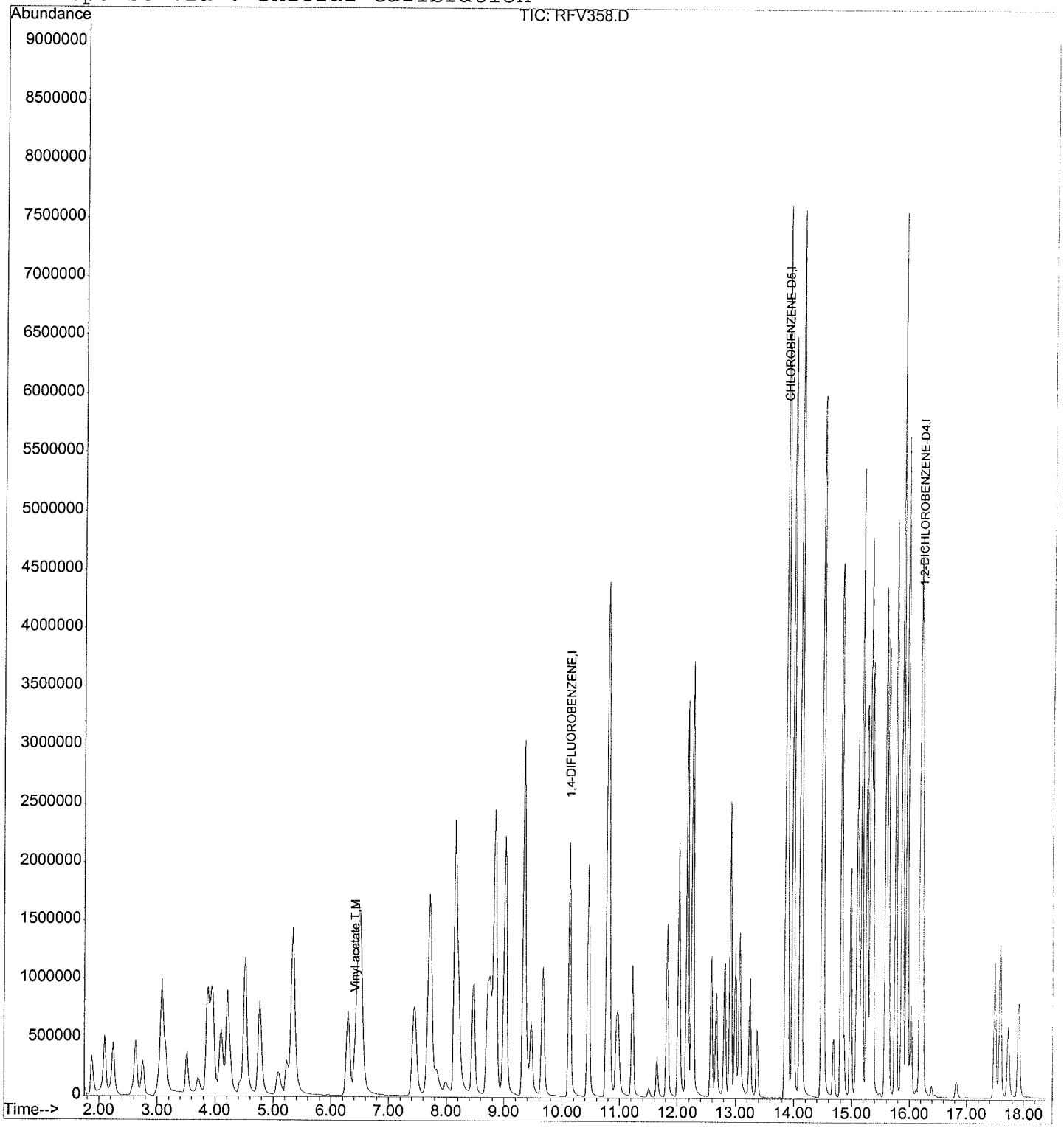
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2775775	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2279035	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	758132	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	1000787	10.88	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV358.D VO01E14.M Tue Jun 30 10:32:38 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV358.D Vial: 3
Acq On : 29 Jun 2020 12:01 pm Operator: VLu
Sample : VO01F17L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:39 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2832970	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2324325	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	792881	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	821826	10.31	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.10%			
38) 1,2-Dichloroethane-d4	9.34	65	554119	10.43	ug/l	0.00
Spiked Amount 10.000			Recovery = 104.30%			
54) Toluene-d8	12.17	98	3092160	9.77	ug/l	0.00
Spiked Amount 10.000			Recovery = 97.70%			
74) 4-Bromofluorobenzene	14.97	95	980438	10.34	ug/l	-0.01
Spiked Amount 10.000			Recovery = 103.40%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	695385	7.98	ug/l	97
4) Chloromethane	2.09	50	1204873	11.57	ug/l	98
5) Vinyl chloride	2.25	62	1077869	10.56	ug/l	98
7) Bromomethane	2.63	94	687204	10.10	ug/l	99
8) Chloroethane	2.76	64	593158	10.49	ug/l	98
9) Dichlorofluoromethane	3.08	67	1567487	11.23	ug/l	99
10) Trichlorofluoromethane	3.14	101	1148596	12.14	ug/l	100
11) Acrolein	3.71	56	270563	55.07	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	574829	9.69	ug/l	99
13) Acetone	3.96	43	517740	53.82	ug/l	100
14) 1,1-Dichloroethene	3.87	61	1301062	9.40	ug/l	98
15) Iodomethane	4.10	142	1557715	9.96	ug/l	98
16) Carbon disulfide	4.21	76	3121893	10.28	ug/l	100
17) Methyl acetate	4.54	43	293882	11.60	ug/l	99
18) Methylene chloride	4.77	49	1209077	10.37	ug/l	97
19) tert-Butyl alcohol	5.08	59	714651	270.86	ug/l	99
20) Acrylonitrile	5.23	53	651309	55.26	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1227702	10.06	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1340751	9.80	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1739524	10.49	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2951686	10.22	ug/l	99
27) tert-Butyl ethyl ether (ET	7.46	59	2010296	9.64	ug/l	100
28) 2-Butanone	7.75	43	884554	57.59	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	994137	10.35	ug/l	97
30) 2,2-Dichloropropane	7.71	77	1156810	11.03	ug/l	99
31) Tetrahydrofurane	8.27	42	92277	9.37	ug/l	94
32) Bromochloromethane	8.21	49	753978	11.01	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFV359.D VO01E13.M Tue Jun 30 11:08:59 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.48	83	1441216	10.52	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1128684	10.32	ug/l	99
36)	Cyclohexane	8.84	84	1859209	11.94	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1687972	10.49	ug/l	100
39)	1,1-Dichloropropene	9.03	110	479418	10.33	ug/l	99
40)	Carbon tetrachloride	9.00	119	983222	10.72	ug/l	99
41)	Benzene	9.34	78	3720653	10.98	ug/l	100
42)	1,2-Dichloroethane	9.47	62	709652	11.16	ug/l	100
44)	Trichloroethene	10.45	130	1092965	10.55	ug/l	99
45)	Methylcyclohexane	10.79	83	2364074	13.53	ug/l	99
46)	1,2-Dichloropropane	10.82	63	997347	10.91	ug/l	100
47)	1,4-Dioxane	10.97	88	60103	192.77	ug/l	95
48)	Dibromomethane	10.94	93	371223	10.71	ug/l	100
49)	Bromodichloromethane	11.22	83	1025586	11.53	ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	246908	8.73	ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1361285	11.90	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2382011	59.81	ug/l	100
55)	Toluene	12.26	91	3789373	10.41	ug/l	100
56)	Ethyl methacrylate	12.67	69	718754	11.08	ug/l	98
57)	trans-1,3-Dichloropropene	12.58	75	962019	11.20	ug/l	99
58)	1,1,2-Trichloroethane	12.82	97	524000	10.75	ug/l	100
59)	Tetrachloroethene	12.91	164	810516	10.18	ug/l	99
60)	1,3-Dichloropropane	13.00	76	1014905	10.88	ug/l	100
61)	2-Hexanone	13.07	43	1538420	58.55	ug/l	100
62)	Dibromochloromethane	13.25	129	711310	11.75	ug/l	100
63)	1,2-Dibromoethane	13.37	107	548082	11.21	ug/l	97
64)	1-Chlorohexane	13.87	91	1649750	10.01	ug/l	99
65)	Chlorobenzene	13.89	112	2467622	10.80	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.99	131	801416	10.95	ug/l	99
67)	Ethylbenzene	13.99	91	4283334	9.94	ug/l	99
68)	m-Xylene & p-Xylene	14.11	91	6232561	20.32	ug/l	98
69)	o-Xylene	14.48	91	3067499	10.43	ug/l	98
70)	Styrene	14.49	104	2616788	10.80	ug/l	100
72)	Bromoform	14.69	173	338804	12.69	ug/l	99
73)	Isopropylbenzene	14.82	105	4337206	10.47	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	657359	11.44	ug/l	98
76)	Bromobenzene	15.10	156	881986	10.88	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	129998	11.32	ug/l	93
78)	1,2,3-Trichloropropane	15.13	110	158765	11.40	ug/l	100
79)	n-Propylbenzene	15.17	91	5024509	10.49	ug/l	100
80)	1,3,5-Trimethylbenzene	15.32	105	3180363	10.88	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

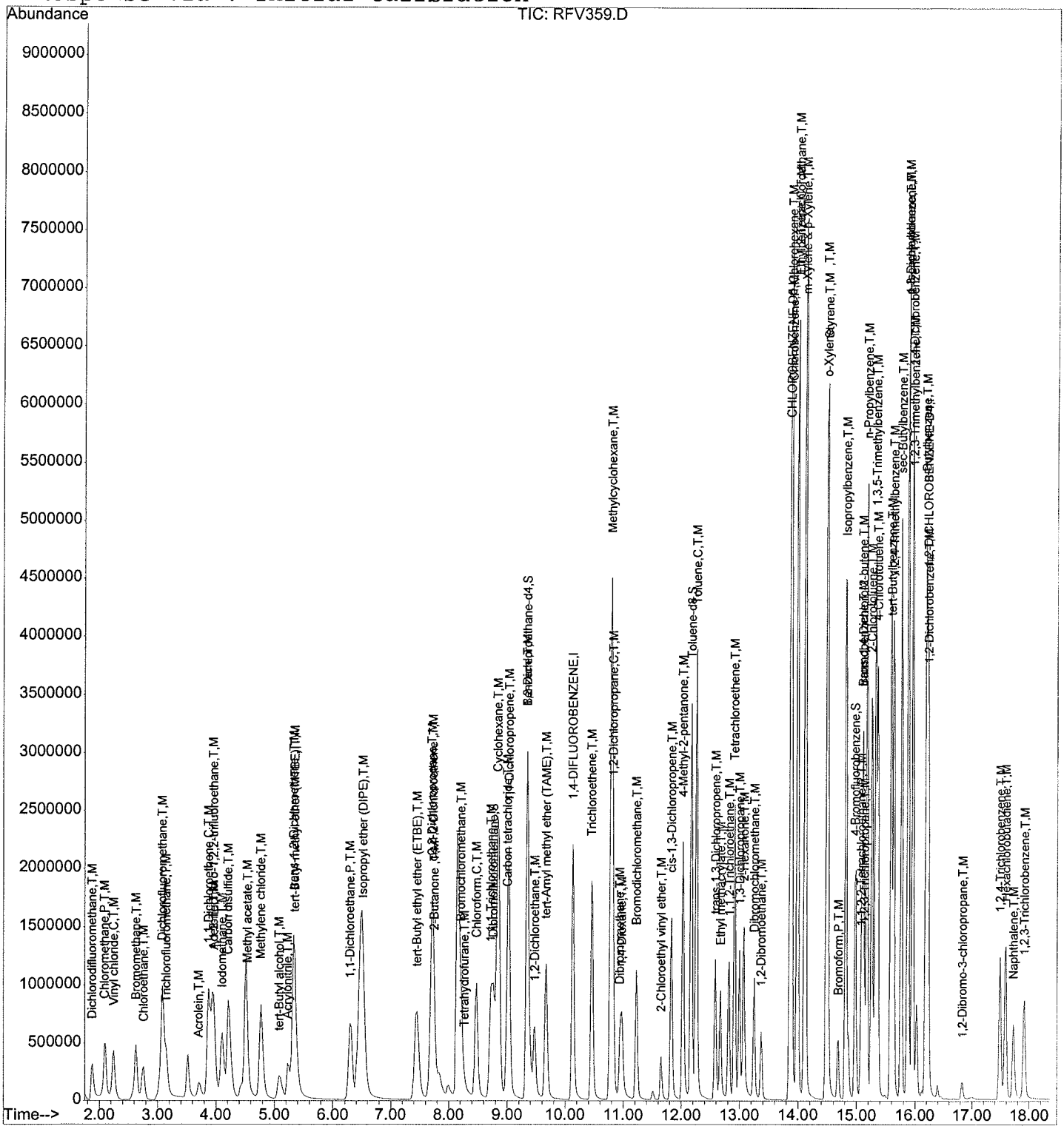
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2526919	10.99	ug/l	100
82)	4-Chlorotoluene	15.35	91	2929377	10.76	ug/l	100
83)	tert-Butylbenzene	15.59	134	824844	10.45	ug/l	71
84)	1,2,4-Trimethylbenzene	15.62	105	3096010	10.96	ug/l	99
85)	sec-Butylbenzene	15.75	105	4628269	10.63	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3484534	10.50	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1622276	10.74	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1548137	10.55	ug/l	98
89)	1,2,3-Trimethylbenzene	15.96	105	2567321	9.89	ug/l	99
90)	n-Butylbenzene	16.18	91	3091800	10.26	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1307957	10.56	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	74714	11.04	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	663519	10.90	ug/l	99
94)	Hexachlorobutadiene	17.59	225	472503	10.17	ug/l	100
95)	Naphthalene	17.72	128	908270	11.28	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	506715	11.12	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:08 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:40 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

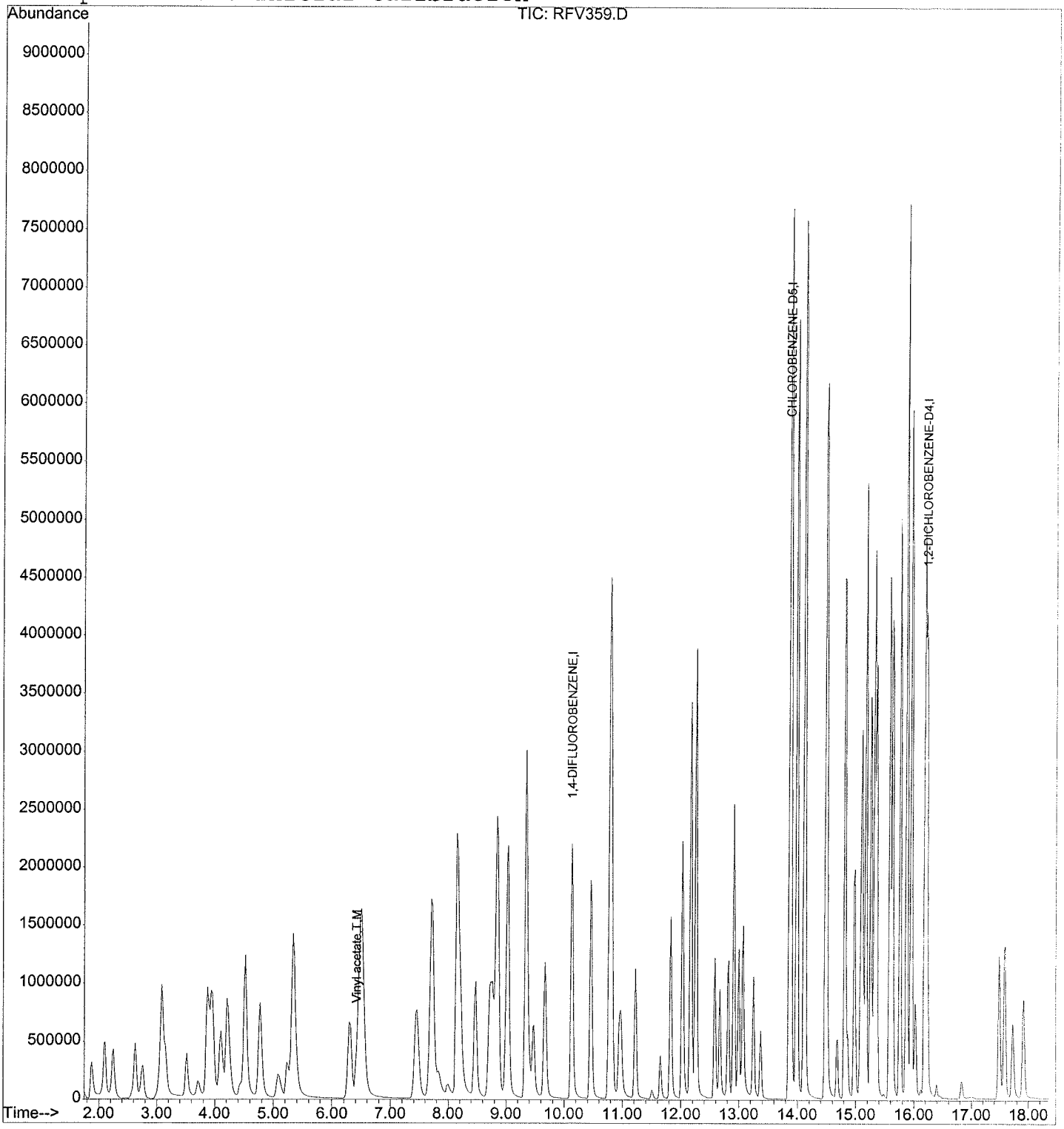
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2832915	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2314561	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	792907	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	968065	10.35	ug/l	95

(#) = qualifier out of range (m) = manual integration
RFV359.D VO01E14.M Tue Jun 30 10:32:46 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV359.D Vial: 4
Acq On : 29 Jun 2020 12:28 pm Operator: VLu
Sample : VO01F17C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 29 17:40 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV386.D Vial: 6
Acq On : 30 Jun 2020 2:26 pm Operator: VLu
Sample : VO01F18B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

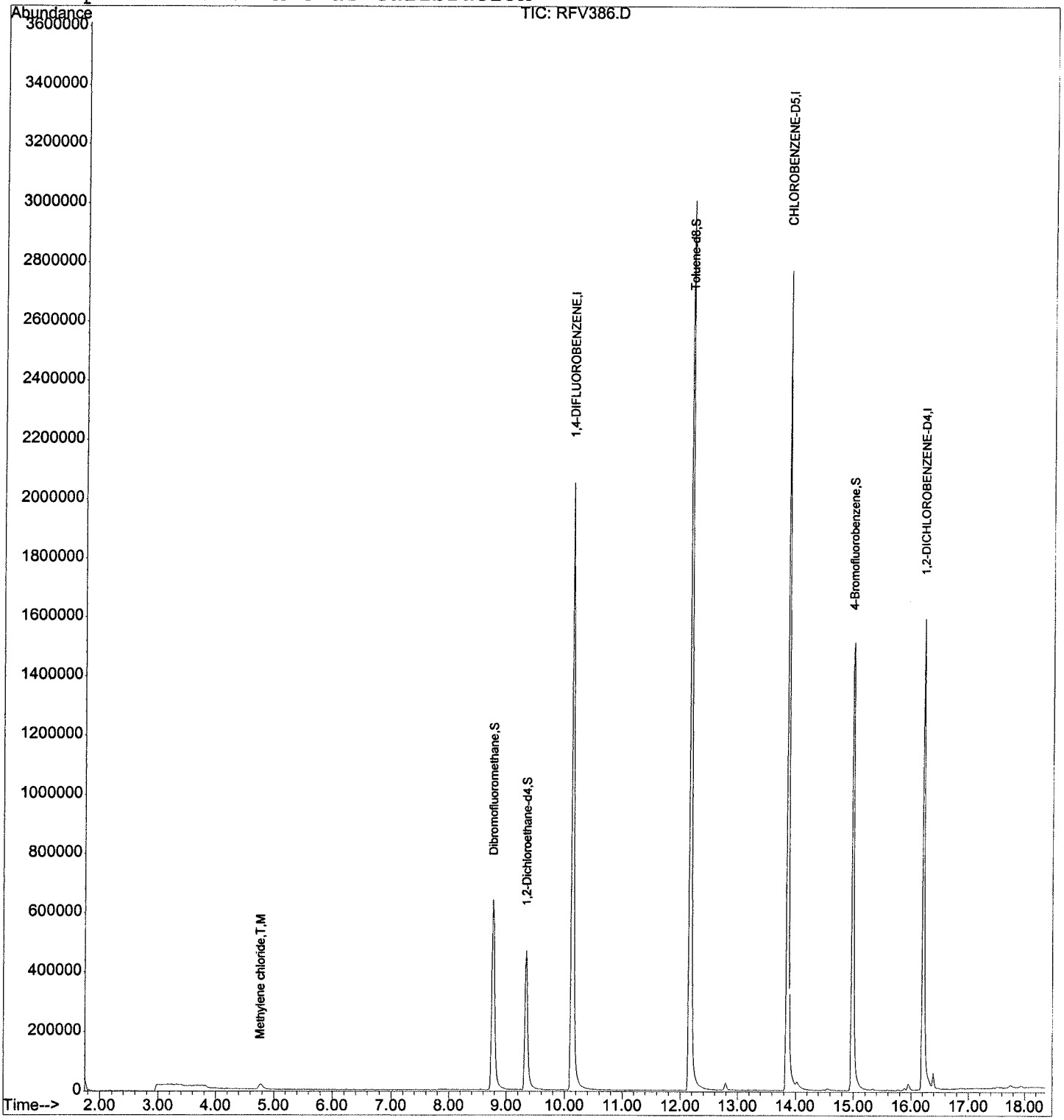
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2693340	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2179444	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	652993	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	770113	10.16	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.60%		
38) 1,2-Dichloroethane-d4	9.34	65	508254	10.07	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.70%		
54) Toluene-d8	12.17	98	2907669	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery =	98.00%		
74) 4-Bromofluorobenzene	14.97	95	855745	10.96	ug/l	-0.01
Spiked Amount 10.000			Recovery =	109.60%		
Target Compounds						Qvalue
18) Methylene chloride	4.77	49	29873	0.27	ug/l	92

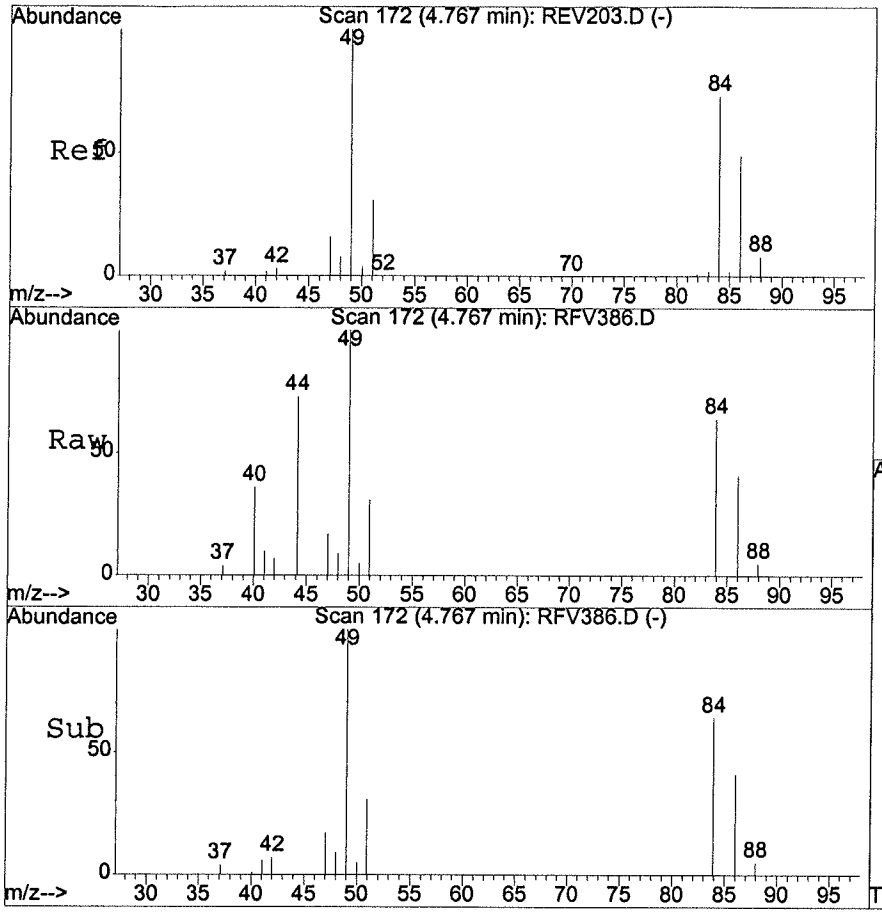
(#) = qualifier out of range (m) = manual integration
RFV386.D VO01E13.M Wed Jul 01 10:31:07 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV386.D Vial: 6
Acq On : 30 Jun 2020 2:26 pm Operator: VLu
Sample : VO01F18B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

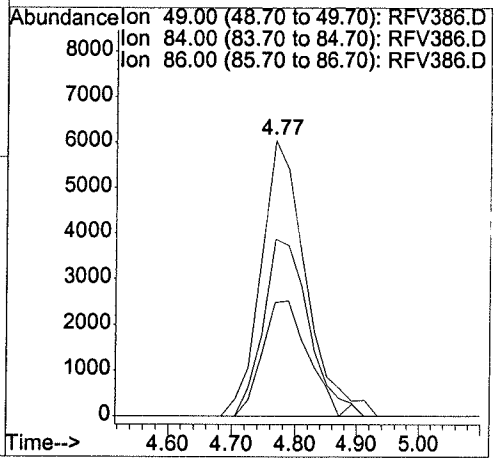




#18
Methylene chloride
Concen: 0.27 ug/l
RT: 4.77 min Scan# 172
Delta R.T. -0.00 min
Lab File: RFV386.D
Acq: 30 Jun 2020 2:26 pm

Tgt Ion: 49 Resp: 29873

Ion	Ratio	Lower	Upper
49	100		
84	65.3	43.3	103.3
86	43.2	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV386.D Vial: 6
Acq On : 30 Jun 2020 2:26 pm Operator: VLu
Sample : VO01F18B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2693396	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2149846	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	653015	10.00	ug/l	0.00

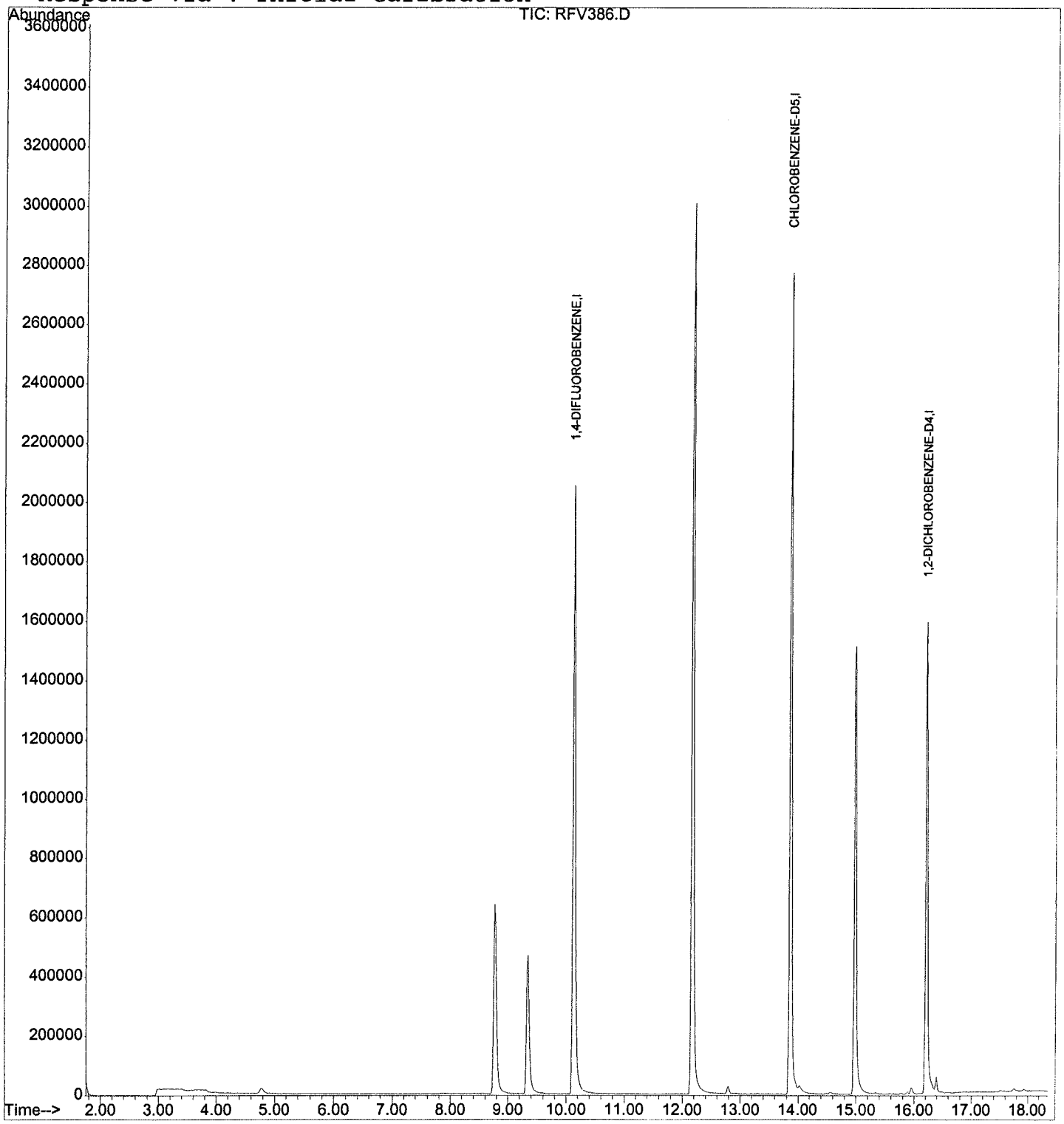
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFV386.D VO01E14.M Wed Jul 01 09:44:43 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV386.D Vial: 6
Acq On : 30 Jun 2020 2:26 pm Operator: VLu
Sample : VO01F18B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:31 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3138584	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2659659	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	878964	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	916830	10.38	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.80%			
38) 1,2-Dichloroethane-d4	9.32	65	622811	10.59	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.90%			
54) Toluene-d8	12.15	98	3533195	9.76	ug/l	-0.02
Spiked Amount 10.000			Recovery = 97.60%			
74) 4-Bromofluorobenzene	14.97	95	1068924	10.17	ug/l	-0.02
Spiked Amount 10.000			Recovery = 101.70%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	661077	6.85	ug/l	97
4) Chloromethane	2.10	50	1168658	10.13	ug/l	99
5) Vinyl chloride	2.25	62	1077145	9.52	ug/l	97
7) Bromomethane	2.63	94	683288	9.07	ug/l	99
8) Chloroethane	2.76	64	590467	9.43	ug/l	99
9) Dichlorofluoromethane	3.08	67	1591605	10.29	ug/l	99
10) Trichlorofluoromethane	3.14	101	1138336	10.86	ug/l	99
11) Acrolein	3.71	56	275135	50.54	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	589872	8.98	ug/l	99
13) Acetone	3.93	43	503047	47.20	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1428135	9.32	ug/l	98
15) Iodomethane	4.10	142	1657841	9.57	ug/l	97
16) Carbon disulfide	4.21	76	3558811	10.58	ug/l	100
17) Methyl acetate	4.54	43	278371	9.92	ug/l	98
18) Methylene chloride	4.77	49	1265317	9.79	ug/l	97
19) tert-Butyl alcohol	5.08	59	681841	233.27	ug/l	98
20) Acrylonitrile	5.23	53	614581	47.07	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	1283830	9.50	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	1447293	9.55	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1841540	10.02	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3274044	10.23	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	2125426	9.20	ug/l	100
28) 2-Butanone	7.73	43	846633	49.75	ug/l	98
29) cis-1,2-Dichloroethene	7.70	96	1041267	9.79	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1219994	10.50	ug/l	98
31) Tetrahydrofurane	8.25	42	93388	8.56	ug/l	98
32) Bromochloromethane	8.18	49	794196	10.47	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:31 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.45	83	1504811	9.92	ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1176478	9.71	ug/l	99
36)	Cyclohexane	8.84	84	1779805	10.32	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1755143	9.84	ug/l	100
39)	1,1-Dichloropropene	9.01	110	507639	9.87	ug/l	99
40)	Carbon tetrachloride	9.00	119	1041012	10.25	ug/l	99
41)	Benzene	9.34	78	3923214	10.45	ug/l	100
42)	1,2-Dichloroethane	9.46	62	727290	10.32	ug/l	97
44)	Trichloroethene	10.45	130	1164984	10.15	ug/l	99
45)	Methylcyclohexane	10.78	83	2212924	11.43	ug/l	99
46)	1,2-Dichloropropane	10.81	63	999787	9.87	ug/l	100
47)	1,4-Dioxane	10.97	88	59188	171.35	ug/l	96
48)	Dibromomethane	10.94	93	386633	10.07	ug/l	98
49)	Bromodichloromethane	11.22	83	1064815	10.80	ug/l	100
50)	2-Chloroethyl vinyl ether	11.63	63	249960	7.98	ug/l	98
51)	cis-1,3-Dichloropropene	11.81	75	1410516	11.13	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2289029	51.88	ug/l	99
55)	Toluene	12.24	91	3975283	9.54	ug/l	99
56)	Ethyl methacrylate	12.67	69	733151	9.87	ug/l	97
57)	trans-1,3-Dichloropropene	12.57	75	970782	9.88	ug/l	98
58)	1,1,2-Trichloroethane	12.80	97	548218	9.83	ug/l	99
59)	Tetrachloroethene	12.91	164	863654	9.48	ug/l	99
60)	1,3-Dichloropropane	13.00	76	1035391	9.70	ug/l	100
61)	2-Hexanone	13.06	43	1451687	48.28	ug/l	100
62)	Dibromochloromethane	13.25	129	712449	10.28	ug/l	99
63)	1,2-Dibromoethane	13.37	107	563441	10.07	ug/l	97
64)	1-Chlorohexane	13.87	91	1841224	9.76	ug/l	98
65)	Chlorobenzene	13.89	112	2617350	10.01	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	826279	9.87	ug/l	99
67)	Ethylbenzene	13.97	91	4551387	9.23	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6727228	19.17	ug/l	99
69)	o-Xylene	14.48	91	3250800	9.66	ug/l	99
70)	Styrene	14.49	104	2677327	9.65	ug/l	99
72)	Bromoform	14.67	173	341930	11.55	ug/l	98
73)	Isopropylbenzene	14.80	105	4654842	10.14	ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	644908	10.13	ug/l	98
76)	Bromobenzene	15.10	156	903310	10.05	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	124545	9.78	ug/l	92
78)	1,2,3-Trichloropropane	15.13	110	159335	10.32	ug/l	95
79)	n-Propylbenzene	15.17	91	5307875	9.99	ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	3301271	10.19	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:31 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

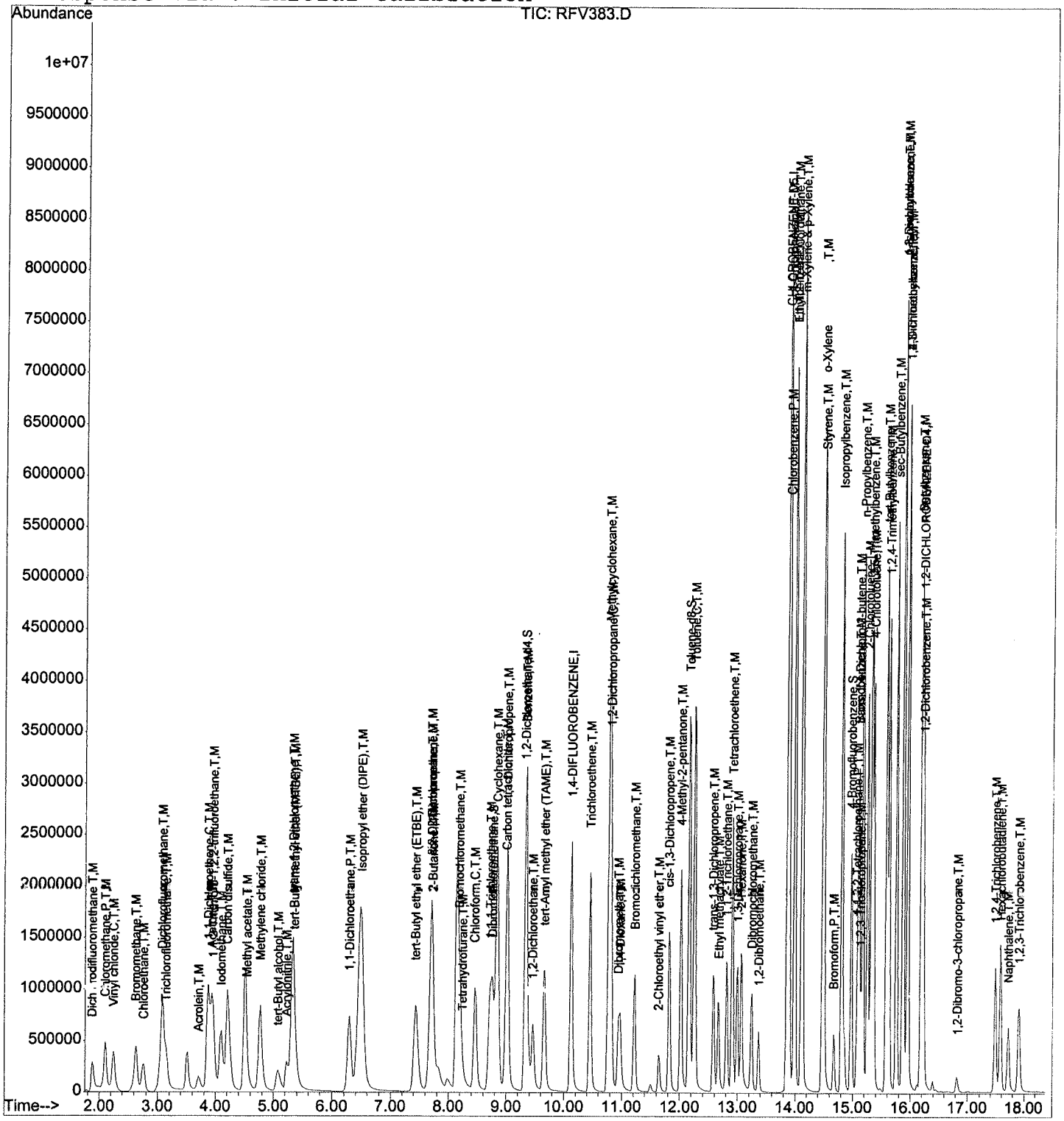
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2582316	10.13	ug/l	100
82)	4-Chlorotoluene	15.35	91	3042188	10.08	ug/l	100
83)	tert-Butylbenzene	15.57	134	869867	9.94	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	3180018	10.15	ug/l	98
85)	sec-Butylbenzene	15.75	105	4806946	9.96	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3669518	9.98	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1699579	10.15	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1565852	9.62	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2862909	9.95	ug/l	99
90)	n-Butylbenzene	16.18	91	3230630	9.67	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1318113	9.60	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	70415	9.38	ug/l	97
93)	1,2,4-Trichlorobenzene	17.48	180	664721	9.85	ug/l	99
94)	Hexachlorobutadiene	17.59	225	483735	9.40	ug/l	99
95)	Naphthalene	17.72	128	885253	9.92	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	504795	9.99	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:31 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

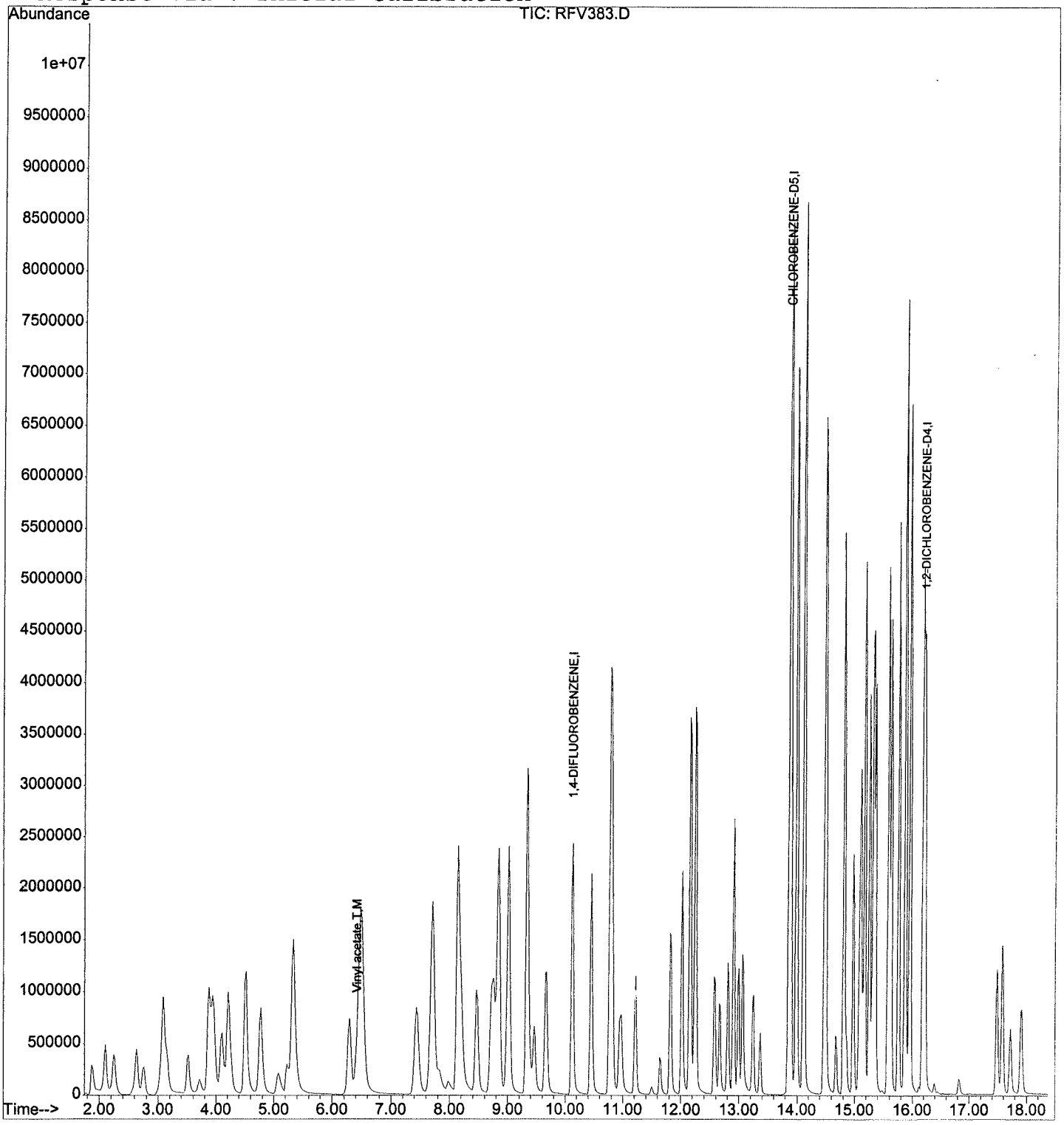
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3122915	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2659825	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	878993	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	1050125	10.19	ug/l	98

(#) = qualifier out of range (m) = manual integration
RFV383.D VO01E14.M Wed Jul 01 09:44:25 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV383.D Vial: 3
Acq On : 30 Jun 2020 1:06 pm Operator: VLu
Sample : VO01F18L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3167309	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2710968	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	890847	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	925970	10.39	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.90%			
38) 1,2-Dichloroethane-d4	9.33	65	629286	10.60	ug/l	-0.01
Spiked Amount 10.000			Recovery = 106.00%			
54) Toluene-d8	12.17	98	3541880	9.60	ug/l	0.00
Spiked Amount 10.000			Recovery = 96.00%			
74) 4-Bromofluorobenzene	14.97	95	1074767	10.09	ug/l	-0.01
Spiked Amount 10.000			Recovery = 100.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	631189	6.48	ug/l	96
4) Chloromethane	2.11	50	1111398	9.55	ug/l	98
5) Vinyl chloride	2.25	62	1014446	8.89	ug/l	98
7) Bromomethane	2.63	94	658551	8.66	ug/l	99
8) Chloroethane	2.76	64	561558	8.89	ug/l	99
9) Dichlorofluoromethane	3.08	67	1586658	10.17	ug/l	99
10) Trichlorofluoromethane	3.14	101	1080709	10.22	ug/l	100
11) Acrolein	3.71	56	260200	47.37	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	599315	9.04	ug/l	98
13) Acetone	3.96	43	515158	47.90	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1427014	9.23	ug/l	98
15) Iodomethane	4.10	142	1677686	9.59	ug/l	98
16) Carbon disulfide	4.21	76	3422828	10.08	ug/l	99
17) Methyl acetate	4.54	43	275261	9.72	ug/l	99
18) Methylene chloride	4.77	49	1272956	9.76	ug/l	96
19) tert-Butyl alcohol	5.08	59	696262	236.04	ug/l	97
20) Acrylonitrile	5.23	53	604030	45.84	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1294322	9.49	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	1447839	9.47	ug/l	98
24) 1,1-Dichloroethane	6.29	63	1817025	9.80	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	3241472	10.04	ug/l	99
27) tert-Butyl ethyl ether (ET	7.46	59	2163906	9.28	ug/l	100
28) 2-Butanone	7.75	43	838524	48.83	ug/l	99
29) cis-1,2-Dichloroethene	7.71	96	1030864	9.60	ug/l	97
30) 2,2-Dichloropropane	7.71	77	1200546	10.24	ug/l	99
31) Tetrahydrofurane	8.27	42	92407	8.40	ug/l	93
32) Bromochloromethane	8.20	49	797609	10.42	ug/l	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.48	83	1515372	9.90	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1174901	9.61	ug/l	99
36)	Cyclohexane	8.84	84	1777654	10.21	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1775492	9.87	ug/l	100
39)	1,1-Dichloropropene	9.03	110	499614	9.63	ug/l	100
40)	Carbon tetrachloride	9.00	119	1041757	10.16	ug/l	98
41)	Benzene	9.34	78	3971567	10.49	ug/l	100
42)	1,2-Dichloroethane	9.46	62	729200	10.25	ug/l	99
44)	Trichloroethene	10.45	130	1152568	9.95	ug/l	98
45)	Methylcyclohexane	10.78	83	2255024	11.54	ug/l	100
46)	1,2-Dichloropropane	10.82	63	1035016	10.13	ug/l	99
47)	1,4-Dioxane	10.97	88	63804	183.04	ug/l	98
48)	Dibromomethane	10.94	93	384813	9.93	ug/l	99
49)	Bromodichloromethane	11.22	83	1076784	10.82	ug/l	100
50)	2-Chloroethyl vinyl ether	11.64	63	250619	7.93	ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	1406844	11.00	ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	2292860	51.50	ug/l	99
55)	Toluene	12.26	91	4032452	9.50	ug/l	99
56)	Ethyl methacrylate	12.67	69	732055	9.67	ug/l	97
57)	trans-1,3-Dichloropropene	12.58	75	963639	9.62	ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	545313	9.60	ug/l	99
59)	Tetrachloroethene	12.91	164	890763	9.59	ug/l	98
60)	1,3-Dichloropropane	13.00	76	1056839	9.71	ug/l	100
61)	2-Hexanone	13.06	43	1454770	47.47	ug/l	100
62)	Dibromochloromethane	13.25	129	717561	10.16	ug/l	98
63)	1,2-Dibromoethane	13.37	107	567225	9.95	ug/l	97
64)	1-Chlorohexane	13.87	91	1851560	9.63	ug/l	99
65)	Chlorobenzene	13.89	112	2663088	9.99	ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.98	131	834954	9.78	ug/l	100
67)	Ethylbenzene	13.98	91	4564999	9.08	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6694499	18.72	ug/l	99
69)	o-Xylene	14.48	91	3257855	9.50	ug/l	99
70)	Styrene	14.49	104	2701543	9.56	ug/l	99
72)	Bromoform	14.67	173	340317	11.34	ug/l	98
73)	Isopropylbenzene	14.81	105	4607037	9.90	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	643819	9.97	ug/l	97
76)	Bromobenzene	15.10	156	908076	9.97	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	125818	9.75	ug/l	96
78)	1,2,3-Trichloropropane	15.13	110	160354	10.25	ug/l	97
79)	n-Propylbenzene	15.18	91	5335517	9.91	ug/l	99
80)	1,3,5-Trimethylbenzene	15.31	105	3313356	10.09	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

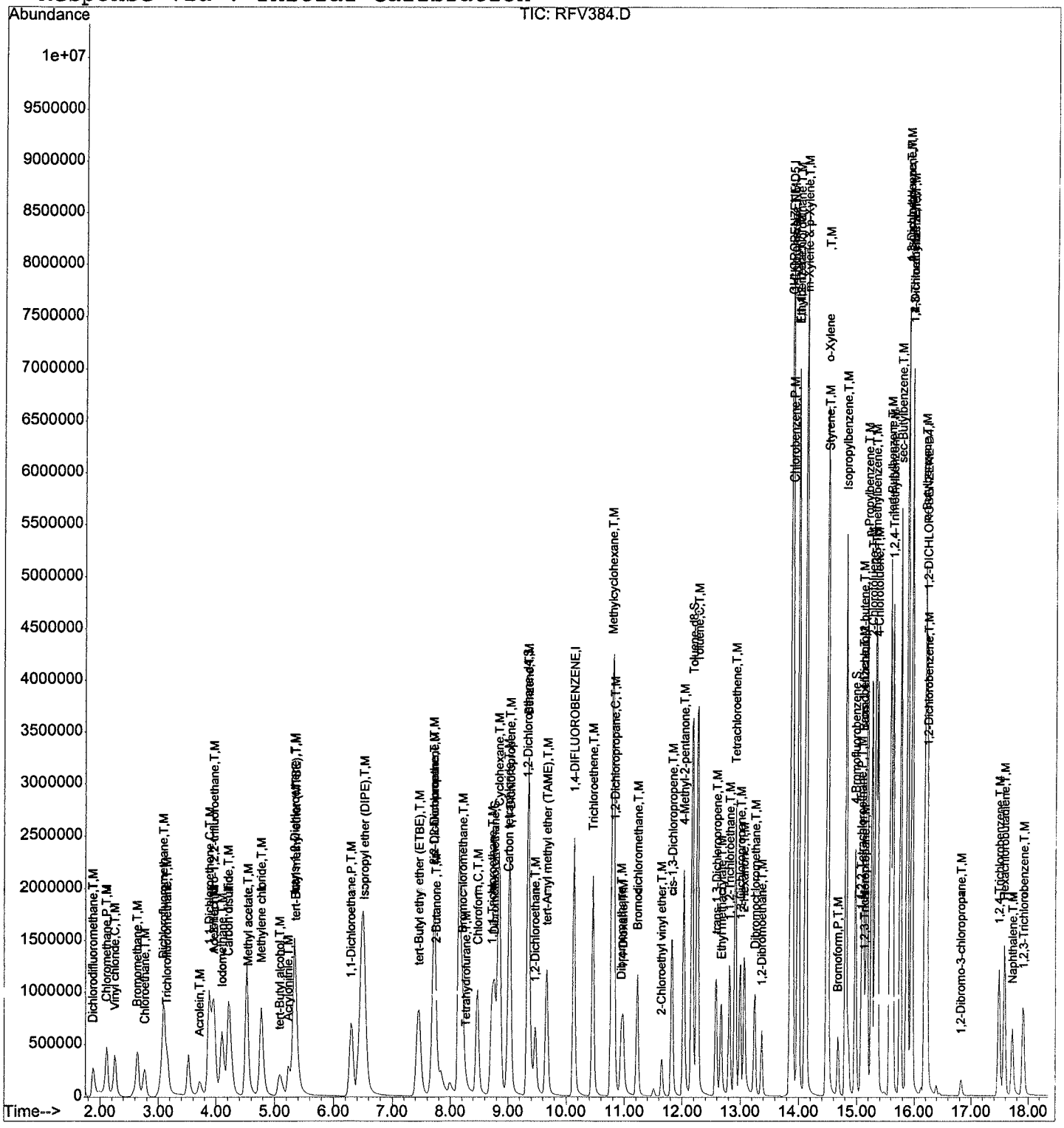
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2580367	9.99	ug/l	99
82)	4-Chlorotoluene	15.35	91	3032695	9.91	ug/l	99
83)	tert-Butylbenzene	15.58	134	865627	9.76	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	3160667	9.96	ug/l	99
85)	sec-Butylbenzene	15.75	105	4825715	9.87	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3669794	9.85	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1700999	10.03	ug/l	98
88)	1,4-Dichlorobenzene	15.95	146	1587844	9.63	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	2924286	10.03	ug/l	99
90)	n-Butylbenzene	16.18	91	3214266	9.50	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1337961	9.62	ug/l	97
92)	1,2-Dibromo-3-chloropropan	16.82	157	72071	9.47	ug/l	96
93)	1,2,4-Trichlorobenzene	17.49	180	670749	9.81	ug/l	99
94)	Hexachlorobutadiene	17.57	225	479071	9.18	ug/l	99
95)	Naphthalene	17.72	128	893294	9.87	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	515151	10.06	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

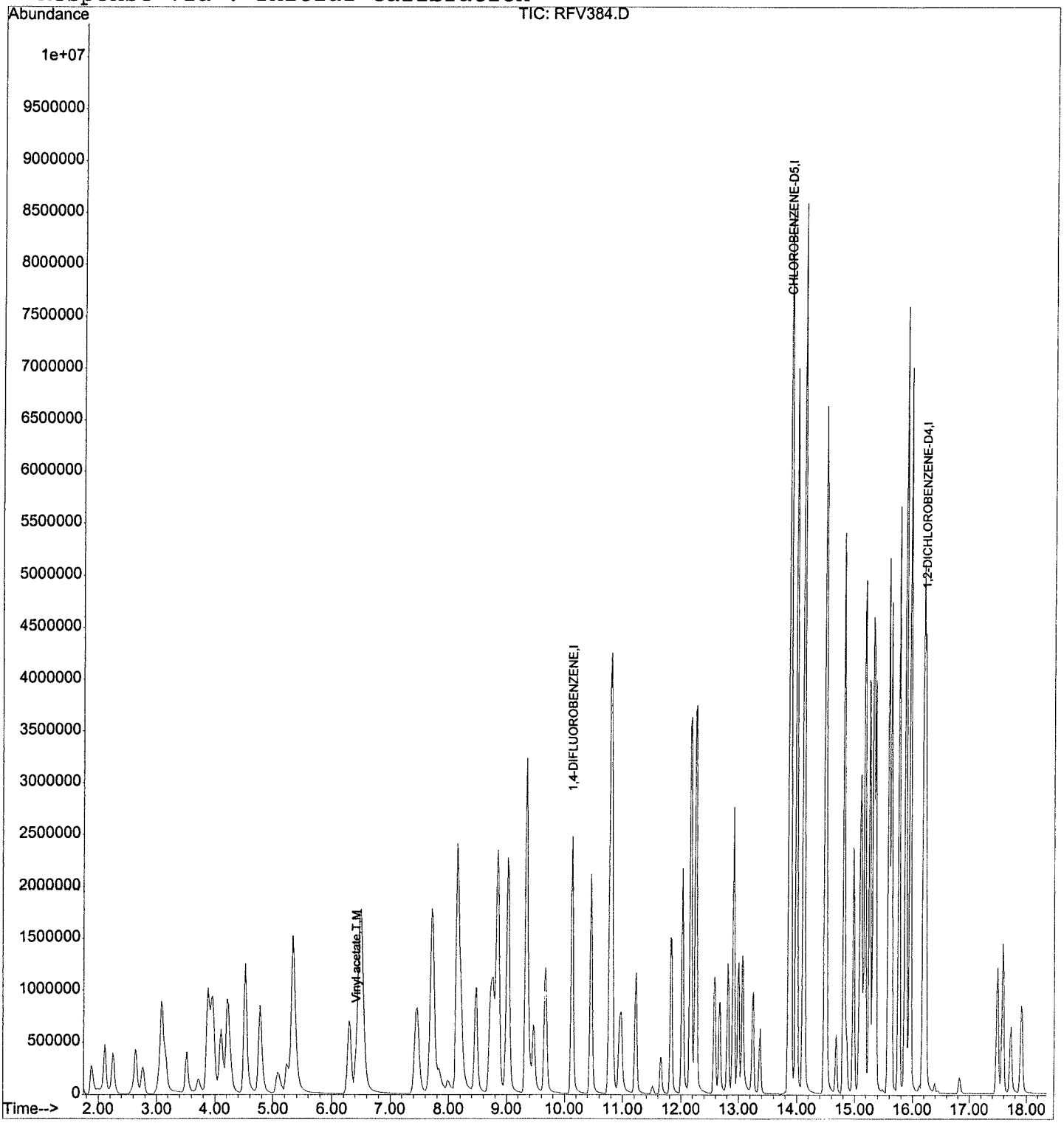
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3167380	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2710832	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	890821	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	892533	8.65	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV384.D VO01E14.M Wed Jul 01 09:44:34 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV384.D Vial: 4
Acq On : 30 Jun 2020 1:33 pm Operator: VLu
Sample : VO01F18C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 15:20 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV028.D Vial: 6
Acq On : 2 Jul 2020 12:16 pm Operator: VLu
Sample : VO01G02B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 12:33 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

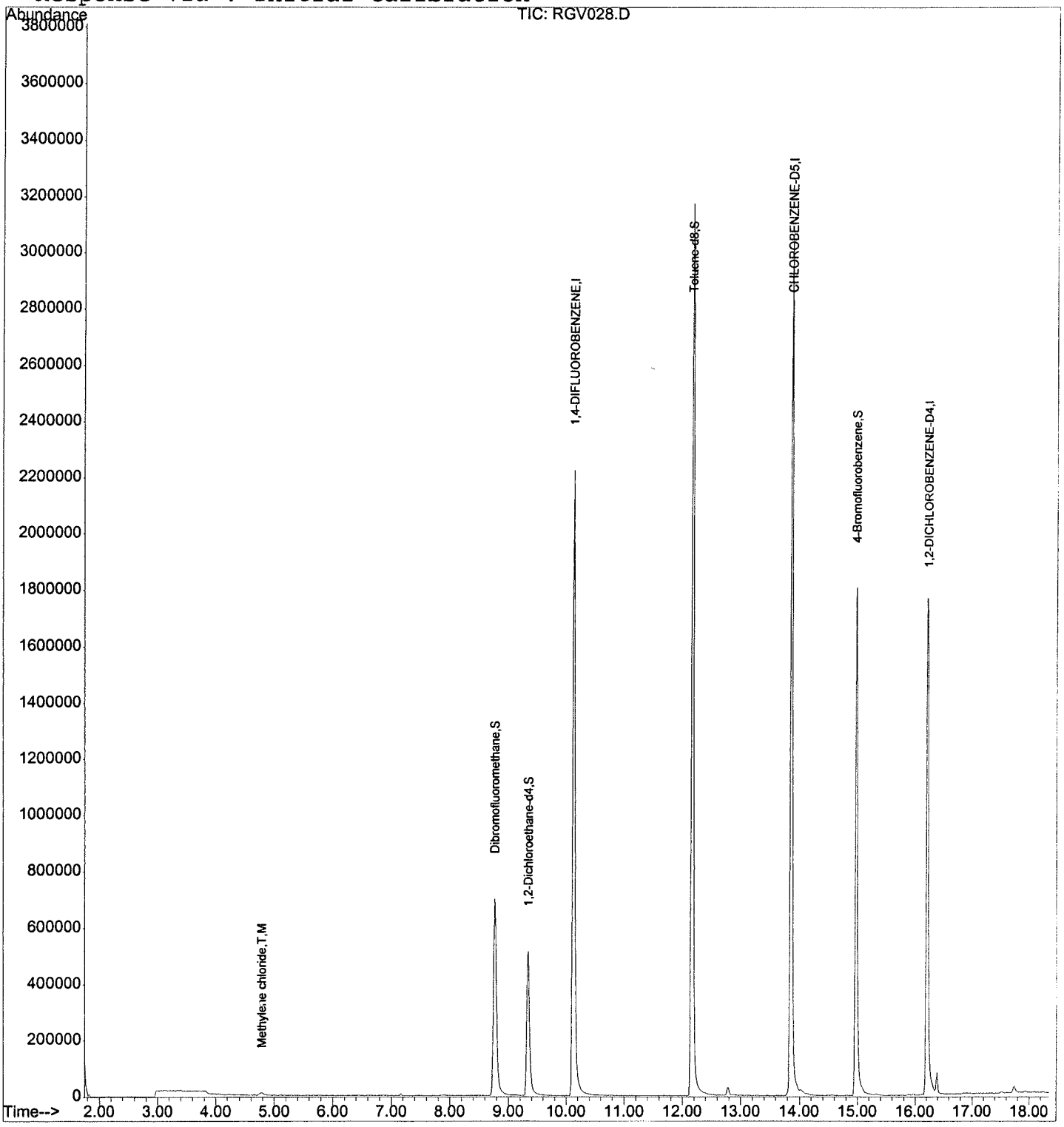
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2943022	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2415549	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	774406	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	828802	10.01	ug/l	0.00
Spiked Amount 10.000			Recovery = 100.10%			
38) 1,2-Dichloroethane-d4	9.34	65	567626	10.29	ug/l	0.00
Spiked Amount 10.000			Recovery = 102.90%			
54) Toluene-d8	12.15	98	3239166	9.85	ug/l	-0.01
Spiked Amount 10.000			Recovery = 98.50%			
74) 4-Bromofluorobenzene	14.97	95	926806	10.01	ug/l	-0.01
Spiked Amount 10.000			Recovery = 100.10%			
Target Compounds						Qvalue
18) Methylene chloride	4.79	49	15306	0.13	ug/l	93

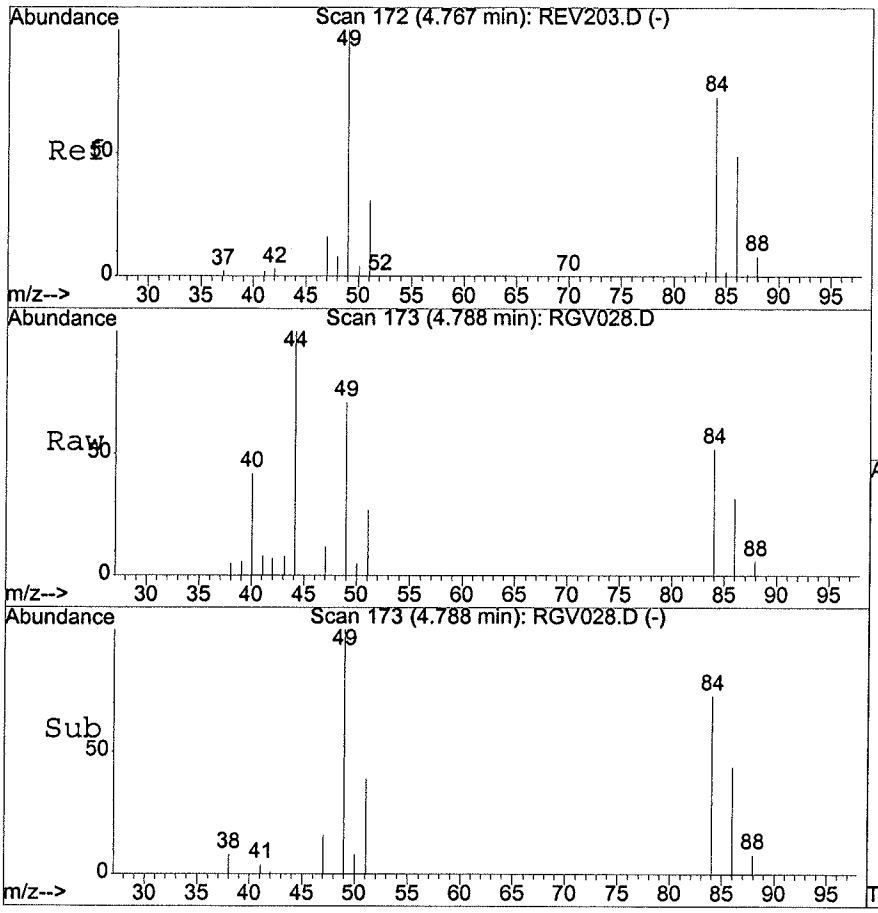
(#) = qualifier out of range (m) = manual integration
RGV028.D VO01E13.M Mon Jul 06 12:33:12 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV028.D Vial: 6
Acq On : 2 Jul 2020 12:16 pm Operator: VLu
Sample : VO01G02B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 12:33 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration

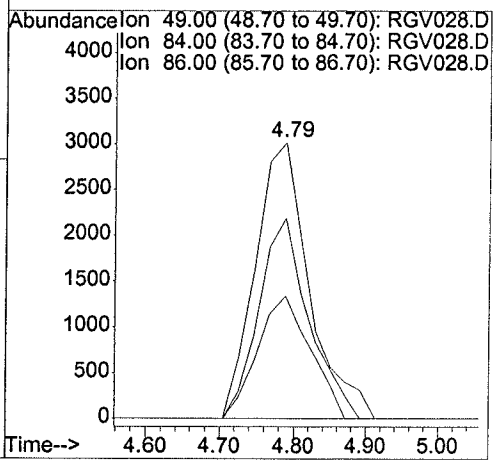




#18
Methylene chloride
Concen: 0.13 ug/l
RT: 4.79 min Scan# 173
Delta R.T. 0.02 min
Lab File: RGV028.D
Acq: 2 Jul 2020 12:16 pm

Tgt Ion: 49 Resp: 15306

Ion	Ratio	Lower	Upper
49	100		
84	67.2	43.3	103.3
86	43.4	17.1	77.1



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV028.D Vial: 6
Acq On : 2 Jul 2020 12:16 pm Operator: VLu
Sample : VO01G02B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2943088	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2412060	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	774384	10.00	ug/l	0.00

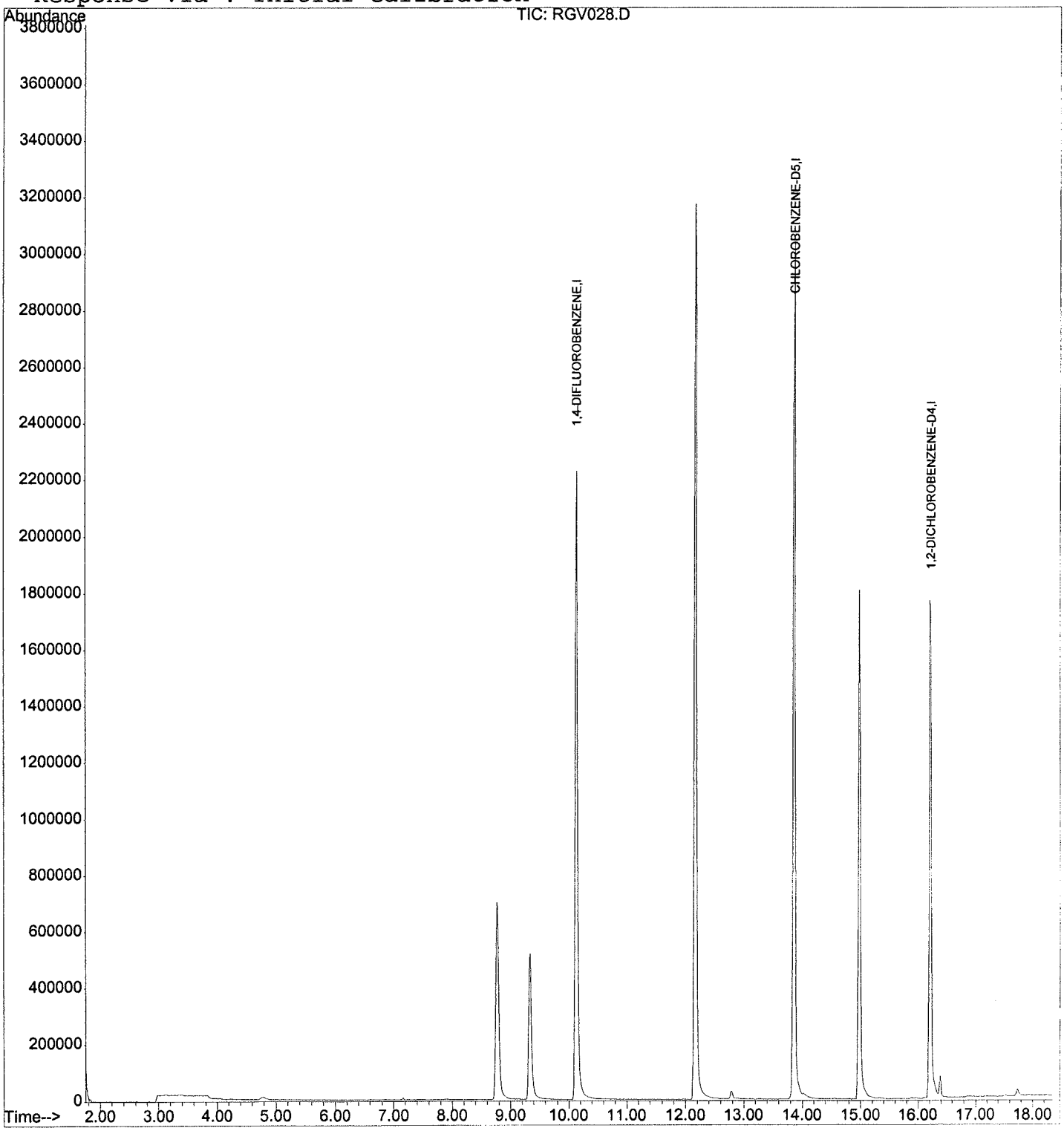
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RGV028.D VO01E14.M Mon Jul 06 12:29:49 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV028.D Vial: 6
Acq On : 2 Jul 2020 12:16 pm Operator: VLu
Sample : VO01G02B 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D
Acq On : 2 Jul 2020 10:55 am
Sample : VO01G02L
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3055353	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2552926	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	899632	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	889249	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.40%			
38) 1,2-Dichloroethane-d4	9.32	65	606388	10.59	ug/l	-0.02
Spiked Amount 10.000			Recovery = 105.90%			
54) Toluene-d8	12.15	98	3379104	9.72	ug/l	-0.02
Spiked Amount 10.000			Recovery = 97.20%			
74) 4-Bromofluorobenzene	14.97	95	1052056	9.78	ug/l	-0.02
Spiked Amount 10.000			Recovery = 97.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.89	85	650719	6.92	ug/l	99
4) Chloromethane	2.12	50	1063087	9.47	ug/l	98
5) Vinyl chloride	2.26	62	975004	8.85	ug/l	97
7) Bromomethane	2.64	94	636236	8.67	ug/l	100
8) Chloroethane	2.76	64	525936	8.63	ug/l	98
9) Dichlorofluoromethane	3.10	67	1475670	9.80	ug/l	99
10) Trichlorofluoromethane	3.14	101	1052434	10.32	ug/l	100
11) Acrolein	3.71	56	243797	46.01	ug/l	94
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	561790	8.78	ug/l	99
13) Acetone	3.96	43	500370	48.23	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1349360	9.04	ug/l	98
15) Iodomethane	4.10	142	1612933	9.56	ug/l	98
16) Carbon disulfide	4.21	76	3432573	10.48	ug/l	100
17) Methyl acetate	4.54	43	274598	10.05	ug/l	100
18) Methylene chloride	4.77	49	1203645	9.57	ug/l	97
19) tert-Butyl alcohol	5.08	59	713223	250.65	ug/l	97
20) Acrylonitrile	5.23	53	613441	48.26	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1297134	9.86	ug/l	96
22) trans-1,2-Dichloroethene	5.33	61	1395801	9.46	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1794911	10.03	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3134139	10.06	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	2124468	9.45	ug/l	99
28) 2-Butanone	7.75	43	844938	51.00	ug/l	98
29) cis-1,2-Dichloroethene	7.70	96	994240	9.60	ug/l	98
30) 2,2-Dichloropropane	7.70	77	1167821	10.33	ug/l	99
31) Tetrahydrofurane	8.25	42	92538	8.72	ug/l	94
32) Bromochloromethane	8.20	49	778368	10.54	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D Vial: 3
Acq On : 2 Jul 2020 10:55 am Operator: VLu
Sample : VO01G02L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
33)	Chloroform	8.45	83	1451763	9.83	ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1136543	9.64	ug/l	99
36)	Cyclohexane	8.84	84	1751013	10.43	ug/l	99
37)	tert-Amyl methyl ether (TA	9.66	73	1752527	10.09	ug/l	100
39)	1,1-Dichloropropene	9.03	110	494821	9.89	ug/l	100
40)	Carbon tetrachloride	9.00	119	1003092	10.14	ug/l	99
41)	Benzene	9.34	78	3777523	10.34	ug/l	99
42)	1,2-Dichloroethane	9.46	62	716072	10.44	ug/l	100
44)	Trichloroethene	10.45	130	1108433	9.92	ug/l	98
45)	Methylcyclohexane	10.78	83	2206041	11.71	ug/l	99
46)	1,2-Dichloropropane	10.81	63	992210	10.06	ug/l	100
47)	1,4-Dioxane	10.97	88	63662	189.32	ug/l	98
48)	Dibromomethane	10.94	93	382108	10.22	ug/l	99
49)	Bromodichloromethane	11.22	83	1052540	10.97	ug/l	100
50)	2-Chloroethyl vinyl ether	11.63	63	239953	7.87	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	1369373	11.10	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2338322	54.44	ug/l	99
55)	Toluene	12.24	91	3893924	9.74	ug/l	100
56)	Ethyl methacrylate	12.66	69	724147	10.16	ug/l	99
57)	trans-1,3-Dichloropropene	12.57	75	955677	10.13	ug/l	98
58)	1,1,2-Trichloroethane	12.80	97	538889	10.07	ug/l	99
59)	Tetrachloroethene	12.91	164	829687	9.49	ug/l	99
60)	1,3-Dichloropropane	13.00	76	1039991	10.15	ug/l	100
61)	2-Hexanone	13.06	43	1456917	50.48	ug/l	100
62)	Dibromochloromethane	13.25	129	701102	10.54	ug/l	100
63)	1,2-Dibromoethane	13.37	107	565741	10.54	ug/l	99
64)	1-Chlorohexane	13.87	91	1736750	9.60	ug/l	99
65)	Chlorobenzene	13.89	112	2491838	9.93	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	822690	10.23	ug/l	99
67)	Ethylbenzene	13.97	91	4392033	9.28	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6307252	18.72	ug/l	98
69)	o-Xylene	14.48	91	3128669	9.69	ug/l	99
70)	Styrene	14.49	104	2600407	9.77	ug/l	100
72)	Bromoform	14.67	173	335923	11.09	ug/l	99
73)	Isopropylbenzene	14.80	105	4480254	9.53	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	657108	10.08	ug/l	99
76)	Bromobenzene	15.10	156	902243	9.81	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	125396	9.62	ug/l	96
78)	1,2,3-Trichloropropane	15.13	110	159952	10.12	ug/l	96
79)	n-Propylbenzene	15.16	91	5094260	9.37	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	3202304	9.66	ug/l	100

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D Vial: 3
Acq On : 2 Jul 2020 10:55 am Operator: VLu
Sample : VO01G02L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

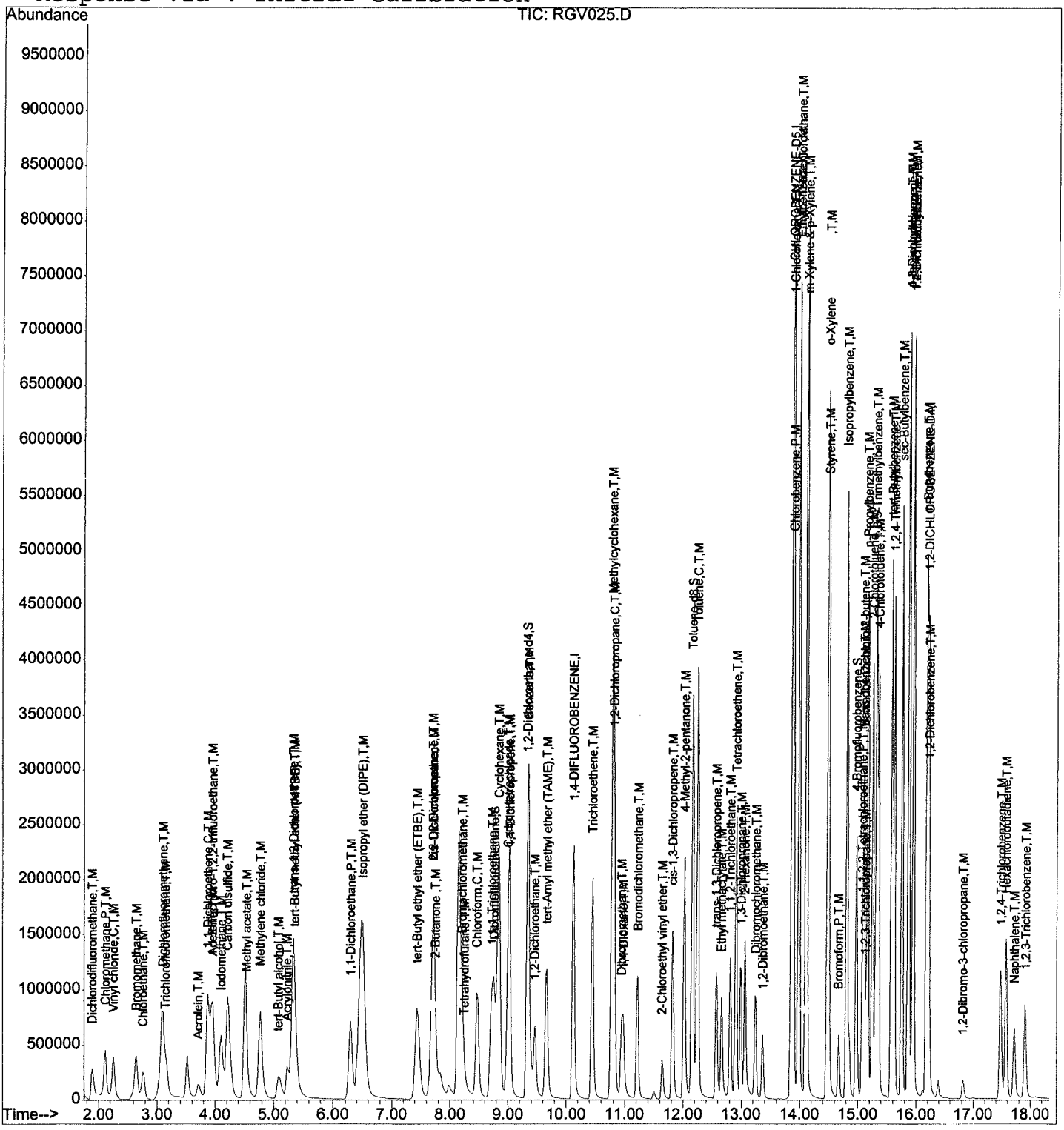
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81) 2-Chlorotoluene	15.25	91	2470438	9.47 ug/l	99
82) 4-Chlorotoluene	15.35	91	2940658	9.52 ug/l	99
83) tert-Butylbenzene	15.57	134	840401	9.38 ug/l	100
84) 1,2,4-Trimethylbenzene	15.62	105	3063196	9.56 ug/l	100
85) sec-Butylbenzene	15.75	105	4661444	9.44 ug/l	100
86) p-Isopropyltoluene	15.87	119	3496622	9.29 ug/l	99
87) 1,3-Dichlorobenzene	15.87	146	1656044	9.67 ug/l	99
88) 1,4-Dichlorobenzene	15.94	146	1533581	9.21 ug/l	100
89) 1,2,3-Trimethylbenzene	15.94	105	2858746	9.71 ug/l	100
90) n-Butylbenzene	16.18	91	3087641	9.03 ug/l	100
91) 1,2-Dichlorobenzene	16.23	146	1313382	9.35 ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.82	157	75223	9.79 ug/l	99
93) 1,2,4-Trichlorobenzene	17.48	180	659877	9.56 ug/l	100
94) Hexachlorobutadiene	17.57	225	482398	9.15 ug/l	100
95) Naphthalene	17.72	128	892121	9.76 ug/l	100
96) 1,2,3-Trichlorobenzene	17.91	180	502935	9.73 ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D Vial: 3
Acq On : 2 Jul 2020 10:55 am Operator: VLu
Sample : VO01G02L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D Vial: 3
Acq On : 2 Jul 2020 10:55 am Operator: VLu
Sample : VO01G02L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

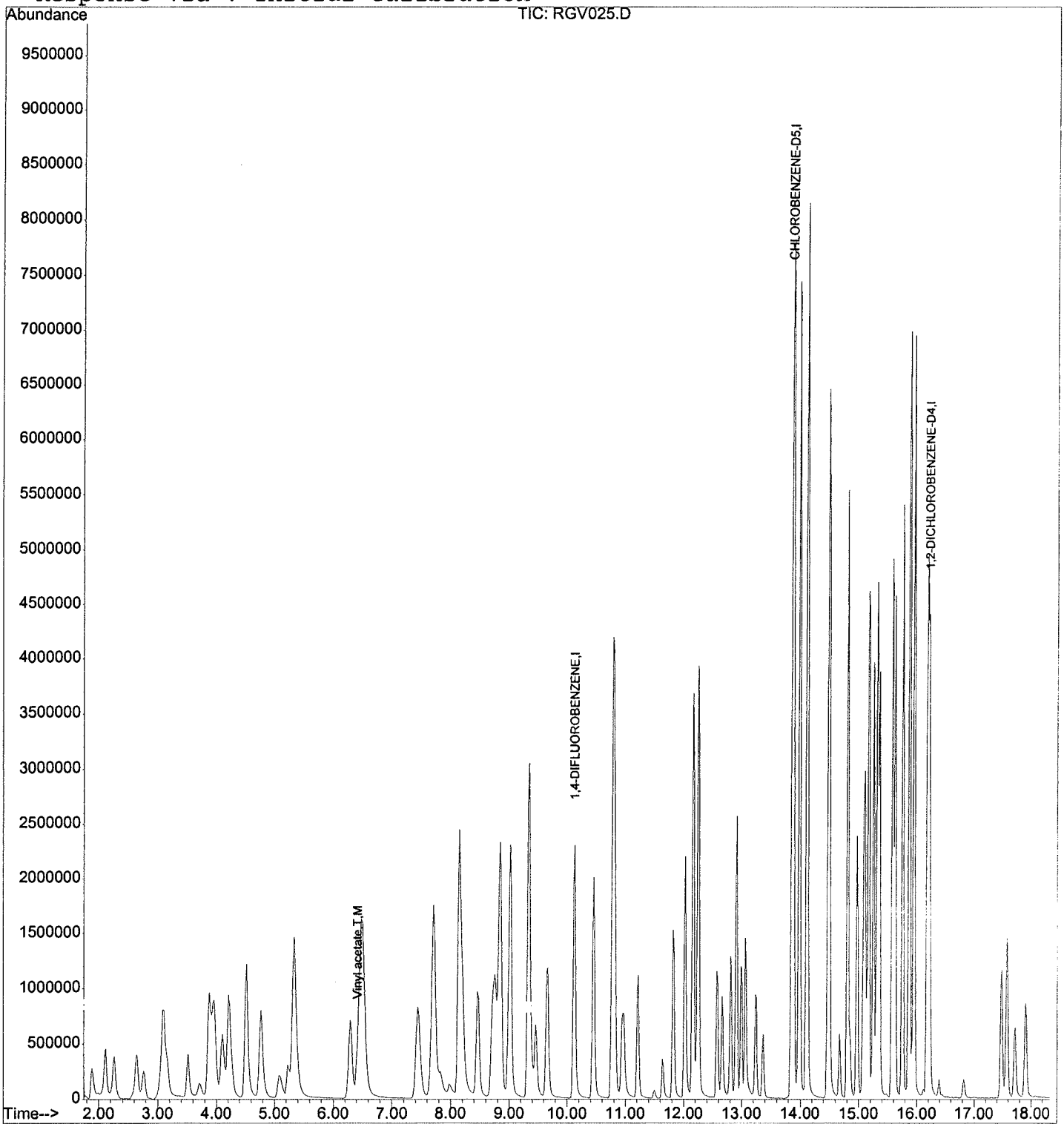
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3042202	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2553086	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	899662	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	942948	9.45	ug/l	97

(#) = qualifier out of range (m) = manual integration
RGV025.D VO01E14.M Mon Jul 06 12:29:58 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV025.D Vial: 3
Acq On : 2 Jul 2020 10:55 am Operator: VLu
Sample : VO01G02L Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2966928	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2462342	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	847044	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	853784	10.22	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.20%		
38) 1,2-Dichloroethane-d4	9.32	65	574095	10.32	ug/l	-0.01
Spiked Amount 10.000			Recovery =	103.20%		
54) Toluene-d8	12.15	98	3354837	10.01	ug/l	-0.01
Spiked Amount 10.000			Recovery =	100.10%		
74) 4-Bromofluorobenzene	14.97	95	1020497	10.08	ug/l	-0.01
Spiked Amount 10.000			Recovery =	100.80%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	613849	6.73	ug/l	97
4) Chloromethane	2.11	50	1058661	9.71	ug/l	100
5) Vinyl chloride	2.25	62	992949	9.29	ug/l	98
7) Bromomethane	2.63	94	624073	8.76	ug/l	100
8) Chloroethane	2.76	64	522500	8.83	ug/l	99
9) Dichlorofluoromethane	3.08	67	1501643	10.27	ug/l	99
10) Trichlorofluoromethane	3.14	101	1034266	10.44	ug/l	100
11) Acrolein	3.71	56	241543	46.94	ug/l	95
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	567635	9.14	ug/l	100
13) Acetone	3.96	43	473096	46.96	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1346496	9.29	ug/l	98
15) Iodomethane	4.10	142	1594005	9.73	ug/l	98
16) Carbon disulfide	4.21	76	3405991	10.71	ug/l	100
17) Methyl acetate	4.54	43	269776	10.17	ug/l	97
18) Methylene chloride	4.77	49	1194951	9.78	ug/l	98
19) tert-Butyl alcohol	5.08	59	677055	245.03	ug/l	99
20) Acrylonitrile	5.23	53	577313	46.77	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1246814	9.76	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	1402546	9.79	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1743140	10.03	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3095026	10.23	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	2058140	9.42	ug/l	99
28) 2-Butanone	7.75	43	789262	49.06	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	979828	9.74	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1145489	10.43	ug/l	99
31) Tetrahydrofurane	8.27	42	85393	8.28	ug/l	95
32) Bromochloromethane	8.20	49	754122	10.52	ug/l	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33) Chloroform	8.48	83	1454584	10.14 ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	1123942	9.81 ug/l	99
36) Cyclohexane	8.84	84	1747949	10.72 ug/l	99
37) tert-Amyl methyl ether (TA	9.67	73	1689084	10.02 ug/l	100
39) 1,1-Dichloropropene	9.03	110	485170	9.98 ug/l	100
40) Carbon tetrachloride	9.00	119	991914	10.33 ug/l	98
41) Benzene	9.34	78	3714152	10.47 ug/l	100
42) 1,2-Dichloroethane	9.46	62	701925	10.54 ug/l	99
44) Trichloroethene	10.45	130	1121251	10.33 ug/l	99
45) Methylcyclohexane	10.78	83	2168498	11.85 ug/l	99
46) 1,2-Dichloropropane	10.81	63	990764	10.35 ug/l	99
47) 1,4-Dioxane	10.97	88	64850	198.60 ug/l	99
48) Dibromomethane	10.94	93	370824	10.21 ug/l	100
49) Bromodichloromethane	11.22	83	1021348	10.96 ug/l	100
50) 2-Chloroethyl vinyl ether	11.64	63	238393	8.05 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	1322380	11.04 ug/l	100
52) 4-Methyl-2-pentanone	12.02	43	2150015	51.55 ug/l	99
55) Toluene	12.24	91	3842432	9.96 ug/l	100
56) Ethyl methacrylate	12.66	69	695653	10.12 ug/l	98
57) trans-1,3-Dichloropropene	12.57	75	905410	9.95 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	524572	10.16 ug/l	99
59) Tetrachloroethene	12.91	164	840607	9.96 ug/l	99
60) 1,3-Dichloropropane	13.00	76	1009758	10.21 ug/l	100
61) 2-Hexanone	13.06	43	1341076	48.18 ug/l	100
62) Dibromochloromethane	13.25	129	679001	10.59 ug/l	99
63) 1,2-Dibromoethane	13.37	107	527511	10.19 ug/l	97
64) 1-Chlorohexane	13.87	91	1741980	9.98 ug/l	99
65) Chlorobenzene	13.89	112	2470197	10.20 ug/l	99
66) 1,1,1,2-Tetrachloroethane	13.97	131	797550	10.29 ug/l	99
67) Ethylbenzene	13.97	91	4314393	9.45 ug/l	100
68) m-Xylene & p-Xylene	14.11	91	6312918	19.43 ug/l	98
69) o-Xylene	14.48	91	3080695	9.89 ug/l	99
70) Styrene	14.49	104	2585105	10.07 ug/l	100
72) Bromoform	14.67	173	320191	11.22 ug/l	99
73) Isopropylbenzene	14.80	105	4345916	9.82 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	621602	10.13 ug/l	100
76) Bromobenzene	15.10	156	875637	10.11 ug/l	99
77) trans-1,4-Dichloro-2-buten	15.10	53	121411	9.90 ug/l	9[illegible]
78) 1,2,3-Trichloropropane	15.13	110	150556	10.12 ug/l	100
79) n-Propylbenzene	15.16	91	4964671	9.70 ug/l	99
80) 1,3,5-Trimethylbenzene	15.31	105	3132393	10.03 ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

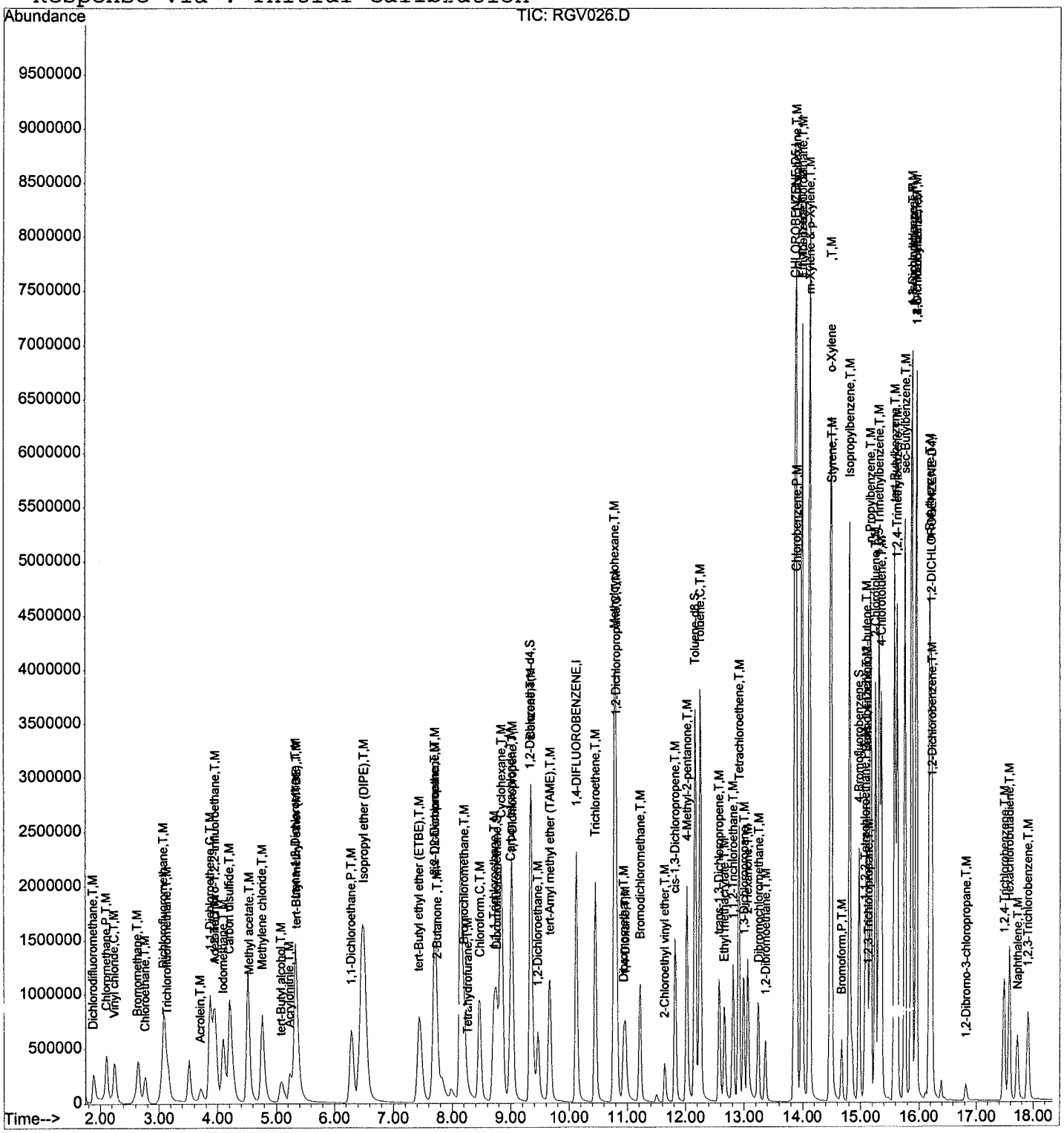
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
81)	2-Chlorotoluene	15.25	91	2456177	10.00	ug/l	100
82)	4-Chlorotoluene	15.35	91	2850234	9.80	ug/l	99
83)	tert-Butylbenzene	15.57	134	830228	9.85	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	3041311	10.08	ug/l	99
85)	sec-Butylbenzene	15.75	105	4646043	9.99	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3515617	9.92	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1575964	9.77	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1534341	9.78	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2771107	10.00	ug/l	99
90)	n-Butylbenzene	16.18	91	3061653	9.51	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1272097	9.62	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	69129	9.56	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	631601	9.71	ug/l	99
94)	Hexachlorobutadiene	17.57	225	462445	9.32	ug/l	99
95)	Naphthalene	17.72	128	833227	9.68	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	480486	9.87	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:58 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

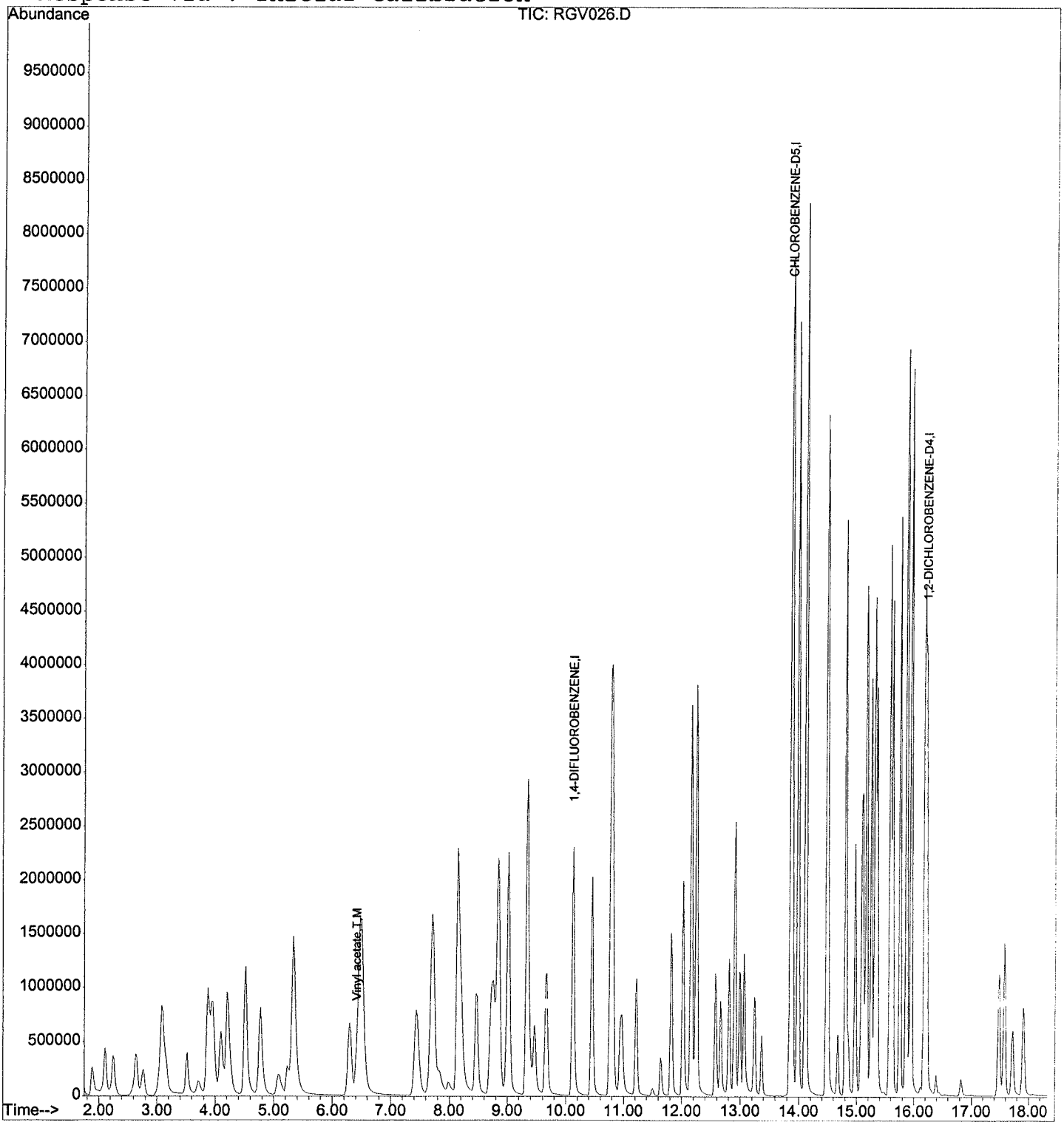
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2954998	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2462219	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	847072	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	895406	9.25	ug/l	97

(#) = qualifier out of range (m) = manual integration
RGV026.D VO01E14.M Mon Jul 06 12:30:07 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV026.D Vial: 4
Acq On : 2 Jul 2020 11:22 am Operator: VLu
Sample : VO01G02C Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 12:46 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D
Acq On : 30 Jun 2020 6:59 pm
Sample : 20F183-08M 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020

Vial: 15
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2847131	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2351576	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	782323	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	821359	10.25	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.50%		
38) 1,2-Dichloroethane-d4	9.34	65	544117	10.20	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.00%		
54) Toluene-d8	12.17	98	3243152	10.13	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.30%		
74) 4-Bromofluorobenzene	14.98	95	965058	10.32	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.89	85	648031	7.40	ug/l	94
4) Chloromethane	2.11	50	1103128	10.54	ug/l	98
5) Vinyl chloride	2.26	62	1012723	9.87	ug/l	97
7) Bromomethane	2.64	94	647170	9.47	ug/l	99
8) Chloroethane	2.77	64	541290	9.53	ug/l	97
9) Dichlorofluoromethane	3.10	67	1445451	10.31	ug/l	99
10) Trichlorofluoromethane	3.14	101	1106039	11.64	ug/l	99
11) Acrolein	3.73	56	212799	43.09	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	528099	8.86	ug/l	98
13) Acetone	3.96	43	367209	37.98	ug/l	98
14) 1,1-Dichloroethene	3.87	61	1289804	9.28	ug/l	97
15) Iodomethane	4.10	142	1451922	9.24	ug/l	96
16) Carbon disulfide	4.23	76	2800621	9.17	ug/l	100
17) Methyl acetate	4.54	43	220301	8.65	ug/l	98
18) Methylene chloride	4.77	49	1126542	9.61	ug/l	96
19) tert-Butyl alcohol	5.10	59	503877	190.03	ug/l	92
20) Acrylonitrile	5.25	53	476948	40.26	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1042838	8.50	ug/l	96
22) trans-1,2-Dichloroethene	5.33	61	1331229	9.68	ug/l	98
24) 1,1-Dichloroethane	6.31	63	1654511	9.92	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	2851015	9.82	ug/l	98
27) tert-Butyl ethyl ether (ET	7.45	59	1756171	8.38	ug/l	98
28) 2-Butanone	7.75	43	623314	40.38	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	927282	9.61	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1088014	10.32	ug/l	98
31) Tetrahydrofurane	8.27	42	70855	7.16	ug/l	89
32) Bromochloromethane	8.20	49	693529	10.08	ug/l	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D Vial: 15
Acq On : 30 Jun 2020 6:59 pm Operator: VLu
Sample : 20F183-08M 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	Chloroform	8.47	83	1961224	14.25 ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1112540	10.12 ug/l	98
36)	Cyclohexane	8.85	84	1726476	11.04 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1433041	8.86 ug/l	100
39)	1,1-Dichloropropene	9.03	110	449577	9.64 ug/l	99
40)	Carbon tetrachloride	9.01	119	933612	10.13 ug/l	99
41)	Benzene	9.34	78	3528512	10.37 ug/l	99
42)	1,2-Dichloroethane	9.47	62	637728	9.98 ug/l	98
44)	Trichloroethene	10.45	130	1078917	10.36 ug/l	98
45)	Methylcyclohexane	10.79	83	2139436	12.18 ug/l	98
46)	1,2-Dichloropropane	10.82	63	907023	9.87 ug/l	99
47)	1,4-Dioxane	10.97	88	51550	164.51 ug/l	98
48)	Dibromomethane	10.94	93	323376	9.28 ug/l	96
49)	Bromodichloromethane	11.22	83	978739	10.95 ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1177053	10.24 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	1806533	45.14 ug/l	98
55)	Toluene	12.26	91	3567524	9.69 ug/l	99
56)	Ethyl methacrylate	12.67	69	573492	8.74 ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	785864	9.05 ug/l	99
58)	1,1,2-Trichloroethane	12.82	97	448981	9.11 ug/l	97
59)	Tetrachloroethene	12.91	164	5381762	66.80 ug/l	98
60)	1,3-Dichloropropane	13.00	76	866675	9.18 ug/l	100
61)	2-Hexanone	13.07	43	1071355	40.30 ug/l	99
62)	Dibromochloromethane	13.25	129	586687	9.58 ug/l	99
63)	1,2-Dibromoethane	13.37	107	453066	9.16 ug/l	97
64)	1-Chlorohexane	13.87	91	1607703	9.64 ug/l	99
65)	Chlorobenzene	13.89	112	2307114	9.98 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.99	131	719991	9.72 ug/l	99
67)	Ethylbenzene	13.99	91	4071006	9.34 ug/l	100
68)	m-Xylene & p-Xylene	14.12	91	5795669	18.68 ug/l	98
69)	o-Xylene	14.48	91	2921906	9.82 ug/l	99
70)	Styrene	14.49	104	2373666	9.68 ug/l	99
72)	Bromoform	14.69	173	268647	10.20 ug/l	98
73)	Isopropylbenzene	14.82	105	4167361	10.20 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	523824	9.24 ug/l	99
76)	Bromobenzene	15.10	156	775165	9.69 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	100103	8.83 ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	126191	9.19 ug/l	94
79)	n-Propylbenzene	15.17	91	4675668	9.89 ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	2997680	10.40 ug/l	99
81)	2-Chlorotoluene	15.26	91	2325696	10.25 ug/l	98

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D Vial: 15
Acq On : 30 Jun 2020 6:59 pm Operator: VLu
Sample : 20F183-08M 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

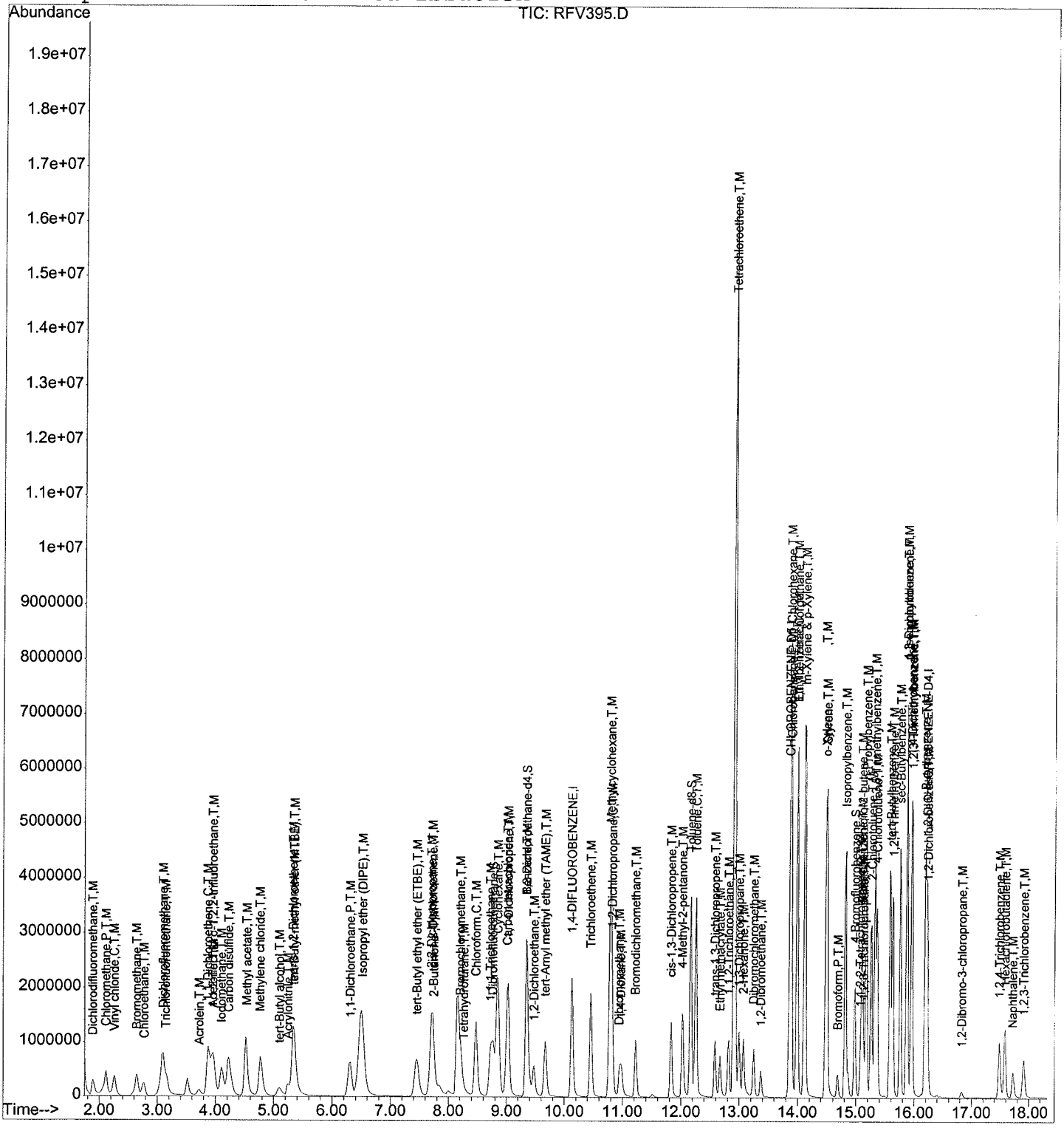
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	4-Chlorotoluene	15.35	91	2761423	10.28	ug/l	100
83)	tert-Butylbenzene	15.59	134	783506	10.06	ug/l	100
84)	1,2,4-Trimethylbenzene	15.63	105	2845098	10.21	ug/l	98
85)	sec-Butylbenzene	15.75	105	4326305	10.07	ug/l	99
86)	p-Isopropyltoluene	15.87	119	3333687	10.18	ug/l	98
87)	1,3-Dichlorobenzene	15.87	146	1485061	9.97	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1397978	9.65	ug/l	98
89)	1,2,3-Trimethylbenzene	15.96	105	2567822	10.03	ug/l	98
90)	n-Butylbenzene	16.18	91	2914676	9.81	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1160172	9.50	ug/l	97
92)	1,2-Dibromo-3-chloropropan	16.83	157	54297	8.13	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	554323	9.23	ug/l	98
94)	Hexachlorobutadiene	17.59	225	427139	9.32	ug/l	98
95)	Naphthalene	17.72	128	661662	8.33	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	419222	9.33	ug/l	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D Vial: 15
Acq On : 30 Jun 2020 6:59 pm Operator: VLu
Sample : 20F183-08M 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D
Acq On : 30 Jun 2020 6:59 pm
Sample : 20F183-08M 25mL
Misc : DF=1.0
MS Integration Params: RTE.P
Quant Time: Jun 30 20:16 2020

Vial: 15
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

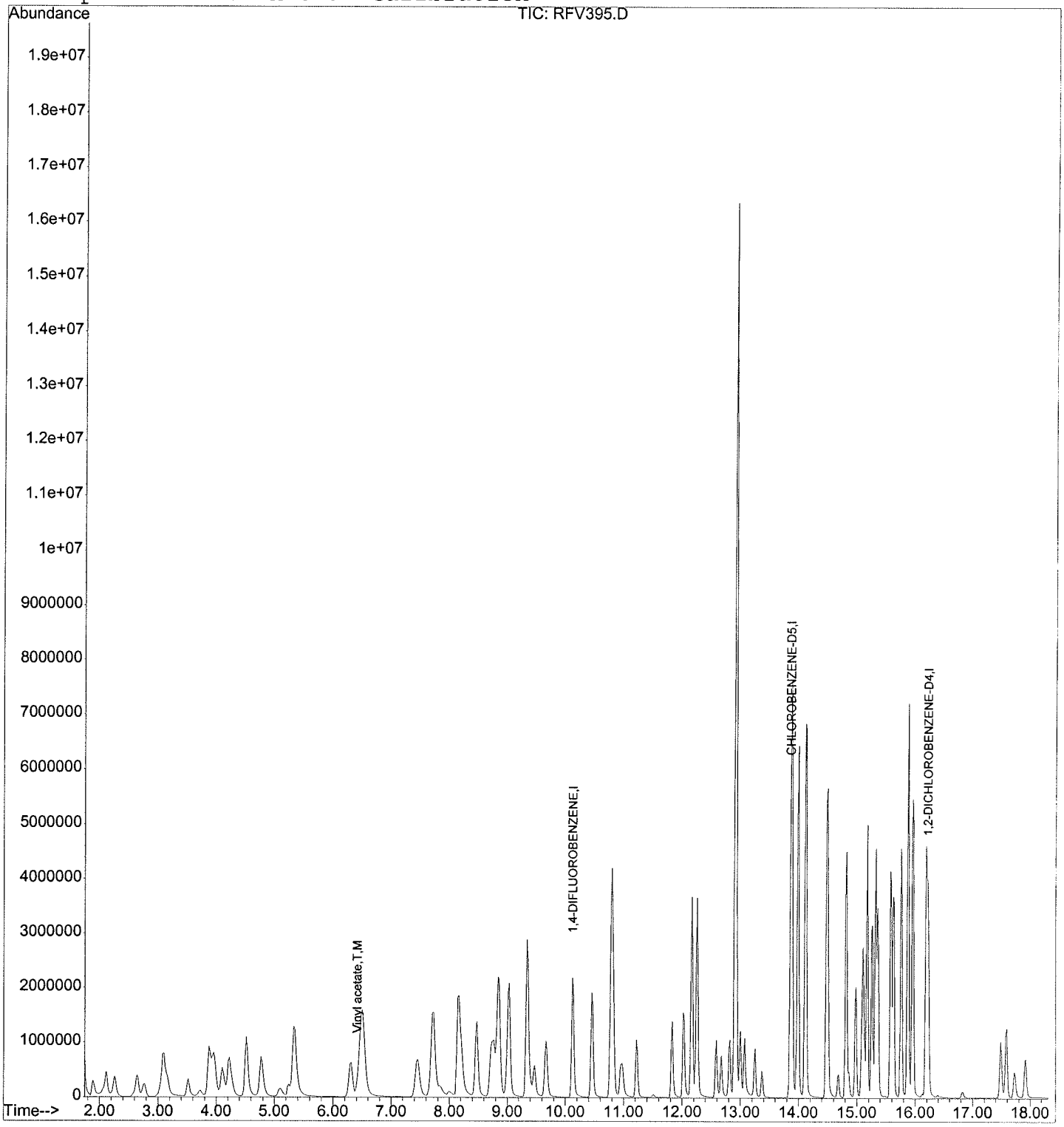
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2847076	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2343428	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	782300	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	708959	7.72	ug/l	94

(#) = qualifier out of range (m) = manual integration
RFV395.D VO01E14.M Wed Jul 01 09:45:46 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV395.D Vial: 15
Acq On : 30 Jun 2020 6:59 pm Operator: VLu
Sample : 20F183-08M 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 20:16 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2974737	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2498968	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	846918	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.78	111	872174	10.42	ug/l	0.02
Spiked Amount 10.000			Recovery = 104.20%			
38) 1,2-Dichloroethane-d4	9.34	65	587781	10.54	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.40%			
54) Toluene-d8	12.17	98	3333645	9.80	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.00%			
74) 4-Bromofluorobenzene	14.97	95	1030563	10.18	ug/l	-0.01
Spiked Amount 10.000			Recovery = 101.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.89	85	652547	7.13	ug/l	97
4) Chloromethane	2.12	50	1058270	9.68	ug/l	98
5) Vinyl chloride	2.26	62	969133	9.04	ug/l	98
7) Bromomethane	2.65	94	627312	8.78	ug/l	100
8) Chloroethane	2.76	64	521925	8.79	ug/l	98
9) Dichlorofluoromethane	3.10	67	1486138	10.14	ug/l	99
10) Trichlorofluoromethane	3.16	101	1052690	10.60	ug/l	100
11) Acrolein	3.73	56	250189	48.49	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.98	151	559266	8.98	ug/l	98
13) Acetone	3.96	43	426451	42.22	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1366058	9.40	ug/l	98
15) Iodomethane	4.10	142	1540365	9.38	ug/l	97
16) Carbon disulfide	4.23	76	3331162	10.44	ug/l	100
17) Methyl acetate	4.56	43	254440	9.56	ug/l	98
18) Methylene chloride	4.77	49	1207344	9.86	ug/l	96
19) tert-Butyl alcohol	5.10	59	643370	232.23	ug/l	95
20) Acrylonitrile	5.25	53	563612	45.54	ug/l	99
21) tert-Butyl methyl ether (M	5.37	73	1201481	9.38	ug/l	96
22) trans-1,2-Dichloroethene	5.33	61	1390519	9.68	ug/l	98
24) 1,1-Dichloroethane	6.31	63	1731899	9.94	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	3018976	9.95	ug/l	98
27) tert-Butyl ethyl ether (ET	7.45	59	1988474	9.08	ug/l	99
28) 2-Butanone	7.75	43	750204	46.51	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	997538	9.89	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1148067	10.43	ug/l	98
31) Tetrahydrofurane	8.27	42	78727	7.62	ug/l	83
32) Bromochloromethane	8.20	49	752083	10.46	ug/l	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
33)	Chloroform	8.47	83	2034678	14.15 ug/l		99
35)	1,1,1-Trichloroethane	8.73	97	1175467	10.24 ug/l		99
36)	Cyclohexane	8.85	84	1684426	10.31 ug/l		99
37)	tert-Amyl methyl ether (TA	9.67	73	1604773	9.49 ug/l		99
39)	1,1-Dichloropropene	9.03	110	469757	9.64 ug/l		99
40)	Carbon tetrachloride	9.01	119	978373	10.16 ug/l		98
41)	Benzene	9.36	78	3666564	10.31 ug/l		99
42)	1,2-Dichloroethane	9.47	62	700587	10.49 ug/l		99
44)	Trichloroethene	10.47	130	1126366	10.35 ug/l		98
45)	Methylcyclohexane	10.79	83	2187253	11.92 ug/l		98
46)	1,2-Dichloropropane	10.82	63	996204	10.38 ug/l		99
47)	1,4-Dioxane	10.97	88	62057	189.55 ug/l		98
48)	Dibromomethane	10.95	93	365547	10.04 ug/l		98
49)	Bromodichloromethane	11.22	83	1056373	11.31 ug/l		100
50)	2-Chloroethyl vinyl ether	11.83	63	6829	0.23 ug/l	#	45
51)	cis-1,3-Dichloropropene	11.83	75	1295566	10.79 ug/l		98
52)	4-Methyl-2-pentanone	12.02	43	2155318	51.54 ug/l		98
55)	Toluene	12.26	91	3770829	9.64 ug/l		100
56)	Ethyl methacrylate	12.67	69	682771	9.79 ug/l		95
57)	trans-1,3-Dichloropropene	12.58	75	886867	9.61 ug/l		99
58)	1,1,2-Trichloroethane	12.82	97	499374	9.53 ug/l		99
59)	Tetrachloroethene	12.91	164	5600612	65.42 ug/l		98
60)	1,3-Dichloropropane	13.00	76	969534	9.66 ug/l		99
61)	2-Hexanone	13.07	43	1312545	46.46 ug/l		99
62)	Dibromochloromethane	13.25	129	660240	10.14 ug/l		99
63)	1,2-Dibromoethane	13.37	107	512489	9.75 ug/l		96
64)	1-Chlorohexane	13.87	91	1696706	9.58 ug/l		99
65)	Chlorobenzene	13.89	112	2476867	10.08 ug/l		98
66)	1,1,1,2-Tetrachloroethane	13.99	131	775807	9.86 ug/l		98
67)	Ethylbenzene	13.99	91	4282907	9.24 ug/l		100
68)	m-Xylene & p-Xylene	14.12	91	6076223	18.43 ug/l		98
69)	o-Xylene	14.48	91	3064365	9.69 ug/l		99
70)	Styrene	14.49	104	2539959	9.75 ug/l		99
72)	Bromoform	14.69	173	309172	10.84 ug/l		98
73)	Isopropylbenzene	14.82	105	4367735	9.87 ug/l		99
75)	1,1,2,2-Tetrachloroethane	15.07	83	610048	9.94 ug/l		99
76)	Bromobenzene	15.10	156	853505	9.86 ug/l		98
77)	trans-1,4-Dichloro-2-buten	15.10	53	119170	9.71 ug/l		94
78)	1,2,3-Trichloropropane	15.13	110	151076	10.16 ug/l		97
79)	n-Propylbenzene	15.17	91	4875272	9.52 ug/l		100
80)	1,3,5-Trimethylbenzene	15.32	105	3113190	9.97 ug/l		99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

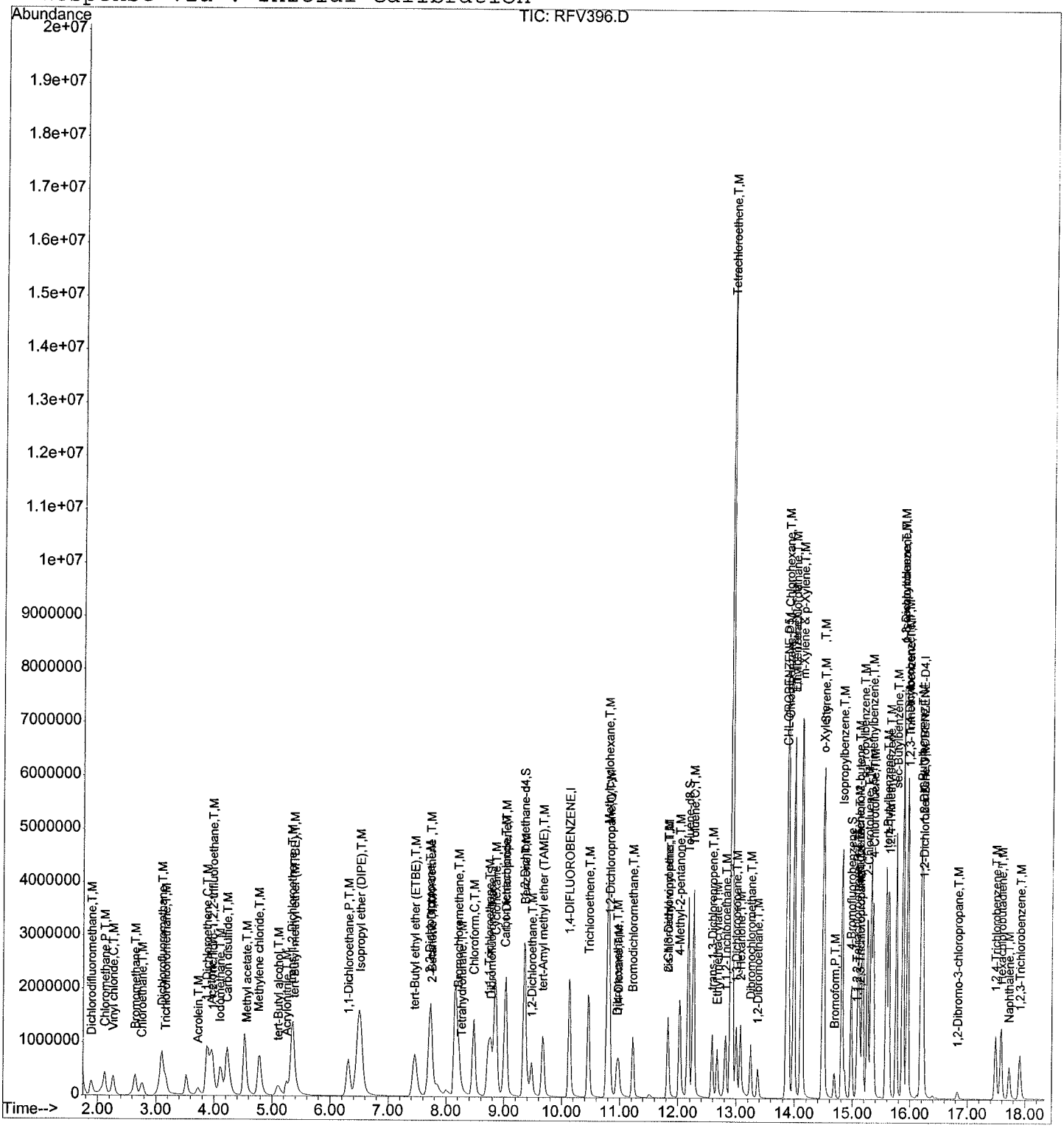
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
81)	2-Chlorotoluene	15.26	91	2505515	10.20 ug/l	98
82)	4-Chlorotoluene	15.35	91	2885938	9.92 ug/l	99
83)	tert-Butylbenzene	15.59	134	817274	9.69 ug/l	70
84)	1,2,4-Trimethylbenzene	15.63	105	2999095	9.94 ug/l	98
85)	sec-Butylbenzene	15.75	105	4583000	9.86 ug/l	99
86)	p-Isopropyltoluene	15.87	119	3499575	9.88 ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1599987	9.92 ug/l	97
88)	1,4-Dichlorobenzene	15.94	146	1518730	9.69 ug/l	98
89)	1,2,3-Trimethylbenzene	15.96	105	2773968	10.01 ug/l	98
90)	n-Butylbenzene	16.18	91	3057597	9.50 ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1261679	9.54 ug/l	98
92)	1,2-Dibromo-3-chloropropan	16.83	157	67024	9.27 ug/l	99
93)	1,2,4-Trichlorobenzene	17.49	180	641729	9.87 ug/l	97
94)	Hexachlorobutadiene	17.59	225	454062	9.15 ug/l	99
95)	Naphthalene	17.72	128	830257	9.65 ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	483308	9.93 ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:38 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 20:16 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

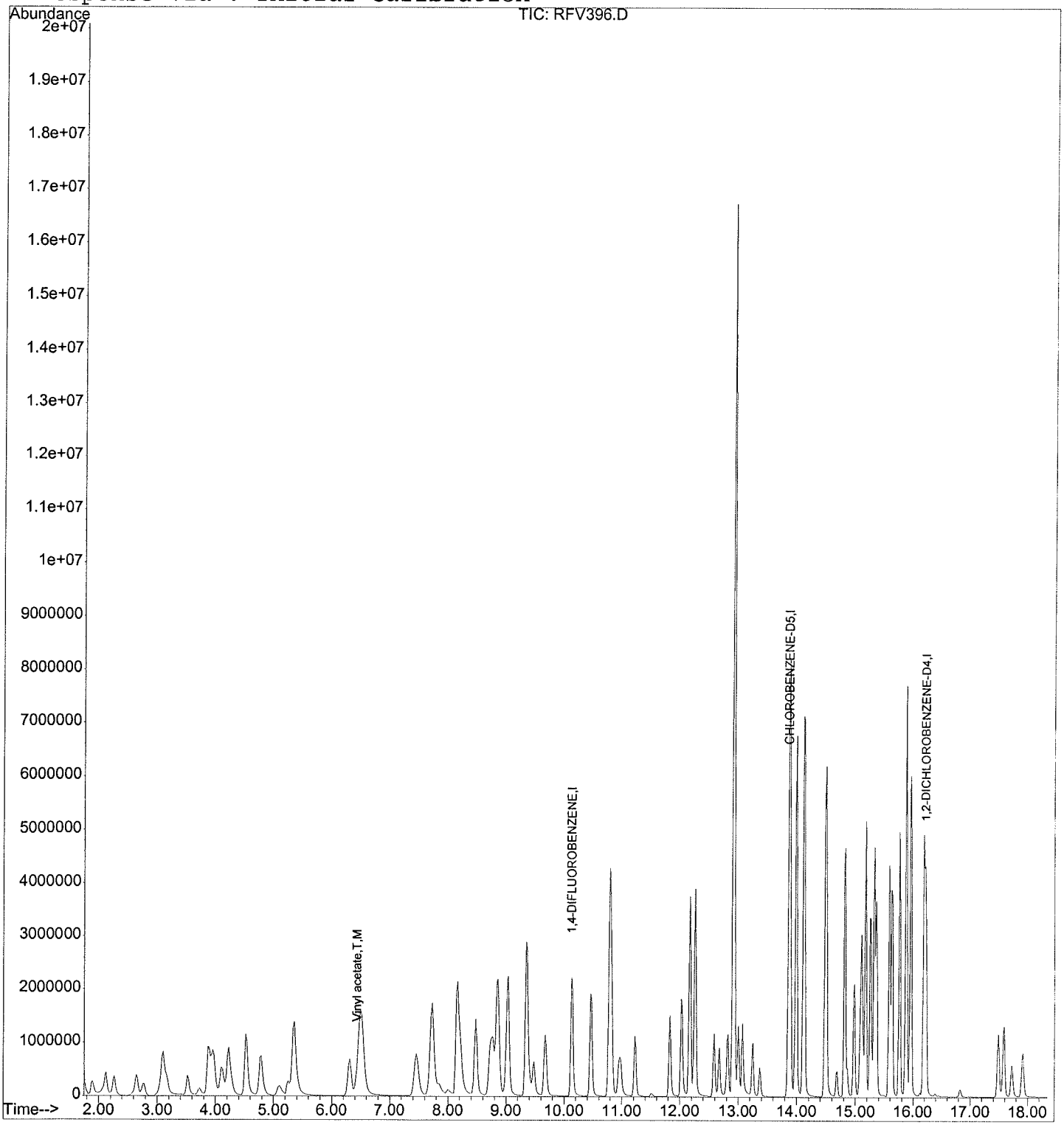
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	2974679	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2492866	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	846946	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.43	43	933475	9.55	ug/l	100

(#) = qualifier out of range (m) = manual integration
RFV396.D VO01E14.M Wed Jul 01 09:45:52 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV396.D Vial: 16
Acq On : 30 Jun 2020 7:26 pm Operator: VLu
Sample : 20F183-08S 25mL Inst : 01
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 20:16 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV197 BFB Injection Date : 05/13/20
Instrument ID: 01 BFB Injection Time : 13:15
GC Column:RX-624SLIMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.92
75	30.0 - 60.0% of mass 95	44.02
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.87
173	Less than 2.0% of mass 174	0.26(0.3)1
174	Greater than 50% of mass 95	74.01
175	5.0 - 9.0% of mass 174	5.02(6.8)1
176	95.0 - 101.0% of mass 174	72.36(97.8)1
177	5.0 - 9.0% of mass 176	4.84(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VO01E131	REV198	05/13/20	14:04
2	VSTD0.5	VO01E132	REV199	05/13/20	14:30
3	VSTD01	VO01E133	REV200	05/13/20	14:57
4	VSTD02	VO01E134	REV201	05/13/20	15:24
5	VSTD05	VO01E135	REV202	05/13/20	15:52
6	VSTD010	VO01E136	REV203	05/13/20	16:20
7	VSTD020	VO01E137	REV204	05/13/20	16:47
8	VSTD030	VO01E138	REV205	05/13/20	17:14
9	VSTD050	VO01E139	REV206	05/13/20	17:40
10	VSTD100	VO01E1310	REV207	05/13/20	18:06
11	VSTD010	IVO01E1301	REV210	05/13/20	19:32

SA 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :VO01E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	0.279	0.287	0.314	0.330	0.310	0.314	0.312	0.312	0.311	0.308	5.00	1.8755
	4	Chloromethane	0.329	0.363	0.370	0.359	0.386	0.373	0.365	0.367	0.374	0.388	0.368	4.47	2.1028
	5	Vinyl chloride	------	0.315	0.341	0.342	0.391	0.378	0.365	0.371	0.361	0.380	0.360	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	0.229	0.234	0.243	0.274	0.260	0.234	0.207	------	------	0.240	9.04	2.6334
	8	Chloroethane	0.191	0.210	0.199	0.211	0.221	0.211	0.195	0.186	0.172	------	0.200	7.77	2.7503
	9	Dichlorofluoromethane	0.549	0.506	0.521	0.506	0.511	0.491	0.479	0.468	0.467	0.429	0.493	6.83	3.0785
	10	Trichlorofluoromethane	------	0.297	0.322	0.326	0.351	0.350	0.344	0.340	0.342	0.331	0.334	5.09	3.1384
5	11	Acrolein	------	------	0.019	0.015	0.018	0.018	0.018	0.017	0.017	0.018	0.017	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	0.213	0.210	0.209	0.210	0.215	0.210	0.210	0.214	0.204	0.199	0.209	2.31	3.9533
5	13	Acetone	------	------	0.037	0.033	0.033	0.034	0.035	0.034	0.031	0.034	0.034	5.07	3.9396
	14	1,1-Dichloroethene	0.482	0.485	0.490	0.502	0.510	0.496	0.491	0.498	0.471	0.460	0.488	3.02	3.8575
	15	Iodomethane	0.537	0.547	0.546	0.565	0.571	0.559	0.553	0.558	0.545	0.541	0.552	2.01	4.0970
	16	Carbon disulfide	------	0.957	1.012	1.034	1.129	1.105	1.101	1.104	1.099	1.109	1.072	5.38	4.2052
	17	Methyl acetate	------	------	------	0.075	0.080	0.094	0.094	0.089	0.090	0.104	0.089	10.51	4.5295
	18	Methylene chloride	------	------	0.465	0.432	0.415	0.406	0.403	0.399	0.385	0.389	0.412	6.33	4.7623
25	19	tert-Butyl alcohol	0.010	0.009	0.008	0.008	0.009	0.010	0.010	0.010	0.010	------	0.009	7.49	5.0916
5	20	Acrylonitrile	------	------	------	0.033	0.037	0.042	0.044	0.044	0.043	0.048	0.042	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	0.461	0.421	0.427	0.407	0.425	0.446	0.438	0.424	0.411	0.447	0.431	3.93	5.3508
	22	trans-1,2-Dichloroethene	0.488	0.469	0.478	0.490	0.503	0.491	0.481	0.487	0.477	0.464	0.483	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	0.568	0.567	0.588	0.590	0.608	0.594	0.586	0.594	0.575	0.583	0.586	2.19	6.2859
	25	Isopropyl ether (DIPE)	1.016	0.993	1.010	1.016	1.020	1.042	1.058	1.036	0.990	1.015	1.020	2.05	6.5067
25	26	2-Butanol	------	------	0.006	0.007	0.009	0.011	0.011	0.011	0.011	------	0.010	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	0.869	0.787	0.719	0.722	0.721	0.719	0.693	0.675	0.718	0.736	7.93	7.4358
5	28	2-Butanone	------	------	------	0.042	0.049	0.057	0.058	0.057	0.056	0.061	0.054	11.88	7.7369
	29	cis-1,2-Dichloroethene	0.333	0.329	0.341	0.343	0.352	0.340	0.341	0.351	0.332	0.329	0.339	2.44	7.7105
	30	2,2-Dichloropropane	0.371	0.382	0.372	0.376	0.385	0.369	0.367	0.376	0.358	0.345	0.370	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	0.025	0.034	0.038	0.038	0.036	0.034	0.039	0.035	13.54	8.2605
	32	Bromochloromethane	0.246	0.234	0.245	0.244	0.251	0.247	0.243	0.242	0.233	0.233	0.242	2.67	8.1958
	33	Chloroform	0.495	0.496	0.476	0.477	0.491	0.486	0.483	0.488	0.468	0.475	0.484	1.90	8.4582
	34	Dibromofluoromethane	------	0.239	0.265	0.267	0.291	0.314	0.295	0.290	0.283	0.288	0.281	7.67	8.7575
	35	1,1,1-Trichloroethane	0.337	0.364	0.369	0.380	0.386	0.381	0.410	0.413	0.406	0.416	0.386	6.62	8.7151
	36	Cyclohexane	0.487	0.574	0.554	0.553	0.585	0.543	0.557	0.560	0.535	0.547	0.549	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	0.575	0.562	0.571	0.562	0.585	0.583	0.578	0.565	0.536	0.566	0.568	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	0.158	0.177	0.179	0.193	0.207	0.202	0.194	0.184	0.192	0.187	7.96	9.3301
	39	1,1-Dichloropropene	0.142	0.157	0.167	0.170	0.174	0.170	0.169	0.169	0.162	0.157	0.164	5.84	9.0216
	40	Carbon tetrachloride	0.296	0.302	0.312	0.328	0.340	0.334	0.334	0.338	0.330	0.323	0.324	4.73	8.9979
	41	Benzene	1.203	1.193	1.182	1.221	1.240	1.181	1.211	1.190	1.140	------	1.196	2.37	9.3400
	42	1,2-Dichloroethane	0.208	0.218	0.226	0.226	0.228	0.231	0.233	0.229	0.219	0.227	0.225	3.25	9.4644
	43	2,2,4-Trimethylpentane	1.263	1.570	1.553	1.636	1.804	1.733	1.659	1.708	1.608	------	1.615	9.56	9.6131
	44	Trichloroethene	0.343	0.354	0.364	0.373	0.385	0.373	0.375	0.369	0.367	0.354	0.366	3.40	10.4521
	45	Methylcyclohexane	0.466	0.592	0.624	0.636	0.675	0.652	0.653	0.639	0.626	0.604	0.617	9.40	10.7779
	46	1,2-Dichloropropane	0.325	0.310	0.323	0.337	0.337	0.335	0.333	0.320	0.308	0.299	0.323	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	8.66	10.9626
	48	Dibromomethane	0.112	0.112	0.121	0.119	0.128	0.129	0.127	0.126	0.122	0.127	0.122	5.25	10.9408

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49	Bromodichloromethane	0.281	0.293	0.293	0.308	0.327	0.326	0.329	0.332	0.322	0.329	0.314	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	0.081	0.084	0.094	0.102	0.106	0.107	0.106	0.119	0.100	12.71	11.6445
51	cis-1,3-Dichloropropene	0.361	0.358	0.375	0.386	0.417	0.422	0.435	0.428	0.423	0.433	0.404	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	0.126	0.128	0.139	0.154	0.155	0.149	0.146	0.128	0.141	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	1.297	1.244	1.372	1.440	1.413	1.401	------	------	1.361	5.54	12.1609
55	Toluene	1.539	1.614	1.579	1.633	1.635	1.546	1.576	1.611	1.361	------	1.566	5.39	12.2491
56	Ethyl methacrylate	------	------	0.249	0.256	0.274	0.287	0.288	0.285	0.281	0.314	0.279	7.24	12.6645
57	trans-1,3-Dichloropropene	------	0.320	0.326	0.356	0.368	0.373	0.389	0.391	0.383	0.420	0.369	8.70	12.5765
58	1,1,2-Trichloroethane	0.206	0.203	0.204	0.211	0.213	0.213	0.210	0.211	0.205	0.220	0.210	2.49	12.8112
59	Tetrachloroethene	0.331	0.332	0.344	0.352	0.357	0.339	0.342	0.350	0.340	0.339	0.343	2.48	12.9104
60	1,3-Dichloropropane	0.377	0.385	0.400	0.403	0.407	0.411	0.408	0.411	0.393	0.422	0.402	3.31	12.9963
5 61	2-Hexanone	------	------	0.086	0.096	0.106	0.121	0.126	0.124	0.121	0.124	0.113	13.31	13.0643
62	Dibromochloromethane	0.218	0.227	0.245	0.250	0.270	0.274	0.277	0.281	0.269	0.294	0.260	9.43	13.2480
63	1,2-Dibromoethane	0.180	0.184	0.204	0.205	0.221	0.221	0.221	0.221	0.213	0.234	0.210	8.30	13.3709
64	1-Chlorohexane	0.709	0.704	0.703	0.714	0.735	0.698	0.709	0.724	0.686	------	0.709	2.00	13.8731
65	Chlorobenzene	0.944	0.986	0.998	1.006	1.013	0.983	0.983	0.997	0.940	------	0.983	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	0.289	0.286	0.310	0.326	0.330	0.326	0.326	0.326	0.315	0.314	0.315	5.03	13.9766
67	Ethylbenzene	1.774	1.822	1.857	1.889	1.963	1.856	1.892	1.779	------	------	1.854	3.39	13.9825
2 68	m-Xylene & p-Xylene	1.283	1.326	1.323	1.357	1.407	1.365	1.302	1.192	------	------	1.319	4.89	14.1102
69	o-Xylene	1.277	1.242	1.292	1.286	1.330	1.289	1.281	1.294	1.096	------	1.265	5.32	14.4803
70	Styrene	0.987	1.001	1.036	1.047	1.095	1.060	1.084	1.093	0.983	------	1.043	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	0.266	0.293	0.306	0.347	0.359	0.371	0.386	0.367	------	0.337	12.81	14.6766
73	Isopropylbenzene	5.246	5.155	5.143	5.373	5.510	5.118	5.195	5.059	------	------	5.225	2.85	14.8062
74	4-Bromofluorobenzene	------	1.008	1.119	1.112	1.262	1.257	1.249	1.316	1.184	1.254	1.196	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	0.666	0.695	0.718	0.712	0.746	0.753	0.736	0.757	0.699	0.764	0.725	4.41	15.0724
76	Bromobenzene	0.945	0.965	1.021	1.036	1.080	1.033	1.025	1.075	1.007	1.039	1.022	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	0.139	0.152	0.142	0.134	0.139	0.146	0.151	0.143	0.157	0.145	5.11	15.1055
78	1,2,3-Trichloropropane	0.154	0.162	0.175	0.172	0.183	0.183	0.182	0.185	0.171	0.190	0.176	6.36	15.1317
79	n-Propylbenzene	5.875	5.876	6.026	6.300	6.554	6.127	6.181	5.411	------	------	6.044	5.63	15.1746
80	1,3,5-Trimethylbenzene	3.697	3.626	3.666	3.769	3.882	3.758	3.722	3.898	3.154	------	3.686	5.94	15.3145
81	2-Chlorotoluene	2.611	2.772	2.839	3.058	3.006	3.003	2.977	3.111	2.725	------	2.900	5.87	15.2503
82	4-Chlorotoluene	3.139	3.507	3.500	3.504	3.619	3.457	3.434	3.574	3.169	------	3.434	4.90	15.3556
83	tert-Butylbenzene	0.956	0.965	1.003	1.037	1.081	0.993	0.991	1.044	0.958	0.927	0.996	4.73	15.5759
84	1,2,4-Trimethylbenzene	3.539	3.450	3.568	3.584	3.818	3.527	3.662	3.787	3.134	------	3.563	5.65	15.6238
85	sec-Butylbenzene	5.127	5.462	5.451	5.694	5.873	5.510	5.628	5.172	------	------	5.490	4.58	15.7540
86	p-Isopropyltoluene	3.935	3.983	4.133	4.264	4.389	4.184	4.240	4.345	------	------	4.184	3.86	15.8724
87	1,3-Dichlorobenzene	1.815	1.776	1.894	1.960	2.025	1.969	1.945	2.023	1.903	1.735	1.905	5.27	15.8721
88	1,4-Dichlorobenzene	1.959	1.897	1.840	1.874	1.940	1.827	1.899	1.911	1.781	1.585	1.851	5.83	15.9491
89	1,2,3-Trimethylbenzene	3.244	3.167	3.297	3.384	3.462	3.296	3.317	3.352	2.935	------	3.273	4.63	15.9463
90	n-Butylbenzene	3.662	3.624	3.720	3.867	4.084	3.888	3.939	4.124	3.284	------	3.799	6.84	16.1833
91	1,2-Dichlorobenzene	1.646	1.536	1.586	1.559	1.607	1.527	1.549	1.585	1.507	1.511	1.561	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	0.069	0.066	0.082	0.087	0.093	0.094	0.090	0.102	0.085	14.58	16.8220
93	1,2,4-Trichlorobenzene	0.667	0.677	0.725	0.737	0.792	0.783	0.840	0.848	0.799	0.808	0.768	8.26	17.4892
94	Hexachlorobutadiene	0.537	0.550	0.581	0.594	0.641	0.589	0.624	0.628	0.583	0.530	0.586	6.55	17.5766
95	Naphthalene	0.976	0.886	0.915	0.912	1.038	1.023	1.094	1.109	1.049	1.156	1.016	9.03	17.7262
96	1,2,3-Trichlorobenzene	0.516	0.524	0.568	0.560	0.611	0.582	0.610	0.614	0.572	0.590	0.575	6.00	17.9113

Spike Amount = Nominal Amount * M
Ave_%RSD : 6.1 Max_%RSD : 22.9

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
26	2-Butanol	-0.01634	0.01139	0.9993

SL 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/13/20 14:04
Spike Units :PPB
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/13/20 18:06
HPChem Method :V001E13

M	IDX	Parameters	.3 14:04 REV198	.5 14:30 REV199	1 14:57 REV200	2 15:24 REV201	5 15:52 REV202	10 16:20 REV203	20 16:47 REV204	30 17:14 REV205	50 17:40 REV206	100 18:06 REV207	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	10.1234
	2	Chlorotrifluoroethylene	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	3	Dichlorodifluoromethane	------	91	93	102	107	101	102	101	101	101	3.5	5.00	1.8755
	4	Chloromethane	89	99	101	98	105	101	99	100	102	105	2.9	4.47	2.1028
	5	Vinyl chloride	------	88	95	95	109	105	101	103	100	106	5.2	6.66	2.2458
	6	2-Chloro-1,1,1-trifluoroethane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	7	Bromomethane	------	95	98	101	114	108	98	86	------	------	6.7	9.04	2.6334
	8	Chloroethane	96	105	100	106	110	106	98	93	86	------	6.1	7.77	2.7503
	9	Dichlorofluoromethane	111	103	106	103	104	100	97	95	95	87	5.3	6.83	3.0785
	10	Trichlorofluoromethane	------	89	96	98	105	105	103	102	102	99	3.9	5.09	3.1384
5	11	Acrolein	------	------	112	88	106	106	106	100	100	106	5.9	6.10	3.7053
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	102	100	100	100	103	100	100	102	98	95	1.6	2.31	3.9533
5	13	Acetone	------	------	109	97	97	100	103	100	91	100	3.3	5.07	3.9396
	14	1,1-Dichloroethene	99	99	100	103	105	102	101	102	97	94	2.3	3.02	3.8575
	15	Iodomethane	97	99	99	102	103	101	100	101	99	98	1.6	2.01	4.0970
	16	Carbon disulfide	------	89	94	96	105	103	103	103	103	103	4.4	5.38	4.2052
	17	Methyl acetate	------	------	------	84	90	106	106	100	101	117	7.9	10.51	4.5295
	18	Methylene chloride	------	------	113	105	101	99	98	97	93	94	4.7	6.33	4.7623
25	19	tert-Butyl alcohol	111	100	89	89	100	111	111	111	111	------	8.6	7.49	5.0916
5	20	Acrylonitrile	------	------	------	79	88	100	105	105	102	114	8.5	12.27	5.2287
	21	tert-Butyl methyl ether (MTBE)	107	98	99	94	99	103	102	98	95	104	3.2	3.93	5.3508
	22	trans-1,2-Dichloroethene	101	97	99	101	104	102	100	101	99	96	1.9	2.38	5.3217
	23	Vinyl acetate	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	1,1-Dichloroethane	97	97	100	101	104	101	100	101	98	99	1.6	2.19	6.2859
	25	Isopropyl ether (DIPE)	100	97	99	100	100	102	104	102	97	100	1.5	2.05	6.5067
25	26	2-Butanol	------	------	112	90	92	105	104	97	100	------	6	22.94	8.2992
	27	tert-Butyl ethyl ether (ETBE)	------	118	107	98	98	98	98	94	92	98	5.6	7.93	7.4358
5	28	2-Butanone	------	------	------	78	91	106	107	106	104	113	9.5	11.88	7.7369
	29	cis-1,2-Dichloroethene	98	97	101	101	104	100	101	104	98	97	2	2.44	7.7105
	30	2,2-Dichloropropane	100	103	101	102	104	100	99	102	97	93	2.2	3.19	7.6939
	31	Tetrahydrofurane	------	------	------	71	97	109	109	103	97	111	9.4	13.54	8.2605
	32	Bromochloromethane	102	97	101	101	104	102	100	100	96	96	2.1	2.67	8.1958
	33	Chloroform	102	102	98	99	101	100	100	101	97	98	1.6	1.90	8.4582
	34	Dibromofluoromethane	------	85	94	95	104	112	105	103	101	102	5.8	7.67	8.7575
	35	1,1,1-Trichloroethane	87	94	96	98	100	99	106	107	105	108	5.2	6.62	8.7151
	36	Cyclohexane	89	105	101	101	107	99	101	102	97	100	3.2	4.79	8.8350
	37	tert-Amyl methyl ether (TAME)	101	99	101	99	103	103	102	99	94	100	1.8	2.47	9.6658
	38	1,2-Dichloroethane-d4	------	84	95	96	103	111	108	104	98	103	6.1	7.96	9.3301
	39	1,1-Dichloropropene	87	96	102	104	106	104	103	103	99	96	4.5	5.84	9.0216
	40	Carbon tetrachloride	91	93	96	101	105	103	103	104	102	100	3.8	4.73	8.9979
	41	Benzene	101	100	99	102	104	99	101	99	95	------	1.7	2.37	9.3400
	42	1,2-Dichloroethane	92	97	100	100	101	103	104	102	97	101	2.4	3.25	9.4644
	43	2,2,4-Trimethylpentane	78	97	96	101	112	107	103	106	100	------	6.4	9.56	9.6131
	44	Trichloroethene	94	97	99	102	105	102	102	101	100	97	2.6	3.40	10.4521
	45	Methylcyclohexane	76	96	101	103	109	106	106	104	101	98	6.1	9.40	10.7779
	46	1,2-Dichloropropane	101	96	100	104	104	104	103	99	95	93	3.3	4.19	10.8105
20	47	1,4-Dioxane	------	------	------	100	100	100	100	100	100	100	0	8.66	10.9626
	48	Dibromomethane	92	92	99	98	105	106	104	103	100	104	4.2	5.25	10.9408

For 8260C
SM
5/18/20

49	Bromodichloromethane	89	93	93	98	104	104	105	106	103	105	5.2	5.97	11.2163
50	2-Chloroethyl vinyl ether	------	------	81	84	94	102	106	107	106	119	10.1	12.71	11.6445
51	cis-1,3-Dichloropropene	89	89	93	96	103	104	108	106	105	107	6.7	7.53	11.8204
5 52	4-Methyl-2-pentanone	------	------	89	91	99	109	110	106	104	91	7.4	8.42	12.0221
53	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	13.8581
54	Toluene-d8	------	------	95	91	101	106	104	103	------	------	4.4	5.54	12.1609
55	Toluene	98	103	101	104	104	99	101	103	87	------	3.6	5.39	12.2491
56	Ethyl methacrylate	------	------	89	92	98	103	103	102	101	113	5.3	7.24	12.6645
57	trans-1,3-Dichloropropene	------	87	88	96	100	101	105	106	104	114	6.5	8.70	12.5765
58	1,1,2-Trichloroethane	98	97	97	100	101	101	100	100	98	105	1.9	2.49	12.8112
59	Tetrachloroethene	97	97	100	103	104	99	100	102	99	99	1.9	2.48	12.9104
60	1,3-Dichloropropane	94	96	100	100	101	102	101	102	98	105	2.6	3.31	12.9963
5 61	2-Hexanone	------	------	76	85	94	107	112	110	107	110	11.3	13.31	13.0643
62	Dibromochloromethane	84	87	94	96	104	105	107	108	103	113	7.9	9.43	13.2480
63	1,2-Dibromoethane	86	88	97	98	105	105	105	105	101	111	6.6	8.30	13.3709
64	1-Chlorohexane	100	99	99	101	104	98	100	102	97	------	1.4	2.00	13.8731
65	Chlorobenzene	96	100	102	102	103	100	100	101	96	------	1.9	2.60	13.8879
66	1,1,1,2-Tetrachloroethane	92	91	98	103	105	103	103	103	100	100	3.8	5.03	13.9766
67	Ethylbenzene	96	98	100	102	106	100	102	96	------	------	2.5	3.39	13.9825
2 68	m-Xylene & p-Xylene	97	101	100	103	107	103	99	90	------	------	3.4	4.89	14.1102
69	o-Xylene	101	98	102	102	105	102	101	102	87	------	3.4	5.32	14.4803
70	Styrene	95	96	99	100	105	102	104	105	94	------	3.5	4.25	14.4984
71	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	16.2112
72	Bromoform	------	79	87	91	103	107	110	115	109	------	10.8	12.81	14.6766
73	Isopropylbenzene	100	99	98	103	105	98	99	97	------	------	2.2	2.85	14.8062
74	4-Bromofluorobenzene	------	84	94	93	106	105	104	110	99	105	6.7	8.21	14.9722
75	1,1,2,2-Tetrachloroethane	92	96	99	98	103	104	102	104	96	105	3.7	4.41	15.0724
76	Bromobenzene	92	94	100	101	106	101	100	105	99	102	3	4.15	15.1035
77	trans-1,4-Dichloro-2-butene	------	96	105	98	92	96	101	104	99	108	4.1	5.11	15.1055
78	1,2,3-Trichloropropane	88	92	99	98	104	104	103	105	97	108	5.1	6.36	15.1317
79	n-Propylbenzene	97	97	100	104	108	101	102	90	------	------	4.1	5.63	15.1746
80	1,3,5-Trimethylbenzene	100	98	99	102	105	102	101	106	86	------	3.7	5.94	15.3145
81	2-Chlorotoluene	90	96	98	105	104	104	103	107	94	------	5	5.87	15.2503
82	4-Chlorotoluene	91	102	102	102	105	101	100	104	92	------	3.6	4.90	15.3556
83	tert-Butylbenzene	96	97	101	104	109	100	99	105	96	93	3.7	4.73	15.5759
84	1,2,4-Trimethylbenzene	99	97	100	101	107	99	103	106	88	------	3.8	5.65	15.6238
85	sec-Butylbenzene	93	99	99	104	107	100	103	94	------	------	3.4	4.58	15.7540
86	p-Isopropyltoluene	94	95	99	102	105	100	101	104	------	------	3	3.86	15.8724
87	1,3-Dichlorobenzene	95	93	99	103	106	103	102	106	100	91	4.2	5.27	15.8721
88	1,4-Dichlorobenzene	106	102	99	101	105	99	103	103	96	86	4	5.83	15.9491
89	1,2,3-Trimethylbenzene	99	97	101	103	106	101	101	102	90	------	3.2	4.63	15.9463
90	n-Butylbenzene	96	95	98	102	108	102	104	109	86	------	5.3	6.84	16.1833
91	1,2-Dichlorobenzene	105	98	102	100	103	98	99	102	97	97	2.3	2.86	16.2260
92	1,2-Dibromo-3-chloropropane	------	------	81	78	96	102	109	111	106	120	11.6	14.58	16.8220
93	1,2,4-Trichlorobenzene	87	88	94	96	103	102	109	110	104	105	6.9	8.26	17.4892
94	Hexachlorobutadiene	92	94	99	101	109	101	106	107	99	90	5	6.55	17.5766
95	Naphthalene	96	87	90	90	102	101	108	109	103	114	7.4	9.03	17.7262
96	1,2,3-Trichlorobenzene	90	91	99	97	106	101	106	107	99	103	4.6	6.00	17.9113

For 8260C
SA
5/18/20

Compound List Report 01

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
Total Cpnds : 96

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Chlorotrifluoroethylene	116	1.84	0.181	A	2	A	B
3	T	Dichlorodifluoromethane	85	1.88	0.185	A	1	A	B
4	T	Chloromethane	50	2.11	0.208	A	1	A	B
5	T	Vinyl chloride	62	2.25	0.222	A	1	A	B
6	T	2-Chloro-1,1,1-trifluoroethane	118	2.36	0.233	A	2	A	B
7	T	Bromomethane	94	2.63	0.260	A	1	A	B
8	T	Chloroethane	64	2.75	0.271	A	1	A	B
9	T	Dichlorofluoromethane	67	3.08	0.304	A	1	A	B
10	T	Trichlorofluoromethane	101	3.14	0.310	A	1	A	B
11	T	Acrolein	56	3.71	0.366	A	1	A	B
12	T	1,1,2-Trichloro-1,2,2-trifluor	151	3.95	0.391	A	1	A	B
13	T	Acetone	43	3.93	0.389	A	1	A	B
14	T	1,1-Dichloroethene	61	3.85	0.380	A	2	A	B
15	T	Iodomethane	142	4.10	0.405	A	1	A	B
16	T	Carbon disulfide	76	4.20	0.415	A	1	A	B
17	T	Methyl acetate	43	4.52	0.446	A	1	A	B
18	T	Methylene chloride	49	4.77	0.471	A	2	A	B
19	T	tert-Butyl alcohol	59	5.08	0.502	A	1	A	B
20	T	Acrylonitrile	53	5.23	0.516	A	2	A	B
21	T	tert-Butyl methyl ether (MTBE)	73	5.35	0.528	A	1	A	B
22	T	trans-1,2-Dichloroethene	61	5.31	0.524	A	2	A	B
23	T	Vinyl acetate	86	6.29	0.621	A	1	A	B
24	T	1,1-Dichloroethane	63	6.29	0.621	A	2	A	B
25	T	Isopropyl ether (DIPE)	45	6.50	0.642	A	1	A	B
26	T	2-Butanol	45	8.29	0.818	L	1	A	B
27	T	tert-Butyl ethyl ether (ETBE)	59	7.43	0.734	A	1	A	B
28	T	2-Butanone	43	7.72	0.763	A	1	A	B
29	T	cis-1,2-Dichloroethene	96	7.70	0.761	A	2	A	B
30	T	2,2-Dichloropropane	77	7.68	0.759	A	2	A	B
31	T	Tetrahydrofurane	42	8.27	0.816	A	2	A	B
32	T	Bromochloromethane	49	8.20	0.810	A	2	A	B
33	T	Chloroform	83	8.47	0.837	A	2	A	B
34	S	Dibromofluoromethane	111	8.76	0.865	A	2	A	B
35	T	1,1,1-Trichloroethane	97	8.72	0.861	A	2	A	B
36	T	Cyclohexane	84	8.84	0.873	A	1	A	B
37	T	tert-Amyl methyl ether (TAME)	73	9.67	0.955	A	1	A	B
38	S	1,2-Dichloroethane-d4	65	9.34	0.922	A	1	A	B
39	T	1,1-Dichloropropene	110	9.03	0.892	A	1	A	B
40	T	Carbon tetrachloride	119	9.00	0.889	A	1	A	B
41	T	Benzene	78	9.34	0.922	A	2	A	B
42	T	1,2-Dichloroethane	62	9.47	0.936	A	1	A	B
43	T	2,2,4-Trimethylpentane	57	9.62	0.950	A	1	A	B
44	T	Trichloroethene	130	10.47	1.034	A	3	A	B
45	T	Methylcyclohexane	83	10.79	1.066	A	2	A	B
46	T	1,2-Dichloropropane	63	10.82	1.069	A	1	A	B
47	T	1,4-Dioxane	88	10.97	1.083	A	1	A	B
48	T	Dibromomethane	93	10.95	1.082	A	2	A	B
49	T	Bromodichloromethane	83	11.22	1.108	A	1	A	B
50	T	2-Chloroethyl vinyl ether	63	11.65	1.151	A	2	A	B
51	T	cis-1,3-Dichloropropene	75	11.83	1.168	A	1	A	B
52	T	4-Methyl-2-pentanone	43	12.04	1.189	A	3	A	B

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53	I	CHLOROBENZENE-D5	117	13.87	1.000	A	2	A	B
54	S	Toluene-d8	98	12.17	0.877	A	1	A	B
55	T	Toluene	91	12.26	0.884	A	1	A	B
56	T	Ethyl methacrylate	69	12.67	0.914	A	1	A	B
57	T	trans-1,3-Dichloropropene	75	12.58	0.907	A	1	A	B
58	T	1,1,2-Trichloroethane	97	12.82	0.924	A	2	A	B
59	T	Tetrachloroethene	164	12.92	0.932	A	3	A	B
60	T	1,3-Dichloropropane	76	13.01	0.938	A	1	A	B
61	T	2-Hexanone	43	13.07	0.942	A	1	A	B
62	T	Dibromochloromethane	129	13.26	0.956	A	1	A	B
63	T	1,2-Dibromoethane	107	13.38	0.965	A	1	A	B
64	T	1-Chlorohexane	91	13.89	1.001	A	1	A	B
65	P,M	Chlorobenzene	112	13.90	1.002	A	1	A	B
66	T	1,1,1,2-Tetrachloroethane	131	13.99	1.009	A	1	A	B
67	T	Ethylbenzene	91	13.99	1.009	A	1	A	B
68	T	m-Xylene & p-Xylene	91	14.12	1.018	A	1	A	B
69	T	o-Xylene	91	14.49	1.045	A	1	A	B
70	T	Styrene	104	14.51	1.046	A	2	A	B
71	I	1,2-DICHLOROBENZENE-D4	152	16.23	1.000	A	1	A	B
72	T	Bromoform	173	14.69	0.905	A	2	A	B
73	T	Isopropylbenzene	105	14.82	0.913	A	3	A	B
74	S	4-Bromofluorobenzene	95	14.98	0.923	A	2	A	B
75	T	1,1,2,2-Tetrachloroethane	83	15.09	0.930	A	1	A	B
76	T	Bromobenzene	156	15.12	0.932	A	1	A	B
77	T	trans-1,4-Dichloro-2-butene	53	15.12	0.932	A	1	A	B
78	T	1,2,3-Trichloropropane	110	15.14	0.933	A	1	A	B
79	T	n-Propylbenzene	91	15.19	0.936	A	2	A	B
80	T	1,3,5-Trimethylbenzene	105	15.32	0.944	A	2	A	B
81	T	2-Chlorotoluene	91	15.26	0.941	A	1	A	B
82	T	4-Chlorotoluene	91	15.37	0.947	A	1	A	B
83	T	tert-Butylbenzene	134	15.59	0.961	A	1	A	B
84	T	1,2,4-Trimethylbenzene	105	15.63	0.963	A	1	A	B
85	T	sec-Butylbenzene	105	15.77	0.972	A	1	A	B
86	T	p-Isopropyltoluene	119	15.89	0.979	A	2	A	B
87	T	1,3-Dichlorobenzene	146	15.89	0.979	A	2	A	B
88	T	1,4-Dichlorobenzene	146	15.96	0.984	A	2	A	B
89	T	1,2,3-Trimethylbenzene	105	15.96	0.984	A	2	A	B
90	T	n-Butylbenzene	91	16.20	0.998	A	2	A	B
91	T	1,2-Dichlorobenzene	146	16.24	1.001	A	1	A	B
92	T	1,2-Dibromo-3-chloropropane	157	16.83	1.037	A	1	A	B
93	T	1,2,4-Trichlorobenzene	180	17.50	1.078	A	2	A	B
94	T	Hexachlorobutadiene	225	17.60	1.085	A	1	A	B
95	T	Naphthalene	128	17.74	1.093	A	1	A	B
96	T	1,2,3-Trichlorobenzene	180	17.93	1.105	A	2	A	B

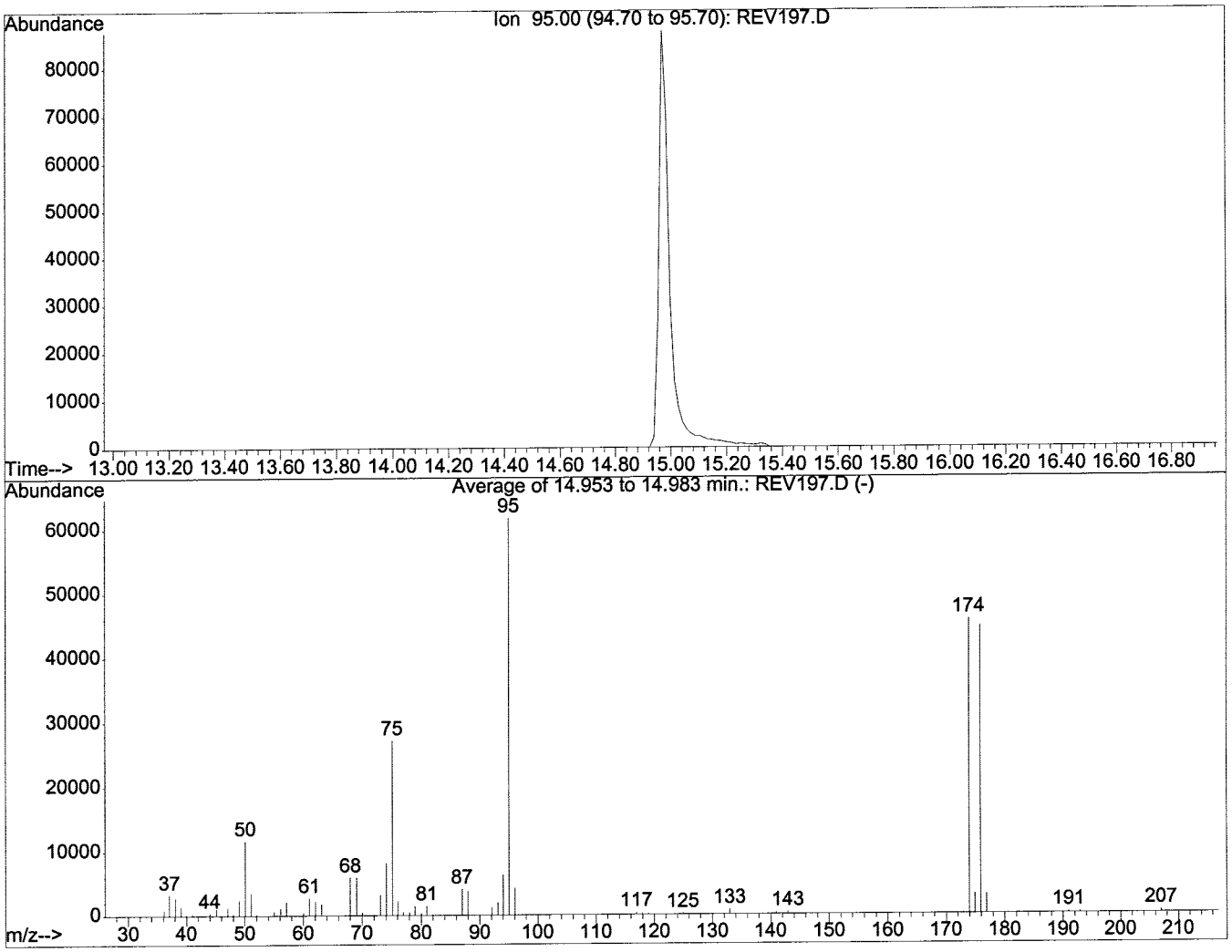
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E13.M Thu May 14 17:49:40 2020

SA 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV197.D
Acq On : 13 May 2020 1:15 pm
Sample : BFB01E09
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 784, 785, 786; Background Corrected with Scan 780

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	11689	PASS
75	95	30	60	44.0	27197	PASS
95	95	100	100	100.0	61784	PASS
96	95	5	9	6.9	4244	PASS
173	174	0.00	2	0.3	158	PASS
174	95	50	100	74.0	45728	PASS
175	174	5	9	6.8	3104	PASS
176	174	95	101	97.8	44709	PASS
177	176	5	9	6.7	2988	PASS

REV197.D VO01E13.M Thu May 14 13:47:25 2020

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.11	114	3270533	10.00	ug/l	-0.01
53) CHLOROBENZENE-D5	13.86	117	2740871	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	908656	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	16459	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
38) 1,2-Dichloroethane-d4	9.34	65	11364	0.19	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.90%			
54) Toluene-d8	12.17	98	67086	0.18	ug/l	0.00
Spiked Amount 10.000			Recovery = 1.80%			
74) 4-Bromofluorobenzene	14.98	95	21655	0.20	ug/l	0.00
Spiked Amount 10.000			Recovery = 2.00%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	22668	0.23	ug/l	92
4) Chloromethane	2.10	50	32279	0.27	ug/l	97
5) Vinyl chloride	2.24	62	25870	0.22	ug/l	76
7) Bromomethane	2.63	94	19066	0.24	ug/l	95
8) Chloroethane	2.75	64	18789	0.29	ug/l	88
9) Dichlorofluoromethane	3.08	67	53832	0.33	ug/l	94
10) Trichlorofluoromethane	3.12	101	25369	0.23	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	20869	0.30	ug/l	97
13) Acetone	3.96	43	30015	2.70	ug/l	93
14) 1,1-Dichloroethene	3.85	61	47304	0.30	ug/l	99
15) Iodomethane	4.08	142	52641	0.29	ug/l	99
16) Carbon disulfide	4.21	76	72219	0.21	ug/l	94
18) Methylene chloride	4.77	49	63196	0.47	ug/l	98
19) tert-Butyl alcohol	5.10	59	23329	7.66	ug/l	95
20) Acrylonitrile	5.35	53	10949	0.80	ug/l	94
21) tert-Butyl methyl ether (M	5.35	73	45230	0.32	ug/l	83
22) trans-1,2-Dichloroethene	5.33	61	47913	0.30	ug/l	99
24) 1,1-Dichloroethane	6.29	63	55757	0.29	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	99671	0.30	ug/l	98
26) 2-Butanol	8.41	45	7304	16.31	ug/l	92
27) tert-Butyl ethyl ether (ET	7.43	59	101325	0.42	ug/l	100
28) 2-Butanone	7.87	43	12838	0.72	ug/l	85
29) cis-1,2-Dichloroethene	7.73	96	32701	0.29	ug/l	99
30) 2,2-Dichloropropane	7.68	77	36397	0.30	ug/l	98
32) Bromochloromethane	8.20	49	24151	0.31	ug/l	94
33) Chloroform	8.45	83	48567	0.31	ug/l	99
35) 1,1,1-Trichloroethane	8.70	97	33033	0.26	ug/l	96

(#) = qualifier out of range (m) = manual integration
REV198.D VO01E13.M Thu May 14 18:33:45 2020 SY 5/18/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
36)	Cyclohexane	8.82	84	47768	0.27 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	56376	0.30 ug/l	95
39)	1,1-Dichloropropene	9.03	110	13938	0.26 ug/l	91
40)	Carbon tetrachloride	8.98	119	29051	0.27 ug/l	100
41)	Benzene	9.34	78	118043	0.30 ug/l	99
42)	1,2-Dichloroethane	9.47	62	20435	0.28 ug/l	100
43)	2,2,4-Trimethylpentane	9.61	57	123917	0.23 ug/l	98
44)	Trichloroethene	10.45	130	33621	0.28 ug/l	97
45)	Methylcyclohexane	10.78	83	45764	0.23 ug/l	97
46)	1,2-Dichloropropane	10.81	63	31886	0.30 ug/l	94
48)	Dibromomethane	10.94	93	10957	0.27 ug/l	97
49)	Bromodichloromethane	11.22	83	27597	0.27 ug/l	99
51)	cis-1,3-Dichloropropene	11.83	75	35404	0.27 ug/l	92
52)	4-Methyl-2-pentanone	12.04	43	57455	1.25 ug/l	94
55)	Toluene	12.26	91	126512	0.29 ug/l	98
56)	Ethyl methacrylate	12.69	69	17953	0.23 ug/l	94
57)	trans-1,3-Dichloropropene	12.60	75	24125	0.24 ug/l	89
58)	1,1,2-Trichloroethane	12.82	97	16953	0.30 ug/l	95
59)	Tetrachloroethene	12.91	164	27179	0.29 ug/l	97
60)	1,3-Dichloropropane	13.00	76	30998	0.28 ug/l	98
61)	2-Hexanone	13.12	43	27987	0.90 ug/l	98
62)	Dibromochloromethane	13.25	129	17947	0.25 ug/l	96
63)	1,2-Dibromoethane	13.38	107	14771	0.26 ug/l	97
64)	1-Chlorohexane	13.87	91	58338	0.30 ug/l	98
65)	Chlorobenzene	13.89	112	77628	0.29 ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	23752	0.28 ug/l	96
67)	Ethylbenzene	13.99	91	145845	0.29 ug/l	98
68)	m-Xylene & p-Xylene	14.11	91	211064	0.58 ug/l	97
69)	o-Xylene	14.48	91	104965	0.30 ug/l	98
70)	Styrene	14.51	104	81176	0.28 ug/l	99
72)	Bromoform	14.69	173	7623	0.25 ug/l	90
73)	Isopropylbenzene	14.80	105	143013	0.30 ug/l	98
75)	1,1,2,2-Tetrachloroethane	15.07	83	18146	0.28 ug/l	92
76)	Bromobenzene	15.12	156	25767	0.28 ug/l	96
77)	trans-1,4-Dichloro-2-buten	15.12	53	2899	0.22 ug/l	81
78)	1,2,3-Trichloropropane	15.13	110	4197	0.26 ug/l	92
79)	n-Propylbenzene	15.18	91	160139	0.29 ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	100775	0.30 ug/l	100
81)	2-Chlorotoluene	15.25	91	71165	0.27 ug/l	91
82)	4-Chlorotoluene	15.37	91	85562	0.27 ug/l	94
83)	tert-Butylbenzene	15.57	134	26062	0.29 ug/l	74

(#) = qualifier out of range (m) = manual integration
REV198.D VO01E13.M Thu May 14 18:33:46 2020 SU 5/18/20 Page 2

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D Vial: 2
Acq On : 13 May 2020 2:04 pm Operator: VLu
Sample : VO01E131 Inst : 01
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
84)	1,2,4-Trimethylbenzene	15.63	105	96484	0.30	ug/l	99
85)	sec-Butylbenzene	15.75	105	139764	0.28	ug/l	100
86)	p-Isopropyltoluene	15.87	119	107256	0.28	ug/l	98
87)	1,3-Dichlorobenzene	15.87	146	49471	0.29	ug/l	100
88)	1,4-Dichlorobenzene	15.96	146	53403	0.32	ug/l	97
89)	1,2,3-Trimethylbenzene	15.95	105	88433	0.30	ug/l	98
90)	n-Butylbenzene	16.18	91	99838	0.29	ug/l	98
91)	1,2-Dichlorobenzene	16.23	146	44881	0.32	ug/l	100
93)	1,2,4-Trichlorobenzene	17.50	180	18180	0.26	ug/l	98
94)	Hexachlorobutadiene	17.57	225	14649	0.28	ug/l	94
95)	Naphthalene	17.74	128	26599	0.29	ug/l	94
96)	1,2,3-Trichlorobenzene	17.93	180	14059	0.27	ug/l	96

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(#) = qualifier out of range (m) = manual integration

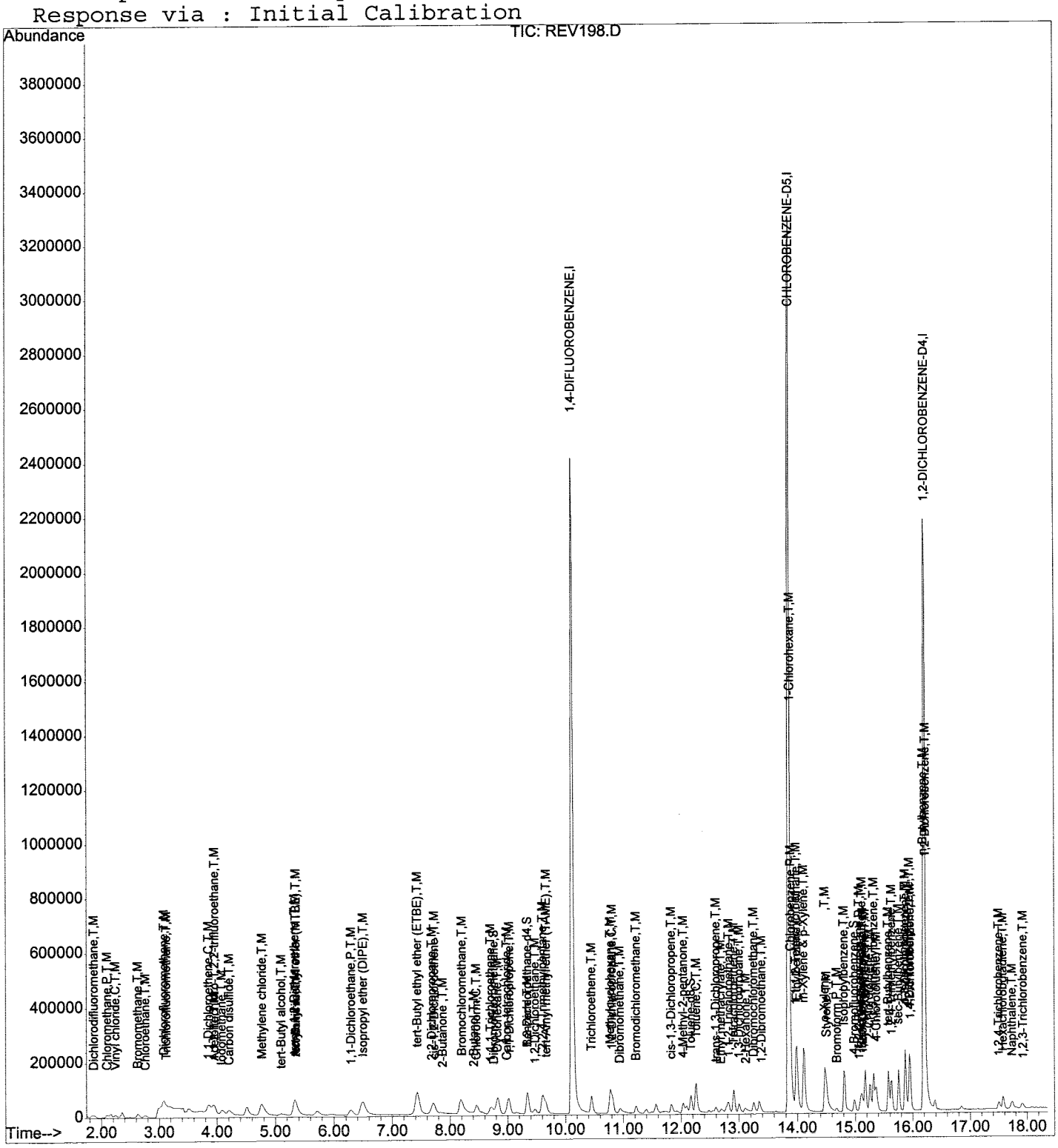
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV198.D
Acq On : 13 May 2020 2:04 pm
Sample : VO01E131
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:42 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3170172	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2635786	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	902237	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	37869	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
38) 1,2-Dichloroethane-d4	9.34	65	25025	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
54) Toluene-d8	12.17	98	148562	0.41	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.10%		
74) 4-Bromofluorobenzene	14.98	95	45459	0.42	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	44207	0.45	ug/l	98
4) Chloromethane	2.10	50	57568	0.49	ug/l	94
5) Vinyl chloride	2.25	62	49863	0.44	ug/l	86
7) Bromomethane	2.63	94	36265	0.48	ug/l	95
8) Chloroethane	2.75	64	33299	0.53	ug/l	98
9) Dichlorofluoromethane	3.08	67	80273	0.51	ug/l	95
10) Trichlorofluoromethane	3.14	101	47142	0.45	ug/l	98
11) Acrolein	3.73	56	17573	3.20	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	33258	0.50	ug/l	98
13) Acetone	3.96	43	35871	3.33	ug/l	91
14) 1,1-Dichloroethene	3.87	61	76917	0.50	ug/l	99
15) Iodomethane	4.10	142	86763	0.50	ug/l	99
16) Carbon disulfide	4.21	76	151665	0.45	ug/l	97
18) Methylene chloride	4.77	49	85076	0.65	ug/l	99
19) tert-Butyl alcohol	5.12	59	34279	11.61	ug/l	97
20) Acrylonitrile	5.33	53	18306	1.39	ug/l	90
21) tert-Butyl methyl ether (M	5.35	73	66802	0.49	ug/l	90
22) trans-1,2-Dichloroethene	5.33	61	74369	0.49	ug/l	99
24) 1,1-Dichloroethane	6.29	63	89856	0.48	ug/l	97
25) Isopropyl ether (DIPE)	6.52	45	157460	0.49	ug/l	99
26) 2-Butanol	8.39	45	22966	20.71	ug/l	96
27) tert-Butyl ethyl ether (ET	7.45	59	137822	0.59	ug/l	100
28) 2-Butanone	7.85	43	23543	1.37	ug/l	94
29) cis-1,2-Dichloroethene	7.73	96	52219	0.49	ug/l	96
30) 2,2-Dichloropropane	7.70	77	60616	0.52	ug/l	98
32) Bromochloromethane	8.20	49	37024	0.48	ug/l	99
33) Chloroform	8.48	83	78573	0.51	ug/l	98

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 Page 1

SU 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
35)	1,1,1-Trichloroethane	8.72	97	57642	0.47 ug/l	98
36)	Cyclohexane	8.84	84	91053	0.52 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	89116	0.49 ug/l	98
39)	1,1-Dichloropropene	9.03	110	24897	0.48 ug/l	95
40)	Carbon tetrachloride	9.00	119	47850	0.47 ug/l	99
41)	Benzene	9.34	78	189099	0.50 ug/l	99
42)	1,2-Dichloroethane	9.47	62	34621	0.49 ug/l	94
43)	2,2,4-Trimethylpentane	9.61	57	248870	0.49 ug/l	100
44)	Trichloroethene	10.45	130	56130	0.48 ug/l	98
45)	Methylcyclohexane	10.78	83	93888	0.48 ug/l	99
46)	1,2-Dichloropropane	10.82	63	49135	0.48 ug/l	98
48)	Dibromomethane	10.94	93	17822	0.46 ug/l	97
49)	Bromodichloromethane	11.22	83	46459	0.47 ug/l	99
50)	2-Chloroethyl vinyl ether	11.67	63	11010	0.35 ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	56723	0.44 ug/l	97
52)	4-Methyl-2-pentanone	12.04	43	97150	2.18 ug/l	95
55)	Toluene	12.26	91	212747	0.52 ug/l	98
56)	Ethyl methacrylate	12.69	69	29579	0.40 ug/l	98
57)	trans-1,3-Dichloropropene	12.60	75	42111	0.43 ug/l	88
58)	1,1,2-Trichloroethane	12.82	97	26812	0.49 ug/l	99
59)	Tetrachloroethene	12.91	164	43804	0.49 ug/l	98
60)	1,3-Dichloropropane	13.00	76	50738	0.48 ug/l	99
61)	2-Hexanone	13.10	43	48952	1.64 ug/l	93
62)	Dibromochloromethane	13.25	129	29957	0.44 ug/l	99
63)	1,2-Dibromoethane	13.37	107	24216	0.44 ug/l	97
64)	1-Chlorohexane	13.87	91	92746	0.50 ug/l	96
65)	Chlorobenzene	13.89	112	129949	0.50 ug/l	98
66)	1,1,1,2-Tetrachloroethane	13.98	131	37723	0.45 ug/l	92
67)	Ethylbenzene	13.99	91	240142	0.49 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	349554	1.01 ug/l	98
69)	o-Xylene	14.48	91	163669	0.49 ug/l	99
70)	Styrene	14.51	104	131895	0.48 ug/l	98
72)	Bromoform	14.69	173	11980	0.39 ug/l	96
73)	Isopropylbenzene	14.80	105	232550	0.49 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	31354	0.48 ug/l	99
76)	Bromobenzene	15.10	156	43525	0.47 ug/l	97
77)	trans-1,4-Dichloro-2-buten	15.12	53	6293	0.48 ug/l	61
78)	1,2,3-Trichloropropane	15.13	110	7317	0.46 ug/l	79
79)	n-Propylbenzene	15.17	91	265056	0.49 ug/l	98
80)	1,3,5-Trimethylbenzene	15.32	105	163567	0.49 ug/l	97
81)	2-Chlorotoluene	15.25	91	125070	0.48 ug/l	95

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:56 2020 SU 5/18/20 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D Vial: 3
Acq On : 13 May 2020 2:30 pm Operator: VLu
Sample : VO01E132 Inst : 01
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
82)	4-Chlorotoluene	15.35	91	158201	0.51	ug/l	99
83)	tert-Butylbenzene	15.57	134	43543	0.48	ug/l	73
84)	1,2,4-Trimethylbenzene	15.63	105	155637	0.48	ug/l	100
85)	sec-Butylbenzene	15.75	105	246395	0.50	ug/l	98
86)	p-Isopropyltoluene	15.87	119	179658	0.48	ug/l	97
87)	1,3-Dichlorobenzene	15.87	146	80120	0.47	ug/l	98
88)	1,4-Dichlorobenzene	15.96	146	85582	0.51	ug/l	96
89)	1,2,3-Trimethylbenzene	15.94	105	142868	0.48	ug/l	96
90)	n-Butylbenzene	16.18	91	163480	0.48	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	69303	0.49	ug/l	94
92)	1,2-Dibromo-3-chloropropan	16.83	157	2667	0.35	ug/l	91
93)	1,2,4-Trichlorobenzene	17.50	180	30556	0.44	ug/l	98
94)	Hexachlorobutadiene	17.57	225	24796	0.47	ug/l	98
95)	Naphthalene	17.74	128	39961	0.44	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	23629	0.46	ug/l	94

SU 5/18/20

(#) = qualifier out of range (m) = manual integration
REV199.D VO01E13.M Thu May 14 18:33:57 2020 Page 3

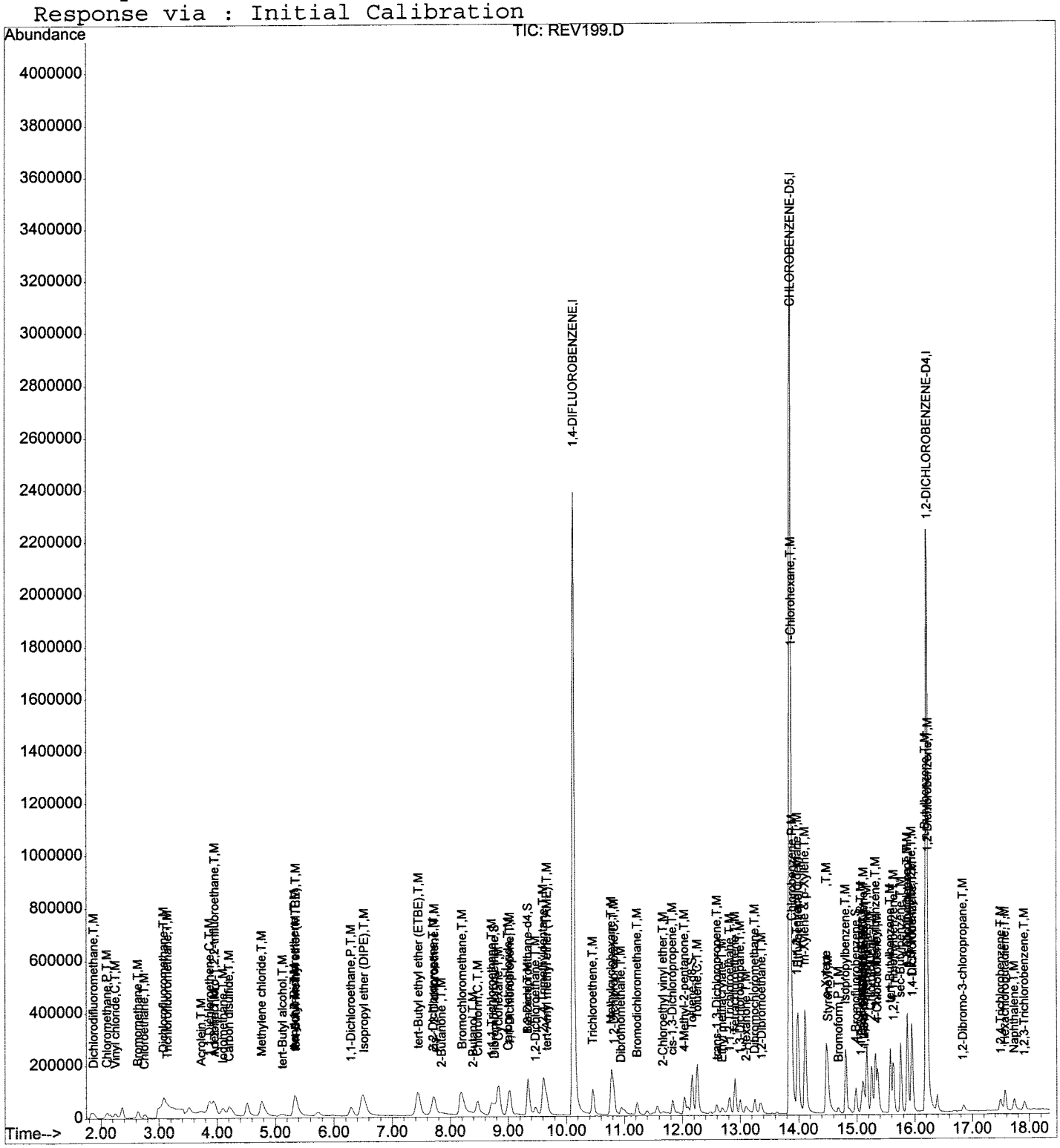
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV199.D
Acq On : 13 May 2020 2:30 pm
Sample : VO01E132
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:43 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3247102	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2673432	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	922687	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	86000	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
38) 1,2-Dichloroethane-d4	9.34	65	57394	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
54) Toluene-d8	12.17	98	346613	0.95	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.50%		
74) 4-Bromofluorobenzene	14.98	95	103247	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery =	9.40%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	93211	0.93	ug/l	98
4) Chloromethane	2.10	50	120062	1.01	ug/l	94
5) Vinyl chloride	2.24	62	110651	0.95	ug/l	95
7) Bromomethane	2.64	94	75832	0.97	ug/l	97
8) Chloroethane	2.75	64	64560	1.00	ug/l	98
9) Dichlorofluoromethane	3.08	67	169088	1.06	ug/l	99
10) Trichlorofluoromethane	3.14	101	104545	0.96	ug/l	97
11) Acrolein	3.71	56	30725	5.46	ug/l	99
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	67741	1.00	ug/l	99
13) Acetone	3.96	43	60789	5.51	ug/l	97
14) 1,1-Dichloroethene	3.85	61	158974	1.00	ug/l	98
15) Iodomethane	4.10	142	177172	0.99	ug/l	99
16) Carbon disulfide	4.21	76	328630	0.94	ug/l	97
17) Methyl acetate	4.56	43	18464	0.64	ug/l	94
18) Methylene chloride	4.77	49	150980	1.13	ug/l	99
19) tert-Butyl alcohol	5.10	59	68958	22.80	ug/l	95
20) Acrylonitrile	5.29	53	46419	3.44	ug/l	95
21) tert-Butyl methyl ether (M	5.35	73	138637	0.99	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	155219	0.99	ug/l	99
24) 1,1-Dichloroethane	6.29	63	190956	1.00	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	328018	0.99	ug/l	100
26) 2-Butanol	8.35	45	50538	28.01	ug/l	90
27) tert-Butyl ethyl ether (ET	7.43	59	255647	1.07	ug/l	98
28) 2-Butanone	7.81	43	63659	3.62	ug/l	99
29) cis-1,2-Dichloroethene	7.73	96	110618	1.00	ug/l	98
30) 2,2-Dichloropropane	7.68	77	120645	1.00	ug/l	99
31) Tetrahydrofurane	8.31	42	7526	0.67	ug/l #	58

(#) = qualifier out of range (m) = manual integration

SM 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	79542	1.01 ug/l	99
33)	Chloroform	8.45	83	154549	0.98 ug/l	97
35)	1,1,1-Trichloroethane	8.72	97	119696	0.95 ug/l	99
36)	Cyclohexane	8.84	84	179772	1.01 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	185571	1.01 ug/l	97
39)	1,1-Dichloropropene	9.03	110	54165	1.02 ug/l	97
40)	Carbon tetrachloride	9.00	119	101375	0.96 ug/l	98
41)	Benzene	9.34	78	383654	0.99 ug/l	100
42)	1,2-Dichloroethane	9.47	62	73244	1.00 ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	504350	0.96 ug/l	99
44)	Trichloroethene	10.45	130	118147	0.99 ug/l	99
45)	Methylcyclohexane	10.78	83	202512	1.01 ug/l	99
46)	1,2-Dichloropropane	10.82	63	104806	1.00 ug/l	99
47)	1,4-Dioxane	10.98	88	5164	14.45 ug/l	98
48)	Dibromomethane	10.94	93	39252	0.99 ug/l	97
49)	Bromodichloromethane	11.22	83	95093	0.93 ug/l	98
50)	2-Chloroethyl vinyl ether	11.66	63	26452	0.82 ug/l	91
51)	cis-1,3-Dichloropropene	11.83	75	121910	0.93 ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	205168	4.49 ug/l	99
55)	Toluene	12.26	91	422220	1.01 ug/l	100
56)	Ethyl methacrylate	12.67	69	66500	0.89 ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	87034	0.88 ug/l	98
58)	1,1,2-Trichloroethane	12.82	97	54566	0.97 ug/l	99
59)	Tetrachloroethene	12.91	164	92069	1.01 ug/l	99
60)	1,3-Dichloropropane	13.00	76	106827	1.00 ug/l	98
61)	2-Hexanone	13.09	43	115271	3.81 ug/l	99
62)	Dibromochloromethane	13.25	129	65456	0.94 ug/l	99
63)	1,2-Dibromoethane	13.37	107	54525	0.97 ug/l	95
64)	1-Chlorohexane	13.87	91	187894	0.99 ug/l	98
65)	Chlorobenzene	13.89	112	266680	1.01 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	82840	0.98 ug/l	99
67)	Ethylbenzene	13.99	91	496364	1.00 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	707521	2.01 ug/l	99
69)	o-Xylene	14.48	91	345540	1.02 ug/l	98
70)	Styrene	14.49	104	276993	0.99 ug/l	99
72)	Bromoform	14.69	173	27051	0.87 ug/l	98
73)	Isopropylbenzene	14.80	105	474532	0.98 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	66248	0.99 ug/l	93
76)	Bromobenzene	15.10	156	94162	1.00 ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.11	53	13979	1.05 ug/l	70
78)	1,2,3-Trichloropropane	15.13	110	16160	1.00 ug/l	91

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	555994	1.00	ug/l	99
80)	1,3,5-Trimethylbenzene	15.32	105	338291	0.99	ug/l	98
81)	2-Chlorotoluene	15.25	91	261974	0.98	ug/l	95
82)	4-Chlorotoluene	15.35	91	322900	1.02	ug/l	97
83)	tert-Butylbenzene	15.57	134	92579	1.01	ug/l	73
84)	1,2,4-Trimethylbenzene	15.62	105	329231	1.00	ug/l	99
85)	sec-Butylbenzene	15.75	105	503002	0.99	ug/l	99
86)	p-Isopropyltoluene	15.87	119	381382	0.99	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	174793	0.99	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	169737	0.99	ug/l	97
89)	1,2,3-Trimethylbenzene	15.94	105	304224	1.01	ug/l	97
90)	n-Butylbenzene	16.18	91	343211	0.98	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	146373	1.02	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.83	157	6354	0.81	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	66885	0.94	ug/l	99
94)	Hexachlorobutadiene	17.57	225	53609	0.99	ug/l	98
95)	Naphthalene	17.74	128	84410	0.90	ug/l	96
96)	1,2,3-Trichlorobenzene	17.91	180	52401	0.99	ug/l	99

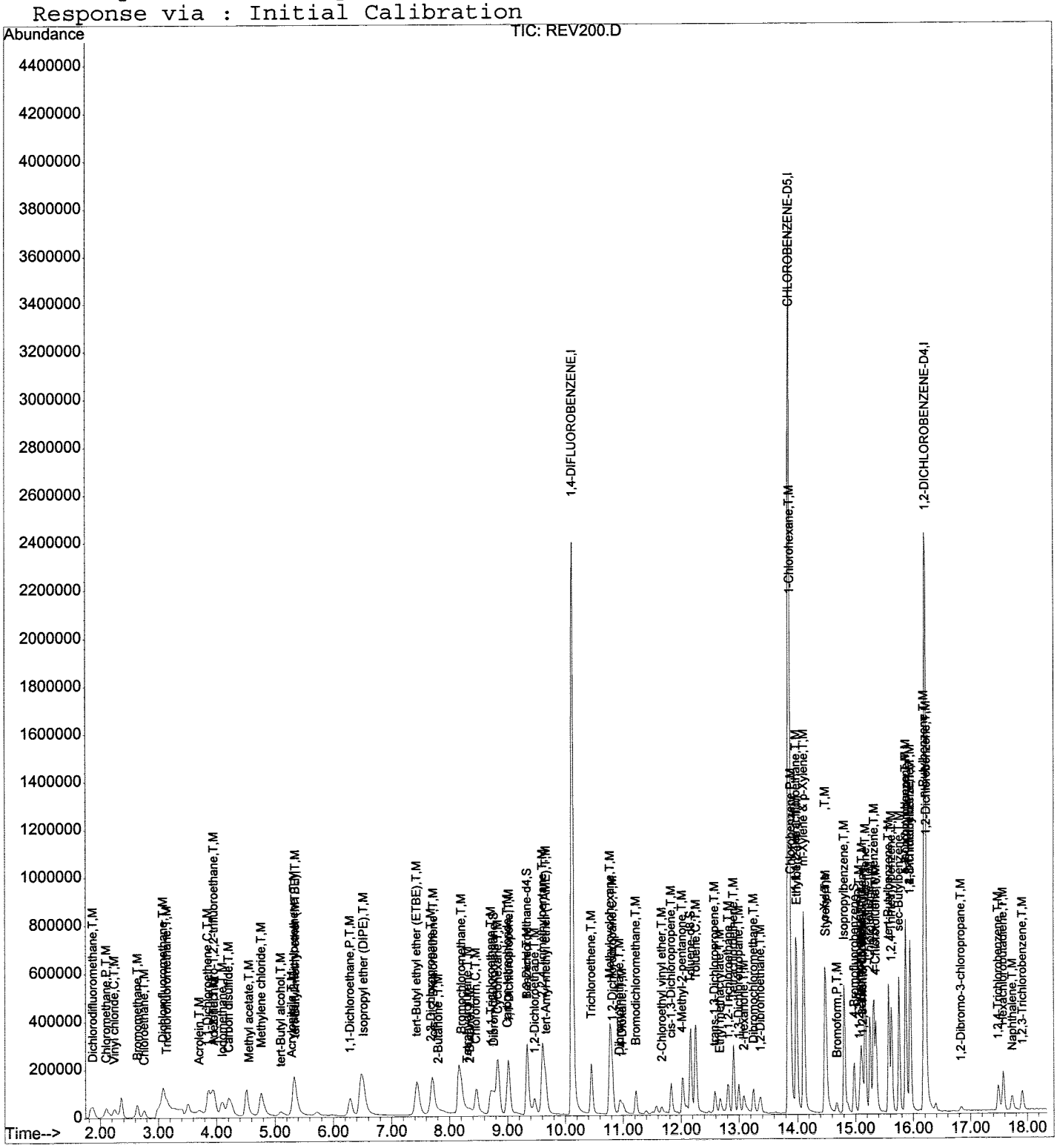
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV200.D Vial: 4
Acq On : 13 May 2020 2:57 pm Operator: VLu
Sample : VO01E133 Inst : 01
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3186295	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2617335	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	907050	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	170417	1.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	19.00%		
38) 1,2-Dichloroethane-d4	9.33	65	114229	1.91	ug/l	-0.01
Spiked Amount 10.000			Recovery =	19.10%		
54) Toluene-d8	12.17	98	651399	1.83	ug/l	0.00
Spiked Amount 10.000			Recovery =	18.30%		
74) 4-Bromofluorobenzene	14.97	95	201707	1.86	ug/l	-0.01
Spiked Amount 10.000			Recovery =	18.60%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	199914	2.04	ug/l	100
4) Chloromethane	2.11	50	228761	1.95	ug/l	100
5) Vinyl chloride	2.25	62	217850	1.90	ug/l	96
7) Bromomethane	2.63	94	155081	2.03	ug/l	98
8) Chloroethane	2.76	64	134628	2.12	ug/l	97
9) Dichlorofluoromethane	3.08	67	322611	2.06	ug/l	100
10) Trichlorofluoromethane	3.14	101	207989	1.96	ug/l	99
11) Acrolein	3.71	56	48905	8.85	ug/l	82
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	133835	2.01	ug/l	99
13) Acetone	3.96	43	105132	9.72	ug/l	99
14) 1,1-Dichloroethene	3.87	61	319620	2.05	ug/l	99
15) Iodomethane	4.10	142	360356	2.05	ug/l	100
16) Carbon disulfide	4.21	76	658774	1.93	ug/l	98
17) Methyl acetate	4.56	43	47946	1.68	ug/l	99
18) Methylene chloride	4.77	49	275056	2.10	ug/l	99
19) tert-Butyl alcohol	5.10	59	133828	45.10	ug/l	100
20) Acrylonitrile	5.27	53	104099	7.85	ug/l	97
21) tert-Butyl methyl ether (M	5.35	73	259484	1.89	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	312283	2.03	ug/l	99
24) 1,1-Dichloroethane	6.29	63	376193	2.02	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	647378	1.99	ug/l	98
26) 2-Butanol	8.33	45	111378	45.04	ug/l	93
27) tert-Butyl ethyl ether (ET	7.43	59	458361	1.95	ug/l	99
28) 2-Butanone	7.79	43	133416	7.72	ug/l	97
29) cis-1,2-Dichloroethene	7.70	96	218592	2.02	ug/l	99
30) 2,2-Dichloropropane	7.68	77	239726	2.03	ug/l	100
31) Tetrahydrofurane	8.29	42	15926	1.44	ug/l	72

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.20	49	155633	2.02 ug/l	99
33)	Chloroform	8.45	83	304210	1.97 ug/l	98
35)	1,1,1-Trichloroethane	8.72	97	242170	1.97 ug/l	99
36)	Cyclohexane	8.84	84	352317	2.01 ug/l	98
37)	tert-Amyl methyl ether (TA	9.67	73	358332	1.98 ug/l	99
39)	1,1-Dichloropropene	9.01	110	108557	2.08 ug/l	99
40)	Carbon tetrachloride	9.00	119	208927	2.03 ug/l	98
41)	Benzene	9.34	78	778215	2.04 ug/l	100
42)	1,2-Dichloroethane	9.46	62	144248	2.02 ug/l	98
43)	2,2,4-Trimethylpentane	9.61	57	1042829	2.03 ug/l	100
44)	Trichloroethene	10.45	130	237462	2.04 ug/l	100
45)	Methylcyclohexane	10.78	83	405427	2.06 ug/l	100
46)	1,2-Dichloropropane	10.81	63	214759	2.09 ug/l	99
47)	1,4-Dioxane	10.98	88	11622	33.14 ug/l	97
48)	Dibromomethane	10.94	93	75637	1.94 ug/l	97
49)	Bromodichloromethane	11.22	83	196150	1.96 ug/l	99
50)	2-Chloroethyl vinyl ether	11.65	63	53304	1.68 ug/l	97
51)	cis-1,3-Dichloropropene	11.83	75	246163	1.91 ug/l	99
52)	4-Methyl-2-pentanone	12.02	43	407706	9.10 ug/l	100
55)	Toluene	12.24	91	854968	2.09 ug/l	99
56)	Ethyl methacrylate	12.67	69	134023	1.83 ug/l	96
57)	trans-1,3-Dichloropropene	12.58	75	186145	1.93 ug/l	97
58)	1,1,2-Trichloroethane	12.81	97	110314	2.01 ug/l	99
59)	Tetrachloroethene	12.91	164	184441	2.06 ug/l	99
60)	1,3-Dichloropropane	13.00	76	211019	2.01 ug/l	99
61)	2-Hexanone	13.07	43	251126	8.49 ug/l	100
62)	Dibromochloromethane	13.25	129	130626	1.92 ug/l	100
63)	1,2-Dibromoethane	13.37	107	107090	1.95 ug/l	98
64)	1-Chlorohexane	13.87	91	373573	2.01 ug/l	99
65)	Chlorobenzene	13.89	112	526855	2.05 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	170716	2.07 ug/l	99
67)	Ethylbenzene	13.97	91	988864	2.04 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	1420704	4.11 ug/l	99
69)	o-Xylene	14.48	91	673059	2.03 ug/l	100
70)	Styrene	14.49	104	548157	2.01 ug/l	98
72)	Bromoform	14.67	173	55465	1.82 ug/l	99
73)	Isopropylbenzene	14.80	105	974630	2.06 ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	129096	1.96 ug/l	96
76)	Bromobenzene	15.10	156	187880	2.03 ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	25769	1.96 ug/l	88
78)	1,2,3-Trichloropropane	15.13	110	31155	1.96 ug/l	96

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D Vial: 5
Acq On : 13 May 2020 3:24 pm Operator: VLu
Sample : VO01E134 Inst : 01
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	1142923	2.08	ug/l	99
80)	1,3,5-Trimethylbenzene	15.31	105	683742	2.05	ug/l	99
81)	2-Chlorotoluene	15.25	91	554801	2.11	ug/l	99
82)	4-Chlorotoluene	15.35	91	635588	2.04	ug/l	98
83)	tert-Butylbenzene	15.57	134	188074	2.08	ug/l	75
84)	1,2,4-Trimethylbenzene	15.62	105	650244	2.01	ug/l	99
85)	sec-Butylbenzene	15.75	105	1032858	2.07	ug/l	99
86)	p-Isopropyltoluene	15.87	119	773598	2.04	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	355583	2.06	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	339893	2.02	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	613803	2.07	ug/l	98
90)	n-Butylbenzene	16.18	91	701545	2.04	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	282786	2.00	ug/l	97
92)	1,2-Dibromo-3-chloropropan	16.82	157	12013	1.55	ug/l	89
93)	1,2,4-Trichlorobenzene	17.48	180	133623	1.92	ug/l	99
94)	Hexachlorobutadiene	17.57	225	107771	2.03	ug/l	98
95)	Naphthalene	17.72	128	165357	1.79	ug/l	98
96)	1,2,3-Trichlorobenzene	17.91	180	101595	1.95	ug/l	98

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

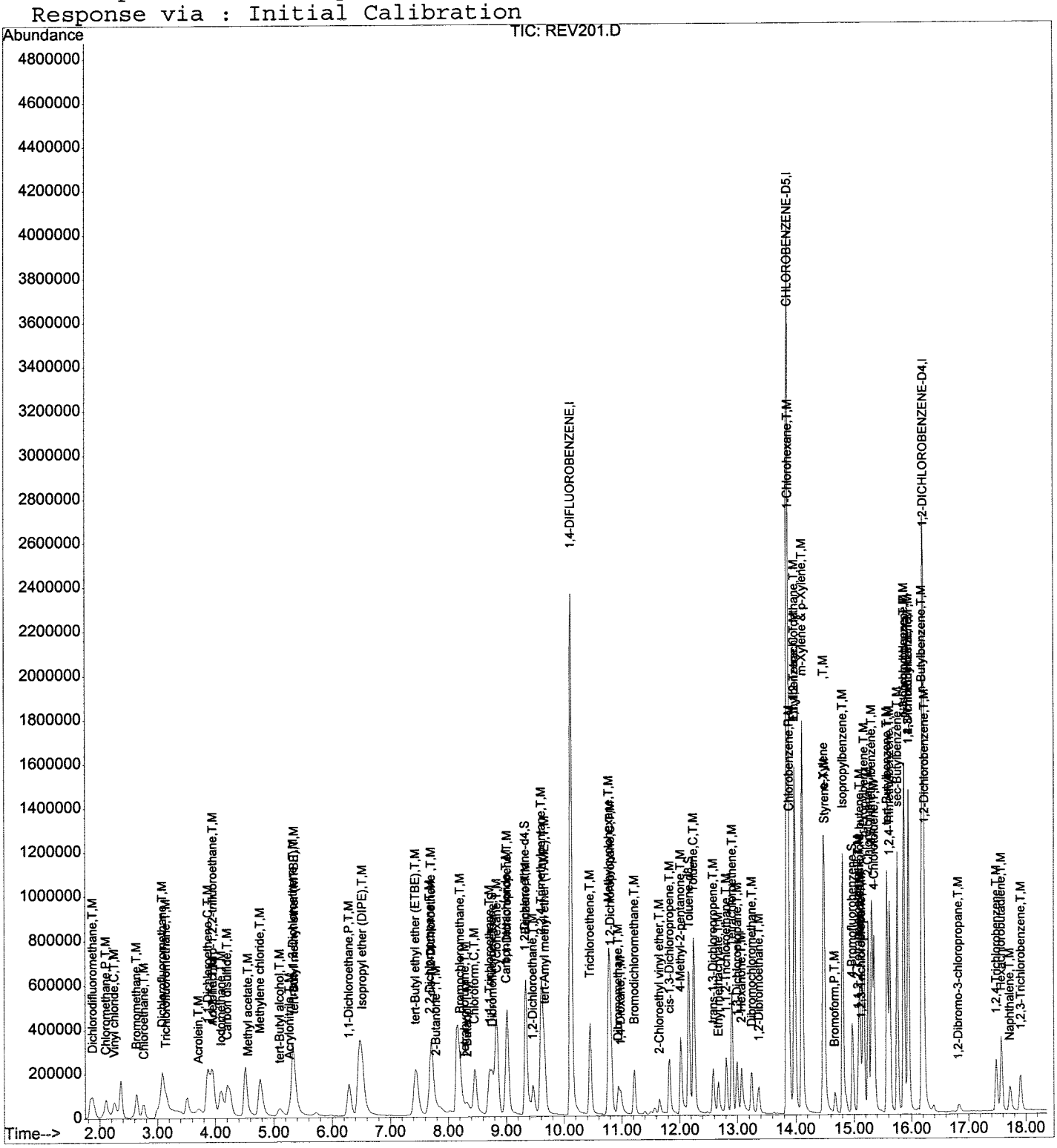
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV201.D
Acq On : 13 May 2020 3:24 pm
Sample : VO01E134
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3068168	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2568523	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	879227	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	446817	5.17	ug/l	0.00
Spiked Amount 10.000			Recovery = 51.70%			
38) 1,2-Dichloroethane-d4	9.33	65	296517	5.16	ug/l	-0.01
Spiked Amount 10.000			Recovery = 51.60%			
54) Toluene-d8	12.15	98	1761756	5.04	ug/l	-0.01
Spiked Amount 10.000			Recovery = 50.40%			
74) 4-Bromofluorobenzene	14.97	95	554791	5.28	ug/l	-0.01
Spiked Amount 10.000			Recovery = 52.80%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	506812	5.37	ug/l	98
4) Chloromethane	2.11	50	592582	5.25	ug/l	100
5) Vinyl chloride	2.25	62	600511	5.43	ug/l	99
7) Bromomethane	2.63	94	419992	5.70	ug/l	100
8) Chloroethane	2.76	64	339374	5.54	ug/l	99
9) Dichlorofluoromethane	3.08	67	783268	5.18	ug/l	100
10) Trichlorofluoromethane	3.14	101	538831	5.26	ug/l	98
11) Acrolein	3.70	56	137854	25.91	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	329748	5.13	ug/l	100
13) Acetone	3.93	43	254309	24.41	ug/l	100
14) 1,1-Dichloroethene	3.85	61	781704	5.22	ug/l	100
15) Iodomethane	4.10	142	876246	5.17	ug/l	100
16) Carbon disulfide	4.20	76	1732715	5.27	ug/l	99
17) Methyl acetate	4.54	43	123272	4.49	ug/l	99
18) Methylene chloride	4.77	49	636836	5.04	ug/l	100
19) tert-Butyl alcohol	5.08	59	346905	121.40	ug/l	100
20) Acrylonitrile	5.25	53	286592	22.45	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	651856	4.93	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	771966	5.21	ug/l	100
24) 1,1-Dichloroethane	6.29	63	933361	5.20	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	1565266	5.00	ug/l	100
26) 2-Butanol	8.31	45	351213	114.86	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1108262	4.91	ug/l	100
28) 2-Butanone	7.75	43	378494	22.75	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	539988	5.19	ug/l	100
30) 2,2-Dichloropropane	7.68	77	590879	5.20	ug/l	99
31) Tetrahydrofurane	8.27	42	51619	4.84	ug/l	95

(#) = qualifier out of range (m) = manual integration

SU 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D Vial: 6
Acq On : 13 May 2020 3:52 pm Operator: VLu
Sample : VO01E135 Inst : 01
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32)	Bromochloromethane	8.18	49	384291	5.18 ug/l	99
33)	Chloroform	8.45	83	752620	5.07 ug/l	99
35)	1,1,1-Trichloroethane	8.70	97	592851	5.01 ug/l	100
36)	Cyclohexane	8.84	84	896678	5.32 ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	897060	5.15 ug/l	99
39)	1,1-Dichloropropene	9.01	110	267353	5.32 ug/l	99
40)	Carbon tetrachloride	9.00	119	521272	5.25 ug/l	99
41)	Benzene	9.34	78	1901912	5.18 ug/l	100
42)	1,2-Dichloroethane	9.46	62	350508	5.09 ug/l	99
43)	2,2,4-Trimethylpentane	9.61	57	2767817	5.59 ug/l	100
44)	Trichloroethene	10.45	130	591124	5.27 ug/l	99
45)	Methylcyclohexane	10.78	83	1034744	5.47 ug/l	100
46)	1,2-Dichloropropane	10.81	63	517549	5.23 ug/l	99
47)	1,4-Dioxane	10.97	88	32881	97.37 ug/l	99
48)	Dibromomethane	10.94	93	196998	5.25 ug/l	99
49)	Bromodichloromethane	11.22	83	500906	5.20 ug/l	98
50)	2-Chloroethyl vinyl ether	11.65	63	143987	4.70 ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	639392	5.16 ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	1067954	24.76 ug/l	100
55)	Toluene	12.24	91	2099951	5.22 ug/l	100
56)	Ethyl methacrylate	12.67	69	351968	4.91 ug/l	97
57)	trans-1,3-Dichloropropene	12.57	75	472240	4.98 ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	273166	5.07 ug/l	99
59)	Tetrachloroethene	12.91	164	458690	5.21 ug/l	99
60)	1,3-Dichloropropane	13.00	76	522545	5.07 ug/l	99
61)	2-Hexanone	13.06	43	683543	23.54 ug/l	100
62)	Dibromochloromethane	13.25	129	346328	5.18 ug/l	100
63)	1,2-Dibromoethane	13.37	107	283853	5.25 ug/l	99
64)	1-Chlorohexane	13.87	91	943461	5.18 ug/l	100
65)	Chlorobenzene	13.89	112	1300326	5.15 ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.98	131	424095	5.24 ug/l	99
67)	Ethylbenzene	13.98	91	2520635	5.29 ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	3614787	10.67 ug/l	100
69)	o-Xylene	14.48	91	1707881	5.26 ug/l	99
70)	Styrene	14.49	104	1405832	5.25 ug/l	100
72)	Bromoform	14.67	173	152702	5.16 ug/l	99
73)	Isopropylbenzene	14.80	105	2422335	5.27 ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.07	83	327943	5.15 ug/l	100
76)	Bromobenzene	15.10	156	474715	5.28 ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	58989	4.63 ug/l	97
78)	1,2,3-Trichloropropane	15.13	110	80450	5.21 ug/l	96

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
79) n-Propylbenzene	15.16	91	2881270	5.42 ug/l	100
80) 1,3,5-Trimethylbenzene	15.31	105	1706508	5.27 ug/l	100
81) 2-Chlorotoluene	15.25	91	1321281	5.18 ug/l	98
82) 4-Chlorotoluene	15.35	91	1590984	5.27 ug/l	99
83) tert-Butylbenzene	15.57	134	475222	5.43 ug/l	74
84) 1,2,4-Trimethylbenzene	15.62	105	1678254	5.36 ug/l	99
85) sec-Butylbenzene	15.75	105	2581945	5.35 ug/l	99
86) p-Isopropyltoluene	15.87	119	1929357	5.24 ug/l	100
87) 1,3-Dichlorobenzene	15.87	146	890179	5.32 ug/l	100
88) 1,4-Dichlorobenzene	15.94	146	852945	5.24 ug/l	100
89) 1,2,3-Trimethylbenzene	15.94	105	1522078	5.29 ug/l	100
90) n-Butylbenzene	16.18	91	1795599	5.38 ug/l	100
91) 1,2-Dichlorobenzene	16.23	146	706630	5.15 ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.82	157	36201	4.82 ug/l	99
93) 1,2,4-Trichlorobenzene	17.48	180	348169	5.16 ug/l	98
94) Hexachlorobutadiene	17.57	225	281905	5.47 ug/l	100
95) Naphthalene	17.72	128	456263	5.11 ug/l	99
96) 1,2,3-Trichlorobenzene	17.91	180	268571	5.32 ug/l	99

SU 5/18/20

(#) = qualifier out of range (m) = manual integration

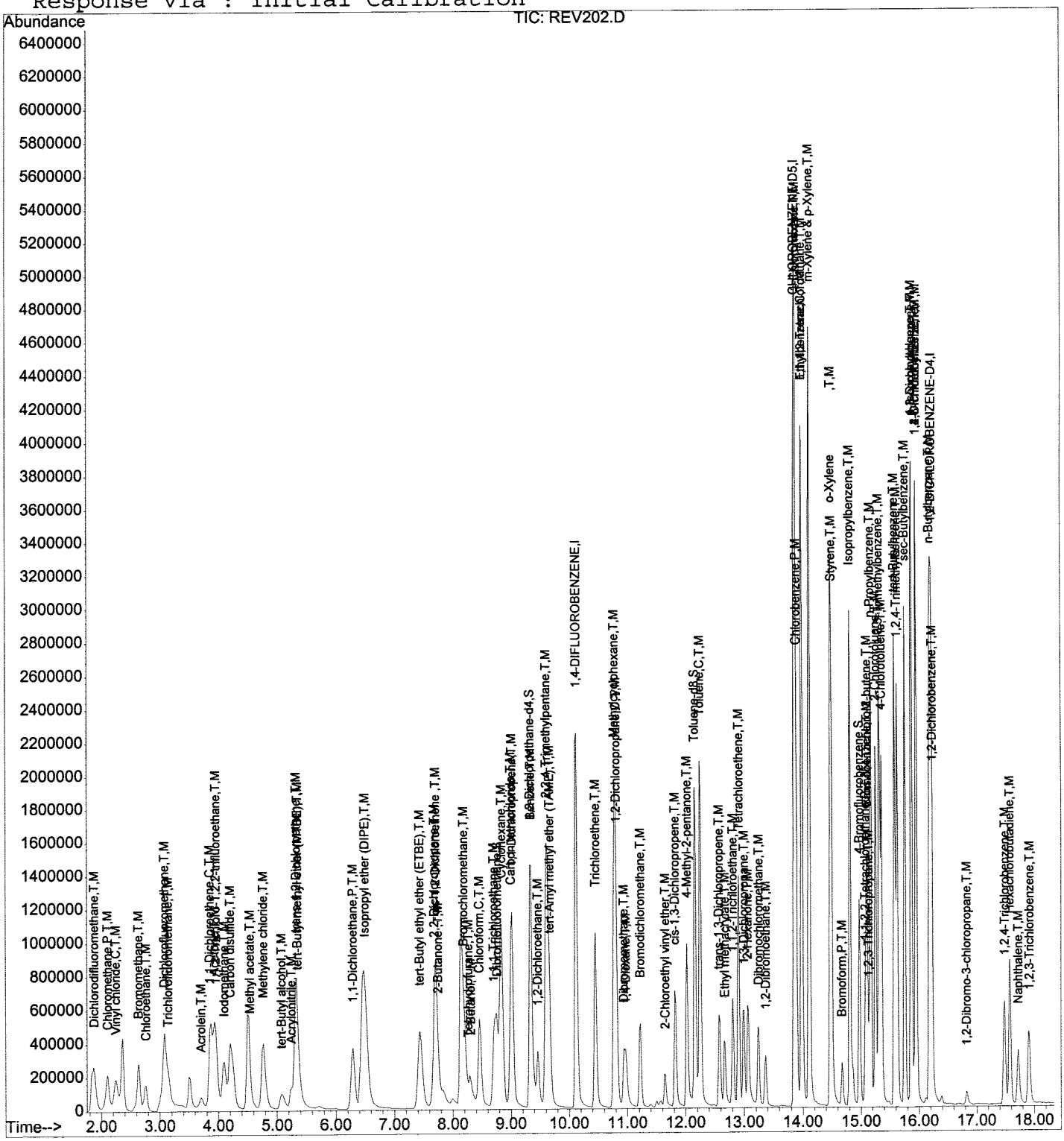
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV202.D
Acq On : 13 May 2020 3:52 pm
Sample : VO01E135
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3167387	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.87	117	2685414	10.00	ug/l	0.00
71) 1,2-DICHLOROBENZENE-D4	16.23	152	938720	10.00	ug/l	0.00
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	993253	11.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	111.40%		
38) 1,2-Dichloroethane-d4	9.34	65	656685	11.06	ug/l	0.00
Spiked Amount 10.000			Recovery =	110.60%		
54) Toluene-d8	12.17	98	3866037	10.58	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.80%		
74) 4-Bromofluorobenzene	14.98	95	1180395	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	981849	10.08	ug/l	100
4) Chloromethane	2.11	50	1182341	10.16	ug/l	100
5) Vinyl chloride	2.25	62	1196903	10.48	ug/l	100
7) Bromomethane	2.63	94	824161	10.84	ug/l	100
8) Chloroethane	2.75	64	668881	10.58	ug/l	100
9) Dichlorofluoromethane	3.08	67	1556421	9.98	ug/l	100
10) Trichlorofluoromethane	3.14	101	1108586	10.48	ug/l	100
11) Acrolein	3.71	56	280483	51.06	ug/l	100
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	666223	10.05	ug/l	100
13) Acetone	3.93	43	542441	50.44	ug/l	100
14) 1,1-Dichloroethene	3.85	61	1570988	10.16	ug/l	100
15) Iodomethane	4.10	142	1769760	10.12	ug/l	100
16) Carbon disulfide	4.20	76	3499947	10.31	ug/l	100
17) Methyl acetate	4.52	43	297519	10.50	ug/l	100
18) Methylene chloride	4.77	49	1284809	9.85	ug/l	100
19) tert-Butyl alcohol	5.08	59	798979	270.85	ug/l	100
20) Acrylonitrile	5.23	53	658986	50.01	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1411462	10.34	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1555305	10.17	ug/l	100
24) 1,1-Dichloroethane	6.29	63	1882548	10.15	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3300430	10.22	ug/l	100
26) 2-Butanol	8.29	45	892519	261.78	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2283239	9.79	ug/l	100
28) 2-Butanone	7.72	43	897015	52.23	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	1075506	10.02	ug/l	100
30) 2,2-Dichloropropane	7.68	77	1169852	9.98	ug/l	100
31) Tetrahydrofurane	8.27	42	119830	10.89	ug/l	100

(#) = qualifier out of range (m) = manual integration

REV203.D VO01E13.M Thu May 14 18:36:18 2020 Page 1

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Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.20	49	781851	10.21	ug/l	100
33)	Chloroform	8.47	83	1539774	10.05	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	1205417	9.86	ug/l	100
36)	Cyclohexane	8.84	84	1721201	9.89	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	1845114	10.25	ug/l	100
39)	1,1-Dichloropropene	9.03	110	538098	10.37	ug/l	100
40)	Carbon tetrachloride	9.00	119	1059221	10.33	ug/l	100
41)	Benzene	9.34	78	3741497	9.88	ug/l	100
42)	1,2-Dichloroethane	9.47	62	731073	10.28	ug/l	100
43)	2,2,4-Trimethylpentane	9.62	57	5488288	10.73	ug/l	100
44)	Trichloroethene	10.47	130	1181673	10.20	ug/l	100
45)	Methylcyclohexane	10.79	83	2066215	10.58	ug/l	100
46)	1,2-Dichloropropane	10.82	63	1060172	10.37	ug/l	100
47)	1,4-Dioxane	10.97	88	72346	207.53	ug/l	100
48)	Dibromomethane	10.95	93	409460	10.56	ug/l	100
49)	Bromodichloromethane	11.22	83	1034032	10.39	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	322016	10.19	ug/l	100
51)	cis-1,3-Dichloropropene	11.83	75	1338031	10.46	ug/l	100
52)	4-Methyl-2-pentanone	12.04	43	2431087	54.60	ug/l	100
55)	Toluene	12.26	91	4152375	9.87	ug/l	100
56)	Ethyl methacrylate	12.67	69	770340	10.28	ug/l	100
57)	trans-1,3-Dichloropropene	12.58	75	1001116	10.09	ug/l	100
58)	1,1,2-Trichloroethane	12.82	97	572207	10.16	ug/l	100
59)	Tetrachloroethene	12.92	164	909641	9.89	ug/l	100
60)	1,3-Dichloropropane	13.01	76	1103037	10.23	ug/l	100
61)	2-Hexanone	13.07	43	1624022	53.49	ug/l	100
62)	Dibromochloromethane	13.26	129	734730	10.50	ug/l	100
63)	1,2-Dibromoethane	13.38	107	592704	10.49	ug/l	100
64)	1-Chlorohexane	13.89	91	1873736	9.84	ug/l	100
65)	Chlorobenzene	13.90	112	2639229	10.00	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.99	131	875621	10.36	ug/l	100
67)	Ethylbenzene	13.99	91	4985455	10.01	ug/l	100
68)	m-Xylene & p-Xylene	14.12	91	7330631	20.69	ug/l	100
69)	o-Xylene	14.49	91	3462673	10.19	ug/l	100
70)	Styrene	14.51	104	2846005	10.16	ug/l	100
72)	Bromoform	14.69	173	336685	10.65	ug/l	100
73)	Isopropylbenzene	14.82	105	4804245	9.80	ug/l	100
75)	1,1,2,2-Tetrachloroethane	15.09	83	706426	10.39	ug/l	100
76)	Bromobenzene	15.12	156	969879	10.10	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.12	53	130204	9.58	ug/l	100
78)	1,2,3-Trichloropropane	15.14	110	171536	10.41	ug/l	100

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D
Acq On : 13 May 2020 4:20 pm
Sample : VO01E136
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79) n-Propylbenzene	15.19	91	5751258	10.14	ug/l	100
80) 1,3,5-Trimethylbenzene	15.32	105	3527307	10.19	ug/l	100
81) 2-Chlorotoluene	15.26	91	2819407	10.36	ug/l	100
82) 4-Chlorotoluene	15.37	91	3245399	10.07	ug/l	100
83) tert-Butylbenzene	15.59	134	932120	9.97	ug/l	100
84) 1,2,4-Trimethylbenzene	15.63	105	3310630	9.90	ug/l	100
85) sec-Butylbenzene	15.77	105	5172032	10.04	ug/l	100
86) p-Isopropyltoluene	15.89	119	3927374	10.00	ug/l	100
87) 1,3-Dichlorobenzene	15.89	146	1848020	10.34	ug/l	100
88) 1,4-Dichlorobenzene	15.96	146	1715478	9.87	ug/l	100
89) 1,2,3-Trimethylbenzene	15.96	105	3094271	10.07	ug/l	100
90) n-Butylbenzene	16.20	91	3649801	10.23	ug/l	100
91) 1,2-Dichlorobenzene	16.24	146	1433728	9.78	ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.83	157	81338	10.15	ug/l	100
93) 1,2,4-Trichlorobenzene	17.50	180	735466	10.21	ug/l	100
94) Hexachlorobutadiene	17.60	225	553020	10.06	ug/l	100
95) Naphthalene	17.74	128	960056	10.07	ug/l	100
96) 1,2,3-Trichlorobenzene	17.93	180	545979	10.12	ug/l	100

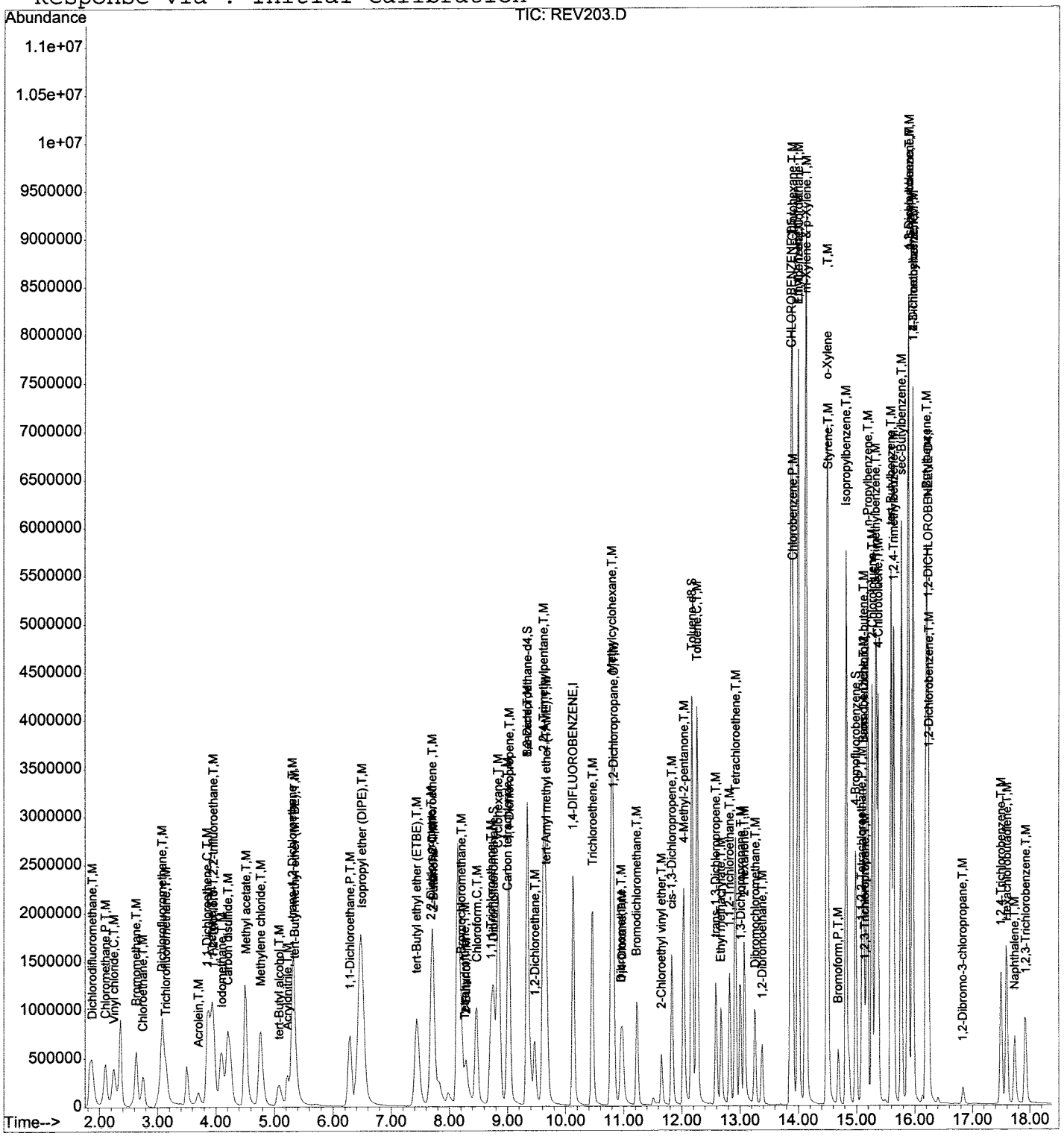
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV203.D Vial: 7
Acq On : 13 May 2020 4:20 pm Operator: VLu
Sample : VO01E136 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:21 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3182543	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2678062	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	936569	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1880478	20.99	ug/l	0.00
Spiked Amount 10.000			Recovery = 209.90%			
38) 1,2-Dichloroethane-d4	9.32	65	1288229	21.59	ug/l	-0.01
Spiked Amount 10.000			Recovery = 215.90%			
54) Toluene-d8	12.15	98	7569793	20.77	ug/l	-0.01
Spiked Amount 10.000			Recovery = 207.70%			
74) 4-Bromofluorobenzene	14.97	95	2338620	20.89	ug/l	-0.01
Spiked Amount 10.000			Recovery = 208.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	1998148	20.41	ug/l	99
4) Chloromethane	2.11	50	2325987	19.89	ug/l	99
5) Vinyl chloride	2.25	62	2323224	20.25	ug/l	99
7) Bromomethane	2.63	94	1488642	19.48	ug/l	99
8) Chloroethane	2.75	64	1238755	19.51	ug/l	99
9) Dichlorofluoromethane	3.08	67	3046413	19.43	ug/l	100
10) Trichlorofluoromethane	3.14	101	2191412	20.62	ug/l	99
11) Acrolein	3.71	56	562100	101.84	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	1339436	20.10	ug/l	99
13) Acetone	3.93	43	1108442	102.57	ug/l	98
14) 1,1-Dichloroethene	3.87	61	3122522	20.09	ug/l	100
15) Iodomethane	4.10	142	3519510	20.03	ug/l	99
16) Carbon disulfide	4.21	76	7009690	20.54	ug/l	100
17) Methyl acetate	4.54	43	595262	20.91	ug/l	99
18) Methylene chloride	4.77	49	2564333	19.57	ug/l	99
19) tert-Butyl alcohol	5.08	59	1634918	551.60	ug/l	100
20) Acrylonitrile	5.23	53	1408295	106.36	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	2786059	20.32	ug/l	99
22) trans-1,2-Dichloroethene	5.33	61	3063263	19.93	ug/l	99
24) 1,1-Dichloroethane	6.29	63	3732915	20.03	ug/l	99
25) Isopropyl ether (DIPE)	6.52	45	6732312	20.75	ug/l	100
26) 2-Butanol	8.29	45	1828437	518.82	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	4574261	19.53	ug/l	100
28) 2-Butanone	7.72	43	1835472	106.37	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	2168474	20.10	ug/l	100
30) 2,2-Dichloropropane	7.70	77	2338863	19.85	ug/l	100
31) Tetrahydrofurane	8.27	42	240698	21.77	ug/l	99

(#) = qualifier out of range (m) = manual integration

5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.20	49	1546357	20.10 ug/l	99
33) Chloroform	8.45	83	3074501	19.98 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	2611987	21.26 ug/l	94
36) Cyclohexane	8.84	84	3547352	20.29 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	3677301	20.34 ug/l	100
39) 1,1-Dichloropropene	9.03	110	1077442	20.67 ug/l	99
40) Carbon tetrachloride	9.00	119	2123420	20.61 ug/l	100
41) Benzene	9.34	78	7706690	20.25 ug/l	100
42) 1,2-Dichloroethane	9.46	62	1480291	20.72 ug/l	100
43) 2,2,4-Trimethylpentane	9.62	57	10559536	20.54 ug/l	100
44) Trichloroethene	10.45	130	2388345	20.52 ug/l	100
45) Methylcyclohexane	10.78	83	4154051	21.17 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2120613	20.65 ug/l	100
47) 1,4-Dioxane	10.95	88	146941	419.51 ug/l	99
48) Dibromomethane	10.94	93	808725	20.76 ug/l	99
49) Bromodichloromethane	11.22	83	2097141	20.98 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	677307	21.33 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	2768892	21.55 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	4919602	109.96 ug/l	99
55) Toluene	12.24	91	8439015	20.12 ug/l	99
56) Ethyl methacrylate	12.66	69	1540328	20.60 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2086191	21.09 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	1124048	20.02 ug/l	100
59) Tetrachloroethene	12.91	164	1832883	19.98 ug/l	100
60) 1,3-Dichloropropane	13.00	76	2183646	20.31 ug/l	99
61) 2-Hexanone	13.06	43	3370336	111.32 ug/l	99
62) Dibromochloromethane	13.25	129	1485763	21.30 ug/l	100
63) 1,2-Dibromoethane	13.37	107	1184644	21.03 ug/l	99
64) 1-Chlorohexane	13.87	91	3797027	20.00 ug/l	99
65) Chlorobenzene	13.89	112	5266132	20.00 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	1745026	20.69 ug/l	100
67) Ethylbenzene	13.97	91	10131853	20.41 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	13945469	39.46 ug/l	98
69) o-Xylene	14.48	91	6861711	20.25 ug/l	100
70) Styrene	14.49	104	5804762	20.78 ug/l	99
72) Bromoform	14.67	173	694516	22.02 ug/l	100
73) Isopropylbenzene	14.80	105	9730818	19.89 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	1378338	20.31 ug/l	99
76) Bromobenzene	15.10	156	1919633	20.05 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	272937	20.12 ug/l	97
78) 1,2,3-Trichloropropane	15.13	110	341841	20.78 ug/l	100

(#) = qualifier out of range (m) = manual integration
REV204.D VO01E13.M Thu May 14 18:36:29 2020 5/18/20 Page 2

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D Vial: 8
Acq On : 13 May 2020 4:47 pm Operator: VLu
Sample : VO01E137 Inst : 01
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	11578541	20.46	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	6971891	20.20	ug/l	100
81)	2-Chlorotoluene	15.25	91	5576205	20.53	ug/l	99
82)	4-Chlorotoluene	15.35	91	6432235	20.00	ug/l	99
83)	tert-Butylbenzene	15.57	134	1856231	19.91	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	6859128	20.55	ug/l	99
85)	sec-Butylbenzene	15.75	105	10541362	20.50	ug/l	100
86)	p-Isopropyltoluene	15.87	119	7941541	20.27	ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	3644189	20.43	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	3557043	20.52	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	6212747	20.27	ug/l	100
90)	n-Butylbenzene	16.18	91	7377784	20.73	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	2901035	19.84	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	174288	21.79	ug/l	100
93)	1,2,4-Trichlorobenzene	17.48	180	1573315	21.89	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1168258	21.29	ug/l	100
95)	Naphthalene	17.72	128	2049737	21.55	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1141986	21.22	ug/l	100

Sa 5/18/20

(#) = qualifier out of range (m) = manual integration

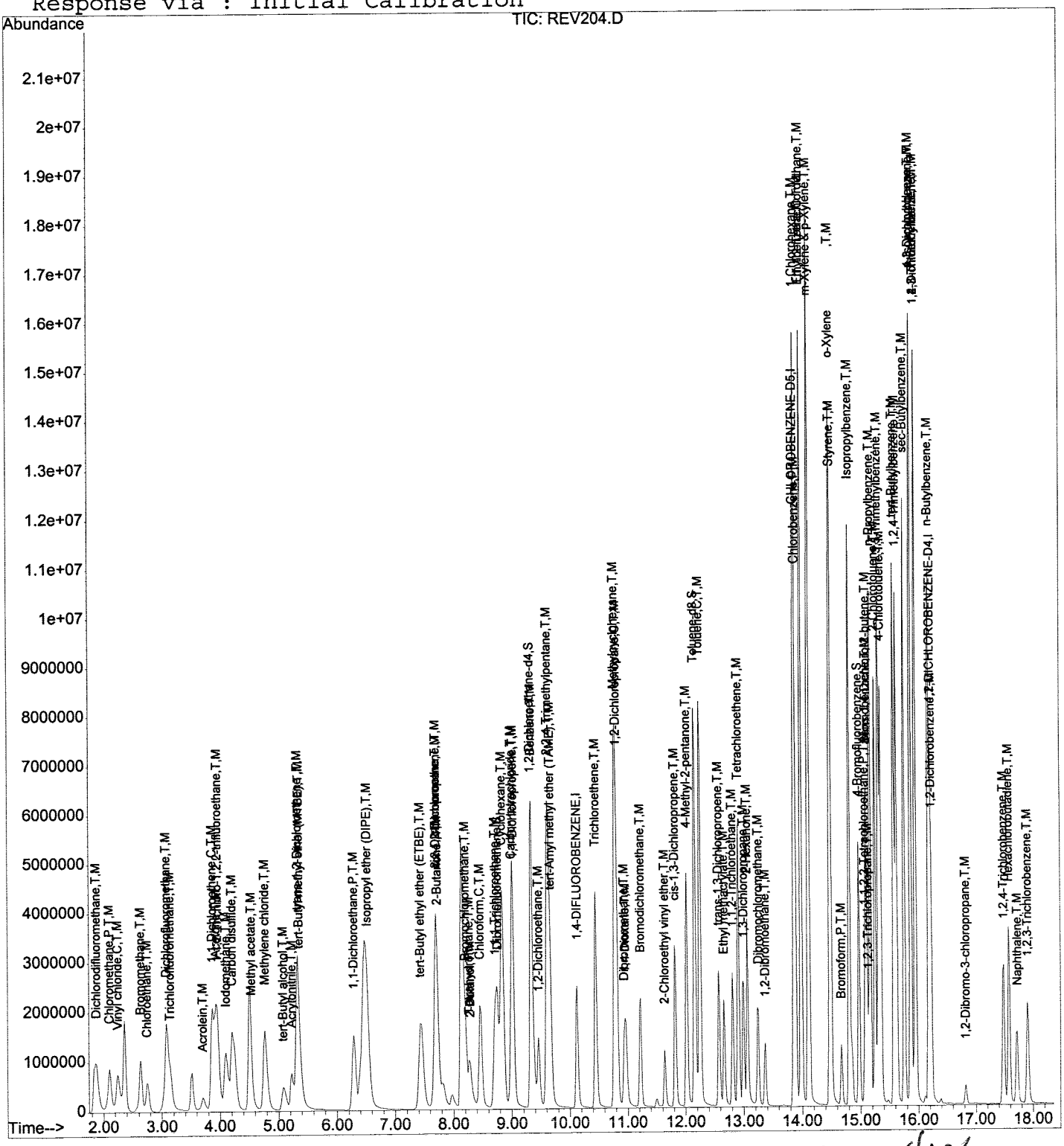
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV204.D
Acq On : 13 May 2020 4:47 pm
Sample : VO01E137
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



REV204.D VO01E13.M Thu May 14 18:36:32 2020 Page 4

Su 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D Vial: 9
Acq On : 13 May 2020 5:14 pm Operator: VLu
Sample : VO01E138 Inst : 01
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3096634	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2554592	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	862320	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	2698043	30.96	ug/l	-0.01
Spiked Amount 10.000			Recovery =	309.60%		
38) 1,2-Dichloroethane-d4	9.33	65	1798985	30.99	ug/l	-0.01
Spiked Amount 10.000			Recovery =	309.90%		
54) Toluene-d8	12.15	98	10740206	30.89	ug/l	-0.01
Spiked Amount 10.000			Recovery =	308.90%		
74) 4-Bromofluorobenzene	14.97	95	3403768	33.02	ug/l	-0.01
Spiked Amount 10.000			Recovery =	330.20%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	2897044	30.41	ug/l	100
4) Chloromethane	2.10	50	3412463	29.98	ug/l	99
5) Vinyl chloride	2.25	62	3449445	30.91	ug/l	100
7) Bromomethane	2.63	94	1926536	25.91	ug/l	100
8) Chloroethane	2.75	64	1723670	27.90	ug/l	100
9) Dichlorofluoromethane	3.08	67	4343157	28.47	ug/l	99
10) Trichlorofluoromethane	3.14	101	3159000	30.56	ug/l	99
11) Acrolein	3.70	56	783974	145.97	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	1988674	30.67	ug/l	99
13) Acetone	3.93	43	1567085	149.03	ug/l	99
14) 1,1-Dichloroethene	3.85	61	4627877	30.60	ug/l	100
15) Iodomethane	4.10	142	5180142	30.30	ug/l	100
16) Carbon disulfide	4.20	76	10252462	30.88	ug/l	100
17) Methyl acetate	4.52	43	828838	29.92	ug/l	99
18) Methylene chloride	4.77	49	3706868	29.08	ug/l	99
19) tert-Butyl alcohol	5.08	59	2281663	791.16	ug/l	99
20) Acrylonitrile	5.23	53	2038109	158.19	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	3938132	29.52	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	4525972	30.26	ug/l	99
24) 1,1-Dichloroethane	6.29	63	5521859	30.45	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	9627906	30.49	ug/l	100
26) 2-Butanol	8.27	45	2527526	731.05	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	6441656	28.26	ug/l	100
28) 2-Butanone	7.72	43	2670603	159.06	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	3261005	31.06	ug/l	98
30) 2,2-Dichloropropane	7.70	77	3492021	30.46	ug/l	100
31) Tetrahydrofurane	8.25	42	335319	31.16	ug/l	99

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	2252313	30.09 ug/l	99
33) Chloroform	8.45	83	4532185	30.27 ug/l	100
35) 1,1,1-Trichloroethane	8.72	97	3833308	32.07 ug/l	95
36) Cyclohexane	8.84	84	5202996	30.58 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	5249152	29.83 ug/l	100
39) 1,1-Dichloropropene	9.01	110	1569661	30.95 ug/l	100
40) Carbon tetrachloride	9.00	119	3139048	31.32 ug/l	100
41) Benzene	9.34	78	11053787	29.86 ug/l	100
42) 1,2-Dichloroethane	9.46	62	2122967	30.53 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	15867817	31.73 ug/l	100
44) Trichloroethene	10.45	130	3428358	30.27 ug/l	100
45) Methylcyclohexane	10.78	83	5937114	31.09 ug/l	99
46) 1,2-Dichloropropane	10.81	63	2973181	29.76 ug/l	99
47) 1,4-Dioxane	10.95	88	214599	629.67 ug/l	99
48) Dibromomethane	10.94	93	1172558	30.94 ug/l	98
49) Bromodichloromethane	11.21	83	3084990	31.72 ug/l	99
50) 2-Chloroethyl vinyl ether	11.64	63	992684	32.12 ug/l	99
51) cis-1,3-Dichloropropene	11.81	75	3972967	31.78 ug/l	100
52) 4-Methyl-2-pentanone	12.02	43	6910110	158.74 ug/l	99
55) Toluene	12.24	91	12347445	30.86 ug/l	99
56) Ethyl methacrylate	12.66	69	2186278	30.66 ug/l	99
57) trans-1,3-Dichloropropene	12.57	75	2996543	31.75 ug/l	100
58) 1,1,2-Trichloroethane	12.81	97	1619105	30.23 ug/l	99
59) Tetrachloroethene	12.91	164	2680006	30.62 ug/l	99
60) 1,3-Dichloropropane	12.98	76	3147529	30.69 ug/l	100
61) 2-Hexanone	13.06	43	4767662	165.08 ug/l	98
62) Dibromochloromethane	13.24	129	2154157	32.37 ug/l	99
63) 1,2-Dibromoethane	13.37	107	1694224	31.54 ug/l	99
64) 1-Chlorohexane	13.87	91	5545249	30.62 ug/l	100
65) Chlorobenzene	13.89	112	7640289	30.42 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.98	131	2499661	31.08 ug/l	100
67) Ethylbenzene	13.98	91	13633368	28.79 ug/l	97
68) m-Xylene & p-Xylene	14.11	91	18268724	54.20 ug/l	89
69) o-Xylene	14.48	91	9920435	30.69 ug/l	100
70) Styrene	14.49	104	8379889	31.46 ug/l	99
72) Bromoform	14.67	173	998157	34.37 ug/l	100
73) Isopropylbenzene	14.80	105	13086936	29.05 ug/l	97
75) 1,1,2,2-Tetrachloroethane	15.07	83	1959221	31.36 ug/l	100
76) Bromobenzene	15.10	156	2781747	31.55 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	391876	31.37 ug/l	99
78) 1,2,3-Trichloropropane	15.13	110	477791	31.55 ug/l	100

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.18	91	13997621	26.86	ug/l	92
80)	1,3,5-Trimethylbenzene	15.31	105	10084275	31.73	ug/l	100
81)	2-Chlorotoluene	15.25	91	8048367	32.18	ug/l	98
82)	4-Chlorotoluene	15.35	91	9245029	31.22	ug/l	100
83)	tert-Butylbenzene	15.57	134	2699922	31.45	ug/l	99
84)	1,2,4-Trimethylbenzene	15.62	105	9797004	31.88	ug/l	99
85)	sec-Butylbenzene	15.75	105	13380886	28.27	ug/l	95
86)	p-Isopropyltoluene	15.87	119	11241032	31.16	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	5233107	31.86	ug/l	99
88)	1,4-Dichlorobenzene	15.95	146	4944171	30.97	ug/l	99
89)	1,2,3-Trimethylbenzene	15.95	105	8671658	30.73	ug/l	99
90)	n-Butylbenzene	16.18	91	10667864	32.56	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	4099793	30.45	ug/l	100
92)	1,2-Dibromo-3-chloropropan	16.82	157	243048	33.01	ug/l	99
93)	1,2,4-Trichlorobenzene	17.49	180	2193270	33.14	ug/l	99
94)	Hexachlorobutadiene	17.57	225	1625625	32.18	ug/l	99
95)	Naphthalene	17.72	128	2869688	32.76	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	1588500	32.06	ug/l	100

Su 5/18/20

(#) = qualifier out of range (m) = manual integration
REV205.D VO01E13.M Thu May 14 18:36:40 2020

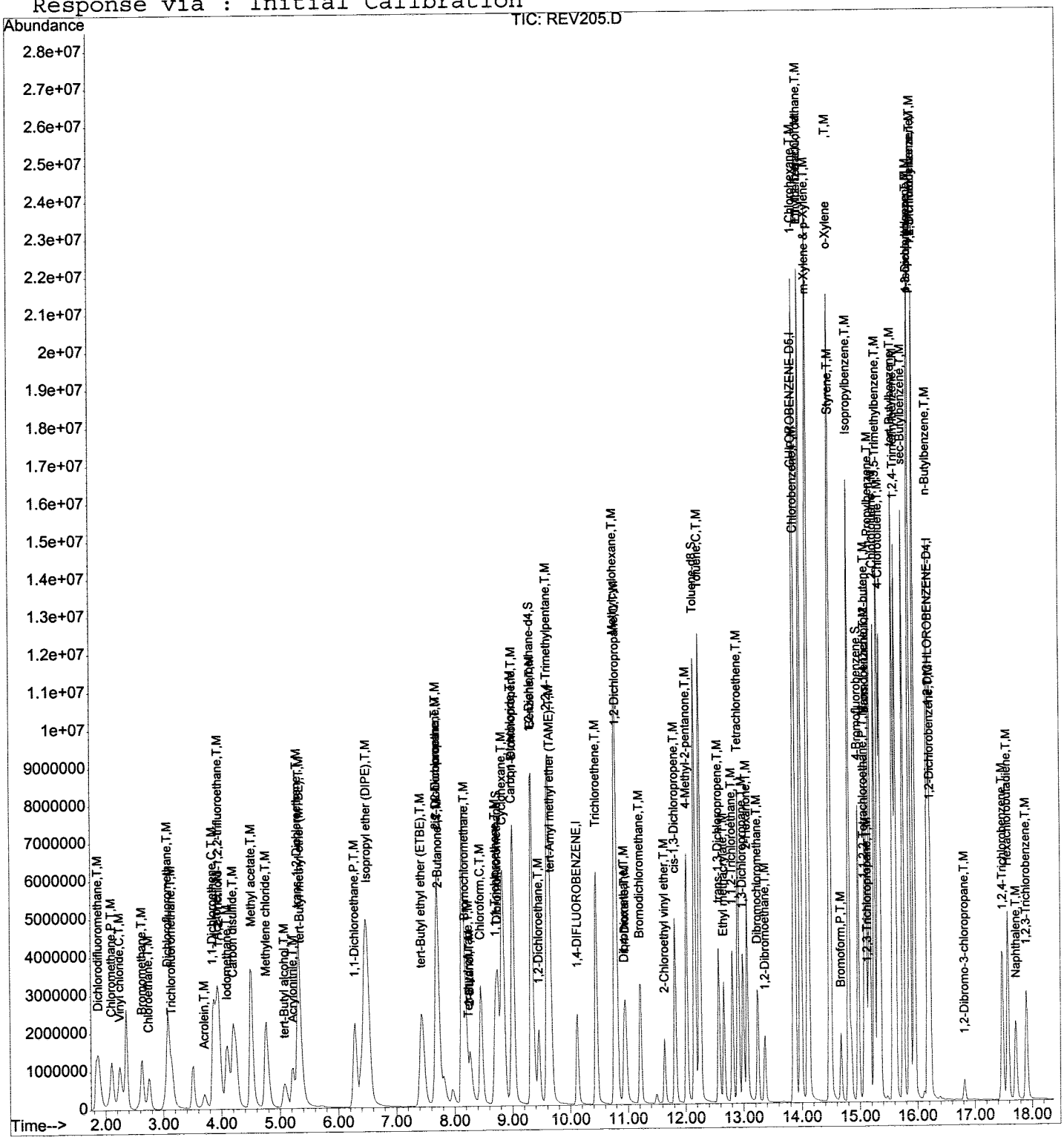
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV205.D
Acq On : 13 May 2020 5:14 pm
Sample : VO01E138
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020

Vial: 9
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3150156	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2611192	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.20	152	901049	10.00	ug/l	-0.03
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	4465266	50.36	ug/l	-0.01
Spiked Amount 10.000			Recovery = 503.60%			
38) 1,2-Dichloroethane-d4	9.33	65	2900379	49.12	ug/l	-0.01
Spiked Amount 10.000			Recovery = 491.20%			
54) Toluene-d8	12.15	98	16440098	46.25	ug/l	-0.01
Spiked Amount 10.000			Recovery = 462.50%			
74) 4-Bromofluorobenzene	14.97	95	5334374	49.52	ug/l	-0.01
Spiked Amount 10.000			Recovery = 495.20%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	4908013	50.64	ug/l	100
4) Chloromethane	2.10	50	5894461	50.91	ug/l	99
5) Vinyl chloride	2.24	62	5690849	50.12	ug/l	99
7) Bromomethane	2.63	94	2636932	34.86	ug/l	99
8) Chloroethane	2.74	64	2701585	42.98	ug/l	100
9) Dichlorofluoromethane	3.08	67	7358611	47.42	ug/l	100
10) Trichlorofluoromethane	3.12	101	5388767	51.24	ug/l	99
11) Acrolein	3.71	56	1312815	240.29	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	3216191	48.76	ug/l	100
13) Acetone	3.94	43	2479926	231.84	ug/l	100
14) 1,1-Dichloroethene	3.85	61	7411335	48.18	ug/l	99
15) Iodomethane	4.10	142	8576834	49.32	ug/l	99
16) Carbon disulfide	4.21	76	17310985	51.25	ug/l	100
17) Methyl acetate	4.52	43	1417314	50.30	ug/l	99
18) Methylene chloride	4.75	49	6064325	46.77	ug/l	99
19) tert-Butyl alcohol	5.08	59	3752185	1278.95	ug/l	99
20) Acrylonitrile	5.21	53	3406355	259.90	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	6480793	47.76	ug/l	99
22) trans-1,2-Dichloroethene	5.31	61	7519203	49.42	ug/l	99
24) 1,1-Dichloroethane	6.29	63	9051617	49.07	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	15594435	48.55	ug/l	100
26) 2-Butanol	8.27	45	4434529	1250.44	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	10634323	45.86	ug/l	100
28) 2-Butanone	7.73	43	4397913	257.49	ug/l	99
29) cis-1,2-Dichloroethene	7.71	96	5227128	48.94	ug/l	100
30) 2,2-Dichloropropane	7.71	77	5636752	48.34	ug/l	100
31) Tetrahydrofurane	8.25	42	538206	49.17	ug/l	98

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.18	49	3662643	48.11	ug/l	100
33)	Chloroform	8.45	83	7371090	48.39	ug/l	100
35)	1,1,1-Trichloroethane	8.72	97	6392327	52.56	ug/l	99
36)	Cyclohexane	8.84	84	8420160	48.65	ug/l	100
37)	tert-Amyl methyl ether (TA	9.67	73	8435107	47.13	ug/l	100
39)	1,1-Dichloropropene	9.01	110	2559117	49.60	ug/l	99
40)	Carbon tetrachloride	9.00	119	5202905	51.03	ug/l	100
41)	Benzene	9.34	78	17956135	47.68	ug/l	100
42)	1,2-Dichloroethane	9.46	62	3451270	48.79	ug/l	99
43)	2,2,4-Trimethylpentane	9.62	57	25329094	49.79	ug/l	100
44)	Trichloroethene	10.45	130	5780585	50.18	ug/l	100
45)	Methylcyclohexane	10.78	83	9854254	50.72	ug/l	99
46)	1,2-Dichloropropane	10.81	63	4843612	47.65	ug/l	99
47)	1,4-Dioxane	10.95	88	337303	972.89	ug/l	99
48)	Dibromomethane	10.94	93	1923801	49.90	ug/l	100
49)	Bromodichloromethane	11.21	83	5074290	51.29	ug/l	99
50)	2-Chloroethyl vinyl ether	11.64	63	1663108	52.90	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	6657180	52.34	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	11507992	259.87	ug/l	100
55)	Toluene	12.24	91	17773741	43.46	ug/l	89
56)	Ethyl methacrylate	12.66	69	3666534	50.30	ug/l	100
57)	trans-1,3-Dichloropropene	12.57	75	4995826	51.79	ug/l	100
58)	1,1,2-Trichloroethane	12.81	97	2670877	48.79	ug/l	99
59)	Tetrachloroethene	12.91	164	4440492	49.64	ug/l	99
60)	1,3-Dichloropropane	12.98	76	5128104	48.91	ug/l	99
61)	2-Hexanone	13.06	43	7899490	267.60	ug/l	98
62)	Dibromochloromethane	13.24	129	3510442	51.61	ug/l	100
63)	1,2-Dibromoethane	13.37	107	2783751	50.69	ug/l	99
64)	1-Chlorohexane	13.87	91	8957593	48.39	ug/l	99
65)	Chlorobenzene	13.89	112	12267173	47.78	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	4119024	50.10	ug/l	100
67)	Ethylbenzene	13.98	91	16483338	34.05	ug/l	76
68)	m-Xylene & p-Xylene	14.11	91	21093164	61.22	ug/l	65
69)	o-Xylene	14.48	91	14312232	43.32	ug/l	92
70)	Styrene	14.49	104	12831033	47.12	ug/l	97
72)	Bromoform	14.67	173	1655066	54.54	ug/l	99
73)	Isopropylbenzene	14.80	105	16741851	35.56	ug/l	85
75)	1,1,2,2-Tetrachloroethane	15.07	83	3151339	48.27	ug/l	100
76)	Bromobenzene	15.10	156	4535634	49.23	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	644992	49.42	ug/l	98
78)	1,2,3-Trichloropropane	15.13	110	768220	48.55	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

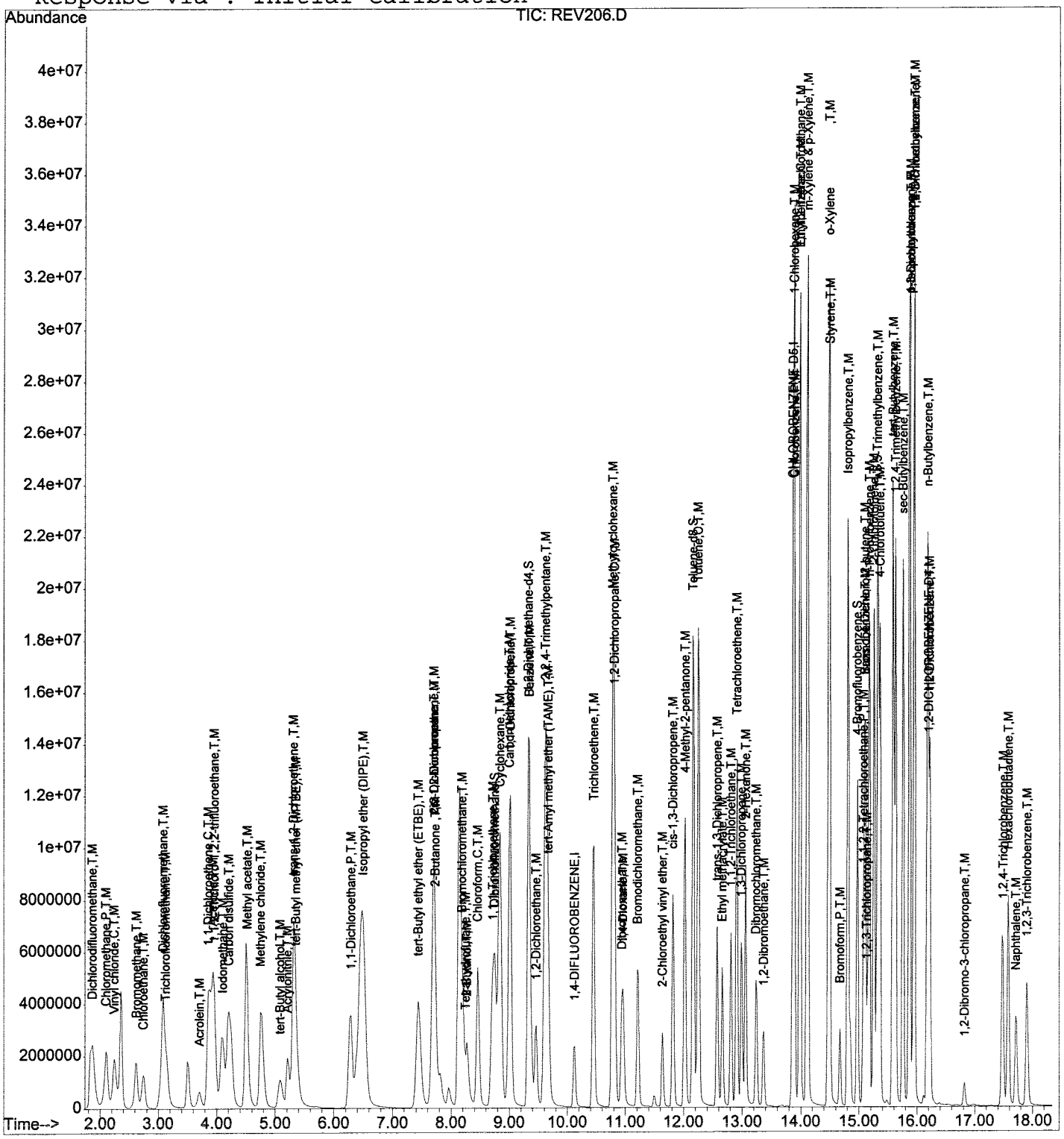
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
79) n-Propylbenzene	15.18	91	16572053	30.43 ug/l	73
80) 1,3,5-Trimethylbenzene	15.31	105	14210237	42.79 ug/l	90
81) 2-Chlorotoluene	15.25	91	12277228	46.98 ug/l	97
82) 4-Chlorotoluene	15.35	91	14276500	46.15 ug/l	98
83) tert-Butylbenzene	15.57	134	4317113	48.13 ug/l	99
84) 1,2,4-Trimethylbenzene	15.62	105	14119313	43.98 ug/l	91
85) sec-Butylbenzene	15.75	105	17685886	35.75 ug/l	85
86) p-Isopropyltoluene	15.87	119	15062222	39.95 ug/l	89
87) 1,3-Dichlorobenzene	15.87	146	8574730	49.97 ug/l	99
88) 1,4-Dichlorobenzene	15.95	146	8022440	48.09 ug/l	99
89) 1,2,3-Trimethylbenzene	15.95	105	13222336	44.84 ug/l	97
90) n-Butylbenzene	16.18	91	14794710	43.22 ug/l	87
91) 1,2-Dichlorobenzene	16.21	146	6791254	48.27 ug/l	100
92) 1,2-Dibromo-3-chloropropan	16.82	157	405016	52.64 ug/l	99
93) 1,2,4-Trichlorobenzene	17.49	180	3599170	52.04 ug/l	99
94) Hexachlorobutadiene	17.57	225	2628209	49.80 ug/l	99
95) Naphthalene	17.71	128	4726401	51.64 ug/l	100
96) 1,2,3-Trichlorobenzene	17.90	180	2578361	49.80 ug/l	99

(#) = qualifier out of range (m) = manual integration SG 5/18/20
REV206.D VO01E13.M Thu May 14 18:36:54 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV206.D Vial: 10
Acq On : 13 May 2020 5:40 pm Operator: VLu
Sample : VO01E139 Inst : 01
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/14/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3172256	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2530086	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	853058	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.75	111	9126720	102.22	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1022.20%		
38) 1,2-Dichloroethane-d4	9.33	65	6102438	102.62	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1026.20%		
54) Toluene-d8	12.15	98	23741109	68.94	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 689.40%		
74) 4-Bromofluorobenzene	14.97	95	10693146	104.85	ug/l	-0.01
Spiked Amount 10.000			Recovery	= 1048.50%		
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	9880249	101.24	ug/l	100
4) Chloromethane	2.10	50	12304782	105.54	ug/l	99
5) Vinyl chloride	2.24	62	12041039	105.32	ug/l	100
7) Bromomethane	2.60	94	2873546	37.72	ug/l	97
8) Chloroethane	2.71	64	3704181	58.52	ug/l	98
9) Dichlorofluoromethane	3.06	67	13600393	87.03	ug/l	99
10) Trichlorofluoromethane	3.12	101	10510039	99.24	ug/l	99
11) Acrolein	3.71	56	2788761	506.88	ug/l	97
12) 1,1,2-Trichloro-1,2,2-trif	3.93	151	6300937	94.87	ug/l	100
13) Acetone	3.93	43	5353116	496.96	ug/l	100
14) 1,1-Dichloroethene	3.85	61	14588987	94.18	ug/l	99
15) Iodomethane	4.08	142	17152390	97.94	ug/l	100
16) Carbon disulfide	4.21	76	35178512	103.42	ug/l	100
17) Methyl acetate	4.52	43	3295745	116.15	ug/l	99
18) Methylene chloride	4.75	49	12333062	94.45	ug/l	99
19) tert-Butyl alcohol	5.10	59	9299908	3147.83	ug/l	99
20) Acrylonitrile	5.21	53	7646437	579.36	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	14195388	103.88	ug/l	98
22) trans-1,2-Dichloroethene	5.31	61	14713873	96.04	ug/l	98
24) 1,1-Dichloroethane	6.27	63	18508258	99.64	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	32187001	99.51	ug/l	100
26) 2-Butanol	8.29	45	11109580	3089.49	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	22779979	97.56	ug/l	100
28) 2-Butanone	7.73	43	9623231	559.49	ug/l	98
29) cis-1,2-Dichloroethene	7.70	96	10429986	96.98	ug/l	98
30) 2,2-Dichloropropane	7.70	77	10936733	93.14	ug/l	100
31) Tetrahydrofurane	8.25	42	1226824	111.30	ug/l	99

(#) = qualifier out of range (m) = manual integration

SY 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
32)	Bromochloromethane	8.18	49	7381914	96.28 ug/l		99
33)	Chloroform	8.45	83	15083674	98.34 ug/l		100
35)	1,1,1-Trichloroethane	8.72	97	13185211	107.67 ug/l		95
36)	Cyclohexane	8.84	84	17351991	99.55 ug/l		97
37)	tert-Amyl methyl ether (TA	9.67	73	17949425	99.58 ug/l		99
39)	1,1-Dichloropropene	9.01	110	4973623	95.72 ug/l		99
40)	Carbon tetrachloride	9.00	119	10237967	99.71 ug/l		100
41)	Benzene	9.34	78	27379124	72.19 ug/l		88
42)	1,2-Dichloroethane	9.46	62	7208190	101.20 ug/l		99
43)	2,2,4-Trimethylpentane	9.62	57	36292611	70.84 ug/l		95
44)	Trichloroethene	10.45	130	11234629	96.84 ug/l		100
45)	Methylcyclohexane	10.78	83	19166853	97.97 ug/l		99
46)	1,2-Dichloropropane	10.81	63	9483875	92.66 ug/l		97
47)	1,4-Dioxane	10.95	88	760347	2177.82 ug/l		99
48)	Dibromomethane	10.94	93	4030480	103.82 ug/l		98
49)	Bromodichloromethane	11.21	83	10434033	104.73 ug/l		99
50)	2-Chloroethyl vinyl ether	11.64	63	3770775	119.11 ug/l		99
51)	cis-1,3-Dichloropropene	11.81	75	13724340	107.15 ug/l		99
52)	4-Methyl-2-pentanone	12.02	43	20313007	455.51 ug/l		87
55)	Toluene	12.24	91	24571394	62.01 ug/l		78
56)	Ethyl methacrylate	12.66	69	7939909	112.42 ug/l		99
57)	trans-1,3-Dichloropropene	12.57	75	10635398	113.79 ug/l		100
58)	1,1,2-Trichloroethane	12.81	97	5573989	105.10 ug/l		99
59)	Tetrachloroethene	12.91	164	8564407	98.80 ug/l		99
60)	1,3-Dichloropropane	13.00	76	10664648	104.98 ug/l		99
61)	2-Hexanone	13.06	43	15630741	546.47 ug/l		92
62)	Dibromochloromethane	13.25	129	7448855	113.02 ug/l		99
63)	1,2-Dibromoethane	13.37	107	5918931	111.24 ug/l		99
64)	1-Chlorohexane	13.87	91	14403522	80.30 ug/l		94
65)	Chlorobenzene	13.89	112	17855295	71.78 ug/l		83
66)	1,1,1,2-Tetrachloroethane	13.98	131	7939976	99.67 ug/l		100
67)	Ethylbenzene	13.99	91	20952504	44.67 ug/l		46
68)	m-Xylene & p-Xylene	14.11	91	25586512	76.64 ug/l	#	56
69)	o-Xylene	14.48	91	18864582	58.93 ug/l		68
70)	Styrene	14.49	104	18203697	68.99 ug/l		73
72)	Bromoform	14.67	173	3607425	125.55 ug/l		100
73)	Isopropylbenzene	14.80	105	20898068	46.89 ug/l		57
75)	1,1,2,2-Tetrachloroethane	15.07	83	6520414	105.49 ug/l		100
76)	Bromobenzene	15.10	156	8861957	101.60 ug/l		100
77)	trans-1,4-Dichloro-2-buten	15.10	53	1342756	108.66 ug/l		90
78)	1,2,3-Trichloropropane	15.13	110	1617705	107.99 ug/l		98

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
79)	n-Propylbenzene	15.16	91	20335903	39.44	ug/l	#	41
80)	1,3,5-Trimethylbenzene	15.31	105	17042971	54.21	ug/l		64
81)	2-Chlorotoluene	15.25	91	15897140	64.25	ug/l		66
82)	4-Chlorotoluene	15.35	91	20195058	68.95	ug/l		78
83)	tert-Butylbenzene	15.57	134	7910197	93.14	ug/l		99
84)	1,2,4-Trimethylbenzene	15.62	105	17915851	58.94	ug/l	#	59
85)	sec-Butylbenzene	15.75	105	20135698	43.00	ug/l		49
86)	p-Isopropyltoluene	15.87	119	18632144	52.20	ug/l		67
87)	1,3-Dichlorobenzene	15.87	146	14803713	91.12	ug/l		95
88)	1,4-Dichlorobenzene	15.94	146	13517560	85.60	ug/l		95
89)	1,2,3-Trimethylbenzene	15.94	105	16966497	60.77	ug/l		72
90)	n-Butylbenzene	16.18	91	18156476	56.02	ug/l		69
91)	1,2-Dichlorobenzene	16.23	146	12888716	96.76	ug/l		99
92)	1,2-Dibromo-3-chloropropan	16.82	157	871457	119.63	ug/l		100
93)	1,2,4-Trichlorobenzene	17.48	180	6892033	105.26	ug/l		99
94)	Hexachlorobutadiene	17.57	225	4518805	90.43	ug/l		99
95)	Naphthalene	17.72	128	9861623	113.81	ug/l		100
96)	1,2,3-Trichlorobenzene	17.90	180	5033779	102.69	ug/l		100

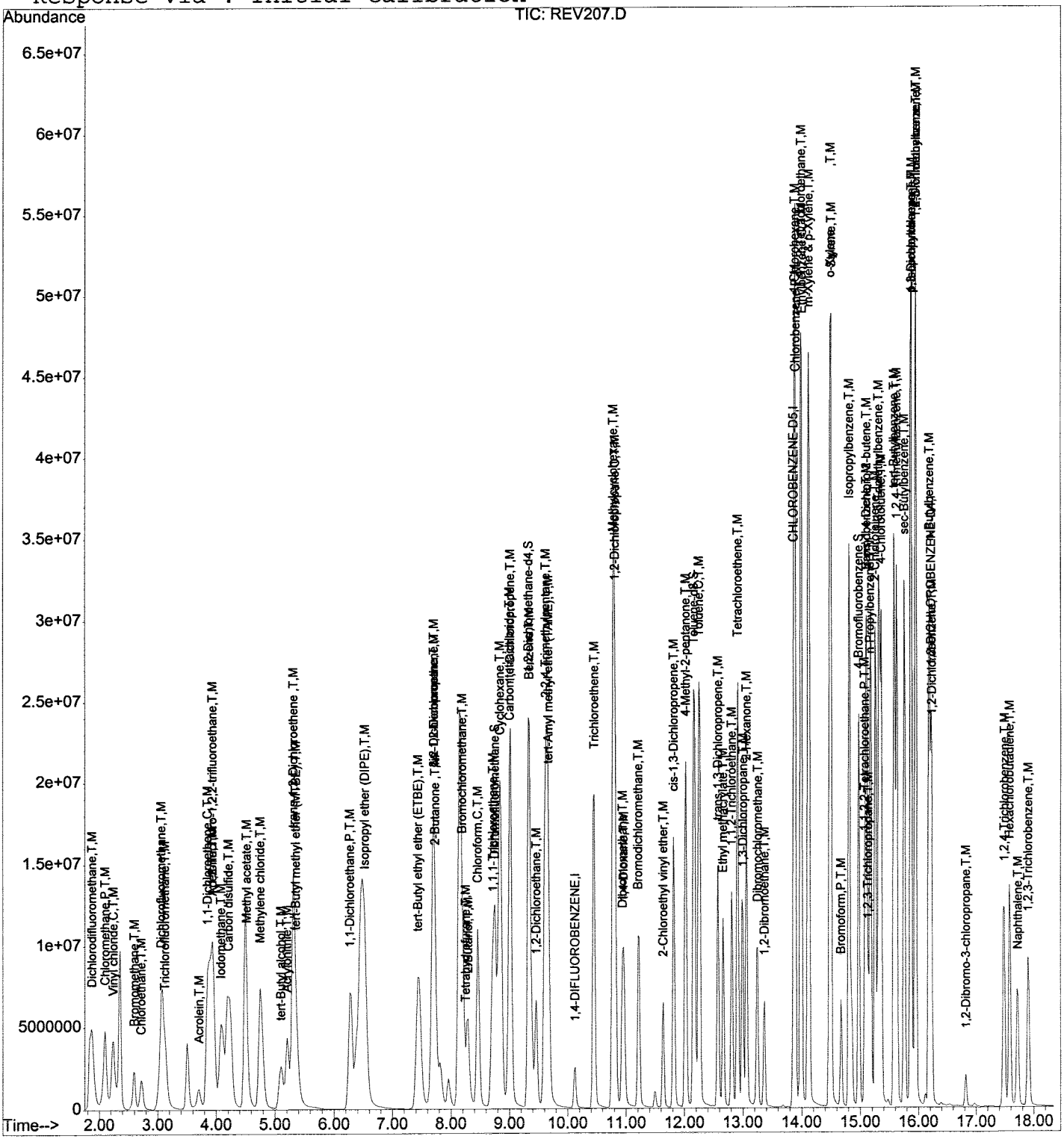
Su 5/18/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV207.D Vial: 11
Acq On : 13 May 2020 6:06 pm Operator: VLu
Sample : VO01E1310 Inst : 01
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:22 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/13/20 14:04
Spike Amount :10 PPB
CC/CV File :REV210
IC File :REV203

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/13/20 18:06
HPChem Method :V001E13
Date_Time :05/13/20 19:32

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AVRRF	CC_Rtm	AVRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	3245262	1	1	10.125	10.123	0				
	2	Chlorotrifluoroethylene												
	3	Dichlorodifluoromethane	8.366	-16.3	835274	0.257	0.308	1.872	1.875	5.00				
	4	Chloromethane	9.736	-2.6	1161255	0.358	0.368	2.100	2.103	4.47				
	5	Vinyl chloride	9.364	-6.4	1095208	0.337	0.360	2.242	2.246	6.66				
	6	2-Chloro-1,1,1-trifluoroethane												
	7	Bromomethane	8.136	-18.6	634004	0.195	0.240	2.627	2.633	9.04				
	8	Chloroethane	8.800	-12.0	569814	0.176	0.200	2.755	2.750	7.77				
	9	Dichlorofluoromethane	10.125	1.3	1618676	0.499	0.493	3.081	3.079	6.83				
	10	Trichlorofluoromethane	10.512	5.1	1138894	0.351	0.334	3.143	3.138	5.09				
5	11	Acrolein	52.346	4.7	294623	0.018	0.017	3.706	3.705	6.10				
	12	1,1,2-Trichloro-1,2,2-trifluoroethane	9.147	-8.5	621550	0.192	0.209	3.955	3.953	2.31				
5	13	Acetone	46.579	-6.8	513288	0.032	0.034	3.935	3.940	5.07				
	14	1,1-Dichloroethene	8.849	-11.5	1402362	0.432	0.488	3.851	3.858	3.02				
	15	Iodomethane	10.032	0.3	1797370	0.554	0.552	4.101	4.097	2.01				
	16	Carbon disulfide	10.453	4.5	3637274	1.121	1.072	4.205	4.205	5.38				
	17	Methyl acetate	9.958	-0.4	289063	0.089	0.089	4.539	4.530	10.51				
	18	Methylene chloride	9.434	-5.7	1260186	0.388	0.412	4.768	4.762	6.33				
25	19	tert-Butyl alcohol	259.049	3.6	782946	0.010	0.009	5.080	5.092	7.49				
5	20	Acrylonitrile	47.874	-4.3	646391	0.040	0.042	5.226	5.229	12.27				
	21	tert-Butyl methyl ether (MTBE)	9.158	-8.4	1280291	0.395	0.431	5.351	5.351	3.93				
	22	trans-1,2-Dichloroethene	9.389	-6.1	1471529	0.453	0.483	5.309	5.322	2.38				
	23	Vinyl acetate												
	24	1,1-Dichloroethane	9.718	-2.8	1846659	0.569	0.586	6.288	6.286	2.19				
	25	Isopropyl ether (DIPE)	9.251	-7.5	3061053	0.943	1.020	6.496	6.507	2.05				
25	26	2-Butanol	210.055	-16.0	723313	0.009	0.010	8.288	8.299	22.94	-0.0163	0.0114		0.9993
	27	tert-Butyl ethyl ether (ETBE)	8.820	-11.8	2106808	0.649	0.736	7.434	7.436	7.93				
5	28	2-Butanone	50.815	1.6	894131	0.055	0.054	7.725	7.737	11.88				
	29	cis-1,2-Dichloroethene	9.783	-2.2	1076415	0.332	0.339	7.704	7.710	2.44				
	30	2,2-Dichloropropane	9.719	-2.8	1167450	0.360	0.370	7.704	7.694	3.19				
	31	Tetrahydrofurane	10.374	3.7	116974	0.036	0.035	8.267	8.260	13.54				
	32	Bromochloromethane	10.096	1.0	791869	0.244	0.242	8.183	8.196	2.67				
	33	Chloroform	9.751	-2.5	1530083	0.471	0.484	8.454	8.458	1.90				
	34	Dibromofluoromethane	11.024	10.2	1006917	0.310	0.281	8.762	8.757	7.67				
	35	1,1,1-Trichloroethane	9.405	-6.0	1178265	0.363	0.386	8.718	8.715	6.62				
	36	Cyclohexane	9.738	-2.6	1736396	0.535	0.549	8.836	8.835	4.79				
	37	tert-Amyl methyl ether (TAME)	9.347	-6.5	1723573	0.531	0.568	9.665	9.666	2.47				
	38	1,2-Dichloroethane-d4	11.056	10.6	672576	0.207	0.187	9.325	9.330	7.96				
	39	1,1-Dichloropropene	9.996	-0.0	531339	0.164	0.164	9.014	9.022	5.84				
	40	Carbon tetrachloride	9.974	-0.3	1047641	0.323	0.324	8.999	8.998	4.73				
	41	Benzene	10.521	5.2	4082361	1.258	1.196	9.340	9.340	2.37				
	42	1,2-Dichloroethane	10.128	1.3	738000	0.227	0.225	9.458	9.464	3.25				
	43	2,2,4-Trimethylpentane	9.483	-5.2	4970151	1.532	1.615	9.621	9.613	9.56				
	44	Trichloroethene	10.018	0.2	1188904	0.366	0.366	10.450	10.452	3.40				
	45	Methylcyclohexane	11.361	13.6	2273785	0.701	0.617	10.776	10.778	9.40				
	46	1,2-Dichloropropane	9.981	-0.2	1045127	0.322	0.323	10.806	10.811	4.19				
20	47	1,4-Dioxane	197.868	-1.1	70672	0.001	0.001	10.969	10.963	8.66				
	48	Dibromomethane	10.271	2.7	407944	0.126	0.122	10.939	10.941	5.25				
	49	Bromodichloromethane	10.577	5.8	1078052	0.332	0.314	11.220	11.216	5.97				
	50	2-Chloroethyl vinyl ether	10.164	1.6	329168	0.101	0.100	11.635	11.644	12.71				
	51	cis-1,3-Dichloropropene	10.785	7.8	1413137	0.435	0.404	11.813	11.820	7.53				
5	52	4-Methyl-2-pentanone	53.518	7.0	2441493	0.150	0.141	12.020	12.022	8.42				
	53	CHLOROBENZENE-D5	10.000	0	2655474	1	1	13.856	13.858	0				
	54	Toluene-d8	10.999	10.0	3975687	1.497	1.361	12.153	12.161	5.54				
	55	Toluene	9.910	-0.9	4121322	1.552	1.566	12.242	12.249	5.39				
	56	Ethyl methacrylate	10.474	4.7	776375	0.292	0.279	12.657	12.665	7.24				
	57	trans-1,3-Dichloropropene	10.380	3.8	1018200	0.383	0.369	12.568	12.576	8.70				
	58	1,1,2-Trichloroethane	10.256	2.6	570900	0.215	0.210	12.805	12.811	2.49				
	59	Tetrachloroethene	10.022	0.2	911745	0.343	0.343	12.909	12.910	2.48				
	60	1,3-Dichloropropane	10.449	4.5	1114078	0.420	0.402	12.997	12.996	3.31				
5	61	2-Hexanone	53.644	7.3	1610450	0.121	0.113	13.057	13.064	13.31				
	62	Dibromochloromethane	10.571	5.7	731261	0.275	0.260	13.249	13.248	9.43				
	63	1,2-Dibromoethane	10.453	4.5	583740	0.220	0.210	13.368	13.371	8.30				
	64	1-Chlorohexane	9.612	-3.9	1809636	0.681	0.709	13.871	13.873	2.00				
	65	Chlorobenzene	10.194	1.9	2661607	1.002	0.983	13.886	13.888	2.60				
	66	1,1,1,2-Tetrachloroethane	10.188	1.9	851850	0.321	0.315	13.975	13.977	5.03				
	67	Ethylbenzene	9.552	-4.5	4702397	1.771	1.854	13.975	13.983	3.39				
2	68	m-Xylene & p-Xylene	19.973	-0.1	6998409	1.318	1.319	14.108	14.110	4.89				
	69	o-Xylene	10.064	0.6	3381380	1.273	1.265	14.478	14.480	5.32				
	70	Styrene	10.357	3.6	2868256	1.080	1.043	14.493	14.498	4.25				
	71	1,2-DICHLOROBENZENE-D4	10.000	0	957151	1	1	16.211	16.211	0				
	72	Bromoform	10.870	8.7	350438	0.366	0.337	14.671	14.677	12.81				
	73	Isopropylbenzene	9.458	-5.4	4730111	4.942	5.225	14.804	14.806	2.85				
	74	4-Bromofluorobenzene	10.785	7.9	1234188	1.289	1.196	14.967	14.972	8.21				
	75	1,1,2,2-Tetrachloroethane	9.945	-0.5	689734	0.721	0.725	15.071	15.072	4.41				
	76	Bromobenzene	10.179	1.8	996200	1.041	1.022	15.100	15.104	4.15				
	77	trans-1,4-Dichloro-2-butene	9.923	-0.8	137577	0.144	0.145	15.100	15.106	5.11				
	78	1,2,3-Trichloropropane	10.537	5.4	177107	0.185	0.176	15.130	15.132	6.36				
	79	n-Propylbenzene	9.908	-0.9	5731622	5.988	6.044	15.174	15.175	5.63				
	80	1,3,5-Trimethylbenzene	9.858	-1.4	3477829	3.634	3.686	15.308	15.314	5.94				
	81	2-Chlorotoluene	9.875	-1.2	2741409	2.864	2.900	15.248	15.250	5.87				
	82	4-Chlorotoluene	9.872	-1.3	3244216	3.389	3.434	15.352	15.356	4.90				
	83	tert-Butylbenzene	9.674	-3.3	921806	0.963	0.996	15.574	15.576	4.73				
	84	1,2,4-Trimethylbenzene	10.181	1.8	3472310	3.628	3.563	15.619	15.624	5.65				
	85	sec-Butylbenzene	9.851	-1.5	5175831	5.408	5.490	15.752	15.754	4.58				
	86	p-Isopropyltoluene	9.866	-1.3	3951312	4.128	4.184	15.870	15.872	3.86				
	87	1,3-Dichlorobenzene	10.138	1.4	1848134	1.931	1.905	15.870	15.872	5.27				
	88	1,4-Dichlorobenzene	9.759	-2.4	1729312	1.807	1.851	15.944	15.949	5.83				
	89	1,2,3-Trimethylbenzene	9.252	-7.5	2898244	3.028	3.273	15.944	15.946	4.63				
	90	n-Butylbenzene	10.081	0.8	3665738	3.830	3.799	16.181	16.183	6.84				
	91	1,2-Dichlorobenzene	9.849	-1.5	1471950	1.538	1.561	16.226	16.226	2.86				
	92	1,2-Dibromo-3-chloropropane	10.061	0.6	82234	0.086	0.085	16.818	16.822	14.58				
	93	1,2,4-Trichlorobenzene	10.156	1.6	746168	0.780	0.768	17.485	17.489	8.26				
	94	Hexachlorobutadiene	9.641	-3.6	540537	0.565	0.586	17.588	17.577	6.55				
	95	Naphthalene	10.322	3.2	1003542	1.048	1.016	17.721	17.726	9.03				
	96	1,2,3-Trichlorobenzene	9.906	-0.9	544806	0.569	0.575	17.914	17.911	6.00				

Spike Amount = Nominal Amount * M

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	0.00
3	T,M	Dichlorodifluoromethane	10.000	8.366	16.3	85	0.00
4	P,T,M	Chloromethane	10.000	9.736	2.6	98	0.00
5	C,T,M	Vinyl chloride	10.000	9.364	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	0.00
7	T,M	Bromomethane	10.000	8.136	18.6	77	0.00
8	T,M	Chloroethane	10.000	8.800	12.0	85	0.00
9	T,M	Dichlorofluoromethane	10.000	10.125	-1.3	104	0.00
10	T,M	Trichlorofluoromethane	10.000	10.512	-5.1	103	0.00
11	T,M	Acrolein	50.000	52.346	-4.7	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.147	8.5	93	0.00
13	T,M	Acetone	50.000	46.579	6.8	95	0.00
14	C,T,M	1,1-Dichloroethene	10.000	8.849	11.5	89	0.00
15	T,M	Iodomethane	10.000	10.032	-0.3	102	0.00
16	T,M	Carbon disulfide	10.000	10.453	-4.5	104	0.00
17	T,M	Methyl acetate	10.000	9.958	0.4	97	0.02
18	T,M	Methylene chloride	10.000	9.434	5.7	98	0.00
19	T,M	tert-Butyl alcohol	250.000	259.049	-3.6	98	0.00
20	T,M	Acrylonitrile	50.000	47.874	4.3	98	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.158	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.389	6.1	95	0.00
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	9.718	2.8	98	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	9.251	7.5	93	0.00
26	T,M	2-Butanol	250.000	210.055	16.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	8.820	11.8	92	0.00
28	T,M	2-Butanone	50.000	50.815	-1.6	100	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	9.783	2.2	100	0.00
30	T,M	2,2-Dichloropropane	10.000	9.719	2.8	100	0.02
31	T,M	Tetrahydrofurane	10.000	10.374	-3.7	98	0.00
32	T,M	Bromochloromethane	10.000	10.096	-1.0	101	-0.02
33	C,T,M	Chloroform	10.000	9.751	2.5	99	-0.02
34	S	Dibromofluoromethane	10.000	11.024	-10.2	101	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.405	6.0	98	0.00
36	T,M	Cyclohexane	10.000	9.738	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.347	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	10.000	11.056	-10.6	102	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.996	0.0	99	-0.01
40	T,M	Carbon tetrachloride	10.000	9.974	0.3	99	0.00
41	T,M	Benzene	10.000	10.521	-5.2	109	0.00

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.128	-1.3	101	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	9.483	5.2	91	0.00
44	T,M	Trichloroethene	10.000	10.018	-0.2	101	-0.01
45	T,M	Methylcyclohexane	10.000	11.361	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.981	0.2	99	-0.01
47	T,M	1,4-Dioxane	200.000	197.868	1.1	98	0.00
48	T,M	Dibromomethane	10.000	10.271	-2.7	100	-0.01
49	T,M	Bromodichloromethane	10.000	10.577	-5.8	104	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	10.164	-1.6	102	-0.01
51	T,M	cis-1,3-Dichloropropene	10.000	10.785	-7.9	106	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	53.518	-7.0	100	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	-0.01
54	S	Toluene-d8	10.000	10.999	-10.0	103	-0.01
55	C,T,M	Toluene	10.000	9.910	0.9	99	-0.01
56	T,M	Ethyl methacrylate	10.000	10.473	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	10.380	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.256	-2.6	100	-0.01
59	T,M	Tetrachloroethene	10.000	10.022	-0.2	100	-0.01
60	T,M	1,3-Dichloropropane	10.000	10.449	-4.5	101	-0.01
61	T,M	2-Hexanone	50.000	53.644	-7.3	99	-0.01
62	T,M	Dibromochloromethane	10.000	10.571	-5.7	100	-0.01
63	T,M	1,2-Dibromoethane	10.000	10.453	-4.5	98	-0.01
64	T,M	1-Chlorohexane	10.000	9.612	3.9	97	-0.01
65	P,M	Chlorobenzene	10.000	10.194	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.188	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	10.000	9.552	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	19.974	0.1	95	-0.01
69	T,M	o-Xylene	10.000	10.064	-0.6	98	-0.01
70	T,M	Styrene	10.000	10.357	-3.6	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	102	-0.01
72	P,T,M	Bromoform	10.000	10.870	-8.7	104	-0.01
73	T,M	Isopropylbenzene	10.000	9.458	5.4	98	-0.01
74	S	4-Bromofluorobenzene	10.000	10.785	-7.9	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.945	0.5	98	-0.01
76	T,M	Bromobenzene	10.000	10.179	-1.8	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.923	0.8	106	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.537	-5.4	103	-0.01
79	T,M	n-Propylbenzene	10.000	9.908	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	9.858	1.4	99	-0.01

(#) = Out of Range

5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	9.875	1.3	97	-0.01
82	T,M	4-Chlorotoluene	10.000	9.872	1.3	100	-0.01
83	T,M	tert-Butylbenzene	10.000	9.674	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.181	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	10.000	9.850	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.867	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	10.138	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.760	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	9.252	7.5	94	-0.01
90	T,M	n-Butylbenzene	10.000	10.081	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.849	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	10.061	-0.6	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	10.156	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.641	3.6	98	-0.01
95	T,M	Naphthalene	10.000	10.322	-3.2	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	9.906	0.9	100	-0.01

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	102	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.108	0.0	0#	0.00
3	T,M	Dichlorodifluoromethane	0.308	0.257	16.6	85	0.00
4	P,T,M	Chloromethane	0.368	0.358	2.7	98	0.00
5	C,T,M	Vinyl chloride	0.360	0.337	6.4	92	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.295	0.0	0#	0.00
7	T,M	Bromomethane	0.240	0.195	18.7	77	0.00
8	T,M	Chloroethane	0.200	0.176	12.0	85	0.00
9	T,M	Dichlorofluoromethane	0.493	0.499	-1.2	104	0.00
10	T,M	Trichlorofluoromethane	0.334	0.351	-5.1	103	0.00
11	T,M	Acrolein	0.017	0.018	-5.9	105	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.192	8.1	93	0.00
13	T,M	Acetone	0.034	0.032	5.9	95	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.432	11.5	89	0.00
15	T,M	Iodomethane	0.552	0.554	-0.4	102	0.00
16	T,M	Carbon disulfide	1.072	1.121	-4.6	104	0.00
17	T,M	Methyl acetate	0.089	0.089	0.0	97	0.02
18	T,M	Methylene chloride	0.412	0.388	5.8	98	0.00
19	T,M	tert-Butyl alcohol	0.009	0.010	-11.1	98	0.00
20	T,M	Acrylonitrile	0.042	0.040	4.8	98	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.395	8.4	91	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.453	6.2	95	0.00
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	-0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.569	2.9	98	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	0.943	7.5	93	0.00
26	T,M	2-Butanol	0.010	0.009	10.0	81	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.649	11.8	92	0.00
28	T,M	2-Butanone	0.054	0.055	-1.9	100	0.00
29	T,M	cis-1,2-Dichloroethene	0.339	0.332	2.1	100	0.00
30	T,M	2,2-Dichloropropane	0.370	0.360	2.7	100	0.02
31	T,M	Tetrahydrofurane	0.035	0.036	-2.9	98	0.00
32	T,M	Bromochloromethane	0.242	0.244	-0.8	101	-0.02
33	C,T,M	Chloroform	0.484	0.471	2.7	99	-0.02
34	S	Dibromofluoromethane	0.281	0.310	-10.3	101	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.363	6.0	98	0.00
36	T,M	Cyclohexane	0.549	0.535	2.6	101	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.531	6.5	93	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.207	-10.7	102	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.164	0.0	99	-0.01
40	T,M	Carbon tetrachloride	0.324	0.323	0.3	99	0.00
41	T,M	Benzene	1.196	1.258	-5.2	109	0.00

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.227	-0.9	101	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	1.532	5.1	91	0.00
44	T,M	Trichloroethene	0.366	0.366	0.0	101	-0.01
45	T,M	Methylcyclohexane	0.617	0.701	-13.6	110	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.322	0.3	99	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	98	0.00
48	T,M	Dibromomethane	0.122	0.126	-3.3	100	-0.01
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	104	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.101	-1.0	102	-0.01
51	T,M	cis-1,3-Dichloropropene	0.404	0.435	-7.7	106	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.150	-6.4	100	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	99	-0.01
54	S	Toluene-d8	1.361	1.497	-10.0	103	-0.01
55	C,T,M	Toluene	1.566	1.552	0.9	99	-0.01
56	T,M	Ethyl methacrylate	0.279	0.292	-4.7	101	-0.01
57	T,M	trans-1,3-Dichloropropene	0.369	0.383	-3.8	102	-0.01
58	T,M	1,1,2-Trichloroethane	0.210	0.215	-2.4	100	-0.01
59	T,M	Tetrachloroethene	0.343	0.343	0.0	100	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.420	-4.5	101	-0.01
61	T,M	2-Hexanone	0.113	0.121	-7.1	99	-0.01
62	T,M	Dibromochloromethane	0.260	0.275	-5.8	100	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.220	-4.8	98	-0.01
64	T,M	1-Chlorohexane	0.709	0.681	3.9	97	-0.01
65	P,M	Chlorobenzene	0.983	1.002	-1.9	101	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.321	-1.9	97	-0.01
67	C,T,M	Ethylbenzene	1.854	1.771	4.5	94	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.318	0.1	95	-0.01
69	T,M	o-Xylene	1.265	1.273	-0.6	98	-0.01
70	T,M	Styrene	1.043	1.080	-3.5	101	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	102	-0.01
72	P,T,M	Bromoform	0.337	0.366	-8.6	104	-0.01
73	T,M	Isopropylbenzene	5.225	4.942	5.4	98	-0.01
74	S	4-Bromofluorobenzene	1.196	1.289	-7.8	105	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.721	0.6	98	-0.01
76	T,M	Bromobenzene	1.022	1.041	-1.9	103	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.144	0.7	106	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.185	-5.1	103	-0.01
79	T,M	n-Propylbenzene	6.044	5.988	0.9	100	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.634	1.4	99	-0.01

(#) = Out of Range

SU 5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.864	1.2	97	-0.01
82	T,M	4-Chlorotoluene	3.434	3.389	1.3	100	-0.01
83	T,M	tert-Butylbenzene	0.996	0.963	3.3	99	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.628	-1.8	105	-0.01
85	T,M	sec-Butylbenzene	5.490	5.408	1.5	100	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.128	1.3	101	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.931	-1.4	100	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.807	2.4	101	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.028	7.5	94	-0.01
90	T,M	n-Butylbenzene	3.799	3.830	-0.8	100	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.538	1.5	103	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.086	-1.2	101	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.780	-1.6	101	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.565	3.6	98	-0.01
95	T,M	Naphthalene	1.016	1.048	-3.1	105	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.569	1.0	100	-0.01

SUS 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3245262	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2655474	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	957151	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	1006917	11.02	ug/l	0.00
Spiked Amount 10.000			Recovery = 110.20%			
38) 1,2-Dichloroethane-d4	9.32	65	672576	11.06	ug/l	-0.01
Spiked Amount 10.000			Recovery = 110.60%			
54) Toluene-d8	12.15	98	3975687	11.00	ug/l	-0.01
Spiked Amount 10.000			Recovery = 110.00%			
74) 4-Bromofluorobenzene	14.97	95	1234188	10.79	ug/l	-0.01
Spiked Amount 10.000			Recovery = 107.90%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	835274	8.37	ug/l	100
4) Chloromethane	2.10	50	1161255	9.74	ug/l	100
5) Vinyl chloride	2.24	62	1095208	9.36	ug/l	99
7) Bromomethane	2.63	94	634004	8.14	ug/l	100
8) Chloroethane	2.75	64	569814	8.80	ug/l	99
9) Dichlorofluoromethane	3.08	67	1618676	10.13	ug/l	100
10) Trichlorofluoromethane	3.14	101	1138894	10.51	ug/l	100
11) Acrolein	3.71	56	294623	52.35	ug/l	96
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	621550	9.15	ug/l	99
13) Acetone	3.93	43	513288	46.58	ug/l	99
14) 1,1-Dichloroethene	3.85	61	1402362	8.85	ug/l	99
15) Iodomethane	4.10	142	1797370	10.03	ug/l	100
16) Carbon disulfide	4.21	76	3637274	10.45	ug/l	100
17) Methyl acetate	4.54	43	289063	9.96	ug/l	99
18) Methylene chloride	4.77	49	1260186	9.43	ug/l	99
19) tert-Butyl alcohol	5.08	59	782946	259.05	ug/l	100
20) Acrylonitrile	5.23	53	646391	47.87	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1280291	9.16	ug/l	100
22) trans-1,2-Dichloroethene	5.31	61	1471529	9.39	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1846659	9.72	ug/l	99
25) Isopropyl ether (DIPE)	6.50	45	3061053	9.25	ug/l	100
26) 2-Butanol	8.29	45	723313	210.06	ug/l	100
27) tert-Butyl ethyl ether (ET	7.43	59	2106808	8.82	ug/l	99
28) 2-Butanone	7.73	43	894131	50.81	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	1076415	9.78	ug/l	99
30) 2,2-Dichloropropane	7.70	77	1167450	9.72	ug/l	100
31) Tetrahydrofurane	8.27	42	116974	10.37	ug/l	97

(#) = qualifier out of range (m) = manual integration

SG 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.18	49	791869	10.10 ug/l	98
33) Chloroform	8.45	83	1530083	9.75 ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	1178265	9.40 ug/l	99
36) Cyclohexane	8.84	84	1736396	9.74 ug/l	99
37) tert-Amyl methyl ether (TA	9.67	73	1723573	9.35 ug/l	100
39) 1,1-Dichloropropene	9.01	110	531339	10.00 ug/l	99
40) Carbon tetrachloride	9.00	119	1047641	9.97 ug/l	100
41) Benzene	9.34	78	4082361	10.52 ug/l	100
42) 1,2-Dichloroethane	9.46	62	738000	10.13 ug/l	99
43) 2,2,4-Trimethylpentane	9.62	57	4970151	9.48 ug/l	100
44) Trichloroethene	10.45	130	1188904	10.02 ug/l	100
45) Methylcyclohexane	10.78	83	2273785	11.36 ug/l	98
46) 1,2-Dichloropropane	10.81	63	1045127	9.98 ug/l	100
47) 1,4-Dioxane	10.97	88	70672	197.87 ug/l	99
48) Dibromomethane	10.94	93	407944	10.27 ug/l	99
49) Bromodichloromethane	11.22	83	1078052	10.58 ug/l	100
50) 2-Chloroethyl vinyl ether	11.64	63	329168	10.16 ug/l	98
51) cis-1,3-Dichloropropene	11.81	75	1413137	10.78 ug/l	99
52) 4-Methyl-2-pentanone	12.02	43	2441493	53.52 ug/l	100
55) Toluene	12.24	91	4121322	9.91 ug/l	100
56) Ethyl methacrylate	12.66	69	776375	10.47 ug/l	98
57) trans-1,3-Dichloropropene	12.57	75	1018200	10.38 ug/l	100
58) 1,1,2-Trichloroethane	12.80	97	570900	10.26 ug/l	100
59) Tetrachloroethene	12.91	164	911745	10.02 ug/l	99
60) 1,3-Dichloropropane	13.00	76	1114078	10.45 ug/l	99
61) 2-Hexanone	13.06	43	1610450	53.64 ug/l	100
62) Dibromochloromethane	13.25	129	731261	10.57 ug/l	100
63) 1,2-Dibromoethane	13.37	107	583740	10.45 ug/l	99
64) 1-Chlorohexane	13.87	91	1809636	9.61 ug/l	99
65) Chlorobenzene	13.89	112	2661607	10.19 ug/l	100
66) 1,1,1,2-Tetrachloroethane	13.97	131	851850	10.19 ug/l	100
67) Ethylbenzene	13.97	91	4702397	9.55 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	6998409	19.97 ug/l	100
69) o-Xylene	14.48	91	3381380	10.06 ug/l	100
70) Styrene	14.49	104	2868256	10.36 ug/l	100
72) Bromoform	14.67	173	350438	10.87 ug/l	99
73) Isopropylbenzene	14.80	105	4730111	9.46 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	689734	9.95 ug/l	99
76) Bromobenzene	15.10	156	996200	10.18 ug/l	99
77) trans-1,4-Dichloro-2-buten	15.10	53	137577	9.92 ug/l	91
78) 1,2,3-Trichloropropane	15.13	110	177107	10.54 ug/l	96

(#) = qualifier out of range (m) = manual integration

SA 5/18/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D Vial: 14
Acq On : 13 May 2020 7:32 pm Operator: VLu
Sample : IVO01E1301 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	n-Propylbenzene	15.17	91	5731622	9.91	ug/l	100
80)	1,3,5-Trimethylbenzene	15.31	105	3477829	9.86	ug/l	100
81)	2-Chlorotoluene	15.25	91	2741409	9.88	ug/l	99
82)	4-Chlorotoluene	15.35	91	3244216	9.87	ug/l	99
83)	tert-Butylbenzene	15.57	134	921806	9.67	ug/l	74
84)	1,2,4-Trimethylbenzene	15.62	105	3472310	10.18	ug/l	99
85)	sec-Butylbenzene	15.75	105	5175831	9.85	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3951312	9.87	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1848134	10.14	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	1729312	9.76	ug/l	100
89)	1,2,3-Trimethylbenzene	15.94	105	2898244	9.25	ug/l	100
90)	n-Butylbenzene	16.18	91	3665738	10.08	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1471950	9.85	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	82234	10.06	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	746168	10.16	ug/l	100
94)	Hexachlorobutadiene	17.59	225	540537	9.64	ug/l	99
95)	Naphthalene	17.72	128	1003542	10.32	ug/l	99
96)	1,2,3-Trichlorobenzene	17.91	180	544806	9.91	ug/l	99

Su 5/18/20

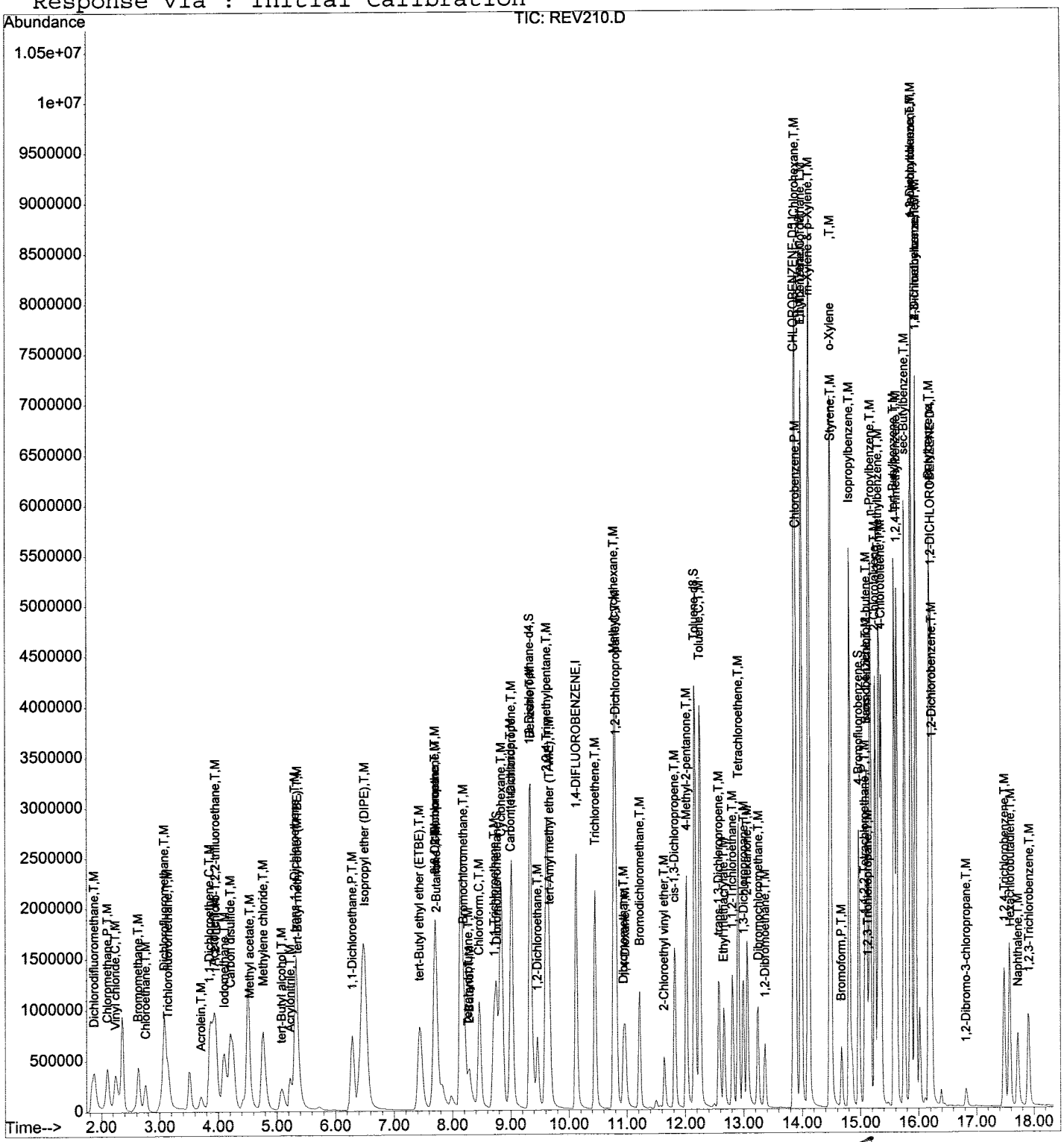
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E13\REV210.D
Acq On : 13 May 2020 7:32 pm
Sample : IVO01E1301
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: May 14 17:44 2020

Vial: 14
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



5/18/20

INITIAL CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: ICAL
Lab Code: EMXT Case No.: SAS No.: SDG No.: ICAL
Lab File ID: REV212 BFB Injection Date : 05/14/20
Instrument ID: 01 BFB Injection Time : 16:40
GC Column:RXI-624SILMS ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.28
75	30.0 - 60.0% of mass 95	42.92
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.98
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	81.50
175	5.0 - 9.0% of mass 174	5.64(6.9)1
176	95.0 - 101.0% of mass 174	77.50(95.1)1
177	5.0 - 9.0% of mass 176	5.13(6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD01	V001E141	REV213	05/14/20	17:31
2	VSTD02	V001E142	REV214	05/14/20	17:59
3	VSTD05	V001E143	REV215	05/14/20	18:26
4	VSTD010	V001E144	REV216	05/14/20	18:53
5	VSTD020	V001E145	REV217	05/14/20	19:20
6	VSTD030	V001E146	REV218	05/14/20	19:48
7	VSTD010	IV001E1401	REV219	05/14/20	20:17

SU 5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :VO01E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	0.165	0.239	0.259	0.305	0.356	0.350	0.279	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

Ave_%RSD : 26.1 Max_%RSD : 26.1

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
2	Vinyl acetate	-0.02369	0.35322	0.9980

SM
5/18/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :01
Beginning DateTime :05/14/20 17:31
Spike Units :PPB
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
Ending DateTime :05/14/20 19:48
HPChem Method :V001E14

		1	2	5	10	20	30			
		17:31	17:59	18:26	18:53	19:20	19:48			
M	IDX	Parameters	REV213	REV214	REV215	REV216	REV217	REV218	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	0	10.1249
	2	Vinyl acetate	114	101	87	93	104	101	6.7	26.14	6.4270
	3	CHLOROBENZENE-D5	1	1	1	1	1	1	1	0	13.8567
	4	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	0	16.2113

For 8260 C

SM

5/18/20

Compound List Report 01

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
Total Cpnds : 4

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	10.12	1.000	A	1	A	B
2	T	Vinyl acetate	43	6.41	0.633	L	1	A	B
3	I	CHLOROBENZENE-D5	117	13.86	1.000	A	2	A	B
4	I	1,2-DICHLOROBENZENE-D4	152	16.21	1.000	A	1	A	B

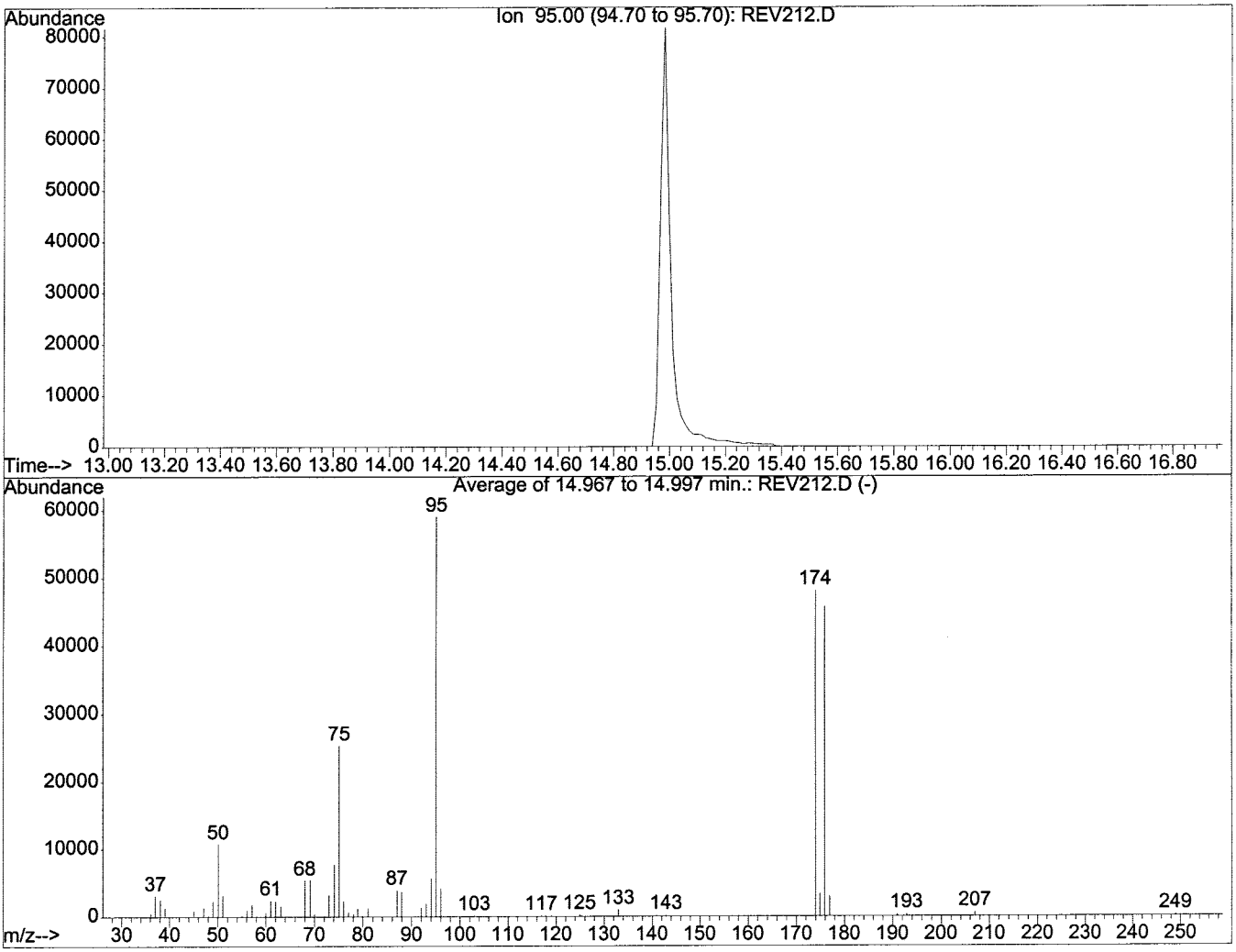
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO01E14.M Fri May 15 11:55:17 2020

SM
5/18/20

Data File : D:\HPCHEM\1\DATA\20E14\REV212.D
Acq On : 14 May 2020 4:40 pm
Sample : BFB01E10
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 782

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	10796	PASS
75	95	30	60	42.9	25347	PASS
95	95	100	100	100.0	59053	PASS
96	95	5	9	7.0	4122	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.5	48131	PASS
175	174	5	9	6.9	3328	PASS
176	174	95	101	95.1	45768	PASS
177	176	5	9	6.6	3031	PASS

SU 5/18/20

REV212.D VO01E14.M Fri May 15 11:35:24 2020

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3326579	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2719976	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	925504	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.48	43	54933	1.14	ug/l	97

SM
5/18/20

(#) = qualifier out of range (m) = manual integration
REV213.D VO01E14.M Fri May 15 11:52:36 2020 Page 1

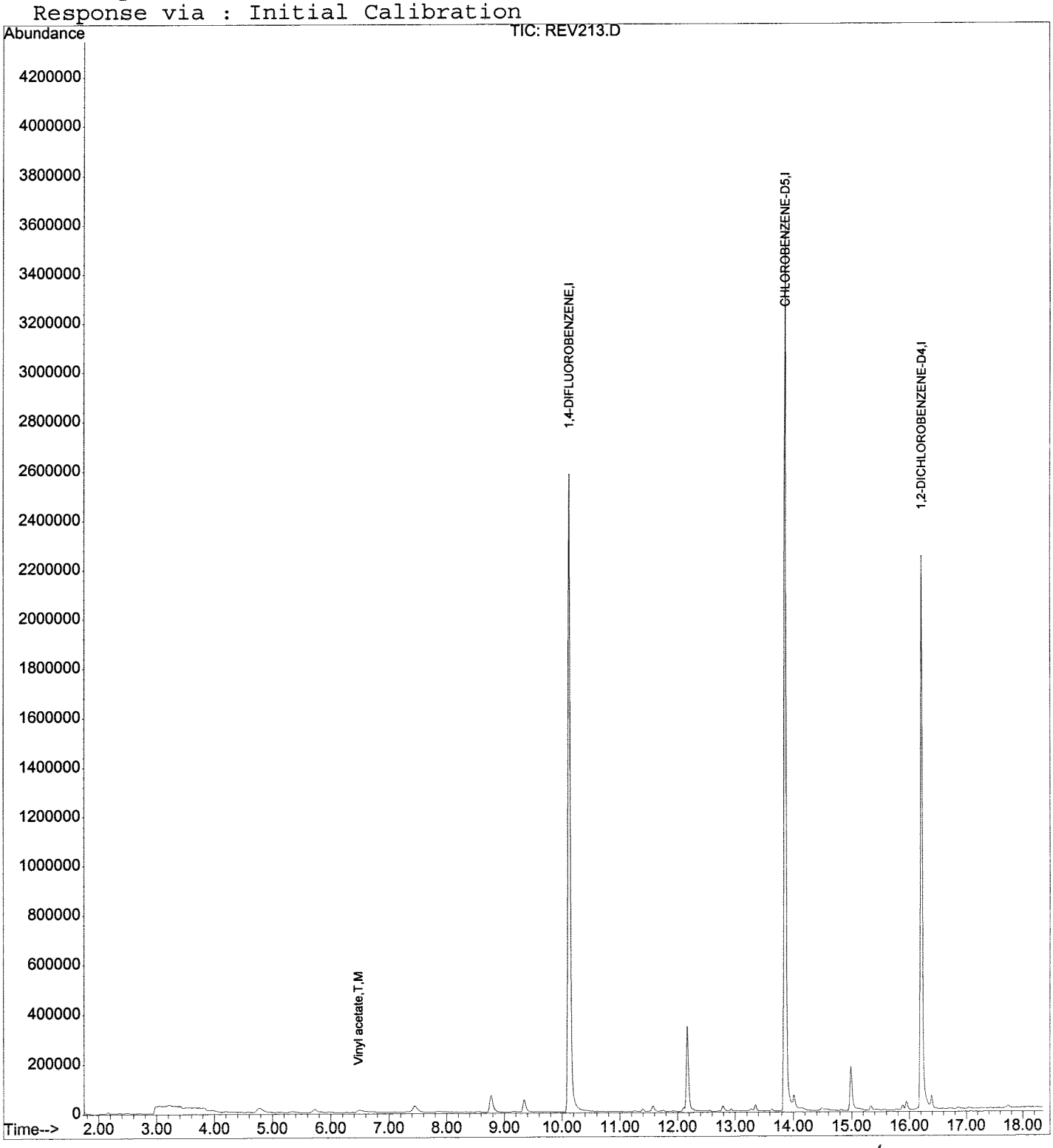
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV213.D
Acq On : 14 May 2020 5:31 pm
Sample : VO01E141
Misc : 1.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3246029	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2751412	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	957167	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.45	43	154840	2.02	ug/l	100

SU 5/18/20

(#) = qualifier out of range (m) = manual integration
REV214.D VO01E14.M Fri May 15 11:52:53 2020 Page 1

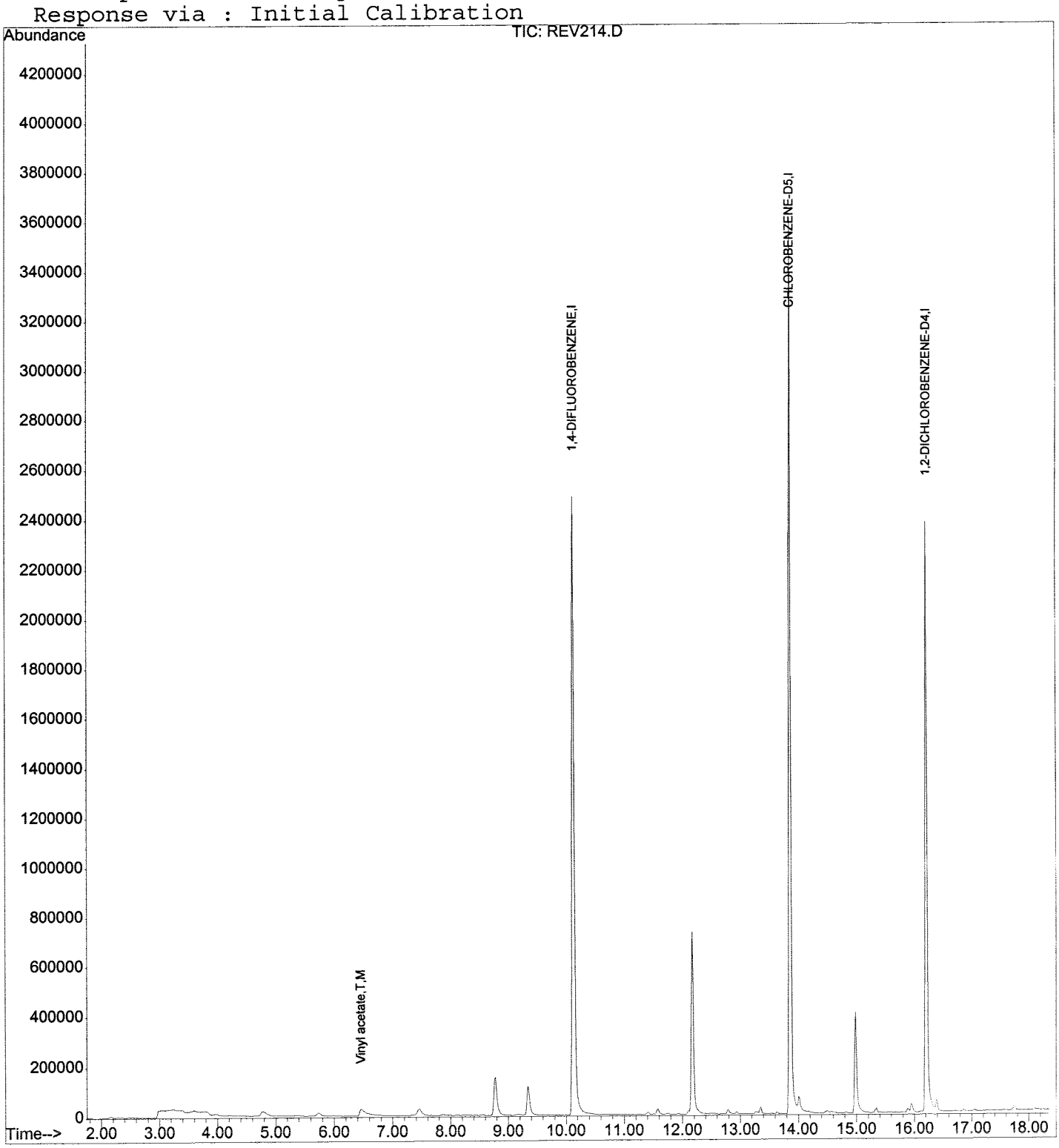
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV214.D
Acq On : 14 May 2020 5:59 pm
Sample : VO01E142
Misc : 2.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 3
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D
Acq On : 14 May 2020 6:26 pm
Sample : VO01E143
Misc : 5.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 4
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3257045	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2685056	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	920046	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.43	43	422325	4.34	ug/l	99

Su 5/18/20

(#) = qualifier out of range (m) = manual integration

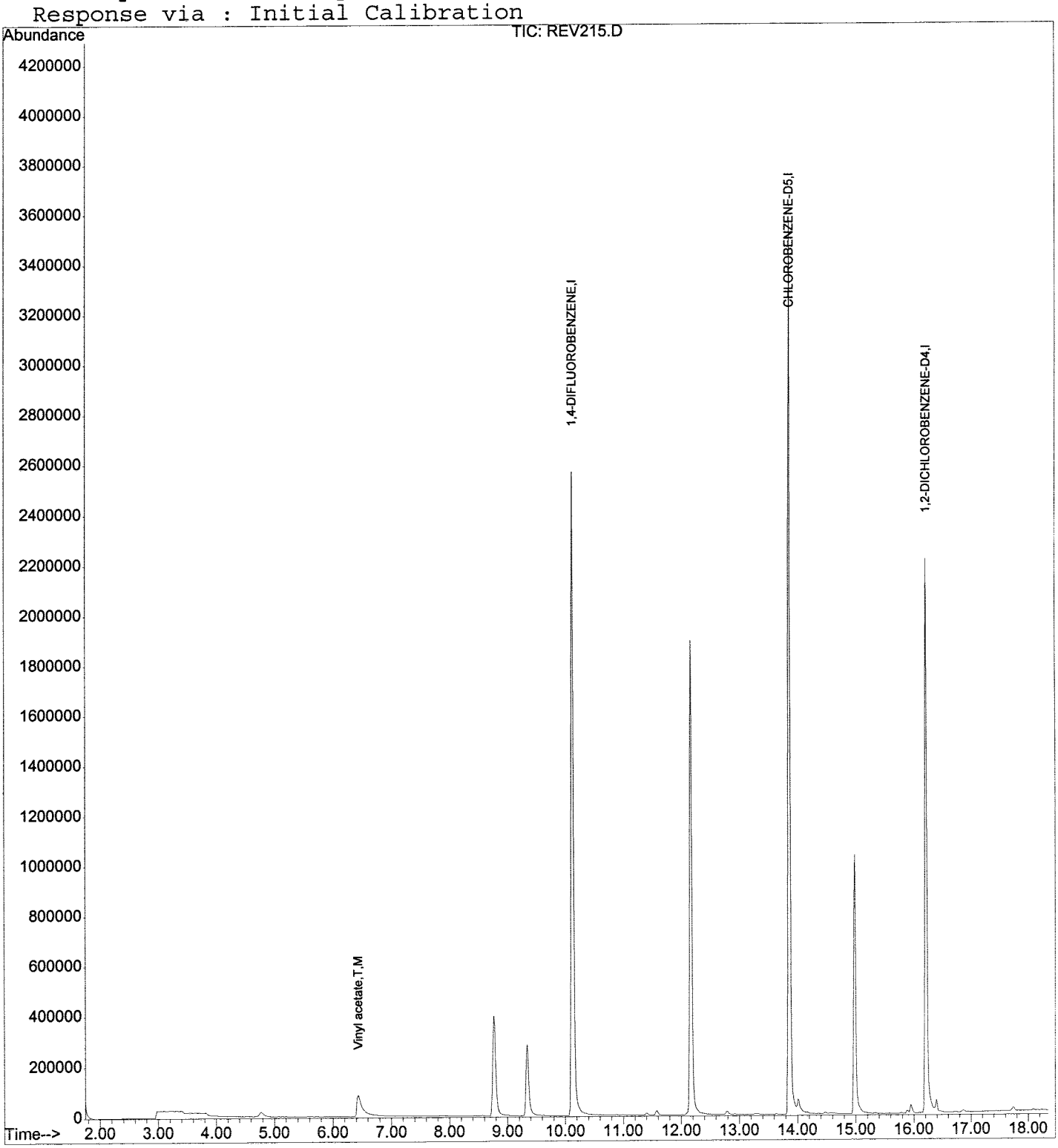
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV215.D
Acq On : 14 May 2020 6:26 pm
Sample : VO01E143
Misc : 5.0ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 4
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3148628	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2661281	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	903830	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.41	43	958998	9.29	ug/l	100

(#) = qualifier out of range (m) = manual integration

REV216.D VO01E14.M Fri May 15 11:52:20 2020

SA 5/18/20

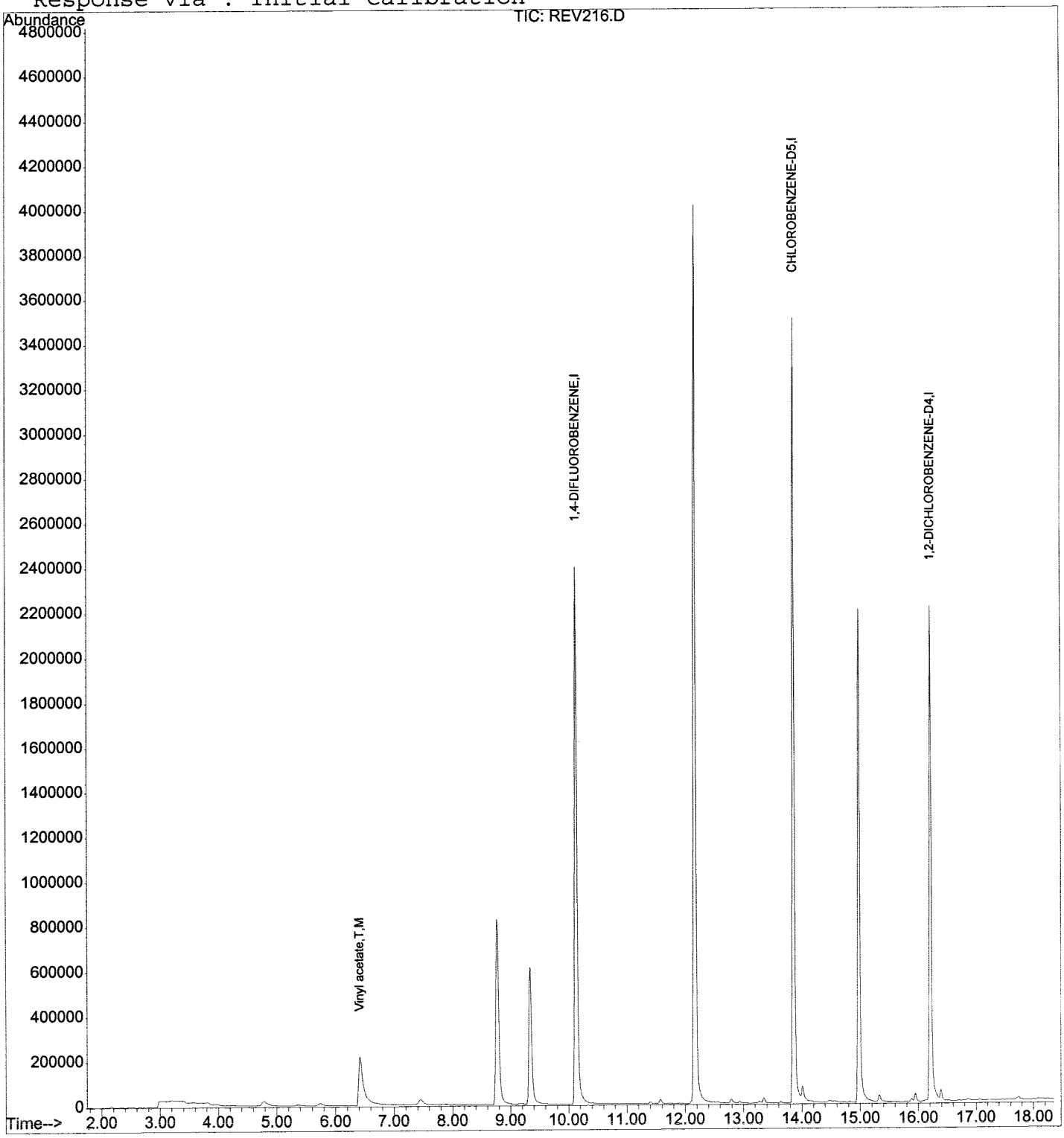
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV216.D
Acq On : 14 May 2020 6:53 pm
Sample : VO01E144
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:52 2020

Vial: 5
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3034475	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2602560	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	894519	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.39	43	2157955	20.80	ug/l	100

Su 5/18/20

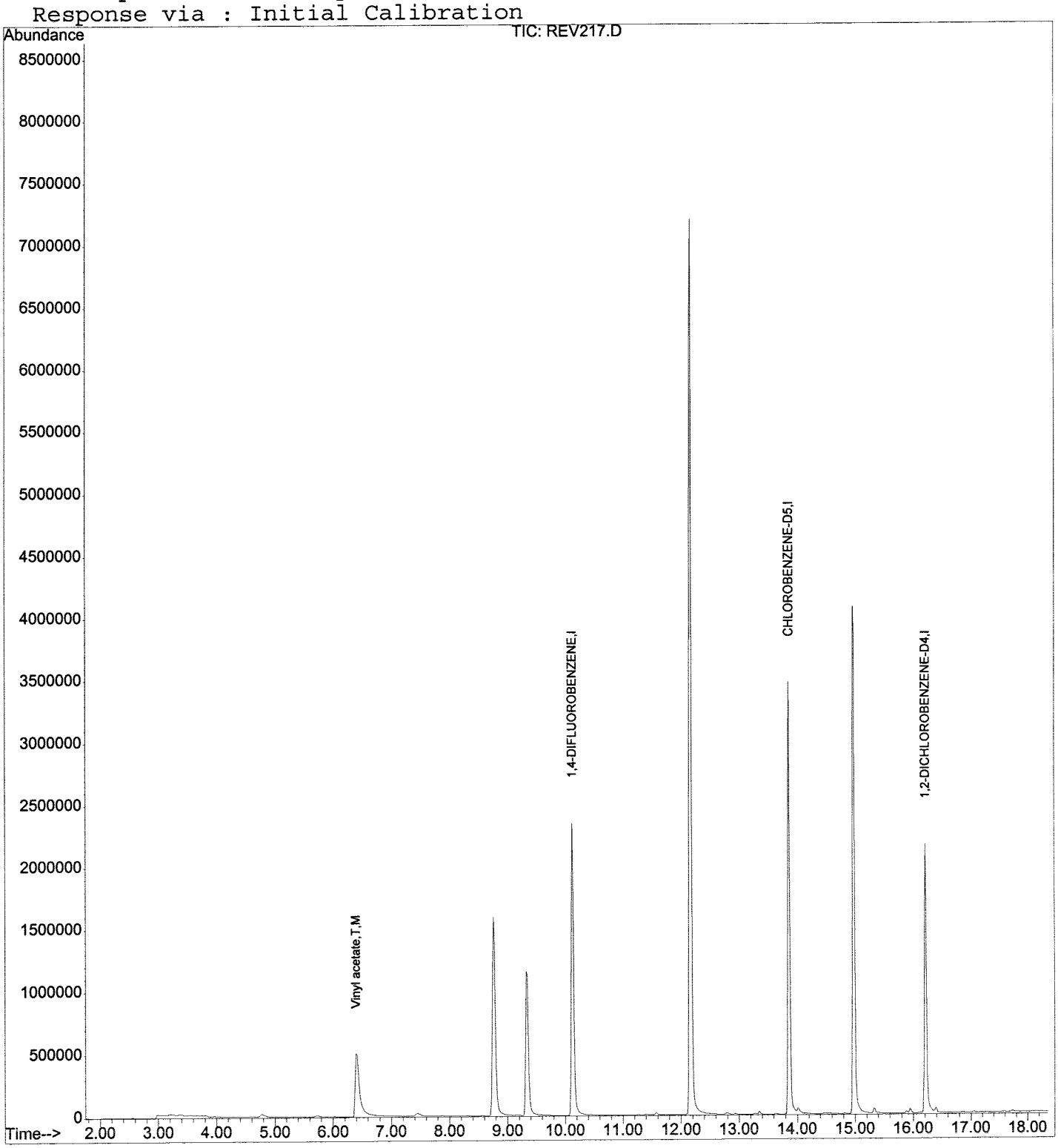
(#) = qualifier out of range (m) = manual integration
REV217.D VO01E14.M Fri May 15 11:53:40 2020 Page 1

Data File : D:\HPCHEM\1\DATA\20E14\REV217.D
Acq On : 14 May 2020 7:20 pm
Sample : VO01E145
Misc : 20ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 6
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3111434	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2585038	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	902599	10.00	ug/l	0.00
Target Compounds						**Qvalue**
2) Vinyl acetate	6.39	43	3267501	30.40	ug/l	100

(#) = qualifier out of range (m) = manual integration
REV218.D VO01E14.M Fri May 15 11:54:05 2020 S 4 5/18/20 Page 1

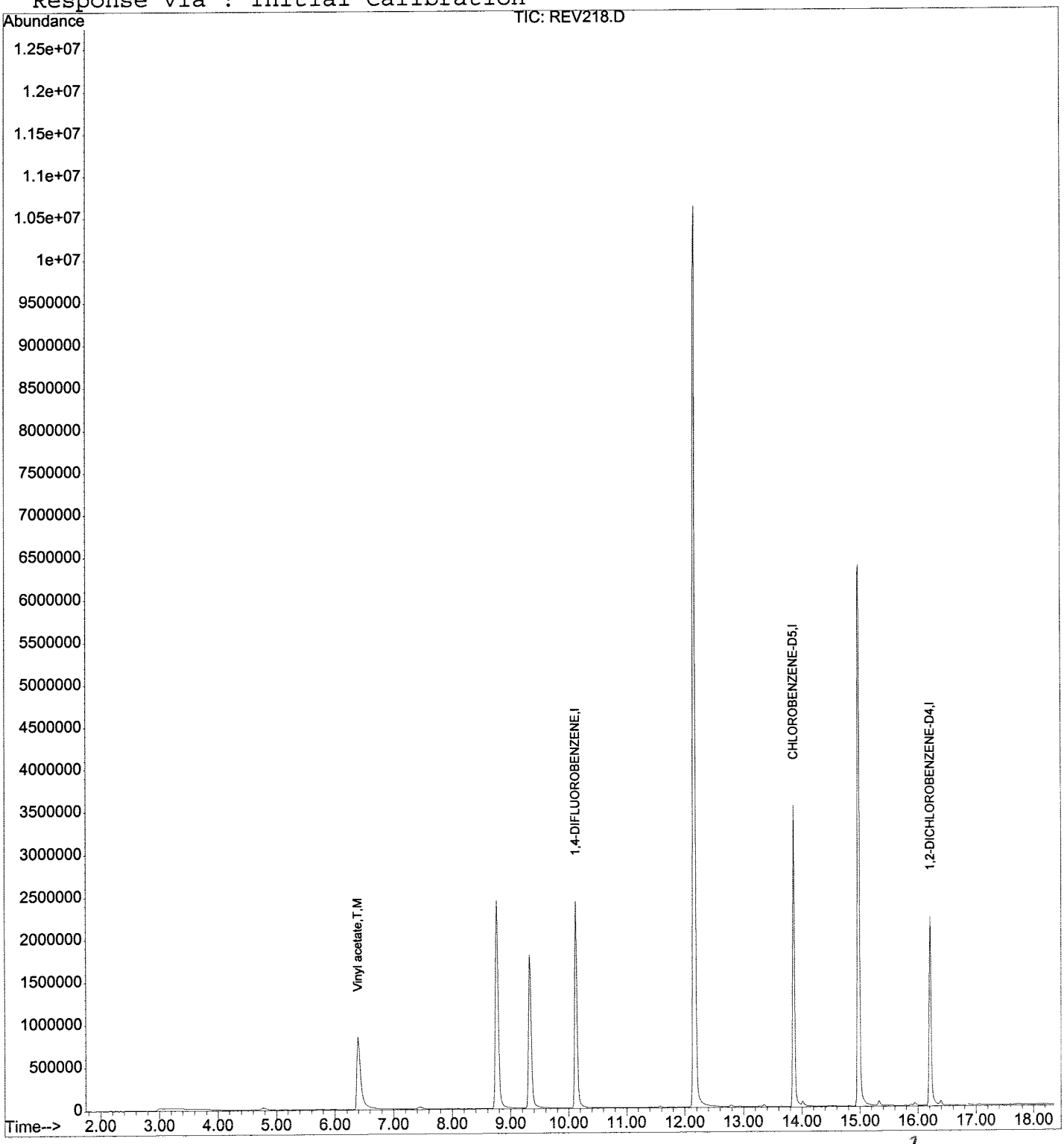
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV218.D
Acq On : 14 May 2020 7:48 pm
Sample : VO01E146
Misc : 30ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:53 2020

Vial: 7
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :01
IC_Beginning DateTime :05/14/20 17:31
Spike Amount :10 PPB
CC/CV File :REV219
IC File :REV216

Column Spec :RXI-624SILMS ID :0.25MM
IC_Ending DateTime :05/14/20 19:48
HPChem Method :V001E14
Date_Time :05/14/20 20:17

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-DIFLUOROBENZENE	10.000	0	3074649	1	1	10.124	10.125	0				
2	Vinyl acetate	9.844	-1.6	996265	0.324	0.279	6.413	6.427	26.14	-0.0237	0.3532		0.9980
3	CHLOROBENZENE-D5	10.000	0	2594947	1	1	13.856	13.857	0				
4	1,2-DICHLOROBENZENE-D4	10.000	0	883852	1	1	16.211	16.211	0				

SU
5/18/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	98	0.00
2	T,M	Vinyl acetate	10.000	9.844	1.6	104	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	98	0.00

SA 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00
2	T,M	Vinyl acetate	0.279	0.324	-16.1	104	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	98	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	98	0.00

SU 5/18/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00
Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3074649	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2594947	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	883852	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	996265	9.84	ug/l	100

5/18/20

(#) = qualifier out of range (m) = manual integration
REV219.D VO01E14.M Fri May 15 11:54:35 2020 Page 1

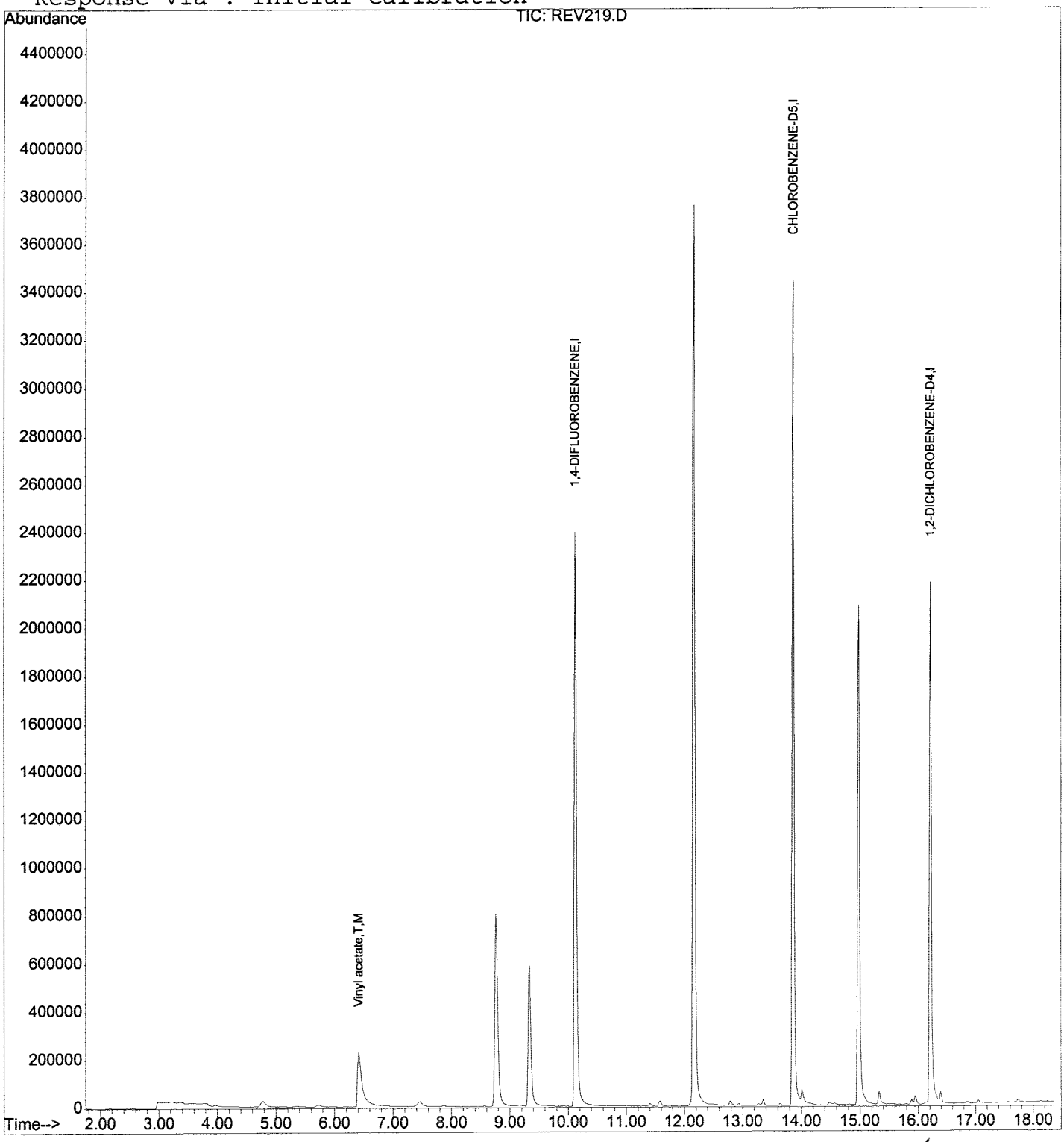
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20E14\REV219.D
Acq On : 14 May 2020 8:17 pm
Sample : IVO01E1401
Misc : 10ppb
MS Integration Params: RTE.P
Quant Time: May 15 11:54 2020

Vial: 8
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



SU 5/18/20

DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F183
Lab File ID: RFV356 BFB Injection Date : 06/29/20
Instrument ID: 01 BFB Injection Time : 10:32
GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.24
75	30.0 - 60.0% of mass 95	42.72
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.86
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	76.63
175	5.0 - 9.0% of mass 174	5.36(7.0)1
176	95.0 - 101.0% of mass 174	74.57(97.3)1
177	5.0 - 9.0% of mass 176	4.97(6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV001E1325	RFV357	06/29/20	11:21
2	MBLK1W	V001F17B	RFV361	06/29/20	13:21
3	LCS1W	V001F17L	RFV358	06/29/20	12:01
4	LCD1W	V001F17C	RFV359	06/29/20	12:28
5	TB14-GW062220	F183-04	RFV368	06/29/20	17:05
6	TB13-GW062220	F183-09	RFV369	06/29/20	17:31
7	TB15-GW062220	F183-10	RFV371	06/29/20	18:25
8	EB01-GW062120	F183-11	RFV372	06/29/20	18:52
9	TB16-GW062220	F183-17	RFV373	06/29/20	19:21
10	MW17S-GW062120	F183-01	RFV374	06/29/20	19:49
11	MW17D-GW062120	F183-02	RFV375	06/29/20	20:16
12	MW06-GW062120	F183-03	RFV376	06/29/20	20:44
13	MW16S-GW062120	F183-05	RFV377	06/29/20	21:11
14	MW16D-GW062120	F183-06	RFV378	06/29/20	21:39
15	MW04-GW062120	F183-07	RFV379	06/29/20	22:07

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	2782201	10.12	2317168	13.86	764401	16.21
2	MBLK1W	2857990	10.13	2329130	13.86	729540	16.21
3	LCS1W	2775829	10.12	2289223	13.86	758157	16.21
4	LCD1W	2832970	10.13	2324325	13.86	792881	16.21
5	TB14-GW062220	2705236	10.13	2131161	13.86	622737	16.21
6	TB13-GW062220	2759975	10.14	2267073	13.86	665820	16.21
7	TB15-GW062220	2709287	10.14	2209541	13.86	686997	16.21
8	EB01-GW062120	2600005	10.13	2154505	13.86	639699	16.21
9	TB16-GW062220	2686424	10.13	2212405	13.86	677978	16.21
10	MW17S-GW062120	2771556	10.12	2298885	13.86	713443	16.21
11	MW17D-GW062120	2720925	10.13	2244688	13.86	710344	16.21
12	MW06-GW062120	2604201	10.12	2155775	13.86	652870	16.21
13	MW16S-GW062120	2613759	10.12	2161140	13.86	667235	16.21
14	MW16D-GW062120	2611426	10.13	2175153	13.86	660250	16.21
15	MW04-GW062120	2644239	10.12	2185713	13.86	687373	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

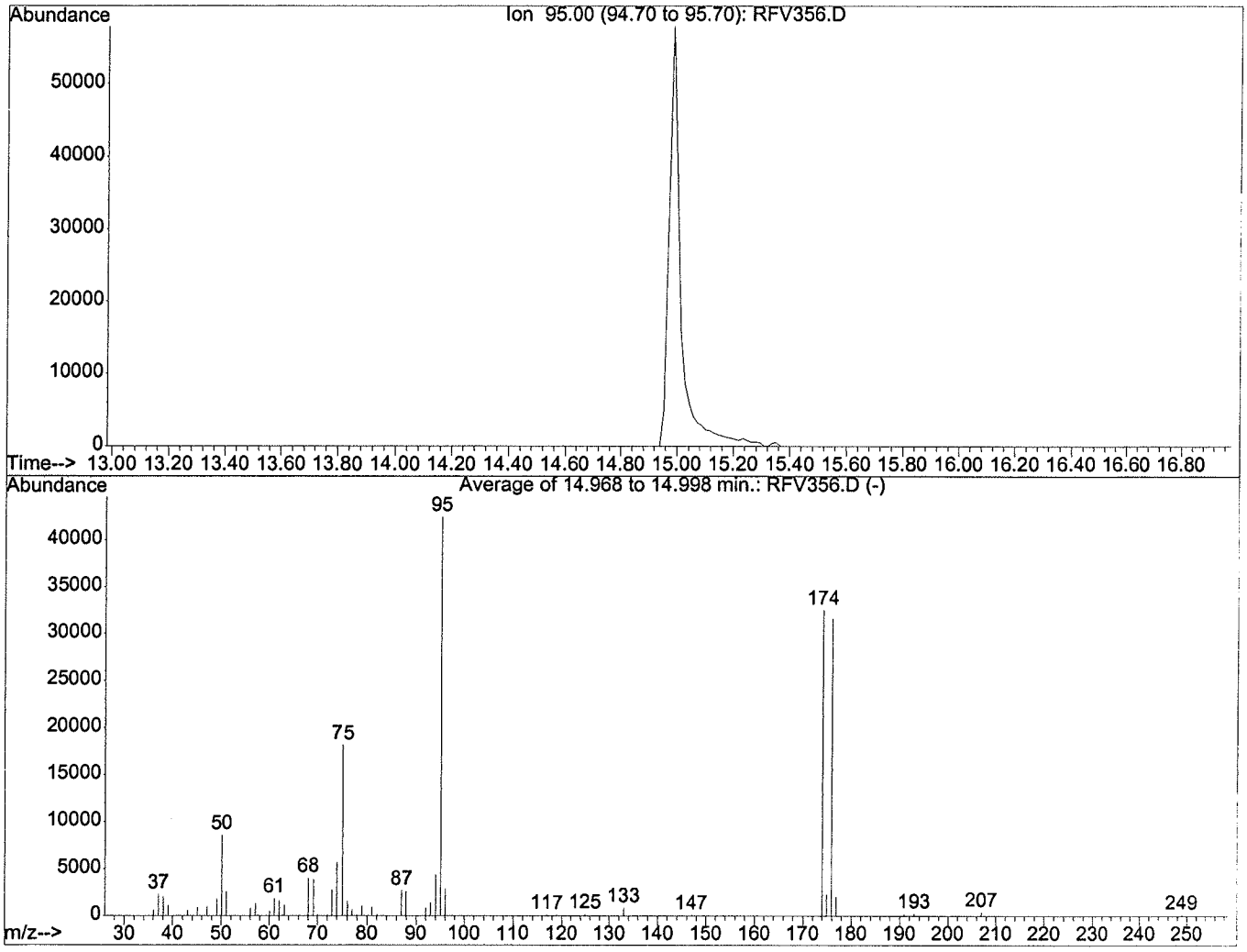
Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	2782259	10.12	2300239	13.86	764426	16.21
2	MBLK1W	2858050	10.13	2313332	13.86	729518	16.21
3	LCS1W	2775775	10.12	2279035	13.86	758132	16.21
4	LCD1W	2832915	10.13	2314561	13.86	792907	16.21
5	TB14-GW062220	2705183	10.13	2119198	13.86	622719	16.21
6	TB13-GW062220	2759922	10.14	2257203	13.86	665801	16.21
7	TB15-GW062220	2686552	10.14	2203042	13.86	677958	16.21
8	EB01-GW062120	2599954	10.13	2143367	13.86	639720	16.21
9	TB16-GW062220	2686372	10.13	2197420	13.86	677955	16.21
10	MW17S-GW062120	2771503	10.12	2286573	13.86	713467	16.21
11	MW17D-GW062120	2720872	10.13	2229786	13.86	710321	16.21
12	MW06-GW062120	2604151	10.12	2143887	13.86	652851	16.21
13	MW16S-GW062120	2613709	10.12	2148116	13.86	667213	16.21
14	MW16D-GW062120	2611485	10.13	2156937	13.86	660231	16.21
15	MW04-GW062120	2644188	10.12	2155378	13.86	687396	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F29\RFV356.D Vial: 1
Acq On : 29 Jun 2020 10:32 am Operator: VLu
Sample : BFB01F17 Inst : 01
Misc : T/CHK Multiplr: 1.00
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 781

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	8598	PASS
75	95	30	60	42.7	18149	PASS
95	95	100	100	100.0	42485	PASS
96	95	5	9	6.9	2913	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.6	32557	PASS
175	174	5	9	7.0	2275	PASS
176	174	95	101	97.3	31679	PASS
177	176	5	9	6.7	2113	PASS

RFV356.D VO01E13.M Tue Jun 30 11:07:31 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	88	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	10.859	-8.6	95	0.00
4	P,T,M	Chloromethane	10.000	10.776	-7.8	93	0.00
5	C,T,M	Vinyl chloride	10.000	11.084	-10.8	93	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	10.879	-8.8	88	0.00
8	T,M	Chloroethane	10.000	12.551	-25.5#	104	0.01
9	T,M	Dichlorofluoromethane	10.000	10.292	-2.9	91	0.00
10	T,M	Trichlorofluoromethane	10.000	11.766	-17.7	99	0.00
11	T,M	Acrolein	50.000	53.804	-7.6	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.190	8.1	80	0.00
13	T,M	Acetone	50.000	54.311	-8.6	95	0.02
14	C,T,M	1,1-Dichloroethene	10.000	8.994	10.1	78	0.02
15	T,M	Iodomethane	10.000	8.280	17.2	72	0.00
16	T,M	Carbon disulfide	10.000	9.290	7.1	79	0.00
17	T,M	Methyl acetate	10.000	9.929	0.7	83	0.02
18	T,M	Methylene chloride	10.000	9.982	0.2	89	0.00
19	T,M	tert-Butyl alcohol	250.000	239.710	4.1	78	0.00
20	T,M	Acrylonitrile	50.000	54.000	-8.0	95	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.970	0.3	85	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.305	7.0	80	0.02
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	0.02
24	P,T,M	1,1-Dichloroethane	10.000	10.137	-1.4	88	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	10.585	-5.9	91	0.00
26	T,M	2-Butanol	250.000	224.797	10.1	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.647	3.5	87	0.00
28	T,M	2-Butanone	50.000	53.527	-7.1	90	0.02
29	T,M	cis-1,2-Dichloroethene	10.000	9.808	1.9	86	0.00
30	T,M	2,2-Dichloropropane	10.000	10.790	-7.9	95	0.02
31	T,M	Tetrahydrofurane	10.000	9.630	3.7	78	0.00
32	T,M	Bromochloromethane	10.000	10.249	-2.5	88	0.00
33	C,T,M	Chloroform	10.000	10.234	-2.3	89	0.00
34	S	Dibromofluoromethane	10.000	10.339	-3.4	82	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.864	1.4	88	0.00
36	T,M	Cyclohexane	10.000	10.208	-2.1	91	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	10.014	-0.1	86	0.00
38	S	1,2-Dichloroethane-d4	10.000	10.572	-5.7	84	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.510	4.9	81	0.00
40	T,M	Carbon tetrachloride	10.000	10.352	-3.5	88	0.00
41	T,M	Benzene	10.000	9.959	0.4	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.355	-3.6	88	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	9.711	2.9	84	-0.01
45	T,M	Methylcyclohexane	10.000	10.837	-8.4	90	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	10.429	-4.3	88	0.00
47	T,M	1,4-Dioxane	200.000	174.155	12.9	74	0.00
48	T,M	Dibromomethane	10.000	9.981	0.2	83	-0.01
49	T,M	Bromodichloromethane	10.000	10.576	-5.8	89	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	7.192	28.1#	62	0.00
51	T,M	cis-1,3-Dichloropropene	10.000	10.345	-3.5	87	0.00
52	T,M	4-Methyl-2-pentanone	50.000	55.860	-11.7	90	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	-0.01
54	S	Toluene-d8	10.000	9.840	1.6	80	0.00
55	C,T,M	Toluene	10.000	9.647	3.5	84	0.00
56	T,M	Ethyl methacrylate	10.000	9.206	7.9	77	0.00
57	T,M	trans-1,3-Dichloropropene	10.000	10.298	-3.0	88	0.00
58	T,M	1,1,2-Trichloroethane	10.000	10.294	-2.9	87	-0.01
59	T,M	Tetrachloroethene	10.000	9.223	7.8	80	-0.01
60	T,M	1,3-Dichloropropane	10.000	9.932	0.7	84	-0.01
61	T,M	2-Hexanone	50.000	54.399	-8.8	88	0.00
62	T,M	Dibromochloromethane	10.000	10.544	-5.4	87	-0.01
63	T,M	1,2-Dibromoethane	10.000	9.912	0.9	81	-0.01
64	T,M	1-Chlorohexane	10.000	9.398	6.0	82	-0.01
65	P,M	Chlorobenzene	10.000	9.984	0.2	86	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.544	-5.4	88	-0.01
67	C,T,M	Ethylbenzene	10.000	9.600	4.0	83	0.00
68	T,M	m-Xylene & p-Xylene	20.000	19.326	3.4	81	-0.01
69	T,M	o-Xylene	10.000	9.725	2.8	82	-0.01
70	T,M	Styrene	10.000	9.805	2.0	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	81	-0.01
72	P,T,M	Bromoform	10.000	11.128	-11.3	85	-0.01
73	T,M	Isopropylbenzene	10.000	10.127	-1.3	84	-0.01
74	S	4-Bromofluorobenzene	10.000	10.547	-5.5	82	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	10.767	-7.7	84	-0.01
76	T,M	Bromobenzene	10.000	10.475	-4.7	84	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	10.005	-0.1	85	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	10.744	-7.4	84	-0.01
79	T,M	n-Propylbenzene	10.000	10.219	-2.2	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	10.000	10.465	-4.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.429	-4.3	82	-0.01
82	T,M	4-Chlorotoluene	10.000	10.175	-1.8	82	-0.01
83	T,M	tert-Butylbenzene	10.000	10.219	-2.2	83	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	10.354	-3.5	85	-0.01
85	T,M	sec-Butylbenzene	10.000	10.249	-2.5	83	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.889	1.1	81	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	9.978	0.2	79	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.735	2.7	80	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	10.232	-2.3	83	-0.01
90	T,M	n-Butylbenzene	10.000	9.861	1.4	78	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.809	1.9	82	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.740	2.6	78	0.00
93	T,M	1,2,4-Trichlorobenzene	10.000	10.033	-0.3	80	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.641	3.6	78	-0.01
95	T,M	Naphthalene	10.000	9.685	3.1	78	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	10.286	-2.9	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	88	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.334	-8.4	95	0.00
4	P,T,M	Chloromethane	0.368	0.396	-7.6	93	0.00
5	C,T,M	Vinyl chloride	0.360	0.399	-10.8	93	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.261	-8.8	88	0.00
8	T,M	Chloroethane	0.200	0.250	-25.0#	104	0.01
9	T,M	Dichlorofluoromethane	0.493	0.507	-2.8	91	0.00
10	T,M	Trichlorofluoromethane	0.334	0.393	-17.7	99	0.00
11	T,M	Acrolein	0.017	0.019	-11.8	93	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.192	8.1	80	0.00
13	T,M	Acetone	0.034	0.037	-8.8	95	0.02
14	C,T,M	1,1-Dichloroethene	0.488	0.439	10.0	78	0.02
15	T,M	Iodomethane	0.552	0.457	17.2	72	0.00
16	T,M	Carbon disulfide	1.072	0.996	7.1	79	0.00
17	T,M	Methyl acetate	0.089	0.089	0.0	83	0.02
18	T,M	Methylene chloride	0.412	0.411	0.2	89	0.00
19	T,M	tert-Butyl alcohol	0.009	0.009	0.0	78	0.00
20	T,M	Acrylonitrile	0.042	0.045	-7.1	95	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.429	0.5	85	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.449	7.0	80	0.02
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.594	-1.4	88	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.079	-5.8	91	0.00
26	T,M	2-Butanol	0.010	0.010	0.0	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.710	3.5	87	0.00
28	T,M	2-Butanone	0.054	0.058	-7.4	90	0.02
29	T,M	cis-1,2-Dichloroethene	0.339	0.333	1.8	86	0.00
30	T,M	2,2-Dichloropropane	0.370	0.399	-7.8	95	0.02
31	T,M	Tetrahydrofurane	0.035	0.033	5.7	78	0.00
32	T,M	Bromochloromethane	0.242	0.248	-2.5	88	0.00
33	C,T,M	Chloroform	0.484	0.495	-2.3	89	0.00
34	S	Dibromofluoromethane	0.281	0.291	-3.6	82	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.381	1.3	88	0.00
36	T,M	Cyclohexane	0.549	0.561	-2.2	91	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.569	-0.2	86	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.198	-5.9	84	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.156	4.9	81	0.00
40	T,M	Carbon tetrachloride	0.324	0.335	-3.4	88	0.00
41	T,M	Benzene	1.196	1.191	0.4	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.233	-3.6	88	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.355	3.0	84	-0.01
45	T,M	Methylcyclohexane	0.617	0.668	-8.3	90	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.336	-4.0	88	0.00
47	T,M	1,4-Dioxane	0.001	0.001	0.0	74	0.00
48	T,M	Dibromomethane	0.122	0.122	0.0	83	-0.01
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	89	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.072	28.0#	62	0.00
51	T,M	cis-1,3-Dichloropropene	0.404	0.418	-3.5	87	0.00
52	T,M	4-Methyl-2-pentanone	0.141	0.157	-11.3	90	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	-0.01
54	S	Toluene-d8	1.361	1.339	1.6	80	0.00
55	C,T,M	Toluene	1.566	1.511	3.5	84	0.00
56	T,M	Ethyl methacrylate	0.279	0.257	7.9	77	0.00
57	T,M	trans-1,3-Dichloropropene	0.369	0.380	-3.0	88	0.00
58	T,M	1,1,2-Trichloroethane	0.210	0.216	-2.9	87	-0.01
59	T,M	Tetrachloroethene	0.343	0.316	7.9	80	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.399	0.7	84	-0.01
61	T,M	2-Hexanone	0.113	0.123	-8.8	88	0.00
62	T,M	Dibromochloromethane	0.260	0.275	-5.8	87	-0.01
63	T,M	1,2-Dibromoethane	0.210	0.208	1.0	81	-0.01
64	T,M	1-Chlorohexane	0.709	0.666	6.1	82	-0.01
65	P,M	Chlorobenzene	0.983	0.982	0.1	86	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.332	-5.4	88	-0.01
67	C,T,M	Ethylbenzene	1.854	1.780	4.0	83	0.00
68	T,M	m-Xylene & p-Xylene	1.319	1.275	3.3	81	-0.01
69	T,M	o-Xylene	1.265	1.231	2.7	82	-0.01
70	T,M	Styrene	1.043	1.023	1.9	83	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	81	-0.01
72	P,T,M	Bromoform	0.337	0.375	-11.3	85	-0.01
73	T,M	Isopropylbenzene	5.225	5.291	-1.3	84	-0.01
74	S	4-Bromofluorobenzene	1.196	1.261	-5.4	82	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.780	-7.6	84	-0.01
76	T,M	Bromobenzene	1.022	1.071	-4.8	84	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.145	0.0	85	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.189	-7.4	84	-0.01
79	T,M	n-Propylbenzene	6.044	6.176	-2.2	82	-0.01
80	T,M	1,3,5-Trimethylbenzene	3.686	3.857	-4.6	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	3.025	-4.3	82	-0.01
82	T,M	4-Chlorotoluene	3.434	3.494	-1.7	82	-0.01
83	T,M	tert-Butylbenzene	0.996	1.017	-2.1	83	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.689	-3.5	85	-0.01
85	T,M	sec-Butylbenzene	5.490	5.626	-2.5	83	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.137	1.1	81	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.900	0.3	79	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.802	2.6	80	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.348	-2.3	83	-0.01
90	T,M	n-Butylbenzene	3.799	3.746	1.4	78	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.532	1.9	82	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.083	2.4	78	0.00
93	T,M	1,2,4-Trichlorobenzene	0.768	0.770	-0.3	80	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.565	3.6	78	-0.01
95	T,M	Naphthalene	1.016	0.984	3.1	78	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.591	-2.8	83	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2782201	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2317168	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.21	152	764401	10.00	ug/l	-0.01
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	809642	10.34	ug/l	0.00
Spiked Amount 10.000			Recovery = 103.40%			
38) 1,2-Dichloroethane-d4	9.33	65	551378	10.57	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.70%			
54) Toluene-d8	12.17	98	3103503	9.84	ug/l	0.00
Spiked Amount 10.000			Recovery = 98.40%			
74) 4-Bromofluorobenzene	14.97	95	963822	10.55	ug/l	-0.01
Spiked Amount 10.000			Recovery = 105.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.88	85	929503	10.86	ug/l	97
4) Chloromethane	2.10	50	1101854	10.78	ug/l	98
5) Vinyl chloride	2.25	62	1111392	11.08	ug/l	97
7) Bromomethane	2.63	94	726799	10.88	ug/l	100
8) Chloroethane	2.76	64	696758	12.55	ug/l	99
9) Dichlorofluoromethane	3.08	67	1410529	10.29	ug/l	99
10) Trichlorofluoromethane	3.14	101	1092903	11.77	ug/l	99
11) Acrolein	3.71	56	259620	53.80	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.95	151	535348	9.19	ug/l	98
13) Acetone	3.95	43	513090	54.31	ug/l	97
14) 1,1-Dichloroethene	3.87	61	1221936	8.99	ug/l	98
15) Iodomethane	4.10	142	1271742	8.28	ug/l	98
16) Carbon disulfide	4.20	76	2771238	9.29	ug/l	100
17) Methyl acetate	4.54	43	247102	9.93	ug/l	100
18) Methylene chloride	4.77	49	1143129	9.98	ug/l	96
19) tert-Butyl alcohol	5.08	59	621118	239.71	ug/l	100
20) Acrylonitrile	5.23	53	625070	54.00	ug/l	98
21) tert-Butyl methyl ether (M	5.35	73	1194902	9.97	ug/l	98
22) trans-1,2-Dichloroethene	5.33	61	1250308	9.31	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1651312	10.14	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3002702	10.58	ug/l	98
26) 2-Butanol	8.29	45	666812	224.80	ug/l	99
27) tert-Butyl ethyl ether (ET	7.43	59	1975656	9.65	ug/l	99
28) 2-Butanone	7.75	43	807466	53.53	ug/l	100
29) cis-1,2-Dichloroethene	7.70	96	925119	9.81	ug/l	96
30) 2,2-Dichloropropane	7.70	77	1111221	10.79	ug/l	99
31) Tetrahydrofurane	8.27	42	93099	9.63	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
32) Bromochloromethane	8.20	49	689142	10.25 ug/l	95
33) Chloroform	8.47	83	1376669	10.23 ug/l	99
35) 1,1,1-Trichloroethane	8.72	97	1059492	9.86 ug/l	99
36) Cyclohexane	8.84	84	1560567	10.21 ug/l	98
37) tert-Amyl methyl ether (TA	9.67	73	1583129	10.01 ug/l	100
39) 1,1-Dichloropropene	9.03	110	433398	9.51 ug/l	99
40) Carbon tetrachloride	9.00	119	932265	10.35 ug/l	99
41) Benzene	9.34	78	3312827	9.96 ug/l	100
42) 1,2-Dichloroethane	9.46	62	646870	10.35 ug/l	98
44) Trichloroethene	10.45	130	988044	9.71 ug/l	98
45) Methylcyclohexane	10.78	83	1859354	10.84 ug/l	98
46) 1,2-Dichloropropane	10.82	63	936152	10.43 ug/l	100
47) 1,4-Dioxane	10.97	88	53327	174.16 ug/l	94
48) Dibromomethane	10.94	93	339841	9.98 ug/l	98
49) Bromodichloromethane	11.22	83	924154	10.58 ug/l	99
50) 2-Chloroethyl vinyl ether	11.65	63	199674	7.19 ug/l	99
51) cis-1,3-Dichloropropene	11.83	75	1162126	10.35 ug/l	100
52) 4-Methyl-2-pentanone	12.02	43	2184722	55.86 ug/l	99
55) Toluene	12.26	91	3500916	9.65 ug/l	100
56) Ethyl methacrylate	12.67	69	595476	9.21 ug/l	98
57) trans-1,3-Dichloropropene	12.58	75	881530	10.30 ug/l	99
58) 1,1,2-Trichloroethane	12.81	97	499997	10.29 ug/l	99
59) Tetrachloroethene	12.91	164	732166	9.22 ug/l	99
60) 1,3-Dichloropropane	13.00	76	924037	9.93 ug/l	99
61) 2-Hexanone	13.07	43	1425038	54.40 ug/l	99
62) Dibromochloromethane	13.25	129	636469	10.54 ug/l	100
63) 1,2-Dibromoethane	13.37	107	483037	9.91 ug/l	98
64) 1-Chlorohexane	13.87	91	1543804	9.40 ug/l	99
65) Chlorobenzene	13.89	112	2274741	9.98 ug/l	99
66) 1,1,1,2-Tetrachloroethane	13.98	131	769315	10.54 ug/l	100
67) Ethylbenzene	13.99	91	4123889	9.60 ug/l	99
68) m-Xylene & p-Xylene	14.11	91	5908703	19.33 ug/l	99
69) o-Xylene	14.48	91	2851355	9.73 ug/l	98
70) Styrene	14.49	104	2369407	9.81 ug/l	100
72) Bromoform	14.67	173	286493	11.13 ug/l	100
73) Isopropylbenzene	14.80	105	4044541	10.13 ug/l	100
75) 1,1,2,2-Tetrachloroethane	15.07	83	596383	10.77 ug/l	98
76) Bromobenzene	15.10	156	818695	10.47 ug/l	100
77) trans-1,4-Dichloro-2-buten	15.10	53	110784	10.01 ug/l	94
78) 1,2,3-Trichloropropane	15.13	110	144224	10.74 ug/l	98
79) n-Propylbenzene	15.17	91	4721127	10.22 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

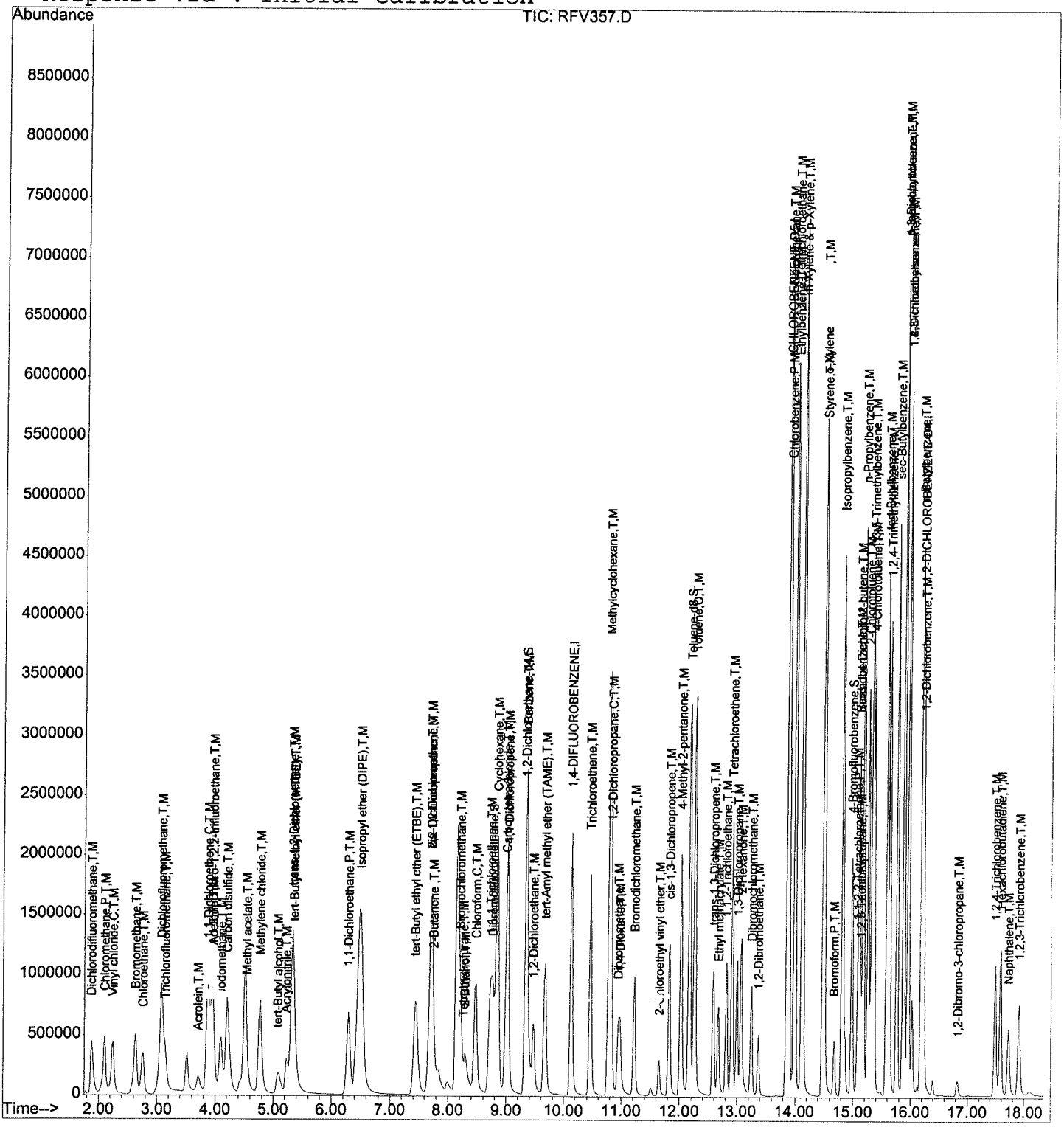
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.32	105	2948336	10.46 ug/l	100
81)	2-Chlorotoluene	15.25	91	2312159	10.43 ug/l	99
82)	4-Chlorotoluene	15.35	91	2670585	10.18 ug/l	100
83)	tert-Butylbenzene	15.57	134	777629	10.22 ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	2820098	10.35 ug/l	99
85)	sec-Butylbenzene	15.75	105	4300760	10.25 ug/l	100
86)	p-Isopropyltoluene	15.87	119	3162626	9.89 ug/l	100
87)	1,3-Dichlorobenzene	15.87	146	1452625	9.98 ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1377639	9.74 ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2559591	10.23 ug/l	99
90)	n-Butylbenzene	16.18	91	2863726	9.86 ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1170716	9.81 ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.83	157	63577	9.74 ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	588694	10.03 ug/l	99
94)	Hexachlorobutadiene	17.59	225	431672	9.64 ug/l	99
95)	Naphthalene	17.72	128	751945	9.68 ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	451814	10.29 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 11:07 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



RFV357.D VO01E13.M Tue Jun 30 11:08:15 2020 Page 4

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	88	0.00
2	T,M	Vinyl acetate	10.000	9.411	5.9	90	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	86	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RFV357.D VO01E14.M Tue Jun 30 10:32:12 2020 Page 1

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	88	0.00
2	T,M	Vinyl acetate	0.279	0.309	-10.8	90	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

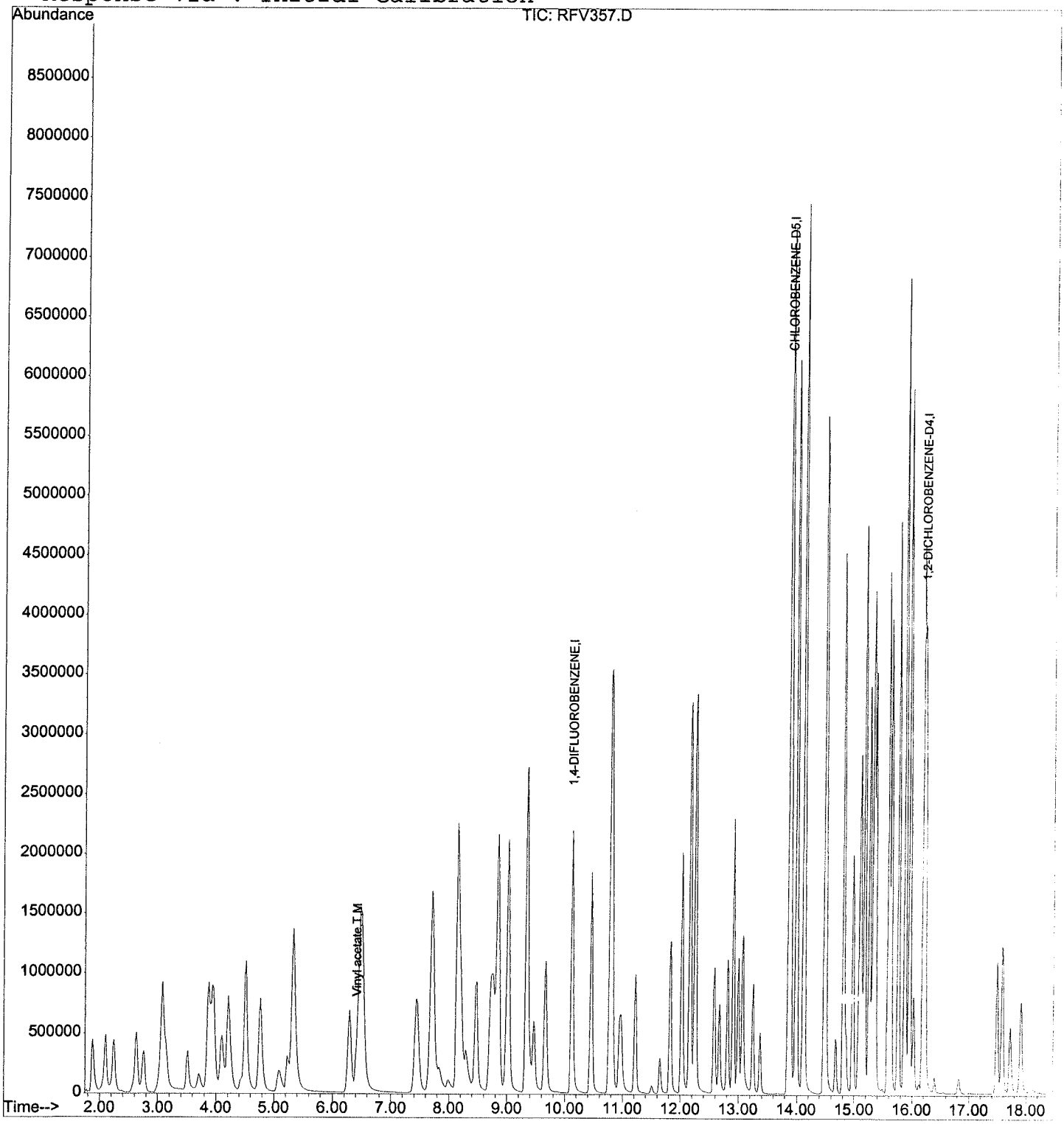
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	2782259	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2300239	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	764426	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	858941	9.41	ug/l	96

(#) = qualifier out of range (m) = manual integration
RFV357.D VO01E14.M Tue Jun 30 10:32:19 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F29\RFV357.D Vial: 2
Acq On : 29 Jun 2020 11:21 am Operator: VLu
Sample : CVO01E1325 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:32 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY

Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F183

Lab File ID: RFV381 BFB Injection Date : 06/30/20

Instrument ID: 01 BFB Injection Time : 12:08

GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.94
75	30.0 - 60.0% of mass 95	44.36
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.58
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	77.59
175	5.0 - 9.0% of mass 174	5.84(7.5)1
176	95.0 - 101.0% of mass 174	76.12(98.1)1
177	5.0 - 9.0% of mass 176	5.64(7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV001E1326	RFV382	06/30/20	12:34
2	MBLK2W	V001F18B	RFV386	06/30/20	14:26
3	LCS2W	V001F18L	RFV383	06/30/20	13:06
4	LCD2W	V001F18C	RFV384	06/30/20	13:33
5	MW08A-GW062120	F183-08	RFV394	06/30/20	18:02
6	MW08A-GW062120MS	F183-08M	RFV395	06/30/20	18:59
7	MW08A-GW062120MSD	F183-08S	RFV396	06/30/20	19:26
8	MW01S-GW062120	F183-12	RFV398	06/30/20	20:21
9	FD01-GW062120	F183-13	RFV399	06/30/20	20:48
10	MW08C-GW062220	F183-14	RFV400	06/30/20	21:16
11	MW08B-GW062220	F183-15	RFV401	06/30/20	21:43
12	FD02-GW062220	F183-16	RFV402	06/30/20	22:10

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	3110340	10.12	2666130	13.86	871845	16.21
2	MBLK2W	2693340	10.13	2179444	13.86	652993	16.21
3	LCS2W	3138584	10.12	2659659	13.86	878964	16.21
4	LCD2W	3167309	10.13	2710968	13.86	890847	16.21
5	MW08A-GW062120	3021803	10.14	2526213	13.86	789716	16.21
6	MW08A-GW062120MS	2847131	10.12	2351576	13.86	782323	16.21
7	MW08A-GW062120MSD	2974737	10.13	2498968	13.86	846918	16.21
8	MW01S-GW062120	3044134	10.12	2495225	13.86	814115	16.21
9	FD01-GW062120	2927222	10.12	2394427	13.86	760601	16.21
10	MW08C-GW062220	2953245	10.13	2419962	13.86	751674	16.21
11	MW08B-GW062220	2942382	10.12	2477441	13.86	784716	16.21
12	FD02-GW062220	2961578	10.12	2452923	13.86	794225	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

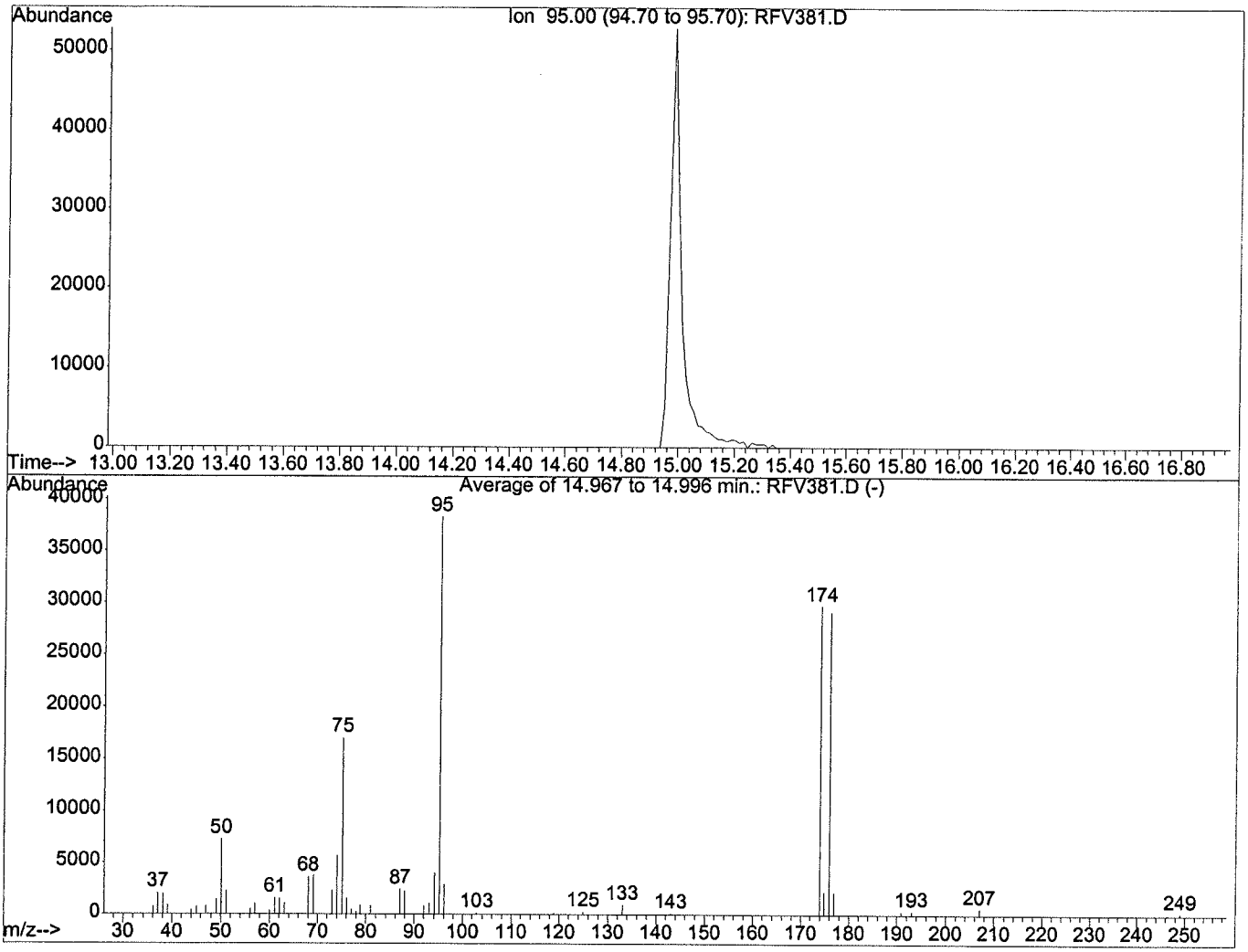
Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	3093928	10.12	2666297	13.86	871874	16.21
2	MBLK2W	2693396	10.13	2149846	13.86	653015	16.21
3	LCS2W	3122915	10.12	2659825	13.86	878993	16.21
4	LCD2W	3167380	10.13	2710832	13.86	890821	16.21
5	MW08A-GW062120	3021745	10.14	2511032	13.86	789742	16.21
6	MW08A-GW062120MS	2847076	10.12	2343428	13.86	782300	16.21
7	MW08A-GW062120MSD	2974679	10.13	2492866	13.86	846946	16.21
8	MW01S-GW062120	3044202	10.12	2483515	13.86	814142	16.21
9	FD01-GW062120	2927288	10.12	2380252	13.86	760626	16.21
10	MW08C-GW062220	2953188	10.13	2404657	13.86	751649	16.21
11	MW08B-GW062220	2942325	10.12	2458135	13.86	784742	16.21
12	FD02-GW062220	2961639	10.12	2433900	13.86	794251	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F30\RFV381.D
Acq On : 30 Jun 2020 12:08 pm
Sample : BFB01F18
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 781

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.9	7259	PASS
75	95	30	60	44.4	17004	PASS
95	95	100	100	100.0	38328	PASS
96	95	5	9	7.6	2905	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.6	29739	PASS
175	174	5	9	7.5	2237	PASS
176	174	95	101	98.1	29176	PASS
177	176	5	9	7.4	2163	PASS

RFV381.D VO01E13.M Wed Jul 01 10:29:41 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	98	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	9.584	4.2	93	0.00
4	P,T,M	Chloromethane	10.000	9.983	0.2	97	0.00
5	C,T,M	Vinyl chloride	10.000	10.361	-3.6	97	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	10.139	-1.4	92	0.00
8	T,M	Chloroethane	10.000	11.524	-15.2	107	0.00
9	T,M	Dichlorofluoromethane	10.000	10.455	-4.6	103	0.00
10	T,M	Trichlorofluoromethane	10.000	10.765	-7.7	101	0.00
11	T,M	Acrolein	50.000	53.157	-6.3	102	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.524	4.8	93	0.00
13	T,M	Acetone	50.000	52.808	-5.6	103	0.00
14	C,T,M	1,1-Dichloroethene	10.000	9.969	0.3	96	0.00
15	T,M	Iodomethane	10.000	9.452	5.5	92	0.00
16	T,M	Carbon disulfide	10.000	9.705	2.9	92	0.00
17	T,M	Methyl acetate	10.000	10.601	-6.0	99	0.02
18	T,M	Methylene chloride	10.000	10.225	-2.2	102	0.00
19	T,M	tert-Butyl alcohol	250.000	258.316	-3.3	94	0.00
20	T,M	Acrylonitrile	50.000	50.506	-1.0	99	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	10.588	-5.9	101	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.966	0.3	96	0.00
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	-0.02
24	P,T,M	1,1-Dichloroethane	10.000	10.413	-4.1	101	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	10.980	-9.8	106	0.00
26	T,M	2-Butanol	250.000	243.675	2.5	91	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.900	1.0	99	0.00
28	T,M	2-Butanone	50.000	52.735	-5.5	99	0.00
29	T,M	cis-1,2-Dichloroethene	10.000	9.982	0.2	98	0.00
30	T,M	2,2-Dichloropropane	10.000	10.245	-2.4	101	0.02
31	T,M	Tetrahydrofurane	10.000	10.772	-7.7	97	0.00
32	T,M	Bromochloromethane	10.000	10.536	-5.4	101	-0.02
33	C,T,M	Chloroform	10.000	10.073	-0.7	98	-0.02
34	S	Dibromofluoromethane	10.000	10.525	-5.3	93	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.739	2.6	97	0.00
36	T,M	Cyclohexane	10.000	9.717	2.8	96	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	10.748	-7.5	103	-0.02
38	S	1,2-Dichloroethane-d4	10.000	10.736	-7.4	95	-0.02
39	T,M	1,1-Dichloropropene	10.000	10.053	-0.5	95	-0.02
40	T,M	Carbon tetrachloride	10.000	10.401	-4.0	99	0.00
41	T,M	Benzene	10.000	9.991	0.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	10.734	-7.3	103	-0.02
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	10.113	-1.1	97	-0.02
45	T,M	Methylcyclohexane	10.000	10.377	-3.8	96	-0.02
46	C,T,M	1,2-Dichloropropane	10.000	10.501	-5.0	99	-0.02
47	T,M	1,4-Dioxane	200.000	193.849	3.1	92	0.00
48	T,M	Dibromomethane	10.000	10.583	-5.8	98	-0.02
49	T,M	Bromodichloromethane	10.000	10.579	-5.8	100	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	5.754	42.5#	55	0.00
51	T,M	cis-1,3-Dichloropropene	10.000	10.623	-6.2	100	-0.02
52	T,M	4-Methyl-2-pentanone	50.000	53.892	-7.8	97	-0.02
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	99	-0.02
54	S	Toluene-d8	10.000	9.897	1.0	93	-0.02
55	C,T,M	Toluene	10.000	9.824	1.8	99	-0.02
56	T,M	Ethyl methacrylate	10.000	10.039	-0.4	97	-0.02
57	T,M	trans-1,3-Dichloropropene	10.000	10.102	-1.0	99	-0.02
58	T,M	1,1,2-Trichloroethane	10.000	10.359	-3.6	101	-0.02
59	T,M	Tetrachloroethene	10.000	9.773	2.3	98	-0.02
60	T,M	1,3-Dichloropropane	10.000	10.051	-0.5	98	-0.02
61	T,M	2-Hexanone	50.000	50.269	-0.5	93	-0.02
62	T,M	Dibromochloromethane	10.000	10.515	-5.2	99	-0.02
63	T,M	1,2-Dibromoethane	10.000	10.364	-3.6	98	-0.02
64	T,M	1-Chlorohexane	10.000	8.713	12.9	88	-0.02
65	P,M	Chlorobenzene	10.000	10.085	-0.9	100	-0.02
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.098	-1.0	97	-0.02
67	C,T,M	Ethylbenzene	10.000	9.873	1.3	98	-0.02
68	T,M	m-Xylene & p-Xylene	20.000	19.719	1.4	95	-0.02
69	T,M	o-Xylene	10.000	9.848	1.5	96	-0.02
70	T,M	Styrene	10.000	9.813	1.9	96	-0.02
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	93	-0.02
72	P,T,M	Bromoform	10.000	11.491	-14.9	100	-0.02
73	T,M	Isopropylbenzene	10.000	10.193	-1.9	97	-0.02
74	S	4-Bromofluorobenzene	10.000	10.448	-4.5	92	-0.02
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	11.050	-10.5	99	-0.02
76	T,M	Bromobenzene	10.000	10.173	-1.7	94	-0.02
77	T,M	trans-1,4-Dichloro-2-butene	10.000	10.209	-2.1	99	-0.02
78	T,M	1,2,3-Trichloropropane	10.000	10.841	-8.4	97	-0.02
79	T,M	n-Propylbenzene	10.000	10.323	-3.2	95	-0.02
80	T,M	1,3,5-Trimethylbenzene	10.000	10.233	-2.3	93	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.547	-5.5	95	-0.02
82	T,M	4-Chlorotoluene	10.000	10.130	-1.3	93	-0.02
83	T,M	tert-Butylbenzene	10.000	9.887	1.1	92	-0.02
84	T,M	1,2,4-Trimethylbenzene	10.000	9.977	0.2	94	-0.02
85	T,M	sec-Butylbenzene	10.000	10.188	-1.9	94	-0.02
86	T,M	p-Isopropyltoluene	10.000	9.767	2.3	91	-0.02
87	T,M	1,3-Dichlorobenzene	10.000	10.181	-1.8	91	-0.02
88	T,M	1,4-Dichlorobenzene	10.000	9.840	1.6	93	-0.02
89	T,M	1,2,3-Trimethylbenzene	10.000	10.489	-4.9	97	-0.01
90	T,M	n-Butylbenzene	10.000	9.422	5.8	86	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.704	3.0	92	-0.02
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.704	3.0	89	-0.02
93	T,M	1,2,4-Trichlorobenzene	10.000	9.656	3.4	88	-0.02
94	T,M	Hexachlorobutadiene	10.000	9.551	4.5	88	-0.03
95	T,M	Naphthalene	10.000	9.724	2.8	90	-0.02
96	T,M	1,2,3-Trichlorobenzene	10.000	10.075	-0.7	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.295	4.2	93	0.00
4	P,T,M	Chloromethane	0.368	0.367	0.3	97	0.00
5	C,T,M	Vinyl chloride	0.360	0.373	-3.6	97	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.243	-1.3	92	0.00
8	T,M	Chloroethane	0.200	0.230	-15.0	107	0.00
9	T,M	Dichlorofluoromethane	0.493	0.515	-4.5	103	0.00
10	T,M	Trichlorofluoromethane	0.334	0.359	-7.5	101	0.00
11	T,M	Acrolein	0.017	0.018	-5.9	102	0.00
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.199	4.8	93	0.00
13	T,M	Acetone	0.034	0.036	-5.9	103	0.00
14	C,T,M	1,1-Dichloroethene	0.488	0.487	0.2	96	0.00
15	T,M	Iodomethane	0.552	0.522	5.4	92	0.00
16	T,M	Carbon disulfide	1.072	1.041	2.9	92	0.00
17	T,M	Methyl acetate	0.089	0.095	-6.7	99	0.02
18	T,M	Methylene chloride	0.412	0.421	-2.2	102	0.00
19	T,M	tert-Butyl alcohol	0.009	0.010	-11.1	94	0.00
20	T,M	Acrylonitrile	0.042	0.042	0.0	99	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.456	-5.8	101	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.481	0.4	96	0.00
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	-0.02
24	P,T,M	1,1-Dichloroethane	0.586	0.610	-4.1	101	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.120	-9.8	106	0.00
26	T,M	2-Butanol	0.010	0.010	0.0	91	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.729	1.0	99	0.00
28	T,M	2-Butanone	0.054	0.057	-5.6	99	0.00
29	T,M	cis-1,2-Dichloroethene	0.339	0.338	0.3	98	0.00
30	T,M	2,2-Dichloropropane	0.370	0.379	-2.4	101	0.02
31	T,M	Tetrahydrofurane	0.035	0.037	-5.7	97	0.00
32	T,M	Bromochloromethane	0.242	0.255	-5.4	101	-0.02
33	C,T,M	Chloroform	0.484	0.487	-0.6	98	-0.02
34	S	Dibromofluoromethane	0.281	0.296	-5.3	93	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.376	2.6	97	0.00
36	T,M	Cyclohexane	0.549	0.534	2.7	96	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.611	-7.6	103	-0.02
38	S	1,2-Dichloroethane-d4	0.187	0.201	-7.5	95	-0.02
39	T,M	1,1-Dichloropropene	0.164	0.165	-0.6	95	-0.02
40	T,M	Carbon tetrachloride	0.324	0.337	-4.0	99	0.00
41	T,M	Benzene	1.196	1.195	0.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.241	-7.1	103	-0.02
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.370	-1.1	97	-0.02
45	T,M	Methylcyclohexane	0.617	0.640	-3.7	96	-0.02
46	C,T,M	1,2-Dichloropropane	0.323	0.339	-5.0	99	-0.02
47	T,M	1,4-Dioxane	0.001	0.001	0.0	92	0.00
48	T,M	Dibromomethane	0.122	0.130	-6.6	98	-0.02
49	T,M	Bromodichloromethane	0.314	0.332	-5.7	100	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.057	43.0#	55	0.00
51	T,M	cis-1,3-Dichloropropene	0.404	0.429	-6.2	100	-0.02
52	T,M	4-Methyl-2-pentanone	0.141	0.152	-7.8	97	-0.02
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	99	-0.02
54	S	Toluene-d8	1.361	1.347	1.0	93	-0.02
55	C,T,M	Toluene	1.566	1.539	1.7	99	-0.02
56	T,M	Ethyl methacrylate	0.279	0.280	-0.4	97	-0.02
57	T,M	trans-1,3-Dichloropropene	0.369	0.373	-1.1	99	-0.02
58	T,M	1,1,2-Trichloroethane	0.210	0.217	-3.3	101	-0.02
59	T,M	Tetrachloroethene	0.343	0.335	2.3	98	-0.02
60	T,M	1,3-Dichloropropane	0.402	0.404	-0.5	98	-0.02
61	T,M	2-Hexanone	0.113	0.114	-0.9	93	-0.02
62	T,M	Dibromochloromethane	0.260	0.274	-5.4	99	-0.02
63	T,M	1,2-Dibromoethane	0.210	0.218	-3.8	98	-0.02
64	T,M	1-Chlorohexane	0.709	0.618	12.8	88	-0.02
65	P,M	Chlorobenzene	0.983	0.992	-0.9	100	-0.02
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.318	-1.0	97	-0.02
67	C,T,M	Ethylbenzene	1.854	1.830	1.3	98	-0.02
68	T,M	m-Xylene & p-Xylene	1.319	1.301	1.4	95	-0.02
69	T,M	o-Xylene	1.265	1.246	1.5	96	-0.02
70	T,M	Styrene	1.043	1.023	1.9	96	-0.02
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	93	-0.02
72	P,T,M	Bromoform	0.337	0.387	-14.8	100	-0.02
73	T,M	Isopropylbenzene	5.225	5.326	-1.9	97	-0.02
74	S	4-Bromofluorobenzene	1.196	1.249	-4.4	92	-0.02
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.801	-10.5	99	-0.02
76	T,M	Bromobenzene	1.022	1.040	-1.8	94	-0.02
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.148	-2.1	99	-0.02
78	T,M	1,2,3-Trichloropropane	0.176	0.190	-8.0	97	-0.02
79	T,M	n-Propylbenzene	6.044	6.239	-3.2	95	-0.02
80	T,M	1,3,5-Trimethylbenzene	3.686	3.772	-2.3	93	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	3.059	-5.5	95	-0.02
82	T,M	4-Chlorotoluene	3.434	3.478	-1.3	93	-0.02
83	T,M	tert-Butylbenzene	0.996	0.984	1.2	92	-0.02
84	T,M	1,2,4-Trimethylbenzene	3.563	3.555	0.2	94	-0.02
85	T,M	sec-Butylbenzene	5.490	5.593	-1.9	94	-0.02
86	T,M	p-Isopropyltoluene	4.184	4.087	2.3	91	-0.02
87	T,M	1,3-Dichlorobenzene	1.905	1.939	-1.8	91	-0.02
88	T,M	1,4-Dichlorobenzene	1.851	1.822	1.6	93	-0.02
89	T,M	1,2,3-Trimethylbenzene	3.273	3.433	-4.9	97	-0.01
90	T,M	n-Butylbenzene	3.799	3.580	5.8	86	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.515	2.9	92	-0.02
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.083	2.4	89	-0.02
93	T,M	1,2,4-Trichlorobenzene	0.768	0.741	3.5	88	-0.02
94	T,M	Hexachlorobutadiene	0.586	0.559	4.6	88	-0.03
95	T,M	Naphthalene	1.016	0.988	2.8	90	-0.02
96	T,M	1,2,3-Trichlorobenzene	0.575	0.579	-0.7	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3110340	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2666130	10.00	ug/l	-0.02
71) 1,2-DICHLOROBENZENE-D4	16.21	152	871845	10.00	ug/l	-0.02
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	921349	10.52	ug/l	0.00
Spiked Amount 10.000			Recovery = 105.20%			
38) 1,2-Dichloroethane-d4	9.32	65	625925	10.74	ug/l	-0.02
Spiked Amount 10.000			Recovery = 107.40%			
54) Toluene-d8	12.15	98	3591750	9.90	ug/l	-0.02
Spiked Amount 10.000			Recovery = 99.00%			
74) 4-Bromofluorobenzene	14.97	95	1088976	10.45	ug/l	-0.02
Spiked Amount 10.000			Recovery = 104.50%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.87	85	917092	9.58	ug/l	97
4) Chloromethane	2.10	50	1141216	9.98	ug/l	98
5) Vinyl chloride	2.24	62	1161496	10.36	ug/l	98
7) Bromomethane	2.63	94	757286	10.14	ug/l	99
8) Chloroethane	2.76	64	715147	11.52	ug/l	99
9) Dichlorofluoromethane	3.08	67	1601889	10.45	ug/l	100
10) Trichlorofluoromethane	3.14	101	1117857	10.76	ug/l	99
11) Acrolein	3.71	56	286749	53.16	ug/l	98
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	620228	9.52	ug/l	98
13) Acetone	3.93	43	557731	52.81	ug/l	99
14) 1,1-Dichloroethene	3.85	61	1514076	9.97	ug/l	98
15) Iodomethane	4.10	142	1623104	9.45	ug/l	97
16) Carbon disulfide	4.20	76	3236727	9.71	ug/l	100
17) Methyl acetate	4.54	43	294934	10.60	ug/l	97
18) Methylene chloride	4.77	49	1309174	10.23	ug/l	96
19) tert-Butyl alcohol	5.08	59	748270	258.32	ug/l	97
20) Acrylonitrile	5.23	53	653576	50.51	ug/l	99
21) tert-Butyl methyl ether (M	5.35	73	1418645	10.59	ug/l	98
22) trans-1,2-Dichloroethene	5.31	61	1496981	9.97	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1896427	10.41	ug/l	100
25) Isopropyl ether (DIPE)	6.50	45	3482229	10.98	ug/l	99
26) 2-Butanol	8.29	45	812329	243.68	ug/l	98
27) tert-Butyl ethyl ether (ET	7.43	59	2266542	9.90	ug/l	99
28) 2-Butanone	7.72	43	889342	52.74	ug/l	99
29) cis-1,2-Dichloroethene	7.70	96	1052629	9.98	ug/l	97
30) 2,2-Dichloropropane	7.70	77	1179528	10.24	ug/l	100
31) Tetrahydrofurane	8.27	42	116419	10.77	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.18	49	792027	10.54	ug/l	96
33)	Chloroform	8.45	83	1514852	10.07	ug/l	98
35)	1,1,1-Trichloroethane	8.72	97	1169379	9.74	ug/l	99
36)	Cyclohexane	8.84	84	1660630	9.72	ug/l	98
37)	tert-Amyl methyl ether (TA	9.65	73	1899571	10.75	ug/l	100
39)	1,1-Dichloropropene	9.01	110	512134	10.05	ug/l	100
40)	Carbon tetrachloride	9.00	119	1047149	10.40	ug/l	99
41)	Benzene	9.34	78	3715355	9.99	ug/l	99
42)	1,2-Dichloroethane	9.46	62	749638	10.73	ug/l	99
44)	Trichloroethene	10.45	130	1150321	10.11	ug/l	98
45)	Methylcyclohexane	10.78	83	1990450	10.38	ug/l	98
46)	1,2-Dichloropropane	10.81	63	1053875	10.50	ug/l	99
47)	1,4-Dioxane	10.97	88	66358	193.85	ug/l	97
48)	Dibromomethane	10.94	93	402841	10.58	ug/l	99
49)	Bromodichloromethane	11.22	83	1033373	10.58	ug/l	100
50)	2-Chloroethyl vinyl ether	11.65	63	178600	5.75	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	1334037	10.62	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2356342	53.89	ug/l	99
55)	Toluene	12.24	91	4102125	9.82	ug/l	99
56)	Ethyl methacrylate	12.66	69	747130	10.04	ug/l	98
57)	trans-1,3-Dichloropropene	12.57	75	994992	10.10	ug/l	99
58)	1,1,2-Trichloroethane	12.80	97	578942	10.36	ug/l	99
59)	Tetrachloroethene	12.91	164	892666	9.77	ug/l	98
60)	1,3-Dichloropropane	13.00	76	1075872	10.05	ug/l	99
61)	2-Hexanone	13.06	43	1515166	50.27	ug/l	99
62)	Dibromochloromethane	13.25	129	730277	10.51	ug/l	99
63)	1,2-Dibromoethane	13.37	107	581138	10.36	ug/l	96
64)	1-Chlorohexane	13.87	91	1646929	8.71	ug/l	99
65)	Chlorobenzene	13.89	112	2643721	10.09	ug/l	99
66)	1,1,1,2-Tetrachloroethane	13.97	131	847688	10.10	ug/l	98
67)	Ethylbenzene	13.97	91	4880129	9.87	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6937081	19.72	ug/l	99
69)	o-Xylene	14.48	91	3322085	9.85	ug/l	99
70)	Styrene	14.49	104	2728421	9.81	ug/l	99
72)	Bromoform	14.67	173	337442	11.49	ug/l	98
73)	Isopropylbenzene	14.80	105	4643031	10.19	ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	698049	11.05	ug/l	99
76)	Bromobenzene	15.10	156	906885	10.17	ug/l	99
77)	trans-1,4-Dichloro-2-buten	15.10	53	128936	10.21	ug/l	100
78)	1,2,3-Trichloropropane	15.13	110	165980	10.84	ug/l	97
79)	n-Propylbenzene	15.17	91	5439304	10.32	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

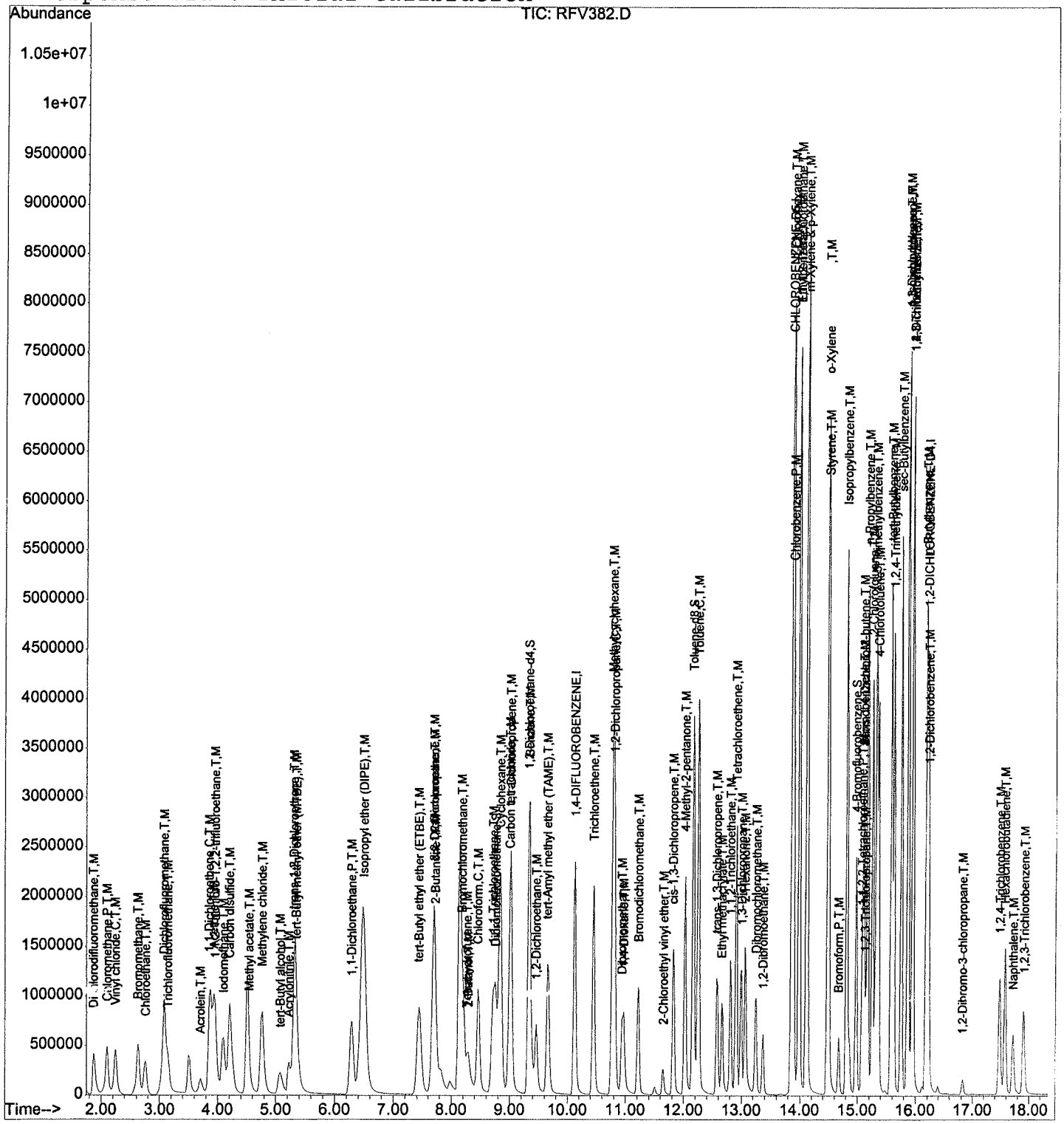
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.31	105	3288427	10.23	ug/l	99
81)	2-Chlorotoluene	15.25	91	2666924	10.55	ug/l	100
82)	4-Chlorotoluene	15.35	91	3032353	10.13	ug/l	100
83)	tert-Butylbenzene	15.57	134	858171	9.89	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	3099507	9.98	ug/l	98
85)	sec-Butylbenzene	15.75	105	4876029	10.19	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3562902	9.77	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1690629	10.18	ug/l	98
88)	1,4-Dichlorobenzene	15.94	146	1588226	9.84	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2992757	10.49	ug/l	99
90)	n-Butylbenzene	16.18	91	3120890	9.42	ug/l	99
91)	1,2-Dichlorobenzene	16.23	146	1321019	9.70	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	72248	9.70	ug/l	98
93)	1,2,4-Trichlorobenzene	17.48	180	646168	9.66	ug/l	99
94)	Hexachlorobutadiene	17.57	225	487757	9.55	ug/l	100
95)	Naphthalene	17.72	128	861109	9.72	ug/l	100
96)	1,2,3-Trichlorobenzene	17.91	180	504753	10.08	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFV382.D VO01E13.M Wed Jul 01 10:30:30 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 1 10:30 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	98	0.00
2	T,M	Vinyl acetate	10.000	8.026	19.7	84	-0.02
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	100	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RFV382.D VO01E14.M Wed Jul 01 09:42:56 2020 Page 1

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	98	0.00
2	T,M	Vinyl acetate	0.279	0.260	6.8	84	-0.02
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	100	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RFV382.D VO01E14.M Wed Jul 01 09:42:58 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 13:06 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

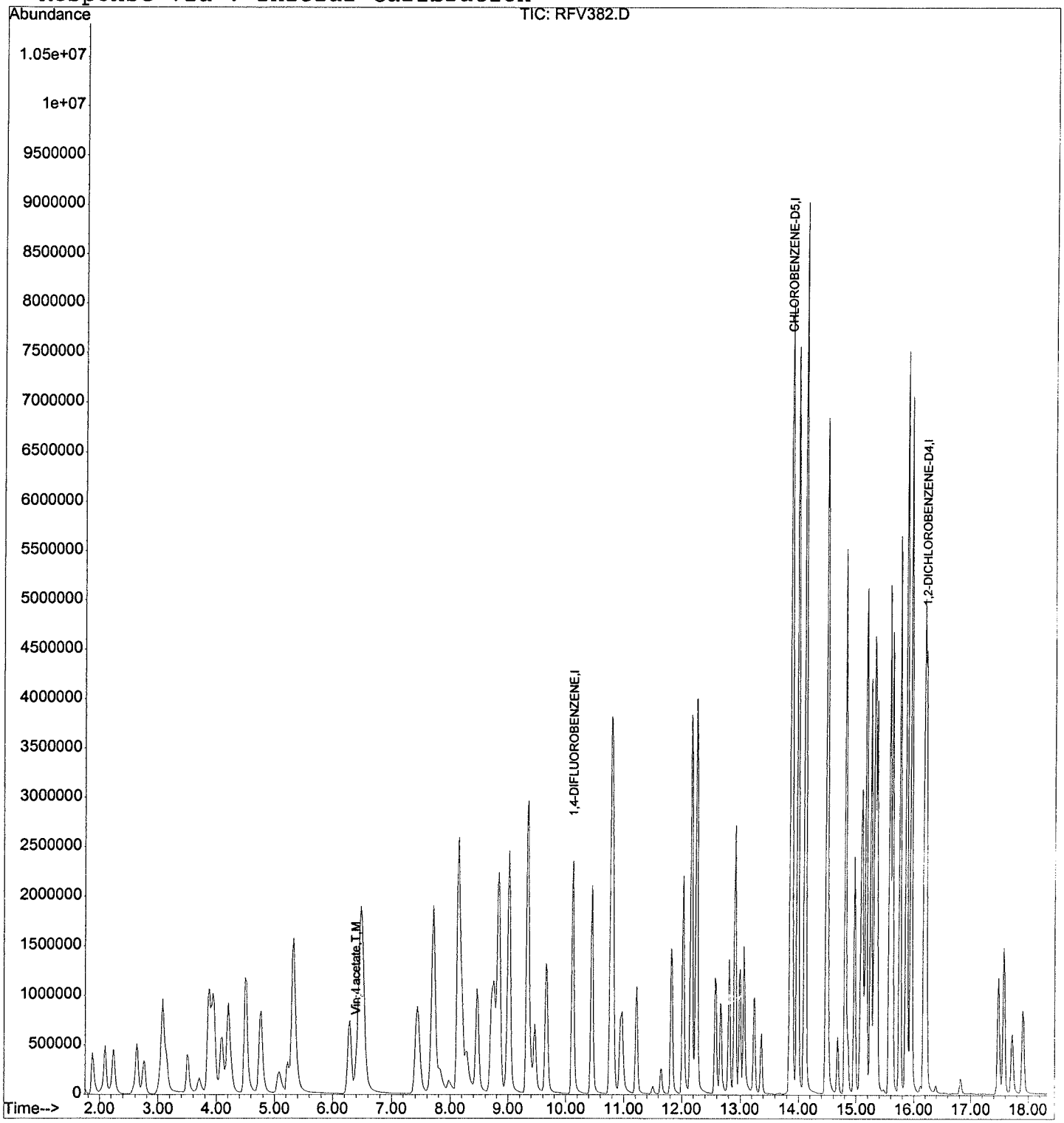
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.12	114	3093928	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2666297	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.21	152	871874	10.00	ug/l	0.00
Target Compounds						Qvalue
2) Vinyl acetate	6.39	43	803780	8.03	ug/l	92

(#) = qualifier out of range (m) = manual integration
RFV382.D VO01E14.M Wed Jul 01 09:43:03 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F30\RFV382.D Vial: 2
Acq On : 30 Jun 2020 12:34 pm Operator: VLu
Sample : CVO01E1326 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 13:06 2020 Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F183
Lab File ID: RGV023 BFB Injection Date : 07/02/20
Instrument ID: 01 BFB Injection Time : 09:37
GC Column:RXI-624SILMSID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.54
75	30.0 - 60.0% of mass 95	42.39
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	8.38
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	78.84
175	5.0 - 9.0% of mass 174	5.48(7.0)1
176	95.0 - 101.0% of mass 174	75.17(95.3)1
177	5.0 - 9.0% of mass 176	5.65(7.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CV001E1328	RGV024	07/02/20	10:23
2	MBLK3W	V001G02B	RGV028	07/02/20	12:16
3	LCS3W	V001G02L	RGV025	07/02/20	10:55
4	LCD3W	V001G02C	RGV026	07/02/20	11:22
5	MW01S-GW062120DL	F183-12I	RGV029	07/02/20	12:43
6	FD01-GW062120DL	F183-13I	RGV030	07/02/20	13:10

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV203
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/13/2020
Time Analyzed: 16:20
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3167387	10.12	2685414	13.87	938720	16.23
	UPPER LIMIT	6334774	10.29	5370828	14.04	1877440	16.40
	LOWER LIMIT	1583694	9.95	1342707	13.70	469360	16.06
	SAMPLE ID						
1	VSTD010	3046588	10.12	2465586	13.86	863123	16.20
2	MBLK3W	2943022	10.13	2415549	13.86	774406	16.21
3	LCS3W	3055353	10.12	2552926	13.86	899632	16.21
4	LCD3W	2966928	10.12	2462342	13.86	847044	16.21
5	MW01S-GW062120DL	3003380	10.12	2480892	13.86	800598	16.21
6	FD01-GW062120DL	2964636	10.13	2408790	13.86	769775	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : REV216
Instrument ID: 01
GC Column : RXI-624SILMSID:0.25mm (mm)

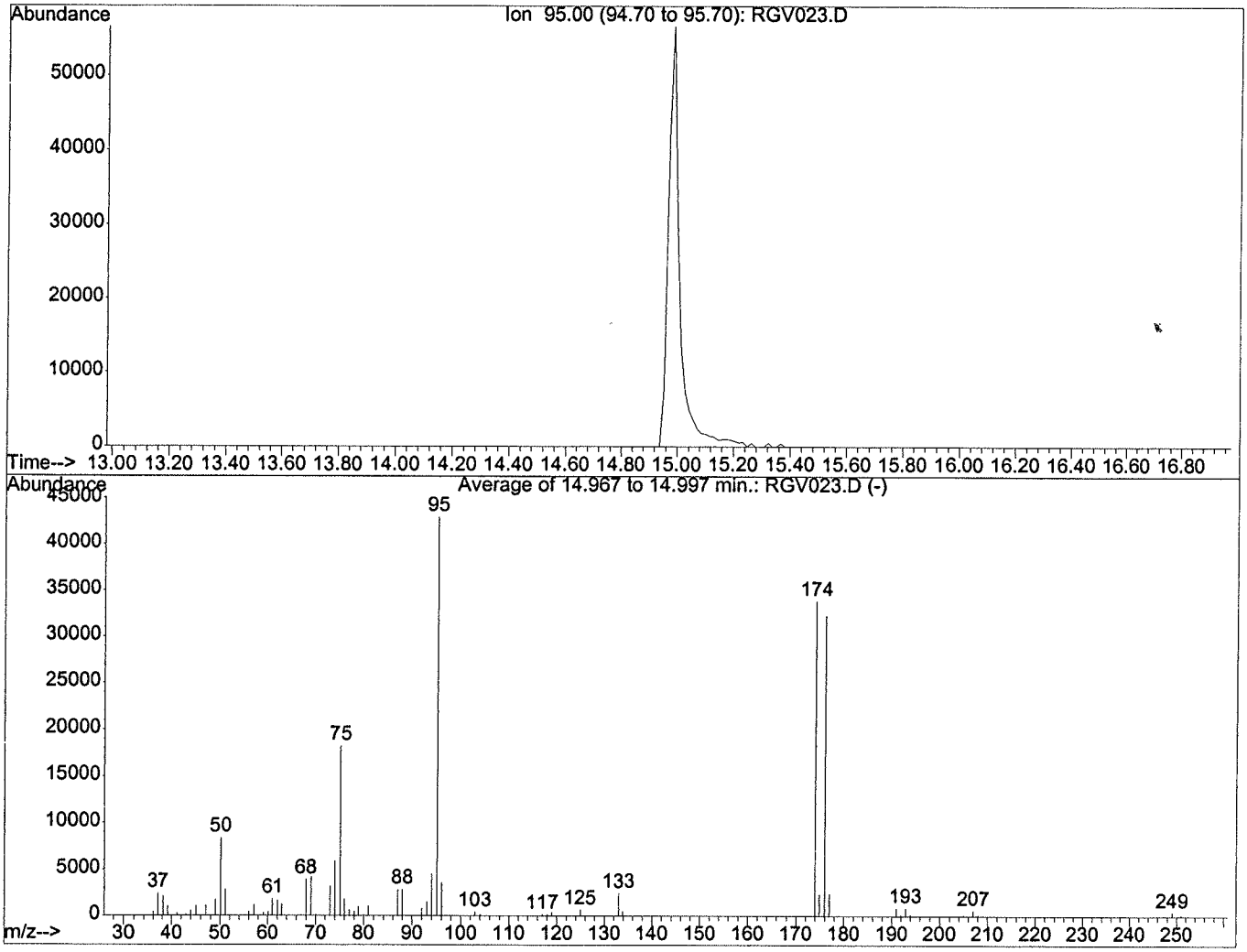
Project: VA SALT LAKE CITY
SDG No: 20F183
Date Analyzed: 05/14/2020
Time Analyzed: 18:53
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	3148628	10.12	2661281	13.86	903830	16.21
	UPPER LIMIT	6297256	10.29	5322562	14.03	1807660	16.38
	LOWER LIMIT	1574314	9.95	1330641	13.69	451915	16.04
	SAMPLE ID						
1	VSTD010	3028282	10.12	2465740	13.86	863094	16.20
2	MBLK3W	2943088	10.13	2412060	13.86	774384	16.21
3	LCS3W	3042202	10.12	2553086	13.86	899662	16.21
4	LCD3W	2954998	10.12	2462219	13.86	847072	16.21
5	MW01S-GW062120DL	3003448	10.12	2477467	13.86	800625	16.21
6	FD01-GW062120DL	2964702	10.13	2408719	13.86	769801	16.21

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20G02\RGV023.D
Acq On : 2 Jul 2020 9:37 am
Sample : BFB01G02
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls

Vial: 1
Operator: VLu
Inst : 01
Multiplr: 1.00



AutoFind: Scans 785, 786, 787; Background Corrected with Scan 781

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.5	8402	PASS
75	95	30	60	42.4	18231	PASS
95	95	100	100	100.0	43005	PASS
96	95	5	9	8.4	3602	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.8	33907	PASS
175	174	5	9	7.0	2357	PASS
176	174	95	101	95.3	32328	PASS
177	176	5	9	7.5	2431	PASS

RGV023.D VO01E13.M Mon Jul 06 13:57:55 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	96	0.00
2	T,M	Chlorotrifluoroethylene	10.000	0.000	100.0#	0	-1.84#
3	T,M	Dichlorodifluoromethane	10.000	10.264	-2.6	98	0.02
4	P,T,M	Chloromethane	10.000	10.230	-2.3	97	0.00
5	C,T,M	Vinyl chloride	10.000	10.614	-6.1	97	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	10.000	0.000	100.0#	0	-2.36#
7	T,M	Bromomethane	10.000	10.031	-0.3	89	0.00
8	T,M	Chloroethane	10.000	11.529	-15.3	105	0.02
9	T,M	Dichlorofluoromethane	10.000	10.003	-0.0	96	0.02
10	T,M	Trichlorofluoromethane	10.000	11.070	-10.7	102	0.00
11	T,M	Acrolein	50.000	44.037	11.9	83	0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	9.466	5.3	91	0.00
13	T,M	Acetone	50.000	45.835	8.3	87	0.02
14	C,T,M	1,1-Dichloroethene	10.000	9.743	2.6	92	0.02
15	T,M	Iodomethane	10.000	9.277	7.2	88	0.00
16	T,M	Carbon disulfide	10.000	10.007	-0.1	93	0.00
17	T,M	Methyl acetate	10.000	9.282	7.2	85	0.02
18	T,M	Methylene chloride	10.000	9.527	4.7	93	0.00
19	T,M	tert-Butyl alcohol	250.000	221.543	11.4	79	0.02
20	T,M	Acrylonitrile	50.000	44.390	11.2	85	0.00
21	T,M	tert-Butyl methyl ether (MT	10.000	9.611	3.9	89	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	9.695	3.0	92	0.02
23	T,M	Vinyl acetate	-1.000	0.000	0.0	0	0.00
24	P,T,M	1,1-Dichloroethane	10.000	9.887	1.1	94	0.00
25	T,M	Isopropyl ether (DIPE)	10.000	10.268	-2.7	97	0.02
26	T,M	2-Butanol	250.000	207.345	17.1	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	10.000	9.189	8.1	90	0.02
28	T,M	2-Butanone	50.000	45.603	8.8	84	0.02
29	T,M	cis-1,2-Dichloroethene	10.000	9.707	2.9	93	0.00
30	T,M	2,2-Dichloropropane	10.000	10.485	-4.8	101	0.02
31	T,M	Tetrahydrofurane	10.000	9.587	4.1	85	0.00
32	T,M	Bromochloromethane	10.000	9.755	2.4	92	0.00
33	C,T,M	Chloroform	10.000	9.943	0.6	95	-0.02
34	S	Dibromofluoromethane	10.000	10.081	-0.8	87	0.00
35	T,M	1,1,1-Trichloroethane	10.000	9.693	3.1	95	0.00
36	T,M	Cyclohexane	10.000	9.667	3.3	94	0.00
37	T,M	tert-Amyl methyl ether (TAM	10.000	9.668	3.3	91	0.00
38	S	1,2-Dichloroethane-d4	10.000	10.276	-2.8	89	-0.01
39	T,M	1,1-Dichloropropene	10.000	9.821	1.8	91	-0.01
40	T,M	Carbon tetrachloride	10.000	10.076	-0.8	94	0.00
41	T,M	Benzene	10.000	9.802	2.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	10.000	9.932	0.7	93	-0.01
43	T,M	2,2,4-Trimethylpentane	10.000	0.000	100.0#	0	-9.62#
44	T,M	Trichloroethene	10.000	9.841	1.6	93	-0.01
45	T,M	Methylcyclohexane	10.000	10.026	-0.3	91	-0.01
46	C,T,M	1,2-Dichloropropane	10.000	9.917	0.8	92	-0.01
47	T,M	1,4-Dioxane	200.000	172.126	13.9	80	0.00
48	T,M	Dibromomethane	10.000	9.696	3.0	88	-0.01
49	T,M	Bromodichloromethane	10.000	10.019	-0.2	93	0.00
50	T,M	2-Chloroethyl vinyl ether	10.000	5.393	46.1#	51	-0.01
51	T,M	cis-1,3-Dichloropropene	10.000	10.119	-1.2	93	-0.01
52	T,M	4-Methyl-2-pentanone	50.000	47.028	5.9	83	-0.01
53	I	CHLOROBENZENE-D5	10.000	10.000	0.0	92	-0.01
54	S	Toluene-d8	10.000	9.956	0.4	86	-0.01
55	C,T,M	Toluene	10.000	9.867	1.3	92	-0.01
56	T,M	Ethyl methacrylate	10.000	9.473	5.3	85	-0.01
57	T,M	trans-1,3-Dichloropropene	10.000	10.080	-0.8	92	-0.01
58	T,M	1,1,2-Trichloroethane	10.000	10.159	-1.6	92	-0.01
59	T,M	Tetrachloroethene	10.000	9.848	1.5	91	-0.01
60	T,M	1,3-Dichloropropane	10.000	9.717	2.8	87	-0.01
61	T,M	2-Hexanone	50.000	45.997	8.0	79	-0.01
62	T,M	Dibromochloromethane	10.000	10.291	-2.9	90	-0.03
63	T,M	1,2-Dibromoethane	10.000	9.946	0.5	87	-0.01
64	T,M	1-Chlorohexane	10.000	9.013	9.9	84	-0.01
65	P,M	Chlorobenzene	10.000	10.110	-1.1	93	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	10.000	10.407	-4.1	92	-0.01
67	C,T,M	Ethylbenzene	10.000	10.060	-0.6	92	-0.01
68	T,M	m-Xylene & p-Xylene	20.000	20.286	-1.4	90	-0.01
69	T,M	o-Xylene	10.000	10.043	-0.4	90	-0.01
70	T,M	Styrene	10.000	10.034	-0.3	91	-0.01
71	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	92	-0.03
72	P,T,M	Bromoform	10.000	10.344	-3.4	89	-0.01
73	T,M	Isopropylbenzene	10.000	10.123	-1.2	95	-0.01
74	S	4-Bromofluorobenzene	10.000	9.944	0.6	87	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.642	3.6	85	-0.01
76	T,M	Bromobenzene	10.000	9.836	1.6	90	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	10.000	9.150	8.5	88	-0.01
78	T,M	1,2,3-Trichloropropane	10.000	9.739	2.6	86	-0.01
79	T,M	n-Propylbenzene	10.000	9.863	1.4	89	-0.03
80	T,M	1,3,5-Trimethylbenzene	10.000	9.975	0.3	90	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	10.000	10.010	-0.1	89	-0.01
82	T,M	4-Chlorotoluene	10.000	9.687	3.1	88	-0.01
83	T,M	tert-Butylbenzene	10.000	9.824	1.8	91	-0.01
84	T,M	1,2,4-Trimethylbenzene	10.000	9.892	1.1	92	-0.01
85	T,M	sec-Butylbenzene	10.000	9.956	0.4	91	-0.01
86	T,M	p-Isopropyltoluene	10.000	9.777	2.2	90	-0.01
87	T,M	1,3-Dichlorobenzene	10.000	9.692	3.1	86	-0.01
88	T,M	1,4-Dichlorobenzene	10.000	9.685	3.1	90	-0.01
89	T,M	1,2,3-Trimethylbenzene	10.000	10.131	-1.3	92	-0.01
90	T,M	n-Butylbenzene	10.000	9.650	3.5	87	-0.01
91	T,M	1,2-Dichlorobenzene	10.000	9.534	4.7	90	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	10.000	9.266	7.3	84	-0.01
93	T,M	1,2,4-Trichlorobenzene	10.000	9.751	2.5	88	-0.01
94	T,M	Hexachlorobutadiene	10.000	9.924	0.8	91	-0.03
95	T,M	Naphthalene	10.000	9.137	8.6	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	10.000	9.868	1.3	90	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	96	0.00
2	T,M	Chlorotrifluoroethylene	0.000	0.000	0.0	0#	-1.84#
3	T,M	Dichlorodifluoromethane	0.308	0.316	-2.6	98	0.02
4	P,T,M	Chloromethane	0.368	0.376	-2.2	97	0.00
5	C,T,M	Vinyl chloride	0.360	0.383	-6.4	97	0.00
6	T,M	2-Chloro-1,1,1-trifluoroeth	0.000	0.000	0.0	0#	-2.36#
7	T,M	Bromomethane	0.240	0.241	-0.4	89	0.00
8	T,M	Chloroethane	0.200	0.230	-15.0	105	0.02
9	T,M	Dichlorofluoromethane	0.493	0.493	0.0	96	0.02
10	T,M	Trichlorofluoromethane	0.334	0.370	-10.8	102	0.00
11	T,M	Acrolein	0.017	0.015	11.8	83	0.02
12	T,M	1,1,2-Trichloro-1,2,2-trifl	0.209	0.198	5.3	91	0.00
13	T,M	Acetone	0.034	0.031	8.8	87	0.02
14	C,T,M	1,1-Dichloroethene	0.488	0.476	2.5	92	0.02
15	T,M	Iodomethane	0.552	0.512	7.2	88	0.00
16	T,M	Carbon disulfide	1.072	1.073	-0.1	93	0.00
17	T,M	Methyl acetate	0.089	0.083	6.7	85	0.02
18	T,M	Methylene chloride	0.412	0.392	4.9	93	0.00
19	T,M	tert-Butyl alcohol	0.009	0.008	11.1	79	0.02
20	T,M	Acrylonitrile	0.042	0.037	11.9	85	0.00
21	T,M	tert-Butyl methyl ether (MT	0.431	0.414	3.9	89	0.00
22	T,M	trans-1,2-Dichloroethene	0.483	0.468	3.1	92	0.02
23	T,M	Vinyl acetate	0.000	0.000	0.0	0#	0.00
24	P,T,M	1,1-Dichloroethane	0.586	0.579	1.2	94	0.00
25	T,M	Isopropyl ether (DIPE)	1.020	1.047	-2.6	97	0.02
26	T,M	2-Butanol	0.010	0.009	10.0	75	0.00
27	T,M	tert-Butyl ethyl ether (ETB	0.736	0.676	8.2	90	0.02
28	T,M	2-Butanone	0.054	0.049	9.3	84	0.02
29	T,M	cis-1,2-Dichloroethene	0.339	0.329	2.9	93	0.00
30	T,M	2,2-Dichloropropane	0.370	0.388	-4.9	101	0.02
31	T,M	Tetrahydrofurane	0.035	0.033	5.7	85	0.00
32	T,M	Bromochloromethane	0.242	0.236	2.5	92	0.00
33	C,T,M	Chloroform	0.484	0.481	0.6	95	-0.02
34	S	Dibromofluoromethane	0.281	0.284	-1.1	87	0.00
35	T,M	1,1,1-Trichloroethane	0.386	0.374	3.1	95	0.00
36	T,M	Cyclohexane	0.549	0.531	3.3	94	0.00
37	T,M	tert-Amyl methyl ether (TAM	0.568	0.549	3.3	91	0.00
38	S	1,2-Dichloroethane-d4	0.187	0.193	-3.2	89	-0.01
39	T,M	1,1-Dichloropropene	0.164	0.161	1.8	91	-0.01
40	T,M	Carbon tetrachloride	0.324	0.326	-0.6	94	0.00
41	T,M	Benzene	1.196	1.172	2.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	1,2-Dichloroethane	0.225	0.223	0.9	93	-0.01
43	T,M	2,2,4-Trimethylpentane	1.615	0.000	100.0#	0#	-9.62#
44	T,M	Trichloroethene	0.366	0.360	1.6	93	-0.01
45	T,M	Methylcyclohexane	0.617	0.618	-0.2	91	-0.01
46	C,T,M	1,2-Dichloropropane	0.323	0.320	0.9	92	-0.01
47	T,M	1,4-Dioxane	0.001	0.001	0.0	80	0.00
48	T,M	Dibromomethane	0.122	0.119	2.5	88	-0.01
49	T,M	Bromodichloromethane	0.314	0.315	-0.3	93	0.00
50	T,M	2-Chloroethyl vinyl ether	0.100	0.054	46.0#	51	-0.01
51	T,M	cis-1,3-Dichloropropene	0.404	0.409	-1.2	93	-0.01
52	T,M	4-Methyl-2-pentanone	0.141	0.132	6.4	83	-0.01
53	I	CHLOROBENZENE-D5	1.000	1.000	0.0	92	-0.01
54	S	Toluene-d8	1.361	1.355	0.4	86	-0.01
55	C,T,M	Toluene	1.566	1.545	1.3	92	-0.01
56	T,M	Ethyl methacrylate	0.279	0.264	5.4	85	-0.01
57	T,M	trans-1,3-Dichloropropene	0.369	0.372	-0.8	92	-0.01
58	T,M	1,1,2-Trichloroethane	0.210	0.213	-1.4	92	-0.01
59	T,M	Tetrachloroethene	0.343	0.337	1.7	91	-0.01
60	T,M	1,3-Dichloropropane	0.402	0.390	3.0	87	-0.01
61	T,M	2-Hexanone	0.113	0.104	8.0	79	-0.01
62	T,M	Dibromochloromethane	0.260	0.268	-3.1	90	-0.03
63	T,M	1,2-Dibromoethane	0.210	0.209	0.5	87	-0.01
64	T,M	1-Chlorohexane	0.709	0.639	9.9	84	-0.01
65	P,M	Chlorobenzene	0.983	0.994	-1.1	93	-0.01
66	T,M	1,1,1,2-Tetrachloroethane	0.315	0.328	-4.1	92	-0.01
67	C,T,M	Ethylbenzene	1.854	1.865	-0.6	92	-0.01
68	T,M	m-Xylene & p-Xylene	1.319	1.338	-1.4	90	-0.01
69	T,M	o-Xylene	1.265	1.271	-0.5	90	-0.01
70	T,M	Styrene	1.043	1.046	-0.3	91	-0.01
71	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	92	-0.03
72	P,T,M	Bromoform	0.337	0.348	-3.3	89	-0.01
73	T,M	Isopropylbenzene	5.225	5.289	-1.2	95	-0.01
74	S	4-Bromofluorobenzene	1.196	1.189	0.6	87	-0.01
75	P,T,M	1,1,2,2-Tetrachloroethane	0.725	0.699	3.6	85	-0.01
76	T,M	Bromobenzene	1.022	1.006	1.6	90	-0.01
77	T,M	trans-1,4-Dichloro-2-butene	0.145	0.133	8.3	88	-0.01
78	T,M	1,2,3-Trichloropropane	0.176	0.171	2.8	86	-0.01
79	T,M	n-Propylbenzene	6.044	5.961	1.4	89	-0.03
80	T,M	1,3,5-Trimethylbenzene	3.686	3.677	0.2	90	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D
Acq On : 2 Jul 2020 10:23 am
Sample : CVO01E1328
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	2-Chlorotoluene	2.900	2.903	-0.1	89	-0.01
82	T,M	4-Chlorotoluene	3.434	3.326	3.1	88	-0.01
83	T,M	tert-Butylbenzene	0.996	0.978	1.8	91	-0.01
84	T,M	1,2,4-Trimethylbenzene	3.563	3.525	1.1	92	-0.01
85	T,M	sec-Butylbenzene	5.490	5.465	0.5	91	-0.01
86	T,M	p-Isopropyltoluene	4.184	4.091	2.2	90	-0.01
87	T,M	1,3-Dichlorobenzene	1.905	1.846	3.1	86	-0.01
88	T,M	1,4-Dichlorobenzene	1.851	1.793	3.1	90	-0.01
89	T,M	1,2,3-Trimethylbenzene	3.273	3.315	-1.3	92	-0.01
90	T,M	n-Butylbenzene	3.799	3.666	3.5	87	-0.01
91	T,M	1,2-Dichlorobenzene	1.561	1.489	4.6	90	-0.01
92	T,M	1,2-Dibromo-3-chloropropane	0.085	0.079	7.1	84	-0.01
93	T,M	1,2,4-Trichlorobenzene	0.768	0.748	2.6	88	-0.01
94	T,M	Hexachlorobutadiene	0.586	0.581	0.9	91	-0.03
95	T,M	Naphthalene	1.016	0.928	8.7	83	-0.01
96	T,M	1,2,3-Trichlorobenzene	0.575	0.567	1.4	90	-0.03

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:56 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3046588	10.00	ug/l	0.00
53) CHLOROBENZENE-D5	13.86	117	2465586	10.00	ug/l	-0.01
71) 1,2-DICHLOROBENZENE-D4	16.20	152	863123	10.00	ug/l	-0.03
System Monitoring Compounds						
34) Dibromofluoromethane	8.76	111	864397	10.08	ug/l	0.00
Spiked Amount 10.000			Recovery = 100.80%			
38) 1,2-Dichloroethane-d4	9.33	65	586843	10.28	ug/l	-0.01
Spiked Amount 10.000			Recovery = 102.80%			
54) Toluene-d8	12.15	98	3341464	9.96	ug/l	-0.01
Spiked Amount 10.000			Recovery = 99.60%			
74) 4-Bromofluorobenzene	14.97	95	1026133	9.94	ug/l	-0.01
Spiked Amount 10.000			Recovery = 99.40%			
Target Compounds						Qvalue
3) Dichlorodifluoromethane	1.90	85	961983	10.26	ug/l	98
4) Chloromethane	2.11	50	1145514	10.23	ug/l	99
5) Vinyl chloride	2.26	62	1165499	10.61	ug/l	98
7) Bromomethane	2.64	94	733850	10.03	ug/l	100
8) Chloroethane	2.77	64	700810	11.53	ug/l	98
9) Dichlorofluoromethane	3.10	67	1501209	10.00	ug/l	100
10) Trichlorofluoromethane	3.14	101	1126006	11.07	ug/l	100
11) Acrolein	3.73	56	232683	44.04	ug/l	93
12) 1,1,2-Trichloro-1,2,2-trif	3.96	151	603815	9.47	ug/l	98
13) Acetone	3.96	43	474160	45.83	ug/l	99
14) 1,1-Dichloroethene	3.87	61	1449553	9.74	ug/l	98
15) Iodomethane	4.10	142	1560396	9.28	ug/l	99
16) Carbon disulfide	4.21	76	3269073	10.01	ug/l	100
17) Methyl acetate	4.54	43	252951	9.28	ug/l	98
18) Methylene chloride	4.77	49	1194745	9.53	ug/l	96
19) tert-Butyl alcohol	5.10	59	628595	221.54	ug/l	99
20) Acrylonitrile	5.23	53	562659	44.39	ug/l	100
21) tert-Butyl methyl ether (M	5.35	73	1261328	9.61	ug/l	97
22) trans-1,2-Dichloroethene	5.33	61	1426541	9.70	ug/l	99
24) 1,1-Dichloroethane	6.29	63	1763702	9.89	ug/l	100
25) Isopropyl ether (DIPE)	6.52	45	3189547	10.27	ug/l	99
26) 2-Butanol	8.29	45	669627	207.34	ug/l	99
27) tert-Butyl ethyl ether (ET	7.46	59	2060652	9.19	ug/l	99
28) 2-Butanone	7.75	43	753296	45.60	ug/l	99
29) cis-1,2-Dichloroethene	7.71	96	1002633	9.71	ug/l	97
30) 2,2-Dichloropropane	7.71	77	1182435	10.49	ug/l	99
31) Tetrahydrofurane	8.27	42	101482	9.59	ug/l	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:56 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
32)	Bromochloromethane	8.21	49	718303	9.76	ug/l	97
33)	Chloroform	8.45	83	1464664	9.94	ug/l	99
35)	1,1,1-Trichloroethane	8.72	97	1140046	9.69	ug/l	99
36)	Cyclohexane	8.84	84	1618242	9.67	ug/l	99
37)	tert-Amyl methyl ether (TA	9.67	73	1673590	9.67	ug/l	100
39)	1,1-Dichloropropene	9.01	110	490060	9.82	ug/l	100
40)	Carbon tetrachloride	9.00	119	993616	10.08	ug/l	99
41)	Benzene	9.34	78	3570288	9.80	ug/l	99
42)	1,2-Dichloroethane	9.46	62	679377	9.93	ug/l	98
44)	Trichloroethene	10.45	130	1096464	9.84	ug/l	99
45)	Methylcyclohexane	10.78	83	1883770	10.03	ug/l	98
46)	1,2-Dichloropropane	10.81	63	974856	9.92	ug/l	99
47)	1,4-Dioxane	10.97	88	57714	172.13	ug/l	99
48)	Dibromomethane	10.94	93	361505	9.70	ug/l	99
49)	Bromodichloromethane	11.22	83	958637	10.02	ug/l	100
50)	2-Chloroethyl vinyl ether	11.64	63	163955	5.39	ug/l	99
51)	cis-1,3-Dichloropropene	11.81	75	1244768	10.12	ug/l	100
52)	4-Methyl-2-pentanone	12.02	43	2014100	47.03	ug/l	99
55)	Toluene	12.24	91	3809929	9.87	ug/l	100
56)	Ethyl methacrylate	12.66	69	652012	9.47	ug/l	98
57)	trans-1,3-Dichloropropene	12.57	75	918140	10.08	ug/l	99
58)	1,1,2-Trichloroethane	12.81	97	525042	10.16	ug/l	99
59)	Tetrachloroethene	12.91	164	831892	9.85	ug/l	100
60)	1,3-Dichloropropane	13.00	76	961953	9.72	ug/l	99
61)	2-Hexanone	13.06	43	1282116	46.00	ug/l	99
62)	Dibromochloromethane	13.23	129	660952	10.29	ug/l	100
63)	1,2-Dibromoethane	13.37	107	515749	9.95	ug/l	97
64)	1-Chlorohexane	13.87	91	1575429	9.01	ug/l	99
65)	Chlorobenzene	13.89	112	2450967	10.11	ug/l	100
66)	1,1,1,2-Tetrachloroethane	13.98	131	807951	10.41	ug/l	99
67)	Ethylbenzene	13.98	91	4598215	10.06	ug/l	100
68)	m-Xylene & p-Xylene	14.11	91	6599634	20.29	ug/l	98
69)	o-Xylene	14.48	91	3133045	10.04	ug/l	99
70)	Styrene	14.49	104	2580079	10.03	ug/l	100
72)	Bromoform	14.67	173	300705	10.34	ug/l	99
73)	Isopropylbenzene	14.80	105	4565208	10.12	ug/l	99
75)	1,1,2,2-Tetrachloroethane	15.07	83	602987	9.64	ug/l	97
76)	Bromobenzene	15.10	156	868076	9.84	ug/l	100
77)	trans-1,4-Dichloro-2-buten	15.10	53	114402	9.15	ug/l	95
78)	1,2,3-Trichloropropane	15.13	110	147621	9.74	ug/l	97
79)	n-Propylbenzene	15.16	91	5145200	9.86	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:56 2020 Quant Results File: VO01E13.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

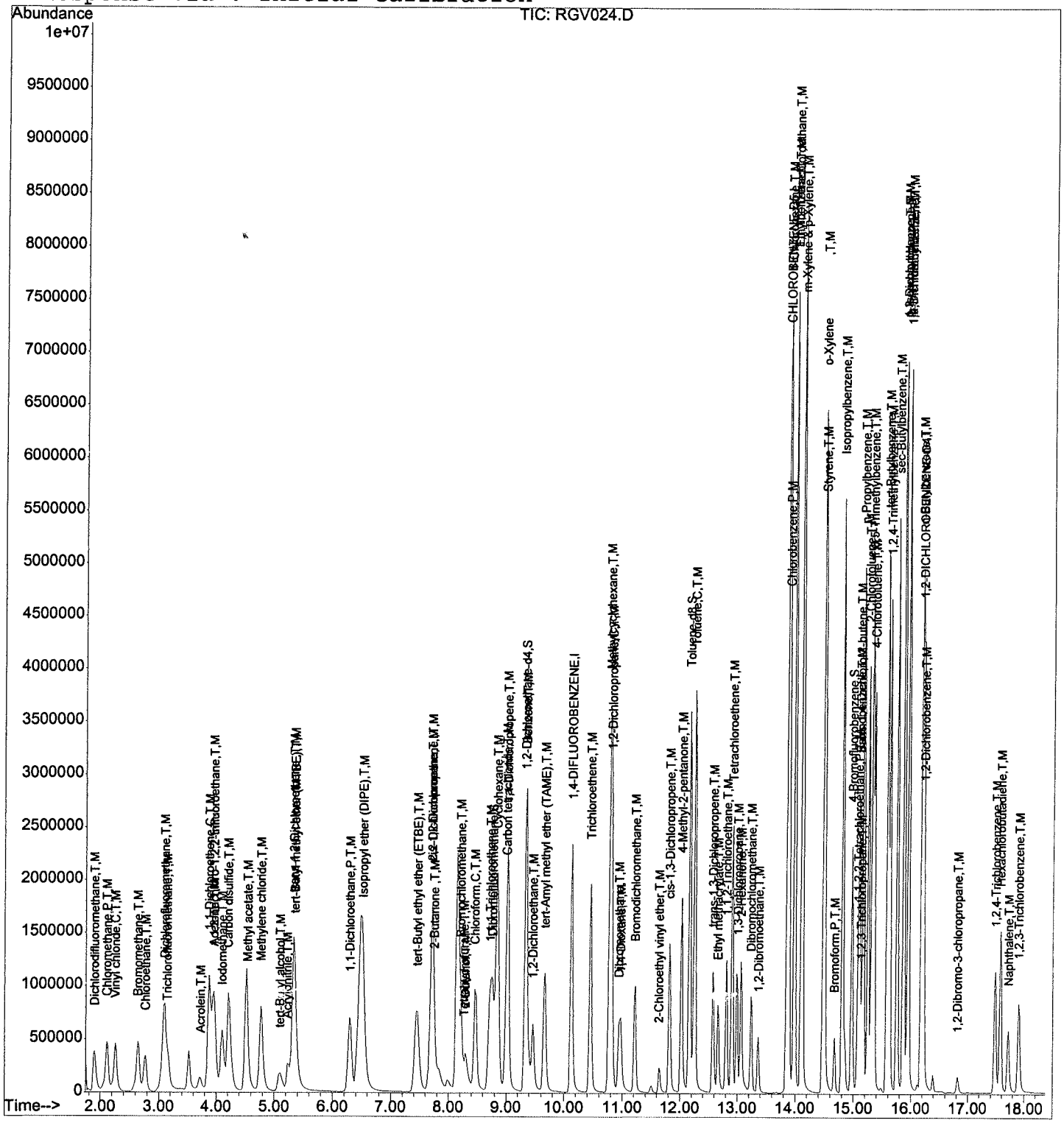
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
80)	1,3,5-Trimethylbenzene	15.31	105	3173289	9.97	ug/l	100
81)	2-Chlorotoluene	15.25	91	2505948	10.01	ug/l	99
82)	4-Chlorotoluene	15.35	91	2870798	9.69	ug/l	98
83)	tert-Butylbenzene	15.57	134	844145	9.82	ug/l	100
84)	1,2,4-Trimethylbenzene	15.62	105	3042451	9.89	ug/l	100
85)	sec-Butylbenzene	15.75	105	4717144	9.96	ug/l	100
86)	p-Isopropyltoluene	15.87	119	3530720	9.78	ug/l	99
87)	1,3-Dichlorobenzene	15.87	146	1593246	9.69	ug/l	99
88)	1,4-Dichlorobenzene	15.94	146	1547474	9.68	ug/l	99
89)	1,2,3-Trimethylbenzene	15.94	105	2861672	10.13	ug/l	100
90)	n-Butylbenzene	16.18	91	3164497	9.65	ug/l	100
91)	1,2-Dichlorobenzene	16.23	146	1284950	9.53	ug/l	99
92)	1,2-Dibromo-3-chloropropan	16.82	157	68293	9.27	ug/l	99
93)	1,2,4-Trichlorobenzene	17.48	180	645991	9.75	ug/l	99
94)	Hexachlorobutadiene	17.57	225	501751	9.92	ug/l	99
95)	Naphthalene	17.72	128	801026	9.14	ug/l	100
96)	1,2,3-Trichlorobenzene	17.90	180	489416	9.87	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 6 13:56 2020 Quant Results File: VO01E13.RES

Method : D:\HPCHEM\1\METHODS\VO01E13.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Thu May 14 17:18:44 2020
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	96	0.00
2	T,M	Vinyl acetate	10.000	8.376	16.2	86	0.00
3	I	CHLOROBENZENE-D5	10.000	10.000	0.0	93	0.00
4	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RGV024.D VO01E14.M Mon Jul 06 12:28:15 2020 Page 1

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	96	0.00
2	T,M	Vinyl acetate	0.279	0.272	2.5	86	0.00
3	I	CHLOROBENZENE-D5	1.000	1.000	0.0	93	0.00
4	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	95	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D Vial: 2
Acq On : 2 Jul 2020 10:23 am Operator: VLu
Sample : CVO01E1328 Inst : 01
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 2 11:17 2020 Quant Results File: VO01E14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration
DataAcq Meth : VO01E13

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	10.13	114	3028282	10.00	ug/l	0.00
3) CHLOROBENZENE-D5	13.86	117	2465740	10.00	ug/l	0.00
4) 1,2-DICHLOROBENZENE-D4	16.20	152	863094	10.00	ug/l	-0.01
Target Compounds						Qvalue
2) Vinyl acetate	6.41	43	824170	8.38	ug/l	96

(#) = qualifier out of range (m) = manual integration
RGV024.D VO01E14.M Mon Jul 06 12:28:22 2020 Page 1

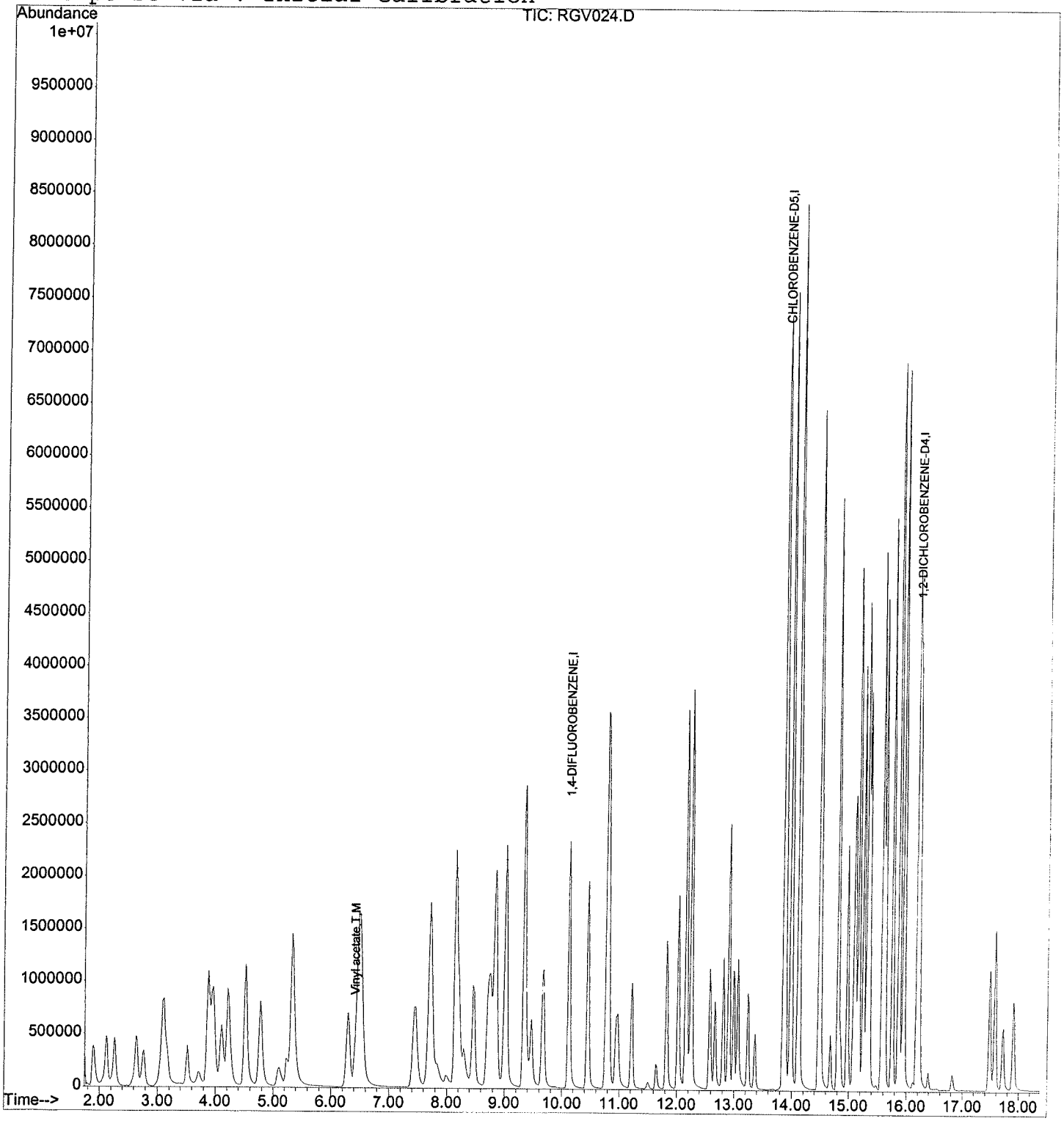
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20G02\RGV024.D
Acq On : 2 Jul 2020 10:23 am
Sample : CVO01E1328
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Jul 2 11:17 2020

Vial: 2
Operator: VLu
Inst : 01
Multiplr: 1.00

Quant Results File: VO01E14.RES

Method : D:\HPCHEM\1\METHODS\VO01E14.M (RTE Integrator)
Title : METHOD 8260 25mls
Last Update : Fri May 15 11:51:49 2020
Response via : Initial Calibration



ANALYTICAL LOG(S)

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 6/29/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A01-063

BATCH CV001E1325

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH<2	Matrix W Cl_2<5ppm	Matrix S	Notes
01		RFV356	BFB01F17 ✓						ID: 32
02		57	CV001E1325 ✓						
03		58	V001F17L ✓						
04		59	↓ L ✓						
05		60	RINSE						
06		61	V001F17B ✓	25 mL					
07		62	20F238-05 ✓	↓	1.0	✓	✓		
08		63	↓ -02 ✓		↓	✓	✓		
09		64	↓ -03 ✓			✓	✓		
10		65	20F178-08 ✓			✓	✓		
11		66	↓ -10 ✓			✓	✓		
12		67	↓ -11 ✓			✓	✓		
13		68	20F183-04 ✓			✓	✓		
14		69	↓ -09 ✓	↓	↓	✓	✓		
15		70	4 TB PREP						
16		71	20F183-10 ✓	25mL	1.0	✓	✓		
17		72	↓ -11 ✓	↓	↓	✓	✓		
18		73	-17 ✓			✓	✓		
19		74	-01 ✓			✓	✓		
20		75	-02 ✓			✓	✓		
21		76	-03 ✓			✓	✓		
22		77	-05 ✓			✓	✓		
23		78	-06 ✓			✓	✓		
24		79	↓ -07 ✓	↓	↓	✓	✓		22:07
25		↓ 80	RINSE						
26									
27									
28									
29									
30									VL 6/30/20

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20 / 5/14/20
ICAL ID	V001E13 / V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 Vol-AA	SVI-34-08-03	5	
	-42-02	5	
DCC 4add	-13-01	1	
DCC GAS	-38-01	1	
DCC CS_2	-05-01	1	
BFB	-26-03	1	SQ12501 1250
IS/SURR.	-40-01	5	
ICV/LCS 8260 Vol-AA	-20-01	5	
	-47-03	5	
ICV/LCS 3add	-48-01	5	
ICV/LCS GAS	↓ -42-01	1	
ICV/LCS CS_2	SVI-33-74-01	1	
Data File Folder	20F29		

	LOT #	Syringe Lot #
pH strip	HC998032	MSV-02-02-05-1
Chlorine strip	002214	↓ -02-01-07-5
Methanol		↓ -01-04-16
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments:

Analyzed By: VL

Date Disposed: 6/30/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☐ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Book #: A01-063

Start Date: 6/30/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

BATCH CV001E1326

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		RFV381	BFB01F18 ✓						12:08
02		82	CV001E1326 ✓						
03		83	V001F18L ✓						
04		84	↓ C ✓						
05		85	RINSE						
06		86	V001F18B ✓	25 mL					
07		87	PV-003-02-19 ✓						
08		88	20F250-02 ✓	25 mL	1.0	✓	✓		
09		89	-01 ✓			✓	✓		
10		90	-04 ✓			✓	✓		
11		91	-03 ✓			✓	✓		
12		92	↓ -05 ✓			✓	✓		
13		93	20F251-01 ✓			✓	✓		
14		94	20F183-08 ✓			✓	✓		
15		95	↓ -08M ✓			✓	✓		
16		96	↓ -08S ✓			✓	✓		
17		97	RINSE						
18		98	20F183-12 ✓	25mL	1.0	✓	✓		5x
19		99	-13 ✓			✓	✓		5x
20		400	-14 ✓			✓	✓		
21		01	-15 ✓			✓	✓		
22		02	↓ -16 ✓			✓	✓		22:10
23		03	RINSE						
24									
25									
26									
27									
28									VL 7/1/20
29									VL 7/1/20
30									

Instrument No. 01

INITIAL CALIBRATION REFERENCE

DATE 5/13/20 / 5/14/20

ICAL ID VL 7/1/20 V001E13 / V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 Ket-AA	SVI-34-08-03	5	
	-42-02	5	
DCC 4add	-13-01	1	
DCC GAS	-38-01	1	
DCC CS_2	-05-01	1	
BFB	-26-03	1	
IS/SURR.	-40-01	5	5012501
ICV/LCS 8260 Ket-AA	-20-01	5	1250
	-47-03	5	
ICV/LCS 3add	-48-01	5	
ICV/LCS GAS	-42-01	1	
ICV/LCS CS_2	SVI-33-74-01	1	
Data File Folder	20F30		

	LOT #	Syringe Lot #
pH strip	HC998032	MSV-02-01-05-1
Chlorine strip	002214	↓ -02-01-07-5
Methanol		↓ -01-04-16
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments:

Analyzed By: VL

Date Disposed: 7/1/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 7/2/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge Book #: A01-063

BATCH CV001E1328

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01	R6V023		BFB01602 ✓						09:37
02	24		CV001E1328 ✓						
03	25		V001602L ✓						
04	26		↓ C ✓						
05	27		RINSE						
06	28		V001602B ✓	25 mL					
07	29		20F183-12I ✓	5.0mL	5.0	✓	✓		
08	30		↓ -13I ✓	↓	↓	✓	✓		
09	31		20F251-02 ✓	25mL	1.0	✓	✓		
10	32		20F187-01 ✓	↓	↓	✓	✓		
11	33		↓ -02 ✓			✓	✓		
12	34		↓ -03 ✓			✓	✓		
13	35		RINSE						
14	36		20F218-10 ✓	25mL	1.0	✓	✓		
15	37		-01 ✓			✓	✓		
16	38		-02 ✓			✓	✓		
17	39		-03 ✓			✓	✓		
18	40		-04 ✓			✓	✓		
19	41		-05 ✓			✓	✓		
20	42		-06 ✓			✓	✓		
21	43		-07 ✓			✓	✓		
22	44		-08 ✓			✓	✓		
23	45		-09 ✓			✓	✓		
24	46		-11 ✓			✓	✓		
25	47		↓ -12 ✓	↓	↓	✓	✓		
26	48		EV001E1328 ✓						21:15
27	49		↓ A						
28	50		↓ B						
29	51		RINSE						
30									VL 7/6/20

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20 / 5/14/20
ICAL ID	V001E13 / V001E14

STANDARDS

	NAME	ID	Amount (µl)	Conc. (mg/L)
DCC	8260 ker-AA	SV1-34-15-01	5	
DCC	ker-AA	-42-03	5	
DCC	4add	-13-01	1	
DCC	GAS	-44-03	1	
DCC	CS_2	-26-01	1	
BFB		-26-03	1	50/2501
IS/SURR.		-50-02	5	1250
ICV/LCS	8260 ker-AA	-31-02	5	
ICV/LCS	ker-AA	-47-03	5	
ICV/LCS	3add	-48-01	5	
ICV/LCS	GAS	-42-01	1	
ICV/LCS	CS_2	-28-01	1	

Data File Folder	20602	
	LOT #	Syringe Lot #
pH strip	HC998032	MSV-02-01-05-1
Chlorine strip	002214	-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		
Reagent Water	RWS-19-001	
Sand		
Electronic Data Archival Location		Date
HPCHEM_VOA/TO01		

Comments:

Analyzed By: VL

Date Disposed: 7/6/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/13/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V01E136

	Sample Prep ID	Data File Name	Lab Sample ID	(mL) Sample Amount (*)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes 8260	Notes ket-AA	Notes TBA
01		REV197	BFB01E09 ✓	A / B	NA	NA	NA				13:15
02		98	V001E131 ✓	0.03/0.15					0.3	1.5	7.5 ppb
03		99	2 ✓	0.05/0.25					0.5	2.5	12.5
04		200	3 ✓	0.1/0.5					1.0	5.0	25
05		01	4 ✓	0.2/1.0					2.0	10	50
06		02	5 ✓	0.5/2.5					5.0	25	125
07		03	6 ✓	1.0/5.0					10	50	250
08		04	7 ✓	2.0/10					20	100	500
09		05	8 ✓	3.0/15					30	150	750
10		06	9 ✓	5.0/25					50	250	1250
11		07	10 ✓	10/50					100	500	2500
12		08	RINSE								
13		09									
14		10	IV001E1301 ✓						10	50	250 ppb
15		11	RINSE								19:58
16									(A): GAS, CS_2, 4add, 224-TMP		
17											
18									(B): 8260, ket-AA		
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30									VL 5/14/20		

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/13/20
ICAL ID	V001E13

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 ket-AA	SV1-34-31-02	*	50/1250
	-34-20-03		250
DCC 4add GAS	-34-13-01		25016250
	-34-32-01		250
DCC CS_2	-33-97-01		250
DCC 224-TMP	-34-33-03		250
BFB	-34-27-01	1	50
IS/SURR. IS	-34-23-02	5	50
SS	-34-01-01	*	250
ICV/LCS 8260 ket-AA	-34-20-01	5	50/1250
	-34-11-01	5	250
ICV/LCS 3add 2but	-33-50-01	5	50
	-25-19-05	6.25	1000
ICV/LCS GAS	-34-10-03	1	250
CS_2	-33-74-01	1	250
ICV/LCS 224-TMP	-34-05-02	5	50
Data File Folder	20E13		

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RWS-19-001	-01-03-12
Sand		N01-C5916

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: (*) varied amount

Analyzed By: VL

Date Disposed: 5/14/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 5/14/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A01-062

BATCH V001E144

	Sample Prep ID	Data File Name	Lab Sample ID	(*) Sample Amount (mL)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01		REV212	BFB01E10 ✓		NA	NA	NA		16:40
02		13	V001E141 ✓	0.5					1.0 ppb
03		14	2 ✓	1.0					2.0 ppb
04		15	3 ✓	2.5					5.0 ppb
05		16	4 ✓	5.0					10 ppb
06		17	5 ✓	10					20 ppb
07		18	6 ✓	15					30 ppb
08		19	IV001E1401 ✓						10 ppb 20:17
09		20	RINSE						
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									VL 5/15/20
30									

Instrument No.	01
INITIAL CALIBRATION REFERENCE	
DATE	5/14/20
ICAL ID	V001E14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC			
DCC			
DCC			
DCC	SVI-34-34-03	*	50
BFB	-27-01	1	50
IS/SURR. IS	-23-02	5	50
ICV/LCS	-35-01	5	50
ICV/LCS			
ICV/LCS			
ICV/LCS			
Data File Folder			

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-01-05-08
Reagent Water	RWS-19-001	NO1-C5916
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO01	

Comments: ** vinyl acetate ICAL ** method of analysis V001E14 same parameters as V001E13 **

Analyzed By: VL

Date Disposed: 5/15/20 Disposed By: VL

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F183

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF099) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF019WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF019WL/SVF019WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. 1,4-Dioxane (P-DIOXANE) was within MS QC limits in 20F183-08M/20F183-08S. Refer to Matrix QC summary form for details.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Instrument ID : F0

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF019WB	1	NA	06/24/2011:40	06/23/2014:45	RFF100	RFF005	20SVF019W	Method Blank
LCS1W	SVF019WL	1	NA	06/24/2011:53	06/23/2014:45	RFF101	RFF005	20SVF019W	Lab Control Sample (LCS)
LCD1W	SVF019WC	1	NA	06/24/2012:12	06/23/2014:45	RFF102	RFF005	20SVF019W	LCS Duplicate
MW17S-GW062120	20F183-01	1	NA	06/24/2012:31	06/23/2014:45	RFF103	RFF005	20SVF019W	Field Sample
MW17D-GW062120	20F183-02	1	NA	06/24/2012:50	06/23/2014:45	RFF104	RFF005	20SVF019W	Field Sample
MW06-GW062120	20F183-03	1	NA	06/24/2013:09	06/23/2014:45	RFF105	RFF005	20SVF019W	Field Sample
MW16S-GW062120	20F183-05	1	NA	06/24/2013:28	06/23/2014:45	RFF106	RFF005	20SVF019W	Field Sample
MW16D-GW062120	20F183-06	1	NA	06/24/2013:47	06/23/2014:45	RFF107	RFF005	20SVF019W	Field Sample
MW04-GW062120	20F183-07	1	NA	06/24/2014:06	06/23/2014:45	RFF108	RFF005	20SVF019W	Field Sample
MW08A-GW062120	20F183-08	1	NA	06/24/2014:25	06/23/2014:45	RFF109	RFF005	20SVF019W	Field Sample
MW08A-GW062120MS	20F183-08M	1	NA	06/24/2014:44	06/23/2014:45	RFF110	RFF005	20SVF019W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	20F183-08S	1	NA	06/24/2015:03	06/23/2014:45	RFF111	RFF005	20SVF019W	MS Duplicate (MSD)
MW01S-GW062120	20F183-12	1	NA	06/24/2015:22	06/23/2014:45	RFF112	RFF005	20SVF019W	Field Sample
FD01-GW062120	20F183-13	1	NA	06/24/2015:41	06/23/2014:45	RFF113	RFF005	20SVF019W	Field Sample
MW08C-GW062220	20F183-14	1	NA	06/24/2016:00	06/23/2014:45	RFF114	RFF005	20SVF019W	Field Sample
MW08B-GW062220	20F183-15	1	NA	06/24/2016:19	06/23/2014:45	RFF115	RFF005	20SVF019W	Field Sample
FD02-GW062220	20F183-16	1	NA	06/24/2016:38	06/23/2014:45	RFF116	RFF005	20SVF019W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW17S-GW062120	Date Analyzed:	06/24/20 12:31
Lab Samp ID:	20F183-01	Dilution Factor:	1
Lab File ID:	RFF103	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	42.2	42.4	100	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 940ml	Final Volume :	2ml
Prepared by	: ERodri	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

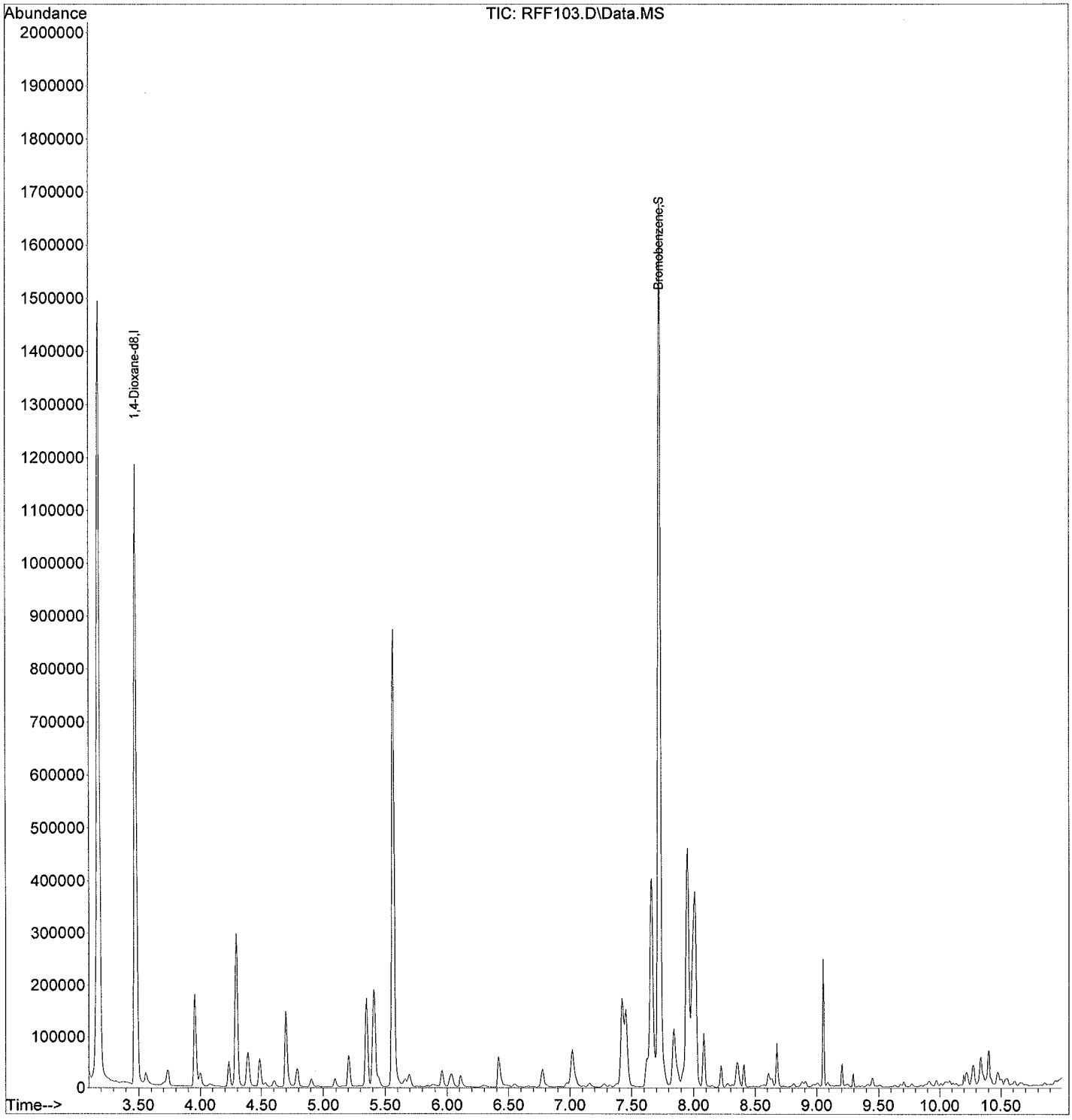
Data File : C:\msdchem\1\DATA\20F24\RFF103.D Vial: 7
Acq On : 24 Jun 2020 12:31 Operator: RMinam
Sample : 20F183-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:19:52 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	180060	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	300212	19.85	ppm	0.00
Spiked Amount 20.000			Recovery = 99.25%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF103.D Vial: 7
Acq On : 24 Jun 2020 12:31 Operator: RMinam
Sample : 20F183-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:19:52 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW17D-GW062120	Date Analyzed:	06/24/20 12:50
Lab Samp ID:	20F183-02	Dilution Factor:	1
Lab File ID:	RFF104	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	39.5	42.4	93	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 940ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

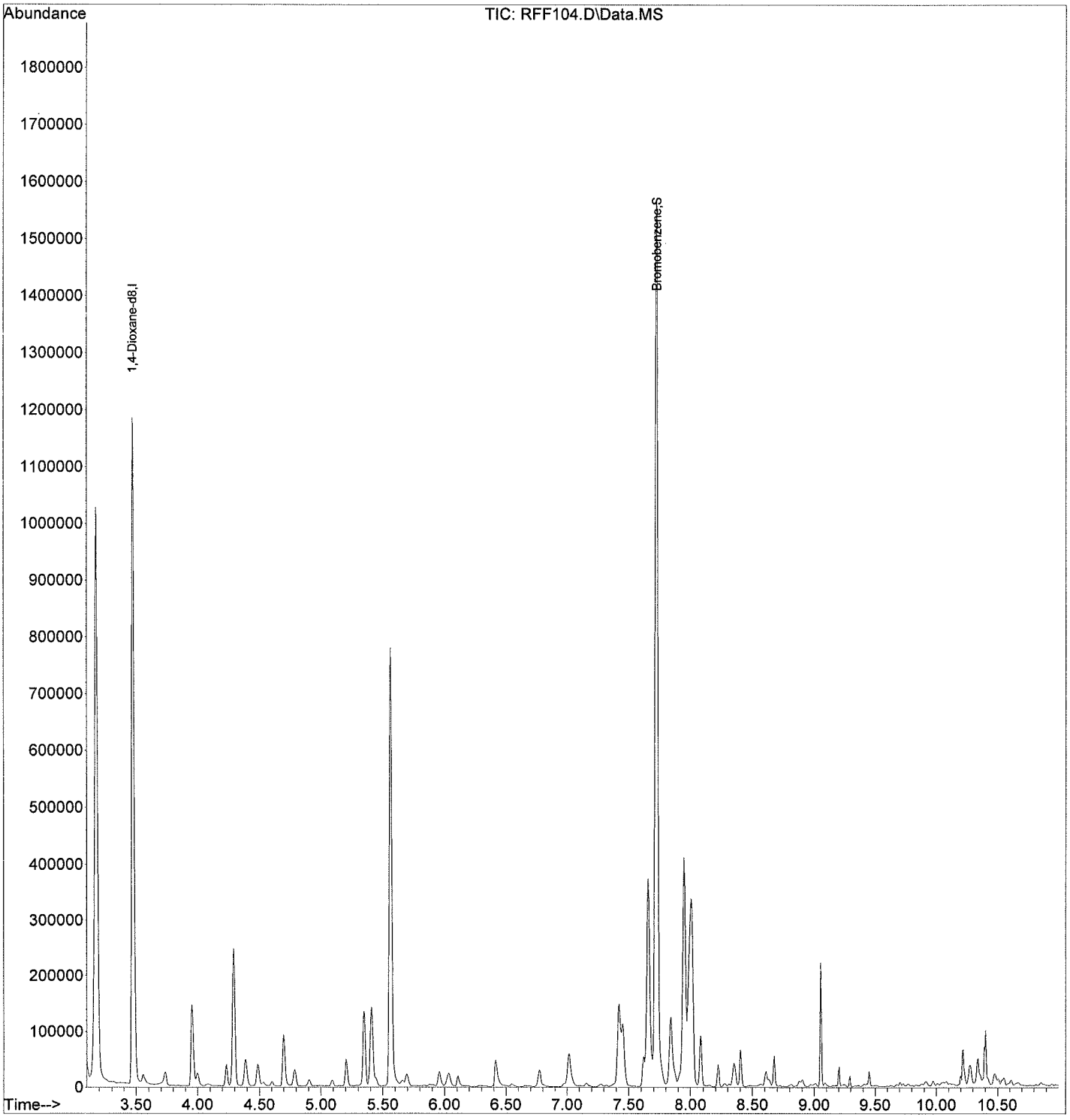
Data File : C:\msdchem\1\DATA\20F24\RFF104.D Vial: 8
Acq On : 24 Jun 2020 12:50 Operator: RMinam
Sample : 20F183-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	186132	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	290563	18.58	ppm	0.00
Spiked Amount 20.000			Recovery =	92.90%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF104.D Vial: 8
Acq On : 24 Jun 2020 12:50 Operator: RMinam
Sample : 20F183-02 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 12:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW06-GW062120	Date Analyzed:	06/24/20 13:09
Lab Samp ID:	20F183-03	Dilution Factor:	1
Lab File ID:	RFF105	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.46	0.23

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	42.4	46.4	91	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 860ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

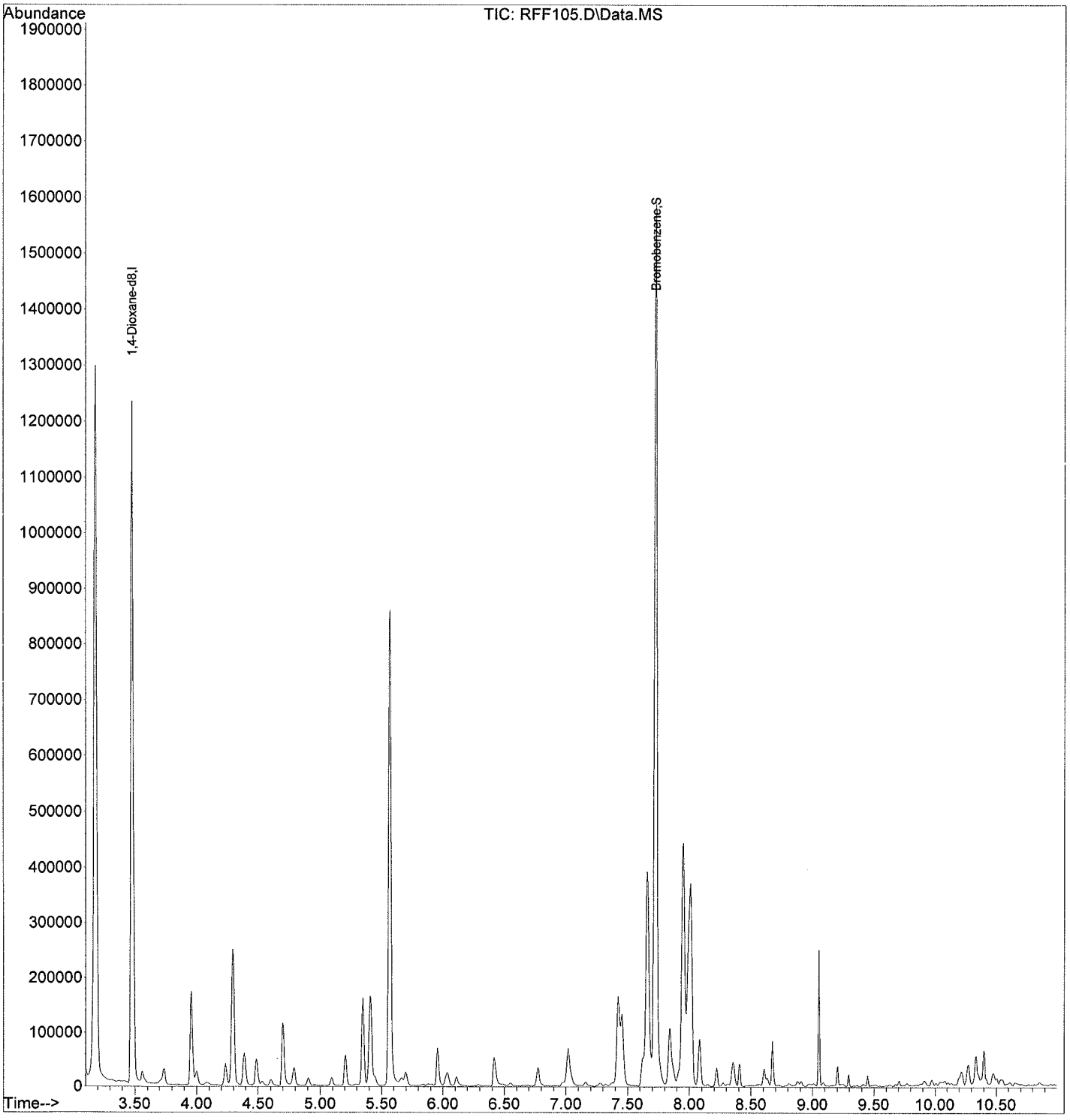
Data File : C:\msdchem\1\DATA\20F24\RFF105.D Vial: 9
Acq On : 24 Jun 2020 13:09 Operator: RMinam
Sample : 20F183-03 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:15 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	184944	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	283147	18.22	ppm	0.00
Spiked Amount 20.000			Recovery = 91.10%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF105.D Vial: 9
Acq On : 24 Jun 2020 13:09 Operator: RMinam
Sample : 20F183-03 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:15 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW16S-GW062120	Date Analyzed:	06/24/20 13:28
Lab Samp ID:	20F183-05	Dilution Factor:	1
Lab File ID:	RFF106	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	39.9	44.4	90	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 900ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

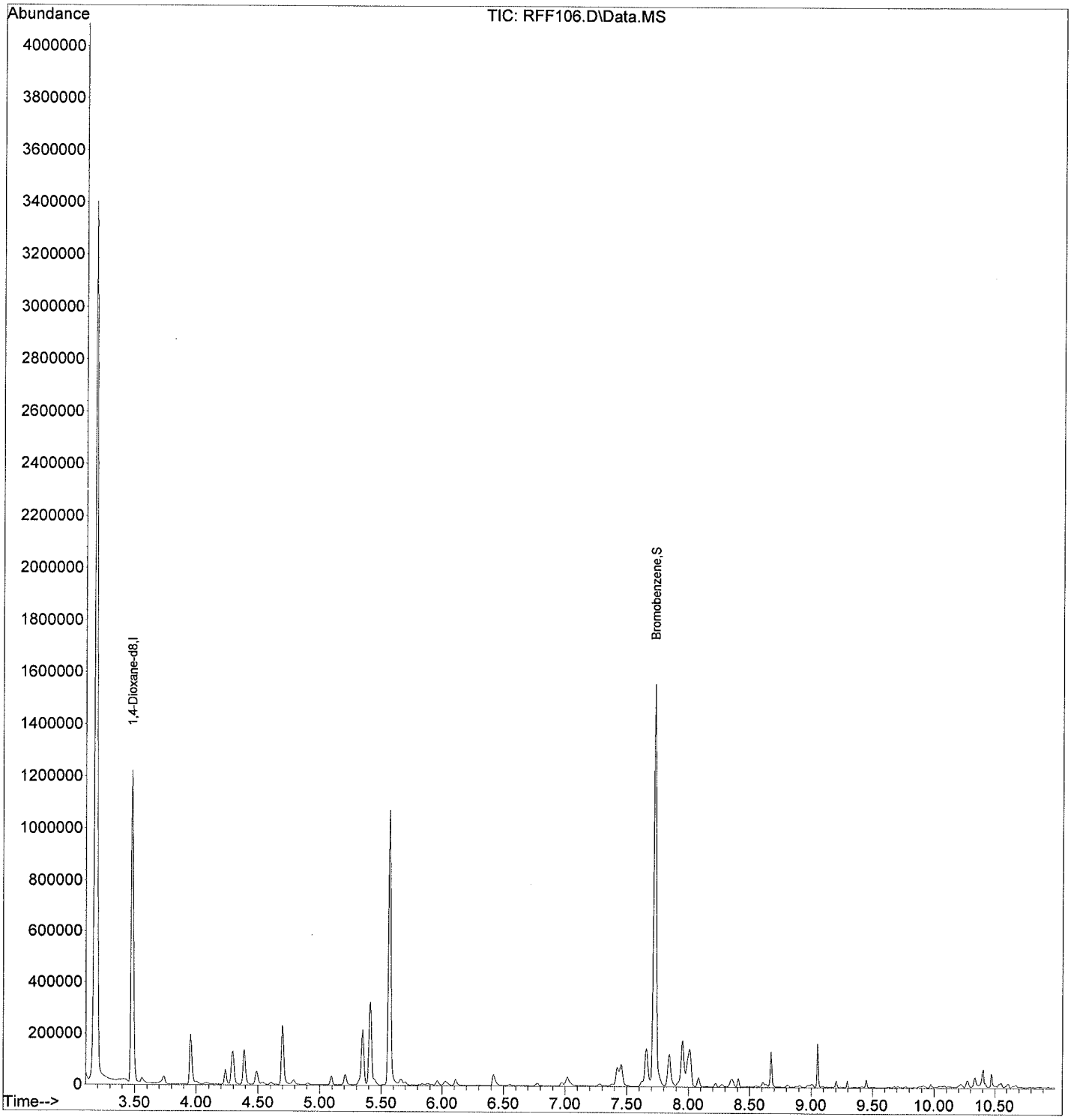
Data File : C:\msdchem\1\DATA\20F24\RFF106.D Vial: 10
Acq On : 24 Jun 2020 13:28 Operator: RMinam
Sample : 20F183-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:51:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	184553	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	278176	17.94	ppm	0.00
Spiked Amount 20.000			Recovery =	89.70%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF106.D Vial: 10
Acq On : 24 Jun 2020 13:28 Operator: RMinam
Sample : 20F183-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:51:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW16D-GW062120	Date Analyzed:	06/24/20 13:47
Lab Samp ID:	20F183-06	Dilution Factor:	1
Lab File ID:	RFF107	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	38.9	42.0	93	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 950ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

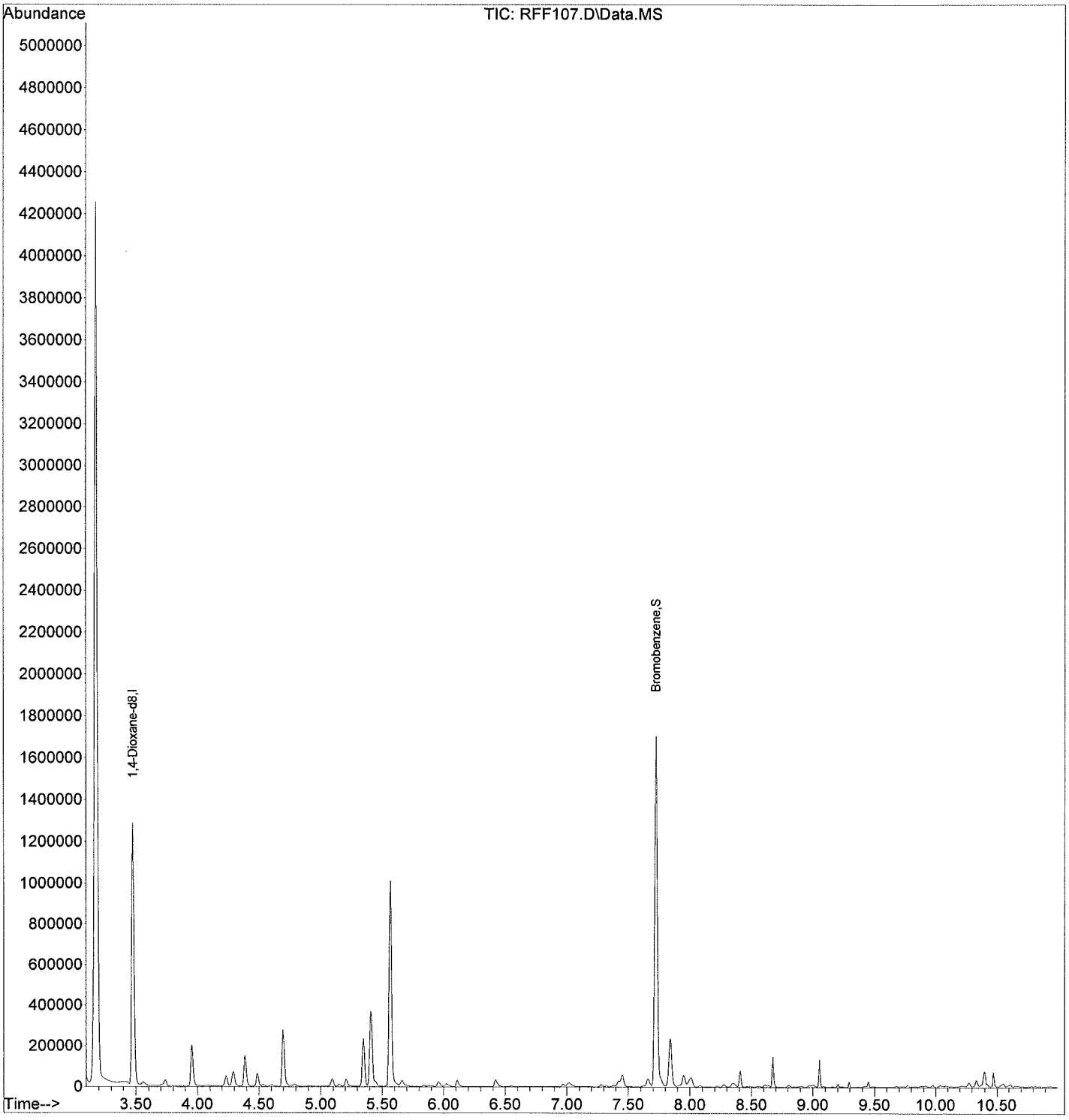
Data File : C:\msdchem\1\DATA\20F24\RFF107.D Vial: 11
Acq On : 24 Jun 2020 13:47 Operator: RMinam
Sample : 20F183-06 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	193370	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	300155	18.48	ppm	0.00
Spiked Amount 20.000			Recovery =	92.40%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF107.D Vial: 11
Acq On : 24 Jun 2020 13:47 Operator: RMinam
Sample : 20F183-06 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:20:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW04-GW062120	Date Analyzed:	06/24/20 14:06
Lab Samp ID:	20F183-07	Dilution Factor:	1
Lab File ID:	RFF108	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	FO

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	39.5	40.8	97	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 980ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

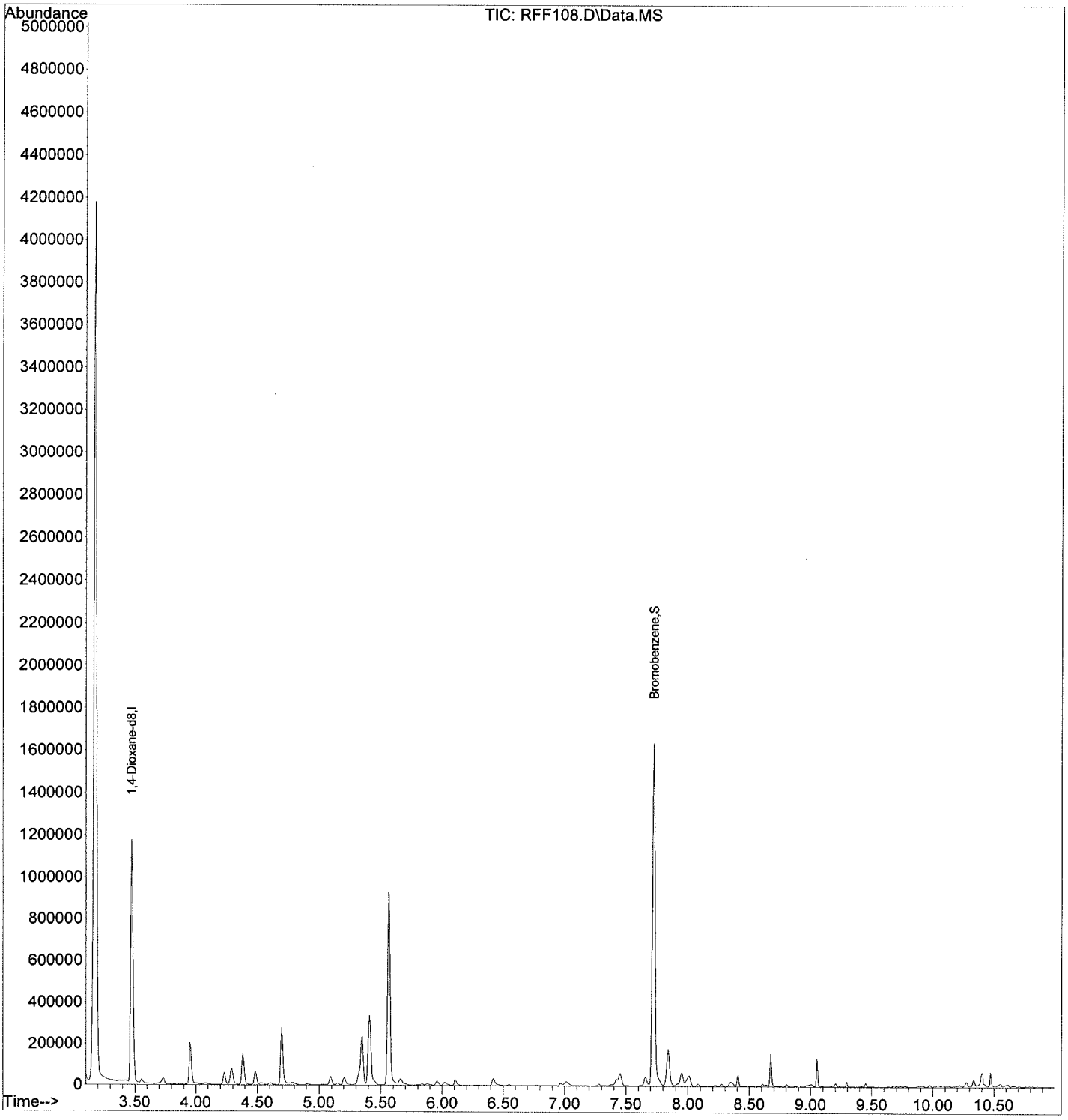
Data File : C:\msdchem\1\DATA\20F24\RFF108.D Vial: 12
Acq On : 24 Jun 2020 14:06 Operator: RMinam
Sample : 20F183-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:25:53 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	181075	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	294374	19.35	ppm	0.00
Spiked Amount 20.000			Recovery = 96.75%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF108.D Vial: 12
Acq On : 24 Jun 2020 14:06 Operator: RMinam
Sample : 20F183-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:25:53 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 16:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW08A-GW062120	Date Analyzed:	06/24/20 14:25
Lab Samp ID:	20F183-08	Dilution Factor:	1
Lab File ID:	RFF109	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.41	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	36.4	40.8	89	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 980ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

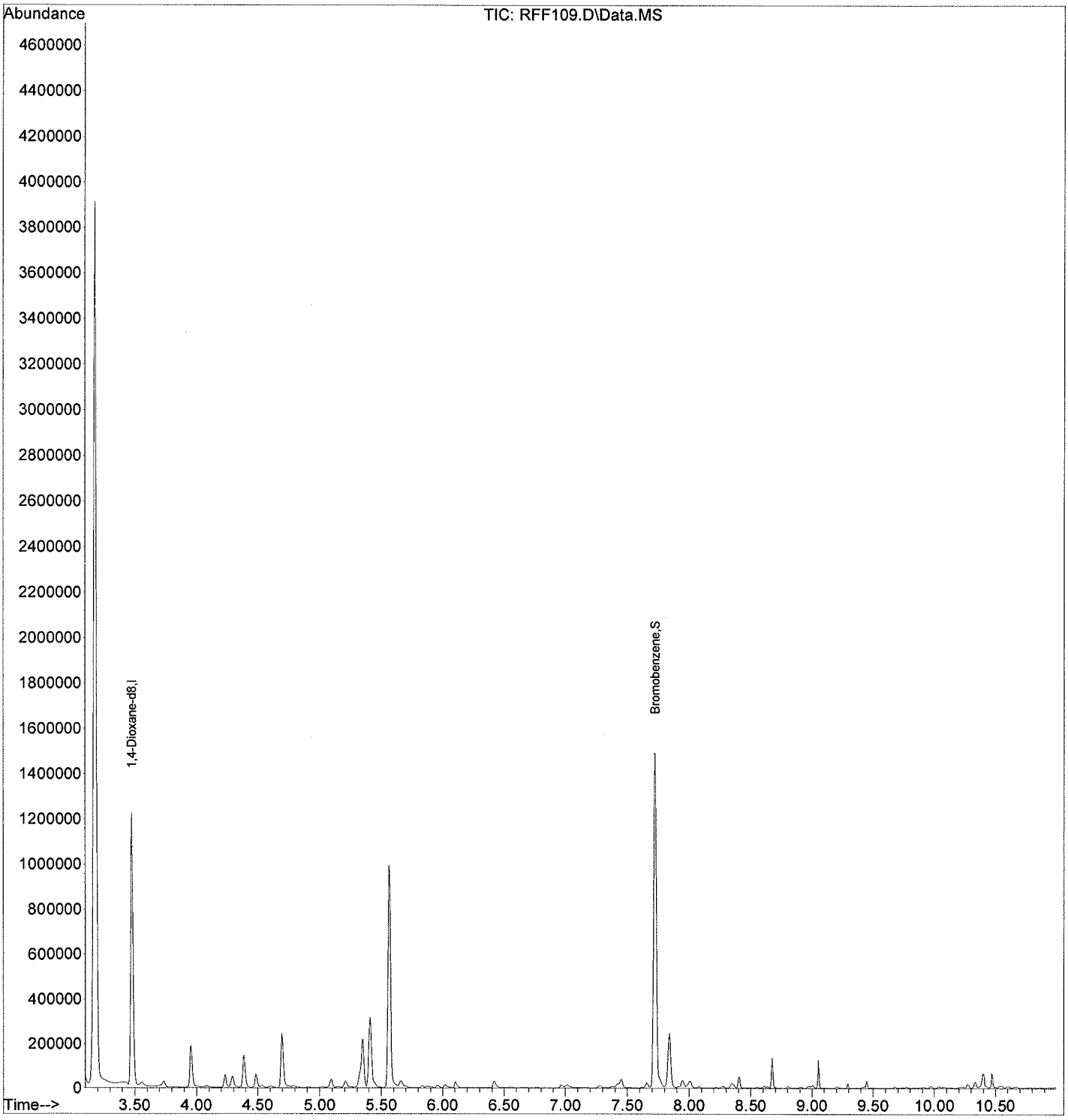
Data File : C:\msdchem\1\DATA\20F24\RFF109.D Vial: 13
Acq On : 24 Jun 2020 14:25 Operator: RMinam
Sample : 20F183-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:57:56 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	186942	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	280114	17.84	ppm	0.00
Spiked Amount 20.000			Recovery =	89.20%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF109.D Vial: 13
Acq On : 24 Jun 2020 14:25 Operator: RMinam
Sample : 20F183-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:57:56 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW01S-GW062120	Date Analyzed:	06/24/20 15:22
Lab Samp ID:	20F183-12	Dilution Factor:	1
Lab File ID:	RFF112	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	34.4	41.6	83	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 960ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

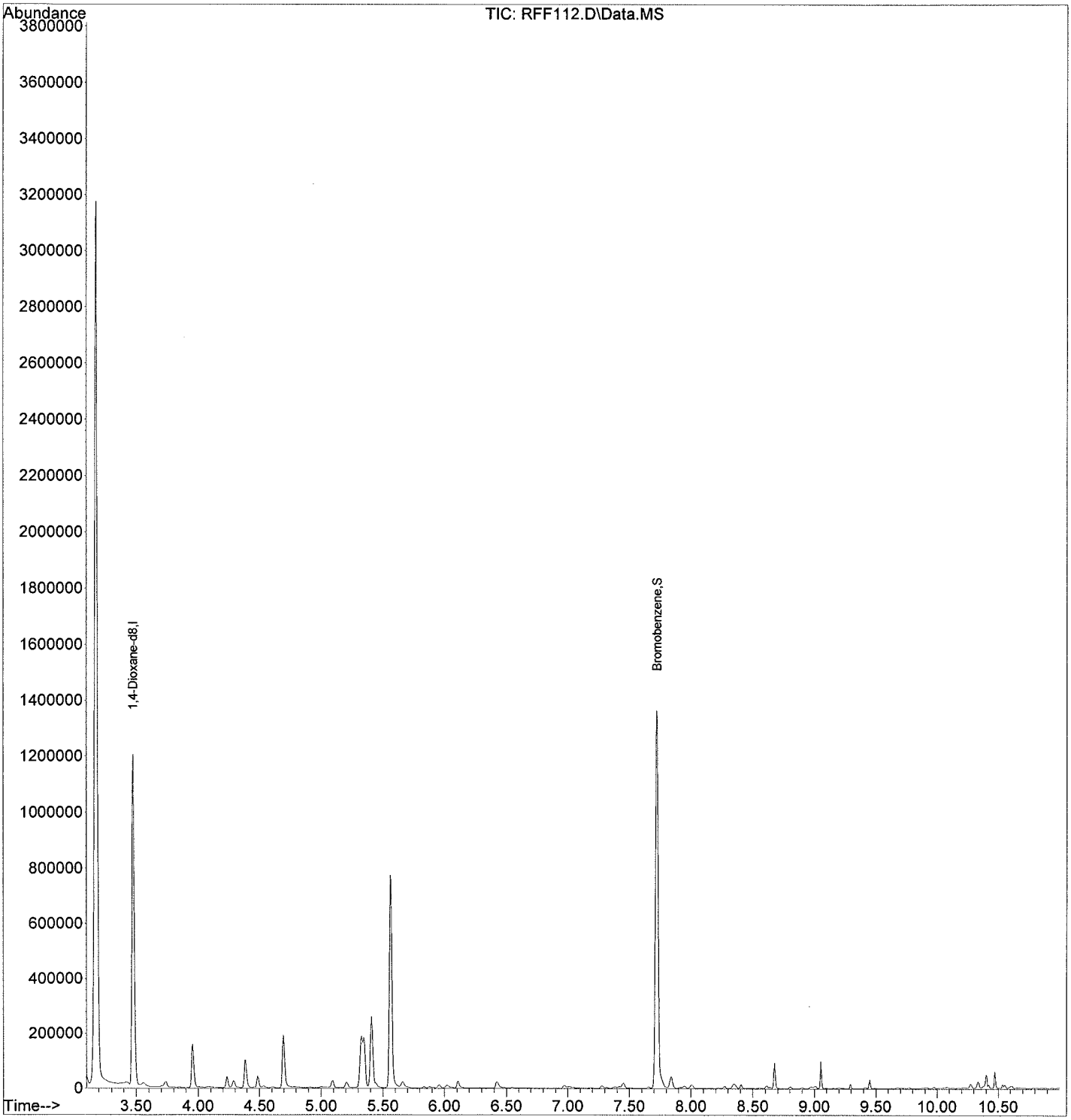
Data File : C:\msdchem\1\DATA\20F24\RFF112.D Vial: 16
Acq On : 24 Jun 2020 15:22 Operator: RMinam
Sample : 20F183-12 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:58:37 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	184834	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	256058	16.49	ppm	0.00
Spiked Amount 20.000			Recovery =	82.45%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF112.D Vial: 16
Acq On : 24 Jun 2020 15:22 Operator: RMinam
Sample : 20F183-12 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:58:37 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/21/20 10:15
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: FD01-GW062120	Date Analyzed:	06/24/20 15:41
Lab Samp ID:	20F183-13	Dilution Factor:	1
Lab File ID:	RFF113	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	31.6	42.0	75	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 950ml	Final Volume	: 2ml
Prepared by	: ERodri	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

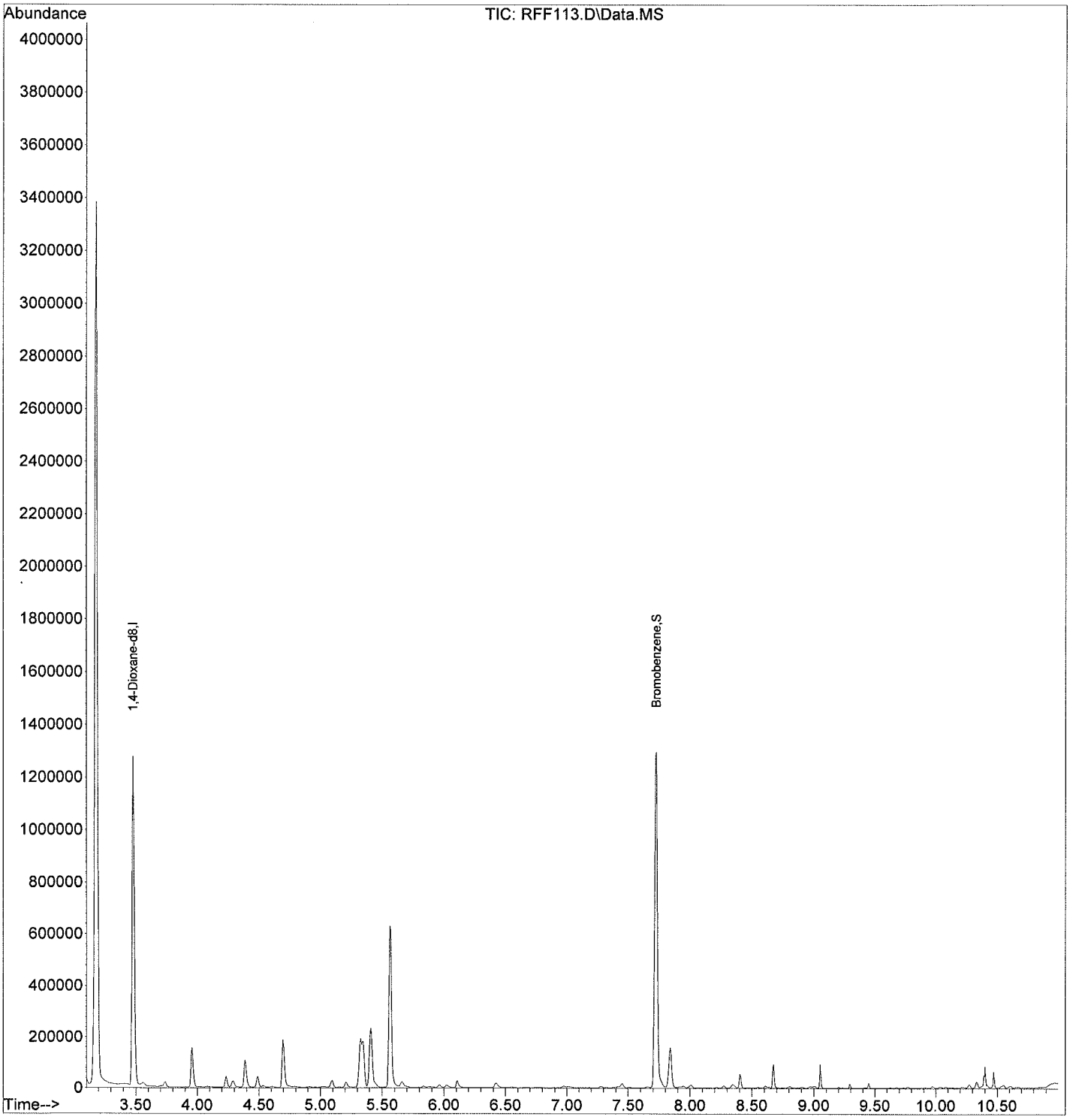
Data File : C:\msdchem\1\DATA\20F24\RFF113.D Vial: 17
Acq On : 24 Jun 2020 15:41 Operator: RMinam
Sample : 20F183-13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:37:49 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	190336	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	240207	15.02	ppm	0.00
Spiked Amount 20.000			Recovery = 75.10%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF113.D Vial: 17
Acq On : 24 Jun 2020 15:41 Operator: RMinam
Sample : 20F183-13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:37:49 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/22/20 10:20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW08C-GW062220	Date Analyzed:	06/24/20 16:00
Lab Samp ID:	20F183-14	Dilution Factor:	1
Lab File ID:	RFF114	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.39	0.20	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	32.2	39.2	82	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1020ml	Final Volume :	2ml
Prepared by	: ERodri	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

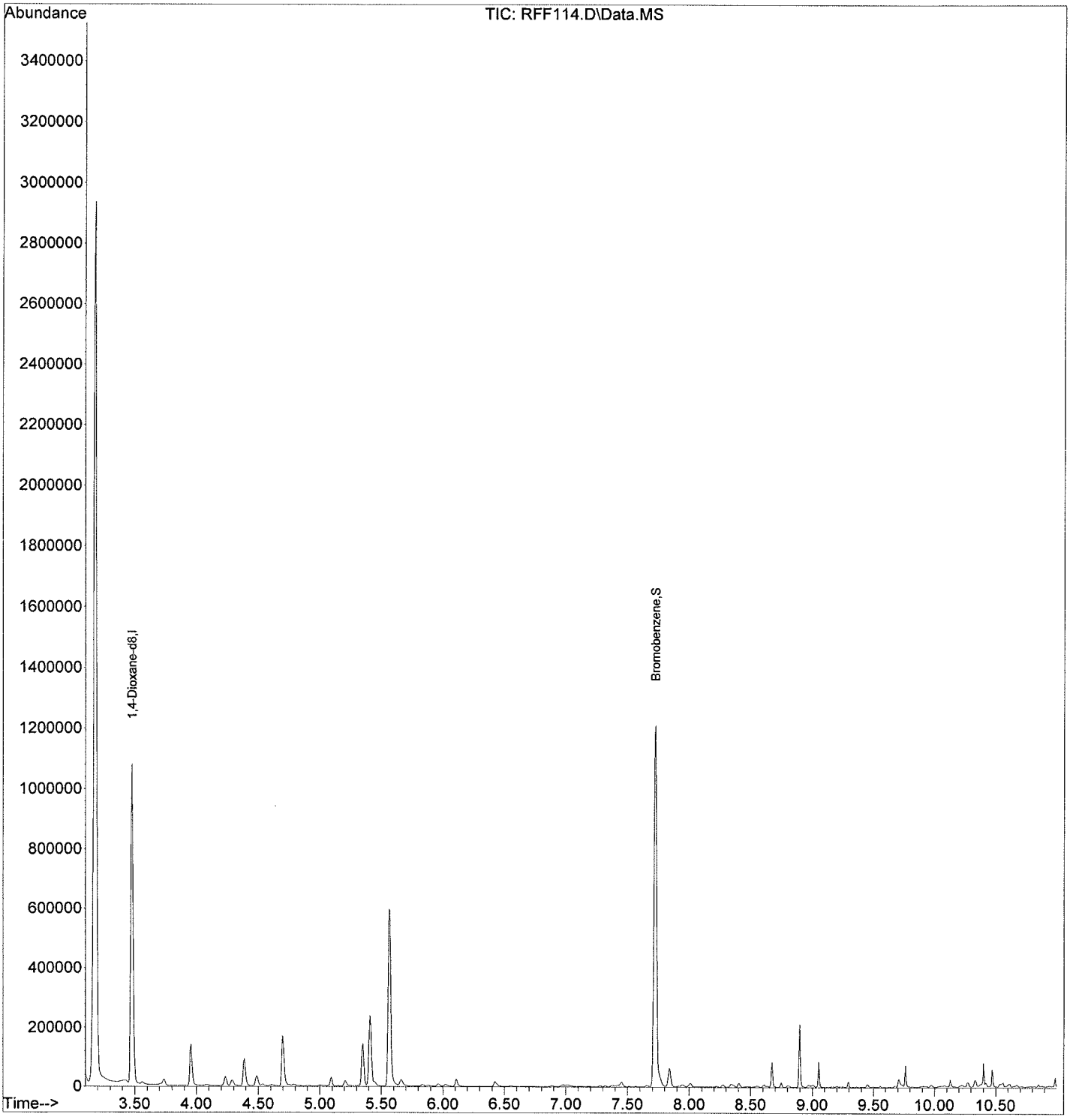
Data File : C:\msdchem\1\DATA\20F24\RFF114.D Vial: 18
Acq On : 24 Jun 2020 16:00 Operator: RMinam
Sample : 20F183-14 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:48:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	162734	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	224662	16.43	ppm	0.00
Spiked Amount 20.000			Recovery =	82.15%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF114.D Vial: 18
Acq On : 24 Jun 2020 16:00 Operator: RMinam
Sample : 20F183-14 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:48:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/22/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MW08B-GW062220	Date Analyzed:	06/24/20 16:19
Lab Samp ID:	20F183-15	Dilution Factor:	1
Lab File ID:	RFF115	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	FO

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.39	0.19	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	27.3	38.8	70	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1030ml	Final Volume :	2ml
Prepared by	: ERodri	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

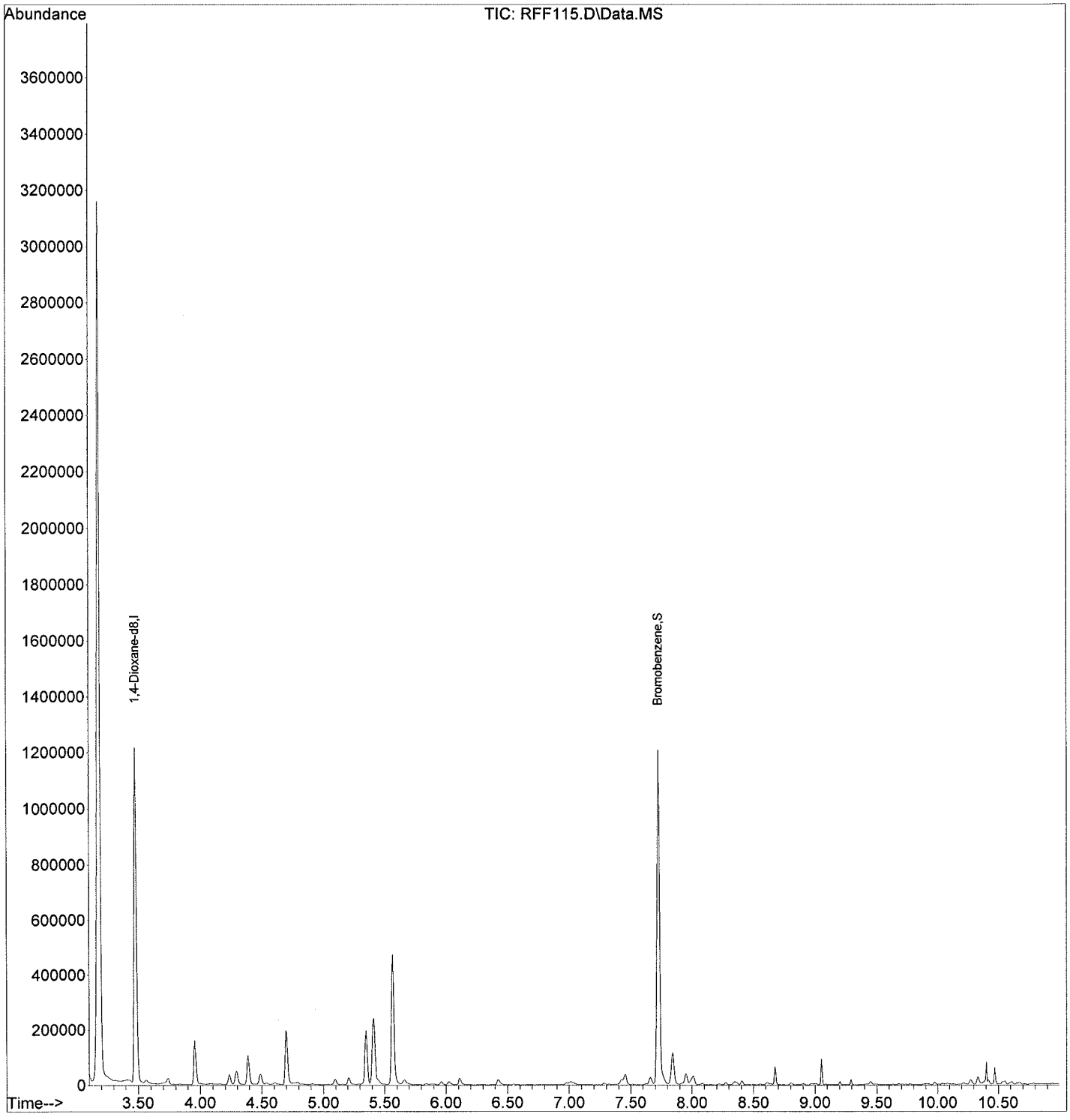
Data File : C:\msdchem\1\DATA\20F24\RFF115.D Vial: 19
Acq On : 24 Jun 2020 16:19 Operator: RMinam
Sample : 20F183-15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:48:53 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	181884	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	214973	14.07	ppm	0.00
Spiked Amount 20.000			Recovery =	70.35%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF115.D Vial: 19
Acq On : 24 Jun 2020 16:19 Operator: RMinam
Sample : 20F183-15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:48:53 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/22/20 10:10
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: FD02-GW062220	Date Analyzed:	06/24/20 16:38
Lab Samp ID:	20F183-16	Dilution Factor:	1
Lab File ID:	RFF116	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.39	0.20	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	23.0	39.2	59	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1020ml	Final Volume :	2ml
Prepared by	: ERodri	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

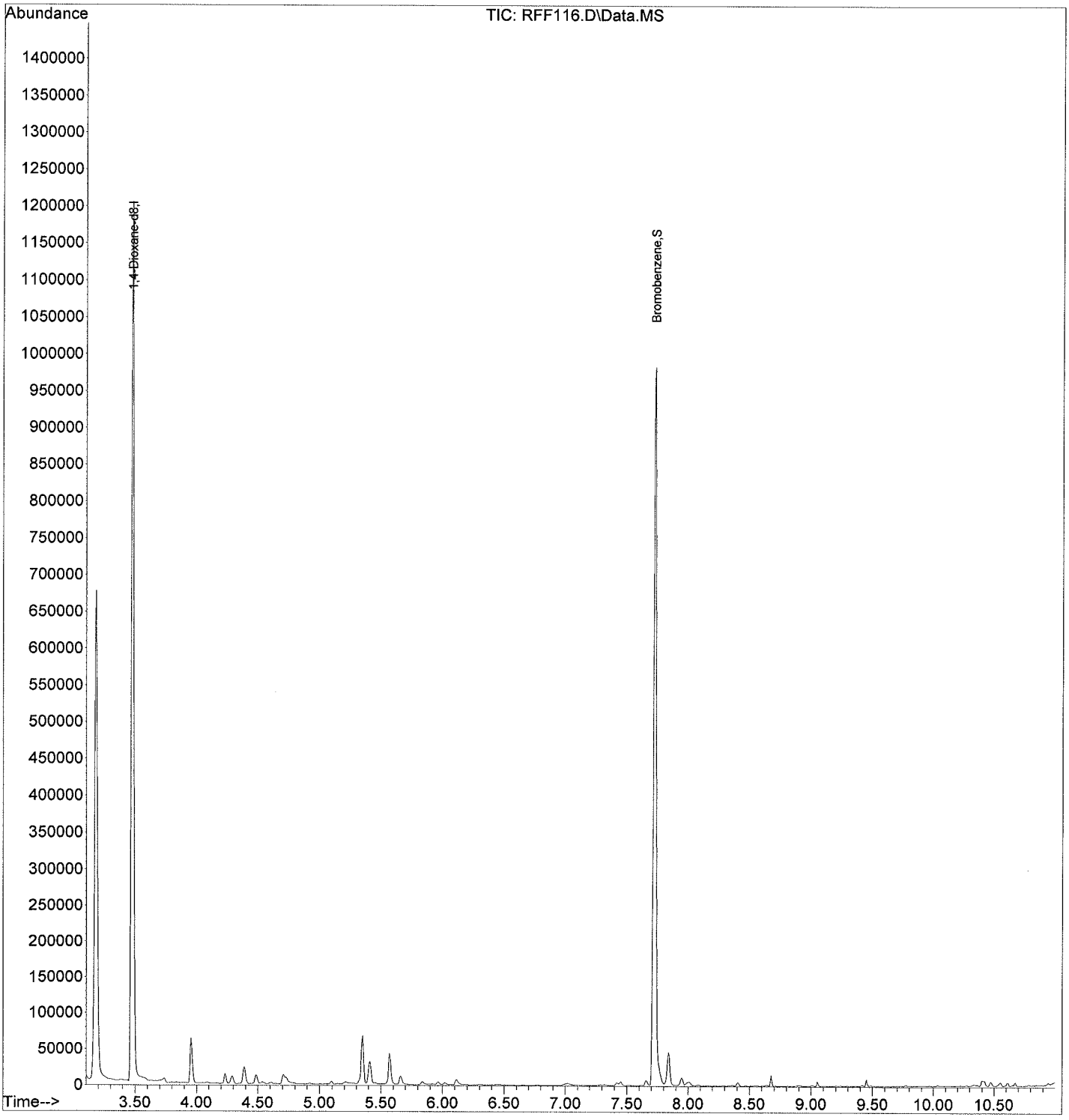
Data File : C:\msdchem\1\DATA\20F24\RFF116.D Vial: 20
Acq On : 24 Jun 2020 16:38 Operator: RMinam
Sample : 20F183-16 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:49:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	187149	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	184756	11.75	ppm	0.00
Spiked Amount 20.000			Recovery = 58.75%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF116.D Vial: 20
Acq On : 24 Jun 2020 16:38 Operator: RMinam
Sample : 20F183-16 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 25 14:49:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/23/20 14:45
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/23/20 14:45
Sample ID	: MBLK1W	Date Analyzed:	06/24/20 11:40
Lab Samp ID:	SVF019WB	Dilution Factor:	1
Lab File ID:	RFF100	Matrix:	WATER
Ext Btch ID:	20SVF019W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	35.6	40.0	89	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: ERodri	Analyzed by :	RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF019WB	SVF019WL	SVF019WC
LAB FILE ID	: RFF100	RFF101	RFF102
DATE PREPARED	: 06/23/20 14:45	06/23/20 14:45	06/23/20 14:45
DATE ANALYZED	: 06/24/20 11:40	06/24/20 11:53	06/24/20 12:12
PREP BATCH	: 20SVF019W	20SVF019W	20SVF019W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	32.3	81	40.0	33.2	83	3	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	37.6	94	40.0	36.6	92	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID	: 20F183-08	20F183-08M	20F183-08S
LAB FILE ID	: RFF109	RFF110	RFF111
DATE PREPARED	: 06/23/20 14:45	06/23/20 14:45	06/23/20 14:45
DATE ANALYZED	: 06/24/20 14:25	06/24/20 14:44	06/24/20 15:03
PREP BATCH	: 20SVF019W	20SVF019W	20SVF019W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.8	33.6	82	40.0	32.0	80	5	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	40.8	39.2	96	40.0	37.5	94	30-160

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

QC DATA

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF100.D
Acq On : 24 Jun 2020 11:40
Sample : SVF019WB
Misc : F0
Integrator: RTE
Quant Time: Jun 24 14:08:29 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

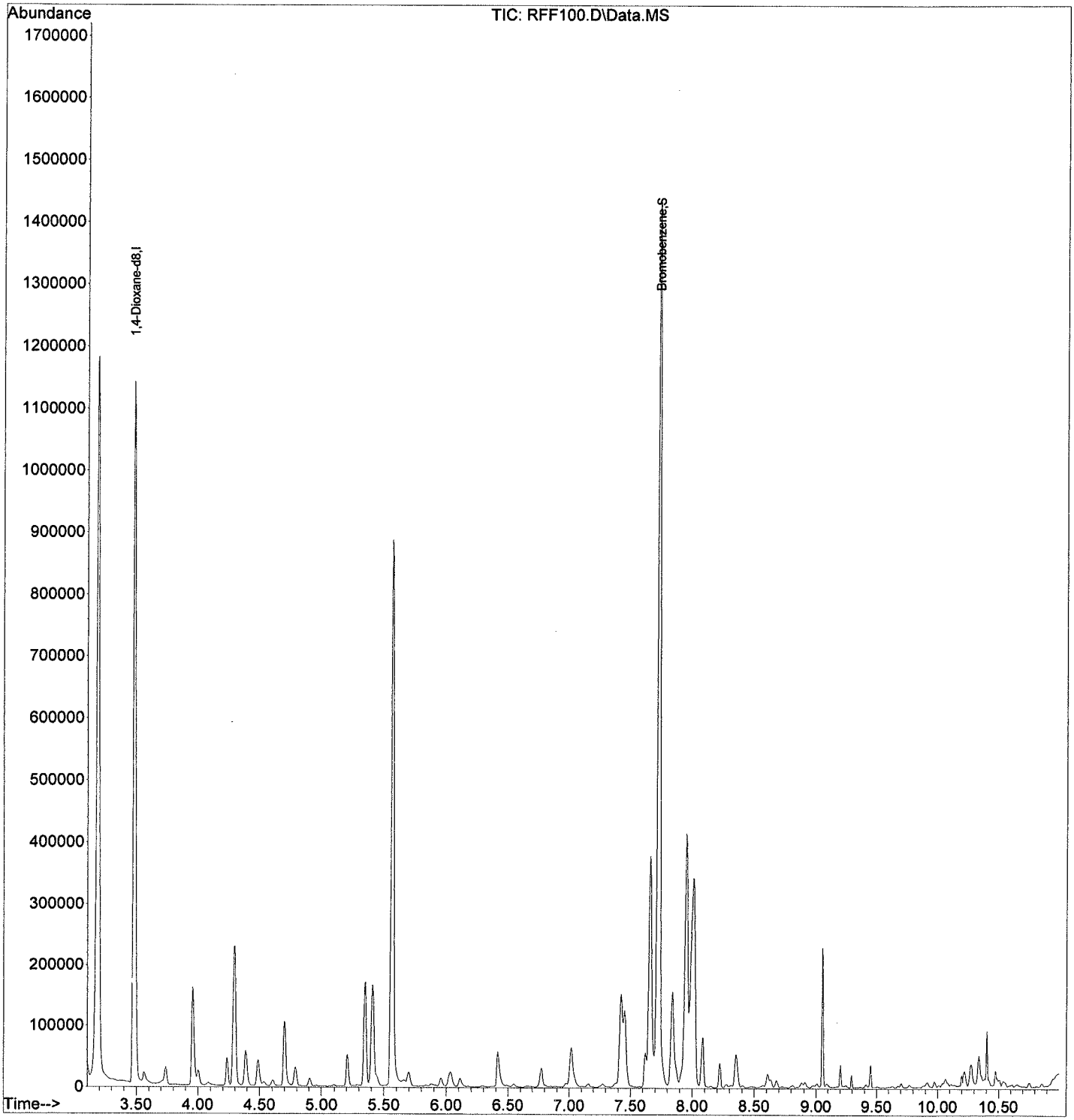
Vial: 4
Operator: RMinam
Inst : DSQ
Multiplr: 1.00

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	179353	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	268108	17.79	ppm	0.00
Spiked Amount 20.000			Recovery =	88.95%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF100.D Vial: 4
Acq On : 24 Jun 2020 11:40 Operator: RMinam
Sample : SVF019WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:08:29 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

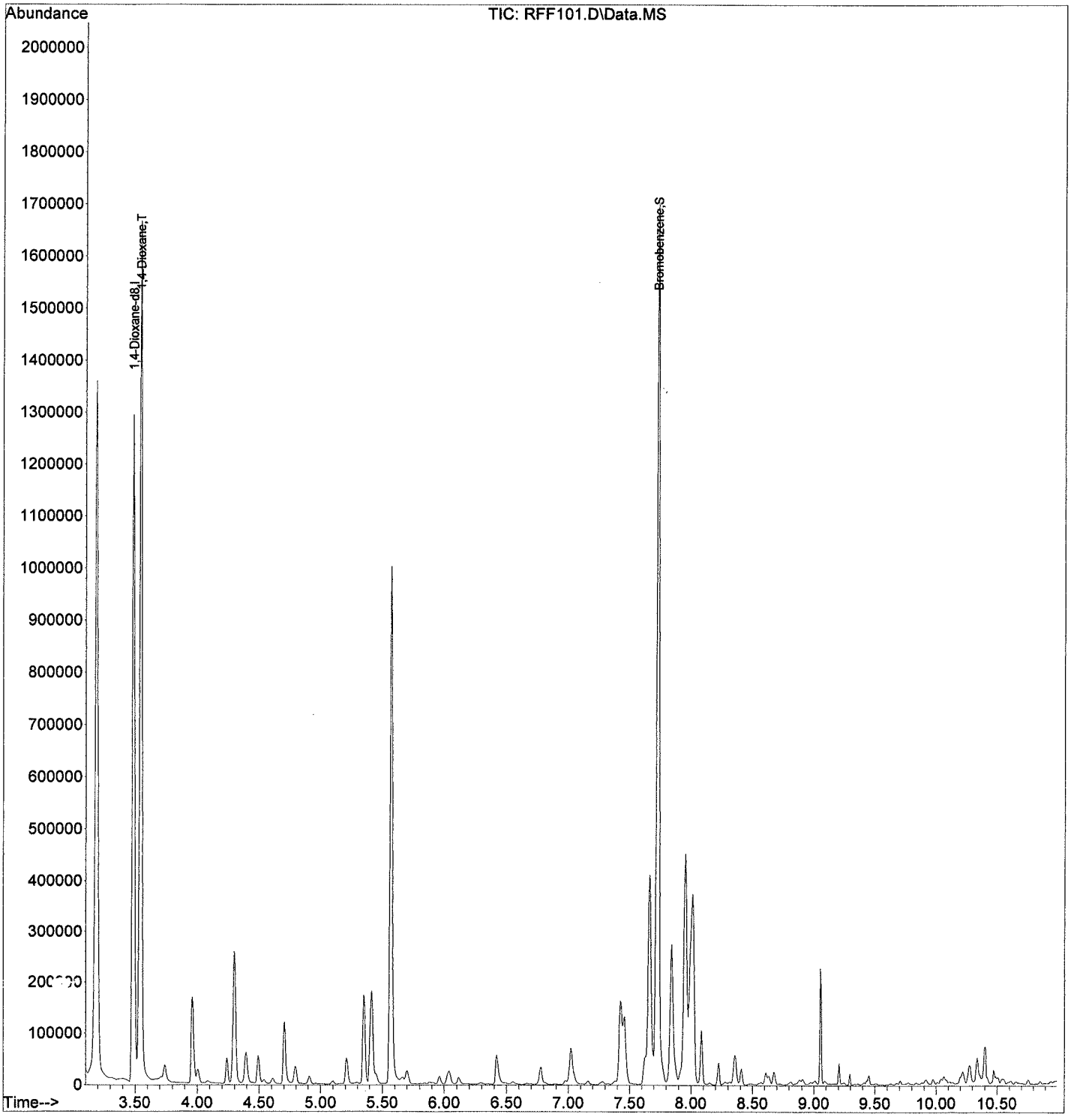
Data File : C:\msdchem\1\DATA\20F24\RFF101.D Vial: 5
Acq On : 24 Jun 2020 11:53 Operator: RMinam
Sample : SVF019WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:09:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.483	96	191993	20.00	ppm	0.01
System Monitoring Compounds						
3) Bromobenzene	7.725	77	303609	18.82	ppm	0.00
Spiked Amount 20.000			Recovery = 94.10%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	214241	16.17	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF101.D Vial: 5
Acq On : 24 Jun 2020 11:53 Operator: RMinam
Sample : SVF019WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:09:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

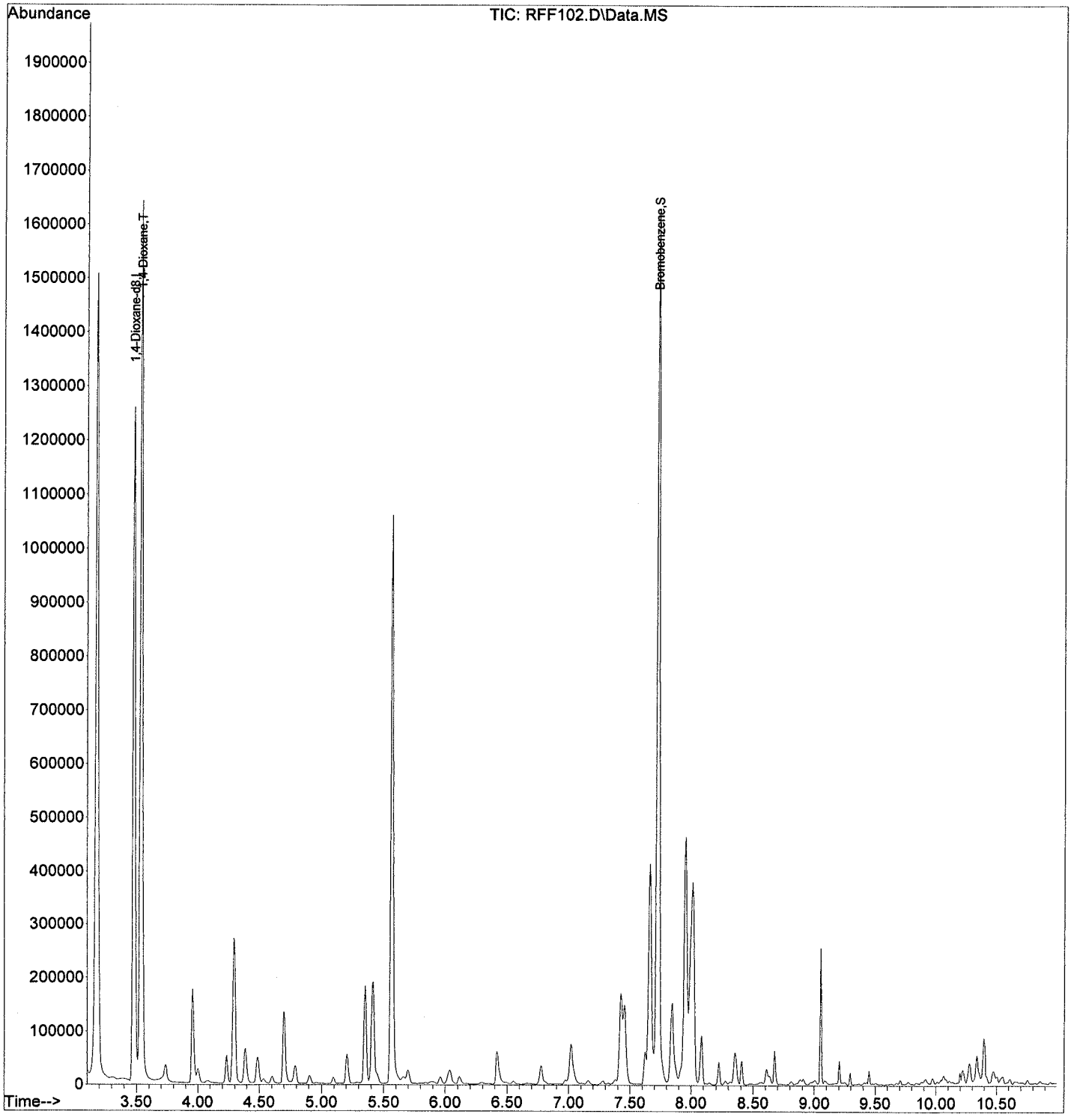
Data File : C:\msdchem\1\DATA\20F24\RFF102.D Vial: 6
Acq On : 24 Jun 2020 12:12 Operator: RMinam
Sample : SVF019WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:09:47 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	187416	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	288074	18.30	ppm	0.00
Spiked Amount 20.000			Recovery = 91.50%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	214863	16.61	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF102.D Vial: 6
Acq On : 24 Jun 2020 12:12 Operator: RMinam
Sample : SVF019WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 14:09:47 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

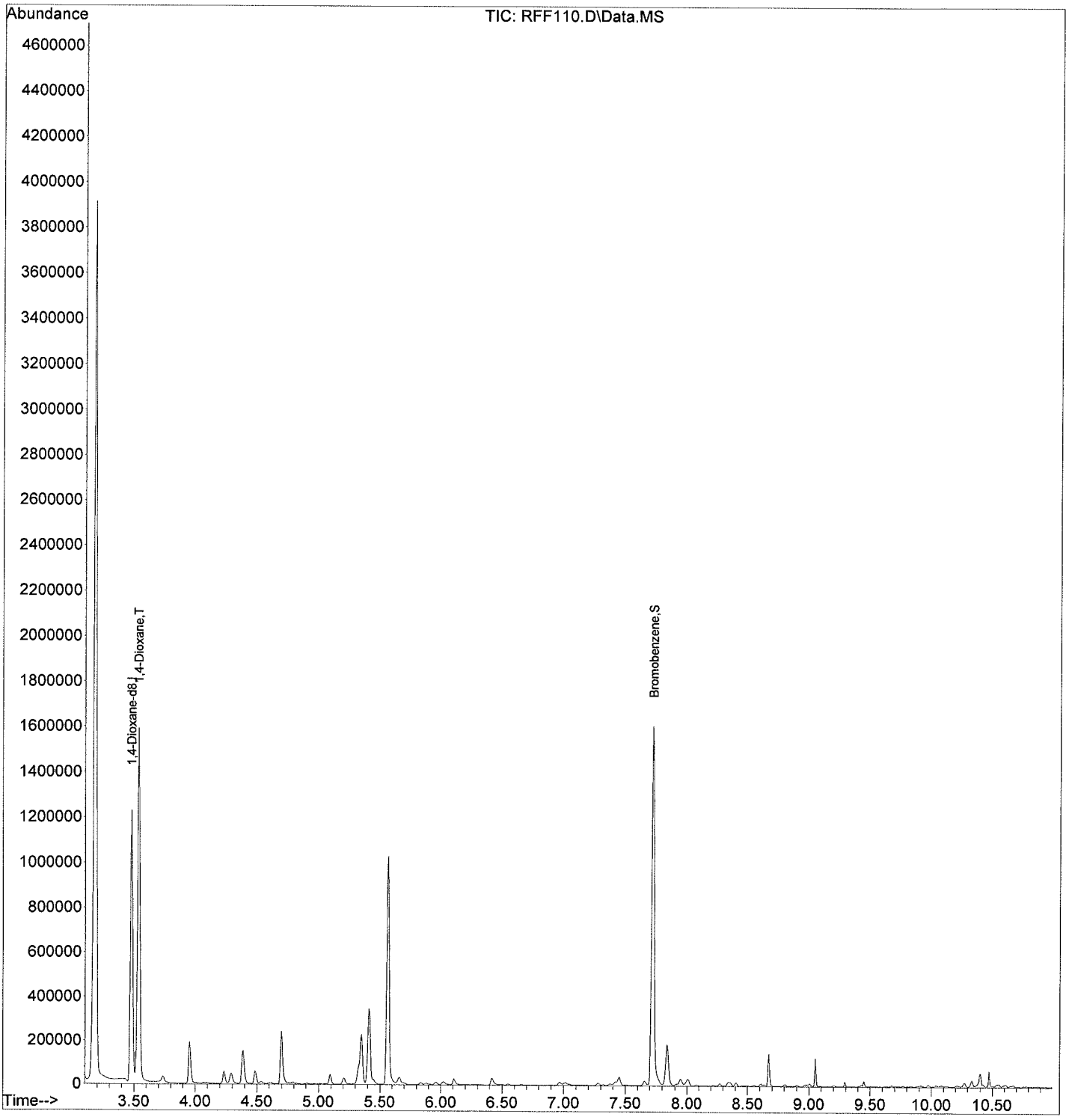
Data File : C:\msdchem\1\DATA\20F24\RFF110.D Vial: 14
Acq On : 24 Jun 2020 14:44 Operator: RMinam
Sample : 20F183-08M Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:51:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	182934	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	294971	19.19	ppm	0.00
Spiked Amount 20.000			Recovery =	95.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	207554	16.44	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF110.D Vial: 14
Acq On : 24 Jun 2020 14:44 Operator: RMinam
Sample : 20F183-08M Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:51:45 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

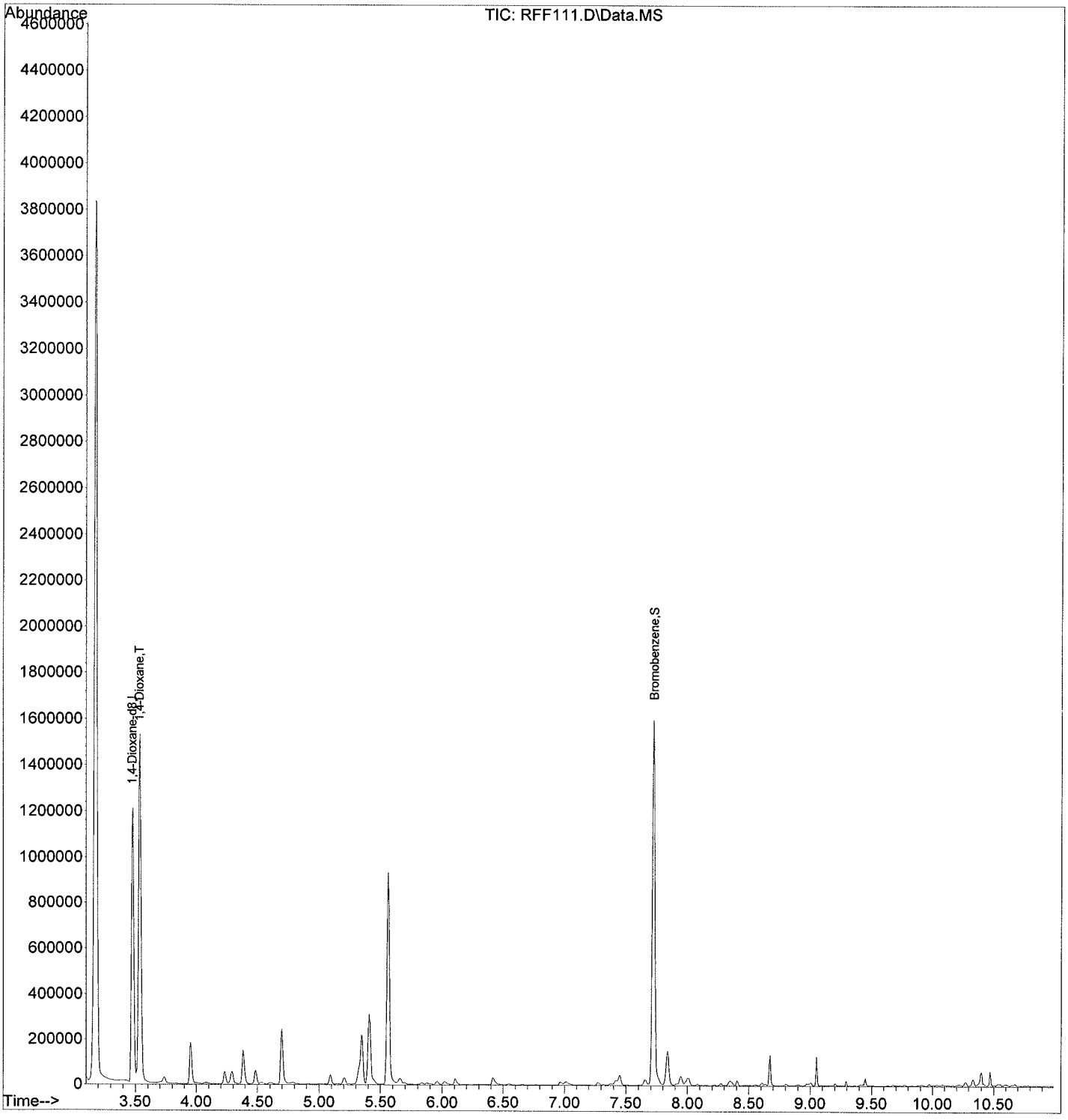
Data File : C:\msdchem\1\DATA\20F24\RFF111.D Vial: 15
Acq On : 24 Jun 2020 15:03 Operator: RMinam
Sample : 20F183-08S Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:51:51 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184358	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	290312	18.74	ppm	0.00
Spiked Amount 20.000			Recovery = 93.70%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	203787	16.02	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF111.D Vial: 15
Acq On : 24 Jun 2020 15:03 Operator: RMinam
Sample : 20F183-08S Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 15:51:51 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

MW 6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVFOF03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

MW 6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

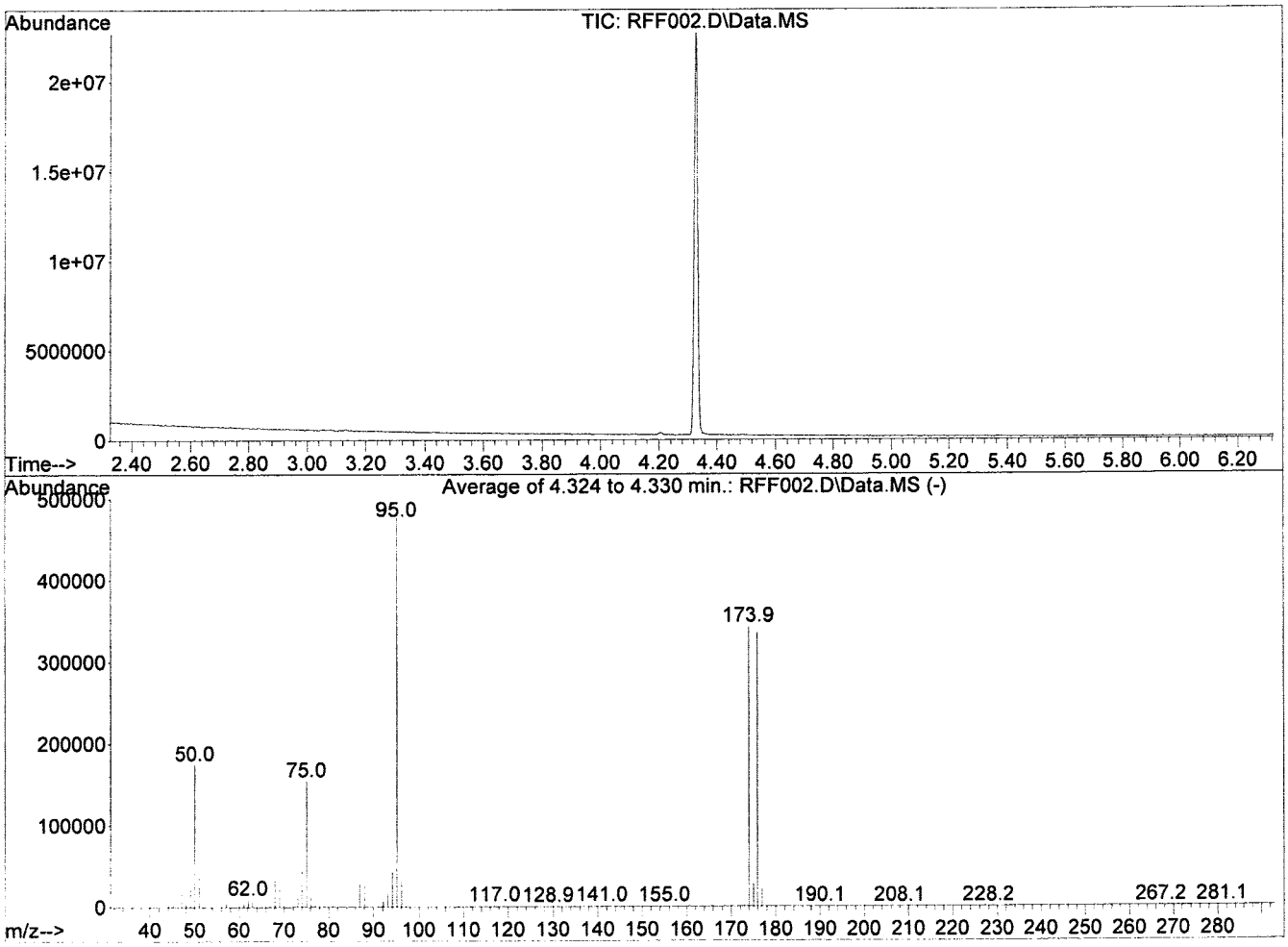
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

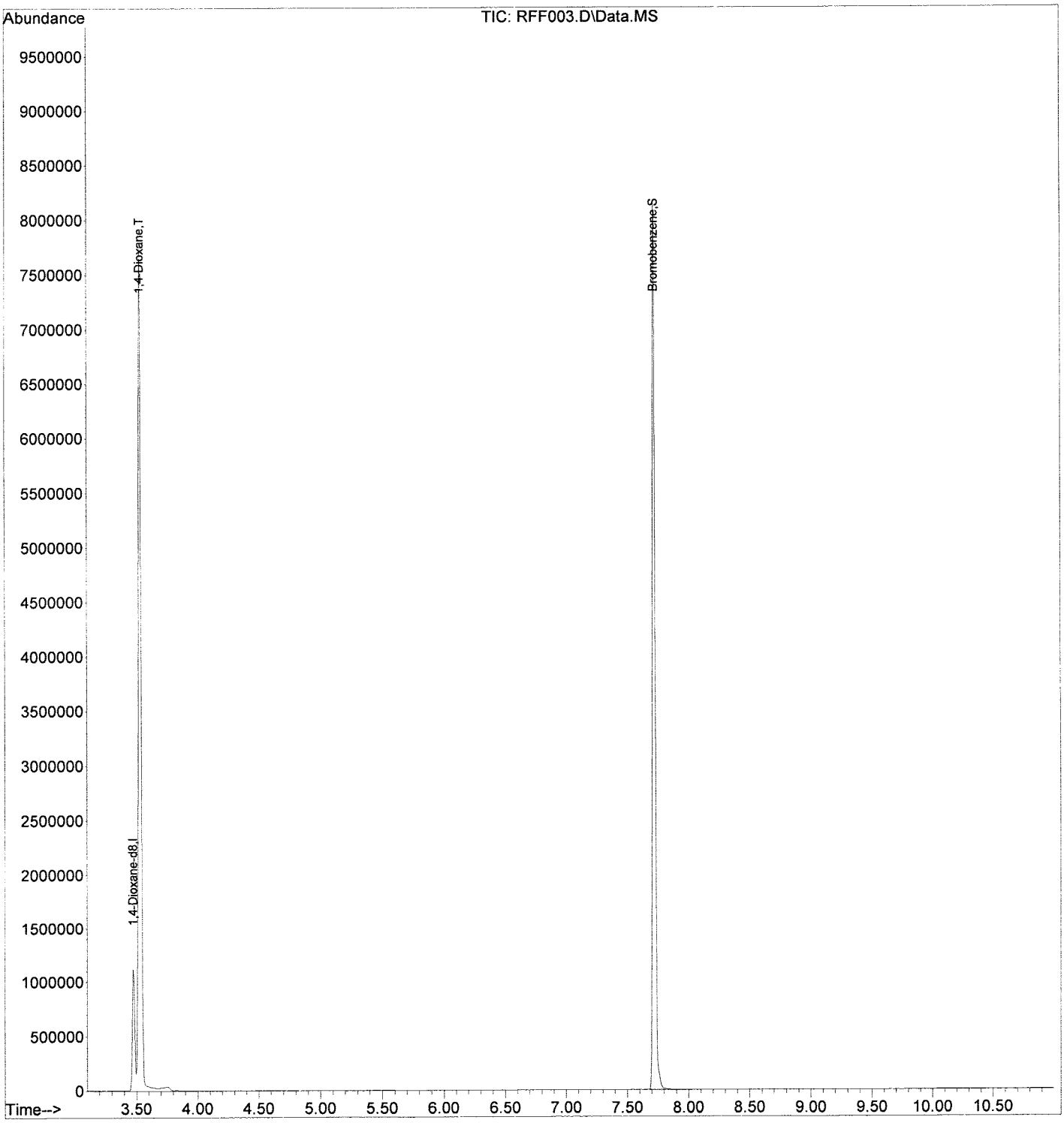
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

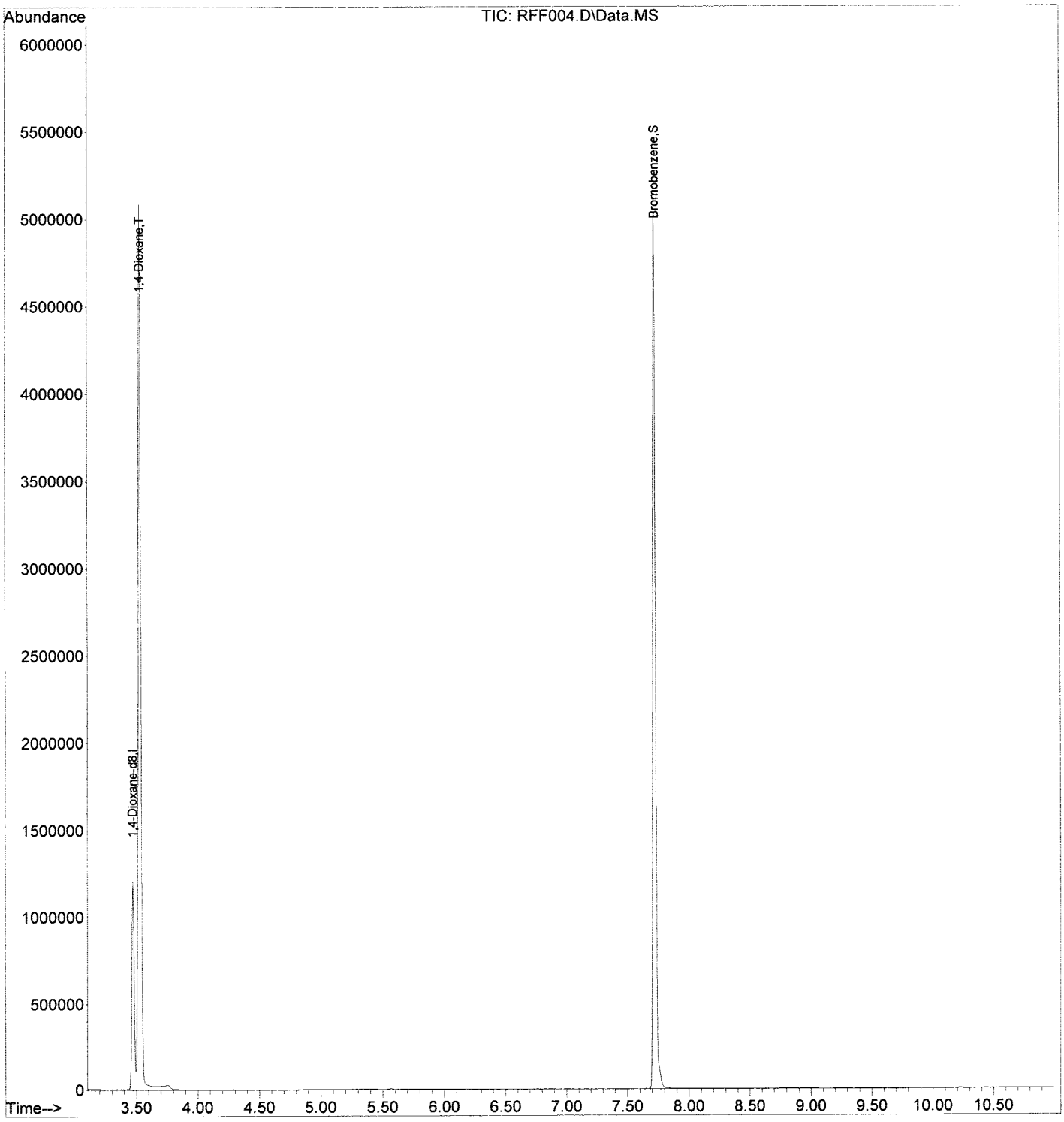
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

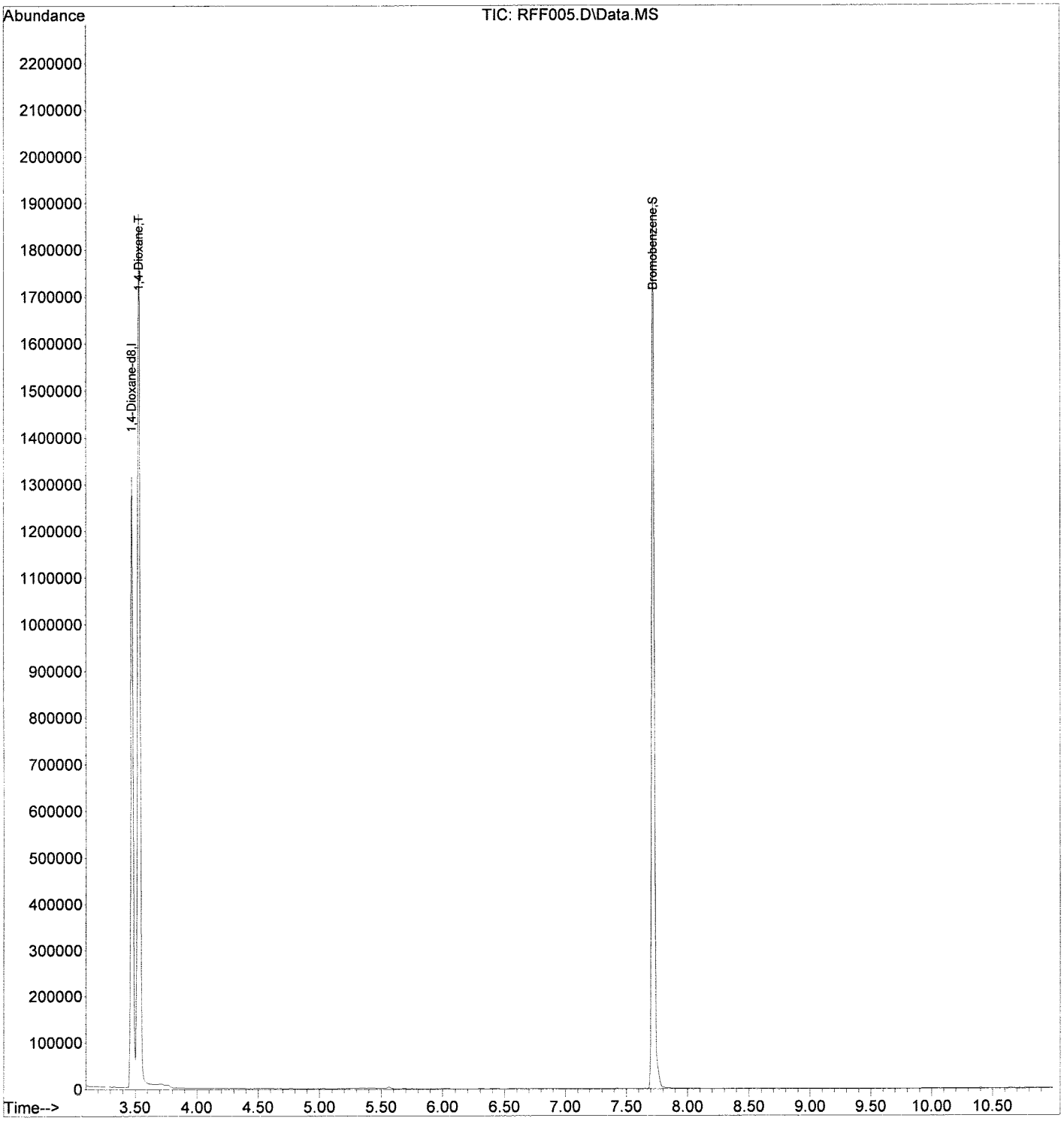
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

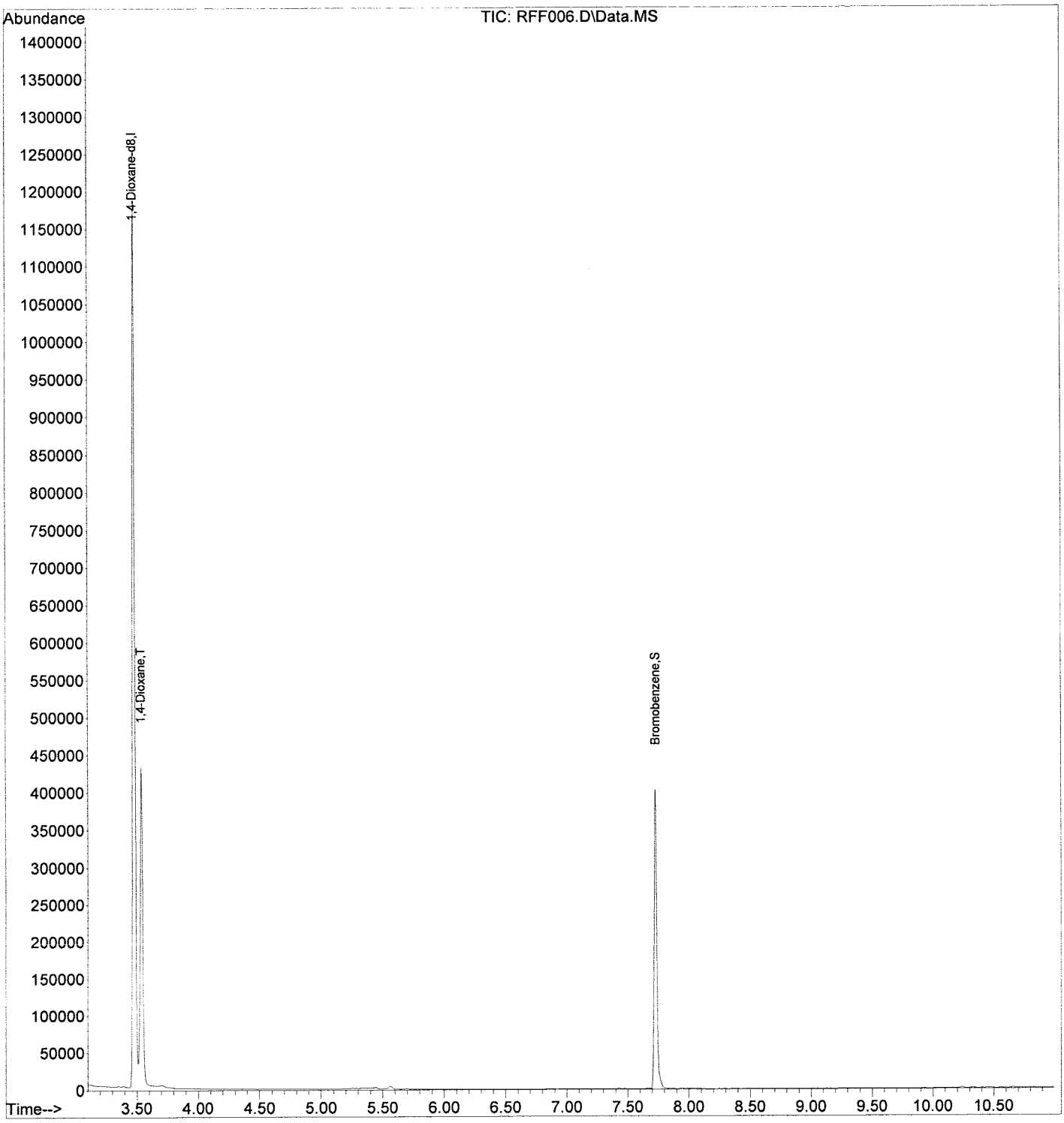
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

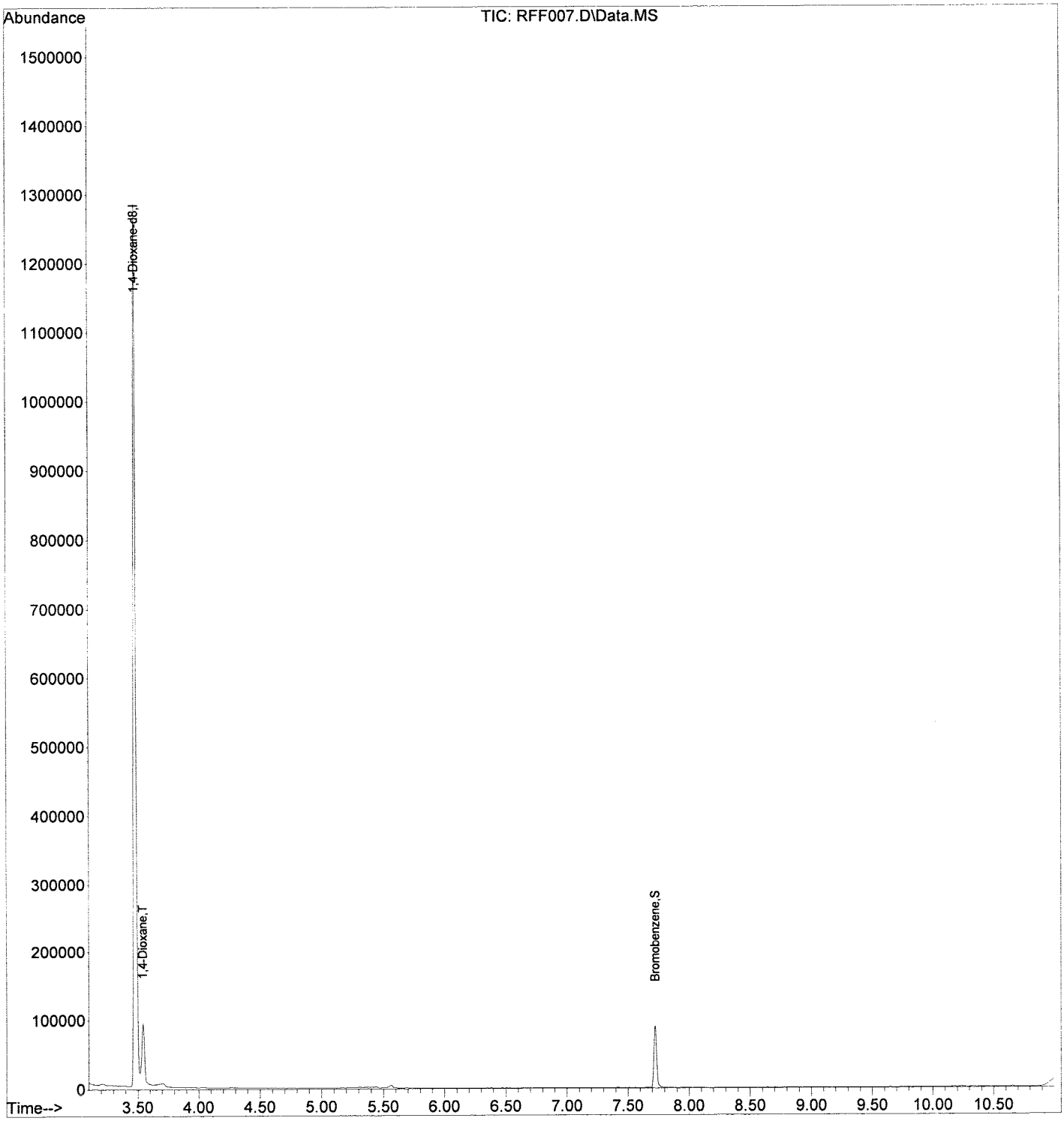
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

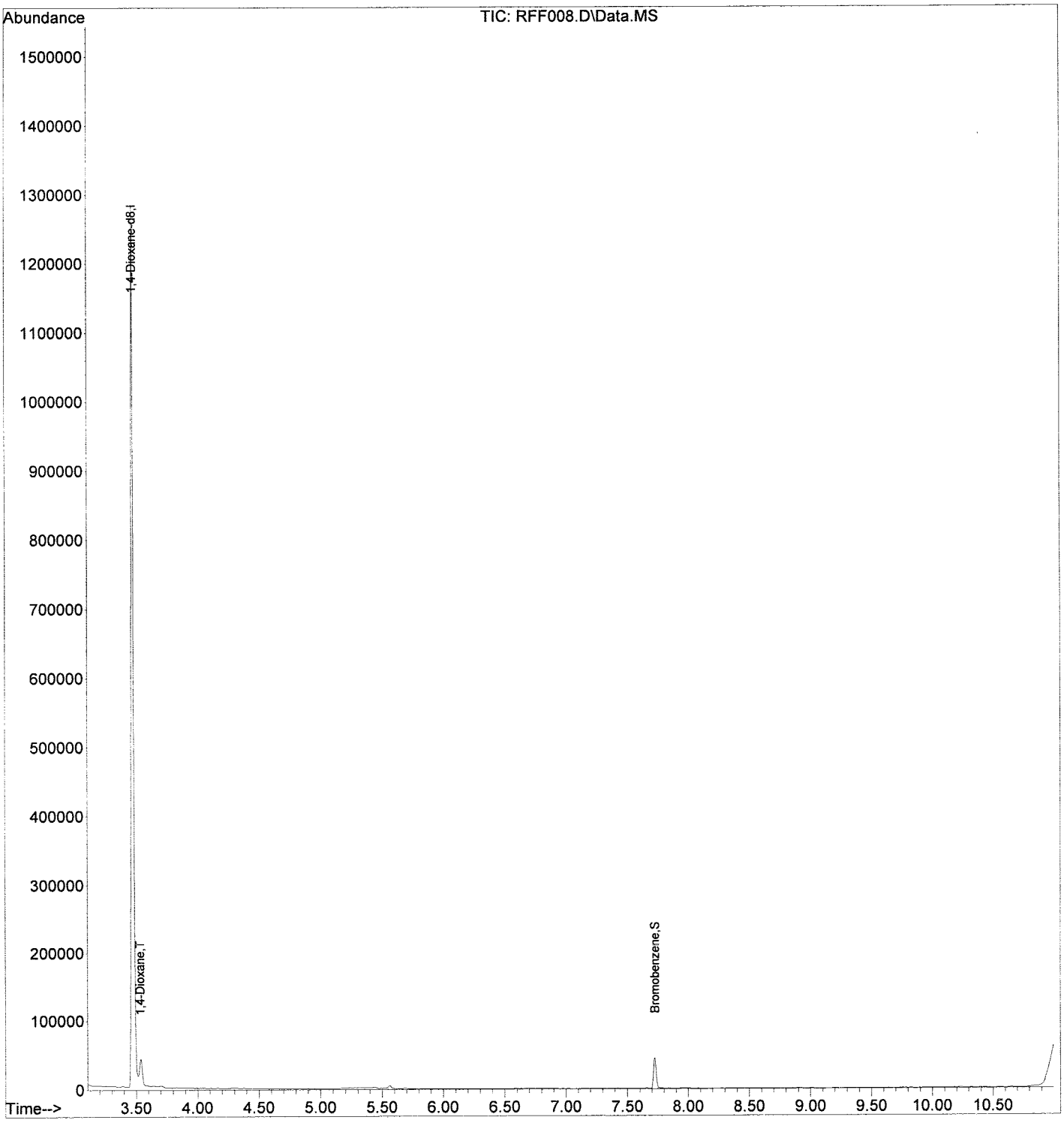
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

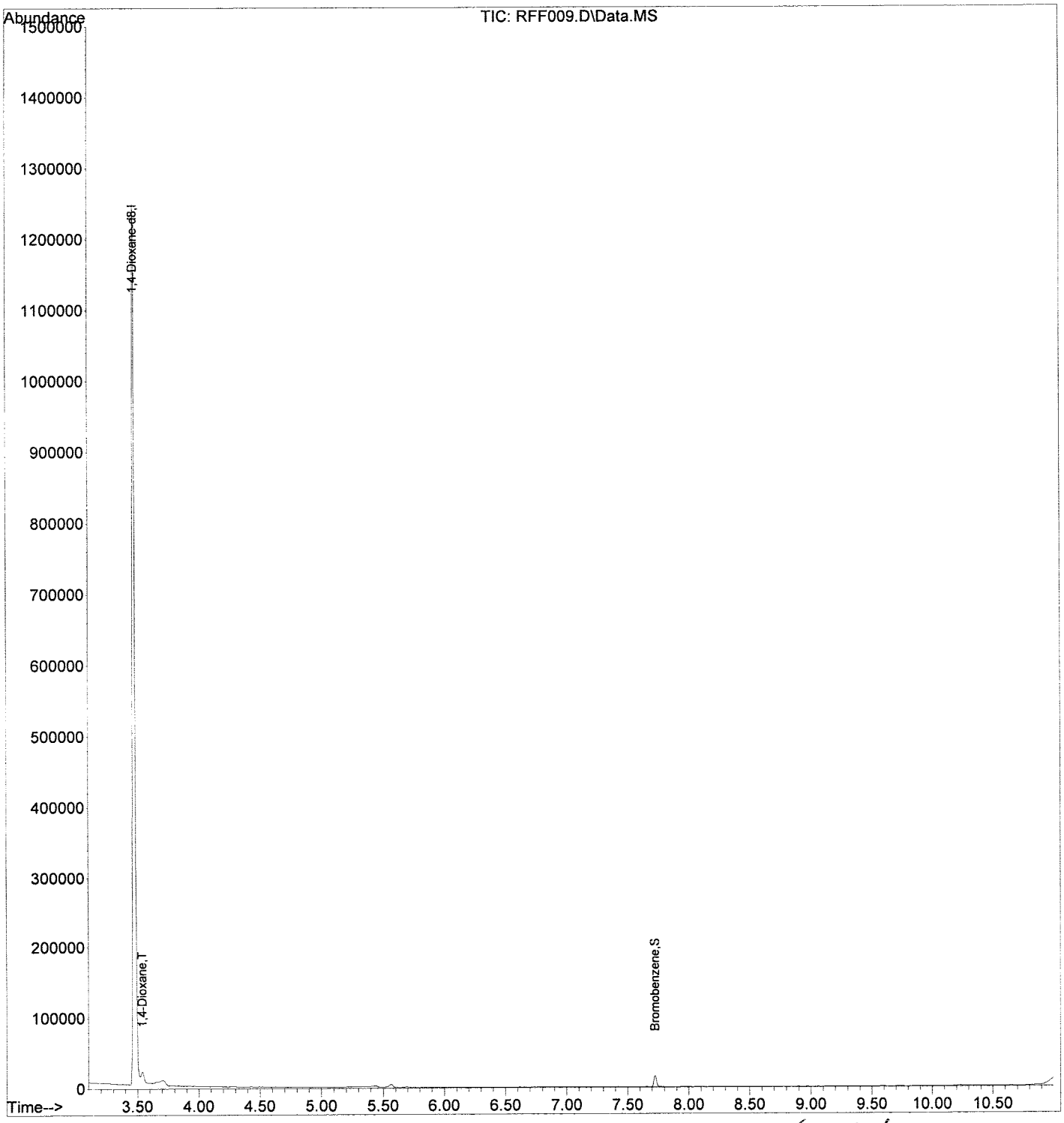
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

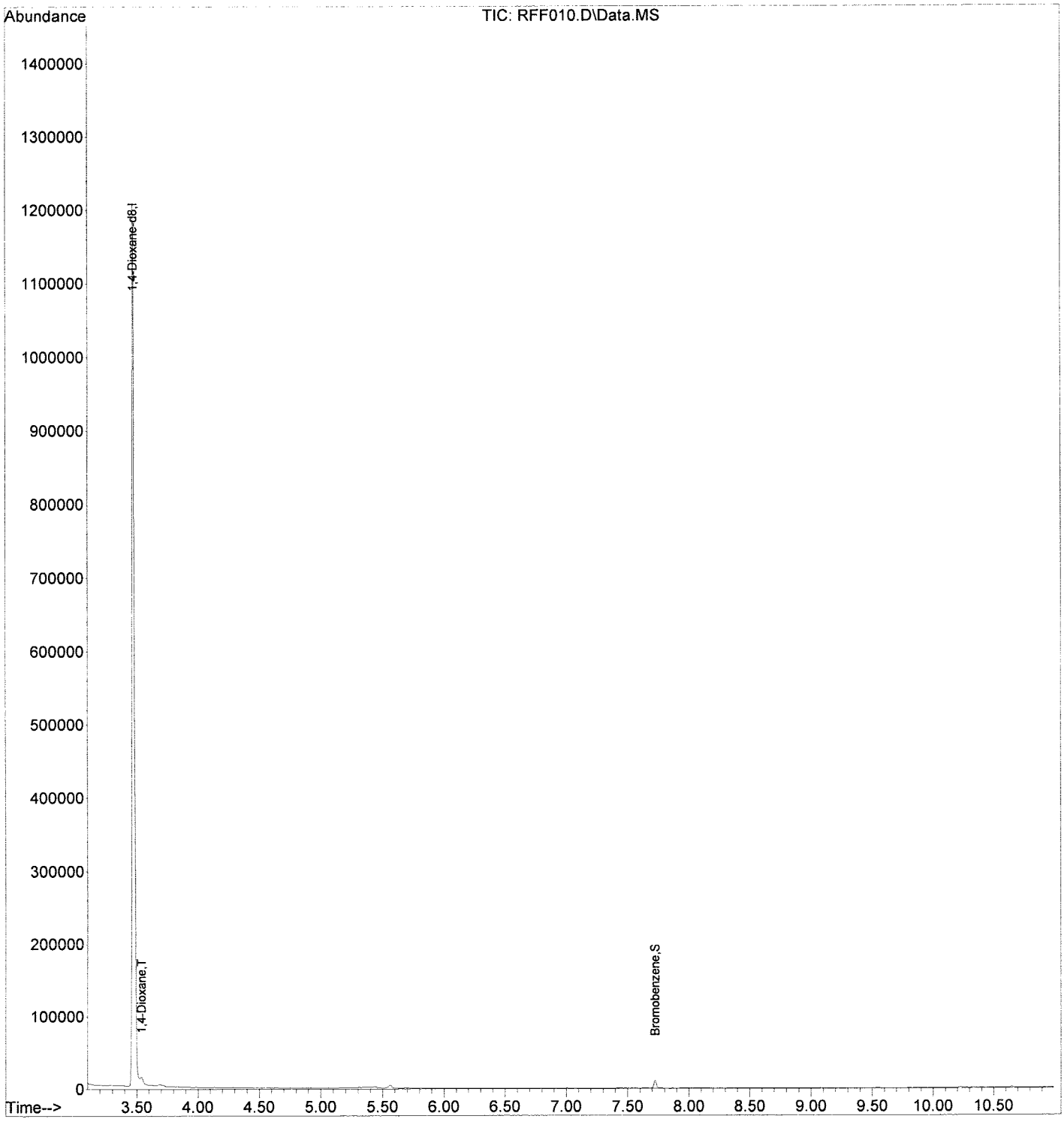
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

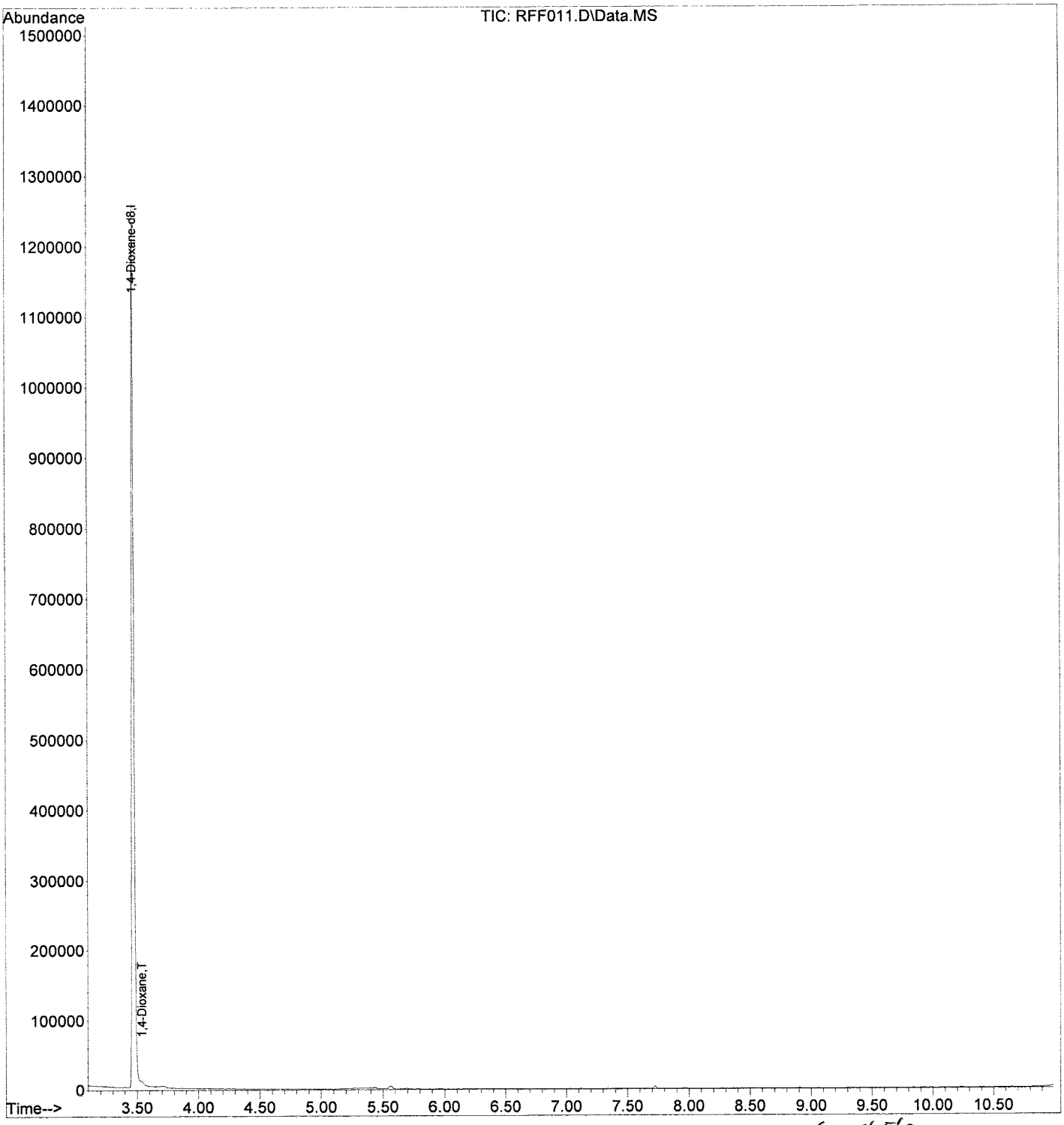
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

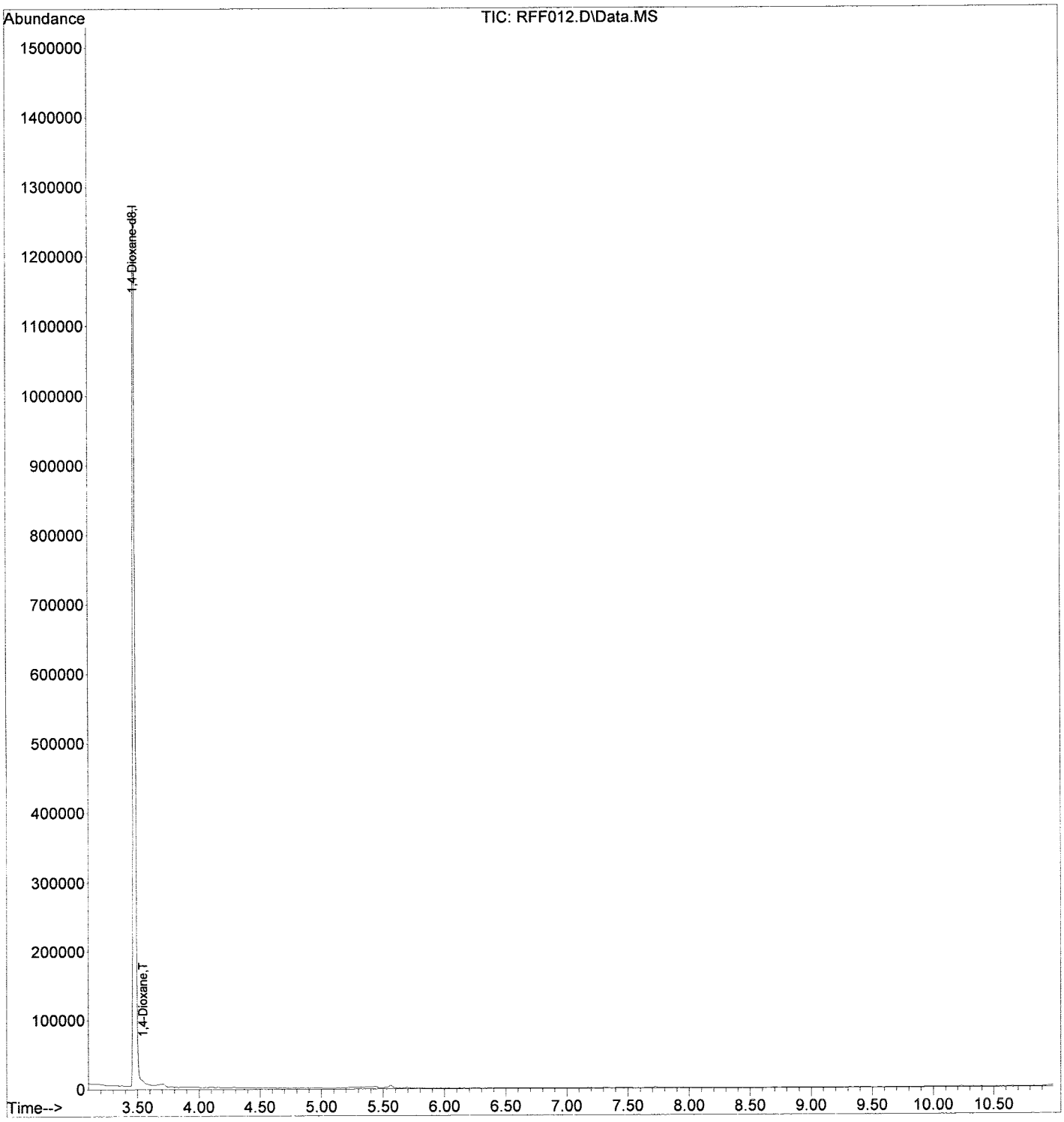
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery = 107.70%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

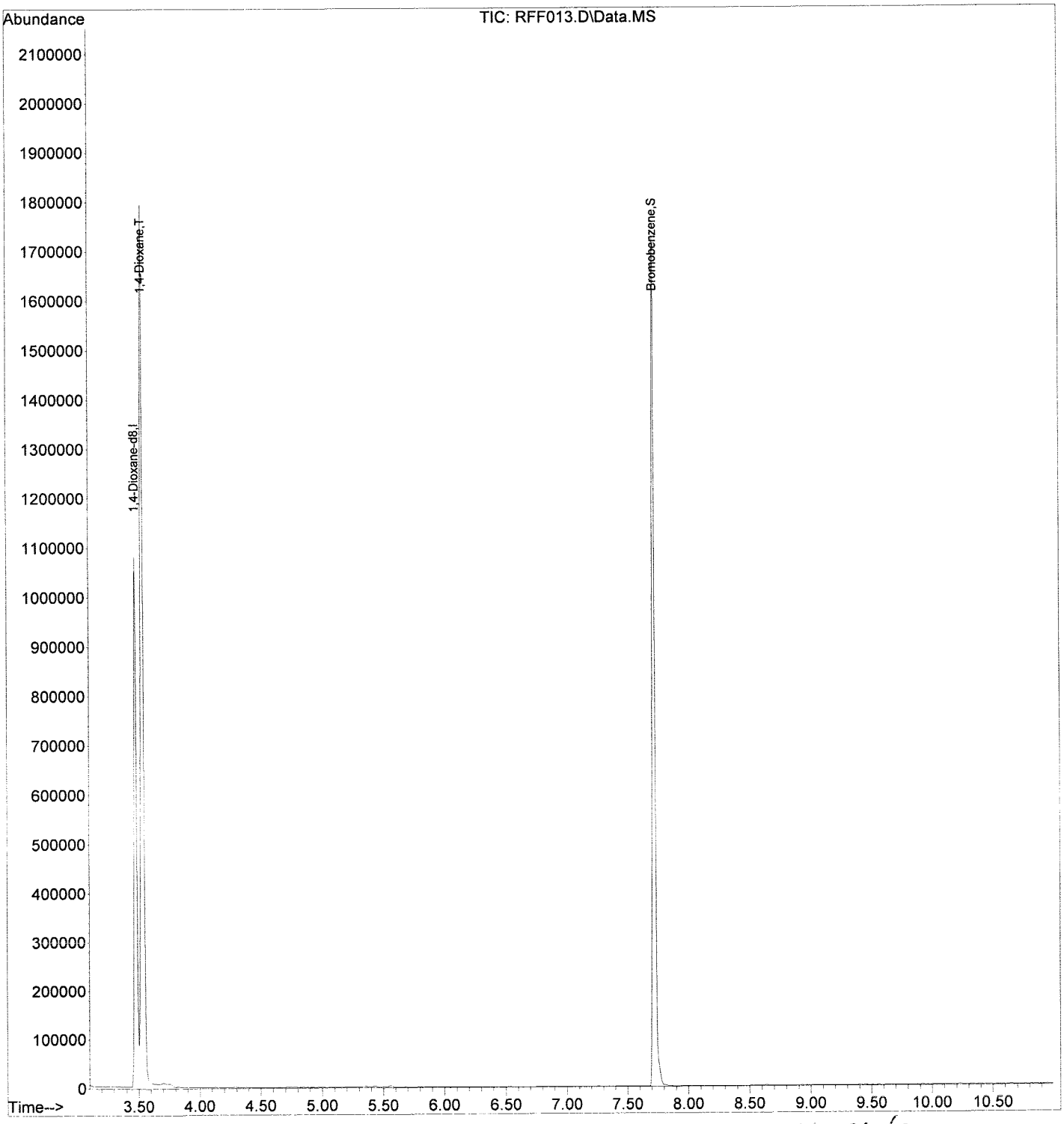
(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D
Acq On : 03 Jun 2020 17:34
Sample : ISVF0F03G1 20ppm
Misc : F0
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY
Lab Code: EMAX SDG No: 20F183
Lab File ID: RFF098 DFTPP Injection Date: 06/24/20
Instrument ID: F0 DFTPP Injection Time: 10:30

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	37.692
75	30 - 60% of mass 95	32.739
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.725
173	Less than 2% of mass 174	0.274(.38)1
174	50 - 100% of mass 95	71.169
175	5 - 9% of mass 174	5.753(8.08)1
176	95 - 101% % of mass 174	69.620(97.82)1
177	5 - 9% % of mass 176	4.468(6.42)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G13	RFF099	06/24/20	10:44
2	MBLK1W	SVF019WB	RFF100	06/24/20	11:40
3	LCS1W	SVF019WL	RFF101	06/24/20	11:53
4	LCD1W	SVF019WC	RFF102	06/24/20	12:12
5	MW17S-GW062120	20F183-01	RFF103	06/24/20	12:31
6	MW17D-GW062120	20F183-02	RFF104	06/24/20	12:50
7	MW06-GW062120	20F183-03	RFF105	06/24/20	13:09
8	MW16S-GW062120	20F183-05	RFF106	06/24/20	13:28
9	MW16D-GW062120	20F183-06	RFF107	06/24/20	13:47
10	MW04-GW062120	20F183-07	RFF108	06/24/20	14:06
11	MW08A-GW062120	20F183-08	RFF109	06/24/20	14:25
12	MW08A-GW062120MS	20F183-08M	RFF110	06/24/20	14:44
13	MW08A-GW062120MSD	20F183-08S	RFF111	06/24/20	15:03
14	MW01S-GW062120	20F183-12	RFF112	06/24/20	15:22
15	FD01-GW062120	20F183-13	RFF113	06/24/20	15:41
16	MW08C-GW062220	20F183-14	RFF114	06/24/20	16:00
17	MW08B-GW062220	20F183-15	RFF115	06/24/20	16:19
18	FD02-GW062220	20F183-16	RFF116	06/24/20	16:38

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.
Project: VA SALT LAKE CITY
Lab Code: EMAX
SDG No: 20F183
Lab File ID: RFF005
Date Analyzed: 06/03/20
Instrument ID: F0
Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	204842	3.48
2	MBLK1W	179353	3.48
3	LCS1W	191993	3.48
4	LCD1W	187416	3.48
5	MW17S-GW062120	180060	3.48
6	MW17D-GW062120	186132	3.47
7	MW06-GW062120	184944	3.48
8	MW16S-GW062120	184553	3.48
9	MW16D-GW062120	193370	3.48
10	MW04-GW062120	181075	3.47
11	MW08A-GW062120	186942	3.48
12	MW08A-GW062120MS	182934	3.48
13	MW08A-GW062120MSD	184358	3.47
14	MW01S-GW062120	184834	3.48
15	FD01-GW062120	190336	3.48
16	MW08C-GW062220	162734	3.48
17	MW08B-GW062220	181884	3.48
18	FD02-GW062220	187149	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area
Area Lower Limit = -50% of ICAL Midpoint IS Area
Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT
Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF099
IC File :RFF005

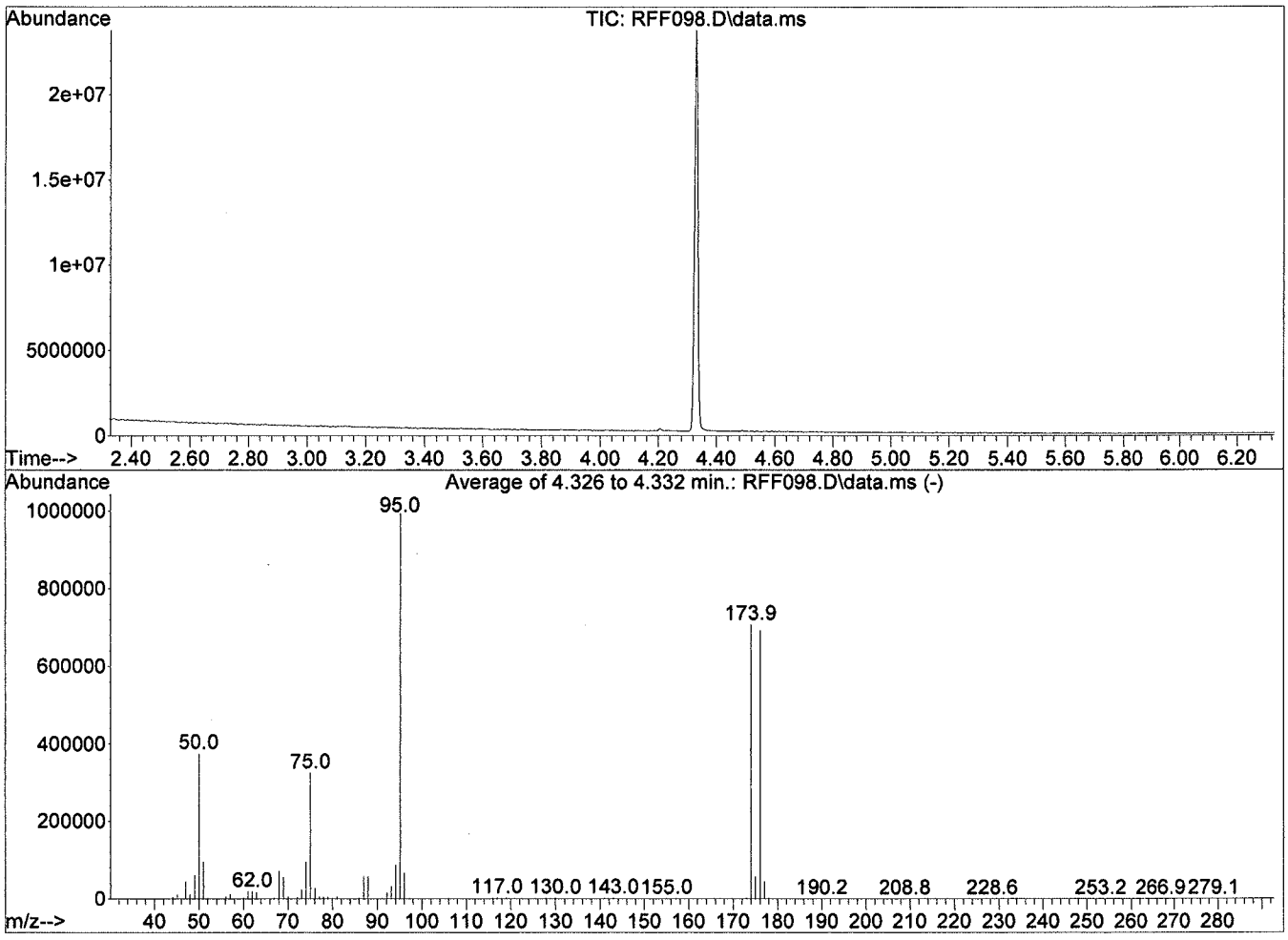
Column Spec :ZB-SEMIVOA ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/24/20 10:44

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	204842	1	1	3.477	3.472	0				
2	1,4-Dioxane	19.923	-0.4	281624	1.375	1.380	3.534	3.536	9.42				
3	Bromobenzene	20.051	0.3	345066	1.685	1.680	7.725	7.724	2.58				

Data Path : C:\msdchem\1\DATA\20F24\
Data File : RFF098.D
Acq On : 24 Jun 2020 10:30
Operator : RMinam
Sample : BFBF0F03G13
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 633

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	37.7	374791	PASS
75	95	30	60	32.7	325538	PASS
95	95	100	100	100.0	994346	PASS
96	95	5	9	6.7	66872	PASS
173	174	0.00	2	0.4	2727	PASS
174	95	50	100	71.2	707669	PASS
175	174	5	9	8.1	57205	PASS
176	174	95	101	97.8	692267	PASS
177	176	5	9	6.4	44429	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F24\RFF099.D Vial: 3
Acq On : 24 Jun 2020 10:44 Operator: RMinam
Sample : CSVF0F03G13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 11:07:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	102	0.00
2	T	1,4-Dioxane	20.000	19.923	0.4	105	0.00
3	S	Bromobenzene	20.000	20.051	-0.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F24\RFF099.D Vial: 3
Acq On : 24 Jun 2020 10:44 Operator: RMinam
Sample : CSVF0F03G13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 11:07:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	102	0.00
2	T	1,4-Dioxane	1.380	1.375	0.4	105	0.00
3	S	Bromobenzene	1.680	1.685	-0.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

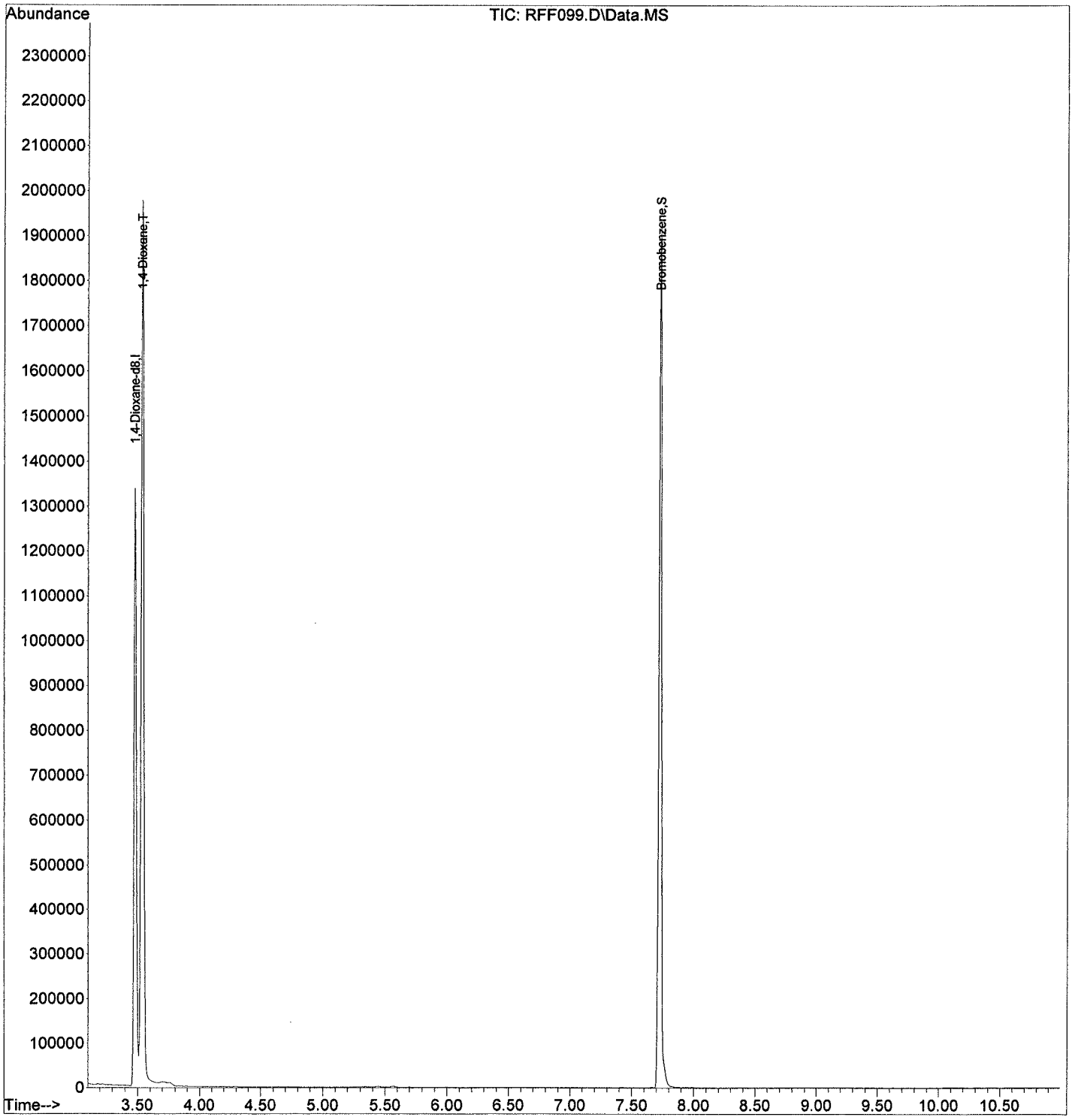
Data File : C:\msdchem\1\DATA\20F24\RFF099.D Vial: 3
Acq On : 24 Jun 2020 10:44 Operator: RMinam
Sample : CSVF0F03G13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 11:07:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	204842	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	345066	20.05	ppm	0.00
Spiked Amount 20.000			Recovery =	100.25%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	281624	19.92	ppm	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F24\RFF099.D Vial: 3
Acq On : 24 Jun 2020 10:44 Operator: RMinam
Sample : CSVF0F03G13 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 24 11:07:24 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

EMAX LABORATORIES, INC.

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F03G Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F03G3

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 (RM 6/5/20)	1			
	002	BFBF0F0301				
	003	SVF0F03G1				100 ppm
	004	2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	10				0.05
	013	ISVF0F03G1				ICV

RM 06/04/20

Instrument No:	F0
INITIAL CALIBRATION REFERENCE	
Date	SVF0F03G 5
ICAL ID	06/03/20

Standards		
Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	0.05 - 100
BFB	-09-02	50
ICV	-09-03	20

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F03

Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AF0-007

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/24/20 10:30 End Date/Time: 06/24/20 18:03

ANALYTICAL BATCH: CSVF0F03G13

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF097	IBF0F03G13				
	098	BFBF0F03G13				
	099	CSVF0F03G13				
SVF019W	100	SVF019WB	1X		X	
	101	L				
	102	C				
	103	20F183-01				
	104	-02				
	105	-03				
	106	-05				
	107	-06				
	108	-07				
	109	-08				
	110	-08M				
	111	-08S				
	112	-12				
	113	-13				
	114	-14				
	115	-15				
	116	-16				
	117	20F184-01				
	118	-03				
	119	-04				
	120	ESVF0F03G14				

RM ~~04~~ 06/24/20

Instrument No:	F0
INITIAL CALIBRATION REFERENCE	
Date	06/03/20
ICAL ID	SVF0F03G
Standards	
Name / ID / Conc. (mg/L)	
DFTPP	
INT. STD.	SS2A-19-01-28 — 1,000
CCV - 8270	
CCV - 1,4-Dioxane	SS2B-19-08-03 — 20
BFB	↓ -09-02 — 50
Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F24
Electronic Data Archival	
Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: 06/24/20

Disposed By: RM

This page is checked during data review.

EXTRACTION LOGS

EMAX LABORATORIES, INC.

EXTRACTION LOG
for
SEMIVOLATILES

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF019W
Matrix: Water
Micropipette ID: PE00-03 (1000 ml)
Micropipette ID: PE97C-03 (100 ml)
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS 1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SWIB-006-19-16
H_2SO_4	
NaOH	SPIB-12-92-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-009-02-07
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	16986363

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF019WB			1
-WL			1
-WG			1
F183-01			1
-02			1
-03			1
-05			2
-06			2
-07			2
-08			2
-08M			2
-08S			2
-12			3
-13			3
-14			3
-15			3
-16			3
F184-01			4
-03			4
-04			4

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output.
		> 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4	35	35
5		
6		
8		

Thermometer ID = SVOC-T1

Prepared By: ER — Witnessed By: HW
Standard Added By: ER — Checked By: JM
Extract Received By: Rm 06/24/20 — Location: SE01-09
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF019W01	SVF019WB	1000	ml	6/23/20 15:14	2	1000	2	1	
20SVF019W02	SVF019WL	1000	ml	6/23/20 15:14	2	1000	2	1	1,4 Dioxane
20SVF019W03	SVF019WC	1000	ml	6/23/20 15:14	2	1000	2	1	1,4 Dioxane
20SVF019W04	F183-01	940	ml	6/23/20 15:14	2	1000	2	1.06	light yellow
20SVF019W05	F183-02	940	ml	6/23/20 15:14	2	1000	2	1.06	light yellow
20SVF019W06	F183-03	860	ml	6/23/20 15:14	2	1000	2	1.16	
20SVF019W07	F183-05	900	ml	6/23/20 15:14	2	1000	2	1.11	
20SVF019W08	F183-06	950	ml	6/23/20 15:16	2	1000	2	1.05	
20SVF019W09	F183-07	980	ml	6/23/20 15:17	2	1000	2	1.02	
20SVF019W10	F183-08	980	ml	6/23/20 15:17	2	1000	2	1.02	turbid light yellow
20SVF019W11	F183-08M	980	ml	6/23/20 15:17	2	1000	2	1.02	turbid light yellow,1,4 Dioxane
20SVF019W12	F183-08S	1000	ml	6/23/20 15:17	2	1000	2	1	turbid light yellow,1,4 Dioxane
20SVF019W13	F183-12	960	ml	6/23/20 15:17	2	1000	2	1.04	
20SVF019W14	F183-13	950	ml	6/23/20 15:17	2	1000	2	1.05	
20SVF019W15	F183-14	1020	ml	6/23/20 15:17	2	1000	2	0.98	
20SVF019W16	F183-15	1030	ml	6/23/20 15:17	2	1000	2	0.97	
20SVF019W17	F183-16	1020	ml	6/23/20 15:17	2	1000	2	0.98	
20SVF019W18	F184-01	910	ml	6/23/20 15:17	2	1000	2	1.1	
20SVF019W19	F184-03	920	ml	6/23/20 15:17	2	1000	2	1.09	
20SVF019W20	F184-04	1040	ml	6/23/20 15:18	2	1000	2	0.96	

Ve=extract volume

PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/23/20 14:45 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: ERodri

☑ Extraction Ended @ 6/24/20 8:45 ☑ pHAdj(≥11) @ 6/23/20 14:45 Vial Cal Ref.: VC-19-020 Checked By: JM

Comments: volume entered after extraction started, pH=7, chlorine not detected Date 6/24/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F183

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD RSK-175
DISSOLVED GASES

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF014WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF014WL/DGF014WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. F183-08M/F183-08S - all analytes were within MS QC limits. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F183
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF014WB	1	NA	06/24/2009:48	06/24/2008:40	BF24003A	BF24002A	DGF014W	Method Blank
LCS1W	DGF014WL	1	NA	06/24/2010:02	06/24/2008:40	BF24004A	BF24002A	DGF014W	Lab Control Sample (LCS)
LCD1W	DGF014WC	1	NA	06/24/2010:16	06/24/2008:40	BF24005A	BF24002A	DGF014W	LCS Duplicate
MW17S-GW062120	F183-01	1	NA	06/24/2010:35	06/24/2008:40	BF24006A	BF24002A	DGF014W	Field Sample
MW17D-GW062120	F183-02	1	NA	06/24/2010:53	06/24/2008:40	BF24007A	BF24002A	DGF014W	Field Sample
MW06-GW062120	F183-03	1	NA	06/24/2011:09	06/24/2008:40	BF24008A	BF24002A	DGF014W	Field Sample
MW16S-GW062120	F183-05	1	NA	06/24/2011:23	06/24/2008:40	BF24009A	BF24002A	DGF014W	Field Sample
MW16D-GW062120	F183-06	1	NA	06/24/2011:37	06/24/2008:40	BF24010A	BF24002A	DGF014W	Field Sample
MW04-GW062120	F183-07	1	NA	06/24/2011:49	06/24/2008:40	BF24011A	BF24002A	DGF014W	Field Sample
MW08A-GW062120	F183-08	1	NA	06/24/2012:03	06/24/2008:40	BF24012A	BF24002A	DGF014W	Field Sample
MW08A-GW062120MS	F183-08M	1	NA	06/24/2012:32	06/24/2008:40	BF24014A	BF24013A	DGF014W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	1	NA	06/24/2012:45	06/24/2008:40	BF24015A	BF24013A	DGF014W	MS Duplicate (MSD)
MW01S-GW062120	F183-12	1	NA	06/24/2012:58	06/24/2008:40	BF24016A	BF24013A	DGF014W	Field Sample
FD01-GW062120	F183-13	1	NA	06/24/2013:11	06/24/2008:40	BF24017A	BF24013A	DGF014W	Field Sample
MW08C-GW062220	F183-14	1	NA	06/24/2013:24	06/24/2008:40	BF24018A	BF24013A	DGF014W	Field Sample
MW08B-GW062220	F183-15	1	NA	06/24/2013:37	06/24/2008:40	BF24019A	BF24013A	DGF014W	Field Sample
FD02-GW062220	F183-16	1	NA	06/24/2013:52	06/24/2008:40	BF24020A	BF24013A	DGF014W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW17S-GW062120	Date Analyzed: 06/24/20 10:35
Lab Samp ID: F183-01	Dilution Factor: 1
Lab File ID: BF24006A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

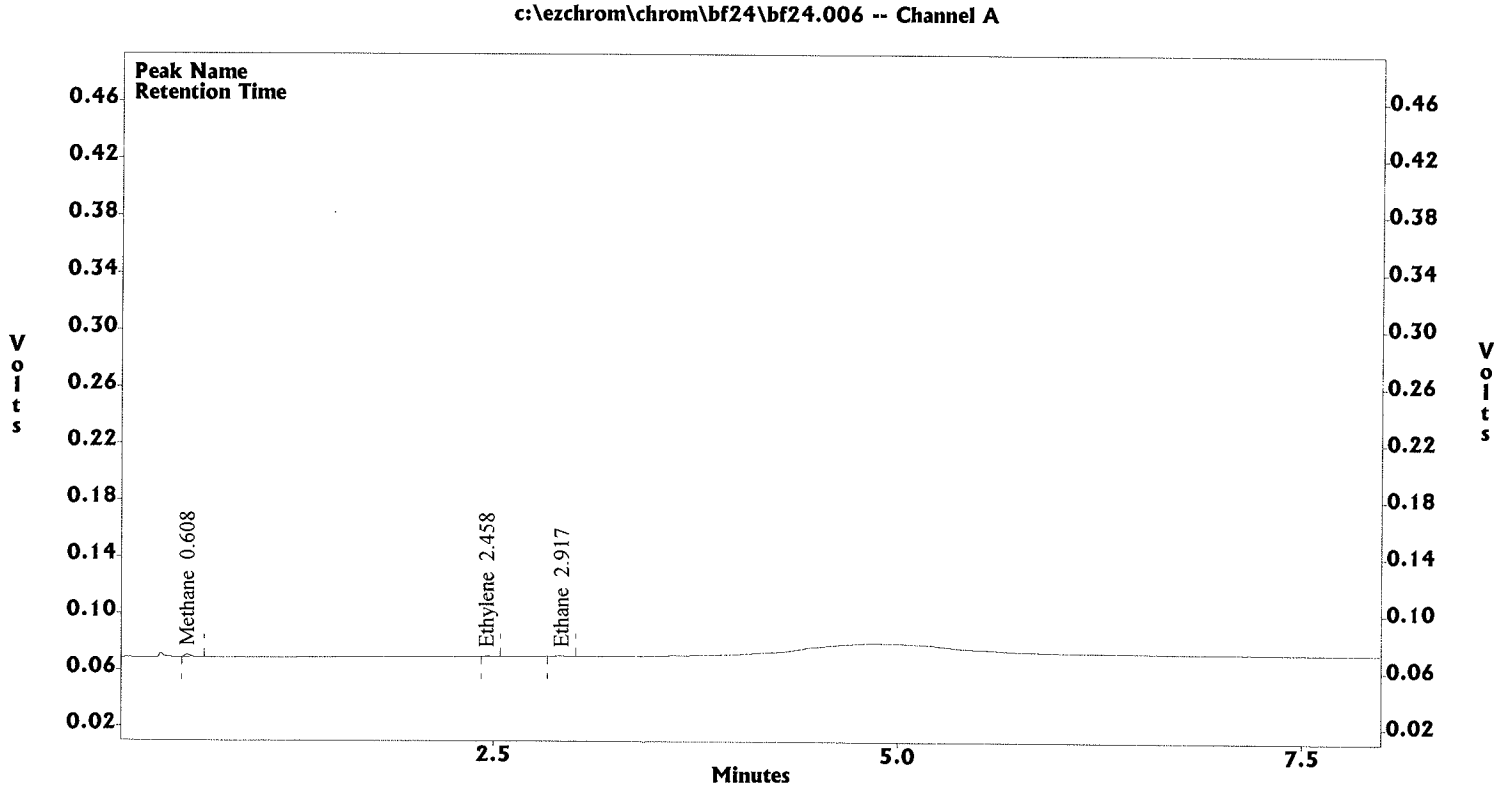
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.25J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\bf24.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : F183-01
Acquired : Jun 24, 2020 10:35:36
Printed : Jun 24, 2020 11:12:26
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	3453	13975.2	0.247
--	Acetylene	1.992	0	0.0	0.000
2	Ethylene	2.458	578	9519.0	0.061
3	Ethane	2.917	1057	13110.4	0.081
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client	: CDM SMITH	Date Collected:	06/21/20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
Batch No.	: 20F183	Date Extracted:	06/24/20 08:40
Sample ID:	MW17D-GW062120	Date Analyzed:	06/24/20 10:53
Lab Samp ID:	F183-02	Dilution Factor:	1
Lab File ID:	BF24007A	Matrix :	WATER
Ext Btch ID:	DGF014W	% Moisture :	NA
Calib. Ref.:	BF24002A	Instrument ID :	GCT072

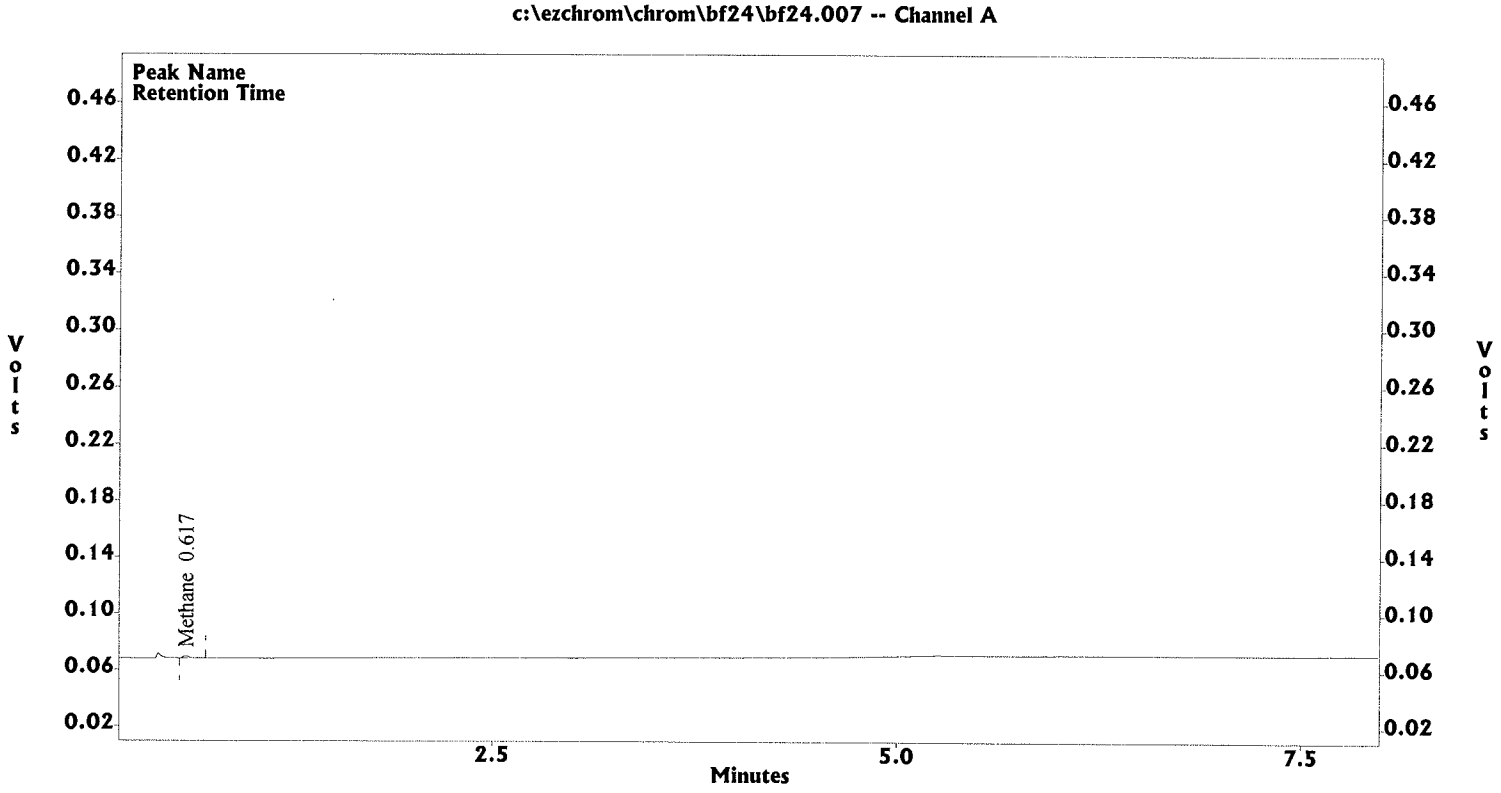
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.20J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\bf24.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : F183-02
Acquired : Jun 24, 2020 10:53:50
Printed : Jun 24, 2020 11:13:30
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	2761	13975.2	0.198
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW06-GW062120	Date Analyzed: 06/24/20 11:09
Lab Samp ID: F183-03	Dilution Factor: 1
Lab File ID: BF24008A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

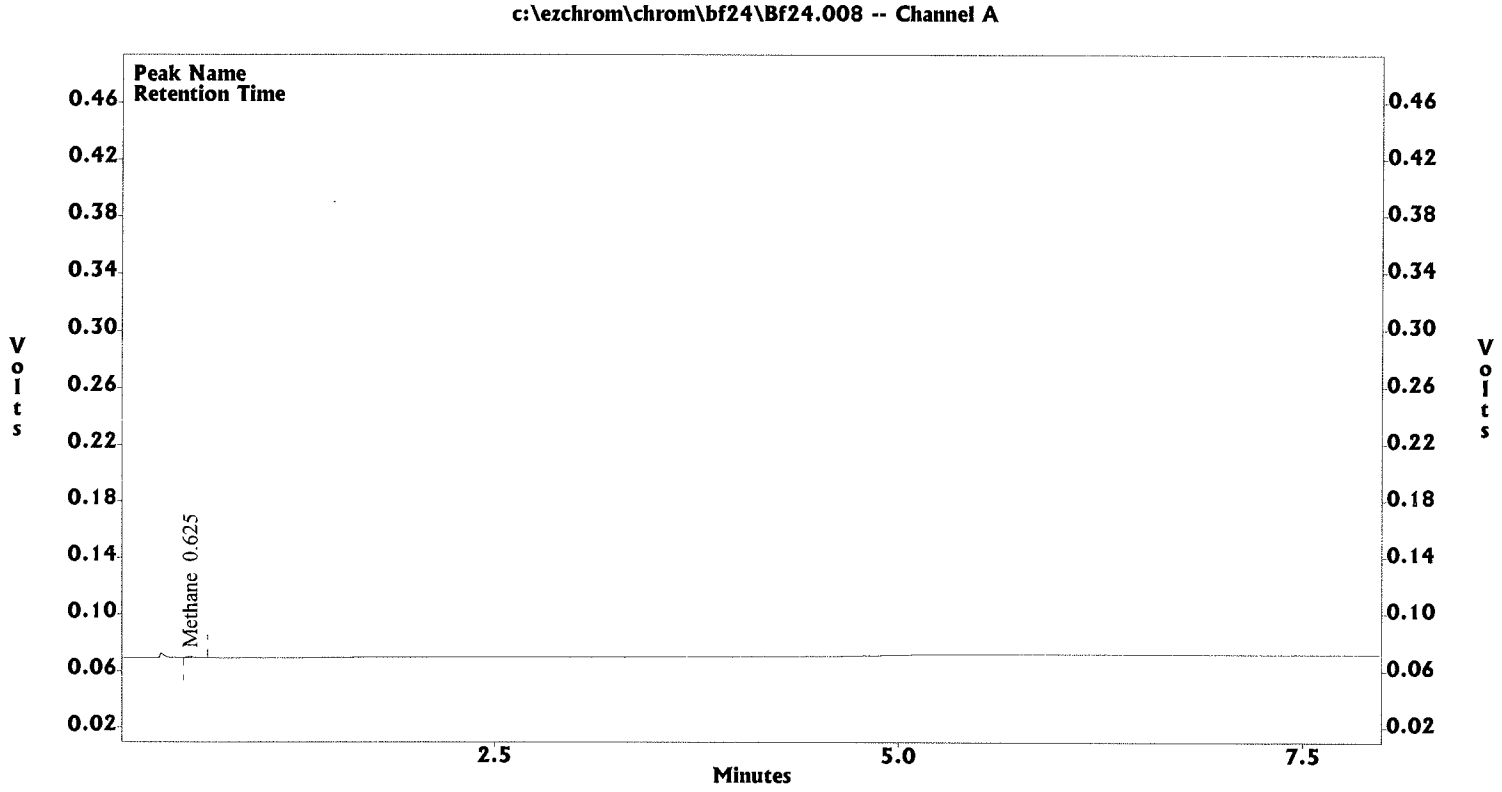
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.008
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-03
Acquired : Jun 24, 2020 11:09:53
Printed : Jun 24, 2020 11:17:54
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	2129	13975.2	0.152
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW16S-GW062120	Date Analyzed: 06/24/20 11:23
Lab Samp ID: F183-05	Dilution Factor: 1
Lab File ID: BF24009A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

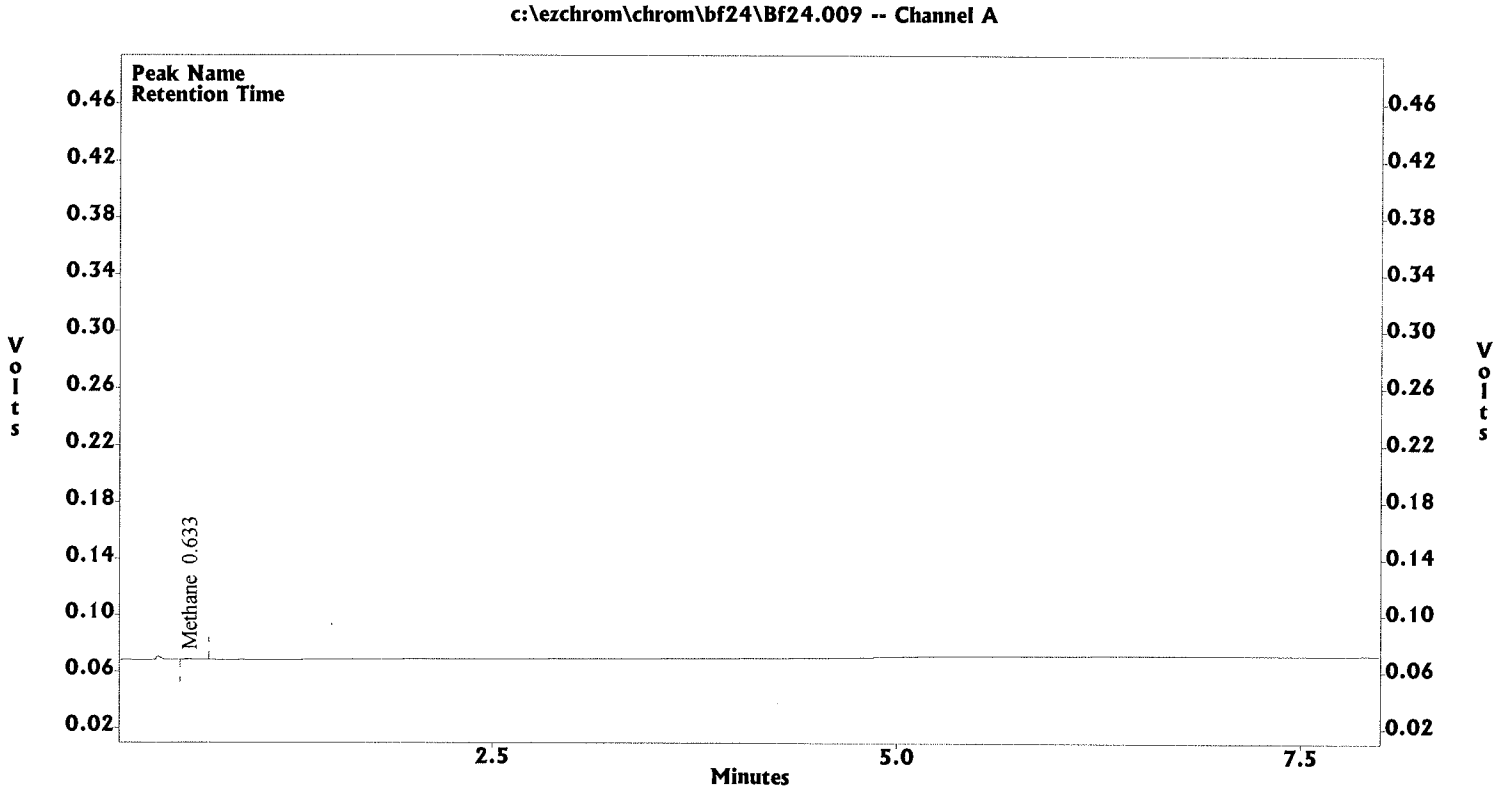
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.009
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-05
Acquired : Jun 24, 2020 11:23:48
Printed : Jun 24, 2020 11:31:49
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.633	1725	13975.2	0.123
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW16D-GW062120	Date Analyzed: 06/24/20 11:37
Lab Samp ID: F183-06	Dilution Factor: 1
Lab File ID: BF24010A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

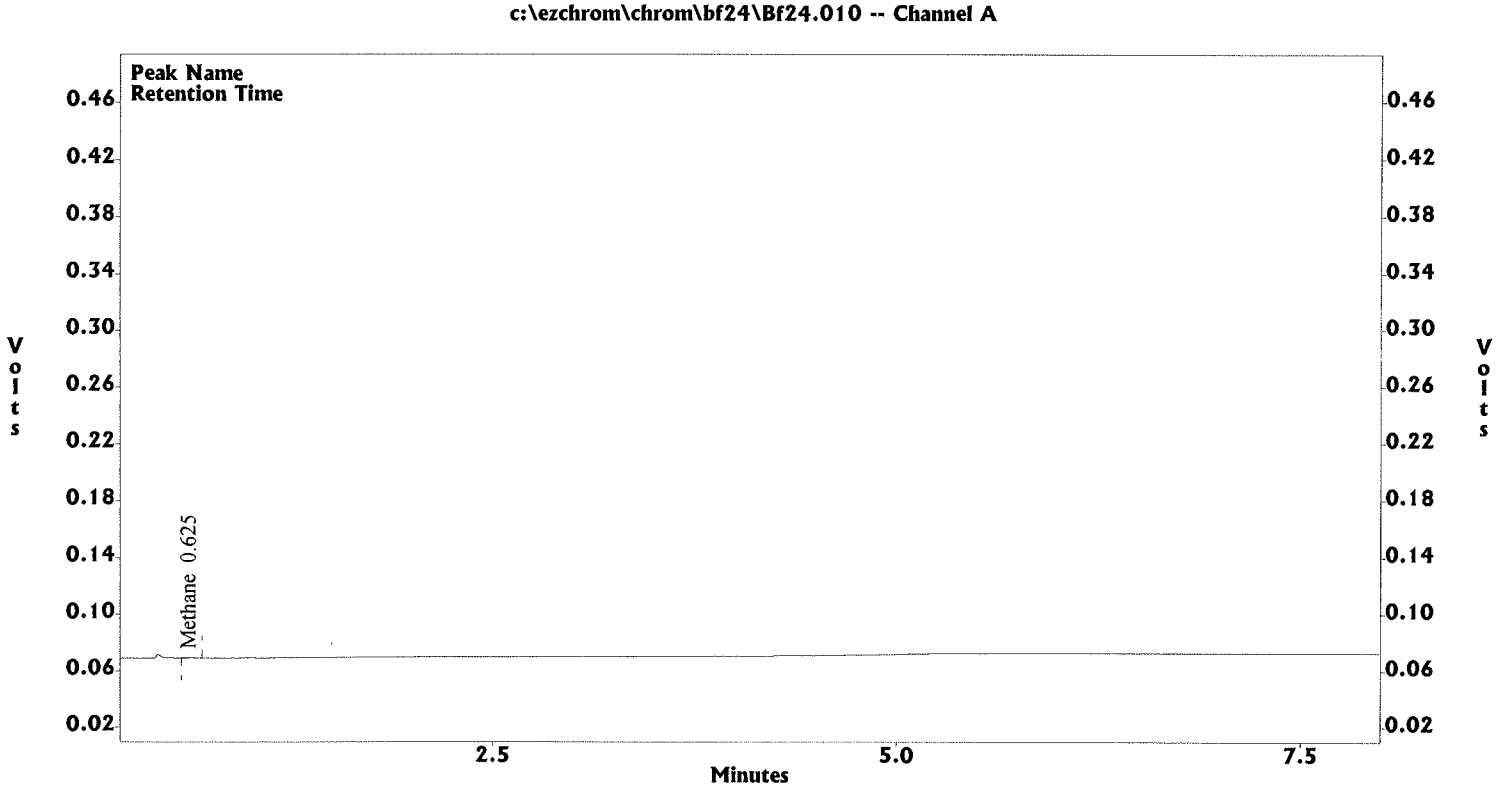
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.010
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-06
Acquired : Jun 24, 2020 11:37:07
Printed : Jun 24, 2020 11:45:08
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	834	13975.2	0.060
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW04-GW062120	Date Analyzed: 06/24/20 11:49
Lab Samp ID: F183-07	Dilution Factor: 1
Lab File ID: BF24011A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

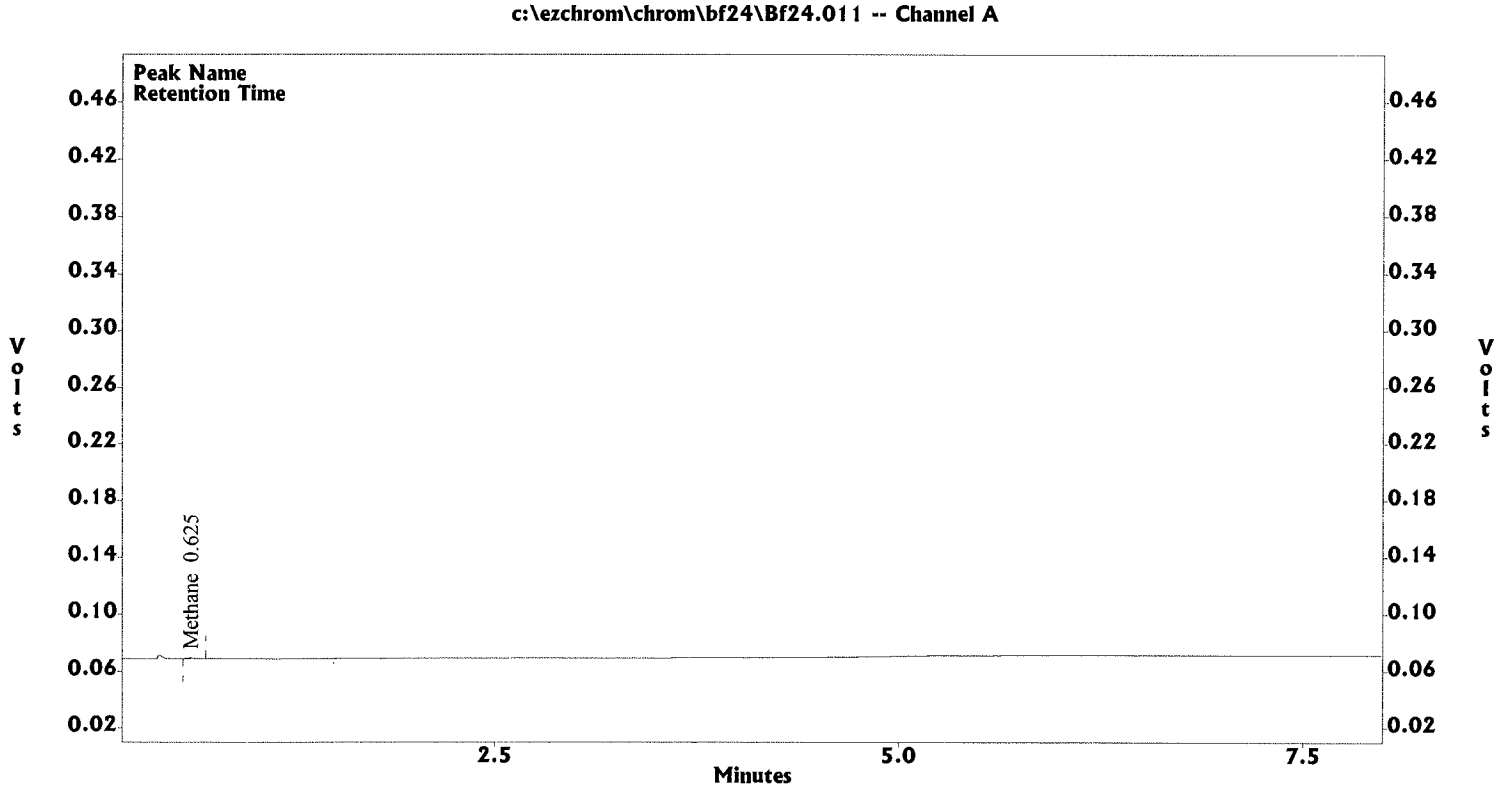
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.011
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-07
Acquired : Jun 24, 2020 11:49:59
Printed : Jun 24, 2020 11:58:00
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1579	13975.2	0.113
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW08A-GW062120	Date Analyzed: 06/24/20 12:03
Lab Samp ID: F183-08	Dilution Factor: 1
Lab File ID: BF24012A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

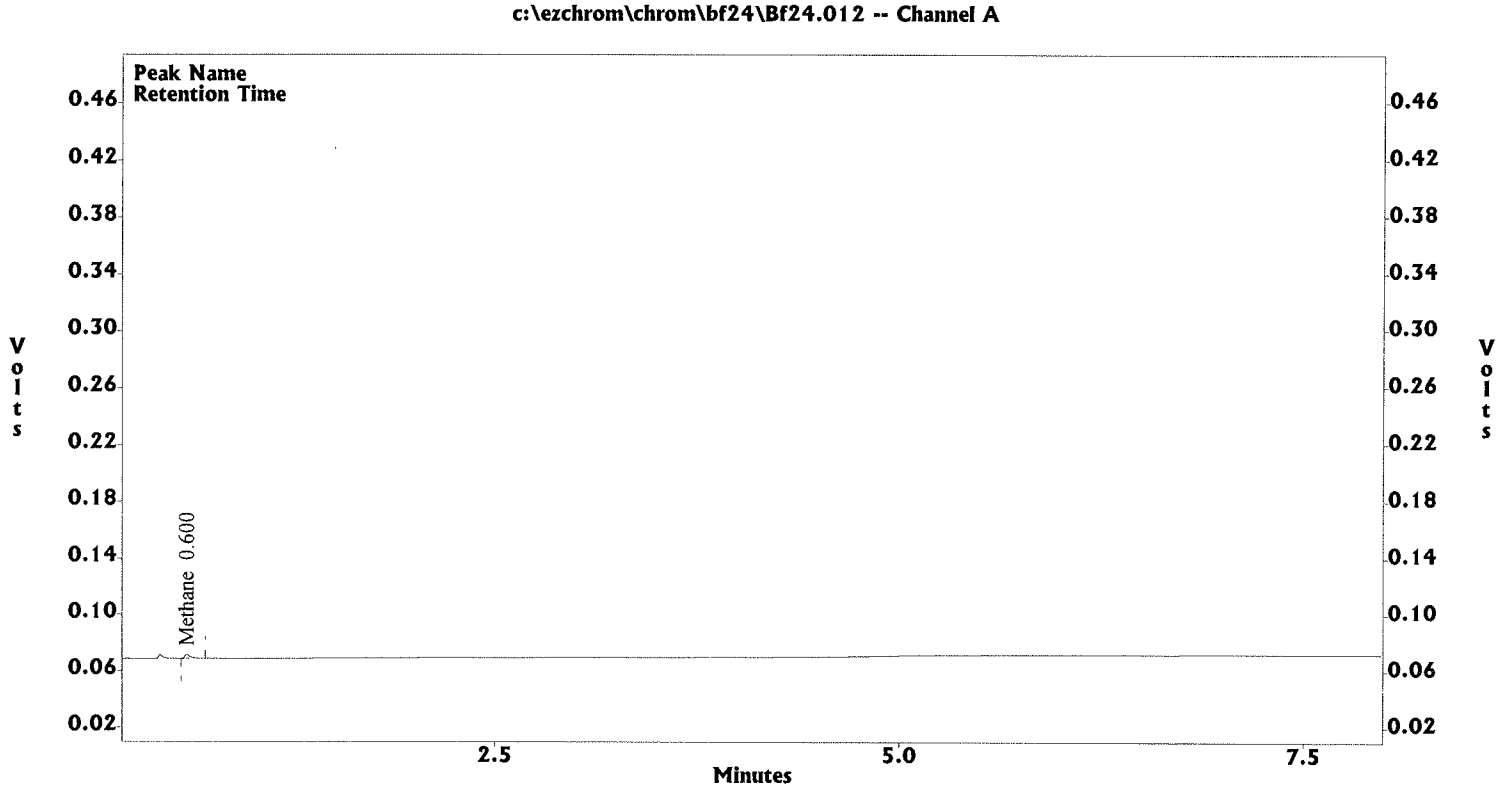
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.45J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.012
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-08
Acquired : Jun 24, 2020 12:03:58
Printed : Jun 24, 2020 12:11:59
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	6274	13975.2	0.449
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW01S-GW062120	Date Analyzed: 06/24/20 12:58
Lab Samp ID: F183-12	Dilution Factor: 1
Lab File ID: BF24016A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24013A	Instrument ID : GCT072

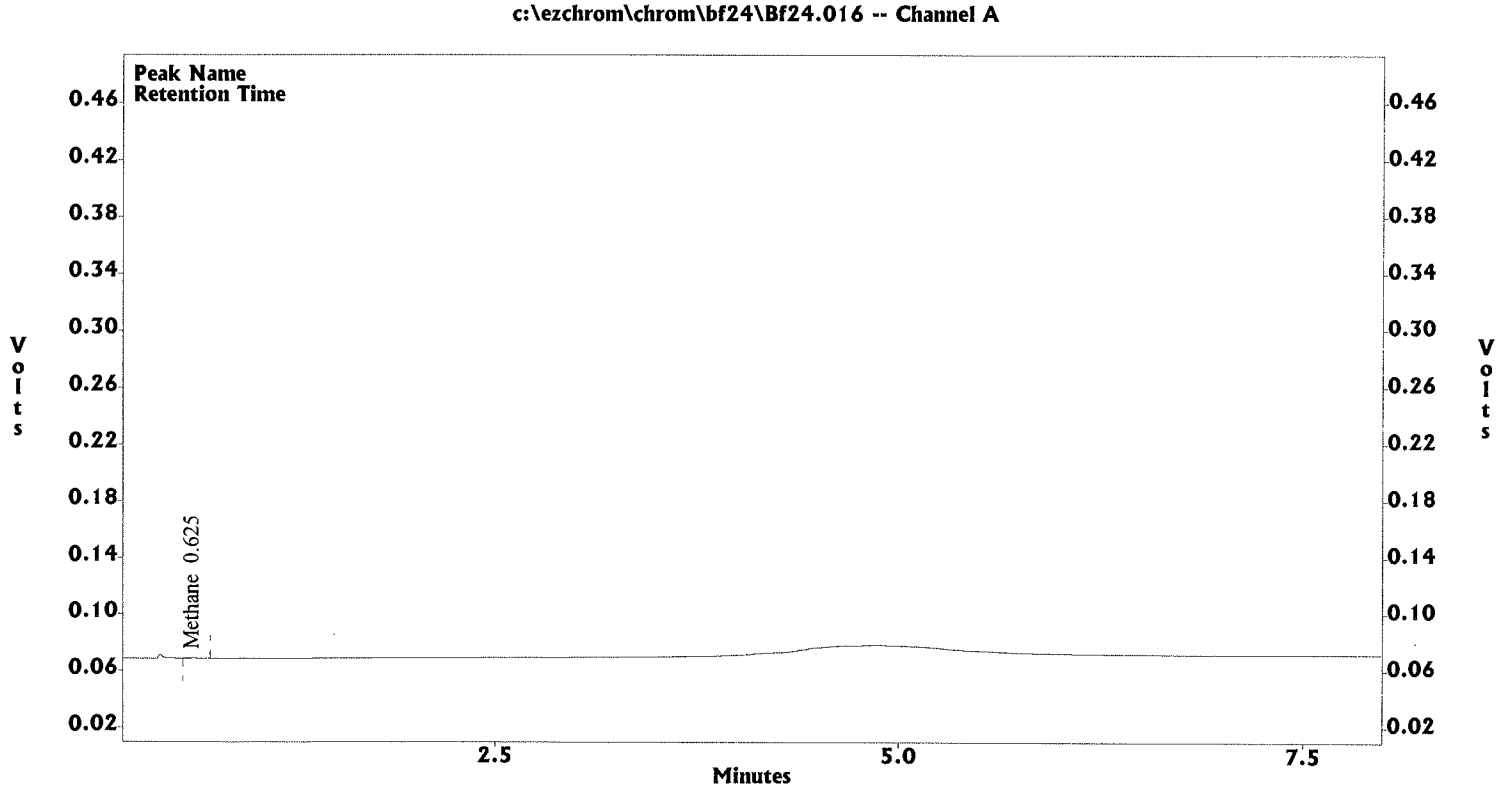
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.016
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-12
Acquired : Jun 24, 2020 12:58:49
Printed : Jun 24, 2020 13:06:49
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1195	13975.2	0.086
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/21/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: FD01-GW062120	Date Analyzed: 06/24/20 13:11
Lab Samp ID: F183-13	Dilution Factor: 1
Lab File ID: BF24017A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24013A	Instrument ID : GCT072

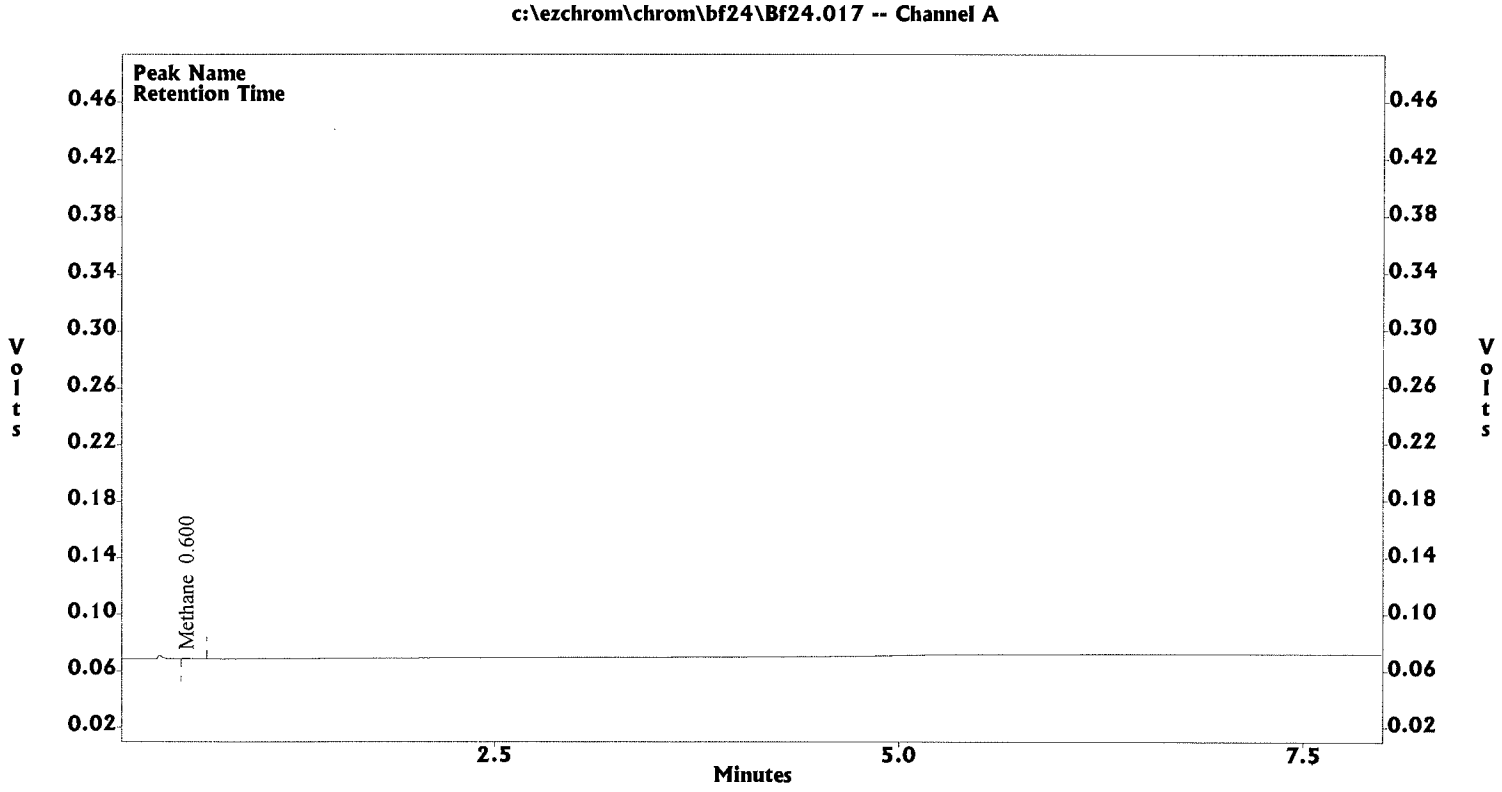
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.017
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-13
Acquired : Jun 24, 2020 13:11:24
Printed : Jun 24, 2020 13:19:25
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	1088	13975.2	0.078
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/22/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW08C-GW062220	Date Analyzed: 06/24/20 13:24
Lab Samp ID: F183-14	Dilution Factor: 1
Lab File ID: BF24018A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24013A	Instrument ID : GCT072

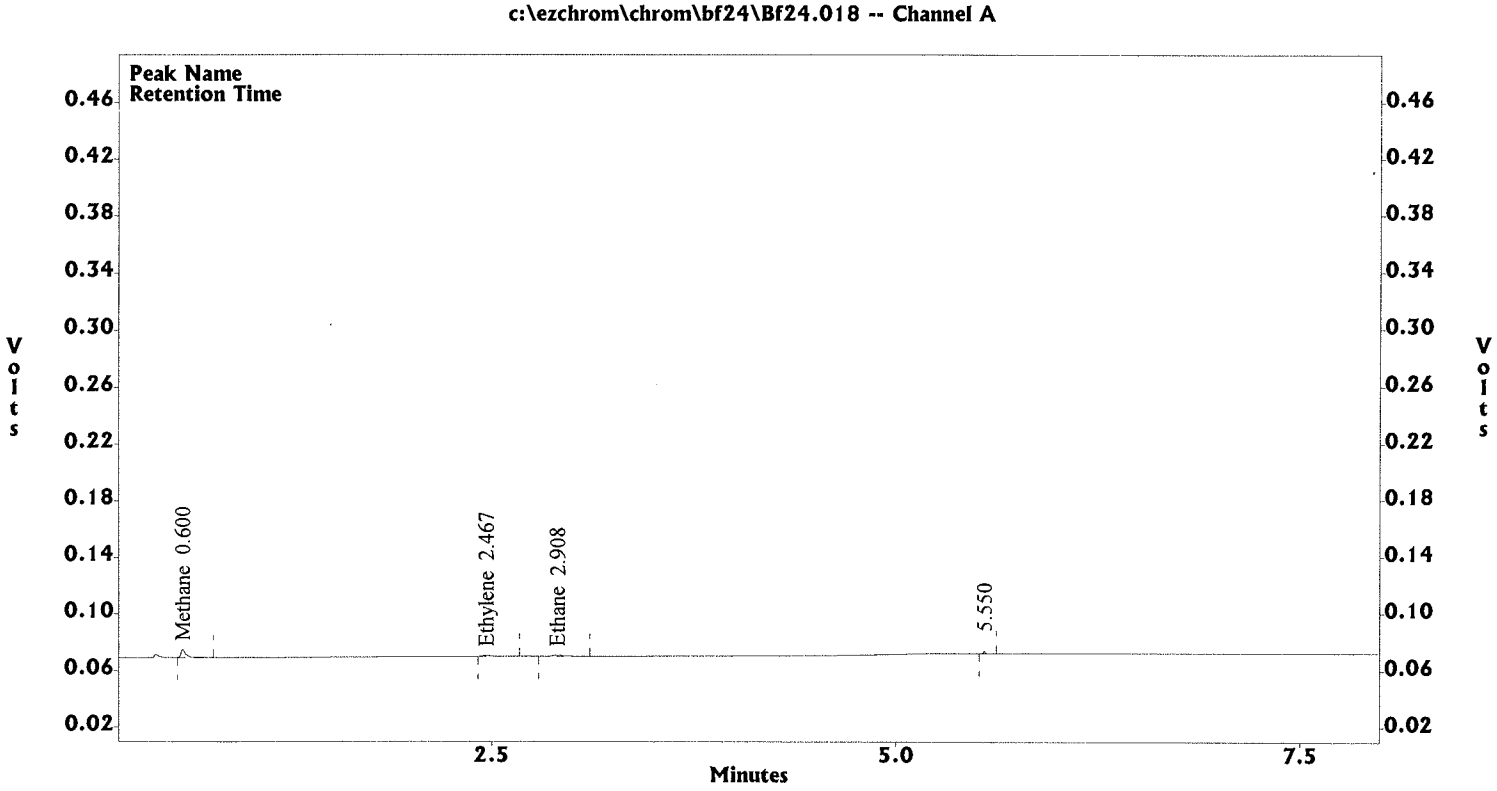
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	0.33J	2.0	0.30
METHANE	0.83J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.018
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-14
Acquired : Jun 24, 2020 13:24:28
Printed : Jun 24, 2020 13:32:29
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	11598	13975.2	0.830
--	Acetylene	1.992	0	0.0	0.000
2	Ethylene	2.467	3116	9519.0	0.327
3	Ethane	2.908	4126	13110.4	0.315
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/22/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MW08B-GW062220	Date Analyzed: 06/24/20 13:37
Lab Samp ID: F183-15	Dilution Factor: 1
Lab File ID: BF24019A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24013A	Instrument ID : GCT072

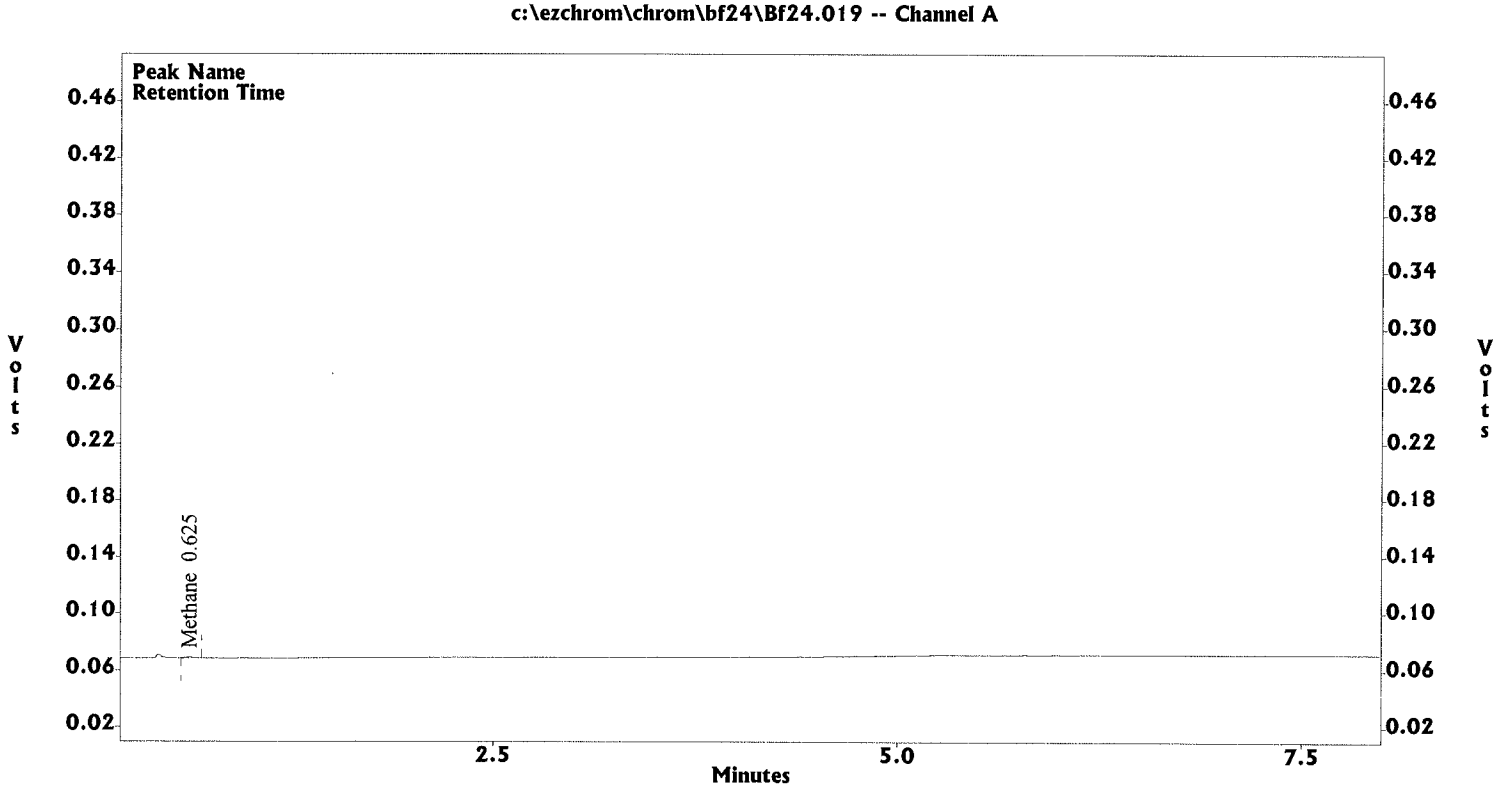
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.019
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-15
Acquired : Jun 24, 2020 13:37:45
Printed : Jun 24, 2020 13:45:47
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.625	1425	13975.2	0.102
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/22/20
Project : VA SALT LAKE CITY	Date Received: 06/23/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: FD02-GW062220	Date Analyzed: 06/24/20 13:52
Lab Samp ID: F183-16	Dilution Factor: 1
Lab File ID: BF24020A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24013A	Instrument ID : GCT072

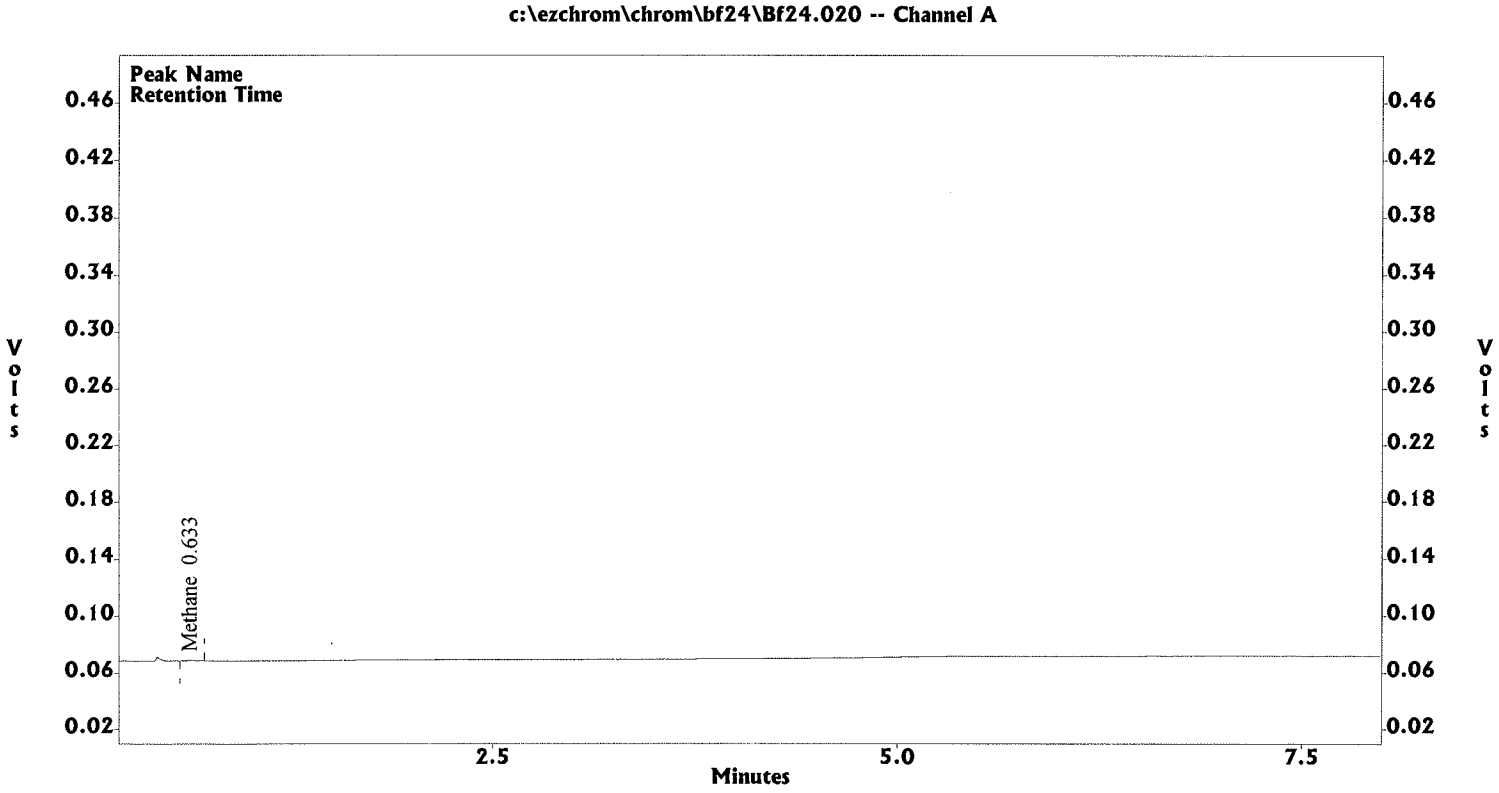
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.020
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-16
Acquired : Jun 24, 2020 13:52:22
Printed : Jun 24, 2020 14:00:24
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.633	2036	13975.2	0.146
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/24/20
Batch No. : 20F183	Date Extracted: 06/24/20 08:40
Sample ID: MBLK1W	Date Analyzed: 06/24/20 09:48
Lab Samp ID: DGF014WB	Dilution Factor: 1
Lab File ID: BF24003A	Matrix : WATER
Ext Btch ID: DGF014W	% Moisture : NA
Calib. Ref.: BF24002A	Instrument ID : GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF014WB	DGF014WL	DGF014WC		
LAB FILE ID:	BF24003A	BF24004A	BF24005A		
DATE EXTRACTED:	06/24/2008:40	06/24/2008:40	06/24/2008:40	DATE COLLECTED:	NA
DATE ANALYZED:	06/24/2009:48	06/24/2010:02	06/24/2010:16	DATE RECEIVED:	06/24/20
PREP. BATCH:	DGF014W	DGF014W	DGF014W		
CALIB. REF:	BF24002A	BF24002A	BF24002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	20.9	82	25.5	23.3	91	11	70-140	30
Ethene	ND	23.8	19.4	82	23.8	21.8	92	12	70-140	30
Methane	ND	13.6	11.2	82	13.6	12.9	95	14	70-130	30

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW08A-GW062120				
LAB SAMP ID:	F183-08	F183-08M	F183-08S		
LAB FILE ID:	BF24012A	BF24014A	BF24015A		
DATE EXTRACTED:	06/24/2008:40	06/24/2008:40	06/24/2008:40	DATE COLLECTED:	06/21/20
DATE ANALYZED:	06/24/2012:03	06/24/2012:32	06/24/2012:45	DATE RECEIVED:	06/23/20
PREP. BATCH:	DGF014W	DGF014W	DGF014W		
CALIB. REF:	BF24002A	BF24013A	BF24013A		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	MS RSLT (ug/L)	MS % REC	SPIKE AMT (ug/L)	MSD RSLT (ug/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	24.2	95	25.5	23.2	91	4	70-140	30
Ethene	ND	23.8	22.6	95	23.8	21.6	91	5	70-140	30
Methane	0.449J	13.6	13.4	95	13.6	12.9	92	4	70-130	30

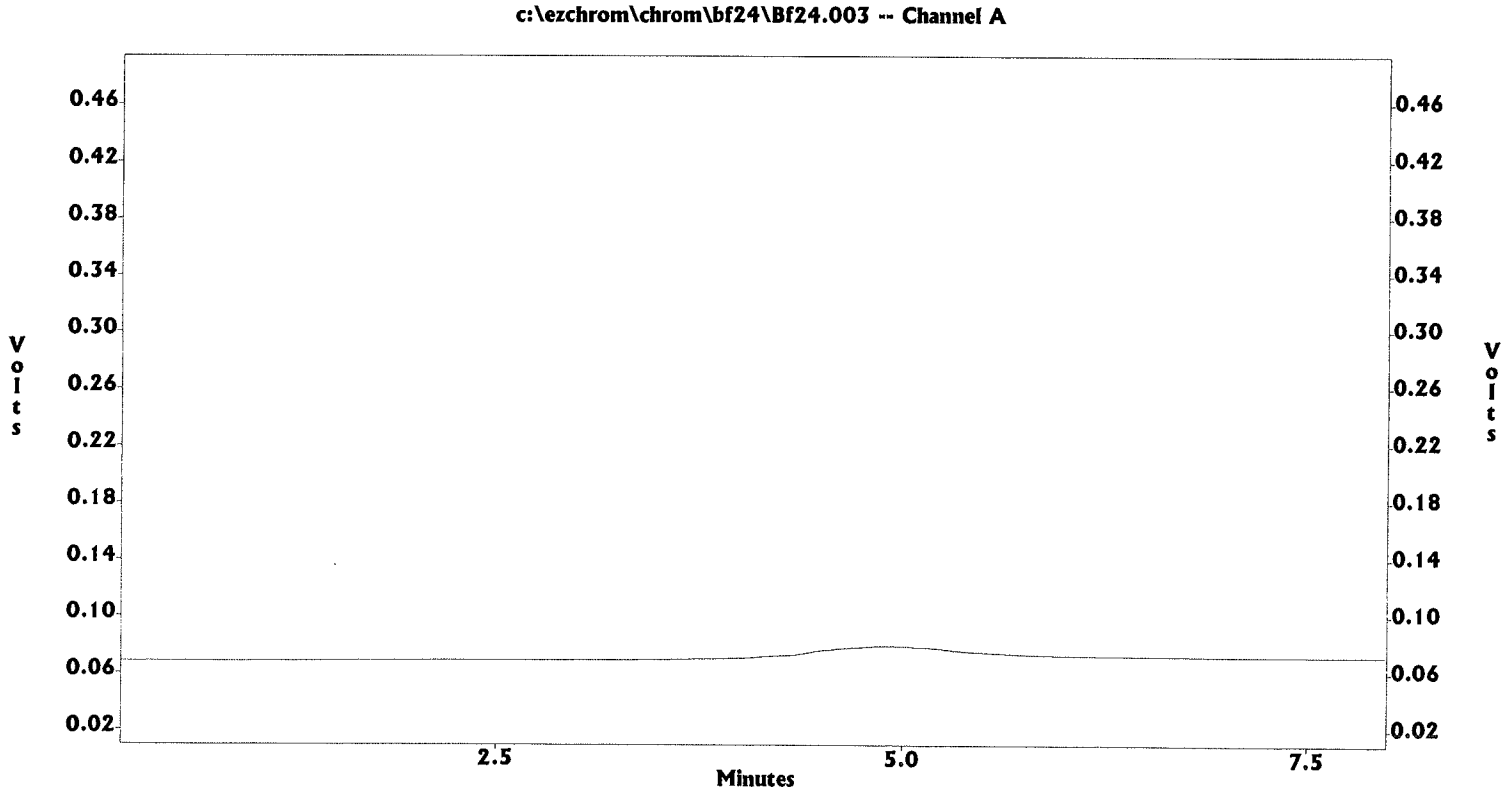
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.003
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF014WB
Acquired : Jun 24, 2020 09:48:33
Printed : Jun 24, 2020 09:56:35
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
--	Methane	0.600	0	0.0	0.000
--	Acetylene	2.050	0	0.0	0.000
--	Ethylene	2.475	0	0.0	0.000
--	Ethane	2.925	0	0.0	0.000
--	Propane	5.250	0	0.0	0.000

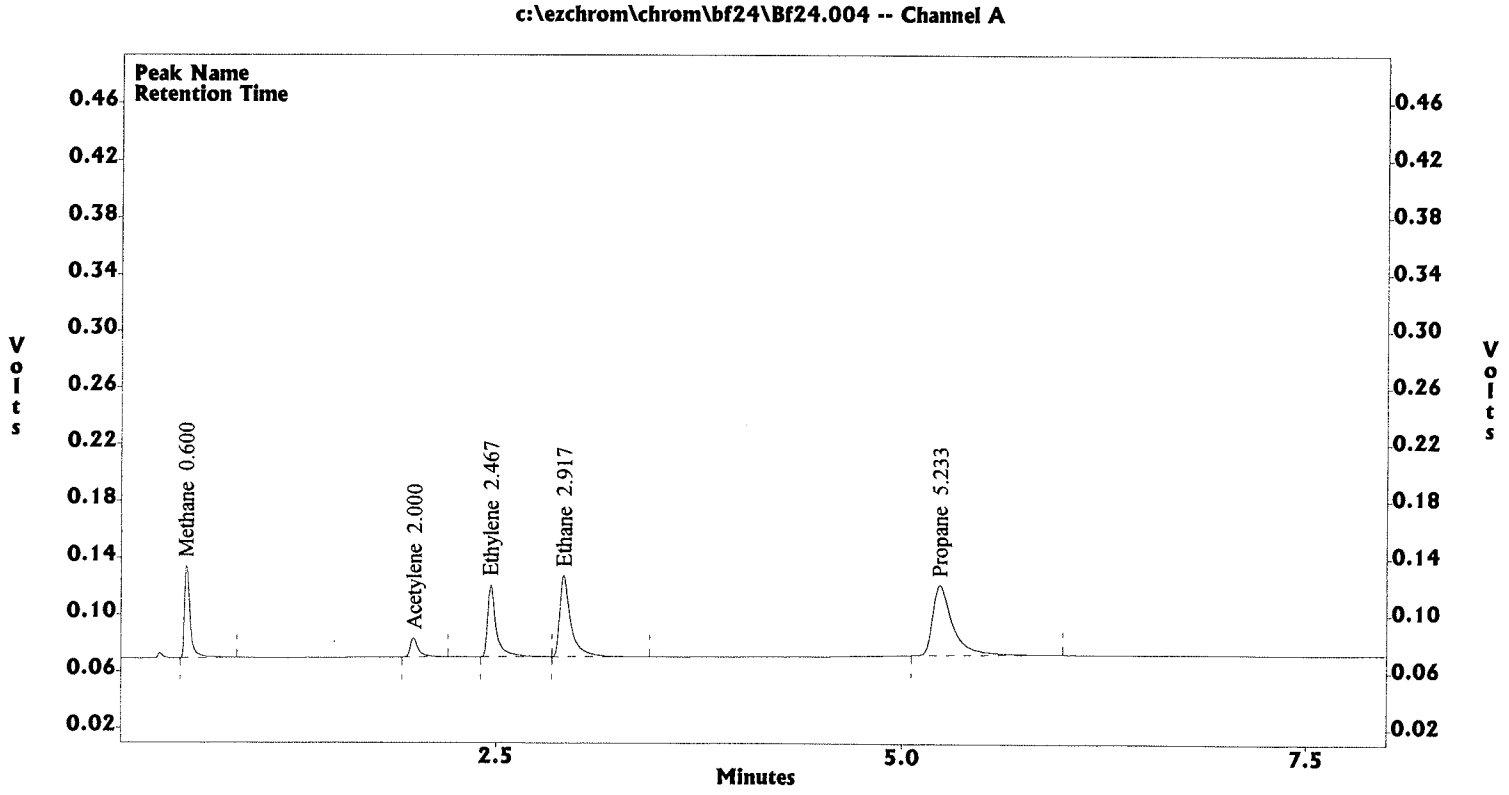


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.004
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF014WL
Acquired : Jun 24, 2020 10:02:23
Printed : Jun 24, 2020 10:10:24
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	156207	13975.2	11.177
2	Acetylene	2.000	44877	2483.4	18.071
3	Ethylene	2.467	185000	9519.0	19.435
4	Ethane	2.917	273761	13110.4	20.881
5	Propane	5.233	427060	13914.6	30.691

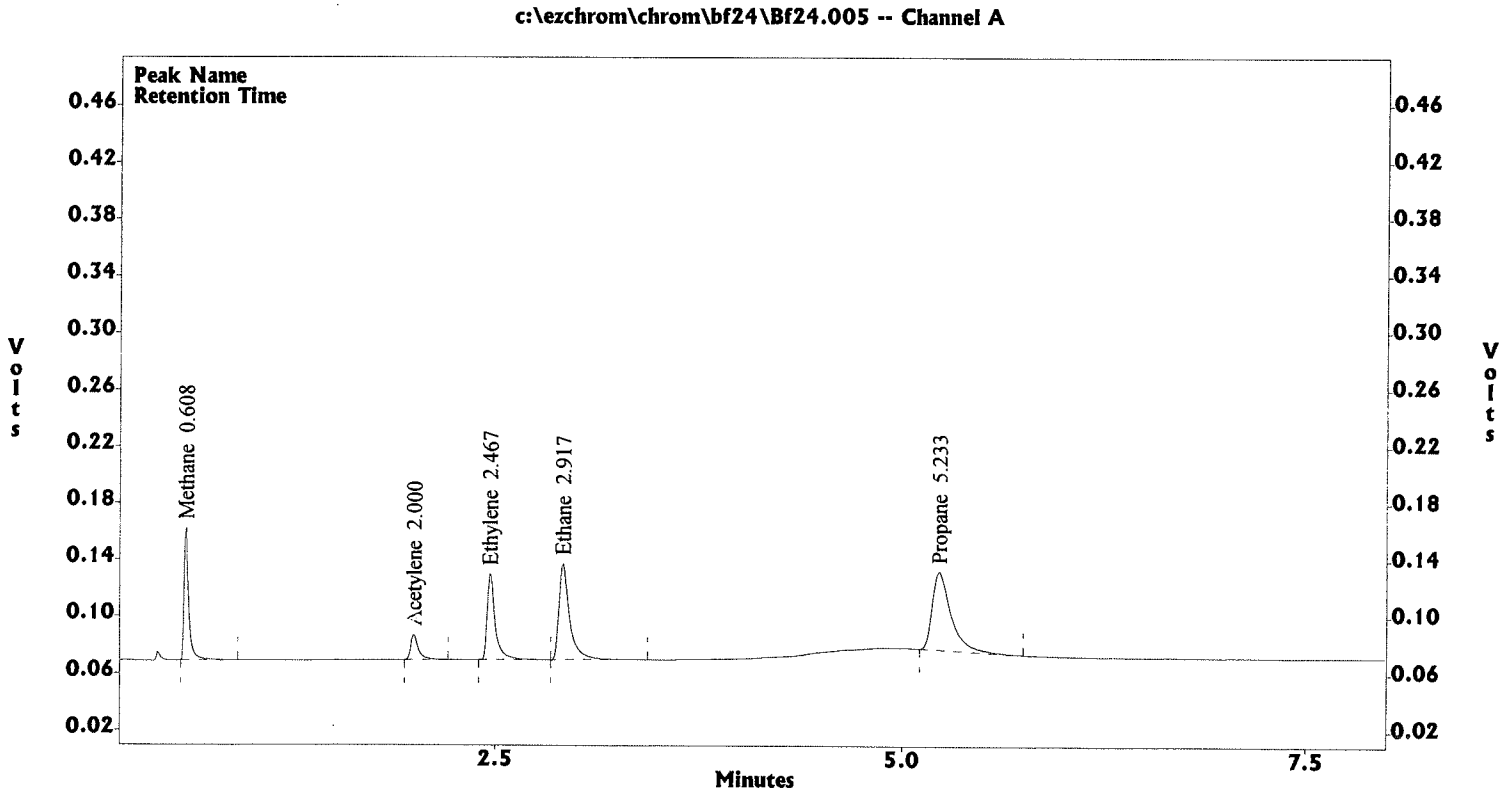


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.005
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF014WC
Acquired : Jun 24, 2020 10:16:09
Printed : Jun 24, 2020 10:24:10
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	179778	13975.2	12.864
2	Acetylene	2.000	55553	2483.4	22.370
3	Ethylene	2.467	207724	9519.0	21.822
4	Ethane	2.917	304875	13110.4	23.254
5	Propane	5.233	452443	13914.6	32.516

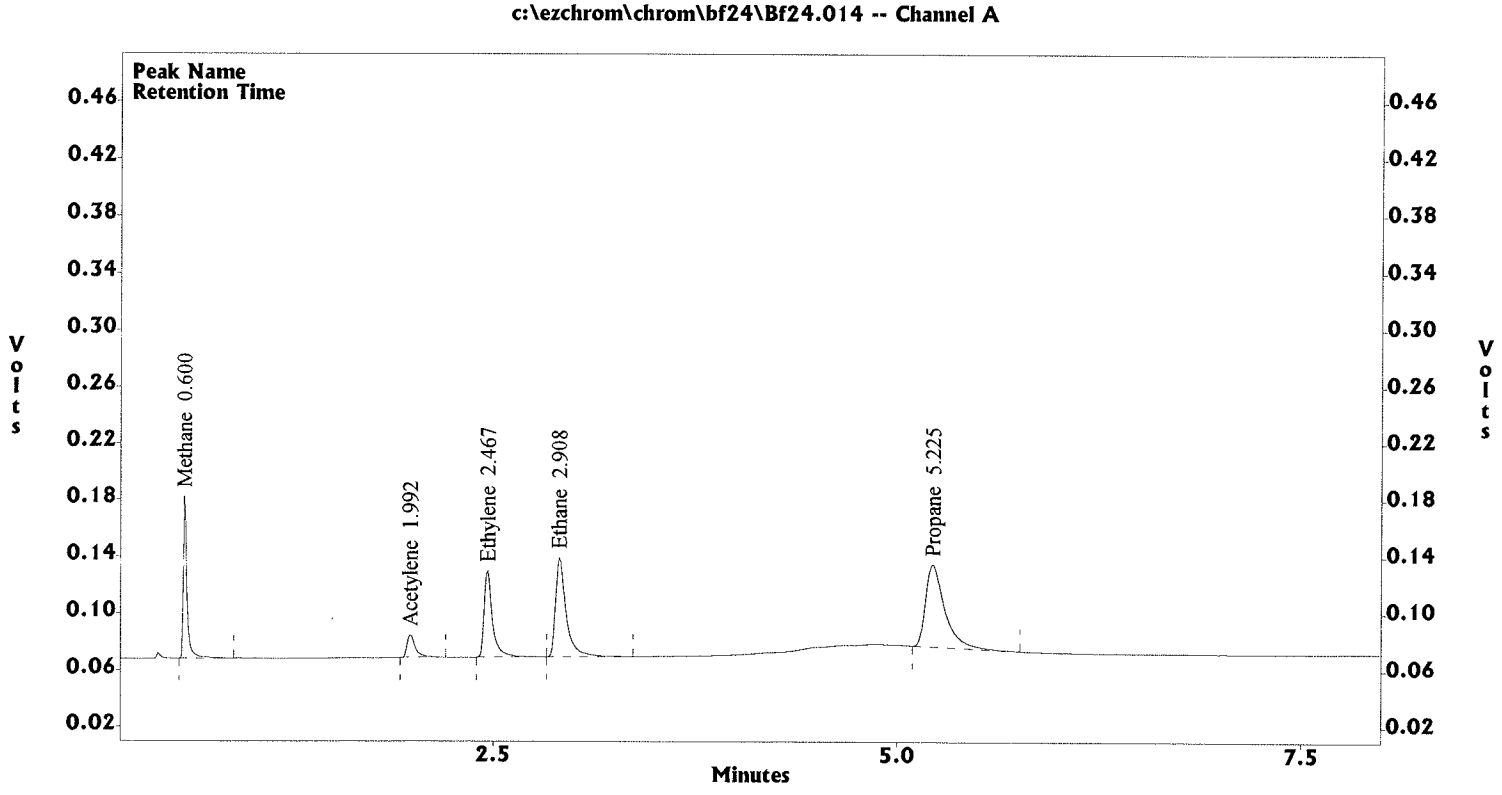


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.014
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-08M
Acquired : Jun 24, 2020 12:32:07
Printed : Jun 24, 2020 12:40:08
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	186804	13975.2	13.367
2	Acetylene	1.992	53755	2483.4	21.646
3	Ethylene	2.467	215359	9519.0	22.624
4	Ethane	2.908	317183	13110.4	24.193
5	Propane	5.225	472969	13914.6	33.991

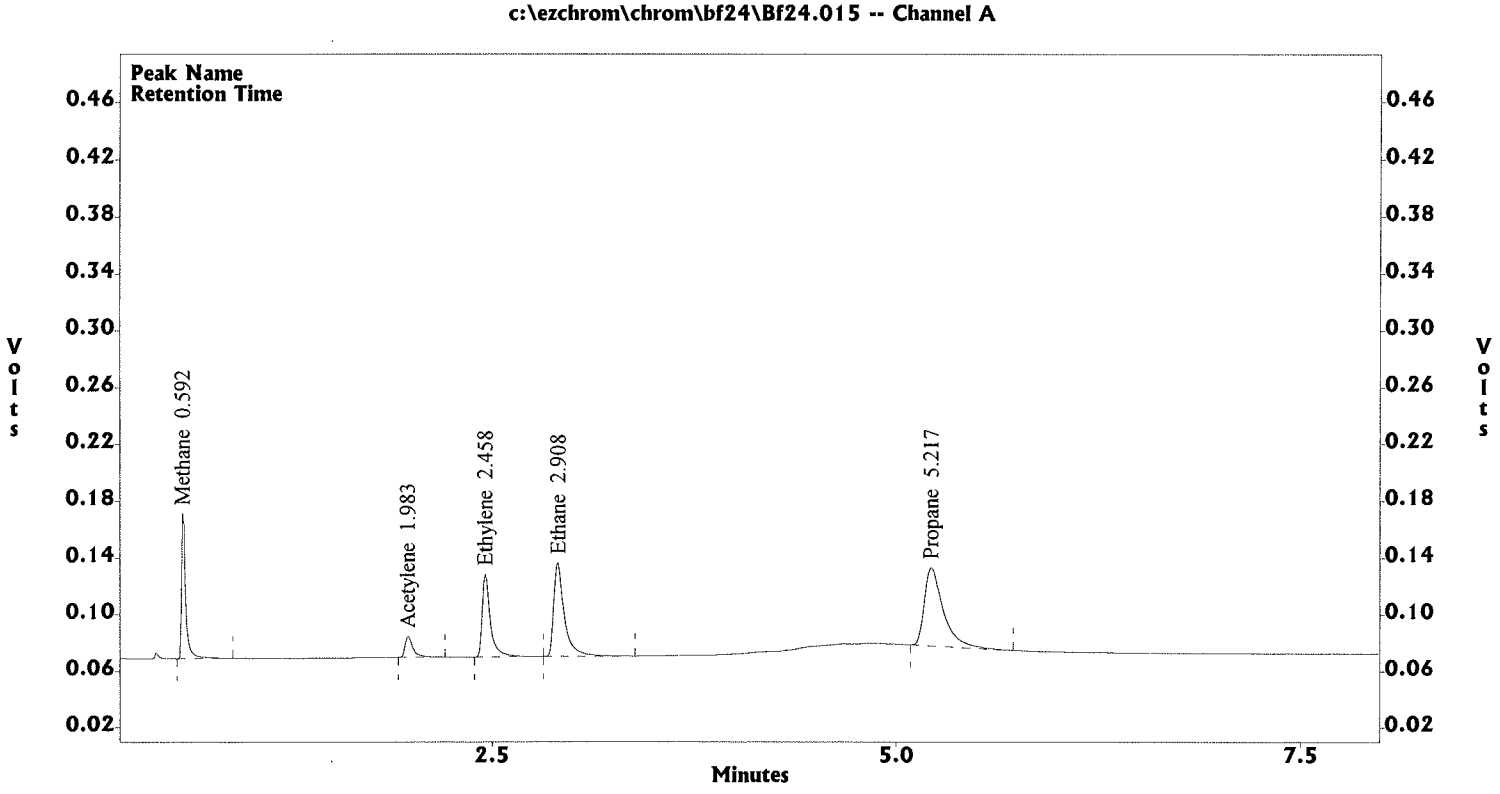


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.015
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F183-08S
Acquired : Jun 24, 2020 12:45:50
Printed : Jun 24, 2020 12:53:51
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.592	180046	13975.2	12.883
2	Acetylene	1.983	50940	2483.4	20.512
3	Ethylene	2.458	205751	9519.0	21.615
4	Ethane	2.908	304063	13110.4	23.192
5	Propane	5.217	451753	13914.6	32.466



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

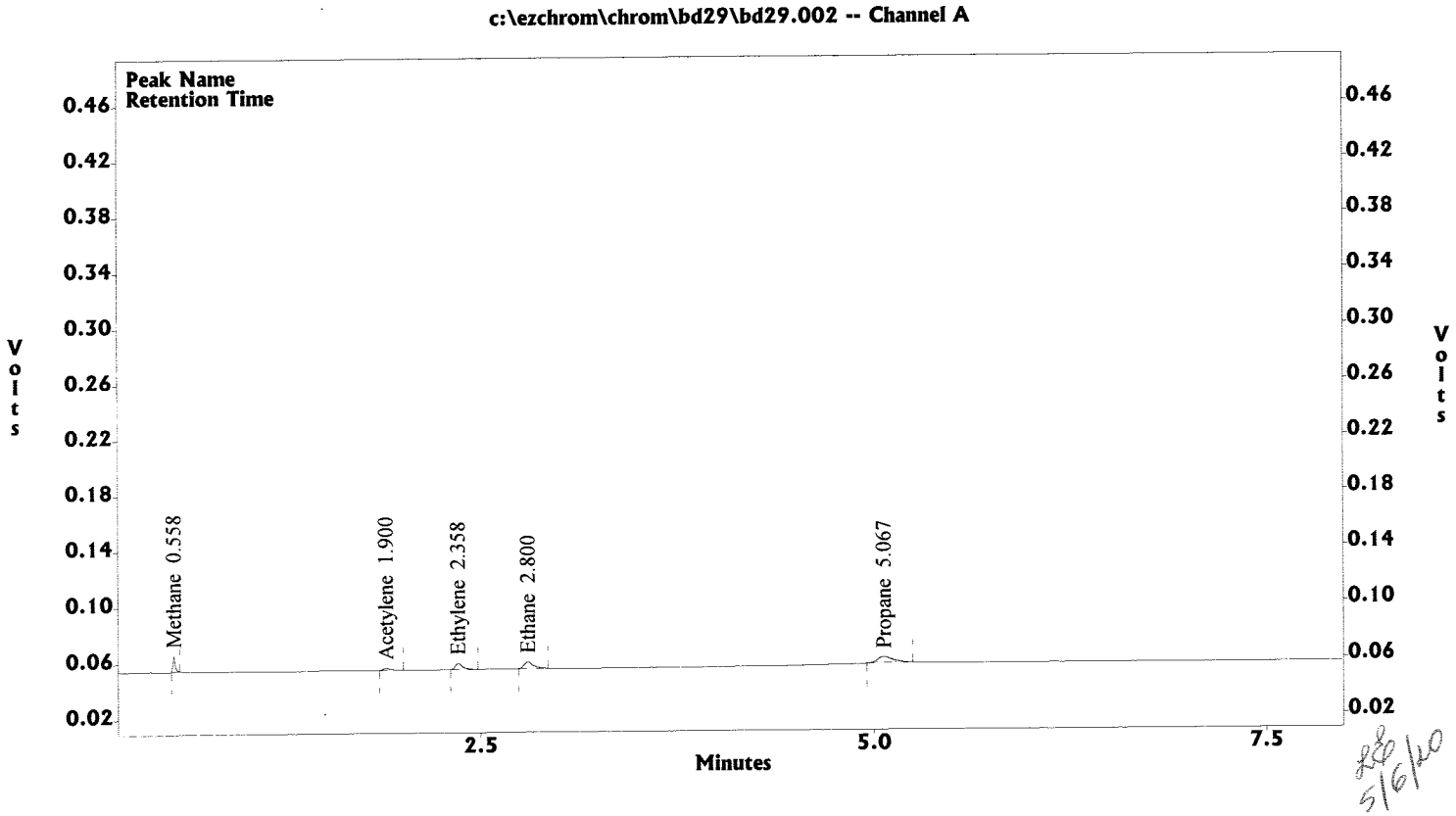
RB 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



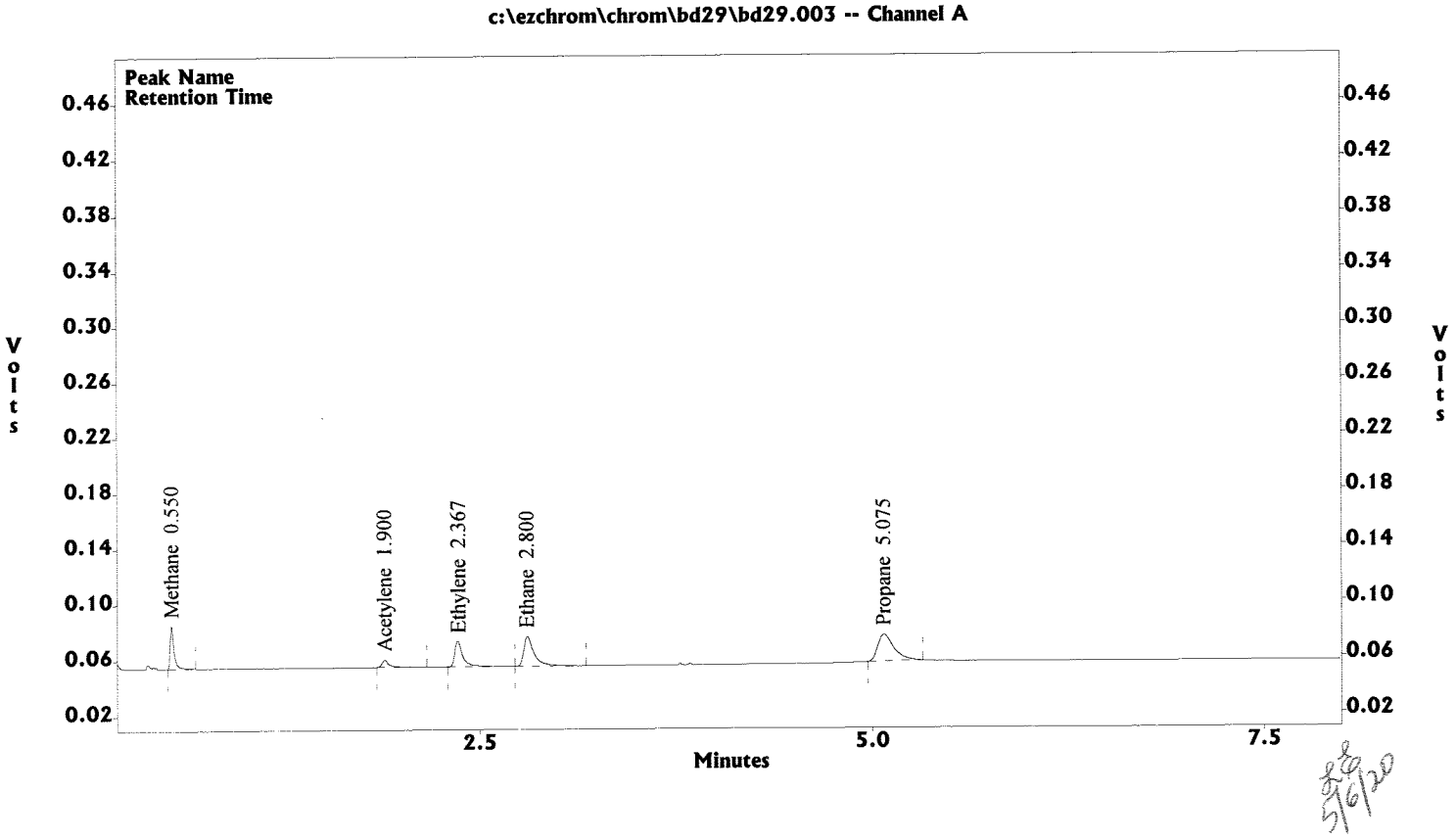
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

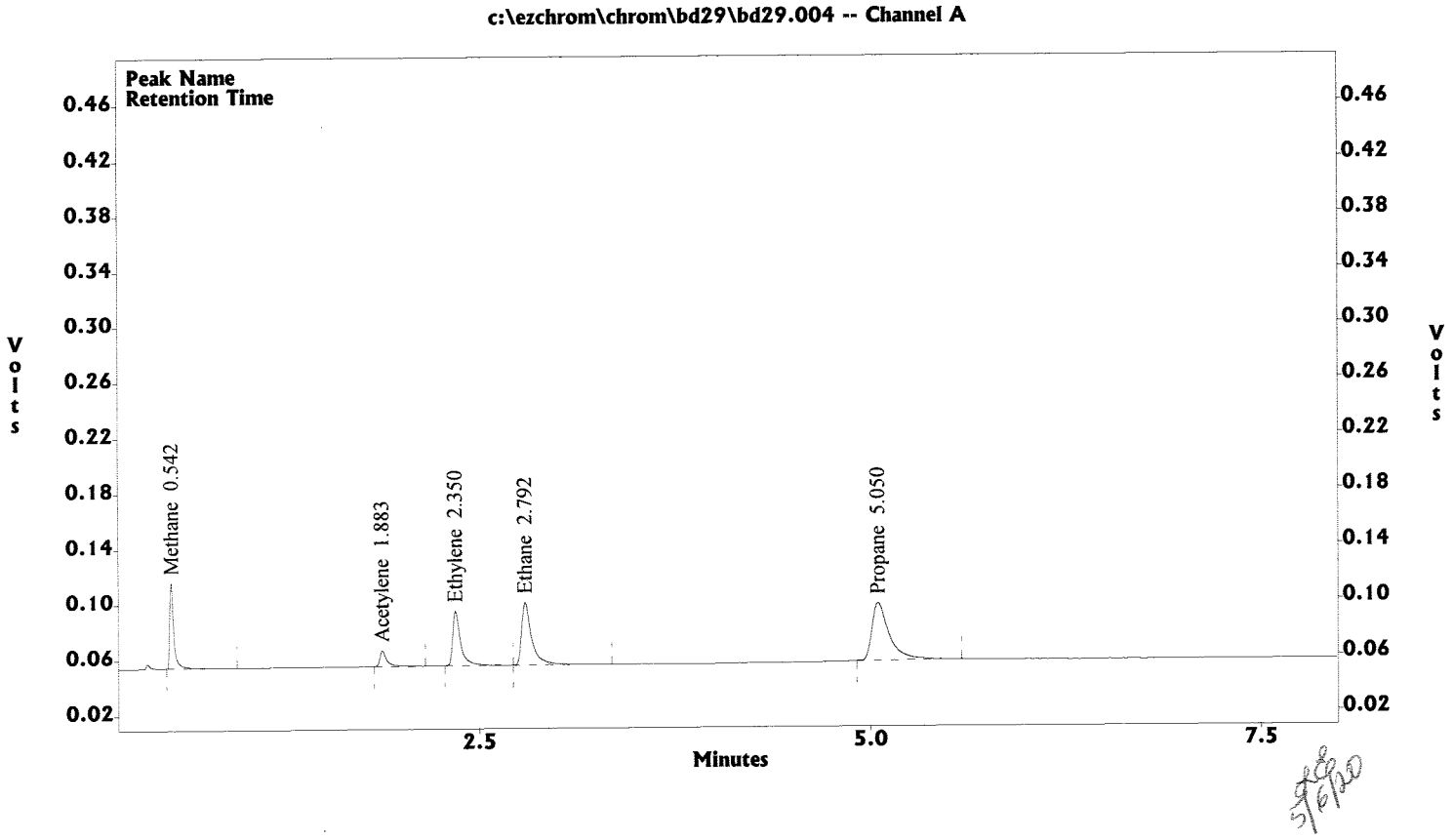


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



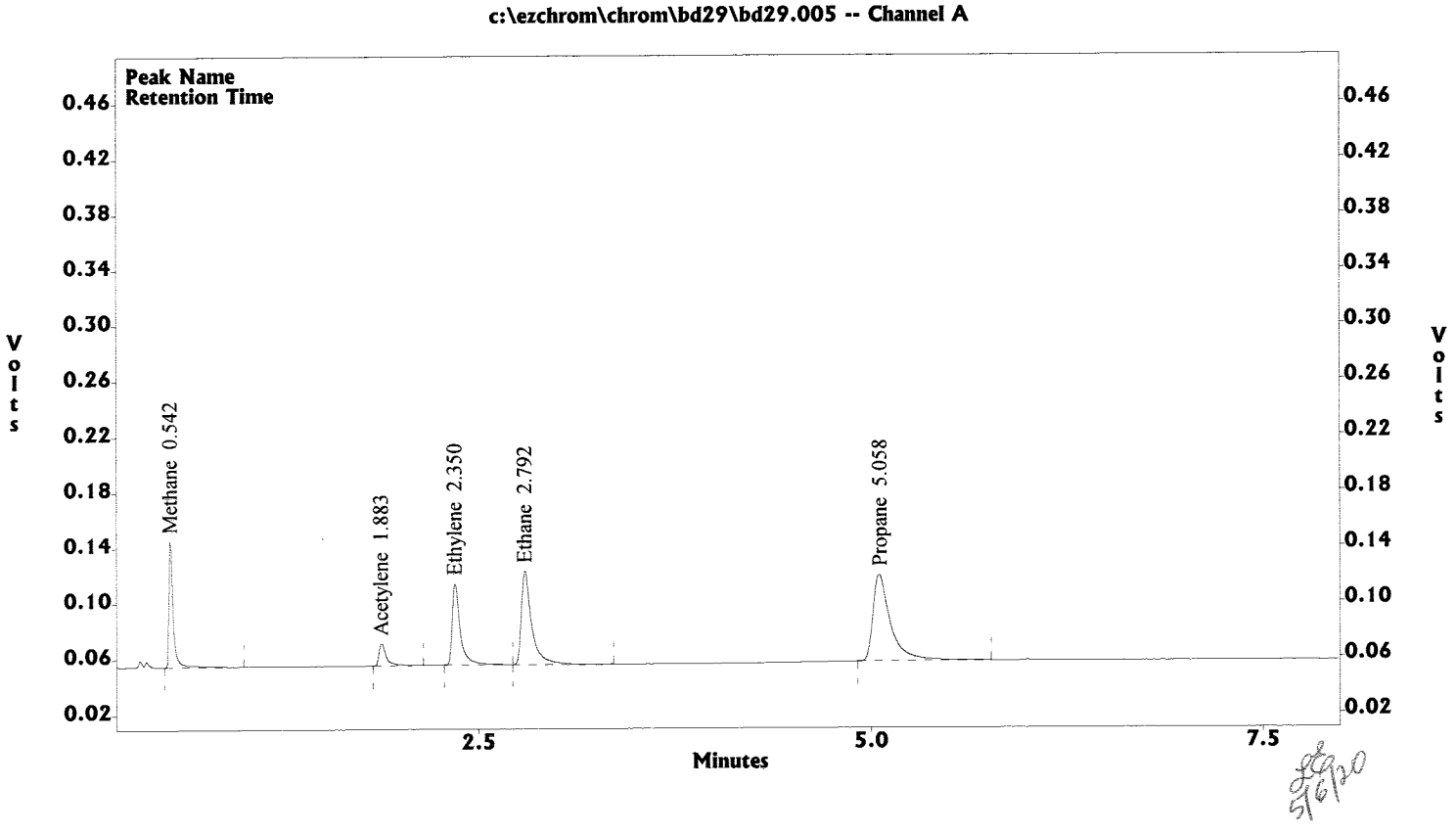
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

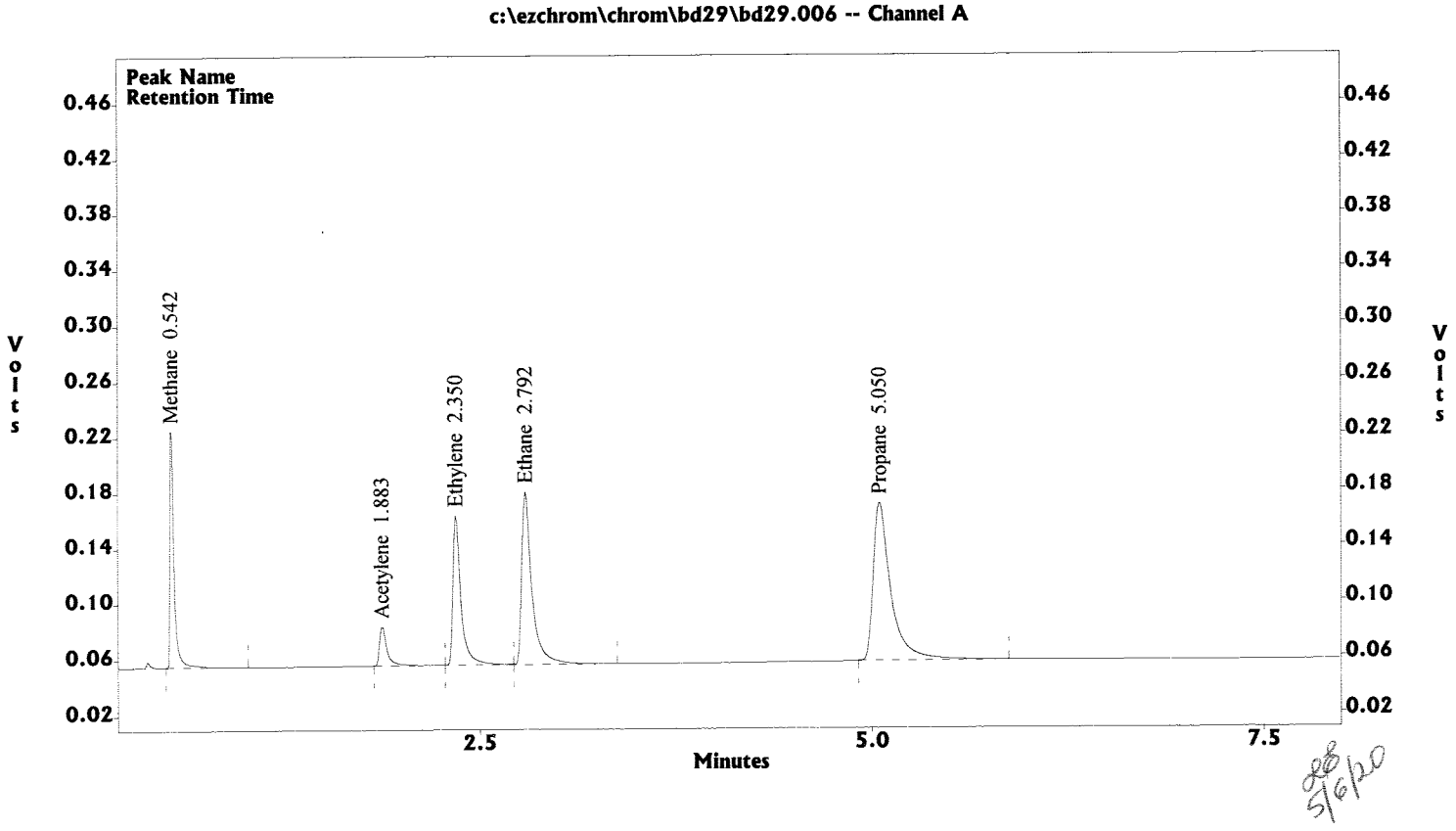


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



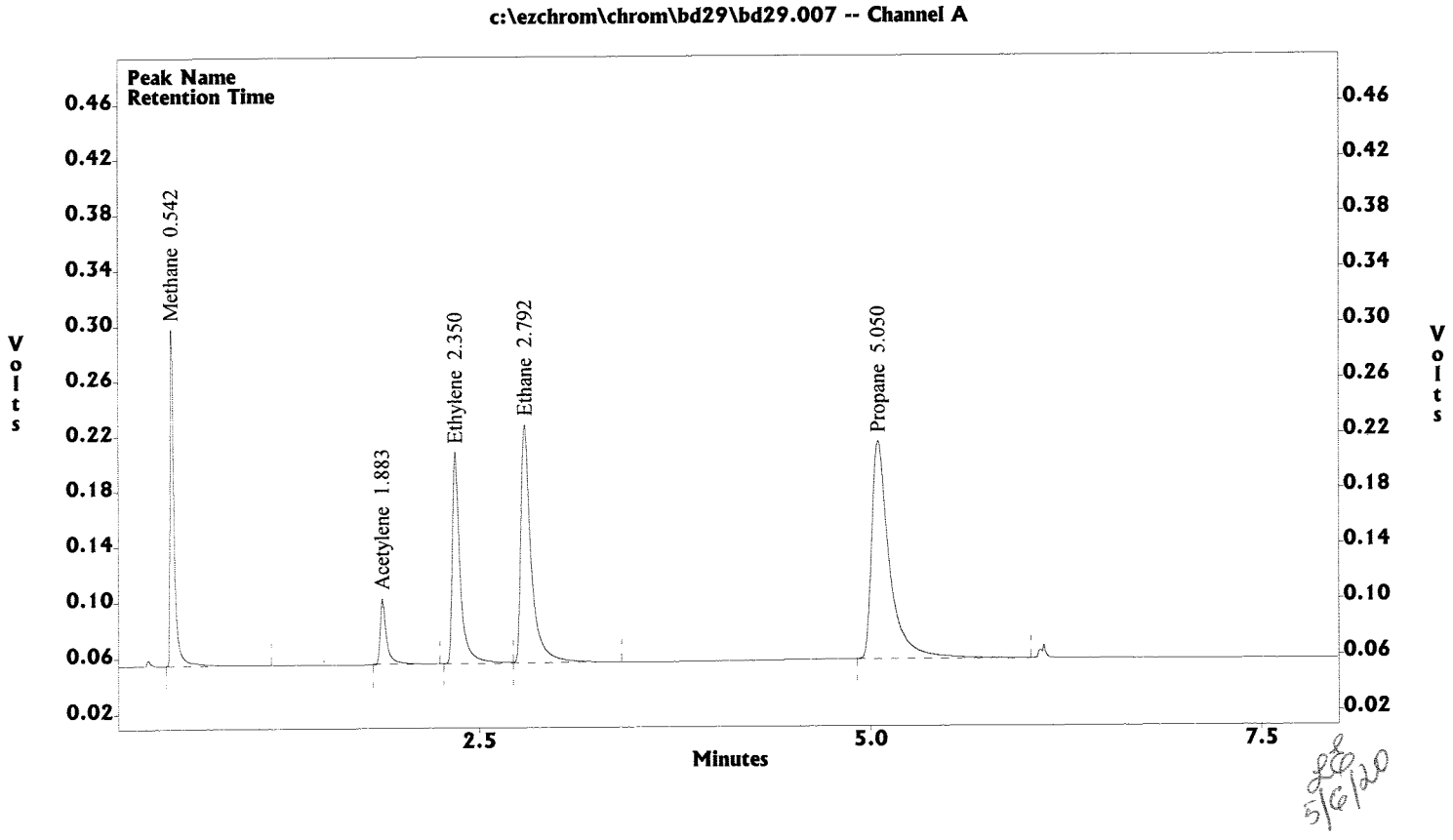
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

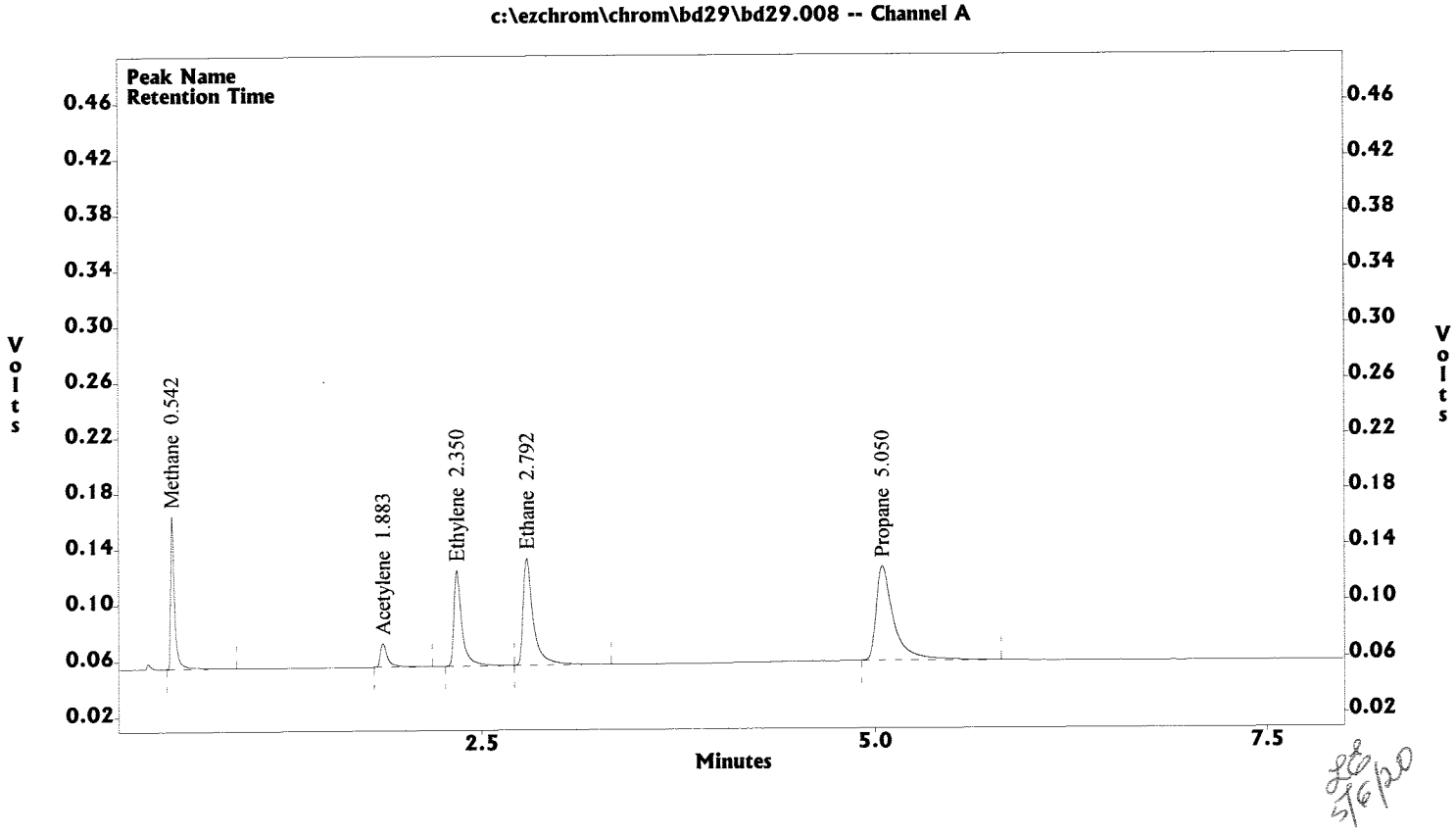
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF24002A 06/24/2020 09:34
CONC UNIT : ppb

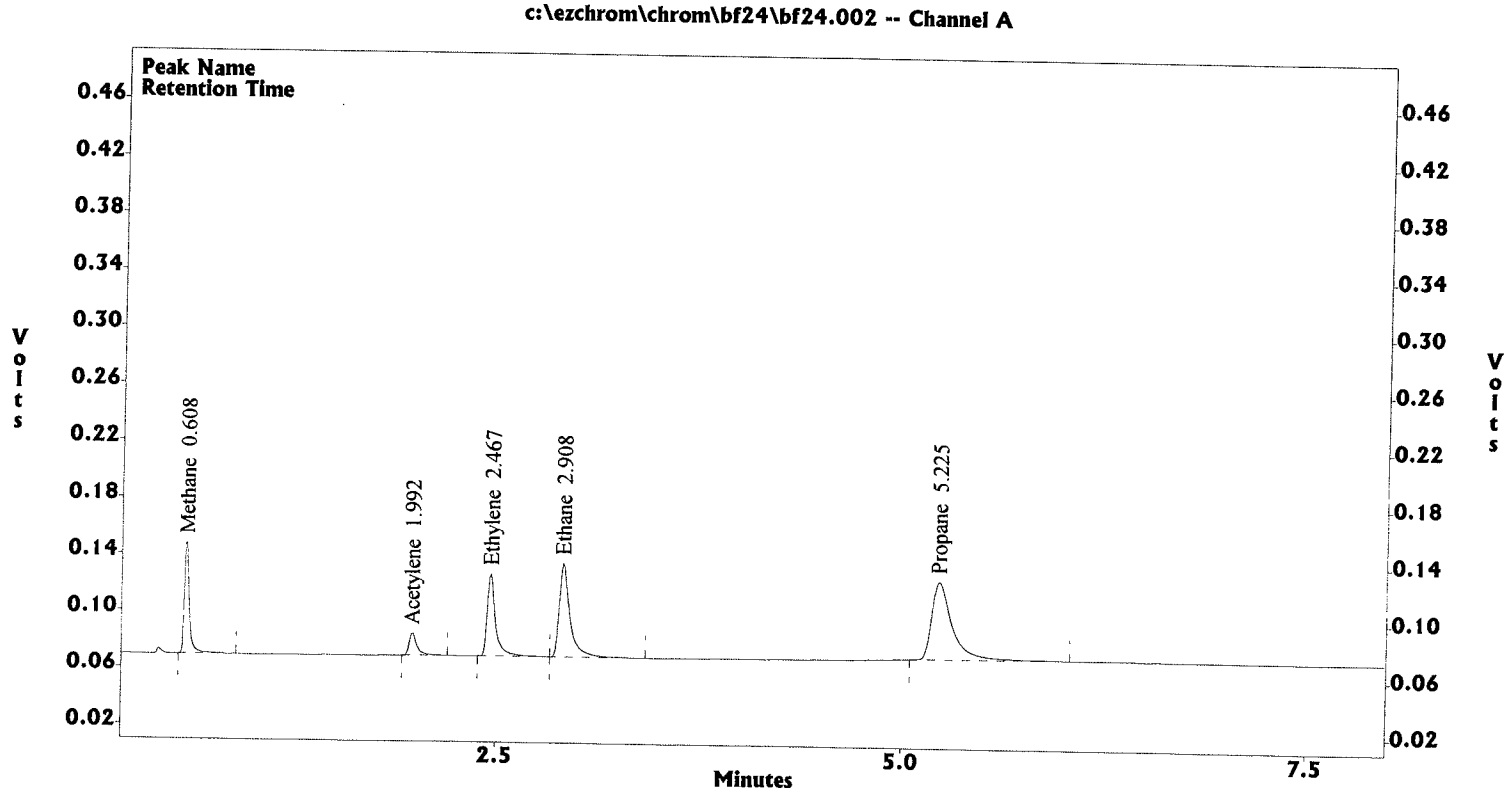
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.608	0.582	0.634	13.6	13975.2	177120	12.67	-7		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	204879	21.52	-10		15
Ethane	2.908	2.870	2.946	25.5	13110.4	303374	23.14	-9		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\bf24.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : CDG72D29121
Acquired : Jun 24, 2020 09:34:52
Printed : Jun 24, 2020 09:56:25
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	177120	13975.2	12.674
2	Acetylene	1.992	50605	2483.4	20.377
3	Ethylene	2.467	204879	9519.0	21.523
4	Ethane	2.908	303374	13110.4	23.140
5	Propane	5.225	478529	13914.6	34.390



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF24013A 06/24/2020 12:19
CONC UNIT : ppb

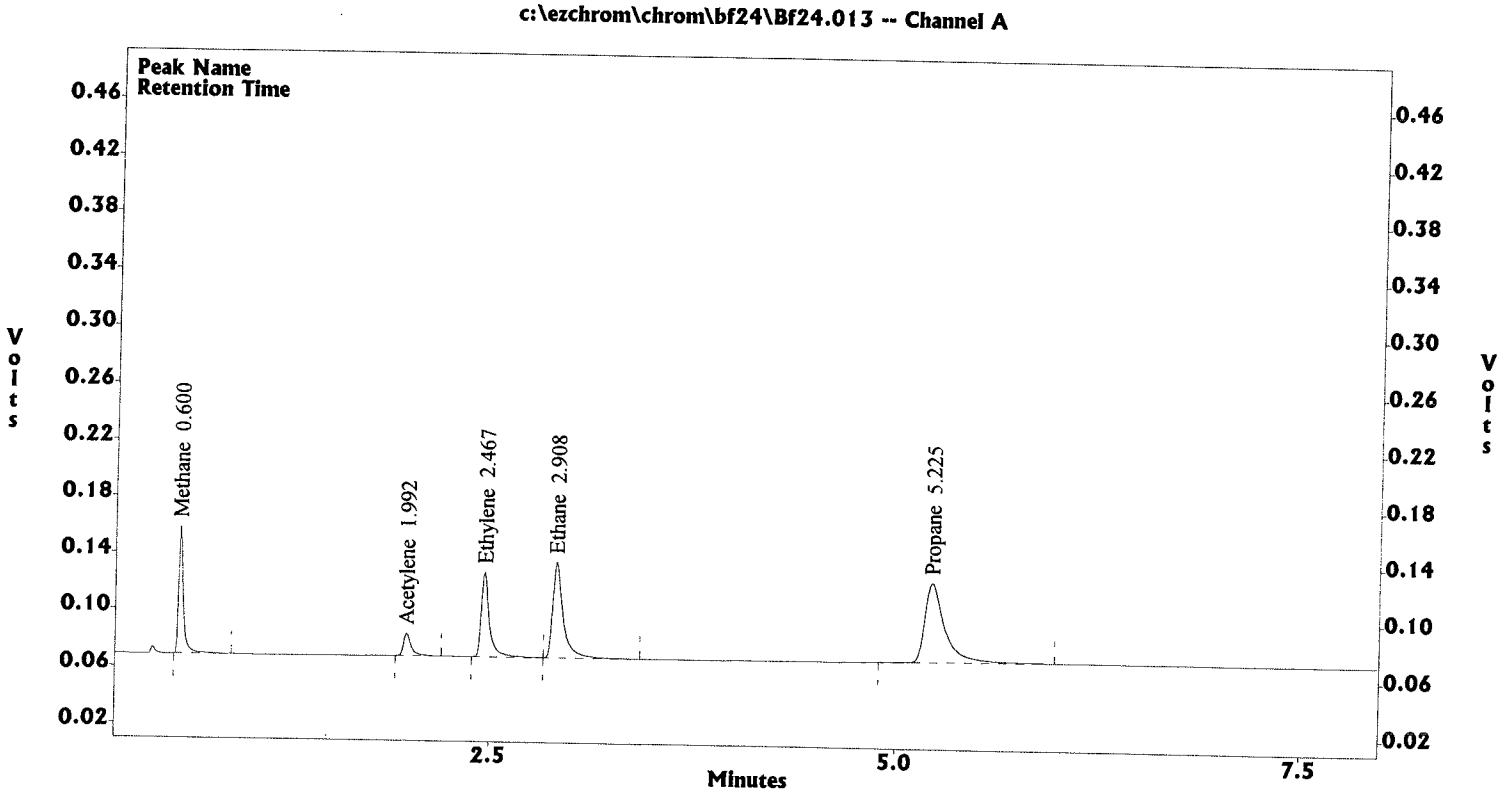
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	180929	12.95	-5		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	208181	21.87	-8		15
Ethane	2.908	2.870	2.946	25.5	13110.4	307183	23.43	-8		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.013
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29122
Acquired : Jun 24, 2020 12:19:08
Printed : Jun 24, 2020 12:27:09
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	180929	13975.2	12.946
2	Acetylene	1.992	50765	2483.4	20.442
3	Ethylene	2.467	208181	9519.0	21.870
4	Ethane	2.908	307183	13110.4	23.430
5	Propane	5.225	487572	13914.6	35.040



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF24025A 06/24/2020 15:26
CONC UNIT : ppb

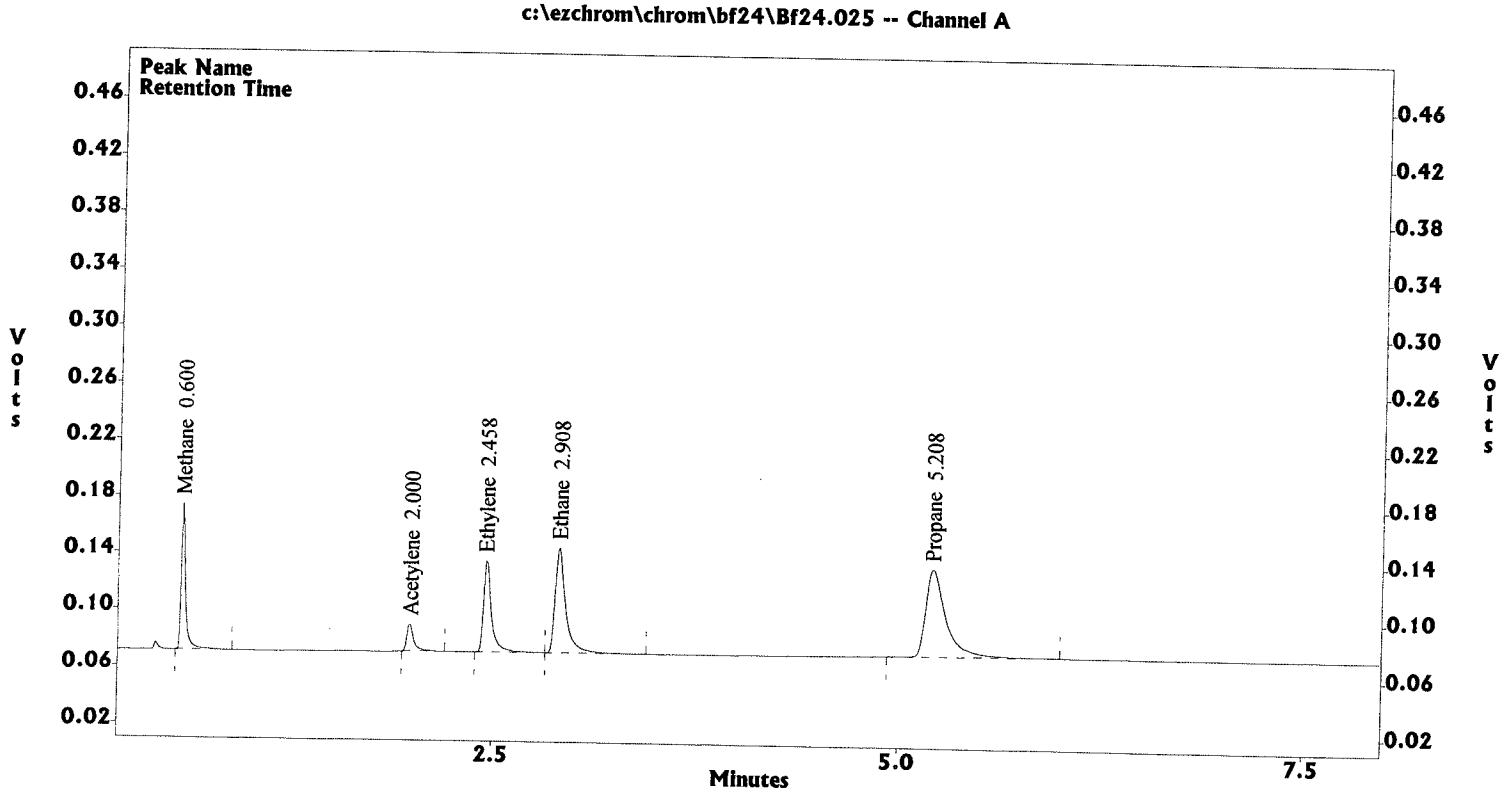
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	197718	14.15	4		15
Ethylene	2.458	2.420	2.496	23.8	9519.0	222797	23.41	-2		15
Ethane	2.908	2.870	2.946	25.5	13110.4	333423	25.43	-0		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf24\Bf24.025
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29123
Acquired : Jun 24, 2020 15:26:50
Printed : Jun 24, 2020 15:34:51
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	197718	13975.2	14.148
2	Acetylene	2.000	55203	2483.4	22.229
3	Ethylene	2.458	222797	9519.0	23.406
4	Ethane	2.908	333423	13110.4	25.432
5	Propane	5.208	527725	13914.6	37.926



ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019

Instrument No.: 72

Analytical Sequence: BD29

Method File: DG72D29

Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	SSSB-18-22-01	10 7500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS

Date: 4/29/20

Disposed By:

Date Disposed:

Batch: bd29.seq

Data	Sample ID						
1	IB72D2901	dg72d29.met	BD29.001	0	500uL	1	
2	DG72D2901	dg72d29.met	BD29.002	1	500uL	1	
3	DG72D2902	dg72d29.met	BD29.003	2	500uL	1	
4	DG72D2903	dg72d29.met	BD29.004	3	500uL	1	
5	DG72D2904	dg72d29.met	BD29.005	4	500uL	1	
6	DG72D2905	dg72d29.met	BD29.006	5	500uL	1	
7	DG72D2906	dg72d29.met	BD29.007	6	500uL	1	
8	IDG72D29001	dg72d29.met	BD29.008	0	500uL	1	

FINAL

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF014W : F183, F190

Book #: A72-020

Instrument No.: 72

Analytical Sequence: BF24

Method File: DG72D29

Analytical Batch: CDG72D29121

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-33-01	200
Temperature (°C)	21	
Data File		

SYRINGES

- ☐ 500 µL - MSF-02-01-01
- ☑ 500 µL - MSF-01-02-12
- ☐ 100 µL - MSF-01-03-05
- ☐ 100 µL - MSF-01-02-01
- ☐ 100 µL - MSF-01-02-20
- ☐ 100 µL - MSF-01-03-08
- ☐ 100 µL - MSF-01-02-13
- ☐ 10 µL - MSF-01-02-05
- ☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC

Date: 6/24/20

Disposed By:

Date Disposed:

Batch: bf24.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F2401	dg72d29.met	BF24.001	500uL	1	
2	CDG72D29121	dg72d29.met	BF24.002	500uL	1	
3	DGF014WB	dg72d29.met	BF24.003	500uL	1	
4	DGF014WL	dg72d29.met	BF24.004	500uL	1	
5	DGF014WC	dg72d29.met	BF24.005	500uL	1	
6	F183-01	dg72d29.met	BF24.006	500uL	1	
7	F183-02	dg72d29.met	BF24.007	500uL	1	
8	F183-03	dg72d29.met	BF24.008	500uL	1	
9	F183-05	dg72d29.met	BF24.009	500uL	1	
10	F183-06	dg72d29.met	BF24.010	500uL	1	
11	F183-07	dg72d29.met	BF24.011	500uL	1	
12	F183-08	dg72d29.met	BF24.012	500uL	1	
13	CDG72D29122	dg72d29.met	BF24.013	500uL	1	
14	F183-08M	dg72d29.met	BF24.014	500uL	1	
15	F183-08S	dg72d29.met	BF24.015	500uL	1	
16	F183-12	dg72d29.met	BF24.016	500uL	1	
17	F183-13	dg72d29.met	BF24.017	500uL	1	
18	F183-14	dg72d29.met	BF24.018	500uL	1	
19	F183-15	dg72d29.met	BF24.019	500uL	1	
20	F183-16	dg72d29.met	BF24.020	500uL	1	
21	F190-01	dg72d29.met	BF24.021	500uL	1	
22	F190-02	dg72d29.met	BF24.022	500uL	1	
23	F190-03	dg72d29.met	BF24.023	500uL	1	

FINAL

Batch: bf24.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
24	F190-04	dg72d29.met	BF24.024	500uL	1	
25	CDG72D29123	dg72d29.met	BF24.025	500uL	1	

FINAL

EXTRACTION LOG(S)

EXTRACTION LOG FOR DISSOLVED GAS

SOP ☑ EMAX-RSK175 Rev. 4 ☐ CO2 ☐

Start Date: 6/24/20 Time: 8:40 Room Temp. (°C): 21

End Date: 6/24/20 Time: 14:00 Book #: EDG-046

PREPARATION BATCH* DGF014W

Sample Prep ID	Lab Sample ID	Sample Amount (ml)	Extract Volume (ml)	pH (< 2)	Notes
01	DGF014WB	39	4	N/A	
02	L			N/A	
03	C			N/A	
04	F183-01			N/A	
05	-02			✓	
06	-03			✓	
07	-05			✓	
08	-06			✓	
09	-07			✓	
10	-08			✓	
11	-08M			✓	
12	-08S			✓	
13	-12			✓	
14	-13			✓	
15	-14			✓	
16	-15			✓	
17	-16			✓	
18	F190-01			✓	
19	-02			✓	
20	-03			✓	
21	-04			✓	
22				✓	
23					
24					
25					
26					SC 6/24/20
27					
28					
29					
30					

Standards	ID	Amount Added (ul)
LCS/MS	SSSA-10-02-03	1600

Reagent	Source
H_2O	RW2-18-001
He	SSSA-11-01-01
Thermometer ID #:	RSK175-01
Tedlar Bag Lot#:	28150508
pH Strips:	HC998032
Vial Manufacturer:	FR ESS# 249828 2 20066

Syringes

- ☐ 10 mL - MSF-01-01-24
- ☑ ~~5~~ mL - MSF-01-01-25
- ☐ 5 mL - MSF-01-01-13
- ☑ ~~5~~ mL - MSF-01-03-06
- ☐ 1 mL - MSF-01-02-24
- ☐

Comments:

Prepared By: SC

Standard Added By: SC

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F183

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SW6020A
METALS BY ICP-MS

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. Samples associated with Zinc that were not ICAL ($r<0.998$) compliant were re-analyzed. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IMF035WB was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF035WL/IMF035WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following were noted: F183-08M/F183-08S - Percent recoveries for Calcium(61X), Magnesium(22X) and Sodium(30X) were not within MS/MSD QC limits. The enclosed value(#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F183
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MW17S-GW062120	F183-01I	10	NA	07/13/2013:18	06/25/2011:06	H6G09043	H6G09038	IMF035W	Diluted Sample
MW17D-GW062120	F183-02I	10	NA	07/13/2013:21	06/25/2011:06	H6G09044	H6G09038	IMF035W	Diluted Sample
MW06-GW062120	F183-03I	10	NA	07/13/2013:24	06/25/2011:06	H6G09045	H6G09038	IMF035W	Diluted Sample
MW16S-GW062120	F183-05I	10	NA	07/13/2013:26	06/25/2011:06	H6G09046	H6G09038	IMF035W	Diluted Sample
MW16D-GW062120	F183-06I	10	NA	07/13/2013:29	06/25/2011:06	H6G09047	H6G09038	IMF035W	Diluted Sample
MW04-GW062120	F183-07I	10	NA	07/13/2013:31	06/25/2011:06	H6G09048	H6G09038	IMF035W	Diluted Sample
MW08A-GW062120MS	F183-08M	10	NA	07/13/2013:39	06/25/2011:06	H6G09051	H6G09049	IMF035W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	10	NA	07/13/2013:42	06/25/2011:06	H6G09052	H6G09049	IMF035W	MS Duplicate (MSD)
MW08A-GW062120	F183-08A	10	NA	07/13/2013:44	06/25/2011:06	H6G09053	H6G09049	IMF035W	Analytical Spike Sample
MW08A-GW062120	F183-08I	10	NA	07/13/2013:47	06/25/2011:06	H6G09054	H6G09049	IMF035W	Diluted Sample
MW08A-GW062120	F183-08J	50	NA	07/13/2013:50	06/25/2011:06	H6G09055	H6G09049	IMF035W	Diluted Sample
MW01S-GW062120	F183-12I	10	NA	07/13/2013:52	06/25/2011:06	H6G09056	H6G09049	IMF035W	Diluted Sample
FD01-GW062120	F183-13I	10	NA	07/13/2013:55	06/25/2011:06	H6G09057	H6G09049	IMF035W	Diluted Sample
MW08C-GW062220	F183-14I	10	NA	07/13/2013:57	06/25/2011:06	H6G09058	H6G09049	IMF035W	Diluted Sample
MW08B-GW062220	F183-15I	10	NA	07/13/2014:00	06/25/2011:06	H6G09059	H6G09049	IMF035W	Diluted Sample
FD02-GW062220	F183-16I	10	NA	07/13/2014:02	06/25/2011:06	H6G09060	H6G09049	IMF035W	Diluted Sample
MBLK1W	IMF035WB	1	NA	07/20/2015:15	06/25/2011:06	H6G15107	H6G15105	IMF035W	Method Blank
LCS1W	IMF035WL	1	NA	07/20/2015:17	06/25/2011:06	H6G15108	H6G15105	IMF035W	Lab Control Sample (LCS)
LCD1W	IMF035WC	1	NA	07/20/2015:20	06/25/2011:06	H6G15109	H6G15105	IMF035W	LCS Duplicate
MW17S-GW062120	F183-01	1	NA	07/20/2015:23	06/25/2011:06	H6G15110	H6G15105	IMF035W	Field Sample
MW17D-GW062120	F183-02	1	NA	07/20/2015:26	06/25/2011:06	H6G15111	H6G15105	IMF035W	Field Sample
MW06-GW062120	F183-03	1	NA	07/20/2015:29	06/25/2011:06	H6G15112	H6G15105	IMF035W	Field Sample
MW16S-GW062120	F183-05	1	NA	07/20/2015:32	06/25/2011:06	H6G15113	H6G15105	IMF035W	Field Sample
MW16D-GW062120	F183-06	1	NA	07/20/2015:35	06/25/2011:06	H6G15114	H6G15105	IMF035W	Field Sample
MW04-GW062120	F183-07	1	NA	07/20/2015:38	06/25/2011:06	H6G15115	H6G15105	IMF035W	Field Sample
MW08A-GW062120MS	F183-08M	1	NA	07/20/2015:47	06/25/2011:06	H6G15118	H6G15116	IMF035W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	1	NA	07/20/2015:50	06/25/2011:06	H6G15119	H6G15116	IMF035W	MS Duplicate (MSD)
MW08A-GW062120	F183-08A	1	NA	07/20/2015:52	06/25/2011:06	H6G15120	H6G15116	IMF035W	Analytical Spike Sample
MW08A-GW062120	F183-08	1	NA	07/20/2015:55	06/25/2011:06	H6G15121	H6G15116	IMF035W	Field Sample
MW08A-GW062120	F183-08J	5	NA	07/20/2015:58	06/25/2011:06	H6G15122	H6G15116	IMF035W	Diluted Sample
MW01S-GW062120	F183-12	1	NA	07/20/2016:01	06/25/2011:06	H6G15123	H6G15116	IMF035W	Field Sample
FD01-GW062120	F183-13	1	NA	07/20/2016:04	06/25/2011:06	H6G15124	H6G15116	IMF035W	Field Sample
MW08C-GW062220	F183-14	1	NA	07/20/2016:07	06/25/2011:06	H6G15125	H6G15116	IMF035W	Field Sample
MW08B-GW062220	F183-15	1	NA	07/20/2016:10	06/25/2011:06	H6G15126	H6G15116	IMF035W	Field Sample
FD02-GW062220	F183-16	1	NA	07/20/2016:13	06/25/2011:06	H6G15127	H6G15116	IMF035W	Field Sample
MBLK1W	IMF035WB	1	NA	07/21/2014:10	06/25/2011:06	H6G16069	H6G16067	IMF035W	Method Blank
LCS1W	IMF035WL	1	NA	07/21/2014:13	06/25/2011:06	H6G16070	H6G16067	IMF035W	Lab Control Sample (LCS)
LCD1W	IMF035WC	1	NA	07/21/2014:16	06/25/2011:06	H6G16071	H6G16067	IMF035W	LCS Duplicate
MW17S-GW062120	F183-01N	1	NA	07/21/2014:18	06/25/2011:06	H6G16072	H6G16067	IMF035W	Field Sample
MW17D-GW062120	F183-02N	1	NA	07/21/2014:21	06/25/2011:06	H6G16073	H6G16067	IMF035W	Field Sample
MW06-GW062120	F183-03N	1	NA	07/21/2014:24	06/25/2011:06	H6G16074	H6G16067	IMF035W	Field Sample
MW16S-GW062120	F183-05N	1	NA	07/21/2014:27	06/25/2011:06	H6G16075	H6G16067	IMF035W	Field Sample
MW16D-GW062120	F183-06N	1	NA	07/21/2014:30	06/25/2011:06	H6G16076	H6G16067	IMF035W	Field Sample
MW04-GW062120	F183-07N	1	NA	07/21/2014:33	06/25/2011:06	H6G16077	H6G16067	IMF035W	Field Sample
MW08A-GW062120MS	F183-08M	1	NA	07/21/2014:42	06/25/2011:06	H6G16080	H6G16078	IMF035W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	1	NA	07/21/2014:44	06/25/2011:06	H6G16081	H6G16078	IMF035W	MS Duplicate (MSD)
MW08A-GW062120	F183-08A	1	NA	07/21/2014:47	06/25/2011:06	H6G16082	H6G16078	IMF035W	Analytical Spike Sample
MW08A-GW062120	F183-08N	1	NA	07/21/2014:50	06/25/2011:06	H6G16083	H6G16078	IMF035W	Field Sample
MW08A-GW062120	F183-08J	5	NA	07/21/2014:53	06/25/2011:06	H6G16084	H6G16078	IMF035W	Diluted Sample
MW01S-GW062120	F183-12N	1	NA	07/21/2014:56	06/25/2011:06	H6G16085	H6G16078	IMF035W	Field Sample
FD01-GW062120	F183-13N	1	NA	07/21/2014:59	06/25/2011:06	H6G16086	H6G16078	IMF035W	Field Sample
MW08C-GW062220	F183-14N	1	NA	07/21/2015:02	06/25/2011:06	H6G16087	H6G16078	IMF035W	Field Sample
MW08B-GW062220	F183-15N	1	NA	07/21/2015:05	06/25/2011:06	H6G16088	H6G16078	IMF035W	Field Sample

FD02-GW062220	F183-16N	1	NA	07/21/2015:08	06/25/2011:06	H6G16089	H6G16078	IMF035W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW17S-GW062120
Lab Samp ID: F183-01
Lab File ID: H6G15110
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 12:50
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:23
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	102	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.226J	1.00	0.125
Barium	120	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	5.55	1.00	0.100
Cobalt	1.08	1.00	0.100
Copper	0.611J	2.00	0.500
Iron	210	100	25.0
Lead	0.189J	1.00	0.0500
Manganese	26.6	1.00	0.250
Nickel	33.5	1.00	0.250
Potassium	4200	100	25.0
Selenium	0.789J	1.00	0.150
Silver	0.169J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	0.551J	1.00	0.250

Sample ID: MW17S-GW062120
Lab Samp ID: F183-01I
Lab File ID: H6G09043
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:18
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	161000	1000	250
Magnesium	60700	1000	250
Sodium	170000	1000	250

Sample ID: MW17S-GW062120
Lab Samp ID: F183-01N
Lab File ID: H6G16072
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:18
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17S-GW062120	Date Analyzed:	07/20/20 15:23
Lab Samp ID:	F183-01	Dilution Factor:	1
Lab File ID:	H6G15110	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	102	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.226J	1.00	0.125
Barium	120	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	153000E	100	25.0
Chromium	5.55	1.00	0.100
Cobalt	1.08	1.00	0.100
Copper	0.611J	2.00	0.500
Iron	210	100	25.0
Lead	0.189J	1.00	0.0500
Magnesium	56100E	100	25.0
Manganese	26.6	1.00	0.250
Nickel	33.5	1.00	0.250
Potassium	4200	100	25.0
Selenium	0.789J	1.00	0.150
Silver	0.169J	1.00	0.100
Sodium	159000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.551J	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17S-GW062120	Date Analyzed:	07/21/20 14:18
Lab Samp ID:	F183-01N	Dilution Factor:	1
Lab File ID:	H6G16072	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	107	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.234J	1.00	0.125
Barium	128	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	154000E	100	25.0
Chromium	5.62	1.00	0.100
Cobalt	1.14	1.00	0.100
Copper	NDE	2.00	0.500
Iron	211	100	25.0
Lead	0.221J	1.00	0.0500
Magnesium	58600E	100	25.0
Manganese	27.6	1.00	0.250
Nickel	33.4	1.00	0.250
Potassium	4210	100	25.0
Selenium	0.818J	1.00	0.150
Silver	0.168J	1.00	0.100
Sodium	158000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.829JE	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17S-GW062120	Date Analyzed:	07/13/20 13:18
Lab Samp ID:	F183-01I	Dilution Factor:	10
Lab File ID:	H6G09043	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	122	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	161000	1000	250
Chromium	5.70J	10.0	1.00
Cobalt	1.28J	10.0	1.00
Copper	ND	20.0	5.00
Iron	251J	1000	250
Lead	ND	10.0	0.500
Magnesium	60700	1000	250
Manganese	29.1	10.0	2.50
Nickel	37.3	10.0	2.50
Potassium	4410	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	170000	1000	250
Thallium	ND	10.0	1.00
Vanadium	ND	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW17D-GW062120
Lab Samp ID: F183-02
Lab File ID: H6G15111
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 15:25
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:26
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	229	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.01	1.00	0.125
Barium	72.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.55	1.00	0.100
Cobalt	0.344J	1.00	0.100
Copper	0.581J	2.00	0.500
Iron	323	100	25.0
Lead	0.730J	1.00	0.0500
Manganese	30.7	1.00	0.250
Nickel	0.475J	1.00	0.250
Potassium	2740	100	25.0
Selenium	0.814J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.75	1.00	0.250

Sample ID: MW17D-GW062120
Lab Samp ID: F183-02I
Lab File ID: H6G09044
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:21
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	165000	1000	250
Magnesium	56400	1000	250
Sodium	109000	1000	250

Sample ID: MW17D-GW062120
Lab Samp ID: F183-02N
Lab File ID: H6G16073
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:21
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17D-GW062120	Date Analyzed:	07/20/20 15:26
Lab Samp ID:	F183-02	Dilution Factor:	1
Lab File ID:	H6G15111	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	229	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.01	1.00	0.125
Barium	72.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	154000E	100	25.0
Chromium	1.55	1.00	0.100
Cobalt	0.344J	1.00	0.100
Copper	0.581J	2.00	0.500
Iron	323	100	25.0
Lead	0.730J	1.00	0.0500
Magnesium	52100E	100	25.0
Manganese	30.7	1.00	0.250
Nickel	0.475J	1.00	0.250
Potassium	2740	100	25.0
Selenium	0.814J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	99800E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.75	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17D-GW062120	Date Analyzed:	07/21/20 14:21
Lab Samp ID:	F183-02N	Dilution Factor:	1
Lab File ID:	H6G16073	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	231	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.04	1.00	0.125
Barium	76.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	158000E	100	25.0
Chromium	1.52	1.00	0.100
Cobalt	0.355J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	324	100	25.0
Lead	0.780J	1.00	0.0500
Magnesium	51600E	100	25.0
Manganese	30.9	1.00	0.250
Nickel	0.425J	1.00	0.250
Potassium	2730	100	25.0
Selenium	0.830J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	102000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	3.10E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 15:25
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW17D-GW062120	Date Analyzed:	07/13/20 13:21
Lab Samp ID:	F183-02I	Dilution Factor:	10
Lab File ID:	H6G09044	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	505J	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	78.8	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	2.01J	10.0	1.00
Calcium	165000	1000	250
Chromium	1.37J	10.0	1.00
Cobalt	2.63J	10.0	1.00
Copper	ND	20.0	5.00
Iron	373J	1000	250
Lead	2.81J	10.0	0.500
Magnesium	56400	1000	250
Manganese	47.3	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2980	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	109000	1000	250
Thallium	1.38J	10.0	1.00
Vanadium	4.05J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW06-GW062120
Lab Samp ID: F183-03
Lab File ID: H6G15112
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 12:00
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:29
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.46	1.00	0.125
Barium	53.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.711J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	1.01J	2.00	0.500
Iron	ND	100	25.0
Lead	0.138J	1.00	0.0500
Magnesium	36500	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	1960	100	25.0
Selenium	0.677J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.56	1.00	0.250

Sample ID: MW06-GW062120
Lab Samp ID: F183-03I
Lab File ID: H6G09045
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:24
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	119000	1000	250
Sodium	69800	1000	250

Sample ID: MW06-GW062120
Lab Samp ID: F183-03N
Lab File ID: H6G16074
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:24
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW06-GW062120	Date Analyzed:	07/20/20 15:29
Lab Samp ID:	F183-03	Dilution Factor:	1
Lab File ID:	H6G15112	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.46	1.00	0.125
Barium	53.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	115000E	100	25.0
Chromium	0.711J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	1.01J	2.00	0.500
Iron	ND	100	25.0
Lead	0.138J	1.00	0.0500
Magnesium	36500	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	1960	100	25.0
Selenium	0.677J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	67800E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.56	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW06-GW062120	Date Analyzed:	07/21/20 14:24
Lab Samp ID:	F183-03N	Dilution Factor:	1
Lab File ID:	H6G16074	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.45	1.00	0.125
Barium	55.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	118000E	100	25.0
Chromium	0.758J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	0.623JE	2.00	0.500
Iron	ND	100	25.0
Lead	0.167J	1.00	0.0500
Magnesium	37000	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	1940	100	25.0
Selenium	0.680J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	67600E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	3.06E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 12:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW06-GW062120	Date Analyzed:	07/13/20 13:24
Lab Samp ID:	F183-03I	Dilution Factor:	10
Lab File ID:	H6G09045	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.71J	10.0	1.25
Barium	52.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	119000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	38100	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2020	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	69800	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.77J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW16S-GW062120
Lab Samp ID: F183-05
Lab File ID: H6G15113
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 09:30
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:32
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	505	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.592J	1.00	0.125
Barium	56.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	3.00	1.00	0.100
Cobalt	0.124J	1.00	0.100
Copper	ND	2.00	0.500
Iron	85.7J	100	25.0
Lead	ND	1.00	0.0500
Manganese	1.23	1.00	0.250
Nickel	0.659J	1.00	0.250
Potassium	2580	100	25.0
Selenium	0.824J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.50	1.00	0.250

Sample ID: MW16S-GW062120
Lab Samp ID: F183-05I
Lab File ID: H6G09046
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:26
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	145000	1000	250
Magnesium	54900	1000	250
Sodium	73500	1000	250

Sample ID: MW16S-GW062120
Lab Samp ID: F183-05N
Lab File ID: H6G16075
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:27
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16S-GW062120	Date Analyzed:	07/20/20 15:32
Lab Samp ID:	F183-05	Dilution Factor:	1
Lab File ID:	H6G15113	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	505	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.592J	1.00	0.125
Barium	56.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	139000E	100	25.0
Chromium	3.00	1.00	0.100
Cobalt	0.124J	1.00	0.100
Copper	ND	2.00	0.500
Iron	85.7J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	52900E	100	25.0
Manganese	1.23	1.00	0.250
Nickel	0.659J	1.00	0.250
Potassium	2580	100	25.0
Selenium	0.824J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	70600E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.50	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16S-GW062120	Date Analyzed:	07/21/20 14:27
Lab Samp ID:	F183-05N	Dilution Factor:	1
Lab File ID:	H6G16075	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	516	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.637J	1.00	0.125
Barium	59.3	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	145000E	100	25.0
Chromium	2.98	1.00	0.100
Cobalt	0.135J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	86.8J	100	25.0
Lead	0.0538J	1.00	0.0500
Magnesium	53400E	100	25.0
Manganese	1.23	1.00	0.250
Nickel	0.639J	1.00	0.250
Potassium	2550	100	25.0
Selenium	0.810J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	71600E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.93E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 09:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16S-GW062120	Date Analyzed:	07/13/20 13:26
Lab Samp ID:	F183-05I	Dilution Factor:	10
Lab File ID:	H6G09046	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	578J	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	58.6	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	145000	1000	250
Chromium	2.86J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	54900	1000	250
Manganese	3.40J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2610	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	73500	1000	250
Thallium	ND	10.0	1.00
Vanadium	2.83J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW16D-GW062120
Lab Samp ID: F183-06
Lab File ID: H6G15114
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 10:40
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:35
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	52.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.495J	1.00	0.125
Barium	29.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	5.75	1.00	0.100
Cobalt	0.493J	1.00	0.100
Copper	0.743J	2.00	0.500
Iron	53.5J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43100	100	25.0
Manganese	5.46	1.00	0.250
Nickel	19.6	1.00	0.250
Potassium	2110	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	33300	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.66	1.00	0.250

Sample ID: MW16D-GW062120
Lab Samp ID: F183-06I
Lab File ID: H6G09047
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:29
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	123000	1000	250

Sample ID: MW16D-GW062120
Lab Samp ID: F183-06N
Lab File ID: H6G16076
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:30
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16D-GW062120	Date Analyzed:	07/20/20 15:35
Lab Samp ID:	F183-06	Dilution Factor:	1
Lab File ID:	H6G15114	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	52.6J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.495J	1.00	0.125
Barium	29.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	120000E	100	25.0
Chromium	5.75	1.00	0.100
Cobalt	0.493J	1.00	0.100
Copper	0.743J	2.00	0.500
Iron	53.5J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43100	100	25.0
Manganese	5.46	1.00	0.250
Nickel	19.6	1.00	0.250
Potassium	2110	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	33300	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.66	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16D-GW062120	Date Analyzed:	07/21/20 14:30
Lab Samp ID:	F183-06N	Dilution Factor:	1
Lab File ID:	H6G16076	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	54.5J	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.549J	1.00	0.125
Barium	31.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	121000E	100	25.0
Chromium	5.89	1.00	0.100
Cobalt	0.514J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	53.8J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	44700	100	25.0
Manganese	5.66	1.00	0.250
Nickel	20.2	1.00	0.250
Potassium	2130	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	33600	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.13E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW16D-GW062120	Date Analyzed:	07/13/20 13:29
Lab Samp ID:	F183-06I	Dilution Factor:	10
Lab File ID:	H6G09047	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	30.5	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	123000	1000	250
Chromium	5.79J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	44900	1000	250
Manganese	6.26J	10.0	2.50
Nickel	21.1	10.0	2.50
Potassium	2190	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	34600	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.07J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW04-GW062120
Lab Samp ID: F183-07
Lab File ID: H6G15115
Ext Btch ID: IMF035W
Calib. Ref.: H6G15105

Date Collected: 06/21/20 10:00
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:38
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.07	1.00	0.125
Barium	47.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	3.46	1.00	0.100
Cobalt	0.139J	1.00	0.100
Copper	1.72J	2.00	0.500
Iron	ND	100	25.0
Lead	0.335J	1.00	0.0500
Manganese	0.494J	1.00	0.250
Nickel	2.32	1.00	0.250
Potassium	2320	100	25.0
Selenium	0.664J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.63	1.00	0.250

Sample ID: MW04-GW062120
Lab Samp ID: F183-07I
Lab File ID: H6G09048
Ext Btch ID: IMF035W
Calib. Ref.: H6G09038

Date Analyzed: 07/13/20 13:31
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	135000	1000	250
Magnesium	47600	1000	250
Sodium	114000	1000	250

Sample ID: MW04-GW062120
Lab Samp ID: F183-07N
Lab File ID: H6G16077
Ext Btch ID: IMF035W
Calib. Ref.: H6G16067

Date Analyzed: 07/21/20 14:33
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW04-GW062120	Date Analyzed:	07/20/20 15:38
Lab Samp ID:	F183-07	Dilution Factor:	1
Lab File ID:	H6G15115	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.07	1.00	0.125
Barium	47.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	132000E	100	25.0
Chromium	3.46	1.00	0.100
Cobalt	0.139J	1.00	0.100
Copper	1.72J	2.00	0.500
Iron	ND	100	25.0
Lead	0.335J	1.00	0.0500
Magnesium	45400E	100	25.0
Manganese	0.494J	1.00	0.250
Nickel	2.32	1.00	0.250
Potassium	2320	100	25.0
Selenium	0.664J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	110000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.63	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW04-GW062120	Date Analyzed:	07/21/20 14:33
Lab Samp ID:	F183-07N	Dilution Factor:	1
Lab File ID:	H6G16077	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.17	1.00	0.125
Barium	49.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	133000E	100	25.0
Chromium	3.48	1.00	0.100
Cobalt	0.150J	1.00	0.100
Copper	1.40JE	2.00	0.500
Iron	ND	100	25.0
Lead	0.361J	1.00	0.0500
Magnesium	47000E	100	25.0
Manganese	0.405J	1.00	0.250
Nickel	2.27	1.00	0.250
Potassium	2350	100	25.0
Selenium	0.629J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	111000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	3.12E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW04-GW062120	Date Analyzed:	07/13/20 13:31
Lab Samp ID:	F183-07I	Dilution Factor:	10
Lab File ID:	H6G09048	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09038	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.55J	10.0	1.25
Barium	47.0	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	135000	1000	250
Chromium	3.50J	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	47600	1000	250
Manganese	ND	10.0	2.50
Nickel	2.78J	10.0	2.50
Potassium	2470	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	114000	1000	250
Thallium	ND	10.0	1.00
Vanadium	4.24J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW08A-GW062120
Lab Samp ID: F183-08
Lab File ID: H6G15121
Ext Btch ID: IMF035W
Calib. Ref.: H6G15116

Date Collected: 06/21/20 16:30
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 15:55
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	209	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.712J	1.00	0.125
Barium	77.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.27	1.00	0.100
Cobalt	0.216J	1.00	0.100
Copper	ND	2.00	0.500
Iron	195	100	25.0
Lead	0.188J	1.00	0.0500
Manganese	20.0	1.00	0.250
Nickel	0.425J	1.00	0.250
Potassium	2830	100	25.0
Selenium	0.923J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250

Sample ID: MW08A-GW062120
Lab Samp ID: F183-08I
Lab File ID: H6G09054
Ext Btch ID: IMF035W
Calib. Ref.: H6G09049

Date Analyzed: 07/13/20 13:47
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	182000	1000	250
Magnesium	65400	1000	250
Sodium	89500	1000	250

Sample ID: MW08A-GW062120
Lab Samp ID: F183-08N
Lab File ID: H6G16083
Ext Btch ID: IMF035W
Calib. Ref.: H6G16078

Date Analyzed: 07/21/20 14:50
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 16:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08A-GW062120	Date Analyzed:	07/20/20 15:55
Lab Samp ID:	F183-08	Dilution Factor:	1
Lab File ID:	H6G15121	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	209	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.712J	1.00	0.125
Barium	77.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	179000E	100	25.0
Chromium	1.27	1.00	0.100
Cobalt	0.216J	1.00	0.100
Copper	ND	2.00	0.500
Iron	195	100	25.0
Lead	0.188J	1.00	0.0500
Magnesium	63900E	100	25.0
Manganese	20.0	1.00	0.250
Nickel	0.425J	1.00	0.250
Potassium	2830	100	25.0
Selenium	0.923J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	87300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 16:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08A-GW062120	Date Analyzed:	07/21/20 14:50
Lab Samp ID:	F183-08N	Dilution Factor:	1
Lab File ID:	H6G16083	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	213	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.800J	1.00	0.125
Barium	81.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	184000E	100	25.0
Chromium	1.24	1.00	0.100
Cobalt	0.233J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	195	100	25.0
Lead	0.218J	1.00	0.0500
Magnesium	64800E	100	25.0
Manganese	20.5	1.00	0.250
Nickel	0.364J	1.00	0.250
Potassium	2840	100	25.0
Selenium	0.921J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	88900E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.45E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 16:30
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08A-GW062120	Date Analyzed:	07/13/20 13:47
Lab Samp ID:	F183-08I	Dilution Factor:	10
Lab File ID:	H6G09054	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	74.9	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	182000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	65400	1000	250
Manganese	20.9	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2890	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	89500	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.13J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW01S-GW062120	Date Analyzed:	07/20/20 16:01
Lab Samp ID:	F183-12	Dilution Factor:	1
Lab File ID:	H6G15123	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.686J	1.00	0.125
Barium	54.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.745J	1.00	0.100
Cobalt	0.110J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Manganese	0.259J	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2280	100	25.0
Selenium	0.826J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250

Sample ID:	MW01S-GW062120	Date Analyzed:	07/13/20 13:52
Lab Samp ID:	F183-12I	Dilution Factor:	10
Lab File ID:	H6G09056	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	152000	1000	250
Magnesium	52900	1000	250
Sodium	84800	1000	250

Sample ID:	MW01S-GW062120	Date Analyzed:	07/21/20 14:56
Lab Samp ID:	F183-12N	Dilution Factor:	1
Lab File ID:	H6G16085	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW01S-GW062120	Date Analyzed:	07/20/20 16:01
Lab Samp ID:	F183-12	Dilution Factor:	1
Lab File ID:	H6G15123	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.686J	1.00	0.125
Barium	54.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	151000E	100	25.0
Chromium	0.745J	1.00	0.100
Cobalt	0.110J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	51700E	100	25.0
Manganese	0.259J	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2280	100	25.0
Selenium	0.826J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	82300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.17	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW01S-GW062120	Date Analyzed:	07/21/20 14:56
Lab Samp ID:	F183-12N	Dilution Factor:	1
Lab File ID:	H6G16085	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.791J	1.00	0.125
Barium	55.5	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	152000E	100	25.0
Chromium	0.790J	1.00	0.100
Cobalt	0.113J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	52900E	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2330	100	25.0
Selenium	0.818J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	83300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.57E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW01S-GW062120	Date Analyzed:	07/13/20 13:52
Lab Samp ID:	F183-12I	Dilution Factor:	10
Lab File ID:	H6G09056	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	54.6	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	152000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	52900	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2370	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	84800	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.13J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:15
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD01-GW062120	Date Analyzed:	07/20/20 16:04
Lab Samp ID:	F183-13	Dilution Factor:	1
Lab File ID:	H6G15124	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.714J	1.00	0.125
Barium	54.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.681J	1.00	0.100
Cobalt	0.105J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2300	100	25.0
Selenium	0.818J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.19	1.00	0.250

Sample ID:	FD01-GW062120	Date Analyzed:	07/13/20 13:55
Lab Samp ID:	F183-13I	Dilution Factor:	10
Lab File ID:	H6G09057	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	155000	1000	250
Magnesium	53500	1000	250
Sodium	86500	1000	250

Sample ID:	FD01-GW062120	Date Analyzed:	07/21/20 14:59
Lab Samp ID:	F183-13N	Dilution Factor:	1
Lab File ID:	H6G16086	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:15
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD01-GW062120	Date Analyzed:	07/20/20 16:04
Lab Samp ID:	F183-13	Dilution Factor:	1
Lab File ID:	H6G15124	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.714J	1.00	0.125
Barium	54.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	153000E	100	25.0
Chromium	0.681J	1.00	0.100
Cobalt	0.105J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	52300E	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2300	100	25.0
Selenium	0.818J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	84100E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.19	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:15
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD01-GW062120	Date Analyzed:	07/21/20 14:59
Lab Samp ID:	F183-13N	Dilution Factor:	1
Lab File ID:	H6G16086	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.750J	1.00	0.125
Barium	58.9	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	153000E	100	25.0
Chromium	0.717J	1.00	0.100
Cobalt	0.119J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	54500E	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2290	100	25.0
Selenium	0.782J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	83600E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.51E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/21/20 10:15
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD01-GW062120	Date Analyzed:	07/13/20 13:55
Lab Samp ID:	F183-13I	Dilution Factor:	10
Lab File ID:	H6G09057	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	54.4	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	155000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	53500	1000	250
Manganese	4.52J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2380	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	86500	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.13J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW08C-GW062220
Lab Samp ID: F183-14
Lab File ID: H6G15125
Ext Btch ID: IMF035W
Calib. Ref.: H6G15116

Date Collected: 06/22/20 10:20
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 16:07
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.507J	1.00	0.125
Barium	45.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.254J	1.00	0.100
Cobalt	0.844J	1.00	0.100
Copper	ND	2.00	0.500
Iron	288	100	25.0
Lead	ND	1.00	0.0500
Magnesium	38500	100	25.0
Manganese	511	1.00	0.250
Nickel	3.48	1.00	0.250
Potassium	2330	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	31600	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.672J	1.00	0.250

Sample ID: MW08C-GW062220
Lab Samp ID: F183-14I
Lab File ID: H6G09058
Ext Btch ID: IMF035W
Calib. Ref.: H6G09049

Date Analyzed: 07/13/20 13:57
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	109000	1000	250

Sample ID: MW08C-GW062220
Lab Samp ID: F183-14N
Lab File ID: H6G16087
Ext Btch ID: IMF035W
Calib. Ref.: H6G16078

Date Analyzed: 07/21/20 15:02
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	17.3J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08C-GW062220	Date Analyzed:	07/20/20 16:07
Lab Samp ID:	F183-14	Dilution Factor:	1
Lab File ID:	H6G15125	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.507J	1.00	0.125
Barium	45.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	108000E	100	25.0
Chromium	0.254J	1.00	0.100
Cobalt	0.844J	1.00	0.100
Copper	ND	2.00	0.500
Iron	288	100	25.0
Lead	ND	1.00	0.0500
Magnesium	38500	100	25.0
Manganese	511	1.00	0.250
Nickel	3.48	1.00	0.250
Potassium	2330	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	31600	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.672J	1.00	0.250
Zinc	16.2JE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08C-GW062220	Date Analyzed:	07/21/20 15:02
Lab Samp ID:	F183-14N	Dilution Factor:	1
Lab File ID:	H6G16087	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.526J	1.00	0.125
Barium	49.1	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	109000E	100	25.0
Chromium	0.311J	1.00	0.100
Cobalt	0.876J	1.00	0.100
Copper	NDE	2.00	0.500
Iron	287	100	25.0
Lead	ND	1.00	0.0500
Magnesium	38800	100	25.0
Manganese	515	1.00	0.250
Nickel	3.37	1.00	0.250
Potassium	2360	100	25.0
Selenium	0.945J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	31600	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.03E	1.00	0.250
Zinc	17.3J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:20
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08C-GW062220	Date Analyzed:	07/13/20 13:57
Lab Samp ID:	F183-14I	Dilution Factor:	10
Lab File ID:	H6G09058	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	46.6	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	109000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	300J	1000	250
Lead	ND	10.0	0.500
Magnesium	39900	1000	250
Manganese	534	10.0	2.50
Nickel	3.83J	10.0	2.50
Potassium	2460	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	32400	1000	250
Thallium	ND	10.0	1.00
Vanadium	ND	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: MW08B-GW062220
Lab Samp ID: F183-15
Lab File ID: H6G15126
Ext Btch ID: IMF035W
Calib. Ref.: H6G15116

Date Collected: 06/22/20 10:00
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 16:10
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.452J	1.00	0.125
Barium	30.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	1.02	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43500	100	25.0
Manganese	2.43	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2020	100	25.0
Selenium	1.03	1.00	0.150
Silver	ND	1.00	0.100
Sodium	34200	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.80	1.00	0.250

Sample ID: MW08B-GW062220
Lab Samp ID: F183-15I
Lab File ID: H6G09059
Ext Btch ID: IMF035W
Calib. Ref.: H6G09049

Date Analyzed: 07/13/20 14:00
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	128000	1000	250

Sample ID: MW08B-GW062220
Lab Samp ID: F183-15N
Lab File ID: H6G16088
Ext Btch ID: IMF035W
Calib. Ref.: H6G16078

Date Analyzed: 07/21/20 15:05
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08B-GW062220	Date Analyzed:	07/20/20 16:10
Lab Samp ID:	F183-15	Dilution Factor:	1
Lab File ID:	H6G15126	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.452J	1.00	0.125
Barium	30.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	126000E	100	25.0
Chromium	1.02	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43500	100	25.0
Manganese	2.43	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2020	100	25.0
Selenium	1.03	1.00	0.150
Silver	ND	1.00	0.100
Sodium	34200	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.80	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08B-GW062220	Date Analyzed:	07/21/20 15:05
Lab Samp ID:	F183-15N	Dilution Factor:	1
Lab File ID:	H6G16088	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.470J	1.00	0.125
Barium	32.1	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	128000E	100	25.0
Chromium	1.03	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	NDE	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43500	100	25.0
Manganese	2.35	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2030	100	25.0
Selenium	1.02	1.00	0.150
Silver	ND	1.00	0.100
Sodium	34700	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.09E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:00
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MW08B-GW062220	Date Analyzed:	07/13/20 14:00
Lab Samp ID:	F183-15I	Dilution Factor:	10
Lab File ID:	H6G09059	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	30.2	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	128000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	44000	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2110	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	35200	1000	250
Thallium	ND	10.0	1.00
Vanadium	2.94J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Sample ID: FD02-GW062220
Lab Samp ID: F183-16
Lab File ID: H6G15127
Ext Btch ID: IMF035W
Calib. Ref.: H6G15116

Date Collected: 06/22/20 10:10
Date Received: 06/23/20
Date Extracted: 06/25/20 11:06
Date Analyzed: 07/20/20 16:13
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.446J	1.00	0.125
Barium	31.1	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.978J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43800	100	25.0
Manganese	2.60	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2030	100	25.0
Selenium	1.02	1.00	0.150
Silver	ND	1.00	0.100
Sodium	34900	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.86	1.00	0.250

Sample ID: FD02-GW062220
Lab Samp ID: F183-16I
Lab File ID: H6G09060
Ext Btch ID: IMF035W
Calib. Ref.: H6G09049

Date Analyzed: 07/13/20 14:02
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	132000	1000	250

Sample ID: FD02-GW062220
Lab Samp ID: F183-16N
Lab File ID: H6G16089
Ext Btch ID: IMF035W
Calib. Ref.: H6G16078

Date Analyzed: 07/21/20 15:08
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:10
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD02-GW062220	Date Analyzed:	07/20/20 16:13
Lab Samp ID:	F183-16	Dilution Factor:	1
Lab File ID:	H6G15127	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15116	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.446J	1.00	0.125
Barium	31.1	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	127000E	100	25.0
Chromium	0.978J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	43800	100	25.0
Manganese	2.60	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2030	100	25.0
Selenium	1.02	1.00	0.150
Silver	ND	1.00	0.100
Sodium	34900	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.86	1.00	0.250
Zinc	NDE	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:10
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD02-GW062220	Date Analyzed:	07/21/20 15:08
Lab Samp ID:	F183-16N	Dilution Factor:	1
Lab File ID:	H6G16089	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16078	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.492J	1.00	0.125
Barium	32.0	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	130000E	100	25.0
Chromium	1.01	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	NDE	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	44400	100	25.0
Manganese	2.51	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	2060	100	25.0
Selenium	1.01	1.00	0.150
Silver	ND	1.00	0.100
Sodium	35000	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.16E	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/22/20 10:10
Project	: VA SALT LAKE CITY	Date Received:	06/23/20
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	FD02-GW062220	Date Analyzed:	07/13/20 14:02
Lab Samp ID:	F183-16I	Dilution Factor:	10
Lab File ID:	H6G09060	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G09049	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	31.7	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	132000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	45600	1000	250
Manganese	4.58J	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2170	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	36000	1000	250
Thallium	ND	10.0	1.00
Vanadium	3.12J	10.0	2.50
Zinc	NDE	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: Ckaing/Mcande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F183	Date Extracted:	06/25/20 11:06
Sample ID:	MBLK1W	Date Analyzed:	07/20/20 15:15
Lab Samp ID:	IMF035WB	Dilution Factor:	1
Lab File ID:	H6G15107	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G15105	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	ND	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Sodium	ND	100	25.0
Thallium	ND	1.00	0.100
Vanadium	ND	1.00	0.250

Sample ID:	MBLK1W	Date Analyzed:	07/21/20 14:10
Lab Samp ID:	IMF035WB	Dilution Factor:	1
Lab File ID:	H6G16069	Matrix:	WATER
Ext Btch ID:	IMF035W	% Moisture:	NA
Calib. Ref.:	H6G16067	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF035WB	IMF035WL	IMF035WC
LAB FILE ID	: H6G15107	H6G15108	H6G15109
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/20/20 15:15	07/20/20 15:17	07/20/20 15:20
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6G15105	H6G15105	H6G15105

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	3010	100	3000	3010	100	0	80-120	20
Antimony	ND	30	28.6	95	30	29.1	97	2	80-120	20
Arsenic	ND	30	29.4	98	30	30.3	101	3	80-120	20
Barium	ND	30	28.6	95	30	28.6	95	0	80-120	20
Beryllium	ND	30	30.2	101	30	30.5	102	1	80-120	20
Cadmium	ND	30	28.6	95	30	29.4	98	3	80-120	20
Calcium	ND	3000	3130	104	3000	3080	103	2	80-120	20
Chromium	ND	30	31.1	104	30	31.5	105	1	80-120	20
Cobalt	ND	30	30.0	100	30	31.2	104	4	80-120	20
Copper	ND	30	32.7	109	30	32.7	109	0	80-120	20
Iron	ND	3000	3180	106	3000	3180	106	0	80-120	20
Lead	ND	30	29.8	99	30	30.9	103	4	80-120	20
Magnesium	ND	3000	3060	102	3000	3090	103	1	80-120	20
Manganese	ND	30	30.8	103	30	32.0	107	4	80-120	20
Nickel	ND	30	32.2	107	30	31.7	106	2	80-120	20
Potassium	ND	3000	3120	104	3000	3080	103	1	80-120	20
Selenium	ND	30	30.9	103	30	32.1	107	4	80-120	20
Silver	ND	30	29.7	99	30	30.6	102	3	80-120	20
Sodium	ND	3000	3150	105	3000	3080	103	2	80-120	20
Thallium	ND	30	29.7	99	30	30.7	102	3	80-120	20
Vanadium	ND	30	30.4	101	30	30.7	102	1	80-120	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF035WB	IMF035WL	IMF035WC
LAB FILE ID	: H6G16069	H6G16070	H6G16071
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/21/20 14:10	07/21/20 14:13	07/21/20 14:16
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6G16067	H6G16067	H6G16067

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Zinc	ND	60	65.5	109	60	65.3	109	0	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID	: F183-08	F183-08M	F183-08S
LAB FILE ID	: H6G15121	H6G15118	H6G15119
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/20/20 15:55	07/20/20 15:47	07/20/20 15:50
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6G15116	H6G15116	H6G15116

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	209	3000	3180	99	3000	3300	103	4	75-125	20
Antimony	ND	30	28.7	96	30	28.3	94	1	75-125	20
Arsenic	0.712J	30	30.4	99	30	30.5	99	0	75-125	20
Barium	77.2	30	105	93	30	104	89	1	75-125	20
Beryllium	ND	30	29.8	99	30	29.8	99	0	75-125	20
Cadmium	ND	30	28.3	94	30	27.8	93	2	75-125	20
Chromium	1.27	30	32.0	102	30	31.8	102	1	75-125	20
Cobalt	0.216J	30	29.0	96	30	29.0	96	0	75-125	20
Copper	ND	30	30.3	101	30	30.1	100	1	75-125	20
Iron	195	3000	3270	103	3000	3350	105	2	75-125	20
Lead	0.188J	30	29.0	96	30	29.1	96	0	75-125	20
Manganese	20.0	30	50.5	102	30	51.1	104	1	75-125	20
Nickel	0.425J	30	29.7	98	30	29.8	98	0	75-125	20
Potassium	2830	3000	5790	99	3000	5840	100	1	75-125	20
Selenium	0.923J	30	31.4	102	30	31.1	101	1	75-125	20
Silver	ND	30	28.8	96	30	28.4	95	1	75-125	20
Thallium	ND	30	29.2	97	30	29.2	97	0	75-125	20
Vanadium	2.17	30	33.0	103	30	33.0	103	0	75-125	20

PSResult - Parent Sample Result

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID	: F183-08N	F183-08M	F183-08S
LAB FILE ID	: H6G16083	H6G16080	H6G16081
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/21/20 14:50	07/21/20 14:42	07/21/20 14:44
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6G16078	H6G16078	H6G16078

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Zinc	ND	60	61.3	102	60	60.0	100	2	75-125	20

PSResult - Parent Sample Result

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY

BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR	: 10	10	10
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID	: F183-08I	F183-08M	F183-08S
LAB FILE ID	: H6G09054	H6G09051	H6G09052
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/13/20 13:47	07/13/20 13:39	07/13/20 13:42
PREP BATCH	: IMF035W	IMF035W	IMF035W
CALIBRATION REF	: H6G09049	H6G09049	H6G09049

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Calcium	182000	3000	188000	200*	3000	188000	200*	0	75-125	20
Magnesium	65400	3000	68300	97	3000	69600	140*	2	75-125	20
Sodium	89500	3000	94600	170*	3000	94300	160*	0	75-125	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	5
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08	F183-08J
LAB FILE ID	: H6G15121	H6G15122
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/20/20 15:55	07/20/20 15:58
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G15116	H6G15116

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Aluminum	209	208J	NA	10
Antimony	ND	ND	0	10
Arsenic	0.712J	1.10J	NA	10
Barium	77.2	82.9	7	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Chromium	1.27	1.14J	NA	10
Cobalt	0.216J	ND	NA	10
Copper	ND	ND	0	10
Iron	195	196J	NA	10
Lead	0.188J	ND	NA	10
Manganese	20.0	20.6	3	10
Nickel	0.425J	ND	NA	10
Potassium	2830	2780	2	10
Selenium	0.923J	0.843J	NA	10
Silver	ND	ND	0	10
Thallium	ND	ND	0	10
Vanadium	2.17	4.31J	NA	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	5
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08N	F183-08J
LAB FILE ID	: H6G16083	H6G16084
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/21/20 14:50	07/21/20 14:53
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G16078	H6G16078

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Zinc	ND	ND	0	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY

BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	50
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08I	F183-08J
LAB FILE ID	: H6G09054	H6G09055
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/13/20 13:47	07/13/20 13:50
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G09049	H6G09049

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Calcium	182000	181000	1	10
Magnesium	65400	65300	0	10
Sodium	89500	89300	0	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08	F183-08A
LAB FILE ID	: H6G15121	H6G15120
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/20/20 15:55	07/20/20 15:52
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G15116	H6G15116

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Aluminum	209	3000	3350	105	80-120
Antimony	ND	30	29.3	98	80-120
Arsenic	0.712J	30	31.0	101	80-120
Barium	77.2	30	107	99	80-120
Beryllium	ND	30	31.1	104	80-120
Cadmium	ND	30	29.4	98	80-120
Chromium	1.27	30	32.7	105	80-120
Cobalt	0.216J	30	30.3	100	80-120
Copper	ND	30	31.8	106	80-120
Iron	195	3000	3340	105	80-120
Lead	0.188J	30	30.2	100	80-120
Manganese	20.0	30	51.4	105	80-120
Nickel	0.425J	30	30.7	101	80-120
Potassium	2830	3000	5960	104	80-120
Selenium	0.923J	30	31.9	103	80-120
Silver	ND	30	26.5	88	80-120
Thallium	ND	30	30.4	101	80-120
Vanadium	2.17	30	33.8	105	80-120

AS - Analytical Spike

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08N	F183-08A
LAB FILE ID	: H6G16083	H6G16082
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/21/20 14:50	07/21/20 14:47
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G16078	H6G16078

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Zinc	ND	60	63.9	107	80-120

AS - Analytical Spike

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY

BATCH NO. : 20F183
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120
LAB SAMPLE ID	: F183-08I	F183-08A
LAB FILE ID	: H6G09054	H6G09053
DATE PREPARED	: 06/25/20 11:06	06/25/20 11:06
DATE ANALYZED	: 07/13/20 13:47	07/13/20 13:44
PREP BATCH	: IMF035W	IMF035W
CALIBRATION REF	: H6G09049	H6G09049

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Calcium	182000	30000	218000	120	80-120
Magnesium	65400	30000	101000	119	80-120
Sodium	89500	30000	124000	115	80-120

AS - Analytical Spike

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07/13/20 11:33

End Date: 07/13/20 15:05

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

see analytical sequence

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	H6609
Analytical Sequence:	H6609
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☐ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-40-02
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (0.2)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B-19-11-02
S7		Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	06-26
CCV	70-01	Post-Spike 3	NA
ICSA	79-01	Post-Spike 4	
ICSAB	79-02		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 07/13/20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G09
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6G09008				H6G09012			H6G09013		
DateAnalyed :		07/13/2011:48				07/13/2011:58			07/13/2012:01		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		31.14	30	1.3	104	0.51101	0	>0	20.149	20	101
Beryllium	T	32.07	30	1.8	107	0.0027618	0	<0.10	20.807	20	104
Boron		35.97	30	2.6	120*	1.4642	0	<5.0	23.018	20	115
Sodium	T	30590	30000	1.0	102	100420	100000	100	98932	100000	99
Magnesium	T	29980	30000	2.8	100	98546	100000	99	97699	100000	98
Aluminum	T	30530	30000	2.7	102	99997	100000	100	98962	100000	99
Silicon		3392	3000	0.7	113*	6.4447	0	<20	216.98	200	108
Phosphorus		287.4	300	2.1	96	98985	100000	99	98051	100000	98
Potassium	T	30550	30000	0.4	102	100270	100000	100	101510	100000	102
Calcium	T	30530	30000	0.8	102	101280	100000	101	100420	100000	100
Titanium		306.7	300	1.2	102	2081.5	2000	104	2080.2	2000	104
Vanadium	T	323.1	300	0.6	108	0.061327	0	<0.25	20.782	20	104
Chromium	T	318.2	300	0.3	106	0.34637	0	>0.1	20.811	20	104
Manganese	T	2038	2000	2.0	102	0.33695	0	>0.25	19.567	20	98
Iron	T	31550	30000	0.6	105	102370	100000	102	101980	100000	102
Cobalt	T	315.3	300	2.9	105	0.40704	0	>0.1	19.995	20	100
Nickel	T	320.3	300	0.6	107	0.38261	0	>0.25	20.730	20	104
Copper	T	321.1	300	1.1	107	17.311	0	>0.50	0.17160	20	1*
Zinc	T	296.5	300	1.2	99	2.7893	0	<5	21.366	20	107
Arsenic	T	321.4	300	0.7	107	0.093775	0	<0.125	20.343	20	102
Selenium	T	321.2	300	0.8	107	0.12754	0	<0.15	20.625	20	103
Strontium		321.6	300	1.6	107	0.85000	0	<1.0	20.919	20	105
Zirconium		28.73	30	1.0	96	0.11204	0	<2.0	9.3815	20	47*
Molybdenum		301.8	300	2.2	101	2012.4	2000	101	2033.5	2000	102
Silver	T	30.82	30	2.2	103	0.015623	0	<0.1	19.383	20	97
Cadmium	T	311.8	300	1.5	104	0.13276	0	>0.1	19.775	20	99
Tin		313.7	300	2.0	105	0.39200	0	>0.2	19.868	20	99
Antimony	T	59.61	60	1.5	99	0.16780	0	<0.25	20.034	20	100
Barium	T	307.9	300	1.4	103	0.44088	0	>0.25	20.092	20	100
Tungsten		33.31	30	2.4	111*	0.19535	0	<1.0	18.672	20	93
Mercury		2.982	3	0.5	99	0.0082017	0	<0.1	2.0019	2	100
Thallium	T	316.8	300	1.8	106	0.0049757	0	<0.1	19.098	20	95
Lead	T	316.1	300	1.5	105	0.11947	0	>0.05	19.431	20	97
Uranium		312.3	300	1.0	104	0.0072901	0	<0.1	19.353	20	97

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G09
Instrument ID: H6

CCV SampleID		: CCV3				CCV4				CCV5		
CCV DataFileID		: H6G09038				H6G09049				H6G09061		
CCV DateTime		: 07/13/20 13:06				07/13/20 13:34				07/13/20 14:05		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD		RESULT	%REC	RSD
Lithium		25	25.2	101	1.1	25.4	102	2.7		25.1	100	1.9
Beryllium	T	25	25.7	103	0.4	26.0	104	2.3		25.5	102	1.1
Boron		50	52.8	106	1.3	53.0	106	3.7		51.6	103	3.5
Sodium	T	25000	25600	102	1.9	25600	102	1.4		25500	102	0.9
Magnesium	T	25000	25000	100	1.1	25300	101	1.2		25000	100	1.5
Aluminum	T	25000	25100	100	2.0	25200	101	1.7		25000	100	2.6
Silicon		2500	2520	101	2.1	2520	101	0.9		2510	100	0.6
Phosphorus		250	243	97	1.2	252	101	1.6		242	97	1.8
Potassium	T	25000	25400	102	0.8	25400	102	0.4		25500	102	0.9
Calcium	T	25000	25200	101	1.2	25300	101	0.5		24900	100	0.7
Titanium		250	250	100	1.0	253	101	0.5		247	99	1.0
Vanadium	T	250	257	103	0.4	255	102	0.6		256	102	0.7
Chromium	T	250	258	103	0.6	256	103	0.3		257	103	0.4
Manganese	T	1500	1530	102	1.4	1540	103	1.5		1530	102	1.7
Iron	T	25000	26000	104	0.6	25900	104	1.7		25800	103	0.9
Cobalt	T	250	256	103	1.9	256	102	1.7		255	102	1.9
Nickel	T	250	257	103	0.8	258	103	1.0		257	103	0.9
Copper	T	250	242	97	0.7	240	96	1.1		238	95	0.4
Zinc	T	250	251	100	0.7	249	100	1.1		252	101	1.9
Arsenic	T	250	252	101	0.5	254	101	0.4		254	101	0.8
Selenium	T	250	255	102	1.1	257	103	1.4		254	102	1.3
Strontium		250	260	104	1.2	253	101	2.8		256	102	1.1
Zirconium		25	25.0	100	0.4	24.7	99	2.4		24.9	100	0.2
Molybdenum		250	246	99	0.2	245	98	0.8		248	99	1.6
Silver	T	25	24.2	97	0.3	24.5	98	1.9		24.5	98	1.9
Cadmium	T	250	242	97	0.4	246	98	1.1		244	98	0.6
Tin		250	248	99	0.7	248	99	0.5		248	99	0.2
Antimony	T	50	48.3	97	0.7	49.4	99	1.3		48.8	98	1.6
Barium	T	500	497	99	0.8	500	100	0.4		506	101	1.1
Tungsten		25	25.1	100	1.1	25.3	101	2.0		24.9	100	2.1
Mercury		2.5	2.48	99	0.5	2.48	99	1.2		2.43	97	1.3
Thallium	T	250	252	101	0.9	249	100	0.6		250	100	1.0
Lead	T	250	253	101	0.8	250	100	1.5		251	100	1.3
Uranium		250	248	99	1.3	244	98	1.0		245	98	0.6

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : SW6020A
Sequence : IH6G09
Instrument ID: H6

CB SampleID		: ICB		CCB3		CCB4		CCB5	
CB DataFileID		: H6G09009		H6G09039		H6G09050		H6G09062	
CB DateTime		: 07/13/2011:50		07/13/2013:08		07/13/2013:37		07/13/2014:11	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.06	>0	0.10	>0	0.07	>0	0.05	>0
Beryllium	T	0.10	0.005	<0.10	0.002	<0.10	0.007	<0.10	0.005	<0.10
Boron		5.0	0.8	<5.0	1	<5.0	0.8	<5.0	0.004	<5.0
Sodium	T	25	5	<25	8	<25	5	<25	0.04	<25
Magnesium	T	25	5	<25	2	<25	4	<25	9	<25
Aluminum	T	25	5	<25	1	<25	4	<25	4	<25
Silicon		20	4	<20	0.1	<20	0.02	<20	0.9	<20
Phosphorus		25	1	<25	4	<25	4	<25	2	<25
Potassium	T	25	4	<25	5	<25	5	<25	8	<25
Calcium	T	25	3	<25	1	<25	2	<25	0.7	<25
Titanium		0.5	0.08	<0.5	0.02	<0.5	0.05	<0.5	0.06	<0.5
Vanadium	T	0.25	0.02	<0.25	0.08	<0.25	0.07	<0.25	0.1	<0.25
Chromium	T	0.1	0.02	<0.1	0.03	<0.1	0.02	<0.1	0.005	<0.1
Manganese	T	0.25	0.4	>0.25	0.1	<0.25	0.3	>0.25	0.3	>0.25
Iron	T	25	4	<25	1	<25	2	<25	2	<25
Cobalt	T	0.1	0.05	<0.1	0.01	<0.1	0.04	<0.1	0.04	<0.1
Nickel	T	0.25	0.02	<0.25	0.02	<0.25	0.01	<0.25	0.02	<0.25
Copper	T	0.50	6	>0.50	20	>0.50	20	>0.50	30	>0.50
Zinc	T	5	0.08	<5	0.03	<5	0.02	<5	0.3	<5
Arsenic	T	0.125	0.04	<0.125	0.04	<0.125	0.05	<0.125	0.06	<0.125
Selenium	T	0.15	0.05	<0.15	0.03	<0.15	0.04	<0.15	0.02	<0.15
Strontium		1.0	0.05	<1.0	0.02	<1.0	0.05	<1.0	0.1	<1.0
Zirconium		2.0	0.004	<2.0	0.003	<2.0	0.003	<2.0	0.005	<2.0
Molybdenum		0.5	0.09	<0.5	0.04	<0.5	0.06	<0.5	0.06	<0.5
Silver	T	0.1	0.007	<0.1	0.001	<0.1	0.004	<0.1	0.004	<0.1
Cadmium	T	0.1	0.08	<0.1	0.04	<0.1	0.06	<0.1	0.05	<0.1
Tin		0.2	0.2	<0.2	0.03	<0.2	0.04	<0.2	0.02	<0.2
Antimony	T	0.25	0.01	<0.25	0.004	<0.25	0.010	<0.25	0.01	<0.25
Barium	T	0.25	0.05	<0.25	0.02	<0.25	0.06	<0.25	0.07	<0.25
Tungsten		1.0	0.02	<1.0	0.001	<1.0	0.007	<1.0	0.004	<1.0
Mercury		0.1	0.04	<0.1	0.01	<0.1	0.02	<0.1	0.001	<0.1
Thallium	T	0.1	0.2	>0.1	0.06	<0.1	0.09	<0.1	0.04	<0.1
Lead	T	0.05	0.1	>0.05	0.02	<0.05	0.04	<0.05	0.02	<0.05
Uranium		0.1	0.05	<0.1	0.02	<0.1	0.04	<0.1	0.04	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G09001.d		1	
2		CalBlk	BLANK		1101	H6G09002.d		1	
3		CalStd	S0		1102	H6G09003.d		1	
4		CalStd	S1		1104	H6G09004.d		2	
5		CalStd	S2		1105	H6G09005.d		3	
6		CalStd	S3		1106	H6G09006.d		4	
7		CalStd	S4		1107	H6G09007.d		5	
8		ICV	ICV		1204	H6G09008.d			1
9		ICB	ICB		1102	H6G09009.d			1
10		LLCCV	MRLG1301	1/100/10 ppb Cu↓	1306	H6G09010.d			1
11		LLCCV2	MRLG1302	0.4/40/4 ppb Cu↓	1307	H6G09011.d			1
12		ICS-A	ICSA		1304	H6G09012.d			1
13		ICSB	ICSAB Cu fail		1305	H6G09013.d			1
14		Sample	MRLG1303	500 ppb CAT	1207	H6G09014.d			1
15		CCV	CCV1		1206	H6G09015.d			1
16		CCB	CCB1		1102	H6G09016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF034WB		2101	H6G09017.d			1
2		LCSW	IMF034WL] Cu fail		2102	H6G09018.d			1
3		LCSW	IMF034WC		2103	H6G09019.d			1
4		Sample	F178-01N Na mg ca↑		2104	H6G09020.d			1
5		Sample	F178-02N ca↑		2105	H6G09021.d			1
6		Sample	F178-04N Na mg ca↑		2106	H6G09022.d			1
7		Sample	F178-05N Na mg ca↑		2107	H6G09023.d			1
8		Sample	F178-07N Na mg ca↑		2108	H6G09024.d			1
9		Sample	F178-08N Na mg ca↑		2109	H6G09025.d			1
10		Sample	F178-10N Na mg ca↑		2110	H6G09026.d			1
11		CCV	CCV2		1206	H6G09027.d			1
12		CCB	CCB2		1102	H6G09028.d			1
13		Sample	F178-11N Na mg ca↑		2111	H6G09029.d			1
14		Sample	F178-01I		2112	H6G09030.d			10
15		Sample	F178-02I		2201	H6G09031.d			10
16		Sample	F178-04I		2202	H6G09032.d			10
17		Sample	F178-05I		2203	H6G09033.d			10
18		Sample	F178-07I		2204	H6G09034.d			10
19		Sample	F178-08I		2205	H6G09035.d			10
20		Sample	F178-10I		2206	H6G09036.d			10

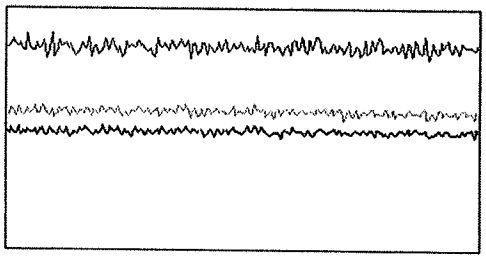
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	F178-11I		2207	H6G09037.d			10
22		CCV	CCV3		1206	H6G09038.d			1
23		CCB	CCB3		1102	H6G09039.d			1
24		Blank	IMF035WB		2208	H6G09040.d			1
25		LCSW	IMF035WL	cu fail	2209	H6G09041.d			1
26		LCSW	IMF035WC		2210	H6G09042.d			1
27		Sample	F183-01I		2211	H6G09043.d			10
28		Sample	F183-02I		2212	H6G09044.d			10
29		Sample	F183-03I		2301	H6G09045.d			10
30		Sample	F183-05I		2302	H6G09046.d			10
31		Sample	F183-06I		2303	H6G09047.d			10
32		Sample	F183-07I		2304	H6G09048.d			10
33		CCV	CCV4		1206	H6G09049.d			1
34		CCB	CCB4		1102	H6G09050.d			1
35		Sample	F183-08M		2305	H6G09051.d			10
36		Sample	F183-08S		2306	H6G09052.d			10
37		Sample	F183-08A		2307	H6G09053.d			10
38		Sample	F183-08I		2308	H6G09054.d			10
39		Sample	F183-08J		2309	H6G09055.d			50
40		Sample	F183-12I		2310	H6G09056.d			10
41		Sample	F183-13I		2311	H6G09057.d			10
42		Sample	F183-14I		2312	H6G09058.d			10
43		Sample	F183-15I		2401	H6G09059.d			10
44		Sample	F183-16I		2402	H6G09060.d			10
45		CCV	CCV5		1206	H6G09061.d			1
46		CCB	CCB5		1102	H6G09062.d			1
47		LLCCV	MRLG1304	1/100/10 ppb mnt cu l	1306	H6G09063.d			1
48		LLCCV2	MRLG1305	0.4/40/4 ppb cu l	1307	H6G09064.d			1
49		Blank	IMG013WB		2403	H6G09065.d			1
50		LCSW	IMG013WL		2404	H6G09066.d			1
51		LCSW	IMG013WC		2405	H6G09067.d			1
52		Sample	TXG001SB		2406	H6G09068.d			1
53		Sample	TXG002SB		2407	H6G09069.d			1
54		Sample	F232-01		2408	H6G09070.d			1
55		CCV	CCV6		1206	H6G09071.d			1
56		CCB	CCB6		1102	H6G09072.d			1
57		Sample	F232-02		2409	H6G09073.d			1
58		Sample	F232-03		2410	H6G09074.d			1
59		Sample	F232-04		2411	H6G09075.d			1
60		Sample	F232-05		2412	H6G09076.d			1
61		Sample	F232-06M		2501	H6G09077.d			1
62		Sample	F232-06S	✓	2502	H6G09078.d			1
63		Sample	F232-06A		2503	H6G09079.d			1
64		Sample	F232-06		2504	H6G09080.d			1
65		Sample	F232-06J		2505	H6G09081.d			5
66		CCV	CCV7		1206	H6G09082.d			1
67		CCB	CCB7		1102	H6G09083.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-13 08:50:54
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



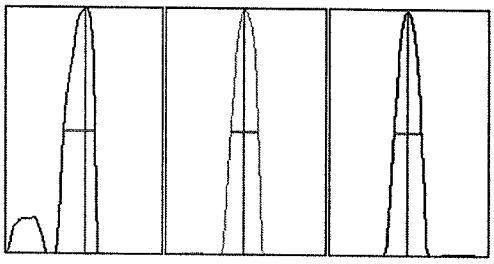
Mass	Range	Count	RSD%	Background
7	5000	4220	2.535	0.050
89	20000	11475	2.211	0.900
205	20000	9825	2.198	2.300

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.149 %
Doubly Charged	70 / 140 1.606 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	4271.11	7.05	0.62	0.75
89	11375.45	89.00	0.54	0.71
205	9909.34	205.00	0.52	0.71

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.06 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	13.8 V
Extract 2	-155.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.6 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.01 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9994
Mass Offset	125	Axis Offset	-0.01

EM

Discriminator	4.2 mV	Analog HV	2411 V	Pulse HV	1559 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.06	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.01	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.03E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	30.7	°C
Nebulizer Gas(DP)	6.04E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.53E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.98E+1	kPa
S/C Temp (H)	16.4	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.46E+2	Pa
Analyzer Press	7.28E-5	Pa
IG HV	178	V
IG Emission	4.97	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.76	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.6	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.9	V
+U Voltage	11.6	V

Name	Value	Unit
-U Voltage	-17.4	V
V Voltage	52.7	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	610.0	V
-120V	-133.7	V
-720V	-738.5	V
Prefilter Bias	-5.03	V
Pickup Heater I	0.07	A
QP PS +48V	47.6	V
QP PS +48V I	0.00	A
Analog HV	-2415	V
Pulse HV	1570	V
EM Gate	-31.9	V
Pulse Gate	310.5	V
EM Entrance	0.2	V
EM HV Gain	-1061.6	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.8	V
RF PS +48V	47.8	V
Forward Power	1549	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.43	A
Drain I 2	11.03	A
Drain I 3	10.90	A
Drain I 4	10.22	A
Temp Sensor	2.8	V
Driver I	5.48	A

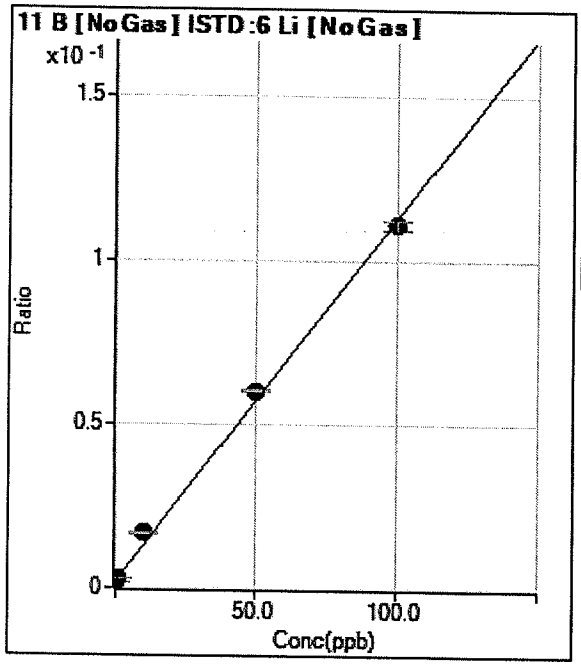
Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	2.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.90E-1	kPa
ORS AMFC Temp	30.5	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-155.3	V
Omega Bias	-80.1	V
Omega Lens	7.9	V
Cell Entrance	-29.9	V
Cell Exit	-50.1	V
Deflect	13.8	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	30.9	°C
Internal Temp	37.0	°C
+24V	23.6	V
Water Temp	18.9	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

Performance Report History

Sensitivity

Batch Folder: D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b\
Analysis File: IH6G09.batch.bin
DA Date-Time: 2020-07-13 15:07:24
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

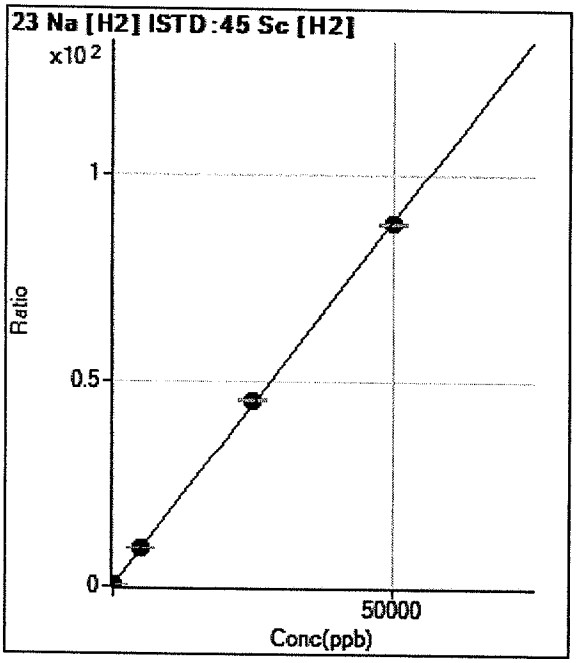
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G09003.d	S0	2020-07-13 11:33:28
2	H6G09004.d	S1	2020-07-13 11:36:19
3	H6G09005.d	S2	2020-07-13 11:39:11
4	H6G09006.d	S3	2020-07-13 11:42:32
5	H6G09007.d	S4	2020-07-13 11:45:22



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4149.50	0.0020	P	1.8
2	☐	0.500	0.828	6010.18	0.0029	P	1.8
3	☐	10.000	13.428	34514.48	0.0168	P	1.5
4	☐	50.000	52.492	121940.17	0.0600	P	0.7
5	☐	100.000	98.410	225087.24	0.1108	P	2.5

y = 0.0011 * x + 0.0020
R = 0.9991
DL = 0.09529
BEC = 1.798

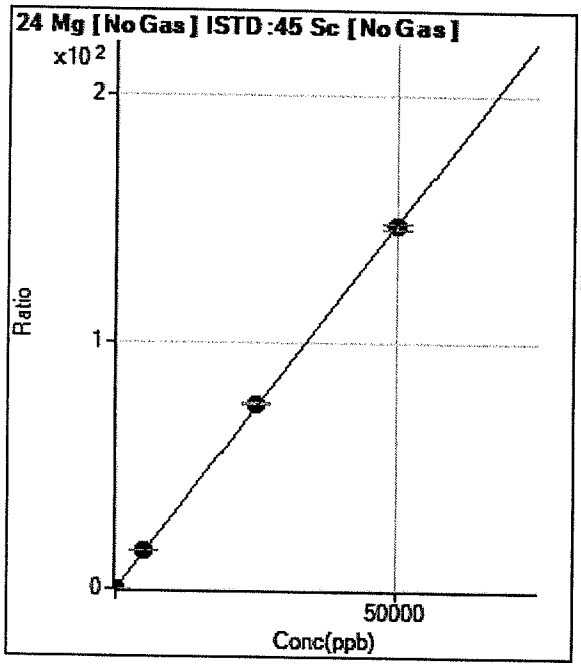
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	362870.27	0.1669	P	0.4
2	☐	50.000	55.293	563661.50	0.2648	P	0.7
3	☐	5000.000	5146.274	20297178.67	9.2799	A	0.8
4	☐	25000.000	25598.357	100187816.00	45.4966	A	1.6
5	☐	50000.000	49686.189	195886202.67	88.1515	A	0.8

y = 0.0018 * x + 0.1669
R = 0.9999
DL = 1.261
BEC = 94.23

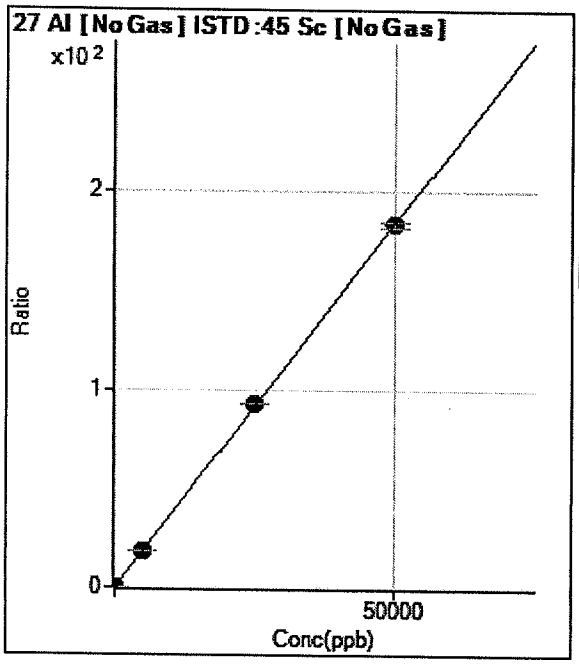
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20416.93	0.0054	P	2.0
2	☐	50.000	53.142	606451.98	0.1629	P	0.6
3	☐	5000.000	5171.022	57115236.00	15.3268	A	0.9
4	☐	25000.000	25372.204	283816010.67	75.1815	A	1.0
5	☐	50000.000	49796.793	555042112.00	147.5498	A	1.9

y = 0.0030 * x + 0.0054
R = 1.0000
DL = 0.1126
BEC = 1.835

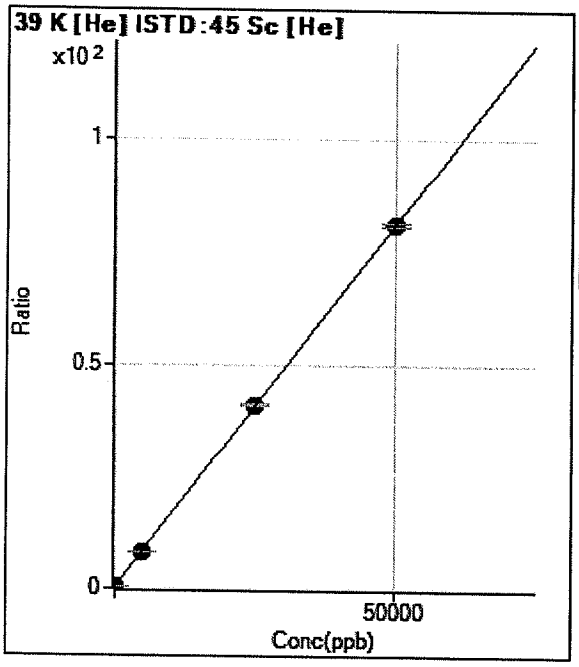
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25333.10	0.0067	P	2.8
2	☐	50.000	52.476	742547.93	0.1995	P	1.4
3	☐	5000.000	5109.539	69950728.96	18.7709	A	0.5
4	☐	25000.000	25323.268	351108514.77	93.0035	A	0.4
5	☐	50000.000	49827.410	688379429.74	182.9921	A	1.6

y = 0.0037 * x + 0.0067
R = 1.0000
DL = 0.155
BEC = 1.836

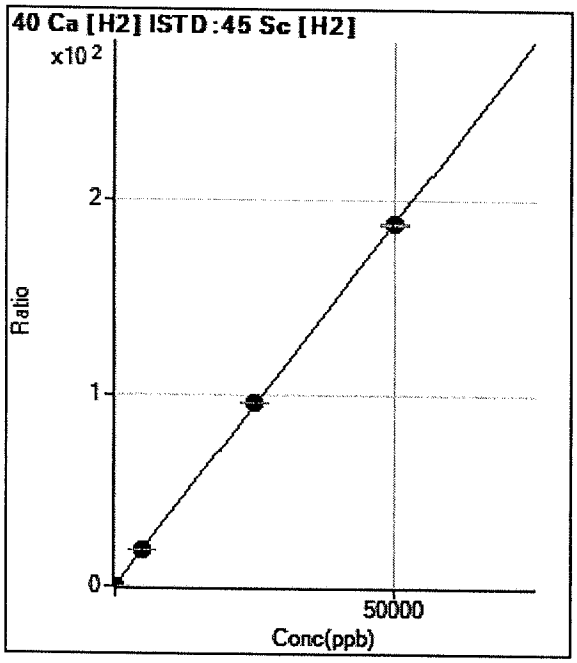
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	107013.95	0.2498	P	3.2
2	☐	50.000	51.261	142042.73	0.3328	P	1.6
3	☐	5000.000	4920.698	3547238.83	8.2198	A	2.6
4	☐	25000.000	25175.726	17796262.67	41.0265	A	1.0
5	☐	50000.000	49920.066	35036772.00	81.1044	A	0.9

y = 0.0016 * x + 0.2498
R = 1.0000
DL = 14.98
BEC = 154.2

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	131577.24	0.0605	P	0.8
2	☐	50.000	44.723	487506.32	0.2290	P	0.7
3	☐	5000.000	4986.132	41221466.67	18.8464	A	0.6
4	☐	25000.000	25344.409	210412960.00	95.5488	A	0.2
5	☐	50000.000	49829.187	417315946.67	187.7983	A	0.3

y = 0.0038 * x + 0.0605
R = 1.0000
DL = 0.3789
BEC = 16.06

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq. Date-Time	2020-07-13 09:09:00
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

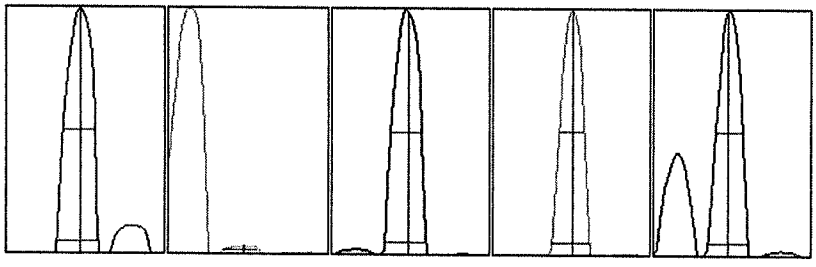
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1646	16460.10			1.469	5.000
24	10.00	5900	58997.89			0.845	5.000
59	10.00	9761	97608.16			0.908	5.000
115	10.00	11847	118469.65			1.088	5.000
208	10.00	5899	58989.09			0.873	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1666	1613	1666	1658	1627
24	5949	5935	5922	5838	5856
59	9679	9765	9895	9682	9782
115	11767	11715	11787	12015	11951
208	5939	5943	5920	5868	5824

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2948.49	8.95	8.90 - 9.10	
24	9883.06	23.95	23.90 - 24.10	
59	17351.21	59.00	58.90 - 59.10	
115	24179.56	115.05	114.90 - 115.10	
208	11347.30	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.777	0.900	
24	0.64	0.787	0.900	
59	0.59	0.781	0.900	
115	0.51	0.731	0.900	
208	0.54	0.782	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.60 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.9 V	Deflect	11.8 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9994	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	-0.01		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.2 mm		

EM

Discriminator	4.2 mV	Analog HV	2411 V	Pulse HV	1559 V

Calibration Standard Report

Sample Name	S0
File Name	H6G09003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:33:28
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	114851.91	2.4
Be	9	6	No Gas	16.67	72.1
B	11	6	No Gas	4149.50	2.0
Na	23	45	H2	362870.27	0.2
Mg	24	45	No Gas	20416.93	2.7
Al	27	45	No Gas	25333.10	3.5
Si	28	45	H2	5509.10	0.8
P	31	45	No Gas	35491.92	1.4
K	39	45	He	107013.95	2.9
Ca	40	45	H2	131577.24	0.6
Ti	47	45	No Gas	342.67	5.0
V	51	45	He	1023.37	0.9
Cr	52	45	He	1138.72	2.3
Mn	55	45	No Gas	8196.46	1.8
Fe	56	45	H2	9630.06	2.5
Co	59	45	No Gas	249.33	6.8
Ni	60	45	He	78.00	20.0
Cu	63	45	He	180104.60	0.4
Zn	66	72	No Gas	3095.02	0.4
As	75	72	He	114.67	4.1
Se	78	72	H2	17.33	17.6
Sr	88	72	No Gas	1526.76	3.6
Zr	90	72	No Gas	126.67	31.9
Mo	95	115	No Gas	30.00	11.1
Ag	107	115	No Gas	52.22	7.4
Cd	111	115	No Gas	19.82	29.5
Sn	118	115	No Gas	1522.31	4.6
Sb	123	115	No Gas	93.33	19.9
Ba	137	115	No Gas	120.00	7.3
W	182	159	No Gas	70.00	0.0
Hg	201	159	He	14.17	27.0
Tl	205	159	No Gas	907.81	6.0
Pb	208	159	No Gas	1436.70	8.7
U	238	159	No Gas	41.11	23.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2086463.50	0.9	2097164.59	99.49	60	120	
Sc	45	No Gas	3755815.58	0.7	3750166.75	100.15	60	120	
Sc	45	H2	2174673.58	0.4	2177398.33	99.87	60	120	
Sc	45	He	428412.13	0.3	433199.3	98.89	60	120	
Ge	72	No Gas	811493.96	0.2	824654.15	98.4	60	120	
Ge	72	H2	598816.73	0.8	601667.94	99.53	60	120	
Ge	72	He	246690.87	0.3	249247.67	98.97	60	120	
In	115	No Gas	4500839.08	0.4	4556929.48	98.77	60	120	
Tb	159	No Gas	5600349.78	1.5	5659230.75	98.96	60	120	
Tb	159	He	4131465.33	0.7	4116226.58	100.37	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G09004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:36:19
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	119529.28	0.8
Be	9	6	No Gas	1805.68	2.5
B	11	6	No Gas	6010.18	1.1
Na	23	45	H2	563661.50	0.4
Mg	24	45	No Gas	606451.98	0.7
Al	27	45	No Gas	742547.93	0.8
Si	28	45	H2	122189.50	0.7
P	31	45	No Gas	59547.23	1.4
K	39	45	He	142042.73	1.6
Ca	40	45	H2	487506.32	0.0
Ti	47	45	No Gas	1156.72	5.0
V	51	45	He	3819.20	3.2
Cr	52	45	He	4431.38	1.5
Mn	55	45	No Gas	20286.35	2.0
Fe	56	45	H2	607095.25	0.6
Co	59	45	No Gas	10980.42	0.3
Ni	60	45	He	1177.39	4.5
Cu	63	45	He	189784.25	0.9
Zn	66	72	No Gas	4362.04	2.3
As	75	72	He	728.69	3.2
Se	78	72	H2	185.67	4.6
Sr	88	72	No Gas	13697.01	0.6
Zr	90	72	No Gas	66243.57	2.4
Mo	95	115	No Gas	2355.77	3.3
Ag	107	115	No Gas	6310.40	2.6
Cd	111	115	No Gas	1286.71	6.1
Sn	118	115	No Gas	4359.62	2.0
Sb	123	115	No Gas	4062.85	1.5
Ba	137	115	No Gas	1896.81	5.2
W	182	159	No Gas	2040.17	2.0
Hg	201	159	He	61.50	3.5
Tl	205	159	No Gas	9741.59	0.5
Pb	208	159	No Gas	13842.99	1.6
U	238	159	No Gas	11756.76	3.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2069616.70	1.0	2097164.59	98.69	60	120	
Sc	45	No Gas	3723087.67	0.7	3750166.75	99.28	60	120	
Sc	45	H2	2128864.75	0.7	2177398.33	97.77	60	120	
Sc	45	He	426770.57	0.6	433199.3	98.52	60	120	
Ge	72	No Gas	822060.17	0.6	824654.15	99.69	60	120	
Ge	72	H2	595629.79	0.5	601667.94	99	60	120	
Ge	72	He	251753.95	1.4	249247.67	101.01	60	120	
In	115	No Gas	4463426.74	0.7	4556929.48	97.95	60	120	
Tb	159	No Gas	5532260.06	0.6	5659230.75	97.76	60	120	
Tb	159	He	4150044.00	0.2	4116226.58	100.82	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G09005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:39:11
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	168893.81	0.7
Be	9	6	No Gas	18204.00	0.9
B	11	6	No Gas	34514.48	1.6
Na	23	45	H2	20297178.67	0.6
Mg	24	45	No Gas	57115236.00	0.7
Al	27	45	No Gas	69950728.96	0.6
Si	28	45	H2	608006.56	0.6
P	31	45	No Gas	85165.33	0.9
K	39	45	He	3547238.83	3.3
Ca	40	45	H2	41221466.67	0.6
Ti	47	45	No Gas	77489.53	0.5
V	51	45	He	262536.09	3.0
Cr	52	45	He	305591.73	3.1
Mn	55	45	No Gas	7281766.33	0.2
Fe	56	45	H2	56874065.33	0.9
Co	59	45	No Ges	1049594.92	0.8
Ni	60	45	He	103648.45	3.8
Cu	63	45	He	444195.86	1.5
Zn	66	72	No Gas	159987.91	0.3
As	75	72	He	53552.55	3.4
Se	78	72	H2	17683.58	1.5
Sr	88	72	No Gas	1234411.65	0.8
Zr	90	72	No Gas	152547.43	0.4
Mo	95	115	No Gas	229858.86	1.0
Ag	107	115	No Gas	59379.37	0.9
Cd	111	115	No Gas	118079.50	1.1
Sn	118	115	No Gas	329784.62	0.5
Sb	123	115	No Gas	78297.26	1.2
Ba	137	115	No Gas	337096.26	1.2
W	182	159	No Ges	39601.96	3.0
Hg	201	159	He	467.34	4.3
Tl	205	159	No Gas	883622.36	0.8
Pb	208	159	No Gas	1221793.24	0.6
U	238	159	No Gas	1161527.42	0.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2049561.00	0.6	2097164.59	97.73	60	120	
Sc	45	No Gas	3726525.92	0.2	3750166.75	99.37	60	120	
Sc	45	H2	2187255.75	0.5	2177398.33	100.45	60	120	
Sc	45	He	431505.33	1.0	433199.3	99.61	60	120	
Ge	72	No Gas	822137.50	0.9	824654.15	99.69	60	120	
Ge	72	H2	611546.58	1.4	601667.94	101.64	60	120	
Ge	72	He	251978.92	1.0	249247.67	101.1	60	120	
In	115	No Gas	4446685.63	0.3	4556929.48	97.58	60	120	
Tb	159	No Gas	5528484.78	0.5	5659230.75	97.69	60	120	
Tb	159	He	4108268.25	0.9	4116226.58	99.81	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G09006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:42:32
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	388269.59	0.7
Be	9	6	No Gas	88822.17	1.0
B	11	6	No Gas	121940.17	1.0
Na	23	45	H2	100187816.00	1.5
Mg	24	45	No Gas	283816010.67	0.6
Al	27	45	No Gas	351108514.77	0.8
Si	28	45	H2	2986323.92	1.3
P	31	45	No Gas	267403.70	1.6
K	39	45	He	17796262.67	1.0
Ca	40	45	H2	210412960.00	0.9
Tl	47	45	No Gas	387048.12	0.5
V	51	45	He	1350095.08	0.5
Cr	52	45	He	1544112.67	0.2
Mn	55	45	No Gas	35889672.00	0.8
Fe	56	45	H2	285271626.67	0.8
Co	59	45	No Gas	5159741.17	0.5
Ni	60	45	He	532397.38	1.0
Cu	63	45	He	1542192.50	0.2
Zn	66	72	No Gas	800577.84	1.0
As	75	72	He	280680.16	0.4
Se	78	72	H2	88704.77	0.5
Sr	88	72	No Gas	6152711.14	1.1
Zr	90	72	No Gas	364787.95	1.9
Mo	95	115	No Gas	1169850.82	0.6
Ag	107	115	No Gas	294951.77	1.0
Cd	111	115	No Gas	586729.19	0.8
Sn	118	115	No Gas	1679614.90	0.3
Sb	123	115	No Gas	394355.28	0.2
Ba	137	115	No Gas	1721851.18	1.2
W	182	159	No Gas	196434.45	0.8
Hg	201	159	He	2392.73	1.0
Tl	205	159	No Gas	4395377.60	1.0
Pb	208	159	No Gas	6078486.55	1.0
U	238	159	No Gas	5824501.30	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2030818.18	0.9	2097164.59	96.84	60	120	
Sc	45	No Gas	3775288.92	1.0	3750166.75	100.67	60	120	
Sc	45	H2	2202187.00	1.1	2177398.33	101.14	60	120	
Sc	45	He	433788.00	1.0	433199.3	100.14	60	120	
Ge	72	No Gas	843809.73	0.5	824654.15	102.32	60	120	
Ge	72	H2	609126.62	0.2	601667.94	101.24	60	120	
Ge	72	He	254923.33	0.4	249247.67	102.28	60	120	
In	115	No Gas	4366122.79	1.3	4556929.48	95.81	60	120	
Tb	159	No Gas	5566323.53	1.1	5659230.75	98.36	60	120	
Tb	159	He	4121400.08	0.5	4116226.56	100.13	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G09007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:45:22
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	659894.28	0.4
Be	9	6	No Gas	173994.41	0.5
B	11	6	No Gas	225087.24	2.0
Na	23	45	H2	195886202.67	0.8
Mg	24	45	No Gas	555042112.00	0.9
Al	27	45	No Gas	688379429.74	0.4
Si	28	45	H2	5832723.87	0.5
P	31	45	No Gas	488946.24	0.3
K	39	45	He	35036772.00	0.7
Ca	40	45	H2	417315946.67	0.3
Ti	47	45	No Gas	761558.04	0.6
V	51	45	He	2659489.42	0.6
Cr	52	45	He	3045217.25	0.8
Mn	55	45	No Gas	70315725.33	0.6
Fe	56	45	H2	558104618.67	0.4
Co	59	45	No Gas	9965827.33	1.4
Ni	60	45	He	1026621.14	0.4
Cu	63	45	He	2793785.58	0.1
Zn	66	72	No Gas	1554448.04	1.0
As	75	72	He	555238.33	0.0
Se	78	72	H2	173614.83	0.8
Sr	88	72	No Gas	12166573.13	0.5
Zr	90	72	No Gas	778620.22	0.9
Mo	95	115	No Gas	2316989.56	0.9
Ag	107	115	No Gas	571038.90	0.8
Cd	111	115	No Gas	1152974.51	0.6
Sn	118	115	No Gas	3314679.10	1.2
Sb	123	115	No Gas	779770.89	0.7
Ba	137	115	No Gas	3376659.93	1.5
W	182	159	No Gas	376937.00	1.3
Hg	201	159	He	4620.69	1.6
Tl	205	159	No Gas	8595821.32	1.2
Pb	208	159	No Gas	11848663.98	0.6
U	238	159	No Gas	11538334.82	0.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2031063.71	0.5	2097164.59	96.85	60	120	
Sc	45	No Gas	3762252.75	1.2	3750166.75	100.32	60	120	
Sc	45	H2	2222150.33	0.0	2177398.33	102.06	60	120	
Sc	45	He	432002.76	0.4	433199.3	99.72	60	120	
Ge	72	No Gas	841350.38	2.1	824654.15	102.02	60	120	
Ge	72	H2	609385.19	0.3	601667.94	101.28	60	120	
Ge	72	He	254012.99	0.7	249247.67	101.91	60	120	
In	115	No Gas	4262402.19	2.1	4556929.48	93.54	60	120	
Tb	159	No Gas	5557262.83	1.9	5659230.75	98.2	60	120	
Tb	159	He	4140380.50	0.9	4116226.58	100.59	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G09008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:48:07
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	31.140	ppb	1.3	451597.95	30	103.8	90	110	
Be	9	6	No Gas	32.073	ppb	1.8	111577.01	30	106.91	90	110	
B	11	6	No Gas	35.973	ppb	2.8	84438.44	30	119.91	90	110	> +/- 10%
Na	23	45	H2	30593.800	ppb	1.0	118922946.87	30000	101.98	90	110	
Mg	24	45	No Gas	29978.003	ppb	2.8	331790421.33	30000	99.93	90	110	
Al	27	45	No Gas	30529.051	ppb	2.7	418784073.76	30000	101.76	90	110	
Si	28	45	H2	3391.718	ppb	0.7	3924885.08	3000	113.06	90	110	> +/- 10%
P	31	45	No Gas	287.375	ppb	2.1	295242.00	300	95.79	90	110	
K	39	45	He	30550.322	ppb	0.4	21345171.33	30000	101.83	90	110	
Ca	40	45	H2	30530.871	ppb	0.8	251867109.33	30000	101.77	90	110	
Ti	47	45	No Gas	306.689	ppb	1.2	465146.77	300	102.23	90	110	
V	51	45	He	323.123	ppb	0.6	1711419.92	300	107.71	90	110	
Cr	52	45	He	318.212	ppb	0.3	1929627.67	300	106.07	90	110	
Mn	55	45	No Gas	2037.733	ppb	2.0	47600080.00	2000	101.89	90	110	
Fe	56	45	H2	31549.227	ppb	0.6	349100640.00	30000	105.16	90	110	
Co	59	45	No Gas	315.339	ppb	2.9	6282986.33	300	105.11	90	110	
Ni	60	45	He	320.265	ppb	0.6	657675.38	300	106.76	90	110	
Cu	63	45	He	321.047	ppb	1.1	1859211.50	300	107.02	90	110	
Zn	66	72	No Gas	296.541	ppb	1.2	908853.31	300	98.85	90	110	
As	75	72	He	321.355	ppb	0.7	353859.95	300	107.12	90	110	
Se	78	72	H2	321.222	ppb	0.8	111176.53	300	107.07	90	110	
Sr	88	72	No Gas	321.600	ppb	1.6	7679419.98	300	107.2	90	110	
Zr	90	72	No Gas	28.731	ppb	1.0	432203.72	30	95.77	90	110	
Mo	95	115	No Gas	301.777	ppb	2.2	1414616.40	300	100.59	90	110	
Ag	107	115	No Gas	30.817	ppb	2.2	357787.15	30	102.72	90	110	
Cd	111	115	No Gas	311.792	ppb	1.5	728597.96	300	103.93	90	110	
Sn	118	115	No Gas	313.742	ppb	2.0	2105630.12	300	104.58	90	110	
Sb	123	115	No Gas	59.614	ppb	1.5	470417.24	60	99.36	90	110	
Ba	137	115	No Gas	307.873	ppb	1.4	1053651.83	300	102.62	90	110	
W	182	159	No Gas	33.307	ppb	2.4	255067.65	30	111.02	90	110	> +/- 10%
Hg	201	159	He	3.050	ppb	1.4	2815.82	3	101.67	90	110	
Tl	205	159	No Gas	316.760	ppb	1.8	5510914.92	300	105.59	90	110	
Pb	208	159	No Gas	316.146	ppb	1.5	7586442.73	300	105.38	90	110	
U	238	159	No Gas	312.326	ppb	1.0	7317650.27	300	104.11	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2021028.69	1.2	2097164.59	96.37	60	120	
Sc	45	No Gas	3734782.42	0.7	3750166.75	99.59	60	120	
Sc	45	H2	2188474.42	0.7	2177398.33	100.51	60	120	
Sc	45	He	429209.21	0.3	433199.3	99.08	60	120	
Ge	72	No Gas	823668.50	0.7	824654.15	99.88	60	120	
Ge	72	H2	604652.96	0.5	601667.94	100.5	60	120	
Ge	72	He	251551.98	0.9	249247.67	100.92	60	120	
In	115	No Gas	4324546.13	0.3	4556929.48	94.9	60	120	
Tb	159	No Gas	5596965.05	0.5	5659230.75	98.9	60	120	
Tb	159	He	4098587.00	0.5	4116226.58	99.57	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G09009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:50:44
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	115187.55	0.4	
Be	9	6	No Gas	0.005	ppb	14.0	34.44	0.08	
B	11	6	No Gas	0.751	ppb	67.2	5922.40	4	
Na	23	45	H2	4.923	ppb	44.2	388587.04	40	
Mg	24	45	No Gas	5.082	ppb	49.4	75957.29	10	
Al	27	45	No Gas	5.168	ppb	52.5	95332.64	15	
Si	28	45	H2	4.058	ppb	5.2	10349.18	8	
P	31	45	No Gas	<0.000	ppb	N/A	33914.66	10	
K	39	45	He	4.422	ppb	119.8	111538.86	20	
Ca	40	45	H2	3.178	ppb	27.6	160388.14	25	
Ti	47	45	No Gas	0.080	ppb	47.0	459.34	0.5	
V	51	45	He	0.023	ppb	19.0	1162.05	0.5	
Cr	52	45	He	0.016	ppb	63.9	1251.39	0.2	
Mn	55	45	No Gas	0.374	ppb	48.4	16770.16	0.2	~~>LOD~~ LY 07/13/20
Fe	56	45	H2	3.720	ppb	26.6	51397.42	10	
Co	59	45	No Gas	0.052	ppb	58.1	1272.74	0.15	
Ni	60	45	He	0.019	ppb	38.5	118.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	149498.06	0.4	
Zn	66	72	No Gas	0.083	ppb	32.9	3347.08	2	
As	75	72	He	0.042	ppb	47.0	162.33	0.2	
Se	78	72	H2	0.048	ppb	59.3	34.33	0.2	
Sr	88	72	No Gas	0.048	ppb	52.2	2662.50	0.2	
Zr	90	72	No Gas	0.004	ppb	101.9	180.00	2	
Mo	95	115	No Gas	0.091	ppb	36.4	471.12	0.2	
Ag	107	115	No Gas	0.007	ppb	27.7	137.78	0.08	
Cd	111	115	No Gas	0.079	ppb	31.5	210.88	0.2	
Sn	118	115	No Gas	0.178	ppb	20.1	2749.18	0.2	
Sb	123	115	No Gas	0.014	ppb	18.4	208.89	0.4	
Ba	137	115	No Gas	0.050	ppb	55.9	298.67	0.2	
W	182	159	No Gas	0.024	ppb	5.3	256.67	0.3	
Hg	201	159	He	0.019	ppb	5.4	32.33	0.1	
Tl	205	159	No Gas	0.175	ppb	27.3	3932.87	0.1	~~>LOD~~
Pb	208	159	No Gas	0.132	ppb	31.3	4569.24	0.1	>LOD LY 07/13/20
U	238	159	No Gas	0.054	ppb	44.9	1294.52	0.05	~~>LOD~~

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2104233.15	1.5	2097164.59	100.34	60	120	
Sc	45	No Gas	3714222.08	0.8	3750166.75	99.04	60	120	
Sc	45	H2	2213585.42	1.5	2177398.33	101.66	60	120	
Sc	45	He	434016.23	0.8	433199.3	100.19	60	120	
Ge	72	No Gas	811833.15	0.9	824654.15	98.45	60	120	
Ge	72	H2	604771.04	1.2	601667.94	100.52	60	120	
Ge	72	He	249864.49	0.5	249247.67	100.17	60	120	
In	115	No Gas	4483612.36	1.1	4556929.48	98.39	60	120	
Tb	159	No Gas	5578131.30	1.1	5659230.75	98.57	60	120	
Tb	159	He	4144753.67	0.3	4116226.58	100.69	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG1301
File Name	H6G09010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 11:53:20
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fail	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.902	ppb	8.4	123384.46	1	90.2	80	120	
Be	9	6	No Gas	0.995	ppb	7.0	3543.79	1	99.5	80	120	
B	11	6	No Gas	10.985	ppb	3.6	29109.02	10	109.85	80	120	
Na	23	45	H2	103.053	ppb	1.1	763568.00	100	103.05	80	120	
Mg	24	45	No Gas	105.529	ppb	2.0	1169106.79	100	105.53	80	120	
Al	27	45	No Gas	103.819	ppb	2.3	1425999.10	100	103.82	80	120	
Si	28	45	H2	104.393	ppb	1.2	126019.41	100	104.39	80	120	
P	31	45	No Gas	53.309	ppb	0.8	82170.93	50	106.62	80	120	
K	39	45	He	105.483	ppb	6.9	180616.98	100	105.48	80	120	
Ca	40	45	H2	100.946	ppb	0.7	963517.21	100	100.95	80	120	
Ti	47	45	No Gas	1.094	ppb	3.1	1966.14	1	109.4	80	120	
V	51	45	He	1.050	ppb	2.8	6584.92	1	105	80	120	
Cr	52	45	He	1.165	ppb	1.2	8204.45	1	116.5	80	120	
Mn	55	45	No Gas	1.141	ppb	1.3	34246.79	1	114.1	80	120	
Fe	56	45	H2	108.852	ppb	0.3	1212554.83	100	108.85	80	120	
Co	59	45	No Gas	1.074	ppb	1.4	21300.62	1	107.4	80	120	
Ni	60	45	He	1.228	ppb	2.6	2601.58	1	122.8	80	120	> +/- 20%
Cu	63	45	He	<0.000	ppb	N/A	164089.13	1	-313.9	80	120	> +/- 20%
Zn	66	72	No Gas	10.494	ppb	2.0	34794.51	10	104.94	80	120	
As	75	72	He	1.052	ppb	2.7	1286.73	1	105.2	80	120	
Se	78	72	H2	1.054	ppb	10.8	385.01	1	105.4	80	120	
Sr	88	72	No Gas	2.159	ppb	1.6	52489.37	2	107.95	80	120	
Zr	90	72	No Gas	4.005	ppb	3.7	59679.94	5	80.1	80	120	
Mo	95	115	No Gas	0.936	ppb	0.5	4606.35	1	93.6	80	120	
Ag	107	115	No Gas	1.052	ppb	3.2	12796.20	1	105.2	80	120	
Cd	111	115	No Gas	1.017	ppb	1.9	2498.66	1	101.7	80	120	
Sn	118	115	No Gas	0.956	ppb	2.0	8214.79	1	95.6	80	120	
Sb	123	115	No Gas	0.948	ppb	1.8	7894.61	1	94.8	80	120	
Ba	137	115	No Gas	1.016	ppb	7.9	3747.21	1	101.6	80	120	
W	182	159	No Gas	2.122	ppb	0.2	16310.56	2	106.1	80	120	
Hg	201	159	He	0.086	ppb	1.1	93.83	0.1	86	80	120	
Tl	205	159	No Gas	1.068	ppb	0.4	19480.74	1	106.8	80	120	
Pb	208	159	No Gas	1.070	ppb	1.4	27098.36	1	107	80	120	
U	238	159	No Gas	0.994	ppb	1.5	23321.08	1	99.4	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2058820.36	0.9	2097164.59	98.17	60	120	
Sc	45	No Gas	3674711.25	0.9	3750166.75	97.99	60	120	
Sc	45	H2	2185681.17	0.1	2177398.33	100.38	60	120	
Sc	45	He	429369.29	0.3	433199.3	99.12	60	120	
Ge	72	No Gas	814345.38	0.9	824654.15	98.75	60	120	
Ge	72	H2	608772.31	0.5	601667.94	101.18	60	120	
Ge	72	He	253780.26	1.0	249247.67	101.82	60	120	
In	115	No Gas	4510076.52	0.6	4556929.48	98.97	60	120	
Tb	159	No Gas	5593857.14	0.5	5659230.75	98.84	60	120	
Tb	159	He	4145296.75	0.8	4116226.58	100.71	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G09012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 11:58:31
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.511	ppb	24.5	115205.10	2	-50	50	
Be	9	6	No Gas	0.003	ppb	138.2	25.55	0.4	-50	50	
B	11	6	No Gas	1.464	ppb	23.3	7181.85	10	-50	50	
Na	23	45	H2	100418.870	ppb	0.7	396834357.33	100000	80	120	
Mg	24	45	No Gas	98546.002	ppb	0.5	1099336981.33	100000	80	120	
Al	27	45	No Gas	99996.687	ppb	1.2	1382781339.39	100000	80	120	
Si	28	45	H2	6.445	ppb	5.0	13234.37	50	-50	50	
P	31	45	No Gas	98984.914	ppb	0.8	90304029.33	100000	80	120	
K	39	45	He	100266.020	ppb	0.6	70446645.33	100000	80	120	
Ca	40	45	H2	101278.908	ppb	0.4	850894933.33	100000	80	120	
Ti	47	45	No Gas	2081.498	ppb	0.5	3180323.67	2000	80	120	
V	51	45	He	0.061	ppb	19.4	1362.73	1	-50	50	
Cr	52	45	He	0.346	ppb	4.8	3269.06	1	-50	50	
Mn	55	45	No Gas	0.337	ppb	18.8	16124.22	1	-50	50	
Fe	56	45	H2	102370.911	ppb	0.3	1153992021.33	100000	80	120	
Co	59	45	No Gas	0.407	ppb	1.8	8422.60	0.75	-50	50	> +/- 20%
Ni	60	45	He	0.383	ppb	5.0	871.36	1	-50	50	
Cu	63	45	He	<0.000	ppb	N/A	90741.82	2	-50	50	> +/- 20%
Zn	66	72	No Gas	2.789	ppb	2.0	11840.50	20	-50	50	
As	75	72	He	0.094	ppb	7.5	219.67	1	-50	50	
Se	78	72	H2	0.128	ppb	22.3	61.67	1	-50	50	
Sr	88	72	No Gas	0.850	ppb	2.3	22173.89	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.112	ppb	29.9	1840.17	10	-50	50	
Mo	95	115	No Gas	2012.412	ppb	0.7	9260165.19	2000	80	120	
Ag	107	115	No Gas	0.016	ppb	17.9	227.78	0.4	-50	50	
Cd	111	115	No Gas	0.133	ppb	34.5	321.75	1	-50	50	
Sn	118	115	No Gas	0.392	ppb	13.4	4012.84	1	-50	50	
Ba	137	115	No Gas	0.441	ppb	4.6	1593.43	1	-50	50	
W	182	159	No Gas	0.195	ppb	5.5	1580.10	1	-50	50	
Hg	201	159	He	0.005	ppb	107.4	18.67	0.5	-50	50	
Tl	205	159	No Gas	0.005	ppb	394.6	987.62	0.5	-50	50	
Pb	208	159	No Gas	0.119	ppb	4.1	4288.09	0.5	-50	50	
U	238	159	No Gas	0.007	ppb	83.6	210.00	0.25	-50	50	

W 07/13/20

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1992995.62	1.9	2097164.59	95.03	60	120	
Sc	45	No Gas	3765134.25	2.6	3750166.75	100.4	60	120	
Sc	45	H2	2229602.75	0.6	2177398.33	102.4	60	120	
Sc	45	He	433138.73	1.2	433199.3	99.99	60	120	
Ge	72	No Gas	836369.79	1.3	824654.15	101.42	60	120	
Ge	72	H2	604808.27	0.6	601667.94	100.52	60	120	
Ge	72	He	250976.77	0.5	249247.67	100.69	60	120	
In	115	No Gas	4245294.52	2.2	4556929.48	93.16	60	120	
Tb	159	No Gas	5579726.72	1.2	5659230.75	98.6	60	120	
Tb	159	He	4120646.42	0.7	4116226.58	100.11	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G09013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:01:08
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.149	ppb	1.6	325872.80	20	80	120	
Be	9	6	No Gas	20.807	ppb	0.6	71161.69	20	80	120	
B	11	6	No Gas	23.018	ppb	1.1	54537.84	20	80	120	
Na	23	45	H2	98931.698	ppb	0.2	398096106.67	100000	80	120	
Mg	24	45	No Gas	97699.149	ppb	1.1	1120446549.33	100000	80	120	
Al	27	45	No Gas	98962.225	ppb	1.1	1406698805.70	100000	80	120	
Si	28	45	H2	216.981	ppb	0.2	265858.08	200	80	120	
P	31	45	No Gas	98051.033	ppb	1.5	91954176.00	100000	80	120	
K	39	45	He	101513.515	ppb	1.3	71176064.00	100000	80	120	
Ca	40	45	H2	100424.789	ppb	0.6	859088085.33	100000	80	120	
Ti	47	45	No Gas	2080.238	ppb	0.5	3267199.08	2000	80	120	
V	51	45	He	20.782	ppb	0.3	111815.52	20	80	120	
Cr	52	45	He	20.811	ppb	0.2	128162.41	20	80	120	
Mn	55	45	No Gas	19.567	ppb	0.4	481959.32	20	80	120	
Fe	56	45	H2	101976.757	ppb	0.2	1170486869.33	100000	80	120	
Co	59	45	No Gas	19.995	ppb	0.5	413010.86	20	80	120	
Ni	60	45	He	20.730	ppb	0.3	42945.46	20	80	120	
Cu	63	45	He	0.172	ppb	232.2	182618.63	20	80	120	> +/- 20%
Zn	66	72	No Gas	21.366	ppb	0.7	69067.80	20	80	120	
As	75	72	He	20.343	ppb	0.2	22302.05	20	80	120	
Se	78	72	H2	20.625	ppb	1.2	7198.25	20	80	120	
Sr	88	72	No Gas	20.919	ppb	1.1	505856.89	20	80	120	
Zr	90	72	No Gas	9.381	ppb	3.0	142598.39	20	80	120	> +/- 20%
Mo	95	115	No Gas	2033.550	ppb	1.8	9474949.07	2000	80	120	
Ag	107	115	No Gas	19.383	ppb	0.8	223715.94	20	80	120	
Cd	111	115	No Gas	19.775	ppb	0.1	45950.92	20	80	120	
Sn	118	115	No Gas	19.868	ppb	0.7	133900.91	20	80	120	
Sb	123	115	No Gas	20.034	ppb	1.7	157186.94	20	80	120	
Ba	137	115	No Gas	20.092	ppb	1.5	68448.50	20	80	120	
W	182	159	No Gas	18.672	ppb	1.9	144827.62	20	80	120	
Hg	201	159	He	2.016	ppb	0.4	1885.31	2	80	120	
Tl	205	159	No Gas	19.098	ppb	1.8	337302.70	20	80	120	
Pb	208	159	No Gas	19.431	ppb	2.2	473505.54	20	80	120	
U	238	159	No Gas	19.353	ppb	1.6	459192.52	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1986840.84	1.5	2097164.59	94.74	60	120	
Sc	45	No Gas	3870016.42	2.0	3750166.75	103.2	60	120	
Sc	45	H2	2270223.25	0.7	2177398.33	104.26	60	120	
Sc	45	He	432247.64	0.5	433199.3	99.78	60	120	
Ge	72	No Gas	831765.40	0.3	824654.15	100.86	60	120	
Ge	72	H2	608318.38	0.2	601667.94	101.11	60	120	
Ge	72	He	249216.76	0.5	249247.67	99.99	60	120	
In	115	No Gas	4298473.66	1.3	4556929.48	94.33	60	120	
Tb	159	No Gas	5667725.47	0.8	5659230.75	100.15	60	120	
Tb	159	He	4140043.92	0.6	4116226.58	100.58	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G09015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 12:06:21
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.948	ppb	0.9	376303.58	25	99.79	90	110	
Be	9	6	No Gas	25.570	ppb	0.4	87184.86	25	102.28	90	110	
B	11	6	No Gas	51.831	ppb	2.4	117532.37	50	103.66	90	110	
Na	23	45	H2	25254.713	ppb	0.4	99697760.00	25000	101.02	90	110	
Mg	24	45	No Gas	24923.040	ppb	1.4	282338485.33	25000	99.69	90	110	
Al	27	45	No Gas	24814.389	ppb	1.9	348451281.47	25000	99.26	90	110	
Si	28	45	H2	2525.233	ppb	1.0	2967180.42	2500	101.01	90	110	
P	31	45	No Gas	243.158	ppb	0.8	261240.84	250	97.26	90	110	
K	39	45	He	25388.703	ppb	0.2	17972601.33	25000	101.55	90	110	
Ca	40	45	H2	25142.862	ppb	0.7	210529568.00	25000	100.57	90	110	
Ti	47	45	No Gas	251.069	ppb	0.2	369805.69	250	100.43	90	110	
V	51	45	He	256.214	ppb	0.9	1373677.21	250	102.49	90	110	
Cr	52	45	He	257.001	ppb	1.3	1577522.71	250	102.8	90	110	
Mn	55	45	No Gas	1528.111	ppb	0.8	36539536.00	1500	101.87	90	110	
Fe	56	45	H2	25865.456	ppb	0.3	290459360.00	25000	103.46	90	110	
Co	59	45	No Gas	256.624	ppb	1.1	5233850.67	250	102.65	90	110	
Ni	60	45	He	257.366	ppb	0.8	534932.63	250	102.95	90	110	
Cu	63	45	He	246.203	ppb	0.8	1485603.29	250	98.48	90	110	
Zn	66	72	No Gas	252.397	ppb	1.2	802530.23	250	100.96	90	110	
As	75	72	He	251.152	ppb	0.9	281534.31	250	100.46	90	110	
Se	78	72	H2	253.948	ppb	0.9	89923.47	250	101.58	90	110	
Sr	88	72	No Gas	252.748	ppb	1.1	6257541.00	250	101.1	90	110	
Zr	90	72	No Gas	24.774	ppb	0.5	366400.69	25	99.1	90	110	
Mo	95	115	No Gas	247.086	ppb	1.0	1167360.20	250	98.83	90	110	
Ag	107	115	No Gas	24.861	ppb	1.4	295885.71	25	99.44	90	110	
Cd	111	115	No Gas	247.596	ppb	1.8	593042.60	250	99.04	90	110	
Sn	118	115	No Gas	248.021	ppb	0.6	1706819.93	250	99.21	90	110	
Sb	123	115	No Gas	49.191	ppb	1.4	397902.56	50	98.38	90	110	
Ba	137	115	No Gas	499.342	ppb	0.7	1752125.03	500	99.87	90	110	
W	182	159	No Gas	25.369	ppb	0.7	195117.17	25	101.48	90	110	
Hg	201	159	He	2.559	ppb	1.8	2385.90	2.5	102.36	90	110	
Tl	205	159	No Gas	252.108	ppb	1.3	4404819.96	250	100.84	90	110	
Pb	208	159	No Gas	252.345	ppb	0.7	6080571.95	250	100.94	90	110	
U	238	159	No Gas	247.396	ppb	0.4	5820339.35	250	98.96	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1980858.94	2.2	2097164.59	94.45	60	120	
Sc	45	No Gas	3822725.17	1.6	3750166.75	101.93	60	120	
Sc	45	H2	2221034.25	0.1	2177398.33	102	60	120	
Sc	45	He	434425.64	0.8	433199.3	100.28	60	120	
Ge	72	No Gas	853985.44	1.1	824654.15	103.56	60	120	
Ge	72	H2	618617.48	1.1	601667.94	102.82	60	120	
Ge	72	He	256053.63	0.8	249247.67	102.73	60	120	
In	115	No Gas	4433613.62	2.2	4556929.48	97.29	60	120	
Tb	159	No Gas	5620251.03	1.5	5659230.75	99.31	60	120	
Tb	159	He	4135516.50	1.0	4116226.58	100.47	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G09016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 12:08:58
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	112410.43	0.4	
Be	9	6	No Gas	0.003	ppb	142.4	26.67	0.08	
B	11	6	No Gas	0.566	ppb	53.3	5354.37	4	
Na	23	45	H2	5.272	ppb	11.3	391801.14	40	
Mg	24	45	No Gas	6.075	ppb	46.8	89025.70	10	
Al	27	45	No Gas	6.324	ppb	45.7	113843.45	15	
Si	28	45	H2	1.241	ppb	7.4	7091.14	8	
P	31	45	No Gas	<0.000	ppb	N/A	31913.96	10	
K	39	45	He	5.931	ppb	96.3	113640.47	20	
Ca	40	45	H2	2.986	ppb	2.3	159557.38	25	
Tl	47	45	No Gas	0.093	ppb	40.4	492.01	0.5	
V	51	45	He	0.078	ppb	18.8	1470.08	0.5	
Cr	52	45	He	0.001	ppb	1095.8	1168.72	0.2	
Mn	55	45	No Gas	0.246	ppb	63.2	14149.72	0.2	>LOD
Fe	56	45	H2	3.540	ppb	4.6	49657.40	10	
Co	59	45	No Gas	0.040	ppb	60.1	1056.72	0.15	
Ni	60	45	He	0.016	ppb	35.5	114.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	88937.29	0.4	
Zn	66	72	No Gas	0.061	ppb	75.7	3341.08	2	
As	75	72	He	0.033	ppb	45.8	155.67	0.2	
Se	78	72	H2	0.024	ppb	104.7	26.00	0.2	
Sr	88	72	No Gas	0.035	ppb	53.8	2392.44	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	113.33	2	
Mo	95	115	No Gas	0.114	ppb	41.4	600.02	0.2	
Ag	107	115	No Gas	0.005	ppb	37.5	112.22	0.08	
Cd	111	115	No Gas	0.048	ppb	51.2	140.75	0.2	
Sn	118	115	No Gas	0.105	ppb	49.1	2317.99	0.2	
Sb	123	115	No Gas	0.014	ppb	37.5	214.45	0.4	
Ba	137	115	No Gas	0.056	ppb	60.6	325.56	0.2	
W	182	159	No Gas	0.012	ppb	10.9	166.67	0.3	
Hg	201	159	He	0.011	ppb	17.9	24.67	0.1	
Tl	205	159	No Gas	0.102	ppb	41.6	2729.21	0.1	>LOD
Pb	208	159	No Gas	0.082	ppb	34.9	3453.52	0.1	
U	238	159	No Gas	0.038	ppb	48.4	957.82	0.05	

LY 07/13/20

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2050492.90	2.0	2097164.59	97.77	60	120	
Sc	45	No Gas	3819987.75	2.3	3750166.75	101.86	60	120	
Sc	45	H2	2223679.58	0.7	2177398.33	102.13	60	120	
Sc	45	He	438049.57	0.5	433199.3	101.12	60	120	
Ge	72	No Gas	827714.58	2.4	824654.15	100.37	60	120	
Ge	72	H2	612309.40	0.7	601667.94	101.77	60	120	
Ge	72	He	254712.94	0.7	249247.67	102.19	60	120	
In	115	No Gas	4631430.51	1.6	4556929.48	101.63	60	120	
Tb	159	No Gas	5708633.80	1.4	5659230.75	100.87	60	120	
Tb	159	He	4202854.08	1.5	4116226.58	102.1	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV3
File Name	H6G09038.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:06:00
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.208	ppb	1.1	378395.43	25	100.83	90	110	
Be	9	6	No Gas	25.701	ppb	0.4	87473.11	25	102.8	90	110	
B	11	6	No Gas	52.770	ppb	1.3	119370.08	50	105.54	90	110	
Na	23	45	H2	25572.650	ppb	1.9	100142997.33	25000	102.29	90	110	
Mg	24	45	No Gas	25033.800	ppb	1.1	282189056.00	25000	100.14	90	110	
Al	27	45	No Gas	25051.164	ppb	2.0	349990274.78	25000	100.2	90	110	
Si	28	45	H2	2518.184	ppb	2.1	2935301.17	2500	100.73	90	110	
P	31	45	No Gas	242.534	ppb	1.2	259396.89	250	97.01	90	110	
K	39	45	He	25428.082	ppb	0.8	17656700.00	25000	101.71	90	110	
Ca	40	45	H2	25242.176	ppb	1.2	209685776.00	25000	100.97	90	110	
Ti	47	45	No Gas	249.796	ppb	1.0	385920.33	250	99.92	90	110	
V	51	45	He	256.933	ppb	0.4	1351293.92	250	102.77	90	110	
Cr	52	45	He	257.744	ppb	0.6	1551964.04	250	103.1	90	110	
Mn	55	45	No Gas	1529.327	ppb	1.4	36387873.33	1500	101.96	90	110	
Fe	56	45	H2	26035.032	ppb	0.6	290062666.67	25000	104.14	90	110	
Co	59	45	No Gas	256.350	ppb	1.9	5202273.17	250	102.54	90	110	
Ni	60	45	He	256.927	ppb	0.8	523870.19	250	102.77	90	110	
Cu	63	45	He	242.276	ppb	0.7	1436917.04	250	96.91	90	110	
Zn	66	72	No Gas	250.881	ppb	0.7	781325.37	250	100.35	90	110	
As	75	72	He	252.489	ppb	0.5	274677.81	250	101	90	110	
Se	78	72	H2	254.801	ppb	1.1	88902.10	250	101.92	90	110	
Sr	88	72	No Gas	260.030	ppb	1.2	6305786.55	250	104.01	90	110	
Zr	90	72	No Gas	24.951	ppb	0.4	381168.24	25	99.8	90	110	
Mo	95	115	No Gas	246.348	ppb	0.2	1195912.90	250	98.54	90	110	
Ag	107	115	No Gas	24.155	ppb	0.3	290443.56	25	96.62	90	110	
Cd	111	115	No Gas	242.391	ppb	0.4	586602.44	250	96.96	90	110	
Sn	118	115	No Gas	247.507	ppb	0.7	1720586.70	250	99	90	110	
Sb	123	115	No Gas	48.310	ppb	0.7	394797.95	50	96.62	90	110	
Ba	137	115	No Gas	496.871	ppb	0.8	1760883.33	500	99.37	90	110	
W	182	159	No Gas	25.055	ppb	1.1	196212.69	25	100.22	90	110	
Hg	201	159	He	2.482	ppb	0.8	2335.05	2.5	99.28	90	110	
Tl	205	159	No Gas	251.591	ppb	0.9	4476156.21	250	100.64	90	110	
P'	208	159	No Gas	252.512	ppb	0.8	[illegible]655.80	250	101	90	110	
U	238	159	No Gas	248.083	ppb	1.3	5944275.32	250	99.23	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1977522.48	2.3	2097164.59	94.3	60	120	
Sc	45	No Gas	3804115.50	1.4	3750166.75	101.44	60	120	
Sc	45	H2	2203550.17	0.9	2177398.33	101.2	60	120	
Sc	45	He	426142.90	0.7	433199.3	98.37	60	120	
Ge	72	No Gas	836446.79	1.1	824654.15	101.43	60	120	
Ge	72	H2	609563.40	1.1	601667.94	101.31	60	120	
Ge	72	He	248492.97	0.5	249247.67	99.7	60	120	
In	115	No Gas	4478350.71	1.2	4556929.48	98.28	60	120	
Tb	159	No Gas	5723455.61	1.1	5659230.75	101.13	60	120	
Tb	159	He	4171716.83	0.2	4116226.58	101.35	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB3
File Name	H6G09039.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:08:37
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.096	ppb	101.3	113236.63	0.4	
Be	9	6	No Gas	0.002	ppb	144.6	23.33	0.08	
B	11	6	No Gas	1.144	ppb	29.8	6624.91	4	
Na	23	45	H2	7.598	ppb	11.5	405301.53	40	
Mg	24	45	No Gas	1.655	ppb	50.4	39666.07	10	
Al	27	45	No Gas	1.400	ppb	55.0	45823.22	15	
Si	28	45	H2	0.125	ppb	44.3	5842.56	8	
P	31	45	No Gas	<0.000	ppb	N/A	32436.45	10	
K	39	45	He	4.792	ppb	87.2	113469.01	20	
Ca	40	45	H2	1.384	ppb	17.7	147710.72	25	
Ti	47	45	No Gas	0.024	ppb	52.1	390.01	0.5	
V	51	45	He	0.080	ppb	21.1	1487.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	988.04	0.2	
Mn	55	45	No Gas	0.123	ppb	40.8	11410.82	0.2	
Fe	56	45	H2	1.120	ppb	5.3	22678.79	10	
Co	59	45	No Gas	0.012	ppb	52.9	510.68	0.15	
Ni	60	45	He	0.021	ppb	61.5	123.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	61835.97	0.4	
Zn	66	72	No Gas	0.030	ppb	159.0	3259.72	2	
As	75	72	He	0.042	ppb	41.9	164.67	0.2	
Se	78	72	H2	0.032	ppb	35.4	29.00	0.2	
Sr	86	72	No Gas	0.021	ppb	55.6	2070.17	0.2	
Zr	90	72	No Gas	0.003	ppb	336.6	170.00	2	
Mo	95	115	No Gas	0.039	ppb	30.8	225.56	0.2	
Ag	107	115	No Gas	0.001	ppb	42.1	71.11	0.08	
Cd	111	115	No Gas	0.044	ppb	42.6	129.76	0.2	
Sn	118	115	No Gas	0.030	ppb	29.3	1783.46	0.2	
Sb	123	115	No Gas	0.004	ppb	43.4	131.11	0.4	
Ba	137	115	No Gas	0.021	ppb	26.1	200.00	0.2	
W	182	159	No Gas	0.001	ppb	51.8	83.33	0.3	
Hg	201	159	He	0.006	ppb	96.3	19.50	0.1	
Tl	205	159	No Gas	0.058	ppb	46.7	1965.72	0.1	
Pb	208	159	No Gas	0.016	ppb	72.8	1875.62	0.1	
U	238	159	No Gas	0.016	ppb	20.5	427.79	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2037785.08	1.3	2097164.59	97.17	60	120	
Sc	45	No Gas	3868524.25	2.2	3750166.75	103.16	60	120	
Sc	45	H2	2247822.00	1.1	2177398.33	103.23	60	120	
Sc	45	He	440531.21	1.2	433199.3	101.69	60	120	
Ge	72	No Gas	830477.17	2.0	824654.15	100.71	60	120	
Ge	72	H2	614550.19	0.5	601667.94	102.14	60	120	
Ge	72	He	254615.71	1.3	249247.67	102.15	60	120	
In	115	No Gas	4643758.50	1.7	4556929.48	101.91	60	120	
Tb	159	No Gas	5779236.99	1.5	5659230.75	102.12	60	120	
Tb	159	He	4165388.83	0.8	4116226.58	101.19	60	120	

Sample Report

Sample Name	F183-01I
File Name	H6G09043.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:18:59
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	41.556	4.156	ppb	1.5	155158.29	50	
Be	9	6	No Gas	0.083	0.008	ppb	59.5	44.44	50	
B	11	6	No Gas	158.973	15.897	ppb	1.5	39173.36	100	
Na	23	45	H2	169663.680	16966.368	ppb	1.9	68232997.33	50000	
Mg	24	45	No Gas	60674.918	6067.492	ppb	1.9	68867234.67	50000	
Al	27	45	No Gas	109.779	10.978	ppb	2.8	180174.43	50000	
Si	28	45	H2	9554.823	955.482	ppb	1.1	1145248.58	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	34881.71	500	
K	39	45	He	4407.487	440.749	ppb	2.4	430251.50	50000	
Ca	40	45	H2	161331.875	16133.188	ppb	0.5	137427962.67	50000	
Ti	47	45	No Gas	1.746	0.175	ppb	5.8	620.68	500	
V	51	45	He	1.736	0.174	ppb	7.3	2022.15	500	
Cr	52	45	He	5.704	0.570	ppb	4.8	4783.50	500	
Mn	55	45	No Gas	29.109	2.911	ppb	1.2	78057.99	3000	
Fe	56	45	H2	250.889	25.089	ppb	4.8	296483.67	50000	
Co	59	45	No Gas	1.283	0.128	ppb	1.5	2875.64	500	
Ni	60	45	He	37.268	3.727	ppb	1.3	8041.71	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	54814.02	500	
Zn	66	72	No Gas	4.522	0.452	ppb	3.9	4716.16	500	
As	75	72	He	0.452	0.045	ppb	32.9	175.00	500	
Se	78	72	H2	0.834	0.083	ppb	44.4	48.67	500	
Sr	88	72	No Gas	1214.097	121.410	ppb	2.2	3023997.38	500	
Zr	90	72	No Gas	0.331	0.033	ppb	16.8	653.35	50	
Mo	95	115	No Gas	3.338	0.334	ppb	2.4	1695.67	500	
Ag	107	115	No Gas	0.224	0.022	ppb	12.1	330.00	50	
Cd	111	115	No Gas	0.182	0.018	ppb	23.4	65.62	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	718.91	500	
Sb	123	115	No Gas	0.217	0.022	ppb	8.6	277.78	100	
Ba	137	115	No Gas	121.816	12.182	ppb	0.9	44487.08	1000	
W	182	159	No Gas	0.016	0.002	ppb	126.2	83.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	794.47	500	
Pb	208	159	No Gas	0.138	0.014	ppb	42.1	1793.39	500	
U	238	159	No Gas	4.232	0.423	ppb	1.3	10100.83	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2001560.41	1.2	2097164.59	95.44	60	120	
Sc	45	No Gas	3829181.50	0.9	3750166.75	102.11	60	120	
Sc	45	H2	2258746.25	1.0	2177398.33	103.74	60	120	
Sc	45	He	446509.51	1.1	433199.3	103.07	60	120	
Ge	72	No Gas	858892.52	0.3	824654.15	104.15	60	120	
Ge	72	H2	635856.63	1.1	601667.94	105.68	60	120	
Ge	72	He	264030.93	0.8	249247.67	105.93	60	120	
In	115	No Gas	4602288.04	0.4	4556929.48	101	60	120	
Tb	159	No Gas	5678095.33	0.5	5659230.75	100.33	60	120	
Tb	159	He	4178001.50	1.8	4116226.58	101.5	60	120	

Sample Report

Sample Name	F183-02I
File Name	H6G09044.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:21:35
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	24.773	2.477	ppb	3.6	137260.14	50	
Be	9	6	No Gas	0.339	0.034	ppb	68.2	134.45	50	
B	11	6	No Gas	156.614	15.661	ppb	1.5	38738.94	100	
Na	23	45	H2	108875.311	10887.531	ppb	0.2	44453506.67	50000	
Mg	24	45	No Gas	56401.128	5640.113	ppb	0.6	64536434.67	50000	
Al	27	45	No Gas	505.134	50.513	ppb	49.2	750083.05	50000	
Si	28	45	H2	9311.049	931.105	ppb	0.4	1129690.54	5000	
P	31	45	No Gas	159.320	15.932	ppb	37.4	51501.61	500	
K	39	45	He	2978.732	297.873	ppb	2.8	322613.49	50000	
Ca	40	45	H2	165042.717	16504.272	ppb	0.8	142281866.67	50000	
Ti	47	45	No Gas	7.044	0.704	ppb	44.3	1466.11	500	
V	51	45	He	4.052	0.405	ppb	3.7	3253.72	500	
Cr	52	45	He	1.368	0.137	ppb	8.2	2022.15	500	
Mn	55	45	No Gas	47.308	4.731	ppb	23.0	123201.60	3000	
Fe	56	45	H2	372.810	37.281	ppb	5.5	440961.05	50000	
Co	59	45	No Gas	2.629	0.263	ppb	79.8	5763.82	500	
Ni	60	45	He	0.575	0.057	ppb	20.1	201.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	55276.56	500	
Zn	66	72	No Gas	7.252	0.725	ppb	23.0	5619.21	500	
As	75	72	He	1.160	0.116	ppb	11.5	253.33	500	
Se	78	72	H2	1.000	0.100	ppb	31.1	55.00	500	
Sr	88	72	No Gas	1263.976	126.398	ppb	1.3	3163161.33	500	
Zr	90	72	No Gas	0.448	0.045	ppb	42.5	843.37	50	
Mo	95	115	No Gas	3.874	0.387	ppb	85.2	1968.18	500	
Ag	107	115	No Gas	0.347	0.035	ppb	65.0	482.24	50	
Cd	111	115	No Gas	2.011	0.201	ppb	97.9	521.71	500	
Sn	118	115	No Gas	0.676	0.068	ppb	287.4	2042.56	500	
Sb	123	115	No Gas	0.523	0.052	ppb	90.4	535.58	100	
Ba	137	115	No Gas	78.769	7.877	ppb	5.1	28738.51	1000	
W	182	159	No Gas	0.142	0.014	ppb	118.5	183.34	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.17	5	
Tl	205	159	No Gas	1.382	0.138	ppb	126.8	3396.93	500	
Pb	208	159	No Gas	2.810	0.281	ppb	75.6	8371.12	500	
U	238	159	No Gas	3.715	0.372	ppb	55.3	8946.76	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2005613.86	3.0	2097164.59	95.63	60	120	
Sc	45	No Gas	3860685.08	3.5	3750166.75	102.95	60	120	
Sc	45	H2	2285923.50	0.4	2177398.33	104.98	60	120	
Sc	45	He	440557.05	0.2	433199.3	101.7	60	120	
Ge	72	No Gas	863116.31	1.9	824654.15	104.66	60	120	
Ge	72	H2	638203.17	0.5	601667.94	106.07	60	120	
Ge	72	He	260442.90	0.2	249247.67	104.49	60	120	
In	115	No Gas	4590415.19	1.3	4556929.48	100.73	60	120	
Tb	159	No Gas	5701841.03	1.2	5659230.75	100.75	60	120	
Tb	159	He	4178763.08	0.4	4116226.58	101.52	60	120	

Sample Report

Sample Name	F183-03I
File Name	H6G09045.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:24:10
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	13.452	1.345	ppb	7.7	126021.69	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	15.56	50	
B	11	6	No Gas	76.072	7.607	ppb	2.3	21034.61	100	
Na	23	45	H2	69771.364	6977.136	ppb	1.4	28598437.33	50000	
Mg	24	45	No Gas	38141.738	3814.174	ppb	2.1	43658174.67	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	18198.60	50000	
Si	28	45	H2	7127.609	712.761	ppb	0.7	865355.10	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35532.67	500	
K	39	45	He	2018.107	201.811	ppb	4.4	253063.84	50000	
Ca	40	45	H2	118851.802	11885.180	ppb	0.9	102408322.67	50000	
Ti	47	45	No Gas	0.420	0.042	ppb	30.0	418.01	500	
V	51	45	He	3.769	0.377	ppb	2.2	3088.35	500	
Cr	52	45	He	0.456	0.046	ppb	32.5	1448.75	500	
Mn	55	45	No Gas	0.394	0.039	ppb	30.0	9373.88	3000	
Fe	56	45	H2	3.379	0.338	ppb	1.3	14014.52	50000	
Co	59	45	No Gas	0.121	0.012	ppb	8.3	505.34	500	
Ni	60	45	He	0.388	0.039	ppb	26.7	161.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	56152.79	500	
Zn	66	72	No Gas	4.590	0.459	ppb	10.7	4724.16	500	
As	75	72	He	1.714	0.171	ppb	9.1	314.33	500	
Se	78	72	H2	0.799	0.080	ppb	16.5	47.33	500	
Sr	88	72	No Gas	802.166	80.217	ppb	2.3	1992678.11	500	
Zr	90	72	No Gas	0.079	0.008	ppb	24.5	256.67	50	
Mo	95	115	No Gas	0.441	0.044	ppb	9.7	251.11	500	
Ag	107	115	No Gas	0.081	0.008	ppb	10.8	153.33	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	7.41	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	554.46	500	
Sb	123	115	No Gas	0.044	0.004	ppb	51.5	132.22	100	
Ba	137	115	No Gas	52.396	5.240	ppb	1.0	19258.72	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	46.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	376.67	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1390.03	500	
U	238	159	No Gas	1.364	0.136	ppb	4.5	3317.12	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2022055.05	0.3	2097164.59	96.42	60	120	
Sc	45	No Gas	3860905.33	1.4	3750166.75	102.95	60	120	
Sc	45	H2	2283867.42	0.2	2177398.33	104.89	60	120	
Sc	45	He	438896.43	1.1	433199.3	101.32	60	120	
Ge	72	No Gas	856317.21	0.9	824654.15	103.84	60	120	
Ge	72	H2	633827.29	0.8	601667.94	105.35	60	120	
Ge	72	He	258817.09	2.1	249247.67	103.84	60	120	
In	115	No Gas	4614863.58	1.6	4556929.48	101.27	60	120	
Tb	159	No Gas	5737986.02	1.9	5659230.75	101.39	60	120	
Tb	159	He	4171727.83	1.2	4116226.58	101.35	60	120	

Sample Report

Sample Name	F183-05I
File Name	H6G09046.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 13:26:45
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	25.224	2.522	ppb	2.6	136754.09	50	
Be	9	6	No Gas	0.021	0.002	ppb	73.9	23.33	50	
B	11	6	No Gas	86.061	8.606	ppb	1.5	22914.26	100	
Na	23	45	H2	73464.823	7346.482	ppb	0.1	29762656.67	50000	
Mg	24	45	No Gas	54914.354	5491.435	ppb	1.6	62447088.00	50000	
Al	27	45	No Gas	578.112	57.811	ppb	10.0	841224.10	50000	
Si	28	45	H2	8049.569	804.957	ppb	0.5	965821.58	5000	
P	31	45	No Gas	9.951	0.995	ppb	172.4	37166.23	500	
K	39	45	He	2612.799	261.280	ppb	4.4	299490.96	50000	
Ca	40	45	H2	144721.936	14472.194	ppb	0.7	123299077.33	50000	
Ti	47	45	No Gas	2.850	0.285	ppb	77.2	788.74	500	
V	51	45	He	2.826	0.283	ppb	3.0	2614.25	500	
Cr	52	45	He	2.856	0.286	ppb	5.9	2977.66	500	
Mn	55	45	No Gas	3.402	0.340	ppb	76.3	16572.62	3000	
Fe	56	45	H2	168.046	16.805	ppb	33.8	201814.06	50000	
Co	59	45	No Gas	0.447	0.045	ppb	102.3	1174.21	500	
Ni	60	45	He	0.982	0.098	ppb	8.1	290.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	55072.37	500	
Zn	66	72	No Gas	7.523	0.752	ppb	5.7	5600.49	500	
As	75	72	He	0.965	0.097	ppb	7.6	229.67	500	
Se	78	72	H2	1.198	0.120	ppb	40.3	61.00	500	
Sr	88	72	No Gas	1089.708	108.971	ppb	1.0	2680417.81	500	
Zr	90	72	No Gas	0.029	0.003	ppb	143.1	176.67	50	
Mo	95	115	No Gas	0.994	0.099	ppb	59.6	518.92	500	
Ag	107	115	No Gas	0.122	0.012	ppb	54.9	201.11	50	
Cd	111	115	No Gas	0.240	0.024	ppb	187.3	79.65	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	692.25	500	
Sb	123	115	No Gas	0.129	0.013	ppb	47.8	200.00	100	
Ba	137	115	No Gas	58.618	5.862	ppb	2.8	21010.33	1000	
W	182	159	No Gas	0.485	0.048	ppb	9.1	440.01	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.33	5	
Tl	205	159	No Gas	0.068	0.007	ppb	982.6	1037.98	500	
Pb	208	159	No Gas	0.176	0.018	ppb	356.0	1873.50	500	
U	238	159	No Gas	2.648	0.265	ppb	22.6	6254.11	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1991027.58	1.8	2097164.59	94.94	60	120	
Sc	45	No Gas	3836134.58	2.2	3750166.75	102.29	60	120	
Sc	45	H2	2258832.50	0.5	2177398.33	103.74	60	120	
Sc	45	He	445090.99	1.1	433199.3	102.75	60	120	
Ge	72	No Gas	848130.13	1.6	824654.15	102.85	60	120	
Ge	72	H2	624641.35	0.8	601667.94	103.82	60	120	
Ge	72	He	258843.60	0.3	249247.67	103.85	60	120	
In	115	No Gas	4502634.99	2.0	4556929.48	98.81	60	120	
Tb	159	No Gas	5588942.84	1.9	5659230.75	98.76	60	120	
Tb	159	He	4169995.08	0.3	4116226.58	101.31	60	120	

Sample Report

Sample Name	F183-06I
File Name	H6G09047.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:29:19
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.398	1.940	ppb	6.2	133092.92	50	
Be	9	6	No Gas	0.004	0.000	ppb	650.6	17.78	50	
B	11	6	No Gas	66.452	6.645	ppb	1.4	18962.79	100	
Na	23	45	H2	34600.306	3460.031	ppb	1.3	14244181.00	50000	
Mg	24	45	No Gas	44920.816	4492.082	ppb	1.0	51223617.33	50000	
Al	27	45	No Gas	47.303	4.730	ppb	0.9	92769.55	50000	
Si	28	45	H2	8731.563	873.156	ppb	1.0	1049205.56	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35821.41	500	
K	39	45	He	2193.056	219.306	ppb	2.4	263812.43	50000	
Ca	40	45	H2	123342.318	12334.232	ppb	0.8	105313490.67	50000	
Ti	47	45	No Gas	0.806	0.081	ppb	43.4	477.34	500	
V	51	45	He	3.073	0.307	ppb	1.1	2694.27	500	
Cr	52	45	He	5.786	0.579	ppb	3.5	4720.82	500	
Mn	55	45	No Gas	6.261	0.626	ppb	1.1	23454.09	3000	
Fe	56	45	H2	55.103	5.510	ppb	0.9	73074.56	50000	
Co	59	45	No Gas	0.537	0.054	ppb	2.7	1357.40	500	
Ni	60	45	He	21.121	2.112	ppb	0.9	4484.74	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	54189.53	500	
Zn	66	72	No Gas	1.967	0.197	ppb	13.1	3872.55	500	
As	75	72	He	0.683	0.068	ppb	10.4	198.00	500	
Se	78	72	H2	0.852	0.085	ppb	27.0	48.67	500	
Sr	88	72	No Gas	1160.491	116.049	ppb	0.5	2868300.65	500	
Zr	90	72	No Gas	0.019	0.002	ppb	120.3	163.33	50	
Mo	95	115	No Gas	1.769	0.177	ppb	8.1	908.92	500	
Ag	107	115	No Gas	0.067	0.007	ppb	39.7	135.56	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	8.16	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	517.79	500	
Sb	123	115	No Gas	0.035	0.004	ppb	9.0	124.44	100	
Ba	137	115	No Gas	30.515	3.052	ppb	0.2	11188.15	1000	
W	182	159	No Gas	0.068	0.007	ppb	172.9	123.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	361.11	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	963.35	500	
U	238	159	No Gas	1.355	0.135	ppb	0.4	3267.11	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2030753.43	1.9	2097164.59	96.83	60	120	
Sc	45	No Gas	3846531.33	2.0	3750166.75	102.57	60	120	
Sc	45	H2	2263357.00	1.0	2177398.33	103.95	60	120	
Sc	45	He	436012.97	0.7	433199.3	100.65	60	120	
Ge	72	No Gas	852283.37	1.2	824654.15	103.35	60	120	
Ge	72	H2	626839.77	1.7	601667.94	104.18	60	120	
Ge	72	He	259242.15	1.1	249247.67	104.01	60	120	
In	115	No Gas	4582792.37	1.5	4556929.48	100.57	60	120	
Tb	159	No Gas	5688415.05	1.0	5659230.75	100.52	60	120	
Tb	159	He	4142543.25	1.2	4116226.58	100.64	60	120	

Sample Report

Sample Name	F183-07I
File Name	H6G09048.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:31:55
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.830	1.483	ppb	8.9	127773.93	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	8.89	50	
B	11	6	No Gas	147.748	14.775	ppb	3.9	37139.08	100	
Na	23	45	H2	113983.029	11398.303	ppb	0.9	46490770.67	50000	
Mg	24	45	No Gas	47557.260	4755.726	ppb	2.7	54182782.67	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	14484.24	50000	
Si	28	45	H2	7530.598	753.060	ppb	0.5	914234.31	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35487.92	500	
K	39	45	He	2473.950	247.395	ppb	2.0	281399.01	50000	
Ca	40	45	H2	135043.252	13504.325	ppb	0.5	116374984.00	50000	
Ti	47	45	No Gas	0.445	0.045	ppb	32.7	420.01	500	
V	51	45	He	4.241	0.424	ppb	7.2	3295.73	500	
Cr	52	45	He	3.497	0.350	ppb	3.4	3285.73	500	
Mn	55	45	No Gas	0.788	0.079	ppb	15.4	10281.20	3000	
Fe	56	45	H2	24.211	2.421	ppb	1.1	38078.94	50000	
Co	59	45	No Gas	0.178	0.018	ppb	2.8	620.01	500	
Ni	60	45	He	2.777	0.278	ppb	7.3	653.35	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	54409.74	500	
Zn	66	72	No Gas	4.683	0.468	ppb	3.0	4757.50	500	
As	75	72	He	1.552	0.155	ppb	4.2	297.00	500	
Se	78	72	H2	0.497	0.050	ppb	47.0	36.33	500	
Sr	88	72	No Gas	951.575	95.157	ppb	1.6	2365980.25	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	103.33	50	
Mo	95	115	No Gas	3.349	0.335	ppb	6.1	1683.44	500	
Ag	107	115	No Gas	0.050	0.005	ppb	14.5	114.44	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	8.85	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	457.79	500	
Sb	123	115	No Gas	0.046	0.005	ppb	18.9	132.22	100	
Ba	137	115	No Gas	47.034	4.703	ppb	1.5	17071.22	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	33.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	330.01	500	
Pb	208	159	No Gas	0.122	0.012	ppb	13.6	1741.17	500	
U	238	159	No Gas	1.621	0.162	ppb	1.9	3868.39	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2025839.12	1.3	2097164.59	96.6	60	120	
Sc	45	No Gas	3843487.08	0.6	3750166.75	102.49	60	120	
Sc	45	H2	2284527.08	0.6	2177398.33	104.92	60	120	
Sc	45	He	432583.01	0.2	433199.3	99.86	60	120	
Ge	72	No Gas	857204.11	1.3	824654.15	103.95	60	120	
Ge	72	H2	632904.60	0.6	601667.94	105.19	60	120	
Ge	72	He	259594.04	0.6	249247.67	104.15	60	120	
In	115	No Gas	4554360.69	1.0	4556929.48	99.94	60	120	
Tb	159	No Gas	5637930.75	0.6	5659230.75	99.62	60	120	
Tb	159	He	4166082.00	0.8	4116226.58	101.21	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV4
File Name	H6G09049.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:34:30
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.376	ppb	2.7	378057.16	25	101.5	90	110	
Be	9	6	No Gas	25.955	ppb	2.3	87839.77	25	103.82	90	110	
B	11	6	No Gas	52.983	ppb	3.7	119147.15	50	105.97	90	110	
Na	23	45	H2	25573.440	ppb	1.4	99815194.67	25000	102.29	90	110	
Mg	24	45	No Gas	25267.001	ppb	1.2	282511605.33	25000	101.07	90	110	
Al	27	45	No Gas	25208.225	ppb	1.7	349321208.13	25000	100.83	90	110	
Si	28	45	H2	2524.620	ppb	0.9	2933325.00	2500	100.98	90	110	
P	31	45	No Gas	252.501	ppb	1.6	266414.99	250	101	90	110	
K	39	45	He	25383.288	ppb	0.4	17736652.67	25000	101.53	90	110	
Ca	40	45	H2	25300.785	ppb	0.5	209486565.33	25000	101.2	90	110	
Ti	47	45	No Gas	253.460	ppb	0.5	388411.10	250	101.38	90	110	
V	51	45	He	255.454	ppb	0.6	1351939.58	250	102.18	90	110	
Cr	52	45	He	256.378	ppb	0.3	1553484.17	250	102.55	90	110	
Mn	55	45	No Gas	1540.190	ppb	1.5	36350389.33	1500	102.68	90	110	
Fe	56	45	H2	25878.686	ppb	1.7	287336426.67	25000	103.51	90	110	
Co	59	45	No Gas	255.514	ppb	1.7	5143132.83	250	102.21	90	110	
Ni	60	45	He	258.126	ppb	1.0	529565.81	250	103.25	90	110	
Cu	63	45	He	239.968	ppb	1.1	1433830.83	250	95.99	90	110	
Zn	66	72	No Gas	249.171	ppb	1.1	795061.73	250	99.67	90	110	
As	75	72	He	253.625	ppb	0.4	279592.89	250	101.45	90	110	
Se	78	72	H2	257.136	ppb	1.4	89662.08	250	102.85	90	110	
Sr	88	72	No Gas	252.653	ppb	2.8	6276930.86	250	101.06	90	110	
Zr	90	72	No Gas	24.693	ppb	2.4	386475.18	25	98.77	90	110	
Mo	95	115	No Gas	245.176	ppb	0.8	1177303.63	250	98.07	90	110	
Ag	107	115	No Gas	24.550	ppb	1.9	291943.59	25	98.2	90	110	
Cd	111	115	No Gas	246.127	ppb	1.1	589118.08	250	98.45	90	110	
Sn	118	115	No Gas	247.816	ppb	0.5	1703953.65	250	99.13	90	110	
Sb	123	115	No Gas	49.426	ppb	1.3	399488.53	50	98.85	90	110	
Ba	137	115	No Gas	500.100	ppb	0.4	1753154.30	500	100.02	90	110	
W	182	159	No Gas	25.282	ppb	2.0	198023.71	25	101.13	90	110	
Hg	201	159	He	2.562	ppb	1.3	2371.72	2.5	102.48	90	110	
Tl	205	159	No Gas	249.039	ppb	0.6	4431467.05	250	99.62	90	110	
Pb	208	159	No Gas	249.836	ppb	1.5	6131040.00	250	99.93	90	110	
U	238	159	No Gas	243.771	ppb	1.0	5841071.30	250	97.51	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1966607.83	1.3	2097164.59	93.77	60	120	
Sc	45	No Gas	3773089.83	1.2	3750166.75	100.61	60	120	
Sc	45	H2	2196345.42	1.5	2177398.33	100.87	60	120	
Sc	45	He	428823.07	1.3	433199.3	98.99	60	120	
Ge	72	No Gas	857040.96	0.7	824654.15	103.93	60	120	
Ge	72	H2	609209.69	1.2	601667.94	101.25	60	120	
Ge	72	He	251806.68	0.5	249247.67	101.03	60	120	
In	115	No Gas	4429817.12	1.4	4556929.48	97.21	60	120	
Tb	159	No Gas	5724481.02	1.5	5659230.75	101.15	60	120	
Tb	159	He	4106139.25	0.7	4116226.58	99.75	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB4
File Name	H6G09050.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:37:07
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.073	ppb	68.6	113440.09	0.4	
Be	9	6	No Gas	0.007	ppb	17.6	41.11	0.08	
B	11	6	No Gas	0.800	ppb	41.4	5871.24	4	
Na	23	45	H2	5.069	ppb	11.0	390232.74	40	
Mg	24	45	No Gas	4.303	ppb	50.7	68734.94	10	
Al	27	45	No Gas	3.933	ppb	53.0	80081.29	15	
Si	28	45	H2	0.020	ppb	495.7	5645.81	8	
P	31	45	No Gas	<0.000	ppb	N/A	32085.01	10	
K	39	45	He	5.247	ppb	85.7	113769.83	20	
Ca	40	45	H2	2.443	ppb	10.9	154694.44	25	
Ti	47	45	No Gas	0.048	ppb	102.5	419.34	0.5	
V	51	45	He	0.068	ppb	0.4	1419.41	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1038.04	0.2	
Mn	55	45	No Gas	0.268	ppb	51.4	14616.74	0.2	>LOD LY 07/13/20
Fe	56	45	H2	1.992	ppb	3.3	32181.85	10	
Co	59	45	No Gas	0.038	ppb	50.5	1020.04	0.15	
Ni	60	45	He	0.010	ppb	18.5	102.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	53393.05	0.4	
Zn	66	72	No Gas	0.019	ppb	299.7	3223.72	2	
As	75	72	He	0.045	ppb	11.0	168.67	0.2	
Se	78	72	H2	0.045	ppb	52.6	33.33	0.2	
Sr	88	72	No Gas	0.045	ppb	42.3	2650.27	0.2	
Zr	90	72	No Gas	0.003	ppb	25.2	173.33	2	
Mo	95	115	No Gas	0.060	ppb	41.1	328.89	0.2	
Ag	107	115	No Gas	0.004	ppb	91.8	97.78	0.08	
Cd	111	115	No Gas	0.062	ppb	37.0	173.43	0.2	
Sn	118	115	No Gas	0.042	ppb	93.6	1855.69	0.2	
Sb	123	115	No Gas	0.010	ppb	33.6	176.67	0.4	
Ba	137	115	No Gas	0.065	ppb	61.1	356.67	0.2	
W	182	159	No Gas	0.007	ppb	56.6	123.33	0.3	
Hg	201	159	He	0.007	ppb	27.4	20.50	0.1	
Tl	205	159	No Gas	0.090	ppb	43.4	2515.83	0.1	
Pb	208	159	No Gas	0.041	ppb	31.6	2466.77	0.1	
U	238	159	No Gas	0.040	ppb	37.7	985.60	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2046244.18	1.6	2097164.59	97.57	60	120	
Sc	45	No Gas	3802149.58	2.6	3750166.75	101.39	60	120	
Sc	45	H2	2219359.08	1.3	2177398.33	101.93	60	120	
Sc	45	He	440325.94	1.4	433199.3	101.65	60	120	
Ge	72	No Gas	829695.54	0.7	824654.15	100.61	60	120	
Ge	72	H2	611253.71	1.4	601667.94	101.59	60	120	
Ge	72	He	254748.00	0.6	249247.67	102.21	60	120	
In	115	No Gas	4601757.07	1.0	4556929.48	100.98	60	120	
Tb	159	No Gas	5726684.08	1.6	5659230.75	101.19	60	120	
Tb	159	He	4189313.58	0.7	4116226.58	101.78	60	120	

Sample Report

Sample Name	F183-08M
File Name	H6G09051.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:39:42
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	51.334	5.133	ppb	1.2	167000.90	50	
Be	9	6	No Gas	31.152	3.115	ppb	1.0	10828.62	50	
B	11	6	No Gas	125.581	12.558	ppb	2.9	32032.12	100	
Na	23	45	H2	94591.322	9459.132	ppb	1.0	37962813.33	50000	
Mg	24	45	No Gas	68328.898	6832.890	ppb	0.9	77940213.33	50000	
Al	27	45	No Gas	3317.032	331.703	ppb	1.3	4714602.22	50000	
Si	28	45	H2	8616.463	861.646	ppb	0.6	1026718.34	5000	
P	31	45	No Gas	8.083	0.808	ppb	121.7	37110.13	500	
K	39	45	He	6096.420	609.642	ppb	1.2	543067.15	50000	
Ca	40	45	H2	188015.036	18801.504	ppb	0.3	159103546.67	50000	
Ti	47	45	No Gas	33.407	3.341	ppb	2.0	5569.13	500	
V	51	45	He	34.452	3.445	ppb	1.5	19699.47	500	
Cr	52	45	He	33.167	3.317	ppb	0.9	21722.53	500	
Mn	55	45	No Gas	53.077	5.308	ppb	1.7	136152.49	3000	
Fe	56	45	H2	3574.606	357.461	ppb	0.8	4065564.00	50000	
Co	59	45	No Gas	31.657	3.166	ppb	1.1	65251.21	500	
Ni	60	45	He	32.425	3.242	ppb	1.8	6887.74	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	68498.37	500	
Zn	66	72	No Gas	66.158	6.616	ppb	0.8	24039.27	500	
As	75	72	He	31.990	3.199	ppb	1.7	3739.85	500	
Se	78	72	H2	33.120	3.312	ppb	2.8	1202.72	500	
Sr	88	72	No Gas	1347.967	134.797	ppb	0.3	3314784.94	500	
Zr	90	72	No Gas	0.179	0.018	ppb	19.4	410.01	50	
Mo	95	115	No Gas	29.075	2.908	ppb	2.5	14398.89	500	
Ag	107	115	No Gas	30.387	3.039	ppb	0.8	37256.83	50	
Cd	111	115	No Gas	29.259	2.926	ppb	1.2	7229.65	500	
Sn	118	115	No Gas	27.108	2.711	ppb	1.5	20712.97	500	
Sb	123	115	No Gas	29.033	2.903	ppb	1.0	24249.09	100	
Ba	137	115	No Gas	105.925	10.593	ppb	1.8	38339.86	1000	
W	182	159	No Gas	0.002	0.000	ppb	1341.8	73.33	50	
Hg	201	159	He	0.021	0.002	ppb	102.6	16.33	5	
Tl	205	159	No Gas	30.142	3.014	ppb	1.6	54440.60	500	
Pb	208	159	No Gas	30.649	3.065	ppb	1.8	76518.44	500	
U	238	159	No Gas	30.984	3.098	ppb	1.9	74145.66	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2016749.76	2.0	2097164.59	96.17	60	120	
Sc	45	No Gas	3848417.17	1.8	3750166.75	102.62	60	120	
Sc	45	H2	2244155.17	0.9	2177398.33	103.07	60	120	
Sc	45	He	438924.55	0.9	433199.3	101.32	60	120	
Ge	72	No Gas	848032.94	2.1	824654.15	102.83	60	120	
Ge	72	H2	625042.23	1.3	601667.94	103.88	60	120	
Ge	72	He	258584.09	0.8	249247.67	103.75	60	120	
In	115	No Gas	4560991.33	2.8	4556929.48	100.09	60	120	
Tb	159	No Gas	5714478.11	2.5	5659230.75	100.98	60	120	
Tb	159	He	4175214.00	0.4	4116226.58	101.43	60	120	

Sample Report

Sample Name	F183-08S
File Name	H6G09052.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:42:17
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	51.993	5.199	ppb	2.9	167283.91	50	
Be	9	6	No Gas	31.073	3.107	ppb	1.1	10771.92	50	
B	11	6	No Gas	127.505	12.750	ppb	2.3	32370.60	100	
Na	23	45	H2	94283.958	9428.396	ppb	1.2	38157597.33	50000	
Mg	24	45	No Gas	69622.982	6962.298	ppb	1.5	79240008.00	50000	
Al	27	45	No Gas	3743.566	374.357	ppb	9.5	5300437.42	50000	
Si	28	45	H2	8717.078	871.708	ppb	1.6	1047286.75	5000	
P	31	45	No Gas	92.263	9.226	ppb	137.8	44764.48	500	
K	39	45	He	6067.952	606.795	ppb	1.0	541996.94	50000	
Ca	40	45	H2	187549.962	18754.996	ppb	1.0	160037034.67	50000	
Ti	47	45	No Gas	37.500	3.750	ppb	16.2	6185.45	500	
V	51	45	He	34.681	3.468	ppb	1.4	19857.03	500	
Cr	52	45	He	33.074	3.307	ppb	0.9	21703.83	500	
Mn	55	45	No Gas	67.614	6.761	ppb	29.0	170324.38	3000	
Fe	56	45	H2	3544.365	354.436	ppb	1.4	4064956.25	50000	
Co	59	45	No Gas	33.998	3.400	ppb	9.2	69835.37	500	
Ni	60	45	He	32.738	3.274	ppb	1.6	6966.45	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	67111.53	500	
Zn	66	72	No Gas	66.680	6.668	ppb	4.8	24286.52	500	
As	75	72	He	31.351	3.135	ppb	4.0	3669.16	500	
Se	78	72	H2	31.735	3.174	ppb	1.8	1157.05	500	
Sr	88	72	No Gas	1351.486	135.149	ppb	0.8	3337153.06	500	
Zr	90	72	No Gas	0.453	0.045	ppb	66.6	830.04	50	
Mo	95	115	No Gas	32.274	3.227	ppb	14.6	15932.17	500	
Ag	107	115	No Gas	30.222	3.022	ppb	1.1	36934.91	50	
Cd	111	115	No Gas	31.446	3.145	ppb	8.1	7744.45	500	
Sn	118	115	No Gas	28.228	2.823	ppb	10.2	21435.62	500	
Sb	123	115	No Gas	28.850	2.885	ppb	0.7	24023.15	100	
Ba	137	115	No Gas	108.929	10.893	ppb	3.2	39306.40	1000	
W	182	159	No Gas	0.235	0.023	ppb	142.8	253.34	50	
Hg	201	159	He	0.017	0.002	ppb	188.7	15.83	5	
Tl	205	159	No Gas	31.430	3.143	ppb	8.9	56693.16	500	
Pb	208	159	No Gas	32.409	3.241	ppb	10.6	80771.49	500	
U	238	159	No Gas	32.653	3.265	ppb	8.6	78083.16	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2011330.50	1.5	2097164.59	95.91	60	120	
Sc	45	No Gas	3839855.75	1.4	3750166.75	102.39	60	120	
Sc	45	H2	2262996.17	0.9	2177398.33	103.93	60	120	
Sc	45	He	439713.04	0.3	433199.3	101.5	60	120	
Ge	72	No Gas	851511.61	2.2	824654.15	103.26	60	120	
Ge	72	H2	627027.15	0.2	601667.94	104.21	60	120	
Ge	72	He	258666.54	0.6	249247.67	103.78	60	120	
In	115	No Gas	4546234.63	1.4	4556929.48	99.77	60	120	
Tb	159	No Gas	5712882.55	1.1	5659230.75	100.95	60	120	
Tb	159	He	4154923.50	0.4	4116226.58	100.94	60	120	

Sample Report

Sample Name	F183-08A
File Name	H6G09053.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:44:52
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	341.714	34.171	ppb	1.5	483099.39	50	
Be	9	6	No Gas	327.076	32.708	ppb	2.8	113422.96	50	
B	11	6	No Gas	407.838	40.784	ppb	1.8	94876.50	100	
Na	23	45	H2	124419.174	12441.917	ppb	0.4	50235509.33	50000	
Mg	24	45	No Gas	100507.221	10050.722	ppb	1.5	113376976.00	50000	
Al	27	45	No Gas	32755.505	3275.550	ppb	1.7	45815080.98	50000	
Si	28	45	H2	8491.943	849.194	ppb	0.5	1020471.75	5000	
P	31	45	No Gas	17.203	1.720	ppb	57.9	37539.28	500	
K	39	45	He	35875.167	3587.517	ppb	1.2	2653998.92	50000	
Ca	40	45	H2	217664.544	21766.454	ppb	0.8	185712730.67	50000	
Ti	47	45	No Gas	318.309	31.831	ppb	1.1	49510.54	500	
V	51	45	He	328.575	32.857	ppb	0.6	178499.58	500	
Cr	52	45	He	333.963	33.396	ppb	0.6	207666.19	500	
Mn	55	45	No Gas	345.311	34.531	ppb	1.1	830212.04	3000	
Fe	56	45	H2	33715.610	3371.561	ppb	0.4	38584878.67	50000	
Co	59	45	No Gas	326.656	32.666	ppb	1.6	663528.29	500	
Ni	60	45	He	328.441	32.844	ppb	0.8	68887.41	500	
Cu	63	45	He	83.682	8.368	ppb	3.1	228746.64	500	
Zn	66	72	No Gas	658.947	65.895	ppb	1.2	208001.40	500	
As	75	72	He	317.854	31.785	ppb	0.1	35729.14	500	
Se	78	72	H2	320.808	32.081	ppb	0.6	11522.59	500	
Sr	88	72	No Gas	1674.656	167.466	ppb	1.4	4069891.92	500	
Zr	90	72	No Gas	0.270	0.027	ppb	13.2	543.35	50	
Mo	95	115	No Gas	294.913	29.491	ppb	1.0	145687.96	500	
Ag	107	115	No Gas	288.928	28.893	ppb	0.4	353371.81	50	
Cd	111	115	No Gas	305.162	30.516	ppb	1.0	75146.11	500	
Sn	118	115	No Gas	293.637	29.364	ppb	1.4	208987.30	500	
Sb	123	115	No Gas	292.972	29.297	ppb	0.6	243613.95	100	
Ba	137	115	No Gas	373.787	37.379	ppb	0.3	134872.78	1000	
W	182	159	No Gas	0.085	0.009	ppb	25.9	136.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	10.67	5	
Tl	205	159	No Gas	315.893	31.589	ppb	0.9	556549.42	500	
Pb	208	159	No Gas	314.406	31.441	ppb	0.4	764154.29	500	
U	238	159	No Gas	309.340	30.934	ppb	1.4	732942.06	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2014038.18	2.1	2097164.59	96.04	60	120	
Sc	45	No Gas	3805799.33	1.9	3750166.75	101.48	60	120	
Sc	45	H2	2262987.17	0.7	2177398.33	103.93	60	120	
Sc	45	He	437917.33	0.2	433199.3	101.09	60	120	
Ge	72	No Gas	838096.83	1.9	824654.15	101.63	60	120	
Ge	72	H2	626611.44	1.2	601667.94	104.15	60	120	
Ge	72	He	256009.77	0.3	249247.67	102.71	60	120	
In	115	No Gas	4555708.66	2.3	4556929.48	99.97	60	120	
Tb	159	No Gas	5659336.44	1.5	5659230.75	100	60	120	
Tb	159	He	4143875.58	0.6	4116226.58	100.67	60	120	

Sample Report

Sample Name	F183-08I
File Name	H6G09054.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:47:28
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.170	2.117	ppb	12.4	135896.09	50	
Be	9	6	No Gas	0.109	0.011	ppb	59.6	54.44	50	
B	11	6	No Gas	93.309	9.331	ppb	2.9	25164.76	100	
Na	23	45	H2	89526.116	8952.612	ppb	0.8	36232626.67	50000	
Mg	24	45	No Gas	65428.989	6542.899	ppb	1.6	74189282.67	50000	
Al	27	45	No Gas	206.591	20.659	ppb	2.4	315877.95	50000	
Si	28	45	H2	8230.732	823.073	ppb	1.5	988671.00	5000	
P	31	45	No Gas	13.901	1.390	ppb	75.7	37418.95	500	
K	39	45	He	2893.801	289.380	ppb	0.8	316293.96	50000	
Ca	40	45	H2	181646.330	18164.633	ppb	1.6	154917264.00	50000	
Ti	47	45	No Gas	2.107	0.211	ppb	10.0	676.02	500	
V	51	45	He	3.131	0.313	ppb	6.4	2750.94	500	
Cr	52	45	He	0.848	0.085	ppb	13.5	1696.77	500	
Mn	55	45	No Gas	20.906	2.091	ppb	1.7	58340.91	3000	
Fe	56	45	H2	198.697	19.870	ppb	0.6	237221.32	50000	
Co	59	45	No Gas	0.342	0.034	ppb	21.3	949.37	500	
Ni	60	45	He	0.307	0.031	ppb	28.7	144.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	45507.19	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2390.88	500	
As	75	72	He	0.886	0.089	ppb	25.0	220.33	500	
Se	78	72	H2	0.836	0.084	ppb	11.7	48.33	500	
Sr	88	72	No Gas	1293.157	129.316	ppb	1.2	3173423.00	500	
Zr	90	72	No Gas	0.120	0.012	ppb	8.0	316.67	50	
Mo	95	115	No Gas	0.458	0.046	ppb	11.3	255.56	500	
Ag	107	115	No Gas	0.127	0.013	ppb	38.6	206.67	50	
Cd	111	115	No Gas	0.137	0.014	ppb	63.1	53.34	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	605.57	500	
Sb	123	115	No Gas	0.264	0.026	ppb	19.1	312.23	100	
Ba	137	115	No Gas	74.857	7.486	ppb	0.9	27031.42	1000	
W	182	159	No Gas	0.016	0.002	ppb	322.0	83.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	648.91	500	
Pb	208	159	No Gas	0.055	0.005	ppb	128.2	1586.72	500	
U	238	159	No Gas	1.536	0.154	ppb	4.9	3683.89	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2044266.91	2.3	2097164.59	97.48	60	120	
Sc	45	No Gas	3824940.00	2.4	3750166.75	101.99	60	120	
Sc	45	H2	2261718.50	0.4	2177398.33	103.87	60	120	
Sc	45	He	440208.74	1.0	433199.3	101.62	60	120	
Ge	72	No Gas	846225.13	1.0	824654.15	102.62	60	120	
Ge	72	H2	629089.23	0.9	601667.94	104.56	60	120	
Ge	72	He	258429.94	0.3	249247.67	103.68	60	120	
In	115	No Gas	4542580.96	1.6	4556929.48	99.69	60	120	
Tb	159	No Gas	5664734.64	0.8	5659230.75	100.1	60	120	
Tb	159	He	4145078.08	0.7	4116226.58	100.7	60	120	

Sample Report

Sample Name	F183-08J
File Name	H6G09055.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:50:03
Sample Type	Sample
Total Dilution	50.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	24.335	0.487	ppb	16.8	117494.22	50	
Be	9	6	No Gas	0.004	0.000	ppb	4156.8	16.67	50	
B	11	6	No Gas	103.284	2.066	ppb	2.9	8703.80	100	
Na	23	45	H2	89275.980	1785.520	ppb	2.3	7510312.33	50000	
Mg	24	45	No Gas	65316.727	1306.335	ppb	3.0	14785095.67	50000	
Al	27	45	No Gas	156.366	3.127	ppb	3.7	69527.00	50000	
Si	28	45	H2	8023.784	160.476	ppb	1.0	196905.50	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	34826.91	500	
K	39	45	He	2978.490	59.570	ppb	8.3	152814.65	50000	
Ca	40	45	H2	181140.007	3622.800	ppb	1.6	30933350.00	50000	
Ti	47	45	No Gas	1.462	0.029	ppb	41.9	393.34	500	
V	51	45	He	7.101	0.142	ppb	4.7	1827.46	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	1066.71	500	
Mn	55	45	No Gas	21.449	0.429	ppb	1.9	18555.25	3000	
Fe	56	45	H2	181.917	3.638	ppb	1.5	51494.72	50000	
Co	59	45	No Gas	0.194	0.004	ppb	60.6	332.00	500	
Ni	60	45	He	0.073	0.001	ppb	345.5	83.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	46143.35	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	1884.80	500	
As	75	72	He	2.120	0.042	ppb	3.2	166.33	500	
Se	78	72	H2	0.807	0.016	ppb	50.7	24.00	500	
Sr	88	72	No Gas	1278.076	25.562	ppb	1.8	630741.47	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	100.00	50	
Mo	95	115	No Gas	0.458	0.009	ppb	24.5	75.55	500	
Ag	107	115	No Gas	0.084	0.002	ppb	83.7	73.33	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	12.47	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	480.01	500	
Sb	123	115	No Gas	0.268	0.005	ppb	15.0	138.89	100	
Ba	137	115	No Gas	74.626	1.493	ppb	1.3	5500.06	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	60.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	418.90	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	951.12	500	
U	238	159	No Gas	1.521	0.030	ppb	3.1	765.58	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2036859.03	1.1	2097164.59	97.12	60	120	
Sc	45	No Gas	3814035.67	1.1	3750166.75	101.7	60	120	
Sc	45	H2	2256265.92	0.1	2177398.33	103.62	60	120	
Sc	45	He	441323.25	1.1	433199.3	101.88	60	120	
Ge	72	No Gas	849088.00	1.5	824654.15	102.96	60	120	
Ge	72	H2	628056.62	0.9	601667.94	104.39	60	120	
Ge	72	He	255744.67	1.0	249247.67	102.61	60	120	
In	115	No Gas	4553819.50	0.8	4556929.48	99.93	60	120	
Tb	159	No Gas	5683962.55	1.0	5659230.75	100.44	60	120	
Tb	159	He	4172335.92	0.6	4116226.58	101.36	60	120	

Sample Report

Sample Name	F183-12l
File Name	H6G09056.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:52:38
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.553	1.455	ppb	3.1	127559.35	50	
Be	9	6	No Gas	0.014	0.001	ppb	152.2	21.11	50	
B	11	6	No Gas	88.766	8.877	ppb	0.8	23934.80	100	
Na	23	45	H2	84781.663	8478.166	ppb	1.0	33999682.67	50000	
Mg	24	45	No Gas	52944.460	5294.446	ppb	0.6	60001244.00	50000	
Al	27	45	No Gas	12.570	1.257	ppb	20.8	43383.34	50000	
Si	28	45	H2	7354.533	735.453	ppb	0.2	875479.19	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35674.38	500	
K	39	45	He	2374.753	237.475	ppb	3.0	277209.27	50000	
Ca	40	45	H2	151734.979	15173.498	ppb	1.0	128178954.67	50000	
Ti	47	45	No Gas	1.225	0.123	ppb	54.0	538.68	500	
V	51	45	He	3.125	0.313	ppb	5.5	2727.60	500	
Cr	52	45	He	0.523	0.052	ppb	28.0	1484.08	500	
Mn	55	45	No Gas	1.293	0.129	ppb	21.1	11426.78	3000	
Fe	56	45	H2	14.555	1.456	ppb	2.5	26400.79	50000	
Co	59	45	No Gas	0.282	0.028	ppb	9.2	828.03	500	
Ni	60	45	He	0.398	0.040	ppb	26.7	162.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	48035.16	500	
Zn	66	72	No Gas	7.618	0.762	ppb	2.5	5653.18	500	
As	75	72	He	1.044	0.104	ppb	12.3	238.00	500	
Se	78	72	H2	0.832	0.083	ppb	25.1	48.00	500	
Sr	88	72	No Gas	1059.477	105.948	ppb	0.4	2616703.93	500	
Zr	90	72	No Gas	0.007	0.001	ppb	523.4	143.33	50	
Mo	95	115	No Gas	0.554	0.055	ppb	12.1	305.56	500	
Ag	107	115	No Gas	0.092	0.009	ppb	26.0	165.55	50	
Cd	111	115	No Gas	0.095	0.010	ppb	62.1	43.57	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	621.13	500	
Sb	123	115	No Gas	0.095	0.010	ppb	59.8	174.44	100	
Ba	137	115	No Gas	54.646	5.465	ppb	1.7	19943.07	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	46.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	815.58	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1314.47	500	
U	238	159	No Gas	1.686	0.169	ppb	4.6	4056.23	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2027291.50	2.3	2097164.59	96.67	60	120	
Sc	45	No Gas	3823238.75	2.5	3750166.75	101.95	60	120	
Sc	45	H2	2239768.67	0.3	2177398.33	102.86	60	120	
Sc	45	He	436917.85	0.9	433199.3	100.86	60	120	
Ge	72	No Gas	851620.19	1.2	824654.15	103.27	60	120	
Ge	72	H2	626128.56	0.8	601667.94	104.07	60	120	
Ge	72	He	258196.76	0.4	249247.67	103.59	60	120	
In	115	No Gas	4584447.38	2.2	4556929.48	100.6	60	120	
Tb	159	No Gas	5689716.72	1.6	5659230.75	100.54	60	120	
Tb	159	He	4158120.50	0.4	4116226.58	101.02	60	120	

Sample Report

Sample Name	F183-13I
File Name	H6G09057.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:55:14
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.745	1.475	ppb	13.5	129055.07	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	13.33	50	
B	11	6	No Gas	85.172	8.517	ppb	1.0	23370.54	100	
Na	23	45	H2	86475.732	8647.573	ppb	0.6	34782821.33	50000	
Mg	24	45	No Gas	53480.710	5348.071	ppb	0.3	61095106.67	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	15662.16	50000	
Si	28	45	H2	7557.683	755.768	ppb	0.8	902365.27	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35785.33	500	
K	39	45	He	2378.524	237.852	ppb	3.5	281637.28	50000	
Ca	40	45	H2	154631.655	15463.165	ppb	0.7	131038637.33	50000	
Ti	47	45	No Gas	0.183	0.018	ppb	96.2	380.01	500	
V	51	45	He	3.134	0.313	ppb	2.6	2773.62	500	
Cr	52	45	He	0.313	0.031	ppb	37.9	1374.74	500	
Mn	55	45	No Gas	4.521	0.452	ppb	4.6	19300.27	3000	
Fe	56	45	H2	11.994	1.199	ppb	30.4	23571.11	50000	
Co	59	45	No Gas	0.145	0.014	ppb	14.0	553.34	500	
Ni	60	45	He	0.192	0.019	ppb	51.1	121.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	45203.52	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	3181.71	500	
As	75	72	He	0.935	0.093	ppb	7.7	225.67	500	
Se	78	72	H2	0.737	0.074	ppb	25.1	44.33	500	
Sr	88	72	No Gas	1071.962	107.196	ppb	1.1	2629149.48	500	
Zr	90	72	No Gas	0.001	0.000	ppb	4867.7	133.33	50	
Mo	95	115	No Gas	0.367	0.037	ppb	10.7	212.23	500	
Ag	107	115	No Gas	0.035	0.004	ppb	55.4	96.67	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	14.41	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	458.90	500	
Sb	123	115	No Gas	0.065	0.006	ppb	45.9	148.89	100	
Ba	137	115	No Gas	54.424	5.442	ppb	3.8	19798.43	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	46.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	10.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	356.67	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	887.78	500	
U	238	159	No Gas	1.592	0.159	ppb	0.4	3860.61	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2048347.81	2.6	2097164.59	97.67	60	120	
Sc	45	No Gas	3854162.50	2.2	3750166.75	102.77	60	120	
Sc	45	H2	2246932.58	0.4	2177398.33	103.19	60	120	
Sc	45	He	443495.97	0.4	433199.3	102.38	60	120	
Ge	72	No Gas	845655.52	1.4	824654.15	102.55	60	120	
Ge	72	H2	623119.11	0.6	601667.94	103.57	60	120	
Ge	72	He	258248.99	0.6	249247.67	103.61	60	120	
In	115	No Gas	4572494.70	3.2	4556929.48	100.34	60	120	
Tb	159	No Gas	5731032.27	1.1	5659230.75	101.27	60	120	
Tb	159	He	4186660.58	0.6	4116226.58	101.71	60	120	

Sample Report

Sample Name	F183-14I
File Name	H6G09058.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 13:57:49
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.775	2.378	ppb	0.2	139543.27	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	8.89	50	
B	11	6	No Gas	56.954	5.695	ppb	3.1	17025.86	100	
Na	23	45	H2	32398.462	3239.846	ppb	1.6	13339711.33	50000	
Mg	24	45	No Gas	39896.100	3989.610	ppb	1.4	45261225.33	50000	
Al	27	45	No Gas	4.910	0.491	ppb	32.1	32728.26	50000	
Si	28	45	H2	8544.173	854.417	ppb	1.1	1025108.58	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35556.08	500	
K	39	45	He	2456.147	245.615	ppb	2.4	284254.33	50000	
Ca	40	45	H2	108884.774	10888.477	ppb	0.3	92830960.00	50000	
Ti	47	45	No Gas	0.712	0.071	ppb	39.4	459.34	500	
V	51	45	He	1.515	0.151	ppb	6.2	1868.13	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	1085.38	500	
Mn	55	45	No Gas	534.110	53.411	ppb	2.0	1286581.09	3000	
Fe	56	45	H2	299.941	29.994	ppb	1.4	352636.66	50000	
Co	59	45	No Gas	0.941	0.094	ppb	2.6	2175.51	500	
Ni	60	45	He	3.829	0.383	ppb	6.8	884.03	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	44411.61	500	
Zn	66	72	No Gas	16.469	1.647	ppb	5.8	8569.38	500	
As	75	72	He	0.586	0.059	ppb	25.2	186.33	500	
Se	78	72	H2	0.962	0.096	ppb	11.6	53.00	500	
Sr	88	72	No Gas	1234.928	123.493	ppb	2.5	3093465.22	500	
Zr	90	72	No Gas	0.029	0.003	ppb	78.9	180.00	50	
Mo	95	115	No Gas	7.719	0.772	ppb	2.5	3865.01	500	
Ag	107	115	No Gas	0.053	0.005	ppb	34.6	117.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	4.59	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	414.45	500	
Sb	123	115	No Gas	0.038	0.004	ppb	0.5	126.67	100	
Ba	137	115	No Gas	46.581	4.658	ppb	1.9	17015.58	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	63.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	282.23	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	803.34	500	
U	238	159	No Gas	1.847	0.185	ppb	1.1	4453.03	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2054969.70	2.1	2097164.59	97.99	60	120	
Sc	45	No Gas	3826939.08	1.3	3750166.75	102.05	60	120	
Sc	45	H2	2259547.92	0.6	2177398.33	103.77	60	120	
Sc	45	He	438902.23	0.5	433199.3	101.32	60	120	
Ge	72	No Gas	863838.14	0.4	824654.15	104.75	60	120	
Ge	72	H2	630720.40	0.3	601667.94	104.83	60	120	
Ge	72	He	258251.47	0.9	249247.67	103.61	60	120	
In	115	No Gas	4583092.21	0.1	4556929.48	100.57	60	120	
Tb	159	No Gas	5705461.86	0.6	5659230.75	100.82	60	120	
Tb	159	He	4152079.33	1.3	4116226.58	100.87	60	120	

Sample Report

Sample Name	F183-15I
File Name	H6G09059.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G09.b
Acq Time	2020-07-13 14:00:24
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	17.173	1.717	ppb	9.6	131317.60	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	12.22	50	
B	11	6	No Gas	58.259	5.826	ppb	1.6	17210.54	100	
Na	23	45	H2	35201.454	3520.145	ppb	1.1	14392551.67	50000	
Mg	24	45	No Gas	44010.198	4401.020	ppb	2.3	50041717.33	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	11941.82	50000	
Si	28	45	H2	8298.754	829.875	ppb	0.7	991104.54	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	35279.39	500	
K	39	45	He	2108.445	210.845	ppb	2.1	258889.44	50000	
Ca	40	45	H2	128200.855	12820.085	ppb	0.8	108752458.67	50000	
Ti	47	45	No Gas	0.492	0.049	ppb	80.8	426.01	500	
V	51	45	He	2.941	0.294	ppb	5.2	2633.59	500	
Cr	52	45	He	0.673	0.067	ppb	23.6	1579.43	500	
Mn	55	45	No Gas	2.441	0.244	ppb	2.2	14222.05	3000	
Fe	56	45	H2	<0.000	<0.000	ppb	N/A	8353.89	50000	
Co	59	45	No Gas	0.096	0.010	ppb	30.3	450.68	500	
Ni	60	45	He	0.043	0.004	ppb	132.1	88.67	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	43752.13	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2672.27	500	
As	75	72	He	0.653	0.065	ppb	10.1	192.33	500	
Se	78	72	H2	0.812	0.081	ppb	42.7	47.00	500	
Sr	88	72	No Gas	1116.483	111.648	ppb	0.9	2723904.20	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	83.33	50	
Mo	95	115	No Gas	0.475	0.048	ppb	5.7	266.67	500	
Ag	107	115	No Gas	0.043	0.004	ppb	25.3	106.67	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	12.12	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	435.57	500	
Sb	123	115	No Gas	0.035	0.004	ppb	84.1	124.44	100	
Ba	137	115	No Gas	30.240	3.024	ppb	1.3	11086.96	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	50.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	337.78	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	847.78	500	
U	238	159	No Gas	1.233	0.123	ppb	2.5	2973.69	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2041052.06	1.4	2097164.59	97.32	60	120	
Sc	45	No Gas	3835273.83	1.3	3750166.75	102.27	60	120	
Sc	45	H2	2248795.08	0.6	2177398.33	103.28	60	120	
Sc	45	He	437801.49	0.6	433199.3	101.06	60	120	
Ge	72	No Gas	841213.10	1.7	824654.15	102.01	60	120	
Ge	72	H2	623701.85	0.6	601667.94	103.66	60	120	
Ge	72	He	256294.94	0.5	249247.67	102.83	60	120	
In	115	No Gas	4582339.24	1.0	4556929.48	100.56	60	120	
Tb	159	No Gas	5682307.97	1.0	5659230.75	100.41	60	120	
Tb	159	He	4135493.50	0.5	4116226.58	100.47	60	120	

Sample Report

Sample Name	F183-16l
File Name	H6G09060.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 14:02:58
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	17.071	1.707	ppb	6.2	132148.27	50	
Be	9	6	No Gas	0.007	0.001	ppb	290.6	18.89	50	
B	11	6	No Gas	59.608	5.961	ppb	1.4	17642.20	100	
Na	23	45	H2	35969.938	3596.994	ppb	1.3	14679144.00	50000	
Mg	24	45	No Gas	45562.855	4556.285	ppb	1.5	51360250.67	50000	
Al	27	45	No Gas	28.231	2.823	ppb	173.5	64470.05	50000	
Si	28	45	H2	8535.931	853.593	ppb	0.2	1017900.94	5000	
P	31	45	No Gas	9.866	0.987	ppb	202.7	36825.44	500	
K	39	45	He	2172.098	217.210	ppb	2.0	260961.34	50000	
Ca	40	45	H2	131868.400	13186.840	ppb	0.2	111710202.67	50000	
Ti	47	45	No Gas	1.189	0.119	ppb	66.2	529.35	500	
V	51	45	He	3.115	0.312	ppb	12.0	2703.60	500	
Cr	52	45	He	0.859	0.086	ppb	8.9	1679.44	500	
Mn	55	45	No Gas	4.581	0.458	ppb	51.9	19141.20	3000	
Fe	56	45	H2	9.766	0.977	ppb	108.1	21024.54	50000	
Co	59	45	No Gas	0.384	0.038	ppb	99.8	1025.39	500	
Ni	60	45	He	0.029	0.003	ppb	574.9	85.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	43058.59	500	
Zn	66	72	No Gas	2.560	0.256	ppb	10.4	3999.92	500	
As	75	72	He	0.794	0.079	ppb	28.0	208.00	500	
Se	78	72	H2	0.924	0.092	ppb	48.5	51.00	500	
Sr	88	72	No Gas	1150.720	115.072	ppb	1.8	2803005.17	500	
Zr	90	72	No Gas	0.008	0.001	ppb	537.7	143.33	50	
Mo	95	115	No Gas	0.935	0.093	ppb	68.3	488.90	500	
Ag	107	115	No Gas	0.090	0.009	ppb	74.5	162.22	50	
Cd	111	115	No Gas	0.227	0.023	ppb	159.1	75.21	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	587.79	500	
Sb	123	115	No Gas	0.107	0.011	ppb	116.3	182.22	100	
Ba	137	115	No Gas	31.712	3.171	ppb	2.2	11557.36	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	63.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.83	5	
Tl	205	159	No Gas	0.074	0.007	ppb	738.1	1050.09	500	
Pb	208	159	No Gas	0.014	0.001	ppb	2302.9	1494.49	500	
U	238	159	No Gas	1.599	0.160	ppb	21.1	3859.53	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2056048.35	1.9	2097164.59	98.04	60	120	
Sc	45	No Gas	3802567.75	1.4	3750166.75	101.4	60	120	
Sc	45	H2	2245740.92	0.7	2177398.33	103.14	60	120	
Sc	45	He	433739.72	1.4	433199.3	100.12	60	120	
Ge	72	No Gas	839886.67	1.3	824654.15	101.85	60	120	
Ge	72	H2	623089.21	0.2	601667.94	103.56	60	120	
Ge	72	He	256005.90	0.2	249247.67	102.71	60	120	
In	115	No Gas	4558427.64	1.9	4556929.48	100.03	60	120	
Tb	159	No Gas	5711071.16	1.1	5659230.75	100.92	60	120	
Tb	159	He	4126940.58	0.2	4116226.58	100.26	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6G09061.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 14:05:34
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.055	ppb	1.9	377738.89	25	100.22	90	110	
Be	9	6	No Gas	25.498	ppb	1.1	87011.76	25	101.99	90	110	
B	11	6	No Gas	51.630	ppb	3.5	117179.51	50	103.26	90	110	
Na	23	45	H2	25454.430	ppb	0.9	98871114.67	25000	101.82	90	110	
Mg	24	45	No Gas	25039.702	ppb	1.5	278151968.00	25000	100.16	90	110	
Al	27	45	No Gas	24978.567	ppb	2.6	343917668.21	25000	99.91	90	110	
Si	28	45	H2	2511.521	ppb	0.6	2903789.50	2500	100.46	90	110	
P	31	45	No Gas	242.329	ppb	1.8	255437.62	250	96.93	90	110	
K	39	45	He	25480.019	ppb	0.9	17559118.67	25000	101.92	90	110	
Ca	40	45	H2	24949.316	ppb	0.7	205562101.33	25000	99.8	90	110	
Ti	47	45	No Gas	247.377	ppb	1.0	376645.17	250	98.95	90	110	
V	51	45	He	255.788	ppb	0.7	1335100.71	250	102.32	90	110	
Cr	52	45	He	256.609	ppb	0.4	1533446.62	250	102.64	90	110	
Mn	55	45	No Gas	1528.548	ppb	1.7	35842294.67	1500	101.9	90	110	
Fe	56	45	H2	25824.241	ppb	0.9	285352885.33	25000	103.3	90	110	
Co	59	45	No Gas	255.464	ppb	1.9	5109000.50	250	102.19	90	110	
Ni	60	45	He	257.168	ppb	0.9	520360.99	250	102.87	90	110	
Cu	63	45	He	237.912	ppb	0.4	1403560.79	250	95.16	90	110	
Zn	66	72	No Gas	251.841	ppb	1.9	774759.90	250	100.74	90	110	
As	75	72	He	253.576	ppb	0.8	273903.54	250	101.43	90	110	
Se	78	72	H2	253.988	ppb	1.3	87818.01	250	101.6	90	110	
Sr	88	72	No Gas	256.108	ppb	1.1	6135144.90	250	102.44	90	110	
Zr	90	72	No Gas	24.884	ppb	0.2	375507.20	25	99.54	90	110	
Mo	95	115	No Gas	247.658	ppb	1.6	1172282.63	250	99.06	90	110	
Ag	107	115	No Gas	24.484	ppb	1.9	287034.05	25	97.94	90	110	
Cd	111	115	No Gas	244.251	ppb	0.6	576331.90	250	97.7	90	110	
Sn	118	115	No Gas	247.979	ppb	0.2	1680769.72	250	99.19	90	110	
Sb	123	115	No Gas	48.772	ppb	1.6	388612.99	50	97.54	90	110	
Ba	137	115	No Gas	506.449	ppb	1.1	1750095.03	500	101.29	90	110	
W	182	159	No Gas	24.920	ppb	2.1	194256.61	25	99.68	90	110	
Hg	201	159	He	2.529	ppb	1.1	2341.22	2.5	101.16	90	110	
Tl	205	159	No Gas	249.547	ppb	1.0	4419365.66	250	99.82	90	110	
Pb	208	159	No Gas	250.862	ppb	1.3	6127441.82	250	100.34	90	110	
U	238	159	No Gas	244.586	ppb	0.6	5833650.05	250	97.83	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1982369.12	1.8	2097164.59	94.53	60	120	
Sc	45	No Gas	3748717.33	0.5	3750166.75	99.96	60	120	
Sc	45	H2	2185439.00	0.4	2177398.33	100.37	60	120	
Sc	45	He	422914.75	0.6	433199.3	97.63	60	120	
Ge	72	No Gas	826265.71	1.2	824654.15	100.2	60	120	
Ge	72	H2	604079.61	1.4	601667.94	100.4	60	120	
Ge	72	He	246728.55	0.3	249247.67	98.99	60	120	
In	115	No Gas	4366447.09	0.9	4556929.48	95.82	60	120	
Tb	159	No Gas	5698148.52	2.3	5659230.75	100.69	60	120	
Tb	159	He	4105304.75	0.5	4116226.58	99.73	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6G09062.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 14:11:26
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.052	ppb	237.4	111992.79	0.4	
Be	9	6	No Gas	0.005	ppb	113.2	34.45	0.08	
B	11	6	No Gas	0.004	ppb	4383.0	4031.70	4	
Na	23	45	H2	<0.000	ppb	N/A	366817.42	40	
Mg	24	45	No Gas	8.675	ppb	81.5	115699.23	10	
Al	27	45	No Gas	4.039	ppb	95.3	80183.41	15	
Si	28	45	H2	<0.000	ppb	N/A	4510.74	8	
P	31	45	No Gas	<0.000	ppb	N/A	33282.54	10	
K	39	45	He	8.083	ppb	33.4	113837.21	20	
Ca	40	45	H2	<0.000	ppb	N/A	127170.04	25	
Ti	47	45	No Gas	0.059	ppb	100.5	431.34	0.5	
V	51	45	He	0.104	ppb	31.7	1589.43	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1118.72	0.2	
Mn	55	45	No Gas	0.256	ppb	70.2	14127.30	0.2	>LOD LY 07/13/20
Fe	56	45	H2	1.861	ppb	6.0	30429.28	10	
Co	59	45	No Gas	0.041	ppb	71.3	1062.73	0.15	
Ni	60	45	He	0.023	ppb	171.4	127.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	45443.65	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2055.49	2	
As	75	72	He	0.064	ppb	66.7	184.67	0.2	
Se	78	72	H2	0.016	ppb	34.9	22.67	0.2	
Sr	88	72	No Gas	0.107	ppb	91.7	3985.40	0.2	
Zr	90	72	No Gas	0.005	ppb	180.0	200.00	2	
Mo	95	115	No Gas	0.058	ppb	68.0	312.23	0.2	
Ag	107	115	No Gas	0.004	ppb	47.9	97.78	0.08	
Cd	111	115	No Gas	0.045	ppb	81.0	129.58	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1373.41	0.2	
Sb	123	115	No Gas	0.012	ppb	71.2	194.45	0.4	
Ba	137	115	No Gas	0.067	ppb	68.3	357.78	0.2	
W	182	159	No Gas	0.004	ppb	183.3	103.33	0.3	
Hg	201	159	He	<0.000	ppb	N/A	12.33	0.1	
Tl	205	159	No Gas	0.043	ppb	71.7	1662.35	0.1	
Pb	208	159	No Gas	0.021	ppb	162.9	1945.64	0.1	
U	238	159	No Gas	0.043	ppb	71.9	1035.65	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2024445.74	2.1	2097164.59	96.53	60	120	
Sc	45	No Gas	3752695.17	3.5	3750166.75	100.07	60	120	
Sc	45	H2	2200172.42	2.8	2177398.33	101.05	60	120	
Sc	45	He	433006.27	0.1	433199.3	99.96	60	120	
Ge	72	No Gas	805669.85	2.6	824654.15	97.7	60	120	
Ge	72	H2	596584.19	2.4	601667.94	99.16	60	120	
Ge	72	He	247444.93	0.4	249247.67	99.28	60	120	
In	115	No Gas	4532115.76	2.9	4556929.48	99.46	60	120	
Tb	159	No Gas	5622245.33	1.9	5659230.75	99.35	60	120	
Tb	159	He	4146403.75	0.8	4116226.58	100.73	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG1304
File Name	H6G09063.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G09.b
Acq Time	2020-07-13 14:14:02
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G09002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.081	ppb	8.2	122981.47	1	108.1	80	120	
Be	9	6	No Gas	1.032	ppb	2.5	3601.58	1	103.2	80	120	
B	11	6	No Gas	11.018	ppb	2.5	28628.03	10	110.18	80	120	
Na	23	45	H2	103.586	ppb	1.7	768355.52	100	103.59	80	120	
Mg	24	45	No Gas	111.467	ppb	5.8	1261702.87	100	111.47	80	120	
Al	27	45	No Gas	106.957	ppb	1.9	1501395.87	100	106.96	80	120	
Si	28	45	H2	100.480	ppb	1.3	121932.65	100	100.48	80	120	
P	31	45	No Gas	50.095	ppb	1.8	81101.26	50	100.19	80	120	
K	39	45	He	109.398	ppb	6.2	182861.31	100	109.4	80	120	
Ca	40	45	H2	103.961	ppb	1.9	991803.08	100	103.96	80	120	
Ti	47	45	No Gas	1.104	ppb	6.6	2026.15	1	110.4	80	120	
V	51	45	He	1.148	ppb	0.4	7085.16	1	114.8	80	120	
Cr	52	45	He	1.120	ppb	3.1	7909.62	1	112	80	120	
Mn	55	45	No Gas	1.312	ppb	15.1	39047.74	1	131.2	80	120	> +/- 20%
Fe	56	45	H2	109.482	ppb	0.8	1223846.75	100	109.48	80	120	
Co	59	45	No Gas	1.076	ppb	1.1	21809.41	1	107.6	80	120	
Ni	60	45	He	1.210	ppb	8.4	2556.24	1	121	80	120	> +/- 20% LY 07/13/20
Cu	63	45	He	<0.000	ppb	N/A	54261.82	1	-2410.8	80	120	> +/- 20%
Zn	66	72	No Gas	10.303	ppb	1.9	34876.04	10	103.03	80	120	
As	75	72	He	1.064	ppb	3.8	1291.73	1	106.4	80	120	
Se	78	72	H2	1.025	ppb	9.3	375.67	1	102.5	80	120	
Sr	88	72	No Gas	2.219	ppb	4.2	54924.65	2	110.95	80	120	
Zr	90	72	No Gas	3.967	ppb	1.7	60242.14	5	79.34	80	120	> +/- 20%
Mo	95	115	No Gas	0.973	ppb	4.5	4809.76	1	97.3	80	120	
Ag	107	115	No Gas	1.034	ppb	2.7	12636.03	1	103.4	80	120	
Cd	111	115	No Gas	1.053	ppb	2.4	2597.82	1	105.3	80	120	
Sn	118	115	No Gas	0.886	ppb	3.8	7758.97	1	88.6	80	120	
Sb	123	115	No Gas	0.958	ppb	2.3	8016.90	1	95.8	80	120	
Ba	137	115	No Gas	1.054	ppb	3.4	3900.59	1	105.4	80	120	
W	182	159	No Gas	2.073	ppb	3.3	16193.76	2	103.65	80	120	
Hg	201	159	He	0.079	ppb	1.7	86.83	0.1	79	80	120	> +/- 20%
Tl	205	159	No Gas	1.019	ppb	1.6	18936.58	1	101.9	80	120	
Pb	208	159	No Gas	1.026	ppb	4.0	26465.62	1	102.6	80	120	
U	238	159	No Gas	0.989	ppb	2.9	23580.44	1	98.9	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2019596.46	0.3	2097164.59	96.3	60	120	
Sc	45	No Gas	3757636.50	0.5	3750166.75	100.2	60	120	
Sc	45	H2	2193536.08	0.8	2177398.33	100.74	60	120	
Sc	45	He	428249.84	0.3	433199.3	98.86	60	120	
Ge	72	No Gas	830007.69	0.7	824654.15	100.65	60	120	
Ge	72	H2	610499.06	1.1	601667.94	101.47	60	120	
Ge	72	He	252191.86	0.8	249247.67	101.18	60	120	
In	115	No Gas	4532525.40	1.1	4556929.48	99.46	60	120	
Tb	159	No Gas	5687170.61	0.6	5659230.75	100.49	60	120	
Tb	159	He	4104572.67	0.3	4116226.58	99.72	60	120	

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07|20|20 10:09
End Date: 07|20|20 10:24

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Zn not reportable r < 0.998
7/27/20

ICB Mn > LOD
IMG025SB V > ½ LOD
IMG027SB ↓
All associated samples > 10X Concentration levels.

ICB Tl > LOD
All associated samples ND

Book #: AH6-005
Instrument No.: H6
Analytical Batch: IH6G15
Analytical Sequence: H6G15
Method File: E6020HG3
Micropipette ID: ☐ 142781004
Micropipette ID: ☒ ICP-06
Micropipette ID: ☒ 339362028
Micropipette ID: ☒ GFAA-07
Micropipette ID: ☐ 339342032
Micropipette ID: ☒ 542780515
Micropipette ID: ☐ 542761827
Micropipette ID: ☐

SOP #	Rev. #
☒ EMAX-200.8	6
☒ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-80-01	MRL1 (1)	SM6B-19-40-02
S1	80-02	MRL2(0.4)	65-01
S2	81-01	MRL3(CAL)	65-02
S3	81-02	MRL4	NA
S4	82-01	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B-19-11-02
S7		Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	06-26
CCV	82-02	Post-Spike 3	NA
ICSA	79-01	Post-Spike 4	
ICSAB	79-02		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY
Date: 07|20|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G15
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6G15008				H6G15012			H6G15013		
DateAnalyed :		07/20/2010:28				07/20/2010:39			07/20/2010:42		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		30.97	30	3.8	103	0.17547	0	>0	19.908	20	100
Beryllium	T	31.24	30	3.7	104	0.0031040	0	<0.10	20.235	20	101
Boron		28.71	30	4.5	96	10.796	0	>5.0	15.286	20	76*
Sodium	T	30430	30000	0.7	101	99940	100000	100	100360	100000	100
Magnesium	T	29440	30000	3.2	98	96657	100000	97	99097	100000	99
Aluminum	T	29950	30000	2.6	100	97312	100000	97	98606	100000	99
Silicon		3401	3000	0.4	113*	3.9776	0	<20	221.94	200	111
Phosphorus		281.4	300	2.3	94	97059	100000	97	98344	100000	98
Potassium	T	30500	30000	0.4	102	100490	100000	100	102560	100000	103
Calcium	T	30490	30000	0.4	102	101370	100000	101	101990	100000	102
Titanium		303.7	300	1.5	101	2043.0	2000	102	2092.2	2000	105
Vanadium	T	319.2	300	0.2	106	0.096160	0	<0.25	20.045	20	100
Chromium	T	318.7	300	0.4	106	0.31405	0	>0.1	20.708	20	104
Manganese	T	2002	2000	2.8	100	0.19785	0	<0.25	19.679	20	98
Iron	T	30850	30000	0.2	103	101050	100000	101	101730	100000	102
Cobalt	T	307.6	300	2.0	103	0.34678	0	>0.1	20.090	20	100
Nickel	T	323.3	300	0.3	108	0.38057	0	>0.25	20.598	20	103
Copper	T	320.0	300	0.5	107	0.36985	0	<0.50	20.201	20	101
Zinc	T	274.5	300	2.3	92	2.3628	0	<5	20.763	20	104
Arsenic	T	312.1	300	0.8	104	0.083203	0	<0.125	20.000	20	100
Selenium	T	318.1	300	1.5	106	0.17487	0	>0.15	21.245	20	106
Strontium		313.3	300	2.7	104	0.81020	0	<1.0	20.766	20	104
Zirconium		30.44	30	1.8	101	0.097873	0	<2.0	4.6388	20	23*
Molybdenum		301.7	300	2.1	101	1948.5	2000	97	2026.6	2000	101
Silver	T	31.28	30	0.9	104	0.012397	0	<0.1	19.552	20	98
Cadmium	T	310.1	300	0.4	103	0.024633	0	<0.1	19.517	20	98
Tin		311.1	300	0.9	104	0.36820	0	>0.2	19.568	20	98
Antimony	T	59.69	60	0.7	99	0.14083	0	<0.25	19.986	20	100
Barium	T	311.3	300	1.2	104	0.34518	0	>0.25	20.122	20	101
Tungsten		32.45	30	1.0	108	0.18149	0	<1.0	18.538	20	93
Mercury		2.954	3	2.2	98	0.0035239	0	<0.1	1.9828	2	99
Thallium	T	319.0	300	2.2	106	0.017962	0	<0.1	19.278	20	96
Lead	T	318.9	300	1.9	106	0.087956	0	>0.05	19.782	20	99
Uranium		312.8	300	1.3	104	0.013593	0	<0.1	19.493	20	97

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G15
Instrument ID: H6

CCV SampleID			CCV10			CCV11			CCV12		
CCV DataFileID			H6G15105			H6G15116			H6G15128		
CCV DateTime			07/20/20 15:09			07/20/20 15:41			07/20/20 16:16		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	25.2	101	0.3	24.9	100	3.1	25.3	101	1.0
Beryllium	T	25	25.2	101	1.7	24.4	98	2.0	24.6	98	0.8
Boron		50	52.1	104	1.1	52.7	105	2.1	51.8	104	3.1
Sodium	T	25000	25200	101	1.9	24600	98	0.9	25000	100	0.7
Magnesium	T	25000	24200	97	2.1	24300	97	2.3	24700	99	0.4
Aluminum	T	25000	24000	96	1.5	23800	95	1.9	24300	97	0.3
Silicon		2500	2420	97	2.3	2410	96	1.0	2440	98	1.1
Phosphorus		250	244	98	1.5	237	95	1.2	240	96	1.3
Potassium	T	25000	24700	99	0.4	24900	99	0.7	24900	99	1.5
Calcium	T	25000	24800	99	0.8	24600	98	0.3	24800	99	0.1
Titanium		250	246	98	0.8	242	97	0.9	244	98	1.1
Vanadium	T	250	250	100	0.8	251	100	0.5	253	101	0.9
Chromium	T	250	253	101	1.3	253	101	0.2	255	102	0.8
Manganese	T	1500	1490	100	1.8	1470	98	1.6	1500	100	0.9
Iron	T	25000	25600	102	0.9	25000	100	0.7	25200	101	0.5
Cobalt	T	250	246	98	1.0	246	98	1.6	249	100	1.3
Nickel	T	250	251	101	1.0	253	101	0.8	253	101	0.3
Copper	T	250	256	102	0.7	258	103	0.2	258	103	0.3
Zinc	T	250	230	92	2.0	227	91	2.1	228	91	0.5
Arsenic	T	250	241	96	0.9	240	96	0.3	241	96	0.5
Selenium	T	250	253	101	1.4	250	100	0.2	249	100	0.4
Strontium		250	247	99	1.7	249	100	3.7	253	101	1.5
Zirconium		25	26.7	107	1.9	26.8	107	2.3	27.1	109	0.7
Molybdenum		250	240	96	2.8	237	95	3.3	243	97	1.4
Silver	T	25	24.0	96	1.7	23.6	94	1.2	24.1	97	0.7
Cadmium	T	250	240	96	1.3	235	94	1.1	238	95	1.1
Tin		250	244	98	2.4	244	98	0.8	245	98	0.1
Antimony	T	50	48.0	96	2.0	47.7	95	1.2	47.7	95	0.7
Barium	T	500	490	98	1.8	489	98	2.0	491	98	0.6
Tungsten		25	24.6	98	1.0	24.6	99	1.6	24.5	98	1.3
Mercury		2.5	2.41	97	4.1	2.39	96	1.5	2.40	96	2.2
Thallium	T	250	251	100	2.5	251	101	0.6	254	101	0.5
Lead	T	250	252	101	2.8	250	100	0.9	254	102	0.5
Uranium		250	240	96	2.5	241	96	0.9	244	98	0.1

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : SW6020A
Sequence : IH6G15
Instrument ID: H6

CB SampleID		: ICB		CCB10		CCB11		CCB12	
CB DataFileID		: H6G15009		H6G15106		H6G15117		H6G15129	
CB DateTime		: 07/20/2010:30		07/20/2015:12		07/20/2015:44		07/20/2016:19	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.3	>0	0.04	>0	0.05	>0	0.3	>0
Beryllium	T	0.10	0.02	<0.10	0.009	<0.10	0.008	<0.10	0.01	<0.10
Boron		5.0	0.3	<5.0	0.4	<5.0	0.2	<5.0	0.6	<5.0
Sodium	T	25	3	<25	8	<25	9	<25	10	<25
Magnesium	T	25	7	<25	6	<25	8	<25	9	<25
Aluminum	T	25	7	<25	6	<25	5	<25	5	<25
Silicon		20	2	<20	0.5	<20	0.4	<20	0.5	<20
Phosphorus		25	0.2	<25	2	<25	2	<25	2	<25
Potassium	T	25	9	<25	7	<25	3	<25	1.0	<25
Calcium	T	25	2	<25	10	<25	10	<25	20	<25
Titanium		0.5	0.07	<0.5	0.10	<0.5	0.1	<0.5	0.1	<0.5
Vanadium	T	0.25	0.008	<0.25	0.1	<0.25	0.07	<0.25	0.2	<0.25
Chromium	T	0.1	0.03	<0.1	0.02	<0.1	0.03	<0.1	0.03	<0.1
Manganese	T	0.25	0.4	>0.25	0.4	>0.25	0.4	>0.25	0.4	>0.25
Iron	T	25	3	<25	3	<25	3	<25	3	<25
Cobalt	T	0.1	0.07	<0.1	0.05	<0.1	0.05	<0.1	0.05	<0.1
Nickel	T	0.25	0.02	<0.25	0.04	<0.25	0.03	<0.25	0.03	<0.25
Copper	T	0.50	0.05	<0.50	0.1	<0.50	0.02	<0.50	0.1	<0.50
Zinc	T	5	0.03	<5	0.01	<5	0.1	<5	0.1	<5
Arsenic	T	0.125	0.03	<0.125	0.03	<0.125	0.03	<0.125	0.07	<0.125
Selenium	T	0.15	0.09	<0.15	0.04	<0.15	0.03	<0.15	0.03	<0.15
Strontium		1.0	0.07	<1.0	0.07	<1.0	0.10	<1.0	0.1	<1.0
Zirconium		2.0	0.004	<2.0	0.002	<2.0	0.00006	<2.0	0.002	<2.0
Molybdenum		0.5	0.1	<0.5	0.07	<0.5	0.07	<0.5	0.07	<0.5
Silver	T	0.1	0.008	<0.1	0.002	<0.1	0.001	<0.1	0.005	<0.1
Cadmium	T	0.1	0.1	>0.1	0.09	<0.1	0.08	<0.1	0.09	<0.1
Tin		0.2	0.1	<0.2	0.5	>0.2	0.4	>0.2	0.4	>0.2
Antimony	T	0.25	0.01	<0.25	0.02	<0.25	0.01	<0.25	0.02	<0.25
Barium	T	0.25	0.08	<0.25	0.1	<0.25	0.1	<0.25	0.1	<0.25
Tungsten		1.0	0.03	<1.0	0.008	<1.0	0.009	<1.0	0.01	<1.0
Mercury		0.1	0.02	<0.1	0.002	<0.1	0.003	<0.1	0.006	<0.1
Thallium	T	0.1	0.3	>0.1	0.1	>0.1	0.10	<0.1	0.1	>0.1
Lead	T	0.05	0.1	>0.05	0.04	<0.05	0.03	<0.05	0.04	<0.05
Uranium		0.1	0.07	<0.1	0.05	<0.1	0.04	<0.1	0.05	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

C 1/2 LOQ TH 7/27/20

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G15001.d		1	
2		CalBlk	BLANK		1101	H6G15002.d		1	
3		CalStd	S0		1102	H6G15003.d		1	
4		CalStd	S1		1104	H6G15004.d		2	
5		CalStd	S2	Zn r<0.998	1105	H6G15005.d		3	
6		CalStd	S3		1106	H6G15006.d		4	
7		CalStd	S4		1107	H6G15007.d		5	
8		ICV	ICV		1204	H6G15008.d			1
9		ICB	ICB Mn Tl >LOD		1102	H6G15009.d			1
10		LLCCV	MRLG2001 ✓	1/100/10 ppb	1306	H6G15010.d			1
11		LLCCV2	MRLG2002	0.4/40/4 ppb	1307	H6G15011.d			1
12		ICS-A	ICSA		1304	H6G15012.d			1
13		ICSB	ICSAB		1305	H6G15013.d			1
14		Sample	MRLG2003	500 ppb CAT	1207	H6G15014.d			1
15		CCV	CCV1		1206	H6G15015.d			1
16		CCB	CCB1 Tl >LOD		1102	H6G15016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMG025SB V >½LOD		2101	H6G15017.d			1
2		LCSS	IMG025SL		2102	H6G15018.d			1
3		LCSS	IMG025SC		2103	H6G15019.d			1
4		Blank	IMG027SB V >½LOD		2104	H6G15020.d			1
5		LCSS	IMG027SL		2105	H6G15021.d			1
6		LCSS	IMG027SC		2106	H6G15022.d			1
7		Sample	G170-01 Ca Sr ↑		2107	H6G15023.d			1
8		Sample	G170-02 Ca Sr ↑		2108	H6G15024.d			1
9		Sample	G170-03 Ca Sr ↑		2109	H6G15025.d			1
10		Sample	G193-01 Ca Sr ↑		2110	H6G15026.d			1
11		CCV	CCV2		1206	H6G15027.d			1
12		CCB	CCB2		1102	H6G15028.d			1
13		Sample	G150-02M Ca Sr ↑		2111	H6G15029.d			1
14		Sample	G150-02S		2112	H6G15030.d			1
15		Sample	G150-02A		2201	H6G15031.d			1
16		Sample	G150-02		2202	H6G15032.d			1
17		Sample	G150-02J		2203	H6G15033.d			5
18		Sample	G150-03 Ca Sr ↑		2204	H6G15034.d			1
19		Sample	G150-04 Ca Sr ↑		2205	H6G15035.d			1
20		Sample	G150-05 Ca Sr ↑		2206	H6G15036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	G150-06	Ca sr ↑	2207	H6G15037.d			1
22		CCV	CCV3		1206	H6G15038.d			1
23		CCB	CCB3	Tl > LOD	1102	H6G15039.d			1
24		Sample	G170-01I		2208	H6G15040.d			10
25		Sample	G170-02I		2209	H6G15041.d			10
26		Sample	G170-03I		2210	H6G15042.d			10
27		Sample	G193-01I		2211	H6G15043.d			10
28		Sample	G193-02	Ca sr ↑	3101	H6G15044.d			1
29		Sample	G193-02I		3102	H6G15045.d			10
30		CCV	CCV4		1206	H6G15046.d			1
31		CCB	CCB4		1102	H6G15047.d			1
32		Sample	G150-02M		2212	H6G15048.d			10
33		Sample	G150-02S		2301	H6G15049.d			10
34		Sample	G150-02A		2302	H6G15050.d			10
35		Sample	G150-02I		2303	H6G15051.d			10
36		Sample	G150-02J		2304	H6G15052.d			50
37		Sample	G150-03I		2305	H6G15053.d			10
38		Sample	G150-04I		2306	H6G15054.d			10
39		Sample	G150-05I		2307	H6G15055.d			10
40		Sample	G150-06I		2308	H6G15056.d			10
41		CCV	CCV5		1206	H6G15057.d			1
42		CCB	CCB5		1102	H6G15058.d			1
43		Blank	IMG028WB		2309	H6G15059.d			1
44		LCSW	IMG028WL		2310	H6G15060.d			1
45		LCSW	IMG028WC		2311	H6G15061.d			1
46		Sample	G471-02		2312	H6G15062.d			1
47		CCV	CCV6		1206	H6G15063.d			1
48		CCB	CCB6		1102	H6G15064.d			1
49		Blank	IMG021WB		2401	H6G15065.d			1
50		LCSW	IMG021WL	X rerun	2402	H6G15066.d			1
51		LCSW	IMG021WC		2403	H6G15067.d			1
52		Sample	G090-01M		2404	H6G15068.d			1
53		Sample	G090-01S		2405	H6G15069.d			1
54		Sample	G090-01A	✓	2406	H6G15070.d			1
55		Sample	G090-01		2407	H6G15071.d			1
56		Sample	G090-01J		2408	H6G15072.d			5
57		Sample	G090-02		2409	H6G15073.d			1
58		LCSW	IMG021WL	✓	2402	H6G15074.d			1
59		CCV	CCV7		1206	H6G15075.d			1
60		CCB	CCB7		1102	H6G15076.d			1
61		Sample	G090-03		2410	H6G15077.d			1
62		Sample	G090-04		2411	H6G15078.d			1
63		Sample	G090-05		2412	H6G15079.d			1
64		Sample	G090-06		2501	H6G15080.d			1
65		Sample	G090-07		2502	H6G15081.d			1
66		Sample	G090-08		2503	H6G15082.d			1
67		Sample	G090-09	Ca ↑	2504	H6G15083.d			1
68		Sample	G090-10	Ca ↑	2505	H6G15084.d			1
69		Sample	G090-11	Ca ↑	2506	H6G15085.d			1
70		Sample	G090-12	Ca ↑	2507	H6G15086.d			1
71		CCV	CCV8		1206	H6G15087.d			1
72		CCB	CCB8		1102	H6G15088.d			1

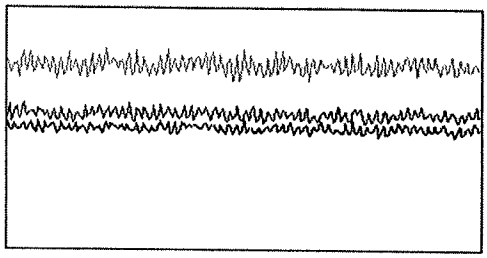
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	G090-13 ca↑		2508	H6G15089.d			1
74		Sample	G090-14 ca↑		2509	H6G15090.d			1
75		Sample	G090-15 ca↑		2510	H6G15091.d			1
76		Sample	G090-16 ca↑		2511	H6G15092.d			1
77		Sample	G090-17 ca↑		2512	H6G15093.d			1
78		CCV	CCV9		1206	H6G15094.d			1
79		CCB	CCB9 mn > ½LOQ		1102	H6G15095.d			1
80		Sample	G090-09G		3301	H6G15096.d			5
81		Sample	G090-10G		3302	H6G15097.d			5
82		Sample	G090-11G		3303	H6G15098.d			5
83		Sample	G090-12G		3304	H6G15099.d			5
84		Sample	G090-13G		3305	H6G15100.d			5
85		Sample	G090-14G		3306	H6G15101.d			5
86		Sample	G090-15G		3307	H6G15102.d			5
87		Sample	G090-16G		3308	H6G15103.d			5
88		Sample	G090-17G		3309	H6G15104.d			5
89		CCV	CCV10		1206	H6G15105.d			1
90		CCB	CCB10		1102	H6G15106.d			1
91		Blank	IMF035WB		3101	H6G15107.d			1
92		LCSW	IMF035WL		3102	H6G15108.d			1
93		LCSW	IMF035WC		3103	H6G15109.d			1
94		Sample	F183-01 Na mg ca↑		3104	H6G15110.d			1
95		Sample	F183-02 Na mg ca↑		3105	H6G15111.d			1
96		Sample	F183-03 Na ca↑		3106	H6G15112.d			1
97		Sample	F183-05 Na mg ca↑		3107	H6G15113.d			1
98		Sample	F183-06 ca↑		3108	H6G15114.d			1
99		Sample	F183-07 Na mg ca↑		3109	H6G15115.d			1
100		CCV	CCV11		1206	H6G15116.d			1
101		CCB	CCB11		1102	H6G15117.d			1
102		Sample	F183-08M Na mg ca↑		3110	H6G15118.d			1
103		Sample	F183-08S	↓	3111	H6G15119.d			1
104		Sample	F183-08A ✓		3112	H6G15120.d			1
105		Sample	F183-08		3201	H6G15121.d			1
106		Sample	F183-08J		3202	H6G15122.d			5
107		Sample	F183-12 Na mg ca↑		3203	H6G15123.d			1
108		Sample	F183-13 Na mg ca↑		3204	H6G15124.d			1
109		Sample	F183-14 ca↑		3205	H6G15125.d			1
110		Sample	F183-15 ca↑		3206	H6G15126.d			1
111		Sample	F183-16 ca↑		3207	H6G15127.d			1
112		CCV	CCV12		1206	H6G15128.d			1
113		CCB	CCB12		1102	H6G15129.d			1
114		LLCCV	MRLG2004 ✓	1/100/10 ppb	1306	H6G15130.d			1
115		LLCCV2	MRLG2005	0.4/40/4 ppb	1307	H6G15131.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-20 08:49:14
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



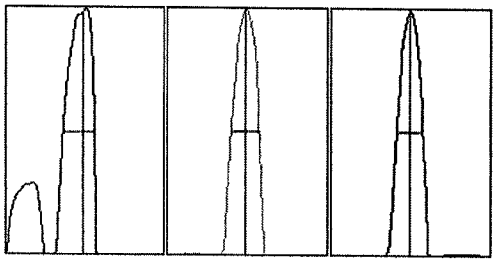
Mass	Range	Count	RSD%	Background
7	10000	5610	3.600	0.200
89	20000	15290	4.013	0.900
205	20000	10055	3.109	3.600

Sampling Period [sec] 0.311
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.169 %
Doubly Charged	70 / 140 1.861 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	5537.08	7.00	0.59	0.72
89	15189.91	89.00	0.54	0.72
205	9884.62	205.00	0.51	0.71

Integration Time [sec] 0.1
Acquisition Time [sec] 22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	13.2 V
Extract 2	-165.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.6 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	124	Axis Gain	0.9995
Mass Offset	125	Axis Offset	-0.04

EM

Discriminator	4.1 mV	Analog HV	2425 V	Pulse HV	1583 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	14.99	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.15E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	28.9	°C
Nebulizer Gas(DP)	6.04E+0	kPa
MU./Dil. Gas(DP)	-1.23E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.55E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.80E+1	kPa
Plasma Gas(BP)	3.96E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.3	°C
Peltier Voltage	2.6	V
IF/BK Press	2.34E+2	Pa
Analyzer Press	6.55E-5	Pa
IG HV	178	V
IG Emission	4.96	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.68	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.6	V
OctP RF Set	3.8	V
OctP FET Bias Set	3.75	V
OctP RF(+)	168.0	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.1	V
+U Voltage	7.4	V

Name	Value	Unit
-U Voltage	-14.5	V
V Voltage	42.1	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	605.7	V
-120V	-129.1	V
-720V	-738.5	V
Prefilter Bias	-5.05	V
Pickup Heater I	0.07	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2429	V
Pulse HV	1594	V
EM Gate	-42.6	V
Pulse Gate	341.1	V
EM Entrance	0.2	V
EM HV Gain	-1076.4	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.6	V
RF PS +48V	47.9	V
Forward Power	1549	W
Reflected Power	3	W
Plasma Freq.	26.73	MHz
Drain I 1	11.35	A
Drain I 2	10.96	A
Drain I 3	10.84	A
Drain I 4	10.13	A
Temp Sensor	2.8	V
Driver I	5.76	A

Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.43	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	-7.8	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	8.49E-1	kPa
ORS AMFC Temp	28.8	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-165.2	V
Omega Bias	-80.1	V
Omega Lens	8.0	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.2	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	28.5	°C
Internal Temp	33.9	°C
+24V	23.6	V
Water Temp	18.5	°C
Water RF/WC/IF	1.46	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

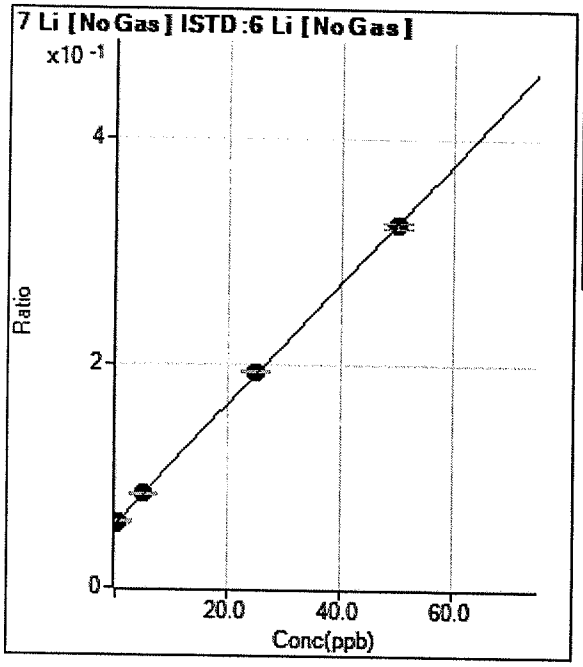
Performance Report History

Sensitivity

Calibration for H6G15131.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b\
Analysis File:	IH6G15.batch.bin
DA Date-Time:	2020-07-20 16:26:42
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

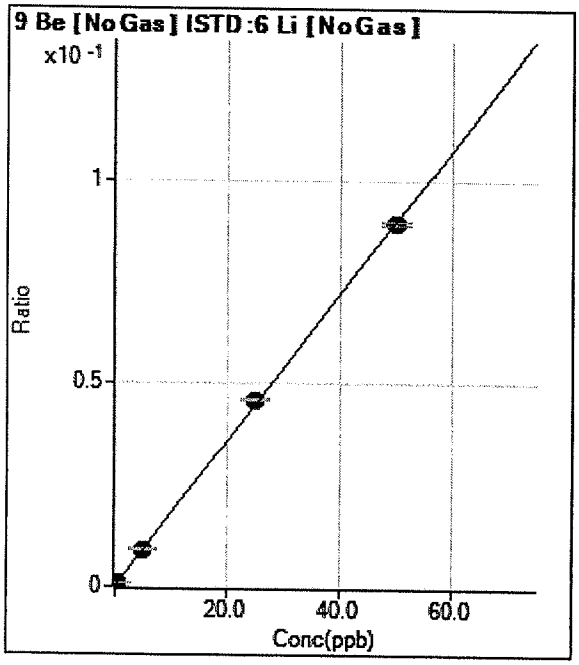
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G15003.d	S0	2020-07-20 10:13:08
2	H6G15004.d	S1	2020-07-20 10:16:07
3	H6G15005.d	S2	2020-07-20 10:19:05
4	H6G15006.d	S3	2020-07-20 10:22:13
5	H6G15007.d	S4	2020-07-20 10:25:10



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	119670.72	0.0564	P	1.1
2	☐	0.500	0.453	124796.83	0.0589	P	2.0
3	☐	5.000	5.061	176770.87	0.0837	P	1.2
4	☐	25.000	25.400	405552.47	0.1932	P	0.6
5	☐	50.000	49.794	677225.98	0.3245	P	1.7

y = 0.0054 * x + 0.0564
R = 0.9999
DL = 0.3554
BEC = 10.48

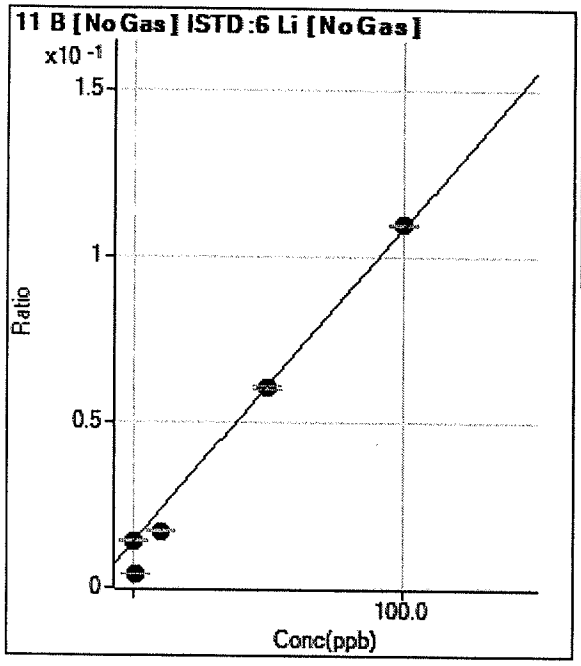
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0000	P	25.8
2	☐	0.500	0.514	1982.36	0.0009	P	2.8
3	☐	5.000	5.065	19220.89	0.0091	P	3.9
4	☐	25.000	25.565	96346.84	0.0459	P	1.1
5	☐	50.000	49.711	186215.72	0.0892	P	1.1

y = 0.0018 * x + 1.2591E-005
R = 0.9999
DL = 0.005435
BEC = 0.007016

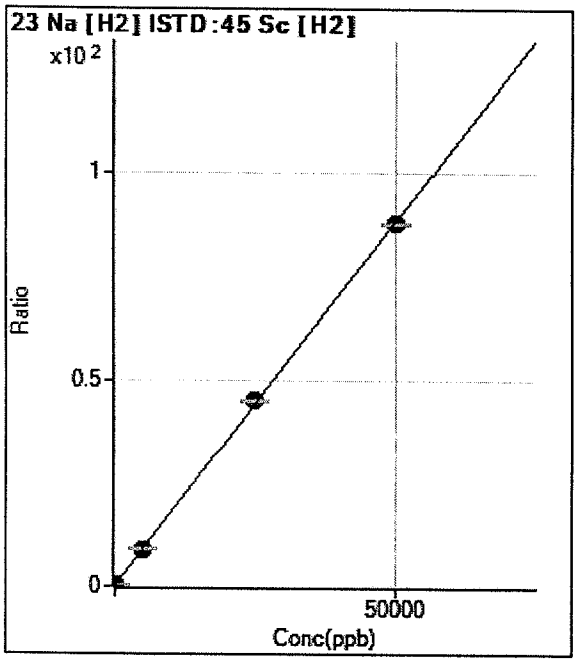
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29939.58	0.0141	P	2.6
2	☐	0.500	-10.805	8270.23	0.0039	P	4.8
3	☐	10.000	3.200	36215.40	0.0171	P	2.0
4	☐	50.000	49.057	127048.47	0.0605	P	2.1
5	☐	100.000	101.208	229261.55	0.1098	P	0.9

y = 9.4587E-004 * x + 0.0141
R = 0.9960
DL = 1.148
BEC = 14.93

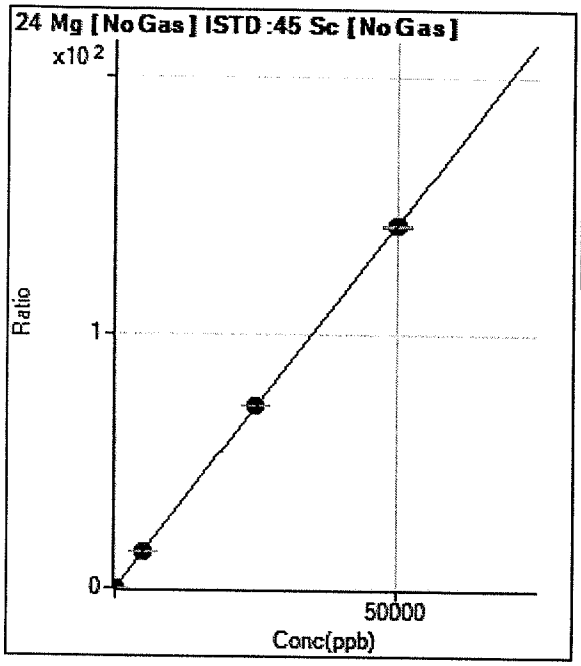
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	421088.10	0.1632	P	0.4
2	☐	50.000	48.606	639778.02	0.2487	P	0.6
3	☐	5000.000	5054.503	23433073.33	9.0597	A	0.3
4	☐	25000.000	25419.048	113679186.67	44.9039	A	0.3
5	☐	50000.000	49785.027	225198890.67	87.7912	A	0.2

y = 0.0018 * x + 0.1632
R = 0.9999
DL = 1.196
BEC = 92.7

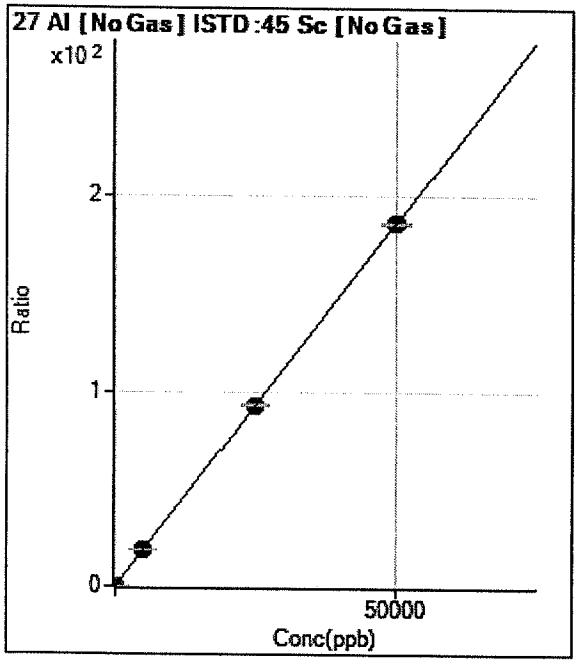
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46057.83	0.0105	P	1.6
2	☐	50.000	51.271	687831.13	0.1568	P	1.1
3	☐	5000.000	5105.489	63880682.67	14.5807	A	0.5
4	☐	25000.000	25133.708	316312661.33	71.7378	A	0.7
5	☐	50000.000	49922.596	621223488.00	142.4810	A	0.3

y = 0.0029 * x + 0.0105
R = 1.0000
DL = 0.1713
BEC = 3.667

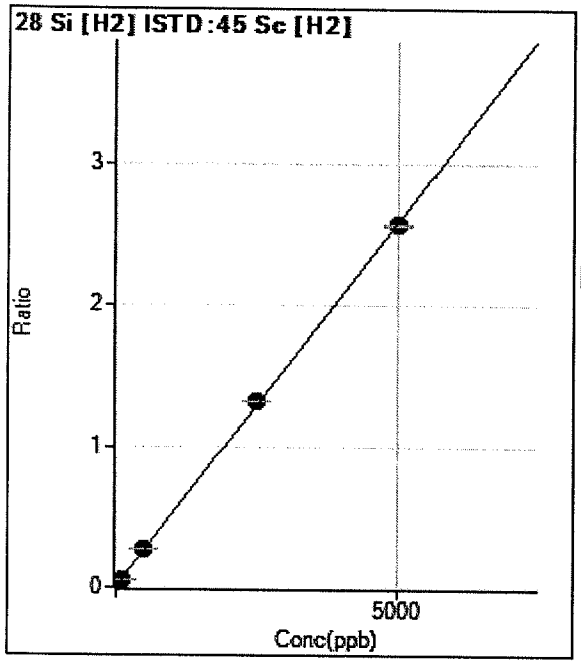
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37313.38	0.0085	P	3.0
2	☐	50.000	50.416	859635.14	0.1959	A	0.7
3	☐	5000.000	5005.920	81586460.45	18.6220	A	0.2
4	☐	25000.000	24997.242	409864033.89	92.9559	A	0.9
5	☐	50000.000	50000.786	810618334.59	185.9267	A	0.8

y = 0.0037 * x + 0.0085
R = 1.0000
DL = 0.2036
BEC = 2.28

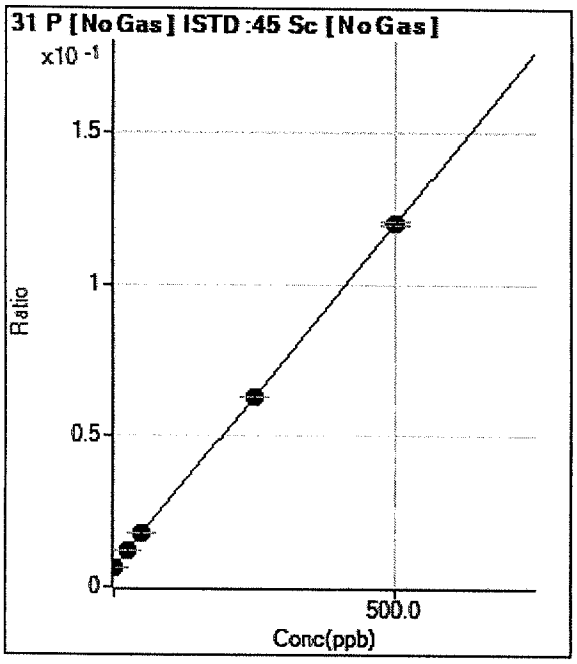
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6078.00	0.0024	P	1.9
2	☐	100.000	99.032	137822.97	0.0536	P	0.6
3	☐	500.000	516.686	697341.79	0.2696	P	0.7
4	☐	2500.000	2548.212	3342801.92	1.3204	A	0.4
5	☐	5000.000	4974.245	6605869.00	2.5752	A	0.6

y = 5.1724E-004 * x + 0.0024
R = 0.9999
DL = 0.2621
BEC = 4.553

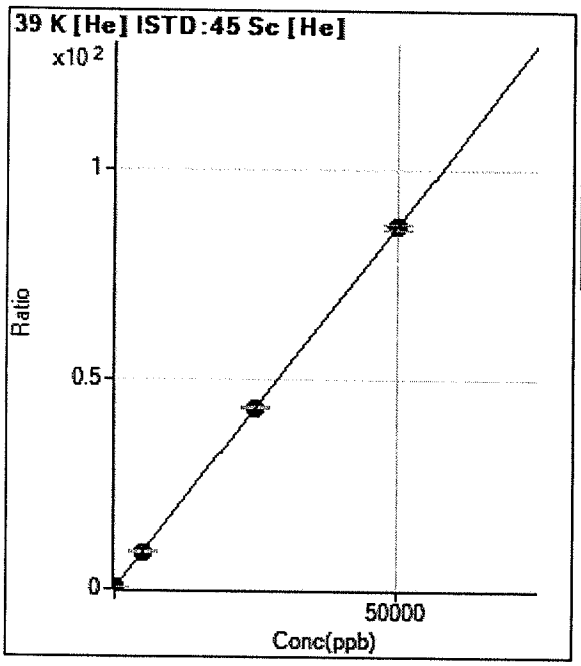
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27662.17	0.0063	P	1.8
2	☐	25.000	24.401	51902.04	0.0118	P	0.9
3	☐	50.000	50.165	77479.95	0.0177	P	0.2
4	☐	250.000	249.208	277415.10	0.0629	P	0.5
5	☐	500.000	500.409	523164.85	0.1200	P	1.2

y = 2.2724E-004 * x + 0.0063
R = 1.0000
DL = 1.464
BEC = 27.66

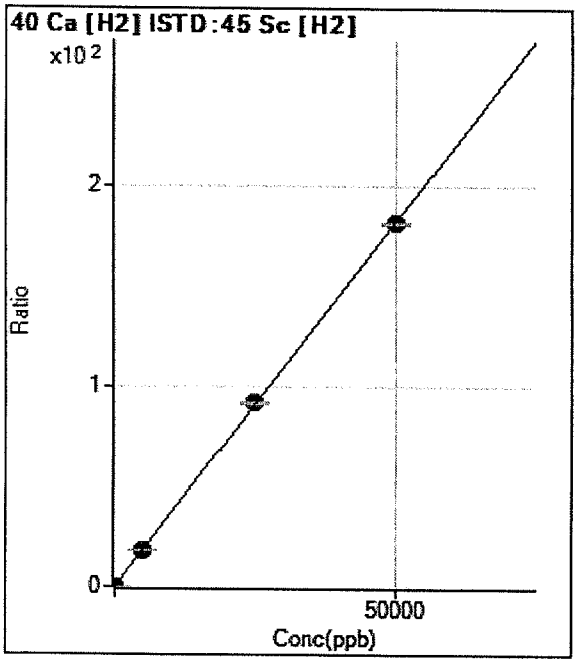
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130264.42	0.2601	P	3.9
2	☐	50.000	48.495	170689.13	0.3435	P	3.8
3	☐	5000.000	5024.958	4469613.00	8.9082	A	0.6
4	☐	25000.000	24940.560	21482071.33	43.1838	A	0.7
5	☐	50000.000	50027.226	42593862.67	86.3590	A	1.7

y = 0.0017 * x + 0.2601
R = 1.0000
DL = 17.53
BEC = 151.1

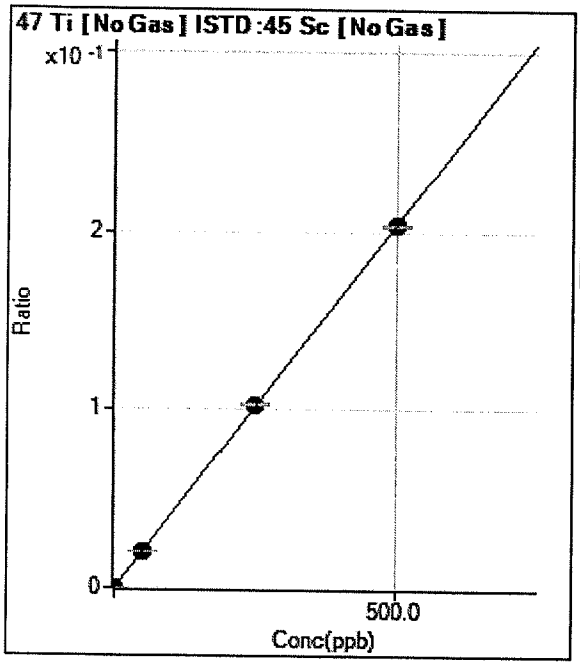
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	222950.57	0.0864	P	1.2
2	☐	50.000	41.617	612312.42	0.2380	P	1.2
3	☐	5000.000	4945.323	46834317.33	18.1070	A	0.4
4	☐	25000.000	25297.320	233592362.67	92.2691	A	0.6
5	☐	50000.000	49856.816	466248480.00	181.7631	A	0.5

y = 0.0036 * x + 0.0864
R = 1.0000
DL = 0.8453
BEC = 23.71

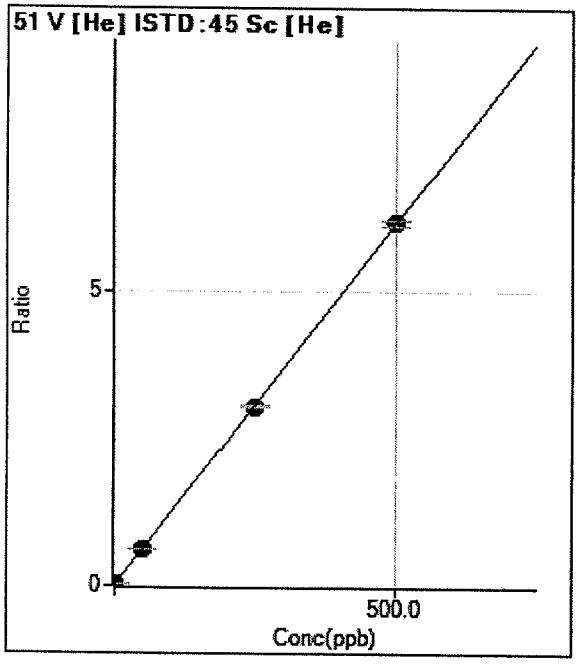
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	306.67	0.0001	P	8.9
2	☐	0.500	0.537	1266.73	0.0003	P	3.6
3	☐	50.000	50.408	90458.96	0.0206	P	0.9
4	☐	250.000	251.726	453381.12	0.1028	P	0.7
5	☐	500.000	499.096	888550.06	0.2038	P	0.6

y = 4.0820E-004 * x + 6.9627E-005
R = 1.0000
DL = 0.04574
BEC = 0.1706

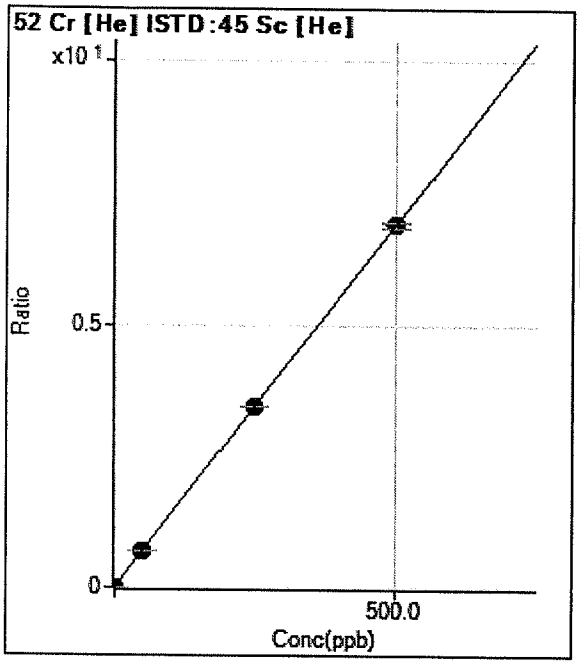
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5591.15	0.0112	P	4.4
2	☐	0.500	0.742	10069.70	0.0203	P	1.8
3	☐	50.000	50.216	314450.72	0.6268	P	0.7
4	☐	250.000	247.834	1516884.04	3.0493	A	0.5
5	☐	500.000	501.061	3035035.17	6.1536	A	1.9

y = 0.0123 * x + 0.0112
R = 1.0000
DL = 0.1197
BEC = 0.9106

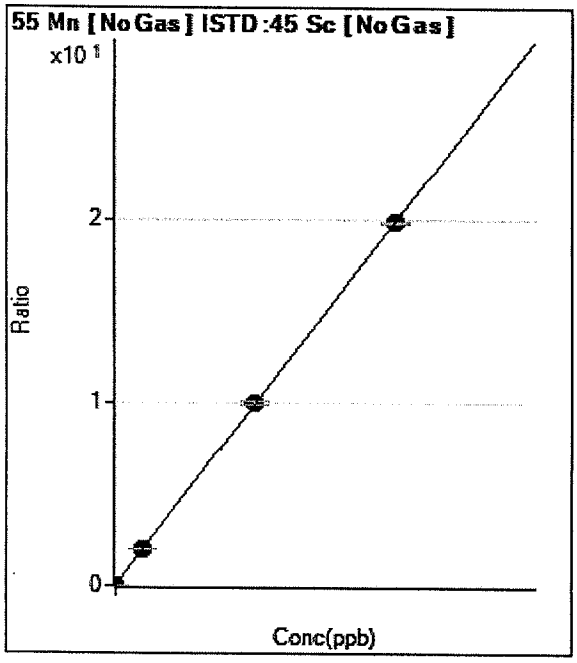
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1237.39	0.0025	P	4.7
2	☐	0.500	0.608	5405.74	0.0109	P	1.2
3	☐	50.000	50.742	352957.12	0.7035	P	0.4
4	☐	250.000	249.482	1715809.71	3.4492	A	0.2
5	☐	500.000	500.185	3409513.50	6.9128	A	1.6

y = 0.0138 * x + 0.0025
R = 1.0000
DL = 0.02499
BEC = 0.1788

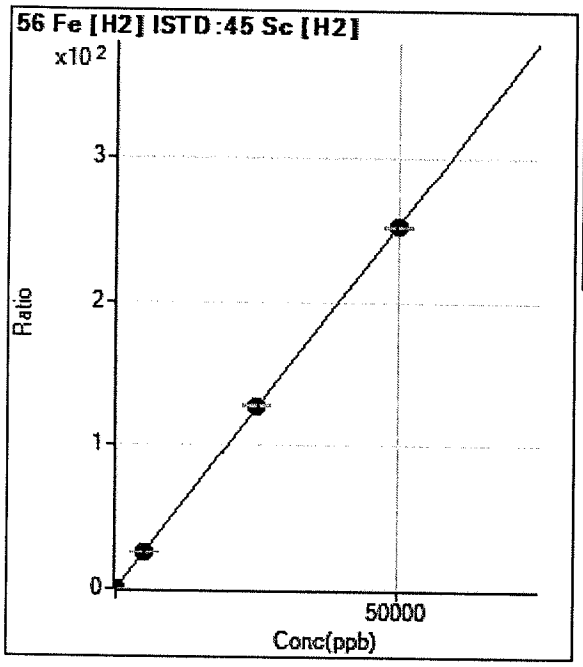
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14398.91	0.0033	P	1.5
2	☐	0.500	0.447	27340.61	0.0062	P	1.4
3	☐	300.000	306.063	8905106.00	2.0327	A	0.9
4	☐	1500.000	1508.260	44111053.33	10.0040	A	1.2
5	☐	3000.000	2995.264	86604170.67	19.8639	A	0.5

y = 0.0066 * x + 0.0033
R = 1.0000
DL = 0.02171
BEC = 0.4934

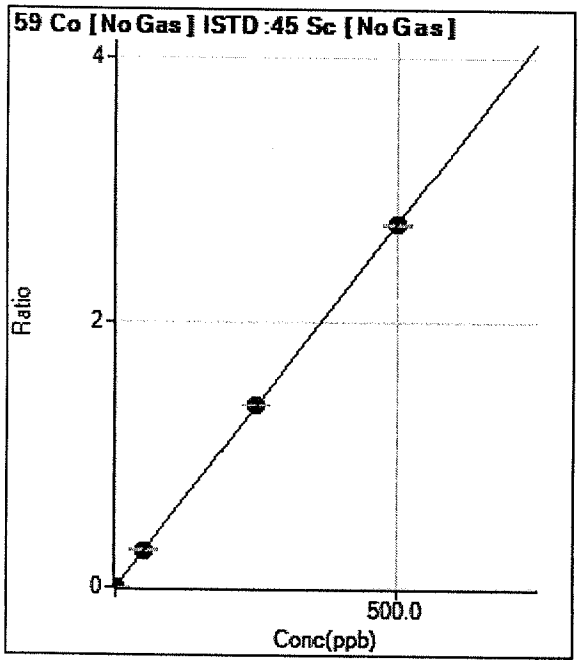
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38047.50	0.0147	P	0.7
2	☐	50.000	52.626	723821.77	0.2814	P	0.7
3	☐	5000.000	5085.309	66683606.67	25.7809	A	0.5
4	☐	25000.000	25212.400	323437237.33	127.7606	A	0.5
5	☐	50000.000	49885.267	648405184.00	252.7728	A	0.3

y = 0.0051 * x + 0.0147
R = 1.0000
DL = 0.05901
BEC = 2.91

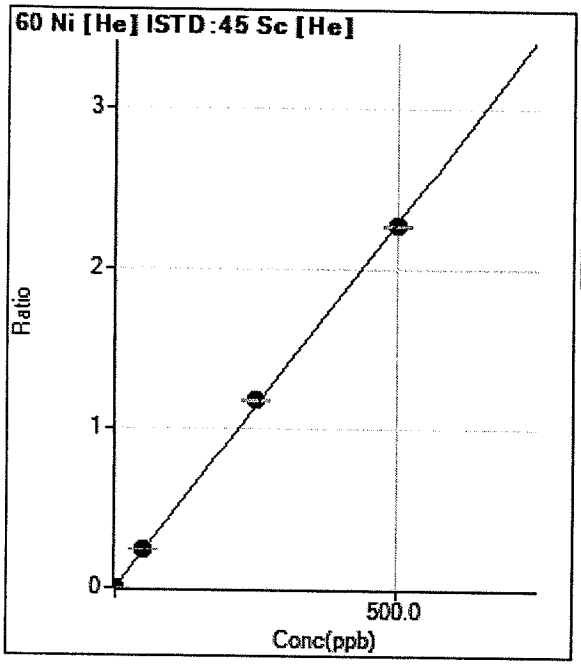
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	630.68	0.0001	P	6.9
2	☐	0.500	0.515	13045.57	0.0030	P	2.7
3	☐	50.000	51.529	1241069.04	0.2833	A	0.8
4	☐	250.000	251.160	6085561.00	1.3802	A	0.9
5	☐	500.000	499.267	11961066.00	2.7435	A	0.6

y = 0.0055 * x + 1.4335E-004
R = 1.0000
DL = 0.005374
BEC = 0.02609

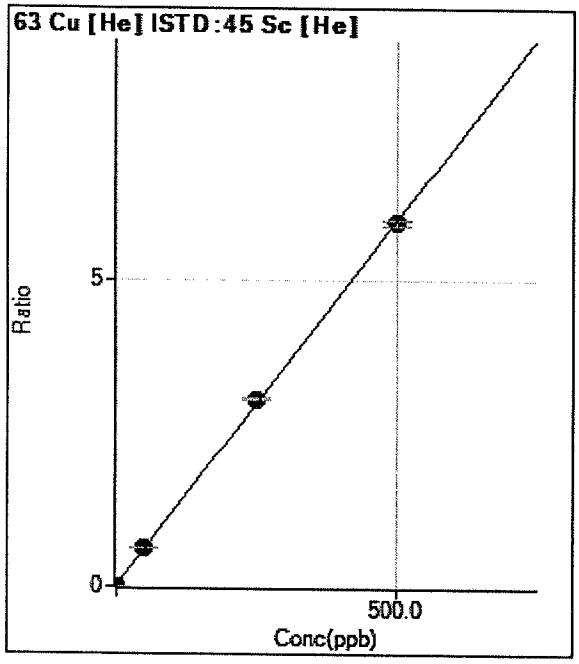
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	159.33	0.0003	P	5.4
2	☐	0.500	0.837	2059.49	0.0041	P	2.3
3	☐	50.000	52.593	120771.15	0.2407	P	1.0
4	☐	250.000	256.661	583775.63	1.1735	P	0.2
5	☐	500.000	496.410	1119384.42	2.2694	A	0.8

y = 0.0046 * x + 3.1802E-004
R = 0.9999
DL = 0.01135
BEC = 0.06957

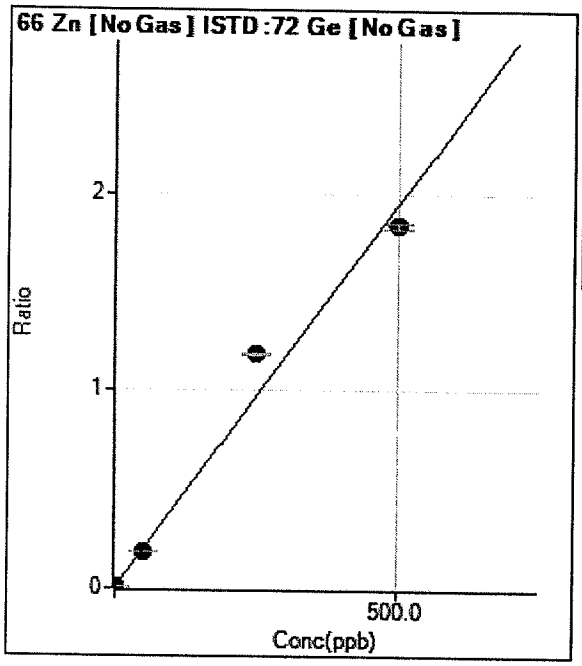
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2883.64	0.0058	P	1.4
2	☐	0.500	0.648	6694.32	0.0135	P	3.7
3	☐	50.000	53.035	319506.55	0.6368	P	0.7
4	☐	250.000	255.682	1516334.25	3.0483	A	0.7
5	☐	500.000	496.855	2918905.92	5.9181	A	1.8

y = 0.0119 * x + 0.0058
R = 0.9999
DL = 0.01989
BEC = 0.4837

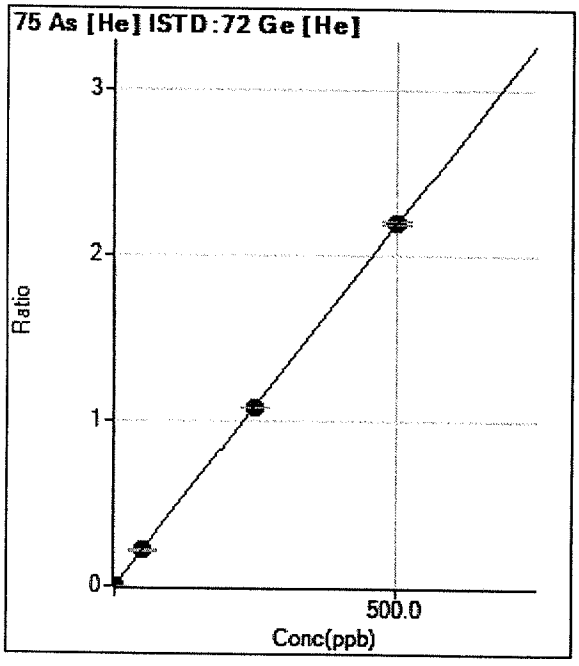
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4258.00	0.0042	P	1.6
2	☐	1.000	1.857	11571.59	0.0114	P	0.3
3	☐	50.000	47.135	190741.78	0.1871	P	1.4
4	☐	250.000	304.969	1220884.58	1.1875	A	0.7
5	☐	500.000	472.800	1863145.00	1.8387	A	1.3

y = 0.0039 * x + 0.0042
R = 0.9902
DL = 0.0515
BEC = 1.087

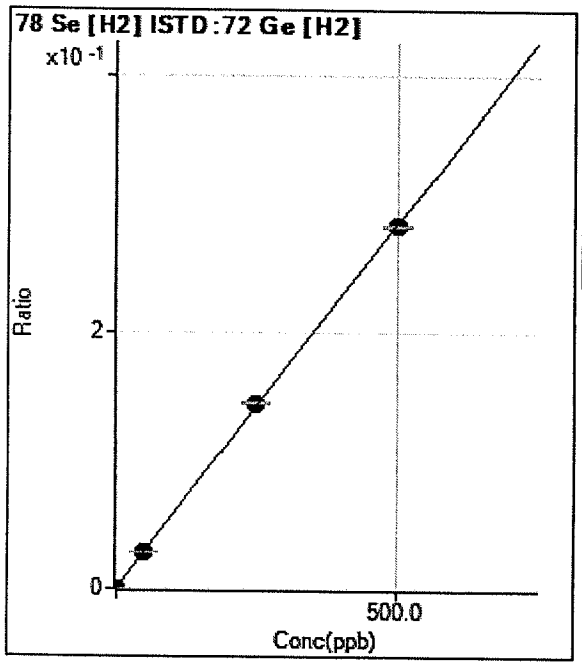
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	338.00	0.0012	P	5.6
2	☐	0.500	0.541	1009.71	0.0036	P	2.5
3	☐	50.000	49.157	61098.02	0.2160	P	1.1
4	☐	250.000	247.045	304089.67	1.0807	P	0.1
5	☐	500.000	501.561	605228.85	2.1928	P	1.0

y = 0.0044 * x + 0.0012
R = 1.0000
DL = 0.04584
BEC = 0.2738

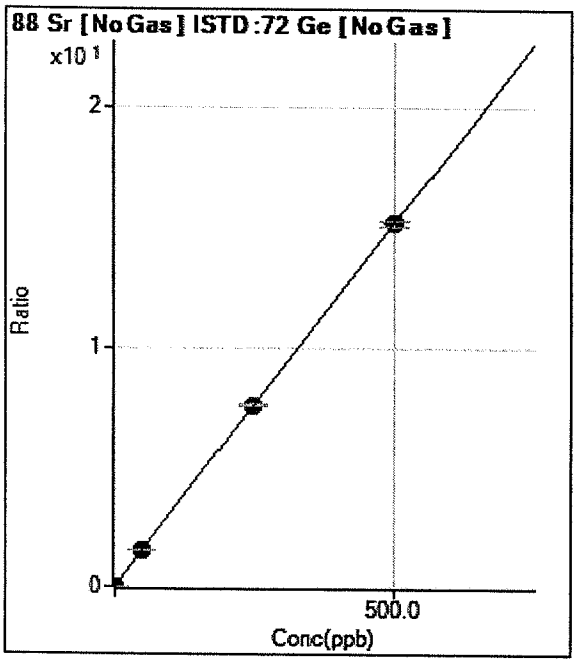
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.33	0.0000	P	10.5
2	☐	0.500	0.510	223.33	0.0003	P	6.0
3	☐	50.000	50.646	20262.53	0.0289	P	0.6
4	☐	250.000	254.258	100076.19	0.1447	P	1.3
5	☐	500.000	497.806	194621.63	0.2834	P	0.8

y = 5.6917E-004 * x + 3.1127E-005
R = 0.9999
DL = 0.01719
BEC = 0.05469

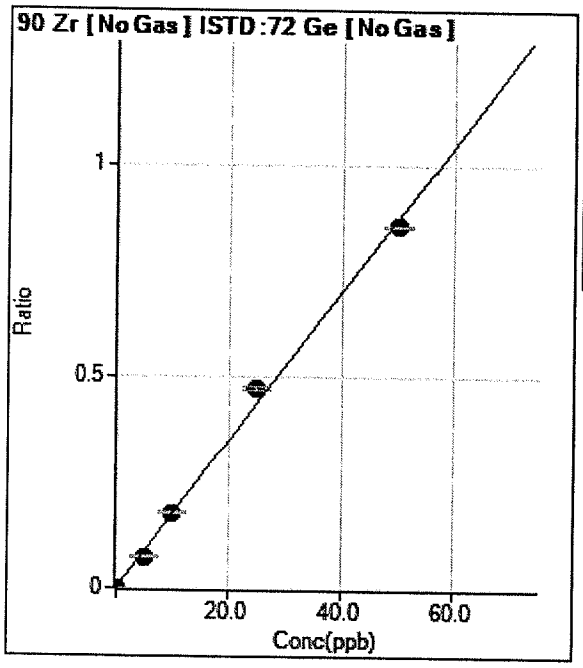
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1797.90	0.0018	P	5.0
2	☐	0.500	0.497	17070.87	0.0169	P	2.7
3	☐	50.000	49.850	1543549.35	1.5140	A	0.4
4	☐	250.000	250.269	7807306.08	7.5938	A	0.8
5	☐	500.000	499.880	15367411.61	15.1658	A	1.3

y = 0.0303 * x + 0.0018
R = 1.0000
DL = 0.008845
BEC = 0.05869

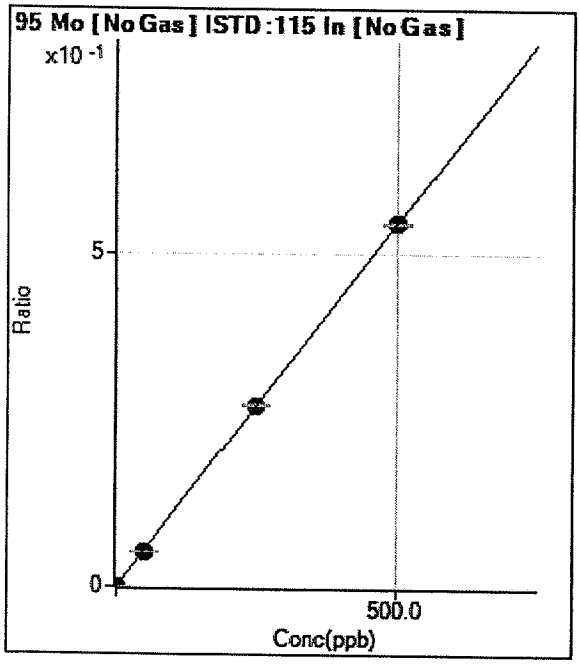
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	223.33	0.0002	P	18.0
2	☐	5.000	4.251	75566.09	0.0746	P	2.0
3	☐	10.000	10.215	182470.93	0.1790	P	1.5
4	☐	25.000	27.010	486192.29	0.4729	P	1.7
5	☐	50.000	49.027	869687.52	0.8582	P	0.6

y = 0.0175 * x + 2.2113E-004
R = 0.9983
DL = 0.006819
BEC = 0.01264

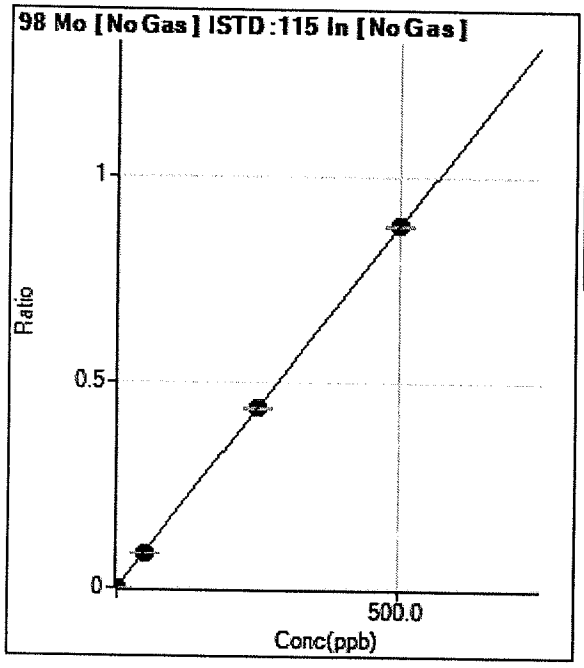
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	208.89	0.0000	P	9.3
2	☐	0.500	0.491	3152.60	0.0006	P	5.8
3	☐	50.000	48.181	288477.59	0.0525	P	1.0
4	☐	250.000	249.971	1471582.13	0.2722	A	0.9
5	☐	500.000	500.196	2878161.07	0.5446	A	0.6

y = 0.0011 * x + 3.7489E-005
R = 1.0000
DL = 0.009598
BEC = 0.03443

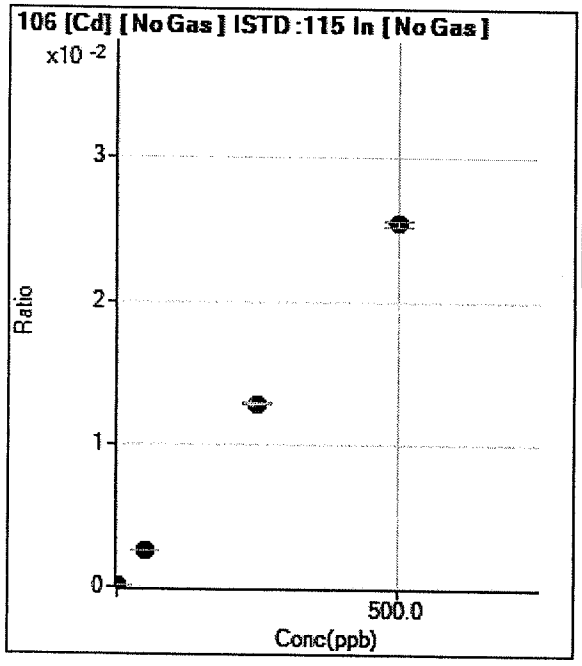
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	413.34	0.0001	P	15.2
2	☐	0.500	0.479	5054.29	0.0009	P	2.0
3	☐	50.000	47.707	461479.06	0.0840	P	0.4
4	☐	250.000	248.705	2365030.04	0.4375	A	1.2
5	☐	500.000	500.877	4655393.84	0.8809	A	0.8

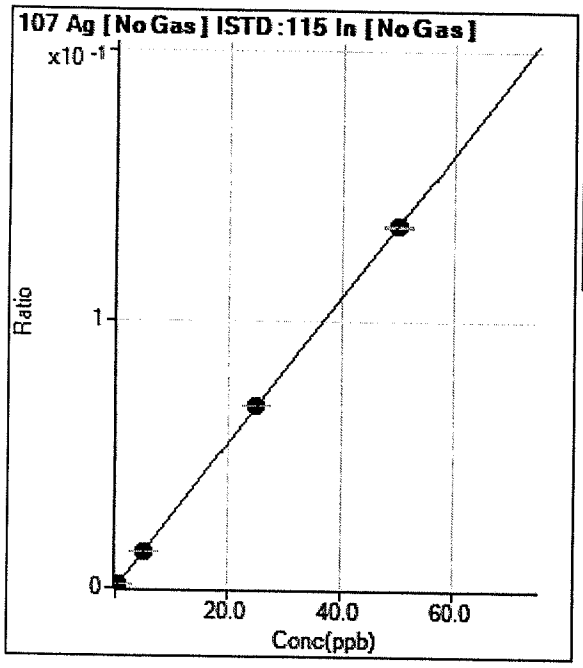
y = 0.0018 * x + 7.4214E-005
R = 1.0000
DL = 0.01919
BEC = 0.0422

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		15.00	0.0000	P	35.0
2	☐	0.500		380.34	0.0001	P	1.8
3	☐	50.000		14111.50	0.0026	P	1.0
4	☐	250.000		69444.25	0.0128	P	0.5
5	☐	500.000		134387.58	0.0254	P	1.4

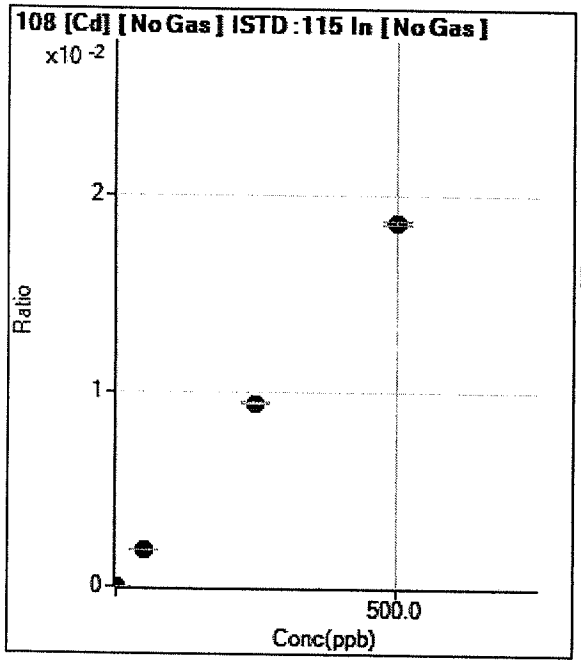
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	116.67	0.0000	P	16.9
2	☐	0.500	0.514	7801.19	0.0014	P	3.0
3	☐	5.000	5.081	75815.13	0.0138	P	0.8
4	☐	25.000	25.082	367739.48	0.0680	P	0.5
5	☐	50.000	49.951	715725.68	0.1354	P	0.7

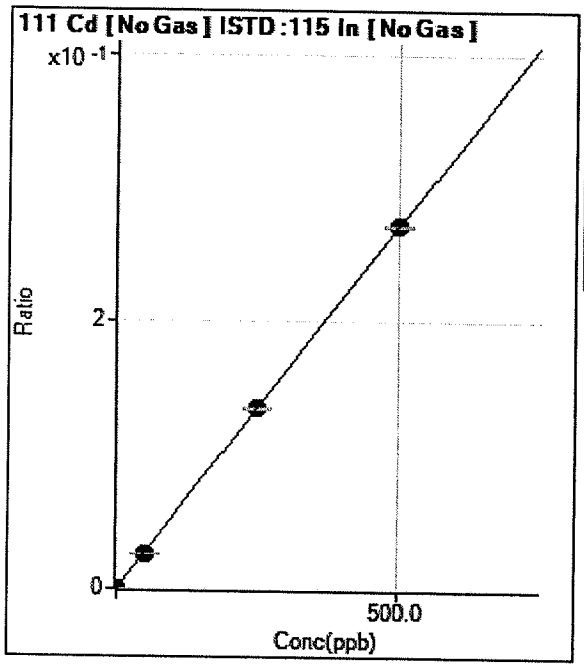
y = 0.0027 * x + 2.0935E-005
R = 1.0000
DL = 0.003905
BEC = 0.007723

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		8.00	0.0000	P	12.8
2	☐	0.500		183.67	0.0000	P	7.5
3	☐	50.000		10284.99	0.0019	P	0.6
4	☐	250.000		50923.65	0.0094	P	0.8
5	☐	500.000		98438.54	0.0186	P	1.2

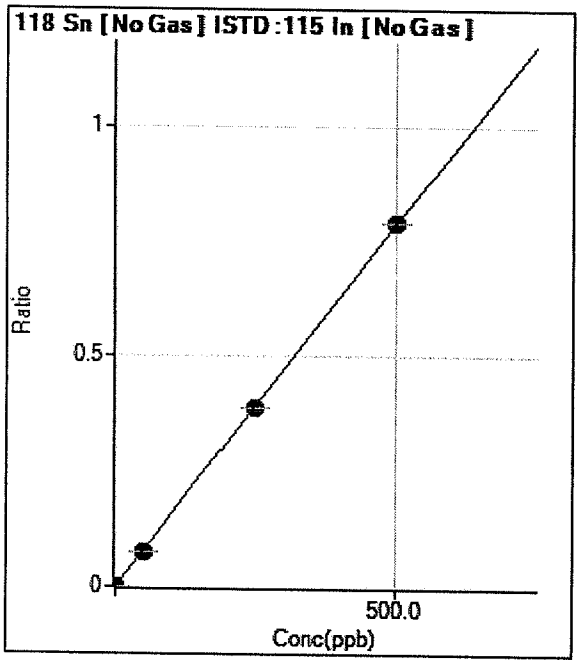
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	75.87	0.0000	P	6.6
2	☐	0.500	0.530	1663.60	0.0003	P	3.2
3	☐	50.000	48.594	145275.86	0.0264	P	0.8
4	☐	250.000	248.441	730407.52	0.1351	P	0.6
5	☐	500.000	500.920	1439437.31	0.2724	A	0.2

y = 5.4373E-004 * x + 1.3620E-005
R = 1.0000
DL = 0.004995
BEC = 0.02505

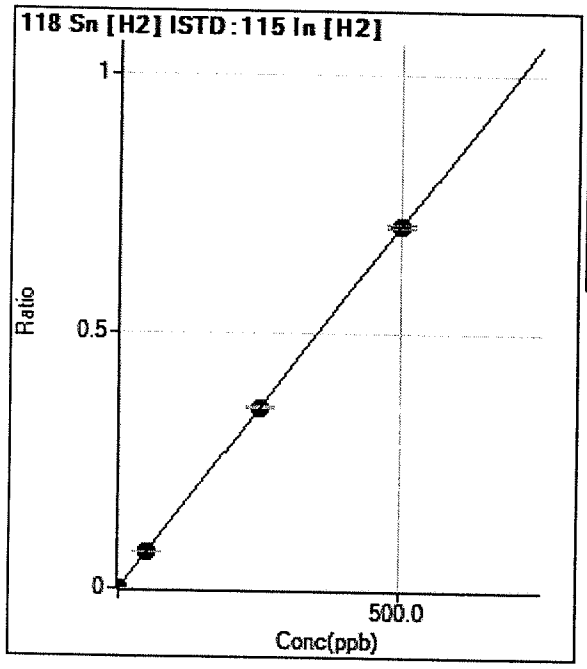
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1687.89	0.0003	P	4.1
2	☐	0.500	0.464	5694.57	0.0010	P	2.4
3	☐	50.000	47.478	412031.01	0.0750	P	0.7
4	☐	250.000	247.535	2106491.58	0.3896	A	0.1
5	☐	500.000	501.485	4169763.03	0.7890	A	0.2

y = 0.0016 * x + 3.0296E-004
R = 1.0000
DL = 0.02374
BEC = 0.1926

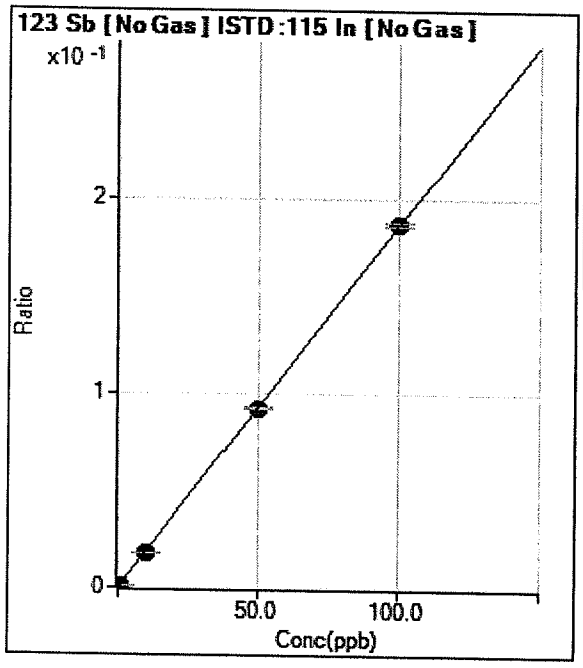
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1364.52	0.0003	P	3.9
2	☐	0.500	0.496	4701.95	0.0010	P	2.6
3	☐	50.000	49.315	335447.11	0.0700	P	0.3
4	☐	250.000	249.839	1668106.15	0.3535	A	1.4
5	☐	500.000	500.149	3272764.59	0.7075	A	0.9

y = 0.0014 * x + 2.8203E-004
R = 1.0000
DL = 0.02351
BEC = 0.1995

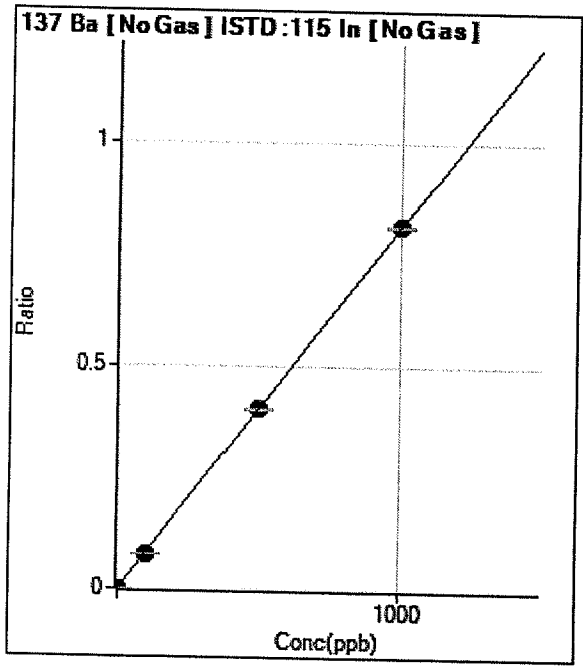
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	201.11	0.0000	P	8.9
2	☐	0.500	0.498	5296.63	0.0010	P	3.0
3	☐	10.000	9.686	99131.65	0.0180	P	1.2
4	☐	50.000	49.564	498232.45	0.0922	P	0.6
5	☐	100.000	100.250	984860.48	0.1864	P	1.2

y = 0.0019 * x + 3.6109E-005
R = 1.0000
DL = 0.005186
BEC = 0.01943

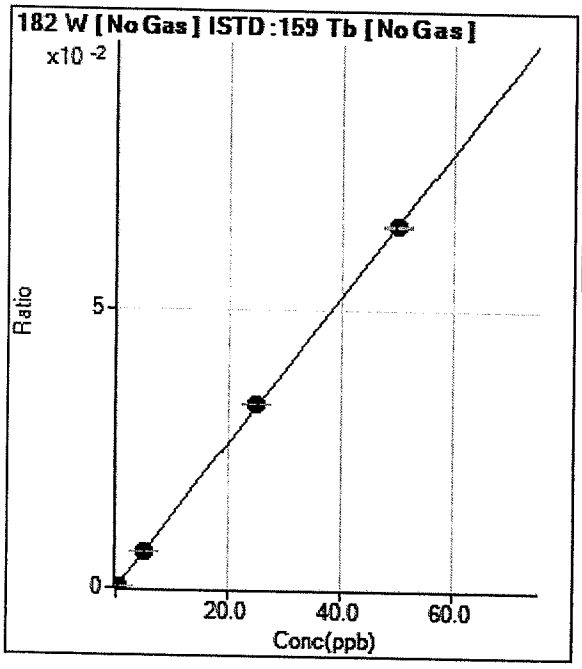
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	290.00	0.0001	P	18.7
2	☐	0.500	0.505	2543.58	0.0005	P	1.3
3	☐	100.000	95.964	427783.05	0.0778	P	1.2
4	☐	500.000	496.774	2177489.98	0.4028	A	0.6
5	☐	1000.000	1002.016	4292851.36	0.8123	A	0.5

y = 8.1063E-004 * x + 5.2037E-005
R = 1.0000
DL = 0.03604
BEC = 0.06419

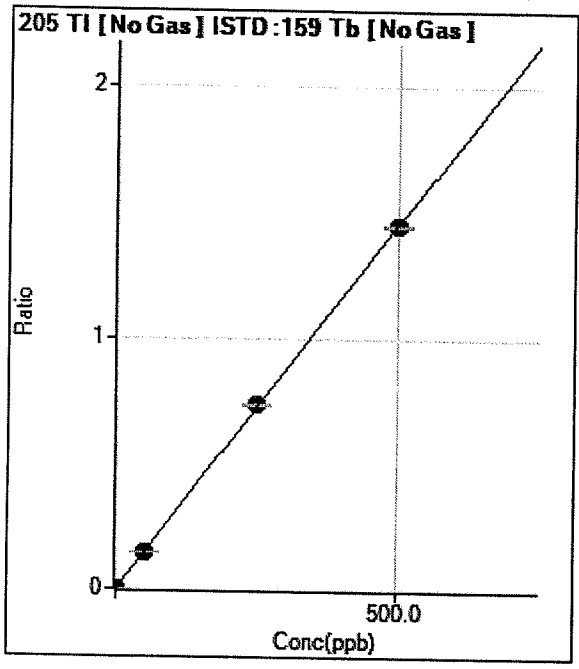
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83.33	0.0000	P	54.8
2	☐	0.500	0.235	2190.20	0.0003	P	6.4
3	☐	5.000	5.046	45980.06	0.0066	P	1.7
4	☐	25.000	25.329	228418.68	0.0331	P	0.4
5	☐	50.000	49.834	449706.80	0.0651	P	0.8

y = 0.0013 * x + 1.2100E-005
R = 0.9999
DL = 0.01525
BEC = 0.009268

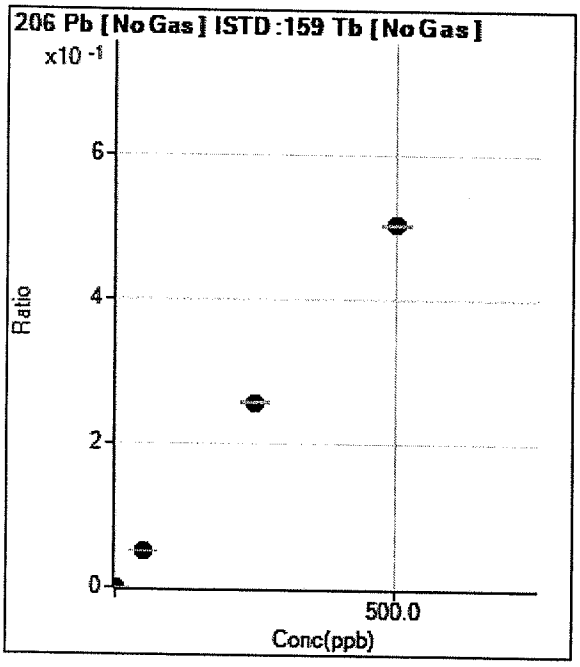
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1188.94	0.0002	P	2.4
2	☐	0.500	0.506	11288.44	0.0016	P	1.9
3	☐	50.000	50.226	1016874.82	0.1460	P	0.9
4	☐	250.000	252.894	5069690.35	0.7342	A	0.6
5	☐	500.000	498.531	10001535.72	1.4472	A	0.3

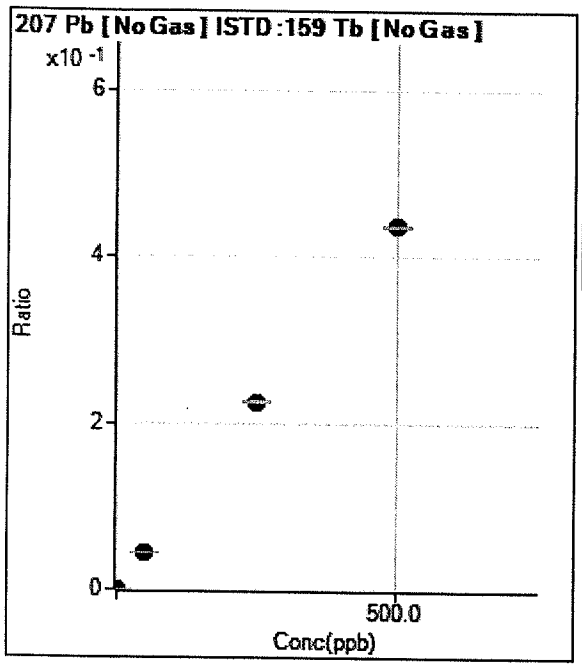
y = 0.0029 * x + 1.7212E-004
R = 1.0000
DL = 0.004231
BEC = 0.0593

Weight: <None>
Min Conc: 0



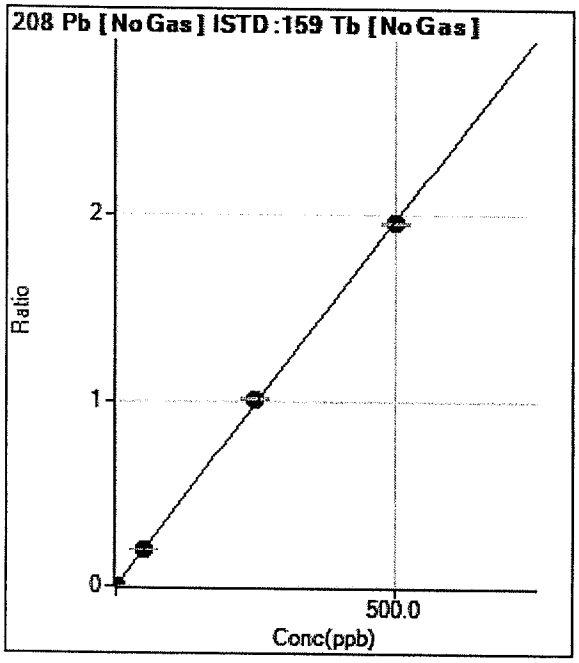
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		486.68	0.0001	P	21.0
2	☐	0.500		4180.71	0.0006	P	7.7
3	☐	50.000		347631.97	0.0499	P	0.6
4	☐	250.000		1772646.64	0.2567	A	1.1
5	☐	500.000		3469218.49	0.5020	A	0.7

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		393.34	0.0001	P	19.9
2	☐	0.500		3627.21	0.0005	P	5.0
3	☐	50.000		304623.24	0.0437	P	1.7
4	☐	250.000		1553849.56	0.2251	A	1.7
5	☐	500.000		3015263.81	0.4363	A	0.7

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1884.50	0.0003	P	6.3
2	☐	0.500	0.532	16285.25	0.0024	P	0.6
3	☐	50.000	50.395	1385174.23	0.1988	P	1.0
4	☐	250.000	256.191	6971132.86	1.0097	A	1.1
5	☐	500.000	496.865	13530547.86	1.9579	A	0.7

y = 0.0039 * x + 2.7283E-004
R = 0.9999
DL = 0.01311
BEC = 0.06925

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq. Date-Time	2020-07-20 09:13:15
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

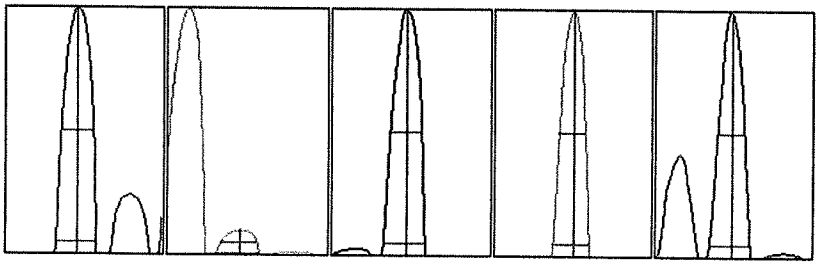
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1828	18281.49			0.749	5.000
24	10.00	7156	71564.94			0.878	5.000
59	10.00	11311	113114.49			1.332	5.000
115	10.00	13138	131382.50			1.043	5.000
208	10.00	5628	56281.65			0.657	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1824	1813	1826	1827	1851
24	7072	7221	7217	7134	7139
59	11100	11217	11442	11446	11353
115	12964	13255	13072	13102	13298
208	5563	5655	5636	5642	5644

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	3238.27	8.90	8.90 - 9.10	
24	12208.19	23.90	23.90 - 24.10	
59	20545.44	58.95	58.90 - 59.10	
115	27362.59	115.05	114.90 - 115.10	
208	11305.14	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.739	0.900	
24	0.63	0.783	0.900	
59	0.58	0.776	0.900	
115	0.50	0.683	0.900	
208	0.51	0.769	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.4 V	Deflect	13.2 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-95 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9995	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	-0.04		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.3 mm

EM

Discriminator	4.1 mV	Analog HV	2425 V	Pulse HV	1583 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6G15002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 10:09:48
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fall	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	119500.56	1.3
Be	9	6	No Gas	37.78	35.7
B	11	6	No Gas	7789.94	3.5
Na	23	45	H2	407413.69	0.2
Mg	24	45	No Gas	31529.02	3.8
Al	27	45	No Gas	27243.42	3.4
Si	28	45	H2	7227.88	1.2
P	31	45	No Gas	29866.73	0.4
K	39	45	He	130960.04	3.0
Ca	40	45	H2	169695.68	0.3
Ti	47	45	No Gas	312.67	10.7
V	51	45	He	5767.88	1.4
Cr	52	45	He	1231.39	1.9
Mn	55	45	No Gas	13015.52	1.5
Fe	56	45	H2	29545.88	2.2
Co	59	45	No Gas	376.01	9.4
Ni	60	45	He	142.00	7.8
Cu	63	45	He	3097.69	2.0
Zn	66	72	No Gas	4722.83	3.9
As	75	72	He	340.67	6.1
Se	78	72	H2	21.33	9.8
Sr	88	72	No Gas	1246.73	3.9
Zr	90	72	No Gas	743.38	38.4
Mo	95	115	No Gas	264.45	3.6
Mo	98	115	No Gas	454.45	16.9
[Cd]	106	115	No Gas	11.33	35.7
Ag	107	115	No Gas	138.89	11.8
[Cd]	108	115	No Gas	12.67	27.7
Cd	111	115	No Gas	49.40	13.3
Sn	118	115	No Gas	1939.14	29.4
Sn	118	115	H2	1342.29	6.9
Sb	123	115	No Gas	151.11	5.1
Ba	137	115	No Gas	202.22	7.8
W	182	159	No Gas	130.00	46.2
Hg	201	159	No Gas	27.33	9.4

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	18.33	22.0
Tl	205	159	No Gas	1201.17	6.7
Pb	206	159	No Gas	393.34	7.3
Pb	207	159	No Gas	390.01	31.5
Pb	208	159	No Gas	1632.27	4.2
Th	232	159	No Gas	44.44	48.8
U	238	159	No Gas	135.56	13.5

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	2127750.42	1.8
Sc	45	No Gas	4351089.67	1.3
Sc	45	H2	2538328.83	1.3
Sc	45	He	501255.85	0.5
Ge	72	No Gas	1004335.48	1.3
Ge	72	H2	677952.25	0.8
Ge	72	He	278337.97	0.2
In	115	No Gas	5483417.78	1.4
Tb	159	No Gas	6795122.92	1.1
Tb	159	He	3833707.42	0.4

Calibration Standard Report

Sample Name	S0
File Name	H6G15003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 10:13:08
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	119670.72	0.3
Be	9	6	No Gas	26.67	25.0
B	11	6	No Gas	29939.58	1.9
Na	23	45	H2	421088.10	0.5
Mg	24	45	No Gas	46057.83	1.0
Al	27	45	No Gas	37313.38	2.4
Si	28	45	H2	6078.00	1.6
P	31	45	No Gas	27662.17	0.6
K	39	45	He	130264.42	3.8
Ca	40	45	H2	222950.57	0.5
Ti	47	45	No Gas	306.67	10.0
V	51	45	He	5591.15	4.0
Cr	52	45	He	1237.39	4.0
Mn	55	45	No Gas	14398.91	0.6
Fe	56	45	H2	38047.50	0.2
Co	59	45	No Gas	630.68	5.8
Ni	60	45	He	159.33	5.9
Cu	63	45	He	2883.64	1.8
Zn	66	72	No Gas	4258.00	1.3
As	75	72	He	338.00	6.4
Se	78	72	H2	21.33	10.8
Sr	88	72	No Gas	1797.90	4.8
Zr	90	72	No Gas	223.33	18.1
Mo	95	115	No Gas	208.89	9.6
Ag	107	115	No Gas	116.67	17.1
Cd	111	115	No Gas	75.87	6.7
Sn	118	115	No Gas	1687.89	4.4
Sb	123	115	No Gas	201.11	8.5
Ba	137	115	No Gas	290.00	19.0
W	182	159	No Gas	83.33	54.1
Hg	201	159	He	16.17	21.1
Tl	205	159	No Gas	1188.94	2.7
Pb	208	159	No Gas	1884.50	6.3
U	238	159	No Gas	443.34	6.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2120806.45	0.9	2127750.42	99.67	60	120	
Sc	45	No Gas	4401746.17	1.2	4351089.67	101.16	60	120	
Sc	45	H2	2580844.00	0.8	2538328.83	101.67	60	120	
Sc	45	He	500933.17	0.8	501255.85	99.94	60	120	
Ge	72	No Gas	1009866.42	0.5	1004335.48	100.55	60	120	
Ge	72	H2	685220.92	0.7	677952.25	101.07	60	120	
Ge	72	He	282452.51	0.9	276337.97	101.48	60	120	
In	115	No Gas	5570888.05	0.4	5483417.78	101.6	60	120	
Tb	159	No Gas	6907588.61	0.8	6795122.92	101.66	60	120	
Tb	159	He	3852480.50	1.8	3833707.42	100.49	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G15004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:16:07
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	124796.83	0.8
Be	9	6	No Gas	1982.36	4.0
B	11	6	No Gas	8270.23	6.1
Na	23	45	H2	639778.02	0.2
Mg	24	45	No Gas	687831.13	1.5
Al	27	45	No Gas	859635.14	1.5
Si	28	45	H2	137822.97	0.3
P	31	45	No Gas	51902.04	1.6
K	39	45	He	170689.13	3.1
Ca	40	45	H2	612312.42	0.5
Ti	47	45	No Gas	1266.73	2.8
V	51	45	He	10069.70	2.3
Cr	52	45	He	5405.74	1.2
Mn	55	45	No Gas	27340.61	0.7
Fe	56	45	H2	723821.77	0.3
Co	59	45	No Gas	13045.57	2.4
Ni	60	45	He	2059.49	2.9
Cu	63	45	He	6694.32	4.2
Zn	66	72	No Gas	11571.59	1.9
As	75	72	He	1009.71	3.1
Se	78	72	H2	223.33	6.0
Sr	88	72	No Gas	17070.87	1.3
Zr	90	72	No Gas	75566.09	0.9
Mo	95	115	No Gas	3152.60	5.0
Ag	107	115	No Gas	7801.19	2.4
Cd	111	115	No Gas	1663.60	3.0
Sn	118	115	No Gas	5694.57	2.1
Sb	123	115	No Gas	5296.63	2.2
Ba	137	115	No Gas	2543.58	0.6
W	182	159	No Gas	2190.20	6.0
Hg	201	159	He	53.33	9.8
Tl	205	159	No Gas	11288.44	1.4
Pb	206	159	No Gas	16285.25	0.9
U	238	159	No Gas	13062.52	3.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2120225.32	1.3	2127750.42	99.65	60	120	
Sc	45	No Gas	4387092.83	0.7	4351089.67	100.83	60	120	
Sc	45	H2	2572429.75	0.8	2538328.83	101.34	60	120	
Sc	45	He	496976.03	0.7	501255.85	99.15	60	120	
Ge	72	No Gas	1013013.33	2.1	1004335.48	100.86	60	120	
Ge	72	H2	694556.67	0.4	677952.25	102.45	60	120	
Ge	72	He	283551.61	0.7	278337.97	101.87	60	120	
In	115	No Gas	5512557.42	0.8	5483417.78	100.53	60	120	
Tb	159	No Gas	6876181.12	0.5	6795122.92	101.19	60	120	
Tb	159	He	3841116.92	1.6	3833707.42	100.19	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G15005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:19:05
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	176770.87	1.4
Be	9	6	No Gas	19220.89	2.4
B	11	6	No Gas	36215.40	0.7
Na	23	45	H2	23433073.33	0.5
Mg	24	45	No Gas	63880682.67	1.0
Al	27	45	No Gas	81586460.45	0.8
Si	28	45	H2	697341.79	0.8
P	31	45	No Gas	77479.95	0.9
K	39	45	He	4469613.00	1.5
Ca	40	45	H2	46834317.33	0.7
Ti	47	45	No Gas	90458.96	1.8
V	51	45	He	314450.72	0.7
Cr	52	45	He	352957.12	0.6
Mn	55	45	No Gas	8905106.00	0.1
Fe	56	45	H2	66683606.67	0.9
Co	59	45	No Gas	1241069.04	0.6
Ni	60	45	He	120771.15	0.7
Cu	63	45	He	319506.55	0.4
Zn	66	72	No Gas	190741.78	0.8
As	75	72	He	61098.02	0.9
Se	78	72	H2	20262.53	1.4
Sr	88	72	No Gas	1543549.35	1.1
Zr	90	72	No Gas	182470.93	1.0
Mo	95	115	No Gas	288477.59	0.7
Ag	107	115	No Gas	75815.13	0.2
Cd	111	115	No Gas	145275.66	0.1
Sn	118	115	No Gas	412031.01	0.8
Sb	123	115	No Gas	99131.65	0.8
Ba	137	115	No Gas	427783.05	0.9
W	182	159	No Gas	45980.06	2.2
Hg	201	159	He	395.68	0.6
Tl	205	159	No Gas	1016874.82	0.3
Pb	208	159	No Gas	1385174.23	0.3
U	238	159	No Gas	1255479.25	1.3

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2112636.84	1.6	2127750.42	99.29	60	120	
Sc	45	No Gas	4381223.67	0.9	4351089.67	100.69	60	120	
Sc	45	H2	2586536.25	0.7	2538328.83	101.9	60	120	
Sc	45	He	501721.62	0.9	501255.85	100.09	60	120	
Ge	72	No Gas	1019502.79	0.7	1004335.48	101.51	60	120	
Ge	72	H2	702138.60	0.9	677952.25	103.57	60	120	
Ge	72	He	282871.19	0.2	278337.97	101.63	60	120	
In	115	No Gas	5495723.67	1.0	5483417.78	100.22	60	120	
Tb	159	No Gas	6967005.56	0.7	6795122.92	102.53	60	120	
Tb	159	He	3868002.58	0.1	3833707.42	100.89	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G15006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:22:13
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	405552.47	1.0
Be	9	6	No Gas	96346.84	1.3
B	11	6	No Gas	127048.47	1.9
Na	23	45	H2	113679186.67	0.4
Mg	24	45	No Gas	316312661.33	0.4
Al	27	45	No Gas	409864033.89	0.2
Si	28	45	H2	3342801.92	0.9
P	31	45	No Gas	277415.10	0.4
K	39	45	He	21482071.33	1.0
Ca	40	45	H2	233592362.67	0.9
Ti	47	45	No Gas	453381.12	0.6
V	51	45	He	1516884.04	0.2
Cr	52	45	He	1715809.71	0.4
Mn	55	45	No Gas	44111053.33	1.1
Fe	56	45	H2	323437237.33	0.2
Co	59	45	No Gas	6085561.00	0.1
Ni	60	45	He	583775.63	0.5
Cu	63	45	He	1516334.25	0.4
Zn	66	72	No Gas	1220884.58	0.5
As	75	72	He	304089.67	1.2
Se	78	72	H2	100076.19	0.5
Sr	88	72	No Gas	7807306.08	0.8
Zr	90	72	No Gas	486192.29	1.4
Mo	95	115	No Gas	1471582.13	0.6
Ag	107	115	No Gas	367739.48	0.9
Cd	111	115	No Gas	730407.52	0.3
Sn	118	115	No Gas	2106491.58	0.4
Sb	123	115	No Gas	498232.45	0.5
Ba	137	115	No Gas	2177489.98	0.6
W	182	159	No Gas	228418.68	1.0
Hg	201	159	He	2001.99	0.8
Tl	205	159	No Gas	5069690.35	0.5
Pb	208	159	No Gas	6971132.86	0.0
U	238	159	No Gas	6445529.19	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2099343.71	0.4	2127750.42	98.66	60	120	
Sc	45	No Gas	4409457.33	0.9	4351089.67	101.34	60	120	
Sc	45	H2	2531631.00	0.6	2538328.83	99.74	60	120	
Sc	45	He	497450.33	0.3	501255.85	99.24	60	120	
Ge	72	No Gas	1028119.63	0.4	1004335.48	102.37	60	120	
Ge	72	H2	691443.69	1.2	677952.25	101.99	60	120	
Ge	72	He	281385.38	1.3	278337.97	101.09	60	120	
In	115	No Gas	5406551.20	0.4	5483417.78	98.6	60	120	
Tb	159	No Gas	6904964.73	1.0	6795122.92	101.62	60	120	
Tb	159	He	3882199.67	0.2	3833707.42	101.26	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G15007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:25:10
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	677225.98	1.0
Be	9	6	No Gas	186215.72	0.5
B	11	6	No Gas	229261.55	0.6
Na	23	45	H2	225198890.67	0.4
Mg	24	45	No Gas	621223488.00	1.1
Al	27	45	No Gas	810618334.59	0.8
Si	28	45	H2	6605869.00	0.4
P	31	45	No Gas	523164.85	0.7
K	39	45	He	42593862.67	0.8
Ca	40	45	H2	466248480.00	0.3
Ti	47	45	No Gas	888550.06	0.8
V	51	45	He	3035035.17	1.0
Cr	52	45	He	3409513.50	0.6
Mn	55	45	No Gas	86604170.67	0.4
Fe	56	45	H2	648405184.00	0.5
Co	59	45	No Gas	11961066.00	0.4
Ni	60	45	He	1119384.42	0.2
Cu	63	45	He	2918905.92	1.0
Zn	66	72	No Gas	1863145.00	0.5
As	75	72	He	605228.85	0.8
Se	76	72	H2	194621.63	0.7
Sr	88	72	No Gas	15367411.61	0.2
Zr	90	72	No Gas	869687.52	0.6
Mo	95	115	No Gas	2878161.07	0.6
Ag	107	115	No Gas	715725.68	0.8
Cd	111	115	No Gas	1439437.31	0.1
Sn	118	115	No Gas	4169763.03	0.5
Sb	123	115	No Gas	984860.48	1.3
Ba	137	115	No Gas	4292851.36	0.4
W	182	159	No Gas	449706.80	0.8
Hg	201	159	He	3910.11	1.3
Tl	205	159	No Gas	10001535.72	0.3
Pb	208	159	No Gas	13530547.86	0.6
U	238	159	No Gas	12529777.28	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2087178.59	1.1	2127750.42	98.09	60	120	
Sc	45	No Gas	4359972.17	0.8	4351089.67	100.2	60	120	
Sc	45	H2	2565160.83	0.2	2538328.83	101.06	60	120	
Sc	45	He	493270.03	1.0	501255.85	98.41	60	120	
Ge	72	No Gas	1013386.52	1.1	1004335.48	100.9	60	120	
Ge	72	H2	686838.13	1.0	677952.25	101.31	60	120	
Ge	72	He	276004.32	0.1	278337.97	99.16	60	120	
In	115	No Gas	5284704.14	0.3	5483417.78	96.38	60	120	
Tb	159	No Gas	6910774.87	0.1	6795122.92	101.7	60	120	
Tb	159	He	3848664.33	1.0	3833707.42	100.39	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G15008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 10:28:04
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.969	ppb	3.8	467423.49	30	103.23	90	110	
Be	9	6	No Gas	31.237	ppb	3.7	117444.29	30	104.12	90	110	
B	11	6	No Gas	28.715	ppb	4.5	86462.65	30	95.72	90	110	
Na	23	45	H2	30427.163	ppb	0.7	135655386.67	30000	101.42	90	110	
Mg	24	45	No Gas	29435.955	ppb	3.2	364932981.33	30000	98.12	90	110	
Al	27	45	No Gas	29948.780	ppb	2.6	483732966.12	30000	99.83	90	110	
Si	28	45	H2	3401.090	ppb	0.4	4448376.83	3000	113.37	90	110	> +/- 10%
P	31	45	No Gas	281.414	ppb	2.3	305062.25	300	93.8	90	110	
K	39	45	He	30495.573	ppb	0.4	25696366.67	30000	101.65	90	110	
Ca	40	45	H2	30495.363	ppb	0.4	280846688.00	30000	101.65	90	110	
Ti	47	45	No Gas	303.705	ppb	1.5	538769.50	300	101.23	90	110	
V	51	45	He	319.221	ppb	0.2	1911961.29	300	106.41	90	110	
Cr	52	45	He	318.712	ppb	0.4	2146363.67	300	106.24	90	110	
Mn	55	45	No Gas	2001.669	ppb	2.8	57663746.67	2000	100.08	90	110	
Fe	56	45	H2	30849.732	ppb	0.2	394769610.67	30000	102.83	90	110	
Co	59	45	No Gas	307.550	ppb	2.0	7340524.00	300	102.52	90	110	
Ni	60	45	He	323.261	ppb	0.3	720039.00	300	107.75	90	110	
Cu	63	45	He	319.999	ppb	0.5	1857902.71	300	106.67	90	110	
Zn	66	72	No Gas	274.535	ppb	2.3	1085701.29	300	91.51	90	110	
As	75	72	He	312.059	ppb	0.8	382710.26	300	104.02	90	110	
Se	78	72	H2	318.076	ppb	1.5	123295.09	300	106.03	90	110	
Sr	88	72	No Gas	313.346	ppb	2.7	9651941.28	300	104.45	90	110	
Zr	90	72	No Gas	30.441	ppb	1.8	541062.37	30	101.47	90	110	
Mo	95	115	No Gas	301.681	ppb	2.1	1758577.40	300	100.56	90	110	
Ag	107	115	No Gas	31.278	ppb	0.9	454030.07	30	104.26	90	110	
Cd	111	115	No Gas	310.135	ppb	0.4	902781.56	300	103.38	90	110	
Sn	118	115	No Gas	311.143	ppb	0.9	2621345.17	300	103.71	90	110	
Sb	123	115	No Gas	59.692	ppb	0.7	594116.09	60	99.49	90	110	
Ba	137	115	No Gas	311.321	ppb	1.2	1351332.28	300	103.77	90	110	
W	182	159	No Gas	32.454	ppb	1.0	291814.39	30	108.18	90	110	
Hg	201	159	He	2.992	ppb	1.4	2357.72	3	99.73	90	110	
Tl	205	159	No Gas	319.007	ppb	2.2	6376653.36	300	106.34	90	110	
Pb	208	159	No Gas	318.932	ppb	1.9	8653285.70	300	106.31	90	110	
U	238	159	No Gas	312.834	ppb	1.3	7905337.74	300	104.28	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2094744.08	0.4	2127750.42	98.45	60	120	
Sc	45	No Gas	4343299.33	0.4	4351089.67	99.82	60	120	
Sc	45	H2	2525313.17	0.7	2538328.83	99.49	60	120	
Sc	45	He	487188.64	0.6	501255.85	97.19	60	120	
Ge	72	No Gas	1015195.08	0.2	1004335.48	101.08	60	120	
Ge	72	H2	681007.37	1.3	677952.25	100.45	60	120	
Ge	72	He	280419.81	0.1	278337.97	100.75	60	120	
In	115	No Gas	5353121.46	0.9	5483417.78	97.62	60	120	
Tb	159	No Gas	6886000.84	1.7	6795122.92	101.34	60	120	
Tb	159	He	3859635.00	0.6	3833707.42	100.68	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G15009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 10:30:57
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	117902.48	0.4	
Be	9	6	No Gas	0.021	ppb	19.5	106.67	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	29774.80	4	
Na	23	45	H2	3.497	ppb	27.6	428848.48	40	
Mg	24	45	No Gas	6.649	ppb	44.6	127918.82	10	
Al	27	45	No Gas	6.522	ppb	44.8	142133.34	15	
Si	28	45	H2	2.492	ppb	9.3	9229.06	8	
P	31	45	No Gas	0.246	ppb	369.3	27634.78	10	
K	39	45	He	8.582	ppb	90.3	135583.28	20	
Ca	40	45	H2	2.480	ppb	7.6	241707.72	25	
Tl	47	45	No Gas	0.066	ppb	41.8	420.68	0.5	
V	51	45	He	<0.000	ppb	N/A	5457.76	0.5	
Cr	52	45	He	0.026	ppb	23.3	1396.74	0.2	
Mn	55	45	No Gas	0.445	ppb	46.3	27046.18	0.2	~~>LOD~~
Fe	56	45	H2	3.252	ppb	9.1	79061.96	10	
Co	59	45	No Gas	0.066	ppb	50.3	2204.86	0.15	
Ni	60	45	He	0.016	ppb	21.5	193.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2563.58	0.4	
Zn	66	72	No Gas	0.032	ppb	10.7	4311.35	2	
As	75	72	He	0.026	ppb	51.3	365.01	0.2	
Se	78	72	H2	0.087	ppb	30.6	55.00	0.2	
Sr	88	72	No Gas	0.066	ppb	50.4	3769.46	0.2	
Zr	90	72	No Gas	0.004	ppb	73.7	290.00	2	
Mo	95	115	No Gas	0.136	ppb	28.4	1016.71	0.2	
Ag	107	115	No Gas	0.008	ppb	35.6	241.12	0.08	
Cd	111	115	No Gas	0.104	ppb	32.1	385.65	0.2	
Sn	118	115	No Gas	0.132	ppb	23.0	2802.53	0.2	
Sb	123	115	No Gas	0.014	ppb	57.8	337.78	0.4	
Ba	137	115	No Gas	0.084	ppb	31.2	657.79	0.2	
W	182	159	No Gas	0.027	ppb	54.6	326.68	0.3	
Hg	201	159	He	0.017	ppb	22.4	30.00	0.1	
Tl	205	159	No Gas	0.292	ppb	28.1	6998.71	0.1	~~>LOD~~
Pb	208	159	No Gas	0.103	ppb	32.2	4683.69	0.1	~~>LOD~~
U	238	159	No Gas	0.068	ppb	40.8	2147.98	0.05	>LOD

LY 07/20/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2153778.88	0.9	2127750.42	101.22	60	120	
Sc	45	No Gas	4359793.67	1.9	4351089.67	100.2	60	120	
Sc	45	H2	2532918.83	0.7	2538328.83	99.79	60	120	
Sc	45	He	493447.82	0.6	501255.85	98.44	60	120	
Ge	72	No Gas	993371.67	0.5	1004335.48	98.91	60	120	
Ge	72	H2	683048.00	0.9	677952.25	100.75	60	120	
Ge	72	He	278933.31	0.3	278337.97	100.21	60	120	
In	115	No Gas	5485403.13	1.0	5483417.78	100.04	60	120	
Tb	159	No Gas	6873648.06	0.9	6795122.92	101.16	60	120	
Tb	159	He	3898034.00	1.1	3833707.42	101.68	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2001
File Name	H6G15010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:33:52
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.736	ppb	3.7	129667.24	1	73.6	80	120	> +/- 20%
Be	9	6	No Gas	0.929	ppb	2.5	3607.13	1	92.9	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	26851.17	10	-17.05	80	120	> +/- 20%
Na	23	45	H2	93.063	ppb	3.7	826893.73	100	93.06	80	120	
Mg	24	45	No Gas	95.452	ppb	0.5	1221328.25	100	95.45	80	120	
Al	27	45	No Gas	93.969	ppb	0.7	1545023.05	100	93.97	80	120	
Si	28	45	H2	94.961	ppb	3.2	130166.82	100	94.96	80	120	
P	31	45	No Gas	45.038	ppb	0.5	71321.18	50	90.08	80	120	
K	39	45	He	95.517	ppb	6.3	213203.10	100	95.52	80	120	
Ca	40	45	H2	93.215	ppb	1.3	1077573.83	100	93.22	80	120	
Ti	47	45	No Gas	0.954	ppb	4.3	1982.14	1	95.4	80	120	
V	51	45	He	0.943	ppb	3.5	11415.42	1	94.3	80	120	
Cr	52	45	He	0.985	ppb	4.0	8075.05	1	98.5	80	120	
Mn	55	45	No Gas	0.971	ppb	0.8	41924.12	1	97.1	80	120	
Fe	56	45	H2	98.483	ppb	0.7	1299325.50	100	98.48	80	120	
Co	59	45	No Gas	0.965	ppb	0.9	23512.29	1	96.5	80	120	
Ni	60	45	He	1.037	ppb	2.1	2541.57	1	103.7	80	120	
Cu	63	45	He	0.961	ppb	4.0	8636.74	1	96.1	80	120	
Zn	66	72	No Gas	9.808	ppb	1.7	42546.56	10	98.08	80	120	
As	75	72	He	0.888	ppb	6.4	1443.08	1	88.8	80	120	
Se	78	72	H2	0.965	ppb	5.4	401.34	1	96.5	80	120	
Sr	88	72	No Gas	1.951	ppb	1.1	81383.53	2	97.55	80	120	
Zr	90	72	No Gas	3.840	ppb	1.5	67868.37	5	76.8	80	120	> +/- 20%
Mo	95	115	No Gas	0.906	ppb	2.4	5678.99	1	90.6	80	120	
Ag	107	115	No Gas	0.933	ppb	3.2	14144.24	1	93.3	80	120	
Cd	111	115	No Gas	0.912	ppb	3.4	2825.83	1	91.2	80	120	
Sn	118	115	No Gas	0.872	ppb	2.8	9286.62	1	87.2	80	120	
Sb	123	115	No Gas	0.886	ppb	3.5	9331.12	1	88.6	80	120	
Ba	137	115	No Gas	0.923	ppb	6.7	4437.43	1	92.3	80	120	
W	182	159	No Gas	1.945	ppb	3.4	17552.22	2	97.25	80	120	
Hg	201	159	He	0.089	ppb	6.6	85.83	0.1	89	80	120	
Tl	205	159	No Gas	0.974	ppb	0.8	20628.14	1	97.4	80	120	
Pb	208	159	No Gas	0.981	ppb	2.4	28461.73	1	98.1	80	120	
U	238	159	No Gas	0.899	ppb	0.8	23137.38	1	89.9	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2147107.06	1.1	2127750.42	100.91	60	120	
Sc	45	No Gas	4317445.50	1.7	4351089.67	99.23	60	120	
Sc	45	H2	2529297.17	0.9	2538328.83	99.64	60	120	
Sc	45	He	502269.45	0.6	501255.85	100.2	60	120	
Ge	72	No Gas	1006373.44	1.3	1004335.48	100.2	60	120	
Ge	72	H2	691120.04	1.4	677952.25	101.94	60	120	
Ge	72	He	284401.92	0.8	278337.97	102.18	60	120	
In	115	No Gas	5547428.83	1.1	5483417.78	101.17	60	120	
Tb	159	No Gas	6880663.06	1.3	6795122.92	101.26	60	120	
Tb	159	He	3873358.58	0.2	3833707.42	101.03	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2002
File Name	H6G15011.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:36:46
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.284	ppb	16.7	122493.71	0.4	71	80	120	> +/- 20%
Be	9	6	No Gas	0.373	ppb	4.8	1441.19	0.4	93.25	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	15975.77	0.4	-1734.25	80	120	> +/- 20%
Na	23	45	H2	36.128	ppb	2.8	574402.62	40	90.32	80	120	
Mg	24	45	No Gas	38.841	ppb	2.0	520141.02	40	97.1	80	120	
Al	27	45	No Gas	39.144	ppb	2.4	660419.46	40	97.86	80	120	
K	39	45	He	41.023	ppb	14.9	163646.53	40	102.56	80	120	
Ca	40	45	H2	30.748	ppb	0.8	502679.78	40	76.87	80	120	> +/- 20%
Ti	47	45	No Gas	0.396	ppb	10.3	992.03	0.4	99	80	120	
V	51	45	He	0.408	ppb	6.5	8001.00	0.4	102	80	120	
Cr	52	45	He	0.411	ppb	1.3	4029.26	0.4	102.75	80	120	
Mn	55	45	No Gas	0.345	ppb	5.2	23842.76	0.4	86.25	80	120	
Fe	56	45	H2	41.071	ppb	0.9	564502.52	40	102.68	80	120	
Co	59	45	No Gas	0.397	ppb	1.5	9972.31	0.4	99.25	80	120	
Ni	60	45	He	0.446	ppb	1.6	1166.05	0.4	111.5	80	120	
Cu	63	45	He	0.383	ppb	2.4	5100.96	0.4	95.75	80	120	
Zn	66	72	No Gas	4.702	ppb	1.2	22338.39	4	117.55	80	120	
As	75	72	He	0.407	ppb	5.1	829.36	0.4	101.75	80	120	
Se	78	72	H2	0.433	ppb	6.8	189.67	0.4	108.25	80	120	
Sr	88	72	No Gas	0.384	ppb	3.1	13360.00	0.4	96	80	120	
Mo	95	115	No Gas	0.360	ppb	3.7	2362.43	0.4	90	80	120	
Ag	107	115	No Gas	0.396	ppb	3.6	6024.72	0.4	99	80	120	
Cd	111	115	No Gas	0.355	ppb	2.1	1137.41	0.4	86.75	80	120	
Sn	118	115	No Gas	0.292	ppb	6.1	4192.90	0.4	73	80	120	> +/- 20%
Sb	123	115	No Gas	0.359	ppb	3.4	3867.24	0.4	89.75	80	120	
Ba	137	115	No Gas	0.403	ppb	7.3	2082.39	0.4	100.75	80	120	
Tl	205	159	No Gas	0.396	ppb	4.2	9034.38	0.4	99	80	120	
Pb	208	159	No Gas	0.391	ppb	3.3	12394.69	0.4	97.75	80	120	
U	238	159	No Gas	0.357	ppb	1.3	9398.05	0.4	89.25	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2113450.55	0.5	2127750.42	99.33	60	120	
Sc	45	No Gas	4287694.00	0.2	4351089.67	98.54	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	2533251.75	0.5	2538328.83	99.8	60	120	
Sc	45	He	494849.21	0.8	501255.85	98.72	60	120	
Ge	72	No Gas	994532.11	1.1	1004335.48	99.02	60	120	
Ge	72	H2	683229.67	1.3	677952.25	100.78	60	120	
Ge	72	He	278782.34	1.0	278337.97	100.16	60	120	
In	115	No Gas	5499711.72	0.6	5483417.78	100.3	60	120	
Tb	159	No Gas	6839970.29	0.6	6795122.92	100.66	60	120	
Tb	159	He	3817356.75	0.4	3833707.42	99.57	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G15012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 10:39:39
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.175	ppb	73.3	115650.75	2	-50	50	
Be	9	6	No Gas	0.003	ppb	99.7	36.67	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	7858.97	10	-50	50	> +/- 20%
Na	23	45	H2	99940.152	ppb	2.2	443361130.67	100000	80	120	
Mg	24	45	No Gas	96657.412	ppb	2.0	1181639637.33	100000	80	120	
Al	27	45	No Gas	97312.386	ppb	2.6	1550077523.57	100000	80	120	
Si	28	45	H2	3.978	ppb	7.3	11109.10	50	-50	50	
P	31	45	No Gas	97059.257	ppb	2.2	94506176.00	100000	80	120	
K	39	45	He	100490.676	ppb	0.4	84850058.67	100000	80	120	
Ca	40	45	H2	101367.964	ppb	1.5	930431338.67	100000	80	120	
Ti	47	45	No Gas	2042.982	ppb	1.5	3572373.25	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	4890.88	1	-50	50	
Cr	52	45	He	0.314	ppb	5.1	3335.74	1	-50	50	
Mn	55	45	No Gas	0.198	ppb	6.4	19628.73	1	-50	50	
Fe	56	45	H2	101049.745	ppb	2.0	1289337088.00	100000	80	120	
Co	59	45	No Gas	0.347	ppb	2.9	8773.50	0.75	-50	50	
Ni	60	45	He	0.381	ppb	3.5	1008.04	1	-50	50	
Cu	63	45	He	0.370	ppb	5.8	4975.58	2	-50	50	
Zn	66	72	No Gas	2.363	ppb	4.1	12940.17	20	-50	50	
As	75	72	He	0.083	ppb	19.7	426.34	1	-50	50	
Se	78	72	H2	0.175	ppb	5.4	85.33	1	-50	50	
Sr	88	72	No Gas	0.810	ppb	1.7	25486.49	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.098	ppb	21.7	1866.80	10	-50	50	
Mo	95	115	No Gas	1948.504	ppb	1.9	11204763.72	2000	80	120	
Ag	107	115	No Gas	0.012	ppb	20.3	287.78	0.4	-50	50	
Cd	111	115	No Gas	0.025	ppb	75.4	142.99	1	-50	50	
Sn	118	115	No Gas	0.368	ppb	2.3	4659.72	1	-50	50	
Ba	137	115	No Gas	0.345	ppb	2.9	1752.34	1	-50	50	
W	182	159	No Gas	0.181	ppb	10.4	1706.79	1	-50	50	
Hg	201	159	He	0.002	ppb	93.4	17.83	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	821.14	0.5	-50	50	
Pb	208	159	No Gas	0.088	ppb	9.5	4242.51	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	97.78	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2015831.47	1.9	2127750.42	94.74	60	120	
Sc	45	No Gas	4282753.50	1.4	4351089.67	98.43	60	120	
Sc	45	H2	2518881.25	2.4	2538328.83	99.23	60	120	
Sc	45	He	489875.46	0.4	501255.85	97.73	60	120	
Ge	72	No Gas	966809.54	1.3	1004335.48	96.26	60	120	
Ge	72	H2	653311.17	1.1	677952.25	96.37	60	120	
Ge	72	He	273334.23	0.5	278337.97	98.2	60	120	
In	115	No Gas	5281723.57	2.4	5483417.78	96.32	60	120	
Tb	159	No Gas	6847106.95	1.3	6795122.92	100.77	60	120	
Tb	159	He	3830769.50	0.7	3833707.42	99.92	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G15013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:42:33
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.908	ppb	1.7	340024.66	20	80	120	
Be	9	6	No Gas	20.235	ppb	2.5	75509.10	20	80	120	
B	11	6	No Gas	15.286	ppb	3.3	59375.04	20	80	120	> +/- 20%
Na	23	45	H2	100357.020	ppb	1.0	464921557.33	100000	80	120	
Mg	24	45	No Gas	99096.706	ppb	2.8	1262408533.33	100000	80	120	
Al	27	45	No Gas	98605.685	ppb	3.0	1636651815.61	100000	80	120	
Si	28	45	H2	221.936	ppb	1.0	308053.13	200	80	120	
P	31	45	No Gas	98344.360	ppb	2.9	99782744.00	100000	80	120	
K	39	45	He	102564.098	ppb	0.4	89383010.67	100000	80	120	
Ca	40	45	H2	101994.229	ppb	1.0	977550357.33	100000	80	120	
Ti	47	45	No Gas	2092.226	ppb	2.5	3812473.83	2000	80	120	
V	51	45	He	20.045	ppb	0.5	129890.84	20	80	120	
Cr	52	45	He	20.708	ppb	0.3	145903.67	20	80	120	
Mn	55	45	No Gas	19.679	ppb	1.6	597031.79	20	80	120	
Fe	56	45	H2	101728.377	ppb	1.0	1355427328.00	100000	80	120	
Co	59	45	No Gas	20.090	ppb	1.8	493373.60	20	80	120	
Ni	60	45	He	20.598	ppb	0.7	47768.10	20	80	120	
Cu	63	45	He	20.201	ppb	0.8	124455.02	20	80	120	
Zn	66	72	No Gas	20.763	ppb	1.3	86057.77	20	80	120	
As	75	72	He	20.000	ppb	0.1	24957.34	20	80	120	
Se	78	72	H2	21.245	ppb	0.6	8243.52	20	80	120	
Sr	88	72	No Gas	20.766	ppb	1.9	641287.30	20	80	120	
Zr	90	72	No Gas	4.639	ppb	1.3	82635.04	20	80	120	> +/- 20%
Mo	95	115	No Gas	2026.638	ppb	2.0	11884423.97	2000	80	120	
Ag	107	115	No Gas	19.552	ppb	0.8	285572.91	20	80	120	
Cd	111	115	No Gas	19.517	ppb	0.9	57223.91	20	80	120	
Sn	118	115	No Gas	19.568	ppb	1.5	167387.99	20	80	120	
Sb	123	115	No Gas	19.986	ppb	1.5	200258.59	20	80	120	
Ba	137	115	No Gas	20.122	ppb	0.4	88126.27	20	80	120	
W	182	159	No Gas	16.538	ppb	1.7	169811.71	20	80	120	
Hg	201	159	He	1.931	ppb	0.8	1545.93	2	80	120	
Tl	205	159	No Gas	19.578	ppb	1.5	393643.98	20	80	120	
Pb	208	159	No Gas	19.782	ppb	0.9	548491.73	20	80	120	
U	238	159	No Gas	19.493	ppb	0.8	502124.74	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2078048.20	1.6	2127750.42	97.66	60	120	
Sc	45	No Gas	4463356.50	0.4	4351089.67	102.58	60	120	
Sc	45	H2	2629683.67	0.7	2538328.83	103.6	60	120	
Sc	45	He	505627.17	0.4	501255.85	100.87	60	120	
Ge	72	No Gas	1015038.60	0.9	1004335.48	101.07	60	120	
Ge	72	H2	680017.63	1.4	677952.25	100.3	60	120	
Ge	72	He	281722.60	0.8	278337.97	101.22	60	120	
In	115	No Gas	5385503.38	0.8	5483417.78	98.21	60	120	
Tb	159	No Gas	7012774.44	0.4	6795122.92	103.2	60	120	
Tb	159	He	3907086.92	1.1	3833707.42	101.91	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G15015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:48:22
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.653	ppb	1.3	389579.32	25	98.61	90	110	
Be	9	6	No Gas	24.819	ppb	2.3	91769.43	25	99.28	90	110	
B	11	6	No Gas	46.356	ppb	3.7	119396.24	50	92.71	90	110	
Na	23	45	H2	25039.347	ppb	2.0	113446954.67	25000	100.16	90	110	
Mg	24	45	No Gas	24772.614	ppb	2.5	311205600.00	25000	99.09	90	110	
Al	27	45	No Gas	24260.556	ppb	1.9	397061194.09	25000	97.04	90	110	
Si	28	45	H2	2518.269	ppb	2.0	3346621.17	2500	100.73	90	110	
P	31	45	No Gas	242.439	ppb	0.9	270120.77	250	96.98	90	110	
K	39	45	He	25190.849	ppb	0.9	21868854.67	25000	100.76	90	110	
Ca	40	45	H2	24964.035	ppb	1.7	233528453.33	25000	99.86	90	110	
Ti	47	45	No Gas	244.718	ppb	1.4	439958.16	250	97.89	90	110	
V	51	45	He	246.431	ppb	1.6	1520324.67	250	98.57	90	110	
Cr	52	45	He	248.170	ppb	1.8	1720335.71	250	99.27	90	110	
Mn	55	45	No Gas	1485.878	ppb	1.7	43374746.67	1500	99.06	90	110	
Fe	56	45	H2	25341.117	ppb	2.1	329321290.67	25000	101.36	90	110	
Co	59	45	No Gas	247.579	ppb	1.4	5987788.67	250	99.03	90	110	
Ni	60	45	He	248.715	ppb	1.1	570203.52	250	99.49	90	110	
Cu	63	45	He	248.384	ppb	0.9	1484875.13	250	99.35	90	110	
Zn	66	72	No Gas	232.131	ppb	0.9	927630.15	250	92.85	90	110	
As	75	72	He	243.460	ppb	0.5	302958.70	250	97.38	90	110	
Se	78	72	H2	252.320	ppb	1.0	98505.34	250	100.93	90	110	
Sr	88	72	No Gas	245.961	ppb	2.4	7650521.08	250	98.38	90	110	
Zr	90	72	No Gas	27.129	ppb	1.8	486922.36	25	108.52	90	110	
Mo	95	115	No Gas	244.525	ppb	1.4	1438150.22	250	97.81	90	110	
Ag	107	115	No Gas	24.673	ppb	0.9	361362.54	25	98.69	90	110	
Cd	111	115	No Gas	242.484	ppb	0.7	712162.15	250	96.99	90	110	
Sn	118	115	No Gas	244.231	ppb	1.0	2076328.67	250	97.69	90	110	
Sb	123	115	No Gas	48.646	ppb	0.9	488499.72	50	97.29	90	110	
Ba	137	115	No Gas	491.932	ppb	1.1	2154023.52	500	98.39	90	110	
W	182	159	No Gas	24.535	ppb	2.0	221822.15	25	98.14	90	110	
Hg	201	159	He	2.438	ppb	0.3	1947.15	2.5	97.52	90	110	
Tl	205	159	No Gas	247.165	ppb	2.9	4967429.80	250	98.87	90	110	
Pb	208	159	No Gas	248.949	ppb	2.6	6791615.44	250	99.58	90	110	
U	238	159	No Gas	242.423	ppb	2.5	6158855.59	250	96.97	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2059474.89	1.1	2127750.42	96.79	60	120	
Sc	45	No Gas	4400916.50	0.8	4351089.67	101.15	60	120	
Sc	45	H2	2565299.58	2.0	2538328.83	101.08	60	120	
Sc	45	He	501417.45	0.6	501255.85	100.03	60	120	
Ge	72	No Gas	1025132.81	0.1	1004335.48	102.07	60	120	
Ge	72	H2	685796.94	0.9	677952.25	101.16	60	120	
Ge	72	He	284457.46	0.7	278337.97	102.2	60	120	
In	115	No Gas	5401031.72	0.6	5483417.78	98.5	60	120	
Tb	159	No Gas	6922733.75	0.6	6795122.92	101.88	60	120	
Tb	159	He	3905420.58	0.3	3833707.42	101.87	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G15016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 10:51:16
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	115761.70	0.4	
Be	9	6	No Gas	0.007	ppb	66.1	51.11	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	28533.35	4	
Na	23	45	H2	<0.000	ppb	N/A	415620.80	40	
Mg	24	45	No Gas	1.877	ppb	71.2	68548.34	10	
Al	27	45	No Gas	1.748	ppb	71.5	64859.37	15	
Si	28	45	H2	0.250	ppb	18.7	6354.12	8	
P	31	45	No Gas	<0.000	ppb	N/A	26550.02	10	
K	39	45	He	7.215	ppb	74.3	136809.11	20	
Ca	40	45	H2	0.798	ppb	31.4	228340.30	25	
Ti	47	45	No Gas	0.002	ppb	524.5	306.67	0.5	
V	51	45	He	0.118	ppb	23.8	6332.80	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1111.38	0.2	
Mn	55	45	No Gas	0.094	ppb	77.3	16892.54	0.2	
Fe	56	45	H2	0.845	ppb	8.1	48640.33	10	
Co	59	45	No Gas	0.017	ppb	78.4	1023.37	0.15	
Ni	60	45	He	0.031	ppb	48.8	231.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2042.15	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	3254.39	2	
As	75	72	He	0.008	ppb	141.0	344.00	0.2	
Se	78	72	H2	0.026	ppb	57.7	31.67	0.2	
Sr	88	72	No Gas	0.007	ppb	145.1	1983.48	0.2	
Zr	90	72	No Gas	0.022	ppb	204.8	603.54	2	
Mo	95	115	No Gas	0.118	ppb	17.0	923.37	0.2	
Ag	107	115	No Gas	0.002	ppb	155.9	145.56	0.08	
Cd	111	115	No Gas	0.035	ppb	46.5	181.50	0.2	
Sn	118	115	No Gas	0.015	ppb	75.0	1814.57	0.2	
Sb	123	115	No Gas	0.002	ppb	174.7	216.67	0.4	
Ba	137	115	No Gas	0.031	ppb	37.2	428.90	0.2	
W	182	159	No Gas	0.013	ppb	34.7	203.33	0.3	
Hg	201	159	He	0.007	ppb	60.6	21.50	0.1	
Tl	205	159	No Gas	0.116	ppb	29.2	3517.18	0.1	>LOU
Pb	208	159	No Gas	0.036	ppb	46.3	2865.69	0.1	
U	238	159	No Gas	0.015	ppb	63.6	825.59	0.05	

TH 7/27/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2092808.49	1.0	2127750.42	98.36	60	120	
Sc	45	No Gas	4339806.50	1.7	4351089.67	99.74	60	120	
Sc	45	H2	2557203.33	1.1	2538328.83	100.74	60	120	
Sc	45	He	502085.35	1.1	501255.85	100.17	60	120	
Ge	72	No Gas	994143.21	1.2	1004335.48	98.99	60	120	
Ge	72	H2	687939.56	1.8	677952.25	101.47	60	120	
Ge	72	He	279064.70	0.5	278337.97	100.26	60	120	
In	115	No Gas	5556973.66	0.6	5483417.78	101.34	60	120	
Tb	159	No Gas	6933656.53	1.5	6795122.92	102.04	60	120	
Tb	159	He	3871759.92	0.8	3833707.42	100.99	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV10
File Name	H6G15105.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:09:13
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.217	ppb	0.3	368909.28	25	100.87	90	110	
Be	9	6	No Gas	25.232	ppb	1.7	86951.10	25	100.93	90	110	
B	11	6	No Gas	52.144	ppb	1.1	121781.35	50	104.29	90	110	
Na	23	45	H2	25209.034	ppb	1.9	109023714.67	25000	100.84	90	110	
Mg	24	45	No Gas	24175.437	ppb	2.1	287033397.33	25000	96.7	90	110	
Al	27	45	No Gas	23966.818	ppb	1.5	370728847.81	25000	95.87	90	110	
Si	28	45	H2	2423.205	ppb	2.3	3074118.25	2500	96.93	90	110	
P	31	45	No Gas	244.226	ppb	1.5	257000.09	250	97.69	90	110	
K	39	45	He	24723.801	ppb	0.4	20134576.00	25000	98.9	90	110	
Ca	40	45	H2	24784.520	ppb	0.8	221328586.67	25000	99.14	90	110	
Ti	47	45	No Gas	245.844	ppb	0.8	417720.62	250	98.34	90	110	
V	51	45	He	250.461	ppb	0.8	1449290.29	250	100.18	90	110	
Cr	52	45	He	252.572	ppb	1.3	1642236.96	250	101.03	90	110	
Mn	55	45	No Gas	1494.094	ppb	1.8	41223146.67	1500	99.61	90	110	
Fe	56	45	H2	25552.911	ppb	0.9	317031498.67	25000	102.21	90	110	
Co	59	45	No Gas	246.081	ppb	1.0	5624854.17	250	98.43	90	110	
Ni	60	45	He	251.398	ppb	1.0	540599.40	250	100.56	90	110	
Cu	63	45	He	256.201	ppb	0.7	1436518.75	250	102.48	90	110	
Zn	66	72	No Gas	229.657	ppb	2.0	881047.04	250	91.86	90	110	
As	75	72	He	240.965	ppb	0.9	283210.96	250	96.39	90	110	
Se	78	72	H2	253.480	ppb	1.4	95449.60	250	101.39	90	110	
Sr	88	72	No Gas	247.486	ppb	1.7	7390201.37	250	98.99	90	110	
Zr	90	72	No Gas	26.697	ppb	1.9	460000.97	25	106.79	90	110	
Mo	95	115	No Gas	239.871	ppb	2.8	1393971.78	250	95.95	90	110	
Ag	107	115	No Gas	23.970	ppb	1.7	346933.76	25	95.88	90	110	
Cd	111	115	No Gas	239.583	ppb	1.3	695323.42	250	95.83	90	110	
Sn	118	115	No Gas	244.099	ppb	2.4	2050485.89	250	97.64	90	110	
Sb	123	115	No Gas	47.995	ppb	2.0	476263.83	50	95.99	90	110	
Ba	137	115	No Gas	490.229	ppb	1.8	2121271.72	500	98.05	90	110	
W	182	159	No Gas	24.607	ppb	1.0	222716.55	25	98.43	90	110	
Hg	201	159	He	2.449	ppb	1.2	1905.48	2.5	97.96	90	110	
Tl	205	159	No Gas	250.743	ppb	2.5	5044563.83	250	100.3	90	110	
Pb	208	159	No Gas	251.517	ppb	2.6	6868554.53	250	100.61	90	110	
U	238	159	No Gas	240.383	ppb	2.5	6113122.81	250	96.15	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1919469.20	1.3	2127750.42	90.21	60	120	
Sc	45	No Gas	4159476.92	0.7	4351089.67	95.6	60	120	
Sc	45	H2	2448409.67	1.2	2538328.83	96.46	60	120	
Sc	45	He	470320.31	0.6	501255.85	93.83	60	120	
Ge	72	No Gas	984240.15	1.2	1004335.48	98	60	120	
Ge	72	H2	661560.60	1.9	677952.25	97.58	60	120	
Ge	72	He	268688.97	1.3	278337.97	96.53	60	120	
In	115	No Gas	5337644.51	1.5	5483417.78	97.34	60	120	
Tb	159	No Gas	6930548.33	1.6	6795122.92	101.99	60	120	
Tb	159	He	3805731.92	1.5	3833707.42	99.27	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB10
File Name	H6G15106.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:12:06
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.043	ppb	167.4	112058.86	0.4	
Be	9	6	No Gas	0.009	ppb	60.5	57.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	27225.20	4	
Na	23	45	H2	<0.000	ppb	N/A	377202.56	40	
Mg	24	45	No Gas	6.403	ppb	38.4	122589.42	10	
Al	27	45	No Gas	5.522	ppb	39.5	123751.56	15	
Si	28	45	H2	0.491	ppb	65.4	6570.96	8	
P	31	45	No Gas	1.932	ppb	19.8	28696.92	10	
K	39	45	He	6.625	ppb	91.7	129576.59	20	
Ca	40	45	H2	12.703	ppb	2.3	334147.45	25	
Ti	47	45	No Gas	0.096	ppb	29.5	464.01	0.5	
V	51	45	He	<0.000	ppb	N/A	4538.75	0.5	
Cr	52	45	He	<0.000	ppb	N/A	1047.37	0.2	
Mn	55	45	No Gas	0.376	ppb	34.5	24589.14	0.2	>LOD
Fe	56	45	H2	3.363	ppb	6.9	80058.54	10	
Co	59	45	No Gas	0.055	ppb	43.6	1890.14	0.15	
Ni	60	45	He	0.041	ppb	10.7	240.67	0.2	
Cu	63	45	He	0.131	ppb	16.7	3490.45	0.4	
Zn	66	72	No Gas	0.010	ppb	303.2	4145.97	2	
As	75	72	He	0.027	ppb	15.6	353.33	0.2	
Se	78	72	H2	0.041	ppb	45.3	36.67	0.2	
Sr	88	72	No Gas	0.069	ppb	35.7	3770.55	0.2	
Zr	90	72	No Gas	0.002	ppb	115.3	243.33	2	
Mo	95	115	No Gas	0.067	ppb	24.0	607.79	0.2	
Ag	107	115	No Gas	0.002	ppb	134.6	141.11	0.08	
Cd	111	115	No Gas	0.087	ppb	34.1	336.47	0.2	
Sn	118	115	No Gas	0.470	ppb	3.8	5746.82	0.2	>LOD
Sb	123	115	No Gas	0.017	ppb	55.8	376.67	0.4	
Ba	137	115	No Gas	0.101	ppb	44.4	740.02	0.2	
W	182	159	No Gas	0.008	ppb	85.2	156.67	0.3	
Hg	201	159	He	<0.000	ppb	N/A	16.00	0.1	
Tl	205	159	No Gas	0.120	ppb	32.0	3593.87	0.1	>LOD
Pb	208	159	No Gas	0.036	ppb	72.6	2872.36	0.1	
U	238	159	No Gas	0.048	ppb	46.9	1666.79	0.05	

LY 07/20/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1977572.66	1.6	2127750.42	92.94	60	120	
Sc	45	No Gas	4267755.17	0.3	4351089.67	98.08	60	120	
Sc	45	H2	2518518.25	0.7	2538328.83	99.22	60	120	
Sc	45	He	477332.04	0.1	501255.85	95.23	60	120	
Ge	72	No Gas	974041.27	1.0	1004335.48	96.98	60	120	
Ge	72	H2	673126.38	1.6	677952.25	99.29	60	120	
Ge	72	He	268822.79	0.3	278337.97	96.58	60	120	
In	115	No Gas	5515954.64	0.9	5483417.78	100.59	60	120	
Tb	159	No Gas	6934543.62	1.3	6795122.92	102.05	60	120	
Tb	159	He	3827984.25	0.5	3833707.42	99.85	60	120	

Blank Report

Sample Name	IMF035WB
File Name	H6G15107.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:15:02
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.055	ppb	184.8	114446.65	0.4	
Be	9	6	No Gas	0.004	ppb	70.4	41.11	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	7912.25	4	
Na	23	45	H2	<0.000	ppb	N/A	367695.67	40	
Mg	24	45	No Gas	0.938	ppb	7.3	56161.63	10	
Al	27	45	No Gas	1.007	ppb	2.8	52234.72	15	
Si	28	45	H2	0.092	ppb	134.6	6118.68	8	
P	31	45	No Gas	3.160	ppb	2.8	29926.18	10	
K	39	45	He	1.595	ppb	377.3	127047.76	20	
Ca	40	45	H2	2.750	ppb	18.7	245470.55	25	
Ti	47	45	No Gas	0.075	ppb	26.6	428.68	0.5	
V	51	45	He	<0.000	ppb	N/A	3742.51	0.5	
Cr	52	45	He	0.003	ppb	337.2	1210.72	0.2	
Mn	55	45	No Gas	0.070	ppb	7.6	15955.97	0.2	
Fe	56	45	H2	0.664	ppb	3.4	46095.78	10	
Co	59	45	No Gas	<0.000	ppb	N/A	532.01	0.15	
Ni	60	45	He	0.011	ppb	24.4	178.00	0.2	
Cu	63	45	He	0.022	ppb	37.8	2908.98	0.4	
Zn	66	72	No Gas	0.867	ppb	4.7	7432.70	2	
As	75	72	He	<0.000	ppb	N/A	256.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	18.33	0.2	
Sr	88	72	No Gas	0.038	ppb	4.2	2864.75	0.2	
Zr	90	72	No Gas	0.003	ppb	201.0	263.34	2	
Mo	95	115	No Gas	<0.000	ppb	N/A	180.00	0.2	
Ag	107	115	No Gas	0.064	ppb	8.1	1087.82	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	68.53	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	950.03	0.2	
Sb	123	115	No Gas	0.002	ppb	122.2	222.22	0.4	
Ba	137	115	No Gas	0.016	ppb	82.6	364.45	0.2	
W	182	159	No Gas	0.002	ppb	292.0	103.33	0.3	
Hg	201	159	He	0.005	ppb	36.1	20.50	0.1	
Tl	205	159	No Gas	<0.000	ppb	N/A	981.15	0.1	
Pb	208	159	No Gas	<0.000	ppb	N/A	1330.03	0.1	
U	238	159	No Gas	<0.000	ppb	N/A	238.89	0.05	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2017387.77	1.7	2127750.42	94.81	60	120	
Sc	45	No Gas	4273305.17	1.6	4351089.67	98.21	60	120	
Sc	45	H2	2545960.75	0.7	2538328.83	100.3	60	120	
Sc	45	He	483259.19	1.5	501255.85	96.41	60	120	
Ge	72	No Gas	980718.96	0.6	1004335.48	97.65	60	120	
Ge	72	H2	679215.83	0.8	677952.25	100.19	60	120	
Ge	72	He	274637.06	0.5	278337.97	98.67	60	120	
In	115	No Gas	5615238.88	0.2	5483417.78	102.4	60	120	
Tb	159	No Gas	6973060.42	1.0	6795122.92	102.62	60	120	
Tb	159	He	3876101.83	0.3	3833707.42	101.11	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WL
File Name	H6G15108.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:17:57
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.388	ppb	1.8	445581.71	30	101.29	85	115	
Be	9	6	No Gas	30.200	ppb	2.8	109788.68	30	100.67	83	121	
B	11	6	No Gas	34.370	ppb	2.0	94425.92	30	114.57	85	115	
Na	23	45	H2	3152.373	ppb	2.1	14360448.67	3000	105.08	85	117	
Mg	24	45	No Gas	3061.287	ppb	1.1	37669924.00	3000	102.04	83	118	
Al	27	45	No Gas	3012.175	ppb	2.1	48272359.28	3000	100.41	84	117	
Si	28	45	H2	1.075	ppb	16.3	7318.59	3000	0.04	85	115	FAIL
P	31	45	No Gas	3.481	ppb	20.7	30474.70	300	1.16	85	115	FAIL
K	39	45	He	3122.371	ppb	1.1	2694287.58	3000	104.08	87	115	
Ca	40	45	H2	3125.141	ppb	0.6	28851498.67	3000	104.17	87	118	
Ti	47	45	No Gas	29.718	ppb	0.9	52542.92	30	99.06	85	115	
V	51	45	He	30.373	ppb	0.8	183409.04	30	101.24	86	115	
Cr	52	45	He	31.072	ppb	1.0	206470.18	30	103.57	85	116	
Mn	55	45	No Gas	30.768	ppb	1.3	892708.12	30	102.56	87	115	
Fe	56	45	H2	3184.812	ppb	1.5	40610336.00	3000	106.16	87	118	
Co	59	45	No Gas	29.954	ppb	0.9	709446.17	30	99.85	86	115	
Ni	60	45	He	32.220	ppb	2.2	70573.29	30	107.4	85	117	
Cu	63	45	He	32.668	ppb	1.9	188630.70	30	108.89	85	118	
Zn	66	72	No Gas	60.265	ppb	0.6	239270.89	60	100.44	83	119	
As	75	72	He	29.449	ppb	0.7	35188.73	30	98.16	84	116	
Se	78	72	H2	30.861	ppb	0.9	11860.88	30	102.87	80	120	
Sr	88	72	No Gas	30.069	ppb	0.3	918622.92	30	100.23	85	115	
Zr	90	72	No Gas	0.026	ppb	33.6	676.69	30	0.09	85	115	FAIL
Mo	95	115	No Gas	28.118	ppb	0.7	170094.09	30	93.73	85	115	
Ag	107	115	No Gas	29.687	ppb	0.4	446724.29	30	98.96	85	117	
Cd	111	115	No Gas	28.564	ppb	1.0	86264.38	30	95.21	87	115	
Sn	118	115	No Gas	28.626	ppb	2.1	251507.10	30	95.42	85	115	
Sb	123	115	No Gas	28.559	ppb	1.7	294762.51	30	95.2	85	117	
Ba	137	115	No Gas	28.565	ppb	1.0	128786.47	30	95.22	86	114	
W	182	159	No Gas	0.007	ppb	42.1	150.00	30	0.02	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	11.67	2.5	-0.24	82	119	FAIL
Tl	205	159	No Gas	29.710	ppb	1.4	605906.95	30	99.03	82	116	
Pb	208	159	No Gas	29.811	ppb	0.8	825490.95	30	99.37	88	115	
U	238	159	No Gas	28.294	ppb	0.1	728534.99	30	94.31	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2025007.74	0.7	2127750.42	95.17	60	120	
Sc	45	No Gas	4306642.17	0.1	4351089.67	98.98	60	120	
Sc	45	H2	2514539.00	1.1	2538328.83	99.06	60	120	
Sc	45	He	478261.10	1.7	501255.85	95.41	60	120	
Ge	72	No Gas	1005142.94	0.7	1004335.48	100.08	60	120	
Ge	72	H2	674064.42	0.8	677952.25	99.43	60	120	
Ge	72	He	270933.31	0.3	278337.97	97.34	60	120	
In	115	No Gas	5549357.05	0.6	5483417.78	101.2	60	120	
Tb	159	No Gas	7011964.44	0.9	6795122.92	103.19	60	120	
Tb	159	He	3824652.33	0.8	3833707.42	99.76	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WC
File Name	H6G15109.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:20:53
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.679	ppb	1.5	448285.52	30	102.26	85	115	
Be	9	6	No Gas	30.499	ppb	1.3	110758.08	30	101.66	83	121	
B	11	6	No Gas	34.663	ppb	5.0	94896.85	30	115.54	85	115	FAIL
Na	23	45	H2	3084.122	ppb	0.8	13958428.00	3000	102.8	85	117	
Mg	24	45	No Gas	3087.944	ppb	1.8	37395104.00	3000	102.93	83	118	
Al	27	45	No Gas	3009.989	ppb	2.0	47471722.63	3000	100.33	84	117	
Si	28	45	H2	1.179	ppb	5.6	7401.30	3000	0.04	85	115	FAIL
P	31	45	No Gas	3.455	ppb	5.6	29967.69	300	1.15	85	115	FAIL
K	39	45	He	3076.490	ppb	1.8	2675244.83	3000	102.55	87	115	
Ca	40	45	H2	3082.499	ppb	0.1	28257034.00	3000	102.75	87	118	
Ti	47	45	No Gas	30.453	ppb	2.0	52982.53	30	101.51	85	115	
V	51	45	He	30.686	ppb	1.7	186552.89	30	102.29	86	115	
Cr	52	45	He	31.501	ppb	1.8	210787.83	30	105	85	116	
Mn	55	45	No Gas	31.995	ppb	1.4	913063.21	30	106.65	87	115	
Fe	56	45	H2	3178.437	ppb	1.7	40236228.00	3000	105.95	87	118	
Co	59	45	No Gas	31.239	ppb	1.3	728148.42	30	104.13	86	115	
Ni	60	45	He	31.683	ppb	2.1	69899.17	30	105.61	85	117	
Cu	63	45	He	32.707	ppb	2.5	190194.35	30	109.02	85	118	
Zn	66	72	No Gas	59.192	ppb	1.9	232209.08	60	98.65	83	119	
As	75	72	He	30.298	ppb	0.5	35873.18	30	100.99	84	116	
Se	78	72	H2	32.060	ppb	0.3	12186.84	30	106.87	80	120	
Sr	88	72	No Gas	30.698	ppb	1.7	926358.30	30	102.33	85	115	
Zr	90	72	No Gas	0.010	ppb	67.8	396.67	30	0.03	85	115	FAIL
Mo	95	115	No Gas	28.477	ppb	0.5	170552.67	30	94.92	85	115	
Ag	107	115	No Gas	30.561	ppb	0.7	455285.09	30	101.87	85	117	
Cd	111	115	No Gas	29.378	ppb	0.2	87835.97	30	97.93	87	115	
Sn	118	115	No Gas	29.037	ppb	0.2	252578.90	30	96.79	85	115	
Sb	123	115	No Gas	29.124	ppb	1.4	297597.05	30	97.08	85	117	
Ba	137	115	No Gas	28.582	ppb	0.4	127587.93	30	95.27	86	114	
W	182	159	No Gas	0.005	ppb	89.1	126.67	30	0.02	85	115	FAIL
Hg	201	159	He	<0.000	ppb	N/A	14.00	2.5	-0.08	82	119	FAIL
Tl	205	159	No Gas	30.739	ppb	0.2	623004.20	30	102.46	82	116	
Pb	208	159	No Gas	30.864	ppb	1.3	849298.22	30	102.88	88	115	
U	238	159	No Gas	29.258	ppb	1.1	748723.56	30	97.53	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2022990.28	0.6	2127750.42	95.08	60	120	
Sc	45	No Gas	4238516.33	0.4	4351089.67	97.41	60	120	
Sc	45	H2	2496451.58	1.0	2538328.83	98.35	60	120	
Sc	45	He	481728.75	2.2	501255.85	96.1	60	120	
Ge	72	No Gas	992894.35	0.5	1004335.48	98.86	60	120	
Ge	72	H2	666731.23	0.7	677952.25	98.34	60	120	
Ge	72	He	268541.29	1.0	278337.97	96.48	60	120	
In	115	No Gas	5494137.82	1.0	5483417.78	100.2	60	120	
Tb	159	No Gas	6968961.25	0.7	6795122.92	102.56	60	120	
Tb	159	He	3779625.08	0.3	3833707.42	98.59	60	120	

Sample Report

Sample Name	F183-01
File Name	H6G15110.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:23:48
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	37.331	37.331	ppb	0.8	502445.71	50	
Be	9	6	No Gas	0.039	0.039	ppb	17.3	160.00	50	
B	11	6	No Gas	148.970	148.970	ppb	2.2	302653.31	100	>LDR
Na	23	45	H2	158717.499	158717.499	ppb	1.7	708305429.33	50000	>LDR
Mg	24	45	No Gas	56104.617	56104.617	ppb	2.3	671325013.33	50000	>LDR
Al	27	45	No Gas	101.930	101.930	ppb	3.0	1624492.11	50000	
Si	28	45	H2	9009.013	9009.013	ppb	1.8	11813327.33	5000	>LDR
P	31	45	No Gas	16.972	16.972	ppb	7.0	42516.93	500	
K	39	45	He	4198.509	4198.509	ppb	0.6	3587296.92	50000	
Ca	40	45	H2	152959.336	152959.336	ppb	1.0	1412538837.33	50000	>LDR
Ti	47	45	No Gas	1.372	1.372	ppb	4.8	2638.92	500	
V	51	45	He	0.551	0.551	ppb	4.9	8586.02	500	
Cr	52	45	He	5.554	5.554	ppb	0.8	37954.44	500	
Mn	55	45	No Gas	26.591	26.591	ppb	1.4	752896.54	3000	
Fe	56	45	H2	210.423	210.423	ppb	0.8	2738869.42	50000	
Co	59	45	No Gas	1.082	1.082	ppb	1.4	25515.19	500	
Ni	60	45	He	33.471	33.471	ppb	1.9	73463.88	500	
Cu	63	45	He	0.611	0.611	ppb	2.8	6239.43	500	
Zn	66	72	No Gas	2.344	2.344	ppb	3.6	12940.83	500	
As	75	72	He	0.226	0.226	ppb	16.5	580.01	500	
Se	78	72	H2	0.789	0.789	ppb	3.3	317.67	500	
Sr	88	72	No Gas	1168.453	1168.453	ppb	1.8	34460635.30	500	>LDR
Zr	90	72	No Gas	0.218	0.218	ppb	1.2	3917.25	50	
Mo	95	115	No Gas	3.320	3.320	ppb	1.8	19275.03	500	
Ag	107	115	No Gas	0.169	0.169	ppb	2.7	2522.46	50	
Cd	111	115	No Gas	0.021	0.021	ppb	35.9	130.99	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1400.08	500	
Sb	123	115	No Gas	0.114	0.114	ppb	6.9	1305.62	100	
Ba	137	115	No Gas	119.735	119.735	ppb	1.1	512548.52	1000	
W	182	159	No Gas	0.028	0.028	ppb	20.9	330.01	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.00	5	
Tl	205	159	No Gas	0.044	0.044	ppb	3.9	2035.73	500	
Pb	208	159	No Gas	0.189	0.189	ppb	1.4	6898.56	500	
U	238	159	No Gas	3.929	3.929	ppb	1.0	98231.57	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1952033.86	1.0	2127750.42	91.74	60	120	
Sc	45	No Gas	4192509.75	0.6	4351089.67	96.36	60	120	
Sc	45	H2	2533922.58	0.6	2538328.83	99.83	60	120	
Sc	45	He	479214.38	0.8	501255.85	95.6	60	120	
Ge	72	No Gas	972195.69	0.3	1004335.48	96.8	60	120	
Ge	72	H2	661938.63	0.6	677952.25	97.64	60	120	
Ge	72	He	265628.24	0.6	278337.97	95.43	60	120	
In	115	No Gas	5277707.81	1.2	5483417.78	96.25	60	120	
Tb	159	No Gas	6782103.06	0.4	6795122.92	99.81	60	120	
Tb	159	He	3762349.50	0.8	3833707.42	98.14	60	120	

Sample Report

Sample Name	F183-02
File Name	H6G15111.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:26:43
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.813	21.813	ppb	1.8	357993.14	50	
Be	9	6	No Gas	0.052	0.052	ppb	18.5	217.78	50	
B	11	6	No Gas	143.789	143.789	ppb	2.3	309096.67	100	>LDR
Na	23	45	H2	99762.948	99762.948	ppb	0.9	448728181.33	50000	>LDR
Mg	24	45	No Gas	52136.216	52136.216	ppb	2.3	628203626.67	50000	>LDR
Al	27	45	No Gas	229.067	229.067	ppb	2.0	3632062.34	50000	
Si	28	45	H2	8635.961	8635.961	ppb	1.9	11409901.00	5000	>LDR
P	31	45	No Gas	104.146	104.146	ppb	1.5	126461.28	500	
K	39	45	He	2737.514	2737.514	ppb	0.3	2349724.67	50000	
Ca	40	45	H2	153811.194	153811.194	ppb	0.4	1431180757.33	50000	>LDR
Ti	47	45	No Gas	3.018	3.018	ppb	2.9	5495.77	500	
V	51	45	He	2.746	2.746	ppb	2.2	21185.01	500	
Cr	52	45	He	1.550	1.550	ppb	1.7	11288.65	500	
Mn	55	45	No Gas	30.705	30.705	ppb	1.8	873386.27	3000	
Fe	56	45	H2	322.918	322.918	ppb	0.7	4214815.33	50000	
Co	59	45	No Gas	0.344	0.344	ppb	1.1	8577.37	500	
Ni	60	45	He	0.475	0.475	ppb	6.1	1177.39	500	
Cu	63	45	He	0.581	0.581	ppb	1.6	5991.32	500	
Zn	66	72	No Gas	2.820	2.820	ppb	2.3	14890.83	500	
As	75	72	He	1.006	1.006	ppb	3.4	1503.08	500	
Se	78	72	H2	0.814	0.814	ppb	3.8	328.67	500	
Sr	88	72	No Gas	1185.074	1185.074	ppb	3.3	35310056.38	500	>LDR
Zr	90	72	No Gas	0.295	0.295	ppb	3.8	5287.72	50	
Mo	95	115	No Gas	0.476	0.476	ppb	0.9	2977.00	500	
Ag	107	115	No Gas	0.072	0.072	ppb	9.4	1156.72	50	
Cd	111	115	No Gas	0.010	0.010	ppb	58.5	101.02	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1140.05	500	
Sb	123	115	No Gas	0.051	0.051	ppb	6.2	698.91	100	
Ba	137	115	No Gas	72.657	72.657	ppb	1.5	315602.70	1000	
W	182	159	No Gas	0.008	0.008	ppb	47.4	156.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	656.68	500	
Pb	208	159	No Gas	0.730	0.730	ppb	4.1	21580.67	500	
U	238	159	No Gas	1.694	1.694	ppb	1.9	43088.94	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2059065.00	1.0	2127750.42	96.77	60	120	
Sc	45	No Gas	4222326.50	0.9	4351089.67	97.04	60	120	
Sc	45	H2	2553130.75	0.7	2538328.83	100.58	60	120	
Sc	45	He	472647.58	0.2	501255.85	94.29	60	120	
Ge	72	No Gas	982387.71	1.1	1004335.48	97.81	60	120	
Ge	72	H2	665044.21	0.2	677952.25	98.1	60	120	
Ge	72	He	268912.75	0.9	278337.97	96.61	60	120	
In	115	No Gas	5354403.63	1.3	5483417.78	97.65	60	120	
Tb	159	No Gas	6859819.59	1.7	6795122.92	100.95	60	120	
Tb	159	He	3857131.67	0.8	3833707.42	100.61	60	120	

Sample Report

Sample Name	F183-03
File Name	H6G15112.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:29:38
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	11.340	11.340	ppb	1.7	245570.23	50	
Be	9	6	No Gas	0.007	0.007	ppb	112.8	53.34	50	
B	11	6	No Gas	63.496	63.496	ppb	1.4	155060.35	100	
Na	23	45	H2	67766.289	67766.289	ppb	1.0	302435264.00	50000	>LDR
Mg	24	45	No Gas	36458.902	36458.902	ppb	1.1	444624544.00	50000	
Al	27	45	No Gas	2.416	2.416	ppb	5.1	74604.38	50000	
Si	28	45	H2	6951.971	6951.971	ppb	0.2	9111071.33	5000	>LDR
P	31	45	No Gas	17.197	17.197	ppb	2.7	43547.43	500	
K	39	45	He	1955.168	1955.168	ppb	1.7	1730319.04	50000	
Ca	40	45	H2	115333.409	115333.409	ppb	0.6	1064377258.67	50000	>LDR
Ti	47	45	No Gas	0.392	0.392	ppb	8.3	981.37	500	
V	51	45	He	2.558	2.558	ppb	0.7	20299.67	500	
Cr	52	45	He	0.711	0.711	ppb	2.0	5868.59	500	
Mn	55	45	No Gas	0.145	0.145	ppb	16.0	18090.63	3000	
Fe	56	45	H2	4.419	4.419	ppb	1.9	94027.96	50000	
Co	59	45	No Gas	0.081	0.081	ppb	5.6	2522.23	500	
Ni	60	45	He	0.237	0.237	ppb	7.3	668.02	500	
Cu	63	45	He	1.010	1.010	ppb	4.5	8484.64	500	
Zn	66	72	No Gas	3.295	3.295	ppb	1.3	16947.90	500	
As	75	72	He	1.460	1.460	ppb	0.9	2033.15	500	
Se	78	72	H2	0.677	0.677	ppb	6.0	281.33	500	
Sr	88	72	No Gas	778.348	778.348	ppb	2.6	23540215.73	500	>LDR
Zr	90	72	No Gas	0.002	0.002	ppb	294.0	253.34	50	
Mo	95	115	No Gas	0.445	0.445	ppb	3.2	2864.75	500	
Ag	107	115	No Gas	0.074	0.074	ppb	8.2	1221.17	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.86	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	588.90	500	
Sb	123	115	No Gas	0.044	0.044	ppb	11.0	643.35	100	
Ba	137	115	No Gas	53.176	53.176	ppb	1.0	236621.16	1000	
W	182	159	No Gas	0.003	0.003	ppb	47.7	106.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	15.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	463.34	500	
Pb	208	159	No Gas	0.138	0.138	ppb	4.5	5642.74	500	
U	238	159	No Gas	1.353	1.353	ppb	1.7	34680.08	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2090404.99	0.7	2127750.42	98.24	60	120	
Sc	45	No Gas	4272516.83	1.0	4351089.67	98.19	60	120	
Sc	45	H2	2532134.50	0.6	2538328.83	99.76	60	120	
Sc	45	He	477381.52	1.2	501255.85	95.24	60	120	
Ge	72	No Gas	996999.50	1.1	1004335.48	99.27	60	120	
Ge	72	H2	675559.17	0.6	677952.25	99.65	60	120	
Ge	72	He	268312.58	0.5	278337.97	96.4	60	120	
In	115	No Gas	5482525.08	0.4	5483417.78	99.98	60	120	
Tb	159	No Gas	6895741.39	0.4	6795122.92	101.48	60	120	
Tb	159	He	3817477.75	0.7	3833707.42	99.58	60	120	

Sample Report

Sample Name	F183-05
File Name	H6G15113.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:32:33
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.805	23.805	ppb	1.3	379840.71	50	
Be	9	6	No Gas	0.006	0.006	ppb	68.3	47.78	50	
B	11	6	No Gas	77.548	77.548	ppb	1.1	179989.29	100	
Na	23	45	H2	70596.649	70596.649	ppb	1.2	320901269.33	50000	>LDR
Mg	24	45	No Gas	52913.533	52913.533	ppb	2.0	651059712.00	50000	>LDR
Al	27	45	No Gas	504.730	504.730	ppb	1.7	8126740.50	50000	
Si	28	45	H2	7684.828	7684.828	ppb	2.2	10257024.33	5000	>LDR
P	31	45	No Gas	15.214	15.214	ppb	3.3	41994.00	500	
K	39	45	He	2575.913	2575.913	ppb	0.4	2245886.42	50000	
Ca	40	45	H2	139256.384	139256.384	ppb	0.9	1309038122.67	50000	>LDR
Ti	47	45	No Gas	0.654	0.654	ppb	4.9	1450.74	500	
V	51	45	He	1.496	1.496	ppb	1.5	14119.93	500	
Cr	52	45	He	2.999	2.999	ppb	0.5	21012.09	500	
Mn	55	45	No Gas	1.234	1.234	ppb	1.1	49361.52	3000	
Fe	56	45	H2	85.746	85.746	ppb	1.8	1158490.75	50000	
Co	59	45	No Gas	0.124	0.124	ppb	4.6	3561.14	500	
Ni	60	45	He	0.659	0.659	ppb	1.0	1592.76	500	
Cu	63	45	He	0.241	0.241	ppb	6.2	4123.96	500	
Zn	66	72	No Gas	2.221	2.221	ppb	2.1	12741.31	500	
As	75	72	He	0.592	0.592	ppb	4.3	1017.71	500	
Se	78	72	H2	0.824	0.824	ppb	5.3	337.00	500	
Sr	88	72	No Gas	1067.361	1067.361	ppb	2.3	32140580.94	500	>LDR
Zr	90	72	No Gas	0.018	0.018	ppb	38.2	526.68	50	
Mo	95	115	No Gas	0.599	0.599	ppb	4.3	3793.88	500	
Ag	107	115	No Gas	0.086	0.086	ppb	0.9	1392.30	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	24.60	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	618.90	500	
Sb	123	115	No Gas	0.040	0.040	ppb	4.3	603.35	100	
Ba	137	115	No Gas	55.975	55.975	ppb	2.3	249756.73	1000	
W	182	159	No Gas	0.483	0.483	ppb	3.6	4490.81	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	372.23	500	
Pb	208	159	No Gas	0.030	0.030	ppb	8.3	2720.12	500	
U	238	159	No Gas	2.209	2.209	ppb	0.5	57045.76	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2057751.78	0.5	2127750.42	96.71	60	120	
Sc	45	No Gas	4310710.33	1.1	4351089.67	99.07	60	120	
Sc	45	H2	2579396.25	1.4	2538328.83	101.62	60	120	
Sc	45	He	478519.36	0.9	501255.85	95.46	60	120	
Ge	72	No Gas	992747.85	1.2	1004335.48	98.85	60	120	
Ge	72	H2	673643.98	0.4	677952.25	99.36	60	120	
Ge	72	He	268959.54	0.8	278337.97	96.63	60	120	
In	115	No Gas	5498250.57	0.6	5483417.78	100.27	60	120	
Tb	159	No Gas	6982144.86	0.3	6795122.92	102.75	60	120	
Tb	159	He	3859790.83	0.9	3833707.42	100.68	60	120	

Sample Report

Sample Name	F183-06
File Name	H6G15114.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:35:28
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.069	19.069	ppb	1.7	326895.49	50	
Be	9	6	No Gas	0.003	0.003	ppb	53.3	35.56	50	
B	11	6	No Gas	54.770	54.770	ppb	1.3	135455.67	100	
Na	23	45	H2	33303.118	33303.118	ppb	1.7	152415370.67	50000	
Mg	24	45	No Gas	43142.506	43142.506	ppb	0.6	533550421.33	50000	
Al	27	45	No Gas	52.647	52.647	ppb	1.0	884967.85	50000	
Si	28	45	H2	8311.669	8311.669	ppb	1.3	11154134.33	5000	>LDR
P	31	45	No Gas	8.965	8.965	ppb	10.5	36054.72	500	
K	39	45	He	2107.340	2107.340	ppb	0.8	1880741.88	50000	
Ca	40	45	H2	120169.293	120169.293	ppb	1.6	1135680682.67	50000	>LDR
Ti	47	45	No Gas	0.460	0.460	ppb	1.2	1114.72	500	
V	51	45	He	1.658	1.658	ppb	0.4	15236.46	500	
Cr	52	45	He	5.752	5.752	ppb	1.0	39642.54	500	
Mn	55	45	No Gas	5.457	5.457	ppb	1.0	170984.66	3000	
Fe	56	45	H2	53.483	53.483	ppb	1.3	740914.05	50000	
Co	59	45	No Gas	0.493	0.493	ppb	0.1	12365.60	500	
Ni	60	45	He	19.609	19.609	ppb	0.4	43524.64	500	
Cu	63	45	He	0.743	0.743	ppb	6.1	7065.84	500	
Zn	66	72	No Gas	0.905	0.905	ppb	7.6	7736.88	500	
As	75	72	He	0.495	0.495	ppb	3.3	915.03	500	
Se	78	72	H2	1.014	1.014	ppb	10.9	414.34	500	
Sr	88	72	No Gas	1130.974	1130.974	ppb	1.3	34358215.30	500	>LDR
Zr	90	72	No Gas	0.008	0.008	ppb	35.4	356.67	50	
Mo	95	115	No Gas	1.755	1.755	ppb	2.4	10799.94	500	
Ag	107	115	No Gas	0.061	0.061	ppb	4.3	1028.93	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	41.48	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	662.24	500	
Sb	123	115	No Gas	0.037	0.037	ppb	9.3	586.68	100	
Ba	137	115	No Gas	29.663	29.663	ppb	0.3	133619.24	1000	
W	182	159	No Gas	0.125	0.125	ppb	7.2	1236.73	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	510.01	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1583.38	500	
U	238	159	No Gas	1.281	1.281	ppb	1.8	33708.50	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2054823.32	1.0	2127750.42	96.57	60	120	
Sc	45	No Gas	4333447.17	1.7	4351089.67	99.59	60	120	
Sc	45	H2	2593407.58	1.7	2538328.83	102.17	60	120	
Sc	45	He	483860.68	0.8	501255.85	96.53	60	120	
Ge	72	No Gas	1001390.10	0.5	1004335.48	99.71	60	120	
Ge	72	H2	681649.27	0.5	677952.25	100.55	60	120	
Ge	72	He	272573.24	0.2	278337.97	97.93	60	120	
In	115	No Gas	5544814.04	0.6	5483417.78	101.12	60	120	
Tb	159	No Gas	7074410.27	0.7	6795122.92	104.11	60	120	
Tb	159	He	3878581.83	0.3	3833707.42	101.17	60	120	

Sample Report

Sample Name	F183-07
File Name	H6G15115.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:38:22
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.367	14.367	ppb	2.5	267865.29	50	
Be	9	6	No Gas	0.003	0.003	ppb	64.7	37.78	50	
B	11	6	No Gas	150.617	150.617	ppb	2.1	313541.97	100	>LDR
Na	23	45	H2	110230.560	110230.560	ppb	1.1	504055914.67	50000	>LDR
Mg	24	45	No Gas	45378.434	45378.434	ppb	2.2	555551360.00	50000	>LDR
Al	27	45	No Gas	0.821	0.821	ppb	25.5	49455.21	50000	
Si	28	45	H2	7331.034	7331.034	ppb	0.9	9849140.67	5000	>LDR
P	31	45	No Gas	10.406	10.406	ppb	2.6	37103.47	500	
K	39	45	He	2318.825	2318.825	ppb	1.6	2049025.54	50000	
Ca	40	45	H2	132220.664	132220.664	ppb	0.4	1250911914.67	50000	>LDR
Ti	47	45	No Gas	0.380	0.380	ppb	10.5	963.37	500	
V	51	45	He	2.631	2.631	ppb	1.1	20929.95	500	
Cr	52	45	He	3.463	3.463	ppb	1.1	24250.76	500	
Mn	55	45	No Gas	0.494	0.494	ppb	5.1	28094.16	3000	
Fe	56	45	H2	24.010	24.010	ppb	0.7	354054.68	50000	
Co	59	45	No Gas	0.139	0.139	ppb	3.2	3898.56	500	
Ni	60	45	He	2.318	2.318	ppb	4.2	5260.35	500	
Cu	63	45	He	1.716	1.716	ppb	3.1	12613.84	500	
Zn	66	72	No Gas	2.657	2.657	ppb	2.5	14521.10	500	
As	75	72	He	1.072	1.072	ppb	0.8	1599.76	500	
Se	78	72	H2	0.664	0.664	ppb	7.3	276.67	500	
Sr	88	72	No Gas	919.950	919.950	ppb	2.4	27901144.45	500	>LDR
Zr	90	72	No Gas	0.004	0.004	ppb	44.2	290.00	50	
Mo	95	115	No Gas	3.298	3.298	ppb	1.1	19727.95	500	
Ag	107	115	No Gas	0.061	0.061	ppb	9.8	1005.60	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-1.83	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	508.90	500	
Sb	123	115	No Gas	0.041	0.041	ppb	10.9	615.57	100	
Ba	137	115	No Gas	47.884	47.884	ppb	0.3	211361.51	1000	
W	182	159	No Gas	0.006	0.006	ppb	36.5	136.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	378.89	500	
Pb	208	159	No Gas	0.335	0.335	ppb	4.3	11184.19	500	
U	238	159	No Gas	1.516	1.516	ppb	2.7	39483.51	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2002171.57	1.0	2127750.42	94.1	60	120	
Sc	45	No Gas	4289547.50	0.5	4351089.67	98.59	60	120	
Sc	45	H2	2595821.33	0.3	2538328.83	102.26	60	120	
Sc	45	He	482017.82	0.6	501255.85	96.16	60	120	
Ge	72	No Gas	999706.04	0.2	1004335.48	99.54	60	120	
Ge	72	H2	676447.81	0.5	677952.25	99.78	60	120	
Ge	72	He	272028.18	1.0	278337.97	97.73	60	120	
In	115	No Gas	5437900.67	0.5	5483417.78	99.17	60	120	
Tb	159	No Gas	7015399.30	1.5	6795122.92	103.24	60	120	
Tb	159	He	3866648.17	1.5	3833707.42	100.86	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV11
File Name	H6G15116.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 15:41:16
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.916	ppb	3.1	381623.83	25	99.66	90	110	
Be	9	6	No Gas	24.444	ppb	2.0	87871.22	25	97.78	90	110	
B	11	6	No Gas	52.733	ppb	2.1	128151.69	50	105.47	90	110	
Na	23	45	H2	24567.380	ppb	0.9	110491794.67	25000	98.27	90	110	
Mg	24	45	No Gas	24268.589	ppb	2.3	296315338.67	25000	97.07	90	110	
Al	27	45	No Gas	23824.878	ppb	1.9	378987421.02	25000	95.3	90	110	
Si	28	45	H2	2411.281	ppb	1.0	3180875.75	2500	96.45	90	110	
P	31	45	No Gas	237.189	ppb	1.2	257440.27	250	94.88	90	110	
K	39	45	He	24856.248	ppb	0.7	20432391.33	25000	99.42	90	110	
Ca	40	45	H2	24570.213	ppb	0.3	228128245.33	25000	98.28	90	110	
Ti	47	45	No Gas	242.208	ppb	0.9	423203.94	250	96.88	90	110	
V	51	45	He	250.665	ppb	0.5	1464210.46	250	100.27	90	110	
Cr	52	45	He	253.354	ppb	0.2	1662926.12	250	101.34	90	110	
Mn	55	45	No Gas	1473.860	ppb	1.6	41817917.33	1500	98.26	90	110	
Fe	56	45	H2	24958.245	ppb	0.7	321936085.33	25000	99.83	90	110	
Co	59	45	No Gas	245.736	ppb	1.6	5776456.17	250	98.29	90	110	
Ni	60	45	He	252.964	ppb	0.8	549116.87	250	101.19	90	110	
Cu	63	45	He	257.816	ppb	0.2	1459215.79	250	103.13	90	110	
Zn	66	72	No Gas	226.703	ppb	2.1	883202.46	250	90.68	90	110	
As	75	72	He	239.841	ppb	0.3	284847.99	250	95.94	90	110	
Se	78	72	H2	249.787	ppb	0.2	95949.77	250	99.91	90	110	
Sr	88	72	No Gas	248.756	ppb	3.7	7542129.15	250	99.5	90	110	
Zr	90	72	No Gas	26.750	ppb	2.3	468031.49	25	107	90	110	
Mo	95	115	No Gas	237.281	ppb	3.3	1419373.90	250	94.91	90	110	
Ag	107	115	No Gas	23.585	ppb	1.2	351366.74	25	94.34	90	110	
Cd	111	115	No Gas	234.556	ppb	1.1	700711.84	250	93.82	90	110	
Sn	118	115	No Gas	244.289	ppb	0.8	2112425.61	250	97.72	90	110	
Sb	123	115	No Gas	47.733	ppb	1.2	487576.87	50	95.47	90	110	
Ba	137	115	No Gas	489.321	ppb	2.0	2179366.09	500	97.86	90	110	
W	182	159	No Gas	24.645	ppb	1.6	228614.26	25	98.58	90	110	
Hg	201	159	He	2.411	ppb	1.0	1926.32	2.5	96.44	90	110	
Tl	205	159	No Gas	251.474	ppb	0.6	5186838.27	250	100.59	90	110	
Pb	208	159	No Gas	250.373	ppb	0.9	7009554.06	250	100.15	90	110	
U	238	159	No Gas	241.144	ppb	0.9	6286377.25	250	96.46	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2002421.75	1.0	2127750.42	94.11	60	120	
Sc	45	No Gas	4277339.83	0.7	4351089.67	98.31	60	120	
Sc	45	H2	2545549.33	0.8	2538328.83	100.28	60	120	
Sc	45	He	474756.23	0.9	501255.85	94.71	60	120	
Ge	72	No Gas	999373.58	0.7	1004335.48	99.51	60	120	
Ge	72	H2	674733.10	0.7	677952.25	99.53	60	120	
Ge	72	He	271485.63	0.4	278337.97	97.54	60	120	
In	115	No Gas	5493903.19	0.6	5483417.78	100.19	60	120	
Tb	159	No Gas	7103834.72	1.7	6795122.92	104.54	60	120	
Tb	159	He	3907853.17	1.2	3833707.42	101.93	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB11
File Name	H6G15117.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:44:10
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	114755.87	0.4	
Be	9	6	No Gas	0.008	ppb	64.4	56.67	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	28371.92	4	
Na	23	45	H2	8.883	ppb	10.2	452610.18	40	
Mg	24	45	No Gas	7.839	ppb	28.3	139192.38	10	
Al	27	45	No Gas	5.241	ppb	35.9	118500.26	15	
Si	28	45	H2	0.383	ppb	5.7	6464.17	8	
P	31	45	No Gas	2.237	ppb	31.3	28831.21	10	
K	39	45	He	2.992	ppb	196.8	126081.96	20	
Ca	40	45	H2	14.510	ppb	0.1	352563.56	25	
Ti	47	45	No Gas	0.108	ppb	48.2	481.34	0.5	
V	51	45	He	0.069	ppb	37.5	5706.52	0.5	
Cr	52	45	He	<0.000	ppb	N/A	982.70	0.2	
Mn	55	45	No Gas	0.373	ppb	32.0	24360.61	0.2	~~>LOD~~
Fe	56	45	H2	3.255	ppb	8.7	79052.56	10	
Co	59	45	No Gas	0.051	ppb	35.8	1786.12	0.15	
Ni	60	45	He	0.034	ppb	26.0	225.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2621.59	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	3767.86	2	
As	75	72	He	0.033	ppb	18.7	361.67	0.2	
Se	78	72	H2	0.029	ppb	24.4	32.00	0.2	
Sr	88	72	No Gas	0.099	ppb	18.8	4727.52	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	216.67	2	
Mo	95	115	No Gas	0.072	ppb	39.1	653.35	0.2	
Ag	107	115	No Gas	0.001	ppb	98.6	136.67	0.08	
Cd	111	115	No Gas	0.083	ppb	29.1	330.45	0.2	
Sn	118	115	No Gas	0.416	ppb	6.2	5390.00	0.2	>LOD
Sb	123	115	No Gas	0.014	ppb	36.1	353.34	0.4	
Ba	137	115	No Gas	0.104	ppb	42.2	764.47	0.2	
W	182	159	No Gas	0.009	ppb	50.9	166.67	0.3	
Hg	201	159	He	<0.000	ppb	N/A	15.17	0.1	
Tl	205	159	No Gas	0.099	ppb	30.1	3250.44	0.1	
Pb	208	159	No Gas	0.032	ppb	66.1	2827.91	0.1	
U	238	159	No Gas	0.040	ppb	38.0	1501.21	0.05	

LY 07/20/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2042832.49	0.2	2127750.42	96.01	60	120	
Sc	45	No Gas	4244718.67	1.3	4351089.67	97.56	60	120	
Sc	45	H2	2531567.75	1.0	2538328.83	99.73	60	120	
Sc	45	He	475362.23	0.6	501255.85	94.83	60	120	
Ge	72	No Gas	985814.40	1.1	1004335.48	98.16	60	120	
Ge	72	H2	673494.44	0.2	677952.25	99.34	60	120	
Ge	72	He	269965.91	1.6	278337.97	96.99	60	120	
In	115	No Gas	5628888.40	1.3	5483417.78	102.65	60	120	
Tb	159	No Gas	7086462.50	0.5	6795122.92	104.29	60	120	
Tb	159	He	3896144.92	0.6	3833707.42	101.63	60	120	

Sample Report

Sample Name	F183-08M
File Name	H6G15118.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:47:05
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	50.452	50.452	ppb	2.6	659048.60	50	>LDR
Be	9	6	No Gas	29.781	29.781	ppb	2.6	107400.49	50	
B	11	6	No Gas	122.766	122.766	ppb	3.4	261657.30	100	>LDR
Na	23	45	H2	88848.615	88848.615	ppb	2.3	400469002.67	50000	>LDR
Mg	24	45	No Gas	65416.908	65416.908	ppb	2.4	795762602.67	50000	>LDR
Al	27	45	No Gas	3184.808	3184.808	ppb	1.9	50511785.91	50000	
Si	28	45	H2	8070.053	8070.053	ppb	1.7	10684198.00	5000	>LDR
P	31	45	No Gas	36.838	36.838	ppb	2.1	62468.07	500	
K	39	45	He	5790.665	5790.665	ppb	0.1	4872786.00	50000	
Ca	40	45	H2	180395.348	180395.348	ppb	1.4	1681852800.00	50000	>LDR
Ti	47	45	No Gas	32.051	32.051	ppb	0.6	56060.71	500	
V	51	45	He	32.977	32.977	ppb	1.0	197942.39	500	
Cr	52	45	He	31.971	31.971	ppb	0.8	211640.83	500	
Mn	55	45	No Gas	50.515	50.515	ppb	2.9	1441569.12	3000	
Fe	56	45	H2	3268.298	3268.298	ppb	0.4	42401756.00	50000	
Co	59	45	No Gas	29.046	29.046	ppb	1.3	680877.88	500	
Ni	60	45	He	29.694	29.694	ppb	0.2	64829.61	500	
Cu	63	45	He	30.285	30.285	ppb	0.2	174469.21	500	
Zn	66	72	No Gas	56.111	56.111	ppb	1.8	220413.75	500	
As	75	72	He	30.421	30.421	ppb	1.6	35849.13	500	
Se	78	72	H2	31.353	31.353	ppb	1.2	11908.92	500	
Sr	88	72	No Gas	1290.105	1290.105	ppb	3.0	38870164.01	500	>LDR
Zr	90	72	No Gas	0.266	0.266	ppb	5.4	4837.56	50	
Mo	95	115	No Gas	28.822	28.822	ppb	1.4	171194.59	500	
Ag	107	115	No Gas	28.812	28.812	ppb	1.3	425696.36	50	
Cd	111	115	No Gas	28.314	28.314	ppb	0.8	83960.30	500	
Sn	118	115	No Gas	27.805	27.805	ppb	1.2	239937.17	500	
Sb	123	115	No Gas	28.735	28.735	ppb	0.5	291214.03	100	
Ba	137	115	No Gas	104.640	104.640	ppb	1.4	462487.03	1000	
W	182	159	No Gas	0.023	0.023	ppb	32.7	293.34	50	
Hg	201	159	He	0.004	0.004	ppb	46.2	19.33	5	
Tl	205	159	No Gas	29.151	29.151	ppb	1.1	598766.94	500	
Pb	208	159	No Gas	28.999	28.999	ppb	1.2	808776.25	500	
U	238	159	No Gas	30.150	30.150	ppb	0.8	781841.39	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2009051.14	0.5	2127750.42	94.42	60	120	
Sc	45	No Gas	4262268.00	0.4	4351089.67	97.96	60	120	
Sc	45	H2	2558269.58	0.5	2538328.83	100.79	60	120	
Sc	45	He	476507.15	0.8	501255.85	95.06	60	120	
Ge	72	No Gas	993154.06	1.1	1004335.48	98.89	60	120	
Ge	72	H2	666224.79	1.6	677952.25	98.27	60	120	
Ge	72	He	267304.65	0.9	278337.97	96.04	60	120	
In	115	No Gas	5449044.40	1.0	5483417.78	99.37	60	120	
Tb	159	No Gas	7062375.55	0.9	6795122.92	103.93	60	120	
Tb	159	He	3834878.50	0.1	3833707.42	100.03	60	120	

Sample Report

Sample Name	F183-08S
File Name	H6G15119.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:50:00
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	50.633	50.633	ppb	2.6	676649.24	50	>LDR
Be	9	6	No Gas	29.821	29.821	ppb	2.2	110105.62	50	
B	11	6	No Gas	125.296	125.296	ppb	2.2	272795.16	100	>LDR
Na	23	45	H2	89843.409	89843.409	ppb	0.7	404156576.00	50000	>LDR
Mg	24	45	No Gas	66885.438	66885.438	ppb	1.6	817287936.00	50000	>LDR
Al	27	45	No Gas	3304.270	3304.270	ppb	2.5	52640569.22	50000	
Si	28	45	H2	8405.354	8405.354	ppb	0.9	11106180.33	5000	>LDR
P	31	45	No Gas	37.628	37.628	ppb	1.5	63518.73	500	
K	39	45	He	5841.861	5841.861	ppb	1.3	4950997.50	50000	
Ca	40	45	H2	182976.152	182976.152	ppb	0.4	1702496938.67	50000	>LDR
Ti	47	45	No Gas	32.587	32.587	ppb	2.0	57246.30	500	
V	51	45	He	32.962	32.962	ppb	1.2	199324.73	500	
Cr	52	45	He	31.790	31.790	ppb	1.5	212003.26	500	
Mn	55	45	No Gas	51.107	51.107	ppb	1.8	1464831.96	3000	
Fe	56	45	H2	3348.620	3348.620	ppb	0.9	43353792.00	50000	
Co	59	45	No Gas	28.985	28.985	ppb	1.5	682464.37	500	
Ni	60	45	He	29.775	29.775	ppb	1.1	65488.10	500	
Cu	63	45	He	30.054	30.054	ppb	0.6	174440.67	500	
Zn	66	72	No Gas	55.573	55.573	ppb	0.9	217837.52	500	
As	75	72	He	30.530	30.530	ppb	1.5	35908.95	500	
Se	78	72	H2	31.137	31.137	ppb	0.4	11840.86	500	
Sr	88	72	No Gas	1307.349	1307.349	ppb	1.9	39297912.89	500	>LDR
Zr	90	72	No Gas	0.293	0.293	ppb	5.6	5301.07	50	
Mo	95	115	No Gas	28.268	28.268	ppb	0.8	169577.67	500	
Ag	107	115	No Gas	28.377	28.377	ppb	0.6	423488.84	50	
Cd	111	115	No Gas	27.846	27.846	ppb	1.9	83394.75	500	
Sn	118	115	No Gas	26.752	26.752	ppb	1.5	233218.03	500	
Sb	123	115	No Gas	28.280	28.280	ppb	1.8	289416.79	100	
Ba	137	115	No Gas	103.810	103.810	ppb	1.7	463371.67	1000	
W	182	159	No Gas	0.020	0.020	ppb	11.7	273.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	15.33	5	
Tl	205	159	No Gas	29.222	29.222	ppb	1.5	600005.53	500	
Pb	208	159	No Gas	29.126	29.126	ppb	1.0	812069.51	500	
U	238	159	No Gas	30.216	30.216	ppb	1.4	783263.32	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2056965.35	2.2	2127750.42	96.67	60	120	
Sc	45	No Gas	4281419.67	0.6	4351089.67	98.4	60	120	
Sc	45	H2	2553103.83	0.7	2538328.83	100.58	60	120	
Sc	45	He	480053.99	1.0	501255.85	95.77	60	120	
Ge	72	No Gas	990851.36	0.4	1004335.48	98.66	60	120	
Ge	72	H2	666991.08	1.5	677952.25	98.38	60	120	
Ge	72	He	266788.26	0.3	278337.97	95.85	60	120	
In	115	No Gas	5503747.32	1.9	5483417.78	100.37	60	120	
Tb	159	No Gas	7060000.56	0.7	6795122.92	103.9	60	120	
Tb	159	He	3858505.00	0.4	3833707.42	100.65	60	120	

Sample Report

Sample Name	F183-08A
File Name	H6G15120.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:52:55
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	52.152	52.152	ppb	0.6	705016.52	50	>LDR
Be	9	6	No Gas	31.138	31.138	ppb	1.8	116866.97	50	
B	11	6	No Gas	124.736	124.736	ppb	1.4	276211.04	100	>LDR
Na	23	45	H2	89576.563	89576.563	ppb	0.4	409234506.67	50000	>LDR
Mg	24	45	No Gas	66646.465	66646.465	ppb	1.4	821581376.00	50000	>LDR
Al	27	45	No Gas	3351.263	3351.263	ppb	1.5	53861967.53	50000	
Si	28	45	H2	8015.823	8015.823	ppb	0.6	10756555.33	5000	>LDR
P	31	45	No Gas	37.130	37.130	ppb	1.8	63590.51	500	
K	39	45	He	5963.723	5963.723	ppb	0.7	5053336.17	50000	
Ca	40	45	H2	180978.930	180978.930	ppb	0.3	1710198997.33	50000	>LDR
Ti	47	45	No Gas	32.429	32.429	ppb	1.2	57479.21	500	
V	51	45	He	33.767	33.767	ppb	0.7	204122.14	500	
Cr	52	45	He	32.720	32.720	ppb	0.5	218243.55	500	
Mn	55	45	No Gas	51.374	51.374	ppb	1.7	1485527.71	3000	
Fe	56	45	H2	3341.733	3341.733	ppb	0.8	43938921.33	50000	
Co	59	45	No Gas	30.294	30.294	ppb	1.9	719581.79	500	
Ni	60	45	He	30.726	30.726	ppb	0.9	67590.93	500	
Cu	63	45	He	31.773	31.773	ppb	1.5	184296.03	500	
Zn	66	72	No Gas	59.287	59.287	ppb	2.1	232564.54	500	
As	75	72	He	30.980	30.980	ppb	1.0	36551.33	500	
Se	78	72	H2	31.903	31.903	ppb	0.2	12103.76	500	
Sr	88	72	No Gas	1318.276	1318.276	ppb	3.1	39700615.09	500	>LDR
Zr	90	72	No Gas	0.194	0.194	ppb	10.4	3597.17	50	
Mo	95	115	No Gas	29.619	29.619	ppb	2.3	175528.69	500	
Ag	107	115	No Gas	26.488	26.488	ppb	1.4	390525.79	50	
Cd	111	115	No Gas	29.408	29.408	ppb	1.5	87012.77	500	
Sn	118	115	No Gas	29.067	29.067	ppb	0.9	250210.10	500	
Sb	123	115	No Gas	29.306	29.306	ppb	2.6	296328.56	100	
Ba	137	115	No Gas	106.682	106.682	ppb	1.4	470477.86	1000	
W	182	159	No Gas	0.014	0.014	ppb	23.7	213.33	50	
Hg	201	159	He	0.002	0.002	ppb	240.1	18.00	5	
Tl	205	159	No Gas	30.429	30.429	ppb	1.6	625268.27	500	
Pb	208	159	No Gas	30.215	30.215	ppb	1.2	843065.46	500	
U	238	159	No Gas	31.161	31.161	ppb	1.8	808385.23	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2090768.11	0.7	2127750.42	98.26	60	120	
Sc	45	No Gas	4319371.00	0.6	4351089.67	99.27	60	120	
Sc	45	H2	2592872.75	0.7	2538328.83	102.15	60	120	
Sc	45	He	480171.48	0.9	501255.85	95.79	60	120	
Ge	72	No Gas	992926.29	1.1	1004335.48	98.86	60	120	
Ge	72	H2	665428.85	0.3	677952.25	98.15	60	120	
Ge	72	He	267644.49	0.3	278337.97	96.16	60	120	
In	115	No Gas	5437406.98	1.0	5483417.78	99.16	60	120	
Tb	159	No Gas	7066295.97	1.2	6795122.92	103.99	60	120	
Tb	159	He	3900271.92	0.9	3833707.42	101.74	60	120	

Sample Report

Sample Name	F183-08
File Name	H6G15121.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:55:50
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.077	21.077	ppb	2.9	357194.75	50	
Be	9	6	No Gas	0.037	0.037	ppb	39.6	167.78	50	
B	11	6	No Gas	91.290	91.290	ppb	1.4	211224.35	100	>LDR
Na	23	45	H2	87345.499	87345.499	ppb	0.1	399809781.33	50000	>LDR
Mg	24	45	No Gas	63931.463	63931.463	ppb	1.7	792896810.67	50000	>LDR
Al	27	45	No Gas	208.718	208.718	ppb	3.1	3409257.76	50000	
Si	28	45	H2	8041.284	8041.284	ppb	0.3	10811140.00	5000	>LDR
P	31	45	No Gas	35.615	35.615	ppb	3.1	62476.72	500	
K	39	45	He	2832.441	2832.441	ppb	1.0	2436766.17	50000	
Ca	40	45	H2	179332.913	179332.913	ppb	1.4	1697797888.00	50000	>LDR
Ti	47	45	No Gas	1.960	1.960	ppb	4.6	3779.19	500	
V	51	45	He	2.170	2.170	ppb	0.5	17920.36	500	
Cr	52	45	He	1.266	1.266	ppb	3.4	9469.27	500	
Mn	55	45	No Gas	19.961	19.961	ppb	1.2	589372.50	3000	
Fe	56	45	H2	194.755	194.755	ppb	0.6	2601746.33	50000	
Co	59	45	No Gas	0.216	0.216	ppb	2.0	5787.90	500	
Ni	60	45	He	0.425	0.425	ppb	3.8	1072.04	500	
Cu	63	45	He	0.207	0.207	ppb	10.6	3901.23	500	
Zn	66	72	No Gas	1.002	1.002	ppb	4.2	8077.07	500	
As	75	72	He	0.712	0.712	ppb	3.9	1157.38	500	
Se	78	72	H2	0.923	0.923	ppb	6.5	370.67	500	
Sr	88	72	No Gas	1293.836	1293.836	ppb	1.6	39120584.00	500	>LDR
Zr	90	72	No Gas	0.169	0.169	ppb	6.4	3163.72	50	
Mo	95	115	No Gas	0.357	0.357	ppb	4.1	2320.20	500	
Ag	107	115	No Gas	0.067	0.067	ppb	4.4	1101.16	50	
Cd	111	115	No Gas	0.009	0.009	ppb	96.8	101.48	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	857.81	500	
Sb	123	115	No Gas	0.069	0.069	ppb	11.4	894.48	100	
Ba	137	115	No Gas	77.164	77.164	ppb	1.2	340953.80	1000	
W	182	159	No Gas	0.009	0.009	ppb	18.2	166.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	825.58	500	
Pb	208	159	No Gas	0.188	0.188	ppb	2.4	7113.03	500	
U	238	159	No Gas	1.550	1.550	ppb	3.2	40306.11	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2102537.76	0.8	2127750.42	98.82	60	120	
Sc	45	No Gas	4345661.50	0.9	4351089.67	99.88	60	120	
Sc	45	H2	2597818.50	0.4	2538328.83	102.34	60	120	
Sc	45	He	474565.74	0.9	501255.85	94.68	60	120	
Ge	72	No Gas	996690.25	0.3	1004335.48	99.24	60	120	
Ge	72	H2	665918.06	0.2	677952.25	98.22	60	120	
Ge	72	He	268705.24	0.6	278337.97	96.54	60	120	
In	115	No Gas	5446492.45	0.7	5483417.78	99.33	60	120	
Tb	159	No Gas	7009697.78	1.3	6795122.92	103.16	60	120	
Tb	159	He	3901618.67	0.6	3833707.42	101.77	60	120	

Sample Report

Sample Name	F183-08J
File Name	H6G15122.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 15:58:46
Sample Type	Sample
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	20.855	4.171	ppb	4.8	171029.00	50	
Be	9	6	No Gas	0.071	0.014	ppb	36.9	82.22	50	
B	11	6	No Gas	90.772	18.154	ppb	2.0	67841.94	100	
Na	23	45	H2	89157.388	17831.478	ppb	1.5	81226040.00	50000	
Mg	24	45	No Gas	65558.977	13111.795	ppb	1.5	163018768.00	50000	
Al	27	45	No Gas	207.705	41.541	ppb	0.5	709672.80	50000	
Si	28	45	H2	8176.539	1635.308	ppb	1.9	2183696.67	5000	
P	31	45	No Gas	35.685	7.137	ppb	10.3	34432.59	500	
K	39	45	He	2778.647	555.729	ppb	1.8	589596.00	50000	
Ca	40	45	H2	181636.797	36327.359	ppb	1.8	341025952.00	50000	
Ti	47	45	No Gas	2.056	0.411	ppb	3.5	1034.04	500	
V	51	45	He	4.306	0.861	ppb	4.9	10526.70	500	
Cr	52	45	He	1.135	0.227	ppb	5.1	2717.61	500	
Mn	55	45	No Gas	20.563	4.113	ppb	1.1	133018.97	3000	
Fe	56	45	H2	196.497	39.299	ppb	1.6	550628.21	50000	
Co	59	45	No Gas	0.186	0.037	ppb	9.4	1512.75	500	
Ni	60	45	He	0.355	0.071	ppb	25.1	311.33	500	
Cu	63	45	He	0.034	0.007	ppb	179.9	2829.63	500	
Zn	66	72	No Gas	0.325	0.065	ppb	40.3	4498.08	500	
As	75	72	He	1.097	0.219	ppb	12.7	589.34	500	
Se	78	72	H2	0.843	0.169	ppb	17.5	86.67	500	
Sr	88	72	No Gas	1305.488	261.098	ppb	1.8	7974175.79	500	
Zr	90	72	No Gas	0.106	0.021	ppb	7.5	596.68	50	
Mo	95	115	No Gas	0.307	0.061	ppb	11.1	578.90	500	
Ag	107	115	No Gas	0.054	0.011	ppb	6.8	277.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	63.24	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1041.15	500	
Sb	123	115	No Gas	0.055	0.011	ppb	17.8	313.34	100	
Ba	137	115	No Gas	82.875	16.575	ppb	0.4	74822.38	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	50.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	511.12	500	
Pb	208	159	No Gas	0.079	0.016	ppb	22.1	2384.54	500	
U	238	159	No Gas	1.459	0.292	ppb	1.8	8078.23	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2168200.53	1.2	2127750.42	101.9	60	120	
Sc	45	No Gas	4355650.33	1.6	4351089.67	100.1	60	120	
Sc	45	H2	2575025.58	1.6	2538328.83	101.45	60	120	
Sc	45	He	484672.78	0.1	501255.85	96.69	60	120	
Ge	72	No Gas	1006571.29	0.2	1004335.48	100.22	60	120	
Ge	72	H2	682032.00	0.3	677952.25	100.6	60	120	
Ge	72	He	273429.53	0.9	278337.97	98.24	60	120	
In	115	No Gas	5547280.62	0.8	5483417.78	101.16	60	120	
Tb	159	No Gas	7119091.11	0.5	6795122.92	104.77	60	120	
Tb	159	He	3909576.08	1.1	3833707.42	101.98	60	120	

Sample Report

Sample Name	F183-12
File Name	H6G15123.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:01:41
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.432	14.432	ppb	0.4	277575.46	50	
Be	9	6	No Gas	0.009	0.009	ppb	37.9	60.00	50	
B	11	6	No Gas	83.289	83.289	ppb	1.6	192275.76	100	
Na	23	45	H2	82296.689	82296.689	ppb	0.9	369122613.33	50000	>LDR
Mg	24	45	No Gas	51668.683	51668.683	ppb	2.0	631656341.33	50000	>LDR
Al	27	45	No Gas	6.510	6.510	ppb	6.8	139970.84	50000	
Si	28	45	H2	7284.704	7284.704	ppb	1.2	9597149.33	5000	>LDR
P	31	45	No Gas	9.211	9.211	ppb	8.6	35882.25	500	
K	39	45	He	2282.494	2282.494	ppb	0.9	2000924.50	50000	
Ca	40	45	H2	151214.141	151214.141	ppb	0.6	1402764672.00	50000	>LDR
Ti	47	45	No Gas	0.447	0.447	ppb	5.3	1080.04	500	
V	51	45	He	2.169	2.169	ppb	2.5	18035.18	500	
Cr	52	45	He	0.745	0.745	ppb	2.9	6098.03	500	
Mn	55	45	No Gas	0.259	0.259	ppb	7.3	21359.32	3000	
Fe	56	45	H2	13.821	13.821	ppb	1.8	215756.17	50000	
Co	59	45	No Gas	0.110	0.110	ppb	2.0	3208.38	500	
Ni	60	45	He	0.246	0.246	ppb	5.5	688.69	500	
Cu	63	45	He	0.003	0.003	ppb	372.6	2768.28	500	
Zn	66	72	No Gas	0.909	0.909	ppb	4.3	7642.16	500	
As	75	72	He	0.686	0.686	ppb	4.1	1128.38	500	
Se	78	72	H2	0.826	0.826	ppb	7.9	337.00	500	
Sr	88	72	No Gas	1054.201	1054.201	ppb	1.9	31565629.86	500	>LDR
Zr	90	72	No Gas	0.006	0.006	ppb	101.1	326.67	50	
Mo	95	115	No Gas	0.343	0.343	ppb	1.4	2241.30	500	
Ag	107	115	No Gas	0.063	0.063	ppb	5.8	1046.71	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	23.83	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1135.60	500	
Sb	123	115	No Gas	0.037	0.037	ppb	10.8	574.46	100	
Ba	137	115	No Gas	54.013	54.013	ppb	1.0	238926.75	1000	
W	182	159	No Gas	0.001	0.001	ppb	275.1	96.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	458.90	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1605.60	500	
U	238	159	No Gas	1.504	1.504	ppb	1.0	39182.47	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2069524.14	1.0	2127750.42	97.26	60	120	
Sc	45	No Gas	4283323.83	1.3	4351089.67	98.44	60	120	
Sc	45	H2	2545299.67	0.7	2538328.83	100.27	60	120	
Sc	45	He	477726.98	1.1	501255.85	95.31	60	120	
Ge	72	No Gas	987094.00	0.8	1004335.48	98.28	60	120	
Ge	72	H2	671985.21	0.9	677952.25	99.12	60	120	
Ge	72	He	268916.16	0.9	278337.97	96.61	60	120	
In	115	No Gas	5450932.31	1.7	5483417.78	99.41	60	120	
Tb	159	No Gas	7019815.83	0.7	6795122.92	103.31	60	120	
Tb	159	He	3863930.00	0.4	3833707.42	100.79	60	120	

Sample Report

Sample Name	F183-13
File Name	H6G15124.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G15.b
Acq Time	2020-07-20 16:04:37
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.199	14.199	ppb	0.6	275936.72	50	
Be	9	6	No Gas	0.005	0.005	ppb	106.1	43.33	50	
B	11	6	No Gas	83.276	83.276	ppb	1.8	192911.28	100	
Na	23	45	H2	84128.029	84128.029	ppb	1.2	379168352.00	50000	>LDR
Mg	24	45	No Gas	52315.895	52315.895	ppb	1.2	641150805.33	50000	>LDR
Al	27	45	No Gas	3.442	3.442	ppb	4.8	91351.32	50000	
Si	28	45	H2	7352.404	7352.404	ppb	1.4	9733605.00	5000	>LDR
P	31	45	No Gas	9.347	9.347	ppb	9.0	36097.48	500	
K	39	45	He	2304.118	2304.118	ppb	1.2	2022250.67	50000	
Ca	40	45	H2	152699.767	152699.767	ppb	1.2	1423538773.33	50000	>LDR
Ti	47	45	No Gas	0.419	0.419	ppb	6.1	1032.71	500	
V	51	45	He	2.185	2.185	ppb	1.9	18161.35	500	
Cr	52	45	He	0.681	0.681	ppb	1.9	5687.85	500	
Mn	55	45	No Gas	0.225	0.225	ppb	11.5	20450.61	3000	
Fe	56	45	H2	12.548	12.548	ppb	1.3	200347.09	50000	
Co	59	45	No Gas	0.105	0.105	ppb	6.0	3084.35	500	
Ni	60	45	He	0.247	0.247	ppb	8.4	692.69	500	
Cu	63	45	He	0.030	0.030	ppb	47.7	2924.98	500	
Zn	66	72	No Gas	1.519	1.519	ppb	3.9	9950.98	500	
As	75	72	He	0.714	0.714	ppb	3.3	1153.38	500	
Se	78	72	H2	0.818	0.818	ppb	1.9	333.67	500	
Sr	88	72	No Gas	1072.002	1072.002	ppb	2.1	32012542.06	500	>LDR
Zr	90	72	No Gas	0.008	0.008	ppb	1.6	360.01	50	
Mo	95	115	No Gas	0.336	0.336	ppb	7.4	2215.74	500	
Ag	107	115	No Gas	0.063	0.063	ppb	5.6	1047.82	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	22.76	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	678.91	500	
Sb	123	115	No Gas	0.040	0.040	ppb	6.8	606.68	100	
Ba	137	115	No Gas	54.556	54.556	ppb	2.8	243168.89	1000	
W	182	159	No Gas	0.005	0.005	ppb	82.0	133.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	373.34	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1415.59	500	
U	238	159	No Gas	1.558	1.558	ppb	1.5	40506.81	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2076738.35	1.8	2127750.42	97.6	60	120	
Sc	45	No Gas	4293613.33	1.6	4351089.67	98.68	60	120	
Sc	45	H2	2557908.83	0.6	2538328.83	100.77	60	120	
Sc	45	He	478601.04	0.8	501255.85	95.48	60	120	
Ge	72	No Gas	984384.89	0.6	1004335.48	98.01	60	120	
Ge	72	H2	671726.63	1.5	677952.25	99.08	60	120	
Ge	72	He	267339.85	0.6	278337.97	96.05	60	120	
In	115	No Gas	5493961.70	1.9	5483417.78	100.19	60	120	
Tb	159	No Gas	7007201.94	0.7	6795122.92	103.12	60	120	
Tb	159	He	3863686.83	1.1	3833707.42	100.78	60	120	

Sample Report

Sample Name	F183-14
File Name	H6G15125.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:07:32
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.177	23.177	ppb	2.3	376729.50	50	
Be	9	6	No Gas	0.005	0.005	ppb	58.6	46.67	50	
B	11	6	No Gas	53.154	53.154	ppb	2.7	133875.89	100	
Na	23	45	H2	31552.065	31552.065	ppb	0.4	142355381.33	50000	
Mg	24	45	No Gas	38487.099	38487.099	ppb	2.6	471546389.33	50000	
Al	27	45	No Gas	14.712	14.712	ppb	5.6	271195.75	50000	
Si	28	45	H2	8265.996	8265.996	ppb	0.5	10933377.33	5000	>LDR
P	31	45	No Gas	10.238	10.238	ppb	4.0	36969.75	500	
K	39	45	He	2332.486	2332.486	ppb	0.8	2046302.42	50000	
Ca	40	45	H2	107810.796	107810.796	ppb	0.9	1004242112.00	50000	>LDR
Ti	47	45	No Gas	0.612	0.612	ppb	6.7	1371.40	500	
V	51	45	He	0.672	0.672	ppb	3.6	9289.15	500	
Cr	52	45	He	0.254	0.254	ppb	4.3	2863.63	500	
Mn	55	45	No Gas	510.907	510.907	ppb	2.7	14556730.67	3000	
Fe	56	45	H2	287.869	287.869	ppb	0.8	3765324.83	50000	
Co	59	45	No Gas	0.844	0.844	ppb	2.0	20522.75	500	
Ni	60	45	He	3.475	3.475	ppb	0.5	7756.88	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2503.57	500	
Zn	66	72	No Gas	16.228	16.228	ppb	1.3	66974.57	500	
As	75	72	He	0.507	0.507	ppb	9.2	926.70	500	
Se	78	72	H2	1.011	1.011	ppb	6.5	406.68	500	
Sr	88	72	No Gas	1233.201	1233.201	ppb	2.7	37292318.52	500	>LDR
Zr	90	72	No Gas	0.025	0.025	ppb	17.4	656.68	50	
Mo	95	115	No Gas	7.815	7.815	ppb	1.0	47843.39	500	
Ag	107	115	No Gas	0.060	0.060	ppb	6.9	1034.49	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	49.94	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	604.46	500	
Sb	123	115	No Gas	0.042	0.042	ppb	3.6	634.46	100	
Ba	137	115	No Gas	45.837	45.837	ppb	1.0	208314.82	1000	
W	182	159	No Gas	0.051	0.051	ppb	17.7	566.68	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	450.01	500	
Pb	208	159	No Gas	0.001	0.001	ppb	392.3	1970.07	500	
U	238	159	No Gas	1.790	1.790	ppb	1.0	47412.58	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2079047.50	0.3	2127750.42	97.71	60	120	
Sc	45	No Gas	4292907.83	0.4	4351089.67	98.66	60	120	
Sc	45	H2	2555760.08	0.6	2538328.83	100.69	60	120	
Sc	45	He	478734.00	0.3	501255.85	95.51	60	120	
Ge	72	No Gas	996988.46	1.0	1004335.48	99.27	60	120	
Ge	72	H2	670531.58	0.5	677952.25	98.91	60	120	
Ge	72	He	271806.70	0.8	278337.97	97.65	60	120	
In	115	No Gas	5598435.80	0.6	5483417.78	102.1	60	120	
Tb	159	No Gas	7146584.16	1.6	6795122.92	105.17	60	120	
Tb	159	He	3896698.17	1.0	3833707.42	101.64	60	120	

Sample Report

Sample Name	F183-15
File Name	H6G15126.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:10:27
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.126	16.126	ppb	2.3	295082.24	50	
Be	9	6	No Gas	0.009	0.009	ppb	32.1	60.00	50	
B	11	6	No Gas	54.550	54.550	ppb	3.0	135364.37	100	
Na	23	45	H2	34171.626	34171.626	ppb	0.8	153805120.00	50000	
Mg	24	45	No Gas	43478.653	43478.653	ppb	2.0	523365408.00	50000	
Al	27	45	No Gas	1.634	1.634	ppb	10.9	61375.72	50000	
Si	28	45	H2	8081.240	8081.240	ppb	0.8	10665987.33	5000	>LDR
P	31	45	No Gas	8.516	8.516	ppb	8.6	34667.85	500	
K	39	45	He	2017.608	2017.608	ppb	0.7	1766225.59	50000	
Ca	40	45	H2	126216.680	126216.680	ppb	1.5	1173078016.00	50000	>LDR
Ti	47	45	No Gas	0.457	0.457	ppb	6.1	1080.04	500	
V	51	45	He	1.804	1.804	ppb	4.2	15747.04	500	
Cr	52	45	He	1.024	1.024	ppb	3.8	7864.93	500	
Mn	55	45	No Gas	2.435	2.435	ppb	3.2	81880.73	3000	
Fe	56	45	H2	2.956	2.956	ppb	2.0	75794.85	50000	
Co	59	45	No Gas	0.086	0.086	ppb	6.2	2600.92	500	
Ni	60	45	He	0.109	0.109	ppb	8.6	385.34	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2352.87	500	
Zn	66	72	No Gas	0.640	0.640	ppb	7.9	6588.27	500	
As	75	72	He	0.452	0.452	ppb	7.9	849.36	500	
Se	78	72	H2	1.029	1.029	ppb	6.8	416.68	500	
Sr	88	72	No Gas	1110.365	1110.365	ppb	3.2	33126212.02	500	>LDR
Zr	90	72	No Gas	0.005	0.005	ppb	62.5	300.00	50	
Mo	95	115	No Gas	0.443	0.443	ppb	7.3	2868.09	500	
Ag	107	115	No Gas	0.062	0.062	ppb	8.4	1034.49	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	22.56	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	594.46	500	
Sb	123	115	No Gas	0.040	0.040	ppb	3.6	607.79	100	
Ba	137	115	No Gas	30.631	30.631	ppb	1.6	137225.38	1000	
W	182	159	No Gas	0.004	0.004	ppb	42.8	123.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	14.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	415.56	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1283.36	500	
U	238	159	No Gas	1.277	1.277	ppb	1.7	33606.01	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2060234.74	1.6	2127750.42	96.83	60	120	
Sc	45	No Gas	4218303.75	1.9	4351089.67	96.95	60	120	
Sc	45	H2	2550414.08	1.3	2538328.83	100.48	60	120	
Sc	45	He	473215.83	0.5	501255.85	94.41	60	120	
Ge	72	No Gas	983663.34	1.7	1004335.48	97.94	60	120	
Ge	72	H2	675642.81	0.3	677952.25	99.66	60	120	
Ge	72	He	268011.00	1.0	278337.97	96.29	60	120	
In	115	No Gas	5515431.94	1.1	5483417.78	100.58	60	120	
Tb	159	No Gas	7072293.88	1.2	6795122.92	104.08	60	120	
Tb	159	He	3870775.17	0.8	3833707.42	100.97	60	120	

Sample Report

Sample Name	F183-16
File Name	H6G15127.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:13:22
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.055	16.055	ppb	1.3	295722.44	50	
Be	9	6	No Gas	0.006	0.006	ppb	65.2	47.78	50	
B	11	6	No Gas	54.979	54.979	ppb	2.0	136873.80	100	
Na	23	45	H2	34930.521	34930.521	ppb	0.9	156479082.67	50000	
Mg	24	45	No Gas	43774.030	43774.030	ppb	1.7	534946560.00	50000	
Al	27	45	No Gas	2.142	2.142	ppb	9.2	70428.12	50000	
Si	28	45	H2	8164.122	8164.122	ppb	1.0	10725567.33	5000	>LDR
P	31	45	No Gas	8.392	8.392	ppb	11.5	35070.85	500	
K	39	45	He	2034.698	2034.698	ppb	1.2	1796272.67	50000	
Ca	40	45	H2	127411.102	127411.102	ppb	0.8	1178787242.67	50000	>LDR
Ti	47	45	No Gas	0.459	0.459	ppb	9.2	1100.05	500	
V	51	45	He	1.858	1.858	ppb	1.7	16206.23	500	
Cr	52	45	He	0.978	0.978	ppb	1.6	7633.46	500	
Mn	55	45	No Gas	2.596	2.596	ppb	1.0	87724.10	3000	
Fe	56	45	H2	2.330	2.330	ppb	5.6	67401.89	50000	
Co	59	45	No Gas	0.087	0.087	ppb	7.0	2668.93	500	
Ni	60	45	He	0.081	0.081	ppb	10.0	329.33	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2354.87	500	
Zn	66	72	No Gas	0.659	0.659	ppb	6.5	6776.36	500	
As	75	72	He	0.446	0.446	ppb	4.0	854.03	500	
Se	78	72	H2	1.024	1.024	ppb	10.0	411.68	500	
Sr	88	72	No Gas	1112.755	1112.755	ppb	3.0	33765799.77	500	>LDR
Zr	90	72	No Gas	0.006	0.006	ppb	54.6	323.34	50	
Mo	95	115	No Gas	0.429	0.429	ppb	2.1	2822.52	500	
Ag	107	115	No Gas	0.060	0.060	ppb	8.2	1027.82	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	18.99	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	542.23	500	
Sb	123	115	No Gas	0.034	0.034	ppb	11.6	556.68	100	
Ba	137	115	No Gas	31.090	31.090	ppb	1.1	141152.68	1000	
W	182	159	No Gas	0.006	0.006	ppb	24.5	146.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	375.56	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1215.58	500	
U	238	159	No Gas	1.295	1.295	ppb	0.8	34559.74	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2069879.00	0.6	2127750.42	97.28	60	120	
Sc	45	No Gas	4281715.67	1.0	4351089.67	98.41	60	120	
Sc	45	H2	2538500.58	1.0	2538328.83	100.01	60	120	
Sc	45	He	477493.34	0.1	501255.85	95.26	60	120	
Ge	72	No Gas	1000283.73	0.5	1004335.48	99.6	60	120	
Ge	72	H2	670942.00	1.0	677952.25	98.97	60	120	
Ge	72	He	271552.27	0.7	278337.97	97.56	60	120	
In	115	No Gas	5589265.68	0.4	5483417.78	101.93	60	120	
Tb	159	No Gas	7173036.66	0.5	6795122.92	105.56	60	120	
Tb	159	He	3931081.17	0.4	3833707.42	102.54	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV12
File Name	H6G15128.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:16:16
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	25.271	ppb	1.0	394066.09	25	101.08	90	110	
Be	9	6	No Gas	24.585	ppb	0.8	90355.33	25	98.34	90	110	
B	11	6	No Gas	51.799	ppb	3.1	129238.68	50	103.6	90	110	
Na	23	45	H2	25020.546	ppb	0.7	110694482.67	25000	100.08	90	110	
Mg	24	45	No Gas	24684.113	ppb	0.4	299816373.33	25000	98.74	90	110	
Al	27	45	No Gas	24335.556	ppb	0.3	385120367.60	25000	97.34	90	110	
Si	28	45	H2	2438.493	ppb	1.1	3164431.08	2500	97.54	90	110	
P	31	45	No Gas	239.927	ppb	1.3	258724.32	250	95.97	90	110	
K	39	45	He	24853.442	ppb	1.5	20238434.00	25000	99.41	90	110	
Ca	40	45	H2	24772.559	ppb	0.1	226279626.67	25000	99.09	90	110	
Ti	47	45	No Gas	244.404	ppb	1.1	424791.98	250	97.76	90	110	
V	51	45	He	252.905	ppb	0.9	1463308.79	250	101.16	90	110	
Cr	52	45	He	255.503	ppb	0.8	1661239.12	250	102.2	90	110	
Mn	55	45	No Gas	1497.104	ppb	0.9	42255904.00	1500	99.81	90	110	
Fe	56	45	H2	25180.124	ppb	0.5	319534570.67	25000	100.72	90	110	
Co	59	45	No Gas	249.222	ppb	1.3	5827508.50	250	99.69	90	110	
Ni	60	45	He	252.506	ppb	0.3	542964.44	250	101	90	110	
Cu	63	45	He	258.158	ppb	0.3	1447411.58	250	103.26	90	110	
Zn	66	72	No Gas	227.539	ppb	0.5	883502.44	250	91.02	90	110	
As	75	72	He	240.539	ppb	0.5	281631.00	250	96.22	90	110	
Se	78	72	H2	249.030	ppb	0.4	94852.71	250	99.61	90	110	
Sr	88	72	No Gas	253.135	ppb	1.5	7650708.31	250	101.25	90	110	
Zr	90	72	No Gas	27.141	ppb	0.7	473319.42	25	108.56	90	110	
Mo	95	115	No Gas	242.680	ppb	1.4	1445601.40	250	97.07	90	110	
Ag	107	115	No Gas	24.139	ppb	0.7	358029.19	25	96.56	90	110	
Cd	111	115	No Gas	237.930	ppb	1.1	707623.74	250	95.17	90	110	
Sn	118	115	No Gas	245.014	ppb	0.1	2109431.31	250	98.01	90	110	
Sb	123	115	No Gas	47.728	ppb	0.7	485368.94	50	95.46	90	110	
Ba	137	115	No Gas	491.449	ppb	0.6	2179488.74	500	98.29	90	110	
W	182	159	No Gas	24.523	ppb	1.3	228674.42	25	98.09	90	110	
Hg	201	159	He	2.467	ppb	2.8	1983.16	2.5	98.68	90	110	
Tl	205	159	No Gas	253.567	ppb	0.5	5256469.65	250	101.43	90	110	
Pb	208	159	No Gas	253.756	ppb	0.5	7140328.02	250	101.5	90	110	
U	238	159	No Gas	243.878	ppb	0.1	6390592.66	250	97.55	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2047386.65	1.2	2127750.42	96.22	60	120	
Sc	45	No Gas	4255728.42	2.7	4351089.67	97.81	60	120	
Sc	45	H2	2504298.92	0.6	2538328.83	98.66	60	120	
Sc	45	He	470286.91	0.1	501255.85	93.82	60	120	
Ge	72	No Gas	996000.52	1.0	1004335.48	99.17	60	120	
Ge	72	H2	669066.48	1.1	677952.25	98.69	60	120	
Ge	72	He	267643.03	0.3	278337.97	96.16	60	120	
In	115	No Gas	5469780.83	1.6	5483417.78	99.75	60	120	
Tb	159	No Gas	7139946.10	0.6	6795122.92	105.07	60	120	
Tb	159	He	3931569.33	0.7	3833707.42	102.55	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB12
File Name	H6G15129.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:19:10
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	116598.71	0.4	
Be	9	6	No Gas	0.011	ppb	18.9	67.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	28789.42	4	
Na	23	45	H2	10.525	ppb	5.0	461541.06	40	
Mg	24	45	No Gas	9.480	ppb	16.1	160664.65	10	
Al	27	45	No Gas	5.450	ppb	28.6	123016.00	15	
Si	28	45	H2	0.491	ppb	32.3	6628.25	8	
P	31	45	No Gas	1.515	ppb	55.3	28413.01	10	
K	39	45	He	<0.000	ppb	N/A	120552.67	20	
Ca	40	45	H2	15.951	ppb	5.0	367158.92	25	
Ti	47	45	No Gas	0.111	ppb	31.8	491.34	0.5	
V	51	45	He	0.180	ppb	9.4	6240.09	0.5	
Cr	52	45	He	<0.000	ppb	N/A	980.04	0.2	
Mn	55	45	No Gas	0.384	ppb	27.7	24916.20	0.2	>LOD
Fe	56	45	H2	2.997	ppb	9.3	76045.31	10	
Co	59	45	No Gas	0.055	ppb	27.3	1896.14	0.15	
Ni	60	45	He	0.031	ppb	24.1	214.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1905.47	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	3615.15	2	
As	75	72	He	0.072	ppb	13.8	405.01	0.2	
Se	78	72	H2	0.026	ppb	50.5	30.67	0.2	
Sr	88	72	No Gas	0.142	ppb	13.7	5940.23	0.2	
Zr	90	72	No Gas	0.002	ppb	201.4	250.00	2	
Mo	95	115	No Gas	0.072	ppb	15.6	653.35	0.2	
Ag	107	115	No Gas	0.005	ppb	70.1	191.11	0.08	
Cd	111	115	No Gas	0.088	ppb	13.7	344.33	0.2	
Sn	118	115	No Gas	0.408	ppb	7.4	5309.96	0.2	>LOD
Sb	123	115	No Gas	0.019	ppb	30.9	396.67	0.4	
Ba	137	115	No Gas	0.102	ppb	36.0	757.80	0.2	
W	182	159	No Gas	0.012	ppb	31.4	196.67	0.3	
Hg	201	159	He	0.002	ppb	161.4	18.00	0.1	
Tl	205	159	No Gas	0.105	ppb	25.5	3441.60	0.1	>LOD
Pb	208	159	No Gas	0.039	ppb	48.8	3074.60	0.1	
U	238	159	No Gas	0.048	ppb	24.0	1721.23	0.05	

LY 07|20|20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2119318.43	1.7	2127750.42	99.6	60	120	
Sc	45	No Gas	4286877.33	1.4	4351089.67	98.52	60	120	
Sc	45	H2	2540359.92	0.6	2538328.83	100.08	60	120	
Sc	45	He	466578.20	0.2	501255.85	93.08	60	120	
Ge	72	No Gas	978222.46	1.3	1004335.48	97.4	60	120	
Ge	72	H2	669996.31	0.4	677952.25	98.83	60	120	
Ge	72	He	267751.50	0.4	278337.97	96.2	60	120	
In	115	No Gas	5617095.37	0.1	5483417.78	102.44	60	120	
Tb	159	No Gas	7196918.05	2.7	6795122.92	105.91	60	120	
Tb	159	He	3910645.83	0.1	3833707.42	102.01	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2004
File Name	H6G15130.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G15.b
Acq Time	2020-07-20 16:22:05
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.884	ppb	9.3	128894.27	1	88.4	80	120	
Be	9	6	No Gas	0.969	ppb	8.0	3693.83	1	96.9	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	26192.16	10	-17.77	80	120	> +/- 20%
Na	23	45	H2	102.157	ppb	1.9	852579.56	100	102.16	80	120	
Mg	24	45	No Gas	99.230	ppb	0.6	1253931.50	100	99.23	80	120	
Al	27	45	No Gas	95.241	ppb	0.5	1548403.99	100	95.24	80	120	
Si	28	45	H2	91.136	ppb	1.4	123039.62	100	91.14	80	120	
P	31	45	No Gas	45.952	ppb	1.0	71423.01	50	91.9	80	120	
K	39	45	He	91.883	ppb	1.4	195875.79	100	91.88	80	120	
Ca	40	45	H2	105.544	ppb	0.5	1170859.42	100	105.54	80	120	
Ti	47	45	No Gas	1.027	ppb	2.4	2088.16	1	102.7	80	120	
V	51	45	He	1.126	ppb	3.0	11694.32	1	112.6	80	120	
Cr	52	45	He	0.984	ppb	2.5	7526.07	1	98.4	80	120	
Mn	55	45	No Gas	0.998	ppb	0.4	42213.02	1	99.8	80	120	
Fe	56	45	H2	101.425	ppb	1.4	1314070.50	100	101.42	80	120	
Co	59	45	No Gas	0.940	ppb	1.2	22659.47	1	94	80	120	
Ni	60	45	He	1.049	ppb	3.7	2394.88	1	104.9	80	120	
Cu	63	45	He	0.885	ppb	2.9	7625.47	1	88.5	80	120	
Zn	66	72	No Gas	9.742	ppb	0.6	40932.93	10	97.42	80	120	
As	75	72	He	0.969	ppb	1.7	1457.41	1	96.9	80	120	
Se	78	72	H2	0.997	ppb	7.7	399.01	1	99.7	80	120	
Sr	88	72	No Gas	2.059	ppb	1.1	62589.27	2	102.95	80	120	
Zr	90	72	No Gas	3.930	ppb	1.7	67222.05	5	78.6	80	120	> +/- 20%
Mo	95	115	No Gas	0.854	ppb	0.8	5425.55	1	85.4	80	120	
Ag	107	115	No Gas	0.896	ppb	2.0	13742.69	1	89.6	80	120	
Cd	111	115	No Gas	0.905	ppb	2.4	2835.24	1	90.5	80	120	
Sn	118	115	No Gas	0.779	ppb	2.4	8571.68	1	77.9	80	120	> +/- 20%
Sb	123	115	No Gas	0.875	ppb	1.0	9327.77	1	87.5	80	120	
Ba	137	115	No Gas	0.959	ppb	0.6	4650.83	1	95.9	80	120	
W	182	159	No Gas	1.873	ppb	1.5	17438.74	2	93.65	80	120	
Hg	201	159	He	0.094	ppb	5.0	90.83	0.1	94	80	120	
Tl	205	159	No Gas	0.922	ppb	0.2	20207.46	1	92.2	80	120	
Pb	208	159	No Gas	0.929	ppb	1.6	27910.04	1	92.9	80	120	
U	238	159	No Gas	0.878	ppb	2.7	23312.18	1	87.8	80	120	

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2106379.84	1.8	2127750.42	99	60	120	
Sc	45	No Gas	4270050.00	1.6	4351089.67	98.14	60	120	
Sc	45	H2	2486062.83	1.4	2538328.83	97.94	60	120	
Sc	45	He	468372.81	1.6	501255.85	93.44	60	120	
Ge	72	No Gas	974230.67	1.2	1004335.48	97	60	120	
Ge	72	H2	667183.31	1.9	677952.25	98.41	60	120	
Ge	72	He	268410.48	0.9	278337.97	96.43	60	120	
In	115	No Gas	5609031.10	1.4	5483417.78	102.29	60	120	
Tb	159	No Gas	7096721.52	1.9	6795122.92	104.44	60	120	
Tb	159	He	3900625.67	0.9	3833707.42	101.75	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2005
File Name	H6G15131.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\I\H6G15.b
Acq Time	2020-07-20 16:24:59
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6G15002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.230	ppb	33.9	118063.82	0.4	57.5	80	120	> +/- 20%
Be	9	6	No Gas	0.417	ppb	7.2	1556.75	0.4	104.25	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	15415.12	0.4	-1741.25	80	120	> +/- 20%
Na	23	45	H2	42.863	ppb	2.7	595083.65	40	107.16	80	120	
Mg	24	45	No Gas	43.928	ppb	2.6	563655.19	40	109.82	80	120	
Al	27	45	No Gas	40.684	ppb	3.7	662897.69	40	101.71	80	120	
K	39	45	He	34.881	ppb	15.9	150954.56	40	87.2	80	120	
Ca	40	45	H2	40.873	ppb	1.9	586909.62	40	102.18	80	120	
Ti	47	45	No Gas	0.470	ppb	6.2	1084.71	0.4	117.5	80	120	
V	51	45	He	0.518	ppb	1.5	8256.49	0.4	129.5	80	120	> +/- 20%
Cr	52	45	He	0.385	ppb	6.1	3675.16	0.4	96.25	80	120	
Mn	55	45	No Gas	0.445	ppb	3.2	25829.69	0.4	111.25	80	120	
Fe	56	45	H2	41.206	ppb	0.4	557481.46	40	103.02	80	120	
Co	59	45	No Gas	0.394	ppb	3.8	9568.69	0.4	98.5	80	120	
Ni	60	45	He	0.427	ppb	2.9	1070.04	0.4	106.75	80	120	
Cu	63	45	He	0.257	ppb	2.0	4155.30	0.4	64.25	80	120	> +/- 20%
Zn	66	72	No Gas	4.764	ppb	2.5	21586.48	4	119.1	80	120	
As	75	72	He	0.395	ppb	7.7	772.69	0.4	98.75	80	120	
Se	78	72	H2	0.382	ppb	9.7	163.67	0.4	95.5	80	120	
Sr	88	72	No Gas	0.466	ppb	1.8	15140.79	0.4	116.5	80	120	
Mo	95	115	No Gas	0.353	ppb	6.5	2307.98	0.4	88.25	80	120	
Ag	107	115	No Gas	0.373	ppb	3.0	5638.98	0.4	93.25	80	120	
Cd	111	115	No Gas	0.373	ppb	12.4	1180.78	0.4	93.25	80	120	
Sn	118	115	No Gas	0.264	ppb	3.9	3929.48	0.4	66	80	120	> +/- 20%
Sb	123	115	No Gas	0.366	ppb	8.2	3916.14	0.4	91.5	80	120	
Ba	137	115	No Gas	0.435	ppb	3.9	2213.53	0.4	108.75	80	120	
Tl	205	159	No Gas	0.359	ppb	3.9	8320.56	0.4	89.75	80	120	
Pb	208	159	No Gas	0.381	ppb	5.8	12155.69	0.4	95.25	80	120	
U	238	159	No Gas	0.366	ppb	6.7	9623.78	0.4	91.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2047574.11	2.8	2127750.42	96.23	60	120	
Sc	45	No Gas	4151485.08	2.6	4351089.67	95.41	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	2494065.50	0.5	2538328.83	98.26	60	120	
Sc	45	He	471528.03	0.9	501255.85	94.07	60	120	
Ge	72	No Gas	951120.62	1.8	1004335.48	94.7	60	120	
Ge	72	H2	658349.79	1.4	677952.25	97.11	60	120	
Ge	72	He	264233.99	0.3	278337.97	94.93	60	120	
In	115	No Gas	5473346.35	3.9	5483417.78	99.82	60	120	
Tb	159	No Gas	6855215.56	3.9	6795122.92	100.88	60	120	
Tb	159	He	3870055.50	0.3	3833707.42	100.95	60	120	

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07/21/20 10:35

End Date: 07/21/20 16:20

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

See analytical sequence

Zn only

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	IH6G16
Analytical Sequence:	H6G16
Method File:	E60201G3
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-80-01	MRL1 (1)	SM6B-19-40-02
S1	80-02	MRL2 (0.4)	65-01
S2	81 80-01	MRL3 (CAL)	65-02
S3	81-02	MRL4	NA
S4	82-01	MRL5	
S5	NA	MRL6	
S6		Internal Standard	SM6B-19-11-02
S7		Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	06-26
CCV	82-02	Post-Spike 3	NA
ICSA	79-01	Post-Spike 4	
ICSAB	79-02		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 07/21/20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G16
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6G16008				H6G16012			H6G16013		
DateAnalyed :		07/21/2010:54				07/21/2011:09			07/21/2011:12		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		31.26	30	0.4	104	0.24406	0	>0	19.412	20	97
Beryllium	T	32.48	30	1.3	108	0.00053500	0	<0.10	20.005	20	100
Boron		29.85	30	2.3	99	0.44611	0	<5.0	20.873	20	104
Sodium	T	30510	30000	0.5	102	98251	100000	98	99535	100000	100
Magnesium	T	29930	30000	2.7	100	95599	100000	96	96759	100000	97
Aluminum	T	30210	30000	2.8	101	97584	100000	98	97779	100000	98
Silicon		3429	3000	1.2	114*	3.3114	0	<20	224.22	200	112
Phosphorus		287.6	300	2.1	96	96015	100000	96	97612	100000	98
Potassium	T	30380	30000	0.8	101	99748	100000	100	98918	100000	99
Calcium	T	31040	30000	0.7	103	100590	100000	101	101420	100000	101
Titanium		309.8	300	2.0	103	2044.8	2000	102	2086.8	2000	104
Vanadium	T	319.5	300	0.3	107	0.00099596	0	<0.25	19.717	20	99
Chromium	T	317.7	300	0.2	106	0.29596	0	>0.1	20.110	20	101
Manganese	T	2041	2000	2.2	102	0.17838	0	<0.25	19.543	20	98
Iron	T	30740	30000	0.7	102	99920	100000	100	100730	100000	101
Cobalt	T	312.0	300	2.2	104	0.34777	0	>0.1	19.789	20	99
Nickel	T	327.7	300	0.4	109	0.27281	0	>0.25	20.150	20	101
Copper	T	317.8	300	0.9	106	0.11415	0	<0.50	19.901	20	100
Zinc	T	299.6	300	0.6	100	0.46921	0	<5	21.083	20	105
Arsenic	T	321.4	300	0.5	107	0.052054	0	<0.125	19.691	20	98
Selenium	T	320.8	300	1.7	107	0.18851	0	>0.15	20.303	20	102
Strontium		317.4	300	2.3	106	0.78107	0	<1.0	20.235	20	101
Zirconium		28.73	30	2.9	96	0.049803	0	<2.0	20.250	20	101
Molybdenum		304.8	300	2.2	102	1989.6	2000	99	2035.5	2000	102
Silver	T	31.58	30	1.7	105	0.012376	0	<0.1	19.121	20	96
Cadmium	T	327.7	300	0.9	109	0.086221	0	<0.1	20.143	20	101
Tin		318.2	300	1.1	106	0.17567	0	<0.2	19.937	20	100
Antimony	T	61.64	60	1.0	103	0.14435	0	<0.25	19.389	20	97
Barium	T	320.1	300	1.3	107	0.16735	0	<0.25	20.401	20	102
Tungsten		33.58	30	1.4	112*	0.17367	0	<1.0	18.619	20	93
Mercury		3.000	3	1.6	100	0.0035389	0	<0.1	1.8692	2	93
Thallium	T	321.3	300	1.9	107	0.011796	0	<0.1	19.255	20	96
Lead	T	320.5	300	1.2	107	0.10190	0	>0.05	19.544	20	98
Uranium		317.7	300	1.6	106	0.0049257	0	<0.1	19.418	20	97

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : METHOD SW6020A
Sequence : IH6G16
Instrument ID: H6

CCV SampleID			CCV6			CCV7			CCV8		
CCV DataFileID			H6G16067			H6G16078			H6G16090		
CCV DateTime			07/21/20 14:04			07/21/20 14:36			07/21/20 15:10		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.5	98	2.1	24.4	98	3.3	24.3	97	2.1
Beryllium	T	25	24.6	99	2.0	24.3	97	2.4	24.3	97	0.9
Boron		50	58.3	117*	1.6	52.2	104	3.5	52.8	106	1.4
Sodium	T	25000	25000	100	0.6	25000	100	1.0	25200	101	0.4
Magnesium	T	25000	24900	100	1.9	25100	101	1.7	25200	101	1.5
Aluminum	T	25000	24500	98	1.2	25000	100	0.8	24600	99	0.9
Silicon		2500	2520	101	0.8	2480	99	0.4	2510	100	0.5
Phosphorus		250	243	97	0.9	244	98	0.7	240	96	0.6
Potassium	T	25000	24900	100	0.5	24900	100	0.2	24700	99	0.6
Calcium	T	25000	25200	101	0.3	24700	99	0.7	25000	100	0.5
Titanium		250	247	99	2.0	244	97	2.0	248	99	0.7
Vanadium	T	250	248	99	1.2	247	99	1.3	247	99	1.5
Chromium	T	250	249	99	0.9	249	100	1.2	248	99	1.9
Manganese	T	1500	1490	99	2.6	1490	99	2.1	1480	99	1.2
Iron	T	25000	25500	102	0.3	25200	101	0.8	25400	101	0.9
Cobalt	T	250	249	100	2.8	249	100	1.5	248	99	1.7
Nickel	T	250	255	102	0.7	253	101	0.5	252	101	1.5
Copper	T	250	251	100	0.8	252	101	1.0	251	100	1.6
Zinc	T	250	250	100 ✓	0.9	248	99 ✓	1.7	247	99 ✓	1.9
Arsenic	T	250	246	99	0.3	245	98	1.1	244	98	0.2
Selenium	T	250	252	101	1.6	248	99	1.1	246	98	0.3
Strontium		250	244	98	2.2	248	99	1.3	243	97	2.6
Zirconium		25	25.1	100	0.8	24.7	99	1.5	24.6	99	2.9
Molybdenum		250	243	97	1.0	241	96	1.5	244	98	2.1
Silver	T	25	25.0	100	0.8	24.1	96	1.0	24.6	98	0.2
Cadmium	T	250	253	101	0.8	246	98	1.1	251	101	0.2
Tin		250	246	98	1.5	246	98	0.9	246	98	0.5
Antimony	T	50	49.7	99	0.8	48.2	96	0.8	49.1	98	1.4
Barium	T	500	496	99	1.3	490	98	1.5	500	100	1.0
Tungsten		25	24.9	100	0.8	24.5	98	1.1	24.9	100	0.7
Mercury		2.5	2.43	97	1.6	2.41	96	2.1	2.40	96	0.9
Thallium	T	250	248	99	1.0	252	101	1.7	250	100	1.0
Lead	T	250	249	100	0.3	251	101	0.9	250	100	0.5
Uranium		250	248	99	1.0	251	100	0.4	248	99	1.1

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F183
Method : SW6020A
Sequence : IH6G16
Instrument ID: H6

		CB SampleID	CB DataFileID	CB DateTime	CCB6	CCB7	CCB8
		:	:	:			
			H6G16009	07/21/2010:56	H6G16068 07/21/2014:07	H6G16079 07/21/2014:39	H6G16091 07/21/2015:13

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.01	>0	0.02	>0	0.04	>0	0.08	>0
Beryllium	T	0.10	0.02	<0.10	0.01	<0.10	0.01	<0.10	0.01	<0.10
Boron		5.0	0.5	<5.0	1	<5.0	1.0	<5.0	0.9	<5.0
Sodium	T	25	8	<25	7	<25	20	<25	20	<25
Magnesium	T	25	7	<25	5	<25	6	<25	5	<25
Aluminum	T	25	7	<25	5	<25	4	<25	3	<25
Silicon		20	3	<20	0.5	<20	0.5	<20	0.5	<20
Phosphorus		25	1.0	<25	1	<25	0.02	<25	0.7	<25
Potassium	T	25	5	<25	3	<25	4	<25	1	<25
Calcium	T	25	4	<25	8	<25	7	<25	8	<25
Titanium		0.5	0.06	<0.5	0.03	<0.5	0.04	<0.5	0.04	<0.5
Vanadium	T	0.25	0.02	<0.25	0.004	<0.25	0.3	>0.25	0.4	>0.25
Chromium	T	0.1	0.05	<0.1	0.001	<0.1	0.008	<0.1	0.02	<0.1
Manganese	T	0.25	0.5	>0.25	0.3	>0.25	0.3	>0.25	0.2	<0.25
Iron	T	25	5	<25	4	<25	3	<25	2	<25
Cobalt	T	0.1	0.07	<0.1	0.05	<0.1	0.04	<0.1	0.04	<0.1
Nickel	T	0.25	0.04	<0.25	0.02	<0.25	0.04	<0.25	0.04	<0.25
Copper	T	0.50	0.06	<0.50	0.4	<0.50	0.4	<0.50	0.4	<0.50
Zinc	T	5	0.03	<5 ✓	0.7	<5 ✓	0.7	<5 ✓	0.7	<5 ✓
Arsenic	T	0.125	0.05	<0.125	0.008	<0.125	0.09	<0.125	0.07	<0.125
Selenium	T	0.15	0.1	<0.15	0.06	<0.15	0.05	<0.15	0.02	<0.15
Strontium		1.0	0.07	<1.0	0.04	<1.0	0.05	<1.0	0.05	<1.0
Zirconium		2.0	0.004	<2.0	0.005	<2.0	0.0003	<2.0	0.003	<2.0
Molybdenum		0.5	0.1	<0.5	0.08	<0.5	0.07	<0.5	0.06	<0.5
Silver	T	0.1	0.008	<0.1	0.007	<0.1	0.007	<0.1	0.005	<0.1
Cadmium	T	0.1	0.1	>0.1	0.10	<0.1	0.08	<0.1	0.08	<0.1
Tin		0.2	0.2	<0.2	0.3	>0.2	0.3	>0.2	0.3	>0.2
Antimony	T	0.25	0.01	<0.25	0.006	<0.25	0.008	<0.25	0.005	<0.25
Barium	T	0.25	0.06	<0.25	0.08	<0.25	0.06	<0.25	0.04	<0.25
Tungsten		1.0	0.01	<1.0	0.003	<1.0	0.01	<1.0	0.006	<1.0
Mercury		0.1	0.02	<0.1	0.008	<0.1	0.01	<0.1	0.008	<0.1
Thallium	T	0.1	0.3	>0.1	0.1	>0.1	0.1	>0.1	0.1	>0.1
Lead	T	0.05	0.10	>0.05	0.07	>0.05	0.06	>0.05	0.05	<0.05
Uranium		0.1	0.07	<0.1	0.06	<0.1	0.05	<0.1	0.04	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b

Zn only

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G16001.d		1	
2		CalBlk	BLANK		1101	H6G16002.d		1	
3		CalStd	S0		1102	H6G16003.d		1	
4		CalStd	S1		1104	H6G16004.d		2	
5		CalStd	S2		1105	H6G16005.d		3	
6		CalStd	S3		1106	H6G16006.d		4	
7		CalStd	S4		1107	H6G16007.d		5	
8		ICV	ICV		1204	H6G16008.d			1
9		ICB	ICB		1102	H6G16009.d			1
10		LLCCV	MRLG2101 ✓	1/100/10 ppb B Sn X	1306	H6G16010.d			1
11		LLCCV2	MRLG2102	0.4/40/4 ppb ↓	1307	H6G16011.d			1
12		ICS-A	ICSA		1304	H6G16012.d			1
13		ICSB	ICSAB		1305	H6G16013.d			1
14		Sample	MRLG2103	500 ppb CAT	1207	H6G16014.d			1
15		CCV	CCV1		1206	H6G16015.d			1
16		CCB	CCB1		1102	H6G16016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMG019WB		2101	H6G16017.d			1
2		LCSW	IMG019WL		2102	H6G16018.d			1
3		LCSW	IMG019WC		2103	H6G16019.d			1
4		Blank	IMG021WB		2104	H6G16020.d			1
5		LCSW	IMG021WL		2105	H6G16021.d			1
6		LCSW	IMG021WC		2106	H6G16022.d			1
7		Blank	IMG022SB V↑		2107	H6G16023.d			1
8		LCSS	IMG022SL		2108	H6G16024.d			1
9		LCSS	IMG022SC		2109	H6G16025.d			1
10		CCV	CCV2		1206	H6G16026.d			1
11		CCB	CCB2		1102	H6G16027.d			1
12		Sample	LOD-WW1	200.8WW Sn ↓	2110	H6G16028.d			1
13		Sample	LOQ-WW1	200.8WW Cd Sn↓ V↑	2111	H6G16029.d			1
14		Sample	LOQ-WW2	200.8WW Cu ↓	2112	H6G16030.d			1
15		Sample	LOD-W1	6020W Sn ↓	2201	H6G16031.d			1
16		Sample	LOQ-W1	6020W Sn↓ V↑	2202	H6G16032.d			1
17		Sample	LOQ-W2	6020W	2203	H6G16033.d			1
18		Sample	LOD-S1	6020S	2204	H6G16034.d			1
19		Sample	LOQ-S1	6020S As V↑	2205	H6G16035.d			1
20		Sample	LOQ-S2	6020S	2206	H6G16036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		CCV	CCV3		1206	H6G16037.d			1
22		CCB	CCB3		1102	H6G16038.d			1
23		Blank	IMG016WB		2207	H6G16039.d			1
24		LCSW	IMG016WL	B fail	2208	H6G16040.d			1
25		LCSW	IMG016WC		2209	H6G16041.d			1
26		Blank	IMG027SB V	½ LOQ	2210	H6G16042.d			1
27		LCSS	IMG027SL		2211	H6G16043.d			1
28		LCSS	IMG027SC		2212	H6G16044.d			1
29		Sample	G005-01	Li ca↑	2301	H6G16045.d			1
30		Sample	G005-01I		2302	H6G16046.d			10
31		CCV	CCV4		1206	H6G16047.d			1
32		CCB	CCB4		1102	H6G16048.d			1
33		Sample	G134-01M	P Ti↑	2303	H6G16049.d			1
34		Sample	G134-01S		2304	H6G16050.d			1
35		Sample	G134-01A	Zr fail	2305	H6G16051.d			1
36		Sample	G134-01		2306	H6G16052.d			1
37		Sample	G134-01J		2307	H6G16053.d			5
38		Sample	G134-01M		2308	H6G16054.d			10
39		Sample	G134-01S		2309	H6G16055.d			10
40		Sample	G134-01A ✓		2310	H6G16056.d			10
41		Sample	G134-01I		2311	H6G16057.d			10
42		Sample	G134-01J		2312	H6G16058.d			50
43		CCV	CCV5		1206	H6G16059.d			1
44		CCB	CCB5		1102	H6G16060.d			1
45		LLCCV	MRLG2104	1/100/10 ppb B V Ca Sn X	1306	H6G16061.d			1
46		LLCCV2	MRLG2105	0.4/40/4 ppb ↓	1307	H6G16062.d			1
47		Blank	IMG028WB		2401	H6G16063.d			1
48		LCSW	IMG028WL		2402	H6G16064.d			1
49		LCSW	IMG028WC		2403	H6G16065.d			1
50		Sample	G471-02N		2404	H6G16066.d			1
51		CCV	CCV6		1206	H6G16067.d			1
52		CCB	CCB6		1102	H6G16068.d			1
53		Blank	IMF035WB		2405	H6G16069.d			1
54		LCSW	IMF035WL		2406	H6G16070.d			1
55		LCSW	IMF035WC		2407	H6G16071.d			1
56		Sample	F183-01N	Na mg ca↑	2408	H6G16072.d			1
57		Sample	F183-02N	Na mg ca↑	2409	H6G16073.d			1
58		Sample	F183-03N	Na Ca↑	2410	H6G16074.d			1
59		Sample	F183-05N	Na mg ca↑	2411	H6G16075.d			1
60		Sample	F183-06N	Ca↑	2412	H6G16076.d			1
61		Sample	F183-07N	Na mg ca↑	2501	H6G16077.d			1
62		CCV	CCV7		1206	H6G16078.d			1
63		CCB	CCB7		1102	H6G16079.d			1
64		Sample	F183-08M	Na mg ca↑	2502	H6G16080.d			1
65		Sample	F183-08S		2503	H6G16081.d			1
66		Sample	F183-08A		2504	H6G16082.d			1
67		Sample	F183-08N		2505	H6G16083.d			1
68		Sample	F183-08J		2506	H6G16084.d			5
69		Sample	F183-12N	Na mg ca↑	2507	H6G16085.d			1
70		Sample	F183-13N	Na mg ca↑	2508	H6G16086.d			1
71		Sample	F183-14N	Ca↑	2509	H6G16087.d			1
72		Sample	F183-15N	Ca↑	2510	H6G16088.d			1

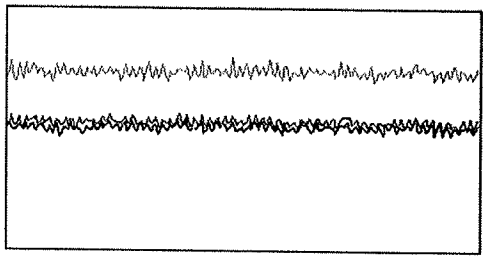
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
73		Sample	F183-16N	Ca↑	2511	H6G16089.d			1
74		CCV	CCV8		1206	H6G16090.d			1
75		CCB	CCB8		1102	H6G16091.d			1
76		LLCCV	MRLG2106	1/100/10 ppb B V Cu Sn X	1306	H6G16092.d			1
77		LLCCV2	MRLG2107	0.4/40/4 ppb ↓	1307	H6G16093.d			1
78		Sample	G047-02M	Na mg↑	3101	H6G16094.d			10
79		Sample	G047-02S		3102	H6G16095.d			10
80		Sample	G047-02A		3103	H6G16096.d			10
81		Sample	G047-02I		3104	H6G16097.d			10
82		Sample	G047-02J		3105	H6G16098.d			50
83		Sample	G047-03I	Na mg↑	3106	H6G16099.d			10
84		Sample	G047-04I	Na↑	3107	H6G16100.d			10
85		Sample	G047-05I	Na mg↑	3108	H6G16101.d			10
86		CCV	CCV9		1206	H6G16102.d			1
87		CCB	CCB9	Na > ½LOQ	1102	H6G16103.d			1
88		Sample	G047-06I	Na mg↑	3109	H6G16104.d			10
89		Sample	G047-07I	Na mg↑	3110	H6G16105.d			10
90		Sample	G047-08I	Na mg↑	3111	H6G16106.d			10
91		Sample	G047-09M	Na↑	3112	H6G16107.d			10
92		Sample	G047-09S		3201	H6G16108.d			10
93		Sample	G047-09A		3202	H6G16109.d			10
94		Sample	G047-09I		3203	H6G16110.d			10
95		Sample	G047-09J		3204	H6G16111.d			50
96		Sample	G047-10I	Na mg ca↑	3205	H6G16112.d			10
97		CCV	CCV10		1206	H6G16113.d			1
98		CCB	CCB10	Na > ½LOQ	1102	H6G16114.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-21 09:20:00
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



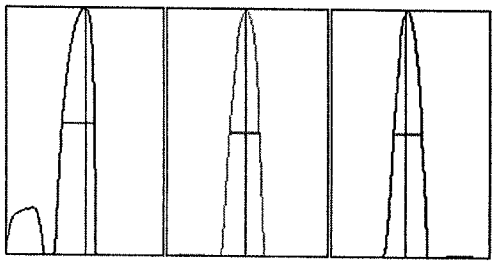
Mass	Range	Count	RSD%	Background
7	10000	5313	2.719	0.150
89	20000	14776	2.795	0.800
205	20000	10189	2.942	4.350

Sampling Period [sec] 0.311
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide 156 / 140 1.170 %
Doubly Charged 70 / 140 1.551 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	5444.44	7.05	0.61	0.73
89	14917.79	89.00	0.57	0.75
205	10201.19	204.95	0.54	0.75

Integration Time [sec] 0.1
Acquisition Time [sec] 22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.0 V	Deflect	14.0 V
Extract 2	-150.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-80 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.5 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	124	Axis Gain	0.9995
Mass Offset	124	Axis Offset	-0.04

EM

Discriminator	4.1 mV	Analog HV	2430 V	Pulse HV	1596 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.02	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.05E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	28.7	°C
Nebulizer Gas(DP)	6.07E+0	kPa
MU./Dil. Gas(DP)	-1.08E-1	kPa
Aux Gas(DP)	1.22E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.56E+2	kPa
MU./Dil. Gas(BP)	-1.54E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	4.05E+1	kPa
S/C Temp (H)	16.2	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.29E+2	Pa
Analyzer Press	6.52E-5	Pa
IG HV	178	V
IG Emission	4.99	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.75	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.18	V
OctP RF (Avg)	202.6	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.96	V
OctP RF(+)	176.2	V
OctP RF(-)	231.5	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	3.9	V
+U Voltage	410.2	V

Name	Value	Unit
-U Voltage	-414.9	V
V Voltage	1785.9	V
QPRF Fader	1.3	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	607.0	V
-120V	-129.7	V
-720V	-738.4	V
Prefilter Bias	-5.01	V
Pickup Heater I	0.09	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2434	V
Pulse HV	1608	V
EM Gate	-47.5	V
Pulse Gate	351.3	V
EM Entrance	0.3	V
EM HV Gain	-1081.9	V
Inner Pole	-300.3	V
Outer Pole	20.1	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.6	V
RF PS +48V	47.6	V
Forward Power	1552	W
Reflected Power	3	W
Plasma Freq.	26.72	MHz
Drain I 1	11.38	A
Drain I 2	10.93	A
Drain I 3	10.83	A
Drain I 4	10.10	A
Temp Sensor	2.8	V
Driver I	5.74	A

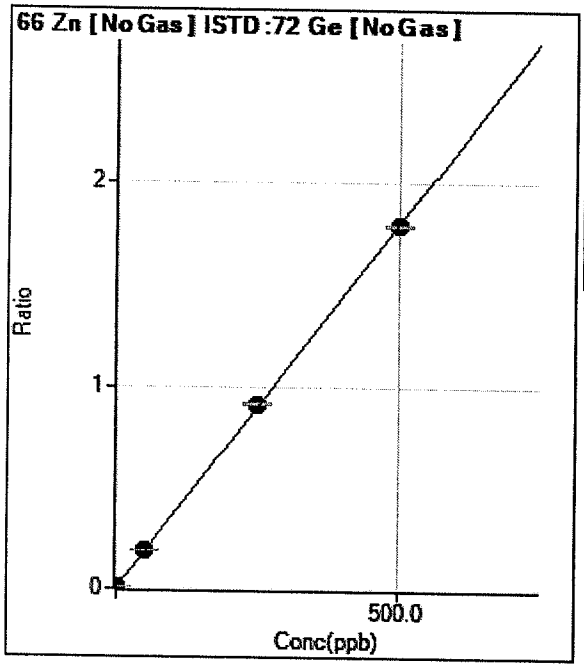
Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.44	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	-2.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	1.04E+0	kPa
ORS AMFC Temp	30.2	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-150.2	V
Omega Bias	-80.1	V
Omega Lens	7.9	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.9	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	28.2	°C
Internal Temp	34.7	°C
+24V	23.6	V
Water Temp	18.4	°C
Water RF/WC/IF	1.48	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

Performance Report History

Sensitivity

Batch Folder: D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b\
Analysis File: IH6G16.batch.bin
DA Date-Time: 2020-07-21 16:22:27
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

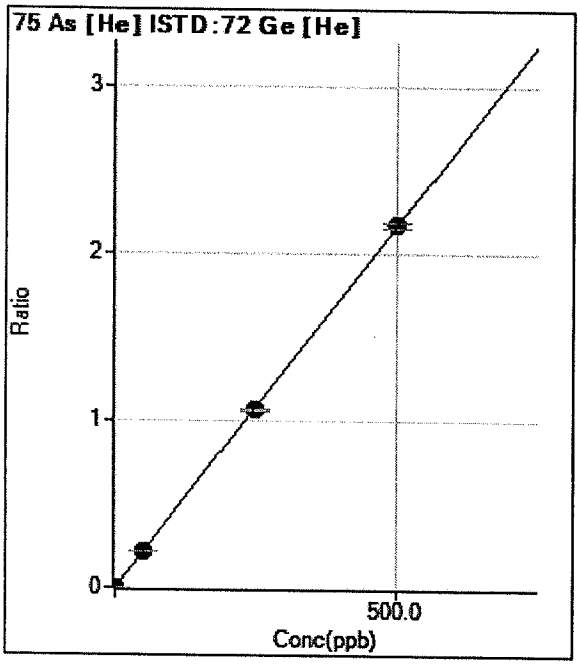
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G16003.d	S0	2020-07-21 10:38:50
2	H6G16004.d	S1	2020-07-21 10:41:49
3	H6G16005.d	S2	2020-07-21 10:44:48
4	H6G16006.d	S3	2020-07-21 10:48:09
5	H6G16007.d	S4	2020-07-21 10:51:06



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4570.10	0.0051	P	1.9
2	☐	1.000	1.265	8876.24	0.0096	P	3.1
3	☐	50.000	51.555	175992.56	0.1897	P	1.5
4	☐	250.000	253.670	822032.83	0.9135	P	0.5
5	☐	500.000	498.009	1625777.04	1.7885	A	0.6

y = 0.0036 * x + 0.0051
R = 1.0000
DL = 0.08184
BEC = 1.417

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	357.34	0.0014	P	1.6
2	☐	0.500	0.546	1011.04	0.0037	P	3.4
3	☐	50.000	49.351	58042.28	0.2150	P	1.6
4	☐	250.000	246.085	283520.39	1.0666	P	0.3
5	☐	500.000	502.023	572004.13	2.1745	P	1.3

y = 0.0043 * x + 0.0014
R = 1.0000
DL = 0.01477
BEC = 0.3175

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq. Date-Time	2020-07-21 09:52:30
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

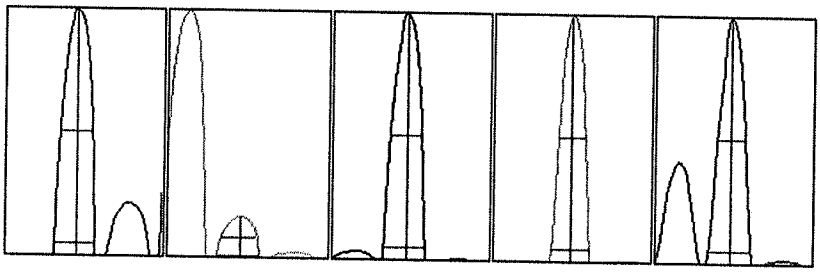
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1657	16571.22			1.979	5.000
24	10.00	6830	68300.86			3.723	5.000
59	10.00	10089	100892.19			3.194	5.000
115	10.00	12051	120510.85			3.235	5.000
208	10.00	5011	50109.72			3.054	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1605	1666	1655	1663	1696
24	6419	6795	6865	6998	7073
59	9551	10106	10142	10242	10404
115	11382	12198	12302	12048	12326
208	4748	5025	5062	5075	5144

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2888.67	8.90	8.90 - 9.10	
24	11439.24	23.90	23.90 - 24.10	
59	17869.82	58.95	58.90 - 59.10	
115	24130.70	115.00	114.90 - 115.10	
208	9824.57	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.783	0.900	
24	0.65	0.788	0.900	
59	0.59	0.783	0.900	
115	0.52	0.719	0.900	
208	0.53	0.803	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	6.5 V	Deflect	12.8 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9995	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.04		

Hardware Settings

Torch

Torch H	0.5 mm	Torch V	-0.3 mm		

EM

Discriminator	4.1 mV	Analog HV	2430 V	Pulse HV	1596 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6G16002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 10:35:31
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113392.44	0.7
Be	9	6	No Gas	23.34	24.7
B	11	6	No Gas	21990.52	0.6
Na	23	45	H2	264310.60	0.4
Mg	24	45	No Gas	21771.63	1.1
Al	27	45	No Gas	15652.21	4.8
Si	28	45	H2	4847.51	1.8
P	31	45	No Gas	33049.24	1.3
K	39	45	He	124180.11	4.1
Ca	40	45	H2	153018.67	0.4
Ti	47	45	No Gas	365.34	7.4
V	51	45	He	4296.01	1.6
Cr	52	45	He	1076.04	4.0
Mn	55	45	No Gas	12115.37	3.5
Fe	56	45	H2	24537.33	0.2
Co	59	45	No Gas	437.34	4.8
Ni	60	45	He	190.67	7.9
Cu	63	45	He	4794.16	4.5
Zn	66	72	No Gas	4033.27	2.1
As	75	72	He	312.33	7.8
Se	78	72	H2	17.00	52.3
Sr	88	72	No Gas	1182.26	1.8
Zr	90	72	No Gas	256.67	4.5
Mo	95	115	No Gas	101.11	18.6
Mo	98	115	No Gas	262.23	4.5
[Cd]	106	115	No Gas	10.67	19.5
Ag	107	115	No Gas	65.55	31.1
[Cd]	108	115	No Gas	7.67	61.6
Cd	111	115	No Gas	50.59	17.1
Sn	118	115	No Gas	1195.61	3.9
Sn	118	115	H2	1084.49	4.2
Sb	123	115	No Gas	124.44	25.5
Ba	137	115	No Gas	158.89	25.6
W	182	159	No Gas	86.67	17.6
Hg	201	159	No Gas	19.67	2.9

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	15.00	14.5
Tl	205	159	No Gas	785.58	1.7
Pb	206	159	No Gas	326.67	16.9
Pb	207	159	No Gas	273.34	27.9
Pb	208	159	No Gas	1170.03	8.2
Th	232	159	No Gas	31.11	6.2
U	238	159	No Gas	72.22	25.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1985491.33	1.5
Sc	45	No Gas	3913503.75	0.3
Sc	45	H2	2411594.33	1.2
Sc	45	He	479494.86	0.8
Ge	72	No Gas	896662.58	1.1
Ge	72	H2	641325.94	1.3
Ge	72	He	265657.30	0.7
In	115	No Gas	5028310.26	0.5
Tb	159	No Gas	6111411.01	0.9
Tb	159	He	3603832.00	0.7

Calibration Standard Report

Sample Name	S0
File Name	H6G16003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:38:50
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113969.43	0.8
Be	9	6	No Gas	28.89	29.0
B	11	6	No Gas	26373.57	1.2
Na	23	45	H2	278258.10	0.8
Mg	24	45	No Gas	37354.56	1.5
Al	27	45	No Gas	24374.74	2.4
Si	28	45	H2	5168.96	1.8
P	31	45	No Gas	30836.83	0.6
K	39	45	He	126071.59	3.0
Ca	40	45	H2	257709.03	1.7
Ti	47	45	No Gas	364.67	6.9
V	51	45	He	5153.64	1.5
Cr	52	45	He	1043.38	4.6
Mn	55	45	No Gas	13367.88	0.5
Fe	56	45	H2	31250.99	1.0
Co	59	45	No Gas	568.68	6.3
Ni	60	45	He	259.33	4.4
Cu	63	45	He	4300.68	1.4
Zn	66	72	No Gas	4570.10	1.8
As	75	72	He	357.34	1.8
Se	78	72	H2	22.67	13.5
Sr	88	72	No Gas	1754.56	2.7
Zr	90	72	No Gas	186.67	34.9
Mo	95	115	No Gas	126.67	19.0
Ag	107	115	No Gas	55.55	24.2
Cd	111	115	No Gas	57.54	23.3
Sn	118	115	No Gas	4855.34	2.0
Sb	123	115	No Gas	166.67	10.4
Ba	137	115	No Gas	272.23	9.9
W	182	159	No Gas	56.67	56.7
Hg	201	159	He	12.83	9.0
Tl	205	159	No Gas	776.69	8.2
Pb	208	159	No Gas	1063.35	3.0
U	238	159	No Gas	157.78	19.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2024735.59	0.3	1985491.33	101.98	60	120	
Sc	45	No Gas	3980883.83	0.9	3913503.75	101.72	60	120	
Sc	45	H2	2450702.67	0.6	2411594.33	101.62	60	120	
Sc	45	He	480926.68	0.6	479494.86	100.3	60	120	
Ge	72	No Gas	900587.00	0.1	896662.58	100.44	60	120	
Ge	72	H2	645155.79	0.6	641325.94	100.6	60	120	
Ge	72	He	259958.97	0.3	265657.3	97.86	60	120	
In	115	No Gas	5045644.34	2.0	5028310.26	100.34	60	120	
Tb	159	No Gas	6094714.90	1.0	6111411.01	99.73	60	120	
Tb	159	He	3579441.33	1.2	3603832	99.32	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G16004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:41:49
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	121631.83	0.7
Be	9	6	No Gas	1942.36	2.0
B	11	6	No Gas	6442.60	6.2
Na	23	45	H2	502467.32	0.7
Mg	24	45	No Gas	642784.29	1.4
Al	27	45	No Gas	801707.67	1.2
Si	28	45	H2	129644.33	0.6
P	31	45	No Gas	56961.10	0.5
K	39	45	He	166069.64	3.2
Ca	40	45	H2	577872.77	0.5
Ti	47	45	No Gas	1220.72	2.6
V	51	45	He	8905.56	0.5
Cr	52	45	He	4856.86	2.2
Mn	55	45	No Gas	26056.11	0.8
Fe	56	45	H2	685888.85	1.7
Co	59	45	No Gas	11699.68	1.6
Ni	60	45	He	1420.74	5.1
Cu	63	45	He	7552.10	1.7
Zn	66	72	No Gas	8876.24	3.2
As	75	72	He	1011.04	3.0
Se	78	72	H2	219.33	10.8
Sr	88	72	No Gas	15567.94	0.7
Zr	90	72	No Gas	72800.87	1.8
Mo	95	115	No Gas	2753.62	2.3
Ag	107	115	No Gas	6951.83	2.3
Cd	111	115	No Gas	1495.44	1.1
Sn	118	115	No Gas	5173.24	4.8
Sb	123	115	No Gas	4906.48	2.1
Ba	137	115	No Gas	2194.63	3.6
W	182	159	No Gas	1906.82	2.5
Hg	201	159	He	43.67	25.3
Tl	205	159	No Gas	9456.91	1.3
Pb	208	159	No Gas	13277.23	1.8
U	238	159	No Gas	10853.70	2.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2047888.06	0.7	1985491.33	103.14	60	120	
Sc	45	No Gas	3993980.33	0.6	3913503.75	102.06	60	120	
Sc	45	H2	2432823.75	1.3	2411594.33	100.88	60	120	
Sc	45	He	484343.40	0.6	479494.86	101.01	60	120	
Ge	72	No Gas	924143.55	0.2	896662.58	103.06	60	120	
Ge	72	H2	655801.64	0.5	641325.94	102.26	60	120	
Ge	72	He	270539.24	1.1	265657.3	101.84	60	120	
In	115	No Gas	5031798.97	0.7	5028310.26	100.07	60	120	
Tb	159	No Gas	6074422.40	1.0	6111411.01	99.39	60	120	
Tb	159	He	3633880.83	1.3	3603832	100.83	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G16005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:44:48
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	170892.18	0.5
Be	9	6	No Gas	19267.62	1.3
B	11	6	No Gas	34332.95	2.4
Na	23	45	H2	23419784.67	0.4
Mg	24	45	No Gas	60795592.00	1.1
Al	27	45	No Gas	76993087.19	1.8
Si	28	45	H2	671392.57	0.2
P	31	45	No Gas	79839.22	0.2
K	39	45	He	4346178.83	0.5
Ca	40	45	H2	44949294.67	0.3
Ti	47	45	No Gas	83297.97	0.8
V	51	45	He	302053.67	0.3
Cr	52	45	He	341088.63	0.9
Mn	55	45	No Gas	8137709.67	1.3
Fe	56	45	H2	62837246.67	0.6
Co	59	45	No Gas	1122263.13	0.7
Ni	60	45	He	113145.65	0.1
Cu	63	45	He	304160.28	0.8
Zn	66	72	No Gas	175992.56	0.5
As	75	72	He	58042.28	0.8
Se	78	72	H2	19206.32	0.6
Sr	88	72	No Gas	1433771.16	0.9
Zr	90	72	No Gas	167683.98	1.6
Mo	95	115	No Gas	263332.92	0.6
Ag	107	115	No Gas	68004.09	0.3
Cd	111	115	No Gas	134013.71	0.6
Sn	118	115	No Gas	381976.50	1.4
Sb	123	115	No Gas	91399.42	0.8
Ba	137	115	No Gas	387939.55	1.0
W	182	159	No Gas	41079.95	1.0
Hg	201	159	He	376.18	1.5
Tl	205	159	No Gas	888073.06	0.1
Pb	208	159	No Gas	1206990.[illegible]	0.4
U	238	159	No Gas	1076892.67	0.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2023485.55	0.1	1985491.33	101.91	60	120	
Sc	45	No Gas	4019124.17	0.7	3913503.75	102.7	60	120	
Sc	45	H2	2420554.33	1.3	2411594.33	100.37	60	120	
Sc	45	He	484139.17	1.0	479494.86	100.97	60	120	
Ge	72	No Gas	927836.77	0.9	896662.58	103.48	60	120	
Ge	72	H2	645980.64	1.1	641325.94	100.73	60	120	
Ge	72	He	269987.26	0.9	265657.3	101.63	60	120	
In	115	No Gas	4986854.70	1.4	5028310.26	99.18	60	120	
Tb	159	No Gas	6148382.26	1.0	6111411.01	100.6	60	120	
Tb	159	He	3673773.83	0.2	3603832	101.94	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G16006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:48:09
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	385517.75	1.5
Be	9	6	No Gas	91295.63	1.0
B	11	6	No Gas	129192.11	1.4
Na	23	45	H2	112648765.33	0.5
Mg	24	45	No Gas	290452778.67	0.8
Al	27	45	No Gas	370159447.82	1.6
Si	28	45	H2	3178650.00	0.3
P	31	45	No Gas	257467.87	1.4
K	39	45	He	20544454.67	1.1
Ca	40	45	H2	219645530.67	0.1
Tl	47	45	No Gas	399902.80	0.8
V	51	45	He	1423832.96	0.2
Cr	52	45	He	1609004.58	0.3
Mn	55	45	No Gas	38742562.67	0.7
Fe	56	45	H2	306048906.67	0.8
Co	59	45	No Gas	5345091.33	0.4
Ni	60	45	He	538900.25	0.6
Cu	63	45	He	1397293.58	0.8
Zn	66	72	No Gas	822032.83	0.4
As	75	72	He	283520.39	0.5
Se	78	72	H2	93130.81	1.4
Sr	88	72	No Gas	6909418.06	0.9
Zr	90	72	No Gas	431667.05	0.9
Mo	95	115	No Gas	1274463.21	0.1
Ag	107	115	No Gas	317762.77	0.7
Cd	111	115	No Gas	640437.97	0.4
Sn	116	115	No Gas	1829934.51	1.2
Sb	123	115	No Gas	437148.54	0.1
Ba	137	115	No Gas	1872832.36	0.1
W	182	159	No Gas	194705.82	1.1
Hg	201	159	He	1816.97	1.5
Tl	205	159	No Gas	4282762.47	0.4
Pb	208	159	No Gas	5779661.66	0.6
U	238	159	No Gas	5247744.24	1.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1977330.38	0.2	1985491.33	99.59	60	120	
Sc	45	No Gas	3957209.33	0.3	3913503.75	101.12	60	120	
Sc	45	H2	2420706.25	1.2	2411594.33	100.38	60	120	
Sc	45	He	473719.47	0.5	479494.86	98.8	60	120	
Ge	72	No Gas	899893.02	0.2	898662.58	100.36	60	120	
Ge	72	H2	842211.77	1.5	841325.94	100.14	60	120	
Ge	72	He	265813.60	0.4	265657.3	100.06	60	120	
In	115	No Gas	4861221.41	1.2	5028310.26	96.68	60	120	
Tb	159	No Gas	6131725.17	0.5	6111411.01	100.33	60	120	
Tb	159	He	3642359.75	0.7	3603832	101.07	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G16007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:51:06
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	643347.69	1.3
Be	9	6	No Gas	177454.03	0.4
B	11	6	No Gas	215421.39	0.7
Na	23	45	H2	226102400.00	0.6
Mg	24	45	No Gas	586184064.00	0.3
Al	27	45	No Gas	754558068.75	0.9
Si	28	45	H2	6307690.17	1.3
P	31	45	No Gas	495554.88	0.5
K	39	45	He	41556573.33	0.7
Ca	40	45	H2	445010890.67	0.6
Ti	47	45	No Gas	807180.19	0.5
V	51	45	He	2919813.17	0.8
Cr	52	45	He	3265866.08	0.6
Mn	55	45	No Gas	77554192.00	1.0
Fe	56	45	H2	614295658.67	0.3
Co	59	45	No Gas	10600887.33	0.8
Ni	60	45	He	1056759.87	0.7
Cu	63	45	He	2769552.17	0.3
Zn	66	72	No Gas	1625777.04	0.4
As	75	72	He	572004.13	0.2
Se	78	72	H2	186362.33	0.6
Sr	88	72	No Gas	14026945.28	1.1
Zr	90	72	No Gas	864344.46	0.7
Mo	95	115	No Gas	2557456.70	1.0
Ag	107	115	No Gas	638221.57	0.8
Cd	111	115	No Gas	1261703.88	0.9
Sn	118	115	No Gas	3665042.08	0.4
Sb	123	115	No Gas	887077.12	0.3
Ba	137	115	No Gas	3733026.38	1.1
W	182	159	No Gas	388000.15	0.6
Hg	201	159	He	3660.03	1.2
Tl	205	159	No Gas	8557222.99	0.7
Pb	208	159	No Gas	11493579.85	0.6
U	238	159	No Gas	10554151.53	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1928892.91	2.0	1985491.33	97.15	60	120	
Sc	45	No Gas	3977510.25	0.6	3913503.75	101.64	60	120	
Sc	45	H2	2447611.33	0.6	2411594.33	101.49	60	120	
Sc	45	He	473896.66	0.9	479494.86	98.83	60	120	
Ge	72	No Gas	909031.85	0.2	896662.58	101.38	60	120	
Ge	72	H2	642835.92	0.4	641325.94	100.24	60	120	
Ge	72	He	263076.49	1.2	265657.3	99.03	60	120	
In	115	No Gas	4838534.41	0.4	5028310.26	96.23	60	120	
Tb	159	No Gas	6092618.37	0.2	6111411.01	99.69	60	120	
Tb	159	He	3615581.25	1.5	3603832	100.33	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G16008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 10:54:00
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	31.258	ppb	0.4	444324.29	30	104.19	90	110	
Be	9	6	No Gas	32.476	ppb	1.3	115758.32	30	108.25	90	110	
B	11	6	No Gas	29.849	ppb	2.3	82578.23	30	99.5	90	110	
Na	23	45	H2	30506.527	ppb	0.5	136839712.00	30000	101.69	90	110	
Mg	24	45	No Gas	29926.366	ppb	2.7	345583690.67	30000	99.75	90	110	
Al	27	45	No Gas	30209.184	ppb	2.8	448121393.32	30000	100.7	90	110	
Si	28	45	H2	3428.969	ppb	1.2	4300648.00	3000	114.3	90	110	> +/- 10%
P	31	45	No Gas	287.592	ppb	2.1	292965.02	300	95.86	90	110	
K	39	45	He	30382.895	ppb	0.8	24979548.67	30000	101.28	90	110	
Ca	40	45	H2	31044.739	ppb	0.7	273437301.33	30000	103.48	90	110	
Ti	47	45	No Gas	309.746	ppb	2.0	492572.73	300	103.25	90	110	
V	51	45	He	319.553	ppb	0.3	1839538.87	300	106.52	90	110	
Cr	52	45	He	317.675	ppb	0.2	2046980.71	300	105.89	90	110	
Mn	55	45	No Gas	2041.340	ppb	2.2	52070462.67	2000	102.07	90	110	
Fe	56	45	H2	30735.303	ppb	0.7	374370602.67	30000	102.45	90	110	
Co	59	45	No Gas	312.009	ppb	2.2	6539816.00	300	104	90	110	
Ni	60	45	He	327.704	ppb	0.4	688747.48	300	109.23	90	110	
Cu	63	45	He	317.785	ppb	0.9	1747789.34	300	105.93	90	110	
Zn	66	72	No Gas	299.576	ppb	0.6	970057.63	300	99.86	90	110	
As	75	72	He	321.382	ppb	0.5	367425.93	300	107.13	90	110	
Se	78	72	H2	320.760	ppb	1.7	118097.73	300	106.92	90	110	
Sr	88	72	No Gas	317.416	ppb	2.3	8808397.43	300	105.81	90	110	
Zr	90	72	No Gas	28.727	ppb	2.9	491149.72	30	95.76	90	110	
Mo	95	115	No Gas	304.779	ppb	2.2	1552074.07	300	101.59	90	110	
Ag	107	115	No Gas	31.583	ppb	1.7	401366.08	30	105.28	90	110	
Cd	111	115	No Gas	327.710	ppb	0.9	826419.87	300	109.24	90	110	
Sn	118	115	No Gas	318.177	ppb	1.1	2323694.91	300	106.06	90	110	
Sb	123	115	No Gas	61.636	ppb	1.0	543099.77	60	102.73	90	110	
Ba	137	115	No Gas	320.055	ppb	1.3	1191215.68	300	106.68	90	110	
W	182	159	No Gas	33.584	ppb	1.4	259479.05	30	111.95	90	110	> +/- 10%
Hg	201	159	He	2.958	ppb	1.1	2191.36	3	98.6	90	110	
Tl	205	159	No Gas	321.267	ppb	1.9	5470904.23	300	107.09	90	110	
Pb	208	159	No Gas	320.535	ppb	1.2	7339068.98	300	106.85	90	110	
U	238	159	No Gas	317.717	ppb	1.6	6704788.07	300	105.91	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1934647.33	0.9	1985491.33	97.44	60	120	
Sc	45	No Gas	3919826.33	0.2	3913503.75	100.16	60	120	
Sc	45	H2	2422176.08	0.3	2411594.33	100.44	60	120	
Sc	45	He	469151.55	0.3	479494.86	97.84	60	120	
Ge	72	No Gas	899953.44	0.6	896662.58	100.37	60	120	
Ge	72	H2	634831.44	0.8	641325.94	98.99	60	120	
Ge	72	He	263854.65	0.9	265657.3	99.32	60	120	
In	115	No Gas	4824286.74	1.1	5028310.26	95.94	60	120	
Tb	159	No Gas	6067259.90	0.2	6111411.01	99.28	60	120	
Tb	159	He	3663880.83	1.2	3603832	101.67	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G16009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:56:53
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	113754.34	0.4	
Be	9	6	No Gas	0.017	ppb	50.1	93.33	0.08	
B	11	6	No Gas	0.472	ppb	69.1	27302.03	4	
Na	23	45	H2	7.672	ppb	8.0	307650.66	40	
Mg	24	45	No Gas	6.697	ppb	21.3	113830.19	10	
Al	27	45	No Gas	8.562	ppb	23.5	121007.04	15	
Si	28	45	H2	3.294	ppb	6.2	9183.70	8	
P	31	45	No Gas	<0.000	ppb	N/A	29426.45	10	
K	39	45	He	5.449	ppb	116.0	127298.21	20	
Ca	40	45	H2	3.863	ppb	6.1	287089.43	25	
Ti	47	45	No Gas	0.061	ppb	46.2	454.68	0.5	
V	51	45	He	<0.000	ppb	N/A	4909.55	0.5	
Cr	52	45	He	0.045	ppb	21.0	1308.06	0.2	
Mn	55	45	No Gas	0.465	ppb	23.6	24956.95	0.2	>LOD
Fe	56	45	H2	4.870	ppb	4.7	89699.21	10	
Co	59	45	No Gas	0.072	ppb	18.6	2070.83	0.15	
Ni	60	45	He	0.038	ppb	23.1	332.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	3883.89	0.4	
Zn	66	72	No Gas	0.030	ppb	132.9	4590.11	2	
As	75	72	He	0.048	ppb	17.9	410.34	0.2	
Se	78	72	H2	0.108	ppb	11.4	62.00	0.2	
Sr	88	72	No Gas	0.067	ppb	17.6	3550.48	0.2	
Zr	90	72	No Gas	0.004	ppb	55.7	253.33	2	
Mo	95	115	No Gas	0.130	ppb	11.4	807.80	0.2	
Ag	107	115	No Gas	0.008	ppb	16.1	163.33	0.08	
Cd	111	115	No Gas	0.139	ppb	12.0	419.52	0.2	
Sn	118	115	No Gas	0.164	ppb	12.8	6019.16	0.2	
Sb	123	115	No Gas	0.013	ppb	33.7	281.12	0.4	
Ba	137	115	No Gas	0.056	ppb	27.9	482.23	0.2	
W	182	159	No Gas	0.014	ppb	57.2	163.33	0.3	
Hg	201	159	He	0.016	ppb	6.6	25.00	0.1	
Tl	205	159	No Gas	0.277	ppb	26.6	5530.16	0.1	>LOD
Pb	208	159	No Gas	0.098	ppb	14.7	3322.41	0.1	
U	238	159	No Gas	0.071	ppb	20.2	1659.00	0.05	>LOD

LY 07/21/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2023193.29	0.8	1985491.33	101.9	60	120	
Sc	45	No Gas	3913495.67	1.1	3913503.75	100	60	120	
Sc	45	H2	2408784.75	0.6	2411594.33	99.88	60	120	
Sc	45	He	468676.21	0.6	479494.86	97.74	60	120	
Ge	72	No Gas	885728.04	0.8	896662.58	98.78	60	120	
Ge	72	H2	634691.63	0.3	641325.94	98.97	60	120	
Ge	72	He	259401.91	0.4	265657.3	97.65	60	120	
In	115	No Gas	4974915.86	0.2	5028310.26	98.94	60	120	
Tb	159	No Gas	6117232.26	0.5	6111411.01	100.1	60	120	
Tb	159	He	3630267.92	1.3	3603832	100.73	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2101
File Name	H6G16010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 10:59:47
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.953	ppb	10.3	123846.14	1	95.3	80	120	
Be	9	6	No Gas	0.900	ppb	1.5	3361.52	1	90	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	24578.12	10	-8.11	80	120	> +/- 20%
Na	23	45	H2	99.198	ppb	1.8	708330.50	100	99.2	80	120	
Mg	24	45	No Gas	97.962	ppb	1.5	1157276.63	100	97.96	80	120	
Al	27	45	No Gas	96.652	ppb	2.1	1444362.06	100	96.65	80	120	
Si	28	45	H2	97.522	ppb	1.0	125371.06	100	97.52	80	120	
P	31	45	No Gas	47.473	ppb	4.4	73050.71	50	94.95	80	120	
K	39	45	He	97.327	ppb	6.5	202245.36	100	97.33	80	120	
Ca	40	45	H2	94.296	ppb	2.2	1068251.62	100	94.3	80	120	
Ti	47	45	No Gas	1.032	ppb	3.4	1981.48	1	103.2	80	120	
V	51	45	He	0.886	ppb	2.7	10097.06	1	88.6	80	120	
Cr	52	45	He	1.055	ppb	2.5	7802.89	1	105.5	80	120	
Mn	55	45	No Gas	1.114	ppb	1.8	41197.91	1	111.4	80	120	
Fe	56	45	H2	100.901	ppb	1.8	1240949.58	100	100.9	80	120	
Co	59	45	No Gas	0.992	ppb	0.8	21165.10	1	99.2	80	120	
Ni	60	45	He	1.114	ppb	3.1	2586.91	1	111.4	80	120	
Cu	63	45	He	0.885	ppb	0.8	9033.00	1	88.5	80	120	
Zn	66	72	No Gas	10.810	ppb	2.6	39336.26	10	108.1	80	120	
As	75	72	He	0.898	ppb	3.7	1403.74	1	89.8	80	120	
Se	78	72	H2	1.111	ppb	1.5	435.01	1	111.1	80	120	
Sr	88	72	No Gas	1.963	ppb	2.7	56122.85	2	98.15	80	120	
Zr	90	72	No Gas	3.620	ppb	4.0	61936.92	5	72.4	80	120	~~> +/- 20%~~
Mo	95	115	No Gas	0.944	ppb	2.9	5137.66	1	94.4	80	120	
Ag	107	115	No Gas	0.937	ppb	3.6	12458.09	1	93.7	80	120	
Cd	111	115	No Gas	1.036	ppb	2.8	2781.79	1	103.6	80	120	
Sn	118	115	No Gas	0.501	ppb	6.1	8646.18	1	50.1	80	120	> +/- 20%
Sb	123	115	No Gas	0.916	ppb	4.3	8578.36	1	91.6	80	120	
Ba	137	115	No Gas	0.995	ppb	5.5	4130.66	1	99.5	80	120	
W	182	159	No Gas	1.949	ppb	4.5	15249.23	2	97.45	80	120	
Hg	201	159	He	0.099	ppb	7.6	85.00	0.1	99	80	120	
Tl	205	159	No Gas	1.036	ppb	3.9	185[illegible]92	1	103.6	80	120	
Pb	208	159	No Gas	1.041	ppb	2.9	25131.04	1	104.1	80	120	
U	238	159	No Gas	0.939	ppb	0.8	20147.67	1	93.9	80	120	

LY 07/21/20

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2011349.77	0.5	1985491.33	101.3	60	120	
Sc	45	No Gas	3883978.00	1.1	3913503.75	99.25	60	120	
Sc	45	H2	2385961.42	0.3	2411594.33	98.94	60	120	
Sc	45	He	468287.14	0.3	479494.86	97.66	60	120	
Ge	72	No Gas	898397.58	0.3	896662.58	100.19	60	120	
Ge	72	H2	640418.77	0.2	641325.94	99.86	60	120	
Ge	72	He	266653.90	0.8	265657.3	100.38	60	120	
In	115	No Gas	5029123.66	0.9	5028310.26	100.02	60	120	
Tb	159	No Gas	6123415.03	1.4	6111411.01	100.2	60	120	
Tb	159	He	3629844.92	0.3	3603832	100.72	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G16012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 11:09:46
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.244	ppb	38.2	108894.17	2	-50	50	
Be	9	6	No Gas	0.001	ppb	246.2	28.89	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	23757.84	10	-50	50	
Na	23	45	H2	98251.366	ppb	0.5	440966666.67	100000	80	120	
Mg	24	45	No Gas	95598.477	ppb	0.7	1118008405.33	100000	80	120	
Al	27	45	No Gas	97583.581	ppb	1.8	1466242324.82	100000	80	120	
Si	28	45	H2	3.311	ppb	4.0	9275.09	50	-50	50	
P	31	45	No Gas	96014.908	ppb	1.0	88829170.67	100000	80	120	
K	39	45	He	99747.529	ppb	0.9	81836072.00	100000	80	120	
Ca	40	45	H2	100588.823	ppb	0.7	887136128.00	100000	80	120	
Ti	47	45	No Gas	2044.830	ppb	0.5	3291364.58	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	5028.26	1	-50	50	
Cr	52	45	He	0.296	ppb	1.0	2929.65	1	-50	50	
Mn	55	45	No Gas	0.178	ppb	11.8	17932.41	1	-50	50	
Fe	56	45	H2	99919.801	ppb	0.9	1219389866.67	100000	80	120	
Co	59	45	No Gas	0.348	ppb	2.5	7948.99	0.75	-50	50	
Ni	60	45	He	0.273	ppb	8.7	827.36	1	-50	50	
Cu	63	45	He	0.114	ppb	10.8	4828.19	2	-50	50	
Zn	66	72	No Gas	0.469	ppb	0.9	5959.98	20	-50	50	
As	75	72	He	0.052	ppb	34.9	414.68	1	-50	50	
Se	78	72	H2	0.189	ppb	17.4	89.33	1	-50	50	
Sr	88	72	No Gas	0.781	ppb	2.3	22964.15	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.050	ppb	20.0	1016.71	10	-50	50	
Mo	95	115	No Gas	1989.629	ppb	1.1	10000815.99	2000	80	120	
Ag	107	115	No Gas	0.012	ppb	5.2	207.78	0.4	-50	50	
Cd	111	115	No Gas	0.086	ppb	68.8	268.50	1	-50	50	
Sn	118	115	No Gas	<0.000	ppb	N/A	3315.98	1	-50	50	
Ba	137	115	No Gas	0.167	ppb	7.4	872.25	1	-50	50	
W	182	159	No Gas	0.174	ppb	3.6	1396.75	1	-50	50	
Hg	201	159	He	0.007	ppb	25.0	18.33	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	572.23	0.5	-50	50	
Pb	208	159	No Gas	0.102	ppb	7.5	3391.30	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	53.33	0.25	-50	50	

W 07/21/20

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1889311.83	1.9	1985491.33	95.16	60	120	
Sc	45	No Gas	3969815.17	1.9	3913503.75	101.44	60	120	
Sc	45	H2	2426915.00	0.2	2411594.33	100.64	60	120	
Sc	45	He	469778.14	0.5	479494.86	97.97	60	120	
Ge	72	No Gas	882313.79	0.7	896662.58	98.4	60	120	
Ge	72	H2	618223.50	0.7	641325.94	96.4	60	120	
Ge	72	He	259197.59	0.4	265657.3	97.57	60	120	
In	115	No Gas	4762219.95	2.2	5028310.26	94.71	60	120	
Tb	159	No Gas	6064089.62	1.9	6111411.01	99.23	60	120	
Tb	159	He	3640193.83	0.4	3603832	101.01	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G16013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 11:12:40
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.412	ppb	3.5	309604.94	20	80	120	
Be	9	6	No Gas	20.005	ppb	2.1	69604.02	20	80	120	
B	11	6	No Gas	20.873	ppb	1.4	63750.72	20	80	120	
Na	23	45	H2	99535.433	ppb	0.2	449862346.67	100000	80	120	
Mg	24	45	No Gas	96759.296	ppb	2.3	1131070634.67	100000	80	120	
Al	27	45	No Gas	97779.503	ppb	1.5	1468258378.12	100000	80	120	
Si	28	45	H2	224.219	ppb	0.9	288558.21	200	80	120	
P	31	45	No Gas	97612.347	ppb	2.1	90261024.00	100000	80	120	
K	39	45	He	98917.532	ppb	1.1	82519117.33	100000	80	120	
Ca	40	45	H2	101421.599	ppb	1.2	900741184.00	100000	80	120	
Tl	47	45	No Gas	2086.809	ppb	2.1	3357430.25	2000	80	120	
V	51	45	He	19.717	ppb	0.4	120366.10	20	80	120	
Cr	52	45	He	20.110	ppb	0.9	133035.82	20	80	120	
Mn	55	45	No Gas	19.543	ppb	1.5	517832.12	20	80	120	
Fa	56	45	H2	100731.449	ppb	1.0	1237878058.67	100000	80	120	
Co	59	45	No Gas	19.789	ppb	1.7	420436.83	20	80	120	
Ni	60	45	He	20.150	ppb	1.0	43359.43	20	80	120	
Cu	63	45	He	19.901	ppb	0.9	115443.10	20	80	120	
Zn	66	72	No Gas	21.083	ppb	1.6	72776.36	20	80	120	
As	75	72	He	19.691	ppb	1.1	22863.65	20	80	120	
Se	78	72	H2	20.303	ppb	1.4	7481.41	20	80	120	
Sr	88	72	No Gas	20.235	ppb	0.8	565146.02	20	80	120	
Zr	90	72	No Gas	20.250	ppb	0.6	347497.91	20	80	120	
Mo	95	115	No Gas	2035.523	ppb	1.3	10255195.70	2000	80	120	
Ag	107	115	No Gas	19.121	ppb	0.3	240437.78	20	80	120	
Cd	111	115	No Gas	20.143	ppb	0.6	50314.32	20	80	120	
Sn	118	115	No Gas	19.937	ppb	0.9	148362.47	20	80	120	
Sb	123	115	No Gas	19.389	ppb	1.0	169159.99	20	80	120	
Ba	137	115	No Gas	20.401	ppb	0.8	75370.11	20	80	120	
W	182	159	No Gas	18.619	ppb	1.1	143977.56	20	80	120	
Hg	201	159	He	1.909	ppb	2.5	1420.75	2	80	120	
Tl	205	159	No Gas	19.255	ppb	0.4	328825.25	20	80	120	
Pb	208	159	No Gas	19.544	ppb	0.6	448755.10	20	80	120	
U	238	159	No Gas	19.418	ppb	0.6	410185.76	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1888206.55	0.3	1985491.33	95.1	60	120	
Sc	45	No Gas	3968014.25	0.5	3913503.75	101.39	60	120	
Sc	45	H2	2443981.33	0.6	2411594.33	101.34	60	120	
Sc	45	He	477666.18	0.3	479494.86	99.62	60	120	
Ge	72	No Gas	903192.81	0.4	896662.58	100.73	60	120	
Ge	72	H2	633560.27	0.6	641325.94	98.79	60	120	
Ge	72	He	263990.16	0.7	265657.3	99.37	60	120	
In	115	No Gas	4773210.32	1.0	5028310.26	94.93	60	120	
Tb	159	No Gas	6071142.26	0.8	6111411.01	99.34	60	120	
Tb	159	He	3668394.75	0.4	3603832	101.79	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G16015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 11:18:28
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.112	ppb	0.7	374613.54	25	96.45	90	110	
Be	9	6	No Gas	24.725	ppb	1.8	89810.35	25	98.9	90	110	
B	11	6	No Gas	50.709	ppb	4.5	125009.22	50	101.42	90	110	
Na	23	45	H2	25319.947	ppb	1.2	114477589.33	25000	101.28	90	110	
Mg	24	45	No Gas	24801.548	ppb	2.3	293271370.67	25000	99.21	90	110	
Al	27	45	No Gas	24599.777	ppb	2.2	373654941.10	25000	98.4	90	110	
Si	28	45	H2	2545.446	ppb	1.5	3217780.42	2500	101.82	90	110	
P	31	45	No Gas	248.822	ppb	0.7	263697.33	250	99.53	90	110	
K	39	45	He	25033.374	ppb	0.5	21086258.67	25000	100.13	90	110	
Ca	40	45	H2	25215.164	ppb	1.2	223819962.67	25000	100.86	90	110	
Ti	47	45	No Gas	249.085	ppb	0.3	405628.77	250	99.63	90	110	
V	51	45	He	246.755	ppb	1.1	1454895.79	250	98.7	90	110	
Cr	52	45	He	247.085	ppb	0.6	1631236.33	250	98.83	90	110	
Mn	55	45	No Gas	1500.619	ppb	0.9	39195273.33	1500	100.04	90	110	
Fe	56	45	H2	25328.755	ppb	1.4	310841056.00	25000	101.32	90	110	
Co	59	45	No Gas	247.722	ppb	1.9	5316714.83	250	99.09	90	110	
Ni	60	45	He	253.657	ppb	0.7	545664.25	250	101.46	90	110	
Cu	63	45	He	251.639	ppb	0.9	1417268.79	250	100.66	90	110	
Zn	66	72	No Gas	251.572	ppb	1.7	837897.89	250	100.63	90	110	
As	75	72	He	247.838	ppb	0.7	288166.42	250	99.14	90	110	
Se	78	72	H2	251.233	ppb	1.8	94605.68	250	100.49	90	110	
Sr	88	72	No Gas	246.090	ppb	2.0	7018014.72	250	98.44	90	110	
Zr	90	72	No Gas	24.887	ppb	0.8	437284.07	25	99.55	90	110	
Mo	95	115	No Gas	244.650	ppb	2.1	1287034.77	250	97.86	90	110	
Ag	107	115	No Gas	24.735	ppb	0.7	324773.14	25	98.94	90	110	
Cd	111	115	No Gas	249.716	ppb	1.1	650637.23	250	99.89	90	110	
Sn	118	115	No Gas	244.638	ppb	1.4	1846967.36	250	97.86	90	110	
Sb	123	115	No Gas	48.673	ppb	0.6	443164.04	50	97.35	90	110	
Ba	137	115	No Gas	489.356	ppb	1.8	1861604.92	500	97.87	90	110	
W	182	159	No Gas	24.975	ppb	0.1	196716.92	25	99.9	90	110	
Hg	201	159	He	2.463	ppb	1.8	1851.80	2.5	98.52	90	110	
Tl	205	159	No Gas	249.017	ppb	1.4	4322645.66	250	99.61	90	110	
Pb	208	159	No Gas	247.548	ppb	2.1	5777279.37	250	99.02	90	110	
U	236	159	No Gas	247.812	ppb	1.9	5330099.10	250	99.12	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1971364.95	0.9	1985491.33	99.29	60	120	
Sc	45	No Gas	4013364.17	0.8	3913503.75	102.55	60	120	
Sc	45	H2	2440735.17	1.6	2411594.33	101.21	60	120	
Sc	45	He	480164.53	1.4	479494.86	100.14	60	120	
Ge	72	No Gas	924903.39	0.4	896662.58	103.15	60	120	
Ge	72	H2	649243.71	1.1	641325.94	101.23	60	120	
Ge	72	He	268269.88	0.9	265657.3	100.98	60	120	
In	115	No Gas	4984269.29	0.4	5028310.26	99.12	60	120	
Tb	159	No Gas	6184583.50	1.0	8111411.01	101.2	60	120	
Tb	159	He	3713289.17	0.9	3603832	103.04	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G16016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 11:21:21
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	111846.59	0.4	
Be	9	6	No Gas	0.006	ppb	13.1	50.00	0.08	
B	11	6	No Gas	0.492	ppb	112.8	26890.13	4	
Na	23	45	H2	7.948	ppb	7.1	312570.27	40	
Mg	24	45	No Gas	5.194	ppb	30.6	97449.34	10	
Al	27	45	No Gas	4.484	ppb	34.3	91087.18	15	
Si	28	45	H2	1.044	ppb	4.0	6456.83	8	
P	31	45	No Gas	<0.000	ppb	N/A	28990.89	10	
K	39	45	He	6.854	ppb	107.3	128719.44	20	
Ca	40	45	H2	1.681	ppb	27.2	271205.86	25	
Ti	47	45	No Gas	0.063	ppb	34.0	463.34	0.5	
V	51	45	He	0.152	ppb	9.8	5908.61	0.5	
Cr	52	45	He	0.013	ppb	54.5	1100.71	0.2	
Mn	55	45	No Gas	0.184	ppb	50.6	17989.94	0.2	
Fe	56	45	H2	3.003	ppb	2.7	67898.77	10	
Co	59	45	No Gas	0.033	ppb	44.8	1264.06	0.15	
Ni	60	45	He	<0.000	ppb	N/A	239.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	3033.67	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	4023.93	2	
As	75	72	He	<0.000	ppb	N/A	338.33	0.2	
Se	78	72	H2	0.042	ppb	50.0	38.00	0.2	
Sr	88	72	No Gas	0.035	ppb	31.3	2692.50	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	126.87	2	
Mo	95	115	No Gas	0.141	ppb	21.5	877.81	0.2	
Ag	107	115	No Gas	0.004	ppb	35.5	105.56	0.08	
Cd	111	115	No Gas	0.077	ppb	28.5	261.93	0.2	
Sn	118	115	No Gas	0.062	ppb	25.2	5352.20	0.2	
Sb	123	115	No Gas	0.013	ppb	39.6	290.00	0.4	
Ba	137	115	No Gas	0.054	ppb	33.6	485.57	0.2	
W	182	159	No Gas	0.017	ppb	55.5	190.00	0.3	
Hg	201	159	He	0.012	ppb	53.3	22.33	0.1	
Tl	205	159	No Gas	0.110	ppb	25.3	2670.30	0.1	>LOD
Pb	208	159	No Gas	0.052	ppb	17.8	2272.32	0.1	
U	238	159	No Gas	0.035	ppb	38.1	900.04	0.05	

LY 07/21/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1990481.17	2.0	1985491.33	100.25	60	120	
Sc	45	No Gas	3958482.00	2.1	3913503.75	101.15	60	120	
Sc	45	H2	2437582.00	0.7	2411594.33	101.08	60	120	
Sc	45	He	469638.74	0.7	479494.86	97.94	60	120	
Ge	72	No Gas	890157.38	1.2	896662.58	99.27	60	120	
Ge	72	H2	640261.60	0.9	641325.94	99.83	60	120	
Ge	72	He	261455.77	0.6	265657.3	98.42	60	120	
In	115	No Gas	5065256.53	2.0	5028310.26	100.73	60	120	
Tb	159	No Gas	6127121.56	1.4	6111411.01	100.26	60	120	
Tb	159	He	3666338.63	0.6	3603832	101.73	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV6
File Name	H6G16067.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:04:28
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.522	ppb	2.1	366622.45	25	98.09	90	110	
Be	9	6	No Gas	24.650	ppb	2.0	86582.15	25	98.6	90	110	
B	11	6	No Gas	58.252	ppb	1.6	135165.27	50	116.5	90	110	> +/- 10%
Na	23	45	H2	25009.291	ppb	0.6	109730410.67	25000	100.04	90	110	
Mg	24	45	No Gas	24923.155	ppb	1.9	285932256.00	25000	99.69	90	110	
Al	27	45	No Gas	24451.684	ppb	1.2	360349887.96	25000	97.81	90	110	
Si	28	45	H2	2522.779	ppb	0.8	3094868.58	2500	100.91	90	110	
P	31	45	No Gas	242.691	ppb	0.9	250322.78	250	97.08	90	110	
K	39	45	He	24887.165	ppb	0.5	20347318.00	25000	99.55	90	110	
Ca	40	45	H2	25214.951	ppb	0.3	217192784.00	25000	100.86	90	110	
Ti	47	45	No Gas	247.011	ppb	2.0	390317.52	250	98.8	90	110	
V	51	45	He	247.807	ppb	1.2	1418138.37	250	99.12	90	110	
Cr	52	45	He	248.643	ppb	0.9	1593255.33	250	99.46	90	110	
Mn	55	45	No Gas	1491.927	ppb	2.6	37810817.33	1500	99.46	90	110	
Fe	56	45	H2	25471.160	ppb	0.3	303349056.00	25000	101.88	90	110	
Co	59	45	No Gas	249.402	ppb	2.8	5193478.17	250	99.76	90	110	
Ni	60	45	He	255.241	ppb	0.7	532935.25	250	102.1	90	110	
Cu	63	45	He	251.074	ppb	0.8	1372563.33	250	100.43	90	110	
Zn	66	72	No Gas	250.030	ppb	0.9	808994.27	250	100.01	90	110	
As	75	72	He	246.402	ppb	0.3	282301.44	250	98.56	90	110	
Se	78	72	H2	252.502	ppb	1.6	92830.07	250	101	90	110	
Sr	88	72	No Gas	244.268	ppb	2.2	6767849.04	250	97.71	90	110	
Zr	90	72	No Gas	25.068	ppb	0.8	427866.96	25	100.27	90	110	
Mo	95	115	No Gas	243.289	ppb	1.0	1244882.66	250	97.32	90	110	
Ag	107	115	No Gas	24.994	ppb	0.8	319175.56	25	99.98	90	110	
Cd	111	115	No Gas	252.885	ppb	0.8	640801.59	250	101.15	90	110	
Sn	118	115	No Gas	246.172	ppb	1.5	1807750.97	250	98.47	90	110	
Sb	123	115	No Gas	49.713	ppb	0.8	440204.18	50	99.43	90	110	
Ba	137	115	No Gas	496.043	ppb	1.3	1855087.08	500	99.21	90	110	
W	182	159	No Gas	24.941	ppb	0.8	195203.98	25	99.76	90	110	
Hg	201	159	He	2.488	ppb	0.3	1844.47	2.5	99.52	90	110	
Tl	205	159	No Gas	247.815	ppb	1.0	4274684.28	250	99.13	90	110	
Pb	208	159	No Gas	249.022	ppb	0.3	5775043.80	250	99.61	90	110	
U	238	159	No Gas	248.203	ppb	1.0	5305348.26	250	99.28	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1906435.26	0.4	1985491.33	96.02	60	120	
Sc	45	No Gas	3894365.33	0.1	3913503.75	99.51	60	120	
Sc	45	H2	2368247.42	0.4	2411594.33	98.2	60	120	
Sc	45	He	466030.92	0.3	479494.86	97.19	60	120	
Ge	72	No Gas	898447.46	1.0	896662.58	100.2	60	120	
Ge	72	H2	633903.04	1.2	641325.94	98.84	60	120	
Ge	72	He	264330.46	0.2	265657.3	99.5	60	120	
In	115	No Gas	4847653.29	1.5	5028310.26	96.41	60	120	
Tb	159	No Gas	6145089.48	0.9	6111411.01	100.55	60	120	
Tb	159	He	3661605.25	0.7	3603832	101.6	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB6
File Name	H6G16068.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:07:22
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.015	ppb	1152.5	111266.89	0.4	
Be	9	6	No Gas	0.014	ppb	27.1	77.78	0.08	
B	11	6	No Gas	1.432	ppb	25.4	28516.64	4	
Na	23	45	H2	6.741	ppb	4.2	297466.52	40	
Mg	24	45	No Gas	5.164	ppb	11.2	95081.97	10	
Al	27	45	No Gas	4.860	ppb	11.5	94770.47	15	
Si	28	45	H2	0.505	ppb	16.8	5595.79	8	
P	31	45	No Gas	<0.000	ppb	N/A	28710.96	10	
K	39	45	He	3.335	ppb	226.1	124895.37	20	
Ca	40	45	H2	<0.000	ppb	N/A	183615.11	25	
Ti	47	45	No Gas	0.031	ppb	26.0	402.01	0.5	
V	51	45	He	0.004	ppb	474.0	5020.92	0.5	
Cr	52	45	He	0.001	ppb	1079.2	1018.70	0.2	
Mn	55	45	No Gas	0.270	ppb	11.2	19784.99	0.2	>LOD
Fe	56	45	H2	3.911	ppb	5.3	76543.03	10	
Co	59	45	No Gas	0.052	ppb	10.5	1629.43	0.15	
Ni	60	45	He	<0.000	ppb	N/A	206.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2217.52	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2375.54	2	
As	75	72	He	<0.000	ppb	N/A	349.34	0.2	
Se	78	72	H2	0.055	ppb	51.5	41.67	0.2	
Sr	88	72	No Gas	0.043	ppb	8.3	2894.76	0.2	
Zr	90	72	No Gas	0.005	ppb	35.7	260.00	2	
Mo	95	115	No Gas	0.076	ppb	19.6	521.12	0.2	
Ag	107	115	No Gas	0.007	ppb	6.7	150.00	0.08	
Cd	111	115	No Gas	0.098	ppb	15.2	311.52	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	2729.17	0.2	
Sb	123	115	No Gas	0.006	ppb	21.4	218.89	0.4	
Ba	137	115	No Gas	0.079	ppb	9.3	570.02	0.2	
W	182	159	No Gas	0.003	ppb	46.0	80.00	0.3	
Hg	201	159	He	0.009	ppb	49.5	19.50	0.1	
Tl	205	159	No Gas	0.135	ppb	21.1	3115.96	0.1	>LOD
Pb	208	159	No Gas	0.069	ppb	17.1	2670.12	0.1	
U	238	159	No Gas	0.058	ppb	8.4	1392.30	0.05	>LOD

LY 07/21/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1973708.44	0.5	1985491.33	99.41	60	120	
Sc	45	No Gas	3866333.58	0.1	3913503.75	98.79	60	120	
Sc	45	H2	2360828.75	0.9	2411594.33	97.89	60	120	
Sc	45	He	466164.44	0.5	479494.86	97.22	60	120	
Ge	72	No Gas	881923.92	1.0	896662.58	98.36	60	120	
Ge	72	H2	621227.37	1.0	641325.94	96.87	60	120	
Ge	72	He	261140.97	1.1	265657.3	98.3	60	120	
In	115	No Gas	4959452.81	0.4	5028310.26	98.63	60	120	
Tb	159	No Gas	6148733.23	0.8	6111411.01	100.61	60	120	
Tb	159	He	3655568.08	0.7	3603832	101.44	60	120	

Blank Report

Sample Name	IMF035WB
File Name	H6G16069.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:10:15
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.035	ppb	182.8	111074.25	0.4	
Be	9	6	No Gas	0.008	ppb	19.0	55.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	8186.94	4	
Na	23	45	H2	<0.000	ppb	N/A	266705.25	40	
Mg	24	45	No Gas	0.359	ppb	68.6	40198.56	10	
Al	27	45	No Gas	1.370	ppb	12.4	43548.09	15	
Si	28	45	H2	0.943	ppb	1.7	6263.41	8	
P	31	45	No Gas	<0.000	ppb	N/A	29090.41	10	
K	39	45	He	<0.000	ppb	N/A	122483.96	20	
Ca	40	45	H2	<0.000	ppb	N/A	178097.82	25	
Ti	47	45	No Gas	0.014	ppb	76.9	374.67	0.5	
V	51	45	He	<0.000	ppb	N/A	4422.71	0.5	
Cr	52	45	He	0.032	ppb	38.9	1223.39	0.2	
Mn	55	45	No Gas	<0.000	ppb	N/A	12812.00	0.2	
Fe	56	45	H2	0.190	ppb	25.9	33065.26	10	
Co	59	45	No Gas	<0.000	ppb	N/A	516.01	0.15	
Ni	60	45	He	<0.000	ppb	N/A	179.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1984.81	0.4	
Zn	66	72	No Gas	0.717	ppb	2.0	6751.69	2	
As	75	72	He	<0.000	ppb	N/A	278.33	0.2	
Se	78	72	H2	<0.000	ppb	N/A	18.00	0.2	
Sr	88	72	No Gas	0.012	ppb	65.8	2036.83	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	163.33	2	
Mo	95	115	No Gas	0.004	ppb	85.7	150.00	0.2	
Ag	107	115	No Gas	0.066	ppb	7.2	934.48	0.08	
Cd	111	115	No Gas	<0.000	ppb	N/A	46.88	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	944.48	0.2	
Sb	123	115	No Gas	<0.000	ppb	N/A	140.00	0.4	
Ba	137	115	No Gas	0.011	ppb	31.4	314.45	0.2	
W	182	159	No Gas	0.003	ppb	125.4	80.00	0.3	
Hg	201	159	He	0.007	ppb	60.1	18.83	0.1	
Tl	205	159	No Gas	0.009	ppb	91.5	936.70	0.1	
Pb	208	159	No Gas	0.009	ppb	39.8	1274.48	0.1	
U	238	159	No Gas	0.002	ppb	80.8	192.22	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1966683.82	1.5	1985491.33	99.05	60	120	
Sc	45	No Gas	3853137.92	1.9	3913503.75	98.46	60	120	
Sc	45	H2	2411761.17	1.3	2411594.33	100.01	60	120	
Sc	45	He	469536.63	1.5	479494.86	97.92	60	120	
Ge	72	No Gas	883364.90	0.6	896662.58	98.52	60	120	
Ge	72	H2	640582.35	1.6	641325.94	99.88	60	120	
Ge	72	He	263290.87	1.5	265657.3	99.11	60	120	
In	115	No Gas	5041816.91	0.8	5028310.26	100.27	60	120	
Tb	159	No Gas	6087200.04	1.6	6111411.01	99.6	60	120	
Tb	159	He	3698417.83	2.8	3603832	102.62	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WL
File Name	H6G16070.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:13:08
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.251	ppb	3.0	434027.10	30	97.5	85	115	
Be	9	6	No Gas	29.205	ppb	3.2	106863.40	30	97.35	83	121	
B	11	6	No Gas	34.061	ppb	4.9	93081.99	30	113.54	85	115	
Na	23	45	H2	3171.381	ppb	1.5	14443625.67	3000	105.71	85	117	
Mg	24	45	No Gas	3107.100	ppb	3.1	36114150.67	3000	103.57	83	118	
Al	27	45	No Gas	3025.807	ppb	3.4	45158289.33	3000	100.86	84	117	
Si	28	45	H2	1.782	ppb	10.2	7325.27	3000	0.06	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	29942.20	300	-0.21	85	115	FAIL
K	39	45	He	3117.378	ppb	1.2	2718666.83	3000	103.91	87	115	
Ca	40	45	H2	3159.548	ppb	0.5	28004999.33	3000	105.32	87	118	
Ti	47	45	No Gas	29.940	ppb	2.7	48203.20	30	99.8	85	115	
V	51	45	He	30.528	ppb	0.8	183342.88	30	101.76	86	115	
Cr	52	45	He	31.273	ppb	1.5	206051.57	30	104.24	85	116	
Mn	55	45	No Gas	31.129	ppb	2.4	811490.29	30	103.76	87	115	
Fe	56	45	H2	3185.177	ppb	0.6	38752884.00	3000	106.17	87	118	
Co	59	45	No Gas	30.721	ppb	2.5	648012.92	30	102.4	86	115	
Ni	60	45	He	32.469	ppb	1.9	69627.11	30	108.23	85	117	
Cu	63	45	He	32.726	ppb	1.1	186867.02	30	109.09	85	118	
Zn	66	72	No Gas	65.491	ppb	1.9	216321.83	60	109.15	83	119	
As	75	72	He	30.240	ppb	1.2	35236.17	30	100.8	84	116	
Se	78	72	H2	30.535	ppb	2.1	11478.21	30	101.78	80	120	
Sr	88	72	No Gas	30.190	ppb	1.6	841969.22	30	100.63	85	115	
Zr	90	72	No Gas	0.025	ppb	20.6	623.35	30	0.08	85	115	FAIL
Mo	95	115	No Gas	28.811	ppb	3.4	152665.70	30	96.04	85	115	
Ag	107	115	No Gas	30.447	ppb	2.8	402360.88	30	101.49	85	117	
Cd	111	115	No Gas	30.038	ppb	3.2	78828.39	30	100.13	87	115	
Sn	118	115	No Gas	29.369	ppb	1.8	227421.65	30	97.9	85	115	
Sb	123	115	No Gas	29.239	ppb	2.7	268013.23	30	97.46	85	117	
Ba	137	115	No Gas	30.068	ppb	2.8	116621.25	30	100.23	86	114	
W	182	159	No Gas	0.005	ppb	130.3	96.67	30	0.02	85	115	FAIL
Hg	201	159	He	0.002	ppb	176.1	15.00	2.5	0.08	82	119	FAIL
Tl	205	159	No Gas	30.654	ppb	1.9	532694.56	30	102.18	82	116	
Pb	208	159	No Gas	30.895	ppb	1.1	721864.41	30	102.98	88	115	
U	238	159	No Gas	29.737	ppb	1.8	639659.80	30	99.12	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1985740.94	2.2	1985491.33	100.01	60	120	
Sc	45	No Gas	3941218.25	0.8	3913503.75	100.71	60	120	
Sc	45	H2	2417678.42	1.0	2411594.33	100.25	60	120	
Sc	45	He	477126.69	0.9	479494.86	99.51	60	120	
Ge	72	No Gas	902672.90	1.6	896662.58	100.67	60	120	
Ge	72	H2	647075.00	1.6	641325.94	100.9	60	120	
Ge	72	He	266411.79	1.2	265657.3	100.28	60	120	
In	115	No Gas	5016584.94	0.6	5028310.26	99.77	60	120	
Tb	159	No Gas	6182751.28	0.5	6111411.01	101.17	60	120	
Tb	159	He	3693593.17	0.5	3603832	102.49	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF035WC
File Name	H6G16071.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:16:02
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	30.943	ppb	2.1	447123.97	30	103.14	85	115	
Be	9	6	No Gas	30.954	ppb	1.1	111869.93	30	103.18	83	121	
B	11	6	No Gas	36.714	ppb	4.4	97116.85	30	122.38	85	115	FAIL
Na	23	45	H2	3141.934	ppb	0.3	14289513.67	3000	104.73	85	117	
Mg	24	45	No Gas	3148.478	ppb	1.0	35996404.00	3000	104.95	83	118	
Al	27	45	No Gas	3090.152	ppb	1.4	45362687.66	3000	103.01	84	117	
Si	28	45	H2	1.738	ppb	6.6	7259.90	3000	0.06	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	29601.50	300	-0.16	85	115	FAIL
K	39	45	He	3123.413	ppb	0.8	2712911.17	3000	104.11	87	115	
Ca	40	45	H2	3126.630	ppb	0.7	27670120.67	3000	104.22	87	118	
Ti	47	45	No Gas	31.241	ppb	1.2	49467.59	30	104.14	85	115	
V	51	45	He	31.357	ppb	0.6	187434.57	30	104.52	86	115	
Cr	52	45	He	32.148	ppb	0.4	210961.74	30	107.16	85	116	
Mn	55	45	No Gas	32.877	ppb	1.4	842297.52	30	109.59	87	115	
Fe	56	45	H2	3236.555	ppb	1.3	39308318.67	3000	107.89	87	118	
Co	59	45	No Gas	32.291	ppb	0.9	669921.62	30	107.64	86	115	
Ni	60	45	He	32.584	ppb	0.6	69599.70	30	108.61	85	117	
Cu	63	45	He	33.187	ppb	0.2	188687.29	30	110.62	85	118	
Zn	66	72	No Gas	65.328	ppb	0.9	213746.67	60	108.88	83	119	
As	75	72	He	30.904	ppb	0.6	36125.20	30	103.01	84	116	
Se	78	72	H2	32.072	ppb	1.0	11923.93	30	106.91	80	120	
Sr	88	72	No Gas	31.293	ppb	0.2	864299.31	30	104.31	85	115	
Zr	90	72	No Gas	0.010	ppb	47.7	350.01	30	0.03	85	115	FAIL
Mo	95	115	No Gas	29.841	ppb	1.1	157293.87	30	99.47	85	115	
Ag	107	115	No Gas	31.450	ppb	0.6	413406.97	30	104.83	85	117	
Cd	111	115	No Gas	31.397	ppb	0.6	81952.47	30	104.66	87	115	
Sn	118	115	No Gas	30.654	ppb	0.7	235876.76	30	102.18	85	115	
Sb	123	115	No Gas	30.055	ppb	1.2	274016.05	30	100.18	85	117	
Ba	137	115	No Gas	30.822	ppb	0.8	118908.18	30	102.74	86	114	
W	182	159	No Gas	0.005	ppb	117.0	96.67	30	0.02	85	115	FAIL
Hg	201	159	He	0.001	ppb	516.0	13.83	2.5	0.04	82	119	FAIL
Tl	205	159	No Gas	31.595	ppb	1.1	540858.35	30	105.32	82	116	
Pb	208	159	No Gas	32.032	ppb	1.0	737280.14	30	106.77	88	115	
U	238	159	No Gas	30.842	ppb	0.6	653533.64	30	102.81	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1961471.66	1.6	1985491.33	98.79	60	120	
Sc	45	No Gas	3877339.17	2.0	3913503.75	99.08	60	120	
Sc	45	H2	2413685.25	1.2	2411594.33	100.09	60	120	
Sc	45	He	475211.68	0.4	479494.86	99.11	60	120	
Ge	72	No Gas	894128.37	2.5	896662.58	99.72	60	120	
Ge	72	H2	639912.96	0.3	641325.94	99.78	60	120	
Ge	72	He	267294.62	0.7	265657.3	100.62	60	120	
In	115	No Gas	4989695.36	1.7	5028310.26	99.23	60	120	
Tb	159	No Gas	6091547.39	2.0	6111411.01	99.67	60	120	
Tb	159	He	3709924.83	0.4	3603832	102.94	60	120	

Sample Report

Sample Name	F183-01N
File Name	H6G16072.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:18:55
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	38.436	38.436	ppb	4.3	492775.26	50	
Be	9	6	No Gas	0.036	0.036	ppb	17.2	146.67	50	
B	11	6	No Gas	152.727	152.727	ppb	2.7	301404.51	100	>LDR
Na	23	45	H2	157720.333	157720.333	ppb	1.1	712267370.67	50000	>LDR
Mg	24	45	No Gas	58559.381	58559.381	ppb	3.4	648878848.00	50000	>LDR
Al	27	45	No Gas	106.674	106.674	ppb	3.7	1541961.07	50000	
Si	28	45	H2	9163.401	9163.401	ppb	1.1	11581917.00	5000	>LDR
P	31	45	No Gas	15.775	15.775	ppb	19.6	42906.78	500	
K	39	45	He	4211.719	4211.719	ppb	0.4	3595239.25	50000	
Ca	40	45	H2	154056.169	154056.169	ppb	0.4	1367428138.67	50000	>LDR
Ti	47	45	No Gas	1.358	1.358	ppb	5.4	2414.88	500	
V	51	45	He	0.829	0.829	ppb	4.8	9856.88	500	
Cr	52	45	He	5.624	5.624	ppb	0.8	37549.99	500	
Mn	55	45	No Gas	27.584	27.584	ppb	4.6	687317.15	3000	
Fe	56	45	H2	210.852	210.852	ppb	0.8	2620974.08	50000	
Co	59	45	No Gas	1.144	1.144	ppb	4.3	23530.98	500	
Ni	60	45	He	33.354	33.354	ppb	0.4	70851.44	500	
Cu	63	45	He	0.203	0.203	ppb	6.5	5350.39	500	
Zn	66	72	No Gas	2.497	2.497	ppb	7.0	12127.42	500	
As	75	72	He	0.234	0.234	ppb	10.8	625.35	500	
Se	78	72	H2	0.818	0.818	ppb	4.9	323.00	500	
Sr	88	72	No Gas	1177.051	1177.051	ppb	3.1	31407974.31	500	>LDR
Zr	90	72	No Gas	0.202	0.202	ppb	6.1	3500.47	50	
Mo	95	115	No Gas	3.539	3.539	ppb	1.9	17815.25	500	
Ag	107	115	No Gas	0.168	0.168	ppb	5.5	2145.73	50	
Cd	111	115	No Gas	0.027	0.027	ppb	20.2	122.13	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1344.51	500	
Sb	123	115	No Gas	0.120	0.120	ppb	5.4	1193.39	100	
Ba	137	115	No Gas	128.306	128.306	ppb	3.1	468932.05	1000	
W	182	159	No Gas	0.032	0.032	ppb	7.9	293.34	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	10.83	5	
Tl	205	159	No Gas	0.051	0.051	ppb	25.2	1581.21	500	
Pb	208	159	No Gas	0.221	0.221	ppb	10.0	5898.34	500	
U	238	159	No Gas	4.187	4.187	ppb	3.9	85555.18	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1831328.48	6.7	1985491.33	92.24	60	120	
Sc	45	No Gas	3766871.08	6.4	3913503.75	96.25	60	120	
Sc	45	H2	2442799.92	1.4	2411594.33	101.29	60	120	
Sc	45	He	472638.66	0.2	479494.86	98.57	60	120	
Ge	72	No Gas	866693.08	6.4	896662.58	96.66	60	120	
Ge	72	H2	633913.60	1.0	641325.94	98.84	60	120	
Ge	72	He	262108.99	1.3	265657.3	98.66	60	120	
In	115	No Gas	4740482.75	5.0	5028310.26	94.28	60	120	
Tb	159	No Gas	5872108.93	4.7	6111411.01	96.08	60	120	
Tb	159	He	3623007.08	0.9	3603832	100.53	60	120	

Sample Report

Sample Name	F183-02N
File Name	H6G16073.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:21:48
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.345	21.345	ppb	2.6	339760.02	50	
Be	9	6	No Gas	0.060	0.060	ppb	14.4	242.23	50	
B	11	6	No Gas	142.052	142.052	ppb	2.6	299766.38	100	>LDR
Na	23	45	H2	102455.568	102455.568	ppb	0.7	459609226.67	50000	>LDR
Mg	24	45	No Gas	51594.798	51594.798	ppb	1.4	594591573.33	50000	>LDR
Al	27	45	No Gas	231.318	231.318	ppb	1.1	3448160.26	50000	
Si	28	45	H2	9062.036	9062.036	ppb	1.2	11373847.00	5000	>LDR
P	31	45	No Gas	103.433	103.433	ppb	0.8	124552.57	500	
K	39	45	He	2726.486	2726.486	ppb	1.2	2363491.75	50000	
Ca	40	45	H2	157651.370	157651.370	ppb	1.4	1389569109.33	50000	>LDR
Ti	47	45	No Gas	3.147	3.147	ppb	4.3	5349.72	500	
V	51	45	He	3.105	3.105	ppb	1.2	22949.18	500	
Cr	52	45	He	1.520	1.520	ppb	1.6	10860.97	500	
Mn	55	45	No Gas	30.892	30.892	ppb	1.1	799350.75	3000	
Fe	56	45	H2	324.104	324.104	ppb	1.2	3984136.92	50000	
Co	59	45	No Gas	0.355	0.355	ppb	1.1	7988.34	500	
Ni	60	45	He	0.425	0.425	ppb	2.6	1150.72	500	
Cu	63	45	He	0.208	0.208	ppb	8.4	5357.72	500	
Zn	66	72	No Gas	2.864	2.864	ppb	4.0	13766.32	500	
As	75	72	He	1.044	1.044	ppb	1.0	1555.76	500	
Se	78	72	H2	0.830	0.830	ppb	1.3	326.67	500	
Sr	88	72	No Gas	1152.551	1152.551	ppb	1.8	31902849.85	500	>LDR
Zr	90	72	No Gas	0.250	0.250	ppb	3.3	4444.09	50	
Mo	95	115	No Gas	0.506	0.506	ppb	3.1	2724.72	500	
Ag	107	115	No Gas	0.081	0.081	ppb	4.5	1094.49	50	
Cd	111	115	No Gas	0.015	0.015	ppb	83.4	94.49	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1095.60	500	
Sb	123	115	No Gas	0.051	0.051	ppb	12.3	617.79	100	
Ba	137	115	No Gas	76.181	76.181	ppb	0.7	286486.45	1000	
W	182	159	No Gas	0.009	0.009	ppb	33.0	126.67	50	
Hg	201	159	He	0.001	0.001	ppb	230.5	13.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	528.90	500	
Pb	208	159	No Gas	0.780	0.780	ppb	1.4	18822.22	500	
U	238	159	No Gas	1.796	1.796	ppb	1.4	37843.85	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1944862.57	1.3	1985491.33	97.95	60	120	
Sc	45	No Gas	3911866.00	0.8	3913503.75	99.96	60	120	
Sc	45	H2	2425869.25	0.7	2411594.33	100.59	60	120	
Sc	45	He	471143.28	0.7	479494.86	98.26	60	120	
Ge	72	No Gas	897873.02	0.1	896662.58	100.13	60	120	
Ge	72	H2	632631.92	1.4	641325.94	98.64	60	120	
Ge	72	He	263938.50	0.6	265657.3	99.35	60	120	
In	115	No Gas	4871091.73	1.6	5028310.26	96.87	60	120	
Tb	159	No Gas	6035320.32	1.6	6111411.01	98.75	60	120	
Tb	159	He	3641345.33	0.9	3603832	101.04	60	120	

Sample Report

Sample Name	F183-03N
File Name	H6G16074.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:24:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	11.357	11.357	ppb	2.5	237212.13	50	
Be	9	6	No Gas	0.008	0.008	ppb	45.9	57.78	50	
B	11	6	No Gas	63.578	63.578	ppb	2.9	151526.85	100	
Na	23	45	H2	67598.616	67598.616	ppb	1.0	305414378.67	50000	>LDR
Mg	24	45	No Gas	37022.569	37022.569	ppb	0.5	432142997.33	50000	
Al	27	45	No Gas	2.273	2.273	ppb	7.1	58302.20	50000	
Si	28	45	H2	7269.808	7269.808	ppb	1.3	9188069.33	5000	>LDR
P	31	45	No Gas	14.950	14.950	ppb	8.5	44479.72	500	
K	39	45	He	1943.817	1943.817	ppb	0.6	1733768.04	50000	
Ca	40	45	H2	117530.528	117530.528	ppb	1.0	1043128746.67	50000	>LDR
Ti	47	45	No Gas	0.380	0.380	ppb	11.0	972.03	500	
V	51	45	He	3.059	3.059	ppb	2.5	22861.70	500	
Cr	52	45	He	0.758	0.758	ppb	1.7	5971.30	500	
Mn	55	45	No Gas	0.075	0.075	ppb	21.5	15228.47	3000	
Fe	56	45	H2	4.187	4.187	ppb	0.5	82567.07	50000	
Co	59	45	No Gas	0.086	0.086	ppb	2.6	2389.54	500	
Ni	60	45	He	0.190	0.190	ppb	10.0	659.35	500	
Cu	63	45	He	0.623	0.623	ppb	3.9	7702.19	500	
Zn	66	72	No Gas	3.461	3.461	ppb	2.5	15544.91	500	
As	75	72	He	1.454	1.454	ppb	1.8	2013.48	500	
Se	78	72	H2	0.680	0.680	ppb	6.4	273.67	500	
Sr	88	72	No Gas	781.484	781.484	ppb	0.6	21440323.04	500	>LDR
Zr	90	72	No Gas	0.007	0.007	ppb	21.7	303.34	50	
Mo	95	115	No Gas	0.451	0.451	ppb	4.7	2489.13	500	
Ag	107	115	No Gas	0.080	0.080	ppb	10.4	1105.60	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	5.96	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	538.90	500	
Sb	123	115	No Gas	0.043	0.043	ppb	13.6	557.79	100	
Ba	137	115	No Gas	55.215	55.215	ppb	0.8	211826.17	1000	
W	182	159	No Gas	0.004	0.004	ppb	109.7	90.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	323.34	500	
Pb	208	159	No Gas	0.167	0.167	ppb	4.4	4933.72	500	
U	238	159	No Gas	1.385	1.385	ppb	0.4	29742.70	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1988509.64	0.9	1985491.33	100.15	60	120	
Sc	45	No Gas	3962315.58	2.1	3913503.75	101.25	60	120	
Sc	45	H2	2442515.75	0.8	2411594.33	101.28	60	120	
Sc	45	He	474738.57	1.4	479494.86	99.01	60	120	
Ge	72	No Gas	889868.67	0.9	896662.58	99.24	60	120	
Ge	72	H2	637497.67	1.1	641325.94	99.4	60	120	
Ge	72	He	262545.49	0.2	265657.3	98.83	60	120	
In	115	No Gas	4967354.24	1.1	5028310.26	98.79	60	120	
Tb	159	No Gas	6140962.53	1.2	6111411.01	100.48	60	120	
Tb	159	He	3693310.83	0.7	3603832	102.48	60	120	

Sample Report

Sample Name	F183-05N
File Name	H6G16075.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:27:36
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.966	23.966	ppb	1.9	377740.33	50	
Be	9	6	No Gas	0.010	0.010	ppb	53.2	64.44	50	
B	11	6	No Gas	76.128	76.128	ppb	2.5	176992.63	100	
Na	23	45	H2	71562.910	71562.910	ppb	1.4	325868970.67	50000	>LDR
Mg	24	45	No Gas	53360.765	53360.765	ppb	1.6	625975872.00	50000	>LDR
Al	27	45	No Gas	515.942	515.942	ppb	1.4	7799158.01	50000	
Si	28	45	H2	8121.381	8121.381	ppb	2.0	10344842.67	5000	>LDR
P	31	45	No Gas	14.188	14.188	ppb	6.1	43998.88	500	
K	39	45	He	2551.138	2551.138	ppb	1.5	2251844.75	50000	
Ca	40	45	H2	144610.675	144610.675	ppb	1.2	1293606101.33	50000	>LDR
Ti	47	45	No Gas	0.699	0.699	ppb	1.7	1492.75	500	
V	51	45	He	1.931	1.931	ppb	1.7	16416.49	500	
Cr	52	45	He	2.980	2.980	ppb	1.9	20610.15	500	
Mn	55	45	No Gas	1.235	1.235	ppb	1.7	45361.05	3000	
Fe	56	45	H2	86.791	86.791	ppb	1.0	1105760.50	50000	
Co	59	45	No Gas	0.135	0.135	ppb	1.3	3441.10	500	
Ni	60	45	He	0.639	0.639	ppb	0.2	1625.43	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	3505.12	500	
Zn	66	72	No Gas	2.202	2.202	ppb	2.0	11835.83	500	
As	75	72	He	0.637	0.637	ppb	3.3	1094.04	500	
Se	78	72	H2	0.810	0.810	ppb	6.1	323.33	500	
Sr	88	72	No Gas	1046.109	1046.109	ppb	1.7	29453632.16	500	>LDR
Zr	90	72	No Gas	0.028	0.028	ppb	31.4	683.37	50	
Mo	95	115	No Gas	0.626	0.626	ppb	1.9	3406.00	500	
Ag	107	115	No Gas	0.088	0.088	ppb	8.6	1205.61	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	24.56	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	671.13	500	
Sb	123	115	No Gas	0.045	0.045	ppb	16.4	575.57	100	
Ba	137	115	No Gas	59.312	59.312	ppb	1.2	227403.47	1000	
W	182	159	No Gas	0.448	0.448	ppb	2.1	3557.18	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	311.11	500	
Pb	208	159	No Gas	0.054	0.054	ppb	4.7	2314.53	500	
U	238	159	No Gas	2.390	2.390	ppb	1.7	51121.97	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1996214.07	0.5	1985491.33	100.54	60	120	
Sc	45	No Gas	3981864.75	1.2	3913503.75	101.75	60	120	
Sc	45	H2	2461873.83	0.6	2411594.33	102.08	60	120	
Sc	45	He	478023.23	0.5	479494.86	99.69	60	120	
Ge	72	No Gas	913308.50	0.4	896662.58	101.86	60	120	
Ge	72	H2	640780.54	0.8	641325.94	99.91	60	120	
Ge	72	He	264768.29	0.9	265657.3	99.67	60	120	
In	115	No Gas	4965309.62	1.6	5028310.26	98.75	60	120	
Tb	159	No Gas	6131764.89	0.6	6111411.01	100.33	60	120	
Tb	159	He	3663631.50	0.8	3603832	101.66	60	120	

Sample Report

Sample Name	F183-06N
File Name	H6G16076.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:30:30
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.150	19.150	ppb	1.6	331438.16	50	
Be	9	6	No Gas	0.006	0.006	ppb	33.1	53.33	50	
B	11	6	No Gas	55.669	55.669	ppb	3.8	139349.71	100	
Na	23	45	H2	33626.282	33626.282	ppb	1.5	154966453.33	50000	
Mg	24	45	No Gas	44654.744	44654.744	ppb	0.8	524539808.00	50000	
Al	27	45	No Gas	54.484	54.484	ppb	1.5	846570.95	50000	
Si	28	45	H2	8565.720	8565.720	ppb	1.2	11031594.33	5000	>LDR
P	31	45	No Gas	8.152	8.152	ppb	8.8	38451.78	500	
K	39	45	He	2128.391	2128.391	ppb	0.2	1900493.29	50000	
Ca	40	45	H2	120953.389	120953.389	ppb	0.6	1094000981.33	50000	>LDR
Ti	47	45	No Gas	0.461	0.461	ppb	10.0	1109.38	500	
V	51	45	He	2.127	2.127	ppb	0.6	17571.92	500	
Cr	52	45	He	5.887	5.887	ppb	0.6	39726.78	500	
Mn	55	45	No Gas	5.657	5.657	ppb	0.3	160138.18	3000	
Fe	56	45	H2	53.845	53.845	ppb	0.9	705650.08	50000	
Co	59	45	No Gas	0.514	0.514	ppb	1.1	11534.88	500	
Ni	60	45	He	20.206	20.206	ppb	0.8	43534.00	500	
Cu	63	45	He	0.481	0.481	ppb	1.4	6966.45	500	
Zn	66	72	No Gas	1.124	1.124	ppb	6.3	8321.89	500	
As	75	72	He	0.549	0.549	ppb	7.1	1003.70	500	
Se	78	72	H2	1.014	1.014	ppb	1.6	406.34	500	
Sr	88	72	No Gas	1120.391	1120.391	ppb	2.6	31592668.74	500	>LDR
Zr	90	72	No Gas	0.015	0.015	ppb	63.6	443.35	50	
Mo	95	115	No Gas	1.841	1.841	ppb	3.1	9772.48	500	
Ag	107	115	No Gas	0.071	0.071	ppb	5.5	986.70	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	19.66	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	678.91	500	
Sb	123	115	No Gas	0.038	0.038	ppb	16.1	511.12	100	
Ba	137	115	No Gas	31.633	31.633	ppb	1.6	121426.03	1000	
W	182	159	No Gas	0.141	0.141	ppb	5.3	1153.39	50	
Hg	201	159	He	0.002	0.002	ppb	92.7	14.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	352.23	500	
Pb	208	159	No Gas	0.039	0.039	ppb	18.9	1968.95	500	
U	238	159	No Gas	1.391	1.391	ppb	1.1	29712.65	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2039687.05	1.5	1985491.33	102.73	60	120	
Sc	45	No Gas	3987252.42	1.6	3913503.75	101.88	60	120	
Sc	45	H2	2489081.75	0.5	2411594.33	103.21	60	120	
Sc	45	He	478266.09	0.1	479494.86	99.74	60	120	
Ge	72	No Gas	914699.46	0.3	896662.58	102.01	60	120	
Ge	72	H2	652071.92	0.9	641325.94	101.68	60	120	
Ge	72	He	267593.59	1.1	265657.3	100.73	60	120	
In	115	No Gas	4966136.86	1.4	5028310.26	98.76	60	120	
Tb	159	No Gas	6110743.23	0.3	6111411.01	99.99	60	120	
Tb	159	He	3672779.33	0.5	3603832	101.91	60	120	

Sample Report

Sample Name	F183-07N
File Name	H6G16077.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:33:23
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.372	14.372	ppb	1.8	271499.94	50	
Be	9	6	No Gas	0.006	0.006	ppb	23.7	48.89	50	
B	11	6	No Gas	147.838	147.838	ppb	1.8	319199.07	100	>LDR
Na	23	45	H2	111168.633	111168.633	ppb	0.6	512213162.67	50000	>LDR
Mg	24	45	No Gas	47020.005	47020.005	ppb	1.4	544993216.00	50000	>LDR
Al	27	45	No Gas	0.503	0.503	ppb	14.0	31586.09	50000	
Si	28	45	H2	7511.027	7511.027	ppb	0.7	9684247.33	5000	>LDR
P	31	45	No Gas	9.590	9.590	ppb	8.2	39257.36	500	
K	39	45	He	2353.097	2353.097	ppb	0.4	2062327.37	50000	
Ca	40	45	H2	133492.795	133492.795	ppb	0.7	1208651008.00	50000	>LDR
Ti	47	45	No Gas	0.376	0.376	ppb	6.0	960.70	500	
V	51	45	He	3.118	3.118	ppb	0.4	23088.08	500	
Cr	52	45	He	3.479	3.479	ppb	1.3	23606.30	500	
Mn	55	45	No Gas	0.405	0.405	ppb	0.9	23577.62	3000	
Fe	56	45	H2	23.132	23.132	ppb	1.3	321593.41	50000	
Co	59	45	No Gas	0.150	0.150	ppb	2.4	3718.51	500	
Ni	60	45	He	2.271	2.271	ppb	0.7	5059.61	500	
Cu	63	45	He	1.399	1.399	ppb	1.2	11953.25	500	
Zn	66	72	No Gas	2.759	2.759	ppb	4.9	13550.10	500	
As	75	72	He	1.166	1.166	ppb	1.4	1668.10	500	
Se	78	72	H2	0.629	0.629	ppb	6.8	256.00	500	
Sr	88	72	No Gas	909.721	909.721	ppb	1.8	25409181.77	500	>LDR
Zr	90	72	No Gas	0.003	0.003	ppb	26.0	243.33	50	
Mo	95	115	No Gas	3.493	3.493	ppb	1.6	18265.88	500	
Ag	107	115	No Gas	0.066	0.066	ppb	7.6	915.59	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	6.91	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	486.68	500	
Sb	123	115	No Gas	0.044	0.044	ppb	1.4	562.24	100	
Ba	137	115	No Gas	49.914	49.914	ppb	1.5	189759.71	1000	
W	182	159	No Gas	0.005	0.005	ppb	86.5	96.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.33	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	257.78	500	
Pb	208	159	No Gas	0.361	0.361	ppb	4.1	9375.81	500	
U	238	159	No Gas	1.589	1.589	ppb	0.4	33899.02	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1996059.19	2.1	1985491.33	100.53	60	120	
Sc	45	No Gas	3934229.92	1.6	3913503.75	100.53	60	120	
Sc	45	H2	2491673.33	0.4	2411594.33	103.32	60	120	
Sc	45	He	472409.37	0.3	479494.86	98.52	60	120	
Ge	72	No Gas	905916.67	0.7	896662.58	101.03	60	120	
Ge	72	H2	639723.46	1.0	641325.94	99.75	60	120	
Ge	72	He	259729.48	0.9	265657.3	97.77	60	120	
In	115	No Gas	4921342.30	0.9	5028310.26	97.87	60	120	
Tb	159	No Gas	6106633.09	1.7	6111411.01	99.92	60	120	
Tb	159	He	3667199.92	0.8	3603832	101.76	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV7
File Name	H6G16078.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:36:17
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.402	ppb	3.3	384622.47	25	97.61	90	110	
Be	9	6	No Gas	24.336	ppb	2.4	89991.10	25	97.34	90	110	
B	11	6	No Gas	52.180	ppb	3.5	130184.87	50	104.36	90	110	
Na	23	45	H2	24979.303	ppb	1.0	111899810.67	25000	99.92	90	110	
Mg	24	45	No Gas	25140.310	ppb	1.7	289805888.00	25000	100.56	90	110	
Al	27	45	No Gas	24978.008	ppb	0.8	369849634.49	25000	99.91	90	110	
Si	28	45	H2	2477.256	ppb	0.4	3103133.67	2500	99.09	90	110	
P	31	45	No Gas	244.118	ppb	0.7	252815.62	250	97.65	90	110	
K	39	45	He	24922.509	ppb	0.2	20529218.67	25000	99.69	90	110	
Ca	40	45	H2	24686.434	ppb	0.7	217112960.00	25000	98.75	90	110	
Ti	47	45	No Gas	243.531	ppb	2.0	386680.71	250	97.41	90	110	
V	51	45	He	247.253	ppb	1.3	1425524.29	250	98.9	90	110	
Cr	52	45	He	249.439	ppb	1.2	1610260.58	250	99.78	90	110	
Mn	55	45	No Gas	1492.397	ppb	2.1	38005078.67	1500	99.49	90	110	
Fe	56	45	H2	25167.837	ppb	0.8	306033408.00	25000	100.67	90	110	
Co	59	45	No Gas	249.339	ppb	1.5	5217128.67	250	99.74	90	110	
Ni	60	45	He	252.896	ppb	0.5	531992.92	250	101.16	90	110	
Cu	63	45	He	252.289	ppb	1.0	1389498.92	250	100.92	90	110	
Zn	66	72	No Gas	247.628	ppb	1.7	796740.11	250	99.05	90	110	
As	75	72	He	244.534	ppb	1.1	277529.48	250	97.81	90	110	
Se	78	72	H2	248.325	ppb	1.1	91001.71	250	99.33	90	110	
Sr	88	72	No Gas	247.921	ppb	1.3	6829496.95	250	99.17	90	110	
Zr	90	72	No Gas	24.673	ppb	1.5	418758.25	25	98.69	90	110	
Mo	95	115	No Gas	241.022	ppb	1.5	1248895.44	250	96.41	90	110	
Ag	107	115	No Gas	24.063	ppb	1.0	311164.35	25	96.25	90	110	
Cd	111	115	No Gas	245.567	ppb	1.1	630161.03	250	98.23	90	110	
Sn	118	115	No Gas	245.662	ppb	0.9	1826697.01	250	98.26	90	110	
Sb	123	115	No Gas	48.177	ppb	0.8	432018.55	50	96.35	90	110	
Ba	137	115	No Gas	489.906	ppb	1.5	1855253.61	500	97.98	90	110	
W	182	159	No Gas	24.488	ppb	1.1	191456.44	25	97.95	90	110	
Hg	201	159	He	2.406	ppb	1.5	1813.13	2.5	96.24	90	110	
Tl	205	159	No Gas	252.099	ppb	1.7	4343881.22	250	100.84	90	110	
Pb	208	159	No Gas	251.341	ppb	0.9	5822558.90	250	100.54	90	110	
U	238	159	No Gas	250.665	ppb	0.4	5352380.90	250	100.27	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2007154.21	0.5	1985491.33	101.09	60	120	
Sc	45	No Gas	3912923.25	0.8	3913503.75	99.99	60	120	
Sc	45	H2	2418118.67	1.3	2411594.33	100.27	60	120	
Sc	45	He	469525.81	0.8	479494.86	97.92	60	120	
Ge	72	No Gas	893364.83	0.2	896662.58	99.63	60	120	
Ge	72	H2	631855.29	1.9	641325.94	98.52	60	120	
Ge	72	He	261866.79	1.2	265657.3	98.57	60	120	
In	115	No Gas	4908803.21	0.9	5028310.26	97.62	60	120	
Tb	159	No Gas	6138915.45	1.9	6111411.01	100.45	60	120	
Tb	159	He	3721562.17	0.8	3603832	103.27	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB7
File Name	H6G16079.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:39:10
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	114968.81	0.4	
Be	9	6	No Gas	0.012	ppb	92.2	75.56	0.08	
B	11	6	No Gas	0.954	ppb	63.0	28635.78	4	
Na	23	45	H2	16.478	ppb	6.2	351792.72	40	
Mg	24	45	No Gas	5.776	ppb	20.9	103893.36	10	
Al	27	45	No Gas	4.307	ppb	19.9	88232.39	15	
Si	28	45	H2	0.479	ppb	17.7	5757.86	8	
P	31	45	No Gas	<0.000	ppb	N/A	30514.79	10	
K	39	45	He	3.745	ppb	169.2	128981.26	20	
Ca	40	45	H2	<0.000	ppb	N/A	197803.57	25	
Ti	47	45	No Gas	0.036	ppb	110.5	418.68	0.5	
V	51	45	He	0.314	ppb	3.7	6989.12	0.5	
Cr	52	45	He	<0.000	ppb	N/A	991.37	0.2	
Mn	55	45	No Gas	0.260	ppb	20.9	19884.46	0.2	>LOD
Fe	56	45	H2	2.972	ppb	6.2	67666.38	10	
Co	59	45	No Gas	0.045	ppb	28.2	1504.09	0.15	
Ni	60	45	He	<0.000	ppb	N/A	169.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2260.86	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2421.55	2	
As	75	72	He	0.090	ppb	10.6	466.34	0.2	
Se	78	72	H2	0.046	ppb	7.5	39.67	0.2	
Sr	88	72	No Gas	0.055	ppb	16.5	3259.29	0.2	
Zr	90	72	No Gas	0.000	ppb	279.0	190.00	2	
Mo	95	115	No Gas	0.071	ppb	30.3	507.79	0.2	
Ag	107	115	No Gas	0.007	ppb	40.2	145.55	0.08	
Cd	111	115	No Gas	0.084	ppb	9.4	283.04	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	2551.36	0.2	
Sb	123	115	No Gas	0.008	ppb	58.0	238.89	0.4	
Ba	137	115	No Gas	0.064	ppb	20.1	526.68	0.2	
W	182	159	No Gas	0.010	ppb	28.1	136.67	0.3	
Hg	201	159	He	0.014	ppb	6.4	23.83	0.1	
Tl	205	159	No Gas	0.133	ppb	26.0	3093.73	0.1	>LOD
Pb	208	159	No Gas	0.055	ppb	8.5	2370.09	0.1	
U	238	159	No Gas	0.051	ppb	10.6	1264.51	0.05	>LOD

LY 07/21/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2050073.86	1.4	1985491.33	103.25	60	120	
Sc	45	No Gas	3941919.33	2.4	3913503.75	100.73	60	120	
Sc	45	H2	2443358.58	1.5	2411594.33	101.32	60	120	
Sc	45	He	479992.34	0.5	479494.86	100.1	60	120	
Ge	72	No Gas	895638.23	1.5	896662.58	99.89	60	120	
Ge	72	H2	638641.19	0.8	641325.94	99.58	60	120	
Ge	72	He	264551.32	1.2	265657.3	99.58	60	120	
In	115	No Gas	5095700.92	1.8	5028310.26	101.34	60	120	
Tb	159	No Gas	6199963.50	1.1	6111411.01	101.45	60	120	
Tb	159	He	3708314.58	0.4	3603832	102.9	60	120	

Sample Report

Sample Name	F183-08M
File Name	H6G16080.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 14:42:03
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	50.712	50.712	ppb	1.2	659521.66	50	>LDR
Be	9	6	No Gas	30.172	30.172	ppb	1.1	108601.82	50	
B	11	6	No Gas	123.029	123.029	ppb	2.7	264303.77	100	>LDR
Na	23	45	H2	90646.250	90646.250	ppb	1.1	412357674.67	50000	>LDR
Mg	24	45	No Gas	66660.057	66660.057	ppb	0.8	779869781.33	50000	>LDR
Al	27	45	No Gas	3262.083	3262.083	ppb	0.4	49050189.27	50000	
Si	28	45	H2	8463.577	8463.577	ppb	0.5	10771960.00	5000	>LDR
P	31	45	No Gas	36.704	36.704	ppb	6.0	64692.89	500	
K	39	45	He	5825.218	5825.218	ppb	0.7	4971507.33	50000	
Ca	40	45	H2	185119.430	185119.430	ppb	0.7	1654517205.33	50000	>LDR
Ti	47	45	No Gas	32.669	32.669	ppb	1.6	52950.61	500	
V	51	45	He	33.037	33.037	ppb	0.8	197978.58	500	
Cr	52	45	He	31.838	31.838	ppb	0.3	209767.83	500	
Mn	55	45	No Gas	51.065	51.065	ppb	1.3	1332696.33	3000	
Fe	56	45	H2	3299.285	3299.285	ppb	0.4	40837401.33	50000	
Co	59	45	No Gas	29.795	29.795	ppb	0.8	633176.98	500	
Ni	60	45	He	30.003	30.003	ppb	1.5	64352.72	500	
Cu	63	45	He	30.257	30.257	ppb	1.3	173076.07	500	
Zn	66	72	No Gas	61.321	61.321	ppb	1.2	203434.22	500	
As	75	72	He	30.985	30.985	ppb	0.5	35635.56	500	
Se	78	72	H2	30.962	30.962	ppb	2.6	11506.25	500	
Sr	88	72	No Gas	1280.453	1280.453	ppb	1.4	35745524.13	500	>LDR
Zr	90	72	No Gas	0.237	0.237	ppb	4.6	4257.37	50	
Mo	95	115	No Gas	30.524	30.524	ppb	1.1	157403.64	500	
Ag	107	115	No Gas	29.904	29.904	ppb	0.7	384571.16	50	
Cd	111	115	No Gas	30.119	30.119	ppb	1.1	76908.05	500	
Sn	118	115	No Gas	28.890	28.890	ppb	1.3	217760.20	500	
Sb	123	115	No Gas	29.731	29.731	ppb	1.1	265187.54	100	
Ba	137	115	No Gas	111.263	111.263	ppb	1.9	419162.93	1000	
W	182	159	No Gas	0.019	0.019	ppb	31.6	203.33	50	
Hg	201	159	He	0.009	0.009	ppb	29.0	20.17	5	
Tl	205	159	No Gas	30.405	30.405	ppb	0.2	522652.10	500	
Pb	208	159	No Gas	30.320	30.320	ppb	1.6	700616.63	500	
U	238	159	No Gas	31.552	31.552	ppb	1.2	671215.48	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1953652.89	1.8	1985491.33	98.4	60	120	
Sc	45	No Gas	3971509.33	2.4	3913503.75	101.48	60	120	
Sc	45	H2	2459705.08	0.4	2411594.33	101.99	60	120	
Sc	45	He	477100.03	1.3	479494.86	99.5	60	120	
Ge	72	No Gas	905454.46	1.0	896662.58	100.98	60	120	
Ge	72	H2	639782.56	1.7	641325.94	99.76	60	120	
Ge	72	He	262990.93	1.0	265657.3	99	60	120	
In	115	No Gas	4882459.67	2.4	5028310.26	97.1	60	120	
Tb	159	No Gas	6116026.84	2.5	6111411.01	100.08	60	120	
Tb	159	He	3675461.08	0.5	3603832	101.99	60	120	

Sample Report

Sample Name	F183-08S
File Name	H6G16081.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:44:56
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	50.550	50.550	ppb	1.3	659450.51	50	>LDR
Be	9	6	No Gas	29.932	29.932	ppb	1.3	108016.70	50	
B	11	6	No Gas	124.300	124.300	ppb	3.6	267449.30	100	>LDR
Na	23	45	H2	90824.282	90824.282	ppb	1.3	413321056.00	50000	>LDR
Mg	24	45	No Gas	67440.795	67440.795	ppb	2.6	783223296.00	50000	>LDR
Al	27	45	No Gas	3373.742	3373.742	ppb	2.0	50354934.25	50000	
Si	28	45	H2	8680.216	8680.216	ppb	1.0	11051931.33	5000	>LDR
P	31	45	No Gas	35.690	35.690	ppb	1.9	63309.18	500	
K	39	45	He	5921.620	5921.620	ppb	1.4	5014934.00	50000	
Ca	40	45	H2	186148.645	186148.645	ppb	0.6	1664430549.33	50000	>LDR
Ti	47	45	No Gas	32.804	32.804	ppb	0.8	52788.57	500	
V	51	45	He	32.997	32.997	ppb	1.4	196321.63	500	
Cr	52	45	He	31.631	31.631	ppb	1.8	206880.59	500	
Mn	55	45	No Gas	51.010	51.010	ppb	2.4	1321498.08	3000	
Fe	56	45	H2	3354.350	3354.350	ppb	1.3	41534546.67	50000	
Co	59	45	No Gas	29.233	29.233	ppb	2.3	616731.58	500	
Ni	60	45	He	29.668	29.668	ppb	1.0	63183.19	500	
Cu	63	45	He	29.847	29.847	ppb	1.5	169555.72	500	
Zn	66	72	No Gas	60.049	60.049	ppb	1.8	196178.65	500	
As	75	72	He	30.898	30.898	ppb	0.5	35009.59	500	
Se	78	72	H2	31.248	31.248	ppb	1.1	11440.52	500	
Sr	88	72	No Gas	1316.267	1316.267	ppb	1.8	36168618.56	500	>LDR
Zr	90	72	No Gas	0.267	0.267	ppb	1.9	4704.18	50	
Mo	95	115	No Gas	29.789	29.789	ppb	1.2	153617.86	500	
Ag	107	115	No Gas	28.946	28.946	ppb	0.9	372259.16	50	
Cd	111	115	No Gas	29.097	29.097	ppb	0.3	74305.03	500	
Sn	118	115	No Gas	27.954	27.954	ppb	0.4	210878.44	500	
Sb	123	115	No Gas	29.031	29.031	ppb	1.2	258970.50	100	
Ba	137	115	No Gas	108.423	108.423	ppb	1.0	408539.73	1000	
W	182	159	No Gas	0.014	0.014	ppb	13.6	163.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	13.00	5	
Tl	205	159	No Gas	29.558	29.558	ppb	2.1	505925.05	500	
Pb	208	159	No Gas	29.689	29.689	ppb	1.3	683241.36	500	
U	238	159	No Gas	31.497	31.497	ppb	2.0	667294.17	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1958569.23	1.2	1985491.33	98.64	60	120	
Sc	45	No Gas	3942170.58	1.0	3913503.75	100.73	60	120	
Sc	45	H2	2460917.25	1.3	2411594.33	102.05	60	120	
Sc	45	He	473665.61	1.1	479494.86	98.78	60	120	
Ge	72	No Gas	891185.29	1.3	896662.58	99.39	60	120	
Ge	72	H2	630132.02	0.6	641325.94	98.25	60	120	
Ge	72	He	259096.05	0.3	265657.3	97.53	60	120	
In	115	No Gas	4881742.14	1.1	5028310.26	97.09	60	120	
Tb	159	No Gas	6089096.15	1.0	6111411.01	99.63	60	120	
Tb	159	He	3676649.25	0.9	3603832	102.02	60	120	

Sample Report

Sample Name	F183-08A
File Name	H6G16082.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:47:49
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	51.567	51.567	ppb	0.4	672633.88	50	>LDR
Be	9	6	No Gas	31.159	31.159	ppb	0.5	112809.85	50	
B	11	6	No Gas	125.003	125.003	ppb	1.4	269664.80	100	>LDR
Na	23	45	H2	89622.452	89622.452	ppb	1.2	409035616.00	50000	>LDR
Mg	24	45	No Gas	67614.339	67614.339	ppb	2.3	789782357.33	50000	>LDR
Al	27	45	No Gas	3362.660	3362.660	ppb	2.3	50475762.58	50000	
Si	28	45	H2	8340.386	8340.386	ppb	1.8	10649839.33	5000	>LDR
P	31	45	No Gas	35.594	35.594	ppb	1.5	63583.15	500	
K	39	45	He	6023.455	6023.455	ppb	1.8	5050641.83	50000	
Ca	40	45	H2	184263.952	184263.952	ppb	2.1	1652223146.67	50000	>LDR
Ti	47	45	No Gas	32.662	32.662	ppb	1.7	52868.28	500	
V	51	45	He	34.320	34.320	ppb	0.3	202044.31	500	
Cr	52	45	He	33.111	33.111	ppb	0.5	214462.78	500	
Mn	55	45	No Gas	51.715	51.715	ppb	1.4	1347324.00	3000	
Fe	56	45	H2	3379.767	3379.767	ppb	1.0	41970817.33	50000	
Co	59	45	No Gas	30.722	30.722	ppb	1.1	651819.83	500	
Ni	60	45	He	31.434	31.434	ppb	1.4	66291.95	500	
Cu	63	45	He	31.989	31.989	ppb	0.8	179697.11	500	
Zn	66	72	No Gas	63.941	63.941	ppb	0.8	209061.29	500	
As	75	72	He	31.371	31.371	ppb	0.5	35953.39	500	
Se	78	72	H2	31.667	31.667	ppb	1.4	11694.74	500	
Sr	88	72	No Gas	1298.459	1298.459	ppb	1.4	35755797.47	500	>LDR
Zr	90	72	No Gas	0.181	0.181	ppb	0.6	3253.74	50	
Mo	95	115	No Gas	31.199	31.199	ppb	2.1	159659.62	500	
Ag	107	115	No Gas	29.850	29.850	ppb	1.3	380948.79	50	
Cd	111	115	No Gas	31.232	31.232	ppb	0.4	79147.98	500	
Sn	118	115	No Gas	30.272	30.272	ppb	1.1	226253.34	500	
Sb	123	115	No Gas	29.995	29.995	ppb	1.5	265516.48	100	
Ba	137	115	No Gas	112.627	112.627	ppb	0.5	421147.22	1000	
W	182	159	No Gas	0.015	0.015	ppb	39.9	173.33	50	
Hg	201	159	He	0.004	0.004	ppb	72.0	15.83	5	
Tl	205	159	No Gas	31.470	31.470	ppb	1.5	541839.84	500	
Pb	208	159	No Gas	31.445	31.445	ppb	1.1	727998.82	500	
U	238	159	No Gas	33.336	33.336	ppb	1.0	710545.60	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1965026.04	1.9	1985491.33	98.97	60	120	
Sc	45	No Gas	3964782.50	1.5	3913503.75	101.31	60	120	
Sc	45	H2	2467879.67	0.5	2411594.33	102.33	60	120	
Sc	45	He	469122.93	0.3	479494.86	97.84	60	120	
Ge	72	No Gas	893143.92	1.8	896662.58	99.61	60	120	
Ge	72	H2	635628.29	1.2	641325.94	99.11	60	120	
Ge	72	He	262101.93	0.5	265657.3	98.66	60	120	
In	115	No Gas	4844924.75	1.6	5028310.26	96.35	60	120	
Tb	159	No Gas	6127632.53	1.9	6111411.01	100.27	60	120	
Tb	159	He	3678196.67	0.1	3603832	102.06	60	120	

Sample Report

Sample Name	F183-08N
File Name	H6G16083.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:50:43
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.173	21.173	ppb	1.9	347326.33	50	
Be	9	6	No Gas	0.033	0.033	ppb	15.0	152.22	50	
B	11	6	No Gas	92.078	92.078	ppb	0.5	208975.02	100	>LDR
Na	23	45	H2	88920.351	88920.351	ppb	1.0	408104394.67	50000	>LDR
Mg	24	45	No Gas	64756.783	64756.783	ppb	1.2	755398058.67	50000	>LDR
Al	27	45	No Gas	212.502	212.502	ppb	0.9	3208439.85	50000	
Si	28	45	H2	8412.364	8412.364	ppb	1.2	10802044.33	5000	>LDR
P	31	45	No Gas	35.295	35.295	ppb	1.4	63222.05	500	
K	39	45	He	2839.985	2839.985	ppb	0.4	2494761.42	50000	
Ca	40	45	H2	184125.525	184125.525	ppb	1.1	1660256298.67	50000	>LDR
Ti	47	45	No Gas	1.857	1.857	ppb	3.6	3344.41	500	
V	51	45	He	2.447	2.447	ppb	0.5	19451.11	500	
Cr	52	45	He	1.243	1.243	ppb	2.3	9207.76	500	
Mn	55	45	No Gas	20.466	20.466	ppb	1.5	540565.55	3000	
Fe	56	45	H2	195.230	195.230	ppb	1.3	2467847.25	50000	
Co	59	45	No Gas	0.233	0.233	ppb	4.2	5486.44	500	
Ni	60	45	He	0.364	0.364	ppb	4.9	1038.04	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	3621.82	500	
Zn	66	72	No Gas	0.899	0.899	ppb	6.9	7488.74	500	
As	75	72	He	0.800	0.800	ppb	6.5	1274.73	500	
Se	78	72	H2	0.921	0.921	ppb	5.0	362.67	500	
Sr	88	72	No Gas	1260.814	1260.814	ppb	2.4	35099168.61	500	>LDR
Zr	90	72	No Gas	0.139	0.139	ppb	7.2	2566.93	50	
Mo	95	115	No Gas	0.364	0.364	ppb	7.6	1979.04	500	
Ag	107	115	No Gas	0.079	0.079	ppb	7.2	1063.38	50	
Cd	111	115	No Gas	0.010	0.010	ppb	103.2	81.27	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	761.14	500	
Sb	123	115	No Gas	0.073	0.073	ppb	3.2	803.36	100	
Ba	137	115	No Gas	81.742	81.742	ppb	0.2	305488.57	1000	
W	182	159	No Gas	0.008	0.008	ppb	19.9	116.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	675.58	500	
Pb	208	159	No Gas	0.218	0.218	ppb	2.3	6106.14	500	
U	238	159	No Gas	1.639	1.639	ppb	4.2	34996.55	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1999633.61	2.7	1985491.33	100.71	60	120	
Sc	45	No Gas	3959543.58	1.6	3913503.75	101.18	60	120	
Sc	45	H2	2481693.75	0.6	2411594.33	102.91	60	120	
Sc	45	He	478419.58	1.0	479494.86	99.78	60	120	
Ge	72	No Gas	902990.33	0.3	896662.58	100.71	60	120	
Ge	72	H2	637358.67	0.5	641325.94	99.38	60	120	
Ge	72	He	263534.68	0.8	265657.3	99.2	60	120	
In	115	No Gas	4841119.71	2.7	5028310.26	96.28	60	120	
Tb	159	No Gas	6115080.73	3.0	6111411.01	100.06	60	120	
Tb	159	He	3682909.58	0.9	3603832	102.19	60	120	

Sample Report

Sample Name	F183-08J
File Name	H6G16084.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:53:36
Sample Type	Sample
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.127	4.225	ppb	6.8	163960.00	50	
Be	9	6	No Gas	0.065	0.013	ppb	40.6	78.89	50	
B	11	6	No Gas	100.435	20.087	ppb	5.7	67810.88	100	
Na	23	45	H2	90890.125	18178.025	ppb	1.1	84297557.33	50000	
Mg	24	45	No Gas	69164.859	13832.972	ppb	5.9	160005178.67	50000	
Al	27	45	No Gas	218.413	43.683	ppb	6.6	672949.52	50000	
Si	28	45	H2	8531.635	1706.327	ppb	2.1	2212087.92	5000	
P	31	45	No Gas	38.346	7.669	ppb	21.5	37436.44	500	
K	39	45	He	2850.237	570.047	ppb	3.5	618354.04	50000	
Ca	40	45	H2	186357.954	37271.591	ppb	1.0	338877760.00	50000	
Ti	47	45	No Gas	1.881	0.376	ppb	9.9	958.70	500	
V	51	45	He	6.497	1.299	ppb	3.4	13102.26	500	
Cr	52	45	He	1.169	0.234	ppb	0.8	2650.26	500	
Mn	55	45	No Gas	21.312	4.262	ppb	6.4	122040.90	3000	
Fe	56	45	H2	196.985	39.397	ppb	0.7	527296.59	50000	
Co	59	45	No Gas	0.192	0.038	ppb	10.2	1368.07	500	
Ni	60	45	He	0.106	0.021	ppb	23.7	312.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2627.59	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	4188.65	500	
As	75	72	He	1.048	0.210	ppb	4.3	623.68	500	
Se	78	72	H2	0.884	0.177	ppb	32.3	90.67	500	
Sr	88	72	No Gas	1313.059	262.612	ppb	4.8	7365564.15	500	
Zr	90	72	No Gas	0.162	0.032	ppb	18.3	746.69	50	
Mo	95	115	No Gas	0.324	0.065	ppb	13.6	457.79	500	
Ag	107	115	No Gas	0.085	0.017	ppb	14.7	272.23	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	33.44	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	991.15	500	
Sb	123	115	No Gas	0.064	0.013	ppb	7.3	276.67	100	
Ba	137	115	No Gas	90.442	18.088	ppb	4.7	68611.88	1000	
W	182	159	No Gas	0.016	0.003	ppb	76.8	80.00	50	
Hg	201	159	He	0.008	0.002	ppb	218.1	14.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	414.45	500	
Pb	208	159	No Gas	0.220	0.044	ppb	16.1	2042.29	500	
U	238	159	No Gas	1.603	0.321	ppb	6.9	6853.03	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2057239.34	3.2	1985491.33	103.61	60	120	
Sc	45	No Gas	3931066.08	3.8	3913503.75	100.45	60	120	
Sc	45	H2	2500759.42	0.3	2411594.33	103.7	60	120	
Sc	45	He	492311.44	1.1	479494.86	102.67	60	120	
Ge	72	No Gas	910557.40	3.3	896662.58	101.55	60	120	
Ge	72	H2	659122.75	0.6	641325.94	102.78	60	120	
Ge	72	He	273331.40	1.6	265657.3	102.89	60	120	
In	115	No Gas	4903471.72	3.4	5028310.26	97.52	60	120	
Tb	159	No Gas	6014680.32	3.9	6111411.01	98.42	60	120	
Tb	159	He	3757190.67	0.8	3603832	104.26	60	120	

Sample Report

Sample Name	F183-12N
File Name	H6G16085.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:56:29
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.117	14.117	ppb	1.1	272916.18	50	
Be	9	6	No Gas	0.007	0.007	ppb	81.5	56.67	50	
B	11	6	No Gas	82.212	82.212	ppb	2.7	192074.87	100	
Na	23	45	H2	83342.738	83342.738	ppb	1.3	385363861.33	50000	>LDR
Mg	24	45	No Gas	52906.834	52906.834	ppb	1.8	623411520.00	50000	>LDR
Al	27	45	No Gas	6.301	6.301	ppb	6.9	119885.17	50000	
Si	28	45	H2	7527.687	7527.687	ppb	1.4	9738311.00	5000	>LDR
P	31	45	No Gas	7.447	7.447	ppb	8.1	37918.31	500	
K	39	45	He	2334.927	2334.927	ppb	2.1	2044687.21	50000	
Ca	40	45	H2	151876.590	151876.590	ppb	1.2	1379693824.00	50000	>LDR
Ti	47	45	No Gas	0.431	0.431	ppb	1.9	1064.71	500	
V	51	45	He	2.568	2.568	ppb	2.6	19881.73	500	
Cr	52	45	He	0.790	0.790	ppb	0.9	6144.05	500	
Mn	55	45	No Gas	0.182	0.182	ppb	0.6	18159.37	3000	
Fe	56	45	H2	12.689	12.689	ppb	2.0	191386.72	50000	
Co	59	45	No Gas	0.113	0.113	ppb	4.4	2985.66	500	
Ni	60	45	He	0.213	0.213	ppb	8.6	705.35	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2488.23	500	
Zn	66	72	No Gas	0.781	0.781	ppb	4.7	7033.83	500	
As	75	72	He	0.791	0.791	ppb	6.9	1247.06	500	
Se	78	72	H2	0.818	0.818	ppb	3.6	324.00	500	
Sr	88	72	No Gas	1057.829	1057.829	ppb	0.9	29135088.84	500	>LDR
Zr	90	72	No Gas	0.004	0.004	ppb	137.2	250.00	50	
Mo	95	115	No Gas	0.363	0.363	ppb	3.1	2050.16	500	
Ag	107	115	No Gas	0.064	0.064	ppb	8.2	906.70	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	4.41	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1314.51	500	
Sb	123	115	No Gas	0.038	0.038	ppb	5.1	516.68	100	
Ba	137	115	No Gas	55.542	55.542	ppb	0.7	215497.72	1000	
W	182	159	No Gas	0.007	0.007	ppb	59.1	113.33	50	
Hg	201	159	He	0.001	0.001	ppb	358.1	13.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	316.67	500	
Pb	208	159	No Gas	0.009	0.009	ppb	43.1	1284.47	500	
U	238	159	No Gas	1.574	1.574	ppb	0.6	34073.96	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2027735.72	1.5	1985491.33	102.13	60	120	
Sc	45	No Gas	3999584.75	1.0	3913503.75	102.2	60	120	
Sc	45	H2	2500313.00	1.5	2411594.33	103.68	60	120	
Sc	45	He	471860.39	1.1	479494.86	98.41	60	120	
Ge	72	No Gas	893353.73	0.6	896662.58	99.63	60	120	
Ge	72	H2	636145.39	1.1	641325.94	99.19	60	120	
Ge	72	He	260102.55	2.5	265657.3	97.91	60	120	
In	115	No Gas	5023606.13	0.7	5028310.26	99.91	60	120	
Tb	159	No Gas	6194240.59	1.6	6111411.01	101.36	60	120	
Tb	159	He	3654375.33	1.7	3603832	101.4	60	120	

Sample Report

Sample Name	F183-13N
File Name	H6G16086.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 14:59:23
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.806	14.806	ppb	4.0	278830.86	50	
Be	9	6	No Gas	0.004	0.004	ppb	37.2	42.22	50	
B	11	6	No Gas	85.313	85.313	ppb	3.7	196980.25	100	
Na	23	45	H2	83560.516	83560.516	ppb	0.8	389420032.00	50000	>LDR
Mg	24	45	No Gas	54513.295	54513.295	ppb	4.3	635750336.00	50000	>LDR
Al	27	45	No Gas	3.411	3.411	ppb	5.9	75372.11	50000	
Si	28	45	H2	7501.820	7501.820	ppb	0.8	9781465.00	5000	>LDR
P	31	45	No Gas	8.183	8.183	ppb	9.1	38222.49	500	
K	39	45	He	2293.971	2293.971	ppb	0.7	2089470.54	50000	
Ca	40	45	H2	153323.429	153323.429	ppb	0.5	1403835690.67	50000	>LDR
Ti	47	45	No Gas	0.430	0.430	ppb	14.3	1051.38	500	
V	51	45	He	2.505	2.505	ppb	1.6	20280.31	500	
Cr	52	45	He	0.717	0.717	ppb	1.7	5891.94	500	
Mn	55	45	No Gas	0.157	0.157	ppb	8.6	17340.98	3000	
Fe	56	45	H2	11.813	11.813	ppb	1.3	181806.52	50000	
Co	59	45	No Gas	0.119	0.119	ppb	1.7	3093.02	500	
Ni	60	45	He	0.197	0.197	ppb	4.4	696.02	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2823.63	500	
Zn	66	72	No Gas	1.561	1.561	ppb	6.1	9672.11	500	
As	75	72	He	0.750	0.750	ppb	4.7	1226.72	500	
Se	78	72	H2	0.782	0.782	ppb	3.4	317.33	500	
Sr	88	72	No Gas	1064.321	1064.321	ppb	3.6	29761177.70	500	>LDR
Zr	90	72	No Gas	0.011	0.011	ppb	28.3	383.34	50	
Mo	95	115	No Gas	0.384	0.384	ppb	3.8	2109.06	500	
Ag	107	115	No Gas	0.067	0.067	ppb	8.1	924.48	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	0.07	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	598.90	500	
Sb	123	115	No Gas	0.043	0.043	ppb	11.1	545.57	100	
Ba	137	115	No Gas	58.906	58.906	ppb	2.8	222952.16	1000	
W	182	159	No Gas	0.009	0.009	ppb	54.1	123.33	50	
Hg	201	159	He	0.002	0.002	ppb	233.7	14.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	315.56	500	
Pb	208	159	No Gas	0.012	0.012	ppb	10.3	1335.59	500	
U	238	159	No Gas	1.662	1.662	ppb	2.6	35435.59	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2015144.93	2.4	1985491.33	101.49	60	120	
Sc	45	No Gas	3960677.92	2.3	3913503.75	101.21	60	120	
Sc	45	H2	2519801.17	0.4	2411594.33	104.49	60	120	
Sc	45	He	490199.79	0.2	479494.86	102.23	60	120	
Ge	72	No Gas	907284.46	1.7	896662.58	101.18	60	120	
Ge	72	H2	649811.59	1.2	641325.94	101.32	60	120	
Ge	72	He	265506.93	0.5	265657.3	99.94	60	120	
In	115	No Gas	4902041.62	1.7	5028310.26	97.49	60	120	
Tb	159	No Gas	6107091.43	2.6	6111411.01	99.93	60	120	
Tb	159	He	3696756.33	0.4	3603832	102.58	60	120	

Sample Report

Sample Name	F183-14N
File Name	H6G16087.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G16.b
Acq Time	2020-07-21 15:02:16
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	23.546	23.546	ppb	2.0	384570.93	50	
Be	9	6	No Gas	0.005	0.005	ppb	10.0	47.78	50	
B	11	6	No Gas	52.434	52.434	ppb	1.3	133993.28	100	
Na	23	45	H2	31563.684	31563.684	ppb	1.1	146590624.00	50000	
Mg	24	45	No Gas	38776.993	38776.993	ppb	1.7	465089056.00	50000	
Al	27	45	No Gas	15.479	15.479	ppb	1.7	263411.15	50000	
Si	28	45	H2	8622.428	8622.428	ppb	0.8	11189743.67	5000	>LDR
P	31	45	No Gas	8.973	8.973	ppb	14.4	40035.58	500	
K	39	45	He	2362.371	2362.371	ppb	1.8	2120677.67	50000	
Ca	40	45	H2	109034.487	109034.487	ppb	1.0	993761493.33	50000	>LDR
Tl	47	45	No Gas	0.663	0.663	ppb	16.7	1466.09	500	
V	51	45	He	1.034	1.034	ppb	0.5	11316.67	500	
Cr	52	45	He	0.311	0.311	ppb	22.7	3113.74	500	
Mn	55	45	No Gas	514.542	514.542	ppb	1.6	13642414.33	3000	
Fe	56	45	H2	287.213	287.213	ppb	1.4	3654036.75	50000	
Co	59	45	No Gas	0.876	0.876	ppb	1.0	19654.83	500	
Ni	60	45	He	3.368	3.368	ppb	3.9	7558.76	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2403.55	500	
Zn	66	72	No Gas	17.295	17.295	ppb	1.8	63068.97	500	
As	75	72	He	0.526	0.526	ppb	4.1	984.04	500	
Se	78	72	H2	0.945	0.945	ppb	9.8	384.34	500	
Sr	88	72	No Gas	1194.488	1194.488	ppb	2.0	34659390.85	500	>LDR
Zr	90	72	No Gas	0.023	0.023	ppb	12.2	603.35	50	
Mo	95	115	No Gas	8.292	8.292	ppb	0.4	44494.16	500	
Ag	107	115	No Gas	0.062	0.062	ppb	1.8	884.48	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-12.83	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	602.24	500	
Sb	123	115	No Gas	0.047	0.047	ppb	5.7	603.35	100	
Ba	137	115	No Gas	49.111	49.111	ppb	0.9	192328.71	1000	
W	182	159	No Gas	0.057	0.057	ppb	23.7	510.01	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	331.12	500	
Pb	208	159	No Gas	0.024	0.024	ppb	11.4	1638.94	500	
U	238	159	No Gas	1.925	1.925	ppb	2.4	41707.45	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2057528.40	1.0	1985491.33	103.63	60	120	
Sc	45	No Gas	4070955.67	1.1	3913503.75	104.02	60	120	
Sc	45	H2	2508136.08	0.5	2411594.33	104	60	120	
Sc	45	He	484098.78	2.4	479494.86	100.96	60	120	
Ge	72	No Gas	941155.50	0.5	896662.58	104.96	60	120	
Ge	72	H2	659047.54	1.2	641325.94	102.76	60	120	
Ge	72	He	269583.32	1.1	265657.3	101.48	60	120	
In	115	No Gas	5069606.14	0.8	5028310.26	100.82	60	120	
Tb	159	No Gas	6207518.92	2.5	6111411.01	101.57	60	120	
Tb	159	He	3696515.50	0.4	3603832	102.57	60	120	

Sample Report

Sample Name	F183-15N
File Name	H6G16088.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 15:05:09
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.934	15.934	ppb	2.3	300021.19	50	
Be	9	6	No Gas	0.002	0.002	ppb	107.9	38.89	50	
B	11	6	No Gas	53.568	53.568	ppb	4.6	137378.77	100	
Na	23	45	H2	34708.409	34708.409	ppb	1.3	159236384.00	50000	
Mg	24	45	No Gas	43478.268	43478.268	ppb	2.9	523100469.33	50000	
Al	27	45	No Gas	1.267	1.267	ppb	10.3	44596.45	50000	
Si	28	45	H2	8435.839	8435.839	ppb	0.6	10816779.33	5000	>LDR
P	31	45	No Gas	6.014	6.014	ppb	12.0	37350.77	500	
K	39	45	He	2026.069	2026.069	ppb	0.4	1828005.33	50000	
Ca	40	45	H2	128260.018	128260.018	ppb	0.6	1154971690.67	50000	>LDR
Ti	47	45	No Gas	0.403	0.403	ppb	9.4	1042.04	500	
V	51	45	He	2.094	2.094	ppb	3.6	17503.17	500	
Cr	52	45	He	1.032	1.032	ppb	2.9	7873.60	500	
Mn	55	45	No Gas	2.354	2.354	ppb	0.6	76246.57	3000	
Fe	56	45	H2	1.886	1.886	ppb	0.8	55099.39	50000	
Co	59	45	No Gas	0.090	0.090	ppb	5.1	2544.24	500	
Ni	60	45	He	0.038	0.038	ppb	15.2	342.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2272.86	500	
Zn	66	72	No Gas	0.525	0.525	ppb	12.0	6478.22	500	
As	75	72	He	0.470	0.470	ppb	4.7	914.36	500	
Se	78	72	H2	1.016	1.016	ppb	2.8	408.01	500	
Sr	88	72	No Gas	1059.126	1059.126	ppb	3.0	30411203.24	500	>LDR
Zr	90	72	No Gas	0.006	0.006	ppb	39.5	293.33	50	
Mo	95	115	No Gas	0.471	0.471	ppb	8.1	2642.49	500	
Ag	107	115	No Gas	0.065	0.065	ppb	4.6	924.48	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-10.08	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	493.34	500	
Sb	123	115	No Gas	0.037	0.037	ppb	17.9	510.01	100	
Ba	137	115	No Gas	32.149	32.149	ppb	1.4	125619.23	1000	
W	182	159	No Gas	0.004	0.004	ppb	73.4	86.67	50	
Hg	201	159	He	0.001	0.001	ppb	690.9	14.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	281.12	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1023.35	500	
U	238	159	No Gas	1.358	1.358	ppb	1.0	29566.72	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2073977.99	0.7	1985491.33	104.46	60	120	
Sc	45	No Gas	4083624.67	0.8	3913503.75	104.35	60	120	
Sc	45	H2	2478152.58	0.8	2411594.33	102.76	60	120	
Sc	45	He	481652.27	1.1	479494.86	100.45	60	120	
Ge	72	No Gas	931517.27	0.8	896662.58	103.89	60	120	
Ge	72	H2	653400.65	1.3	641325.94	101.88	60	120	
Ge	72	He	268190.63	1.4	265657.3	100.95	60	120	
In	115	No Gas	5055049.96	1.0	5028310.26	100.53	60	120	
Tb	159	No Gas	6226392.11	0.5	6111411.01	101.88	60	120	
Tb	159	He	3733919.67	1.5	3603832	103.61	60	120	

Sample Report

Sample Name	F183-16N
File Name	H6G16089.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 15:08:03
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.141	16.141	ppb	0.5	301619.03	50	
Be	9	6	No Gas	0.004	0.004	ppb	21.6	45.55	50	
B	11	6	No Gas	53.329	53.329	ppb	1.3	136543.20	100	
Na	23	45	H2	34984.402	34984.402	ppb	1.0	161507552.00	50000	
Mg	24	45	No Gas	44381.950	44381.950	ppb	0.7	528610165.33	50000	
Al	27	45	No Gas	1.821	1.821	ppb	4.7	52602.83	50000	
Si	28	45	H2	8461.188	8461.188	ppb	0.2	10917735.33	5000	>LDR
P	31	45	No Gas	5.946	5.946	ppb	23.2	36894.89	500	
K	39	45	He	2060.782	2060.782	ppb	0.7	1867765.42	50000	
Ca	40	45	H2	129804.851	129804.851	ppb	1.1	1176182186.67	50000	>LDR
Ti	47	45	No Gas	0.420	0.420	ppb	5.3	1059.38	500	
V	51	45	He	2.158	2.158	ppb	1.7	17980.45	500	
Cr	52	45	He	1.011	1.011	ppb	3.3	7777.54	500	
Mn	55	45	No Gas	2.510	2.510	ppb	2.4	79566.66	3000	
Fe	56	45	H2	1.495	1.495	ppb	3.2	50543.20	50000	
Co	59	45	No Gas	0.092	0.092	ppb	2.5	2566.91	500	
Ni	60	45	He	0.022	0.022	ppb	57.2	308.00	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	2308.86	500	
Zn	66	72	No Gas	0.528	0.528	ppb	15.5	6378.84	500	
As	75	72	He	0.492	0.492	ppb	4.0	935.03	500	
Se	78	72	H2	1.011	1.011	ppb	1.5	404.34	500	
Sr	88	72	No Gas	1096.241	1096.241	ppb	1.4	30940308.77	500	>LDR
Zr	90	72	No Gas	0.007	0.007	ppb	67.2	320.00	50	
Mo	95	115	No Gas	0.460	0.460	ppb	2.0	2581.36	500	
Ag	107	115	No Gas	0.061	0.061	ppb	10.3	866.69	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	-9.53	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	448.89	500	
Sb	123	115	No Gas	0.036	0.036	ppb	3.1	501.12	100	
Ba	137	115	No Gas	32.032	32.032	ppb	0.2	125150.29	1000	
W	182	159	No Gas	0.003	0.003	ppb	162.9	80.00	50	
Hg	201	159	He	0.003	0.003	ppb	85.7	15.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	271.11	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1036.68	500	
U	238	159	No Gas	1.363	1.363	ppb	0.8	29743.84	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2068377.60	1.8	1985491.33	104.17	60	120	
Sc	45	No Gas	4042854.08	2.6	3913503.75	103.31	60	120	
Sc	45	H2	2493697.83	0.9	2411594.33	103.4	60	120	
Sc	45	He	484406.59	0.2	479494.86	101.02	60	120	
Ge	72	No Gas	915317.50	2.0	896662.58	102.08	60	120	
Ge	72	H2	650977.29	1.1	641325.94	101.5	60	120	
Ge	72	He	266713.41	0.4	265657.3	100.4	60	120	
In	115	No Gas	5054138.59	2.3	5028310.26	100.51	60	120	
Tb	159	No Gas	6241879.48	1.5	6111411.01	102.13	60	120	
Tb	159	He	3728507.50	0.6	3603832	103.46	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV8
File Name	H6G16090.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 15:10:57
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.320	ppb	2.1	383466.30	25	97.28	90	110	
Be	9	6	No Gas	24.350	ppb	0.9	89988.70	25	97.4	90	110	
B	11	6	No Gas	52.816	ppb	1.4	131373.48	50	105.63	90	110	
Na	23	45	H2	25198.485	ppb	0.4	113497736.00	25000	100.79	90	110	
Mg	24	45	No Gas	25223.961	ppb	1.5	297136458.67	25000	100.9	90	110	
Al	27	45	No Gas	24646.464	ppb	0.9	372936607.78	25000	98.59	90	110	
Si	28	45	H2	2506.074	ppb	0.5	3156142.67	2500	100.24	90	110	
P	31	45	No Gas	240.109	ppb	0.6	254609.08	250	96.04	90	110	
K	39	45	He	24721.496	ppb	0.6	20699273.33	25000	98.89	90	110	
Ca	40	45	H2	24990.589	ppb	0.5	220982149.33	25000	99.96	90	110	
Ti	47	45	No Gas	248.390	ppb	0.7	403001.24	250	99.36	90	110	
V	51	45	He	246.949	ppb	1.5	1447169.96	250	98.78	90	110	
Cr	52	45	He	248.339	ppb	1.9	1629461.41	250	99.34	90	110	
Mn	55	45	No Gas	1484.322	ppb	1.2	38625544.00	1500	98.95	90	110	
Fe	56	45	H2	25363.401	ppb	0.9	310093045.33	25000	101.45	90	110	
Co	59	45	No Gas	247.909	ppb	1.7	5300866.50	250	99.16	90	110	
Ni	60	45	He	252.289	ppb	1.5	539416.69	250	100.92	90	110	
Cu	63	45	He	251.230	ppb	1.6	1406364.87	250	100.49	90	110	
Zn	66	72	No Gas	247.215	ppb	1.9	824872.48	250	98.89	90	110	
As	75	72	He	244.286	ppb	0.2	280864.79	250	97.71	90	110	
Se	78	72	H2	245.765	ppb	0.3	92868.30	250	98.31	90	110	
Sr	88	72	No Gas	243.016	ppb	2.6	6942032.50	250	97.21	90	110	
Zr	90	72	No Gas	24.638	ppb	2.9	433628.71	25	98.55	90	110	
Mo	95	115	No Gas	244.221	ppb	2.1	1270970.05	250	97.69	90	110	
Ag	107	115	No Gas	24.564	ppb	0.2	319023.10	25	98.26	90	110	
Cd	111	115	No Gas	251.340	ppb	0.2	647770.12	250	100.54	90	110	
Sn	118	115	No Gas	246.197	ppb	0.5	1838547.15	250	98.48	90	110	
Sb	123	115	No Gas	49.104	ppb	1.4	442214.46	50	98.21	90	110	
Ba	137	115	No Gas	499.873	ppb	1.0	1901231.80	500	99.97	90	110	
W	182	159	No Gas	24.936	ppb	0.7	199690.12	25	99.74	90	110	
Hg	201	159	He	2.450	ppb	1.8	1845.47	2.5	98	90	110	
Tl	205	159	No Gas	249.679	ppb	1.0	4406256.49	250	99.87	90	110	
Pb	208	159	No Gas	249.700	ppb	0.5	5925252.01	250	99.88	90	110	
U	238	159	No Gas	248.091	ppb	1.1	5425399.50	250	99.24	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2005793.07	0.2	1985491.33	101.02	60	120	
Sc	45	No Gas	3998440.67	0.7	3913503.75	102.17	60	120	
Sc	45	H2	2431173.92	0.3	2411594.33	100.81	60	120	
Sc	45	He	477268.63	1.3	479494.86	99.54	60	120	
Ge	72	No Gas	926520.46	0.7	896662.58	103.33	60	120	
Ge	72	H2	651464.81	1.0	641325.94	101.58	60	120	
Ge	72	He	265263.29	0.7	265657.3	99.85	60	120	
In	115	No Gas	4930140.27	0.9	5028310.26	98.05	60	120	
Tb	159	No Gas	6287675.03	1.0	6111411.01	102.88	60	120	
Tb	159	He	3721057.00	1.4	3603832	103.25	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB8
File Name	H6G16091.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 15:13:50
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.082	ppb	36.3	116374.81	0.4	
Be	9	6	No Gas	0.012	ppb	3.3	74.44	0.08	
B	11	6	No Gas	0.900	ppb	67.8	28532.24	4	
Na	23	45	H2	20.608	ppb	3.8	374911.46	40	
Mg	24	45	No Gas	4.562	ppb	32.1	91462.09	10	
Al	27	45	No Gas	3.469	ppb	36.4	77082.94	15	
Si	28	45	H2	0.452	ppb	11.8	5793.21	8	
P	31	45	No Gas	<0.000	ppb	N/A	30511.46	10	
K	39	45	He	1.032	ppb	603.9	128962.31	20	
Ca	40	45	H2	<0.000	ppb	N/A	184760.17	25	
Ti	47	45	No Gas	0.037	ppb	68.4	427.34	0.5	
V	51	45	He	0.406	ppb	4.4	7662.81	0.5	
Cr	52	45	He	<0.000	ppb	N/A	947.37	0.2	
Mn	55	45	No Gas	0.228	ppb	32.4	19421.20	0.2	>LOD
Fe	56	45	H2	1.548	ppb	17.0	50797.16	10	
Co	59	45	No Gas	0.037	ppb	33.5	1366.74	0.15	
Ni	60	45	He	<0.000	ppb	N/A	179.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1842.79	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	2362.21	2	
As	75	72	He	0.070	ppb	15.8	450.34	0.2	
Se	78	72	H2	0.020	ppb	71.4	30.33	0.2	
Sr	88	72	No Gas	0.045	ppb	40.7	3018.13	0.2	
Zr	90	72	No Gas	0.003	ppb	190.2	233.34	2	
Mo	95	115	No Gas	0.060	ppb	19.5	456.67	0.2	
Ag	107	115	No Gas	0.005	ppb	25.3	122.22	0.08	
Cd	111	115	No Gas	0.081	ppb	26.4	275.10	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	2482.46	0.2	
Sb	123	115	No Gas	0.005	ppb	72.7	216.67	0.4	
Ba	137	115	No Gas	0.039	ppb	55.2	432.23	0.2	
W	182	159	No Gas	0.006	ppb	68.3	110.00	0.3	
Hg	201	159	He	0.011	ppb	65.0	21.83	0.1	
Tl	205	159	No Gas	0.128	ppb	31.2	3051.50	0.1	>LOD
Pb	208	159	No Gas	0.045	ppb	36.0	2168.96	0.1	
U	238	159	No Gas	0.041	ppb	34.6	1056.72	0.05	

LY 07/21/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2050870.04	2.1	1985491.33	103.29	60	120	
Sc	45	No Gas	4018355.58	2.1	3913503.75	102.68	60	120	
Sc	45	H2	2472697.00	1.2	2411594.33	102.53	60	120	
Sc	45	He	488569.91	1.0	479494.86	101.89	60	120	
Ge	72	No Gas	904411.87	1.3	896662.58	100.86	60	120	
Ge	72	H2	650730.60	1.1	641325.94	101.47	60	120	
Ge	72	He	268511.78	0.9	265657.3	101.07	60	120	
In	115	No Gas	5136795.77	1.0	5028310.26	102.16	60	120	
Tb	159	No Gas	6279657.95	1.2	6111411.01	102.75	60	120	
Tb	159	He	3763482.58	1.1	3603832	104.43	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG2106
File Name	H6G16092.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G16.b
Acq Time	2020-07-21 15:16:44
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G16002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.052	ppb	10.1	127512.80	1	105.2	80	120	
Be	9	6	No Gas	0.942	ppb	3.5	3592.69	1	94.2	80	120	
B	11	6	No Gas	4.859	ppb	6.3	36643.16	10	48.59	80	120	> +/- 20%
Na	23	45	H2	112.163	ppb	2.6	801504.42	100	112.16	80	120	
Mg	24	45	No Gas	99.453	ppb	2.9	1222738.63	100	99.45	80	120	
Al	27	45	No Gas	97.290	ppb	4.0	1513586.54	100	97.29	80	120	
Si	28	45	H2	94.428	ppb	1.9	127267.54	100	94.43	80	120	
P	31	45	No Gas	47.200	ppb	4.2	75792.19	50	94.4	80	120	
K	39	45	He	95.775	ppb	7.7	210980.64	100	95.78	80	120	
Ca	40	45	H2	81.622	ppb	1.4	1003570.96	100	81.62	80	120	
Ti	47	45	No Gas	0.985	ppb	3.9	1986.15	1	98.5	80	120	
V	51	45	He	1.417	ppb	1.6	13789.60	1	141.7	80	120	> +/- 20%
Cr	52	45	He	1.024	ppb	0.4	7980.99	1	102.4	80	120	
Mn	55	45	No Gas	0.935	ppb	4.3	38173.85	1	93.5	80	120	
Fe	56	45	H2	98.634	ppb	1.4	1270885.13	100	98.63	80	120	
Co	59	45	No Gas	0.981	ppb	1.3	21782.05	1	98.1	80	120	
Ni	60	45	He	1.002	ppb	7.4	2471.56	1	100.2	80	120	
Cu	63	45	He	0.538	ppb	1.4	7487.39	1	53.8	80	120	> +/- 20%
Zn	66	72	No Gas	10.353	ppb	3.7	39104.90	10	103.53	80	120	
As	75	72	He	1.016	ppb	1.7	1560.09	1	101.6	80	120	
Se	78	72	H2	0.919	ppb	7.5	375.01	1	91.9	80	120	
Sr	88	72	No Gas	1.968	ppb	3.4	58090.12	2	98.4	80	120	
Zr	90	72	No Gas	3.811	ppb	2.9	67335.79	5	76.22	80	120	> +/- 20%
Mo	95	115	No Gas	0.933	ppb	3.1	5157.67	1	93.3	80	120	
Ag	107	115	No Gas	0.967	ppb	1.2	13066.46	1	96.7	80	120	
Cd	111	115	No Gas	0.998	ppb	5.4	2721.58	1	99.8	80	120	
Sn	118	115	No Gas	0.453	ppb	7.9	8408.25	1	45.3	80	120	> +/- 20%
Sb	123	115	No Gas	0.932	ppb	4.0	8855.22	1	93.2	80	120	
Ba	137	115	No Gas	0.923	ppb	2.8	3911.70	1	92.3	80	120	
W	182	159	No Gas	2.049	ppb	0.6	16100.28	2	102.45	80	120	
Hg	201	159	He	0.095	ppb	7.9	84.67	0.1	95	80	120	
Tl	205	159	No Gas	0.976	ppb	2.7	17611.30	1	97.6	80	120	
Pb	208	159	No Gas	1.009	ppb	3.6	24462.60	1	100.9	80	120	
U	238	159	No Gas	0.955	ppb	1.9	20580.61	1	95.5	80	120	

LY 07/21/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2052810.97	1.5	1985491.33	103.39	60	120	
Sc	45	No Gas	4044631.50	0.9	3913503.75	103.35	60	120	
Sc	45	H2	2498615.00	1.7	2411594.33	103.61	60	120	
Sc	45	He	491589.45	0.3	479494.86	102.52	60	120	
Ge	72	No Gas	927957.02	1.1	896662.58	103.49	60	120	
Ge	72	H2	660784.81	1.1	641325.94	103.03	60	120	
Ge	72	He	270231.51	0.6	265657.3	101.72	60	120	
In	115	No Gas	5106055.96	1.3	5028310.26	101.55	60	120	
Tb	159	No Gas	6148161.98	1.3	6111411.01	100.6	60	120	
Tb	159	He	3739239.83	1.0	3603832	103.76	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SM5A-04-04-10

ALL SAMPLES PH<2

Book #: EIM-081
Batch: IMF035W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.3 °C		93.9 °C

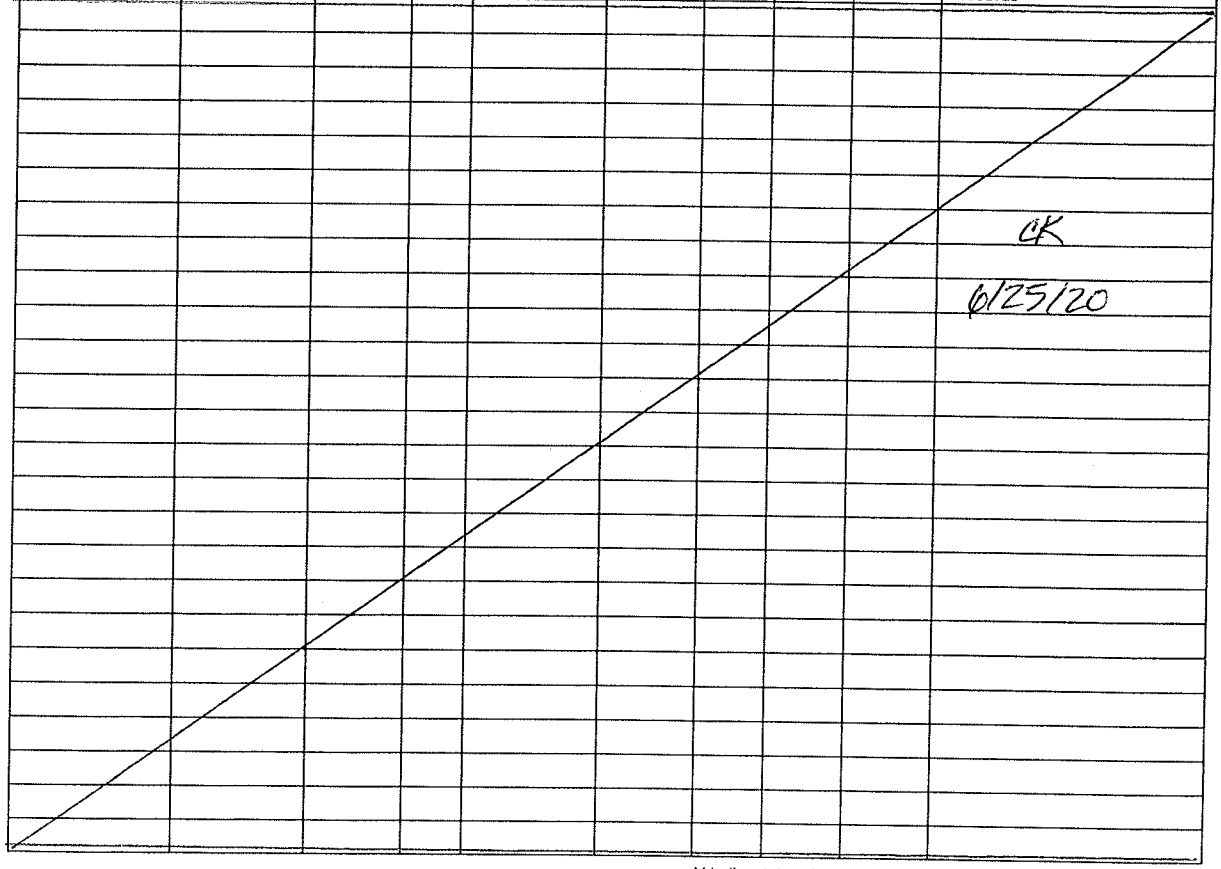
Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	-06-26	0.15
MS	SAME SPIKE SOLN AND VOL AS	LCS 1,2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1
pH Strip (0-14)	HC998032	N/A
Digestate Location	METALS	
Extract Location	N/A	
☐ Reagent Water ID: SWIA-08-25-05		
☑ Thermometer ID: 192272442/E15		
☑ Pipette ID: 742766331		
☐ Pipette ID:		
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: CK/MC
Standard Added By: CK Witnessed By: MC
Extract Rcvd By: LM Checked By: MC

EMAX LABORATORIES

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF035W01	IMF035WB	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W02	IMF035WL	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W03	IMF035WC	50	ml	6/25/20 9:31	50	50	50	1	
20IMF035W04	F183-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W05	F183-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W06	F183-03	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W07	F183-05	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W08	F183-06	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W09	F183-07	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W10	F183-08	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W11	F183-08M	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W12	F183-08S	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W13	F183-12	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W14	F183-13	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W15	F183-14	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W16	F183-15	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W17	F183-16	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W18	F155-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W19	F155-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W20	F164-01	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W21	F170-02	50	ml	6/25/20 9:31	50	50	50	1	TOTAL
20IMF035W22	F170-03	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W23	F170-04	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W24	F170-05	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED
20IMF035W25	F170-06	50	ml	6/25/20 9:31	50	50	50	1	DISSOLVED



Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/25/20 11:06

☑ Digestion Ended @ 6/25/20 13:23

Prepared By: Ckaing/Mcande

Checked By: MC

Comments:

Date

SOP EMAX-6020 Rev. 13

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGG004WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGG004WL/HGG004WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Mercury was within MS QC limits in F183-08M/F183-08S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F183
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGG004WB	1	NA	07/07/2017:26	07/07/2012:27	M47G003039	M47G003	20HGG004W	Method Blank
LCS1W	HGG004WL	1	NA	07/07/2017:28	07/07/2012:27	M47G003040	M47G003	20HGG004W	Lab Control Sample (LCS)
LCD1W	HGG004WC	1	NA	07/07/2017:31	07/07/2012:27	M47G003041	M47G003	20HGG004W	LCS Duplicate
MW17S-GW062120	F183-01	1	NA	07/07/2017:57	07/07/2012:27	M47G003052	M47G003	20HGG004W	Field Sample
MW17D-GW062120	F183-02	1	NA	07/07/2017:59	07/07/2012:27	M47G003053	M47G003	20HGG004W	Field Sample
MW06-GW062120	F183-03	1	NA	07/07/2018:01	07/07/2012:27	M47G003054	M47G003	20HGG004W	Field Sample
MW16S-GW062120	F183-05	1	NA	07/07/2018:03	07/07/2012:27	M47G003055	M47G003	20HGG004W	Field Sample
MW16D-GW062120	F183-06	1	NA	07/07/2018:06	07/07/2012:27	M47G003056	M47G003	20HGG004W	Field Sample
MW04-GW062120	F183-07	1	NA	07/07/2018:08	07/07/2012:27	M47G003057	M47G003	20HGG004W	Field Sample
MW08A-GW062120	F183-08	1	NA	07/07/2018:18	07/07/2012:27	M47G003061	M47G003	20HGG004W	Field Sample
MW08A-GW062120MS	F183-08M	1	NA	07/07/2018:23	07/07/2012:27	M47G003063	M47G003	20HGG004W	Matrix Spike Sample (MS)
MW08A-GW062120MSD	F183-08S	1	NA	07/07/2018:25	07/07/2012:27	M47G003064	M47G003	20HGG004W	MS Duplicate (MSD)
MW01S-GW062120	F183-12	1	NA	07/07/2018:27	07/07/2012:27	M47G003065	M47G003	20HGG004W	Field Sample
FD01-GW062120	F183-13	1	NA	07/07/2018:30	07/07/2012:27	M47G003066	M47G003	20HGG004W	Field Sample
MW08C-GW062220	F183-14	1	NA	07/07/2018:32	07/07/2012:27	M47G003067	M47G003	20HGG004W	Field Sample
MW08B-GW062220	F183-15	1	NA	07/07/2018:35	07/07/2012:27	M47G003068	M47G003	20HGG004W	Field Sample
FD02-GW062220	F183-16	1	NA	07/07/2018:37	07/07/2012:27	M47G003069	M47G003	20HGG004W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183
Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGG004WB	ND	1	NA	0.500	0.100	07/07/2017:26	07/07/2012:27	M47G003039	M47G003	20HGG004W	NA	NA
LCS1W	HGG004WL	2.54	1	NA	0.500	0.100	07/07/2017:28	07/07/2012:27	M47G003040	M47G003	20HGG004W	NA	NA
LCD1W	HGG004WC	2.52	1	NA	0.500	0.100	07/07/2017:31	07/07/2012:27	M47G003041	M47G003	20HGG004W	NA	NA
MW17S-GW062120	F183-01	ND	1	NA	0.500	0.100	07/07/2017:57	07/07/2012:27	M47G003052	M47G003	20HGG004W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02	ND	1	NA	0.500	0.100	07/07/2017:59	07/07/2012:27	M47G003053	M47G003	20HGG004W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03	ND	1	NA	0.500	0.100	07/07/2018:01	07/07/2012:27	M47G003054	M47G003	20HGG004W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05	ND	1	NA	0.500	0.100	07/07/2018:03	07/07/2012:27	M47G003055	M47G003	20HGG004W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06	ND	1	NA	0.500	0.100	07/07/2018:06	07/07/2012:27	M47G003056	M47G003	20HGG004W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07	ND	1	NA	0.500	0.100	07/07/2018:08	07/07/2012:27	M47G003057	M47G003	20HGG004W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08	ND	1	NA	0.500	0.100	07/07/2018:18	07/07/2012:27	M47G003061	M47G003	20HGG004W	06/21/2016:30	06/23/20
MW08A-GW062120MS	F183-08M	2.47	1	NA	0.500	0.100	07/07/2018:23	07/07/2012:27	M47G003063	M47G003	20HGG004W	06/21/2016:30	06/23/20
MW08A-GW062120MSD	F183-08S	2.49	1	NA	0.500	0.100	07/07/2018:25	07/07/2012:27	M47G003064	M47G003	20HGG004W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12	ND	1	NA	0.500	0.100	07/07/2018:27	07/07/2012:27	M47G003065	M47G003	20HGG004W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13	ND	1	NA	0.500	0.100	07/07/2018:30	07/07/2012:27	M47G003066	M47G003	20HGG004W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14	ND	1	NA	0.500	0.100	07/07/2018:32	07/07/2012:27	M47G003067	M47G003	20HGG004W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15	ND	1	NA	0.500	0.100	07/07/2018:35	07/07/2012:27	M47G003068	M47G003	20HGG004W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16	ND	1	NA	0.500	0.100	07/07/2018:37	07/07/2012:27	M47G003069	M47G003	20HGG004W	06/22/2010:10	06/23/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGG004WB	HGG004WL	HGG004WC
LAB FILE ID	: M47G003039	M47G003040	M47G003041
DATE PREPARED	: 07/07/2012:27	07/07/2012:27	07/07/2012:27
DATE ANALYZED	: 07/07/2017:26	07/07/2017:28	07/07/2017:31
PREP BATCH	: 20HGG004W	20HGG004W	20HGG004W
CALIBRATION REF	: M47G003	M47G003	M47G003

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.54	102	2.50	2.52	101	1	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID	: F183-08	F183-08M	F183-08S
LAB FILE ID	: M47G003061	M47G003063	M47G003064
DATE PREPARED	: 07/07/2012:27	07/07/2012:27	07/07/2012:27
DATE ANALYZED	: 07/07/2018:18	07/07/2018:23	07/07/2018:25
PREP BATCH	: 20HGG004W	20HGG004W	20HGG004W
CALIBRATION REF	: M47G003	M47G003	M47G003

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.47	99	2.50	2.49	100	1	80-120	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 7/7/20 Start Time: 15:54

End Date: 7/7/20 End Time: 18:54

Comments:

QC OK

Book #:	A47-121
Instrument No.:	47
Analytical Sequence/Batch:	M476003
Method File:	HG1
Micropipette ID:	☑ 339342032
Micropipette ID:	☑ HG-03
Micropipette ID:	☐ 742781062
Micropipette ID:	☑ HG-06
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	Blank
S2	SM3B-19-22-03
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-19-22-04
LCS	
Analytical Spike	
	SM3B-19-22-05 TV 3 ml

Analyzed By: MC

Date: 7/8/20

Disposed By:

Date:

"M47G003"

EMAXlfid	EMAXlsid	conc	Raw_resp	rsd/rf	adatetime	DF
M47G003001	STD01REP1	0	14743		07/07/2015:54	1
M47G003002	STD02REP1	.2	46891		07/07/2015:57	1
M47G003003	STD03REP1	.5	96047		07/07/2015:59	1
M47G003004	STD04REP1	1	179820		07/07/2016:01	1
M47G003005	STD05REP1	2	348157		07/07/2016:04	1
M47G003006	STD06REP1	5	833922		07/07/2016:06	1
M47G003007	ICV	2.01	344828	0	07/07/2016:10	1
M47G003008	ICB	-.015	12851	0	07/07/2016:12	1
M47G003009	MRLG0702	.512	99442	0	07/07/2016:15	1
M47G003010	CCV1	2.03	349236	0	07/07/2016:17	1
M47G003011	CCB1	-.027	10900	0	07/07/2016:19	1
M47G003012	F206-03	-.015	12969	0	07/07/2016:22	1
M47G003013	F206-04	-.014	12995	0	07/07/2016:24	1
M47G003014	F206-05	-.02	12134	0	07/07/2016:26	1
M47G003015	F213-01	-.002	15040	0	07/07/2016:29	1
M47G003016	F213-02	-.014	12990	0	07/07/2016:31	1
M47G003017	F213-03	-.021	11962	0	07/07/2016:33	1
M47G003018	F213-04	-.011	13610	0	07/07/2016:35	1
M47G003019	F213-05	-.004	14737	0	07/07/2016:38	1
M47G003020	F213-06	-.015	12889	0	07/07/2016:40	1
M47G003021	F213-07	-.003	14876	0	07/07/2016:42	1
M47G003022	CCV2	2.02	347502	0	07/07/2016:44	1
M47G003023	CCB2	-.009	13910	0	07/07/2016:47	1
M47G003024	F213-08	-.036	9482	0	07/07/2016:49	1
M47G003025	F213-09	-.002	14997	0	07/07/2016:52	1
M47G003026	F213-10	-.024	11381	0	07/07/2016:54	1
M47G003027	F213-11A	2.71	460580	0	07/07/2016:56	1
M47G003028	F213-11	-.011	13519	0	07/07/2016:58	1
M47G003029	F213-11J	-.011	13638	0	07/07/2017:01	5
M47G003030	F213-11M	2.28	389442	0	07/07/2017:03	1
M47G003031	F213-11S	2.27	387044	0	07/07/2017:05	1
M47G003032	F213-12	-.016	12800	0	07/07/2017:08	1
M47G003033	F213-13	-.014	12985	0	07/07/2017:11	1
M47G003034	CCV3	2.03	349164	0	07/07/2017:13	1
M47G003035	CCB3	.007	16488	0	07/07/2017:15	1
M47G003036	F213-14	-.024	11376	0	07/07/2017:18	1
M47G003037	F213-15	-.017	12515	0	07/07/2017:20	1
M47G003038	F213-16	-.009	13892	0	07/07/2017:23	1
M47G003039	HGG004WB	-.019	12195	0	07/07/2017:26	1
M47G003040	HGG004WL	2.54	431836	0	07/07/2017:28	1
M47G003041	HGG004WC	2.52	429170	0	07/07/2017:31	1
M47G003042	F162-01	.011	17088	0	07/07/2017:33	1
M47G003043	F162-02	-.034	9746	0	07/07/2017:36	1
M47G003044	F162-04	-.037	9270	0	07/07/2017:38	1
M47G003045	F162-05	-.032	10056	0	07/07/2017:40	1
M47G003046	CCV4	2.01	345251	0	07/07/2017:42	1
M47G003047	CCB4	-.021	11912	0	07/07/2017:45	1
M47G003048	F162-07	-.039	8937	0	07/07/2017:47	1
M47G003049	F162-08	-.024	11353	0	07/07/2017:50	1
M47G003050	F162-10	-.024	11432	0	07/07/2017:52	1
M47G003051	F162-11	-.048	7536	0	07/07/2017:54	1
M47G003052	F183-01	-.038	9082	0	07/07/2017:57	1
M47G003053	F183-02	-.022	11749	0	07/07/2017:59	1
M47G003054	F183-03	-.039	8988	0	07/07/2018:01	1
M47G003055	F183-05	-.042	8505	0	07/07/2018:03	1
M47G003056	F183-06	-.03	10388	0	07/07/2018:06	1
M47G003057	F183-07	-.032	10104	0	07/07/2018:08	1
M47G003058	CCV5	2	343390	0	07/07/2018:11	1
M47G003059	CCB5	.007	16536	0	07/07/2018:13	1
M47G003060	F183-08A	2.98	504447	0	07/07/2018:15	1
M47G003061	F183-08	-.041	8709	0	07/07/2018:18	1
M47G003062	F183-08J	.007	16564	0	07/07/2018:21	5
M47G003063	F183-08M	2.47	420048	0	07/07/2018:23	1
M47G003064	F183-08S	2.49	424634	0	07/07/2018:25	1
M47G003065	F183-12	-.043	8385	0	07/07/2018:27	1
M47G003066	F183-13	-.033	9880	0	07/07/2018:30	1
M47G003067	F183-14	-.025	11245	0	07/07/2018:32	1
M47G003068	F183-15	-.028	10700	0	07/07/2018:35	1
M47G003069	F183-16	-.039	8958	0	07/07/2018:37	1
M47G003070	CCV6	1.98	339515	0	07/07/2018:39	1
M47G003071	CCB6	-.003	14934	0	07/07/2018:42	1
M47G003072	HGG003WB	-.006	14414	0	07/07/2018:44	1
M47G003073	HGG003WL	2.53	429719	0	07/07/2018:47	1

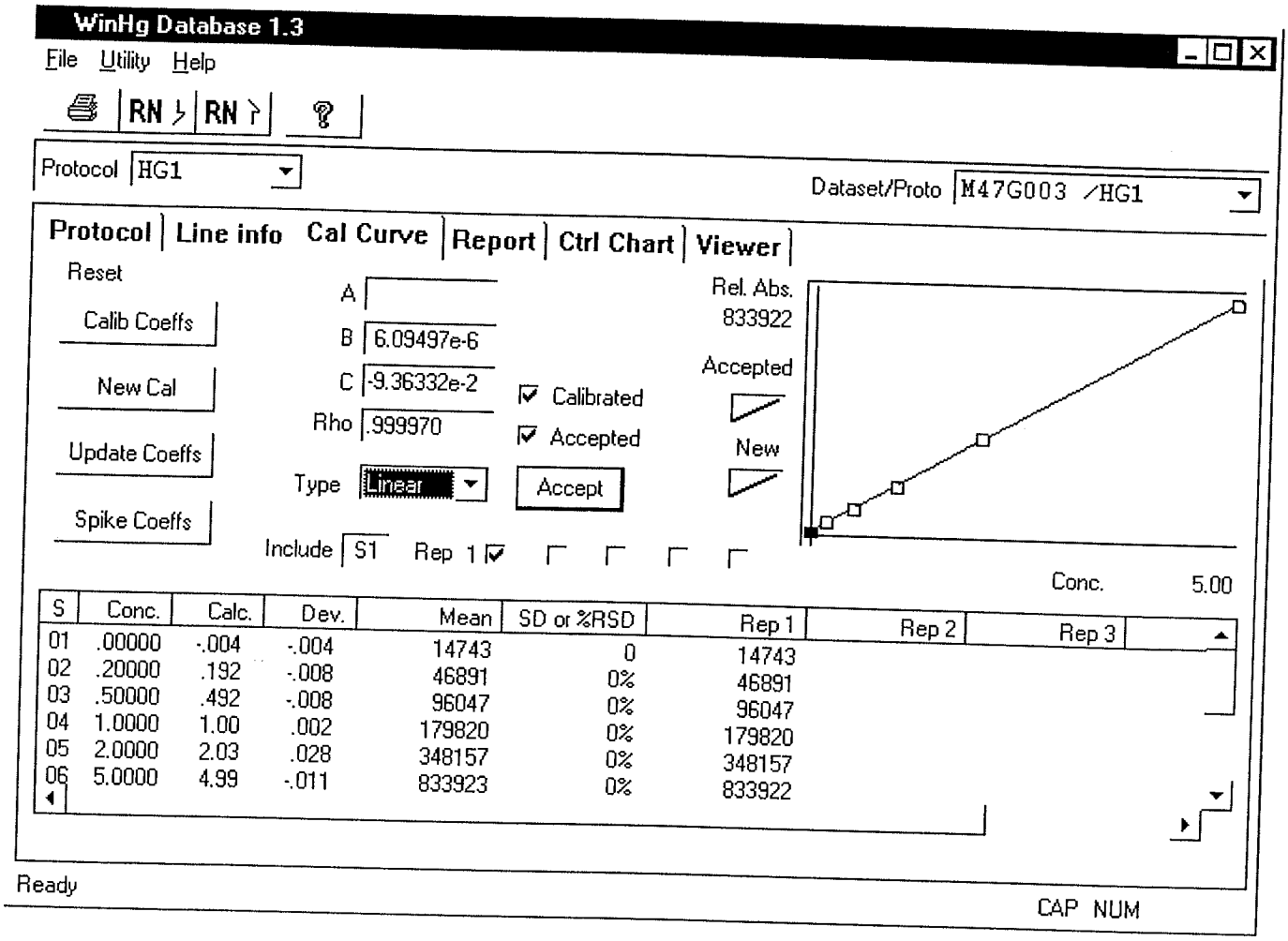
M47G003074	HGG003WC	2.55	433378	0	07/07/2018:49	1
M47G003075	CCV7	1.96	336710	0	07/07/2018:52	1
M47G003076	CCB7	.002	15684	0	07/07/2018:54	1
**********	**********	**********	**********	**********	**********	***
EMAX1fid	EMAX1sid	Xint	Yint	rrf	adatetime	DF
M47G003000		0	0	0	07/07/2018:54	1
M47G003001	BLANK	-9.372693E-02	15376.81	.9999697	07/07/2018:54	1

M476003

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLG0702	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	F206-03		1.0000	1.0000	
7	F206-04		1.0000	1.0000	
8	F206-05		1.0000	1.0000	
9	F213-01		1.0000	1.0000	
10	F213-02		1.0000	1.0000	
11	F213-03		1.0000	1.0000	
12	F213-04		1.0000	1.0000	
13	F213-05		1.0000	1.0000	
14	F213-06		1.0000	1.0000	
15	F213-07		1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F213-08		1.0000	1.0000	
19	F213-09		1.0000	1.0000	
20	F213-10		1.0000	1.0000	
21	F213-11A		1.0000	1.0000	
22	F213-11		1.0000	1.0000	
23	F213-11J	5X	1.0000	1.0000	
24	F213-11M		1.0000	1.0000	
25	F213-11S		1.0000	1.0000	
26	F213-12		1.0000	1.0000	
27	F213-13		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F213-14		1.0000	1.0000	
31	F213-15		1.0000	1.0000	
32	F213-16		1.0000	1.0000	
33	HGG004WB		1.0000	1.0000	
34	HGG004WL		1.0000	1.0000	
35	HGG004WC		1.0000	1.0000	
36	F162-01		1.0000	1.0000	
37	F162-02		1.0000	1.0000	
38	F162-04		1.0000	1.0000	
39	F162-05		1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	F162-07		1.0000	1.0000	
43	F162-08		1.0000	1.0000	
44	F162-10		1.0000	1.0000	

MC 7/7/2020

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	F162-11		1.0000	1.0000	
2	F183-01		1.0000	1.0000	
3	F183-02		1.0000	1.0000	
4	F183-03		1.0000	1.0000	
5	F183-05		1.0000	1.0000	
6	F183-06		1.0000	1.0000	
7	F183-07		1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	F183-08A		1.0000	1.0000	
11	F183-08		1.0000	1.0000	
12	F183-08J	5X	1.0000	1.0000	
13	F183-08M		1.0000	1.0000	
14	F183-08S		1.0000	1.0000	
15	F183-12		1.0000	1.0000	
16	F183-13		1.0000	1.0000	
17	F183-14		1.0000	1.0000	
18	F183-15		1.0000	1.0000	
19	F183-16		1.0000	1.0000	
20	CCV6		1.0000	1.0000	
21	CCB6		1.0000	1.0000	
22	HGG003WB		1.0000	1.0000	
23	HGG003WL		1.0000	1.0000	
24	HGG003WC		1.0000	1.0000	
25	CCV7		1.0000	1.0000	
26	CCB7		1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47G003 /HG1
Protocol Line info Cal Curve Report Ctrl Chart Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.09497e-6
C -9.36332e-2
Rho .999970
Type Linear
Calibrated
Accepted
Accept
Include S1 Rep 1
Rel. Abs. 833922
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.004 -.004 14743 0 14743
02 .20000 .192 -.008 46891 0% 46891
03 .50000 .492 -.008 96047 0% 96047
04 1.0000 1.00 .002 179820 0% 179820
05 2.0000 2.03 .028 348157 0% 348157
06 5.0000 4.99 -.011 833923 0% 833922
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	15:54:54 07 Jul 20	HG		
Hg	.000	ppb	14743					
*** Standard: 2 Rep: 1				Seq: 2	15:57:08 07 Jul 20	HG		
Hg	.200	ppb	46891					
*** Standard: 3 Rep: 1				Seq: 3	15:59:28 07 Jul 20	HG		
Hg	.500	ppb	96047					
*** Standard: 4 Rep: 1				Seq: 4	16:01:46 07 Jul 20	HG		
Hg	1.00	ppb	179820					
*** Standard: 5 Rep: 1				Seq: 5	16:04:03 07 Jul 20	HG		
Hg	2.00	ppb	348157					
*** Standard: 6 Rep: 1				Seq: 6	16:06:20 07 Jul 20	HG		
Hg	5.00	ppb	833922					
*** Sample ID: ICV				Seq: 7	16:10:33 07 Jul 20	HG		
Hg	2.01	ppb	344828					
*** Sample ID: ICB				Seq: 8	16:12:54 07 Jul 20	HG		
Hg	-.015	ppb	12851					
*** Sample ID: MRLG0702				Seq: 9	16:15:23 07 Jul 20	HG		
				0.5				
Hg	.512	ppb	99442					
*** Sample ID: CCV1				Seq: 10	16:17:37 07 Jul 20	HG		
Hg	2.03	ppb	349236					
*** Sample ID: CCB1				Seq: 11	16:19:48 07 Jul 20	HG		
Hg	-.027	ppb	10900					
*** Sample ID: F206-03				Seq: 12	16:22:00 07 Jul 20	HG		
Hg	-.015	ppb	12969					
*** Sample ID: F206-04				Seq: 13	16:24:10 07 Jul 20	HG		
Hg	-.014	ppb	12995					
*** Sample ID: F206-05				Seq: 14	16:26:19 07 Jul 20	HG		
Hg	-.020	ppb	12134					
*** Sample ID: F213-01				Seq: 15	16:29:02 07 Jul 20	HG		
Hg	-.002	ppb	15040					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F213-02				Seq: 16		16:31:18 07 Jul 20			HG
Hg	-.014	ppb	12990						
*** Sample ID: F213-03				Seq: 17		16:33:42 07 Jul 20			HG
Hg	-.021	ppb	11962						
*** Sample ID: F213-04				Seq: 18		16:35:50 07 Jul 20			HG
Hg	-.011	ppb	13610						
*** Sample ID: F213-05				Seq: 19		16:38:09 07 Jul 20			HG
Hg	-.004	ppb	14737						
*** Sample ID: F213-06				Seq: 20		16:40:17 07 Jul 20			HG
Hg	-.015	ppb	12889						
*** Sample ID: F213-07				Seq: 21		16:42:27 07 Jul 20			HG
Hg	-.003	ppb	14876						
*** Sample ID: CCV2				Seq: 22		16:44:48 07 Jul 20			HG
Hg	2.02	ppb	347502						
*** Sample ID: CCB2				Seq: 23		16:47:13 07 Jul 20			HG
Hg	-.009	ppb	13910						
*** Sample ID: F213-08				Seq: 24		16:49:21 07 Jul 20			HG
Hg	-.036	ppb	9482						
*** Sample ID: F213-09				Seq: 25		16:52:04 07 Jul 20			HG
Hg	-.002	ppb	14997						
*** Sample ID: F213-10				Seq: 26		16:54:14 07 Jul 20			HG
Hg	-.024	ppb	11381						
*** Sample ID: F213-11A				Seq: 27		16:56:24 07 Jul 20			HG
Hg	2.71	ppb	460580						
*** Sample ID: F213-11				Seq: 28		16:58:56 07 Jul 20			HG
Hg	-.011	ppb	13519						
*** Sample ID: F213-11J				Seq: 29		17:01:06 07 Jul 20			HG
			5X						
Hg	-.011	ppb	13638						
*** Sample ID: F213-11M				Seq: 30		17:03:35 07 Jul 20			HG
Hg	2.28	ppb	389442						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F213-11S				Seq: 31	17:05:55 07 Jul 20	HG		
Hg	2.27	ppb	387044					
*** Sample ID: F213-12				Seq: 32	17:08:25 07 Jul 20	HG		
Hg	-.016	ppb	12800					
*** Sample ID: F213-13				Seq: 33	17:11:00 07 Jul 20	HG		
Hg	-.014	ppb	12985					
*** Sample ID: CCV3				Seq: 34	17:13:21 07 Jul 20	HG		
Hg	2.03	ppb	349164					
*** Sample ID: CCB3				Seq: 35	17:15:44 07 Jul 20	HG		
Hg	.007	ppb	16488					
*** Sample ID: F213-14				Seq: 36	17:18:26 07 Jul 20	HG		
Hg	-.024	ppb	11376					
*** Sample ID: F213-15				Seq: 37	17:20:46 07 Jul 20	HG		
Hg	-.017	ppb	12515					
*** Sample ID: F213-16				Seq: 38	17:23:16 07 Jul 20	HG		
Hg	-.009	ppb	13892					
*** Sample ID: HGG004WB				Seq: 39	17:26:17 07 Jul 20	HG		
Hg	-.019	ppb	12195					
*** Sample ID: HGG004WL				Seq: 40	17:28:27 07 Jul 20	HG		
Hg	2.54	ppb	431836					
*** Sample ID: HGG004WC				Seq: 41	17:31:02 07 Jul 20	HG		
Hg	2.52	ppb	429170					
*** Sample ID: F162-01				Seq: 42	17:33:11 07 Jul 20	HG		
Hg	.011	ppb	17088					
*** Sample ID: F162-02				Seq: 43	17:36:10 07 Jul 20	HG		
Hg	-.034	ppb	9746					
*** Sample ID: F162-04				Seq: 44	17:38:20 07 Jul 20	HG		
Hg	-.037	ppb	9270					
*** Sample ID: F162-05				Seq: 45	17:40:39 07 Jul 20	HG		
Hg	-.032	ppb	10056					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	17:42:53 07 Jul 20	HG		
Hg	2.01	ppb	345251					
*** Sample ID: CCB4				Seq: 47	17:45:14 07 Jul 20	HG		
Hg	-.021	ppb	11912					
*** Sample ID: F162-07				Seq: 48	17:47:44 07 Jul 20	HG		
Hg	-.039	ppb	8937					
*** Sample ID: F162-08				Seq: 49	17:50:04 07 Jul 20	HG		
Hg	-.024	ppb	11353					
*** Sample ID: F162-10				Seq: 50	17:52:20 07 Jul 20	HG		
Hg	-.024	ppb	11432					
*** Sample ID: F162-11				Seq: 51	17:54:50 07 Jul 20	HG		
Hg	-.048	ppb	7536					
*** Sample ID: F183-01				Seq: 52	17:57:02 07 Jul 20	HG		
Hg	-.038	ppb	9082					
*** Sample ID: F183-02				Seq: 53	17:59:14 07 Jul 20	HG		
Hg	-.022	ppb	11749					
*** Sample ID: F183-03				Seq: 54	18:01:44 07 Jul 20	HG		
Hg	-.039	ppb	8988					
*** Sample ID: F183-05				Seq: 55	18:03:59 07 Jul 20	HG		
Hg	-.042	ppb	8505					
*** Sample ID: F183-06				Seq: 56	18:06:13 07 Jul 20	HG		
Hg	-.030	ppb	10388					
*** Sample ID: F183-07				Seq: 57	18:08:35 07 Jul 20	HG		
Hg	-.032	ppb	10104					
*** Sample ID: CCV5				Seq: 58	18:11:08 07 Jul 20	HG		
Hg	2.00	ppb	343390					
*** Sample ID: CCB5				Seq: 59	18:13:18 07 Jul 20	HG		
Hg	.007	ppb	16536					
*** Sample ID: F183-08A				Seq: 60	18:15:41 07 Jul 20	HG		
Hg	2.98	ppb	504447					

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F183-08				Seq: 61	18:18:43 07 Jul 20				HG
Hg	-.041	ppb	8709						
*** Sample ID: F183-08J				Seq: 62	18:21:04 07 Jul 20				HG
			5X						
Hg	.007	ppb	16564						
*** Sample ID: F183-08M				Seq: 63	18:23:15 07 Jul 20				HG
Hg	2.47	ppb	420048						
*** Sample ID: F183-08S				Seq: 64	18:25:31 07 Jul 20				HG
Hg	2.49	ppb	424634						
*** Sample ID: F183-12				Seq: 65	18:27:42 07 Jul 20				HG
Hg	-.043	ppb	8385						
*** Sample ID: F183-13				Seq: 66	18:30:42 07 Jul 20				HG
Hg	-.033	ppb	9880						
*** Sample ID: F183-14				Seq: 67	18:32:56 07 Jul 20				HG
Hg	-.025	ppb	11245						
*** Sample ID: F183-15				Seq: 68	18:35:12 07 Jul 20				HG
Hg	-.028	ppb	10700						
*** Sample ID: F183-16				Seq: 69	18:37:22 07 Jul 20				HG
Hg	-.039	ppb	8958						
*** Sample ID: CCV6				Seq: 70	18:39:52 07 Jul 20				HG
Hg	1.98	ppb	339515						
*** Sample ID: CCB6				Seq: 71	18:42:03 07 Jul 20				HG
Hg	-.003	ppb	14934						
*** Sample ID: HGG003WB				Seq: 72	18:44:45 07 Jul 20				HG
Hg	-.006	ppb	14414						
*** Sample ID: HGG003WL				Seq: 73	18:47:07 07 Jul 20				HG
Hg	2.53	ppb	429719						
*** Sample ID: HGG003WC				Seq: 74	18:49:20 07 Jul 20				HG
Hg	2.55	ppb	433378						
*** Sample ID: CCV7				Seq: 75	18:52:40 07 Jul 20				HG
Hg	1.96	ppb	336710						

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: CCB7 Seq: 76 18:54:52 07 Jul 20 HG

Hg	.002	ppb	15684

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28619010

Aqua Regia Prep. Vessel Lot#: N/A

All samples pH<2

ICAL on HG6003W

Book #: E47-116

Batch No.: HG6004W

Matrix: water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-22-03	50	0.2,0.5,1,7.5
CCV	↓	↓	2
ICV	SM3B-19-22-04	↓	2
LCS/MS	↓	↓	2.5
Reagent	**ID / Lot #**		
HNO_3	SW1A-009-02-08		
HCl	N/A		
H_2SO_4	SW1A-08-24-05		
$KMnO_4$	SMSB-04-14-04		
$K_2S_2O_8$	SMSB-04-13-04		
$NH_2OH \cdot HCl \cdot NaCl$	SMSB-04-15-01		
$SnCl_2$	SMSB-04-14-03		
Silica Sand	N/A		
Reagent Water	RW1-19-003		
pH strip 0-14	HC563163		
Digestor ID/ Temp (°C)	B / 95.4		
Thermometer ID/LOC:	170238083 / BIM		
Thermometer ID/LOC:			
Pipette ID:	H6-06, 742781062, H6-03, 339342032		
☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder			
☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder			
☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder			

Prepared By: MC

Standard Added By: MC Witnessed By: TH

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGG004W01	HGG004WB	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W02	HGG004WL	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W03	HGG004WC	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W04	F162-01	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W05	F162-02	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W06	F162-04	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W07	F162-05	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W08	F162-07	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W09	F162-08	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W10	F162-10	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W11	F162-11	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W12	F183-01	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W13	F183-02	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W14	F183-03	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W15	F183-05	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W16	F183-06	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W17	F183-07	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W18	F183-08	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W19	F183-08M	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W20	F183-08S	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W21	F183-12	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W22	F183-13	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W23	F183-14	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W24	F183-15	50	ml	7/7/20 11:13	80	50	80	1	
20HGG004W25	F183-16	50	ml	7/7/20 11:13	80	50	80	1	

MC
7/7/2020

Vd=digestate volume

PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 7/7/20 12:27

☑ Digestion Ended @ 7/7/20 14:34

Prepared By: MCande

Checked By: MC

Comments:

Date 7/7/2020

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F183

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD E300.0
CHLORIDE

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two(2) method blanks were analyzed. ICF039WB and ICF041WB were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two(2) sets of LCS/LCD were analyzed. ICF039WL/ICF039WC and ICF041WL/ICF041WC were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Chloride was within MS QC limits in F183-08JM/F183-08JS. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD E300.0
SULFATE

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF039WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF039WL/ICF039WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Sulfate was within MS QC limits in F183-08IM/F183-08IS. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RESULTS

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF039WB	ND	1	NA	0.2	0.05	06/29/2010:55	NA	AF37-03	AF37-01	ICF039W	NA	NA
LCS1W	ICF039WL	1.88	1	NA	0.2	0.05	06/29/2011:13	NA	AF37-04	AF37-01	ICF039W	NA	NA
LCD1W	ICF039WC	1.90	1	NA	0.2	0.05	06/29/2011:30	NA	AF37-05	AF37-01	ICF039W	NA	NA
MW17S-GW062120	F183-01J	322	200	NA	40	10	06/29/2013:23	NA	AF37-11	AF37-06	ICF039W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02J	269	100	NA	20	5	06/29/2013:57	NA	AF37-13	AF37-06	ICF039W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03J	154	50	NA	10	2.5	06/29/2014:31	NA	AF37-15	AF37-06	ICF039W	06/21/2012:00	06/23/20
MW16D-GW062120	F183-06J	98.2	50	NA	10	2.5	06/29/2016:17	NA	AF37-21	AF37-18	ICF039W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07J	250	100	NA	20	5	06/29/2016:51	NA	AF37-23	AF37-18	ICF039W	06/21/2010:00	06/23/20
MW01S-GW062120	F183-12J	270	100	NA	20	5	06/29/2018:34	NA	AF37-29	AF37-18	ICF039W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13J	271	100	NA	20	5	06/29/2019:42	NA	AF37-33	AF37-30	ICF039W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14I	26.0	10	NA	2	0.5	06/29/2019:59	NA	AF37-34	AF37-30	ICF039W	06/22/2010:20	06/23/20
MW08A-GW062120	F183-08J	383	200	NA	40	10	06/29/2020:33	NA	AF37-36	AF37-30	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08JD	386	200	NA	40	10	06/29/2020:50	NA	AF37-37	AF37-30	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120MS	F183-08JM	771	200	NA	40	10	06/29/2021:07	NA	AF37-38	AF37-30	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120MSD	F183-08JS	772	200	NA	40	10	06/29/2021:24	NA	AF37-39	AF37-30	ICF039W	06/21/2016:30	06/23/20
MW08B-GW062220	F183-15J	114	50	NA	10	2.5	06/29/2021:59	NA	AF37-41	AF37-30	ICF039W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16J	114	50	NA	10	2.5	06/29/2023:07	NA	AF37-45	AF37-42	ICF039W	06/22/2010:10	06/23/20
MBLK2W	ICF041WB	ND	1	NA	0.2	0.05	06/30/2010:22	NA	AF39-03	AF39-01	ICF041W	NA	NA
LCS2W	ICF041WL	1.87	1	NA	0.2	0.05	06/30/2010:39	NA	AF39-04	AF39-01	ICF041W	NA	NA
LCD2W	ICF041WC	1.88	1	NA	0.2	0.05	06/30/2010:56	NA	AF39-05	AF39-01	ICF041W	NA	NA
MW16S-GW062120	F183-05I	255	100	NA	20	5	07/01/2004:28	NA	AF39-66	AF39-61	ICF041W	06/21/2009:30	06/23/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183

Matrix : WATER
InstrumentID : DO

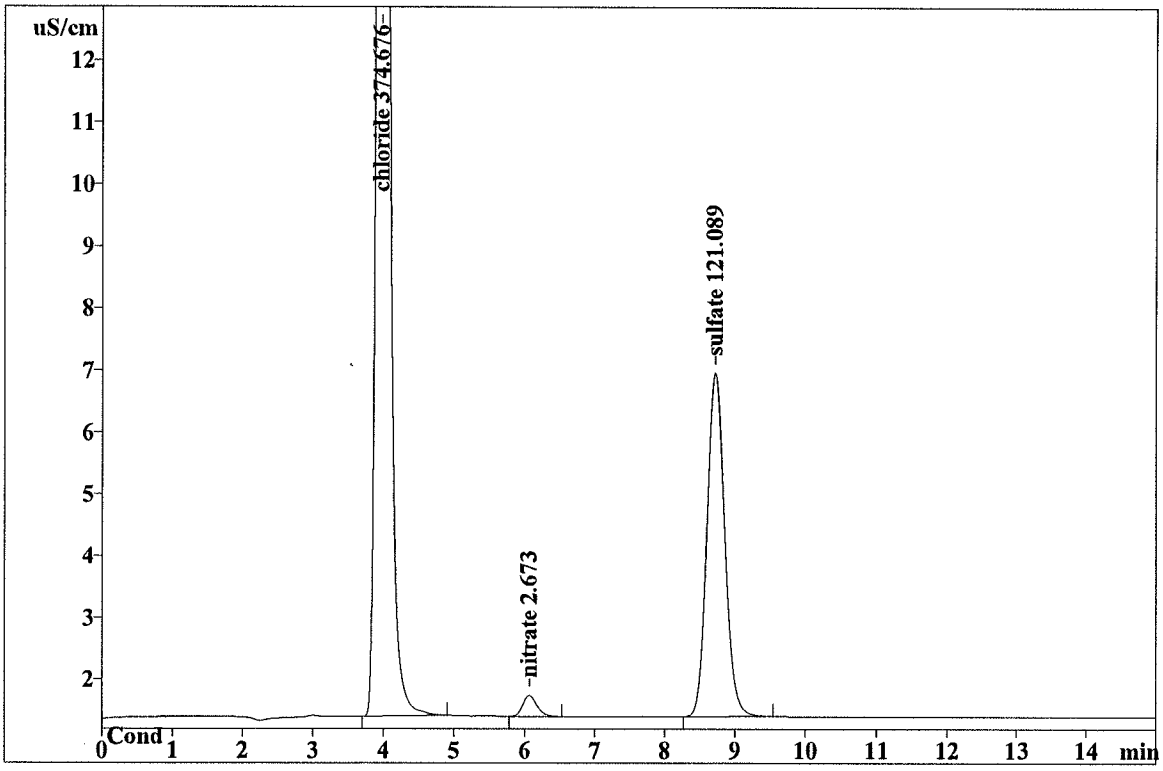
CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF039WB	ND	1	NA	0.5	0.13	06/29/2010:55	NA	AF37-03	AF37-01	ICF039W	NA	NA
LCS1W	ICF039WL	4.65	1	NA	0.5	0.13	06/29/2011:13	NA	AF37-04	AF37-01	ICF039W	NA	NA
LCD1W	ICF039WC	4.79	1	NA	0.5	0.13	06/29/2011:30	NA	AF37-05	AF37-01	ICF039W	NA	NA
MW17S-GW062120	F183-01I	121	20	NA	10	2.6	06/29/2013:06	NA	AF37-10	AF37-06	ICF039W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02I	108	20	NA	10	2.6	06/29/2013:40	NA	AF37-12	AF37-06	ICF039W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03I	95.3	20	NA	10	2.6	06/29/2014:14	NA	AF37-14	AF37-06	ICF039W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05I	87.6	10	NA	5	1.3	06/29/2014:52	NA	AF37-16	AF37-06	ICF039W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06I	144	10	NA	5	1.3	06/29/2016:00	NA	AF37-20	AF37-18	ICF039W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07I	49.3	10	NA	5	1.3	06/29/2016:34	NA	AF37-22	AF37-18	ICF039W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08I	97.3	10	NA	5	1.3	06/29/2017:08	NA	AF37-24	AF37-18	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08ID	93.3	10	NA	5	1.3	06/29/2017:25	NA	AF37-25	AF37-18	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120MS	F183-08IM	147	10	NA	5	1.3	06/29/2017:42	NA	AF37-26	AF37-18	ICF039W	06/21/2016:30	06/23/20
MW08A-GW062120MSD	F183-08IS	149	10	NA	5	1.3	06/29/2017:59	NA	AF37-27	AF37-18	ICF039W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12I	49.7	10	NA	5	1.3	06/29/2018:17	NA	AF37-28	AF37-18	ICF039W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13I	105	10	NA	5	1.3	06/29/2019:25	NA	AF37-32	AF37-30	ICF039W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14I	78.7	10	NA	5	1.3	06/29/2019:59	NA	AF37-34	AF37-30	ICF039W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15I	144	10	NA	5	1.3	06/29/2021:41	NA	AF37-40	AF37-30	ICF039W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16I	141	10	NA	5	1.3	06/29/2022:50	NA	AF37-44	AF37-42	ICF039W	06/22/2010:10	06/23/20

Report date: 7/2/2020 12:20:53 PM
Printed by: TWangc

Ident: AF37-10 F183-01I DF=20
Analysis from: 6/29/2020 1:06:35 PM
File: _2020-06-29_13-06.chw Last save: 6/29/2020 1:21:32 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159565

SAMPLE: METHOD300/9056/4110B
:
Vial number: 10
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	39.90	397.221	374.676	chloride
2	6.07	0.34	4.619	2.673	nitrate
3	8.71	5.56	97.664	121.089	sulfate ✓
3	15.00	45.80	499.504	498.438	

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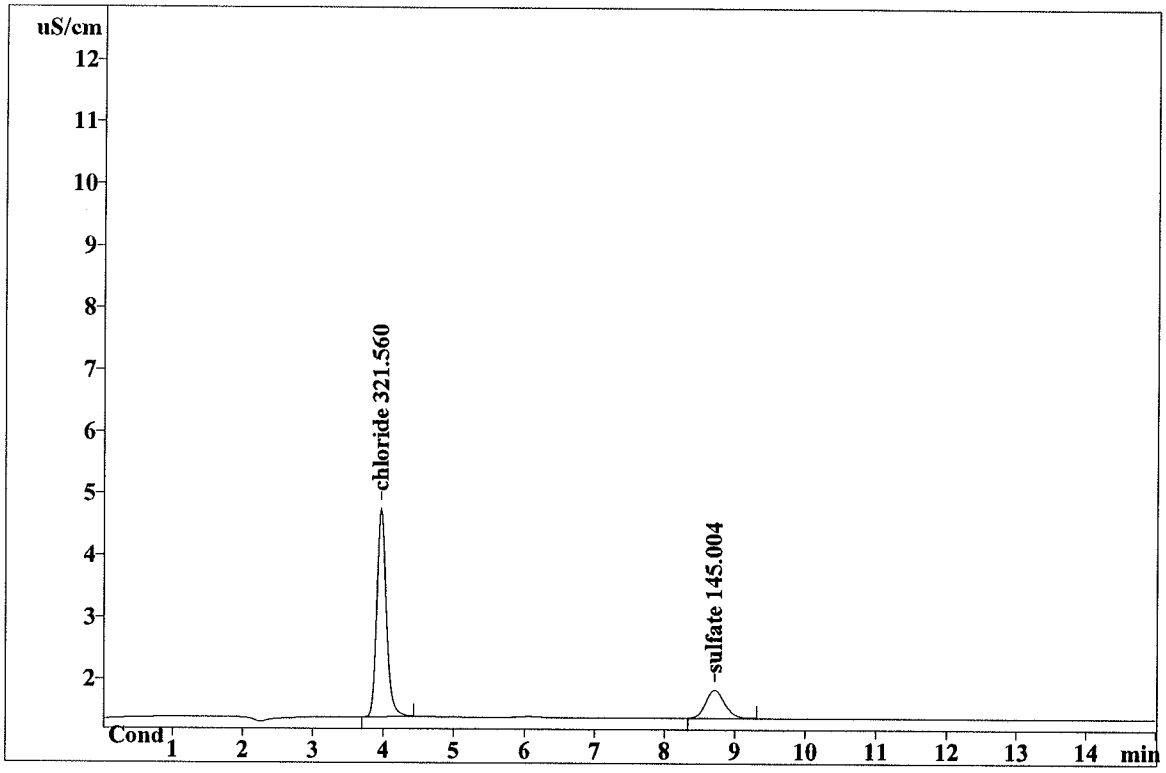
Report date: 7/2/2020 12:46:10 PM
Printed by: TWangc

Ident: AF37-11 F183-01J DF=200
Analysis from: 6/29/2020 1:23:40 PM
File: _2020-06-29_13-23.chw Last save: 6/29/2020 1:38:37 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159566

SAMPLE: METHOD300/9056/4110B
:
Vial number: 11
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	3.35	32.320	321.560	chloride ✓
2	8.71	0.46	8.486	145.004	sulfate
2	15.00	3.81	40.806	466.564	

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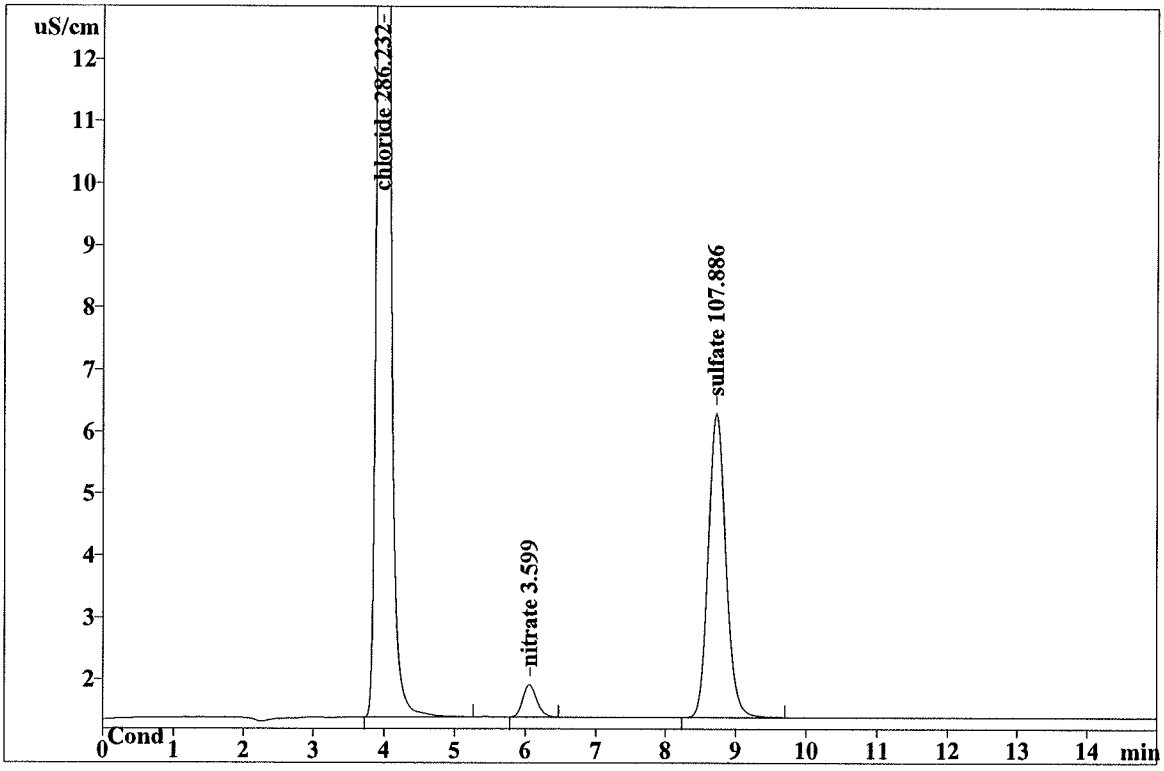
Report date: 7/2/2020 12:21:28 PM
Printed by: TWangc

Ident: AF37-12 F183-02I DF=20
Analysis from: 6/29/2020 1:40:45 PM
File: _2020-06-29_13-40.chw Last save: 6/29/2020 3:29:11 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159567

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	30.42	302.998	286.232	chloride
2	6.06	0.52	7.072	3.599	nitrate
3	8.72	4.91	86.618	107.886	sulfate ✓
3	15.00	35.85	396.688	397.717	

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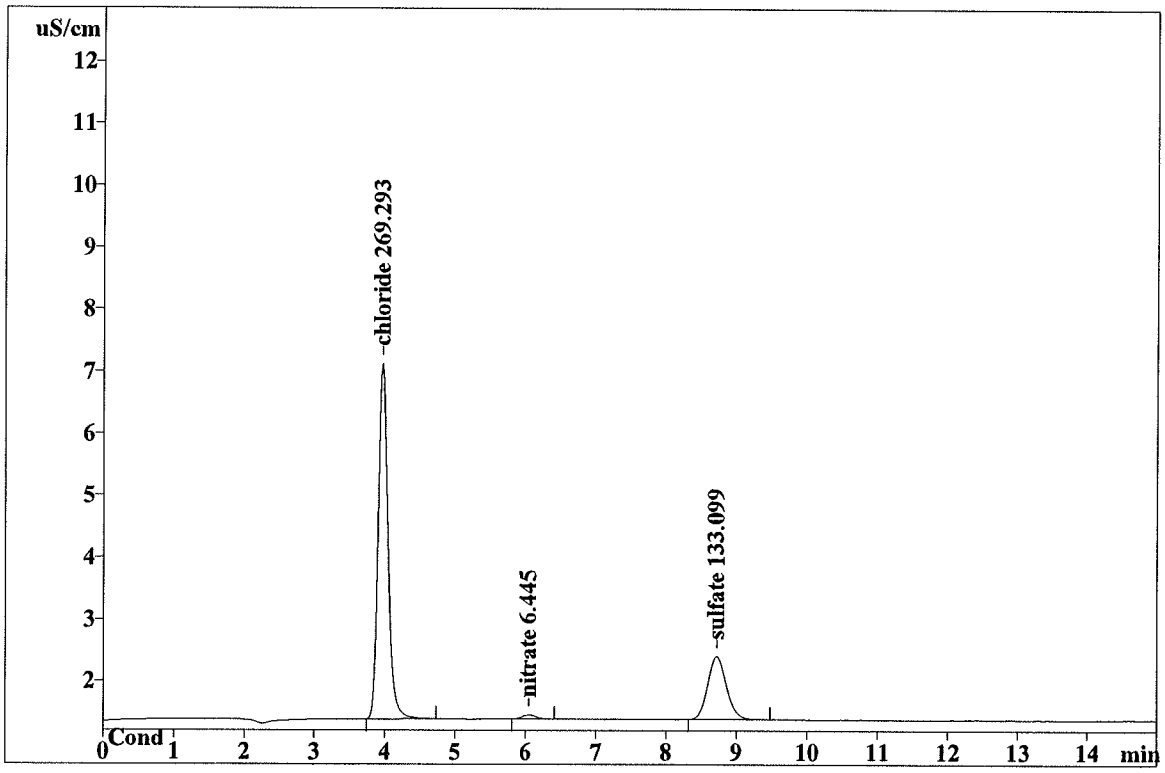
Report date: 7/2/2020 12:21:50 PM
Printed by: TWangc

Ident: AF37-13 F183-02J DF=100
Analysis from: 6/29/2020 1:57:50 PM
File: _2020-06-29_13-57.chw Last save: 6/29/2020 3:32:17 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159568

SAMPLE: METHOD300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	5.73	55.440	269.293	chloride ✓
2	6.05	0.07	0.949	6.445	nitrate
3	8.72	1.02	18.626	133.099	sulfate
3	15.00	6.83	75.015	408.837	

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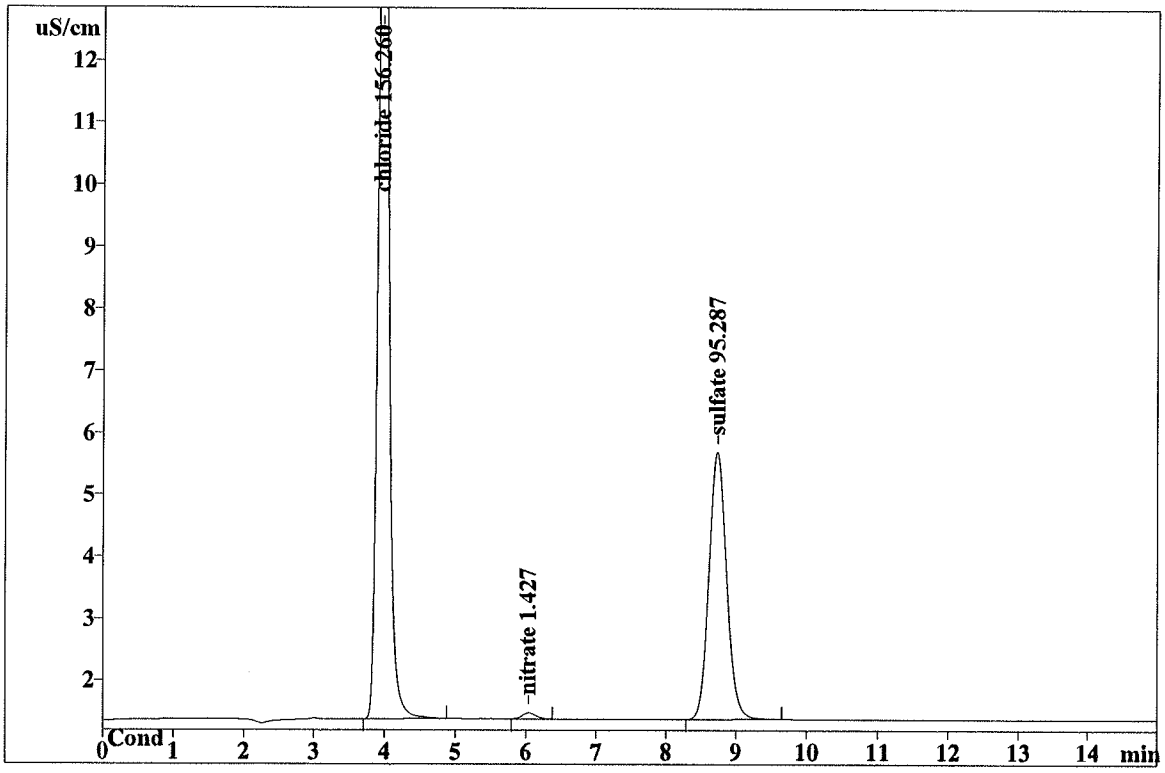
Report date: 7/2/2020 12:22:46 PM
Printed by: TWangc

Ident: AF37-14 F183-03I DF=20
Analysis from: 6/29/2020 2:14:54 PM
File: _2020-06-29_14-14.chw Last save: 6/29/2020 3:45:53 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159569

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	16.90	164.533	156.260	chloride
2	6.04	0.10	1.315	1.427	nitrate
3	8.72	4.32	76.077	95.287	sulfate ✓
3	15.00	21.32	241.925	252.974	

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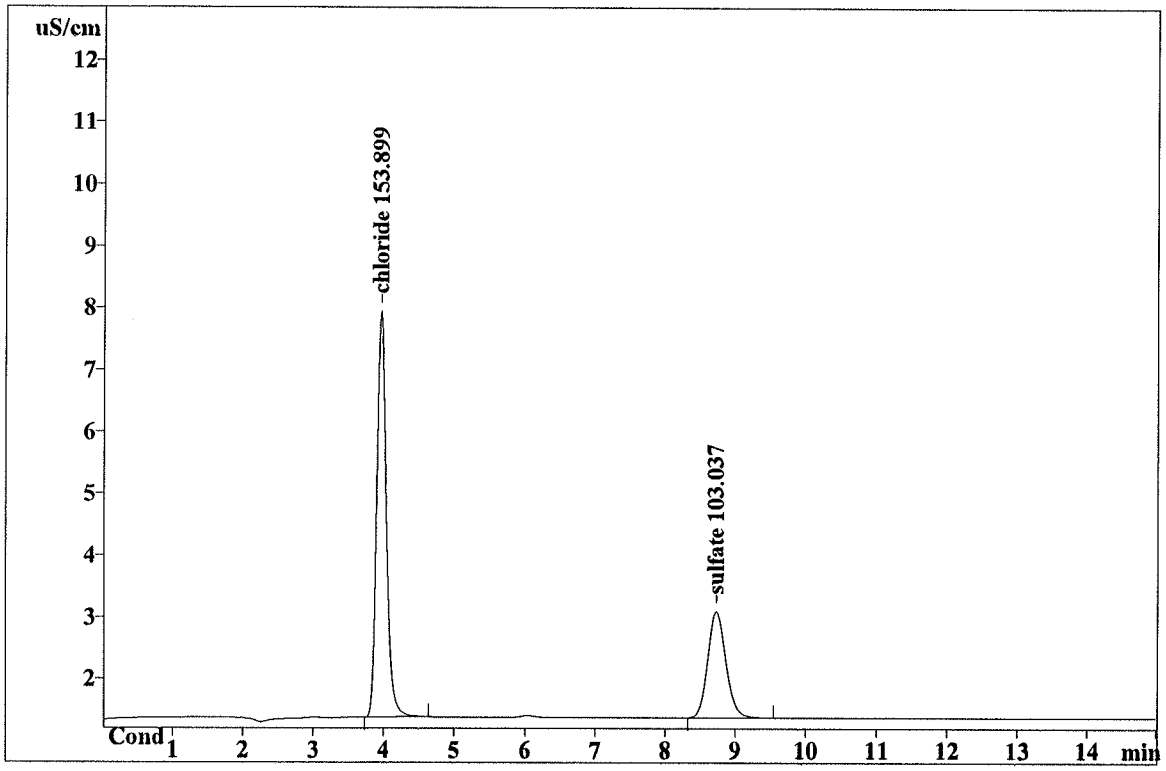
Report date: 7/2/2020 12:43:23 PM
Printed by: TWangc

Ident: AF37-15 F183-03J DF=50
Analysis from: 6/29/2020 2:31:58 PM
File: _2020-06-29_14-31.chw Last save: 6/29/2020 2:46:56 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159570

SAMPLE: METHOD300/9056/4110B
:
Vial number: 15
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	6.57	63.645	153.899	chloride ✓
2	8.73	1.72	30.837	103.037	sulfate
2	15.00	8.29	94.482	256.937	

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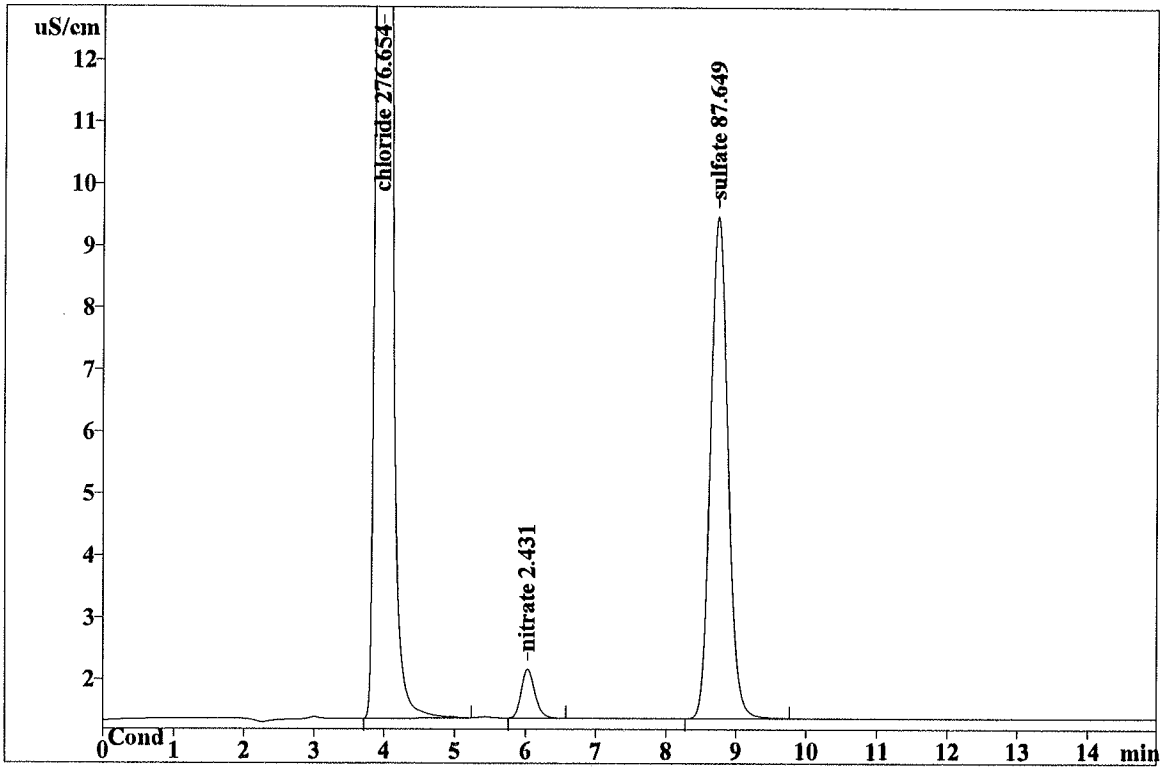
Report date: 7/2/2020 12:23:21 PM
Printed by: TWangc

Ident: AF37-16 F183-05I DF=10
Analysis from: 6/29/2020 2:52:06 PM
File: _2020-06-29_14-52.chw Last save: 6/29/2020 3:07:03 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159571

SAMPLE: METHOD300/9056/4110B
:
Vial number: 16
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	58.85	587.527	276.654	chloride
2	6.03	0.79	10.422	2.431	nitrate
3	8.74	8.11	143.020	87.649	sulfate ✓
3	15.00	67.75	740.968	366.735	

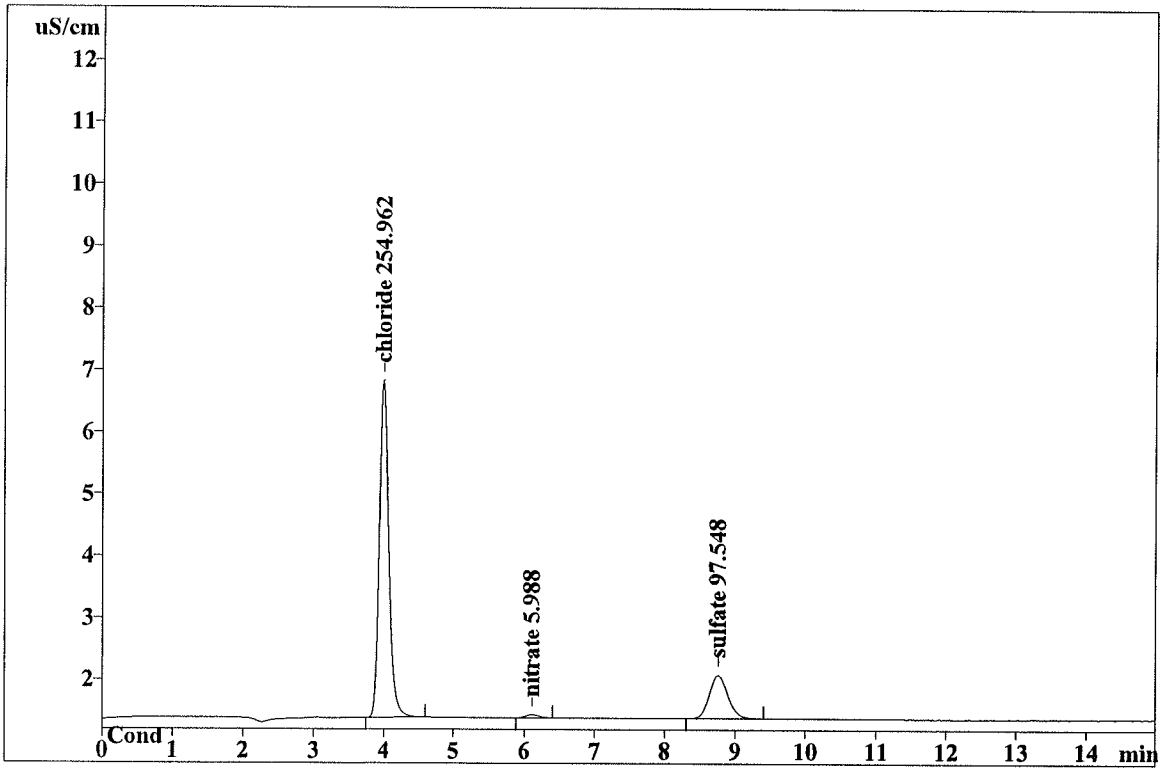
This report has been created by IC Net
METROHM LTD

Report date: 7/1/2020 10:47:05 AM
Printed by: TWangc

Ident: AF39-66 F183-05I DF=100
Analysis from: 7/1/2020 4:28:12 AM
File: _2020-07-01_04-28.chw Last save: 7/1/2020 4:43:09 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159669

SAMPLE: METHOD300/9056/4110B
:
Vial number: 66
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.99	5.44	52.387	254.962	chloride ✓
2	6.12	0.05	0.706	5.988	nitrate
3	8.75	0.70	12.677	97.548	sulfate
3	15.00	6.20	65.770	358.498	

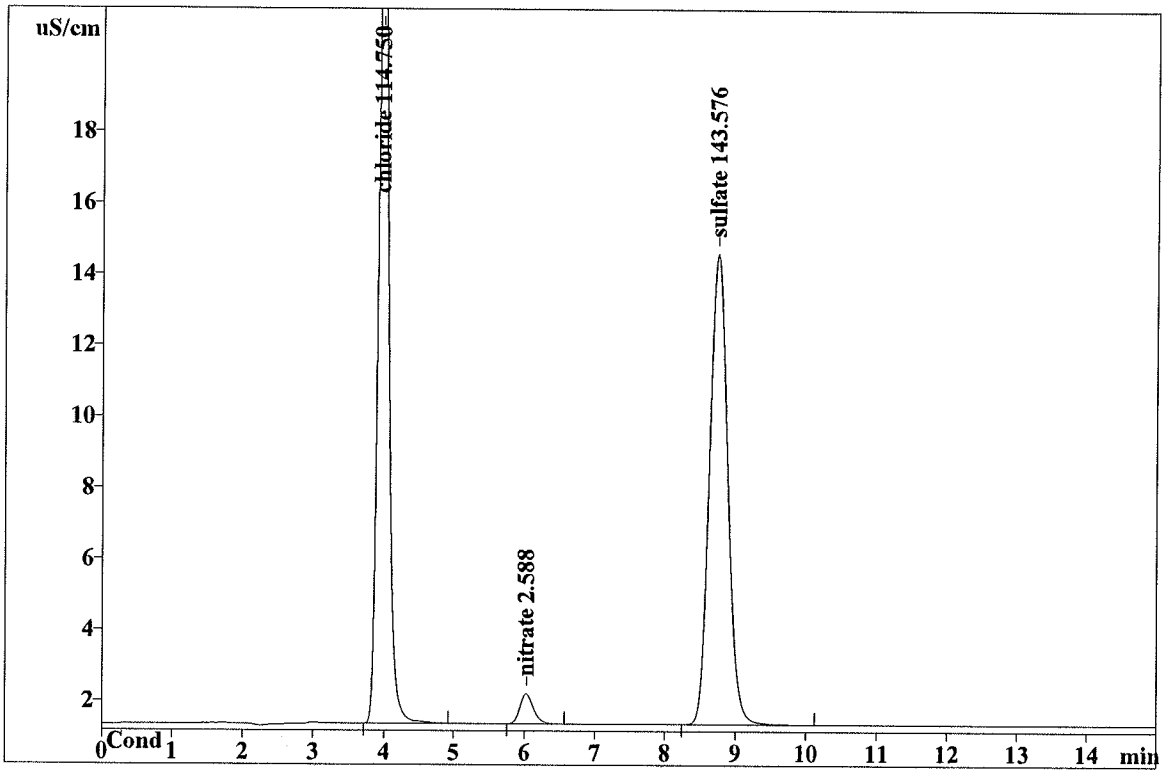
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:24:05 PM
Printed by: TWangc

Ident: AF37-20 F183-06I DF=10
Analysis from: 6/29/2020 4:00:24 PM
File: _2020-06-29_16-00.chw Last save: 6/29/2020 4:15:21 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159575

SAMPLE: METHOD300/9056/4110B
:
Vial number: 20
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	24.56	242.558	114.750	chloride
2	6.03	0.84	11.253	2.588	nitrate
3	8.74	13.21	236.603	143.576	sulfate ✓
3	15.00	38.62	490.414	260.914	

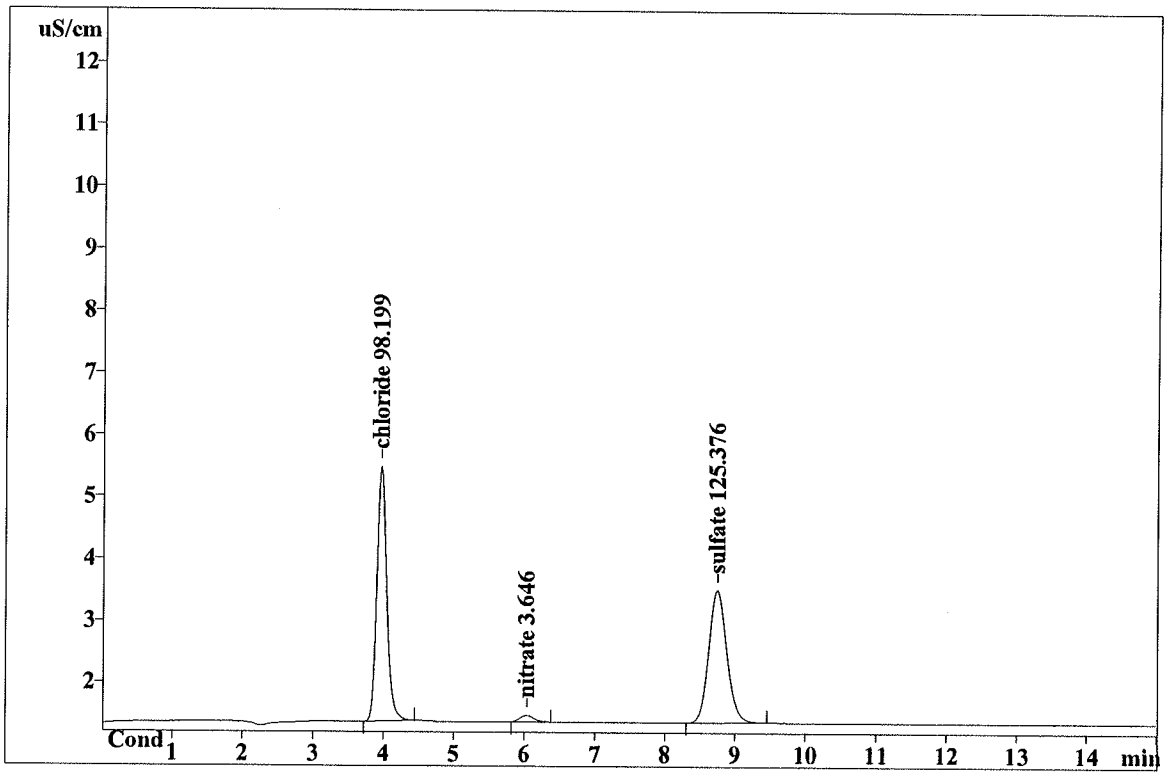
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:24:29 PM
Printed by: TWangc

Ident: AF37-21 F183-06J DF=50
Analysis from: 6/29/2020 4:17:29 PM
File: _2020-06-29_16-17.chw Last save: 6/29/2020 4:32:26 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159576

SAMPLE: METHOD300/9056/4110B
:
Vial number: 21
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	4.11	39.909	98.199	chloride ✓
2	6.03	0.10	1.398	3.646	nitrate
3	8.74	2.14	38.313	125.376	sulfate
3	15.00	6.36	79.620	227.222	

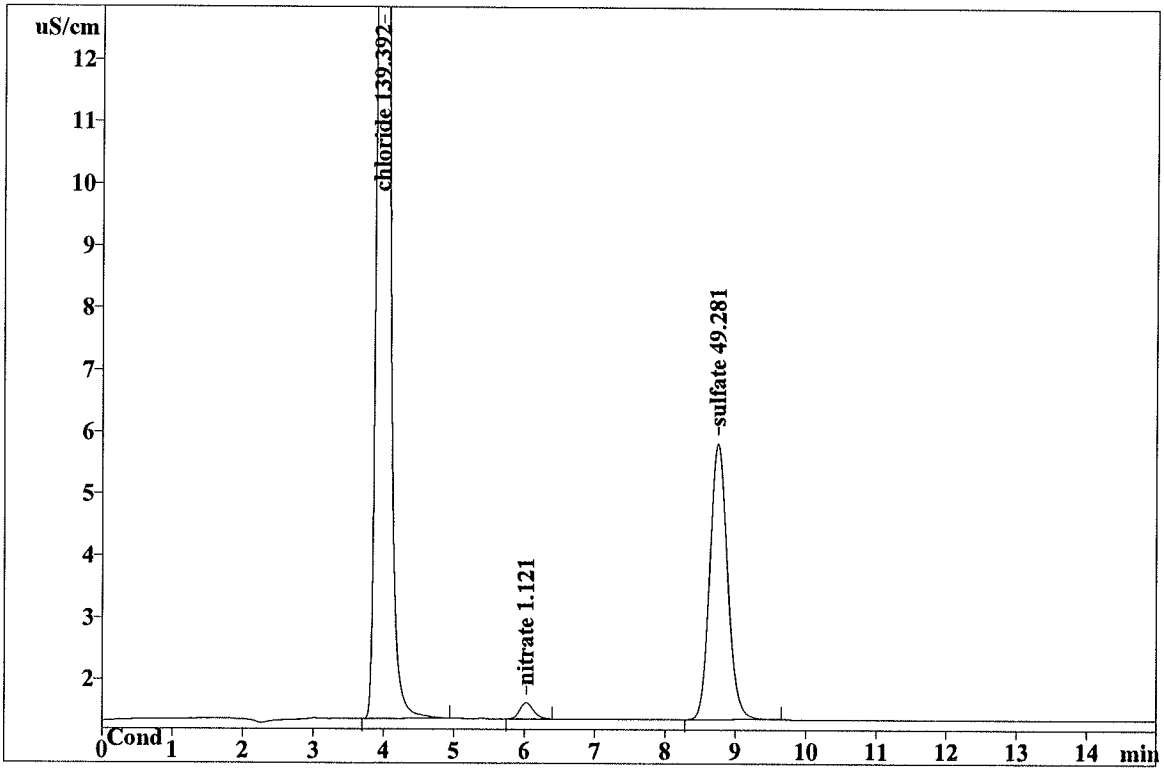
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:24:43 PM
Printed by: TWangc

Ident: AF37-22 F183-07I DF=10
Analysis from: 6/29/2020 4:34:33 PM
File: _2020-06-29_16-34.chw Last save: 6/29/2020 4:49:30 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159577

SAMPLE: METHOD300/9056/4110B
:
Vial number: 22
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	29.87	295.062	139.392	chloride
2	6.03	0.26	3.475	1.121	nitrate
3	8.75	4.46	78.816	49.281	sulfate ✓
3	15.00	34.59	377.354	189.793	

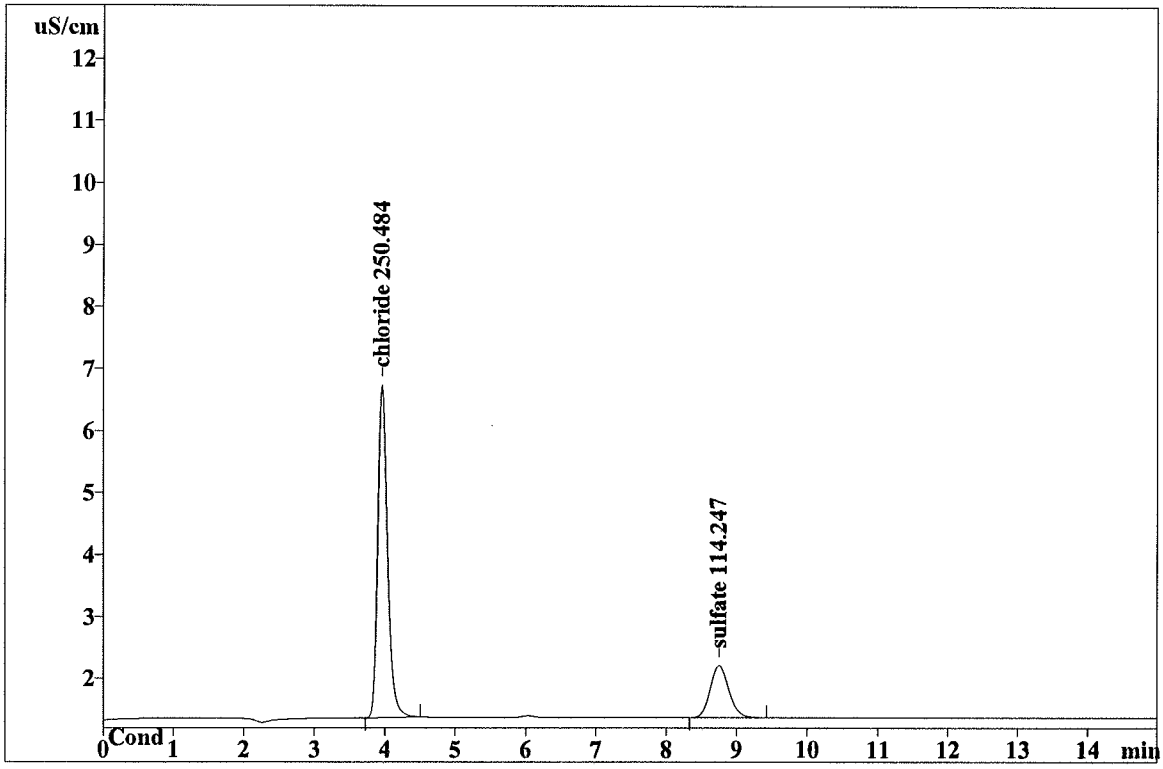
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:25:00 PM
Printed by: TWangc

Ident: AF37-23 F183-07J DF=100
Analysis from: 6/29/2020 4:51:38 PM
File: _2020-06-29_16-51.chw Last save: 6/29/2020 5:06:35 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159578

SAMPLE: METHOD300/9056/4110B
:
Vial number: 23
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	5.37	51.433	250.484	chloride ✓
2	8.75	0.84	15.471	114.247	sulfate
2	15.00	6.21	66.904	364.731	

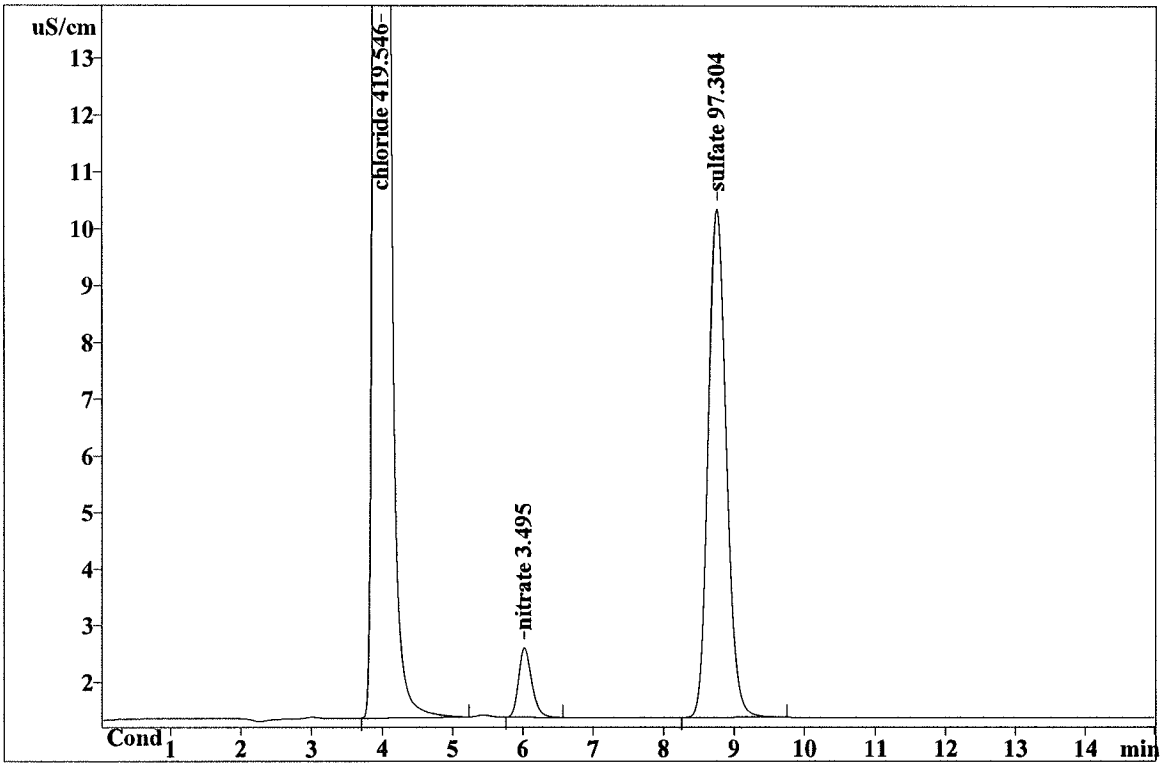
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:41:15 PM
Printed by: TWangc

Ident: AF37-24 F183-08I DF=10
Analysis from: 6/29/2020 5:08:43 PM
File: _2020-06-29_17-08.chw Last save: 6/29/2020 5:23:40 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159579

SAMPLE: METHOD300/9056/4110B
:
Vial number: 24
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	88.40	891.984	419.546	chloride
2	6.02	1.23	16.061	3.495	nitrate
3	8.75	8.98	159.175	97.304	sulfate ✓
3	15.00	98.61	1067.219	520.344	

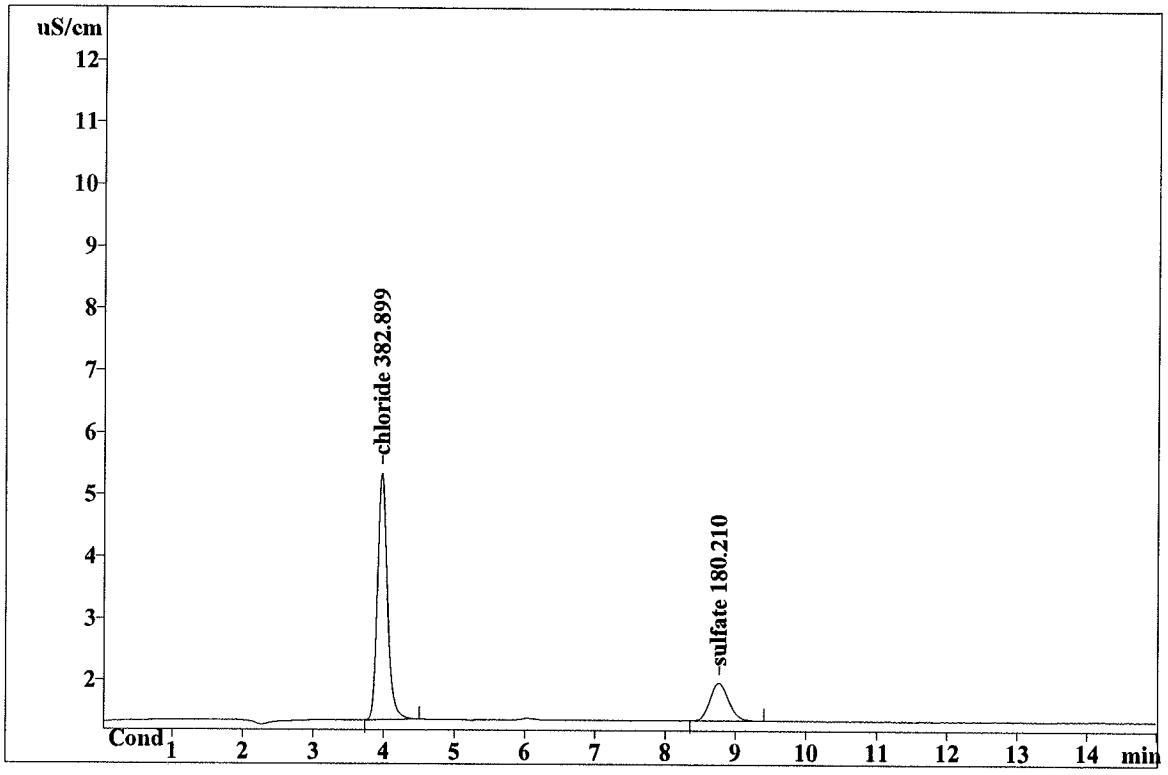
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:29:17 PM
Printed by: TWangc

Ident: AF37-36 F183-08J DF=200
Analysis from: 6/29/2020 8:33:40 PM
File: _2020-06-29_20-33.chw Last save: 6/29/2020 8:48:37 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159591

SAMPLE: METHOD300/9056/4110B
:
Vial number: 36
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	3.99	38.854	382.899	chloride ✓
2	8.76	0.61	11.432	180.210	sulfate
2	15.00	4.60	50.286	563.109	

This report has been created by IC Net
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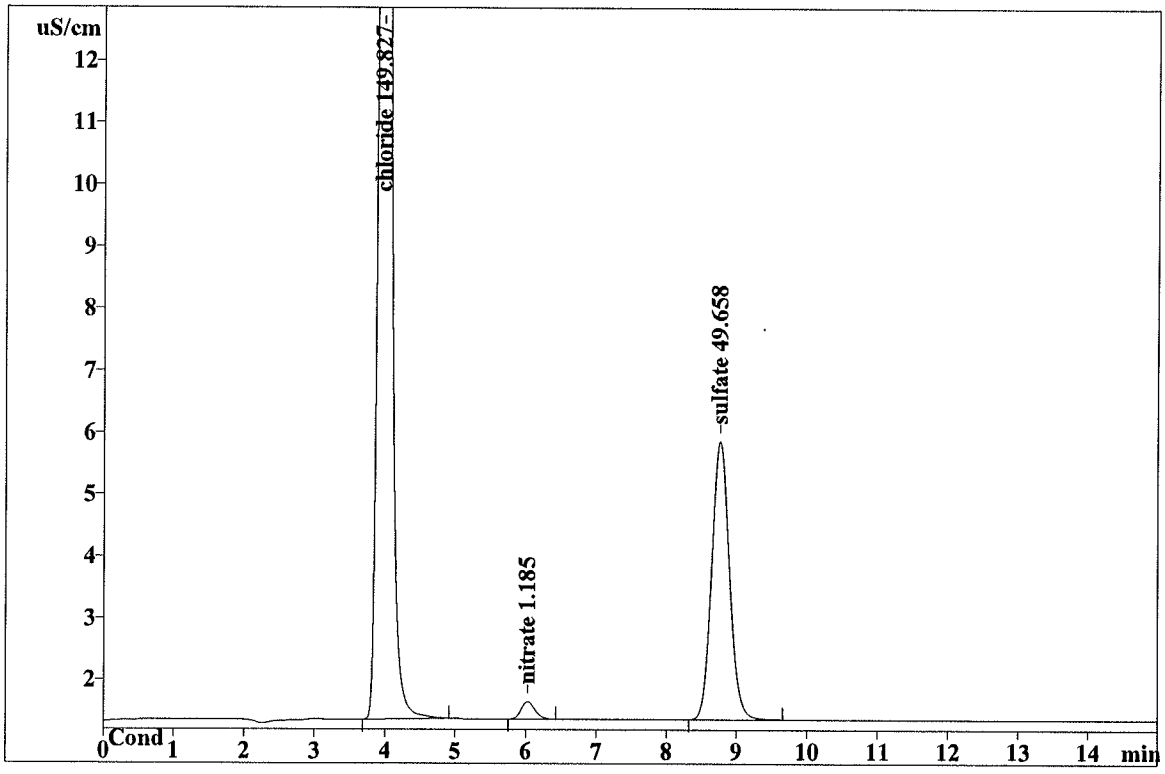
Report date: 7/2/2020 12:26:57 PM
Printed by: TWangc

Ident: AF37-28 F183-12I DF=10
Analysis from: 6/29/2020 6:17:02 PM
File: _2020-06-29_18-17.chw Last save: 6/29/2020 6:31:59 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159583

SAMPLE: METHOD300/9056/4110B
:
Vial number: 28
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	31.99	317.296	149.827	chloride
2	6.03	0.28	3.813	1.185	nitrate
3	8.76	4.50	79.448	49.658	sulfate ✓
3	15.00	36.78	400.557	200.669	

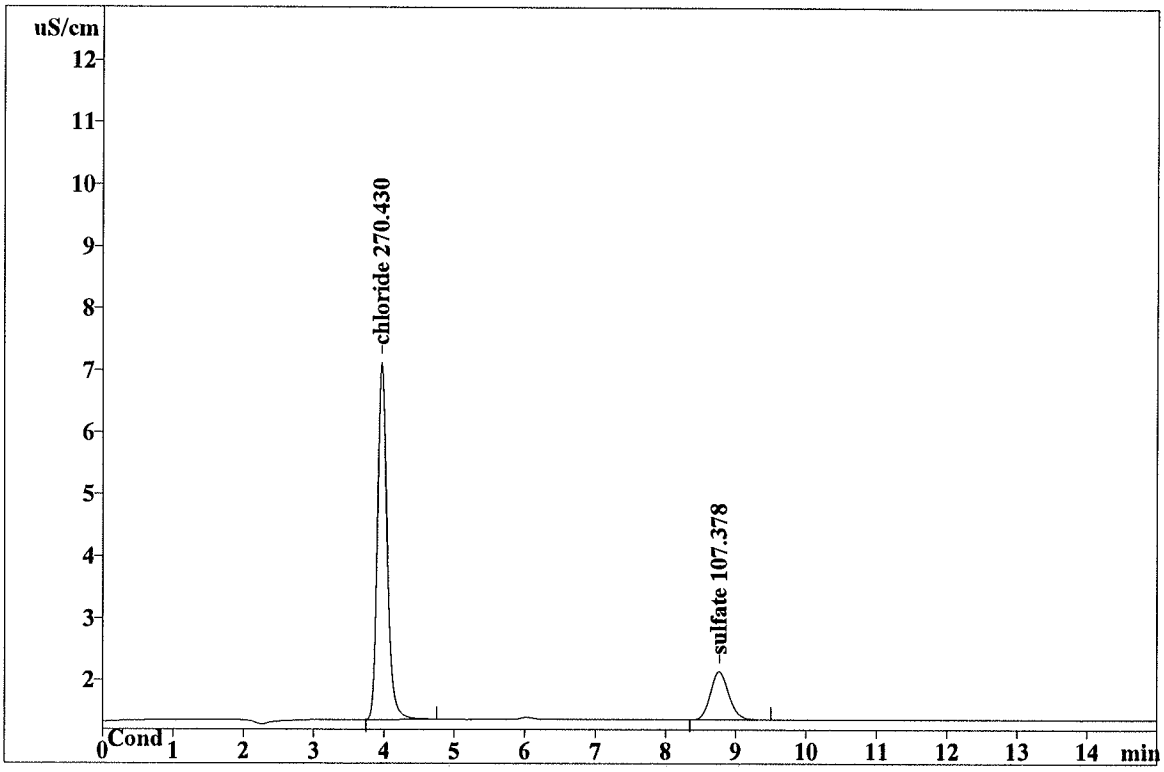
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:27:11 PM
Printed by: TWangc

Ident: AF37-29 F183-12J DF=100
Analysis from: 6/29/2020 6:34:07 PM
File: _2020-06-29_18-34.chw Last save: 6/29/2020 6:49:04 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159584

SAMPLE: METHOD300/9056/4110B
:
Vial number: 29
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	5.75	55.683	270.430	chloride ✓
2	8.76	0.78	14.322	107.378	sulfate
2	15.00	6.53	70.004	377.808	

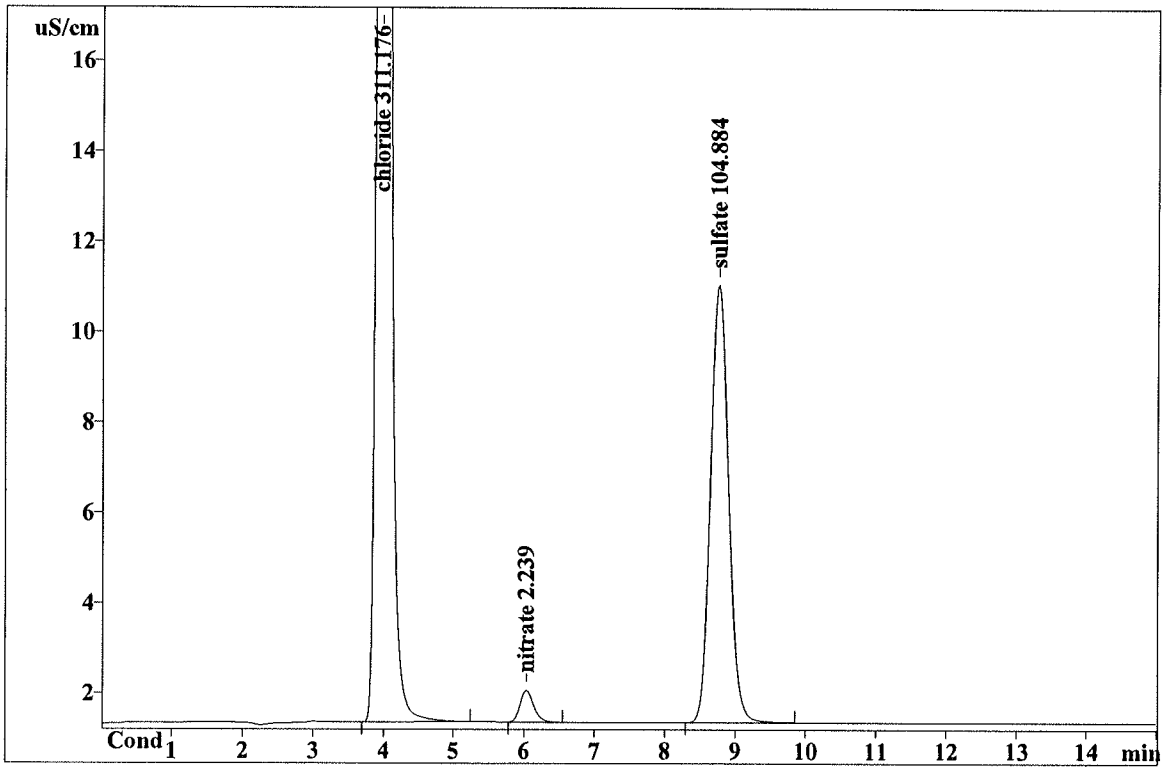
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:27:41 PM
Printed by: TWangc

Ident: AF37-32 F183-13I DF=10
Analysis from: 6/29/2020 7:25:21 PM
File: _2020-06-29_19-25.chw Last save: 6/29/2020 7:40:18 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159587

SAMPLE: METHOD300/9056/4110B
:
Vial number: 32
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	65.77	661.081	311.176	chloride
2	6.03	0.71	9.402	2.239	nitrate
3	8.76	9.67	171.859	104.884	sulfate ✓
3	15.00	76.15	842.342	418.299	

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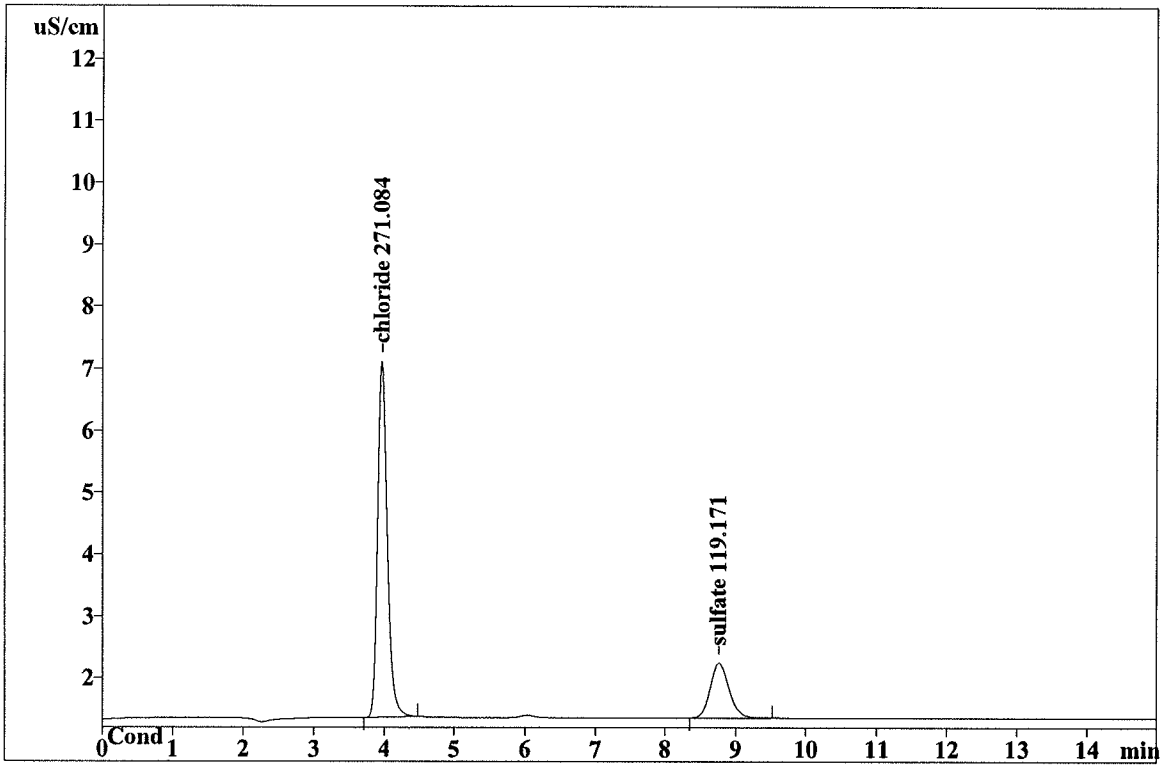
Report date: 7/2/2020 12:28:01 PM
Printed by: TWangc

Ident: AF37-33 F183-13J DF=100
Analysis from: 6/29/2020 7:42:26 PM
File: _2020-06-29_19-42.chw Last save: 6/29/2020 7:57:23 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159588

SAMPLE: METHOD300/9056/4110B
:
Vial number: 33
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	5.76	55.822	271.084	chloride ✓
2	8.76	0.88	16.295	119.171	sulfate
2	15.00	6.64	72.117	390.255	

This report has been created by IC Net
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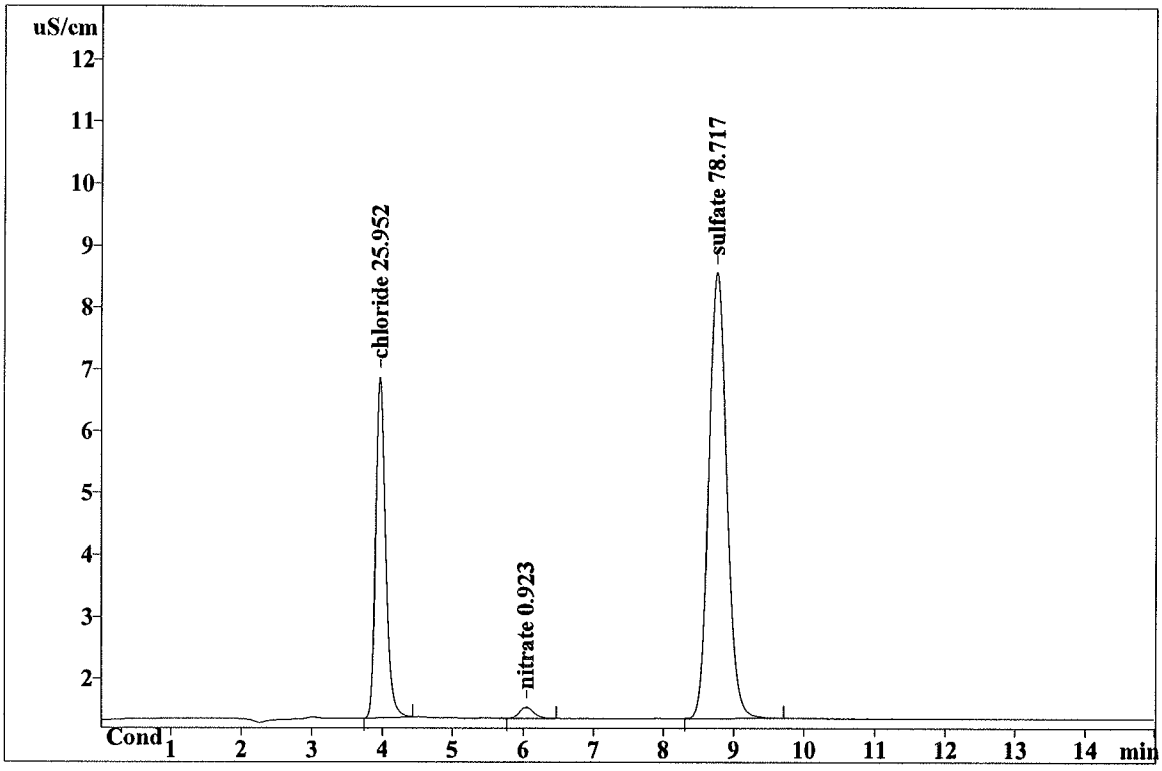
Report date: 7/2/2020 12:28:22 PM
Printed by: TWangc

Ident: AF37-34 F183-14I DF=10
Analysis from: 6/29/2020 7:59:31 PM
File: _2020-06-29_19-59.chw Last save: 6/29/2020 8:14:28 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159589

SAMPLE: METHOD300/9056/4110B
:
Vial number: 34
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.96	5.52	53.357	25.952	chloride ✓
2	6.04	0.18	2.426	0.923	nitrate
3	8.75	7.22	128.073	78.717	sulfate ✓
3	15.00	12.91	183.856	105.592	

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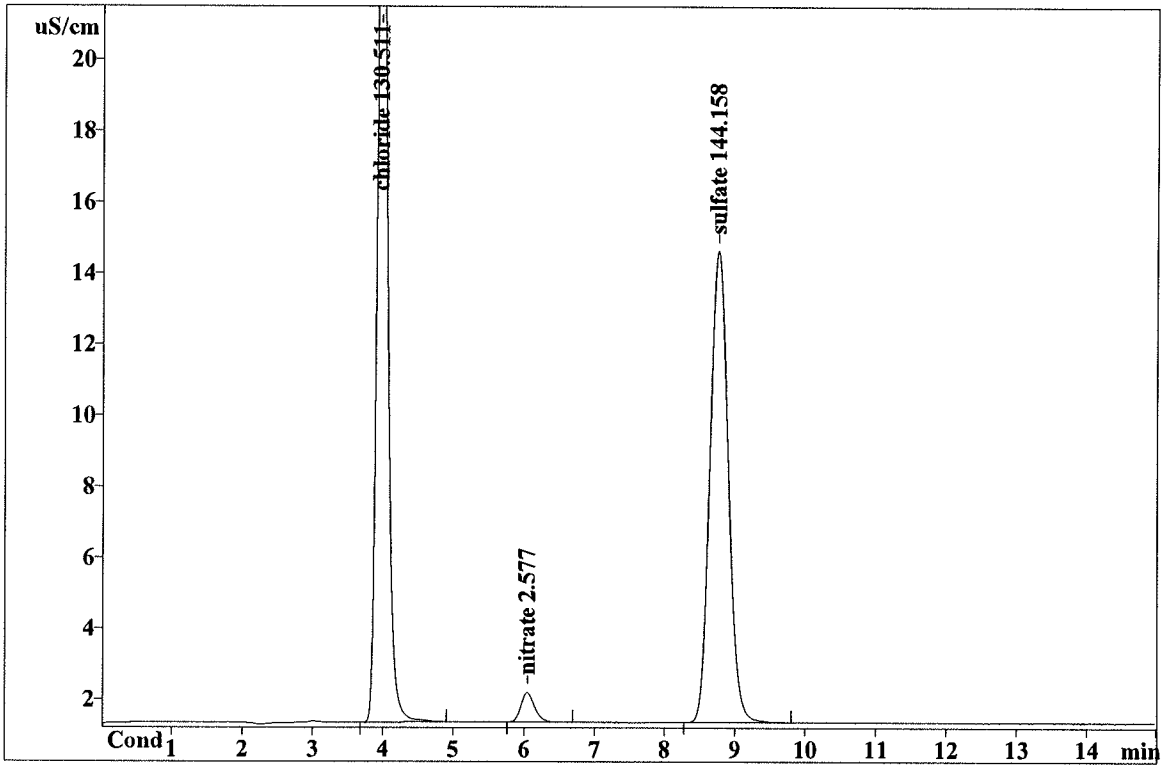
Report date: 7/2/2020 12:31:18 PM
Printed by: TWangc

Ident: AF37-40 F183-15I DF=10
Analysis from: 6/29/2020 9:41:59 PM
File: _2020-06-29_21-41.chw Last save: 6/29/2020 9:56:56 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159595

SAMPLE: METHOD300/9056/4110B
:
Vial number: 40
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	27.76	276.141	130.511	chloride
2	6.04	0.83	11.195	2.577	nitrate
3	8.76	13.26	237.576	144.158	sulfate ✓
3	15.00	41.85	524.912	277.246	

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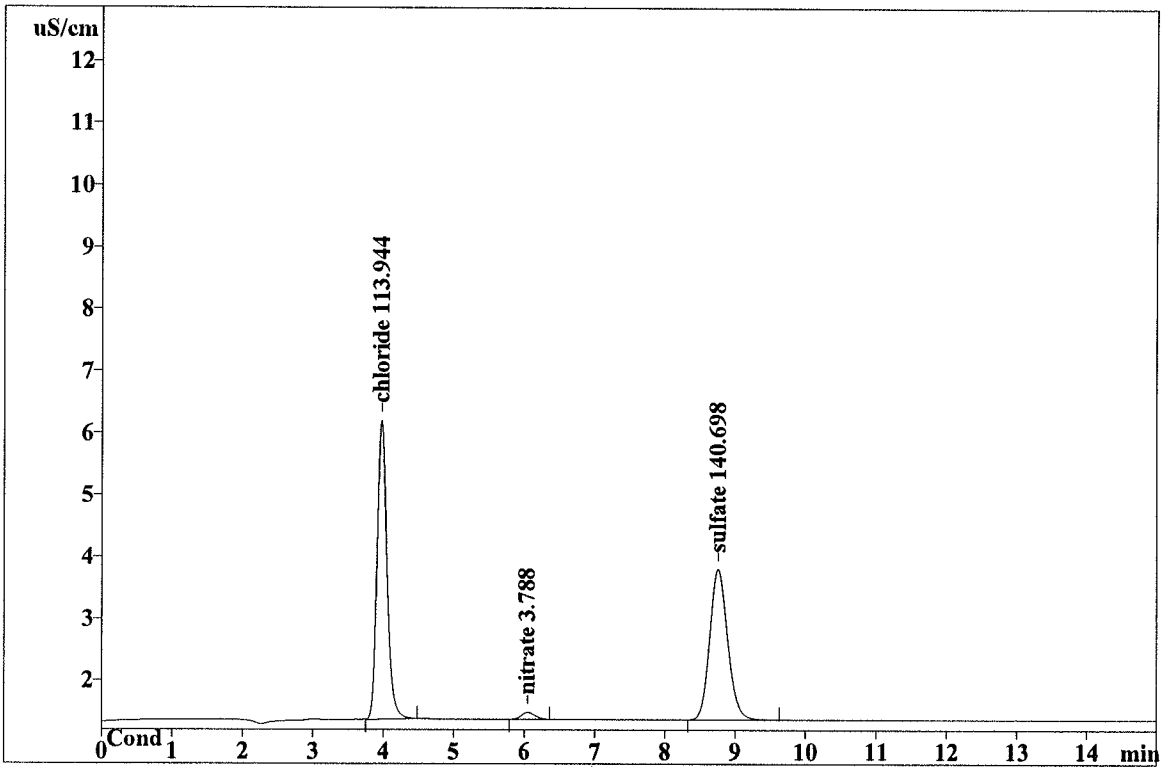
Report date: 7/2/2020 12:31:42 PM
Printed by: TWangc

Ident: AF37-41 F183-15J DF=50
Analysis from: 6/29/2020 9:59:03 PM
File: _2020-06-29_21-59.chw Last save: 6/29/2020 10:14:00 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159596

SAMPLE: METHOD300/9056/4110B
:
Vial number: 41
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	4.83	46.618	113.944	chloride ✓
2	6.05	0.11	1.548	3.788	nitrate
3	8.75	2.43	43.441	140.698	sulfate
3	15.00	7.38	91.607	258.430	

This report has been created by IC Net
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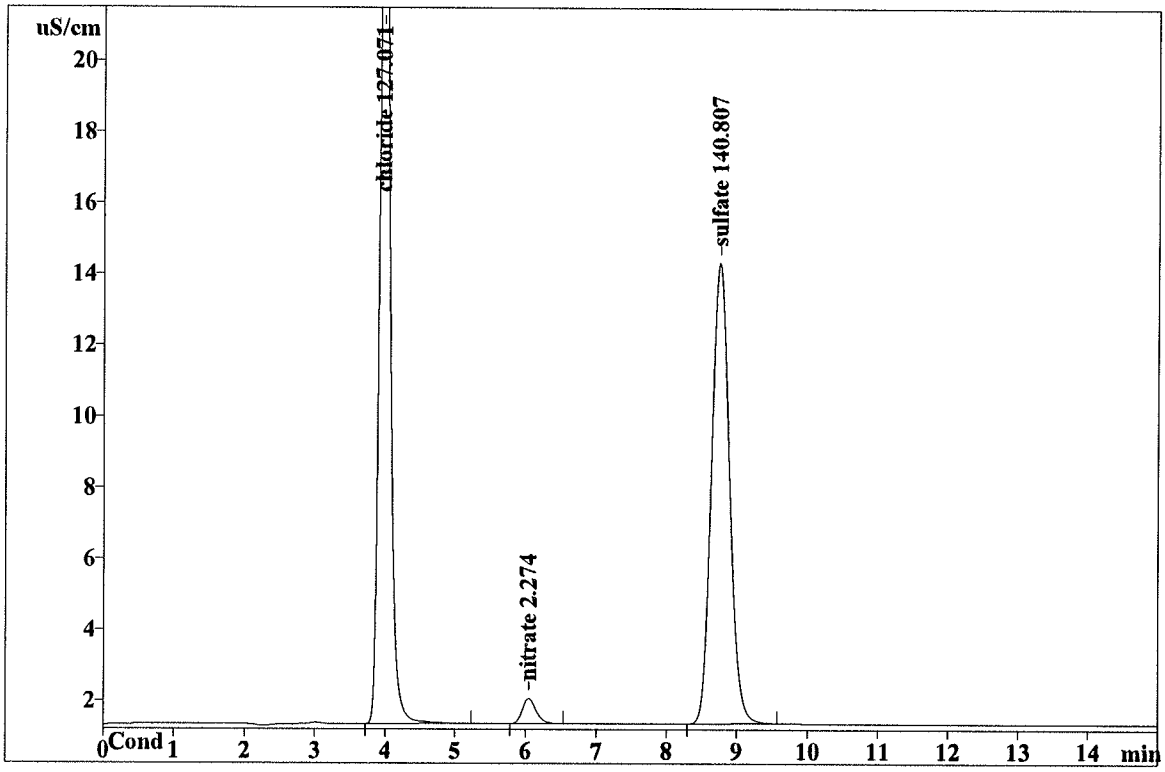
Report date: 7/2/2020 12:32:01 PM
Printed by: TWangc

Ident: AF37-44 F183-16I DF=10
Analysis from: 6/29/2020 10:50:17 PM
File: _2020-06-29_22-50.chw Last save: 6/29/2020 11:05:14 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159599

SAMPLE: METHOD300/9056/4110B
:
Vial number: 44
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	27.02	268.811	127.071	chloride
2	6.05	0.71	9.589	2.274	nitrate
3	8.75	12.94	231.969	140.807	sulfate
3	15.00	40.67	510.369	270.151	

This report has been created by IC Net
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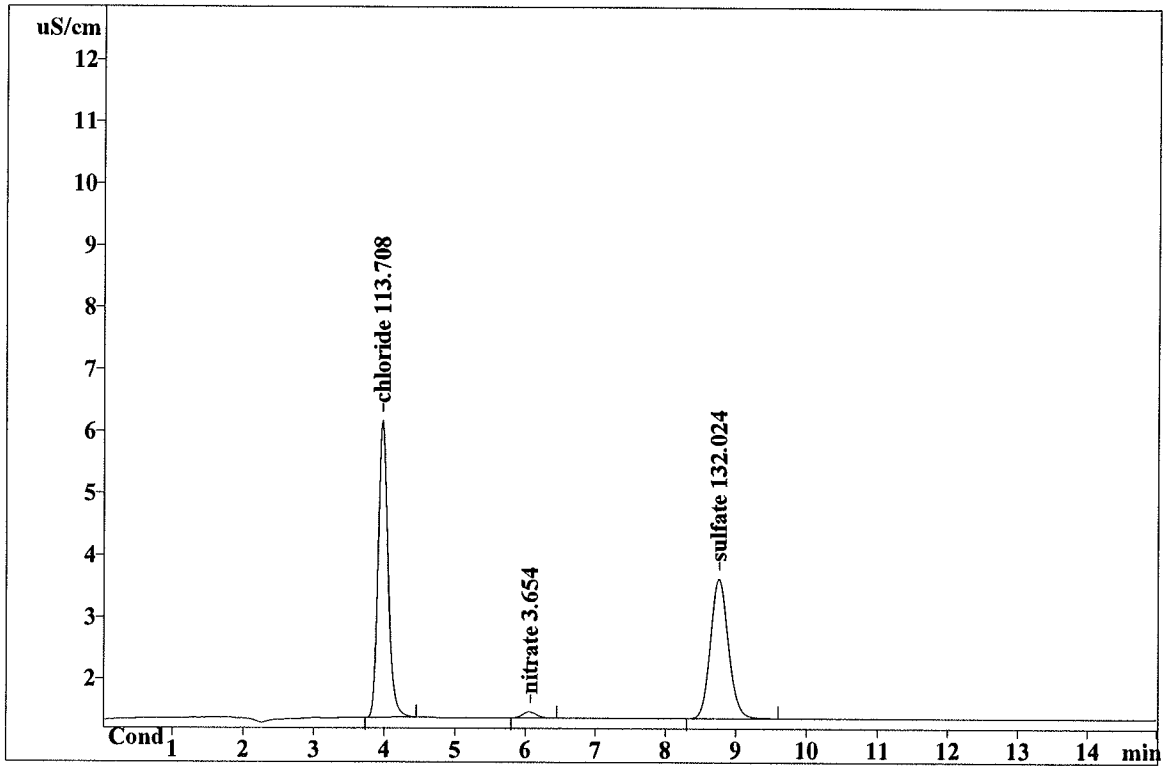
Report date: 7/2/2020 12:32:24 PM
Printed by: TWangc

Ident: AF37-45 F183-16J DF=50
Analysis from: 6/29/2020 11:07:22 PM
File: _2020-06-29_23-07.chw Last save: 6/29/2020 11:22:19 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159600

SAMPLE: METHOD300/9056/4110B
:
Vial number: 45
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	4.79	46.518	113.708	chloride ✓
2	6.06	0.10	1.406	3.654	nitrate
3	8.75	2.26	40.538	132.024	sulfate
3	15.00	7.16	88.461	249.386	

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF039WB	ICF039WL	ICF039WC
LAB FILE ID :	AF37-03	AF37-04	AF37-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/29/2010:55	06/29/2011:13	06/29/2011:30
PREP BATCH :	ICF039W	ICF039W	ICF039W
CALIBRATION REF:	AF37-01	AF37-01	AF37-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.88	94	2	1.90	95	1	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK2W	LCS2W	LCD2W
LAB SAMPLE ID :	ICF041WB	ICF041WL	ICF041WC
LAB FILE ID :	AF39-03	AF39-04	AF39-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/30/2010:22	06/30/2010:39	06/30/2010:56
PREP BATCH :	ICF041W	ICF041W	ICF041W
CALIBRATION REF:	AF39-01	AF39-01	AF39-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.87	94	2	1.88	94	1	87-111	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	200	200	200
SAMPLE ID :	MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID :	F183-08J	F183-08JM	F183-08JS
LAB FILE ID :	AF37-36	AF37-38	AF37-39
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/29/2020:33	06/29/2021:07	06/29/2021:24
PREP BATCH :	ICF039W	ICF039W	ICF039W
CALIBRATION REF:	AF37-30	AF37-30	AF37-30

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	SPIKE AMT (mg/L)	MSD RESULT (mg/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	383	400	771	97	400	772	97	0	87-111	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX :	WATER	
DILUTION FACTOR:	200	200
SAMPLE ID :	MW08A-GW062120	MW08A-GW062120DUP
LAB SAMPLE ID :	F183-08J	F183-08JD
LAB FILE ID :	AF37-36	AF37-37
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/29/2020:33	06/29/2020:50
PREP BATCH :	ICF039W	ICF039W
CALIBRATION REF:	AF37-30	AF37-30

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Chloride	383	386	1	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF039WB	ICF039WL	ICF039WC
LAB FILE ID :	AF37-03	AF37-04	AF37-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/29/2010:55	06/29/2011:13	06/29/2011:30
PREP BATCH :	ICF039W	ICF039W	ICF039W
CALIBRATION REF:	AF37-01	AF37-01	AF37-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.65	93	5	4.79	96	3	87-112	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	10	10	10
SAMPLE ID :	MW08A-GW062120	MW08A-GW062120MS	MW08A-GW062120MSD
LAB SAMPLE ID :	F183-08I	F183-08IM	F183-08IS
LAB FILE ID :	AF37-24	AF37-26	AF37-27
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/29/2017:08	06/29/2017:42	06/29/2017:59
PREP BATCH :	ICF039W	ICF039W	ICF039W
CALIBRATION REF:	AF37-18	AF37-18	AF37-18

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	SPIKE AMT (mg/L)	MS RESULT (mg/L)	MS REC (%)	SPIKE AMT (mg/L)	MSD RESULT (mg/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	97.3	50	147	99	50	149	103	1	87-112	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : E300.0

MATRIX	: WATER	
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120DUP
LAB SAMPLE ID	: F183-08I	F183-08ID
LAB FILE ID	: AF37-24	AF37-25
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/29/2017:08	06/29/2017:25
PREP BATCH	: ICF039W	ICF039W
CALIBRATION REF	: AF37-18	AF37-18

ACCESSION:

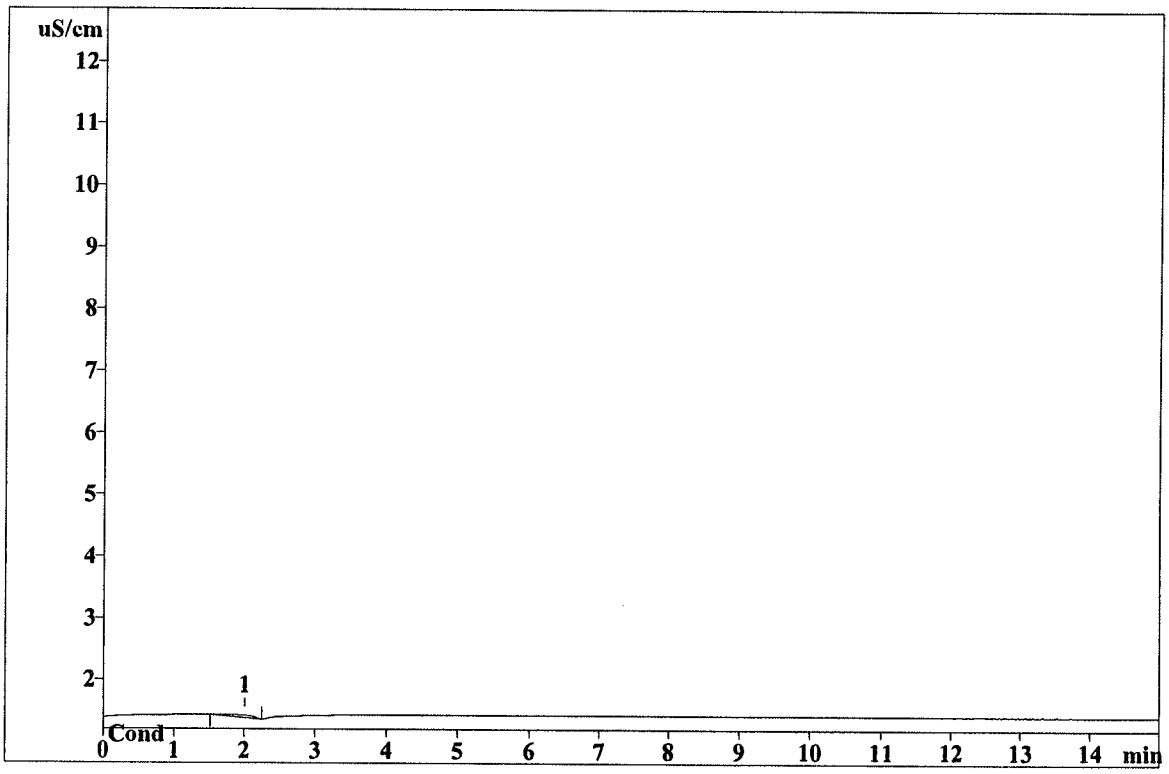
PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Sulfate	97.3	93.3	4	20

QC DATA

Report date: 7/2/2020 1:58:22 PM
Printed by: TWangc

Ident: AF39-03 ICF041WB
Analysis from: 6/30/2020 10:22:30 AM
File: _2020-06-30_10-22.chw Last save: 6/30/2020 10:37:27 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159606

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.02	0.04	1.083	0.000	

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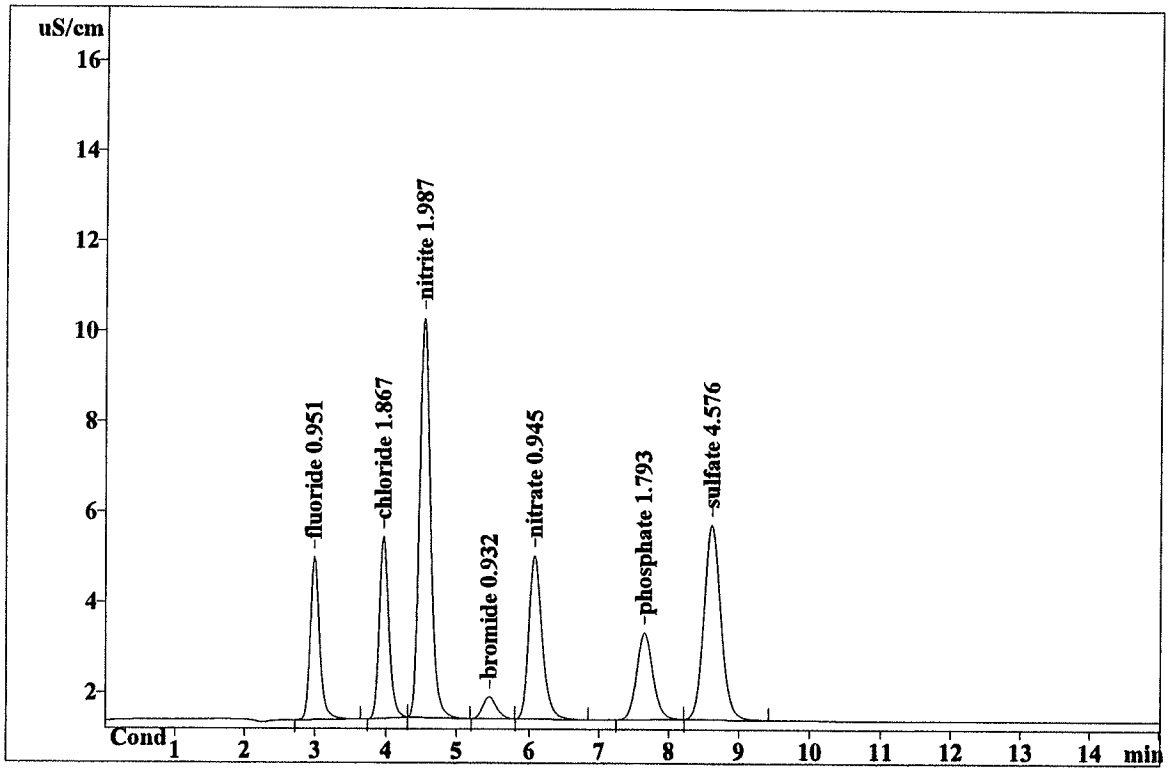
Report date: 7/2/2020 1:58:42 PM
Printed by: TWangc

Ident: AF39-04 ICF041WL
Analysis from: 6/30/2020 10:39:35 AM
File: _2020-06-30_10-39.chw Last save: 6/30/2020 11:42:02 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159607

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.59	33.017	0.951	fluoride
2	3.96	4.01	37.845	1.867	chloride
3	4.53	8.85	96.489	1.987	nitrite
4	5.44	0.49	6.537	0.932	bromide
5	6.07	3.62	47.648	0.945	nitrate
6	7.64	1.92	31.284	1.793	phosphate
7	8.60	4.30	72.925	4.576	sulfate
7	15.00	26.78	325.745	13.051	

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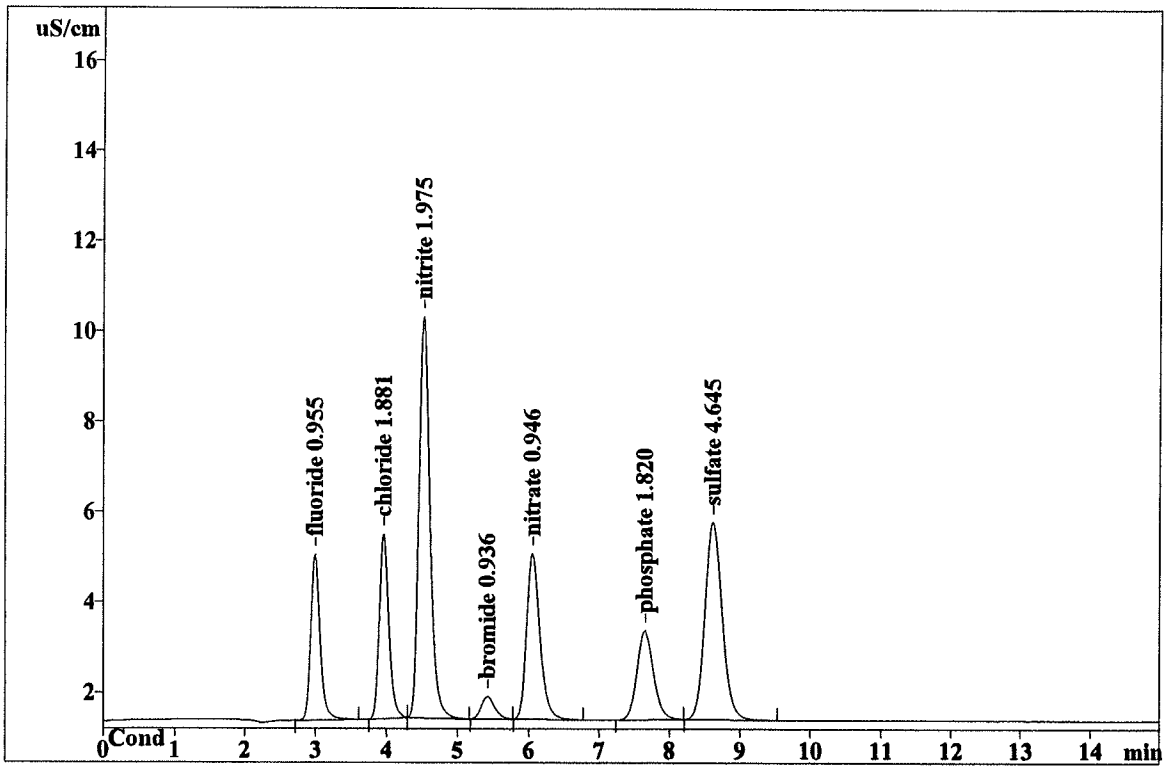
Report date: 7/2/2020 1:59:05 PM
Printed by: TWangc

Ident: AF39-05 ICF041WC
Analysis from: 6/30/2020 10:56:41 AM
File: _2020-06-30_10-56.chw Last save: 6/30/2020 11:11:38 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159608

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.65	33.174	0.955	fluoride
2	3.95	4.08	38.138	1.881	chloride
3	4.52	8.87	95.887	1.975	nitrite
4	5.42	0.49	6.573	0.936	bromide
5	6.05	3.66	47.714	0.946	nitrate
6	7.65	1.96	31.814	1.820	phosphate
7	8.61	4.36	74.072	4.645	sulfate
7	15.00	27.07	327.372	13.158	

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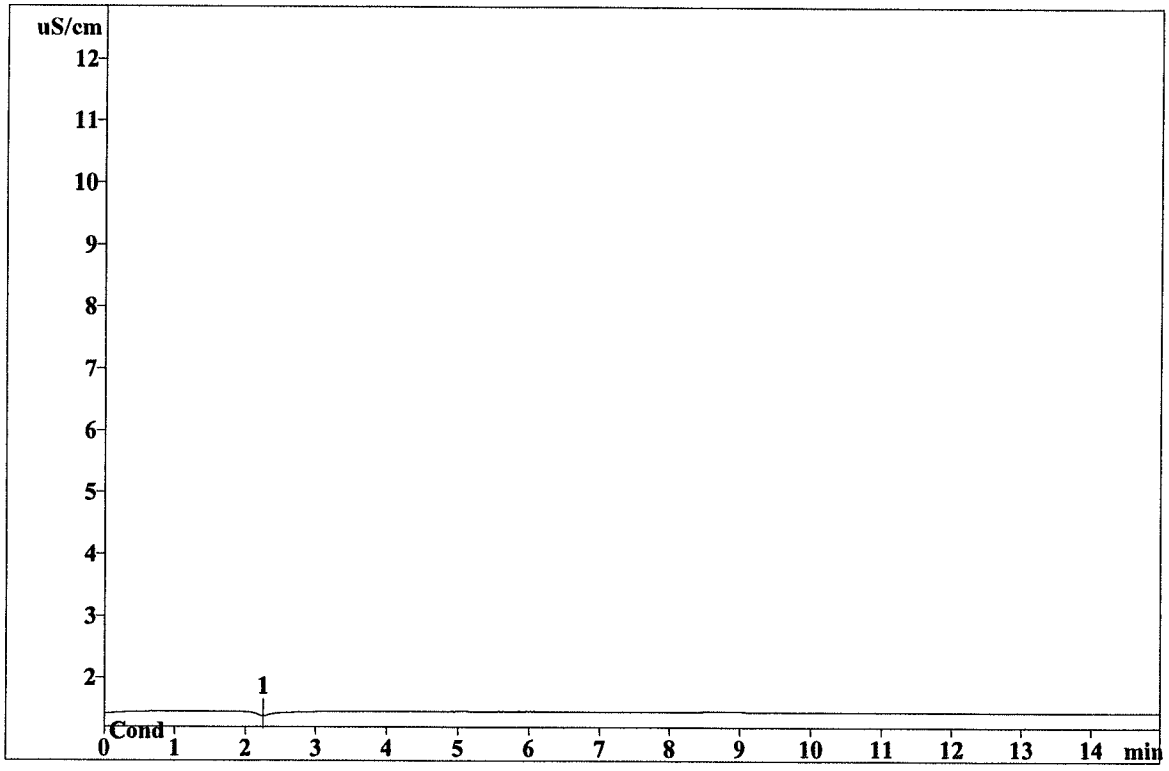
Report date: 6/30/2020 10:54:09 AM
Printed by: TWangc

Ident: AF37-03 ICF039WB
Analysis from: 6/29/2020 10:55:57 AM
File: _2020-06-29_10-55.chw Last save: 6/29/2020 11:10:54 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159558

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

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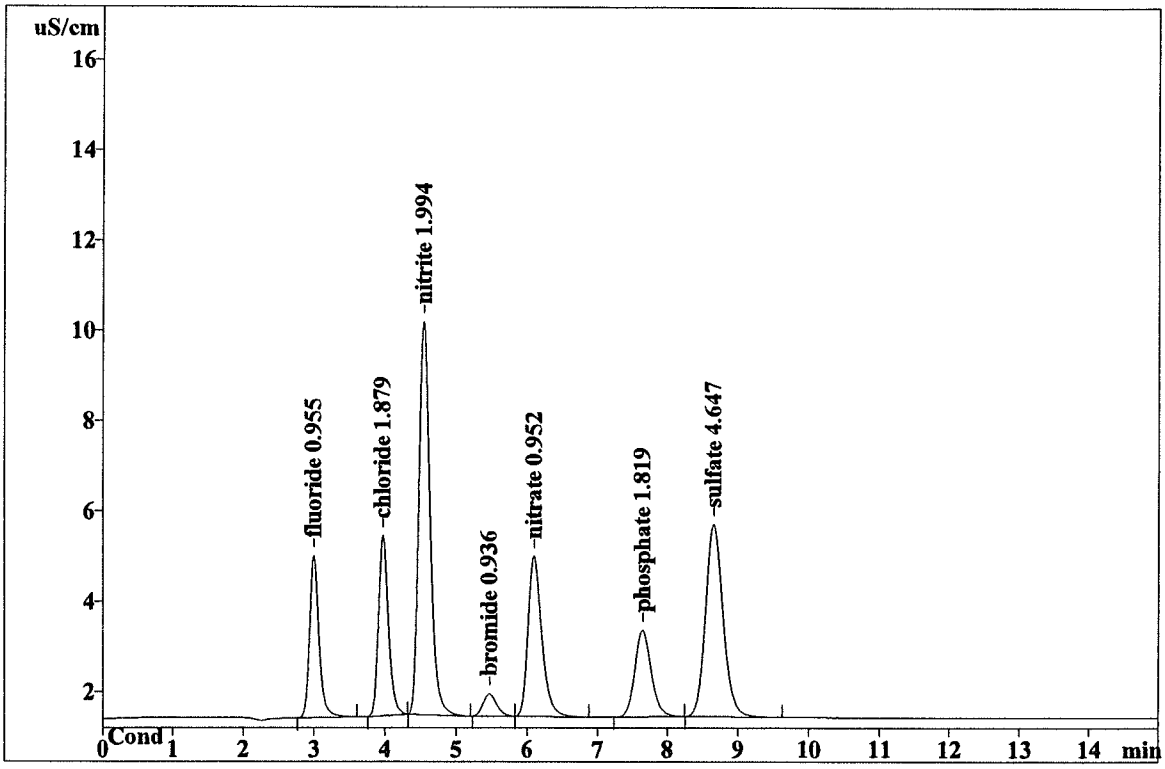
Report date: 6/30/2020 10:54:31 AM
Printed by: TWangc

Ident: AF37-04 ICF039WL
Analysis from: 6/29/2020 11:13:02 AM
File: _2020-06-29_11-13.chw Last save: 6/29/2020 11:27:59 AM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159559

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.58	33.168	0.955	fluoride
2	3.97	3.98	38.089	1.879	chloride
3	4.54	8.71	96.857	1.994	nitrite
4	5.46	0.49	6.579	0.936	bromide
5	6.10	3.54	47.988	0.952	nitrate
6	7.64	1.92	31.792	1.819	phosphate
7	8.65	4.24	74.107	4.647	sulfate
7	15.00	26.47	328.581	13.182	

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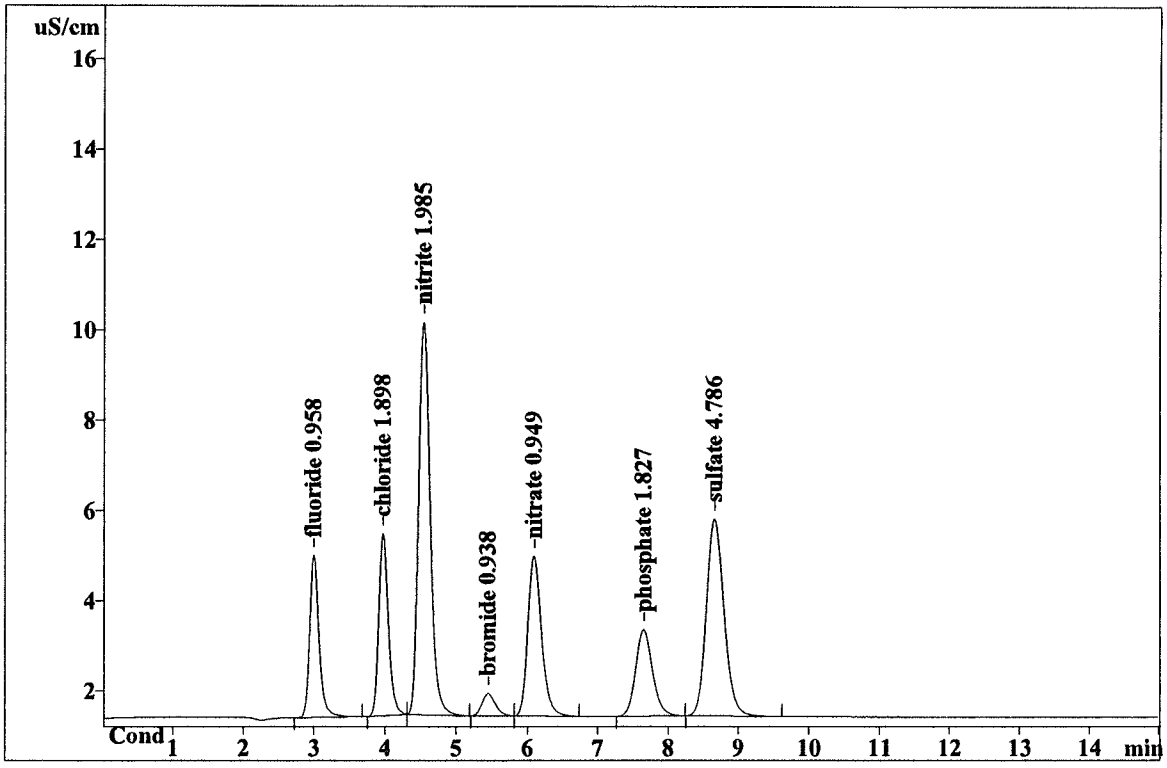
Report date: 6/30/2020 10:54:45 AM
Printed by: TWangc

Ident: AF37-05 ICF039WC
Analysis from: 6/29/2020 11:30:06 AM
File: _2020-06-29_11-30.chw Last save: 6/29/2020 11:45:03 AM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159560

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.59	33.258	0.958	fluoride
2	3.97	4.03	38.513	1.898	chloride
3	4.54	8.70	96.407	1.985	nitrite
4	5.45	0.50	6.594	0.938	bromide
5	6.09	3.55	47.831	0.949	nitrate
6	7.65	1.93	31.949	1.827	phosphate
7	8.66	4.38	76.441	4.786	sulfate
7	15.00	26.68	330.993	13.341	

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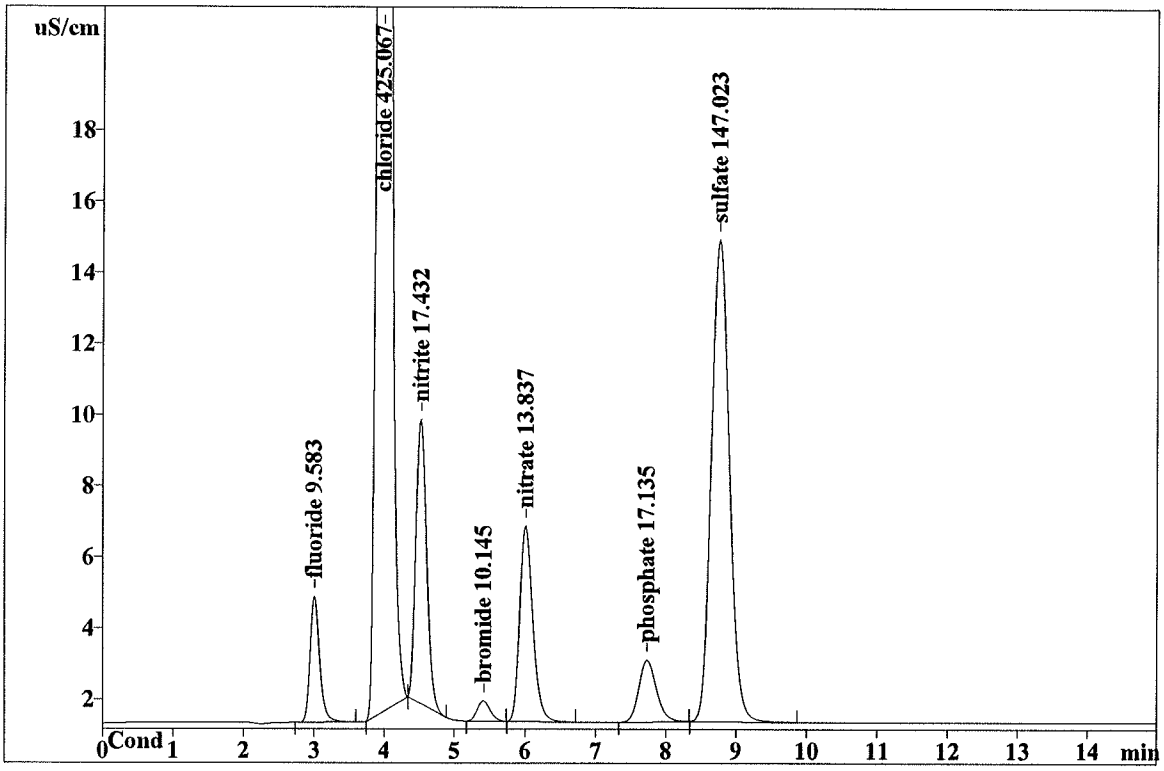
Report date: 7/2/2020 12:26:01 PM
Printed by: TWangc

Ident: AF37-26 F183-08IM DF=10
Analysis from: 6/29/2020 5:42:53 PM
File: _2020-06-29_17-42.chw Last save: 6/29/2020 5:57:50 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159581

SAMPLE: METHOD300/9056/4110B
:
Vial number: 26
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

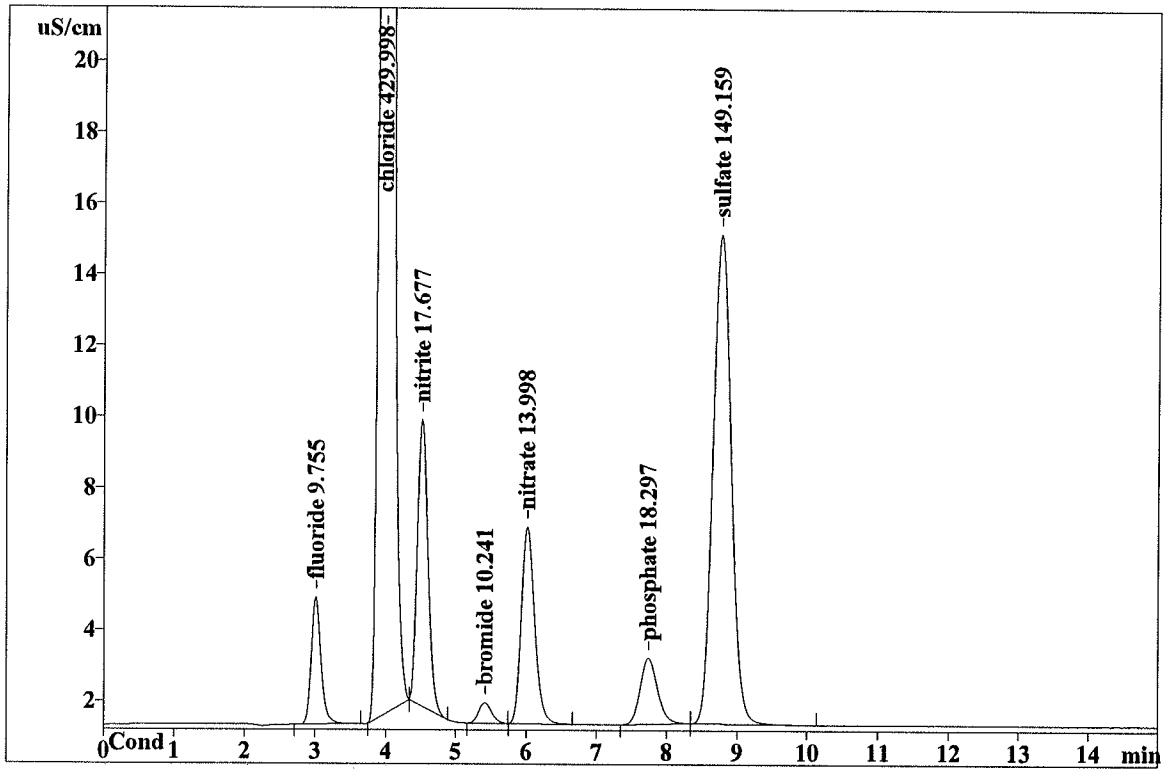
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.53	33.281	9.583	fluoride
2	3.97	91.05	903.749	425.067	chloride
3	4.51	7.98	84.408	17.432	nitrite
4	5.41	0.57	7.297	10.145	bromide
5	6.00	5.49	70.896	13.837	nitrate
6	7.73	1.73	29.745	17.135	phosphate
7	8.76	13.55	242.371	147.023	sulfate ✓
7	15.00	123.90	1371.746	640.221	

This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:26:30 PM
Printed by: TWangc

Ident: AF37-27 F183-08IS DF=10
Analysis from: 6/29/2020 5:59:57 PM
File: _2020-06-29_17-59.chw Last save: 6/29/2020 6:14:54 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159582

SAMPLE: METHOD300/9056/4110B
:
Vial number: 27
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.57	33.902	9.755	fluoride
2	3.97	91.65	914.254	429.998	chloride
3	4.52	8.04	85.623	17.677	nitrite
4	5.41	0.58	7.385	10.241	bromide
5	6.01	5.53	71.749	13.998	nitrate
6	7.74	1.86	31.994	18.297	phosphate
7	8.76	13.76	245.945	149.159	sulfate ✓
7	15.00	124.99	1390.852	649.123	

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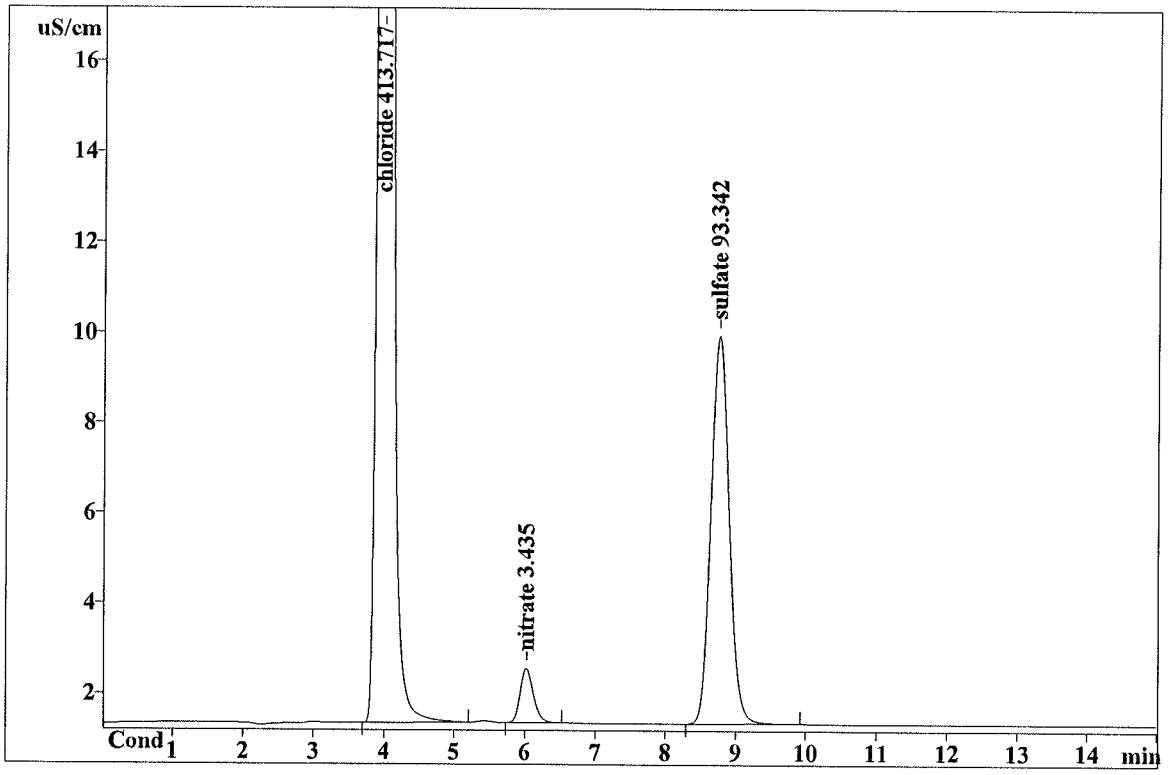
Report date: 7/2/2020 5:14:36 PM
Printed by: TWangc

Ident: AF37-25 F183-08ID DF=10
Analysis from: 6/29/2020 5:25:48 PM
File: _2020-06-29_17-25.chw Last save: 7/2/2020 4:30:14 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159580

SAMPLE: METHOD300/9056/4110B
:
Vial number: 25
Volume: 1.0 µL
Dilution: 10.00
Amount: 1.0000



Quantitation method: Custom

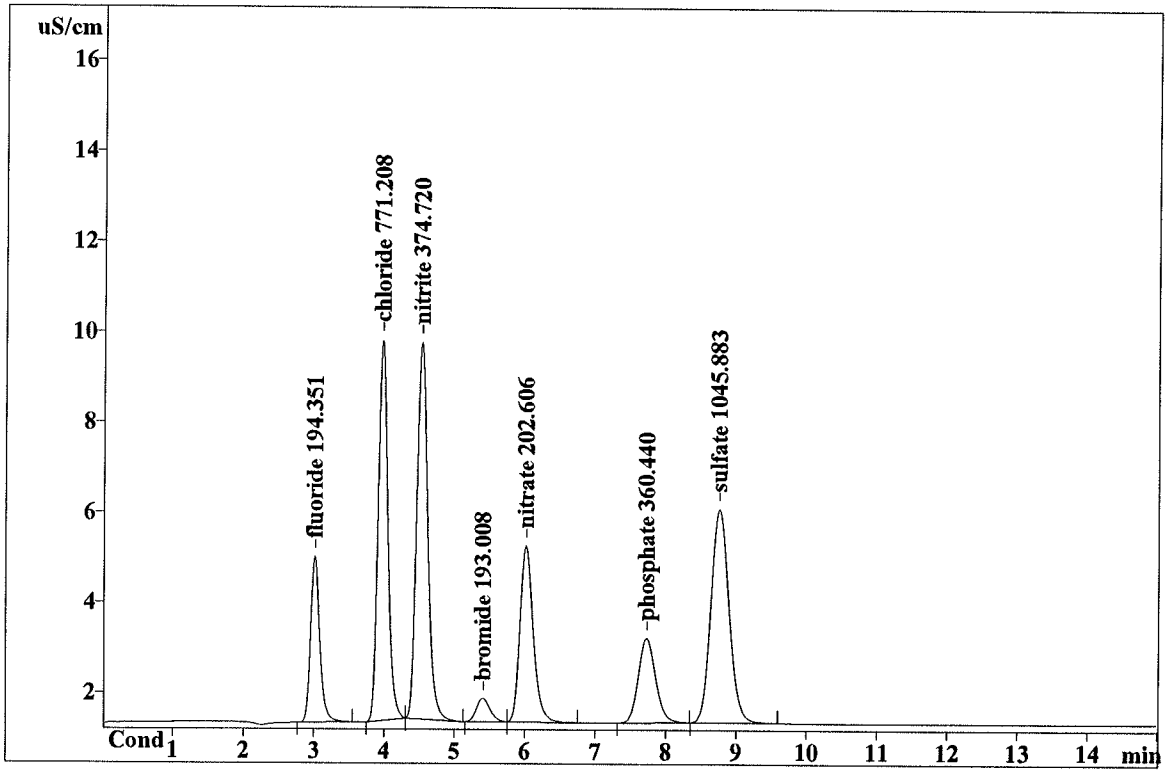
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	87.03	879.566	413.717	chloride
2	6.02	1.20	15.745	3.435	nitrate
3	8.76	8.59	152.546	93.342	sulfate ✓
3	15.00	96.82	1047.856	510.495	

This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:30:01 PM
Printed by: TWangc

Ident: AF37-38 F183-08JM DF=200
Analysis from: 6/29/2020 9:07:50 PM
File: _2020-06-29_21-07.chw Last save: 6/29/2020 9:22:47 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159593

SAMPLE: METHOD300/9056/4110B
:
Vial number: 38
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.67	33.768	194.351	fluoride
2	3.96	8.44	80.223	771.208	chloride ✓
3	4.52	8.35	90.879	374.720	nitrite
4	5.40	0.51	6.843	193.008	bromide
5	6.01	3.90	51.243	202.606	nitrate
6	7.72	1.86	31.462	360.440	phosphate
7	8.76	4.73	83.859	1045.883	sulfate
7	15.00	31.47	378.277	3142.216	

This report has been created by IC Net
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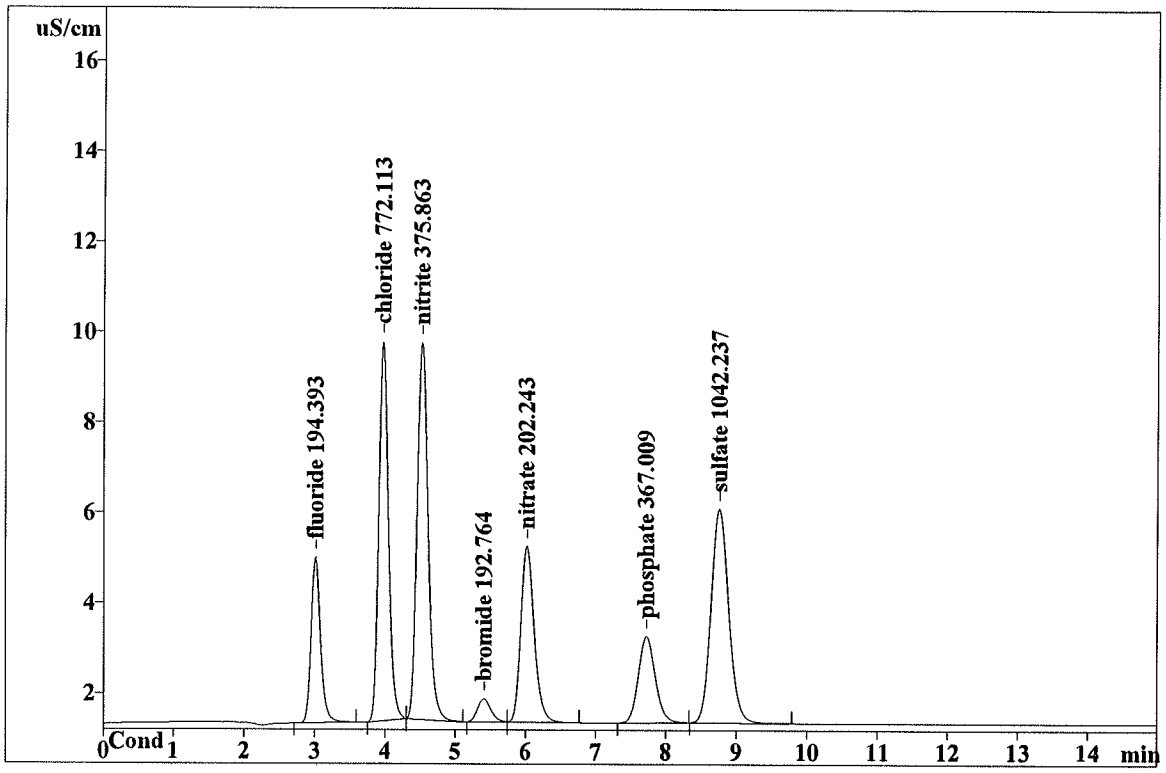
Report date: 7/2/2020 12:30:30 PM
Printed by: TWangc

Ident: AF37-39 F183-08JS DF=200
Analysis from: 6/29/2020 9:24:54 PM
File: _2020-06-29_21-24.chw Last save: 6/29/2020 9:39:51 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159594

SAMPLE: METHOD300/9056/4110B
:
Vial number: 39
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.65	33.776	194.393	fluoride
2	3.96	8.40	80.319	772.113	chloride ✓
3	4.52	8.34	91.162	375.863	nitrite
4	5.40	0.51	6.832	192.764	bromide
5	6.02	3.88	51.147	202.243	nitrate
6	7.72	1.90	32.098	367.009	phosphate
7	8.75	4.71	83.554	1042.237	sulfate
7	15.00	31.40	378.888	3146.621	

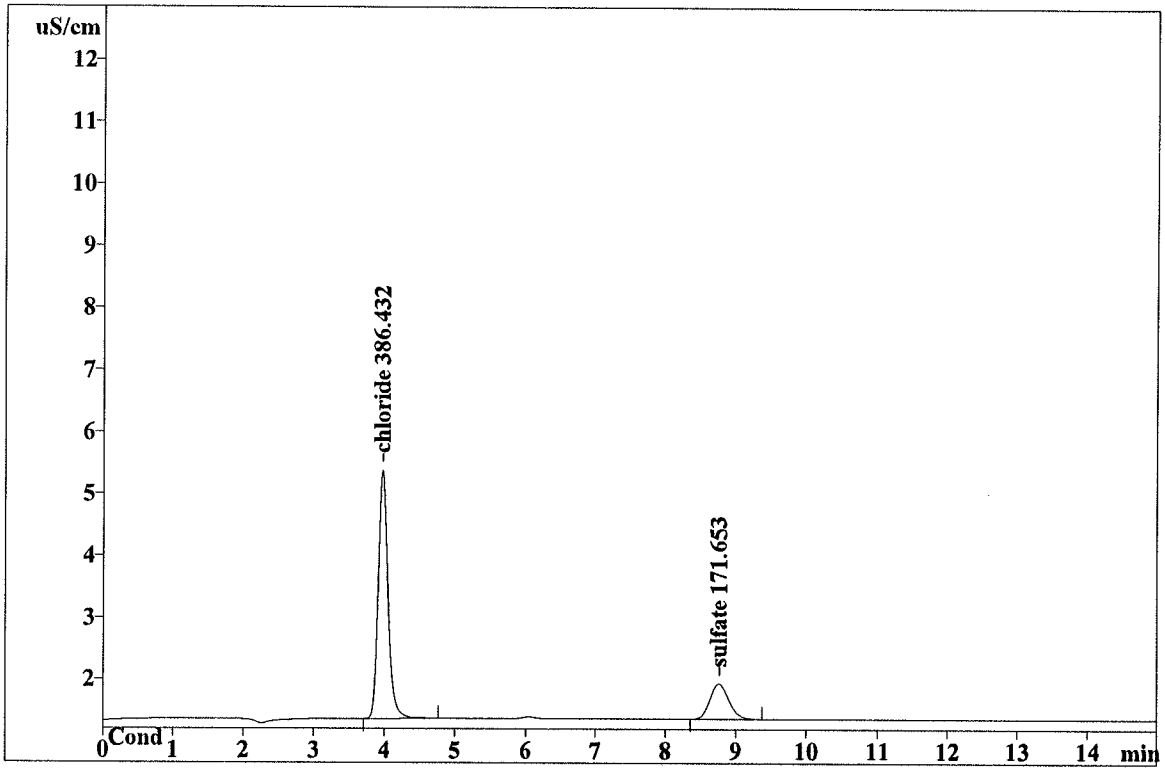
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 12:29:32 PM
Printed by: TWangc

Ident: AF37-37 F183-08JD DF=200
Analysis from: 6/29/2020 8:50:45 PM
File: _2020-06-29_20-50.chw Last save: 6/29/2020 9:05:42 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159592

SAMPLE: METHOD300/9056/4110B
:
Vial number: 37
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.97	4.01	39.231	386.432	chloride ✓
2	8.76	0.57	10.716	171.653	sulfate
2	15.00	4.59	49.946	558.085	

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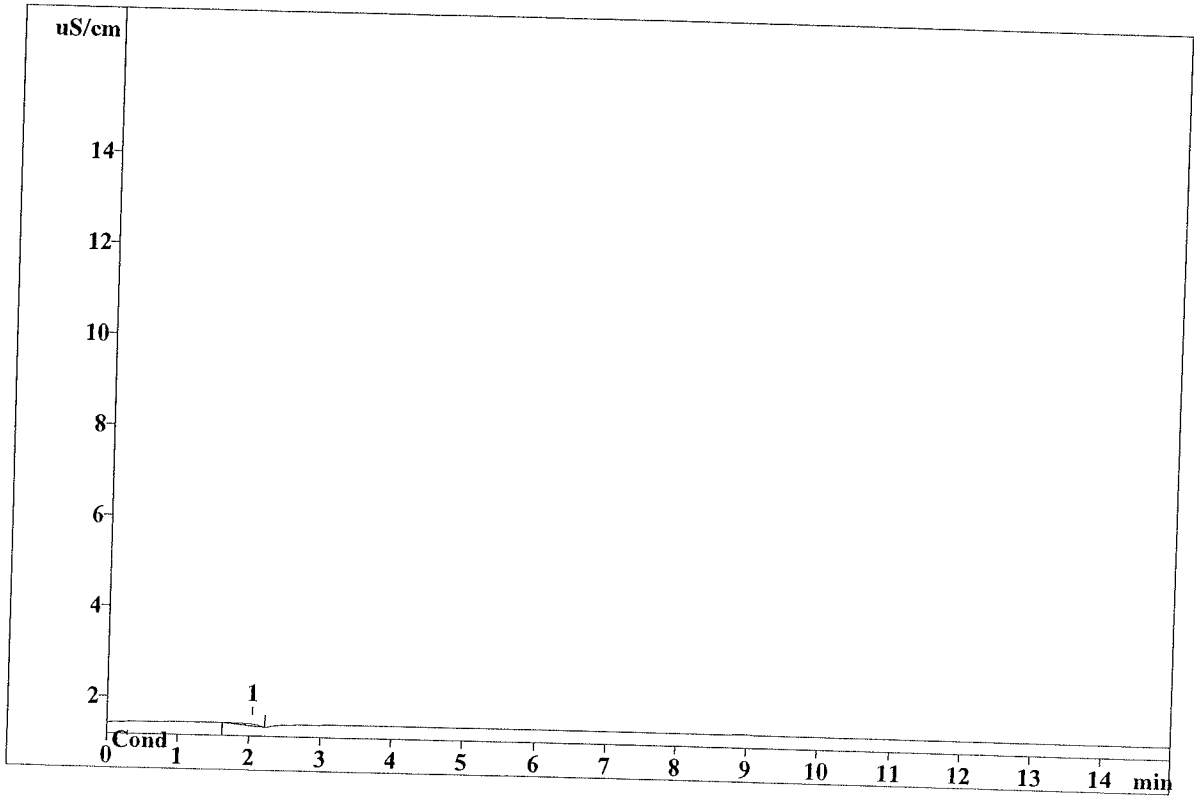
INITIAL CALIBRATION(S)

IC Result Check FormVersion : B24/AB25(2020)

LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AB25-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-47	1
AB25-03	S1	OCFIBNPS	0	0.130932	0.0736569	0.0777071	0.262476	0.0835989	0.194145	0.268643	_2020-02-24_21-04	1
AB25-04	S2	OCFIBNPS	0	0.164605	0.106859	0.111126	0.294912	0.119582	0.213056	0.302238	_2020-02-24_21-21	1
AB25-05	S3	OCFIBNPS	0	0.23743	0.182756	0.194941	0.367787	0.19938	0.278602	0.370165	_2020-02-24_21-39	1
AB25-06	S4	OCFIBNPS	0	0.479227	0.467048	0.463725	0.590591	0.467839	0.473997	0.59173	_2020-02-24_21-56	1
AB25-07	S5	OCFIBNPS	0	0.907337	0.953599	0.917912	0.969488	0.952213	0.838299	0.964092	_2020-02-24_22-13	1
AB25-08	S6	OCFIBNPS	0	1.8697	1.99933	1.99949	1.79754	2.02739	1.75229	1.79408	_2020-02-24_22-30	1
AB25-09	S7	OCFIBNPS	0	5.06077	5.12498	5.1581	4.61476	5.46023	5.09961	4.62219	_2020-02-24_22-47	1
AB25-10	S8	OCFIBNPS	0	10.5296	9.94178	9.92699	9.72349	11.2469	11.2045	9.69729	_2020-02-24_23-04	1
AB25-11	S9	OCFIBNPS	0	21.5568	18.5889	21.4357	20.229	22.8079	23.7145	20.2396	_2020-02-24_23-21	1
AB25-12	ICV	OCFIBNPS	0%*	95.1%	96.9%	100.8%	97.7%	98.3%	91.5%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	OCFIBNPS	0%*	91.8%	98.3%	95.5%	98.1%	97%	88.2%*	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date:	2/25/2020 12:19:29 PM	
Printed by:	LDip	
Ident:	AB25-02 S0	
Analysis from:	2/24/2020 8:47:50 PM	
File:	_2020-02-24_20-47.chw	Last save: 2/25/2020 12:15:05 PM
Method:	ICD0-B24.mtw	Last save: 2/24/2020 9:54:01 PM
Run operator:	LDip	
Analysis number:	155970	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	2	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

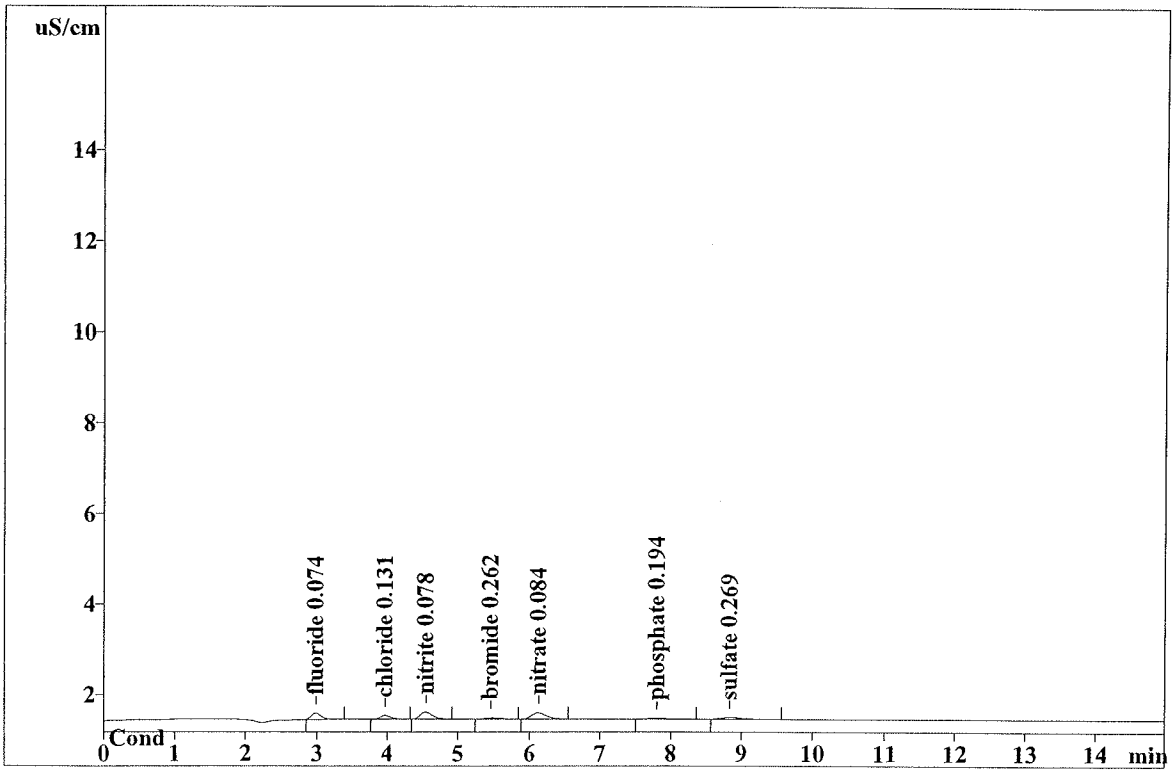
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.891	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:02 PM
Printed by: LDip

Ident: AB25-03 S1
Analysis from: 2/24/2020 9:04:55 PM
File: _2020-02-24_21-04.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155971

SAMPLE: METHOD300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

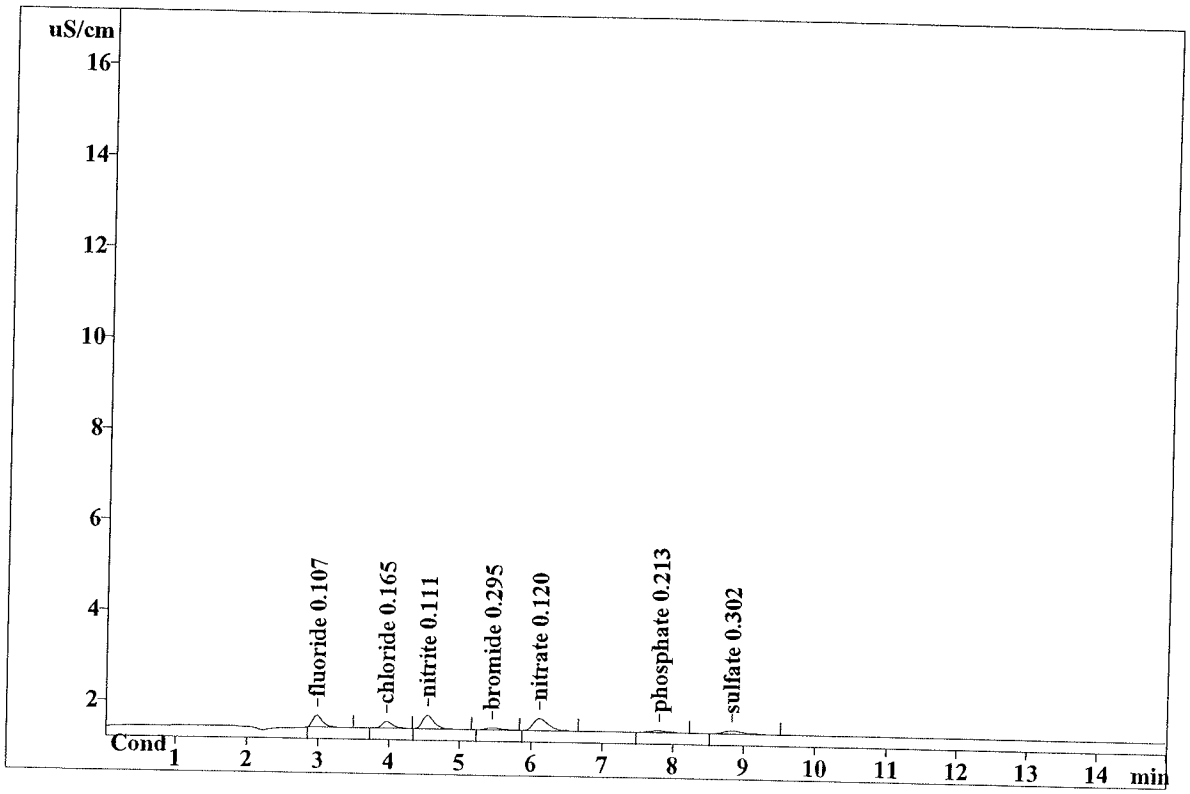
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.14	1.336	0.074	fluoride
2	3.96	0.08	0.852	0.131	chloride
3	4.54	0.16	1.770	0.078	nitrite
4	5.45	0.03	0.395	0.262	bromide
5	6.12	0.14	1.964	0.084	nitrate
6	7.79	0.02	0.341	0.194	phosphate
7	8.84	0.04	0.849	0.269	sulfate
7	15.00	0.60	7.507	1.091	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:17 PM
Printed by: LDip

Ident: AB25-04 S2
Analysis from: 2/24/2020 9:21:59 PM
File: _2020-02-24_21-21.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155972

SAMPLE: METHOD300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.26	2.535	0.107	fluoride
2	3.96	0.15	1.570	0.165	chloride
3	4.54	0.29	3.428	0.111	nitrite
4	5.45	0.05	0.692	0.295	bromide
5	6.12	0.26	3.872	0.120	nitrate
6	7.79	0.04	0.707	0.213	phosphate
7	8.84	0.07	1.412	0.302	sulfate
7	15.00	1.13	14.215	1.312	

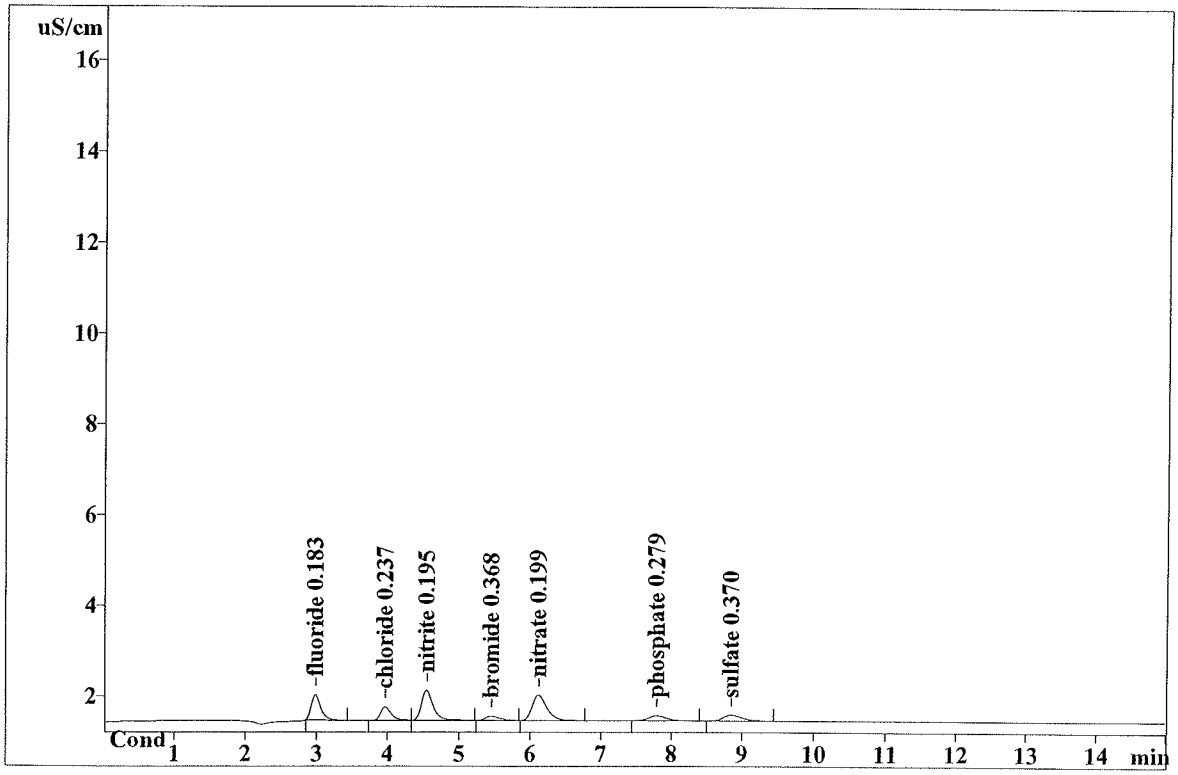
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:25 PM
Printed by: LDip

Ident: AB25-05 S3
Analysis from: 2/24/2020 9:39:04 PM
File: _2020-02-24_21-39.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155973

SAMPLE: METHOD300/9056/4110B
: 0.2 PPM
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

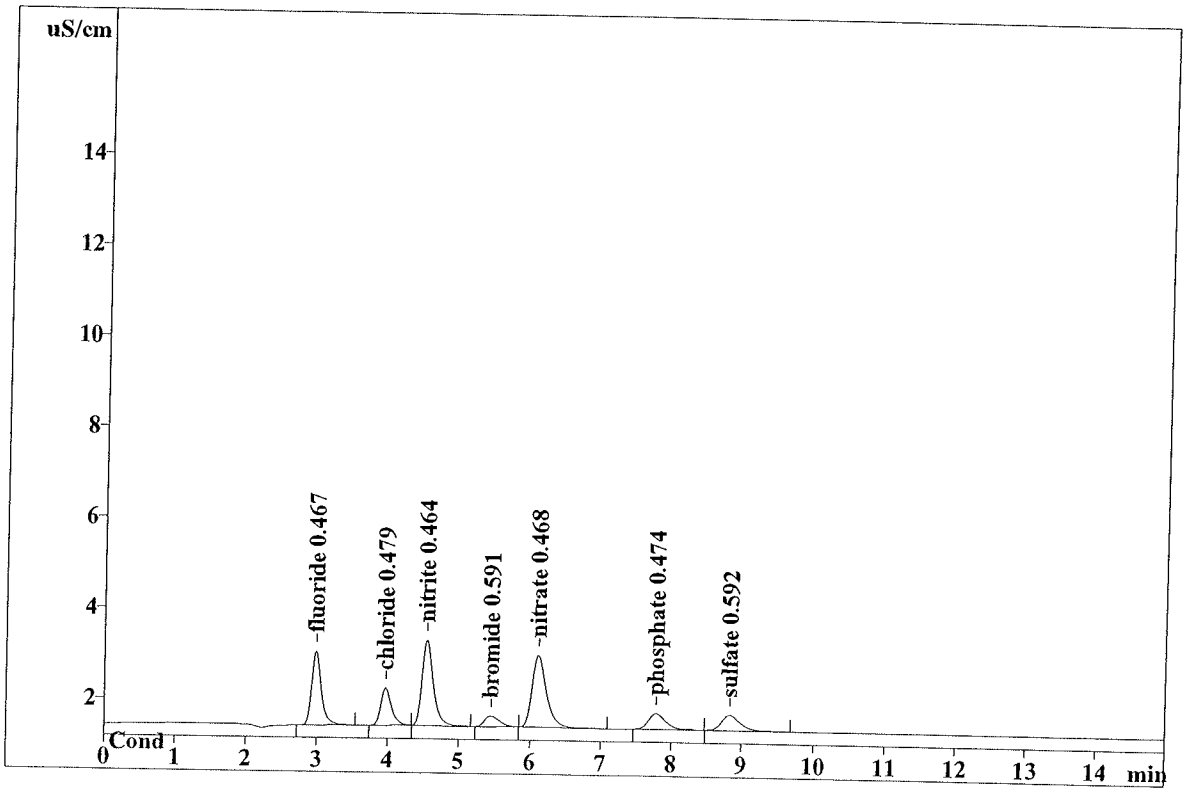
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.56	5.276	0.183	fluoride
2	3.97	0.30	3.121	0.237	chloride
3	4.54	0.67	7.587	0.195	nitrite
4	5.45	0.09	1.361	0.368	bromide
5	6.12	0.56	8.103	0.199	nitrate
6	7.80	0.11	1.975	0.279	phosphate
7	8.85	0.13	2.548	0.370	sulfate
7	15.00	2.43	29.971	1.831	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:38 PM
Printed by: LDip

Ident: AB25-06 S4
Analysis from: 2/24/2020 9:56:09 PM
File: _2020-02-24_21-56.chw Last save: 2/25/2020 12:15:06 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155974

SAMPLE: METHOD300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	1.64	15.542	0.467	fluoride
2	3.97	0.82	8.273	0.479	chloride
3	4.54	1.89	20.923	0.464	nitrite
4	5.45	0.24	3.406	0.591	bromide
5	6.11	1.59	22.337	0.468	nitrate
6	7.79	0.34	5.757	0.474	phosphate
7	8.83	0.34	6.256	0.592	sulfate
7	15.00	6.86	82.494	3.534	

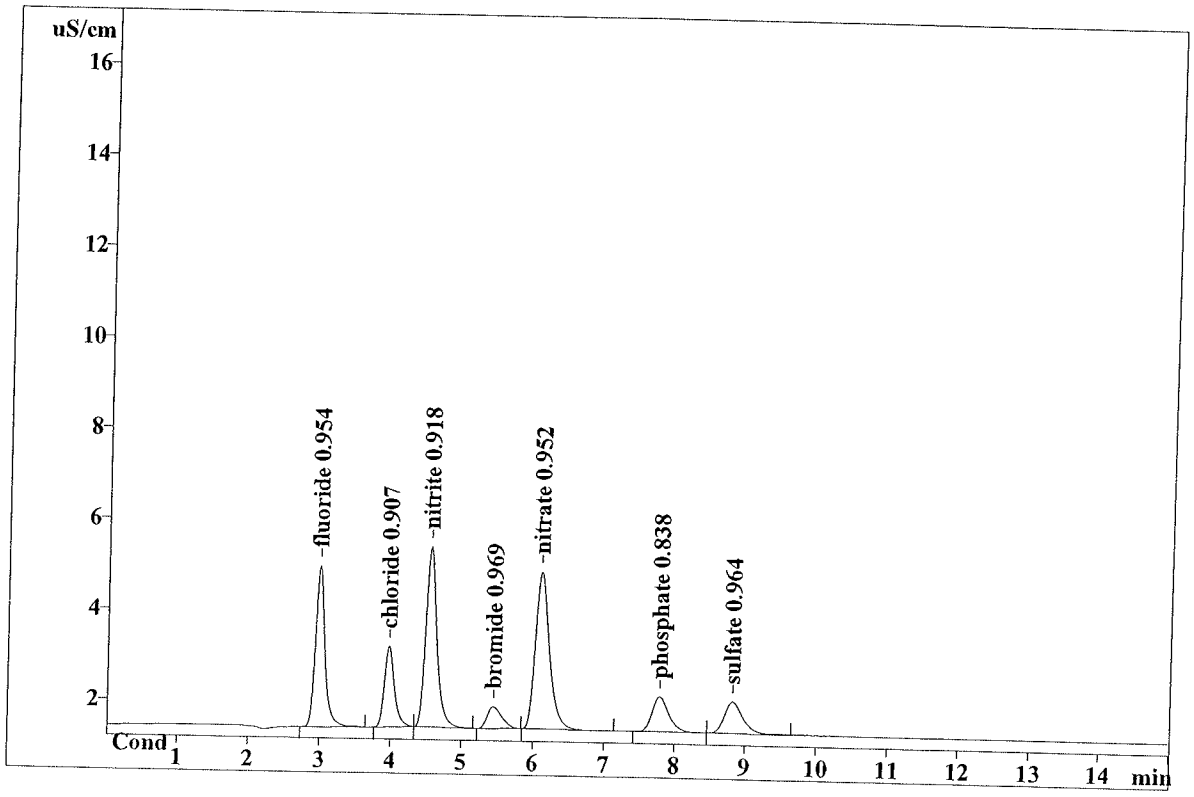
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:46 PM
Printed by: LDip

Ident: AB25-07 S5
Analysis from: 2/24/2020 10:13:14 PM
File: _2020-02-24_22-13.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155975

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.55	33.112	0.954	fluoride
2	3.96	1.78	17.395	0.907	chloride
3	4.54	3.97	43.459	0.918	nitrite
4	5.44	0.48	6.884	0.969	bromide
5	6.10	3.47	48.019	0.952	nitrate
6	7.78	0.78	12.807	0.838	phosphate
7	8.82	0.70	12.486	0.964	sulfate
7	15.00	14.72	174.163	6.503	

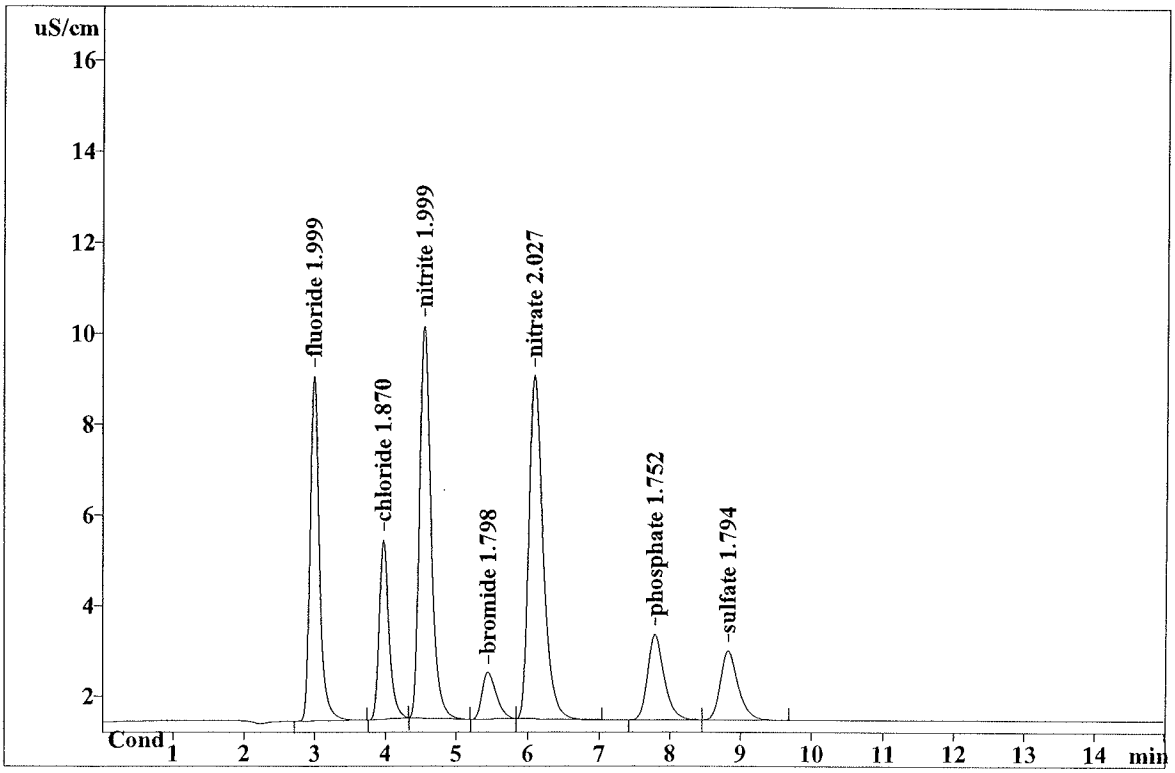
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:51 PM
Printed by: LDip

Ident: AB25-08 S6
Analysis from: 2/24/2020 10:30:19 PM
File: _2020-02-24_22-30.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155976

SAMPLE: METHOD300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

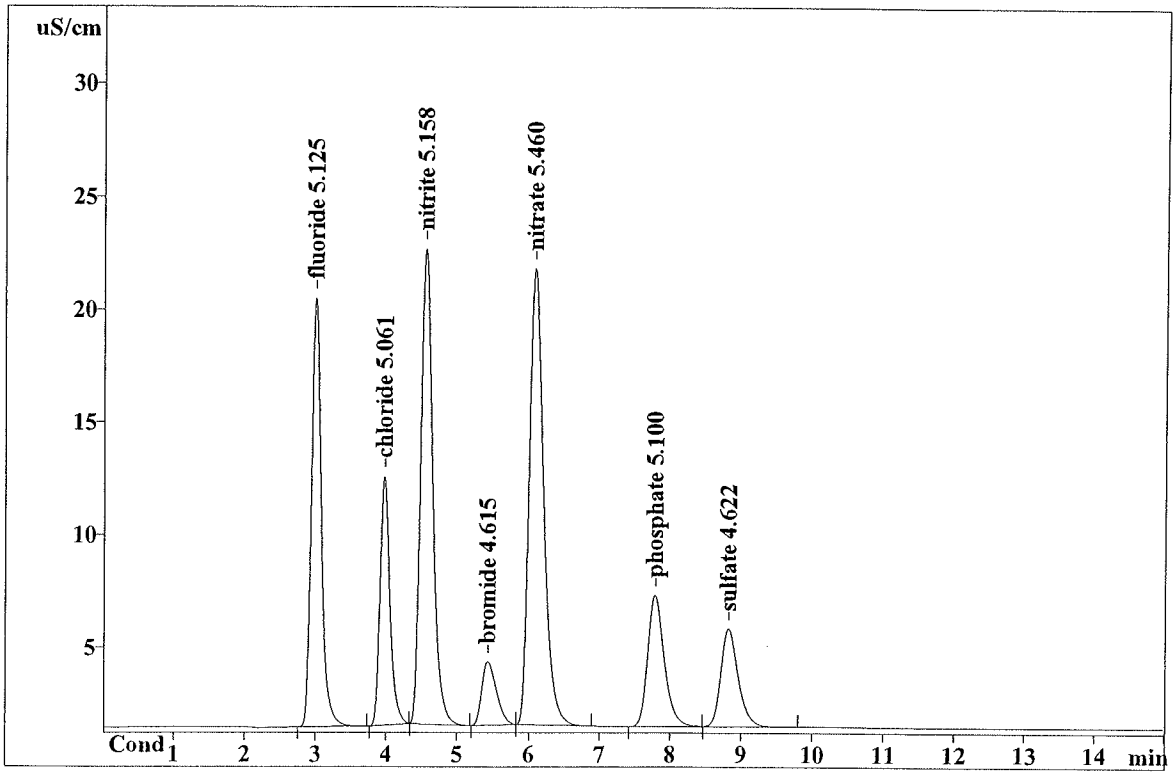


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	7.62	70.876	1.999	fluoride
2	3.96	3.97	37.900	1.870	chloride
3	4.54	8.67	97.125	1.999	nitrite
4	5.44	1.03	14.483	1.798	bromide
5	6.09	7.58	105.026	2.027	nitrate
6	7.78	1.88	30.496	1.752	phosphate
7	8.82	1.52	26.375	1.794	sulfate
7	15.00	32.27	382.281	13.240	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:20:59 PM	
Printed by:	LDip	
Ident:	AB25-09 S7	
Analysis from:	2/24/2020 10:47:23 PM	
File:	_2020-02-24_22-47.chw	Last save: 2/25/2020 12:15:06 PM
Method:	ICD0-B24.mtw	Last save: 2/24/2020 9:54:01 PM
Run operator:	LDip	
Analysis number:	155977	
SAMPLE:	METHOD300/9056/4110B	
:	5.0 PPM	
Vial number:	9	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	19.07	183.749	5.125	fluoride
2	3.96	11.09	105.892	5.061	chloride
3	4.54	21.13	253.850	5.158	nitrite
4	5.43	2.84	40.339	4.615	bromide
5	6.07	20.29	287.039	5.460	nitrate
6	7.78	5.85	95.279	5.100	phosphate
7	8.82	4.37	73.698	4.622	sulfate
7	15.00	84.64	1039.846	35.141	

This report has been created by IC Net
METROHM LTD

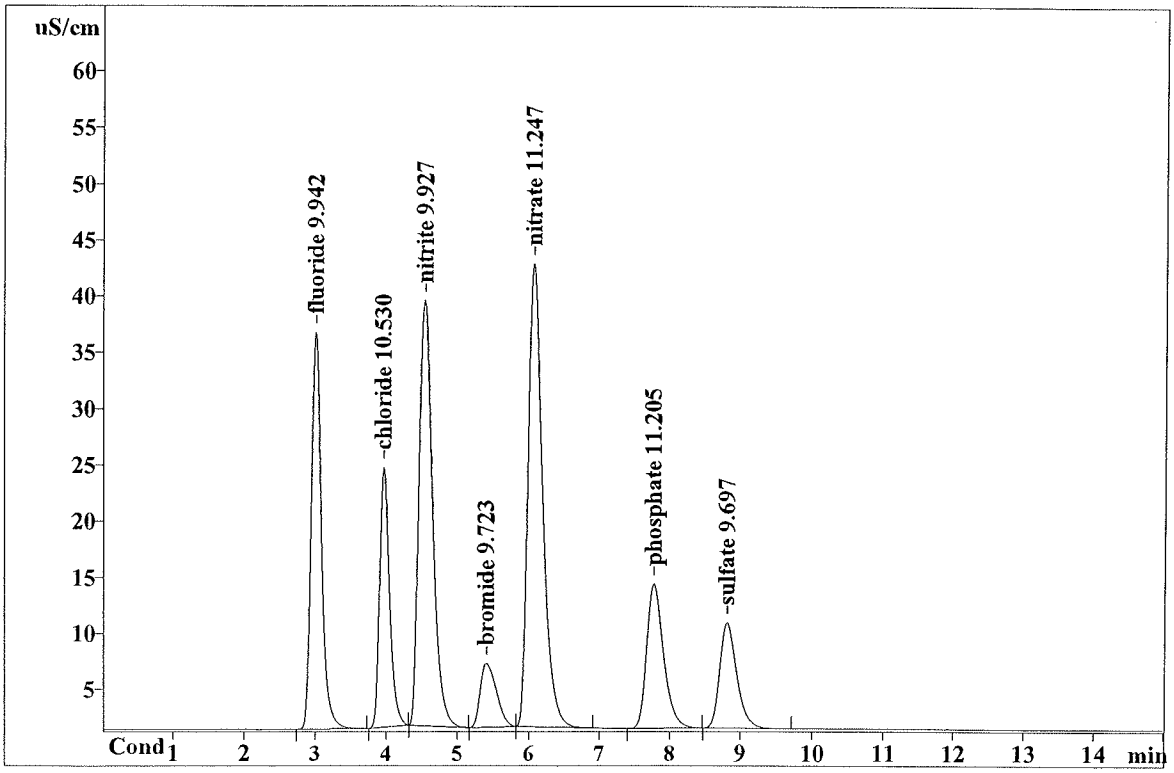
IK 02/26/20

Report date: 2/25/2020 12:21:07 PM
Printed by: LDip

Ident: AB25-10 S8
Analysis from: 2/24/2020 11:04:28 PM
File: _2020-02-24_23-04.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155978

SAMPLE: METHOD300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	35.35	357.692	9.942	fluoride
2	3.96	23.13	222.415	10.530	chloride
3	4.54	37.88	490.473	9.927	nitrite
4	5.41	5.69	87.226	9.723	bromide
5	6.06	41.27	593.856	11.247	nitrate
6	7.77	12.84	213.432	11.205	phosphate
7	8.81	9.41	158.621	9.697	sulfate
7	15.00	165.57	2123.716	72.271	

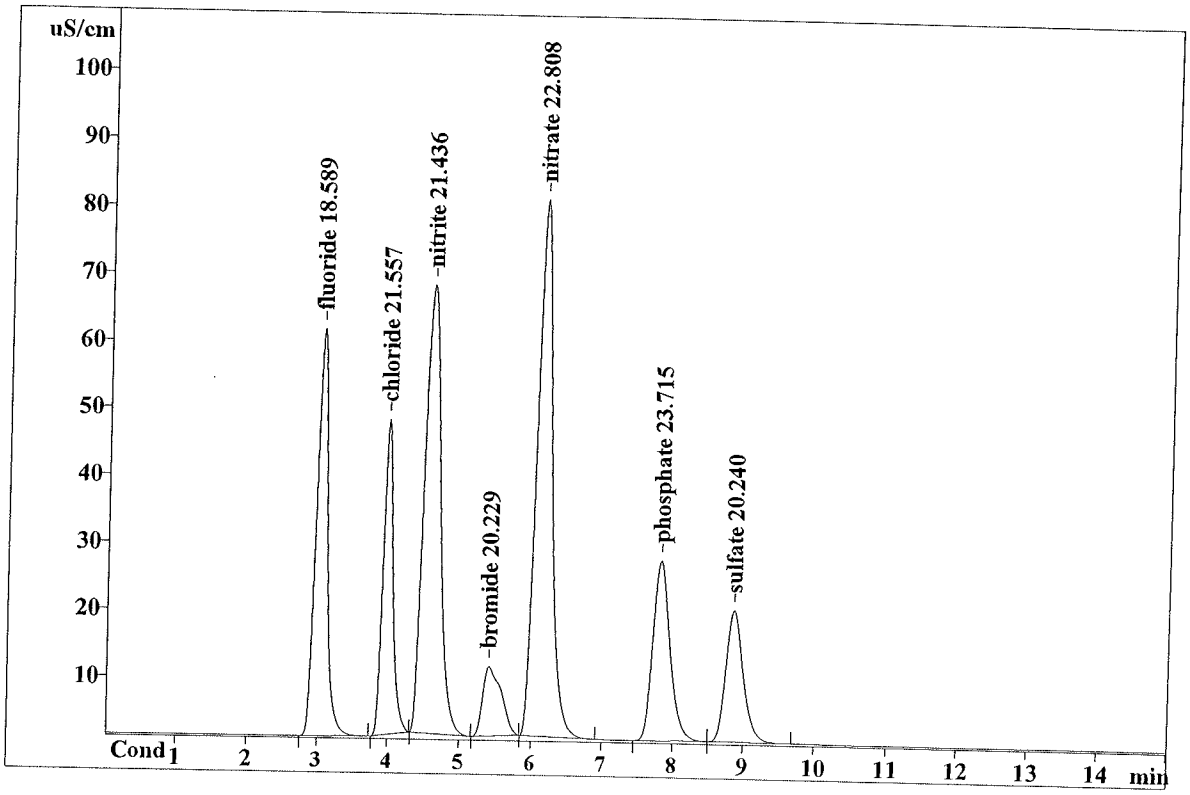
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:13 PM
Printed by: LDip

Ident: AB25-11 S9
Analysis from: 2/24/2020 11:21:33 PM
File: _2020-02-24_23-21.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155979

SAMPLE: METHOD300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	60.60	669.957	18.589	fluoride
2	3.96	46.92	457.371	21.557	chloride
3	4.55	66.71	1061.515	21.436	nitrite
4	5.40	10.32	183.643	20.229	bromide
5	6.11	79.75	1206.835	22.808	nitrate
6	7.80	26.69	455.548	23.715	phosphate
7	8.85	19.55	335.027	20.240	sulfate
7	15.00	310.55	4369.897	148.572	

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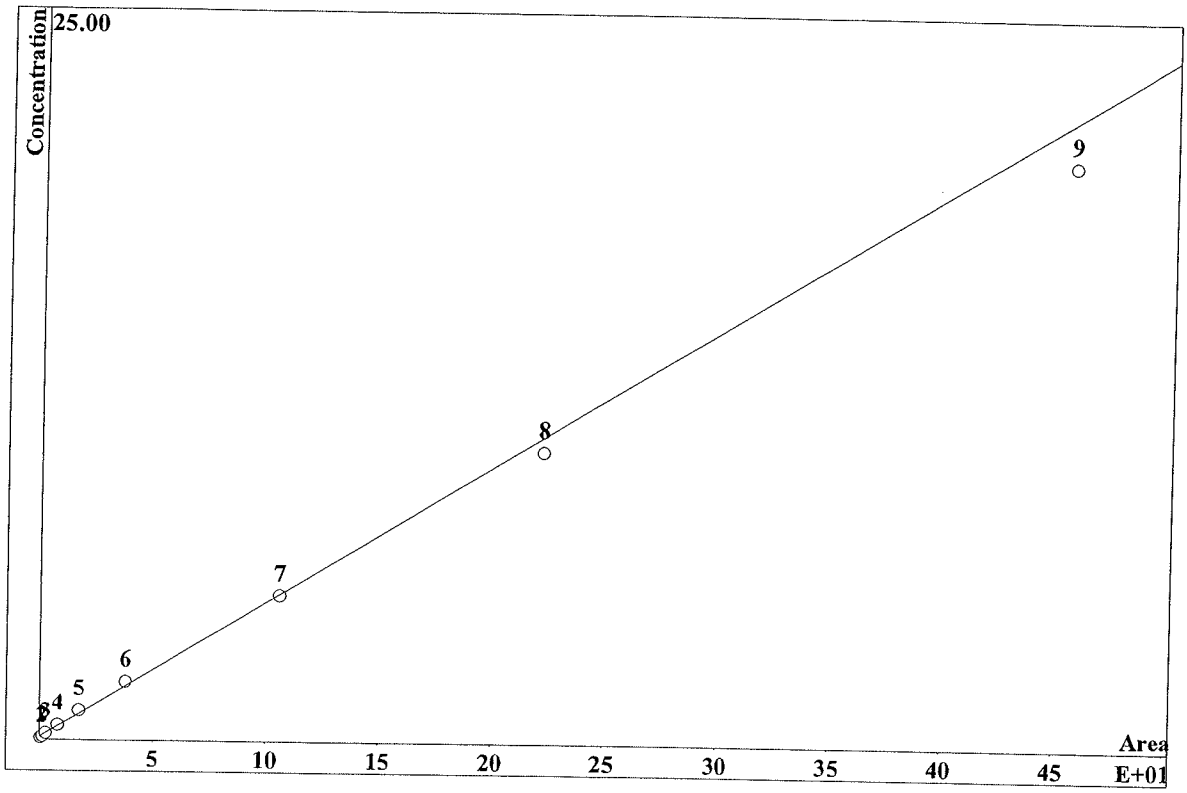
CALIBRATION OF COMPONENT chloride

Method: ICD0-B24.mtw
Equation: Q = 0.0469332·A + 0.0909434
RSD: 7.233 %
Correlation coefficient: 0.998906

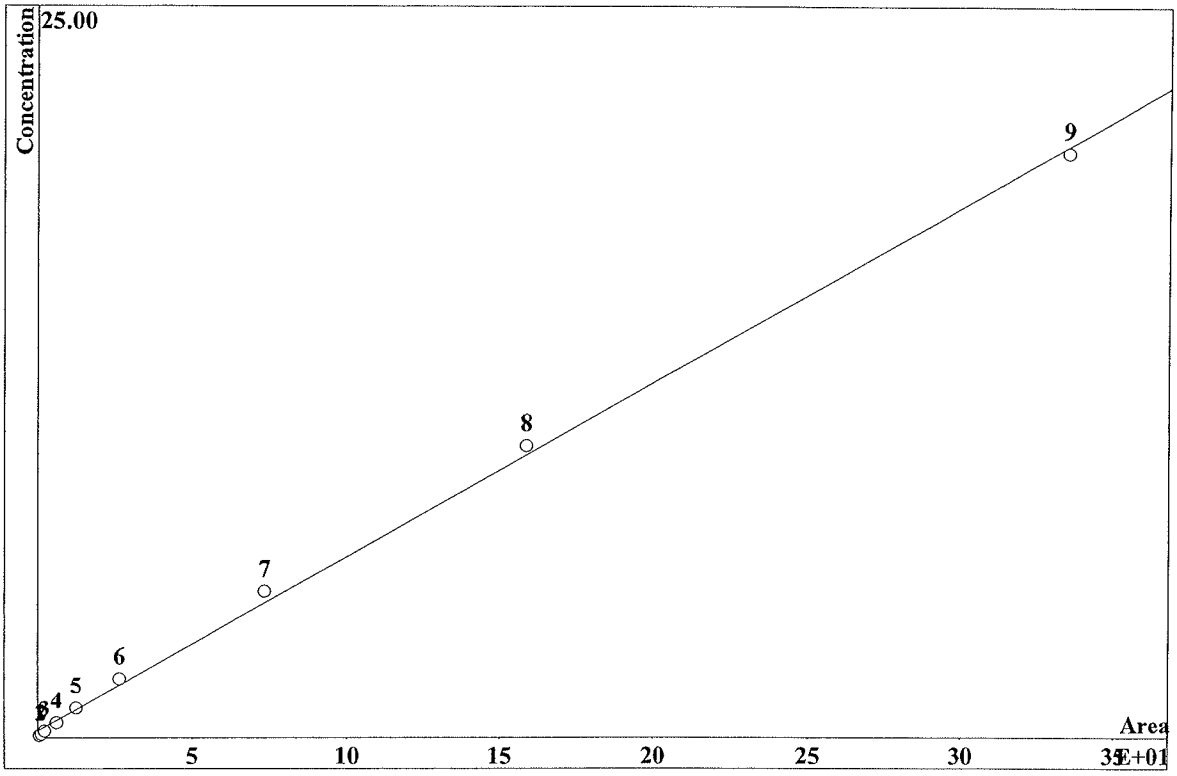


K3 = 0 K2 = 0 K1 = 0.0469332 K0 = 0.0909434
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.08183	0.852	0.05	1	3.96	Yes	_2020-02-24_2□
2	0.1492	1.57	0.1	1	3.96	Yes	_2020-02-24_2□
3	0.3042	3.121	0.2	1	3.96	Yes	_2020-02-24_2□
4	0.8241	8.273	0.5	1	3.96	Yes	_2020-02-24_2□
5	1.778	17.39	1	1	3.96	Yes	_2020-02-24_2□
6	3.966	37.9	2	1	3.96	Yes	_2020-02-24_2□
7	11.09	105.9	5	1	3.96	Yes	_2020-02-24_2□
8	23.13	222.4	10	1	3.96	No	_2020-02-24_2
9	46.92	457.4	20	1	3.96	No	_2020-02-24_2

CALIBRATION OF COMPONENT sulfate

Method: ICD0-B24.mtw
Equation: Q = 0.0597613·A + 0.217884
RSD: 5.948 %
Correlation coefficient: 0.999363



K3 = 0 K2 = 0 K1 = 0.0597613 K0 = 0.217884
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.04145	0.8494	0.05	1	8.83	Yes	_2020-02-24_2□
2	0.07188	1.412	0.1	1	8.83	Yes	_2020-02-24_2□
3	0.1354	2.548	0.2	1	8.83	Yes	_2020-02-24_2□
4	0.3422	6.256	0.5	1	8.83	Yes	_2020-02-24_2□
5	0.6991	12.49	1	1	8.83	Yes	_2020-02-24_2□
6	1.523	26.37	2	1	8.83	Yes	_2020-02-24_2□
7	4.368	73.7	5	1	8.83	Yes	_2020-02-24_2□
8	9.407	158.6	10	1	8.83	Yes	_2020-02-24_2
9	19.55	335	20	1	8.83	Yes	_2020-02-24_2

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : B24/AB25(2020)

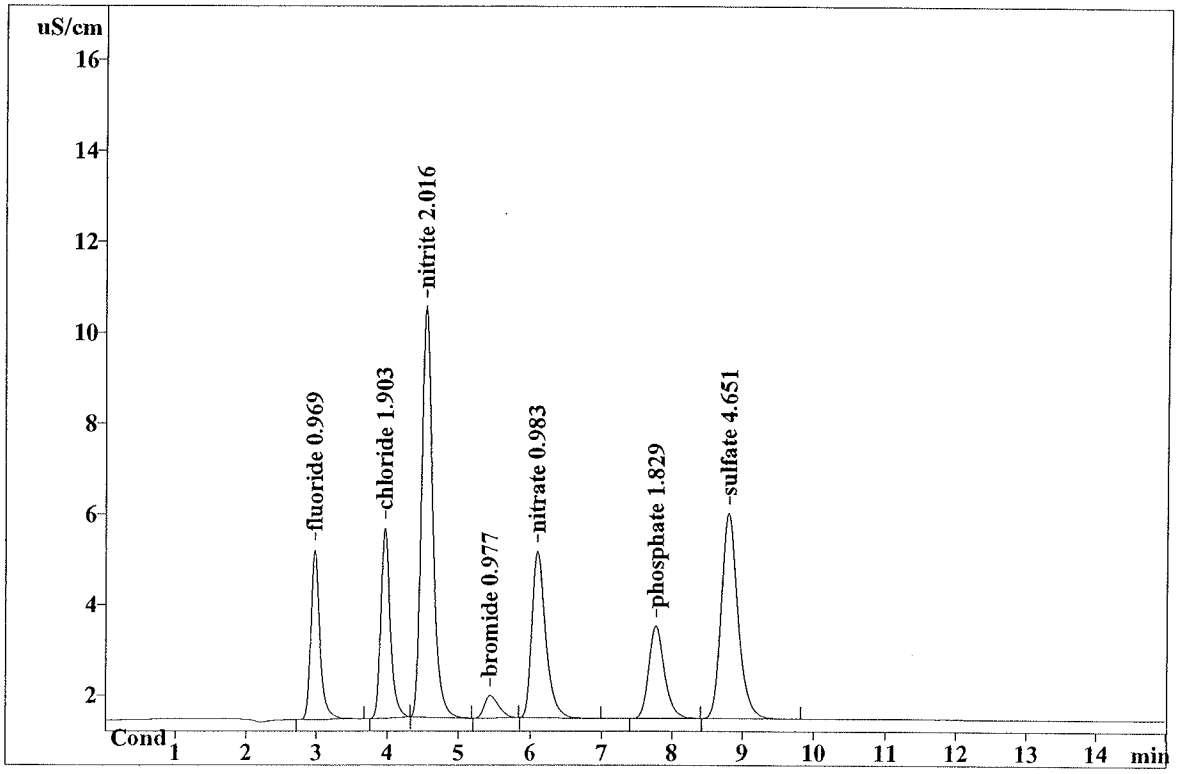
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AB25-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-12	ICV	PINOFCBS	91.5%	100.8%	98.3%	0%*	96.9%	95.1%	97.7%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	PINOFCBS	88.2%*	95.5%	97%	0%*	98.3%	91.8%	98.1%	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:21:18 PM
Printed by: LDip

Ident: AB25-12 ICV
Analysis from: 2/24/2020 11:38:38 PM
File: _2020-02-24_23-38.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155980

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	3.75	33.675	0.969	fluoride
2	3.96	4.21	38.609	1.903	chloride
3	4.53	9.07	97.933	2.016	nitrite
4	5.44	0.50	6.951	0.977	bromide
5	6.10	3.69	49.671	0.983	nitrate
6	7.76	2.05	31.988	1.829	phosphate
7	8.80	4.54	74.179	4.651	sulfate
7	15.00	27.80	333.006	13.328	

This report has been created by IC Net
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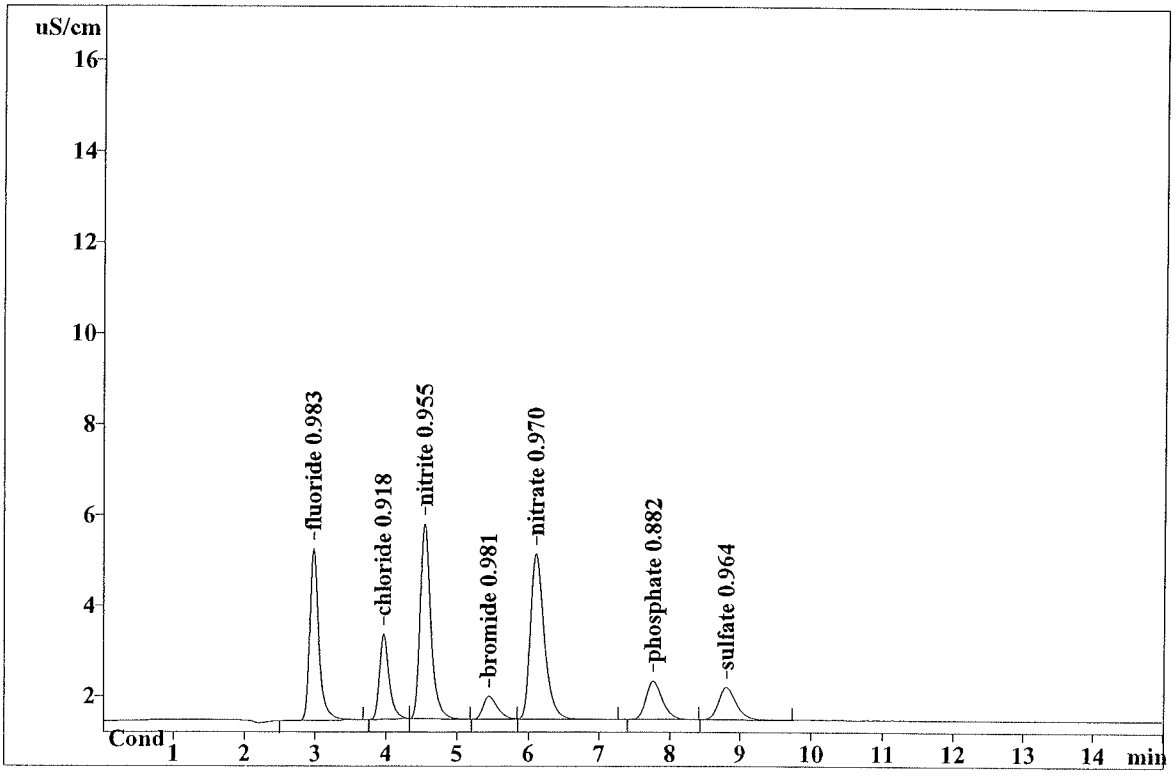
Report date: 2/25/2020 12:21:23 PM
Printed by: LDip

Ident: AB25-13 ICV1
Analysis from: 2/24/2020 11:55:43 PM
File: _2020-02-24_23-55.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155981

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.79	34.158	0.983	fluoride
2	3.96	1.88	17.616	0.918	chloride
3	4.54	4.31	45.313	0.955	nitrite
4	5.45	0.51	6.985	0.981	bromide
5	6.10	3.65	48.958	0.970	nitrate
6	7.77	0.85	13.652	0.882	phosphate
7	8.80	0.72	12.482	0.964	sulfate
7	15.00	15.70	179.164	6.652	

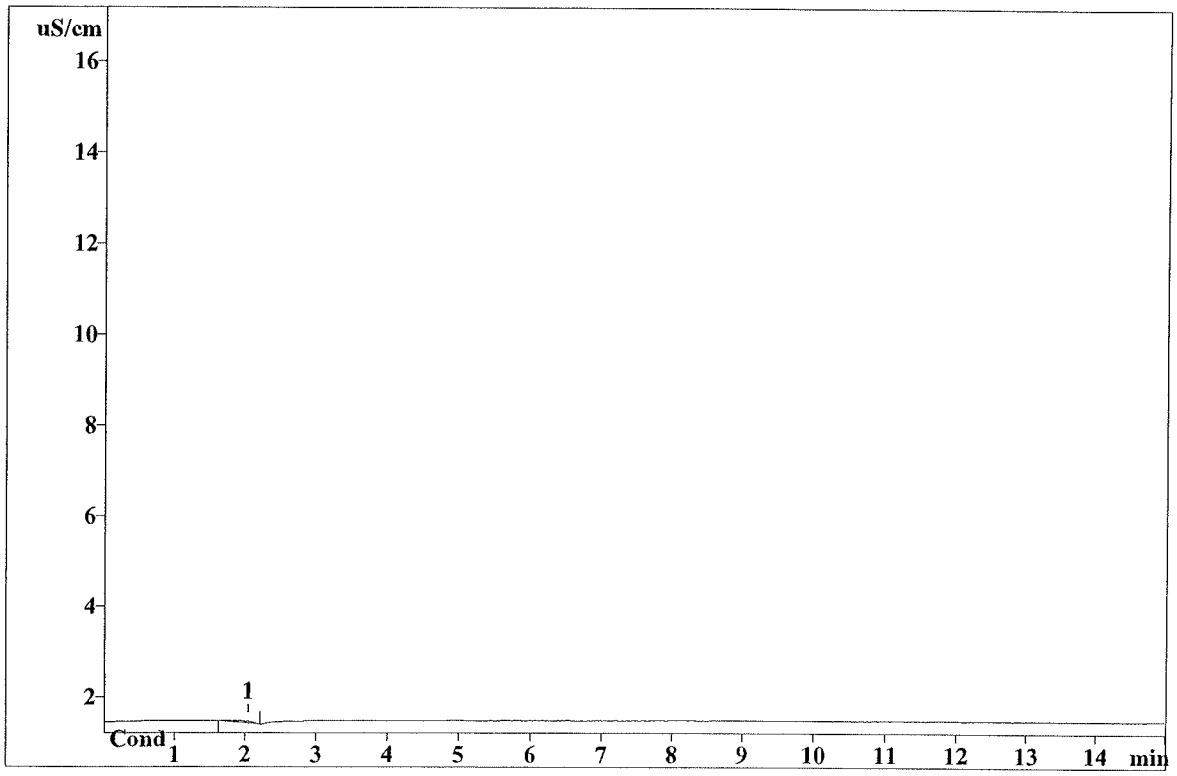
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:29 PM
Printed by: LDip

Ident: AB25-14 ICB
Analysis from: 2/25/2020 12:12:47 AM
File: _2020-02-25_00-12.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155982

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.898	0.000	

This report has been created by IC Net
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DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F183
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF37-01	CCV787	96.5	06/29/2010:21
AF37-06	CCV789	95.7	06/29/2011:58
AF37-18	CCV791	94.9	06/29/2015:26
AF37-30	CCV793	107	06/29/2018:51
AF37-42	CCV795	97.6	06/29/2022:16
AF37-46	CCV797	95.6	06/29/2023:24
AF39-01	CCV799	91.1	06/30/2009:48
AF39-13	CCV801	97.3	06/30/2013:13
AF39-61	CCV809	95.3	07/01/2003:02
AF39-68	CCV811	94.1	07/01/2005:02

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F183
Method : E300.0
ICAL Ref. : 20IC RESULT CHECK FORMVERSION : B24\AB25
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF37-01	CCV787	95.9	06/29/2010:21
AF37-06	CCV789	94.3	06/29/2011:58
AF37-18	CCV791	92.7	06/29/2015:26
AF37-30	CCV793	104.9	06/29/2018:51
AF37-42	CCV795	96.8	06/29/2022:16
AF37-46	CCV797	97.8	06/29/2023:24

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : B24/AB25(2020)

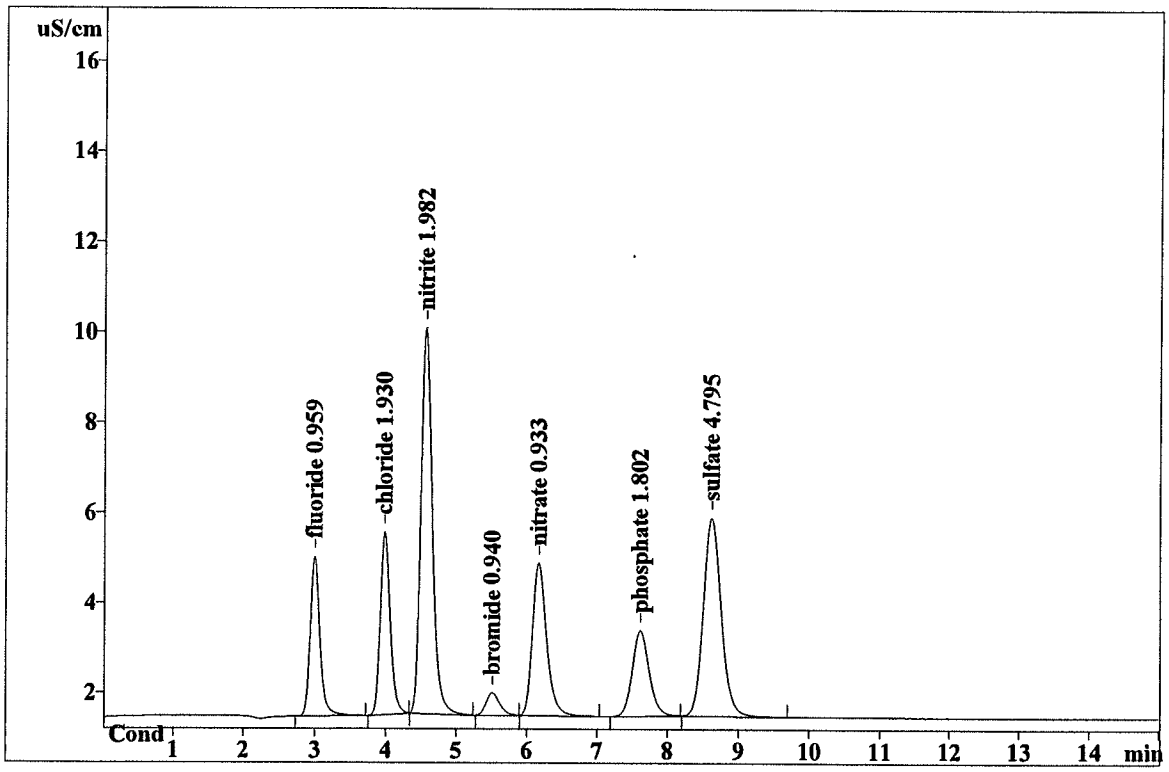
LFID	LSID	Selection	nitrate	chloride	fluoride	iodide	nitrite	bromide	phosphate	sulfate	RawNetID	DF
AF37-01	CCV787	NCFOIBPS	93.3%	96.5%	95.9%	0%*	99.1%	94%	90.1%	95.9%	_2020-06-29_10-21	1
AF37-02	CCB787	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_10-38	1
AF37-06	CCV789	NCFOIBPS	92.9%	95.7%	95.9%	0%*	98.5%	94.3%	91.8%	94.3%	_2020-06-29_11-58	1
AF37-07	CCB789	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_12-15	1
AF37-18	CCV791	NCFOIBPS	92.4%	94.9%	96.3%	0%*	98.7%	94.1%	89.4%*	92.7%	_2020-06-29_15-26	1
AF37-19	CCB791	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_15-43	1
AF37-30	CCV793	NCFOIBPS	92.8%	107%	96.8%	0%*	99.5%	94.5%	91.3%	104.9%	_2020-06-29_18-51	1
AF37-31	CCB793	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_19-08	1
AF37-42	CCV795	NCFOIBPS	93.4%	97.6%	96.8%	0%*	100.1%	94.9%	91.7%	96.8%	_2020-06-29_22-16	1
AF37-43	CCB795	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_22-33	1
AF37-46	CCV797	NCFOIBPS	93.6%	95.6%	96.6%	0%*	99.1%	95.1%	91.5%	97.8%	_2020-06-29_23-24	1
AF37-47	CCB797	NCFOIBPS	0	0	0	0	0	0	0	0	_2020-06-29_23-41	1

Report date: 6/30/2020 10:49:02 AM
Printed by: TWangc

Ident: AF37-01 CCV787
Analysis from: 6/29/2020 10:21:48 AM
File: _2020-06-29_10-21.chw Last save: 6/29/2020 10:36:45 AM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159556

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.55	33.301	0.959	fluoride
2	3.98	4.05	39.176	1.930	chloride
3	4.56	8.55	96.253	1.982	nitrite
4	5.51	0.49	6.616	0.940	bromide
5	6.16	3.39	46.988	0.933	nitrate
6	7.61	1.90	31.449	1.802	phosphate
7	8.61	4.40	76.584	4.795	sulfate
7	15.00	26.33	330.367	13.340	

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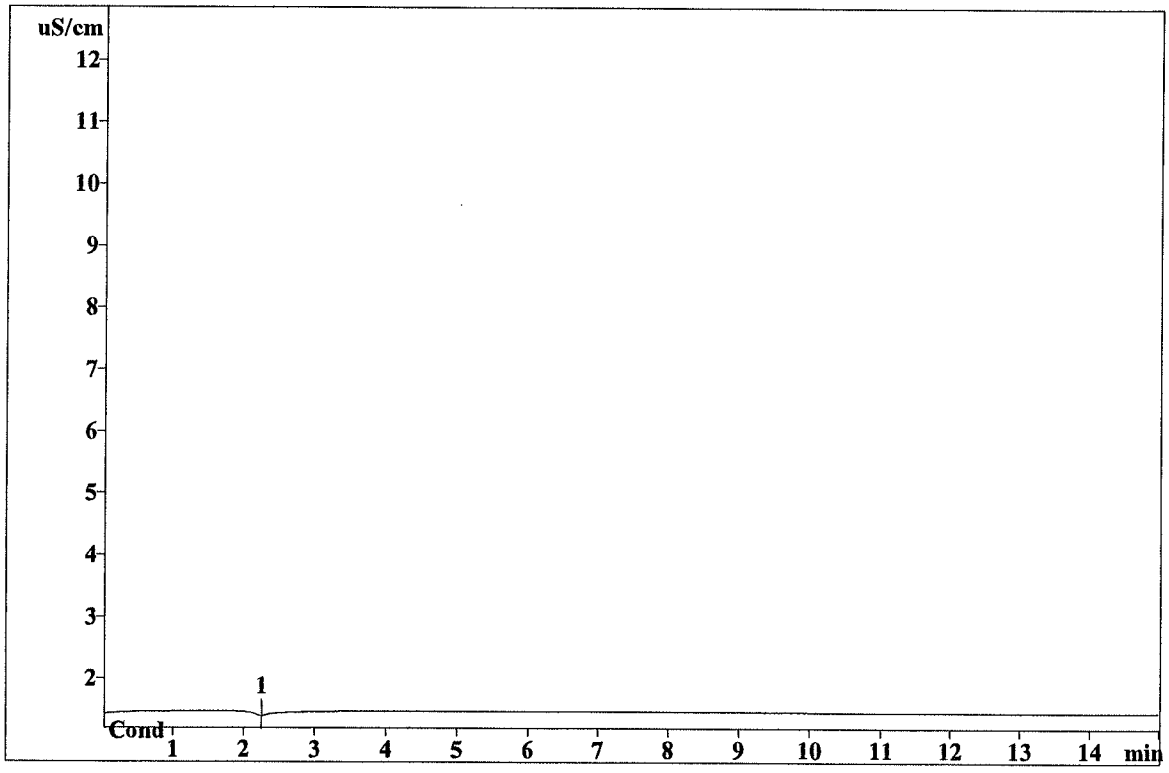
Report date: 7/2/2020 5:11:23 PM
Printed by: TWangc

Ident: AF37-02 CCB787
Analysis from: 6/29/2020 10:38:52 AM
File: _2020-06-29_10-38.chw Last save: 7/2/2020 4:31:37 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159557

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

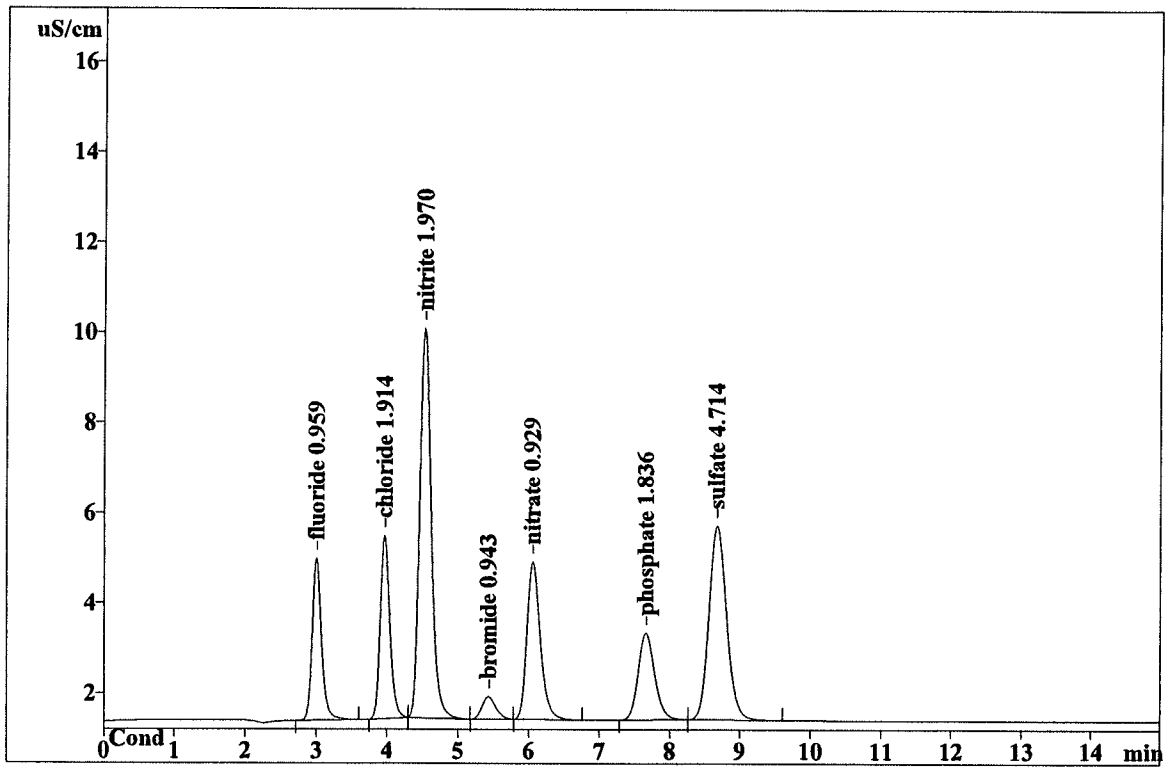
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 10:55:50 AM
Printed by: TWangc

Ident: AF37-06 CCV789
Analysis from: 6/29/2020 11:58:16 AM
File: _2020-06-29_11-58.chw Last save: 6/29/2020 12:13:13 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159561

SAMPLE: METHOD300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.59	33.297	0.959	fluoride
2	3.96	4.06	38.849	1.914	chloride
3	4.53	8.64	95.649	1.970	nitrite
4	5.43	0.50	6.637	0.943	bromide
5	6.06	3.49	46.767	0.929	nitrate
6	7.66	1.93	32.119	1.836	phosphate
7	8.67	4.30	75.227	4.714	sulfate
7	15.00	26.52	328.545	13.264	

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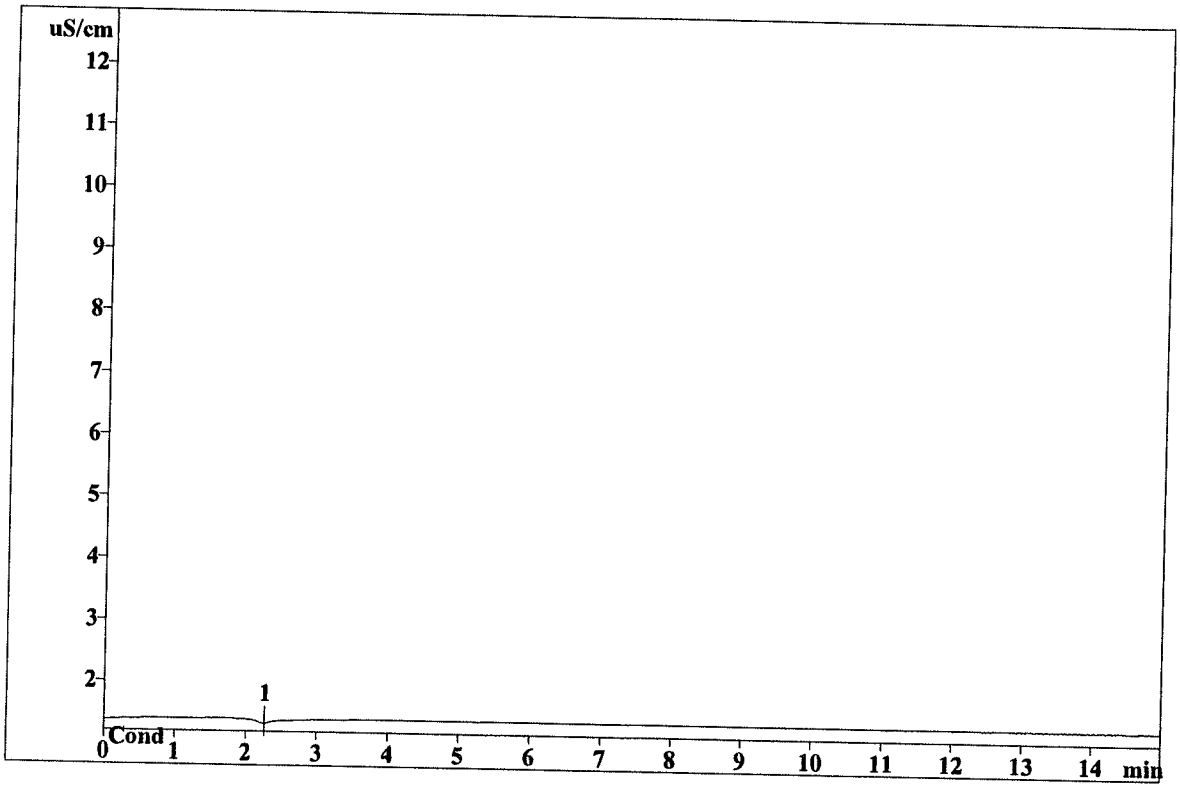
METROHM LTD

Report date:	6/30/2020 10:56:58 AM	
Printed by:	TWangc	
Ident:	AF37-07 CCB789	
Analysis from:	6/29/2020 12:15:21 PM	
File:	_2020-06-29_12-15.chw	Last save: 6/29/2020 12:30:18 PM
Modified!		
Method:	ICD0-B24.mtw	Last save: 6/29/2020 10:22:29 AM
Run operator:	TWangc	
Analysis number:	159562	
SAMPLE:	METHOD300/9056/4110B	
:		
Vial number:	7	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	0.000	0.000	

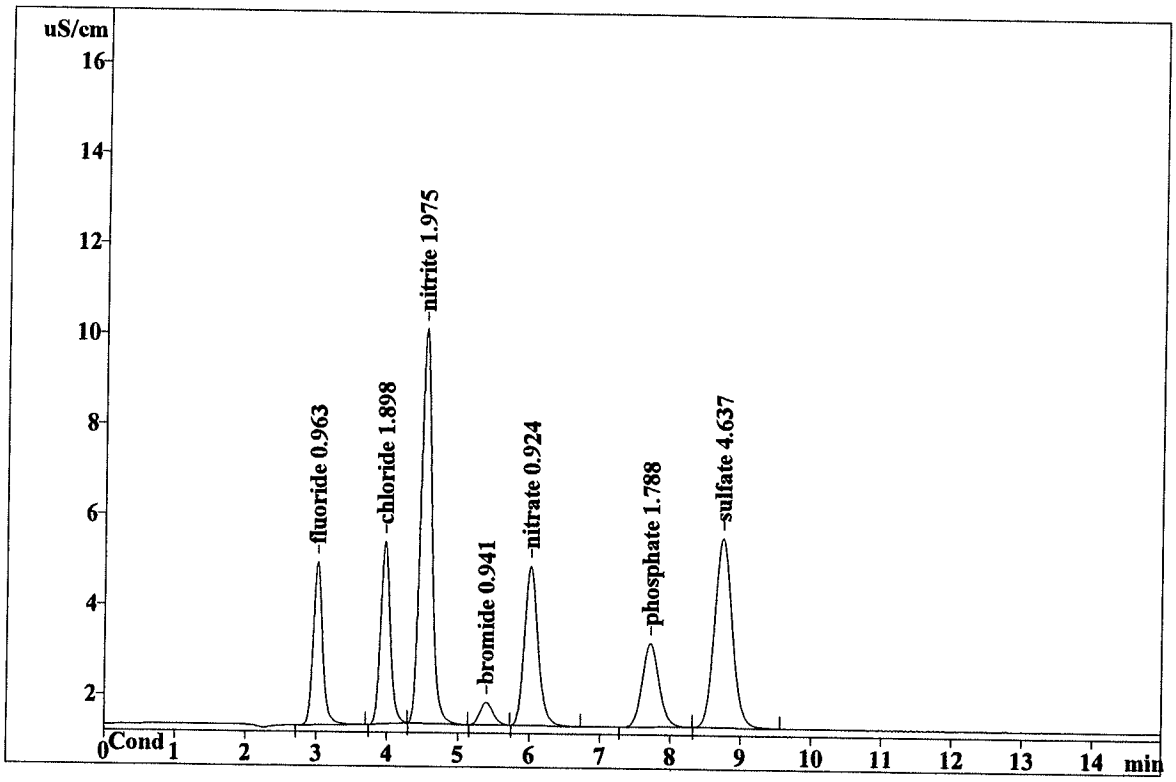
This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 10:57:23 AM
Printed by: TWangc

Ident: AF37-18 CCV791
Analysis from: 6/29/2020 3:26:15 PM
File: _2020-06-29_15-26.chw Last save: 6/29/2020 3:58:06 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159573

SAMPLE: METHOD300/9056/4110B
:
Vial number: 18
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

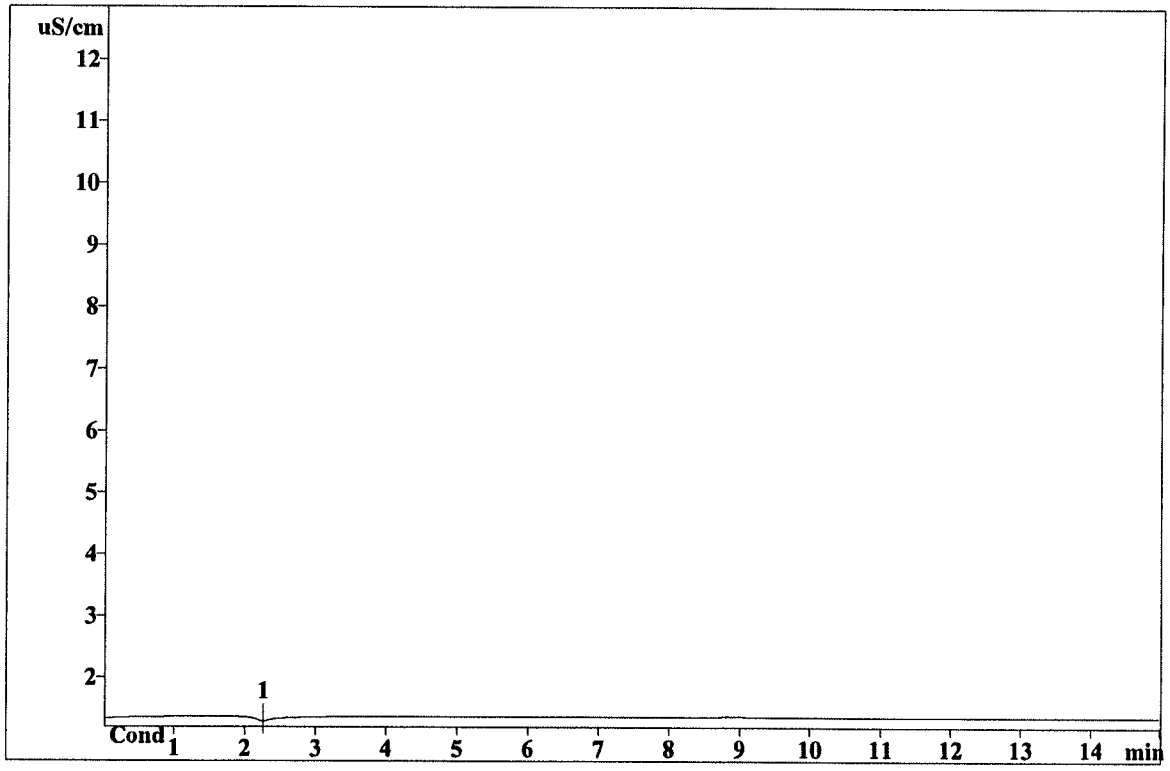
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.61	33.452	0.963	fluoride
2	3.96	4.04	38.494	1.898	chloride
3	4.51	8.73	95.906	1.975	nitrite
4	5.39	0.50	6.626	0.941	bromide
5	6.01	3.53	46.523	0.924	nitrate
6	7.71	1.86	31.196	1.788	phosphate
7	8.73	4.19	73.942	4.637	sulfate
7	15.00	26.47	326.140	13.126	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 10:58:24 AM
Printed by: TWangc

Ident: AF37-19 CCB791
Analysis from: 6/29/2020 3:43:19 PM
File: _2020-06-29_15-43.chw Last save: 6/29/2020 3:58:16 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159574

SAMPLE: METHOD300/9056/4110B
:
Vial number: 19
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.25	-0.00	-0.000	0.000	

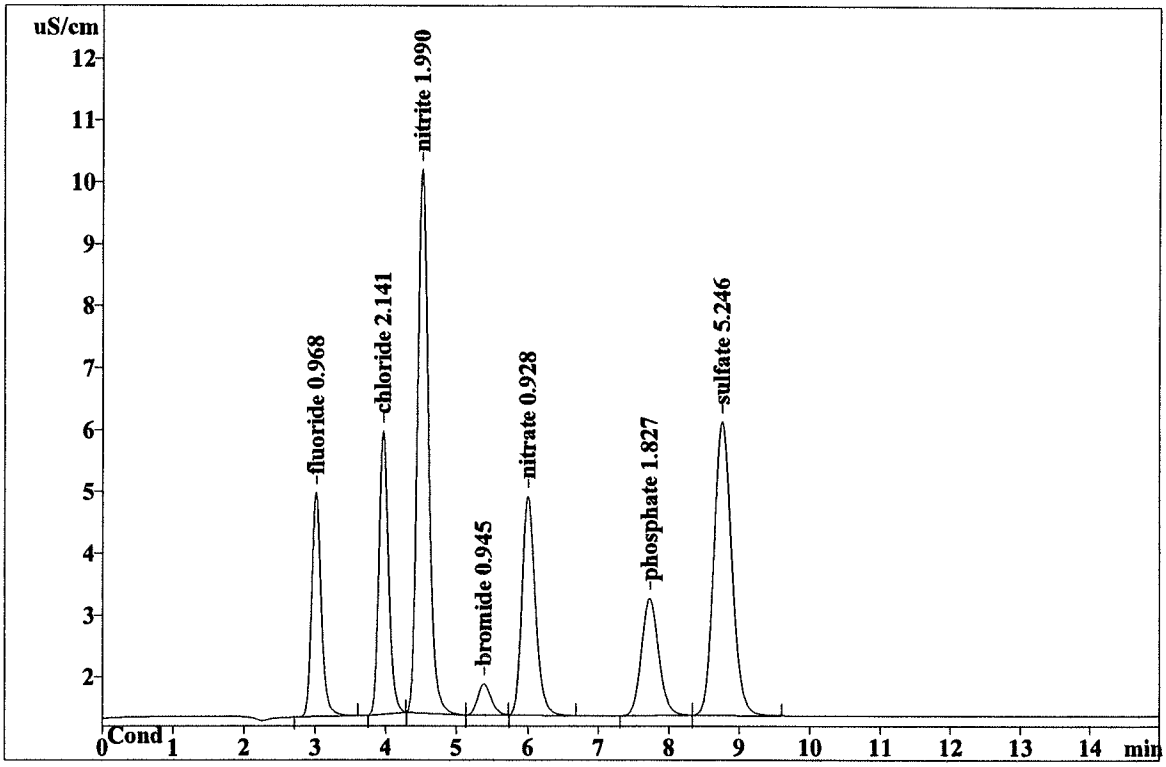
This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 10:58:47 AM
Printed by: TWangc

Ident: AF37-30 CCV793
Analysis from: 6/29/2020 6:51:11 PM
File: _2020-06-29_18-51.chw Last save: 6/29/2020 7:06:09 PM

Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159585

SAMPLE: METHOD300/9056/4110B
:
Vial number: 30
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.63	33.632	0.968	fluoride
2	3.96	4.58	43.670	2.141	chloride
3	4.51	8.79	96.664	1.990	nitrite
4	5.39	0.50	6.663	0.945	bromide
5	6.00	3.55	46.754	0.928	nitrate
6	7.72	1.90	31.937	1.827	phosphate
7	8.75	4.76	84.132	5.246	sulfate
7	15.00	27.71	343.452	14.045	

This report has been created by IC Net
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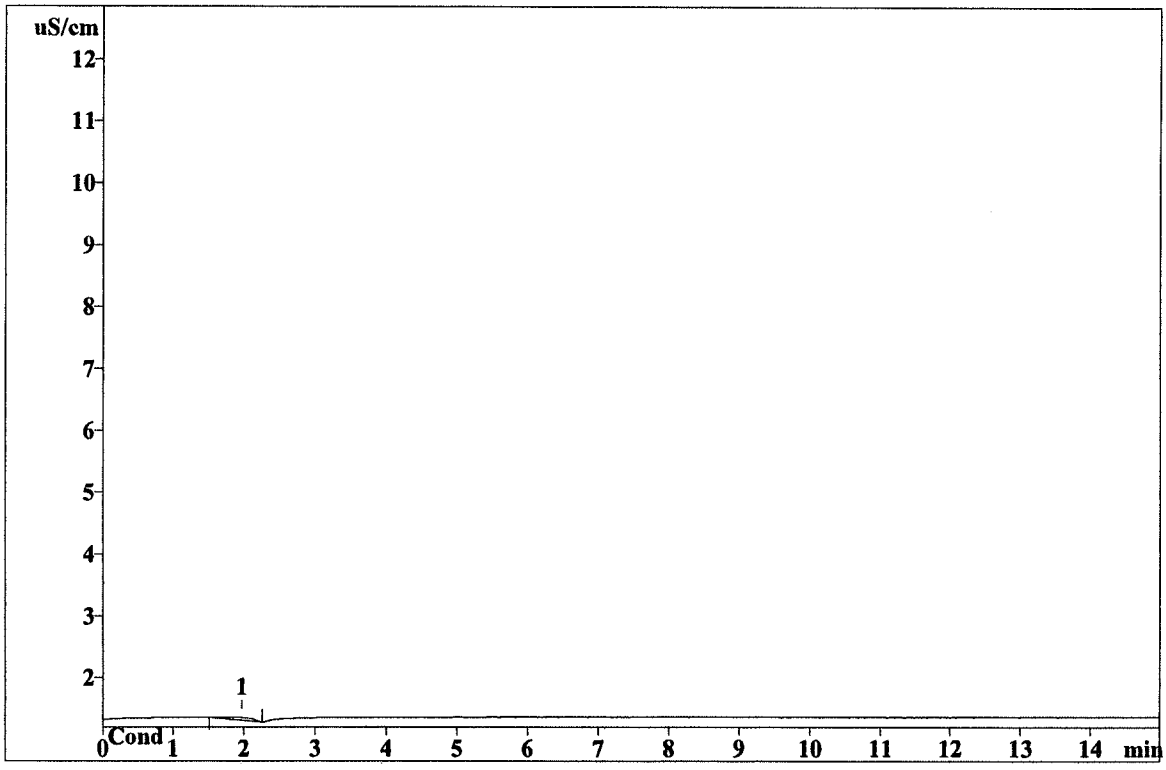
Report date: 6/30/2020 10:59:37 AM
Printed by: TWangc

Ident: AF37-31 CCB793
Analysis from: 6/29/2020 7:08:16 PM
File: _2020-06-29_19-08.chw Last save: 6/29/2020 7:23:13 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159586

SAMPLE: METHOD300/9056/4110B
:
Vial number: 31
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

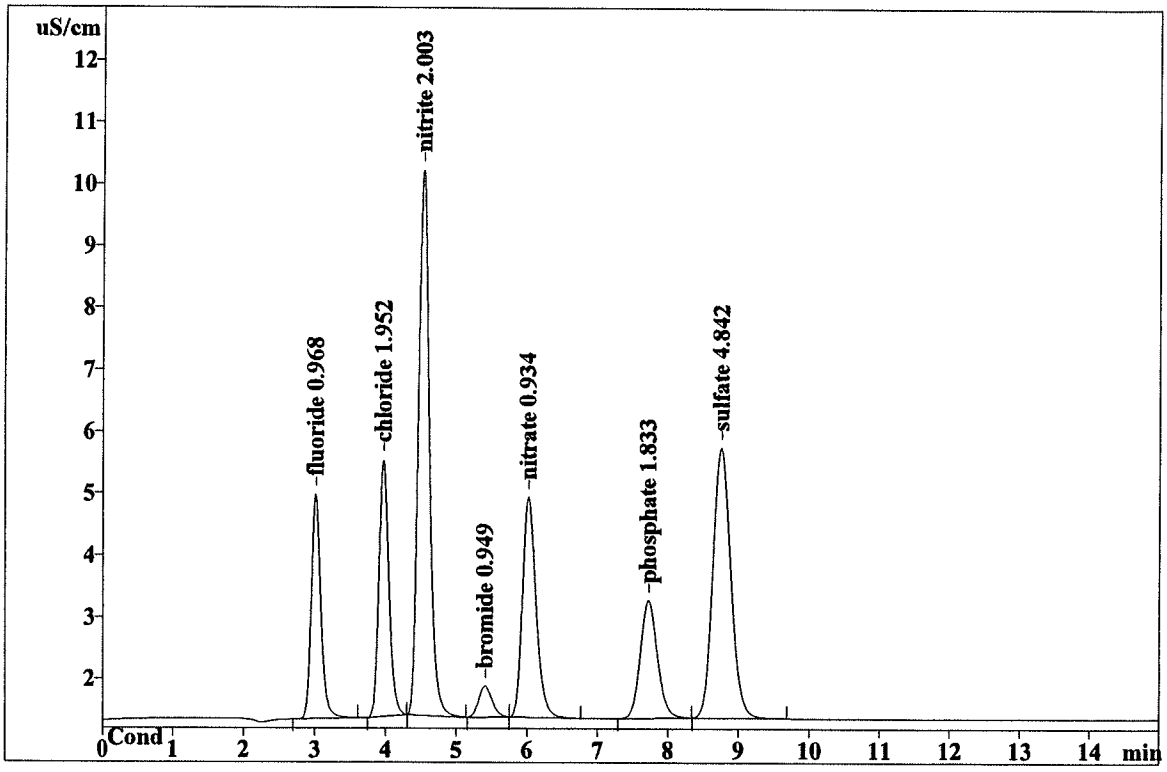
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	1.99	0.04	1.168	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 11:00:03 AM
Printed by: TWangc

Ident: AF37-42 CCV795
Analysis from: 6/29/2020 10:16:08 PM
File: _2020-06-29_22-16.chw Last save: 6/29/2020 10:31:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159597

SAMPLE: METHOD300/9056/4110B
:
Vial number: 42
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

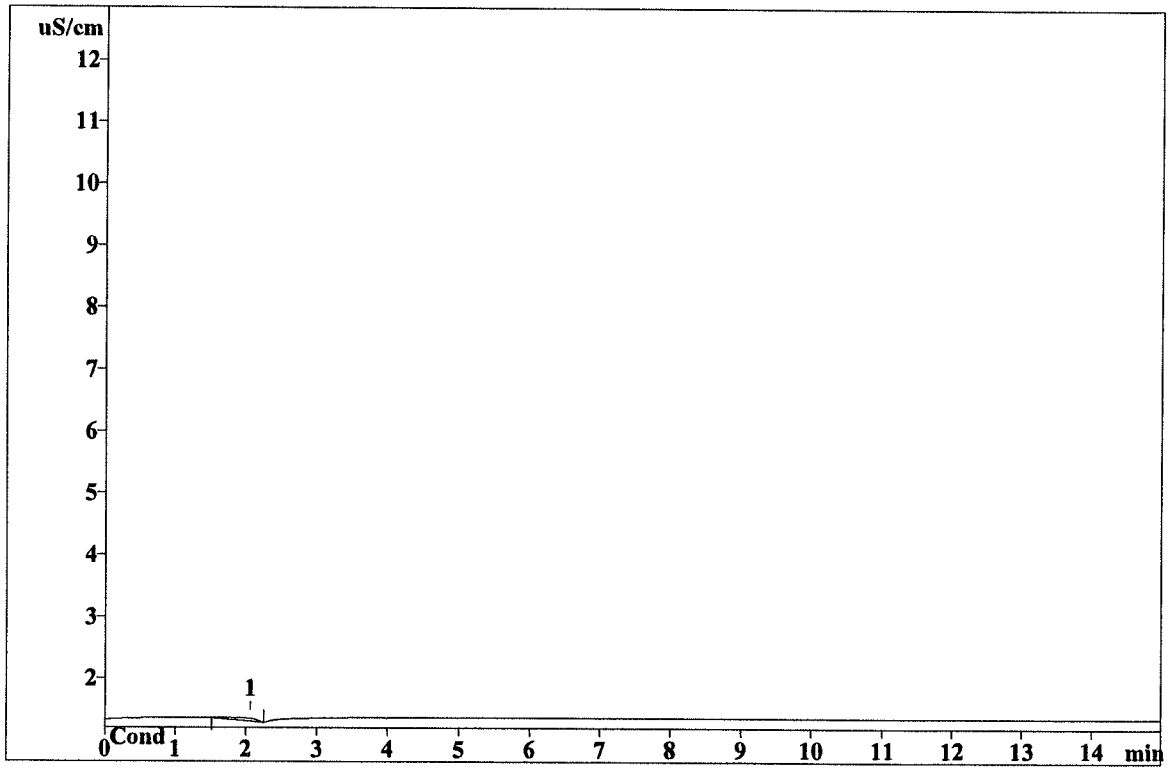
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.62	33.617	0.968	fluoride
2	3.96	4.15	39.659	1.952	chloride
3	4.52	8.83	97.275	2.003	nitrite
4	5.40	0.50	6.694	0.949	bromide
5	6.02	3.56	47.028	0.934	nitrate
6	7.72	1.90	32.066	1.833	phosphate
7	8.75	4.36	77.382	4.842	sulfate
7	15.00	26.91	333.721	13.480	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 11:00:54 AM
Printed by: TWangc

Ident: AF37-43 CCB795
Analysis from: 6/29/2020 10:33:13 PM
File: _2020-06-29_22-33.chw Last save: 6/30/2020 9:45:58 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159598

SAMPLE: METHOD300/9056/4110B
:
Vial number: 43
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

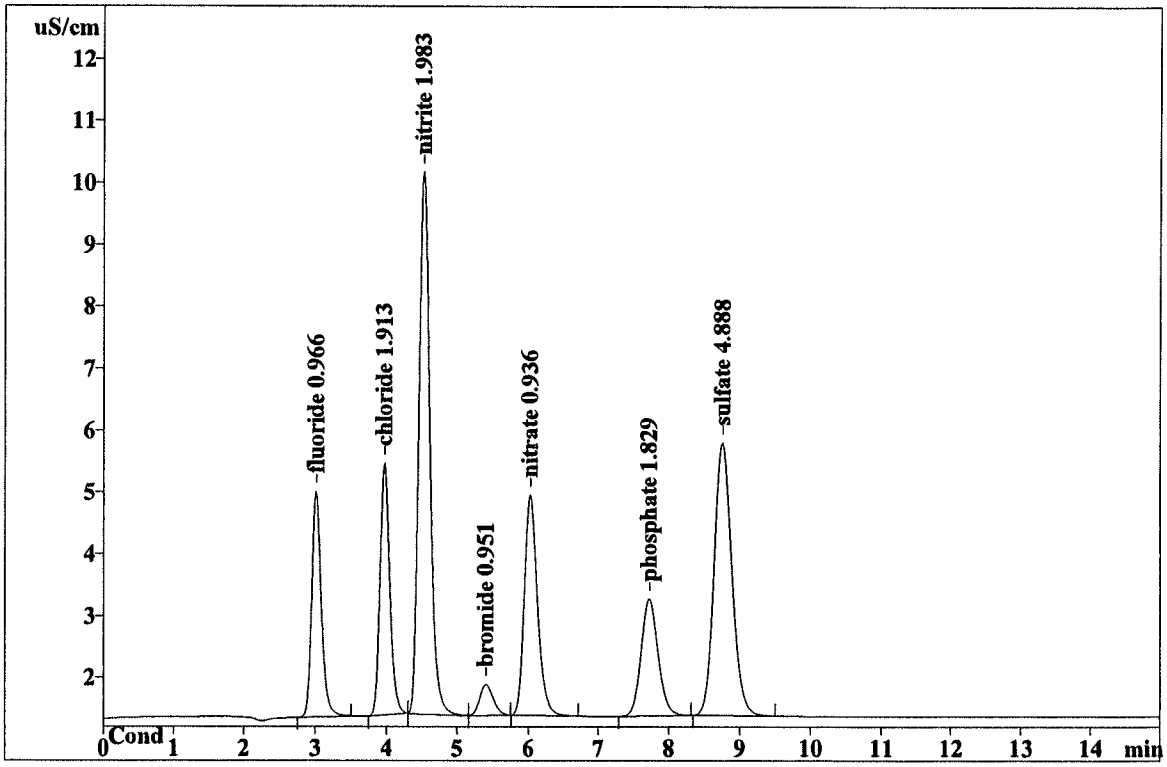
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.06	0.04	1.120	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 11:01:22 AM
Printed by: TWangc

Ident: AF37-46 CCV797
Analysis from: 6/29/2020 11:24:27 PM
File: _2020-06-29_23-24.chw Last save: 6/29/2020 11:39:24 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159601

SAMPLE: METHOD300/9056/4110B
:
Vial number: 46
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

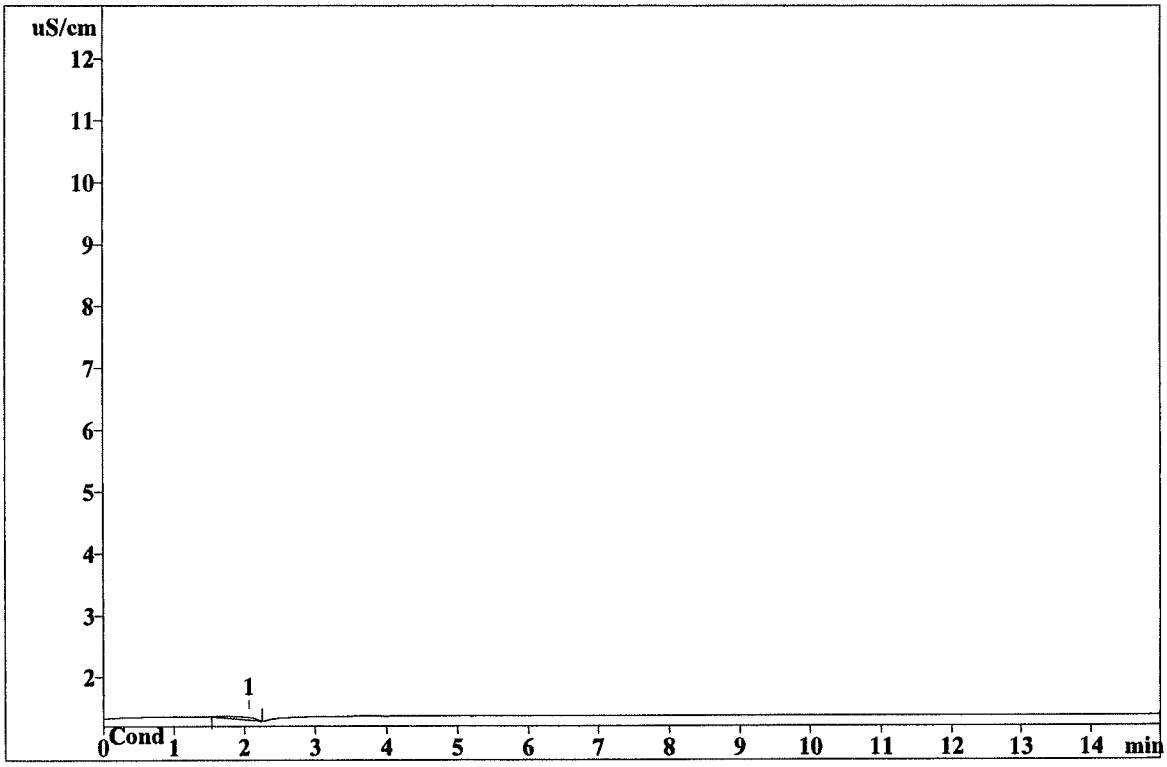
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.65	33.545	0.966	fluoride
2	3.97	4.07	38.820	1.913	chloride
3	4.52	8.77	96.305	1.983	nitrite
4	5.41	0.50	6.710	0.951	bromide
5	6.03	3.57	47.183	0.936	nitrate
6	7.72	1.90	31.990	1.829	phosphate
7	8.75	4.42	78.144	4.888	sulfate
7	15.00	26.88	332.697	13.466	

This report has been created by IC Net
METROHM LTD

Report date: 6/30/2020 11:01:53 AM
Printed by: TWangc

Ident: AF37-47 CCB797
Analysis from: 6/29/2020 11:41:31 PM
File: _2020-06-29_23-41.chw Last save: 6/29/2020 11:56:28 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/29/2020 10:22:29 AM
Run operator: TWangc
Analysis number: 159602

SAMPLE: METHOD300/9056/4110B
:
Vial number: 47
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.06	0.04	1.108	0.000	

This report has been created by IC Net
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IC Result Check FormVersion : B24\AB25(2020)

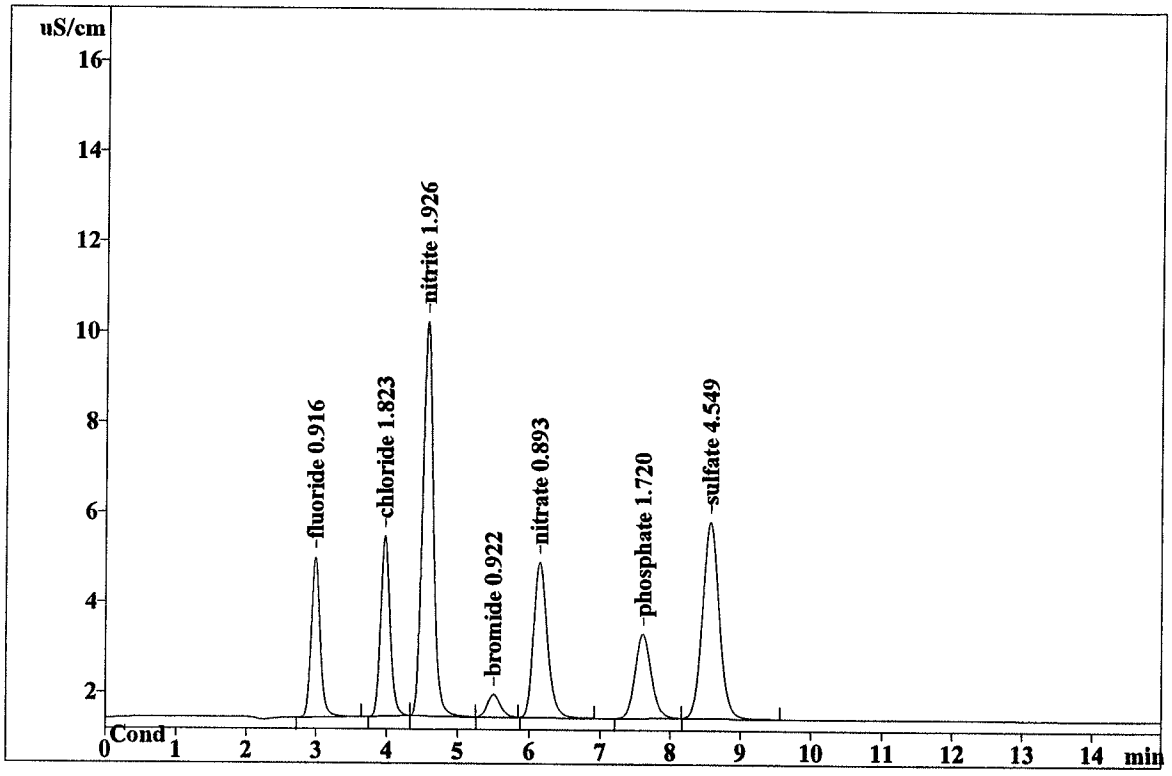
LFID	LSID	Selection	bromide	chloride	fluoride	iodide	sulfate	phosphate	nitrite	nitrate	RawNetID	DF
AF39-01	CCV799	BCFOSPIN	92.2%	91.1%	91.6%	0%*	91%	86%*	96.3%	89.3%*	_2020-06-30_09-48	1
AF39-02	CCB799	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-30_10-05	1
AF39-13	CCV801	BCFOSPIN	95.3%	97.3%	96.4%	0%*	96.2%	89%*	99.9%	92.3%	_2020-06-30_13-13	1
AF39-14	CCB801	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-30_13-30	1
AF39-25	CCV803	BCFOSPIN	95.2%	94.7%	96.4%	0%*	91.3%	89.1%*	99.9%	92.9%	_2020-06-30_16-43	1
AF39-26	CCB803	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-30_17-00	1
AF39-37	CCV805	BCFOSPIN	95.3%	94.9%	96.5%	0%*	93.5%	90.2%	100.8%	93.3%	_2020-06-30_20-12	1
AF39-38	CCB805	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-30_20-29	1
AF39-49	CCV807	BCFOSPIN	95.1%	95.6%	96.3%	0%*	92.1%	89.2%*	100.6%	93.1%	_2020-06-30_23-37	1
AF39-50	CCB807	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-06-30_23-54	1
AF39-61	CCV809	BCFOSPIN	96.1%	95.3%	96.3%	0%*	92.3%	88.2%*	100.3%	93.9%	_2020-07-01_03-02	1
AF39-62	CCB809	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-07-01_03-19	1
AF39-68	CCV811	BCFOSPIN	95.2%	94.1%	96.4%	0%*	90.7%	88.6%*	99.9%	93.4%	_2020-07-01_05-02	1
AF39-69	CCB811	BCFOSPIN	0	0	0	0	0	0	0	0	_2020-07-01_05-19	1

Report date: 7/2/2020 1:54:53 PM
Printed by: TWangc

Ident: AF39-01 CCV799
Analysis from: 6/30/2020 9:48:20 AM
File: _2020-06-30_09-48.chw Last save: 6/30/2020 10:03:18 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159604

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

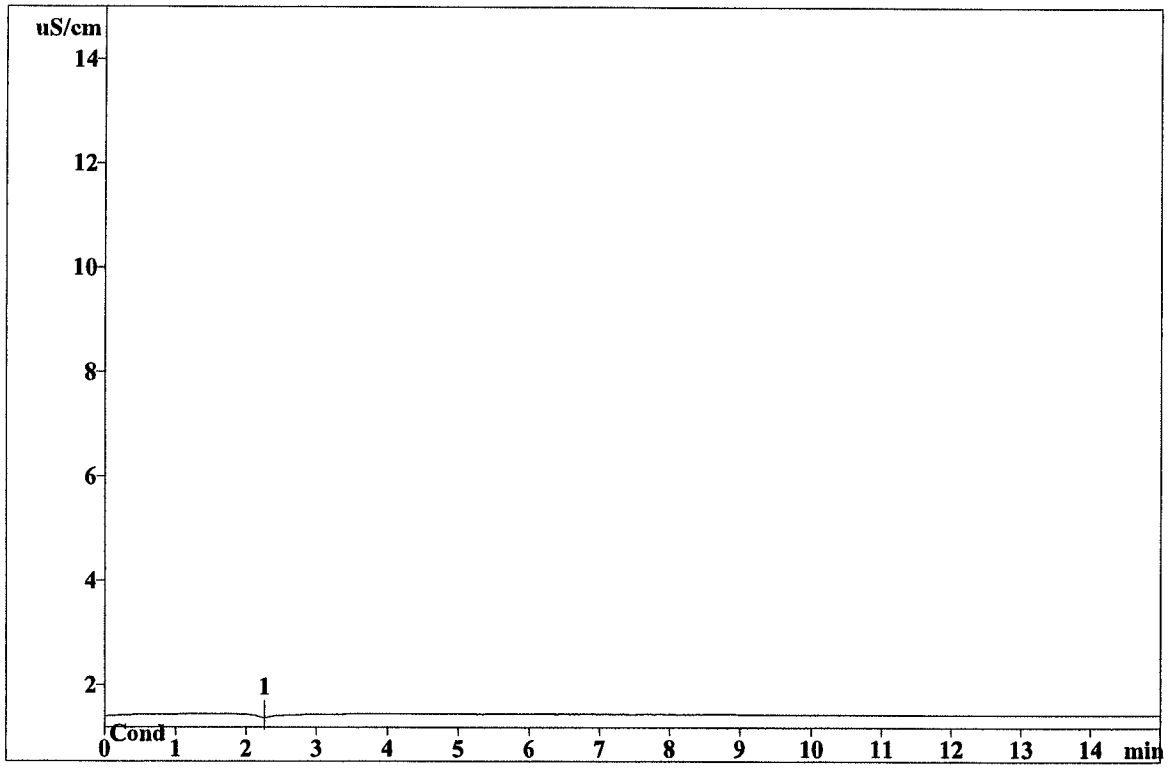
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	3.55	31.762	0.916	fluoride
2	3.97	4.01	36.904	1.823	chloride
3	4.55	8.75	93.472	1.926	nitrite
4	5.49	0.50	6.452	0.922	bromide
5	6.14	3.45	44.871	0.893	nitrate
6	7.60	1.87	29.868	1.720	phosphate
7	8.56	4.36	72.476	4.549	sulfate
7	15.00	26.49	315.805	12.749	

This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 1:57:07 PM
Printed by: TWangc

Ident: AF39-02 CCB799
Analysis from: 6/30/2020 10:05:26 AM
File: _2020-06-30_10-05.chw Last save: 7/1/2020 6:28:50 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159605

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.26	-0.00	-0.000	0.000	

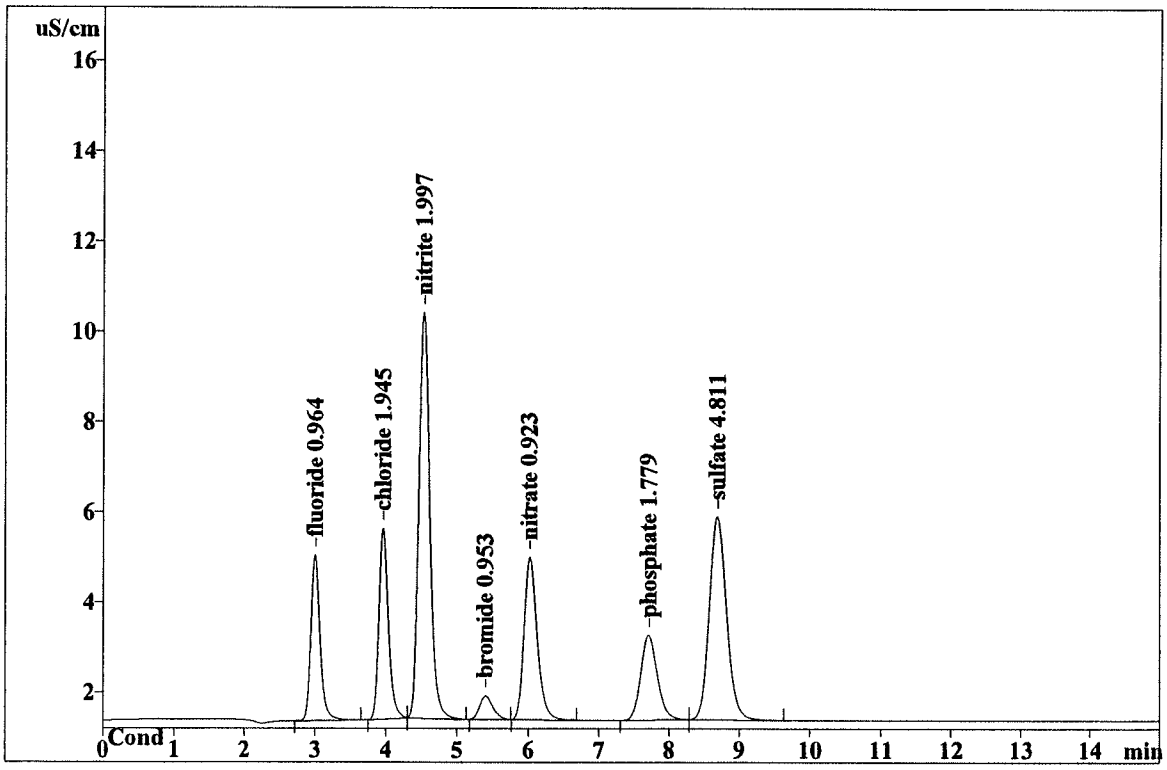
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 1:59:36 PM
Printed by: TWangc

Ident: AF39-13 CCV801
Analysis from: 6/30/2020 1:13:18 PM
File: _2020-06-30_13-13.chw Last save: 6/30/2020 2:33:42 PM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159616

SAMPLE: METHOD300/9056/4110B
:
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

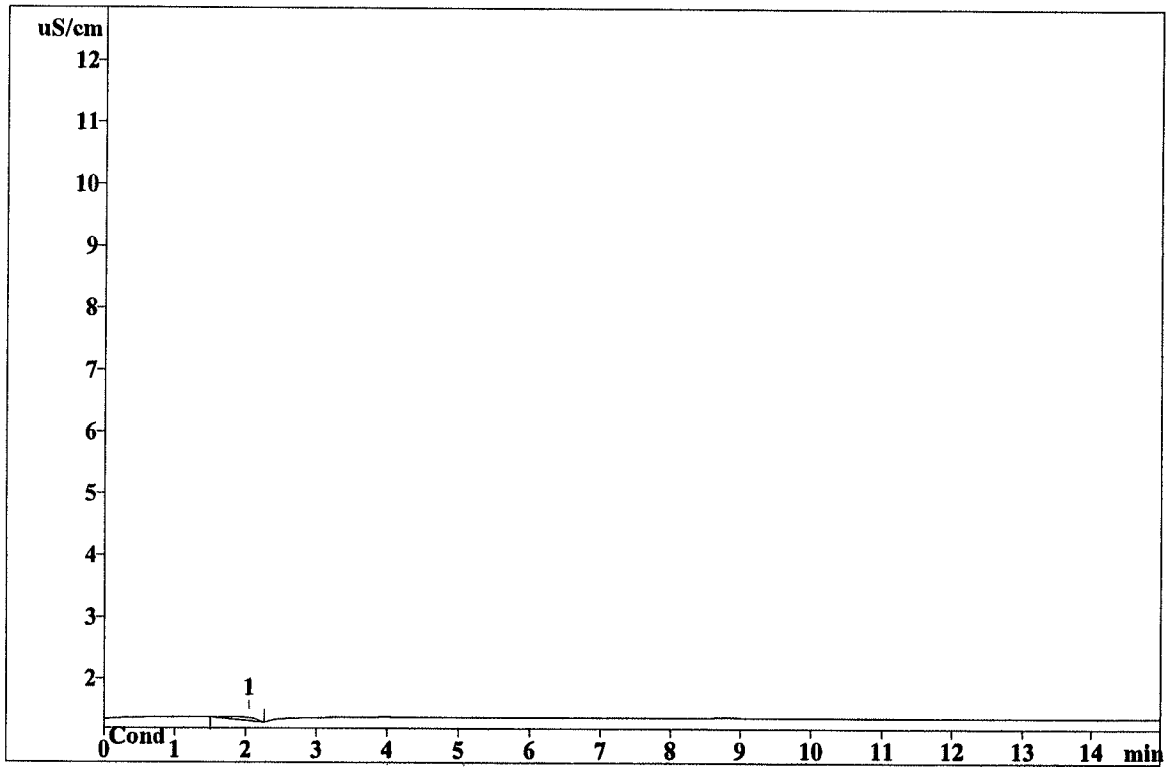
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	3.68	33.480	0.964	fluoride
2	3.96	4.23	39.515	1.945	chloride
3	4.51	9.00	97.011	1.997	nitrite
4	5.40	0.52	6.728	0.953	bromide
5	6.02	3.60	46.495	0.923	nitrate
6	7.70	1.89	31.019	1.779	phosphate
7	8.68	4.51	76.851	4.811	sulfate
7	15.00	27.41	331.098	13.372	

This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 2:00:46 PM
Printed by: TWangc

Ident: AF39-14 CCB801
Analysis from: 6/30/2020 1:30:22 PM
File: _2020-06-30_13-30.chw Last save: 6/30/2020 1:45:19 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159617

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.05	1.279	0.000	

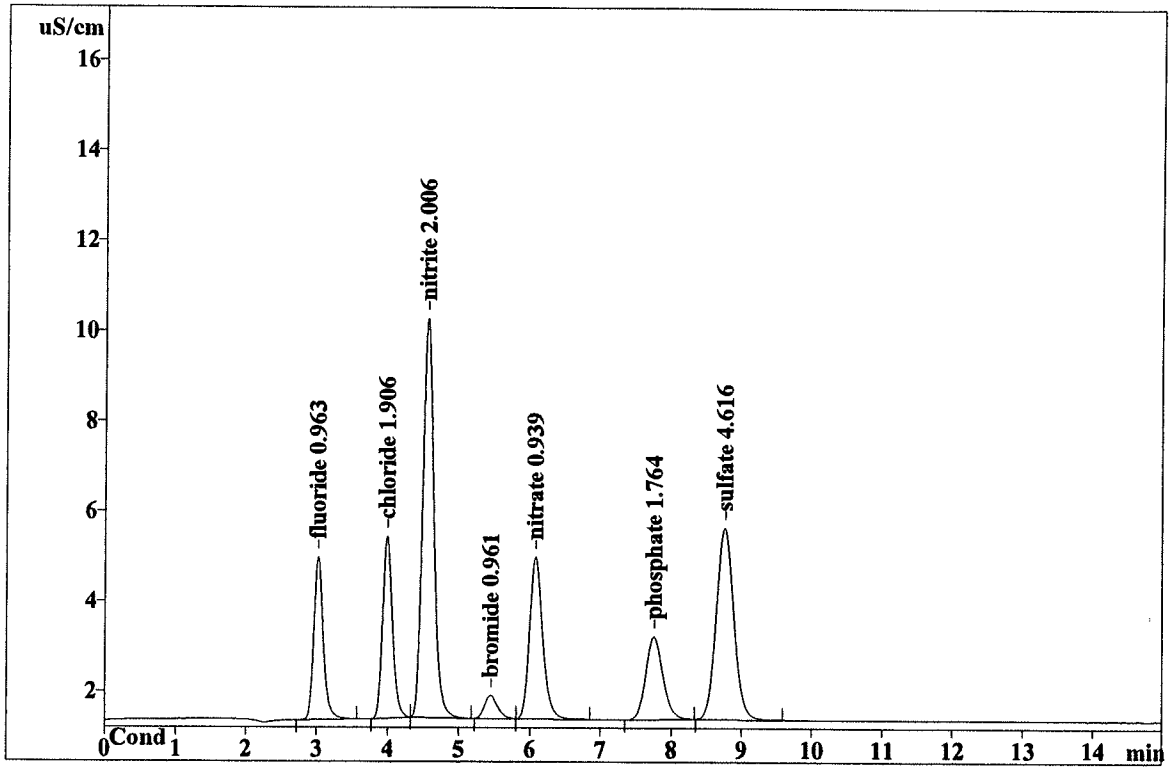
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 2:06:24 PM
Printed by: TWangc

Ident: AF39-61 CCV809
Analysis from: 7/1/2020 3:02:48 AM
File: _2020-07-01_03-02.chw Last save: 7/1/2020 3:17:45 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159664

SAMPLE: METHOD300/9056/4110B
:
Vial number: 61
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

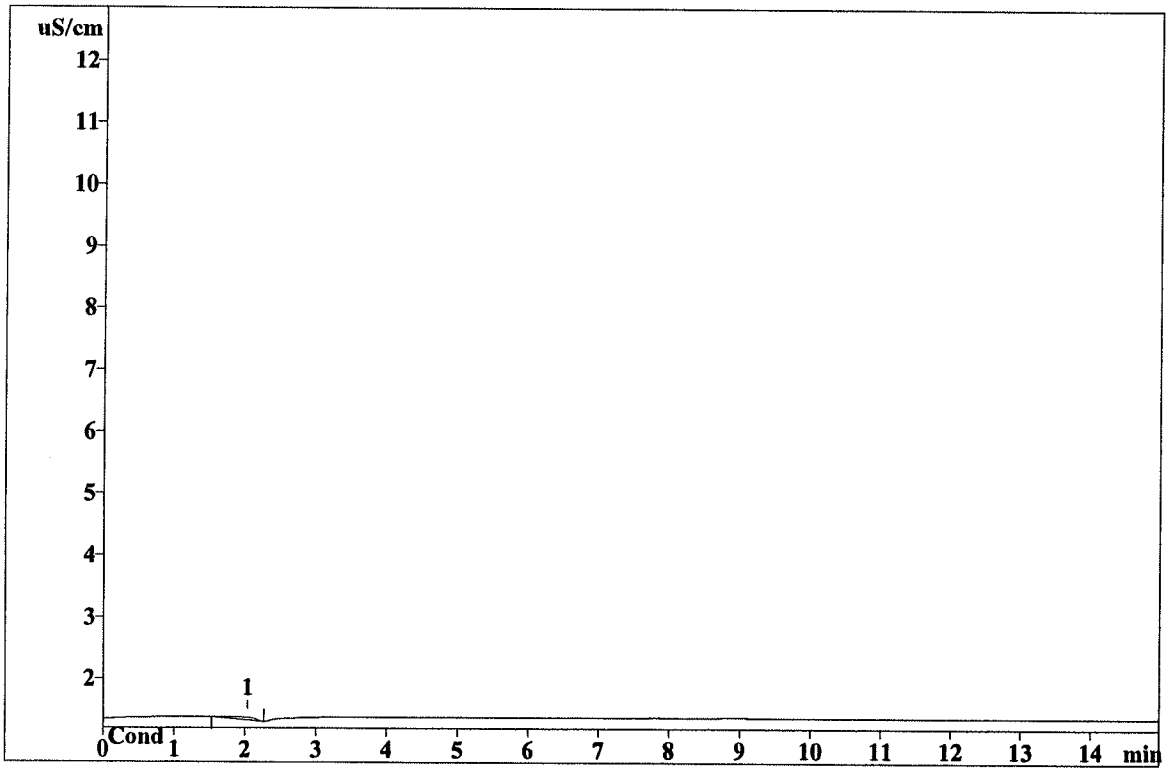
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	3.60	33.457	0.963	fluoride
2	3.98	4.04	38.666	1.906	chloride
3	4.55	8.86	97.456	2.006	nitrite
4	5.45	0.51	6.807	0.961	bromide
5	6.07	3.59	47.329	0.939	nitrate
6	7.75	1.84	30.723	1.764	phosphate
7	8.75	4.25	73.600	4.616	sulfate
7	15.00	26.70	328.038	13.156	

This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 2:07:21 PM
Printed by: TWangc

Ident: AF39-62 CCB809
Analysis from: 7/1/2020 3:19:53 AM
File: _2020-07-01_03-19.chw Last save: 7/1/2020 3:34:50 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159665

SAMPLE: METHOD300/9056/4110B
:
Vial number: 62
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.05	0.04	1.152	0.000	

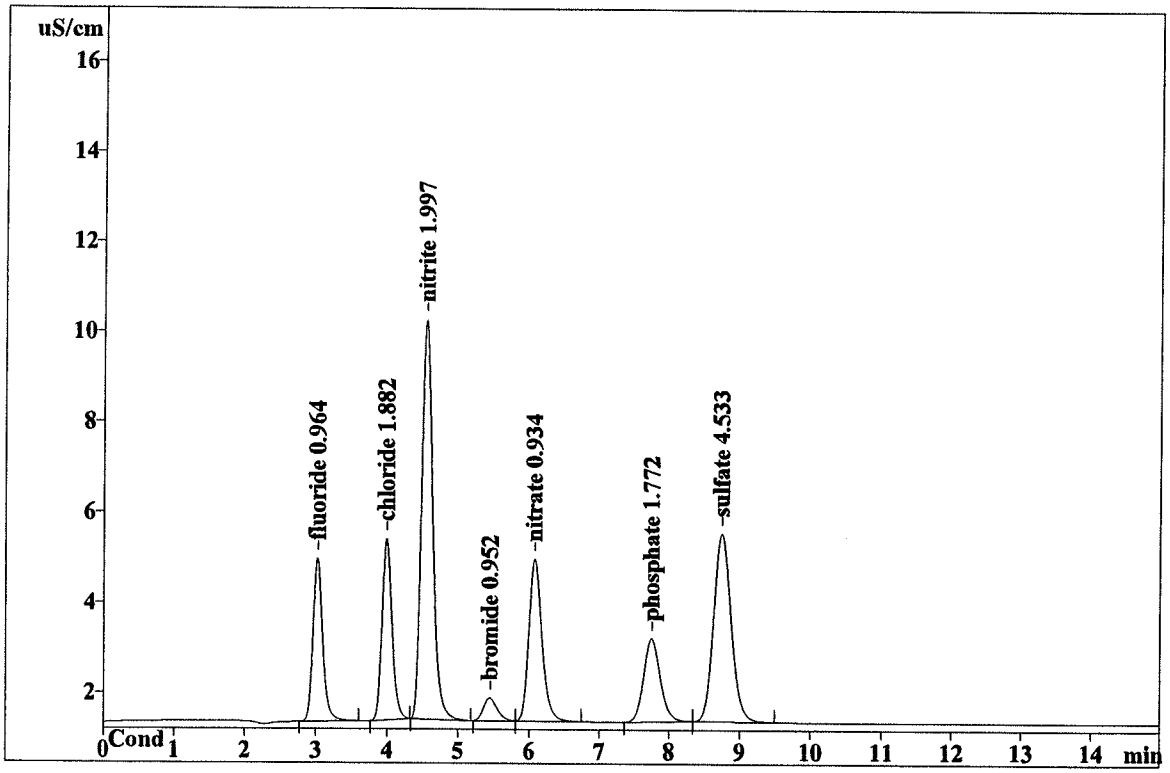
This report has been created by IC Net
METROHM LTD

Report date: 7/2/2020 2:07:46 PM
Printed by: TWangc

Ident: AF39-68 CCV811
Analysis from: 7/1/2020 5:02:22 AM
File: _2020-07-01_05-02.chw Last save: 7/1/2020 5:17:19 AM

Method: ICD0-B24.mtw Last save: 6/30/2020 9:48:59 AM
Run operator: TWangc
Analysis number: 159671

SAMPLE: METHOD300/9056/4110B
:
Vial number: 68
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

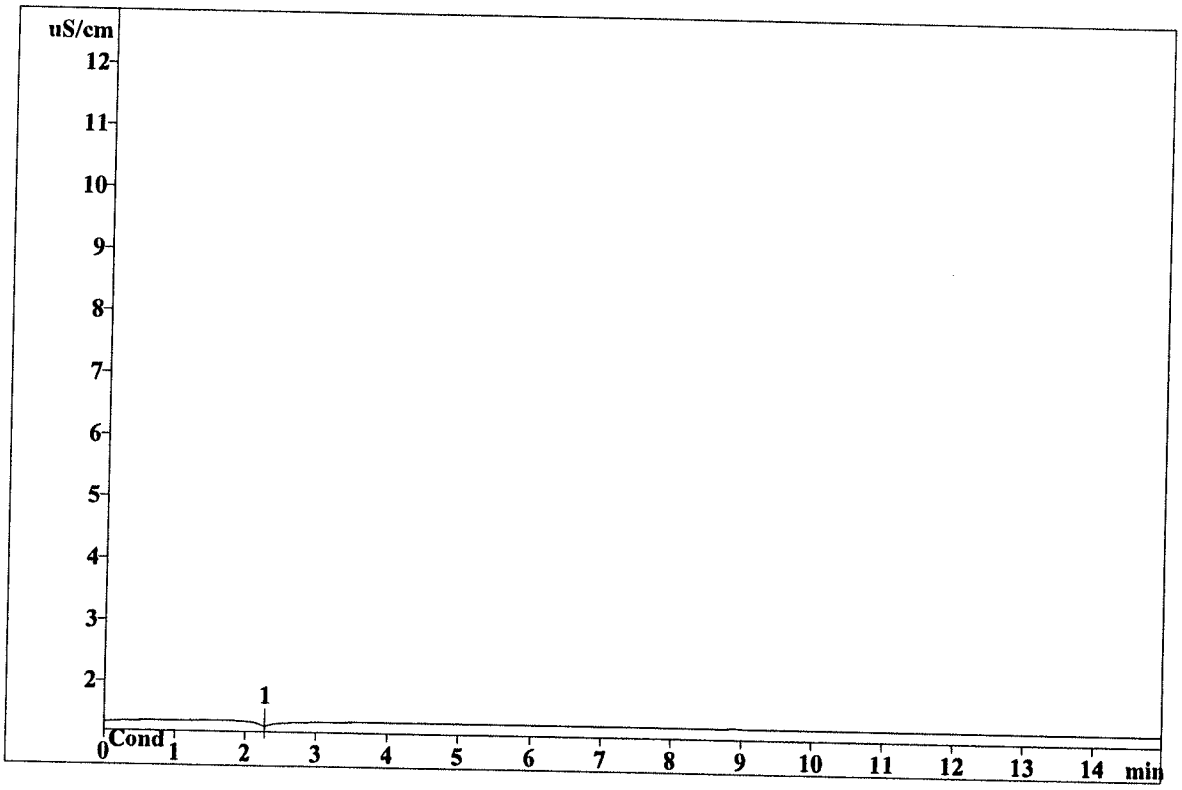


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	3.62	33.492	0.964	fluoride
2	3.98	4.02	38.167	1.882	chloride
3	4.55	8.85	97.016	1.997	nitrite
4	5.45	0.50	6.727	0.952	bromide
5	6.07	3.58	47.037	0.934	nitrate
6	7.75	1.85	30.874	1.772	phosphate
7	8.74	4.17	72.199	4.533	sulfate
7	15.00	26.59	325.512	13.034	

This report has been created by IC Net
METROHM LTD

Report date:	7/2/2020 2:08:45 PM		
Printed by:	TWangc		
Ident:	AF39-69 CCB811		
Analysis from:	7/1/2020 5:19:27 AM		
File:	_2020-07-01_05-19.chw	Last save:	7/1/2020 5:34:23 AM
Modified!			
Method:	ICD0-B24.mtw	Last save:	6/30/2020 9:48:59 AM
Run operator:	TWangc		
Analysis number:	159672		
SAMPLE:	METHOD300/9056/4110B		
:			
Vial number:	69		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.28	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	Concentrations (ppm)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (ppm)
F	10
Cl	5
NO_2	10
Br	20
NO_3	2
PO_4	5
SO_4	20

IC ELUENT PREPARATION — Expiration Date: 03/20/20

Std ID	Aliquot	Final Vol*
SP2-01-07-01	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 03/21/20

Std ID	Aliquot	Final Vol*
SP2-01-22-02	100 mL	1 L

* Reagent Water ID: SWIA-08-21-09

Book #: AD0-067
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AB25
Method File: ICD0 - B24. mtw
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	

STANDARDS ID	
ICAL	SW3B-11-42-03
ICV	SW3B-11-42-01
~~CCV~~ ICV1	SW3B-11-43-01
LCS	—
MS	—

Filters Lot #:
0.45 µm:
0.2 µm:

Snap Seal Containers Lot #:
4 oz: 04119002
1.5 oz:

Column: Metrosep A Supp 5-100
Flow Rate: 0.70 ml/min

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LO
Date: 2/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-02-24_20-30.chw	ICD0-B24.mtw	AB25-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_20-47.chw	ICD0-B24.mtw	AB25-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_21-04.chw	ICD0-B24.mtw	AB25-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD300/9056/4110B	0.05 PPM
_2020-02-24_21-21.chw	ICD0-B24.mtw	AB25-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD300/9056/4110B	0.1 PPM
_2020-02-24_21-39.chw	ICD0-B24.mtw	AB25-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD300/9056/4110B	0.2 PPM
_2020-02-24_21-56.chw	ICD0-B24.mtw	AB25-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD300/9056/4110B	0.5 PPM
_2020-02-24_22-13.chw	ICD0-B24.mtw	AB25-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD300/9056/4110B	1.0 PPM
_2020-02-24_22-30.chw	ICD0-B24.mtw	AB25-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD300/9056/4110B	2.0 PPM
_2020-02-24_22-47.chw	ICD0-B24.mtw	AB25-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD300/9056/4110B	5.0 PPM
_2020-02-24_23-04.chw	ICD0-B24.mtw	AB25-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD300/9056/4110B	10.0 PPM
_2020-02-24_23-21.chw	ICD0-B24.mtw	AB25-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD300/9056/4110B	20.0 PPM
_2020-02-24_23-38.chw	ICD0-B24.mtw	AB25-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_23-55.chw	ICD0-B24.mtw	AB25-13 ICVI	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1.0 PPM
_2020-02-25_00-12.chw	ICD0-B24.mtw	AB25-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL 02/25/20

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #: AD0-068
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AF37
Method File: ICD0-B24.mtw
Analytical Batch: ICF039W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	—
ICV	—
CCV	SW3B-13-11-03
LCS	SW3B-13-12-01
MS	SCP refer to LCS Parent ID

Filters Lot #:
0.45 µm: 00191103
0.22 / 0.2 µm: 91478103 TW 6/29/20

Snap Seal Containers Lot #:
4 oz:
1.5 oz: 22319008

Column: Metrosep A Supp 5-100
Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION — Expiration Date: 7/25/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 7/25/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SWIA-009-03-10

ELECTRONIC DATA ARCHIVAL	
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: TW.
Date: 6/29/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-29_10-21.chw	ICD-B24.mtw	AF37-01 CCV787	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_10-38.chw	ICD-B24.mtw	AF37-02 CCB787	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_10-55.chw	ICD0-B24.mtw	AF37-03 ICF039WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_11-13.chw	ICD0-B24.mtw	AF37-04 ICF039WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_11-30.chw	ICD0-B24.mtw	AF37-05 ICF039WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_11-58.chw	ICD0-B24.mtw	AF37-06 CCV789	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_12-15.chw	ICD0-B24.mtw	AF37-07 CCB789	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_12-32.chw	ICD0-B24.mtw	AF37-08 F183-08	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_12-49.chw	ICD0-B24.mtw	AF37-09 F223-05I DF=100	9	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_13-06.chw	ICD0-B24.mtw	AF37-10 F183-01I DF=20	10	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_13-23.chw	ICD0-B24.mtw	AF37-11 F183-01J DF=200	11	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_13-40.chw	ICD0-B24.mtw	AF37-12 F183-02I DF=20	12	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_13-57.chw	ICD0-B24.mtw	AF37-13 F183-02J DF=100	13	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_14-14.chw	ICD0-B24.mtw	AF37-14 F183-03I DF=20	14	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_14-31.chw	ICD0-B24.mtw	AF37-15 F183-03J DF=50	15	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_14-52.chw	ICD0-B24.mtw	AF37-16 F183-05I DF=10	16	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_15-09.chw	ICD0-B24.mtw	AF37-17 F183-05J DF=50	17	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_15-26.chw	ICD0-B24.mtw	AF37-18 CCV791	18	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_15-43.chw	ICD0-B24.mtw	AF37-19 CCB791	19	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_16-00.chw	ICD0-B24.mtw	AF37-20 F183-06I DF=10	20	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_16-17.chw	ICD0-B24.mtw	AF37-21 F183-06J DF=50	21	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_16-34.chw	ICD0-B24.mtw	AF37-22 F183-07I DF=10	22	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_16-51.chw	ICD0-B24.mtw	AF37-23 F183-07J DF=100	23	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_17-08.chw	ICD0-B24.mtw	AF37-24 F183-08I DF=10	24	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_17-25.chw	ICD0-B24.mtw	AF37-25 F183-08D DF=10	25	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_17-42.chw	ICD0-B24.mtw	AF37-26 F183-08IM DF=10	26	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_17-59.chw	ICD-B24.mtw	AF37-27 F183-08IS DF=10	27	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_18-17.chw	ICD-B24.mtw	AF37-28 F183-12I DF=10	28	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_18-34.chw	ICD0-B24.mtw	AF37-29 F183-12J DF=100	29	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_18-51.chw	ICD0-B24.mtw	AF37-30 CCV793	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_19-08.chw	ICD0-B24.mtw	AF37-31 CCB793	31	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_19-25.chw	ICD0-B24.mtw	AF37-32 F183-13I DF=10	32	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_19-42.chw	ICD0-B24.mtw	AF37-33 F183-13J DF=100	33	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_19-59.chw	ICD0-B24.mtw	AF37-34 F183-14I DF=10	34	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_20-16.chw	ICD0-B24.mtw	AF37-35 F183-14J DF=50	35	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_20-33.chw	ICD0-B24.mtw	AF37-36 F183-08J DF=200	36	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_20-50.chw	ICD0-B24.mtw	AF37-37 F183-08JD DF=200	37	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_21-07.chw	ICD0-B24.mtw	AF37-38 F183-08JM DF=200	38	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_21-24.chw	ICD0-B24.mtw	AF37-39 F183-08JS DF=200	39	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_21-41.chw	ICD0-B24.mtw	AF37-40 F183-15I DF=10	40	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_21-59.chw	ICD0-B24.mtw	AF37-41 F183-15J DF=50	41	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_22-16.chw	ICD0-B24.mtw	AF37-42 CCV795	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_22-33.chw	ICD0-B24.mtw	AF37-43 CCB795	43	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_22-50.chw	ICD0-B24.mtw	AF37-44 F183-16I DF=10	44	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_23-07.chw	ICD0-B24.mtw	AF37-45 F183-16J DF=50	45	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_23-24.chw	ICD0-B24.mtw	AF37-46 CCV797	46	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-29_23-41.chw	ICD0-B24.mtw	AF37-47 CCB797	47	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL TW 7/2/2020

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-069
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF39
Method File:	ICDO-B24.mtw
Analytical Batch:	ICF041W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	—
ICV	—
CCV	SW3B-13-12-02
LCS	SW3B-13-12-03
MS	SCP refer to LCS Parent ID

Filters Lot #:
0.45 µm: 00191103
~~0.2 µm~~ 0.22µm: TW 6/30/20 91478103

Snap Seal Containers Lot #:
4 oz:
1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION — Expiration Date: 7/27/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION — Expiration Date: 7/27/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SWIA-009-03-10

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: TW

Date: 6/30/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-07-01_02-28.chw	ICD0-B24.mtw	AF39-59 F215-04ID DF=2	59	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	LIGHT YELLOW
_2020-07-01_02-45.chw	ICD0-B24.mtw	AF39-60 F215-05	60	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_03-02.chw	ICD0-B24.mtw	AF39-61 CCV809	61	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_03-19.chw	ICD0-B24.mtw	AF39-62 CCB809	62	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_03-36.chw	D0-B24.mtw	AF39-63 F215-06	63	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_03-54.chw	ICD0-B24.mtw	AF39-64 F215-04IM DF=2	64	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_04-11.chw	ICD0-B24.mtw	AF39-65 F215-04IS DF=2	65	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	LIGHY YELLOW
_2020-07-01_04-28.chw	ICD0-B24.mtw	AF39-66 F183-05I DF=100	66	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	LIGHT YELLOW
_2020-07-01_04-45.chw	ICD0-B24.mtw	AF39-67 F183-14I DF=20	67	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_05-02.chw	ICD0-B24.mtw	AF39-68 CCV811	68	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-07-01_05-19.chw	ICD0-B24.mtw	AF39-69 CCB811	69	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

TW
FINAL 7/8/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
2020-06-30_09-48.chw	ICD0-B24.mtw	AF39-01 CCV799	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_10-05.chw	ICD0-B24.mtw	AF39-02 CCB799	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_10-22.chw	ICD0-B24.mtw	AF39-03 ICF041WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_10-39.chw	ICD0-B24.mtw	AF39-04 ICF041WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_10-56.chw	ICD0-B24.mtw	AF39-05 ICF041WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_11-13.chw	ICD0-B24.mtw	AF39-06 F247-02	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_11-30.chw	ICD0-B24.mtw	AF39-07 F247-03	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_11-47.chw	ICD0-B24.mtw	AF39-08 F249-01	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_12-04.chw	ICD0-B24.mtw	AF39-09 F249-04I DF=2	9	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-30_12-22.chw	ICD0-B24.mtw	AF39-10 F249-05	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_12-39.chw	ICD0-B24.mtw	AF39-11 F249-06	11	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_12-56.chw	ICD0-B24.mtw	AF39-12 F249-07	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_13-13.chw	ICD0-B24.mtw	AF39-13 CCV801	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_13-30.chw	ICD0-B24.mtw	AF39-14 CCB801	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_13-47.chw	ICD0-B24.mtw	AF39-15 F249-02	15	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_14-04.chw	ICD0-B24.mtw	AF39-16 F249-01I DF=5	16	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_14-21.chw	ICD0-B24.mtw	AF39-17 F249-04J DF=5	17	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-30_14-38.chw	ICD0-B24.mtw	AF39-18 F249-05I DF=5	18	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_15-00.chw	ICD0-B24.mtw	AF39-19 F249-06I DF=2	19	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_15-17.chw	ICD0-B24.mtw	AF39-20 F249-06J DF=5	20	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_15-34.chw	D0-B24.mtw	AF39-21 F249-07I DF=5	21	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_15-51.chw	ICD0-B24.mtw	AF39-22 F215-04I DF=2	22	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	LIGHT YELLOW
2020-06-30_16-08.chw	ICD0-B24.mtw	AF39-23 F249-01J DF=10	23	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_16-25.chw	ICD0-B24.mtw	AF39-24 F249-04K DF=10	24	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-30_16-43.chw	ICD0-B24.mtw	AF39-25 CCV803	25	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_17-00.chw	ICD0-B24.mtw	AF39-26 CCB803	26	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_17-20.chw	ICD0-B24.mtw	AF39-27 F249-07J DF=10	27	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_17-38.chw	ICD0-B24.mtw	AF39-28 F247-03M	28	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_17-55.chw	ICD0-B24.mtw	AF39-29 F247-03S	29	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_18-13.chw	ICD0-B24.mtw	AF39-30 F247-03D	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_18-30.chw	ICD0-B24.mtw	AF39-31 F247-03I DF=5	31	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_18-47.chw	ICD0-B24.mtw	AF39-32 F247-03ID DF=5	32	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_19-04.chw	ICD0-B24.mtw	AF39-33 F247-03IM DF=5	33	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_19-21.chw	ICD0-B24.mtw	AF39-34 F247-03IS DF=5	34	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_19-38.chw	ICD0-B24.mtw	AF39-35 F249-04T DF=20	35	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-06-30_19-55.chw	ICD0-B24.mtw	AF39-36 F249-05J DF=10	36	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_20-12.chw	ICD0-B24.mtw	AF39-37 CCV805	37	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_20-29.chw	ICD0-B24.mtw	AF39-38 CCB805	38	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_20-47.chw	ICD0-B24.mtw	AF39-39 F249-07K DF=20	39	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_21-04.chw	ICD0-B24.mtw	AF39-40 F247-02I DF=10	40	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_21-21.chw	ICD0-B24.mtw	AF39-41 F247-02J DF=20	41	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_21-38.chw	ICD0-B24.mtw	AF39-42 F249-06K DF=10	42	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_21-55.chw	CD0-B24.mtw	AF39-43 F249-06T DF=20	43	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_22-12.chw	ICD0-B24.mtw	AF39-44 F247-03J DF=20	44	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_22-29.chw	ICD0-B24.mtw	AF39-45 F247-03JD DF=20	45	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_22-46.chw	ICD0-B24.mtw	AF39-46 F247-03JM DF=20	46	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_23-03.chw	ICD0-B24.mtw	AF39-47 F247-03JS DF=20	47	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_23-20.chw	ICD0-B24.mtw	AF39-48 F249-01K DF=20	48	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_23-37.chw	ICD0-B24.mtw	AF39-49 CCV807	49	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-06-30_23-54.chw	ICD0-B24.mtw	AF39-50 CCB807	50	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_00-12.chw	ICD0-B24.mtw	AF39-51 F249-01T DF=40	51	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_00-29.chw	ICD0-B24.mtw	AF39-52 F249-04G DF=40	52	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	HIGH CONDUCTIVITY
2020-07-01_00-46.chw	ICD0-B24.mtw	AF39-53 F249-05K DF=40	53	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_01-03.chw	ICD0-B24.mtw	AF39-54 F249-06G DF=50	54	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_01-20.chw	ICD0-B24.mtw	AF39-55 F249-07T DF=40	55	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_01-37.chw	ICD0-B24.mtw	AF39-56 F215-01	56	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_01-54.chw	ICD0-B24.mtw	AF39-57 F215-02	57	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
2020-07-01_02-11.chw	ICD0-B24.mtw	AF39-58 F215-03	58	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column:	METROSEP A SUPP 5
		Column size:	100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

AA
06/03/14

RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D0 (761 IC) IC column: METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**2.99**	2.90	3.08	**0.090**
CHLORIDE	**3.96**	3.86	4.07	**0.104**
NITRITE	**4.54**	4.38	4.70	**0.159**
BROMIDE	**5.44**	5.11	5.76	**0.329**
NITRATE	**6.10**	5.68	6.52	**0.420**
PHOSPHATE	**7.79**	7.26	8.31	**0.528**
SULFATE	**8.83**	8.03	9.63	**0.797**

ICD0-B24.mtw

TK 04/26/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SM2320B
TOTAL ALKALINITY

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF015WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF015WL/ALF015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183

Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF015WB	ND	1	NA	5	5	06/30/2016:24	NA	20E5F1003	20E5F10	ALF015W	NA	NA
LCS1W	ALF015WL	72.0	1	NA	5	5	06/30/2016:31	NA	20E5F1004	20E5F10	ALF015W	NA	NA
LCD1W	ALF015WC	74.1	1	NA	5	5	06/30/2016:38	NA	20E5F1005	20E5F10	ALF015W	NA	NA
MW17S-GW062120	F183-01	310	1	NA	5	5	06/30/2016:46	NA	20E5F1006	20E5F10	ALF015W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02	286	1	NA	5	5	06/30/2016:53	NA	20E5F1007	20E5F10	ALF015W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03	266	1	NA	5	5	06/30/2017:02	NA	20E5F1008	20E5F10	ALF015W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05	265	1	NA	5	5	06/30/2017:10	NA	20E5F1009	20E5F10	ALF015W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06	229	1	NA	5	5	06/30/2017:17	NA	20E5F1010	20E5F10	ALF015W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07	284	1	NA	5	5	06/30/2017:24	NA	20E5F1011	20E5F10	ALF015W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08	267	1	NA	5	5	06/30/2017:33	NA	20E5F1012	20E5F10	ALF015W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08D	257	1	NA	5	5	06/30/2017:40	NA	20E5F1013	20E5F10	ALF015W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12	267	1	NA	5	5	06/30/2017:48	NA	20E5F1014	20E5F10	ALF015W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13	269	1	NA	5	5	06/30/2017:55	NA	20E5F1015	20E5F10	ALF015W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14	242	1	NA	5	5	06/30/2018:04	NA	20E5F1016	20E5F10	ALF015W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15	238	1	NA	5	5	06/30/2018:11	NA	20E5F1017	20E5F10	ALF015W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16	237	1	NA	5	5	06/30/2018:18	NA	20E5F1018	20E5F10	ALF015W	06/22/2010:10	06/23/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALF015WB	ALF015WL	ALF015WC
LAB FILE ID :	20E5F1003	20E5F1004	20E5F1005
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/30/2016:24	06/30/2016:31	06/30/2016:38
PREP BATCH :	ALF015W	ALF015W	ALF015W
CALIBRATION REF:	20E5F10	20E5F10	20E5F10

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	72.0	95	75.8	74.1	98	3	80-120	20

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : METHOD SM2320B

MATRIX	: WATER	
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120DUP
LAB SAMPLE ID	: F183-08	F183-08D
LAB FILE ID	: 20E5F1012	20E5F1013
DATE PREPARED	: NA	NA
DATE ANALYZED	: 06/30/2017:33	06/30/2017:40
PREP BATCH	: ALF015W	ALF015W
CALIBRATION REF	: 20E5F101	20E5F101

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
ALKALINITY	267	257	4	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☑ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Reagent Water: RWI – 19-003

Comments:

Book#: AAL-043

Instrument No.: ☐ 53 ☑ E5

Analytical Batch: 20E5F10

Analytical Sequence: ALF015 / ALF016

SOP #	Rev. #
☑ EMAX-2320B	6
☐ EMAX-	

STANDARDS ID	Conc. (mg/L)
0.02N HCL SWRI-02-24-10	0.02 N
LCS SWI-02-05-02	75.8
MS/MSD NA	NA
ICV NA	NA

pH Buffer	ID
pH 4	SWI-02-05-21
pH 7	SWI-02-05-22
pH 10	SWI-02-05-23
pH 8.0 (Check)	SWI-02-05-19
pH Strip	HC99 8032

Analyzed By: LO / TK

Date: 6/30/20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1168 **Analytical Batch#** 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F10	06/30/20	4:10 PM	7.93	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F10	06/30/20	4:17 PM	8.27	.00	1.57	-1.00	.00	62.65	62.65	.00	.00	
3	ALF015WB	20E5F10	06/30/20	4:24 PM	6.72	.00	.07	.12	.00	1.18	1.18	.00	.00	
4	ALF015WL	20E5F10	06/30/20	4:31 PM	9.06	1.15	1.80	-1.00	46.11	72.00	.00	51.78	20.23	
5	ALF015WC	20E5F10	06/30/20	4:38 PM	9.09	1.22	1.85	-1.00	48.74	74.07	.00	50.65	23.41	
6	F183-01	20E5F10	06/30/20	4:46 PM	7.42	.00	7.75	-1.00	.00	309.88	309.88	.00	.00	
7	F183-02	20E5F10	06/30/20	4:53 PM	7.38	.00	7.14	-1.00	.00	285.59	285.59	.00	.00	
8	F183-03	20E5F10	06/30/20	5:02 PM	7.69	.00	6.66	-1.00	.00	266.34	266.34	.00	.00	
9	F183-05	20E5F10	06/30/20	5:10 PM	7.50	.00	6.63	-1.00	.00	265.29	265.29	.00	.00	
10	F183-06	20E5F10	06/30/20	5:17 PM	7.60	.00	5.73	-1.00	.00	229.09	229.09	.00	.00	
11	F183-07	20E5F10	06/30/20	5:24 PM	7.50	.00	7.10	-1.00	.00	283.87	283.87	.00	.00	
12	F183-08	20E5F10	06/30/20	5:33 PM	7.44	.00	6.67	-1.00	.00	266.82	266.82	.00	.00	
13	F183-08D	20E5F10	06/30/20	5:40 PM	7.45	.00	6.41	-1.00	.00	256.57	256.57	.00	.00	
14	F183-12	20E5F10	06/30/20	5:48 PM	7.51	.00	6.68	-1.00	.00	267.26	267.26	.00	.00	
15	F183-13	20E5F10	06/30/20	5:55 PM	7.52	.00	6.72	-1.00	.00	268.62	268.62	.00	.00	
16	F183-14	20E5F10	06/30/20	6:04 PM	7.62	.00	6.05	-1.00	.00	242.07	242.07	.00	.00	
17	F183-15	20E5F10	06/30/20	6:11 PM	7.58	.00	5.96	-1.00	.00	238.30	238.30	.00	.00	
18	F183-16	20E5F10	06/30/20	6:18 PM	7.55	.00	5.92	-1.00	.00	236.91	236.91	.00	.00	

Analyzed by: LD / TK Reviewed by: TK Date: 07/06/20

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Run Number 1168 **Analytical Batch#** 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F190-01	20E5F10	06/30/20	6:25 PM	7.05	.00	6.88	-1.00	.00	275.34	275.34	.00	.00	
20	F190-02	20E5F10	06/30/20	6:32 PM	6.64	.00	.08	.12	.00	1.43	1.43	.00	.00	
21	F190-03	20E5F10	06/30/20	6:40 PM	8.34	.03	3.22	-1.00	1.01	128.68	126.66	2.03	.00	
22	F190-04	20E5F10	06/30/20	6:49 PM	10.94	1.64	2.15	-1.00	65.70	85.88	.00	40.36	45.52	
23	F193-02	20E5F10	06/30/20	6:55 PM	8.08	.00	3.02	-1.00	.00	120.93	120.93	.00	.00	
24	F193-03	20E5F10	06/30/20	7:03 PM	7.75	.00	2.86	-1.00	.00	114.47	114.47	.00	.00	
25	F193-04	20E5F10	06/30/20	7:10 PM	8.05	.00	5.02	-1.00	.00	200.61	200.61	.00	.00	
26	RINSE	20E5F10	06/30/20	7:16 PM	6.60	.00	.07	.11	.00	1.08	1.08	.00	.00	
27	ALF016WB	20E5F10	06/30/20	7:23 PM	6.34	.00	.06	.10	.00	.87	.87	.00	.00	
28	ALF016WL	20E5F10	06/30/20	7:30 PM	9.06	1.17	1.85	-1.00	46.78	73.91	.00	54.25	19.65	
29	ALF016WC	20E5F10	06/30/20	7:38 PM	9.06	1.17	1.86	-1.00	46.90	74.49	.00	55.18	19.31	
30	F215-01	20E5F10	06/30/20	7:51 PM	7.32	.00	21.35	-1.00	.00	854.05	854.05	.00	.00	
31	F215-02	20E5F10	06/30/20	8:01 PM	7.66	.00	10.01	-1.00	.00	400.42	400.42	.00	.00	
32	F215-03	20E5F10	06/30/20	8:12 PM	7.96	.00	19.89	-1.00	.00	795.44	795.44	.00	.00	
33	F215-04	20E5F10	06/30/20	8:26 PM	7.25	.00	23.12	-1.00	.00	924.90	924.90	.00	.00	
34	F215-04D	20E5F10	06/30/20	8:41 PM	7.24	.00	24.23	-1.00	.00	969.39	969.39	.00	.00	
35	F215-05	20E5F10	06/30/20	8:51 PM	7.39	.00	12.31	-1.00	.00	492.59	492.59	.00	.00	
36	F215-06	20E5F10	06/30/20	8:59 PM	7.75	.00	6.48	-1.00	.00	259.40	259.40	.00	.00	
37	F182-01	20E5F10	06/30/20	9:06 PM	7.46	.00	6.52	-1.00	.00	260.63	260.63	.00	.00	
38	F195-01	20E5F10	06/30/20	9:15 PM	7.75	.00	6.51	-1.00	.00	260.33	260.33	.00	.00	

Analyzed by: LD / IK

Reviewed by: [illegible] IK

Date: 07/06/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

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Run Number 1168 **Analytical Batch#** 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
39	F206-03	20E5F10	06/30/20	9:22 PM	7.93	.00	4.35	-1.00	.00	173.92	173.92	.00	.00	
40	F206-04	20E5F10	06/30/20	9:30 PM	8.02	.00	6.89	-1.00	.00	275.73	275.73	.00	.00	
41	F206-05	20E5F10	06/30/20	9:38 PM	8.00	.00	6.89	-1.00	.00	275.43	275.43	.00	.00	
42	F210-01	20E5F10	06/30/20	9:48 PM	7.82	.00	7.21	-1.00	.00	288.42	288.42	.00	.00	
43	F210-04	20E5F10	06/30/20	9:55 PM	7.67	.00	7.20	-1.00	.00	287.81	287.81	.00	.00	
44	F210-05	20E5F10	06/30/20	10:03 PM	7.59	.00	7.44	-1.00	.00	297.42	297.42	.00	.00	
45	F210-07	20E5F10	06/30/20	10:12 PM	7.68	.00	6.32	-1.00	.00	252.69	252.69	.00	.00	
46	F210-08	20E5F10	06/30/20	10:19 PM	7.70	.00	6.20	-1.00	.00	247.87	247.87	.00	.00	
47	RINSE	20E5F10	06/30/20	10:26 PM	6.64	.00	.07	.11	.00	1.26	1.26	.00	.00	

Analyzed by: LO / TK Reviewed by: TK Date: 07/06/20

PC-TitrATION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

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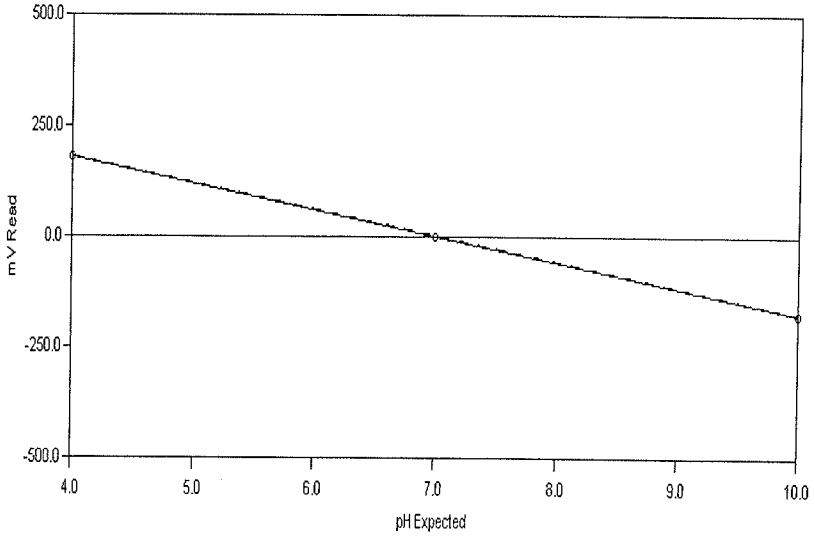
PC-TitratION PLUS
Calibration Report

Calibration Record # 826



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/30/2020
Channel	1	Time	4:07 PM
Probe Type	pH	Temperature	299.14 K 25.99 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.447	CorrCoeff	1.0000
Intercept	0.770	Equation: Y = (-59.447) X + (0.770)	

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-59.447	-65.00	-53.00
Intercept	0.770	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	179.07
	7.00	0.85
	10.00	-177.61

Copyright Hinterland Software Ltd.

PC-Titrate For Windows

Running List Report

Order Number - 20E5F10

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF015WB	6	.00	25.00
5	PH-ALK	ALF015WL	7	.00	25.00
6	PH-ALK	ALF015WC	8	.00	25.00
7	PH-ALK	F183-01	9	.00	25.00
8	PH-ALK	F183-02	10	.00	25.00
9	PH-ALK	F183-03	11	.00	25.00
10	PH-ALK	F183-05	12	.00	25.00
11	PH-ALK	F183-06	13	.00	25.00
12	PH-ALK	F183-07	14	.00	25.00
13	PH-ALK	F183-08	15	.00	25.00
14	PH-ALK	F183-08D	16	.00	25.00
15	PH-ALK	F183-12	17	.00	25.00
16	PH-ALK	F183-13	18	.00	25.00
17	PH-ALK	F183-14	19	.00	25.00
18	PH-ALK	F183-15	20	.00	25.00
19	PH-ALK	F183-16	21	.00	25.00
20	PH-ALK	F190-01	22	.00	25.00
21	PH-ALK	F190-02	23	.00	25.00
22	PH-ALK	F190-03	24	.00	25.00
23	PH-ALK	F190-04	25	.00	25.00
24	PH-ALK	F193-02	26	.00	25.00
25	PH-ALK	F193-03	27	.00	25.00
26	PH-ALK	F193-04	28	.00	25.00
27	PH-ALK	RINSE	29	.00	25.00
28	PH-ALK	ALF016WB	30	.00	25.00
29	PH-ALK	ALF016WL	31	.00	25.00
30	PH-ALK	ALF016WC	32	.00	25.00
31	PH-ALK	F215-01	33	.00	25.00
32	PH-ALK	F215-02	34	.00	25.00
33	PH-ALK	F215-03	35	.00	25.00
34	PH-ALK	F215-04	36	.00	25.00
35	PH-ALK	F215-04D	37	.00	25.00
36	PH-ALK	F215-05	38	.00	25.00
37	PH-ALK	F215-06	39	.00	25.00
38	PH-ALK	F182-01	40	.00	25.00
39	PH-ALK	F195-01	41	.00	25.00
40	PH-ALK	F206-03	42	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW

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Running List Report

Order Number - 20E5F10

	Schedule	Sample Id	Vial	Weight	Volume
41	PH-ALK	F206-04	43	.00	25.00
42	PH-ALK	F206-05	44	.00	25.00
43	PH-ALK	F210-01	45	.00	25.00
44	PH-ALK	F210-04	46	.00	25.00
45	PH-ALK	F210-05	47	.00	25.00
46	PH-ALK	F210-07	48	.00	25.00
47	PH-ALK	F210-08	49	.00	25.00
48	PH-ALK	RINSE	50	.00	25.00

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CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF008WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF008WL. Refer to LCS summary form for details.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183

Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF008WB	ND	1	NA	10	10	06/24/2017:34	NA	20TDF00801	20TDF008	TDF008W	NA	NA
LCS1W	TDF008WL	974	1	NA	10	10	06/24/2017:34	NA	20TDF00802	20TDF008	TDF008W	NA	NA
MW17S-GW062120	F183-01	1130	1	NA	10	10	06/24/2017:34	NA	20TDF00812	20TDF008	TDF008W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02	971	1	NA	10	10	06/24/2017:34	NA	20TDF00813	20TDF008	TDF008W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03	690	1	NA	10	10	06/24/2017:34	NA	20TDF00814	20TDF008	TDF008W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05	939	1	NA	10	10	06/24/2017:34	NA	20TDF00815	20TDF008	TDF008W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06	689	1	NA	10	10	06/24/2017:34	NA	20TDF00816	20TDF008	TDF008W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07	909	1	NA	10	10	06/24/2017:34	NA	20TDF00817	20TDF008	TDF008W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08	1130	1	NA	10	10	06/24/2017:34	NA	20TDF00818	20TDF008	TDF008W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08D	1160	1	NA	10	10	06/24/2017:34	NA	20TDF00819	20TDF008	TDF008W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12	984	1	NA	10	10	06/24/2017:34	NA	20TDF00820	20TDF008	TDF008W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13	996	1	NA	10	10	06/24/2017:34	NA	20TDF00821	20TDF008	TDF008W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14	602	1	NA	10	10	06/24/2017:34	NA	20TDF00822	20TDF008	TDF008W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15	758	1	NA	10	10	06/24/2017:34	NA	20TDF00823	20TDF008	TDF008W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16	787	1	NA	10	10	06/24/2017:34	NA	20TDF00824	20TDF008	TDF008W	06/22/2010:10	06/23/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR:	1	1
SAMPLE ID :	MBLK1W	LCS1W
LAB SAMPLE ID :	TDF008WB	TDF008WL
LAB FILE ID :	20TDF00801	20TDF00802
DATE PREPARED :	NA	NA
DATE ANALYZED :	06/24/2017:34	06/24/2017:34
PREP BATCH :	TDF008W	TDF008W
CALIBRATION REF:	20TDF008	20TDF008

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	974	97	80-120

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SM2540C

MATRIX : WATER

DILUTION FACTOR	1	1
SAMPLE ID	MW08A-GW062120	MW08A-GW062120DUP
LAB SAMPLE ID	F183-08	F183-08D
LAB FILE ID	20TDF00818	20TDF00819
DATE PREPARED	NA	NA
DATE ANALYZED	06/24/2017:34	06/24/2017:34
PREP BATCH	TDF008W	TDF008W
CALIBRATION REF	20TDF008	20TDF008

ACCESSION:

PARAMETER	PARENT RESULT (mg/L)	DUP RESULT (mg/L)	RPD (%)	MAX RPD (%)
Total Dissolved Solids	1130	1160	3	20

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF008

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF00801	TDF008WB	100	B	90.6008	90.6012	6/25/20 15:56	90.601	6/25/20 18:00			0.2	0.2	2	ND
20TDF00802	TDF008WL	20	L	21.12044	21.1396	6/25/20 15:56	21.13992	6/25/20 18:00			0.32	19.48	974	974
20TDF00803	F178-01	20	1	20.92616	20.9431	6/25/20 15:57	20.94331	6/25/20 18:00			0.21	17.15	857.5	858
20TDF00804	F178-01D	20	2	21.8848	21.9025	6/25/20 15:57	21.90211	6/25/20 18:01			0.39	17.31	865.5	866
20TDF00805	F178-02	100	3	95.4868	95.5486	6/25/20 15:57	95.5488	6/25/20 18:01			0.2	62	620	620
20TDF00806	F178-04	20	4	20.82968	20.8497	6/25/20 15:58	20.84961	6/25/20 18:02			0.09	19.93	996.5	996
20TDF00807	F178-05	20	5	21.75025	21.7746	6/25/20 15:58	21.77507	6/25/20 18:02			0.47	24.82	1241	1240
20TDF00808	F178-07	20	6	21.05858	21.083	6/25/20 15:58	21.0832	6/25/20 18:03			0.2	24.62	1231	1230
20TDF00809	F178-08	20	7	21.05887	21.081	6/25/20 15:59	21.08128	6/25/20 18:03			0.28	22.41	1120.5	1120
20TDF00810	F178-10	20	8	21.83475	21.8566	6/25/20 15:59	21.85665	6/25/20 18:03			0.05	21.9	1095	1090
20TDF00811	F178-11	20	9	21.55986	21.5777	6/25/20 15:59	21.57795	6/25/20 18:04			0.25	18.09	904.5	905
20TDF00812	F183-01	20	10	20.69328	20.7154	6/25/20 15:59	20.71584	6/25/20 18:04			0.44	22.56	1128	1130
20TDF00813	F183-02	20	11	21.61477	21.634	6/25/20 16:00	21.6342	6/25/20 18:04			0.2	19.43	971.5	971
20TDF00814	F183-03	50	12	42.28841	42.32246	6/25/20 16:00	42.32292	6/25/20 18:05			0.46	34.51	690.2	690
20TDF00815	F183-05	20	13	21.55661	21.57549	6/25/20 16:01	21.5754	6/25/20 18:05			0.09	18.79	939.5	939
20TDF00816	F183-06	50	14	43.27364	43.30807	6/25/20 16:01	43.30807	6/25/20 18:06			0	34.43	688.6	689
20TDF00817	F183-07	20	15	21.59881	21.6168	6/25/20 16:01	21.61698	6/25/20 18:06			0.18	18.17	908.5	909
20TDF00818	F183-08	20	16	21.20076	21.22335	6/25/20 16:02	21.22341	6/25/20 18:06			0.06	22.65	1132.5	1130
20TDF00819	F183-08D	20	17	20.93352	20.95691	6/25/20 16:02	20.95666	6/25/20 18:07			0.25	23.14	1157	1160
20TDF00820	F183-12	20	18	20.90815	20.92776	6/25/20 16:02	20.92782	6/25/20 18:07			0.06	19.67	983.5	984
20TDF00821	F183-13	20	19	21.15918	21.17947	6/25/20 16:03	21.1791	6/25/20 18:07			0.37	19.92	996	996
20TDF00822	F183-14	100	20	89.3619	89.4219	6/25/20 16:03	89.4221	6/25/20 18:08			0.2	60.2	602	602
20TDF00823	F183-15	50	21	42.45414	42.49228	6/25/20 16:03	42.49205	6/25/20 18:08			0.23	37.91	758.2	758
20TDF00824	F183-16	50	22	41.76929	41.80826	6/25/20 16:04	41.80866	6/25/20 18:08			0.4	39.37	787.4	787

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 17:33	PASSED
5	4.9997	6/24/20 17:34	PASSED
100	99.9995	6/24/20 17:34	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/24/20 17:58	PASSED
5	4.9996	6/24/20 17:58	PASSED
100	99.9994	6/24/20 17:58	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/25/20 15:55	PASSED
5	4.9998	6/25/20 15:55	PASSED
100	99.9995	6/25/20 15:55	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	6/25/20 18:09	PASSED
5	4.9998	6/25/20 18:09	PASSED
100	99.9992	6/25/20 18:09	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-19-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF008WB	2	ND	MB Passed
TDF008WL	974	1000	%R=97
#N/A	#N/A	#N/A	#N/A
F178-01D	865.5	857.5	%D=1
F183-08D	1157	1132.5	%D=2

Oven Drying Thermometer ID: 3078

Evaporating			
☑ Start	6/24/2020 16:45	Temp	90 °C
☑ End	6/25/2020 13:18	Temp	90 °C
1st Drying			
☑ Start	6/25/20 14:02	Temp	180 °C
☑ End	6/25/20 15:02	Temp	180 °C
2nd Drying			
☑ Start	6/25/20 16:15	Temp	180 °C
☑ End	6/25/20 17:15	Temp	180 °C
Final Drying			
☐ Start		Temp	°C
☐ End		Temp	°C

Notes:

SOP

Analyzedby: YAquin/NHando

Checked by: TK

☑ EMAX-2540C Rev. 9

Date: 06/26/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 64278022

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAG003WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAG003WL/NAG003WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) MS was analyzed. Percent recovery for Nitrogen, Nitrate-Nitrite was within MS QC limits in F183-08IM. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183
Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG003WB	ND	1	NA	0.05	0.01	07/09/2016:22	NA	20NAG00310	20NAG003	NAG003W	NA	NA
LCS1W	NAG003WL	0.515	1	NA	0.05	0.01	07/09/2016:22	NA	20NAG00311	20NAG003	NAG003W	NA	NA
LCD1W	NAG003WC	0.500	1	NA	0.05	0.01	07/09/2016:22	NA	20NAG00312	20NAG003	NAG003W	NA	NA
MW17S-GW062120	F183-01I	2.09	5	NA	0.25	0.05	07/09/2016:22	NA	20NAG00313	20NAG003	NAG003W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02I	3.00	5	NA	0.25	0.05	07/09/2016:22	NA	20NAG00314	20NAG003	NAG003W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03I	0.966	5	NA	0.25	0.05	07/09/2016:23	NA	20NAG00315	20NAG003	NAG003W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05I	1.95	5	NA	0.25	0.05	07/09/2016:23	NA	20NAG00316	20NAG003	NAG003W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06I	2.11	5	NA	0.25	0.05	07/09/2016:23	NA	20NAG00317	20NAG003	NAG003W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07I	1.73	5	NA	0.25	0.05	07/09/2016:23	NA	20NAG00318	20NAG003	NAG003W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08I	2.00	5	NA	0.25	0.05	07/09/2016:23	NA	20NAG00319	20NAG003	NAG003W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08ID	1.88	5	NA	0.25	0.05	07/09/2016:45	NA	20NAG00322	20NAG003	NAG003W	06/21/2016:30	06/23/20
MW08A-GW062120MS	F183-08IM	4.38	5	NA	0.25	0.05	07/09/2016:45	NA	20NAG00323	20NAG003	NAG003W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12I	2.04	5	NA	0.25	0.05	07/09/2016:45	NA	20NAG00324	20NAG003	NAG003W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13I	1.86	5	NA	0.25	0.05	07/09/2016:45	NA	20NAG00325	20NAG003	NAG003W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14I	1.22	5	NA	0.25	0.05	07/09/2016:45	NA	20NAG00326	20NAG003	NAG003W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15I	1.75	5	NA	0.25	0.05	07/09/2016:46	NA	20NAG00327	20NAG003	NAG003W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16I	1.92	5	NA	0.25	0.05	07/09/2016:46	NA	20NAG00328	20NAG003	NAG003W	06/22/2010:10	06/23/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAG003WB	NAG003WL	NAG003WC
LAB FILE ID	: 20NAG00310	20NAG00311	20NAG00312
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 07/09/2016:22	07/09/2016:22	07/09/2016:22
PREP BATCH	: NAG003W	NAG003W	NAG003W
CALIBRATION REF	: 20NAG003	20NAG003	20NAG003

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.515	103	0.500	0.500	100	3	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SM4500-NO3E

MATRIX : WATER
DILUTION FACTOR: 5 5
SAMPLE ID : MW08A-GW062120 MW08A-GW062120DUP
LAB SAMPLE ID : F183-08I F183-08ID
LAB FILE ID : 20NAG00319 20NAG00322
DATE PREPARED : NA NA
DATE ANALYZED : 07/09/2016:23 07/09/2016:45
PREP BATCH : NAG003W NAG003W
CALIBRATION REF: 20NAG003 20NAG003

ACCESSION:

PARAMETER	PSResult (mg/L)	DUPResult (mg/L)	RPD (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	2.00	1.88	6	10

PS: Parent Sample DUP: Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F183
METHOD : SM4500-NO3E

MATRIX	: WATER	% Moisture: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW08A-GW062120	MW08A-GW062120MS
LAB SAMPLE ID	: F183-08I	F183-08IM
LAB FILE ID	: 20NAG00319	20NAG00323
DATE PREPARED	: NA	NA
DATE ANALYZED	: 07/09/2016:23	07/09/2016:45
PREP BATCH	: NAG003W	NAG003W
CALIBRATION REF	: 20NAG003	20NAG003

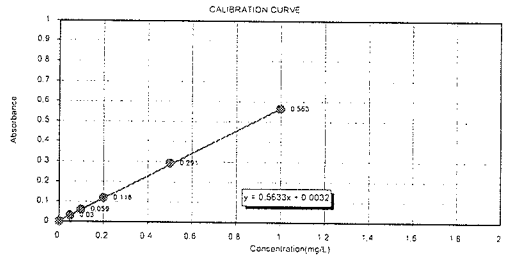
ACCESSION:

PARAMETER	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	2.00	2.50	4.38	95.2	75-125

PS: Parent Sample MS: Matrix Spike

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAG00301	S0	0	543nm	0	7/9/20 15:52	-0.005638997	ND
20NAG00302	S1	0.05	543nm	0.03	7/9/20 15:52	0.047651719	95
20NAG00303	S2	0.1	543nm	0.059	7/9/20 15:53	0.099137077	99
20NAG00304	S3	0.2	543nm	0.118	7/9/20 15:53	0.203883152	102
20NAG00305	S4	0.5	543nm	0.291	7/9/20 15:53	0.511019946	102
20NAG00306	S5	1	543nm	0.563	7/9/20 15:53	0.993917103	99
20NAG00307	NO2-N Std Check	0.5	543nm	0.303	7/9/20 15:53	0.532324233	106
20NAG00308	ICV	0.5	543nm	0.294	7/9/20 15:53	0.516346018	103
20NAG00309	ICB	0	543nm	0.001	7/9/20 15:53	-0.00383364	ND
20NAG00320	CCV1	0.5	543nm	0.264	7/9/20 16:44	0.463085302	93
20NAG00321	CCB1	0	543nm	0.001	7/9/20 16:45	-0.00383364	ND
20NAG00329	CCV2	0.5	543nm	0.263	7/9/20 16:46	0.461309945	92
20NAG00330	CCB2	0	543nm	0.005	7/9/20 16:46	0.003267789	ND

Reduction Time	Coloring Time	InstrumentID: H9
7/9/20 14:51	7/9/20 14:52	
7/9/20 14:54	7/9/20 14:55	
7/9/20 14:58	7/9/20 14:59	
7/9/20 15:01	7/9/20 15:02	
7/9/20 15:04	7/9/20 15:05	
7/9/20 15:07	7/9/20 15:08	
NA	7/9/20 15:08	
7/9/20 15:10	7/9/20 15:11	
7/9/20 15:15	7/9/20 15:16	



$$FC = [(A * CF) - Y] * DF$$

CF= 1.775357193 Y= 0.00561 r= 0.999856

DL Water(mg/L)	0.01	DL Soil(mg/Kg)	0.1
LOD Water(mg/L)	0.02	LOD Soil(mg/Kg)	0.2
LOQ Water(mg/L)	0.05	LOQ Soil(mg/Kg)	0.5

SOP

☑ EMAX-4500-ND3E Rev. 5

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-18-05	ICAL CCV (mg/L)	10	07/09/20
SW2B-30-18-06	ICV LCS MS Std (mg/L)	10	07/09/20
SW2B-30-18-07	NO2 CHK	10	07/09/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-59-01-03	NH4Cl-EDTA Soln	**	01/09/21
SWP1-56-49-03	HCl	1N	07/07/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	7/9/20 14:38
S1	0.1	20	7/9/20 14:38
S2	0.2	20	7/9/20 14:38
S3	0.4	20	7/9/20 14:38
S4	1	20	7/9/20 14:38
S5	2	20	7/9/20 14:38
ICV	1	20	7/9/20 14:38
CCV	1	20	7/9/20 14:38
NO2 CHK	1	20	7/9/20 14:38
LCS EV	1	20	7/9/20 14:38
MS EV	1	20	7/9/20 14:38

MicropipetteID: 842750082 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-59

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00310	NAG003WB	ND	ND	MB Passed
20NAG00311	NAG003WL	0.515	0.5	%R=103
20NAG00312	NAG003WC	0.500	0.5	%R=100

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00319	F183-08I	2.00		
20NAG00323	F183-08IM	4.38	2.5	%R=95

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAG00319	F183-08I	2.00		6
20NAG00322	F183-08ID	1.88	2.00	

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.02	7/9/20 10:02
SW1-02-05-11	7.01	7	7/9/20 10:03
SW1-02-05-12	10.02	10.03	7/9/20 10:04
SW1-02-05-08	Check Std (7.96)	7.98	7/9/20 10:05

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

Reviewed by: VD

Date: 07/09/20

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAG00310	NAG003WB	ND		mg/L	20	ml	NA	20	543nm	0 a	7/9/20 16:22	0	1		-0.00561	1		VDuran	5.33	8.51	7/9/20 15:18	7/9/20 15:19
20NAG00311	NAG003WL	0.515		mg/L	20	ml	NA	20	543nm	0.293 a	7/9/20 16:22	0	1		0.514571	1		VDuran	5.33	8.51	7/9/20 15:21	7/9/20 15:22
20NAG00312	NAG003WC	0.5		mg/L	20	ml	NA	20	543nm	0.285 a	7/9/20 16:22	0	1		0.500368	1		VDuran	5.33	8.51	7/9/20 15:24	7/9/20 15:25
20NAG00313	F183-01I	2.085		mg/L	20	ml	NA	20	543nm	0.238 a	7/9/20 16:22	0	5		2.08463	5		VDuran	1.4	8.55	7/9/20 15:27	7/9/20 15:28
20NAG00314	F183-02I	2.999		mg/L	20	ml	NA	20	543nm	0.341 a	7/9/20 16:22	0	5		2.998939	5		VDuran	1.38	8.51	7/9/20 15:31	7/9/20 15:32
20NAG00315	F183-03I	0.966		mg/L	20	ml	NA	20	543nm	0.112 a	7/9/20 16:23	0	5		0.966155	5		VDuran	1.41	8.55	7/9/20 15:33	7/9/20 15:34
20NAG00316	F183-05I	1.951		mg/L	20	ml	NA	20	543nm	0.223 a	7/9/20 16:23	0	5		1.951478	5		VDuran	1.42	8.52	7/9/20 15:37	7/9/20 15:37
20NAG00317	F183-06I	2.111		mg/L	20	ml	NA	20	543nm	0.241 a	7/9/20 16:23	0	5		2.11126	5		VDuran	1.38	8.51	7/9/20 15:40	7/9/20 15:41
20NAG00318	F183-07I	1.73		mg/L	20	ml	NA	20	543nm	0.198 a	7/9/20 16:23	0	5		1.729559	5		VDuran	1.44	8.5	7/9/20 15:43	7/9/20 15:44
20NAG00319	F183-08I	1.996		mg/L	20	ml	NA	20	543nm	0.228 a	7/9/20 16:23	0	5		1.995862	5		VDuran	1.39	8.55	7/9/20 15:46	7/9/20 15:47
20NAG00320	CCV1	0.463		mg/L	20	ml	NA	20	543nm	0.264 a	7/9/20 16:44	0	1		0.463085	1		VDuran			7/9/20 15:49	7/9/20 15:51
20NAG00321	CCB1	ND		mg/L	20	ml	NA	20	543nm	0.001 a	7/9/20 16:45	0	1		-0.00383	1		VDuran			7/9/20 15:54	7/9/20 15:55
20NAG00322	F183-08ID	1.88		mg/L	20	ml	NA	20	543nm	0.215 a	7/9/20 16:45	0	5		1.880464	5		VDuran	1.39	8.55	7/9/20 15:57	7/9/20 15:58
20NAG00323	F183-08IM	4.375		mg/L	20	ml	NA	20	543nm	0.496 a	7/9/20 16:45	0	5		4.374841	5		VDuran	1.39	8.55	7/9/20 16:00	7/9/20 16:01
20NAG00324	F183-12I	2.04		mg/L	20	ml	NA	20	543nm	0.233 a	7/9/20 16:45	0	5		2.040246	5		VDuran	1.42	8.53	7/9/20 16:04	7/9/20 16:05
20NAG00325	F183-13I	1.863		mg/L	20	ml	NA	20	543nm	0.213 a	7/9/20 16:45	0	5		1.86271	5		VDuran	1.4	8.5	7/9/20 16:07	7/9/20 16:08
20NAG00326	F183-14I	1.215		mg/L	20	ml	NA	20	543nm	0.14 a	7/9/20 16:45	0	5		1.214705	5		VDuran	1.41	8.5	7/9/20 16:10	7/9/20 16:11
20NAG00327	F183-15I	1.747		mg/L	20	ml	NA	20	543nm	0.2 a	7/9/20 16:46	0	5		1.747312	5		VDuran	1.39	8.49	7/9/20 16:13	7/9/20 16:14
20NAG00328	F183-16I	1.925		mg/L	20	ml	NA	20	543nm	0.22 a	7/9/20 16:46	0	5		1.924848	5		VDuran	1.24	8.52	7/9/20 16:16	7/9/20 16:17
20NAG00329	CCV2	0.461		mg/L	20	ml	NA	20	543nm	0.263 a	7/9/20 16:46	0	1		0.46131	1		VDuran			7/9/20 16:19	7/9/20 16:20
20NAG00330	CCB2	ND		mg/L	20	ml	NA	20	543nm	0.005 a	7/9/20 16:46	0	1		0.003268	1		VDuran			7/9/20 16:25	7/9/20 16:26

Reviewed by: VD

Date: 07/09/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F183

METHOD SW9060
TOC

A total of twelve(12) water samples were received on 06/23/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Organic Carbon was not detected in TCG004WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. TCG004WL/TCG004WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Total Organic Carbon was within MS QC limits in F183-08M/F183-08S. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F183

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG004WB	ND	1	NA	1.00	0.250	07/13/2021:46	NA	TCG005-05	TCG005-02	TCG004W	NA	NA
LCS1W	TCG004WL	24.8	1	NA	1.00	0.250	07/13/2022:02	NA	TCG005-06	TCG005-02	TCG004W	NA	NA
LCD1W	TCG004WC	24.9	1	NA	1.00	0.250	07/13/2022:18	NA	TCG005-07	TCG005-02	TCG004W	NA	NA
MW17S-GW062120	F183-01	0.860J	1	NA	1.00	0.250	07/13/2022:33	NA	TCG005-08	TCG005-02	TCG004W	06/21/2012:50	06/23/20
MW17D-GW062120	F183-02	0.520J	1	NA	1.00	0.250	07/13/2022:48	NA	TCG005-09	TCG005-02	TCG004W	06/21/2015:25	06/23/20
MW06-GW062120	F183-03	0.523J	1	NA	1.00	0.250	07/13/2023:04	NA	TCG005-10	TCG005-02	TCG004W	06/21/2012:00	06/23/20
MW16S-GW062120	F183-05	0.478J	1	NA	1.00	0.250	07/13/2023:19	NA	TCG005-11	TCG005-02	TCG004W	06/21/2009:30	06/23/20
MW16D-GW062120	F183-06	0.294J	1	NA	1.00	0.250	07/13/2023:34	NA	TCG005-12	TCG005-02	TCG004W	06/21/2010:40	06/23/20
MW04-GW062120	F183-07	0.519J	1	NA	1.00	0.250	07/13/2023:49	NA	TCG005-13	TCG005-02	TCG004W	06/21/2010:00	06/23/20
MW08A-GW062120	F183-08	0.456J	1	NA	1.00	0.250	07/14/2000:48	NA	TCG005-16	TCG005-14	TCG004W	06/21/2016:30	06/23/20
MW08A-GW062120DUP	F183-08D	0.480J	1	NA	1.00	0.250	07/14/2001:04	NA	TCG005-17	TCG005-14	TCG004W	06/21/2016:30	06/23/20
MW08A-GW062120MS	F183-08M	23.6	1	NA	1.00	0.250	07/14/2001:20	NA	TCG005-18	TCG005-14	TCG004W	06/21/2016:30	06/23/20
MW08A-GW062120MSD	F183-08S	23.8	1	NA	1.00	0.250	07/14/2001:35	NA	TCG005-19	TCG005-14	TCG004W	06/21/2016:30	06/23/20
MW01S-GW062120	F183-12	0.472J	1	NA	1.00	0.250	07/14/2001:50	NA	TCG005-20	TCG005-14	TCG004W	06/21/2010:00	06/23/20
FD01-GW062120	F183-13	0.436J	1	NA	1.00	0.250	07/14/2002:05	NA	TCG005-21	TCG005-14	TCG004W	06/21/2010:15	06/23/20
MW08C-GW062220	F183-14	6.64	1	NA	1.00	0.250	07/14/2002:21	NA	TCG005-22	TCG005-14	TCG004W	06/22/2010:20	06/23/20
MW08B-GW062220	F183-15	0.333J	1	NA	1.00	0.250	07/14/2002:36	NA	TCG005-23	TCG005-14	TCG004W	06/22/2010:00	06/23/20
FD02-GW062220	F183-16	0.333J	1	NA	1.00	0.250	07/14/2002:51	NA	TCG005-24	TCG005-14	TCG004W	06/22/2010:10	06/23/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW9060

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: TCG004WB TCG004WL TCG004WC
LAB FILE ID: TCG005-05 TCG005-06 TCG005-07
DATE EXTRACTED: NA NA NA DATE COLLECTED: NA
DATE ANALYZED: 07/13/2021:46 07/13/2022:02 07/13/2022:18 DATE RECEIVED: NA
PREP. BATCH: TCG004W TCG004W TCG004W
CALIB. REF: TCG005-02 TCG005-02 TCG005-02

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	24.8	99	25	24.9	99	0	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MW08A-GW062120				
LAB SAMP ID:	F183-08	F183-08M	F183-08S		
LAB FILE ID:	TCG005-16	TCG005-18	TCG005-19		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	06/21/20 16:30
DATE ANALYZED:	07/14/2000:48	07/14/2001:20	07/14/2001:35	DATE RECEIVED:	06/23/20
PREP. BATCH:	TCG004W	TCG004W	TCG004W		
CALIB. REF:	TCG005-14	TCG005-14	TCG005-14		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	SPIKE AMT (mg/L)	MS RSLT (mg/L)	MS % REC	SPIKE AMT (mg/L)	MSD RSLT (mg/L)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	.456J	25	23.6	93	25	23.8	93	1	80-120	20

EMAX QUALITY CONTROL DATA
DUPLICATE SAMPLE ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F183
METHOD: SW9060

MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MW08A-GW062120			
EMAX SAMP ID:	F183-08	F183-08D		
LAB FILE ID:	TCG005-16	TCG005-17		
DATE EXTRACTED:	NA	NA	DATE COLLECTED:	06/21/20 16:30
DATE ANALYZED:	07/14/2000:48	07/14/2001:04	DATE RECEIVED:	06/23/20
PREP. BATCH:	TCG004W	TCG004W		
CALIB. REF:	TCG005-14	TCG005-14		

ACCESSION:

PARAMETER	SMPL RSLT (mg/L)	DUPL RSLT (mg/L)	RPD RSLT %	QC LIMIT (%)
Total Organic Carbon	0.456J	0.480J	NA	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
TOC

	Date	Time
Start	07/13/20	18:52
End	07/14/20	16:58

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☑ Sample was filtered. Filter ID: 91478103

Comments: TCG004W: 20F183
20F215
20F490
20F491
TCG005W: 20F504
20F190
20F193
20F210
20F206
20F208
20F228

Reagent Water ID #: RW1-19-003

pH Strips Lot #: 1fc998032

2 M HCl SVP1-5036-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☑ 439350020

Micropipette ID: ☑ 539360056

Micropipette ID: ☑ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG005

Method File: TCG005

Analytical Batch: TCG004W/SW

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RW1-19-003	0
S1	SW7B-01-18-06	1
S2	↓	5
S3		10
S4		40
S5		80
S6	—	—
ICV/LCS	SW7B-01-18-07	25
CCV	SW7B-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WZ

Date: 07/13/20

	Type	Analysis	Sample Name	Sample ID	Dilutio	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG005-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG005 02	1.000	NPOC:24.94 mg/L	
3	Unknown	NPOC	ICB	TCG005-03	1.000	NPOC:0.2168 mg/	
4	Unknown	NPOC	HCO3/CO3	TCG005-04	1.000	NPOC:0.1488 mg/	
5	Unknown	NPOC	TCG004WB	TCG005-05	1.000	NPOC:0.1374 mg/	FILTERED
6	Unknown	NPOC	TCG004WL	TCG005-06	1.000	NPOC:24.79 mg/L	FILTERED
7	Unknown	NPOC	TCG004WC	TCG005-07	1.000	NPOC:24.87 mg/L	FILTERED
8	Unknown	NPOC	F183-01	TCG005-08	1.000	NPOC:0.8595 mg/	PH<2
9	Unknown	NPOC	F183-02	TCG005-09	1.000	NPOC:0.5195 mg/	PH<2
10	Unknown	NPOC	F183-03	TCG005-10	1.000	NPOC:0.5233 mg/	PH<2
11	Unknown	NPOC	F183-05	TCG005-11	1.000	NPOC:0.4775 mg/	PH<2
12	Unknown	NPOC	F183-06	TCG005-12	1.000	NPOC:0.2940 mg/	PH<2
13	Unknown	NPOC	F183-07	TCG005-13	1.000	NPOC:0.5187 mg/	PH<2
14	Control	NPOC	CCV1	TCG005-14	1.000	NPOC:24.19 mg/L	
15	Unknown	NPOC	CCB1	TCG005-15	1.000	NPOC:0.1464 mg/	
16	Unknown	NPOC	F183-08	TCG005-16	1.000	NPOC:0.4563 mg/	PH<2
17	Unknown	NPOC	F183-08D	TCG005-17	1.000	NPOC:0.4795 mg/	PH<2
18	Unknown	NPOC	F183-08M	TCG005-18	1.000	NPOC:23.60 mg/L	PH<2
19	Unknown	NPOC	F183-08S	TCG005-19	1.000	NPOC:23.80 mg/L	PH<2
20	Unknown	NPOC	F183-12	TCG005-20	1.000	NPOC:0.4724 mg/	PH<2
21	Unknown	NPOC	F183-13	TCG005-21	1.000	NPOC:0.4360 mg/	PH<2
22	Unknown	NPOC	F183-14	TCG005-22	1.000	NPOC:6.638 mg/L	PH<2
23	Unknown	NPOC	F183-15	TCG005-23	1.000	NPOC:0.3329 mg/	PH<2
24	Unknown	NPOC	F183-16	TCG005-24	1.000	NPOC:0.3334 mg/	PH<2
25	Unknown	NPOC	F215-01	TCG005-25	1.000	NPOC:6.108 mg/L	PH<2
26	Control	NPOC	CCV2	TCG005-26	1.000	NPOC:24.19 mg/L	
27	Unknown	NPOC	CCB2	TCG005-27	1.000	NPOC:0.1715 mg/	
28	Unknown	NPOC	F215-02	TCG005-28	1.000	NPOC:4.297 mg/L	PH<2
29	Unknown	NPOC	F215-03	TCG005-29	1.000	NPOC:3.117 mg/L	PH<2
30	Unknown	NPOC	F215-04I	TCG005-30	3.000	NPOC:18.10 mg/L	DF=3; YELLOW; PH<2
31	Unknown	NPOC	F215-04ID	TCG005-31	3.000	NPOC:18.15 mg/L	DF=3; YELLOW; PH<2
32	Unknown	NPOC	F215-04IM	TCG005-32	3.000	NPOC:89.61 mg/L	DF=3; YELLOW; PH<2
33	Unknown	NPOC	F215-04IS	TCG005-33	3.000	NPOC:89.63 mg/L	DF=3; YELLOW; PH<2
34	Unknown	NPOC	F215-05	TCG005-34	1.000	NPOC:4.065 mg/L	PH<2
35	Unknown	NPOC	F215-06	TCG005-35	1.000	NPOC:4.410 mg/L	PH<2
36	Unknown	NPOC	F490-01I	TCG005-36	100.0	NPOC:76.42 mg/L	DF=100; FILTERED; DIRTY; ODOR; PH<2 PROSX
37	Unknown	NPOC	F491-01I	TCG005-37	500.0	NPOC:2142 mg/L	DF=500; FILTERED; BROWN; DIRTY; ODOR; PH<
38	Control	NPOC	CCV3	TCG005-38	1.000	NPOC:23.98 mg/L	
39	Unknown	NPOC	CCB3	TCG005-39	1.000	NPOC:0.1745 mg/	
40	Unknown	NPOC	TCG005WB	TCG005-40	1.000	NPOC:0.1928 mg/	
41	Unknown	NPOC	TCG005WL	TCG005-41	1.000	NPOC:25.08 mg/L	
42	Unknown	NPOC	TCG005WC	TCG005-42	1.000	NPOC:25.06 mg/L	
43	Unknown	NPOC	F524-01I	TCG005-43	10.00	NPOC:341.1 mg/L	DF=10; LIGHT BROWN; PH<2
44	Unknown	NPOC	F190-01	TCG005-44	1.000	NPOC:6.452 mg/L	PH<2
45	Unknown	NPOC	F190-02	TCG005-45	1.000	NPOC:0.6472 mg/	PH<2
46	Unknown	NPOC	F190-02D	TCG005-46	1.000	NPOC:0.5666 mg/	PH<2
47	Unknown	NPOC	F190-02M	TCG005-47	1.000	NPOC:24.34 mg/L	PH<2
48	Unknown	NPOC	F190-02S	TCG005-48	1.000	NPOC:24.60 mg/L	PH<2
49	Unknown	NPOC	F190-03	TCG005-49	1.000	NPOC:1.324 mg/L	PH<2
50	Control	NPOC	CCV4	TCG005-50	1.000	NPOC:23.91 mg/L	
51	Unknown	NPOC	CCB5	TCG005-51	1.000	NPOC:0.1232 mg/	
52	Unknown	NPOC	F190-04	TCG005-52	1.000	NPOC:2.194 mg/L	PH<2
53	Unknown	NPOC	F193-02	TCG005-53	1.000	NPOC:1.895 mg/L	PH<2
54	Unknown	NPOC	F193-03	TCG005-54	1.000	NPOC:2.139 mg/L	PH<2
55	Unknown	NPOC	F193-04	TCG005-55	1.000	NPOC:2.191 mg/L	PH<2
56	Unknown	NPOC	F210-01	TCG005-56	1.000	NPOC:0.9706 mg/	PH<2
57	Unknown	NPOC	F210-04	TCG005-57	1.000	NPOC:0.4500 mg/	PH<2
58	Unknown	NPOC	F210-05	TCG005-58	1.000	NPOC:0.4911 mg/	PH<2
59	Unknown	NPOC	F210-07	TCG005-59	1.000	NPOC:0.9126 mg/	PH<2
60	Unknown	NPOC	F210-08	TCG005-60	1.000	NPOC:0.4428 mg/	PH<2
61	Unknown	NPOC	F206-03	TCG005-61	1.000	NPOC:4.333 mg/L	PH<2
62	Control	NPOC	CCV5	TCG005-62	1.000	NPOC:24.02 mg/L	
63	Unknown	NPOC	CCB5	TCG005-63	1.000	NPOC:0.1241 mg/	
64	Unknown	NPOC	F206-04	TCG005-64	1.000	NPOC:3.514 mg/L	PH<2
65	Unknown	NPOC	F206-05	TCG005-65	1.000	NPOC:3.443 mg/L	PH<2
66	Unknown	NPOC	F208-02	TCG005-66	1.000	NPOC:0.7294 mg/	PH<2
67	Unknown	NPOC	F208-02D	TCG005-67	1.000	NPOC:0.6978 mg/	PH<2

	Type	Analysis	Sample Name	Sample ID	Dilutio	Result	Comment
68	Unknown	NPOC	F208-02M	TCG005-68	1.000	NPOC:24.27 mg/L	PH<2
69	Unknown	NPOC	F208-02S	TCG005-69	1.000	NPOC:24.35 mg/L	PH<2
70	Unknown	NPOC	F208-03	TCG005-70	1.000	NPOC:0.6135 mg/	PH<2
71	Unknown	NPOC	F228-01	TCG005-71	1.000	NPOC:1.591 mg/L	PH<2
72	Unknown	NPOC	F228-02	TCG005-72	1.000	NPOC:0.3731 mg/	PH<2
73	Control	NPOC	CCV6	TCG005-73	1.000	NPOC:24.64 mg/L	
74	Unknown	NPOC	CCB6	TCG005-74	1.000	NPOC:0.1667 mg/	
75							
76							
77							
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100							

WR 7/15/20

Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

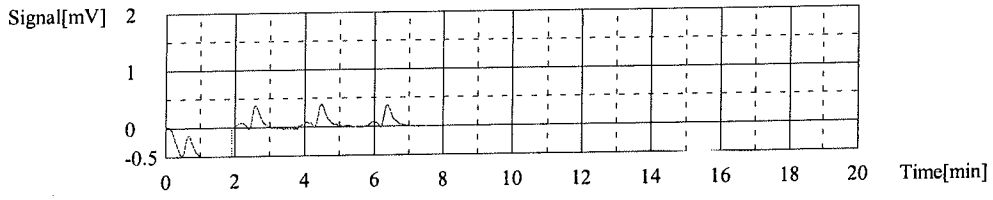
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG005-01
Cal. Curve:	TCG005.2020_07_13_18_43_42.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.4655	50uL	1	*******		07/13/20 06:52:12 PM
2	0.7011	50uL	1	*******		07/13/20 06:54:16 PM
3	0.5562	50uL	1	*******		07/13/20 06:56:21 PM
4	0.6379	50uL	1	*******		07/13/20 06:58:25 PM

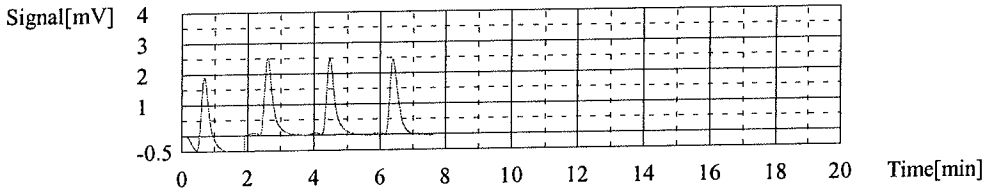
Acid Add.	2.500%
Sp. Time	90.00sec
Mean Area	0.5902



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.920	50uL	1	*******		07/13/20 07:07:11 PM
2	4.486	50uL	1	*******		07/13/20 07:09:16 PM
3	4.336	50uL	1	*******		07/13/20 07:11:21 PM
4	4.289	50uL	1	*******		07/13/20 07:13:25 PM

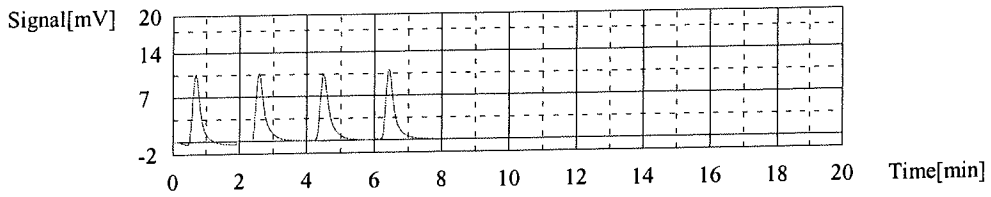
Acid Add.	2.500%
Sp. Time	90.00sec
Mean Area	4.258



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	19.63	50uL	1	*******		07/13/20 07:22:11 PM
2	19.67	50uL	1	*******		07/13/20 07:24:16 PM
3	20.20	50uL	1	*******		07/13/20 07:26:23 PM
4	20.53	50uL	1	*******		07/13/20 07:28:34 PM

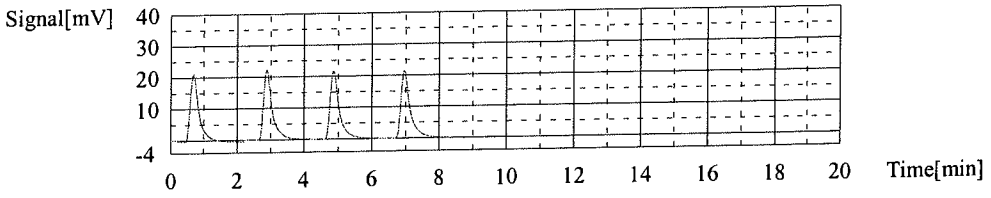
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.01



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	40.65	50uL	1	*******		07/13/20 07:37:39 PM
2	41.30	50uL	1	*******		07/13/20 07:39:50 PM
3	41.37	50uL	1	*******		07/13/20 07:42:06 PM
4	40.80	50uL	1	*******		07/13/20 07:44:17 PM

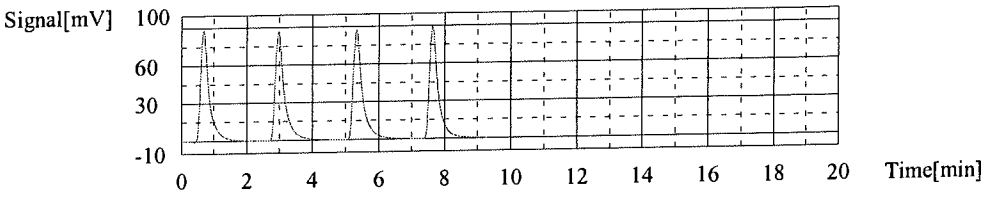
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 41.03



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	169.0	50uL	1	*******		07/13/20 07:53:29 PM
2	170.0	50uL	1	*******		07/13/20 07:56:02 PM
3	169.5	50uL	1	*******		07/13/20 07:58:30 PM
4	171.0	50uL	1	*******		07/13/20 08:01:03 PM

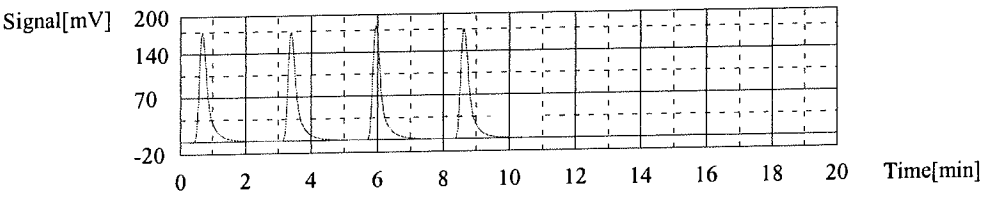
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 169.9



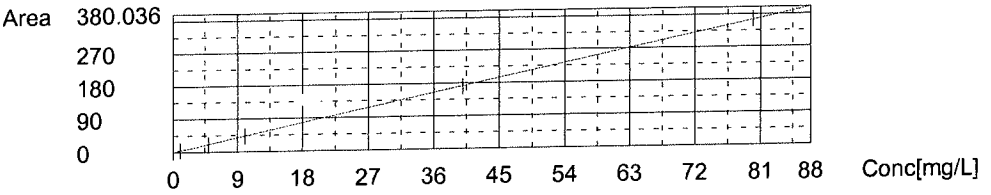
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	346.2	50uL	1	*******		07/13/20 08:10:40 PM
2	341.3	50uL	1	*******		07/13/20 08:13:24 PM
3	345.6	50uL	1	*******		07/13/20 08:16:14 PM
4	349.3	50uL	1	*******		07/13/20 08:19:03 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 345.6



Slope: 4.319
Intercept 0.000
r^2 0.999896



Control Sample

Sample Name: ICV
Sample ID: TCG005-02
Method: TCG005.tpl
Chk. Result Control value: 24.94 / Control exceeds range!

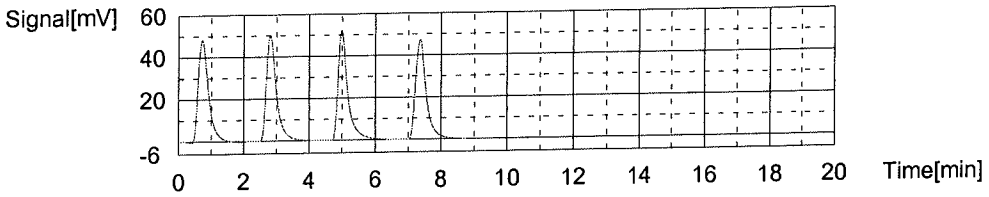
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.94 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.3	24.85mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:28:09 PM
2	108.5	25.12mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:30:32 PM
3	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:33:01 PM
4	107.3	24.85mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:35:23 PM

Mean Area 107.7
Mean Conc. 24.94mg/L



Sample

Sample Name: ICB
Sample ID: TCG005-03
Origin: TCG005.cal
Chk. Result

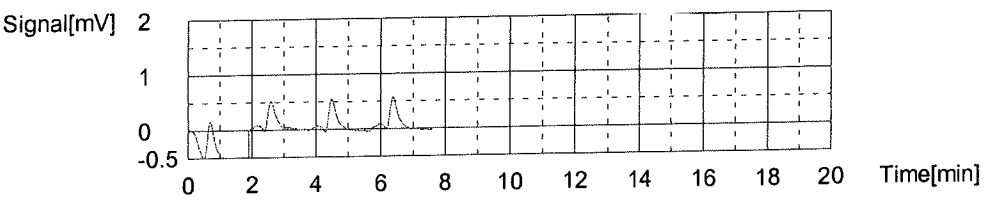
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2168 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9552	0.2212mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:44:13 PM
2	0.8481	0.1964mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:46:18 PM
3	0.9180	0.2126mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:48:23 PM
4	1.024	0.2371mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:50:28 PM

Mean Area 0.9363
Mean Conc. 0.2168mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG005-04
Origin: TCG005.cal
Chk. Result

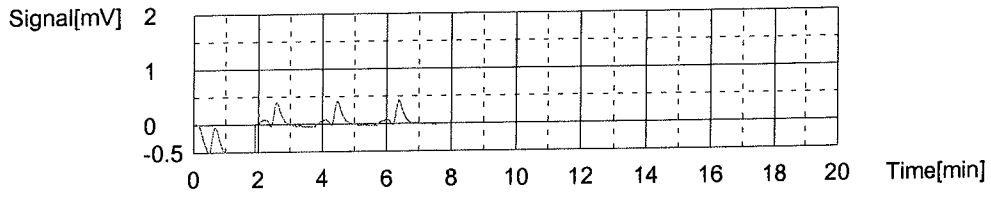
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1488 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6751	0.1563mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:12:10 PM
2	0.6157	0.1426mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:14:15 PM
3	0.6956	0.1611mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:16:20 PM
4	0.5837	0.1352mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:18:25 PM

Mean Area 0.6425
Mean Conc. 0.1488mg/L



Sample

Sample Name: TCG004WB
Sample ID: TCG005-05
Origin: TCG005.cal
Chk. Result

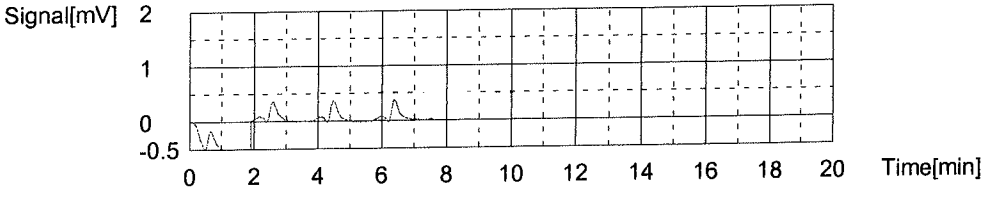
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1374 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4609	0.1067mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:40:05 PM
2	0.6359	0.1472mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:42:10 PM
3	0.6619	0.1533mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:44:15 PM
4	0.6155	0.1425mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:46:20 PM

Mean Area 0.5936
Mean Conc. 0.1374mg/L



Sample

Sample Name: TCG004WL
Sample ID: TCG005-06
Origin: TCG005.cal
Chk. Result

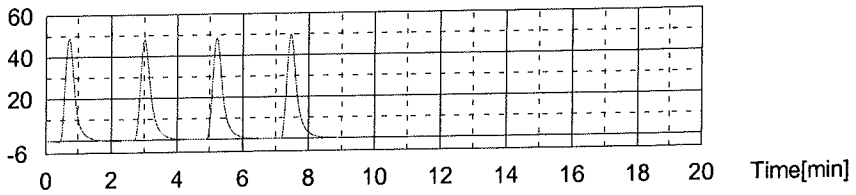
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.79 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.8	24.73mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:55:29 PM
2	106.7	24.71mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:57:52 PM
3	107.2	24.82mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:00:18 PM
4	107.5	24.89mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:02:39 PM

Mean Area 107.1
Mean Conc. 24.79mg/L



Sample

Sample Name: TCG004WC
Sample ID: TCG005-07
Origin: TCG005.cal
Chk. Result

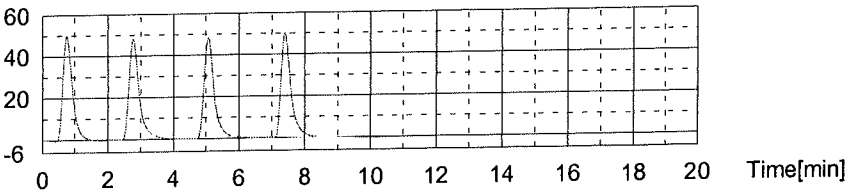
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.87 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.0	24.78mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:11:32 PM
2	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:14:03 PM
3	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:16:35 PM
4	107.2	24.82mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:18:51 PM

Mean Area 107.4
Mean Conc. 24.87mg/L



Sample

Sample Name: F183-01
Sample ID: TCG005-08
Origin: TCG005.cal
Chk. Result

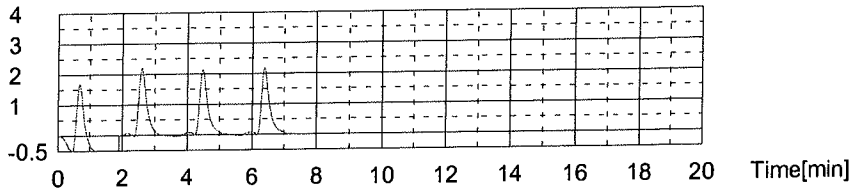
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.8595 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.532	0.8179mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:27:38 PM
2	3.937	0.9116mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:29:43 PM
3	3.662	0.8480mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:31:49 PM
4	3.716	0.8605mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:33:54 PM

Mean Area 3.712
Mean Conc. 0.8595mg/L



Sample

Sample Name: F183-02
Sample ID: TCG005-09
Origin: TCG005.cal
Chk. Result

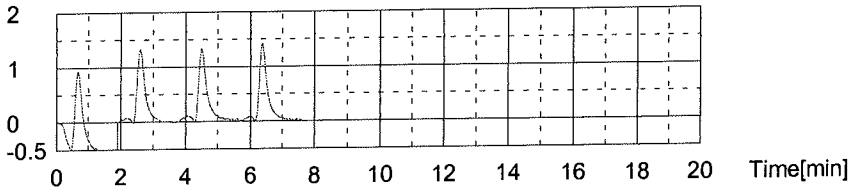
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5195 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.306	0.5340mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:42:41 PM
2	2.181	0.5050mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:44:46 PM
3	2.230	0.5164mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:46:52 PM
4	2.257	0.5226mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:48:57 PM

Mean Area 2.244
Mean Conc. 0.5195mg/L



Sample

Sample Name: F183-03
Sample ID: TCG005-10
Origin: TCG005.cal
Chk. Result

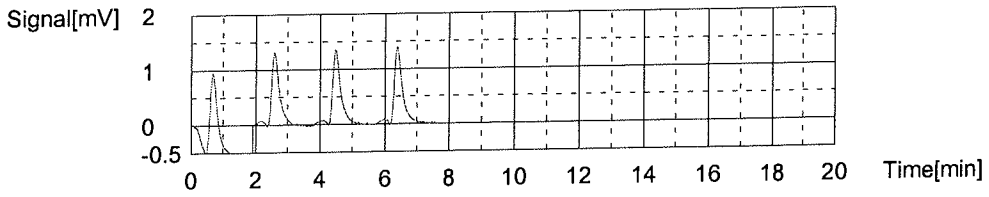
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5233 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.326	0.5386mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:57:44 PM
2	2.192	0.5076mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:59:49 PM
3	2.115	0.4897mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:01:54 PM
4	2.406	0.5571mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:04:00 PM

Mean Area 2.260
Mean Conc. 0.5233mg/L



Sample

Sample Name: F183-05
Sample ID: TCG005-11
Origin: TCG005.cal
Chk. Result

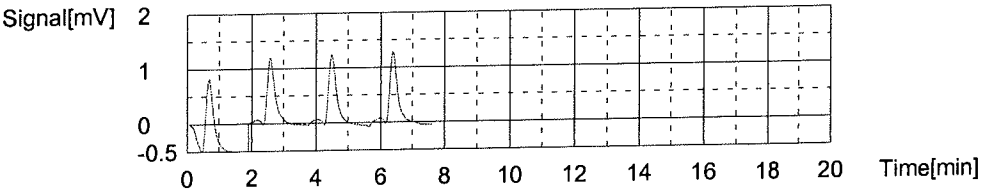
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4775 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.085	0.4828mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:12:46 PM
2	2.026	0.4691mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:14:51 PM
3	2.114	0.4895mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:16:56 PM
4	2.024	0.4687mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:19:02 PM

Mean Area 2.062
Mean Conc. 0.4775mg/L



Sample

Sample Name: F183-06
Sample ID: TCG005-12
Origin: TCG005.cal
Chk. Result

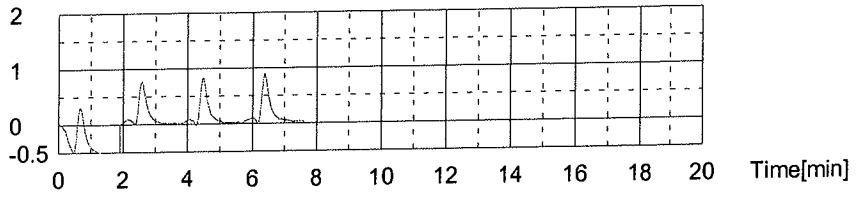
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2940 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.287	0.2980mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:27:48 PM
2	1.178	0.2728mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:29:53 PM
3	1.233	0.2855mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:31:58 PM
4	1.381	0.3198mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:34:04 PM

Mean Area 1.270
Mean Conc. 0.2940mg/L



Sample

Sample Name: F183-07
Sample ID: TCG005-13
Origin: TCG005.cal
Chk. Result

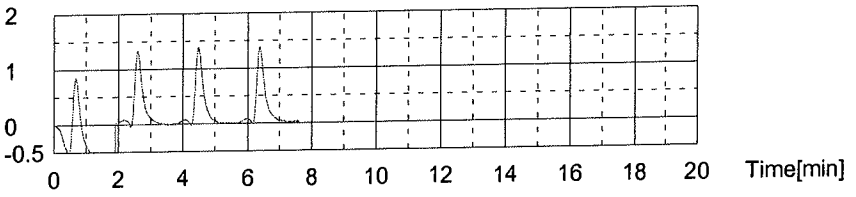
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5187 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.285	0.5291mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:42:51 PM
2	2.140	0.4955mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:44:56 PM
3	2.218	0.5136mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:47:01 PM
4	2.318	0.5367mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:49:07 PM

Mean Area 2.240
Mean Conc. 0.5187mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG005-14
Method: TCG005.tpl
Chk. Result Control value: 24.19 / Control exceeds range!

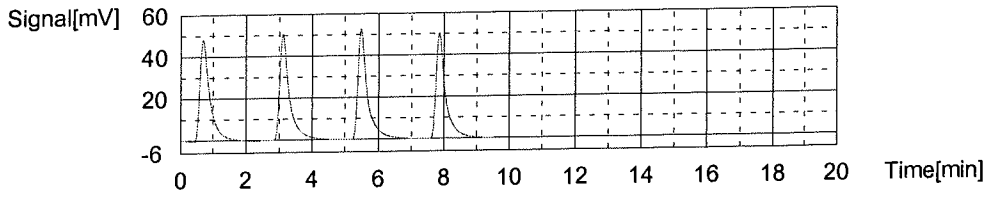
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.19 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:58:24 PM
2	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:00:58 AM
3	104.0	24.08mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:03:32 AM
4	103.8	24.04mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:06:01 AM

Mean Area 104.5
Mean Conc. 24.19mg/L



Sample

Sample Name: CCB1
Sample ID: TCG005-15
Origin: TCG005.cal
Chk. Result

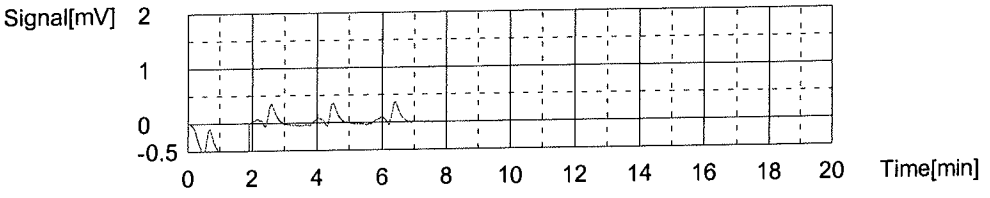
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1464 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7150	0.1656mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:27:41 AM
2	0.5958	0.1380mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:29:46 AM
3	0.5762	0.1334mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:31:51 AM
4	0.6412	0.1485mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:33:56 AM

Mean Area 0.6321
Mean Conc. 0.1464mg/L



Sample

Sample Name: F183-08
Sample ID: TCG005-16
Origin: TCG005.cal
Chk. Result

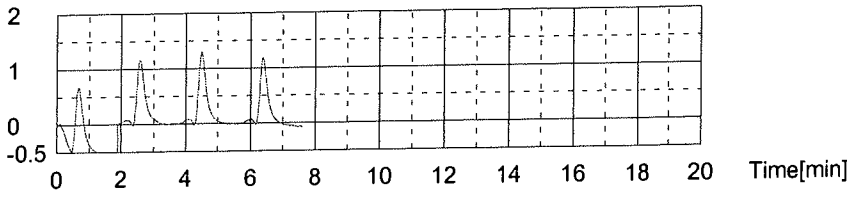
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4563 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.852	0.4288mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:42:43 AM
2	2.029	0.4698mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:44:48 AM
3	2.026	0.4691mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:46:53 AM
4	1.975	0.4573mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:48:58 AM

Mean Area 1.970
Mean Conc. 0.4563mg/L



Sample

Sample Name: F183-08D
Sample ID: TCG005-17
Origin: TCG005.cal
Chk. Result

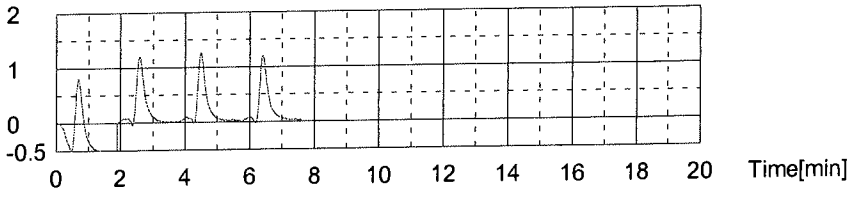
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4795 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.080	0.4816mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:57:46 AM
2	2.041	0.4726mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:59:51 AM
3	2.099	0.4860mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:01:56 AM
4	2.063	0.4777mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:04:01 AM

Mean Area 2.071
Mean Conc. 0.4795mg/L



Sample

Sample Name: F183-08M
Sample ID: TCG005-18
Origin: TCG005.cal
Chk. Result

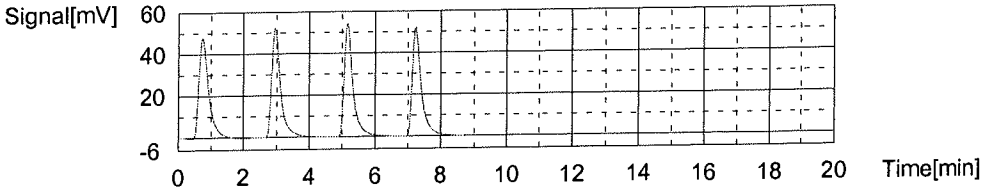
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.60 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	102.5	23.73mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:13:09 AM
2	101.7	23.55mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:15:33 AM
3	101.5	23.50mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:17:49 AM
4	101.9	23.60mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:20:07 AM

Mean Area 101.9
Mean Conc. 23.60mg/L



Sample

Sample Name: F183-08S
Sample ID: TCG005-19
Origin: TCG005.cal
Chk. Result

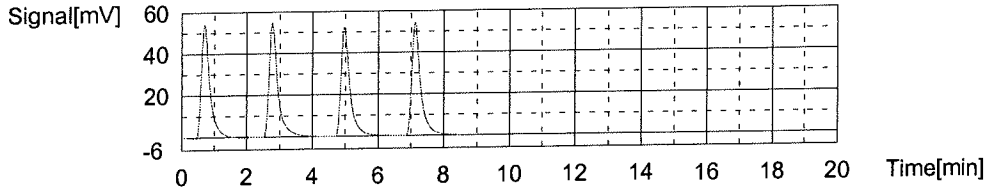
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:23.80 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.1	23.87mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:28:57 AM
2	102.2	23.67mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:31:22 AM
3	102.1	23.64mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:33:41 AM
4	103.8	24.04mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:35:56 AM

Mean Area 102.8
Mean Conc. 23.80mg/L



Sample

Sample Name: F183-12
Sample ID: TCG005-20
Origin: TCG005.cal
Chk. Result

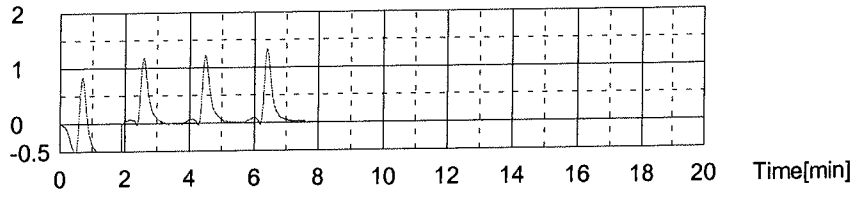
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4724 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.079	0.4814mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:44:43 AM
2	1.909	0.4420mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:46:49 AM
3	2.130	0.4932mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:48:54 AM
4	2.042	0.4728mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:50:59 AM

Mean Area 2.040
Mean Conc. 0.4724mg/L



Sample

Sample Name: F183-13
Sample ID: TCG005-21
Origin: TCG005.cal
Chk. Result

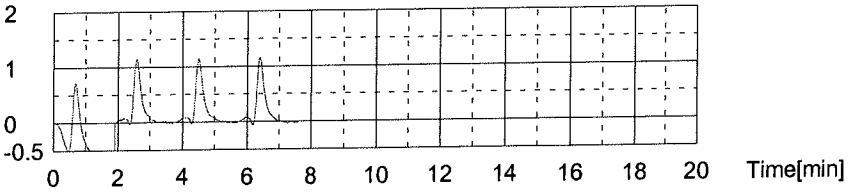
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4360 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.816	0.4205mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:59:35 AM
2	1.807	0.4184mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:01:41 AM
3	1.964	0.4548mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:03:46 AM
4	1.944	0.4501mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:05:51 AM

Mean Area 1.883
Mean Conc. 0.4360mg/L



Sample

Sample Name: F183-14
Sample ID: TCG005-22
Origin: TCG005.cal
Chk. Result

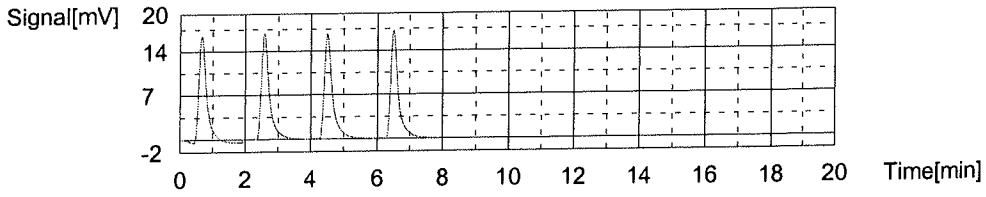
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:6.638 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.33	6.560mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:14:39 AM
2	28.42	6.581mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:16:45 AM
3	29.18	6.757mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:18:56 AM
4	28.73	6.653mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:21:01 AM

Mean Area 28.67
Mean Conc. 6.638mg/L



Sample

Sample Name: F183-15
Sample ID: TCG005-23
Origin: TCG005.cal
Chk. Result

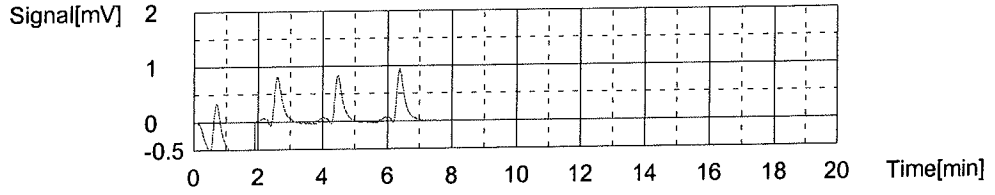
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3329 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.373	0.3179mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:29:48 AM
2	1.440	0.3334mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:31:54 AM
3	1.372	0.3177mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:33:59 AM
4	1.565	0.3624mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:36:04 AM

Mean Area 1.438
Mean Conc. 0.3329mg/L



Sample

Sample Name: F183-16
Sample ID: TCG005-24
Origin: TCG005.cal
Chk. Result

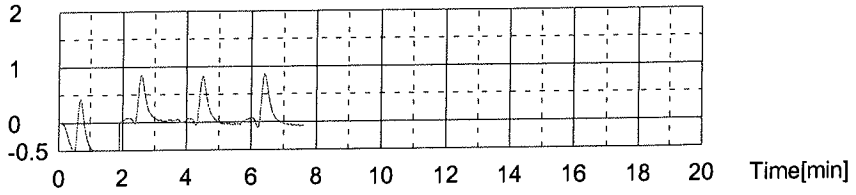
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3334 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.460	0.3381mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:44:51 AM
2	1.366	0.3163mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:46:57 AM
3	1.473	0.3411mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:49:02 AM
4	1.460	0.3381mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:51:07 AM

Mean Area 1.440
Mean Conc. 0.3334mg/L



Sample

Sample Name: F215-01
Sample ID: TCG005-25
Origin: TCG005.cal
Chk. Result

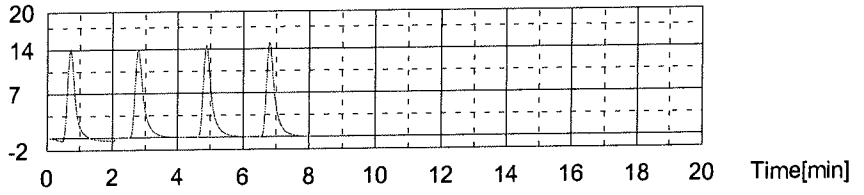
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:6.108 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.00	6.020mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:00:04 AM
2	26.36	6.104mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:02:22 AM
3	26.64	6.169mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:04:29 AM
4	26.52	6.141mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:06:36 AM

Mean Area 26.38
Mean Conc. 6.108mg/L



Control Sample

Sample Name: CCV2
Sample ID: TCG005-26
Method: TCG005.tpl
Chk. Result Control value: 24.19 / Control exceeds range!

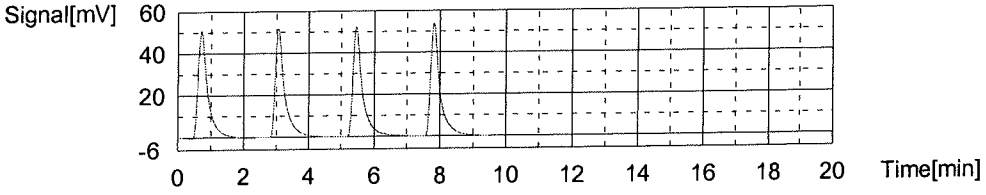
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.19 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.5	23.97mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:15:51 AM
2	105.4	24.41mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:18:25 AM
3	104.5	24.20mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:20:57 AM
4	104.4	24.17mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:23:27 AM

Mean Area 104.4
Mean Conc. 24.19mg/L



Sample

Sample Name: CCB2
Sample ID: TCG005-27
Origin: TCG005.cal
Chk. Result

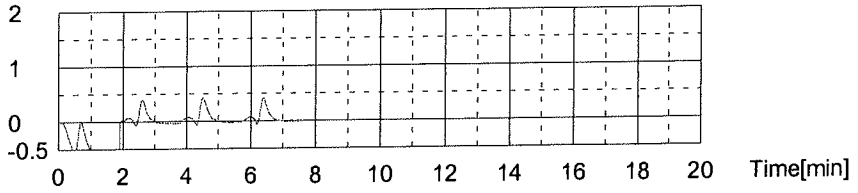
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1715 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8679	0.2010mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:45:07 AM
2	0.7079	0.1639mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:47:12 AM
3	0.6795	0.1573mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:49:18 AM
4	0.7065	0.1636mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:51:23 AM

Mean Area 0.7405
Mean Conc. 0.1715mg/L



Sample

Sample Name: F215-02
Sample ID: TCG005-28
Origin: TCG005.cal
Chk. Result

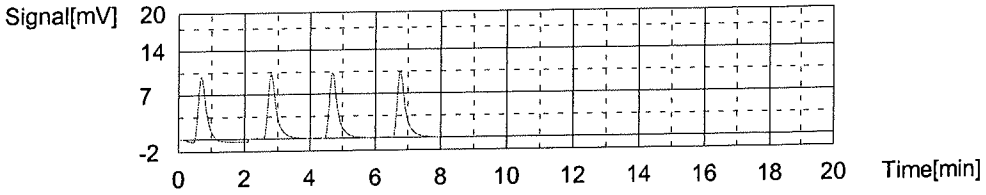
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:4.297 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.13	4.198mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:00:21 AM
2	18.29	4.235mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:02:26 AM
3	18.99	4.397mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:04:40 AM
4	18.81	4.356mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:06:48 AM

Mean Area 18.56
Mean Conc. 4.297mg/L



Sample

Sample Name: F215-03
Sample ID: TCG005-29
Origin: TCG005.cal
Chk. Result

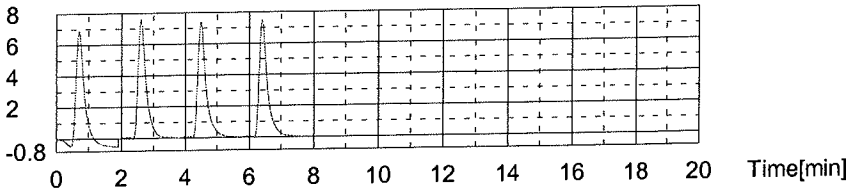
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.117 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.30	3.080mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:15:35 AM
2	13.34	3.089mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:17:40 AM
3	13.52	3.131mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:19:45 AM
4	13.68	3.168mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:21:51 AM

Mean Area 13.46
Mean Conc. 3.117mg/L



Sample

Sample Name: F215-04I
Sample ID: TCG005-30
Origin: TCG005.cal
Chk. Result

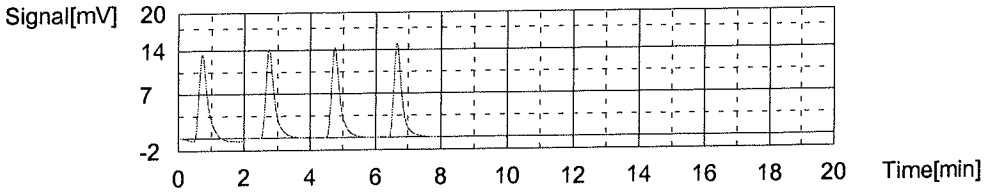
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:18.10 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.26	18.24mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:30:47 AM
2	25.35	17.61mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:32:58 AM
3	26.34	18.30mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:35:03 AM
4	26.27	18.25mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:37:10 AM

Mean Area 26.06
Mean Conc. 18.10mg/L



Sample

Sample Name: F215-04ID
Sample ID: TCG005-31
Origin: TCG005.cal
Chk. Result

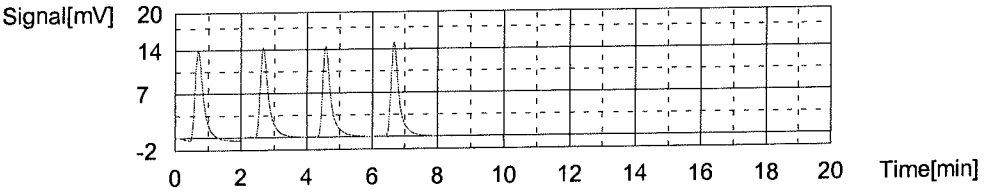
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:18.15 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.71	17.86mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:46:02 AM
2	26.07	18.11mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:48:07 AM
3	26.01	18.07mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:50:24 AM
4	26.73	18.57mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:52:31 AM

Mean Area 26.13
Mean Conc. 18.15mg/L



Sample

Sample Name: F215-04IM
Sample ID: TCG005-32
Origin: TCG005.cal
Chk. Result

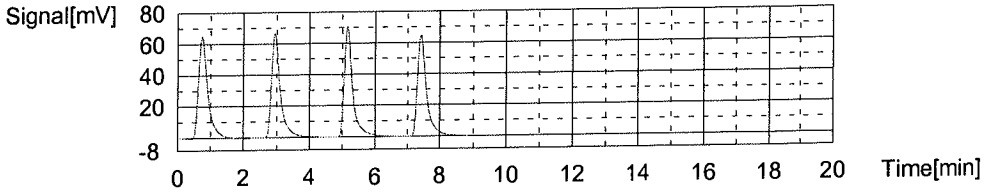
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:89.61 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	130.2	90.45mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:01:38 AM
2	128.1	88.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:04:01 AM
3	129.3	89.82mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:06:28 AM
4	128.4	89.20mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:08:48 AM

Mean Area 129.0
Mean Conc. 89.61mg/L



Sample

Sample Name: F215-04IS
Sample ID: TCG005-33
Origin: TCG005.cal
Chk. Result

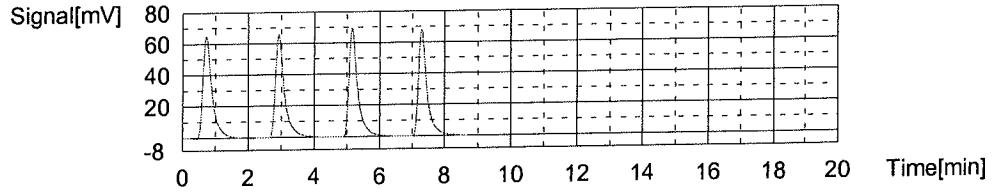
Type	Anal.	Dil.	Result
Unknown	NPOC	3.000	NPOC:89.63 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	129.6	90.03mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:17:54 AM
2	128.6	89.33mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:20:19 AM
3	129.9	90.24mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:22:38 AM
4	128.0	88.92mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:24:58 AM

Mean Area 129.0
Mean Conc. 89.63mg/L



Sample

Sample Name: F215-05
Sample ID: TCG005-34
Origin: TCG005.cal
Chk. Result

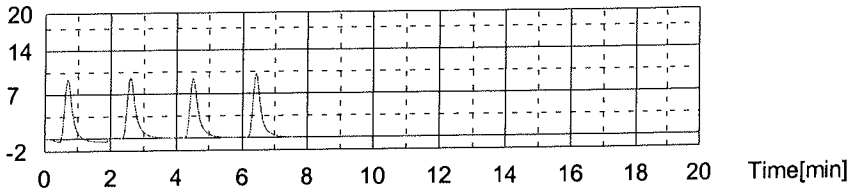
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:4.065 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.22	3.987mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:33:42 AM
2	17.66	4.089mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:35:47 AM
3	17.60	4.075mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:37:52 AM
4	17.74	4.108mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:39:57 AM

Mean Area 17.56
Mean Conc. 4.065mg/L



Sample

Sample Name: F215-06
Sample ID: TCG005-35
Origin: TCG005.cal
Chk. Result

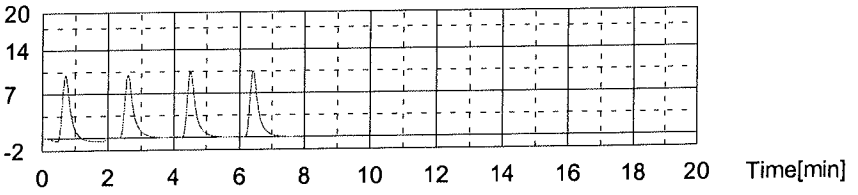
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:4.410 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.78	4.349mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:48:46 AM
2	18.96	4.390mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:50:51 AM
3	19.00	4.400mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:52:56 AM
4	19.44	4.501mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 05:55:04 AM

Mean Area 19.05
Mean Conc. 4.410mg/L



Sample

Sample Name: F490-011
Sample ID: TCG005-36
Origin: TCG005.cal
Chk. Result

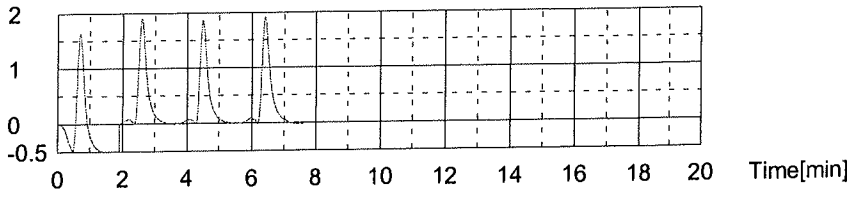
Type	Anal.	Dil.	Result
Unknown	NPOC	100.0	NPOC:76.42 mg/L

1. Det

Anal · NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.365	77.92mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:03:52 AM
2	3.260	75.49mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:05:57 AM
3	3.165	73.29mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:08:02 AM
4	3.411	78.98mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:10:07 AM

Mean Area 3.300
Mean Conc. 76.42mg/L



Sample

Sample Name: F491-011
Sample ID: TCG005-37
Origin: TCG005.cal
Chk. Result

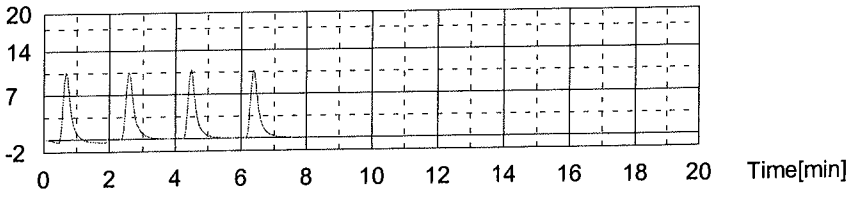
Type	Anal.	Dil.	Result
Unknown	NPOC	500.0	NPOC:2142 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.56	2149mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:18:56 AM
2	18.52	2144mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:21:01 AM
3	18.23	2111mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:23:06 AM
4	18.69	2164mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:25:11 AM

Mean Area 18.50
Mean Conc. 2142mg/L



Control Sample

Sample Name: CCV3
Sample ID: TCG005-38
Method: TCG005.tpl
Chk. Result Control value: 23.98 / Control exceeds range!

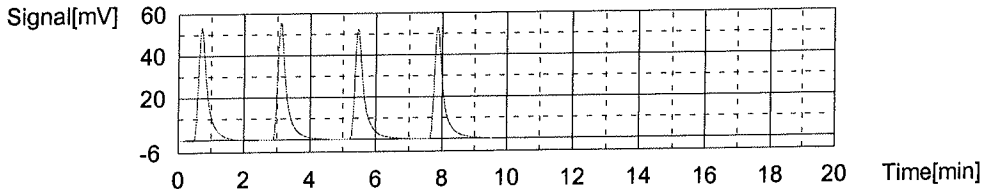
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:23.98 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.8	24.04mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:47:23 AM
2	103.6	23.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:49:54 AM
3	103.4	23.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:52:29 AM
4	103.5	23.97mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:55:01 AM

Mean Area 103.6
Mean Conc. 23.98mg/L



Sample

Sample Name: CCB3
Sample ID: TCG005-39
Origin: TCG005.cal
Chk. Result

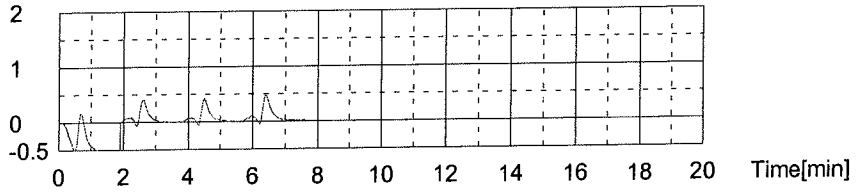
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1745 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9648	0.2234mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:16:42 AM
2	0.6808	0.1576mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:18:47 AM
3	0.6184	0.1432mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:20:53 AM
4	0.7504	0.1738mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:22:58 AM

Mean Area 0.7536
Mean Conc. 0.1745mg/L



Sample

Sample Name: TCG005WB
Sample ID: TCG005-40
Origin: TCG005.cal
Chk. Result

Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1928 mg/L

1. Det

Anal.: NPOC

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 08-04-2020
EMAX Batch No.: 20F210

Attn: Cherie Zakowski

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202

Subject: Laboratory Report
Project: VA SALT LAKE CITY

Enclosed is the Laboratory report for samples received on 06/25/20.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW23C-GW062320	F210-01	06/23/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB19-GW062420	F210-02	06/24/20	WATER	VOCS BY 8260C
FB01-GW062420	F210-03	06/24/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM
MW27-GW062420	F210-04	06/24/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
MW28-GW062420	F210-05	06/24/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON
TB18-GW062420	F210-06	06/24/20	WATER	VOCS BY 8260C
MW14S-GW062320	F210-07	06/23/20	WATER	VOCS BY 8260C 1,4-DIOXANE BY 8270D SIM DISSOLVED GAS TOTAL METALS BY ICP-MS MERCURY ANIONS BY IC NITRATE/NITRITE AS N TOTAL ALKALINITY TOTAL DISSOLVED SOLIDS TOTAL ORGANIC CARBON

EMAX
LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Sample ID	Control #	Col Date	Matrix	Analysis
MW14D-GW062320	F210-08	06/23/20	WATER	VOCS BY 8260C
				1,4-DIOXANE BY 8270D SIM
				DISSOLVED GAS
				TOTAL METALS BY ICP-MS
				MERCURY
				ANIONS BY IC
				NITRATE/NITRITE AS N
				TOTAL ALKALINITY
				TOTAL DISSOLVED SOLIDS
				TOTAL ORGANIC CARBON
TB17-GW062420	F210-09	06/24/20	WATER	VOCS BY 8260C

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

T.B-57C

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	**PO NUMBER:** SAMPLE STORAGE	**EMAX CONTROL NO.** 20F210 **PROJECT CODE:**

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskicc@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Ramnan Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A/7470; Chloride/Sulfate / 300; Nitrate Nitrite / SM4500; Alkalinity/TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ ER
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW23C-GW062320		6/23/20	1250	13			GW		VOCs, 1,4-Dioxane, Gases MEE, metals/mercury, Chloride/Sulfate, Nitrate Nitrite, Alkalinity/TDS, TOC	
2	TB19-GW062420		6/24/20	1210	2			GW		VOCs	
3	FB01-GW062420		6/24/20	1600	5			GW		VOCs, 1,4-Dioxane	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	5.7	
2	5.2	
3	3.9	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Summer Dat	6/24/20	1600	6/25/2020 C9:10

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

(2) T.B.- 5.2°C

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	**PO NUMBER:** SAMPLE STORAGE	**EMAX CONTROL NO.** 20F210 **PROJECT CODE:**

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO:
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500, Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A 7470; Chloride/Sulfate / 300; Nitrate / SM4500; Alkalinity/TDS; TOC / 9060

TAT:
- ☐ Rush __24__ hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ 9R
- ☒ 21 days

LAB	SAMPLE ID CLIENT	SAMPLING LOCATION	DATE	TIME	CONTAINER NO.	SIZE	TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
4 * 1	MW27-GW062420		6/24/20	0935	13			GW		X X X X X X X X	
5 * 2	MW28-GW062420		6/24/20	1110	13			GW		X X X X X X X X	
4 * 3	TB18-GW062420		6/24/20	1205	2			GW		X	
* 4											
* 5											
* 6											
* 7											
* 8											
* 9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	5.7	
2	5.2	
3	3.9	

SAMPLER

RELINQUISHED BY	Date	Time	COURIER/AIRBILL RECEIVED BY
Emmanuel	6/24/20	1500	6/25/2020 9:10

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER:
SAMPLE STORAGE

EMAX CONTROL NO. 20F210
PROJECT CODE:

CLIENT: CDM Smith
PROJECT: 700S 1600E PCE Plume
COORDINATOR: Cherie Zakowski
TEL: 720-264-1109 FAX: EMAIL: zakowskica@cdmsmith.com
SEND REPORT TO
COMPANY: CDM Smith
ADDRESS: 555 17th St. Suite 500
Denver, CO 80201
EMAX PM: Raman Singh

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	

ANALYSIS REQUIRED: VOCs / 8260C; 1,4-Dioxane/8270DSIM; Gases MEE / RSK-175; metals/mercury / 6020A / 7470; Cr6 / 300; Nitrate Nitrite / SM4500; Alkalinity / TDS; TOC / 9060

TAT
- ☐ Rush __24__hrs.
- ☐ Rush __48_hrs
- ☐ Rush_72_hrs
- ☐ 7 days
- ☒ ~~14 days~~ QR
- ☒ 21 days

LAB	SAMPLE ID (CLIENT)	LOCATION	SAMPLING DATE	SAMPLING TIME	CONTAINER NO.	CONTAINER SIZE	CONTAINER TYPE	MATRIX CODE	QC	PRESERVATIVE CODE	COMMENTS
1	MW14S-GW062320		6/23/20	1040	13			GW		X X X X X X X X	
2	MW14D-GW062320		6/23/20	1140	13			GW		X X X X X X X X	
3	TB17-GW062420		6/24/20	1200	2			GW		X	
4											
5											
6											
7											
8											
9											
10											

Instructions

Cooler #	Temp. (°C)	Sample #s
1	5.7	
2	5.2	
3	3.9	

SAMPLER

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Emma Rat	6/24/20	1500	Fedex 9:10

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs, TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

Type of Delivery	Airbill / Tracking Number	
☑ Fedex ☐ UPS ☐ GSO ☐ Others	3941 9204 3443 / 3941 9204 3454	ECN 20F210
☐ EMAX Courier ☐ Client Delivery	3941 9204 3465	Recipient Rosie Carrillo
		Date 6/25/2020 Time 9:10

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: Correction is not initialed, dated.

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☐ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☐ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 5.7 °C	☑ Cooler 2 5.2 °C	☑ Cooler 3 3.9 °C	☐ Cooler 4 _____ °C	☐ Cooler 5 _____ °C
	☐ Cooler 6 _____ °C	☐ Cooler 7 _____ °C	☐ Cooler 8 _____ °C	☐ Cooler 9 _____ °C	☐ Cooler 10 _____ °C
Thermometer:	*A - S/N* 192381464	*B - S/N* _____	*C - S/N* 200291756	*D - S/N* _____	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-9		D16	cont's preserv. per label/sticker	PI - label
1,4,5,7,8	7,27,40,55,68	D2	label reads; Metals.*	Analyze Metals + Hg

6/25/20 PS 6/25/20

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: * Per COC Metals / Mercury 6020A 7470

LEGEND:

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in COC
D17	Preservation mismatch COC vs labcl
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

☐ **Continue to next page.**

Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☑ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling _____ **Date** 6/18/2020 / 6/25/20

SRF _____ **Date** 6/25/20

PM _____ **Date** 6/25/20

ORIGIN ID:NPHA (406) 551-5169

CDM SMITH
555 17TH ST STE 1100

DENVER, CO 80202
UNITED STATES US

SHIP DATE: 24JUN20
ACTWGT: 52.75 LB
CAD: 6991948/SSF02110
DIMS: 29x17x14 IN

BILL THIRD PARTY

TO EMAX LABORATORIES INC
ATTN: SAMPLE RECEIVING
1835 WEST 205TH STREET

TORRANCE CA 90501

(406) 551-5169 REF: 238824649SF304805.SAMPLE

INV:
PO: DEPT:

FedEx Express

1 of 3

TRK# 0201 3941 9204 3443

MASTER

WZ HHRA

THU - 25 JUN 10:30A
PRIORITY OVERNIGHT
AHS
90501
CA-US LAX

Do Not Lift Using This Tag

ORIGIN ID:NPHA (406) 551-5169
CDM SMITH
555 17TH ST STE 1100
DENVER, CO 80202
UNITED STATES US

SHIP DATE: 24JUN20
ACTWGT: 59.55 LB
CAD: 6991948/SSF02110
DIMS: 29x17x14 IN
BILL THIRD PARTY

TO EMAX LABORATORIES INC
ATTN: SAMPLE RECEIVING
1835 WEST 205TH STREET

TORRANCE CA 90501
(406) 551-5169
INV:
PO:
REF: 238824649SF304805.SAMPLE
DEPT:

FedEx Express

2 of 3
MPS# 0263 3941 9204 3454
Mstr# 3941 9204 3443
0201
WZ HHRA

THU - 25 JUN 10:30A
PRIORITY OVERNIGHT
AHS
90501
CA-US LAX

(2) TB-5.29

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

SDG#: 20F210

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

A total of nine(9) water samples were received on 06/25/20 to be analyzed for Volatile Organics by GC/MS in accordance with Method SW5030B/8260C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All calibration requirements were satisfied. Average response factors for all analytes were within method recommended response factors with the exception of Acetone and 2-Butanone. However, percent recoveries for all target analytes were within 70-130% on all calibration points. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. VO94F18B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. VO94F18L/VO94F18C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F210
Instrument ID : 94

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	V094F18B	1	NA	06/26/2017:58	06/26/2017:58	RFD400	RDD105	V094F18	Method Blank
LCS1W	V094F18L	1	NA	06/26/2016:24	06/26/2016:24	RFD397	RDD105	V094F18	Lab Control Sample (LCS)
LCD1W	V094F18C	1	NA	06/26/2016:55	06/26/2016:55	RFD398	RDD105	V094F18	LCS Duplicate
MW23C-GW062320	F210-01	1	NA	06/26/2018:29	06/26/2018:29	RFD401	RDD105	V094F18	Field Sample
TB19-GW062420	F210-02	1	NA	06/26/2019:00	06/26/2019:00	RFD402	RDD105	V094F18	Field Sample
FB01-GW062420	F210-03	1	NA	06/26/2019:32	06/26/2019:32	RFD403	RDD105	V094F18	Field Sample
MW27-GW062420	F210-04	1	NA	06/26/2020:03	06/26/2020:03	RFD404	RDD105	V094F18	Field Sample
MW28-GW062420	F210-05	1	NA	06/26/2020:34	06/26/2020:34	RFD405	RDD105	V094F18	Field Sample
TB18-GW062420	F210-06	1	NA	06/26/2021:06	06/26/2021:06	RFD406	RDD105	V094F18	Field Sample
MW14S-GW062320	F210-07	1	NA	06/26/2021:37	06/26/2021:37	RFD407	RDD105	V094F18	Field Sample
MW14D-GW062320	F210-08	1	NA	06/26/2022:09	06/26/2022:09	RFD408	RDD105	V094F18	Field Sample
TB17-GW062420	F210-09	1	NA	06/26/2022:40	06/26/2022:40	RFD409	RDD105	V094F18	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/23/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/26/20 18:29
Sample ID: MW23C-GW062320	Date Analyzed: 06/26/20 18:29
Lab Samp ID: F210-01	Dilution Factor: 1
Lab File ID: RFD401	Matrix : WATER
Ext Btch ID: VO94F18	% Moisture : NA
Calib. Ref.: RDD105	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	5.5
ACETONE	ND	20	2.5
BENZENE	0.77J	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	0.14J	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	0.12J	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	0.57J	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.4	10.00	114	70-130
BROMOFLUOROBENZENE	9.67	10.00	96.7	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	10.1	10.00	101	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD401.D Vial: 7
Acq On : 26 Jun 2020 6:29 pm Operator: FAdame/ODinh
Sample : 20F210-01 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:06 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

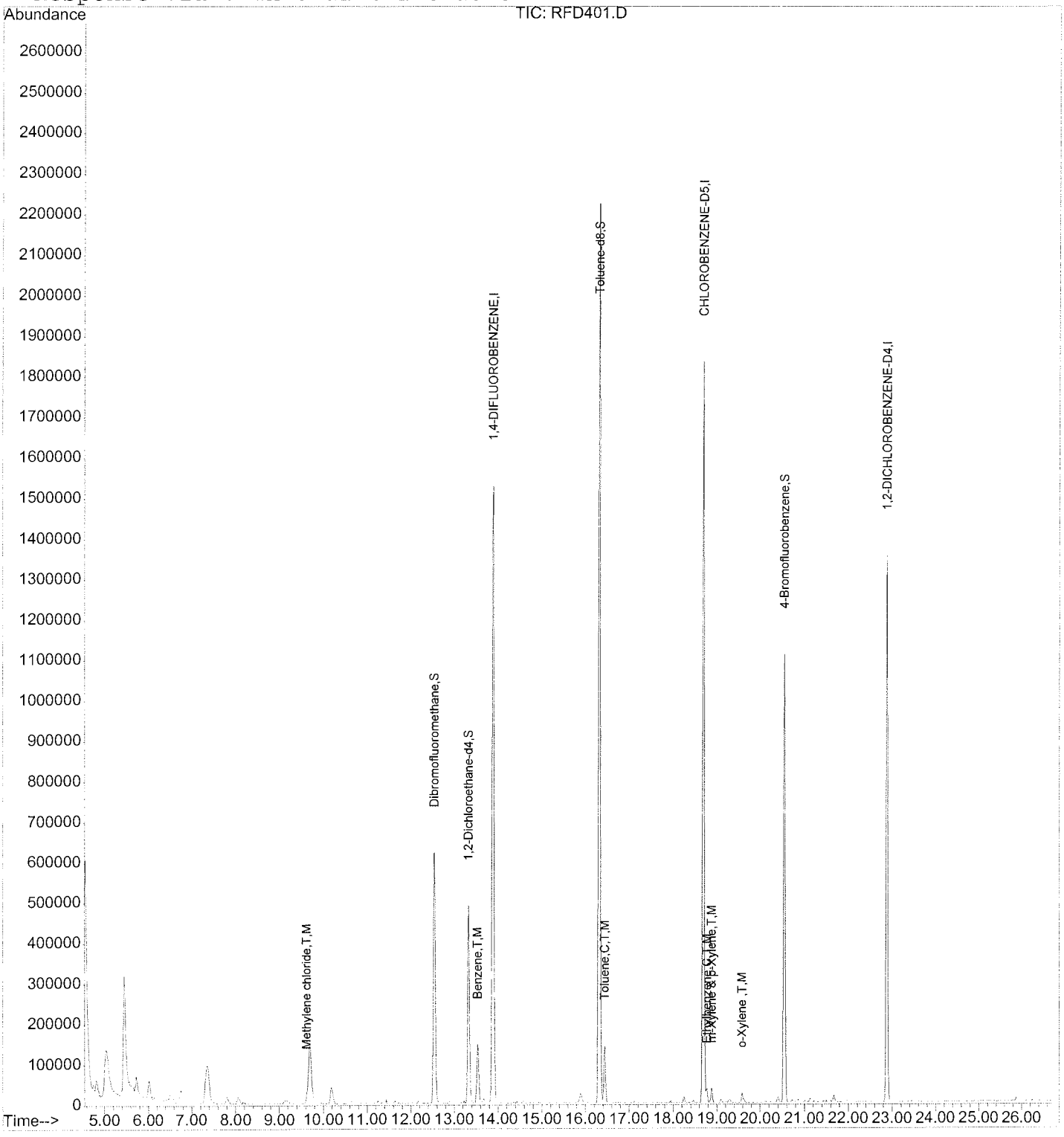
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2051775	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1594033	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	522291	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	599974	10.07	ug/l	0.02
Spiked Amount 10.000			Recovery =	100.70%		
43) 1,2-Dichloroethane-d4	13.33	65	458739	11.43	ug/l	0.02
Spiked Amount 10.000			Recovery =	114.30%		
56) Toluene-d8	16.31	98	2261113	10.01	ug/l	0.02
Spiked Amount 10.000			Recovery =	100.10%		
77) 4-Bromofluorobenzene	20.54	95	590742	9.67	ug/l	0.01
Spiked Amount 10.000			Recovery =	96.70%		
Target Compounds						Qvalue
18) Methylene chloride	9.62	49	24744	0.23	ug/l	85
45) Benzene	13.54	78	224031	0.77	ug/l	97
57) Toluene	16.44	91	154860	0.57	ug/l	99
68) Ethylbenzene	18.78	91	41432	0.14	ug/l	100
70) m-Xylene & p-Xylene	18.88	91	32812	0.16	ug/l	96
71) o-Xylene	19.58	91	24857	0.12	ug/l	94

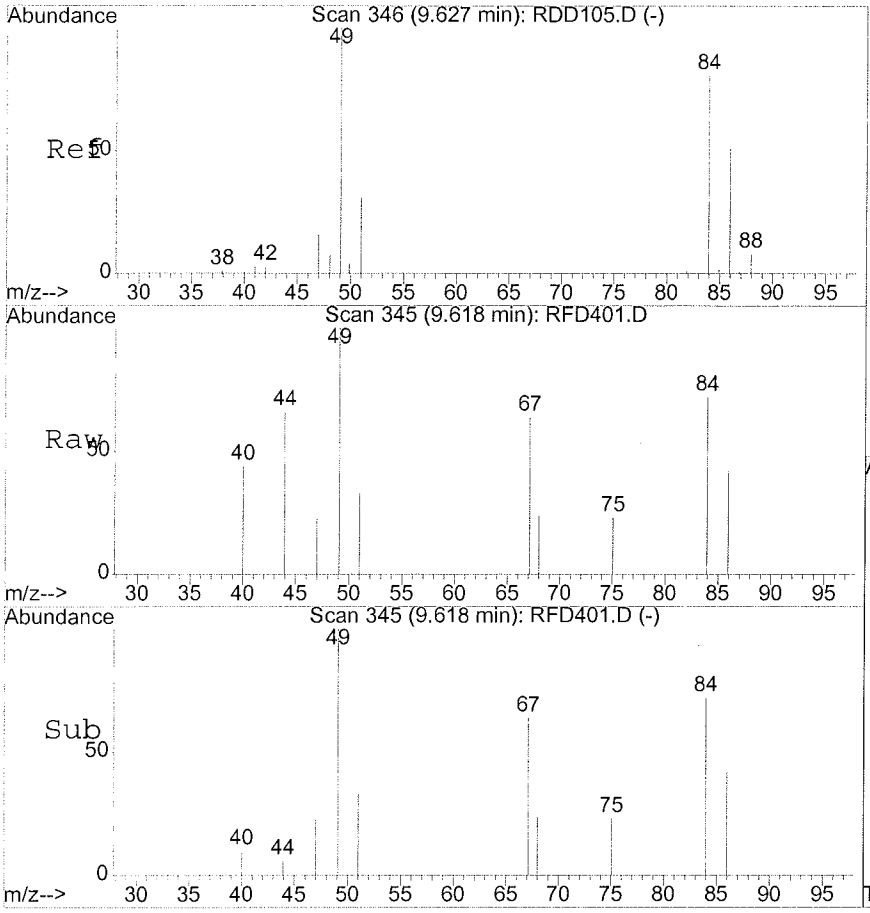
(#) = qualifier out of range (m) = manual integration
RFD401.D VO94D14.M Wed Jul 08 10:08:34 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD401.D Vial: 7
Acq On : 26 Jun 2020 6:29 pm Operator: FAdame/ODinh
Sample : 20F210-01 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:06 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

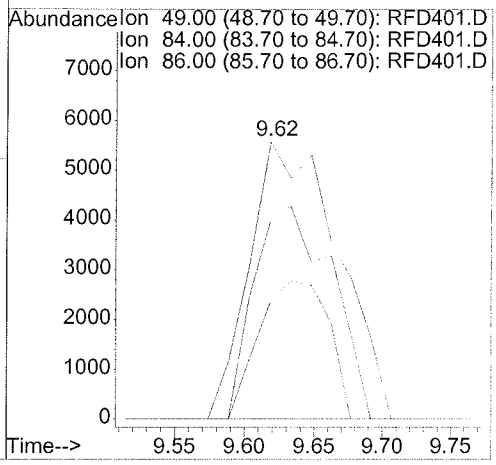


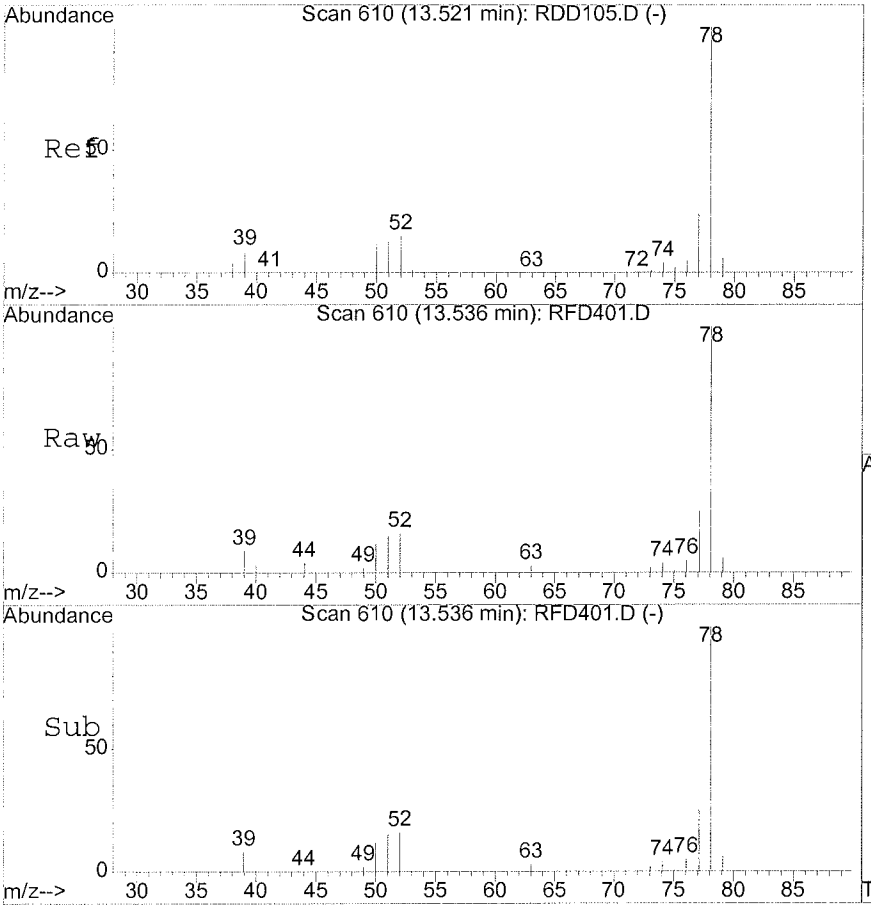


#18
Methylene chloride
Concen: 0.23 ug/l
RT: 9.62 min Scan# 345
Delta R.T. -0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 49 Resp: 24744

Ion	Ratio	Lower	Upper
49	100		
84	67.5	49.6	109.6
86	39.2	21.0	81.0

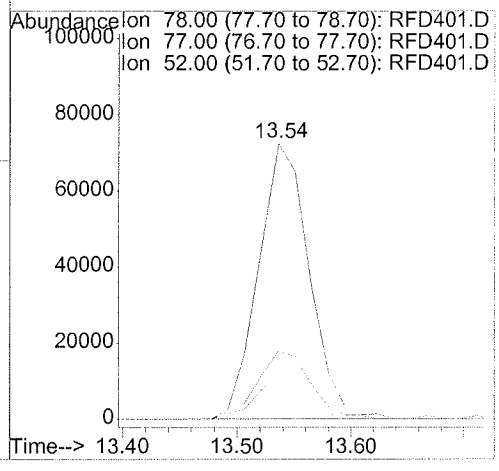


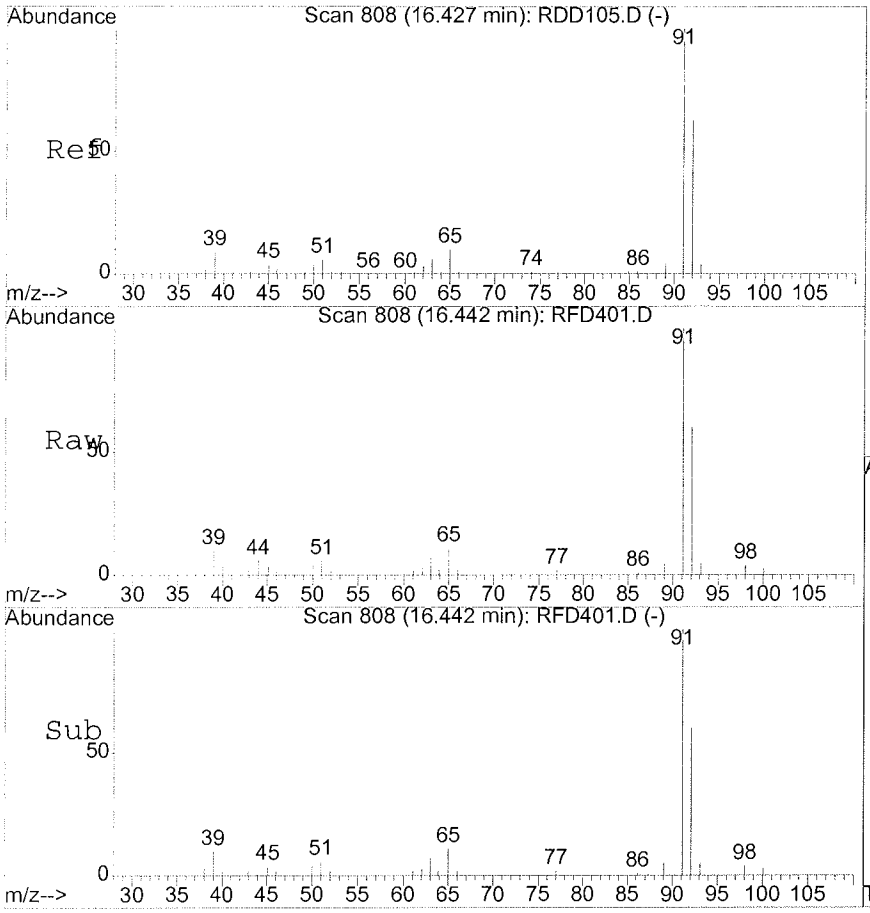


#45
Benzene
Concen: 0.77 ug/l
RT: 13.54 min Scan# 610
Delta R.T. 0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 78 Resp: 224031

Ion	Ratio	Lower	Upper
78	100		
77	25.9	0.0	53.6
52	15.0	0.0	44.9

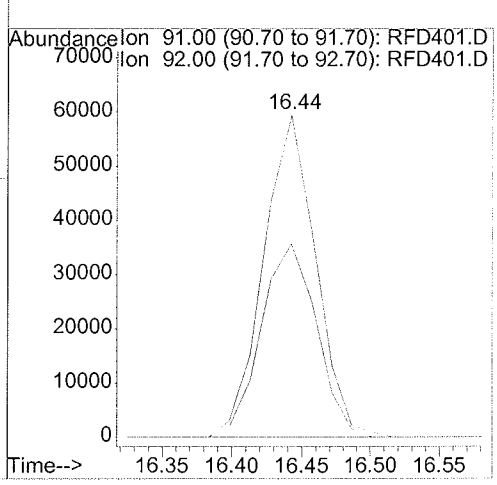


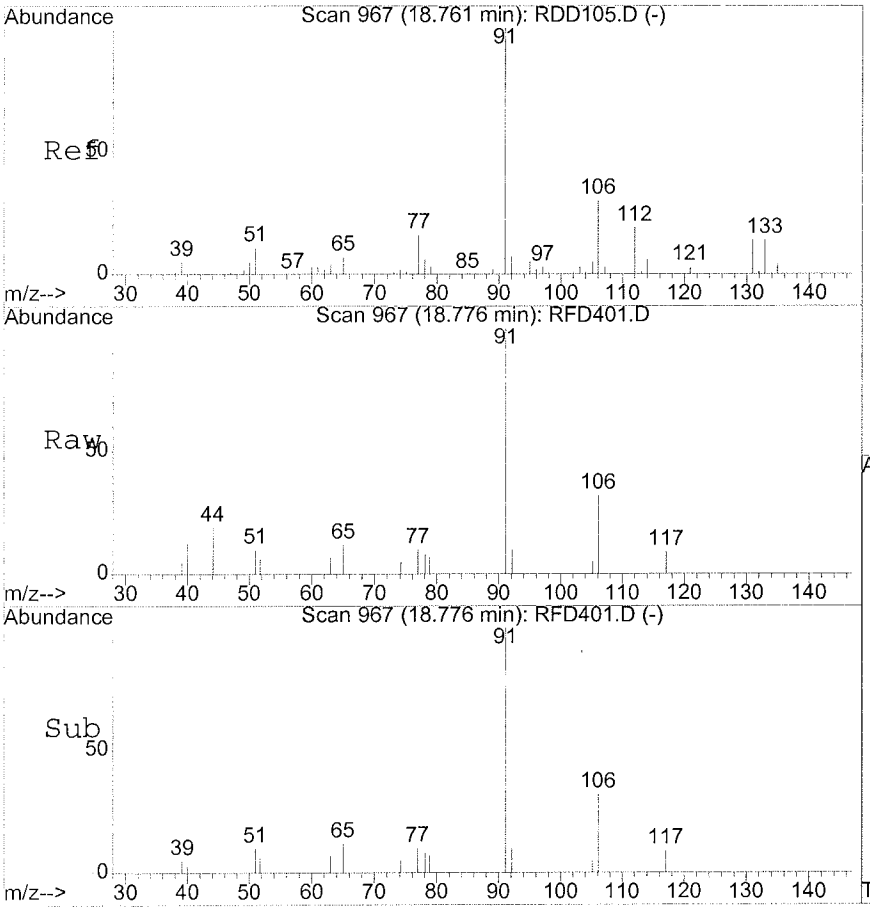


#57
Toluene
Concen: 0.57 ug/l
RT: 16.44 min Scan# 808
Delta R.T. 0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 91 Resp: 154860

Ion	Ratio	Lower	Upper
91	100		
92	63.7	32.7	92.7

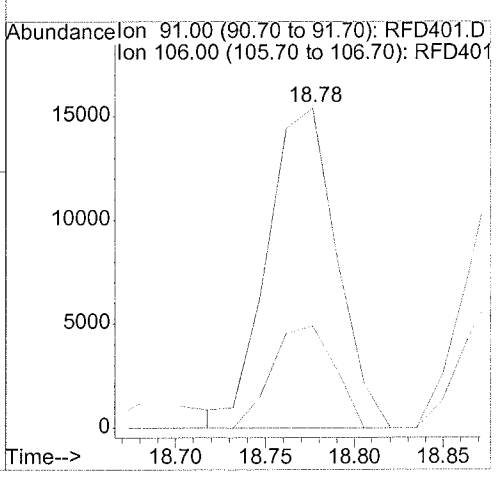


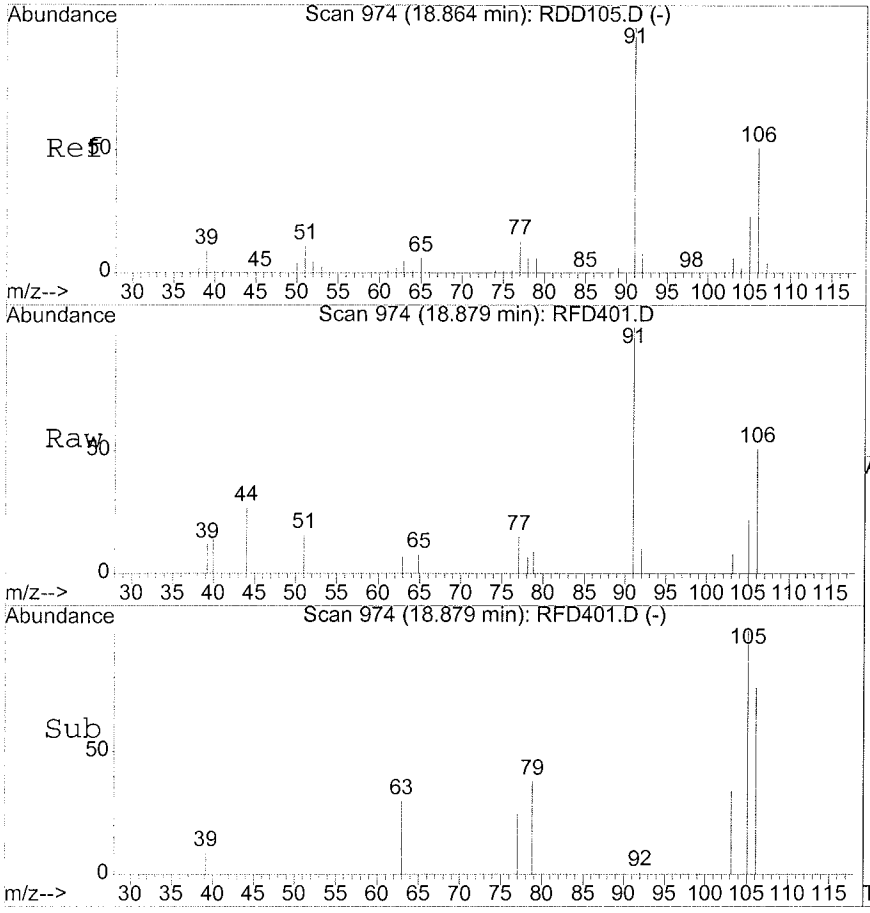


#68
Ethylbenzene
Concen: 0.14 ug/l
RT: 18.78 min Scan# 967
Delta R.T. 0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 91 Resp: 41432

Ion	Ratio	Lower	Upper
91	100		
106	28.9	0.0	59.1

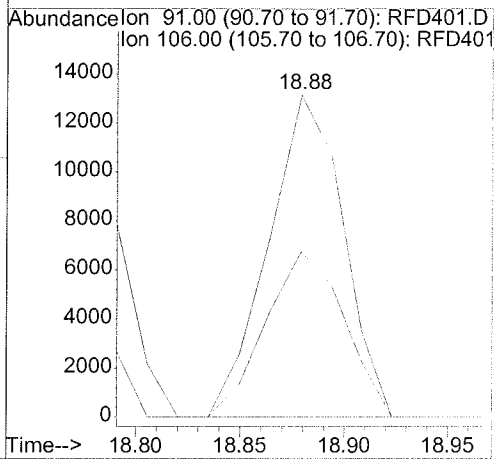


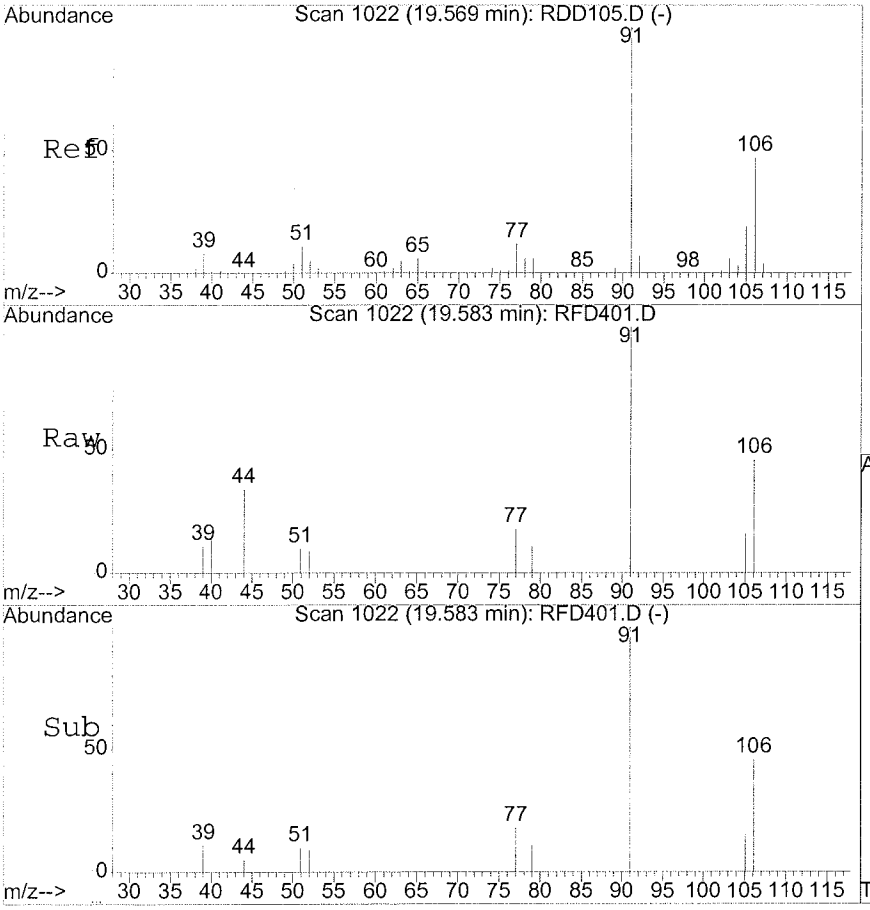


#70
m-Xylene & p-Xylene
Concen: 0.16 ug/l
RT: 18.88 min Scan# 974
Delta R.T. 0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 91 Resp: 32812

Ion	Ratio	Lower	Upper
91	100		
106	53.9	21.0	81.0

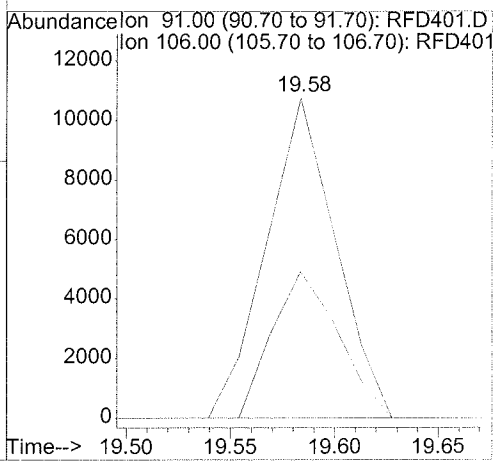




#71
o-Xylene
Concen: 0.12 ug/l
RT: 19.58 min Scan# 1022
Delta R.T. 0.01 min
Lab File: RFD401.D
Acq: 26 Jun 2020 6:29 pm

Tgt Ion: 91 Resp: 24857

Ion	Ratio	Lower	Upper
91	100		
106	43.7	17.4	77.4



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 19:00
Sample ID:	TB19-GW062420	Date Analyzed:	06/26/20 19:00
Lab Samp ID:	F210-02	Dilution Factor:	1
Lab File ID:	RFD402	Matrix	: WATER
Ext Btch ID:	VO94F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	5.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-130
BROMOFLUOROBENZENE	9.55	10.00	95.5	70-130
TOLUENE-D8	9.90	10.00	99.0	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD402.D Vial: 8
Acq On : 26 Jun 2020 7:00 pm Operator: FAdame/ODinh
Sample : 20F210-02 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:09 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

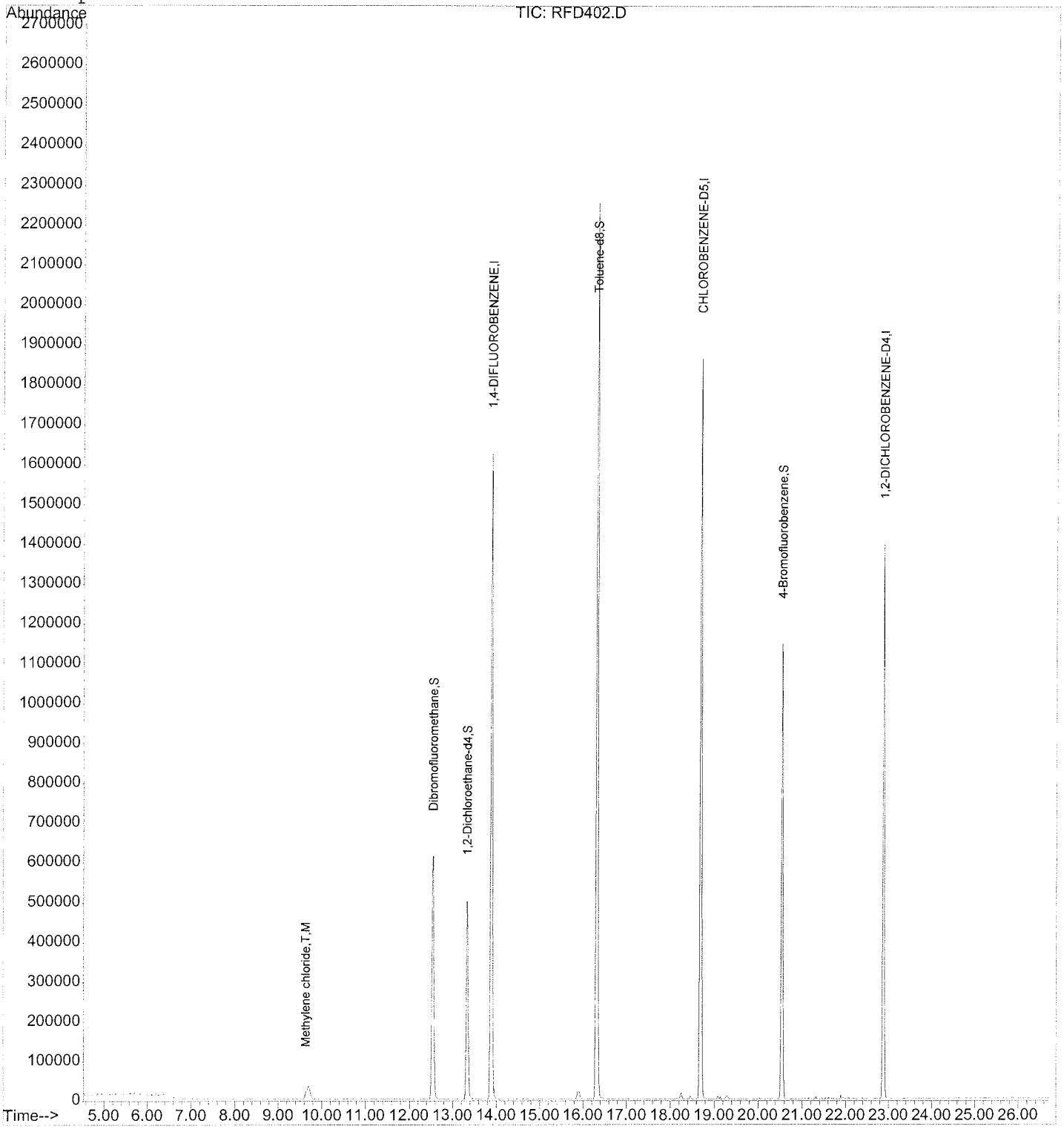
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2101235	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1611884	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	543196	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.55	111	622011	10.19	ug/l	0.03
Spiked Amount 10.000			Recovery =	101.90%		
43) 1,2-Dichloroethane-d4	13.33	65	475771	11.57	ug/l	0.02
Spiked Amount 10.000			Recovery =	115.70%		
56) Toluene-d8	16.31	98	2260964	9.90	ug/l	0.02
Spiked Amount 10.000			Recovery =	99.00%		
77) 4-Bromofluorobenzene	20.54	95	606999	9.55	ug/l	0.01
Spiked Amount 10.000			Recovery =	95.50%		
Target Compounds						Qvalue
18) Methylene chloride	9.63	49	24900	0.22	ug/l	93

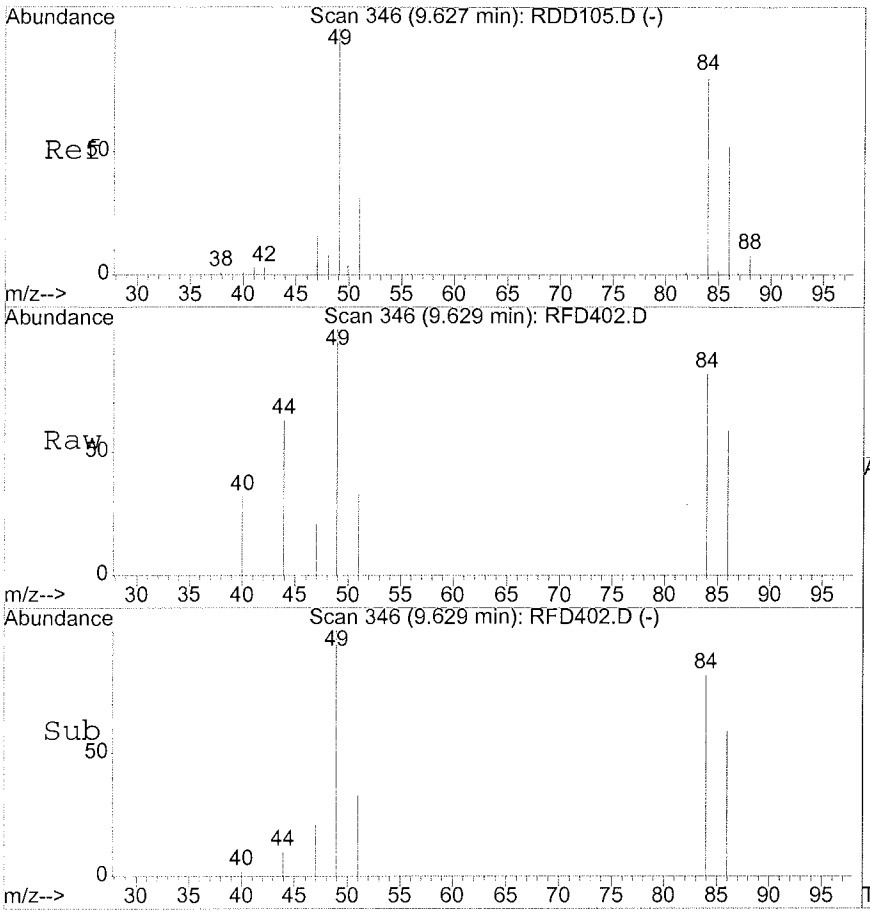
(#) = qualifier out of range (m) = manual integration
RFD402.D VO94D14.M Wed Jul 08 10:09:30 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD402.D Vial: 8
Acq On : 26 Jun 2020 7:00 pm Operator: FAdame/ODinh
Sample : 20F210-02 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:09 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

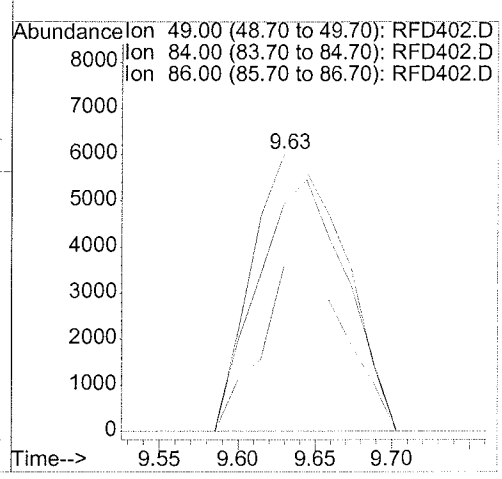




#18
Methylene chloride
Concen: 0.22 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD402.D
Acq: 26 Jun 2020 7:00 pm

Tgt Ion: 49 Resp: 24900

Ion	Ratio	Lower	Upper
49	100		
84	87.7	49.6	109.6
86	53.9	21.0	81.0



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 19:32
Sample ID:	FB01-GW062420	Date Analyzed:	06/26/20 19:32
Lab Samp ID:	F210-03	Dilution Factor:	1
Lab File ID:	RFD403	Matrix	: WATER
Ext Btch ID:	VO94F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.8	10.00	118	70-130
BROMOFLUOROBENZENE	9.63	10.00	96.3	70-130
TOLUENE-D8	9.94	10.00	99.4	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD403.D Vial: 9
Acq On : 26 Jun 2020 7:32 pm Operator: FAdame/ODinh
Sample : 20F210-03 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:14 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

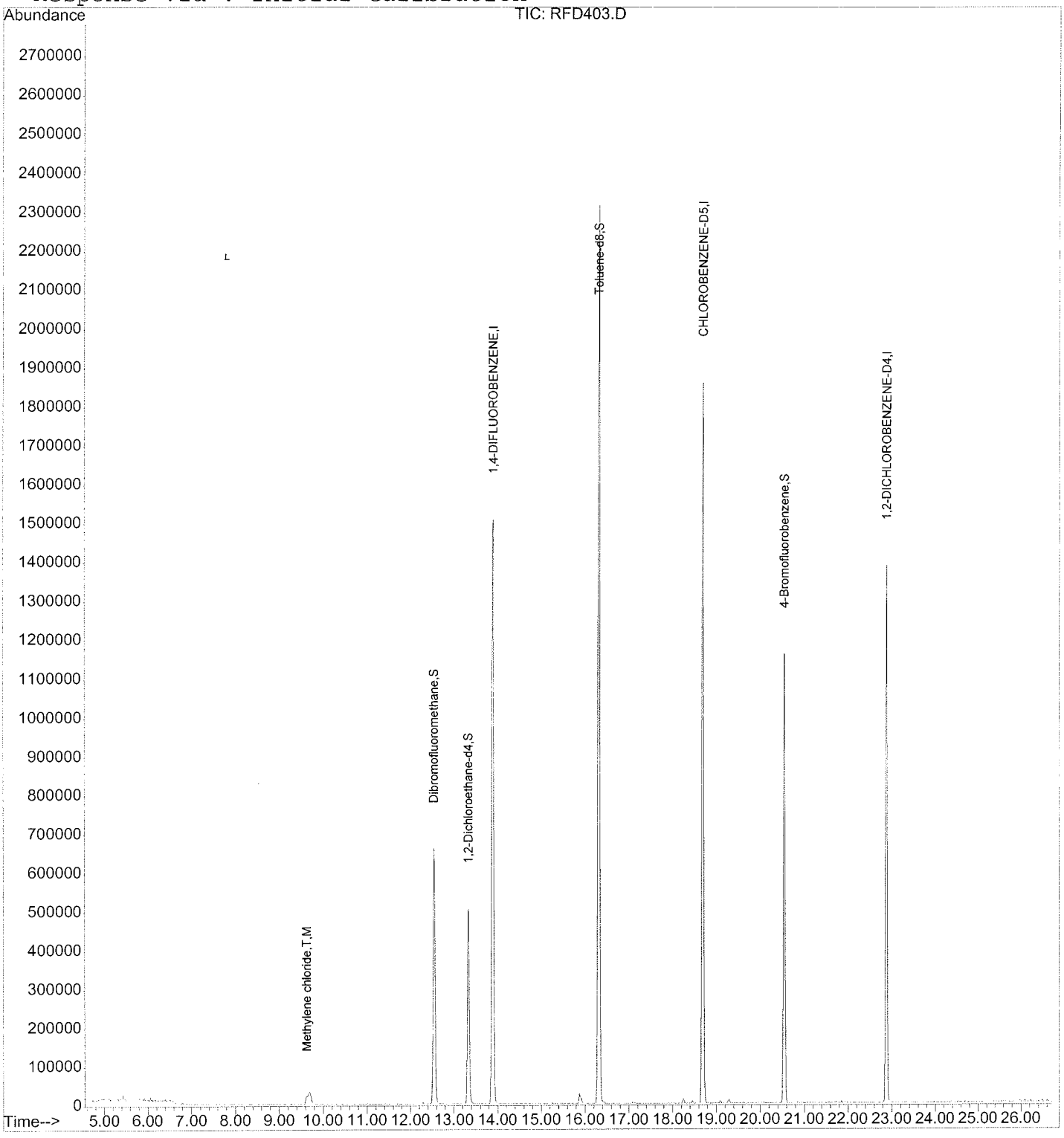
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2074770	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1618411	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	530847	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	618527	10.26	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.60%		
43) 1,2-Dichloroethane-d4	13.33	65	478093	11.78	ug/l	0.02
Spiked Amount 10.000			Recovery =	117.80%		
56) Toluene-d8	16.31	98	2279899	9.94	ug/l	0.02
Spiked Amount 10.000			Recovery =	99.40%		
77) 4-Bromofluorobenzene	20.54	95	598458	9.63	ug/l	0.01
Spiked Amount 10.000			Recovery =	96.30%		
Target Compounds						Qvalue
18) Methylene chloride	9.63	49	30123	0.27	ug/l	93

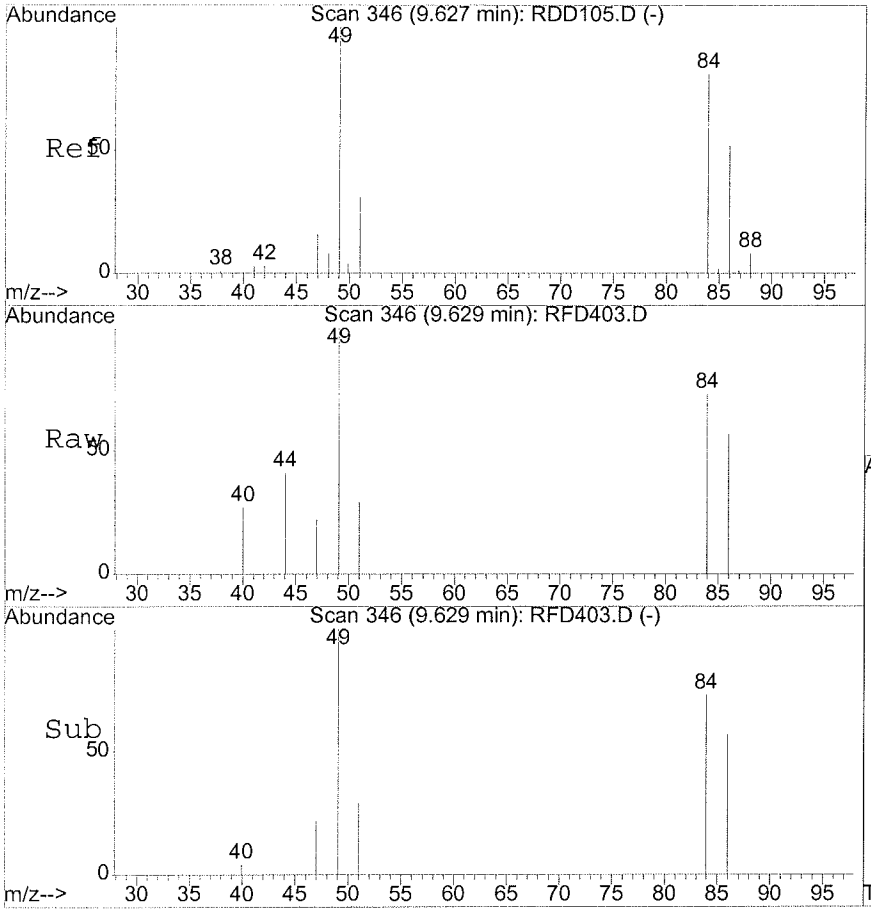
(#) = qualifier out of range (m) = manual integration
RFD403.D VO94D14.M Tue Jun 30 10:14:52 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD403.D Vial: 9
Acq On : 26 Jun 2020 7:32 pm Operator: FAdame/ODinh
Sample : 20F210-03 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:14 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

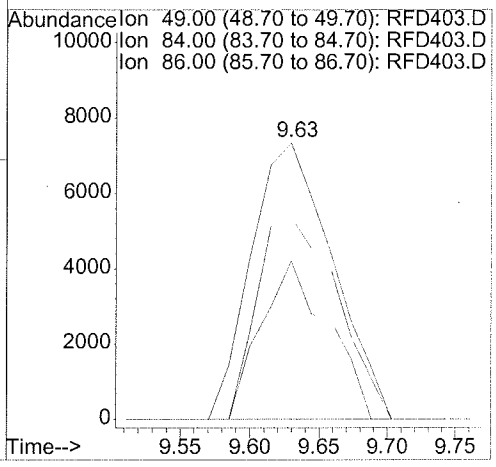




#18
Methylene chloride
Concen: 0.27 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD403.D
Acq: 26 Jun 2020 7:32 pm

Tgt Ion: 49 Resp: 30123

Ion	Ratio	Lower	Upper
49	100		
84	72.0	49.6	109.6
86	47.2	21.0	81.0



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 20:03
Sample ID:	MW27-GW062420	Date Analyzed:	06/26/20 20:03
Lab Samp ID:	F210-04	Dilution Factor:	1
Lab File ID:	RFD404	Matrix	: WATER
Ext Btch ID:	VO94F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.40J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	6.1	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.13J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.2	10.00	112	70-130
BROMOFLUOROBENZENE	9.51	10.00	95.1	70-130
TOLUENE-D8	9.97	10.00	99.7	70-130
DIBROMOFLUOROMETHANE	10.0	10.00	100	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD404.D Vial: 10
Acq On : 26 Jun 2020 8:03 pm Operator: FAdame/ODinh
Sample : 20F210-04 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:16 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

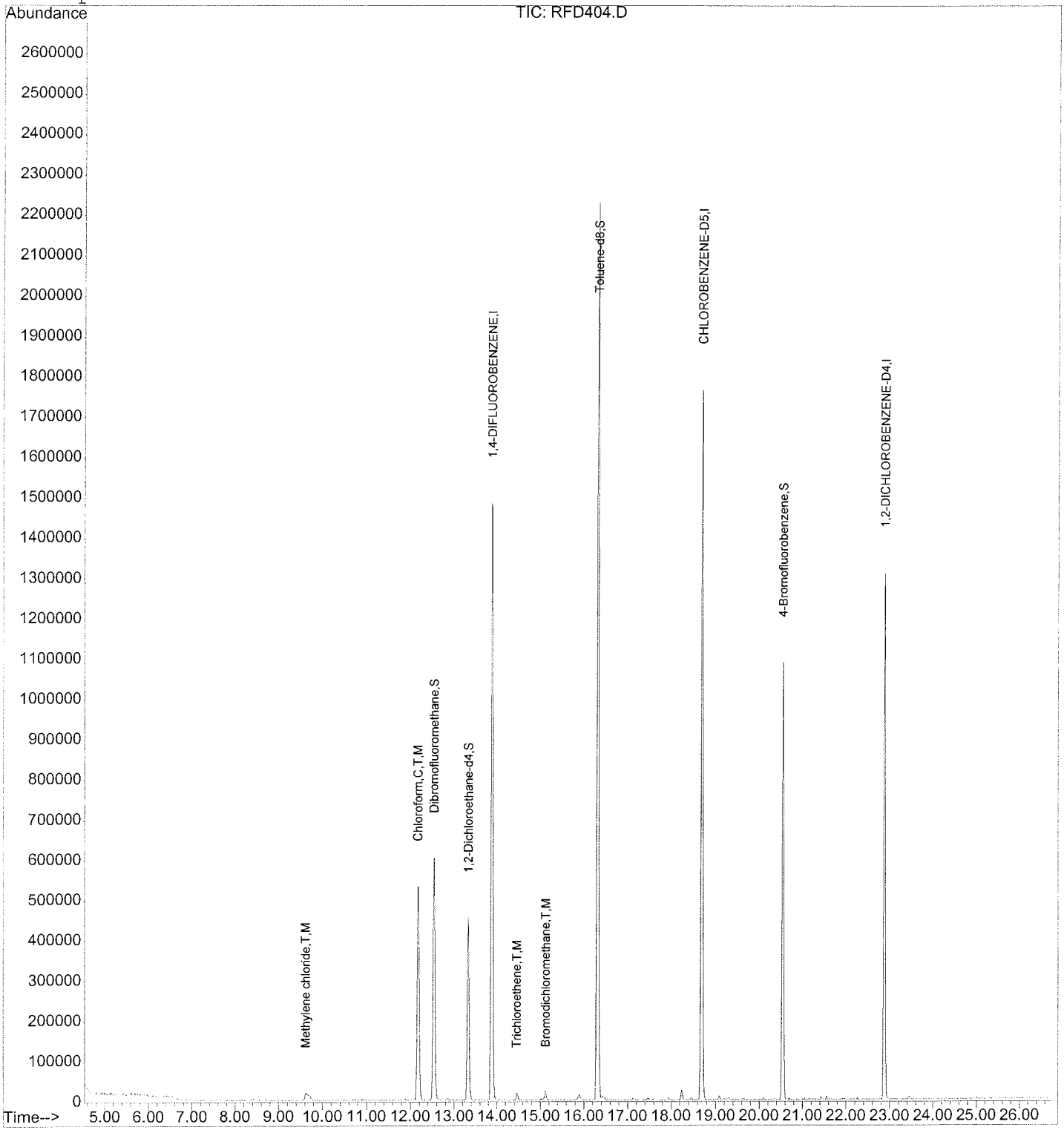
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1978857	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.69	117	1535404	10.00	ug/l	0.02
74) 1,2-DICHLOROBENZENE-D4	22.87	152	502298	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	575854	10.02	ug/l	0.02
Spiked Amount 10.000			Recovery	=	100.20%	
43) 1,2-Dichloroethane-d4	13.33	65	432872	11.18	ug/l	0.02
Spiked Amount 10.000			Recovery	=	111.80%	
56) Toluene-d8	16.31	98	2170505	9.97	ug/l	0.02
Spiked Amount 10.000			Recovery	=	99.70%	
77) 4-Bromofluorobenzene	20.54	95	558833	9.51	ug/l	0.01
Spiked Amount 10.000			Recovery	=	95.10%	
Target Compounds						Qvalue
18) Methylene chloride	9.62	49	25688	0.25	ug/l	93
32) Chloroform	12.17	83	704748	6.07	ug/l	99
46) Trichloroethene	14.46	130	10066	0.13	ug/l	92
50) Bromodichloromethane	15.12	83	27148	0.40	ug/l	98

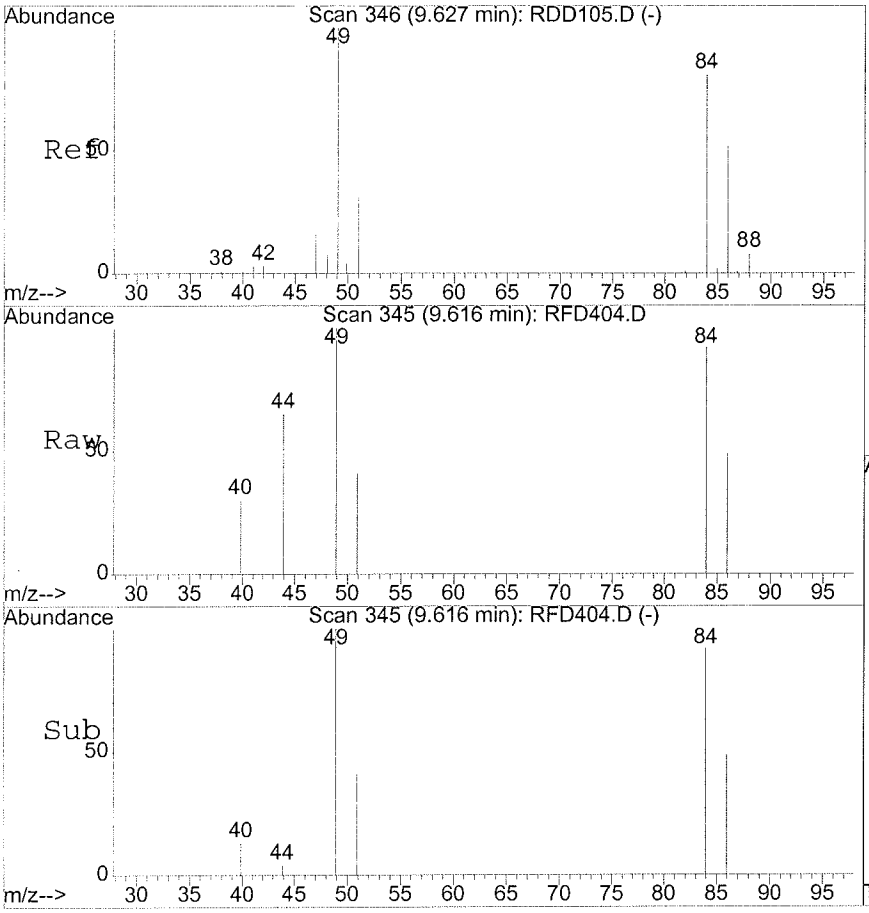
(#) = qualifier out of range (m) = manual integration
RFD404.D VO94D14.M Tue Jun 30 10:16:27 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD404.D Vial: 10
Acq On : 26 Jun 2020 8:03 pm Operator: FAdame/ODinh
Sample : 20F210-04 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:16 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

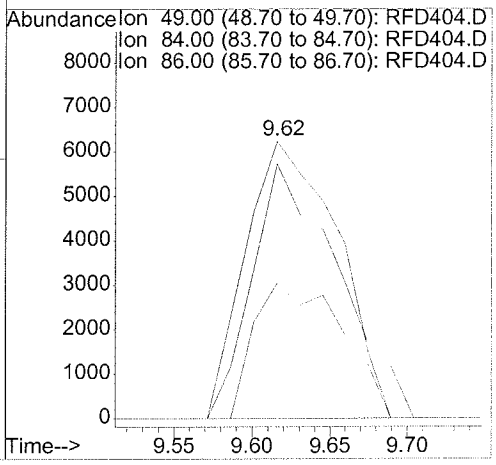


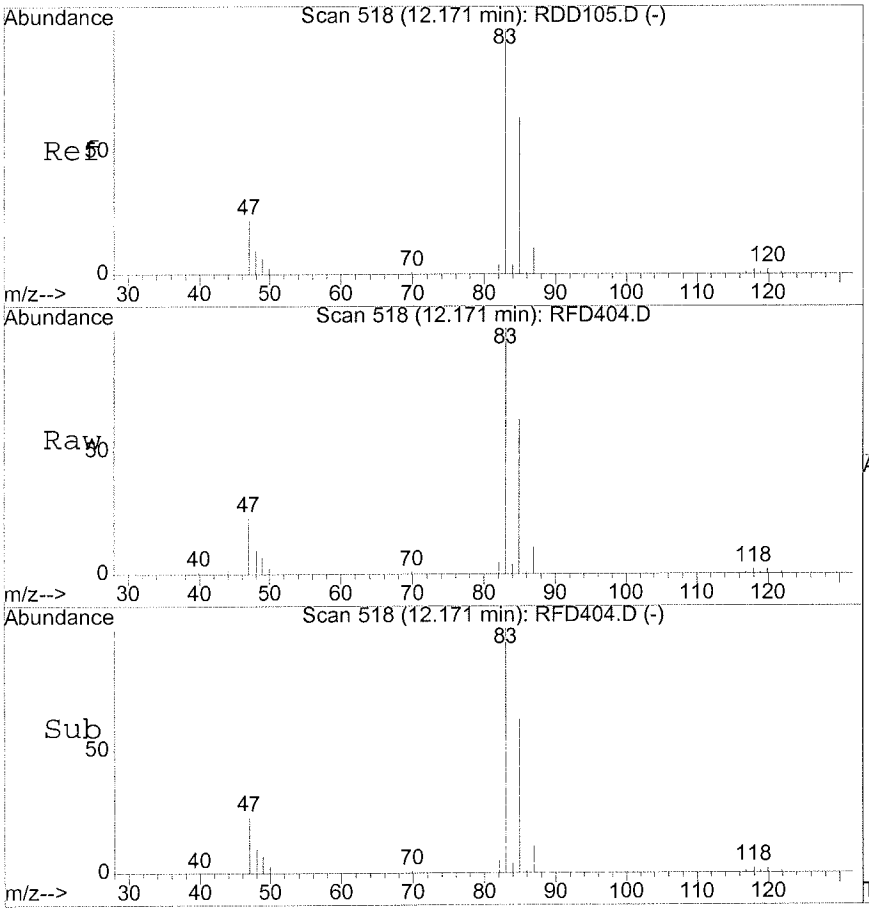


#18
Methylene chloride
Concen: 0.25 ug/l
RT: 9.62 min Scan# 345
Delta R.T. -0.01 min
Lab File: RFD404.D
Acq: 26 Jun 2020 8:03 pm

Tgt Ion: 49 Resp: 25688

Ion	Ratio	Lower	Upper
49	100		
84	86.2	49.6	109.6
86	47.0	21.0	81.0

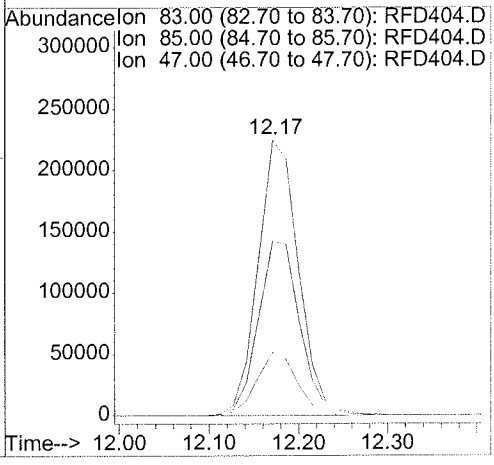


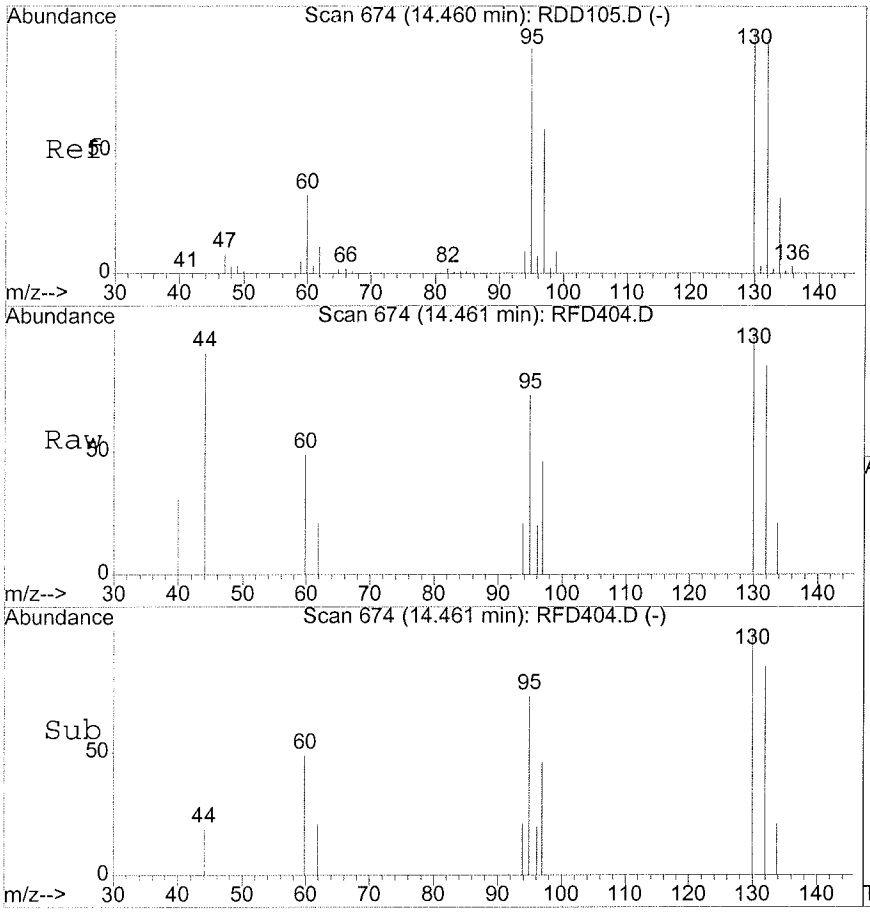


#32
Chloroform
Concen: 6.07 ug/l
RT: 12.17 min Scan# 518
Delta R.T. 0.00 min
Lab File: RFD404.D
Acq: 26 Jun 2020 8:03 pm

Tgt Ion: 83 Resp: 704748

Ion	Ratio	Lower	Upper
83	100		
85	64.8	34.4	94.4
47	22.6	0.0	52.9

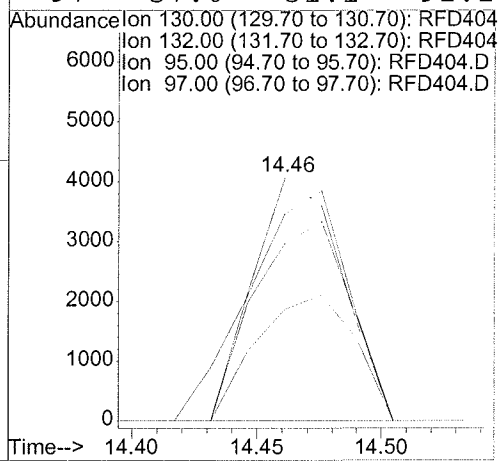


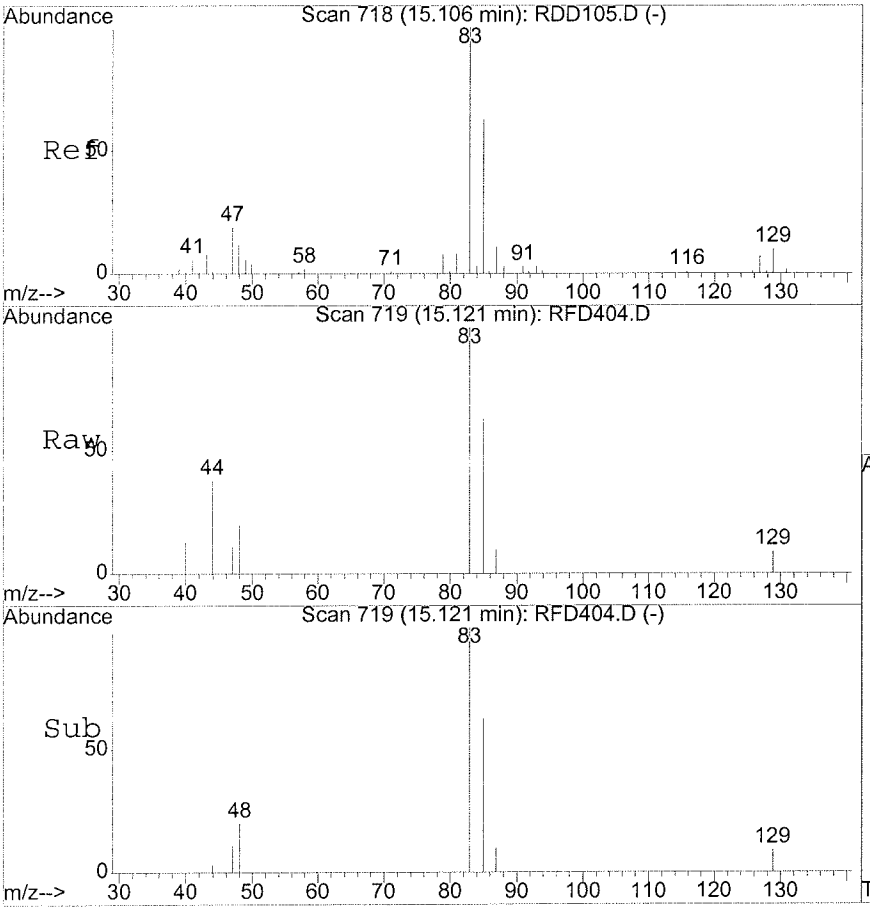


#46
Trichloroethene
Concen: 0.13 ug/l
RT: 14.46 min Scan# 674
Delta R.T. 0.00 min
Lab File: RFD404.D
Acq: 26 Jun 2020 8:03 pm

Tgt Ion:130 Resp: 10066

Ion	Ratio	Lower	Upper
130	100		
132	105.7	66.4	126.4
95	87.6	66.2	126.2
97	57.0	31.1	91.1

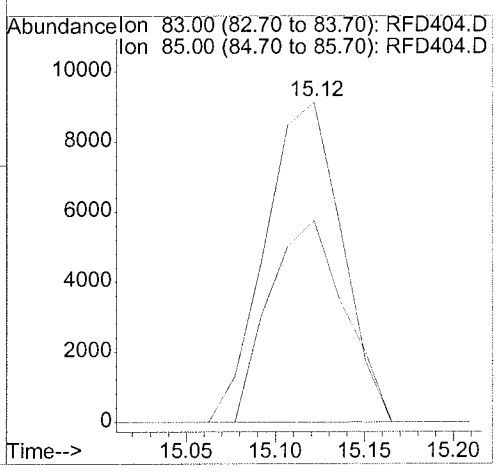




#50
Bromodichloromethane
Concen: 0.40 ug/l
RT: 15.12 min Scan# 719
Delta R.T. 0.02 min
Lab File: RFD404.D
Acq: 26 Jun 2020 8:03 pm

Tgt Ion: 83 Resp: 27148

Ion	Ratio	Lower	Upper
83	100		
85	62.5	33.8	93.8



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 20:34
Sample ID:	MW28-GW062420	Date Analyzed:	06/26/20 20:34
Lab Samp ID:	F210-05	Dilution Factor:	1
Lab File ID:	RFD405	Matrix	: WATER
Ext Btch ID:	V094F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.35J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	4.8	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.24J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-130
BROMOFLUOROBENZENE	9.25	10.00	92.5	70-130
TOLUENE-D8	9.81	10.00	98.1	70-130
DIBROMOFLUOROMETHANE	10.0	10.00	100	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD405.D Vial: 11
Acq On : 26 Jun 2020 8:34 pm Operator: FAdame/ODinh
Sample : 20F210-05 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

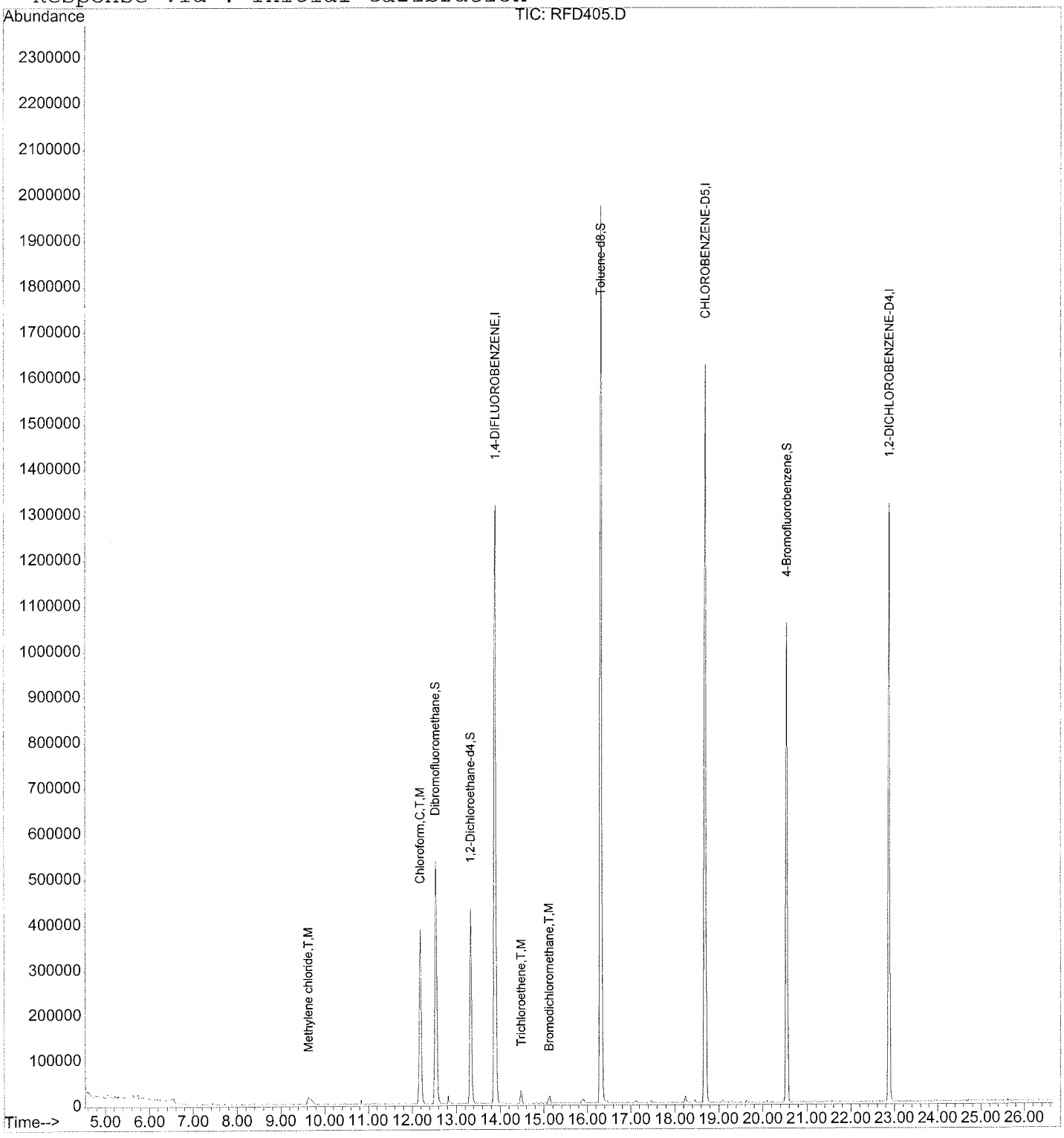
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	1764171	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1418960	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	505062	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	514781	10.04	ug/l	0.02
Spiked Amount 10.000			Recovery =	100.40%		
43) 1,2-Dichloroethane-d4	13.33	65	401032	11.62	ug/l	0.02
Spiked Amount 10.000			Recovery =	116.20%		
56) Toluene-d8	16.31	98	1972679	9.81	ug/l	0.02
Spiked Amount 10.000			Recovery =	98.10%		
77) 4-Bromofluorobenzene	20.54	95	546687	9.25	ug/l	0.01
Spiked Amount 10.000			Recovery =	92.50%		
Target Compounds						Qvalue
18) Methylene chloride	9.63	49	21539	0.23	ug/l	98
32) Chloroform	12.19	83	497959	4.81	ug/l	100
46) Trichloroethene	14.48	130	16764	0.24	ug/l	95
50) Bromodichloromethane	15.12	83	21001	0.35	ug/l	98

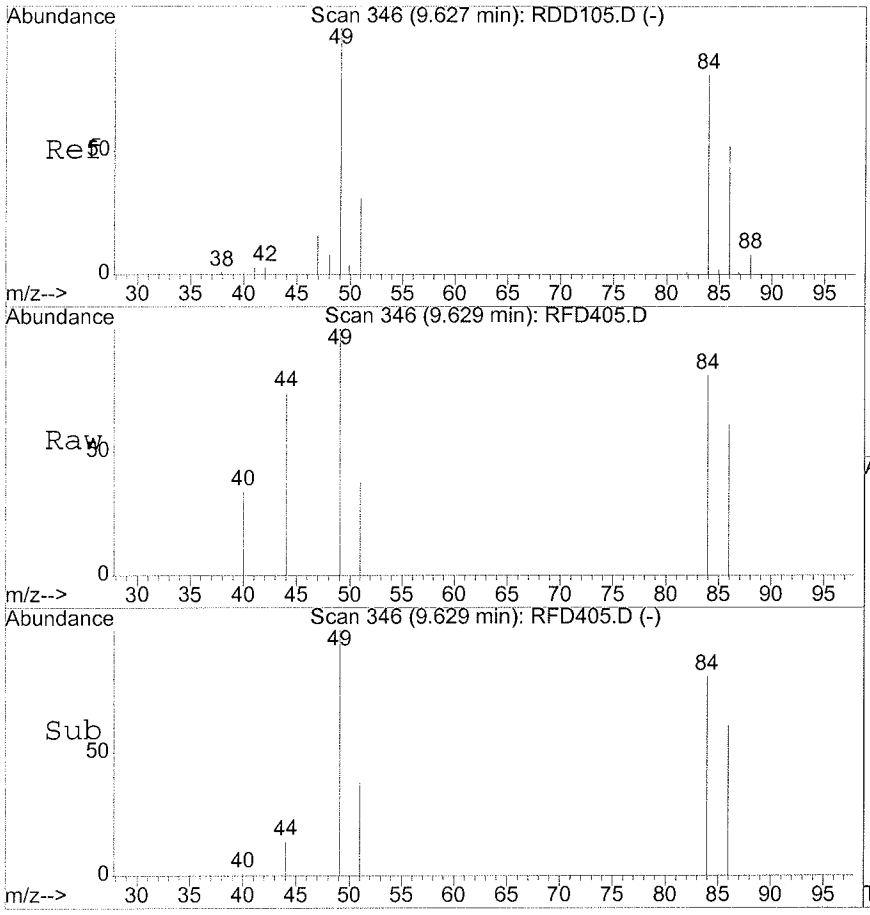
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD405.D Vial: 11
Acq On : 26 Jun 2020 8:34 pm Operator: FAdame/ODinh
Sample : 20F210-05 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:17 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

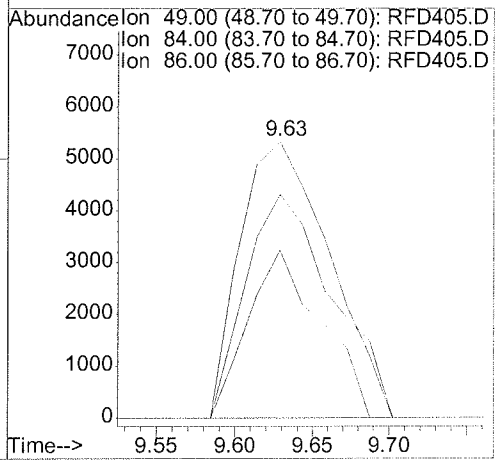


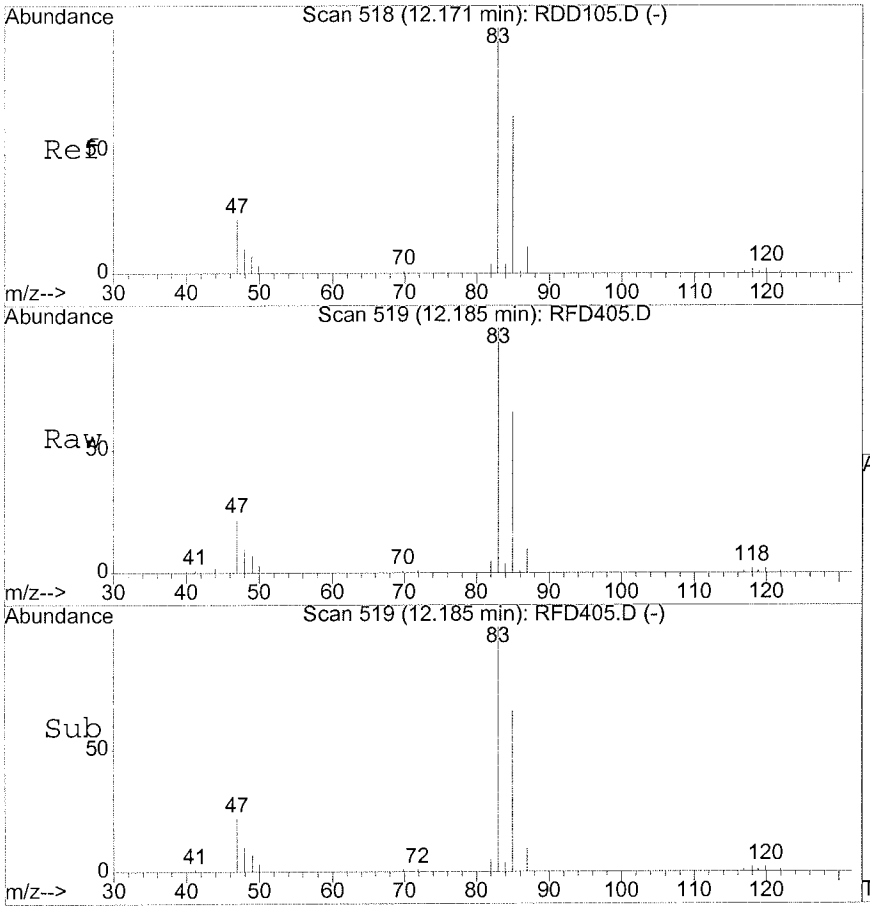


#18
Methylene chloride
Concen: 0.23 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD405.D
Acq: 26 Jun 2020 8:34 pm

Tgt Ion: 49 Resp: 21539

Ion	Ratio	Lower	Upper
49	100		
84	78.4	49.6	109.6
86	49.5	21.0	81.0

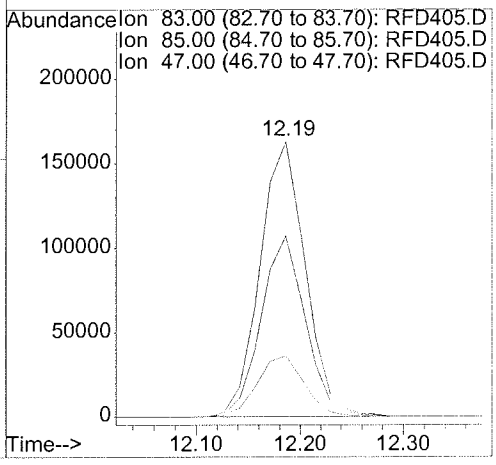


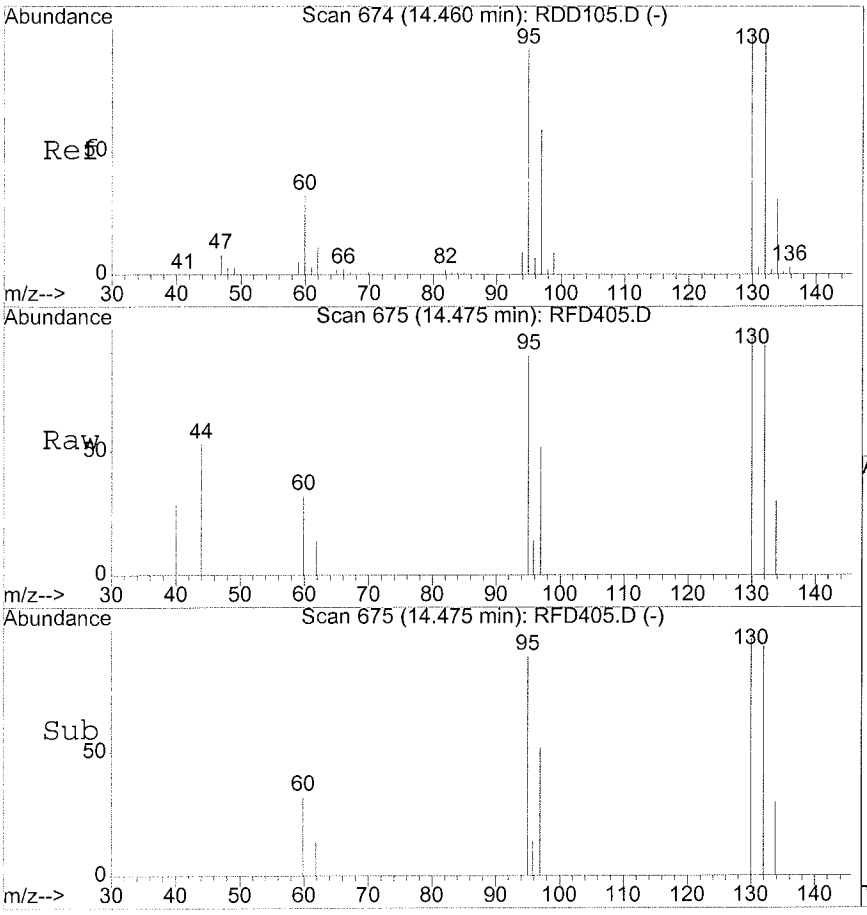


#32
Chloroform
Concen: 4.81 ug/l
RT: 12.19 min Scan# 519
Delta R.T. 0.01 min
Lab File: RFD405.D
Acq: 26 Jun 2020 8:34 pm

Tgt Ion: 83 Resp: 497959

Ion	Ratio	Lower	Upper
83	100		
85	64.2	34.4	94.4
47	22.9	0.0	52.9

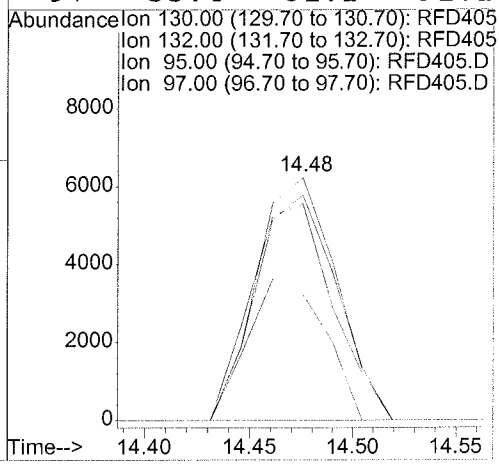


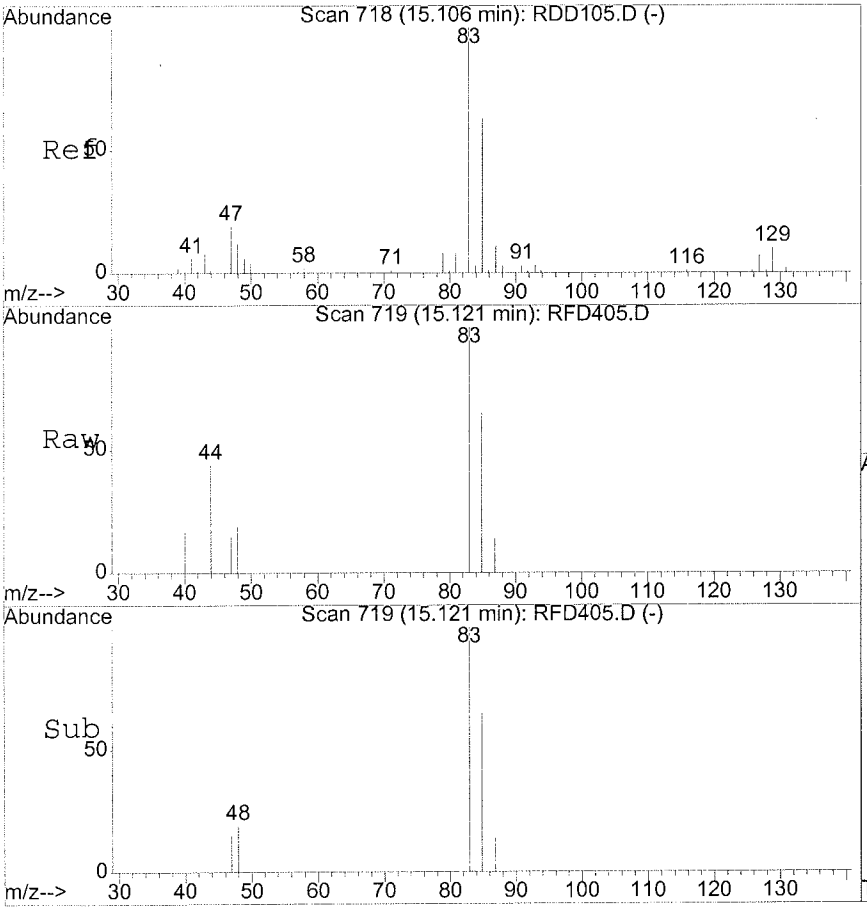


#46
Trichloroethene
Concen: 0.24 ug/l
RT: 14.48 min Scan# 675
Delta R.T. 0.01 min
Lab File: RFD405.D
Acq: 26 Jun 2020 8:34 pm

Tgt Ion:130 Resp: 16764

Ion	Ratio	Lower	Upper
130	100		
132	94.4	66.4	126.4
95	91.0	66.2	126.2
97	55.4	31.1	91.1

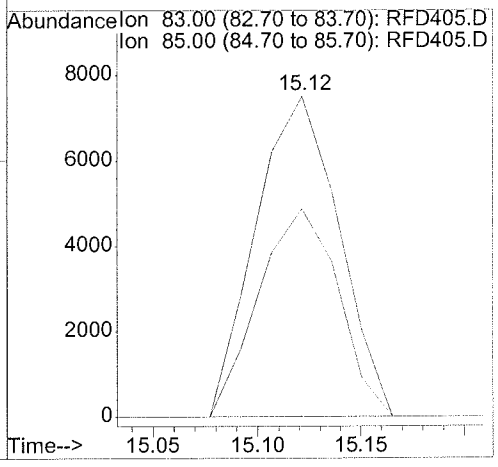




#50
Bromodichloromethane
Concen: 0.35 ug/l
RT: 15.12 min Scan# 719
Delta R.T. 0.01 min
Lab File: RFD405.D
Acq: 26 Jun 2020 8:34 pm

Tgt Ion: 83 Resp: 21001

Ion	Ratio	Lower	Upper
83	100		
85	62.4	33.8	93.8



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 21:06
Sample ID:	TB18-GW062420	Date Analyzed:	06/26/20 21:06
Lab Samp ID:	F210-06	Dilution Factor:	1
Lab File ID:	RFD406	Matrix	: WATER
Ext Btch ID:	V094F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.9	10.00	119	70-130
BROMOFLUOROBENZENE	9.16	10.00	91.6	70-130
TOLUENE-D8	9.96	10.00	99.6	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD406.D Vial: 12
Acq On : 26 Jun 2020 9:06 pm Operator: FAdame/ODinh
Sample : 20F210-06 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:18 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

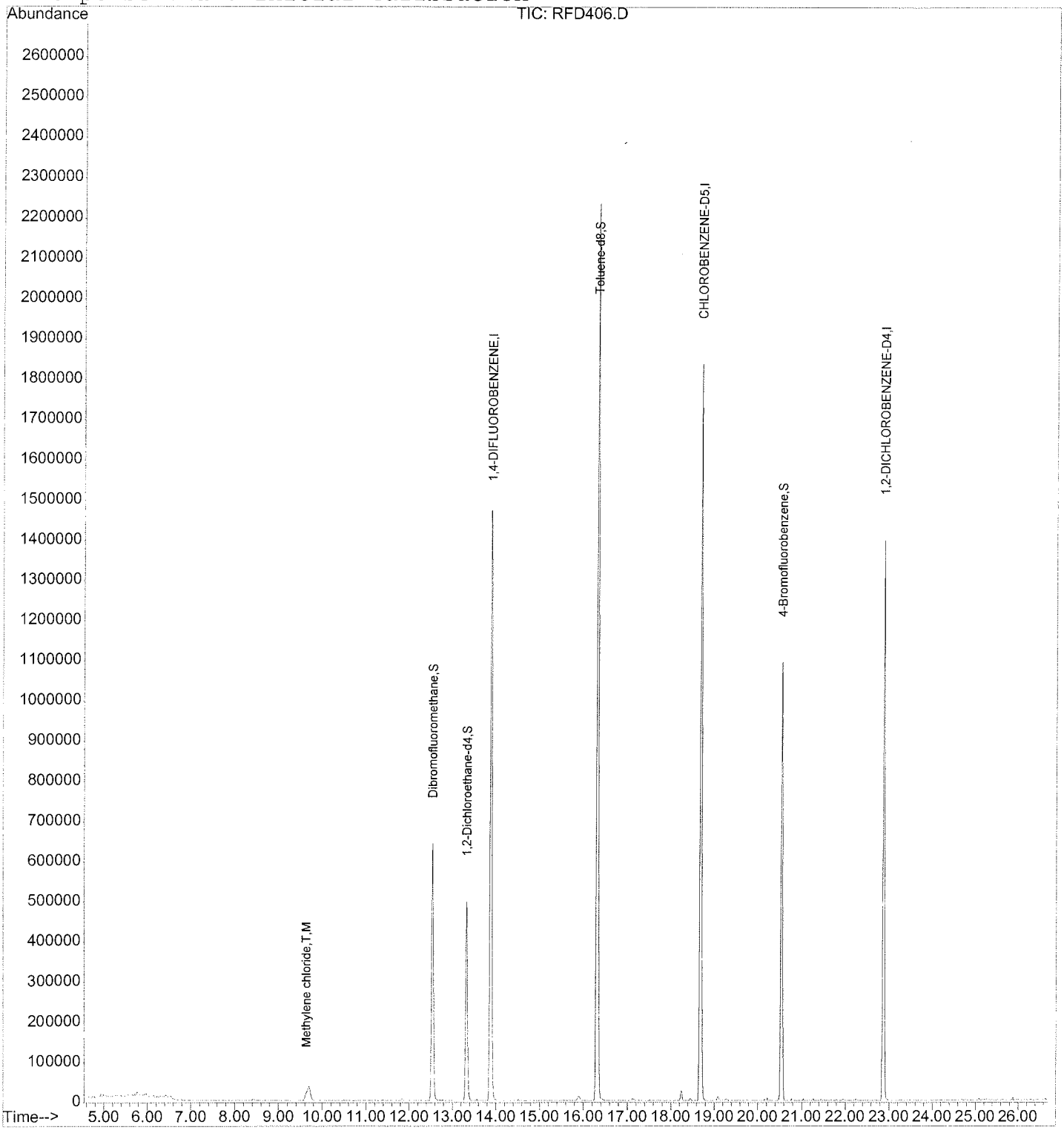
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2017347	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1562020	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	532406	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	600266	10.24	ug/l	0.01
Spiked Amount 10.000			Recovery =	102.40%		
43) 1,2-Dichloroethane-d4	13.33	65	467821	11.85	ug/l	0.01
Spiked Amount 10.000			Recovery =	118.50%		
56) Toluene-d8	16.31	98	2205087	9.96	ug/l	0.01
Spiked Amount 10.000			Recovery =	99.60%		
77) 4-Bromofluorobenzene	20.54	95	570939	9.16	ug/l	0.01
Spiked Amount 10.000			Recovery =	91.60%		
Target Compounds						Qvalue
18) Methylene chloride	9.63	49	25614	0.24	ug/l	97

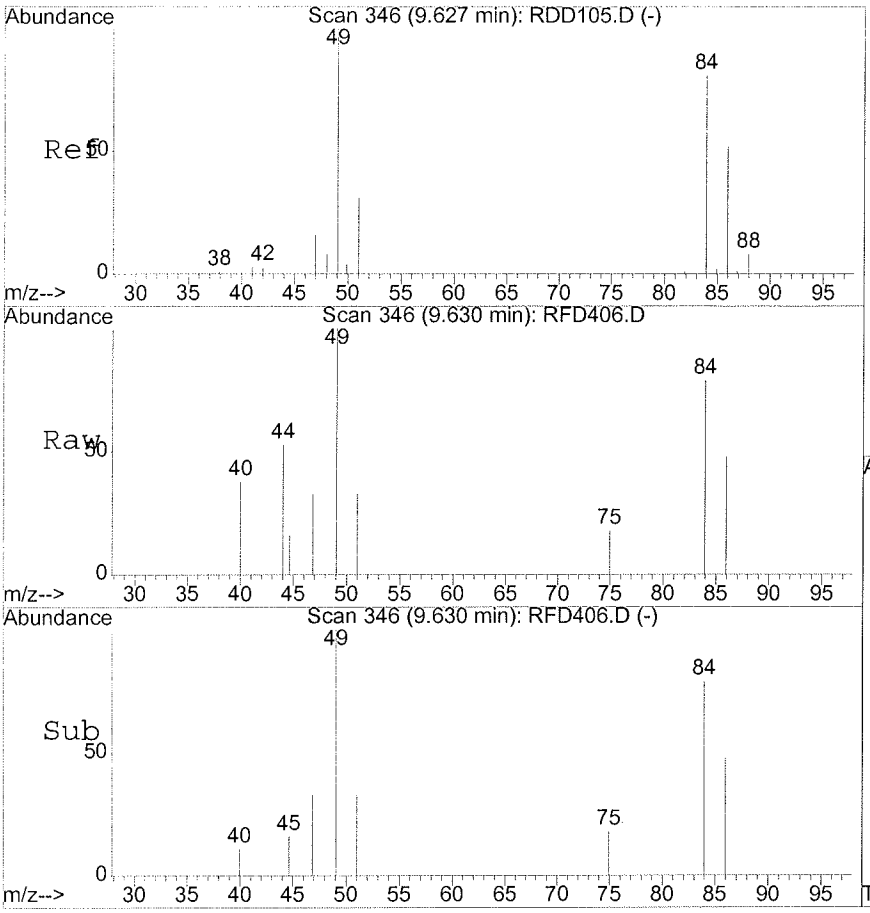
(#) = qualifier out of range (m) = manual integration
RFD406.D VO94D14.M Tue Jun 30 10:18:29 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD406.D Vial: 12
Acq On : 26 Jun 2020 9:06 pm Operator: FAdame/ODinh
Sample : 20F210-06 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:18 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

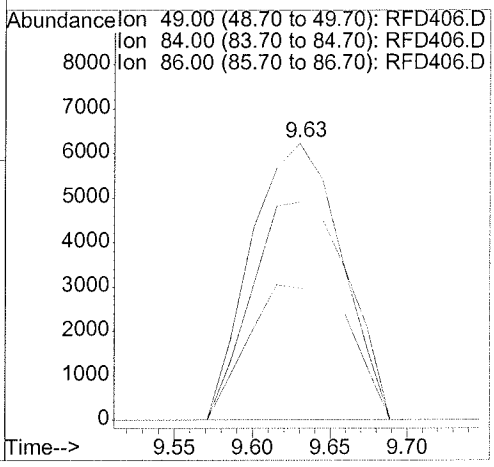




#18
Methylene chloride
Concen: 0.24 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD406.D
Acq: 26 Jun 2020 9:06 pm

Tgt Ion: 49 Resp: 25614

Ion	Ratio	Lower	Upper
49	100		
84	81.6	49.6	109.6
86	53.8	21.0	81.0



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: 06/23/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/26/20 21:37
Sample ID: MW14S-GW062320	Date Analyzed: 06/26/20 21:37
Lab Samp ID: F210-07	Dilution Factor: 1
Lab File ID: RFD407	Matrix : WATER
Ext Btch ID: VO94F18	% Moisture : NA
Calib. Ref.: RDD105	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	0.30J	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.89J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	7.8	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	4.8	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-130
BROMOFLUOROBENZENE	9.40	10.00	94.0	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	10.3	10.00	103	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD407.D Vial: 13
Acq On : 26 Jun 2020 9:37 pm Operator: FAdame/ODinh
Sample : 20F210-07 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:10 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

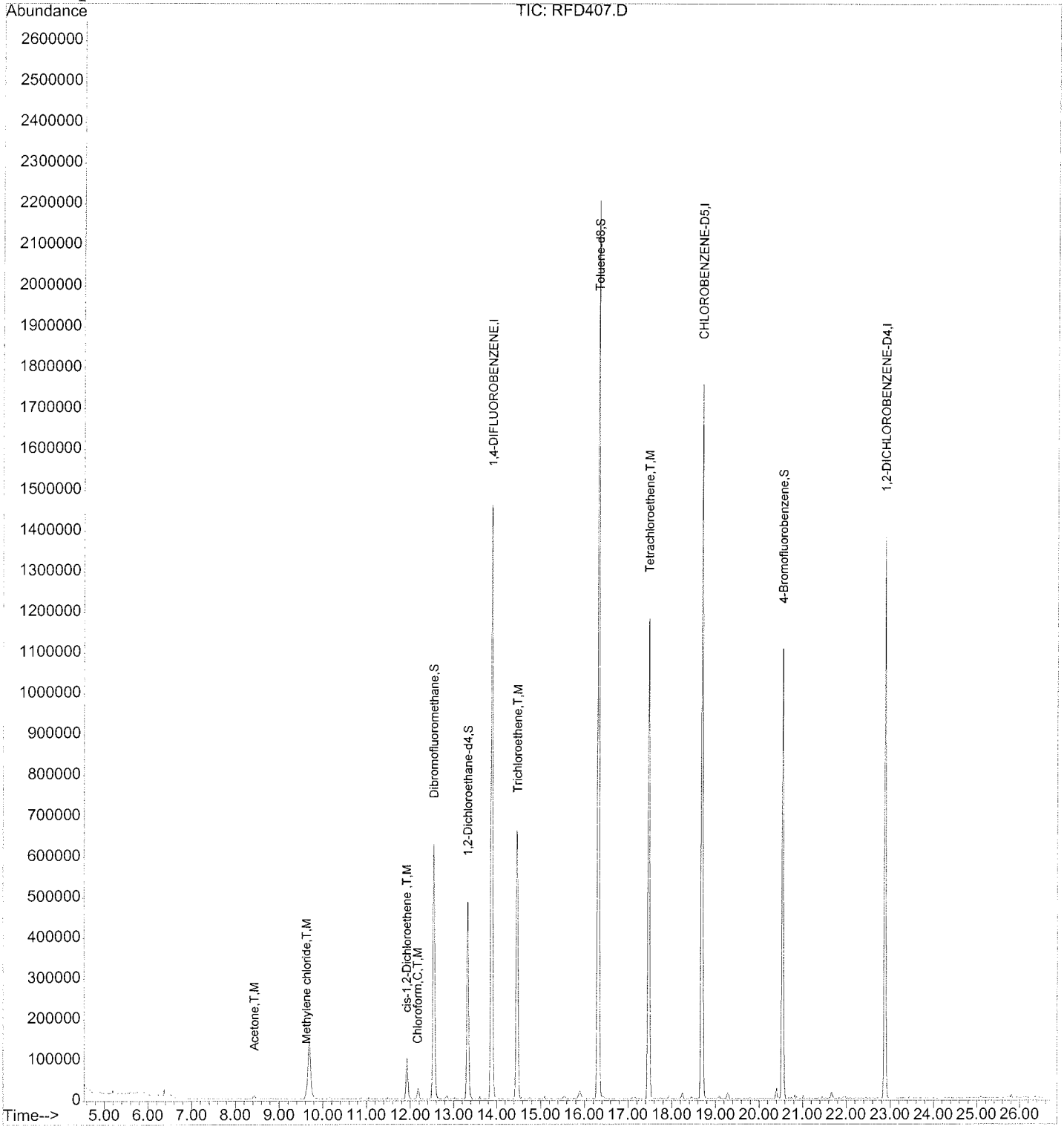
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2004998	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1539798	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	518848	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	598199	10.27	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.70%		
43) 1,2-Dichloroethane-d4	13.33	65	454200	11.58	ug/l	0.01
Spiked Amount 10.000			Recovery =	115.80%		
56) Toluene-d8	16.31	98	2182103	10.00	ug/l	0.01
Spiked Amount 10.000			Recovery =	100.00%		
77) 4-Bromofluorobenzene	20.54	95	570454	9.40	ug/l	0.01
Spiked Amount 10.000			Recovery =	94.00%		
Target Compounds						Qvalue
12) Acetone	8.44	43	20709	2.29	ug/l	86
18) Methylene chloride	9.63	49	28352	0.27	ug/l	93
31) cis-1,2-Dichloroethene	11.92	96	75960	0.89	ug/l	98
32) Chloroform	12.17	83	35207	0.30	ug/l	99
46) Trichloroethene	14.47	130	383533	4.83	ug/l	97
63) Tetrachloroethene	17.47	164	443577	7.79	ug/l	96

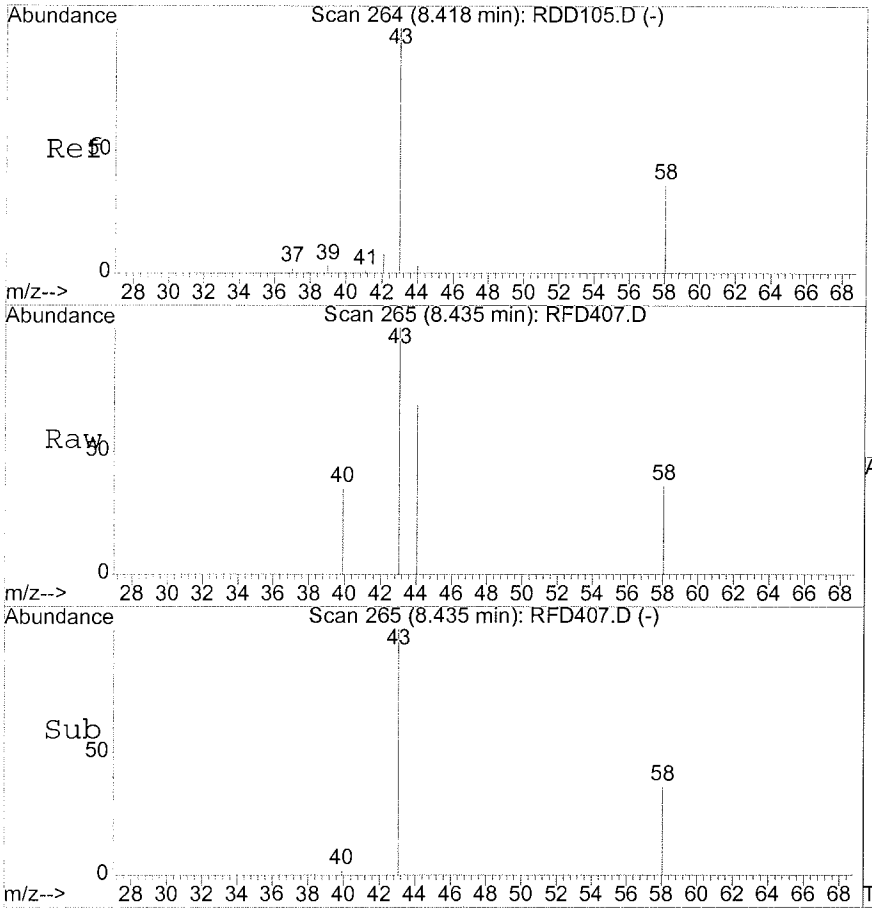
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD407.D Vial: 13
Acq On : 26 Jun 2020 9:37 pm Operator: FAdame/ODinh
Sample : 20F210-07 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jul 8 10:10 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

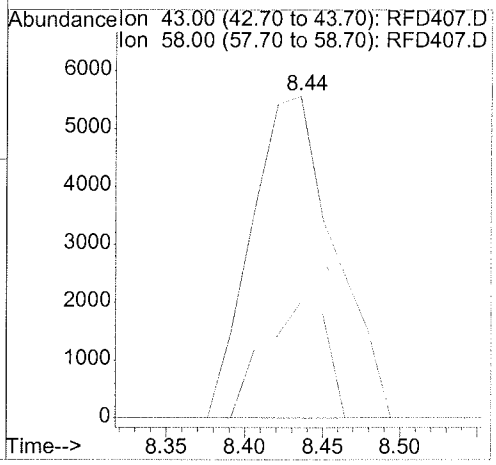


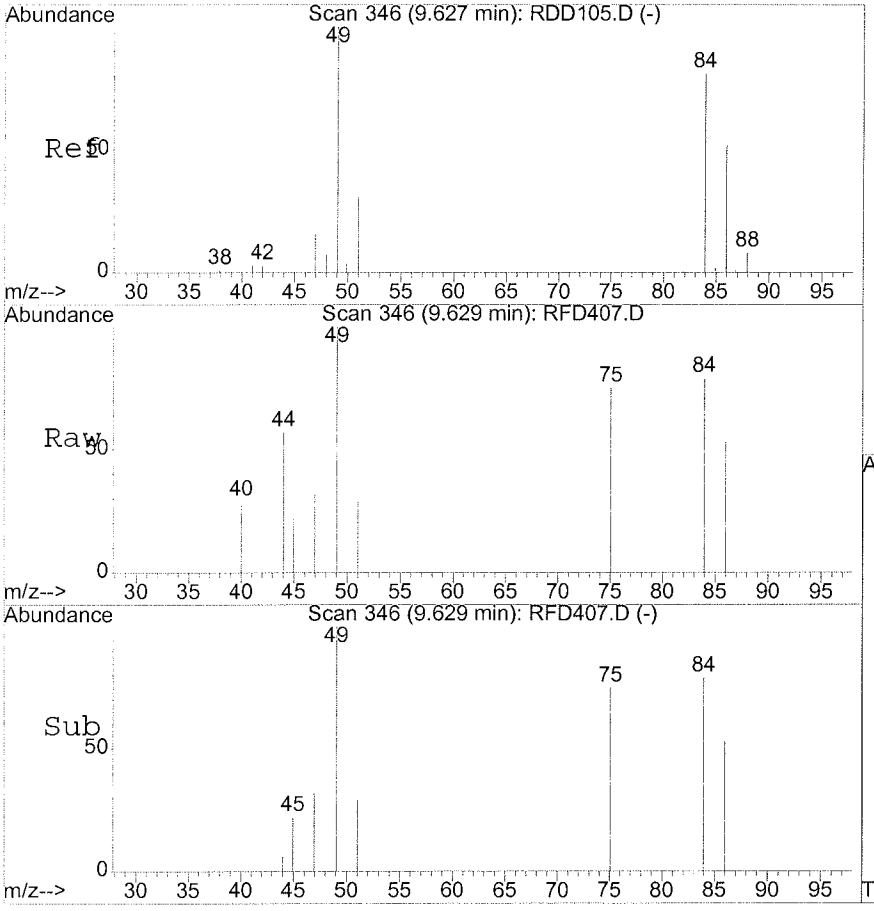


#12
Acetone
Concen: 2.29 ug/l
RT: 8.44 min Scan# 265
Delta R.T. 0.02 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion: 43 Resp: 20709

Ion	Ratio	Lower	Upper
43	100		
58	27.2	5.4	65.4

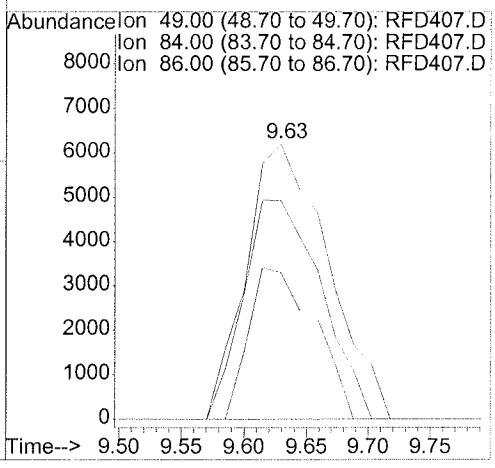


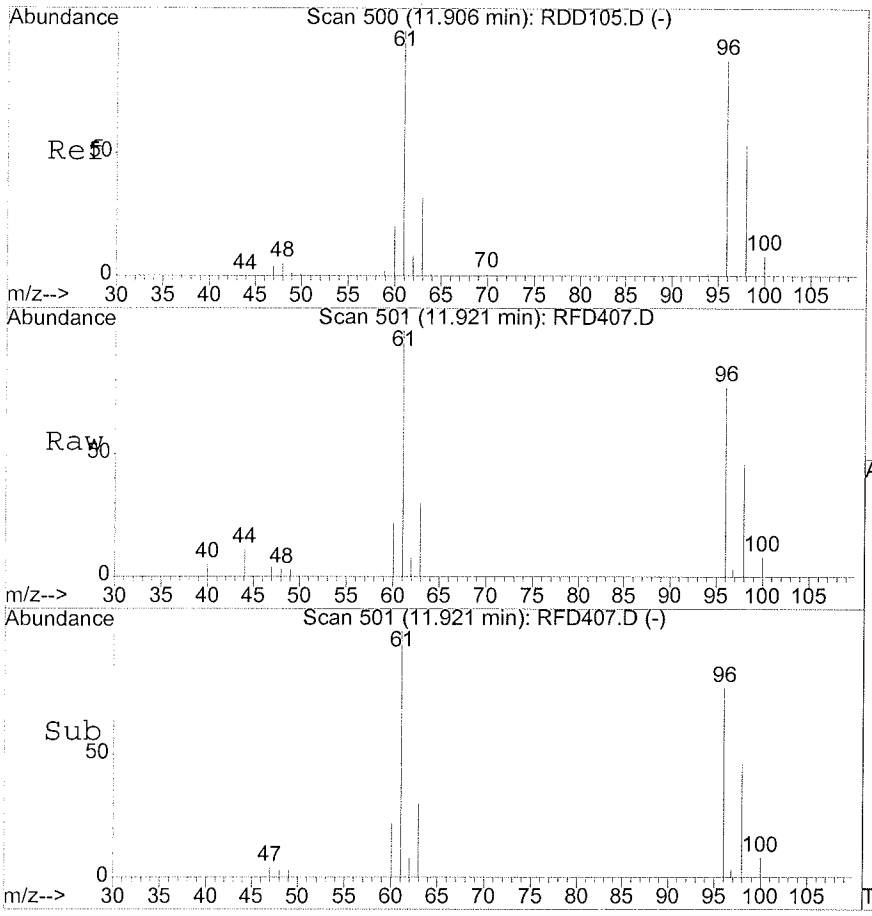


#18
Methylene chloride
Concen: 0.27 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion: 49 Resp: 28352

Ion	Ratio	Lower	Upper
49	100		
84	75.6	49.6	109.6
86	44.3	21.0	81.0

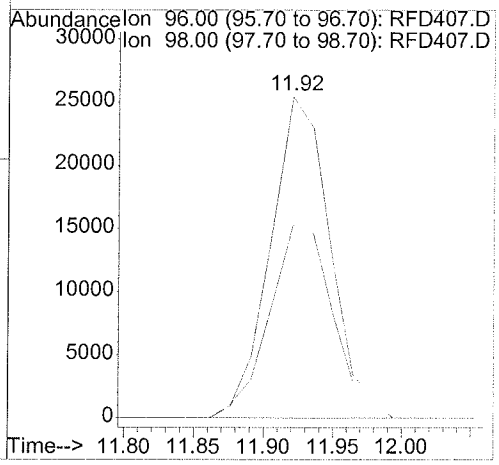


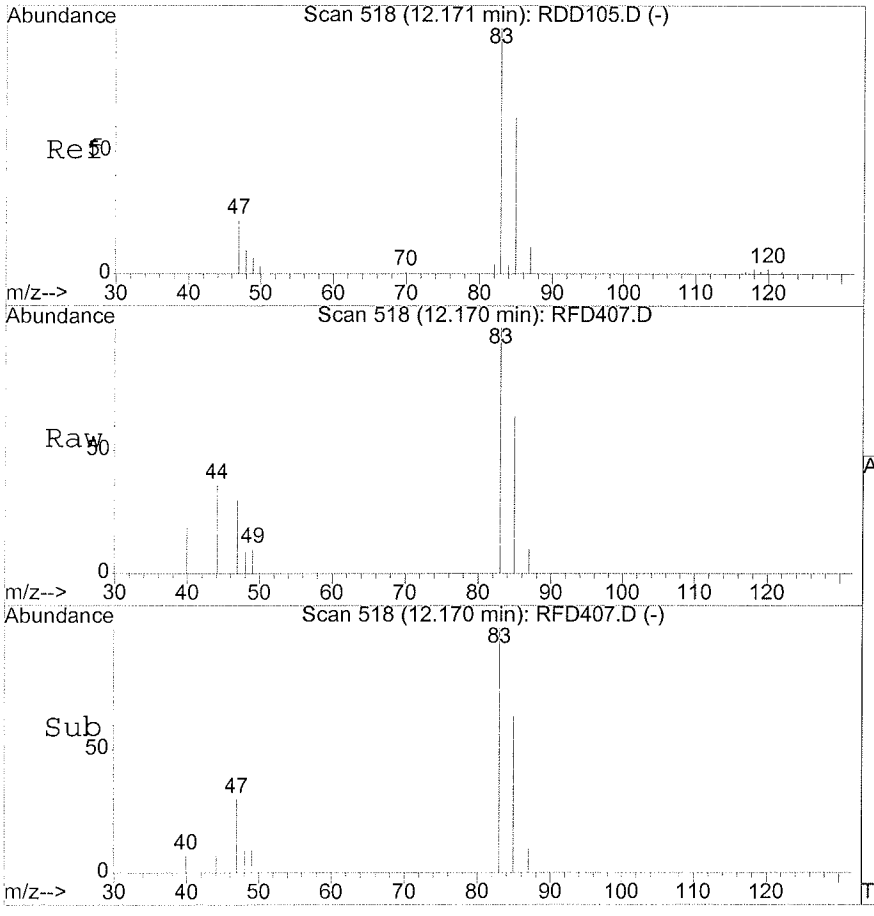


#31
cis-1,2-Dichloroethene
Concen: 0.89 ug/l
RT: 11.92 min Scan# 501
Delta R.T. 0.01 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion: 96 Resp: 75960

Ion	Ratio	Lower	Upper
96	100		
98	64.2	32.6	92.6

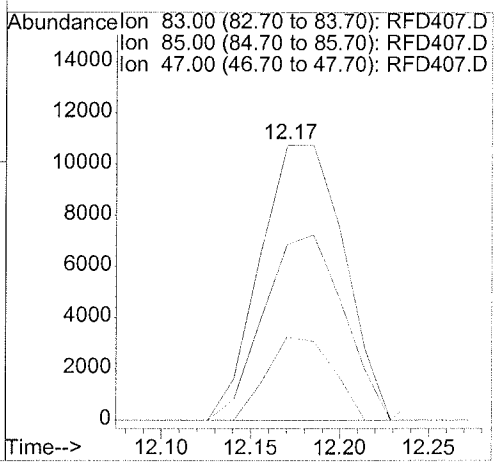


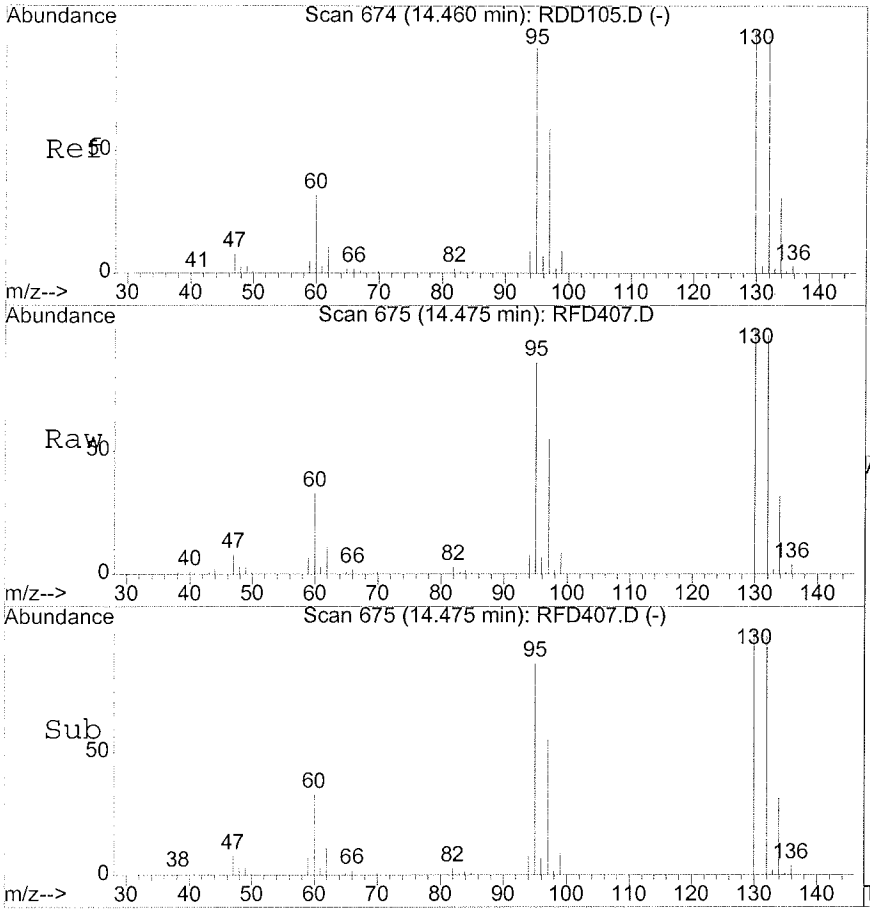


#32
Chloroform
Concen: 0.30 ug/l
RT: 12.17 min Scan# 518
Delta R.T. -0.00 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion: 83 Resp: 35207

Ion	Ratio	Lower	Upper
83	100		
85	64.0	34.4	94.4
47	23.7	0.0	52.9

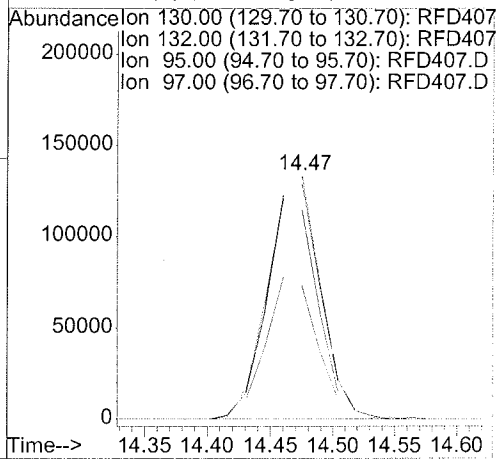


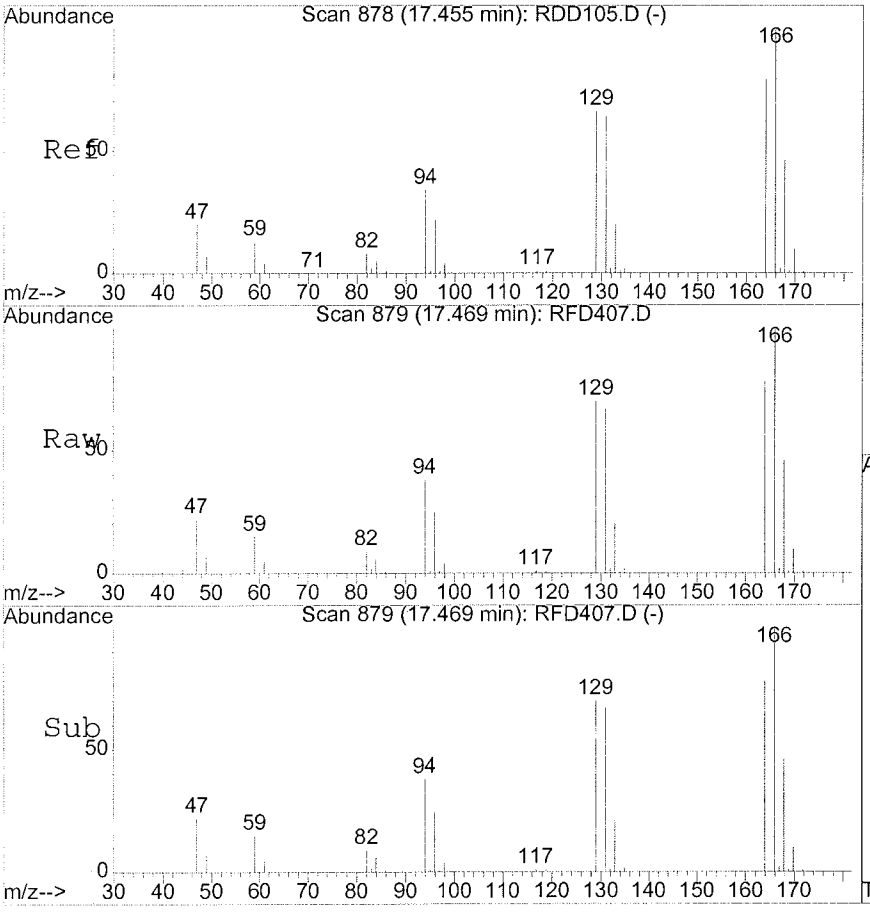


#46
Trichloroethene
Concen: 4.83 ug/l
RT: 14.47 min Scan# 675
Delta R.T. 0.01 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion:130 Resp: 383533

Ion	Ratio	Lower	Upper
130	100		
132	97.5	66.4	126.4
95	91.2	66.2	126.2
97	58.2	31.1	91.1

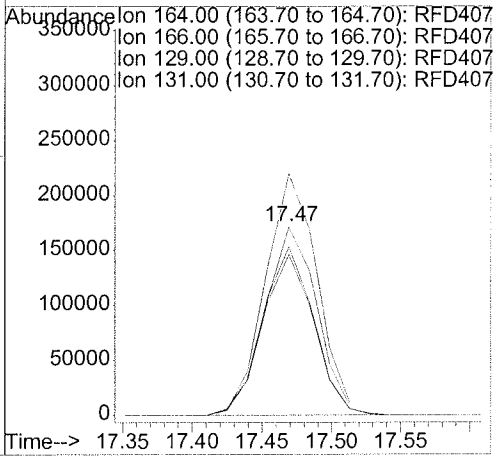




#63
Tetrachloroethene
Concen: 7.79 ug/l
RT: 17.47 min Scan# 879
Delta R.T. 0.01 min
Lab File: RFD407.D
Acq: 26 Jun 2020 9:37 pm

Tgt Ion:164 Resp: 443577

Ion	Ratio	Lower	Upper
164	100		
166	128.5	97.7	157.7
129	88.6	51.8	111.8
131	85.0	48.5	108.5



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/23/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 22:09
Sample ID:	MW14D-GW062320	Date Analyzed:	06/26/20 22:09
Lab Samp ID:	F210-08	Dilution Factor:	1
Lab File ID:	RFD408	Matrix	: WATER
Ext Btch ID:	V094F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	0.53J	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	0.16J	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	0.25J	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	2.1	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	0.25J	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	26	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	0.21J	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	12.1	10.00	121	70-130
BROMOFLUOROBENZENE	9.46	10.00	94.6	70-130
TOLUENE-D8	10.2	10.00	102	70-130
DIBROMOFLUOROMETHANE	10.4	10.00	104	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD408.D Vial: 14
Acq On : 26 Jun 2020 10:09 pm Operator: FAdame/ODinh
Sample : 20F210-08 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:20 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

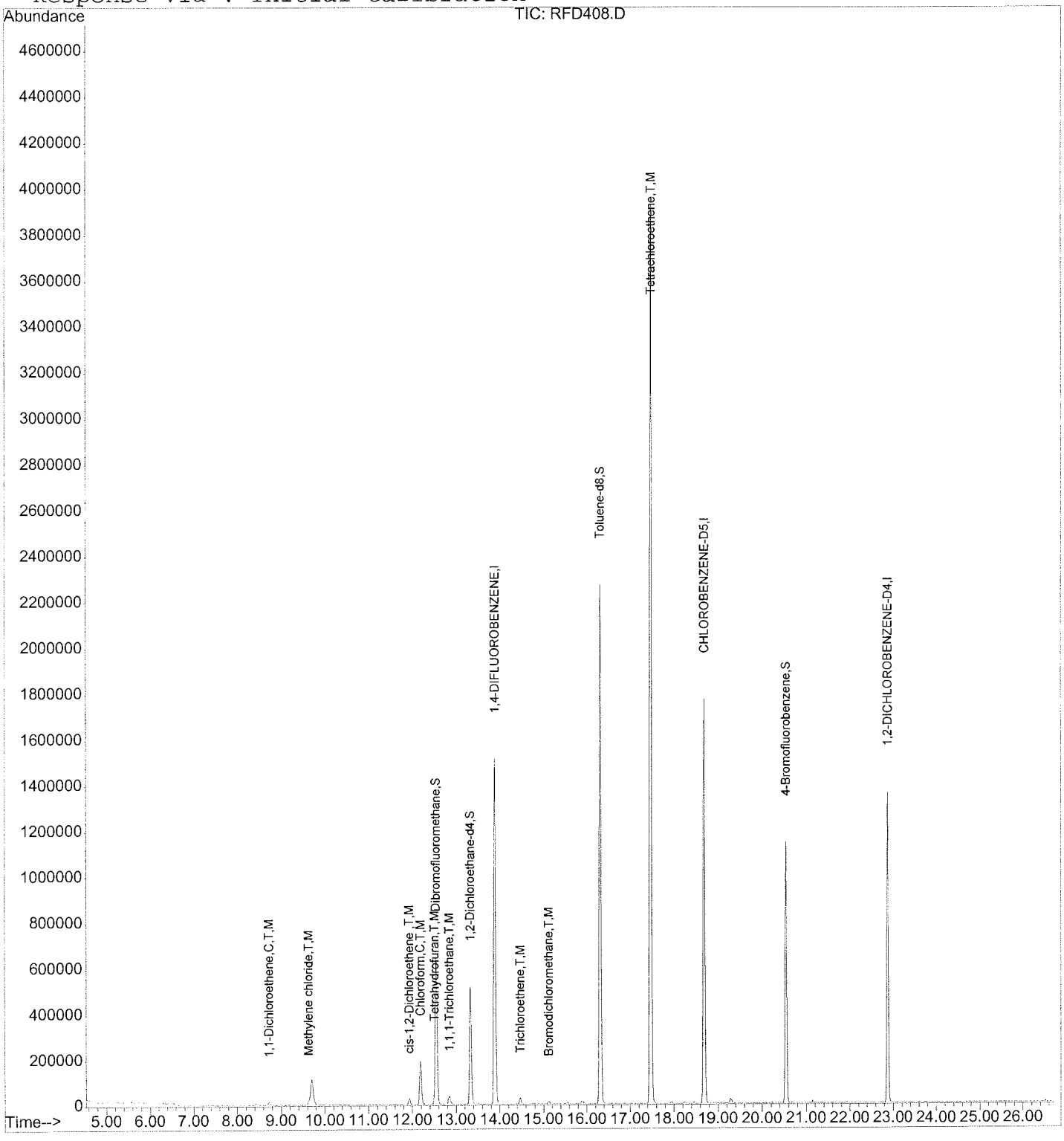
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2018138	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1544350	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	527922	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	607843	10.37	ug/l	0.02
Spiked Amount 10.000			Recovery =	103.70%		
43) 1,2-Dichloroethane-d4	13.33	65	477878	12.10	ug/l	0.02
Spiked Amount 10.000			Recovery =	121.00%		
56) Toluene-d8	16.31	98	2227156	10.17	ug/l	0.01
Spiked Amount 10.000			Recovery =	101.70%		
77) 4-Bromofluorobenzene	20.54	95	584505	9.46	ug/l	0.01
Spiked Amount 10.000			Recovery =	94.60%		
Target Compounds						Qvalue
13) 1,1-Dichloroethene	8.73	61	20646	0.16	ug/l	87
18) Methylene chloride	9.63	49	26938	0.25	ug/l	94
31) cis-1,2-Dichloroethene	11.94	96	21213	0.25	ug/l	98
32) Chloroform	12.19	83	245711	2.08	ug/l	99
35) Tetrahydrofuran	12.51	42	40286	4.33	ug/l	96
37) 1,1,1-Trichloroethane	12.85	97	42769	0.53	ug/l	80
46) Trichloroethene	14.48	130	16675	0.21	ug/l	97
50) Bromodichloromethane	15.12	83	17590	0.25	ug/l	97
63) Tetrachloroethene	17.47	164	1487354	26.04	ug/l	96

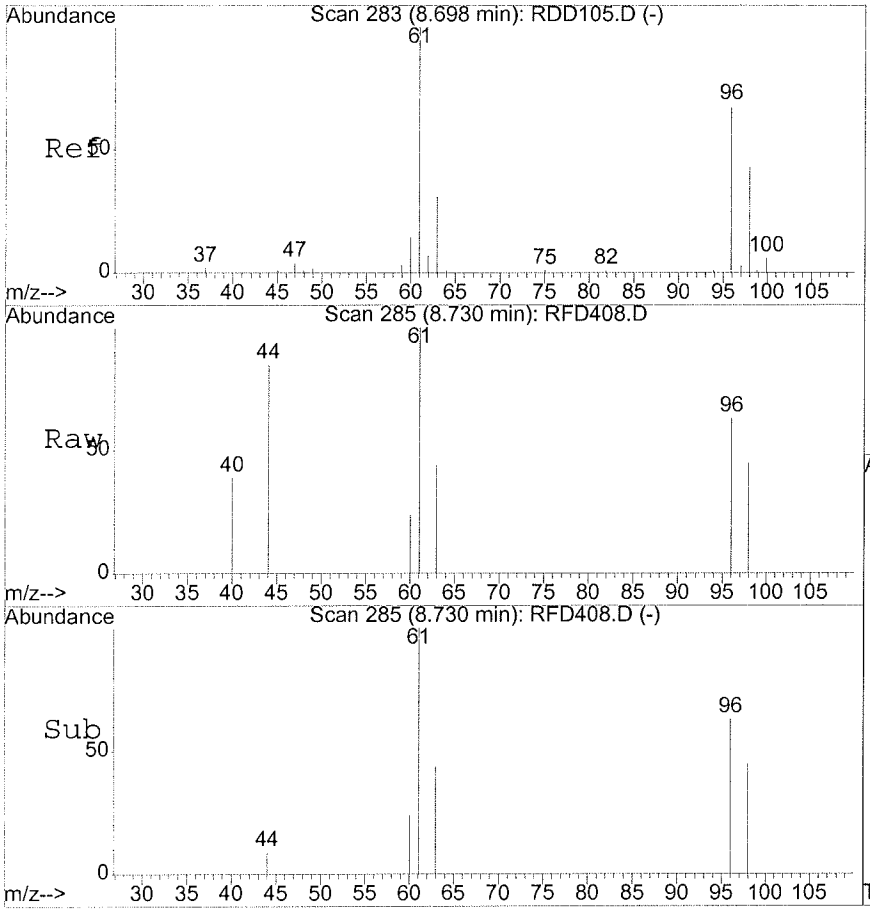
(#) = qualifier out of range (m) = manual integration
RFD408.D VO94D14.M Tue Jun 30 10:20:51 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD408.D Vial: 14
Acq On : 26 Jun 2020 10:09 pm Operator: FAdame/ODinh
Sample : 20F210-08 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:20 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

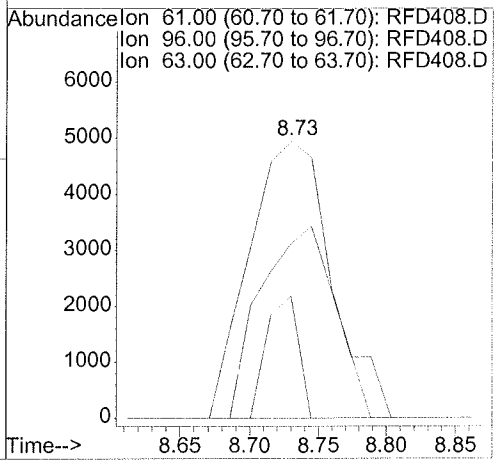


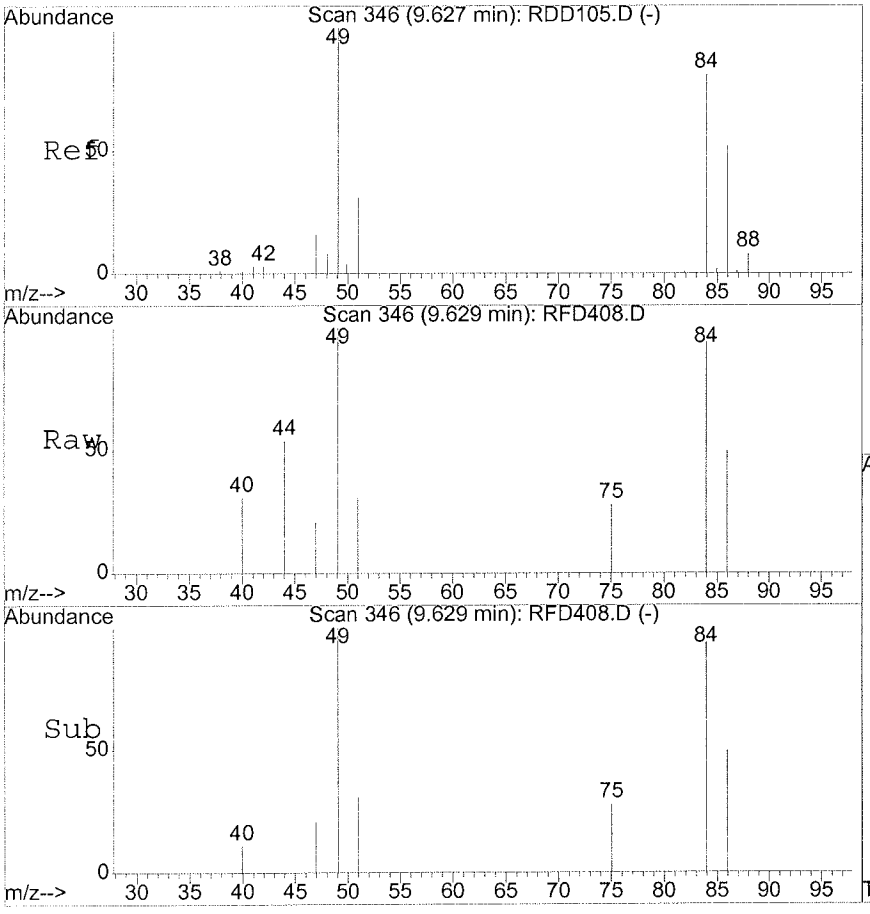


#13
1,1-Dichloroethene
Concen: 0.16 ug/l
RT: 8.73 min Scan# 285
Delta R.T. 0.03 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 61 Resp: 20646

Ion	Ratio	Lower	Upper
61	100		
96	62.6	39.1	99.1
63	17.3	1.4	61.4

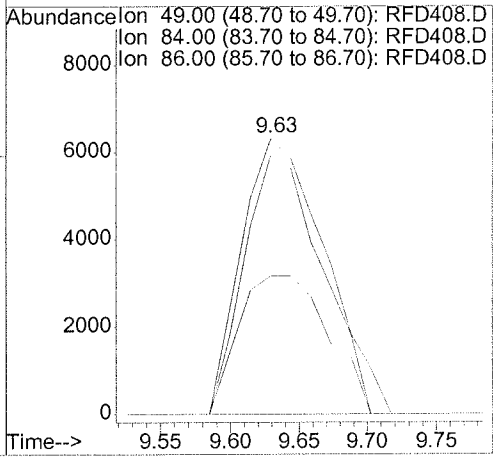


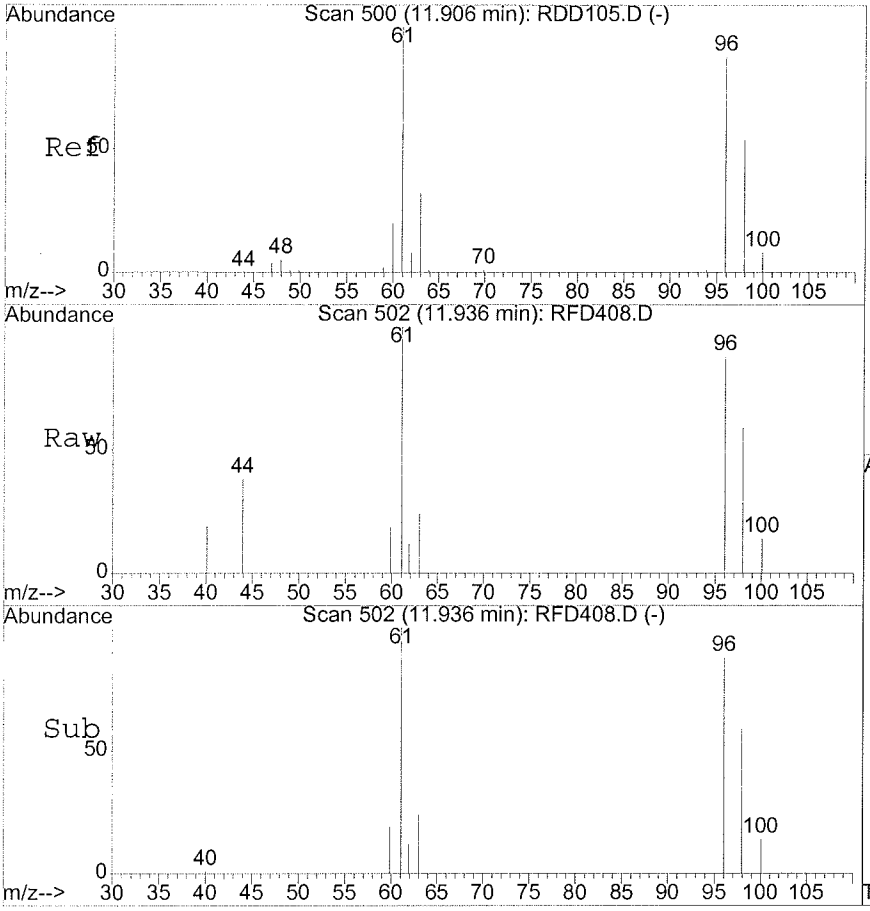


#18
Methylene chloride
Concen: 0.25 ug/l
RT: 9.63 min Scan# 346
Delta R.T. 0.00 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 49 Resp: 26938

Ion	Ratio	Lower	Upper
49	100		
84	86.6	49.6	109.6
86	53.2	21.0	81.0

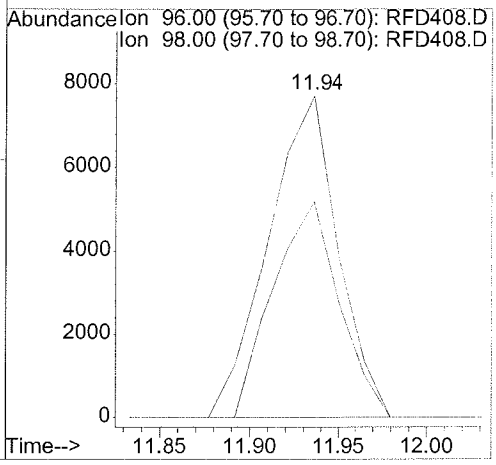


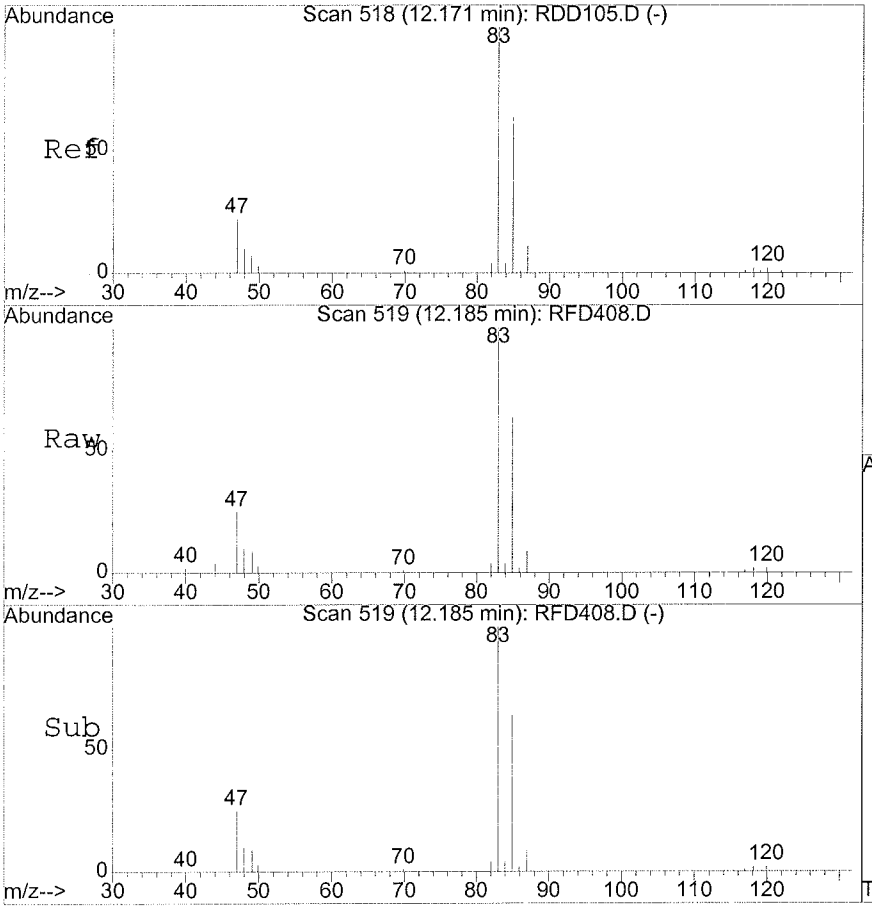


#31
cis-1,2-Dichloroethene
Concen: 0.25 ug/l
RT: 11.94 min Scan# 502
Delta R.T. 0.03 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 96 Resp: 21213

Ion	Ratio	Lower	Upper
96	100		
98	63.9	32.6	92.6

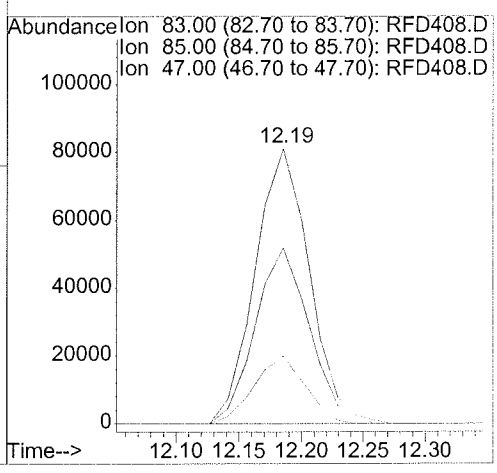


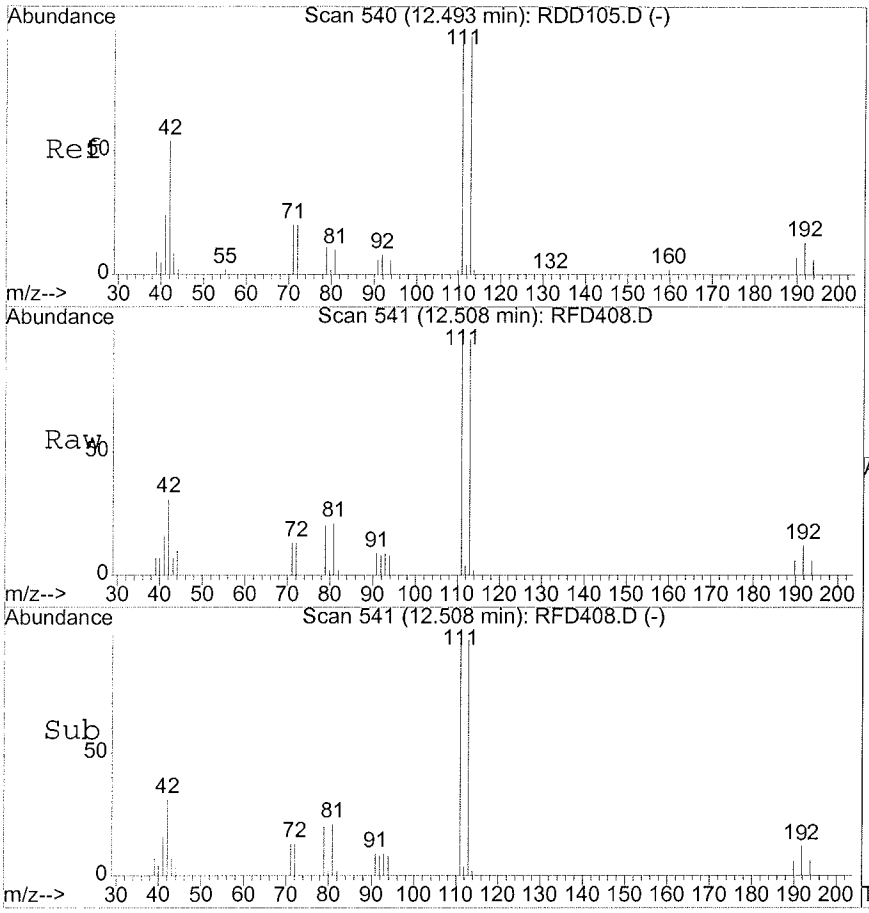


#32
Chloroform
Concen: 2.08 ug/l
RT: 12.19 min Scan# 519
Delta R.T. 0.01 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 83 Resp: 245711

Ion	Ratio	Lower	Upper
83	100		
85	63.8	34.4	94.4
47	23.2	0.0	52.9

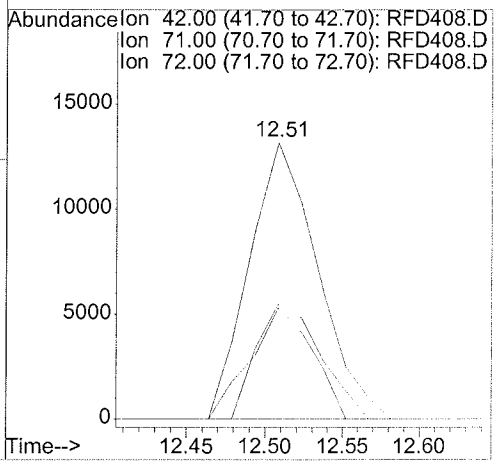


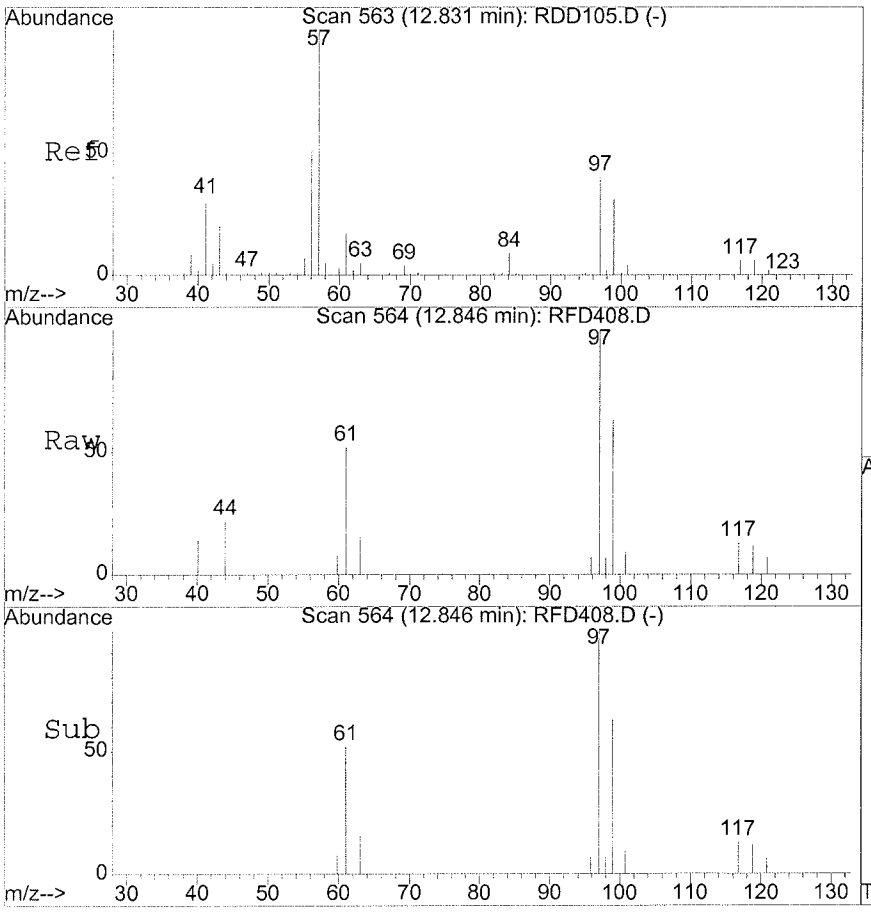


#35
Tetrahydrofuran
Concen: 4.33 ug/l
RT: 12.51 min Scan# 541
Delta R.T. 0.02 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 42 Resp: 40286

Ion	Ratio	Lower	Upper
42	100		
71	36.4	8.9	68.9
72	38.8	6.5	66.5

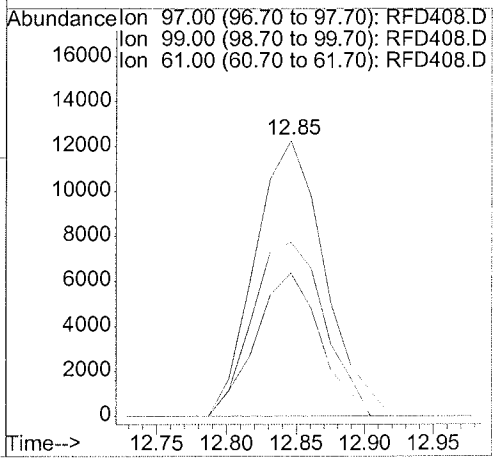


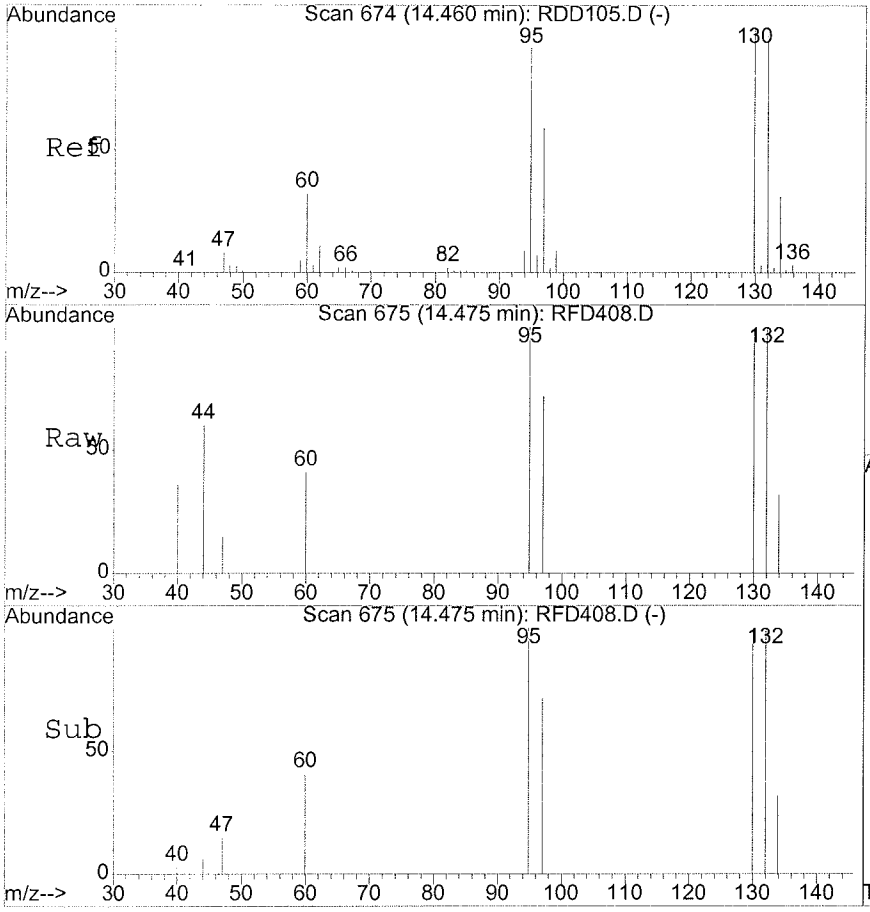


#37
1,1,1-Trichloroethane
Concen: 0.53 ug/l
RT: 12.85 min Scan# 564
Delta R.T. 0.01 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 97 Resp: 42769

Ion	Ratio	Lower	Upper
97	100		
99	65.3	58.9	118.9
61	48.3	13.2	73.2

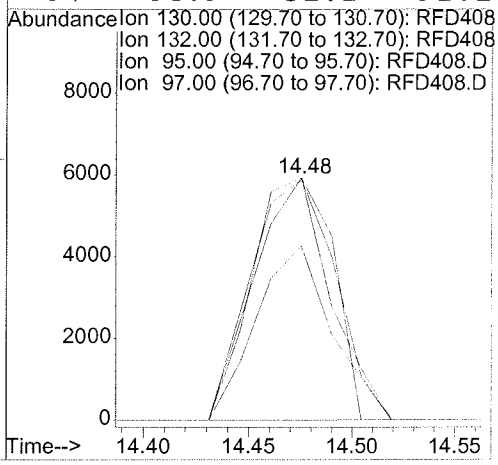


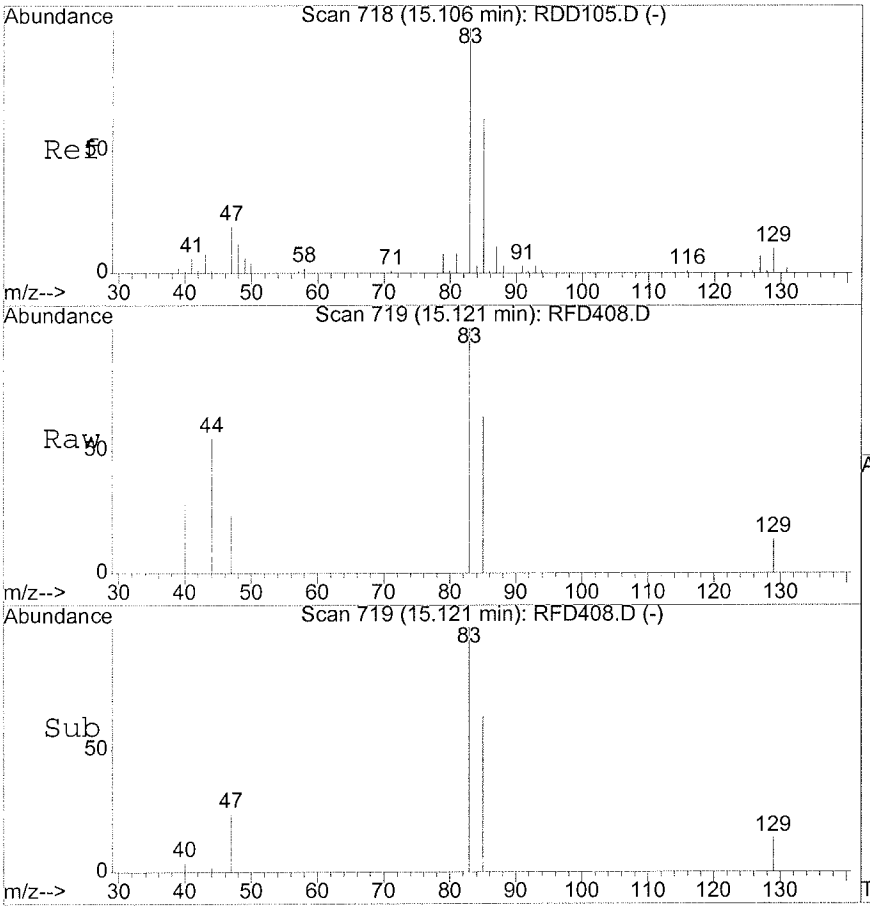


#46
Trichloroethene
Concen: 0.21 ug/l
RT: 14.48 min Scan# 675
Delta R.T. 0.01 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion:130 Resp: 16675

Ion	Ratio	Lower	Upper
130	100		
132	96.2	66.4	126.4
95	91.0	66.2	126.2
97	64.9	31.1	91.1

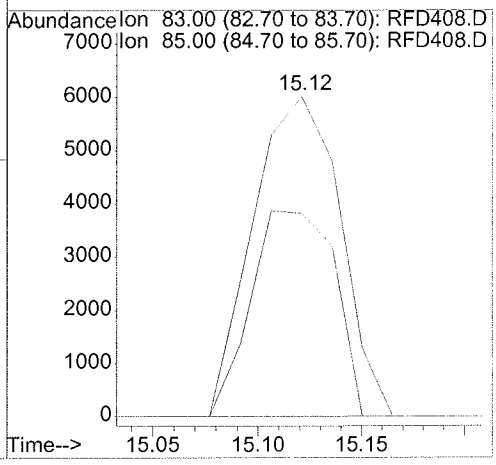


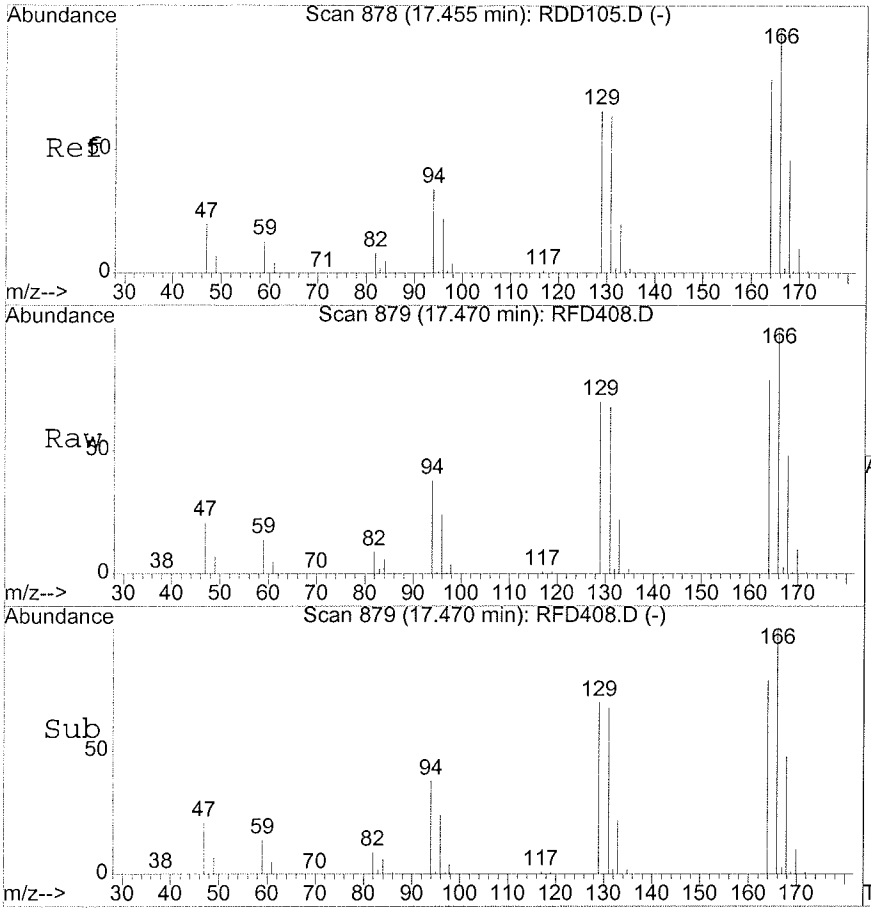


#50
Bromodichloromethane
Concen: 0.25 ug/l
RT: 15.12 min Scan# 719
Delta R.T. 0.01 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion: 83 Resp: 17590

Ion	Ratio	Lower	Upper
83	100		
85	61.5	33.8	93.8

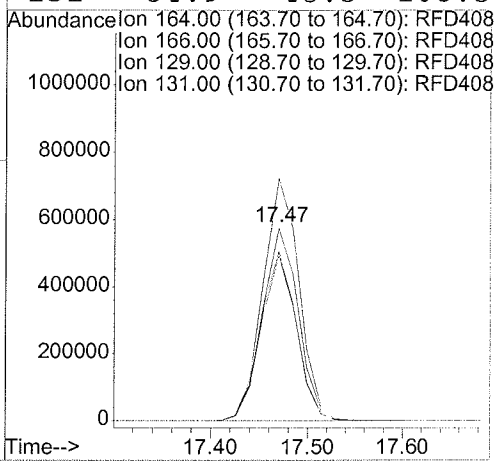




#63
Tetrachloroethene
Concen: 26.04 ug/l
RT: 17.47 min Scan# 879
Delta R.T. 0.01 min
Lab File: RFD408.D
Acq: 26 Jun 2020 10:09 pm

Tgt Ion:164 Resp: 1487354

Ion	Ratio	Lower	Upper
164	100		
166	126.7	97.7	157.7
129	87.3	51.8	111.8
131	84.9	48.5	108.5



METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client	: CDM SMITH	Date Collected:	06/24/20
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/26/20 22:40
Sample ID:	TB17-GW062420	Date Analyzed:	06/26/20 22:40
Lab Samp ID:	F210-09	Dilution Factor:	1
Lab File ID:	RFD409	Matrix	: WATER
Ext Btch ID:	VO94F18	% Moisture	: NA
Calib. Ref.:	RDD105	Instrument ID	: T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	11.6	10.00	116	70-130
BROMOFLUOROBENZENE	9.63	10.00	96.3	70-130
TOLUENE-D8	10.0	10.00	100	70-130
DIBROMOFLUOROMETHANE	10.2	10.00	102	70-130

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD409.D Vial: 15
Acq On : 26 Jun 2020 10:40 pm Operator: FAdame/ODinh
Sample : 20F210-09 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

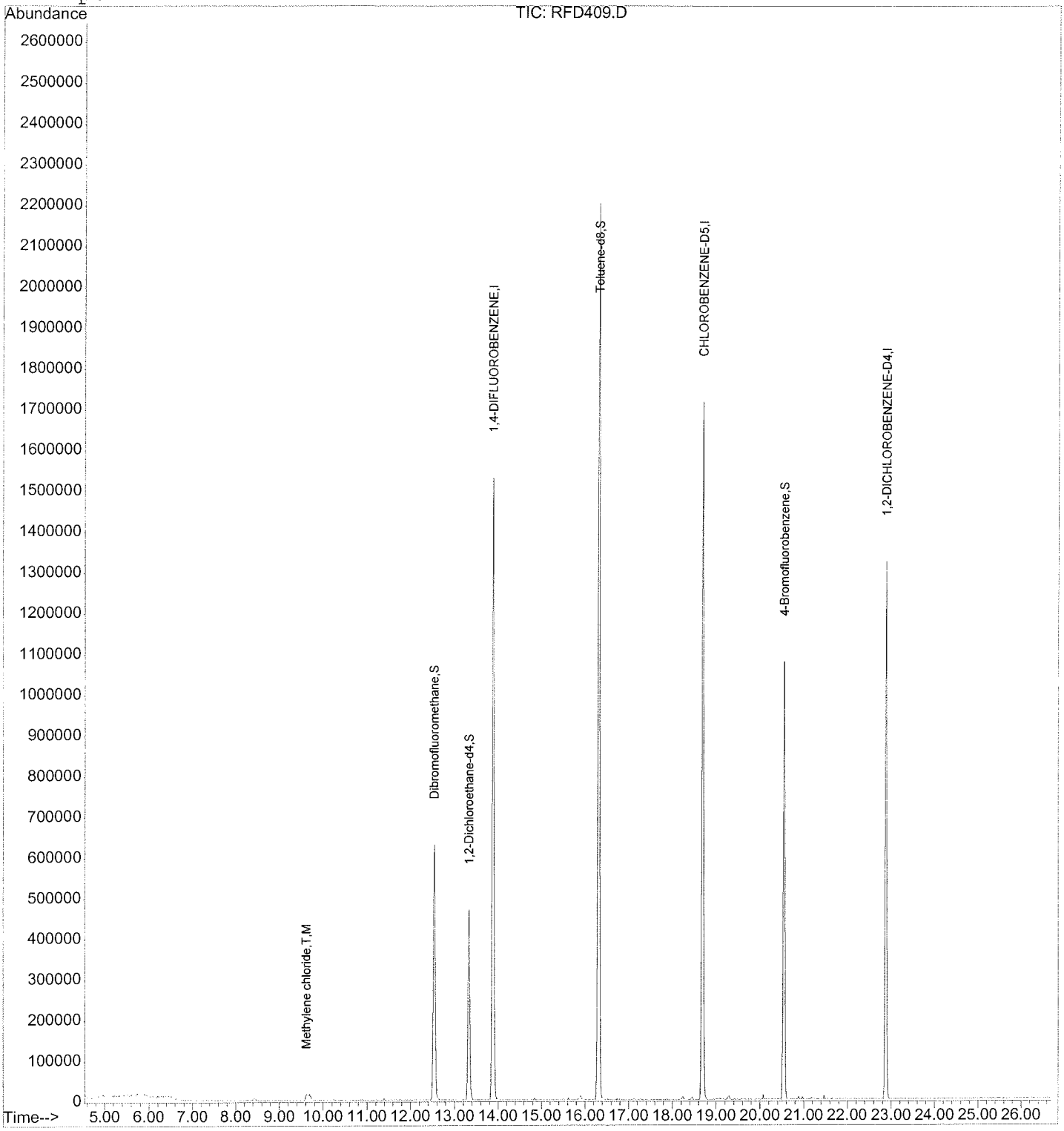
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1994791	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.69	117	1535966	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	497018	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	592954	10.23	ug/l	0.02
Spiked Amount 10.000			Recovery =	102.30%		
43) 1,2-Dichloroethane-d4	13.33	65	452755	11.60	ug/l	0.02
Spiked Amount 10.000			Recovery =	116.00%		
56) Toluene-d8	16.31	98	2178170	10.00	ug/l	0.02
Spiked Amount 10.000			Recovery =	100.00%		
77) 4-Bromofluorobenzene	20.54	95	560079	9.63	ug/l	0.01
Spiked Amount 10.000			Recovery =	96.30%		
Target Compounds						Qvalue
18) Methylene chloride	9.61	49	22644	0.21	ug/l	96

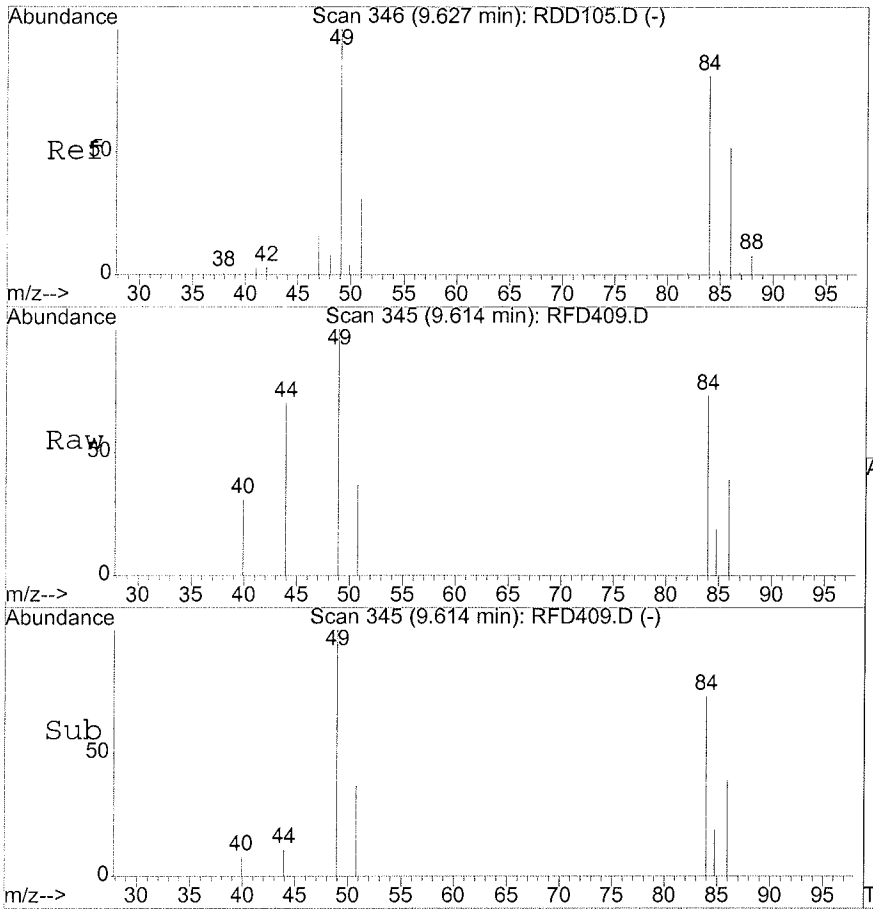
(#) = qualifier out of range (m) = manual integration
RFD409.D VO94D14.M Tue Jun 30 10:22:19 2020 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD409.D Vial: 15
Acq On : 26 Jun 2020 10:40 pm Operator: FAdame/ODinh
Sample : 20F210-09 25 ml Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 10:22 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration

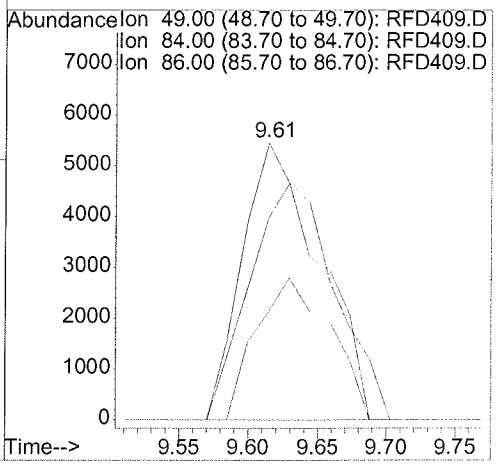




#18
Methylene chloride
Concen: 0.21 ug/l
RT: 9.61 min Scan# 345
Delta R.T. -0.01 min
Lab File: RFD409.D
Acq: 26 Jun 2020 10:40 pm

Tgt Ion: 49 Resp: 22644

Ion	Ratio	Lower	Upper
49	100		
84	80.9	49.6	109.6
86	45.7	21.0	81.0



QC SUMMARIES

METHOD SW5030B/8260C
VOLATILE ORGANICS BY GC/MS

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/26/20
Batch No. : 20F210	Date Extracted: 06/26/20 17:58
Sample ID: MBLK1W	Date Analyzed: 06/26/20 17:58
Lab Samp ID: V094F18B	Dilution Factor: 1
Lab File ID: RFD400	Matrix : WATER
Ext Btch ID: V094F18	% Moisture : NA
Calib. Ref.: RDD105	Instrument ID : T-094

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	1.0	0.10
1,1,2,2-TETRACHLOROETHANE	ND	1.0	0.11
1,1,2-TRICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHANE	ND	1.0	0.10
1,1-DICHLOROETHENE	ND	1.0	0.10
1,2,3-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRICHLOROBENZENE	ND	1.0	0.15
1,2,4-TRIMETHYLBENZENE	ND	1.0	0.11
1,2-DIBROMO-3-CHLOROPROPANE	ND	2.0	0.25
1,2-DICHLOROBENZENE	ND	1.0	0.10
1,2-DICHLOROETHANE	ND	1.0	0.10
1,2-DICHLOROPROPANE	ND	1.0	0.10
1,3,5-TRIMETHYLBENZENE	ND	1.0	0.12
1,3-DICHLOROBENZENE	ND	1.0	0.11
1,4-DICHLOROBENZENE	ND	1.0	0.10
2-BUTANONE	ND	20	2.5
2-HEXANONE	ND	20	2.5
ACETONE	ND	20	2.5
BENZENE	ND	1.0	0.10
BROMOCHLOROMETHANE	ND	1.0	0.11
BROMODICHLOROMETHANE	ND	1.0	0.10
BROMOFORM	ND	1.0	0.15
BROMOMETHANE	ND	1.0	0.16
CARBON DISULFIDE	ND	1.0	0.25
CARBON TETRACHLORIDE	ND	1.0	0.10
CHLOROBENZENE	ND	1.0	0.10
CHLOROETHANE	ND	1.0	0.27
CHLOROFORM	ND	1.0	0.10
CHLOROMETHANE	ND	1.0	0.15
CIS-1,2-DICHLOROETHYLENE	ND	1.0	0.10
DIBROMOCHLOROMETHANE	ND	1.0	0.10
DICHLORODIFLUOROMETHANE	ND	1.0	0.15
ETHYLBENZENE	ND	1.0	0.10
ISOPROPYLBENZENE	ND	1.0	0.10
M,P-XYLENE	ND	2.0	0.21
4-METHYL-2-PENTANONE	ND	20	2.5
METHYLENE CHLORIDE	ND	2.0	0.50
TERT-BUTYL METHYL ETHER	ND	1.0	0.13
O-XYLENE	ND	1.0	0.10
STYRENE	ND	1.0	0.25
TETRACHLOROETHENE	ND	1.0	0.15
TOLUENE	ND	1.0	0.10
TRANS-1,2-DCE	ND	1.0	0.10
CIS-1,3-DICHLOROPROPENE	ND	1.0	0.10
TRANS-1,3-DICHLOROPROPENE	ND	1.0	0.11
TCE	ND	1.0	0.10
TRICHLOROFLUOROMETHANE	ND	1.0	0.15
VINYL CHLORIDE	ND	1.0	0.12
1,2-DIBROMOETHANE	ND	1.0	0.10
VINYL ACETATE	ND	2.0	0.25
TRICHLOROTRIFLUOROETHANE	ND	1.0	0.15
METHYL ACETATE	ND	2.0	0.25

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	10.9	10.00	109	70-130
BROMOFLUOROBENZENE	9.85	10.00	98.5	70-130
TOLUENE-D8	10.1	10.00	101	70-130
DIBROMOFLUOROMETHANE	10.0	10.00	100	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F210
METHOD: SW5030B/8260C

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: VO94F18B VO94F18L VO94F18C
LAB FILE ID: RFD400 RFD397 RFD398
DATE EXTRACTED: 06/26/2017:58 06/26/2016:24 06/26/2016:55 DATE COLLECTED: NA
DATE ANALYZED: 06/26/2017:58 06/26/2016:24 06/26/2016:55 DATE RECEIVED: 06/26/20
PREP. BATCH: VO94F18 VO94F18 VO94F18
CALIB. REF: RDD105 RDD105 RDD105

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1,1-Trichloroethane	ND	10.0	10.4	104	10.0	10.6	106	2	74-131	20
1,1,2,2-Tetrachloroethane	ND	10.0	9.25	93	10.0	9.11	91	2	71-121	20
1,1,2-Trichloroethane	ND	10.0	9.04	90	10.0	9.05	90	0	80-119	20
1,1-Dichloroethane	ND	10.0	9.69	97	10.0	9.64	96	0	77-125	20
1,1-Dichloroethene	ND	10.0	9.22	92	10.0	9.18	92	0	71-131	20
1,2,3-Trichlorobenzene	ND	10.0	10.0	100	10.0	10.5	105	5	69-129	20
1,2,4-Trichlorobenzene	ND	10.0	9.52	95	10.0	10.0	100	5	69-130	20
1,2,4-Trimethylbenzene	ND	10.0	9.03	90	10.0	9.54	95	5	76-124	20
1,2-Dibromo-3-chloropropane	ND	10.0	8.09	81	10.0	8.52	85	5	62-138	20
1,2-Dichlorobenzene	ND	10.0	9.29	93	10.0	9.46	95	2	80-119	20
1,2-Dichloroethane	ND	10.0	10.9	109	10.0	10.6	106	3	73-128	20
1,2-Dichloropropane	ND	10.0	9.14	91	10.0	8.93	89	2	78-122	20
1,3,5-Trimethylbenzene	ND	10.0	9.03	90	10.0	9.60	96	6	75-124	20
1,3-Dichlorobenzene	ND	10.0	9.22	92	10.0	9.62	96	4	80-119	20
1,4-Dichlorobenzene	ND	10.0	9.26	93	10.0	9.56	96	3	79-118	20
2-Butanone	ND	50.0	49.6	99	50.0	43.8	88	12	56-143	20
2-Hexanone	ND	50.0	45.5	91	50.0	42.6	85	7	57-139	20
Acetone	ND	50.0	51.7	103	50.0	44.9	90	14	39-160	20
Benzene	ND	10.0	8.80	88	10.0	8.82	88	0	79-120	20
Bromochloromethane	ND	10.0	9.66	97	10.0	9.36	94	3	78-120	20
Bromodichloromethane	ND	10.0	10.1	101	10.0	9.92	99	2	79-125	20
Bromoform	ND	10.0	9.34	93	10.0	9.41	94	1	66-130	20
Bromomethane	ND	10.0	9.19	92	10.0	8.61	86	7	53-141	20
Carbon Disulfide	ND	10.0	9.15	92	10.0	8.36	84	9	64-133	20
Carbon Tetrachloride	ND	10.0	11.6	116	10.0	11.8	118	2	72-136	20
Chlorobenzene	ND	10.0	9.26	93	10.0	9.39	94	1	82-118	20
Chloroethane	ND	10.0	9.90	99	10.0	9.52	95	4	60-138	20
Chloroform	ND	10.0	10.0	100	10.0	9.96	100	1	79-124	20
Chloromethane	ND	10.0	9.95	99	10.0	9.26	93	7	50-139	20
cis-1,2-Dichloroethylene	ND	10.0	9.38	94	10.0	9.34	93	0	78-123	20
Dibromochloromethane	ND	10.0	9.91	99	10.0	9.94	99	0	74-126	20
Dichlorodifluoromethane	ND	10.0	11.9	119	10.0	11.3	113	6	32-152	20
Ethylbenzene	ND	10.0	8.89	89	10.0	9.20	92	3	79-121	20
Isopropylbenzene	ND	10.0	9.26	93	10.0	9.50	95	3	72-131	20
m,p-Xylene	ND	20.0	17.8	89	20.0	18.3	92	3	80-121	20
4-Methyl-2-Pentanone	ND	50.0	47.6	95	50.0	43.7	87	9	67-130	20
Methylene Chloride	ND	10.0	8.28	83	10.0	8.10	81	2	74-124	20
tert-Butyl Methyl Ether	ND	10.0	9.62	96	10.0	9.15	91	5	71-124	20
o-Xylene	ND	10.0	8.88	89	10.0	8.92	89	0	78-122	20
Styrene	ND	10.0	9.22	92	10.0	9.22	92	0	78-123	20
Tetrachloroethene	ND	10.0	8.02	80	10.0	8.54	85	6	74-129	20
Toluene	ND	10.0	8.51	85	10.0	8.89	89	4	80-121	20
Trans-1,2-DCE	ND	10.0	8.99	90	10.0	9.16	92	2	75-124	20
cis-1,3-Dichloropropene	ND	10.0	9.65	97	10.0	9.41	94	3	75-124	20
Trans-1,3-Dichloropropene	ND	10.0	9.76	98	10.0	9.73	97	0	73-127	20
TCE	ND	10.0	9.26	93	10.0	9.21	92	1	79-123	20
Trichlorofluoromethane	ND	10.0	10.5	105	10.0	10.1	101	4	65-141	20
Vinyl Chloride	ND	10.0	12.0	120	10.0	11.5	115	4	58-137	20
1,2-Dibromoethane	ND	10.0	9.18	92	10.0	9.14	91	0	77-121	20
Vinyl Acetate	ND	10.0	10.5	105	10.0	9.50	95	10	54-146	20
Trichlorotrifluoroethane	ND	10.0	8.45	85	10.0	8.61	86	2	70-136	20
Methyl Acetate	ND	10.0	9.65	97	10.0	8.74	87	10	50-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	10.0	11.9	119	10.0	11.4	114	70-130
Bromofluorobenzene	10.0	9.43	94	10.0	9.81	98	70-130
Toluene-d8	10.0	9.44	94	10.0	9.61	96	70-130
Dibromofluoromethane	10.0	10.6	106	10.0	10.3	103	70-130

QC DATA

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD400.D Vial: 6
Acq On : 26 Jun 2020 5:58 pm Operator: FAdame/ODinh
Sample : VO94F18B Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 14:47 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

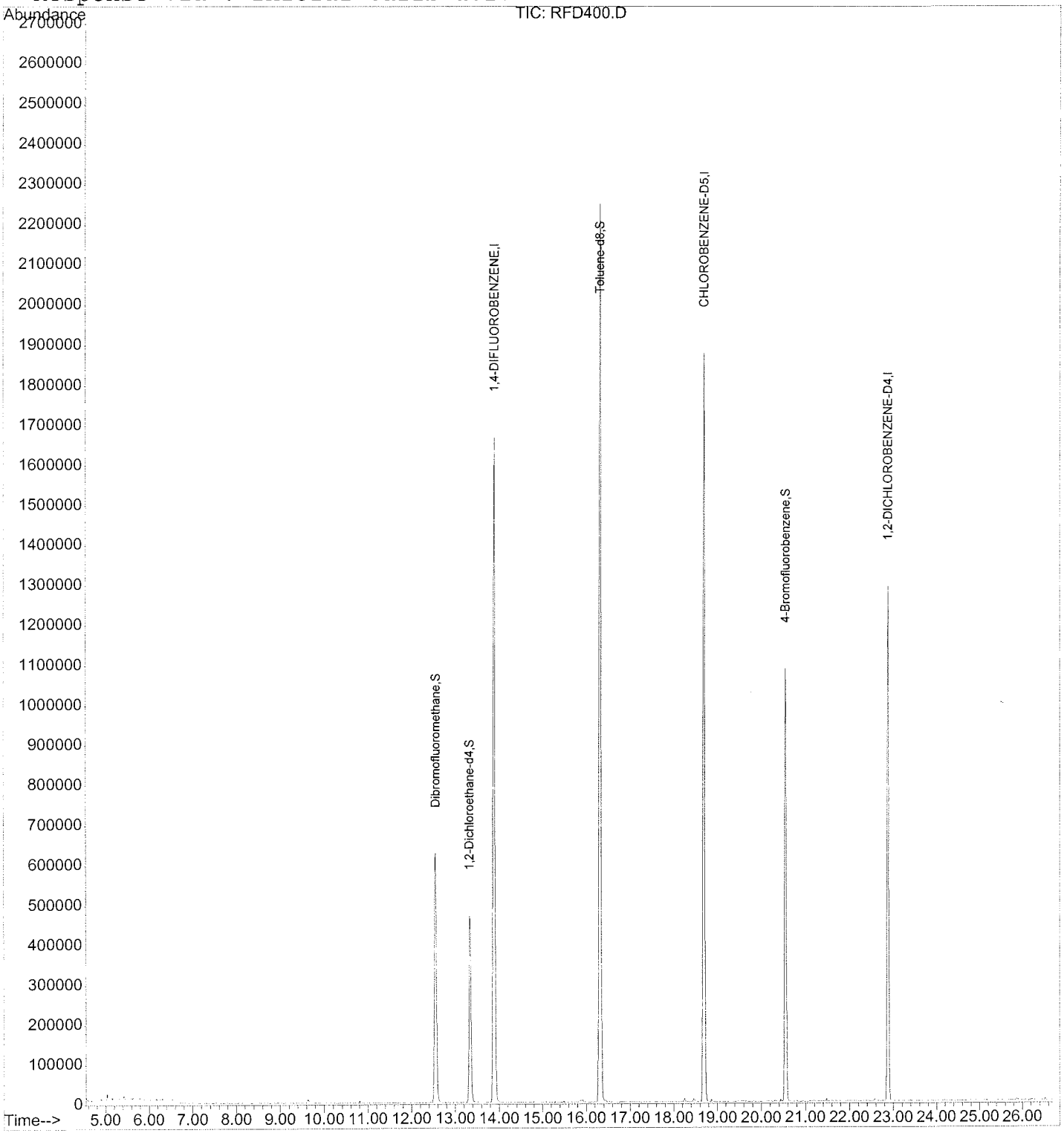
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	2146235	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1638937	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	514943	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.55	111	626202	10.04	ug/l	0.03
Spiked Amount 10.000			Recovery = 100.40%			
43) 1,2-Dichloroethane-d4	13.33	65	459146	10.94	ug/l	0.02
Spiked Amount 10.000			Recovery = 109.40%			
56) Toluene-d8	16.31	98	2336070	10.06	ug/l	0.02
Spiked Amount 10.000			Recovery = 100.60%			
77) 4-Bromofluorobenzene	20.54	95	593595	9.85	ug/l	0.01
Spiked Amount 10.000			Recovery = 98.50%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
RFD400.D VO94D14.M Wed Jul 08 10:11:26 2020 Page 1

Data File : D:\HPCHEM\1\DATA\20F26\RFD400.D Vial: 6
Acq On : 26 Jun 2020 5:58 pm Operator: FAdame/ODinh
Sample : VO94F18B Inst : 94
Misc : DF=1.0 Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 30 14:47 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD397.D Vial: 3
Acq On : 26 Jun 2020 4:24 pm Operator: FAdame/ODinh
Sample : VO94F18L Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:51 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	1575197	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1363928	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	473376	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.55	111	487157	10.65	ug/l	0.03
Spiked Amount 10.000			Recovery = 106.50%			
43) 1,2-Dichloroethane-d4	13.33	65	367856	11.94	ug/l	0.02
Spiked Amount 10.000			Recovery = 119.40%			
56) Toluene-d8	16.31	98	1825527	9.44	ug/l	0.02
Spiked Amount 10.000			Recovery = 94.40%			
77) 4-Bromofluorobenzene	20.54	95	522474	9.43	ug/l	0.01
Spiked Amount 10.000			Recovery = 94.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.65	85	752135	11.94	ug/l	95
4) Chloromethane	5.30	50	1094220	9.95	ug/l	100
5) Vinyl chloride	5.59	62	959604	12.04	ug/l	100
6) Bromomethane	6.70	94	679388	9.19	ug/l	98
7) Chloroethane	6.89	64	626565	9.90	ug/l	99
8) Dichlorofluoromethane	6.96	67	1145038	9.54	ug/l	99
9) Trichlorofluoromethane	7.45	101	867842	10.53	ug/l	99
10) Acrolein	8.32	56	189664	41.46	ug/l	86
11) 1,1,2-Trichloro-1,2,2-trif	8.36	151	384931	8.45	ug/l	100
12) Acetone	8.44	43	367308	51.73	ug/l	93
13) 1,1-Dichloroethene	8.73	61	935430	9.22	ug/l	97
14) tert-Butyl alcohol	8.82	59	546807	233.58	ug/l	96
16) Methyl acetate	9.31	43	203076	9.65	ug/l	100
17) Iodomethane	9.37	142	820934	9.15	ug/l	92
18) Methylene chloride	9.63	49	688923	8.28	ug/l	98
19) Carbon disulfide	9.75	76	2197686	9.15	ug/l	100
20) Acrylonitrile	9.84	53	445398	49.21	ug/l	98
21) tert-Butyl methyl ether (M	9.87	73	857938	9.62	ug/l	94
22) trans-1,2-Dichloroethene	10.18	96	623779	8.99	ug/l	100
24) Isopropyl ether (DIPE)	10.63	45	1795034	8.67	ug/l	95
25) Vinyl acetate	10.83	43	700945	10.52	ug/l	100
26) 1,1-Dichloroethane	10.91	63	1029273	9.69	ug/l	99
28) tert-Butyl ethyl ether (ET	11.32	59	1126467	8.18	ug/l	100
29) 2-Butanone	11.57	72	128344	49.57	ug/l	99
30) 2,2-Dichloropropane	11.85	77	483510	10.67	ug/l	98
31) cis-1,2-Dichloroethene	11.94	96	631262	9.38	ug/l	100
32) Chloroform	12.19	83	926117	10.03	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD397.D Vial: 3
Acq On : 26 Jun 2020 4:24 pm Operator: FAdame/ODinh
Sample : VO94F18L Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:51 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
33)	tert-Amyl alcohol	12.38	59	11482	5.89 ug/l		94
34)	Bromochloromethane	12.48	130	279046	9.66 ug/l		98
35)	Tetrahydrofuran	12.51	42	65294	9.00 ug/l		98
37)	1,1,1-Trichloroethane	12.85	97	661008	10.45 ug/l		82
38)	2,2,4-Trimethylpentane	12.89	57	42455	0.15 ug/l	#	87
39)	Cyclohexane	12.90	84	886588	8.34 ug/l		99
40)	1,1-Dichloropropene	13.10	110	266847	9.15 ug/l		100
41)	tert-Amyl methyl ether (TA	13.20	73	874852	8.30 ug/l		99
42)	Carbon tetrachloride	13.29	119	569691	11.56 ug/l		97
44)	1,2-Dichloroethane	13.48	62	398487	10.89 ug/l		99
45)	Benzene	13.55	78	1956019	8.80 ug/l		100
46)	Trichloroethene	14.48	130	577362	9.26 ug/l		97
47)	Methylcyclohexane	14.58	83	1042424	8.97 ug/l		99
48)	1,2-Dichloropropane	14.74	63	472406	9.14 ug/l		91
49)	1,4-Dioxane	15.09	88	34092	161.42 ug/l		96
50)	Bromodichloromethane	15.12	83	549943	10.12 ug/l		100
51)	Dibromomethane	15.24	93	198652	9.59 ug/l		98
52)	2-Chloroethyl vinyl ether	15.46	63	116513	7.23 ug/l		99
53)	4-Methyl-2-pentanone	15.49	43	1244966	47.63 ug/l		98
54)	cis-1,3-Dichloropropene	15.90	75	662770	9.65 ug/l		99
57)	Toluene	16.44	91	1985575	8.51 ug/l		98
58)	Ethyl methacrylate	16.52	69	338917	9.55 ug/l		92
59)	trans-1,3-Dichloropropene	16.65	75	503744	9.76 ug/l		98
60)	2-Hexanone	16.82	43	773106	45.53 ug/l		97
61)	1,1,2-Trichloroethane	16.93	97	280801	9.04 ug/l		99
62)	1,3-Dichloropropane	17.31	76	522868	9.30 ug/l		99
63)	Tetrachloroethene	17.47	164	404662	8.02 ug/l		95
64)	Dibromochloromethane	17.81	129	325600	9.91 ug/l		100
65)	1,2-Dibromoethane	18.13	107	247844	9.18 ug/l		98
66)	1-Chlorohexane	18.20	91	789855	8.25 ug/l		99
67)	Chlorobenzene	18.75	112	1234664	9.26 ug/l		99
68)	Ethylbenzene	18.78	91	2291178	8.89 ug/l		96
69)	1,1,1,2-Tetrachloroethane	18.79	131	427738	10.41 ug/l		99
70)	m-Xylene & p-Xylene	18.88	91	3162065	17.77 ug/l		97
71)	o-Xylene	19.58	91	1584880	8.88 ug/l		97
72)	Styrene	19.63	104	1231179	9.22 ug/l		99
73)	Isopropylbenzene	20.10	105	2072155	9.26 ug/l		99
75)	Bromoform	20.28	173	148890	9.34 ug/l		99
76)	1,1,2,2-Tetrachloroethane	20.38	83	320653	9.25 ug/l		98
78)	1,2,3-Trichloropropane	20.61	110	79491	10.57 ug/l		87
79)	trans-1,4-Dichloro-2-buten	20.66	53	52157	8.54 ug/l		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD397.D Vial: 3
Acq On : 26 Jun 2020 4:24 pm Operator: FAdame/ODinh
Sample : VO94F18L Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:51 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

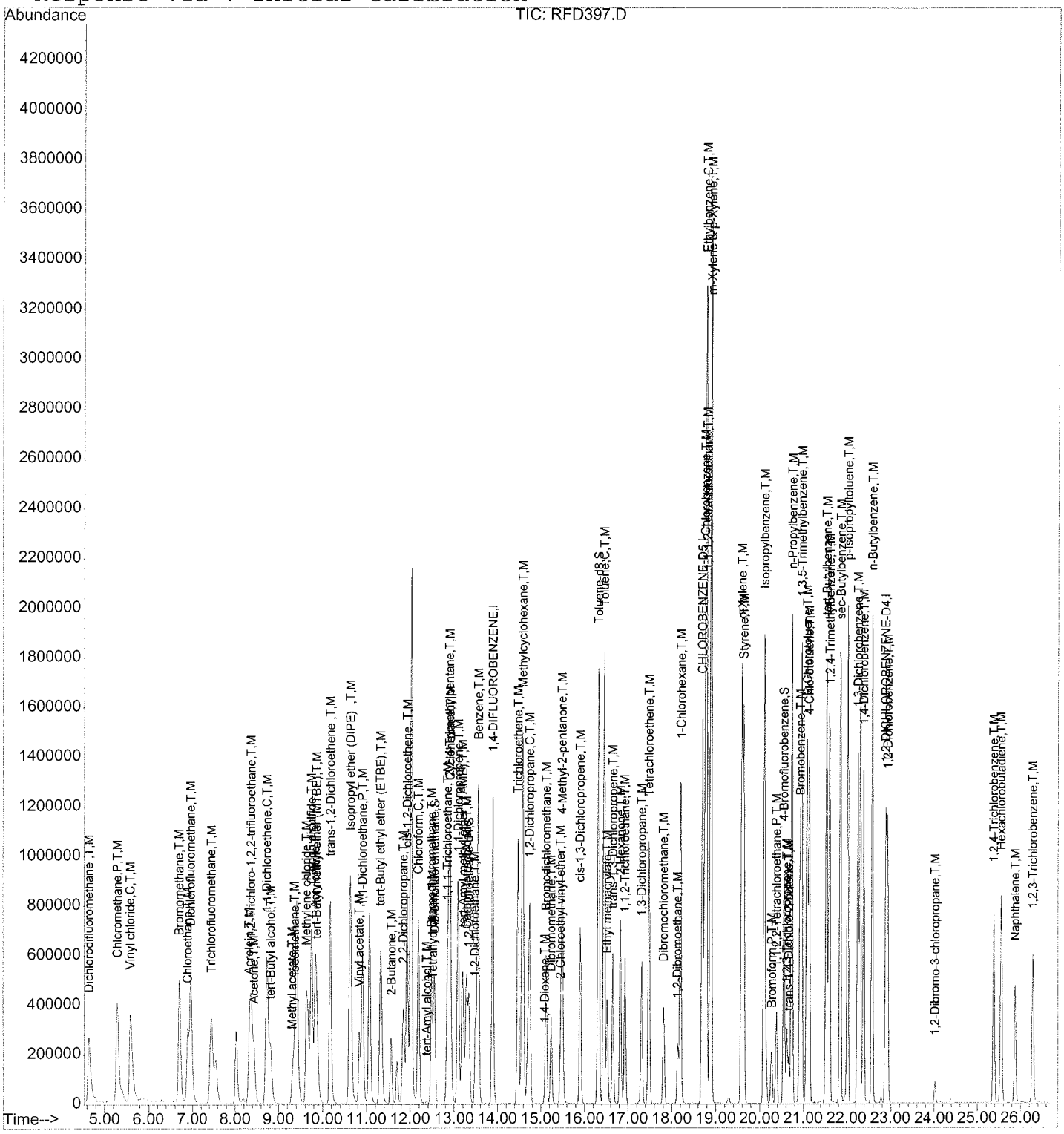
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
80)	n-Propylbenzene	20.73	91	2481695	8.78	ug/l	97
81)	Bromobenzene	20.92	156	412374	8.59	ug/l	99
82)	1,3,5-Trimethylbenzene	20.95	105	1496191	9.03	ug/l	98
83)	2-Chlorotoluene	21.08	91	1577519	9.32	ug/l	95
84)	4-Chlorotoluene	21.13	91	1040251	8.43	ug/l	95
85)	tert-Butylbenzene	21.52	134	382783	9.44	ug/l	99
86)	1,2,4-Trimethylbenzene	21.60	105	1399552	9.03	ug/l	98
87)	sec-Butylbenzene	21.85	105	2153462	9.12	ug/l	98
88)	p-Isopropyltoluene	22.01	119	1672792	9.87	ug/l	99
89)	1,3-Dichlorobenzene	22.24	146	834130	9.22	ug/l	99
90)	1,4-Dichlorobenzene	22.37	146	785275	9.26	ug/l	99
91)	n-Butylbenzene	22.57	91	1544681	9.18	ug/l	99
92)	1,2-Dichlorobenzene	22.92	146	690393	9.29	ug/l	100
93)	1,2-Dibromo-3-chloropropan	24.02	157	35505	8.09	ug/l	97
94)	1,2,4-Trichlorobenzene	25.37	180	420032	9.52	ug/l	98
95)	Hexachlorobutadiene	25.54	225	327296	11.18	ug/l	100
96)	Naphthalene	25.87	128	623706	9.85	ug/l	99
97)	1,2,3-Trichlorobenzene	26.28	180	340769	10.00	ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD397.D Vial: 3
Acq On : 26 Jun 2020 4:24 pm Operator: FAdame/ODinh
Sample : VO94F18L Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:51 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD398.D Vial: 4
Acq On : 26 Jun 2020 4:55 pm Operator: FAdame/ODinh
Sample : VO94F18C Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	1605748	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1342048	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	441663	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	479875	10.29	ug/l	0.02
Spiked Amount 10.000			Recovery = 102.90%			
43) 1,2-Dichloroethane-d4	13.33	65	357941	11.39	ug/l	0.02
Spiked Amount 10.000			Recovery = 113.90%			
56) Toluene-d8	16.31	98	1827894	9.61	ug/l	0.01
Spiked Amount 10.000			Recovery = 96.10%			
77) 4-Bromofluorobenzene	20.54	95	506952	9.81	ug/l	0.01
Spiked Amount 10.000			Recovery = 98.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.65	85	724869	11.29	ug/l	95
4) Chloromethane	5.30	50	1035707	9.26	ug/l	99
5) Vinyl chloride	5.59	62	937565	11.54	ug/l	100
6) Bromomethane	6.70	94	648648	8.61	ug/l	98
7) Chloroethane	6.89	64	613111	9.52	ug/l	99
8) Dichlorofluoromethane	6.96	67	1132627	9.25	ug/l	100
9) Trichlorofluoromethane	7.45	101	847145	10.10	ug/l	100
10) Acrolein	8.32	56	180976	38.81	ug/l	90
11) 1,1,2-Trichloro-1,2,2-trif	8.36	151	399924	8.61	ug/l	100
12) Acetone	8.44	43	324995	44.90	ug/l	96
13) 1,1-Dichloroethene	8.73	61	949628	9.18	ug/l	96
14) tert-Butyl alcohol	8.82	59	514161	215.46	ug/l	99
16) Methyl acetate	9.31	43	187549	8.74	ug/l	97
17) Iodomethane	9.36	142	851590	9.31	ug/l	91
18) Methylene chloride	9.63	49	687039	8.10	ug/l	98
19) Carbon disulfide	9.75	76	2046458	8.36	ug/l	100
20) Acrylonitrile	9.84	53	425613	46.13	ug/l	100
21) tert-Butyl methyl ether (M	9.87	73	831391	9.15	ug/l	94
22) trans-1,2-Dichloroethene	10.17	96	648412	9.16	ug/l	100
24) Isopropyl ether (DIPE)	10.63	45	1778789	8.43	ug/l	95
25) Vinyl acetate	10.83	43	645472	9.50	ug/l	99
26) 1,1-Dichloroethane	10.91	63	1044528	9.64	ug/l	100
28) tert-Butyl ethyl ether (ET	11.32	59	1123637	8.01	ug/l	100
29) 2-Butanone	11.55	72	115618	43.80	ug/l	97
30) 2,2-Dichloropropane	11.85	77	503809	10.90	ug/l	98
31) cis-1,2-Dichloroethene	11.94	96	640900	9.34	ug/l	99
32) Chloroform	12.19	83	937718	9.96	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD398.D Vial: 4
Acq On : 26 Jun 2020 4:55 pm Operator: FAdame/ODinh
Sample : VO94F18C Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
33)	tert-Amyl alcohol	12.38	59	11569	5.82	ug/l	#	76
34)	Bromochloromethane	12.48	130	275574	9.36	ug/l		99
35)	Tetrahydrofuran	12.51	42	59549	8.05	ug/l		98
37)	1,1,1-Trichloroethane	12.85	97	685187	10.62	ug/l		82
38)	2,2,4-Trimethylpentane	12.89	57	42381	0.14	ug/l	#	87
39)	Cyclohexane	12.90	84	871008	8.04	ug/l		98
40)	1,1-Dichloropropene	13.08	110	277468	9.34	ug/l		100
41)	tert-Amyl methyl ether (TA	13.18	73	849998	7.91	ug/l		99
42)	Carbon tetrachloride	13.29	119	595022	11.85	ug/l		99
44)	1,2-Dichloroethane	13.48	62	393912	10.56	ug/l		99
45)	Benzene	13.55	78	1998516	8.82	ug/l		99
46)	Trichloroethene	14.48	130	585201	9.21	ug/l		97
47)	Methylcyclohexane	14.58	83	1028402	8.69	ug/l		99
48)	1,2-Dichloropropane	14.74	63	470849	8.93	ug/l		92
49)	1,4-Dioxane	15.09	88	33301	154.67	ug/l		97
50)	Bromodichloromethane	15.12	83	549028	9.92	ug/l		99
51)	Dibromomethane	15.24	93	195604	9.26	ug/l		97
52)	2-Chloroethyl vinyl ether	15.46	63	112184	6.83	ug/l		100
53)	4-Methyl-2-pentanone	15.49	43	1163919	43.68	ug/l		98
54)	cis-1,3-Dichloropropene	15.90	75	658573	9.41	ug/l		100
57)	Toluene	16.44	91	2039988	8.89	ug/l		99
58)	Ethyl methacrylate	16.52	69	319811	9.16	ug/l		94
59)	trans-1,3-Dichloropropene	16.65	75	494278	9.73	ug/l		98
60)	2-Hexanone	16.82	43	712352	42.63	ug/l		99
61)	1,1,2-Trichloroethane	16.93	97	276425	9.05	ug/l		98
62)	1,3-Dichloropropane	17.31	76	513180	9.27	ug/l		99
63)	Tetrachloroethene	17.47	164	423941	8.54	ug/l		95
64)	Dibromochloromethane	17.81	129	321178	9.94	ug/l		100
65)	1,2-Dibromoethane	18.13	107	242786	9.14	ug/l		97
66)	1-Chlorohexane	18.20	91	824507	8.75	ug/l		100
67)	Chlorobenzene	18.75	112	1231969	9.39	ug/l		99
68)	Ethylbenzene	18.78	91	2332394	9.20	ug/l		97
69)	1,1,1,2-Tetrachloroethane	18.79	131	423583	10.47	ug/l		100
70)	m-Xylene & p-Xylene	18.88	91	3211976	18.34	ug/l		97
71)	o-Xylene	19.58	91	1566491	8.92	ug/l		96
72)	Styrene	19.63	104	1212077	9.22	ug/l		99
73)	Isopropylbenzene	20.10	105	2090920	9.50	ug/l		98
75)	Bromoform	20.28	173	139898	9.41	ug/l		99
76)	1,1,2,2-Tetrachloroethane	20.38	83	294551	9.11	ug/l		99
78)	1,2,3-Trichloropropane	20.61	110	72348	10.31	ug/l		92
79)	trans-1,4-Dichloro-2-buten	20.66	53	49036	8.61	ug/l		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD398.D Vial: 4
Acq On : 26 Jun 2020 4:55 pm Operator: FAdame/ODinh
Sample : VO94F18C Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

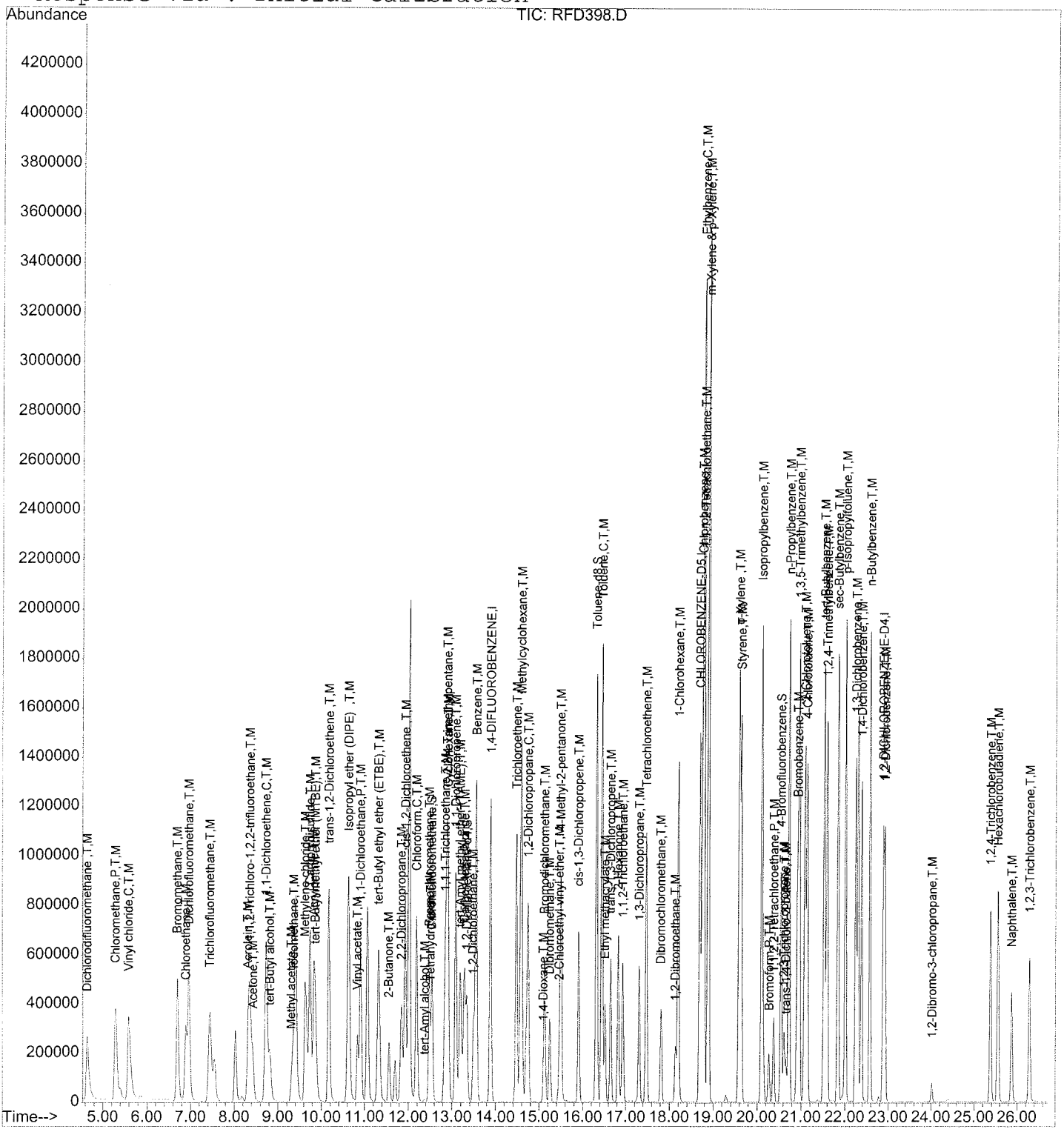
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
80)	n-Propylbenzene	20.73	91	2486187	9.43	ug/l	97
81)	Bromobenzene	20.92	156	402206	8.98	ug/l	99
82)	1,3,5-Trimethylbenzene	20.95	105	1483765	9.60	ug/l	99
83)	2-Chlorotoluene	21.08	91	1550781	9.82	ug/l	95
84)	4-Chlorotoluene	21.13	91	1041348	9.05	ug/l	96
85)	tert-Butylbenzene	21.52	134	383814	10.14	ug/l	98
86)	1,2,4-Trimethylbenzene	21.58	105	1378851	9.54	ug/l	97
87)	sec-Butylbenzene	21.83	105	2165042	9.83	ug/l	98
88)	p-Isopropyltoluene	22.01	119	1643801	10.40	ug/l	99
89)	1,3-Dichlorobenzene	22.24	146	812158	9.62	ug/l	99
90)	1,4-Dichlorobenzene	22.38	146	756412	9.56	ug/l	98
91)	n-Butylbenzene	22.57	91	1530783	9.75	ug/l	99
92)	1,2-Dichlorobenzene	22.92	146	656124	9.46	ug/l	99
93)	1,2-Dibromo-3-chloropropan	24.02	157	34856	8.52	ug/l	99
94)	1,2,4-Trichlorobenzene	25.37	180	412792	10.03	ug/l	98
95)	Hexachlorobutadiene	25.55	225	328002	12.00	ug/l	99
96)	Naphthalene	25.87	128	598803	10.14	ug/l	99
97)	1,2,3-Trichlorobenzene	26.28	180	333838	10.50	ug/l	100

(#) = qualifier out of range (m) = manual integration
RFD398.D VO94D14.M Mon Jun 29 11:46:42 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD398.D Vial: 4
Acq On : 26 Jun 2020 4:55 pm Operator: FAdame/ODinh
Sample : VO94F18C Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 17:22 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



INITIAL CALIBRATION

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc
Lab Code: EMXT Case No.:
Lab File ID: RDD099
Instrument ID: 94
GC Column:RTX502.2ID:0.25mm (mm)

Contract: ICAL
SAS No.: SDG No.: ICAL
BFB Injection Date : 04/14/20
BFB Injection Time : 17:42
Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.33
75	30.0 - 60.0% of mass 95	40.94
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	6.74
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	85.49
175	5.0 - 9.0% of mass 174	6.36(7.4)1
176	95.0 - 101.0% of mass 174	82.72(96.8)1
177	5.0 - 9.0% of mass 176	5.72(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD0.3	VO94D141	RDD100	04/14/20	18:31
2	VSTD0.5	VO94D142	RDD101	04/14/20	19:02
3	VSTD01	VO94D143	RDD102	04/14/20	19:33
4	VSTD02	VO94D144	RDD103	04/14/20	20:05
5	VSTD05	VO94D145	RDD104	04/14/20	20:36
6	VSTD010	VO94D146	RDD105	04/14/20	21:08
7	VSTD020	VO94D147	RDD106	04/14/20	21:39
8	VSTD030	VO94D148	RDD107	04/14/20	22:10
9	VSTD050	VO94D149	RDD108	04/14/20	22:42
10	VSTD100	VO94D1410	RDD109	04/14/20	23:14
11	VSTD010	IVO94D1401	RDD112	04/15/20	00:48

FORM V VOA OLM02.0

SC
4/16/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :94
Beginning DateTime :04/14/20 18:31
Spike Units :PPB
IC File :RDD105

Column Spec :RTX502.2 ID :0.25MM
Ending DateTime :04/14/20 23:14
HPChem Method :VO94D14

M	IDX	Parameters	.3 18:31 RDD100	.5 19:02 RDD101	1 19:33 RDD102	2 20:05 RDD103	5 20:36 RDD104	10 21:08 RDD105	20 21:39 RDD106	30 22:10 RDD107	50 22:42 RDD108	100 23:14 RDD109	Av_RRF	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	13.8748
	2	Dichlorodifluoromethane	0.390	0.344	0.358	0.322	0.362	0.395	0.438	0.439	0.480	0.469	0.400	13.60	4.6219
	3	Dichlorotetrafluoroethane	------	------	0.404	0.426	0.461	0.493	0.517	0.507	0.565	0.556	0.491	11.76	4.9083
	4	Chloromethane	------	0.489	0.507	0.565	0.599	0.661	0.720	0.710	0.742	0.708	0.633	15.21	5.2691
	5	Vinyl chloride	------	0.426	0.459	0.490	0.524	0.560	0.563	0.533	0.528	0.473	0.506	9.27	5.5655
	6	Bromomethane	------	0.360	0.392	0.414	0.456	0.497	0.527	0.514	0.549	0.513	0.469	14.18	6.6663
	7	Chloroethane	------	0.270	0.308	0.323	0.361	0.395	0.418	0.398	0.434	0.403	0.368	15.15	6.8563
	8	Dichlorofluoromethane	------	0.675	0.675	0.715	0.716	0.800	0.855	0.821	0.852	0.752	0.762	9.42	6.9300
	9	Trichlorofluoromethane	------	0.353	0.395	0.433	0.478	0.525	0.549	0.536	0.562	0.514	0.483	15.22	7.4165
5	10	Acrolein	0.029	0.029	0.028	0.027	0.029	0.030	0.032	0.031	0.030	0.025	0.029	6.98	8.3043
	11	1,1,2-Trichloro-1,2,2-trifluoroethane	------	0.249	0.264	0.282	0.277	0.303	0.319	0.304	0.319	0.287	0.289	8.35	8.3304
5	12	Acetone	------	------	0.055	0.044	0.044	0.043	0.046	0.044	0.043	0.041	0.045	9.68	8.4168
	13	1,1-Dichloroethene	0.570	0.567	0.604	0.628	0.624	0.690	0.724	0.694	0.705	0.635	0.644	8.72	8.7052
25	14	tert-Butyl alcohol	0.014	0.014	0.013	0.013	0.015	0.015	0.017	0.016	0.016	0.014	0.015	7.22	8.8070
10	15	Acetonitrile	------	------	------	0.021	0.020	0.021	0.022	0.021	0.021	0.020	0.021	3.57	8.9515
	16	Methyl acetate	------	------	------	0.141	0.136	0.133	0.132	0.129	0.128	0.137	0.134	3.44	9.2906
	17	Iodomethane	------	0.515	0.522	0.552	0.551	0.592	0.622	0.602	0.608	0.562	0.570	6.75	9.3492
	18	Methylene chloride	------	0.610	0.537	0.528	0.505	0.519	0.547	0.521	0.511	0.478	0.528	6.89	9.6195
	19	Carbon disulfide	------	1.165	1.364	1.459	1.589	1.731	1.676	1.607	1.636	1.490	1.524	11.59	9.7178
5	20	Acrylonitrile	0.052	0.052	0.053	0.054	0.059	0.060	0.064	0.062	0.059	0.059	0.057	7.46	9.8182
	21	tert-Butyl methyl ether (MTBE)	0.523	0.545	0.542	0.576	0.572	0.583	0.613	0.585	0.567	0.553	0.566	4.58	9.8521
	22	trans-1,2-Dichloroethene	0.403	0.411	0.432	0.448	0.441	0.455	0.473	0.468	0.452	0.423	0.441	5.31	10.1485
	23	n-Hexane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	Isopropyl ether (DIPE)	1.242	1.241	1.224	1.297	1.375	1.371	1.418	1.378	1.327	1.273	1.315	5.24	10.6161
	25	Vinyl acetate	------	0.356	0.393	0.438	0.440	0.442	0.460	0.420	0.404	0.455	0.423	7.91	10.8219
	26	1,1-Dichloroethane	0.641	0.646	0.654	0.683	0.681	0.690	0.718	0.709	0.682	0.642	0.675	4.12	10.8862
25	27	2-Butanol	------	0.015	0.014	0.014	0.016	0.016	0.016	0.015	0.015	0.017	0.015	5.77	11.1937
	28	tert-Butyl ethyl ether (ETBE)	------	1.074	0.896	0.837	0.867	0.852	0.879	0.848	0.819	0.792	0.874	9.32	11.3062
5	29	2-Butanone	------	0.017	0.016	0.015	0.017	0.016	0.017	0.016	0.016	0.017	0.016	3.90	11.5427
	30	2,2-Dichloropropane	0.284	0.280	0.316	0.308	0.290	0.288	0.292	0.279	0.254	------	0.288	6.19	11.8346
	31	cis-1,2-Dichloroethene	0.381	0.420	0.421	0.435	0.431	0.432	0.449	0.449	0.437	0.416	0.427	4.64	11.9123
	32	Chloroform	0.572	0.588	0.601	0.606	0.595	0.587	0.604	0.594	0.578	0.539	0.586	3.40	12.1735
5	33	tert-Amyl alcohol	------	------	0.011	0.011	0.013	0.013	0.013	0.012	0.012	0.014	0.012	8.73	12.3486
	34	Bromochloromethane	0.161	0.180	0.188	0.188	0.182	0.182	0.193	0.190	0.186	0.184	0.183	4.77	12.4671
	35	Tetrahydrofuran	------	------	0.051	0.047	0.046	0.046	0.048	0.045	0.043	0.043	0.046	5.67	12.4954
	36	Dibromofluoromethane	------	0.278	0.273	0.287	0.292	0.305	0.301	0.293	0.293	0.294	0.291	3.47	12.5246
	37	1,1,1-Trichloroethane	0.383	0.408	0.414	0.420	0.402	0.409	0.416	0.412	0.398	0.356	0.402	4.81	12.8326
	38	2,2,4-Trimethylpentane	1.614	1.716	1.853	1.932	1.964	2.039	1.878	1.813	1.781	1.619	1.821	7.78	12.8605
	39	Cyclohexane	------	0.652	0.701	0.678	0.694	0.713	0.686	0.660	0.662	0.629	0.675	3.92	12.8769
	40	1,1-Dichloropropene	0.158	0.184	0.189	0.194	0.189	0.188	0.192	0.191	0.188	0.178	0.185	5.80	13.0689
	41	tert-Amyl methyl ether (TAME)	0.805	0.744	0.697	0.669	0.656	0.632	0.662	0.629	0.608	0.587	0.669	9.75	13.1731
	42	Carbon tetrachloride	0.258	0.291	0.311	0.316	0.313	0.322	0.338	0.336	0.334	0.310	0.313	7.69	13.2612
	43	1,2-Dichloroethane-d4	------	0.195	0.195	0.196	0.199	0.205	0.198	0.192	0.192	0.190	0.196	2.26	13.3172
	44	1,2-Dichloroethane	0.221	0.240	0.226	0.237	0.234	0.232	0.244	0.236	0.227	0.223	0.232	3.26	13.4652
	45	Benzene	1.439	1.438	1.448	1.487	1.428	1.410	1.439	1.412	1.358	1.250	1.411	4.64	13.5240
	46	Trichloroethene	0.361	0.405	0.377	0.388	0.382	0.391	0.415	0.415	0.420	0.404	0.396	4.86	14.4619
	47	Methylcyclohexane	------	------	0.741	0.710	0.743	0.758	0.746	0.739	0.744	0.718	0.737	2.11	14.5632
	48	1,2-Dichloropropane	0.324	0.325	0.326	0.329	0.324	0.324	0.345	0.338	0.330	0.317	0.328	2.40	14.7247
20	49	1,4-Dioxane	------	------	------	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	7.79	15.0790
	50	Bromodichloromethane	0.316	0.336	0.332	0.340	0.331	0.341	0.366	0.366	0.363	0.356	0.345	4.98	15.1078
	51	Dibromomethane	0.118	0.125	0.126	0.133	0.130	0.131	0.139	0.139	0.137	0.137	0.132	5.25	15.2252
	52	2-Chloroethyl vinyl ether	------	0.092	0.088	0.097	0.100	0.101	0.111	0.108	0.108	0.114	0.102	8.53	15.4440
5	53	4-Methyl-2-pentanone	0.158	0.165	0.156	0.153	0.172	0.168	0.181	0.170	0.169	0.168	0.166	4.98	15.4777

SA
4/16/20

54	cis-1,3-Dichloropropene	0.404	0.381	0.413	0.428	0.424	0.439	0.475	0.473	0.465	0.458	0.436	7.27	15.8872
55	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	18.6747
56	Toluene-d8	------	1.470	1.387	1.431	1.457	1.494	1.421	1.403	1.393	1.302	1.417	3.98	16.2970
57	Toluene	1.775	1.821	1.784	1.856	1.729	1.708	1.709	1.672	1.611	1.435	1.710	7.04	16.4289
58	Ethyl methacrylate	0.238	0.264	0.261	0.264	0.261	0.261	0.275	0.262	0.259	0.258	0.260	3.46	16.5023
59	trans-1,3-Dichloropropene	0.348	0.368	0.380	0.395	0.376	0.382	0.399	0.388	0.380	0.368	0.378	3.88	16.6344
5 60	2-Hexanone	0.122	0.132	0.138	0.124	0.125	0.123	0.128	0.120	0.118	0.115	0.125	5.45	16.8091
61	1,1,2-Trichloroethane	0.240	0.236	0.238	0.239	0.225	0.221	0.228	0.220	0.216	0.213	0.228	4.45	16.9118
62	1,3-Dichloropropane	0.404	0.411	0.418	0.430	0.406	0.409	0.426	0.414	0.407	0.397	0.412	2.47	17.2934
63	Tetrachloroethene	0.384	0.389	0.377	0.387	0.362	0.360	0.372	0.365	0.364	0.339	0.370	4.08	17.4578
64	Dibromochloromethane	0.204	0.230	0.239	0.239	0.237	0.243	0.258	0.255	0.253	0.251	0.241	6.65	17.7954
65	1,2-Dibromoethane	0.186	0.188	0.194	0.203	0.198	0.196	0.207	0.203	0.202	0.203	0.198	3.52	18.1169
66	1-Chlorohexane	0.668	0.696	0.713	0.727	0.696	0.716	0.723	0.718	0.713	0.652	0.702	3.51	18.1889
67	Chlorobenzene	0.953	0.979	1.011	1.023	0.967	0.983	1.009	0.994	0.969	0.885	0.977	4.00	18.7349
68	Ethylbenzene	1.880	1.894	1.939	2.013	1.880	1.895	1.900	1.842	1.755	------	1.889	3.67	18.7613
69	1,1,1,2-Tetrachloroethane	0.274	0.307	0.298	0.317	0.297	0.303	0.315	0.312	0.307	0.284	0.301	4.54	18.7760
2 70	m-Xylene & p-Xylene	1.314	1.354	1.371	1.411	1.325	1.305	1.274	1.233	1.155	------	1.305	5.87	18.8657
71	o-Xylene	1.322	1.325	1.332	1.354	1.302	1.303	1.318	1.275	1.249	------	1.309	2.39	19.5703
72	Styrene	1.003	0.998	0.977	1.021	0.973	0.983	1.007	0.982	0.969	0.883	0.980	3.87	19.6142
73	Isopropylbenzene	1.608	1.645	1.677	1.712	1.629	1.648	1.665	1.610	1.567	------	1.640	2.61	20.0869
74	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	22.8698
75	Bromoform	------	0.295	0.304	0.317	0.330	0.325	0.355	0.368	0.367	0.369	0.337	8.56	20.2581
76	1,1,2,2-Tetrachloroethane	0.733	0.771	0.764	0.741	0.727	0.690	0.729	0.739	0.713	0.717	0.732	3.25	20.3642
77	4-Bromofluorobenzene	1.120	1.234	1.154	1.148	1.171	1.193	1.166	1.187	1.196	1.133	1.170	2.88	20.5257
78	1,2,3-Trichloropropane	------	0.150	0.167	0.159	0.154	0.157	0.162	0.165	0.159	0.157	0.159	3.33	20.5990
79	trans-1,4-Dichloro-2-butene	------	------	0.125	0.120	0.128	0.123	0.134	0.136	0.134	0.133	0.129	4.48	20.6430
80	n-Propylbenzene	5.828	5.859	5.960	6.271	5.995	5.843	5.954	6.188	5.855	------	5.972	2.65	20.7165
81	Bromobenzene	0.980	1.027	1.029	1.027	0.985	0.971	1.029	1.064	1.047	0.980	1.014	3.19	20.9073
82	1,3,5-Trimethylbenzene	3.400	3.412	3.578	3.660	3.556	3.422	3.500	3.566	3.406	------	3.500	2.71	20.9367
83	2-Chlorotoluene	3.635	3.755	3.765	3.846	3.818	3.639	3.091	3.699	3.486	3.035	3.577	8.11	21.0688
84	4-Chlorotoluene	2.822	2.626	2.650	2.746	2.505	2.407	3.081	2.549	2.490	2.183	2.606	9.40	21.1157
85	tert-Butylbenzene	0.808	0.870	0.892	0.889	0.846	0.834	0.870	0.891	0.878	0.791	0.857	4.19	21.5106
86	1,2,4-Trimethylbenzene	3.188	3.273	3.269	3.450	3.262	3.186	3.310	3.324	3.198	------	3.273	2.56	21.5825
87	sec-Butylbenzene	4.848	4.965	5.047	5.234	5.067	4.937	4.993	5.032	4.759	------	4.987	2.73	21.8321
88	p-Isopropyltoluene	3.540	3.502	3.568	3.749	3.713	3.646	3.724	3.689	3.551	3.120	3.580	5.13	21.9935
89	1,3-Dichlorobenzene	1.899	1.850	1.927	1.960	1.909	1.877	1.970	1.975	1.940	1.799	1.911	2.95	22.2284
90	1,4-Dichlorobenzene	1.821	1.790	1.815	1.852	1.772	1.737	1.841	1.834	1.783	1.664	1.791	3.17	22.3708
91	n-Butylbenzene	3.611	3.516	3.508	3.784	3.601	3.571	3.700	3.691	3.485	3.093	3.556	5.29	22.5630
92	1,2-Dichlorobenzene	1.575	1.531	1.596	1.590	1.522	1.549	1.623	1.607	1.593	1.509	1.570	2.49	22.9036
93	1,2-Dibromo-3-chloropropane	------	0.090	0.076	0.084	0.087	0.091	0.099	0.096	0.101	0.109	0.093	10.69	24.0044
94	1,2,4-Trichlorobenzene	0.832	0.792	0.833	0.837	0.841	0.938	1.039	1.026	1.082	1.097	0.932	12.73	25.3652
95	Hexachlorobutadiene	0.548	0.594	0.570	0.589	0.595	0.644	0.679	0.656	0.670	0.642	0.619	7.31	25.5384
96	Naphthalene	1.310	1.260	1.195	1.170	1.198	1.345	1.477	1.460	1.475	1.485	1.338	9.65	25.8555
97	1,2,3-Trichlorobenzene	0.670	0.630	0.636	0.641	0.666	0.737	0.814	0.790	0.803	0.810	0.720	10.96	26.2650

Spike Amount = Nominal Amount * M
Ave_%RSD : 6.1 Max_%RSD : 15.2

Use Least Square Linear Regression with weighting factor of inverse concentration for comps with %_RSD > 15
Resp_Ratio = xo + x1 * Amt_Ratio

IDX	Parameter	x0	x1	CCF
4	Chloromethane	-0.01938	0.71765	0.9994
7	Chloroethane	-0.01017	0.41196	0.9992
9	Trichlorofluoromethane	-0.01182	0.53422	0.9991

SA
4/16/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :94
Beginning DateTime :04/14/20 18:31
Spike Units :PPB
IC File :RDD105

Column Spec :RTX502.2 ID :0.25MM
Ending DateTime :04/14/20 23:14
HPChem Method :VO94D14

M	IDX	Parameters	.3 18:31 RDD100	.5 19:02 RDD101	1 19:33 RDD102	2 20:05 RDD103	5 20:36 RDD104	10 21:08 RDD105	20 21:39 RDD106	30 22:10 RDD107	50 22:42 RDD108	100 23:14 RDD109	AvDRec	%_RSD	Av_Rt_M
	1	1,4-DIFLUOROBENZENE	1	1	1	1	1	1	1	1	1	1	1	0	13.8748
	2	Dichlorodifluoromethane	98	86	90	80	90	99	110	110	120	117	11.4	13.60	4.6219
	3	Dichlorotetrafluoroethane	------	------	82	87	94	100	105	103	115	113	9.3	11.76	4.9083
	4	Chloromethane	------	122	98	92	89	95	102	100	104	99	6.1	15.21	5.2691
	5	Vinyl chloride	------	84	91	97	104	111	111	105	104	93	7.8	9.27	5.5655
	6	Bromomethane	------	77	84	88	97	106	112	110	117	109	12.1	14.18	6.6663
	7	Chloroethane	------	115	99	91	93	98	103	97	106	98	5.3	15.15	6.8563
	8	Dichlorofluoromethane	------	89	89	94	94	105	112	108	112	99	8.1	9.42	6.9300
	9	Trichlorofluoromethane	------	110	96	92	94	100	104	101	106	97	4.7	15.22	7.4165
5	10	Acrolein	100	100	97	93	100	103	110	107	103	86	4.8	6.98	8.3043
	11	1,1,2-Trichloro-1,2,2-trifluoroethane	------	86	91	98	96	105	110	105	110	99	6.7	8.35	8.3304
5	12	Acetone	------	------	122	98	98	96	102	98	96	91	6.1	9.68	8.4168
	13	1,1-Dichloroethene	89	88	94	98	97	107	112	108	109	99	7.3	8.72	8.7052
25	14	tert-Butyl alcohol	93	93	87	87	100	100	113	107	107	93	7.3	7.22	8.8070
10	15	Acetonitrile	------	------	------	100	95	100	105	100	100	95	2	3.57	8.9515
	16	Methyl acetate	------	------	------	105	101	99	99	96	96	102	2.8	3.44	9.2906
	17	Iodomethane	------	90	92	97	97	104	109	106	107	99	5.7	6.75	9.3492
	18	Methylene chloride	------	116	102	100	96	98	104	99	97	91	4.5	6.89	9.6195
	19	Carbon disulfide	------	76	90	96	104	114	110	105	107	98	9	11.59	9.7178
5	20	Acrylonitrile	91	91	93	95	104	105	112	109	104	104	6.7	7.46	9.8182
	21	tert-Butyl methyl ether (MTBE)	92	96	96	102	101	103	108	103	100	98	3.6	4.58	9.8521
	22	trans-1,2-Dichloroethene	91	93	98	102	100	103	107	106	102	96	4.2	5.31	10.1485
	23	n-Hexane	------	------	------	------	------	------	------	------	------	------	0.000	0.00	0.0000
	24	Isopropyl ether (DIPE)	94	94	93	99	105	104	108	105	101	97	4.5	5.24	10.6161
	25	Vinyl acetate	------	84	93	104	104	104	109	99	96	108	6.3	7.91	10.8219
	26	1,1-Dichloroethane	95	96	97	101	101	102	106	105	101	95	3.4	4.12	10.8862
25	27	2-Butanol	------	100	93	93	107	107	107	100	100	113	5.2	5.77	11.1937
	28	tert-Butyl ethyl ether (ETBE)	------	123	103	96	99	97	101	97	94	91	5.8	9.32	11.3062
5	29	2-Butanone	------	106	100	94	106	100	106	100	100	106	3.5	3.90	11.5427
	30	2,2-Dichloropropane	99	97	110	107	101	100	101	97	88	------	4.2	6.19	11.8346
	31	cis-1,2-Dichloroethene	89	98	99	102	101	101	105	105	102	97	3.3	4.64	11.9123
	32	Chloroform	98	100	103	103	102	100	103	101	99	92	2.4	3.40	12.1735
5	33	tert-Amyl alcohol	------	------	92	92	108	108	108	100	100	117	7.3	8.73	12.3486
	34	Bromochloromethane	88	98	103	103	99	99	105	104	102	101	3.2	4.77	12.4671
	35	Tetrahydrofuran	------	------	111	102	100	100	104	98	93	93	4.1	5.67	12.4954
	36	Dibromofluoromethane	------	96	94	99	100	105	103	101	101	101	2.6	3.47	12.5246
	37	1,1,1-Trichloroethane	95	101	103	104	100	102	103	102	99	89	3.4	4.81	12.8326
	38	2,2,4-Trimethylpentane	89	94	102	106	108	112	103	100	98	89	6.2	7.78	12.8605
	39	Cyclohexane	------	97	104	100	103	106	102	98	98	93	3.2	3.92	12.8769
	40	1,1-Dichloropropene	85	99	102	105	102	102	104	103	102	96	3.8	5.80	13.0689
	41	tert-Amyl methyl ether (TAME)	120	111	104	100	98	94	99	94	91	88	7.2	9.75	13.1731
	42	Carbon tetrachloride	82	93	99	101	100	103	108	107	107	99	5.2	7.69	13.2612
	43	1,2-Dichloroethane-d4	------	99	99	100	102	105	101	98	98	97	1.7	2.26	13.3172
	44	1,2-Dichloroethane	95	103	97	102	101	100	105	102	98	96	2.7	3.26	13.4652
	45	Benzene	102	102	103	105	101	100	102	100	96	89	3	4.64	13.5240
	46	Trichloroethene	91	102	95	98	96	99	105	105	106	102	4	4.86	14.4619
	47	Methylcyclohexane	------	------	101	96	101	103	101	100	101	97	1.6	2.11	14.5632
	48	1,2-Dichloropropane	99	99	99	100	99	99	105	103	101	97	1.8	2.40	14.7247
20	49	1,4-Dioxane	------	------	------	100	100	100	100	100	100	100	0	7.79	15.0790
	50	Bromodichloromethane	92	97	96	99	96	99	106	106	105	103	4.2	4.98	15.1078
	51	Dibromomethane	89	95	95	101	98	99	105	105	104	104	4.2	5.25	15.2252
	52	2-Chloroethyl vinyl ether	------	90	86	95	98	99	109	106	106	112	7.1	8.53	15.4440
5	53	4-Methyl-2-pentanone	95	99	94	92	104	101	109	102	102	101	3.9	4.98	15.4777

For 8260C

SM

4/16/20

54	cis-1,3-Dichloropropene	93	87	95	98	97	101	109	108	107	105	6	7.27	15.8872
55	CHLOROBENZENE-D5	1	1	1	1	1	1	1	1	1	1	1	0	18.6747
56	Toluene-d8	------	104	98	101	103	105	100	99	98	92	2.9	3.98	16.2970
57	Toluene	104	106	104	109	101	100	100	98	94	84	4.9	7.04	16.4289
58	Ethyl methacrylate	92	102	100	102	100	100	106	101	100	99	2	3.46	16.5023
59	trans-1,3-Dichloropropene	92	97	101	104	99	101	106	103	101	97	2.9	3.88	16.6344
5 60	2-Hexanone	98	106	110	99	100	98	102	96	94	92	4.1	5.45	16.8091
61	1,1,2-Trichloroethane	105	104	104	105	99	97	100	96	95	93	3.8	4.45	16.9118
62	1,3-Dichloropropane	98	100	101	104	99	99	103	100	99	96	1.9	2.47	17.2934
63	Tetrachloroethene	104	105	102	105	98	97	101	99	98	92	3.2	4.08	17.4578
64	Dibromochloromethane	85	95	99	99	98	101	107	106	105	104	4.6	6.65	17.7954
65	1,2-Dibromoethane	94	95	98	103	100	99	105	103	102	103	2.8	3.52	18.1169
66	1-Chlorohexane	95	99	102	104	99	102	103	102	102	93	2.8	3.51	18.1889
67	Chlorobenzene	98	100	103	105	99	101	103	102	99	91	2.8	4.00	18.7349
68	Ethylbenzene	100	100	103	107	100	100	101	98	93	------	2.3	3.67	18.7613
69	1,1,1,2-Tetrachloroethane	91	102	99	105	99	101	105	104	102	94	3.5	4.54	18.7760
2 70	m-Xylene & p-Xylene	101	104	105	108	102	100	98	94	89	------	4.3	5.87	18.8657
71	o-Xylene	101	101	102	103	99	100	101	97	95	------	1.8	2.39	19.5703
72	Styrene	102	102	100	104	99	100	103	100	99	90	2.4	3.87	19.6142
73	Isopropylbenzene	98	100	102	104	99	100	102	98	96	------	2	2.61	20.0869
74	1,2-DICHLOROBENZENE-D4	1	1	1	1	1	1	1	1	1	1	1	0	22.8698
75	Bromoform	------	88	90	94	98	96	105	109	109	109	7.4	8.56	20.2581
76	1,1,2,2-Tetrachloroethane	100	105	104	101	99	94	100	101	97	98	2.3	3.25	20.3642
77	4-Bromofluorobenzene	96	105	99	98	100	102	100	101	102	97	2.2	2.88	20.5257
78	1,2,3-Trichloropropane	------	94	105	100	97	99	102	104	100	99	2.4	3.33	20.5990
79	trans-1,4-Dichloro-2-butene	------	------	97	93	99	95	104	105	104	103	4	4.48	20.6430
80	n-Propylbenzene	98	98	100	105	100	98	100	104	98	------	2	2.65	20.7165
81	Bromobenzene	97	101	101	101	97	96	101	105	103	97	2.8	3.19	20.9073
82	1,3,5-Trimethylbenzene	97	97	102	105	102	98	100	102	97	------	2.3	2.71	20.9367
83	2-Chlorotoluene	102	105	105	108	107	102	86	103	97	85	6.3	8.11	21.0688
84	4-Chlorotoluene	108	101	102	105	96	92	118	98	96	84	6.9	9.40	21.1157
85	tert-Butylbenzene	94	102	104	104	99	97	102	104	102	92	3.5	4.19	21.5106
86	1,2,4-Trimethylbenzene	97	100	100	105	100	97	101	102	98	------	1.8	2.56	21.5825
87	sec-Butylbenzene	97	100	101	105	102	99	100	101	95	------	2	2.73	21.8321
88	p-Isopropyltoluene	99	98	100	105	104	102	104	103	99	87	3.5	5.13	21.9935
89	1,3-Dichlorobenzene	99	97	101	103	100	98	103	103	102	94	2.3	2.95	22.2284
90	1,4-Dichlorobenzene	102	100	101	103	99	97	103	102	100	93	2.3	3.17	22.3708
91	n-Butylbenzene	102	99	99	106	101	100	104	104	98	87	3.5	5.29	22.5630
92	1,2-Dichlorobenzene	100	98	102	101	97	99	103	102	101	96	2.1	2.49	22.9036
93	1,2-Dibromo-3-chloropropane	------	97	82	90	94	98	106	103	109	117	8.4	10.69	24.0044
94	1,2,4-Trichlorobenzene	89	85	89	90	90	101	111	110	116	118	11.2	12.73	25.3652
95	Hexachlorobutadiene	89	96	92	95	96	104	110	106	108	104	6.4	7.31	25.5384
96	Naphthalene	98	94	89	87	90	101	110	109	110	111	8.3	9.65	25.8555
97	1,2,3-Trichlorobenzene	93	88	88	89	92	102	113	110	112	112	9.9	10.96	26.2650

For 8260C
SA
4/16/20

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
Total Cpnds : 97

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-DIFLUOROBENZENE	114	13.87	1.000	A	1	A	B
2	T	Dichlorodifluoromethane	85	4.61	0.333	A	1	A	B
3	T	Dichlorotetrafluoroethane	85	4.91	0.354	A	1	A	B
4	T	Chloromethane	50	5.26	0.379	L	1	A	B
5	T	Vinyl chloride	62	5.57	0.402	A	1	A	B
6	T	Bromomethane	94	6.66	0.480	A	1	A	B
7	T	Chloroethane	64	6.86	0.494	L	1	A	B
8	T	Dichlorofluoromethane	67	6.93	0.499	A	1	A	B
9	T	Trichlorofluoromethane	101	7.42	0.534	L	1	A	B
10	T	Acrolein	56	8.30	0.598	A	1	A	B
11	T	1,1,2-Trichloro-1,2,2-trifluor	151	8.33	0.600	A	1	A	B
12	T	Acetone	43	8.42	0.607	A	1	A	B
13	T	1,1-Dichloroethene	61	8.70	0.627	A	2	A	B
14	T	tert-Butyl alcohol	59	8.80	0.634	A	1	A	B
15	T	Acetonitrile	41	8.95	0.645	A	2	A	B
16	T	Methyl acetate	43	9.29	0.669	A	1	A	B
17	T	Iodomethane	142	9.35	0.674	A	1	A	B
18	T	Methylene chloride	49	9.63	0.694	A	2	A	B
19	T	Carbon disulfide	76	9.71	0.700	A	1	A	B
20	T	Acrylonitrile	53	9.82	0.708	A	2	A	B
21	T	tert-Butyl methyl ether (MTBE)	73	9.85	0.710	A	1	A	B
22	T	trans-1,2-Dichloroethene	96	10.14	0.731	A	1	A	B
23	T	n-Hexane	57	0.00	0.000	A	3	A	B
24	T	Isopropyl ether (DIPE)	45	10.61	0.765	A	1	A	B
25	T	Vinyl acetate	43	10.82	0.780	A	1	A	B
26	T	1,1-Dichloroethane	63	10.89	0.785	A	1	A	B
27	T	2-Butanol	45	11.19	0.806	A	1	A	B
28	T	tert-Butyl ethyl ether (ETBE)	59	11.30	0.815	A	1	A	B
29	T	2-Butanone	72	11.54	0.832	A	1	A	B
30	T	2,2-Dichloropropane	77	11.83	0.853	A	1	A	B
31	T	cis-1,2-Dichloroethene	96	11.91	0.858	A	1	A	B
32	T	Chloroform	83	12.17	0.877	A	2	A	B
33	T	tert-Amyl alcohol	59	12.35	0.890	A	1	A	B
34	T	Bromochloromethane	130	12.46	0.898	A	1	A	B
35	T	Tetrahydrofuran	42	12.49	0.901	A	2	A	B
36	S	Dibromofluoromethane	111	12.52	0.903	A	1	A	B
37	T	1,1,1-Trichloroethane	97	12.83	0.925	A	2	A	B
38	T	2,2,4-Trimethylpentane	57	12.86	0.927	A	1	A	B
39	T	Cyclohexane	84	12.88	0.928	A	1	A	B
40	T	1,1-Dichloropropene	110	13.07	0.942	A	1	A	B
41	T	tert-Amyl methyl ether (TAME)	73	13.17	0.949	A	1	A	B
42	T	Carbon tetrachloride	119	13.26	0.956	A	1	A	B
43	S	1,2-Dichloroethane-d4	65	13.32	0.960	A	1	A	B
44	T	1,2-Dichloroethane	62	13.46	0.970	A	1	A	B
45	T	Benzene	78	13.52	0.975	A	2	A	B
46	T	Trichloroethene	130	14.46	1.042	A	3	A	B
47	T	Methylcyclohexane	83	14.56	1.050	A	2	A	B
48	T	1,2-Dichloropropane	63	14.72	1.061	A	1	A	B
49	T	1,4-Dioxane	88	15.08	1.087	A	1	A	B
50	T	Bromodichloromethane	83	15.11	1.089	A	1	A	B
51	T	Dibromomethane	93	15.22	1.097	A	2	A	B
52	T	2-Chloroethyl vinyl ether	63	15.44	1.113	A	1	A	B
53	T	4-Methyl-2-pentanone	43	15.47	1.115	A	3	A	B

SW 4/16/20

54	T	cis-1,3-Dichloropropene	75	15.88	1.145	A	3	A	B
55	I	CHLOROBENZENE-D5	117	18.67	1.000	A	2	A	B
56	S	Toluene-d8	98	16.30	0.873	A	1	A	B
57	T	Toluene	91	16.43	0.880	A	1	A	B
58	T	Ethyl methacrylate	69	16.50	0.884	A	1	A	B
59	T	trans-1,3-Dichloropropene	75	16.63	0.891	A	1	A	B
60	T	2-Hexanone	43	16.81	0.900	A	1	A	B
61	T	1,1,2-Trichloroethane	97	16.91	0.906	A	2	A	B
62	T	1,3-Dichloropropane	76	17.29	0.926	A	1	A	B
63	T	Tetrachloroethene	164	17.45	0.935	A	3	A	B
64	T	Dibromochloromethane	129	17.79	0.953	A	1	A	B
65	T	1,2-Dibromoethane	107	18.12	0.970	A	1	A	B
66	T	1-Chlorohexane	91	18.19	0.974	A	1	A	B
67	T	Chlorobenzene	112	18.73	1.003	A	1	A	B
68	T	Ethylbenzene	91	18.76	1.005	A	1	A	B
69	T	1,1,1,2-Tetrachloroethane	131	18.78	1.006	A	1	A	B
70	T	m-Xylene & p-Xylene	91	18.86	1.010	A	1	A	B
71	T	o-Xylene	91	19.57	1.048	A	1	A	B
72	T	Styrene	104	19.61	1.050	A	2	A	B
73	T	Isopropylbenzene	105	20.09	1.076	A	3	A	B
74	I	1,2-DICHLOROBENZENE-D4	152	22.86	1.000	A	1	A	B
75	T	Bromoform	173	20.26	0.886	A	2	A	B
76	T	1,1,2,2-Tetrachloroethane	83	20.36	0.891	A	1	A	B
77	S	4-Bromofluorobenzene	95	20.53	0.898	A	2	A	B
78	T	1,2,3-Trichloropropane	110	20.60	0.901	A	1	A	B
79	T	trans-1,4-Dichloro-2-butene	53	20.64	0.903	A	1	A	B
80	T	n-Propylbenzene	91	20.72	0.906	A	2	A	B
81	T	Bromobenzene	156	20.91	0.915	A	1	A	B
82	T	1,3,5-Trimethylbenzene	105	20.94	0.916	A	2	A	B
83	T	2-Chlorotoluene	91	21.07	0.922	A	1	A	B
84	T	4-Chlorotoluene	91	21.11	0.924	A	1	A	B
85	T	tert-Butylbenzene	134	21.51	0.941	A	1	A	B
86	T	1,2,4-Trimethylbenzene	105	21.58	0.944	A	1	A	B
87	T	sec-Butylbenzene	105	21.83	0.955	A	1	A	B
88	T	p-Isopropyltoluene	119	21.99	0.962	A	2	A	B
89	T	1,3-Dichlorobenzene	146	22.23	0.972	A	2	A	B
90	T	1,4-Dichlorobenzene	146	22.36	0.978	A	2	A	B
91	T	n-Butylbenzene	91	22.55	0.987	A	2	A	B
92	T	1,2-Dichlorobenzene	146	22.90	1.002	A	1	A	B
93	T	1,2-Dibromo-3-chloropropane	157	24.00	1.050	A	1	A	B
94	T	1,2,4-Trichlorobenzene	180	25.36	1.109	A	2	A	B
95	T	Hexachlorobutadiene	225	25.53	1.117	A	2	A	B
96	T	Naphthalene	128	25.85	1.131	A	1	A	B
97	T	1,2,3-Trichlorobenzene	180	26.27	1.149	A	2	A	B

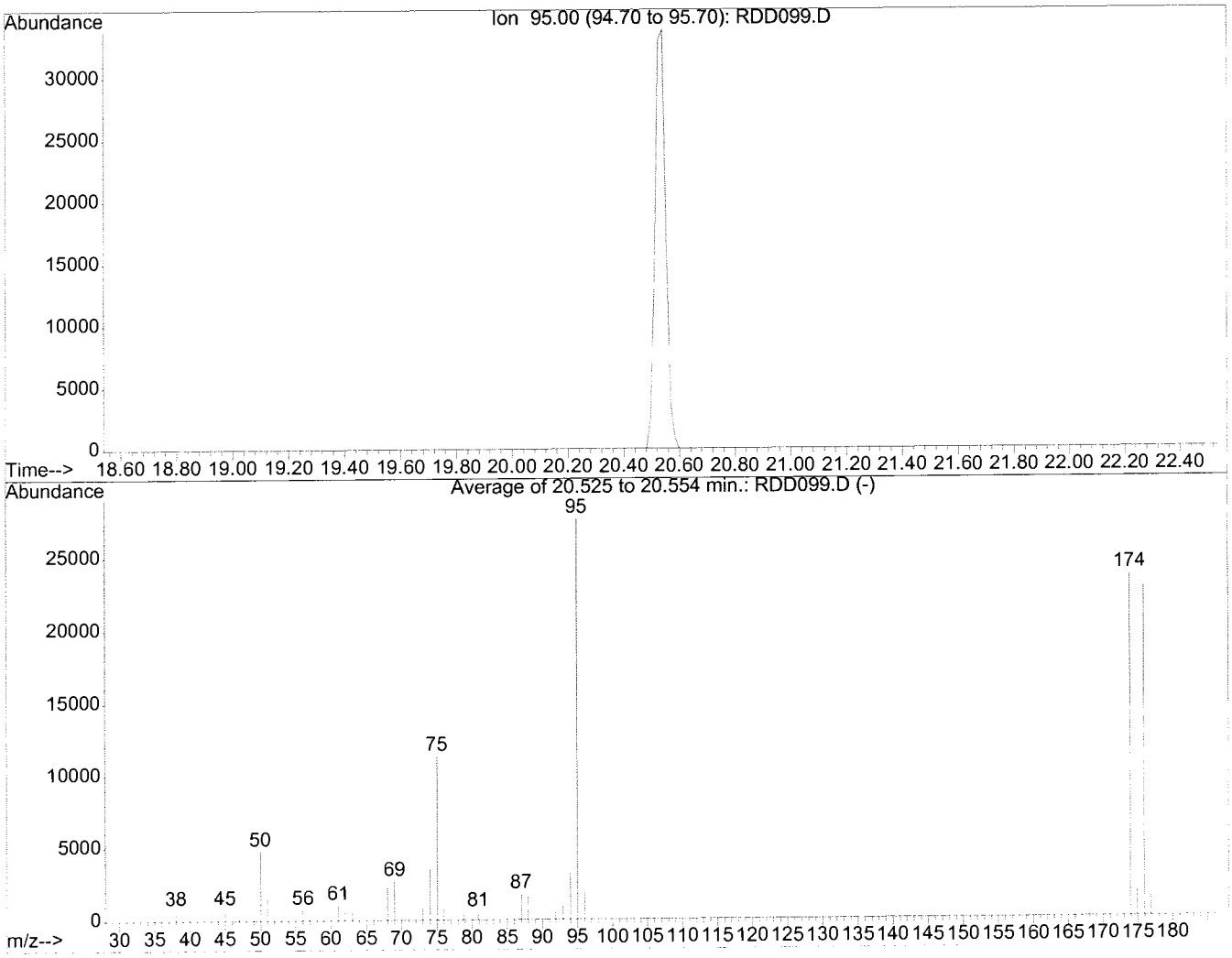
Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

VO94D14.M Wed Apr 15 17:58:37 2020

4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD099.D
Acq On : 14 Apr 2020 5:42 pm
Sample : BFB94D04
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260

Vial: 1
Operator: VLu
Inst : 94
Multiplr: 1.00



AutoFind: Scans 1086, 1087, 1088; Background Corrected with Scan 1082

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.3	4787	PASS
75	95	30	60	40.9	11311	PASS
95	95	100	100	100.0	27627	PASS
96	95	5	9	6.7	1863	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.5	23619	PASS
175	174	5	9	7.4	1758	PASS
176	174	95	101	96.8	22853	PASS
177	176	5	9	6.9	1580	PASS

RDD099.D VO94D14.M Wed Apr 15 17:57:42 2020 SS 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD100.D Vial: 2
Acq On : 14 Apr 2020 6:31 pm Operator: VLu
Sample : VO94D141 Inst : 94
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	1951059	10.00	ug/l		0.01
55) CHLOROBENZENE-D5	18.69	117	1530999	10.00	ug/l		0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	518261	10.00	ug/l		0.01
System Monitoring Compounds							
36) Dibromofluoromethane	12.54	111	14403	0.25	ug/l		0.01
Spiked Amount 10.000			Recovery =	2.50%			
43) 1,2-Dichloroethane-d4	13.33	65	8918	0.23	ug/l		0.01
Spiked Amount 10.000			Recovery =	2.30%			
56) Toluene-d8	16.31	98	54290	0.25	ug/l		0.01
Spiked Amount 10.000			Recovery =	2.50%			
77) 4-Bromofluorobenzene	20.53	95	17412	0.29	ug/l		0.00
Spiked Amount 10.000			Recovery =	2.90%			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.62	85	22852	0.29	ug/l		60
4) Chloromethane	5.27	50	29257	0.48	ug/l		94
5) Vinyl chloride	5.58	62	23382	0.24	ug/l		92
6) Bromomethane	6.68	94	19619	0.21	ug/l		90
7) Chloroethane	6.87	64	14944	0.43	ug/l		72
8) Dichlorofluoromethane	6.95	67	38179	0.26	ug/l		92
9) Trichlorofluoromethane	7.44	101	17863	0.39	ug/l		97
10) Acrolein	8.33	56	8440	1.49	ug/l		98
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	12925	0.23	ug/l		88
13) 1,1-Dichloroethene	8.73	61	33357	0.27	ug/l		93
14) tert-Butyl alcohol	8.82	59	20982	7.24	ug/l	#	25
17) Iodomethane	9.37	142	26875	0.24	ug/l		97
18) Methylene chloride	9.63	49	39314	0.38	ug/l		98
19) Carbon disulfide	9.73	76	64369	0.22	ug/l		97
20) Acrylonitrile	9.84	53	15340	1.37	ug/l		94
21) tert-Butyl methyl ether (M	9.87	73	30601	0.28	ug/l		83
22) trans-1,2-Dichloroethene	10.18	96	23579	0.27	ug/l		97
24) Isopropyl ether (DIPE)	10.63	45	72691	0.28	ug/l		96
26) 1,1-Dichloroethane	10.91	63	37504	0.28	ug/l		98
28) tert-Butyl ethyl ether (ET	11.32	59	73321	0.43	ug/l		98
29) 2-Butanone	11.57	72	5440	1.70	ug/l		52
30) 2,2-Dichloropropane	11.85	77	16616	0.30	ug/l		96
31) cis-1,2-Dichloroethene	11.94	96	22285	0.27	ug/l		99
32) Chloroform	12.18	83	33460	0.29	ug/l		99
34) Bromochloromethane	12.48	130	9430	0.26	ug/l		98
37) 1,1,1-Trichloroethane	12.85	97	22429	0.29	ug/l		87
38) 2,2,4-Trimethylpentane	12.87	57	94499	0.27	ug/l		89

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD100.D VO94D14.M Wed Apr 15 17:58:58 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD100.D Vial: 2
Acq On : 14 Apr 2020 6:31 pm Operator: VLu
Sample : VO94D141 Inst : 94
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
39)	Cyclohexane	12.90	84	31082	0.24 ug/l	93
40)	1,1-Dichloropropene	13.08	110	9220	0.26 ug/l	100
41)	tert-Amyl methyl ether (TA	13.18	73	47103	0.36 ug/l	85
42)	Carbon tetrachloride	13.29	119	15074	0.25 ug/l	100
44)	1,2-Dichloroethane	13.48	62	12933	0.29 ug/l	91
45)	Benzene	13.54	78	84216	0.31 ug/l	96
46)	Trichloroethene	14.47	130	21124	0.27 ug/l	93
47)	Methylcyclohexane	14.58	83	31376	0.22 ug/l	94
48)	1,2-Dichloropropane	14.72	63	18968	0.30 ug/l	91
50)	Bromodichloromethane	15.12	83	18497	0.27 ug/l	62
51)	Dibromomethane	15.24	93	6924	0.27 ug/l	97
53)	4-Methyl-2-pentanone	15.49	43	46206	1.43 ug/l	97
54)	cis-1,3-Dichloropropene	15.90	75	23621	0.28 ug/l	92
57)	Toluene	16.44	91	81535	0.31 ug/l	99
58)	Ethyl methacrylate	16.51	69	10954	0.27 ug/l	67
59)	trans-1,3-Dichloropropene	16.65	75	15991	0.28 ug/l	85
60)	2-Hexanone	16.81	43	28077	1.47 ug/l	97
61)	1,1,2-Trichloroethane	16.91	97	11044	0.32 ug/l	92
62)	1,3-Dichloropropane	17.29	76	18571	0.29 ug/l	98
63)	Tetrachloroethene	17.47	164	17620	0.31 ug/l	97
64)	Dibromochloromethane	17.81	129	9349	0.25 ug/l	99
65)	1,2-Dibromoethane	18.13	107	8542	0.28 ug/l	90
66)	1-Chlorohexane	18.19	91	30681	0.29 ug/l	98
67)	Chlorobenzene	18.75	112	43771	0.29 ug/l	99
68)	Ethylbenzene	18.76	91	86366	0.30 ug/l	98
69)	1,1,1,2-Tetrachloroethane	18.78	131	12577	0.27 ug/l	97
70)	m-Xylene & p-Xylene	18.88	91	120720	0.60 ug/l	99
71)	o-Xylene	19.58	91	60704	0.30 ug/l	99
72)	Styrene	19.63	104	46076	0.31 ug/l	98
73)	Isopropylbenzene	20.10	105	73843	0.29 ug/l	99
76)	1,1,2,2-Tetrachloroethane	20.36	83	11402	0.30 ug/l	84
80)	n-Propylbenzene	20.72	91	90605	0.29 ug/l	98
81)	Bromobenzene	20.91	156	15231	0.29 ug/l	99
82)	1,3,5-Trimethylbenzene	20.94	105	52866	0.29 ug/l	99
83)	2-Chlorotoluene	21.07	91	56522	0.30 ug/l	99
84)	4-Chlorotoluene	21.13	91	43878	0.32 ug/l	96
85)	tert-Butylbenzene	21.52	134	12568	0.28 ug/l	99
86)	1,2,4-Trimethylbenzene	21.58	105	49565	0.29 ug/l	100
87)	sec-Butylbenzene	21.83	105	75369	0.29 ug/l	99
88)	p-Isopropyltoluene	21.99	119	55039	0.30 ug/l	99
89)	1,3-Dichlorobenzene	22.23	146	29527	0.30 ug/l	99

(#) = qualifier out of range (m) = manual integration

SA 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD100.D Vial: 2
Acq On : 14 Apr 2020 6:31 pm Operator: VLu
Sample : VO94D141 Inst : 94
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:22 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
90)	1,4-Dichlorobenzene	22.38	146	28308	0.31	ug/l	100
91)	n-Butylbenzene	22.57	91	56145	0.30	ug/l	96
92)	1,2-Dichlorobenzene	22.90	146	24495	0.30	ug/l	95
94)	1,2,4-Trichlorobenzene	25.37	180	12937	0.27	ug/l	98
95)	Hexachlorobutadiene	25.55	225	8520	0.27	ug/l	98
96)	Naphthalene	25.87	128	20364	0.29	ug/l	89
97)	1,2,3-Trichlorobenzene	26.27	180	10423	0.28	ug/l	87

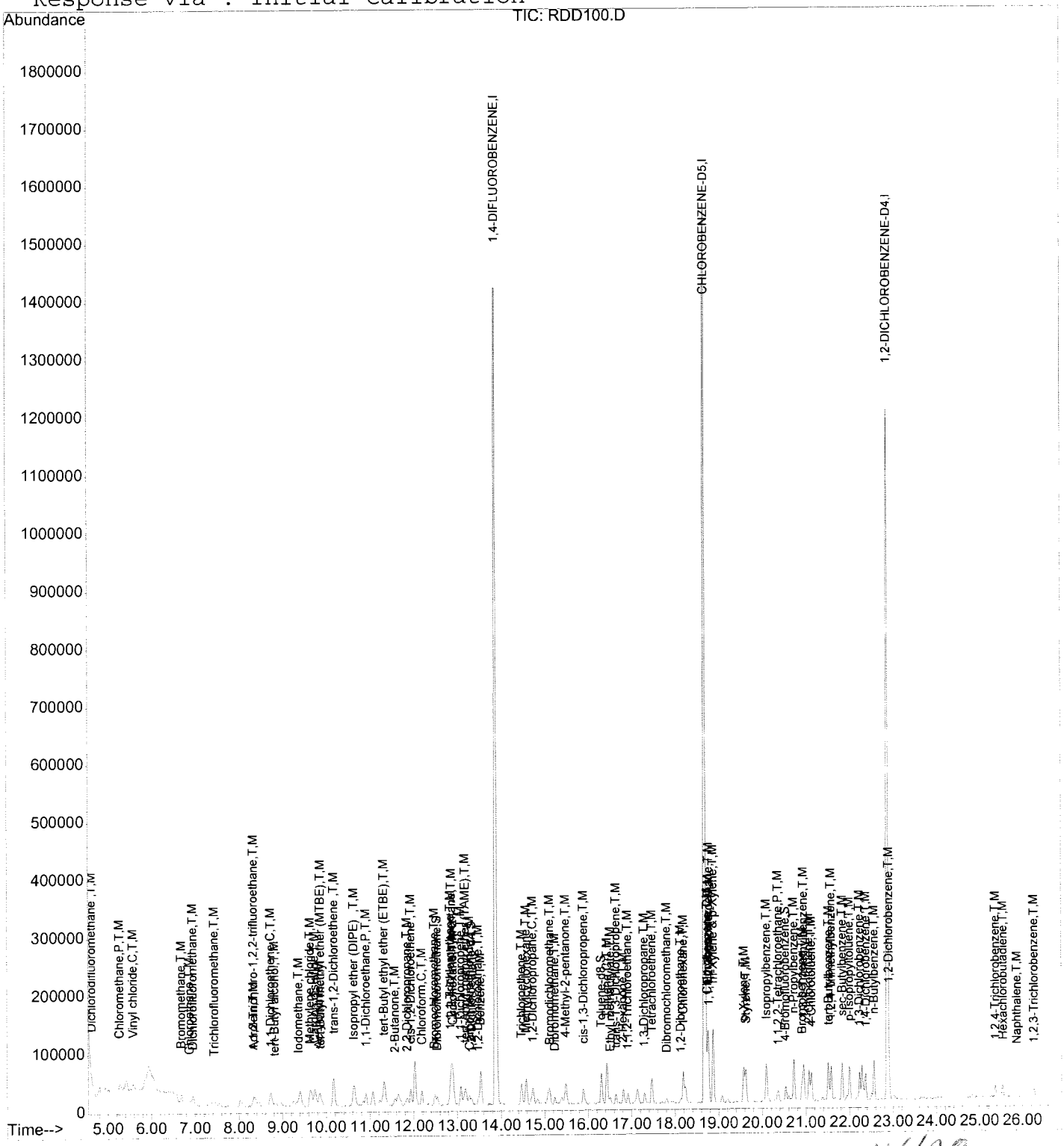
SA 4/16/20

(#) = qualifier out of range (m) = manual integration
RDD100.D VO94D14.M Wed Apr 15 17:58:59 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD100.D Vial: 2
Acq On : 14 Apr 2020 6:31 pm Operator: VLu
Sample : VO94D141 Inst : 94
Misc : 0.3ppb 8260/1.5ppb KET-AA/7.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:22 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD101.D Vial: 3
Acq On : 14 Apr 2020 7:02 pm Operator: VLu
Sample : VO94D142 Inst : 94
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:32 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1919492	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1500748	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	505287	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	26642	0.48	ug/l	0.00
Spiked Amount 10.000			Recovery =	4.80%		
43) 1,2-Dichloroethane-d4	13.32	65	18737	0.50	ug/l	0.00
Spiked Amount 10.000			Recovery =	5.00%		
56) Toluene-d8	16.30	98	110280	0.52	ug/l	0.00
Spiked Amount 10.000			Recovery =	5.20%		
77) 4-Bromofluorobenzene	20.53	95	31170	0.53	ug/l	0.00
Spiked Amount 10.000			Recovery =	5.30%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.62	85	33025	0.43	ug/l	82
3) Dichlorotetrafluoroethane	4.90	85	31209	0.33	ug/l	81
4) Chloromethane	5.28	50	46885	0.61	ug/l	97
5) Vinyl chloride	5.58	62	40885	0.42	ug/l	99
6) Bromomethane	6.67	94	34557	0.38	ug/l	97
7) Chloroethane	6.86	64	25937	0.57	ug/l	76
8) Dichlorofluoromethane	6.93	67	64735	0.44	ug/l	98
9) Trichlorofluoromethane	7.42	101	33881	0.55	ug/l	97
10) Acrolein	8.30	56	13725	2.46	ug/l	66
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	23858	0.43	ug/l	91
13) 1,1-Dichloroethene	8.70	61	54457	0.44	ug/l	99
14) tert-Butyl alcohol	8.80	59	34528	12.10	ug/l	68
17) Iodomethane	9.35	142	49390	0.45	ug/l	98
18) Methylene chloride	9.61	49	58551	0.58	ug/l	98
19) Carbon disulfide	9.72	76	111788	0.38	ug/l	94
20) Acrylonitrile	9.82	53	24990	2.27	ug/l	97
21) tert-Butyl methyl ether (M	9.85	73	52279	0.48	ug/l	82
22) trans-1,2-Dichloroethene	10.15	96	39440	0.47	ug/l	98
24) Isopropyl ether (DIPE)	10.62	45	119113	0.47	ug/l	98
25) Vinyl acetate	10.82	43	34200	0.42	ug/l	80
26) 1,1-Dichloroethane	10.89	63	61981	0.48	ug/l	98
27) 2-Butanol	11.20	45	35523	11.97	ug/l	90
28) tert-Butyl ethyl ether (ET	11.30	59	103106	0.61	ug/l	98
29) 2-Butanone	11.55	72	8174	2.59	ug/l	63
30) 2,2-Dichloropropane	11.83	77	26829	0.49	ug/l	99
31) cis-1,2-Dichloroethene	11.92	96	40322	0.49	ug/l	100
32) Chloroform	12.17	83	56410	0.50	ug/l	99

(#) = qualifier out of range (m) = manual integration

RDD101.D VO94D14.M Wed Apr 15 18:04:48 2020 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD101.D Vial: 3
Acq On : 14 Apr 2020 7:02 pm Operator: VLu
Sample : VO94D142 Inst : 94
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:32 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
33)	tert-Amyl alcohol	12.36	59	3986	1.68 ug/l	90
34)	Bromochloromethane	12.46	130	17233	0.49 ug/l	93
37)	1,1,1-Trichloroethane	12.83	97	39133	0.51 ug/l	94
38)	2,2,4-Trimethylpentane	12.85	57	164682	0.47 ug/l	100
39)	Cyclohexane	12.88	84	62614	0.48 ug/l	94
40)	1,1-Dichloropropene	13.07	110	17629	0.50 ug/l	89
41)	tert-Amyl methyl ether (TA	13.18	73	71371	0.56 ug/l	97
42)	Carbon tetrachloride	13.26	119	27943	0.47 ug/l	99
44)	1,2-Dichloroethane	13.46	62	23078	0.52 ug/l	99
45)	Benzene	13.52	78	138005	0.51 ug/l	94
46)	Trichloroethene	14.46	130	38898	0.51 ug/l	97
47)	Methylcyclohexane	14.56	83	63913	0.45 ug/l	97
48)	1,2-Dichloropropane	14.73	63	31182	0.49 ug/l	100
50)	Bromodichloromethane	15.11	83	32291	0.49 ug/l	97
51)	Dibromomethane	15.22	93	11989	0.47 ug/l	95
52)	2-Chloroethyl vinyl ether	15.44	63	8832	0.45 ug/l	91
53)	4-Methyl-2-pentanone	15.49	43	79301	2.49 ug/l	99
54)	cis-1,3-Dichloropropene	15.88	75	36588	0.44 ug/l	90
57)	Toluene	16.43	91	136608	0.53 ug/l	99
58)	Ethyl methacrylate	16.50	69	19784	0.51 ug/l	77
59)	trans-1,3-Dichloropropene	16.63	75	27601	0.49 ug/l	88
60)	2-Hexanone	16.81	43	49651	2.66 ug/l	94
61)	1,1,2-Trichloroethane	16.91	97	17734	0.52 ug/l	97
62)	1,3-Dichloropropane	17.29	76	30832	0.50 ug/l	96
63)	Tetrachloroethene	17.46	164	29184	0.53 ug/l	98
64)	Dibromochloromethane	17.79	129	17240	0.48 ug/l	97
65)	1,2-Dibromoethane	18.12	107	14116	0.48 ug/l	99
66)	1-Chlorohexane	18.19	91	52191	0.50 ug/l	99
67)	Chlorobenzene	18.73	112	73450	0.50 ug/l	100
68)	Ethylbenzene	18.76	91	142116	0.50 ug/l	99
69)	1,1,1,2-Tetrachloroethane	18.78	131	23073	0.51 ug/l	98
70)	m-Xylene & p-Xylene	18.86	91	203142	1.04 ug/l	96
71)	o-Xylene	19.57	91	99431	0.51 ug/l	100
72)	Styrene	19.61	104	74907	0.51 ug/l	96
73)	Isopropylbenzene	20.09	105	123457	0.50 ug/l	100
75)	Bromoform	20.26	173	7448	0.44 ug/l	87
76)	1,1,2,2-Tetrachloroethane	20.36	83	19486	0.53 ug/l	90
78)	1,2,3-Trichloropropane	20.60	110	3788	0.47 ug/l	92
80)	n-Propylbenzene	20.72	91	148014	0.49 ug/l	99
81)	Bromobenzene	20.91	156	25957	0.51 ug/l	97
82)	1,3,5-Trimethylbenzene	20.94	105	86207	0.49 ug/l	98

(#) = qualifier out of range (m) = manual integration
RDD101.D VO94D14.M Wed Apr 15 18:04:49 2020 4/16/20 Page 2

Data File : D:\HPCHEM\1\DATA\20D14\RDD101.D Vial: 3
Acq On : 14 Apr 2020 7:02 pm Operator: VLu
Sample : VO94D142 Inst : 94
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:32 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
83) 2-Chlorotoluene	21.07	91	94868	0.52 ug/l	99
84) 4-Chlorotoluene	21.11	91	66347	0.50 ug/l	98
85) tert-Butylbenzene	21.51	134	21975	0.51 ug/l	90
86) 1,2,4-Trimethylbenzene	21.58	105	82680	0.50 ug/l	99
87) sec-Butylbenzene	21.83	105	125441	0.50 ug/l	98
88) p-Isopropyltoluene	21.99	119	88465	0.49 ug/l	100
89) 1,3-Dichlorobenzene	22.23	146	46747	0.48 ug/l	98
90) 1,4-Dichlorobenzene	22.38	146	45219	0.50 ug/l	99
91) n-Butylbenzene	22.57	91	88832	0.49 ug/l	97
92) 1,2-Dichlorobenzene	22.90	146	38687	0.49 ug/l	95
93) 1,2-Dibromo-3-chloropropan	24.00	157	2286	0.49 ug/l	74
94) 1,2,4-Trichlorobenzene	25.37	180	20000	0.42 ug/l	100
95) Hexachlorobutadiene	25.55	225	15016	0.48 ug/l	93
96) Naphthalene	25.85	128	31825	0.47 ug/l	100
97) 1,2,3-Trichlorobenzene	26.27	180	15909	0.44 ug/l	97

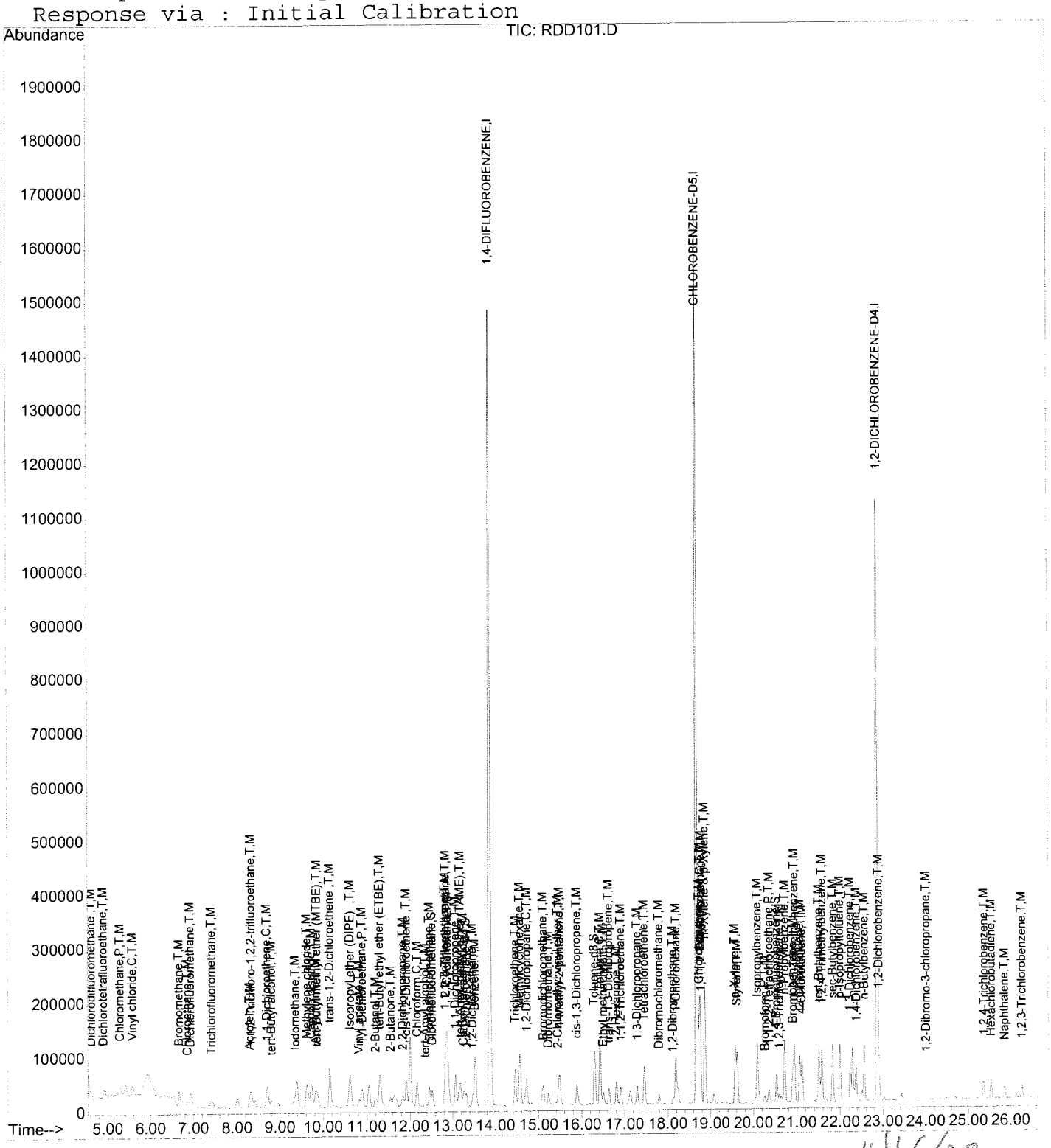
SW 4/16/20

(#) = qualifier out of range (m) = manual integration
RDD101.D VO94D14.M Wed Apr 15 18:04:49 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD101.D Vial: 3
Acq On : 14 Apr 2020 7:02 pm Operator: VLu
Sample : VO94D142 Inst : 94
Misc : 0.5ppb 8260/2.5ppb KET-AA/12.5ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:32 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



RDD101.D VO94D14.M Wed Apr 15 18:04:51 2020 Page 4

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD102.D Vial: 4
Acq On : 14 Apr 2020 7:33 pm Operator: VLu
Sample : VO94D143 Inst : 94
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:00 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1845471	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1458268	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	491142	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	50414	0.94	ug/l	0.00
Spiked Amount 10.000			Recovery = 9.40%			
43) 1,2-Dichloroethane-d4	13.32	65	35964	1.00	ug/l	0.00
Spiked Amount 10.000			Recovery = 10.00%			
56) Toluene-d8	16.30	98	202294	0.98	ug/l	0.00
Spiked Amount 10.000			Recovery = 9.80%			
77) 4-Bromofluorobenzene	20.53	95	56683	0.99	ug/l	0.00
Spiked Amount 10.000			Recovery = 9.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.63	85	66060	0.90	ug/l	87
3) Dichlorotetrafluoroethane	4.91	85	74517	0.82	ug/l	91
4) Chloromethane	5.26	50	93591	0.98	ug/l	94
5) Vinyl chloride	5.57	62	84655	0.91	ug/l	98
6) Bromomethane	6.68	94	72422	0.84	ug/l	97
7) Chloroethane	6.86	64	56877	0.99	ug/l	87
8) Dichlorofluoromethane	6.93	67	124549	0.89	ug/l	96
9) Trichlorofluoromethane	7.42	101	72924	0.96	ug/l	100
10) Acrolein	8.30	56	25383	4.74	ug/l	89
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	48710	0.91	ug/l	98
12) Acetone	8.42	43	50891	6.12	ug/l	94
13) 1,1-Dichloroethene	8.70	61	111427	0.94	ug/l	99
14) tert-Butyl alcohol	8.80	59	61911	22.57	ug/l	68
15) Acetonitrile	8.95	41	60828	15.84	ug/l	94
16) Methyl acetate	9.29	43	31752	1.29	ug/l	79
17) Iodomethane	9.35	142	96251	0.92	ug/l	99
18) Methylene chloride	9.61	49	99044	1.02	ug/l	98
19) Carbon disulfide	9.72	76	251731	0.89	ug/l	99
20) Acrylonitrile	9.82	53	48790	4.60	ug/l	94
21) tert-Butyl methyl ether (M	9.85	73	100108	0.96	ug/l	86
22) trans-1,2-Dichloroethene	10.14	96	79713	0.98	ug/l	99
24) Isopropyl ether (DIPE)	10.62	45	225839	0.93	ug/l	97
25) Vinyl acetate	10.82	43	72502	0.93	ug/l	96
26) 1,1-Dichloroethane	10.88	63	120641	0.97	ug/l	99
27) 2-Butanol	11.20	45	66889	23.45	ug/l	98
28) tert-Butyl ethyl ether (ET	11.31	59	165399	1.03	ug/l	96
29) 2-Butanone	11.54	72	14834	4.89	ug/l	58

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD102.D VO94D14.M Wed Apr 15 18:04:58 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD102.D Vial: 4
Acq On : 14 Apr 2020 7:33 pm Operator: VLu
Sample : VO94D143 Inst : 94
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:00 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	2,2-Dichloropropane	11.83	77	58320	1.10 ug/l	97
31)	cis-1,2-Dichloroethene	11.91	96	77732	0.99 ug/l	99
32)	Chloroform	12.17	83	110985	1.03 ug/l	99
33)	tert-Amyl alcohol	12.35	59	9938	4.35 ug/l	100
34)	Bromochloromethane	12.46	130	34738	1.03 ug/l	95
35)	Tetrahydrofuran	12.49	42	9391	1.10 ug/l	87
37)	1,1,1-Trichloroethane	12.83	97	76330	1.03 ug/l	98
38)	2,2,4-Trimethylpentane	12.86	57	341902	1.02 ug/l	100
39)	Cyclohexane	12.88	84	129337	1.04 ug/l	96
40)	1,1-Dichloropropene	13.07	110	34877	1.02 ug/l	100
41)	tert-Amyl methyl ether (TA	13.17	73	128542	1.04 ug/l	95
42)	Carbon tetrachloride	13.26	119	57309	0.99 ug/l	100
44)	1,2-Dichloroethane	13.46	62	41724	0.97 ug/l	96
45)	Benzene	13.52	78	267133	1.03 ug/l	97
46)	Trichloroethene	14.46	130	69598	0.95 ug/l	98
47)	Methylcyclohexane	14.56	83	136791	1.01 ug/l	96
48)	1,2-Dichloropropane	14.73	63	60130	0.99 ug/l	100
50)	Bromodichloromethane	15.11	83	61284	0.96 ug/l	92
51)	Dibromomethane	15.22	93	23219	0.96 ug/l	99
52)	2-Chloroethyl vinyl ether	15.44	63	16306	0.86 ug/l	95
53)	4-Methyl-2-pentanone	15.47	43	143885	4.70 ug/l	98
54)	cis-1,3-Dichloropropene	15.88	75	76236	0.95 ug/l	99
57)	Toluene	16.43	91	260111	1.04 ug/l	100
58)	Ethyl methacrylate	16.50	69	37992	1.00 ug/l	88
59)	trans-1,3-Dichloropropene	16.63	75	55402	1.00 ug/l	91
60)	2-Hexanone	16.81	43	100352	5.53 ug/l	89
61)	1,1,2-Trichloroethane	16.91	97	34729	1.05 ug/l	99
62)	1,3-Dichloropropane	17.29	76	60964	1.01 ug/l	97
63)	Tetrachloroethene	17.46	164	54964	1.02 ug/l	99
64)	Dibromochloromethane	17.79	129	34818	0.99 ug/l	98
65)	1,2-Dibromoethane	18.12	107	28263	0.98 ug/l	97
66)	1-Chlorohexane	18.19	91	104039	1.02 ug/l	100
67)	Chlorobenzene	18.73	112	147448	1.03 ug/l	99
68)	Ethylbenzene	18.76	91	282782	1.03 ug/l	100
69)	1,1,1,2-Tetrachloroethane	18.78	131	43469	0.99 ug/l	96
70)	m-Xylene & p-Xylene	18.86	91	399850	2.10 ug/l	98
71)	o-Xylene	19.57	91	194271	1.02 ug/l	99
72)	Styrene	19.61	104	142512	1.00 ug/l	97
73)	Isopropylbenzene	20.09	105	244497	1.02 ug/l	99
75)	Bromoform	20.26	173	14925	0.90 ug/l	97
76)	1,1,2,2-Tetrachloroethane	20.36	83	37519	1.04 ug/l	99

(#) = qualifier out of range (m) = manual integration
RDD102.D VO94D14.M Wed Apr 15 18:04:59 2020 Page 2

Su 4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD102.D
Acq On : 14 Apr 2020 7:33 pm
Sample : VO94D143
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 15 17:00 2020

Vial: 4
Operator: VLu
Inst : 94
Multiplr: 1.00
Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
78) 1,2,3-Trichloropropane	20.60	110	8197	1.05 ug/l	89
79) trans-1,4-Dichloro-2-buten	20.64	53	6153	0.97 ug/l	77
80) n-Propylbenzene	20.72	91	292717	1.00 ug/l	99
81) Bromobenzene	20.91	156	50543	1.01 ug/l	98
82) 1,3,5-Trimethylbenzene	20.94	105	175717	1.02 ug/l	98
83) 2-Chlorotoluene	21.07	91	184901	1.05 ug/l	99
84) 4-Chlorotoluene	21.11	91	130132	1.02 ug/l	100
85) tert-Butylbenzene	21.51	134	43801	1.04 ug/l	92
86) 1,2,4-Trimethylbenzene	21.58	105	160531	1.00 ug/l	100
87) sec-Butylbenzene	21.83	105	247902	1.01 ug/l	99
88) p-Isopropyltoluene	21.99	119	175224	1.00 ug/l	99
89) 1,3-Dichlorobenzene	22.23	146	94652	1.01 ug/l	99
90) 1,4-Dichlorobenzene	22.38	146	89144	1.01 ug/l	99
91) n-Butylbenzene	22.57	91	172310	0.99 ug/l	100
92) 1,2-Dichlorobenzene	22.90	146	78375	1.02 ug/l	98
93) 1,2-Dibromo-3-chloropropan	24.00	157	3756	0.83 ug/l	98
94) 1,2,4-Trichlorobenzene	25.37	180	40897	0.89 ug/l	98
95) Hexachlorobutadiene	25.55	225	27975	0.92 ug/l	97
96) Naphthalene	25.85	128	58692	0.89 ug/l	98
97) 1,2,3-Trichlorobenzene	26.26	180	31216	0.88 ug/l	99

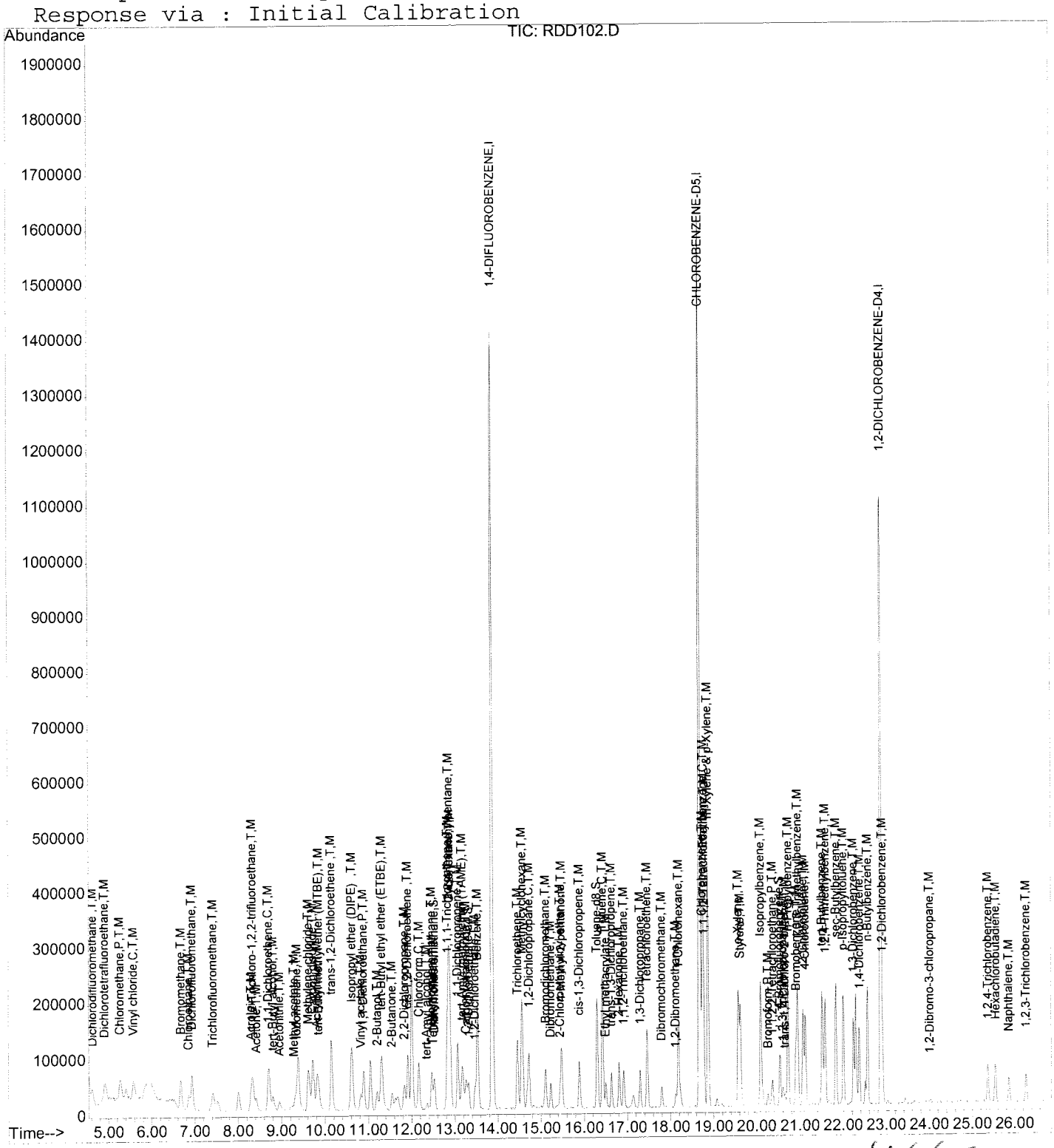
SU 4/16/20

(#) = qualifier out of range (m) = manual integration
RDD102.D VO94D14.M Wed Apr 15 18:04:59 2020

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD102.D Vial: 4
Acq On : 14 Apr 2020 7:33 pm Operator: VLu
Sample : VO94D143 Inst : 94
Misc : 1.0ppb 8260/5.0ppb KET-AA/25ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 17:00 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



RDD102.D VO94D14.M Wed Apr 15 18:05:02 2020 Su 4/16/20 Page 4

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD103.D Vial: 5
Acq On : 14 Apr 2020 8:05 pm Operator: VLu
Sample : VO94D144 Inst : 94
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:35 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1789865	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1418029	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	480586	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	102654	1.97	ug/l	0.02
Spiked Amount 10.000			Recovery =	19.70%		
43) 1,2-Dichloroethane-d4	13.33	65	69994	2.00	ug/l	0.02
Spiked Amount 10.000			Recovery =	20.00%		
56) Toluene-d8	16.31	98	405849	2.02	ug/l	0.02
Spiked Amount 10.000			Recovery =	20.20%		
77) 4-Bromofluorobenzene	20.53	95	110374	1.96	ug/l	0.00
Spiked Amount 10.000			Recovery =	19.60%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.63	85	115387	1.61	ug/l	98
3) Dichlorotetrafluoroethane	4.91	85	152643	1.74	ug/l	95
4) Chloromethane	5.28	50	202148	1.84	ug/l	100
5) Vinyl chloride	5.57	62	175248	1.93	ug/l	99
6) Bromomethane	6.68	94	148110	1.76	ug/l	99
7) Chloroethane	6.87	64	115548	1.81	ug/l	89
8) Dichlorofluoromethane	6.95	67	256024	1.88	ug/l	97
9) Trichlorofluoromethane	7.43	101	155043	1.84	ug/l	100
10) Acrolein	8.32	56	48381	9.31	ug/l	83
11) 1,1,2-Trichloro-1,2,2-trif	8.35	151	100777	1.95	ug/l	99
12) Acetone	8.43	43	78079	9.68	ug/l	91
13) 1,1-Dichloroethene	8.73	61	224846	1.95	ug/l	99
14) tert-Butyl alcohol	8.82	59	120769	45.40	ug/l	90
15) Acetonitrile	8.96	41	74619	20.03	ug/l	87
16) Methyl acetate	9.30	43	50435	2.11	ug/l	87
17) Iodomethane	9.36	142	197728	1.94	ug/l	100
18) Methylene chloride	9.63	49	189009	2.00	ug/l	99
19) Carbon disulfide	9.73	76	522272	1.91	ug/l	100
20) Acrylonitrile	9.83	53	96885	9.42	ug/l	98
21) tert-Butyl methyl ether (M	9.86	73	206280	2.04	ug/l	99
22) trans-1,2-Dichloroethene	10.16	96	160280	2.03	ug/l	99
24) Isopropyl ether (DIPE)	10.63	45	464309	1.97	ug/l	98
25) Vinyl acetate	10.84	43	156728	2.07	ug/l	95
26) 1,1-Dichloroethane	10.89	63	244648	2.03	ug/l	100
27) 2-Butanol	11.20	45	125035	45.20	ug/l	99
28) tert-Butyl ethyl ether (ET	11.32	59	299603	1.92	ug/l	100
29) 2-Butanone	11.55	72	26921	9.15	ug/l	74

(#) = qualifier out of range (m) = manual integration SA 4/16/20
RDD103.D VO94D14.M Wed Apr 15 18:05:09 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD103.D Vial: 5
Acq On : 14 Apr 2020 8:05 pm Operator: VLu
Sample : VO94D144 Inst : 94
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:35 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30)	2,2-Dichloropropane	11.83	77	110280	2.14	ug/l	100
31)	cis-1,2-Dichloroethene	11.92	96	155668	2.04	ug/l	100
32)	Chloroform	12.19	83	216930	2.07	ug/l	99
33)	tert-Amyl alcohol	12.36	59	19558	8.83	ug/l	98
34)	Bromochloromethane	12.48	130	67315	2.05	ug/l	98
35)	Tetrahydrofuran	12.51	42	16932	2.05	ug/l	94
37)	1,1,1-Trichloroethane	12.83	97	150511	2.09	ug/l	98
38)	2,2,4-Trimethylpentane	12.86	57	691453	2.12	ug/l	100
39)	Cyclohexane	12.89	84	242573	2.01	ug/l	98
40)	1,1-Dichloropropene	13.08	110	69518	2.10	ug/l	100
41)	tert-Amyl methyl ether (TA	13.18	73	239535	2.00	ug/l	100
42)	Carbon tetrachloride	13.27	119	113289	2.02	ug/l	100
44)	1,2-Dichloroethane	13.48	62	84992	2.05	ug/l	98
45)	Benzene	13.54	78	532374	2.11	ug/l	99
46)	Trichloroethene	14.46	130	139055	1.96	ug/l	99
47)	Methylcyclohexane	14.56	83	254285	1.93	ug/l	98
48)	1,2-Dichloropropane	14.73	63	117864	2.01	ug/l	98
49)	1,4-Dioxane	15.09	88	8441	35.17	ug/l	75
50)	Bromodichloromethane	15.11	83	121766	1.97	ug/l	94
51)	Dibromomethane	15.22	93	47596	2.02	ug/l	99
52)	2-Chloroethyl vinyl ether	15.44	63	34869	1.91	ug/l	97
53)	4-Methyl-2-pentanone	15.49	43	274158	9.23	ug/l	99
54)	cis-1,3-Dichloropropene	15.90	75	153227	1.96	ug/l	97
57)	Toluene	16.43	91	526258	2.17	ug/l	99
58)	Ethyl methacrylate	16.50	69	74785	2.03	ug/l	90
59)	trans-1,3-Dichloropropene	16.63	75	112154	2.09	ug/l	96
60)	2-Hexanone	16.81	43	176530	10.00	ug/l	97
61)	1,1,2-Trichloroethane	16.91	97	67684	2.10	ug/l	99
62)	1,3-Dichloropropane	17.29	76	122059	2.09	ug/l	97
63)	Tetrachloroethene	17.47	164	109815	2.09	ug/l	99
64)	Dibromochloromethane	17.81	129	67876	1.99	ug/l	99
65)	1,2-Dibromoethane	18.12	107	57601	2.05	ug/l	100
66)	1-Chlorohexane	18.19	91	206083	2.07	ug/l	99
67)	Chlorobenzene	18.75	112	290028	2.09	ug/l	98
68)	Ethylbenzene	18.76	91	571002	2.13	ug/l	99
69)	1,1,1,2-Tetrachloroethane	18.78	131	89859	2.10	ug/l	99
70)	m-Xylene & p-Xylene	18.86	91	800136	4.32	ug/l	98
71)	o-Xylene	19.57	91	383964	2.07	ug/l	100
72)	Styrene	19.61	104	289469	2.08	ug/l	99
73)	Isopropylbenzene	20.09	105	485476	2.09	ug/l	99
75)	Bromoform	20.26	173	30500	1.89	ug/l	98

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD103.D VO94D14.M Wed Apr 15 18:05:09 2020 Page 2

Data File : D:\HPCHEM\1\DATA\20D14\RDD103.D Vial: 5
Acq On : 14 Apr 2020 8:05 pm Operator: VLu
Sample : VO94D144 Inst : 94
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:35 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	71188	2.02 ug/l	99
78)	1,2,3-Trichloropropane	20.60	110	15315	2.01 ug/l	99
79)	trans-1,4-Dichloro-2-buten	20.64	53	11534	1.86 ug/l	92
80)	n-Propylbenzene	20.72	91	602739	2.10 ug/l	100
81)	Bromobenzene	20.91	156	98744	2.03 ug/l	97
82)	1,3,5-Trimethylbenzene	20.94	105	351819	2.09 ug/l	98
83)	2-Chlorotoluene	21.07	91	369644	2.15 ug/l	98
84)	4-Chlorotoluene	21.11	91	263911	2.11 ug/l	98
85)	tert-Butylbenzene	21.51	134	85414	2.07 ug/l	92
86)	1,2,4-Trimethylbenzene	21.58	105	331621	2.11 ug/l	99
87)	sec-Butylbenzene	21.83	105	503102	2.10 ug/l	100
88)	p-Isopropyltoluene	21.99	119	360389	2.09 ug/l	99
89)	1,3-Dichlorobenzene	22.23	146	188389	2.05 ug/l	98
90)	1,4-Dichlorobenzene	22.38	146	177965	2.07 ug/l	98
91)	n-Butylbenzene	22.57	91	363664	2.13 ug/l	97
92)	1,2-Dichlorobenzene	22.90	146	152799	2.03 ug/l	97
93)	1,2-Dibromo-3-chloropropan	24.01	157	8088	1.82 ug/l	93
94)	1,2,4-Trichlorobenzene	25.37	180	80463	1.80 ug/l	99
95)	Hexachlorobutadiene	25.55	225	56589	1.90 ug/l	100
96)	Naphthalene	25.85	128	112448	1.75 ug/l	100
97)	1,2,3-Trichlorobenzene	26.27	180	61625	1.78 ug/l	100

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(#) = qualifier out of range (m) = manual integration
RDD103.D VO94D14.M Wed Apr 15 18:05:10 2020 Page 3

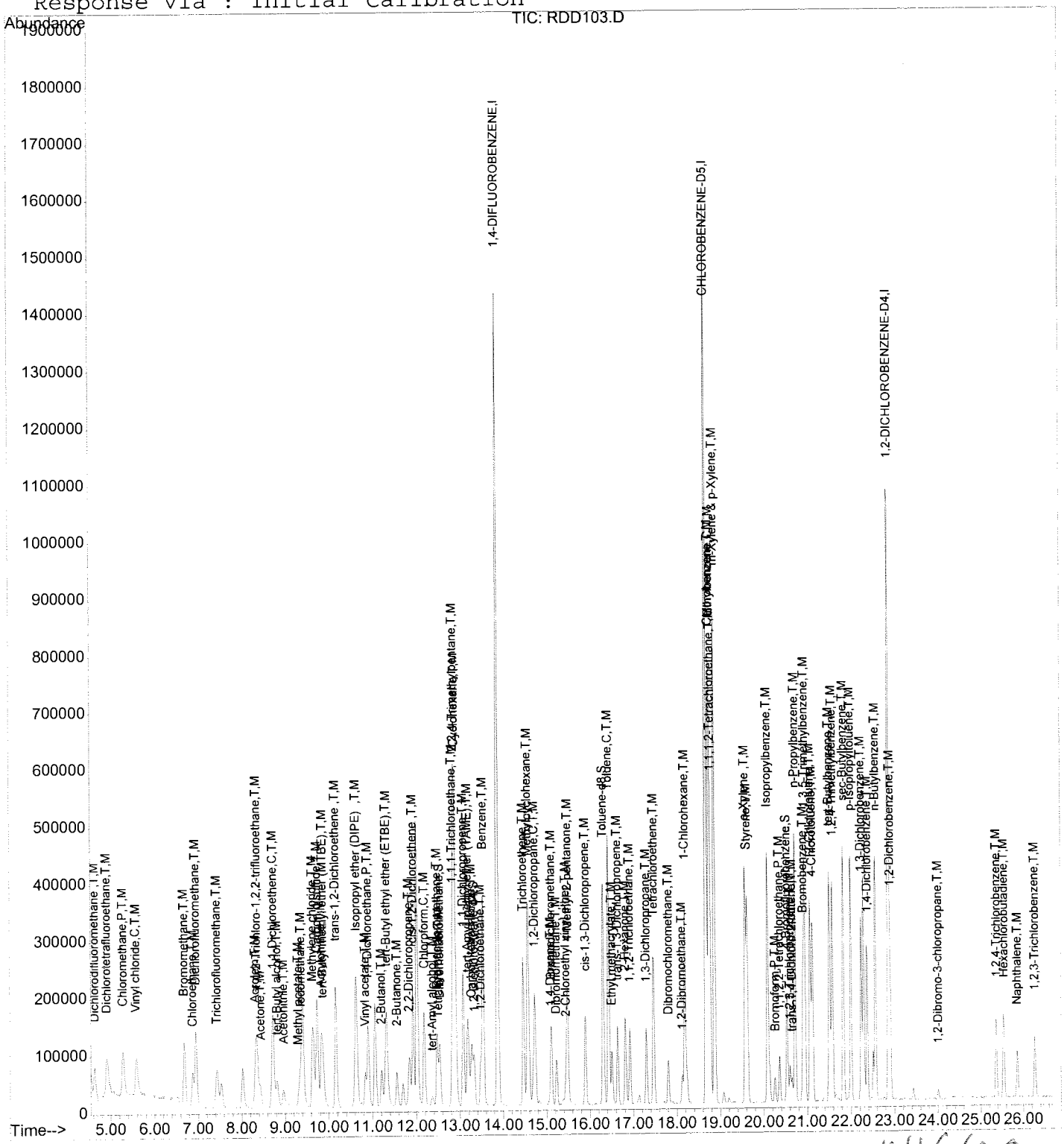
Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD103.D
Acq On : 14 Apr 2020 8:05 pm
Sample : VO94D144
Misc : 2.0ppb 8260/10ppb KET-AA/50ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 15 16:35 2020

Vial: 5
Operator: VLu
Inst : 94
Multiplr: 1.00

Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Sa 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD104.D Vial: 6
Acq On : 14 Apr 2020 8:36 pm Operator: VLu
Sample : VO94D145 Inst : 94
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:38 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1709561	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1403867	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.86	152	470778	10.00	ug/l	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	249666	5.03	ug/l	0.00
Spiked Amount 10.000			Recovery =	50.30%		
43) 1,2-Dichloroethane-d4	13.32	65	169879	5.08	ug/l	0.00
Spiked Amount 10.000			Recovery =	50.80%		
56) Toluene-d8	16.30	98	1022637	5.14	ug/l	0.00
Spiked Amount 10.000			Recovery =	51.40%		
77) 4-Bromofluorobenzene	20.53	95	275665	5.00	ug/l	0.00
Spiked Amount 10.000			Recovery =	50.00%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.63	85	309635	4.53	ug/l	100
3) Dichlorotetrafluoroethane	4.91	85	394444	4.70	ug/l	97
4) Chloromethane	5.28	50	512148	4.44	ug/l	98
5) Vinyl chloride	5.57	62	447837	5.18	ug/l	99
6) Bromomethane	6.66	94	389810	4.86	ug/l	100
7) Chloroethane	6.85	64	308971	4.63	ug/l	99
8) Dichlorofluoromethane	6.93	67	611919	4.70	ug/l	100
9) Trichlorofluoromethane	7.42	101	408741	4.70	ug/l	99
10) Acrolein	8.30	56	125312	25.24	ug/l	92
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	236948	4.79	ug/l	99
12) Acetone	8.42	43	189666	24.61	ug/l	98
13) 1,1-Dichloroethene	8.70	61	533092	4.84	ug/l	99
14) tert-Butyl alcohol	8.80	59	321031	126.36	ug/l	99
15) Acetonitrile	8.95	41	168622	47.40	ug/l	84
16) Methyl acetate	9.29	43	116174	5.09	ug/l	94
17) Iodomethane	9.35	142	471261	4.84	ug/l	100
18) Methylene chloride	9.61	49	431763	4.78	ug/l	99
19) Carbon disulfide	9.71	76	1358484	5.21	ug/l	100
20) Acrylonitrile	9.82	53	250671	25.52	ug/l	99
21) tert-Butyl methyl ether (M	9.85	73	489051	5.05	ug/l	100
22) trans-1,2-Dichloroethene	10.14	96	377175	5.01	ug/l	100
24) Isopropyl ether (DIPE)	10.61	45	1175736	5.23	ug/l	100
25) Vinyl acetate	10.82	43	376460	5.20	ug/l	100
26) 1,1-Dichloroethane	10.88	63	582294	5.05	ug/l	100
27) 2-Butanol	11.19	45	341322	129.18	ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	741042	4.96	ug/l	100
29) 2-Butanone	11.54	72	70898	25.23	ug/l	83

(#) = qualifier out of range (m) = manual integration
RDD104.D VO94D14.M Wed Apr 15 18:05:19 2020 Sn 4/16/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD104.D Vial: 6
Acq On : 14 Apr 2020 8:36 pm Operator: VLu
Sample : VO94D145 Inst : 94
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:38 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30)	2,2-Dichloropropane	11.83	77	248154	5.04 ug/l	99
31)	cis-1,2-Dichloroethene	11.91	96	368396	5.05 ug/l	99
32)	Chloroform	12.17	83	508805	5.08 ug/l	100
33)	tert-Amyl alcohol	12.35	59	55913	26.43 ug/l	99
34)	Bromochloromethane	12.46	130	155865	4.97 ug/l	99
35)	Tetrahydrofuran	12.49	42	39726	5.04 ug/l	96
37)	1,1,1-Trichloroethane	12.83	97	343212	5.00 ug/l	99
38)	2,2,4-Trimethylpentane	12.86	57	1678936	5.39 ug/l	99
39)	Cyclohexane	12.88	84	593607	5.14 ug/l	99
40)	1,1-Dichloropropene	13.07	110	161856	5.12 ug/l	99
41)	tert-Amyl methyl ether (TA	13.17	73	560652	4.90 ug/l	100
42)	Carbon tetrachloride	13.26	119	267906	5.01 ug/l	100
44)	1,2-Dichloroethane	13.46	62	200353	5.05 ug/l	97
45)	Benzene	13.52	78	1220427	5.06 ug/l	99
46)	Trichloroethene	14.46	130	326144	4.82 ug/l	100
47)	Methylcyclohexane	14.56	83	635078	5.04 ug/l	99
48)	1,2-Dichloropropane	14.72	63	276887	4.93 ug/l	99
49)	1,4-Dioxane	15.08	88	20965	91.46 ug/l	93
50)	Bromodichloromethane	15.11	83	283137	4.80 ug/l	99
51)	Dibromomethane	15.22	93	111294	4.95 ug/l	99
52)	2-Chloroethyl vinyl ether	15.44	63	85547	4.89 ug/l	96
53)	4-Methyl-2-pentanone	15.47	43	734064	25.88 ug/l	99
54)	cis-1,3-Dichloropropene	15.88	75	362067	4.86 ug/l	99
57)	Toluene	16.43	91	1213655	5.06 ug/l	100
58)	Ethyl methacrylate	16.50	69	183158	5.01 ug/l	98
59)	trans-1,3-Dichloropropene	16.63	75	264063	4.97 ug/l	98
60)	2-Hexanone	16.81	43	439358	25.14 ug/l	98
61)	1,1,2-Trichloroethane	16.91	97	158016	4.94 ug/l	100
62)	1,3-Dichloropropane	17.29	76	285287	4.93 ug/l	98
63)	Tetrachloroethene	17.45	164	254048	4.89 ug/l	100
64)	Dibromochloromethane	17.79	129	166298	4.92 ug/l	99
65)	1,2-Dibromoethane	18.12	107	138753	4.99 ug/l	100
66)	1-Chlorohexane	18.19	91	488257	4.95 ug/l	100
67)	Chlorobenzene	18.73	112	678804	4.95 ug/l	100
68)	Ethylbenzene	18.76	91	1319818	4.98 ug/l	99
69)	1,1,1,2-Tetrachloroethane	18.78	131	208138	4.92 ug/l	99
70)	m-Xylene & p-Xylene	18.86	91	1860374	10.16 ug/l	99
71)	o-Xylene	19.57	91	913893	4.97 ug/l	100
72)	Styrene	19.61	104	682658	4.96 ug/l	100
73)	Isopropylbenzene	20.09	105	1143493	4.97 ug/l	99
75)	Bromoform	20.26	173	77656	4.90 ug/l	99

(#) = qualifier out of range (m) = manual integration 4/16/20
RDD104.D VO94D14.M Wed Apr 15 18:05:19 2020 Page 2

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD104.D Vial: 6
Acq On : 14 Apr 2020 8:36 pm Operator: VLu
Sample : VO94D145 Inst : 94
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:38 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	171057	4.96	ug/l	100
78)	1,2,3-Trichloropropane	20.60	110	36326	4.86	ug/l	97
79)	trans-1,4-Dichloro-2-buten	20.64	53	30091	4.95	ug/l	98
80)	n-Propylbenzene	20.72	91	1411173	5.02	ug/l	100
81)	Bromobenzene	20.91	156	231935	4.86	ug/l	100
82)	1,3,5-Trimethylbenzene	20.94	105	837119	5.08	ug/l	98
83)	2-Chlorotoluene	21.07	91	898728	5.34	ug/l	100
84)	4-Chlorotoluene	21.11	91	589644	4.81	ug/l	99
85)	tert-Butylbenzene	21.51	134	199172	4.94	ug/l	97
86)	1,2,4-Trimethylbenzene	21.58	105	767864	4.98	ug/l	100
87)	sec-Butylbenzene	21.83	105	1192766	5.08	ug/l	100
88)	p-Isopropyltoluene	21.99	119	873995	5.19	ug/l	99
89)	1,3-Dichlorobenzene	22.23	146	449375	5.00	ug/l	99
90)	1,4-Dichlorobenzene	22.36	146	417180	4.95	ug/l	100
91)	n-Butylbenzene	22.57	91	847686	5.06	ug/l	99
92)	1,2-Dichlorobenzene	22.90	146	358359	4.85	ug/l	100
93)	1,2-Dibromo-3-chloropropan	24.00	157	20377	4.67	ug/l	97
94)	1,2,4-Trichlorobenzene	25.37	180	198060	4.52	ug/l	100
95)	Hexachlorobutadiene	25.55	225	139958	4.81	ug/l	100
96)	Naphthalene	25.85	128	282061	4.48	ug/l	99
97)	1,2,3-Trichlorobenzene	26.27	180	156768	4.63	ug/l	99

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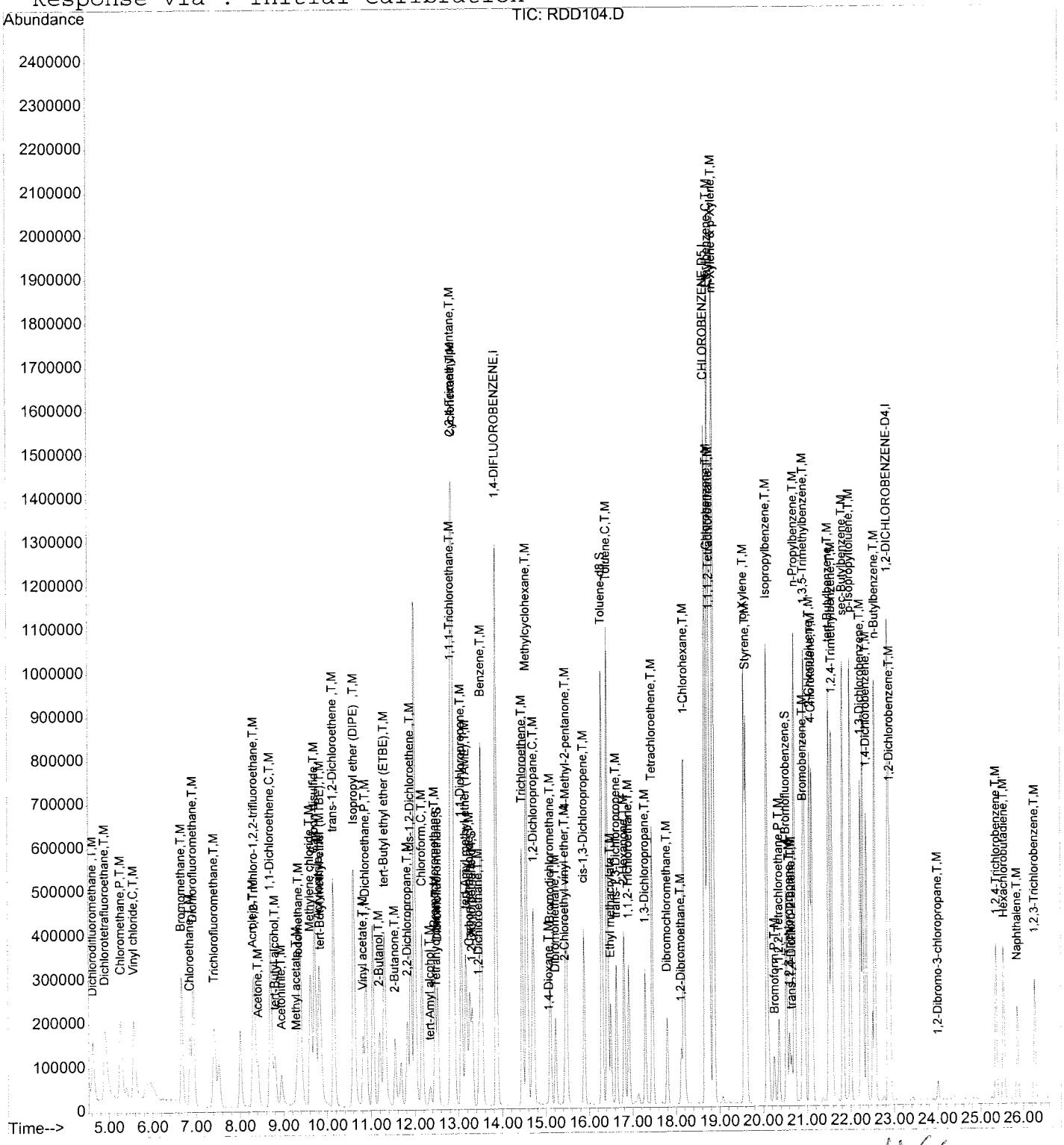
(#) = qualifier out of range (m) = manual integration
RDD104.D VO94D14.M Wed Apr 15 18:05:20 2020 Page 3

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD104.D Vial: 6
Acq On : 14 Apr 2020 8:36 pm Operator: VLu
Sample : VO94D145 Inst : 94
Misc : 5.0ppb 8260/25ppb KET-AA/125ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:38 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD105.D Vial: 7
Acq On : 14 Apr 2020 9:08 pm Operator: VLu
Sample : VO94D146 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:42 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1514502	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1277044	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.86	152	452860	10.00	ug/l	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	461405	10.49	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.90%		
43) 1,2-Dichloroethane-d4	13.32	65	310068	10.47	ug/l	0.00
Spiked Amount 10.000			Recovery =	104.70%		
56) Toluene-d8	16.30	98	1908000	10.54	ug/l	0.00
Spiked Amount 10.000			Recovery =	105.40%		
77) 4-Bromofluorobenzene	20.53	95	540275	10.19	ug/l	0.00
Spiked Amount 10.000			Recovery =	101.90%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.61	85	598861	9.89	ug/l	100
3) Dichlorotetrafluoroethane	4.91	85	747047	10.04	ug/l	100
4) Chloromethane	5.26	50	1001683	9.49	ug/l	100
5) Vinyl chloride	5.57	62	847587	11.06	ug/l	100
6) Bromomethane	6.66	94	752864	10.60	ug/l	100
7) Chloroethane	6.86	64	597498	9.82	ug/l	100
8) Dichlorofluoromethane	6.93	67	1211744	10.50	ug/l	100
9) Trichlorofluoromethane	7.42	101	794742	10.04	ug/l	100
10) Acrolein	8.30	56	228569	51.97	ug/l	100
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	458452	10.47	ug/l	100
12) Acetone	8.42	43	326844	47.87	ug/l	100
13) 1,1-Dichloroethene	8.70	61	1044805	10.71	ug/l	100
14) tert-Butyl alcohol	8.80	59	586705	260.67	ug/l	100
15) Acetonitrile	8.95	41	310942	98.66	ug/l	100
16) Methyl acetate	9.29	43	201011	9.94	ug/l	100
17) Iodomethane	9.35	142	897075	10.40	ug/l	100
18) Methylene chloride	9.63	49	785750	9.82	ug/l	100
19) Carbon disulfide	9.72	76	2621641	11.36	ug/l	100
20) Acrylonitrile	9.82	53	457856	52.61	ug/l	100
21) tert-Butyl methyl ether (M	9.85	73	883412	10.31	ug/l	100
22) trans-1,2-Dichloroethene	10.14	96	689023	10.33	ug/l	100
24) Isopropyl ether (DIPE)	10.61	45	2077002	10.43	ug/l	100
25) Vinyl acetate	10.82	43	668883	10.44	ug/l	100
26) 1,1-Dichloroethane	10.89	63	1044781	10.23	ug/l	100
27) 2-Butanol	11.19	45	610386	260.77	ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	1290112	9.75	ug/l	100
29) 2-Butanone	11.54	72	123321	49.54	ug/l	100

(#) = qualifier out of range (m) = manual integration
RDD105.D VO94D14.M Wed Apr 15 18:05:29 2020 Page 1

SA 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD105.D Vial: 7
Acq On : 14 Apr 2020 9:08 pm Operator: VLu
Sample : VO94D146 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:42 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) 2,2-Dichloropropane	11.83	77	435462	9.99 ug/l	100
31) cis-1,2-Dichloroethene	11.91	96	654496	10.12 ug/l	100
32) Chloroform	12.17	83	889282	10.01 ug/l	100
33) tert-Amyl alcohol	12.35	59	99768	53.23 ug/l	100
34) Bromochloromethane	12.46	130	276186	9.94 ug/l	100
35) Tetrahydrofuran	12.49	42	69137	9.91 ug/l	100
37) 1,1,1-Trichloroethane	12.83	97	618982	10.18 ug/l	100
38) 2,2,4-Trimethylpentane	12.86	57	3087833	11.20 ug/l	100
39) Cyclohexane	12.88	84	1079962	10.56 ug/l	100
40) 1,1-Dichloropropene	13.07	110	284906	10.17 ug/l	100
41) tert-Amyl methyl ether (TA	13.17	73	957899	9.46 ug/l	100
42) Carbon tetrachloride	13.26	119	487355	10.29 ug/l	100
44) 1,2-Dichloroethane	13.46	62	351073	9.98 ug/l	100
45) Benzene	13.52	78	2135633	10.00 ug/l	100
46) Trichloroethene	14.46	130	592182	9.88 ug/l	100
47) Methylcyclohexane	14.56	83	1148299	10.28 ug/l	100
48) 1,2-Dichloropropane	14.72	63	491278	9.88 ug/l	100
49) 1,4-Dioxane	15.08	88	39946	196.71 ug/l	100
50) Bromodichloromethane	15.11	83	516219	9.88 ug/l	100
51) Dibromomethane	15.22	93	198926	9.98 ug/l	100
52) 2-Chloroethyl vinyl ether	15.44	63	153623	9.92 ug/l	100
53) 4-Methyl-2-pentanone	15.47	43	1271211	50.58 ug/l	100
54) cis-1,3-Dichloropropene	15.88	75	665327	10.08 ug/l	100
57) Toluene	16.43	91	2180889	9.99 ug/l	100
58) Ethyl methacrylate	16.50	69	333567	10.04 ug/l	100
59) trans-1,3-Dichloropropene	16.63	75	487817	10.09 ug/l	100
60) 2-Hexanone	16.81	43	785238	49.39 ug/l	100
61) 1,1,2-Trichloroethane	16.91	97	281808	9.69 ug/l	100
62) 1,3-Dichloropropane	17.29	76	522367	9.92 ug/l	100
63) Tetrachloroethene	17.45	164	460263	9.74 ug/l	100
64) Dibromochloromethane	17.79	129	309715	10.07 ug/l	100
65) 1,2-Dibromoethane	18.12	107	250120	9.89 ug/l	100
66) 1-Chlorohexane	18.19	91	914100	10.19 ug/l	100
67) Chlorobenzene	18.73	112	1255249	10.06 ug/l	100
68) Ethylbenzene	18.76	91	2420527	10.04 ug/l	100
69) 1,1,1,2-Tetrachloroethane	18.78	131	387049	10.06 ug/l	100
70) m-Xylene & p-Xylene	18.86	91	3333488	20.01 ug/l	100
71) o-Xylene	19.57	91	1664401	9.96 ug/l	100
72) Styrene	19.61	104	1254859	10.03 ug/l	100
73) Isopropylbenzene	20.09	105	2104264	10.05 ug/l	100
75) Bromoform	20.26	173	147187	9.66 ug/l	100

(#) = qualifier out of range (m) = manual integration

SA 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD105.D
Acq On : 14 Apr 2020 9:08 pm
Sample : VO94D146
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 15 16:42 2020

Vial: 7
Operator: VLu
Inst : 94
Multiplr: 1.00
Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	312513	9.42	ug/l	100
78)	1,2,3-Trichloropropane	20.60	110	71022	9.87	ug/l	100
79)	trans-1,4-Dichloro-2-buten	20.64	53	55751	9.54	ug/l	100
80)	n-Propylbenzene	20.72	91	2646226	9.78	ug/l	100
81)	Bromobenzene	20.91	156	439589	9.57	ug/l	100
82)	1,3,5-Trimethylbenzene	20.94	105	1549675	9.78	ug/l	100
83)	2-Chlorotoluene	21.07	91	1647831	10.17	ug/l	100
84)	4-Chlorotoluene	21.11	91	1090136	9.24	ug/l	100
85)	tert-Butylbenzene	21.51	134	377481	9.73	ug/l	100
86)	1,2,4-Trimethylbenzene	21.58	105	1442711	9.73	ug/l	100
87)	sec-Butylbenzene	21.83	105	2235622	9.90	ug/l	100
88)	p-Isopropyltoluene	21.99	119	1651107	10.18	ug/l	100
89)	1,3-Dichlorobenzene	22.23	146	850152	9.82	ug/l	100
90)	1,4-Dichlorobenzene	22.36	146	786745	9.70	ug/l	100
91)	n-Butylbenzene	22.55	91	1617169	10.04	ug/l	100
92)	1,2-Dichlorobenzene	22.90	146	701586	9.87	ug/l	100
93)	1,2-Dibromo-3-chloropropan	24.00	157	41001	9.77	ug/l	100
94)	1,2,4-Trichlorobenzene	25.36	180	424924	10.07	ug/l	100
95)	Hexachlorobutadiene	25.53	225	291804	10.41	ug/l	100
96)	Naphthalene	25.85	128	609286	10.06	ug/l	100
97)	1,2,3-Trichlorobenzene	26.27	180	333878	10.24	ug/l	100

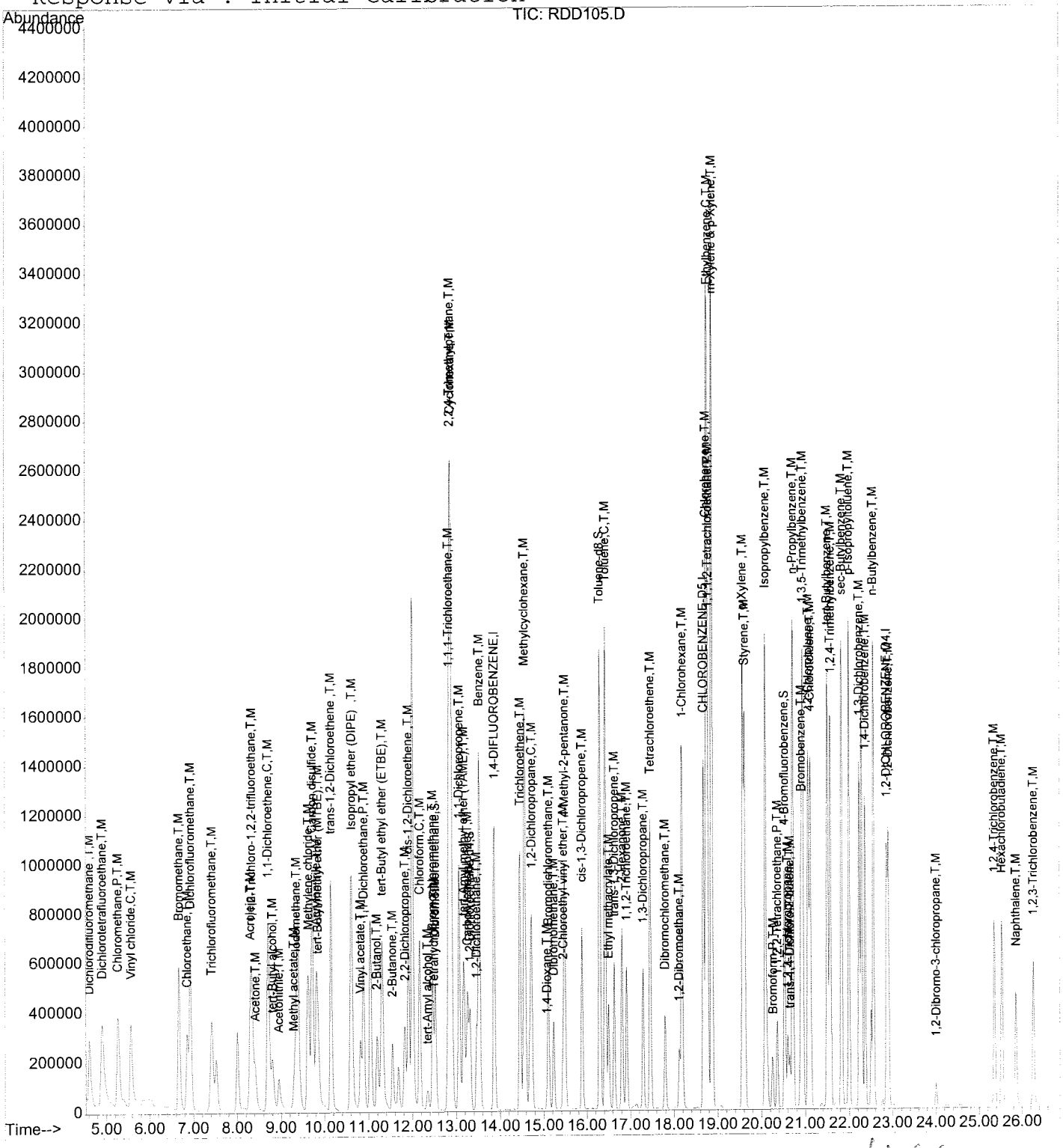
Su 4/16/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD105.D Vial: 7
Acq On : 14 Apr 2020 9:08 pm Operator: VLu
Sample : VO94D146 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:42 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Sa 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD106.D Vial: 8
Acq On : 14 Apr 2020 9:39 pm Operator: VLu
Sample : VO94D147 Inst : 94
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:45 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1393391	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1213977	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.86	152	420894	10.00	ug/l	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	838208	20.71	ug/l	0.00
Spiked Amount 10.000			Recovery =	207.10%		
43) 1,2-Dichloroethane-d4	13.32	65	550941	20.21	ug/l	0.00
Spiked Amount 10.000			Recovery =	202.10%		
56) Toluene-d8	16.30	98	3450108	20.05	ug/l	0.00
Spiked Amount 10.000			Recovery =	200.50%		
77) 4-Bromofluorobenzene	20.53	95	981394	19.93	ug/l	0.00
Spiked Amount 10.000			Recovery =	199.30%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.62	85	1219754	21.89	ug/l	95
3) Dichlorotetrafluoroethane	4.91	85	1441421	21.05	ug/l	99
4) Chloromethane	5.27	50	2007325	20.34	ug/l	99
5) Vinyl chloride	5.56	62	1567951	22.24	ug/l	98
6) Bromomethane	6.67	94	1467968	22.46	ug/l	99
7) Chloroethane	6.86	64	1165252	20.55	ug/l	88
8) Dichlorofluoromethane	6.93	67	2381792	22.42	ug/l	99
9) Trichlorofluoromethane	7.42	101	1530251	20.78	ug/l	99
10) Acrolein	8.29	56	451474	111.57	ug/l	91
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	888274	22.04	ug/l	100
12) Acetone	8.41	43	646620	102.94	ug/l	99
13) 1,1-Dichloroethene	8.70	61	2016321	22.47	ug/l	99
14) tert-Butyl alcohol	8.80	59	1176194	568.00	ug/l	98
15) Acetonitrile	8.95	41	615223	212.18	ug/l	93
16) Methyl acetate	9.29	43	367642	19.75	ug/l	100
17) Iodomethane	9.35	142	1734346	21.85	ug/l	100
18) Methylene chloride	9.62	49	1525449	20.72	ug/l	100
19) Carbon disulfide	9.72	76	4671435	22.00	ug/l	100
20) Acrylonitrile	9.81	53	893975	111.65	ug/l	99
21) tert-Butyl methyl ether (M	9.85	73	1708670	21.67	ug/l	100
22) trans-1,2-Dichloroethene	10.15	96	1319473	21.49	ug/l	99
24) Isopropyl ether (DIPE)	10.61	45	3951628	21.57	ug/l	97
25) Vinyl acetate	10.82	43	1281861	21.74	ug/l	99
26) 1,1-Dichloroethane	10.88	63	2000084	21.28	ug/l	99
27) 2-Butanol	11.19	45	1146134	532.22	ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	2448970	20.12	ug/l	99
29) 2-Butanone	11.54	72	239312	104.48	ug/l	95

(#) = qualifier out of range (m) = manual integration
RDD106.D VO94D14.M Wed Apr 15 18:05:42 2020 Su 4/16/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD106.D Vial: 8
Acq On : 14 Apr 2020 9:39 pm Operator: VLu
Sample : VO94D147 Inst : 94
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:45 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) 2,2-Dichloropropane	11.83	77	812926	20.27 ug/l	98
31) cis-1,2-Dichloroethene	11.91	96	1252277	21.04 ug/l	99
32) Chloroform	12.17	83	1682104	20.59 ug/l	99
33) tert-Amyl alcohol	12.35	59	179820	104.27 ug/l	100
34) Bromochloromethane	12.46	130	536622	21.00 ug/l	99
35) Tetrahydrofuran	12.49	42	132495	20.64 ug/l	97
37) 1,1,1-Trichloroethane	12.83	97	1159716	20.72 ug/l	98
38) 2,2,4-Trimethylpentane	12.86	57	5234036	20.63 ug/l	100
39) Cyclohexane	12.88	84	1910864	20.31 ug/l	100
40) 1,1-Dichloropropene	13.07	110	535721	20.78 ug/l	99
41) tert-Amyl methyl ether (TA	13.17	73	1845094	19.80 ug/l	100
42) Carbon tetrachloride	13.26	119	941090	21.59 ug/l	100
44) 1,2-Dichloroethane	13.46	62	679025	20.99 ug/l	99
45) Benzene	13.52	78	4010036	20.40 ug/l	100
46) Trichloroethene	14.46	130	1156530	20.97 ug/l	100
47) Methylcyclohexane	14.56	83	2077997	20.23 ug/l	99
48) 1,2-Dichloropropane	14.73	63	960201	20.99 ug/l	99
49) 1,4-Dioxane	15.08	88	81367	435.51 ug/l	99
50) Bromodichloromethane	15.11	83	1019419	21.22 ug/l	99
51) Dibromomethane	15.22	93	388208	21.18 ug/l	99
52) 2-Chloroethyl vinyl ether	15.44	63	308747	21.67 ug/l	98
53) 4-Methyl-2-pentanone	15.47	43	2519488	108.97 ug/l	100
54) cis-1,3-Dichloropropene	15.88	75	1324770	21.81 ug/l	100
57) Toluene	16.43	91	4149680	19.99 ug/l	99
58) Ethyl methacrylate	16.50	69	668053	21.14 ug/l	97
59) trans-1,3-Dichloropropene	16.63	75	967676	21.06 ug/l	99
60) 2-Hexanone	16.81	43	1551668	102.66 ug/l	100
61) 1,1,2-Trichloroethane	16.91	97	553423	20.02 ug/l	99
62) 1,3-Dichloropropane	17.29	76	1035251	20.68 ug/l	100
63) Tetrachloroethene	17.46	164	902510	20.10 ug/l	100
64) Dibromochloromethane	17.79	129	627021	21.44 ug/l	100
65) 1,2-Dibromoethane	18.12	107	502327	20.90 ug/l	99
66) 1-Chlorohexane	18.19	91	1754285	20.58 ug/l	99
67) Chlorobenzene	18.73	112	2448606	20.64 ug/l	99
68) Ethylbenzene	18.76	91	4612091	20.11 ug/l	98
69) 1,1,1,2-Tetrachloroethane	18.78	131	763710	20.88 ug/l	99
70) m-Xylene & p-Xylene	18.86	91	6187790	39.07 ug/l	99
71) o-Xylene	19.57	91	3200232	20.14 ug/l	99
72) Styrene	19.61	104	2445785	20.57 ug/l	100
73) Isopropylbenzene	20.09	105	4043728	20.31 ug/l	99
75) Bromoform	20.25	173	298439	21.07 ug/l	99

(#) = qualifier out of range (m) = manual integration
Su 4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD106.D Vial: 8
Acq On : 14 Apr 2020 9:39 pm Operator: VLu
Sample : VO94D147 Inst : 94
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:45 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

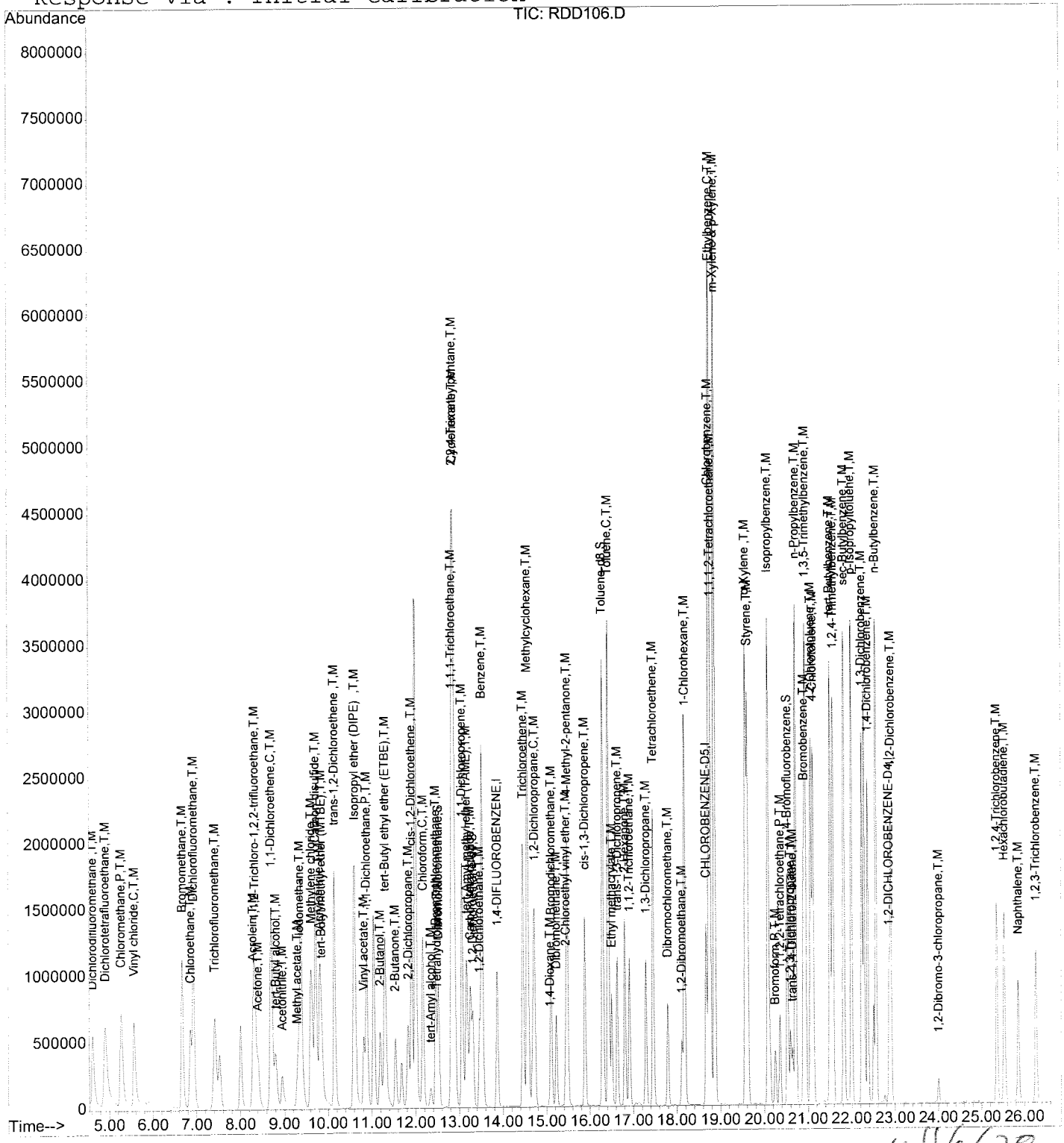
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76) 1,1,2,2-Tetrachloroethane	20.36	83	613599	19.91 ug/l	99
78) 1,2,3-Trichloropropane	20.60	110	136590	20.42 ug/l	98
79) trans-1,4-Dichloro-2-buten	20.64	53	112576	20.73 ug/l	100
80) n-Propylbenzene	20.72	91	5011586	19.94 ug/l	99
81) Bromobenzene	20.91	156	866127	20.30 ug/l	99
82) 1,3,5-Trimethylbenzene	20.94	105	2946144	20.00 ug/l	100
83) 2-Chlorotoluene	21.07	91	2601746	17.28 ug/l	86
84) 4-Chlorotoluene	21.11	91	2593533	23.65 ug/l	89
85) tert-Butylbenzene	21.51	134	732483	20.31 ug/l	97
86) 1,2,4-Trimethylbenzene	21.58	105	2786135	20.22 ug/l	99
87) sec-Butylbenzene	21.83	105	4202672	20.02 ug/l	99
88) p-Isopropyltoluene	21.99	119	3134947	20.80 ug/l	100
89) 1,3-Dichlorobenzene	22.23	146	1658253	20.62 ug/l	99
90) 1,4-Dichlorobenzene	22.36	146	1549516	20.56 ug/l	100
91) n-Butylbenzene	22.55	91	3114843	20.81 ug/l	99
92) 1,2-Dichlorobenzene	22.90	146	1366212	20.68 ug/l	100
93) 1,2-Dibromo-3-chloropropan	24.00	157	83577	21.43 ug/l	99
94) 1,2,4-Trichlorobenzene	25.35	180	874425	22.30 ug/l	99
95) Hexachlorobutadiene	25.53	225	571694	21.95 ug/l	100
96) Naphthalene	25.85	128	1243684	22.09 ug/l	99
97) 1,2,3-Trichlorobenzene	26.27	180	685340	22.62 ug/l	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD106.D Vial: 8
Acq On : 14 Apr 2020 9:39 pm Operator: VLu
Sample : VO94D147 Inst : 94
Misc : 20ppb 8260/100ppb KET-AA/500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:45 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



Su 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD107.D Vial: 9
Acq On : 14 Apr 2020 10:10 pm Operator: VLu
Sample : VO94D148 Inst : 94
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:48 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1328536	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1157162	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	374364	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	1167095	30.24	ug/l	0.00
Spiked Amount 10.000			Recovery =	302.40%		
43) 1,2-Dichloroethane-d4	13.31	65	764247	29.40	ug/l	0.00
Spiked Amount 10.000			Recovery =	294.00%		
56) Toluene-d8	16.29	98	4868827	29.68	ug/l	0.00
Spiked Amount 10.000			Recovery =	296.80%		
77) 4-Bromofluorobenzene	20.52	95	1333073	30.43	ug/l	0.00
Spiked Amount 10.000			Recovery =	304.30%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.63	85	1748435	32.91	ug/l	96
3) Dichlorotetrafluoroethane	4.91	85	2021836	30.97	ug/l	99
4) Chloromethane	5.26	50	2828083	29.93	ug/l	99
5) Vinyl chloride	5.56	62	2124203	31.60	ug/l	99
6) Bromomethane	6.66	94	2050528	32.90	ug/l	99
7) Chloroethane	6.86	64	1586916	29.24	ug/l	88
8) Dichlorofluoromethane	6.93	67	3271379	32.30	ug/l	98
9) Trichlorofluoromethane	7.42	101	2135576	30.31	ug/l	99
10) Acrolein	8.30	56	614626	159.31	ug/l	90
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	1211954	31.54	ug/l	99
12) Acetone	8.40	43	882471	147.34	ug/l	98
13) 1,1-Dichloroethene	8.70	61	2767060	32.34	ug/l	99
14) tert-Butyl alcohol	8.80	59	1564621	792.46	ug/l	96
15) Acetonitrile	8.95	41	837644	302.98	ug/l	94
16) Methyl acetate	9.29	43	514360	28.99	ug/l	99
17) Iodomethane	9.35	142	2398009	31.69	ug/l	99
18) Methylene chloride	9.61	49	2076344	29.57	ug/l	100
19) Carbon disulfide	9.72	76	6405624	31.63	ug/l	100
20) Acrylonitrile	9.80	53	1229705	161.08	ug/l	98
21) tert-Butyl methyl ether (M	9.85	73	2329938	30.99	ug/l	98
22) trans-1,2-Dichloroethene	10.14	96	1866215	31.88	ug/l	100
24) Isopropyl ether (DIPE)	10.60	45	5490368	31.44	ug/l	96
25) Vinyl acetate	10.82	43	1672226	29.75	ug/l	100
26) 1,1-Dichloroethane	10.88	63	2827009	31.55	ug/l	99
27) 2-Butanol	11.19	45	1522649	741.58	ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	3379243	29.11	ug/l	99
29) 2-Butanone	11.54	72	327257	149.85	ug/l	94

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD107.D VO94D14.M Wed Apr 15 18:05:52 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD107.D
Acq On : 14 Apr 2020 10:10 pm
Sample : VO94D148
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 15 16:48 2020

Vial: 9
Operator: VLu
Inst : 94
Multiplr: 1.00
Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30)	2,2-Dichloropropane	11.83	77	1112103	29.09	ug/l	98
31)	cis-1,2-Dichloroethene	11.91	96	1788749	31.52	ug/l	99
32)	Chloroform	12.17	83	2369069	30.41	ug/l	98
33)	tert-Amyl alcohol	12.35	59	240985	146.56	ug/l	98
34)	Bromochloromethane	12.46	130	755644	31.01	ug/l	100
35)	Tetrahydrofuran	12.49	42	178431	29.15	ug/l	97
37)	1,1,1-Trichloroethane	12.83	97	1641071	30.75	ug/l	98
38)	2,2,4-Trimethylpentane	12.86	57	7225780	29.87	ug/l	100
39)	Cyclohexane	12.87	84	2631858	29.35	ug/l	100
40)	1,1-Dichloropropene	13.07	110	759599	30.90	ug/l	99
41)	tert-Amyl methyl ether (TA	13.17	73	2507449	28.22	ug/l	100
42)	Carbon tetrachloride	13.26	119	1337612	32.19	ug/l	99
44)	1,2-Dichloroethane	13.46	62	942481	30.55	ug/l	99
45)	Benzene	13.52	78	5627213	30.02	ug/l	99
46)	Trichloroethene	14.46	130	1655677	31.49	ug/l	99
47)	Methylcyclohexane	14.56	83	2943929	30.05	ug/l	99
48)	1,2-Dichloropropane	14.72	63	1347059	30.89	ug/l	100
49)	1,4-Dioxane	15.08	88	109924	617.09	ug/l	98
50)	Bromodichloromethane	15.11	83	1459270	31.85	ug/l	99
51)	Dibromomethane	15.22	93	554459	31.72	ug/l	99
52)	2-Chloroethyl vinyl ether	15.44	63	430009	31.65	ug/l	97
53)	4-Methyl-2-pentanone	15.47	43	3389462	153.75	ug/l	100
54)	cis-1,3-Dichloropropene	15.88	75	1886147	32.56	ug/l	99
57)	Toluene	16.43	91	5805866	29.34	ug/l	99
58)	Ethyl methacrylate	16.50	69	908941	30.18	ug/l	97
59)	trans-1,3-Dichloropropene	16.63	75	1347726	30.78	ug/l	100
60)	2-Hexanone	16.81	43	2077712	144.22	ug/l	99
61)	1,1,2-Trichloroethane	16.91	97	763551	28.98	ug/l	100
62)	1,3-Dichloropropane	17.29	76	1437909	30.13	ug/l	100
63)	Tetrachloroethene	17.45	164	1267975	29.62	ug/l	100
64)	Dibromochloromethane	17.79	129	886040	31.79	ug/l	100
65)	1,2-Dibromoethane	18.11	107	705486	30.80	ug/l	99
66)	1-Chlorohexane	18.19	91	2494251	30.70	ug/l	99
67)	Chlorobenzene	18.73	112	3451425	30.52	ug/l	99
68)	Ethylbenzene	18.76	91	6393156	29.25	ug/l	97
69)	1,1,1,2-Tetrachloroethane	18.78	131	1081873	31.03	ug/l	99
70)	m-Xylene & p-Xylene	18.86	91	8558713	56.69	ug/l	98
71)	o-Xylene	19.57	91	4426582	29.22	ug/l	98
72)	Styrene	19.61	104	3408255	30.07	ug/l	99
73)	Isopropylbenzene	20.08	105	5587822	29.44	ug/l	99
75)	Bromoform	20.26	173	413115	32.78	ug/l	98

(#) = qualifier out of range (m) = manual integration

SU 4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD107.D Vial: 9
Acq On : 14 Apr 2020 10:10 pm Operator: VLu
Sample : VO94D148 Inst : 94
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:48 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76) 1,1,2,2-Tetrachloroethane	20.36	83	829722	30.27 ug/l	99
78) 1,2,3-Trichloropropane	20.60	110	185329	31.15 ug/l	98
79) trans-1,4-Dichloro-2-buten	20.64	53	152328	31.54 ug/l	99
80) n-Propylbenzene	20.72	91	6949239	31.08 ug/l	99
81) Bromobenzene	20.91	156	1194955	31.48 ug/l	99
82) 1,3,5-Trimethylbenzene	20.94	105	4004867	30.57 ug/l	99
83) 2-Chlorotoluene	21.07	91	4153820	31.02 ug/l	98
84) 4-Chlorotoluene	21.11	91	2863165	29.35 ug/l	99
85) tert-Butylbenzene	21.51	134	1000237	31.18 ug/l	97
86) 1,2,4-Trimethylbenzene	21.58	105	3733517	30.47 ug/l	98
87) sec-Butylbenzene	21.83	105	5651587	30.27 ug/l	98
88) p-Isopropyltoluene	21.99	119	4143235	30.91 ug/l	99
89) 1,3-Dichlorobenzene	22.23	146	2218546	31.01 ug/l	100
90) 1,4-Dichlorobenzene	22.37	146	2059228	30.72 ug/l	99
91) n-Butylbenzene	22.56	91	4145760	31.14 ug/l	99
92) 1,2-Dichlorobenzene	22.90	146	1805284	30.72 ug/l	99
93) 1,2-Dibromo-3-chloropropan	24.00	157	107994	31.13 ug/l	100
94) 1,2,4-Trichlorobenzene	25.37	180	1152214	33.04 ug/l	99
95) Hexachlorobutadiene	25.53	225	736652	31.80 ug/l	100
96) Naphthalene	25.85	128	1639979	32.75 ug/l	99
97) 1,2,3-Trichlorobenzene	26.26	180	887742	32.95 ug/l	100

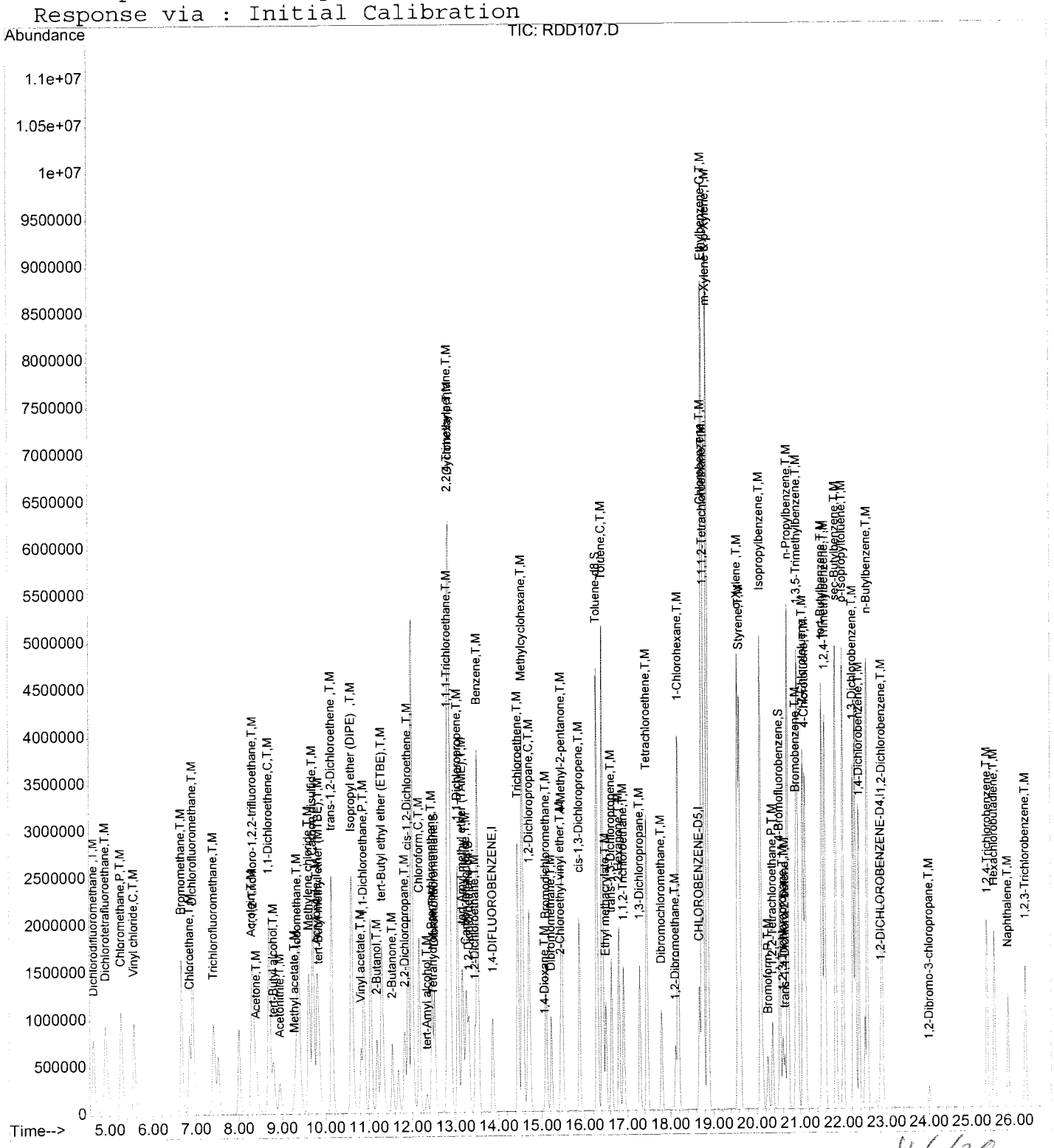
SLL 4/16/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD107.D Vial: 9
Acq On : 14 Apr 2020 10:10 pm Operator: VLu
Sample : VO94D148 Inst : 94
Misc : 30ppb 8260/150ppb KET-AA/750ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:48 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



RDD107.D VO94D14.M Wed Apr 15 18:05:56 2020 Page 4

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD108.D Vial: 10
Acq On : 14 Apr 2020 10:42 pm Operator: VLu
Sample : VO94D149 Inst : 94
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:53 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1256588	10.00	ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1103622	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	367613	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	1839196	50.38	ug/l	0.00
Spiked Amount 10.000			Recovery =	503.80%		
43) 1,2-Dichloroethane-d4	13.32	65	1206584	49.08	ug/l	0.00
Spiked Amount 10.000			Recovery =	490.80%		
56) Toluene-d8	16.30	98	7686098	49.13	ug/l	0.00
Spiked Amount 10.000			Recovery =	491.30%		
77) 4-Bromofluorobenzene	20.53	95	2198670	51.11	ug/l	0.00
Spiked Amount 10.000			Recovery =	511.10%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.62	85	3017882	60.07	ug/l	95
3) Dichlorotetrafluoroethane	4.91	85	3552858	57.54	ug/l	100
4) Chloromethane	5.26	50	4659293	51.94	ug/l	98
5) Vinyl chloride	5.56	62	3314809	52.13	ug/l	100
6) Bromomethane	6.66	94	3446598	58.46	ug/l	98
7) Chloroethane	6.86	64	2724056	52.87	ug/l	99
8) Dichlorofluoromethane	6.93	67	5354494	55.90	ug/l	98
9) Trichlorofluoromethane	7.42	101	3529658	52.80	ug/l	98
10) Acrolein	8.30	56	949956	260.32	ug/l	92
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	2004434	55.16	ug/l	99
12) Acetone	8.42	43	1345264	237.48	ug/l	98
13) 1,1-Dichloroethene	8.70	61	4427108	54.71	ug/l	98
14) tert-Butyl alcohol	8.80	59	2438656	1305.86	ug/l	95
15) Acetonitrile	8.95	41	1330981	509.00	ug/l	96
16) Methyl acetate	9.29	43	802726	47.83	ug/l	99
17) Iodomethane	9.35	142	3819590	53.36	ug/l	99
18) Methylene chloride	9.63	49	3210218	48.34	ug/l	99
19) Carbon disulfide	9.72	76	10278849	53.67	ug/l	99
20) Acrylonitrile	9.80	53	1863936	258.14	ug/l	99
21) tert-Butyl methyl ether (M	9.85	73	3559915	50.06	ug/l	98
22) trans-1,2-Dichloroethene	10.14	96	2839239	51.28	ug/l	99
24) Isopropyl ether (DIPE)	10.61	45	8338643	50.48	ug/l	95
25) Vinyl acetate	10.82	43	2541351	47.80	ug/l	99
26) 1,1-Dichloroethane	10.88	63	4281934	50.52	ug/l	99
27) 2-Butanol	11.19	45	2433527	1253.06	ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	5147359	46.88	ug/l	99
29) 2-Butanone	11.54	72	514624	249.14	ug/l	98

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD108.D VO94D14.M Wed Apr 15 18:06:03 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD108.D Vial: 10
Acq On : 14 Apr 2020 10:42 pm Operator: VLu
Sample : VO94D149 Inst : 94
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:53 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) 2,2-Dichloropropane	11.83	77	1595386	44.12 ug/l	99
31) cis-1,2-Dichloroethene	11.91	96	2747597	51.19 ug/l	98
32) Chloroform	12.17	83	3628894	49.25 ug/l	99
33) tert-Amyl alcohol	12.35	59	385593	247.94 ug/l	99
34) Bromochloromethane	12.46	130	1169027	50.73 ug/l	100
35) Tetrahydrofuran	12.49	42	269392	46.53 ug/l	97
37) 1,1,1-Trichloroethane	12.83	97	2497587	49.49 ug/l	99
38) 2,2,4-Trimethylpentane	12.86	57	11187843	48.90 ug/l	100
39) Cyclohexane	12.87	84	4158488	49.02 ug/l	100
40) 1,1-Dichloropropene	13.07	110	1182888	50.87 ug/l	99
41) tert-Amyl methyl ether (TA	13.17	73	3818506	45.43 ug/l	100
42) Carbon tetrachloride	13.26	119	2096450	53.33 ug/l	99
44) 1,2-Dichloroethane	13.46	62	1429051	48.98 ug/l	99
45) Benzene	13.52	78	8530889	48.12 ug/l	99
46) Trichloroethene	14.46	130	2637368	53.03 ug/l	99
47) Methylcyclohexane	14.56	83	4672421	50.43 ug/l	98
48) 1,2-Dichloropropane	14.72	63	2076247	50.34 ug/l	100
49) 1,4-Dioxane	15.08	88	176763	1049.12 ug/l	100
50) Bromodichloromethane	15.11	83	2282811	52.69 ug/l	99
51) Dibromomethane	15.22	93	858564	51.93 ug/l	99
52) 2-Chloroethyl vinyl ether	15.44	63	680014	52.92 ug/l	97
53) 4-Methyl-2-pentanone	15.47	43	5295067	253.94 ug/l	99
54) cis-1,3-Dichloropropene	15.88	75	2921747	53.33 ug/l	99
57) Toluene	16.43	91	8891102	47.11 ug/l	98
58) Ethyl methacrylate	16.50	69	1430648	49.81 ug/l	96
59) trans-1,3-Dichloropropene	16.63	75	2095311	50.17 ug/l	99
60) 2-Hexanone	16.81	43	3249553	236.50 ug/l	98
61) 1,1,2-Trichloroethane	16.91	97	1193503	47.50 ug/l	99
62) 1,3-Dichloropropane	17.29	76	2245095	49.33 ug/l	99
63) Tetrachloroethene	17.45	164	2006713	49.16 ug/l	99
64) Dibromochloromethane	17.79	129	1395974	52.51 ug/l	100
65) 1,2-Dibromoethane	18.12	107	1114357	51.01 ug/l	99
66) 1-Chlorohexane	18.19	91	3936936	50.80 ug/l	99
67) Chlorobenzene	18.73	112	5346355	49.57 ug/l	98
68) Ethylbenzene	18.76	91	9686034	46.47 ug/l	96
69) 1,1,1,2-Tetrachloroethane	18.78	131	1695311	50.98 ug/l	100
70) m-Xylene & p-Xylene	18.86	91	12750207	88.55 ug/l	96
71) o-Xylene	19.57	91	6894217	47.72 ug/l	97
72) Styrene	19.61	104	5345594	49.45 ug/l	99
73) Isopropylbenzene	20.08	105	8646665	47.77 ug/l	98
75) Bromoform	20.26	173	674540	54.51 ug/l	98

(#) = qualifier out of range (m) = manual integration
RDD108.D VO94D14.M Wed Apr 15 18:06:04 2020 Page 2

4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD108.D Vial: 10
Acq On : 14 Apr 2020 10:42 pm Operator: VLu
Sample : VO94D149 Inst : 94
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:53 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	1309873	48.66 ug/l	99
78)	1,2,3-Trichloropropane	20.60	110	292276	50.03 ug/l	98
79)	trans-1,4-Dichloro-2-buten	20.64	53	245836	51.84 ug/l	97
80)	n-Propylbenzene	20.72	91	10762738	49.02 ug/l	98
81)	Bromobenzene	20.91	156	1924354	51.63 ug/l	99
82)	1,3,5-Trimethylbenzene	20.94	105	6259612	48.65 ug/l	98
83)	2-Chlorotoluene	21.07	91	6408094	48.74 ug/l	97
84)	4-Chlorotoluene	21.11	91	4577338	47.78 ug/l	98
85)	tert-Butylbenzene	21.51	134	1614630	51.26 ug/l	96
86)	1,2,4-Trimethylbenzene	21.58	105	5877945	48.85 ug/l	97
87)	sec-Butylbenzene	21.83	105	8747103	47.71 ug/l	97
88)	p-Isopropyltoluene	21.99	119	6526417	49.59 ug/l	98
89)	1,3-Dichlorobenzene	22.23	146	3566535	50.77 ug/l	99
90)	1,4-Dichlorobenzene	22.37	146	3276517	49.77 ug/l	99
91)	n-Butylbenzene	22.57	91	6406265	49.00 ug/l	99
92)	1,2-Dichlorobenzene	22.90	146	2927871	50.74 ug/l	99
93)	1,2-Dibromo-3-chloropropan	24.00	157	186018	54.60 ug/l	99
94)	1,2,4-Trichlorobenzene	25.37	180	1988770	58.07 ug/l	100
95)	Hexachlorobutadiene	25.53	225	1231987	54.17 ug/l	100
96)	Naphthalene	25.85	128	2710702	55.13 ug/l	99
97)	1,2,3-Trichlorobenzene	26.26	180	1475442	55.76 ug/l	100

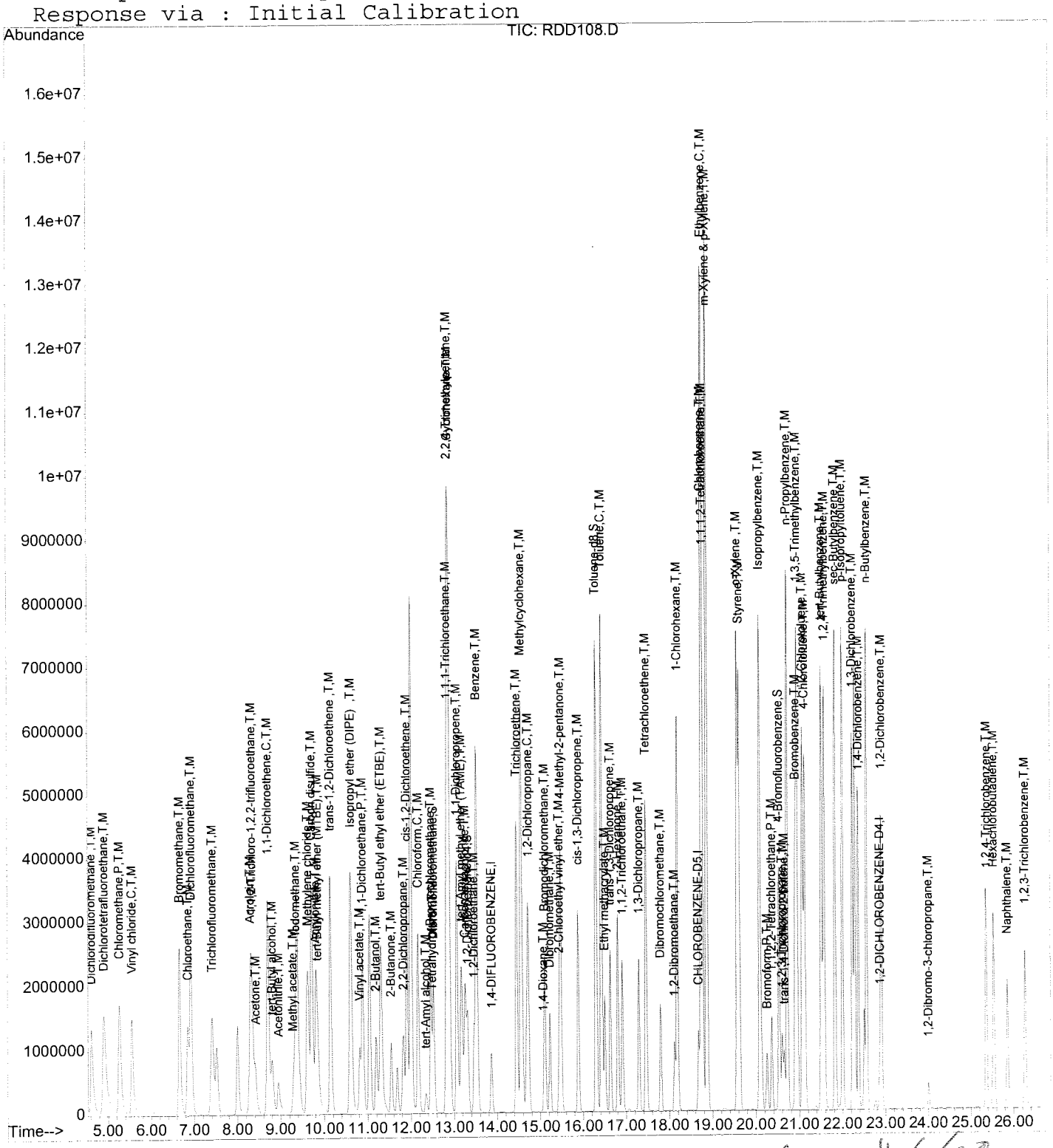
SA 4/16/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD108.D Vial: 10
Acq On : 14 Apr 2020 10:42 pm Operator: VLu
Sample : VO94D149 Inst : 94
Misc : 50ppb 8260/250ppb KET-AA/1250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:53 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



SA 4/16/20

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD109.D Vial: 11
Acq On : 14 Apr 2020 11:14 pm Operator: VLu
Sample : VO94D1410 Inst : 94
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:55 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.87	114	1201780	10.00 ug/l	0.00
55) CHLOROBENZENE-D5	18.67	117	1076218	10.00 ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.87	152	361007	10.00 ug/l	0.01
System Monitoring Compounds					
36) Dibromofluoromethane	12.52	111	3533856	101.22 ug/l	0.00
Spiked Amount 10.000			Recovery	= 1012.20%	
43) 1,2-Dichloroethane-d4	13.32	65	2284540	97.17 ug/l	0.00
Spiked Amount 10.000			Recovery	= 971.70%	
56) Toluene-d8	16.30	98	14012815	91.86 ug/l	0.00
Spiked Amount 10.000			Recovery	= 918.60%	
77) 4-Bromofluorobenzene	20.53	95	4090158	96.82 ug/l	0.00
Spiked Amount 10.000			Recovery	= 968.20%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.62	85	5638610	117.34 ug/l	97
3) Dichlorotetrafluoroethane	4.90	85	6680000	113.13 ug/l	100
4) Chloromethane	5.26	50	8508617	98.93 ug/l	98
5) Vinyl chloride	5.54	62	5684980	93.49 ug/l	100
6) Bromomethane	6.65	94	6167094	109.38 ug/l	98
7) Chloroethane	6.84	64	4839605	98.00 ug/l	99
8) Dichlorofluoromethane	6.91	67	9040710	98.69 ug/l	97
9) Trichlorofluoromethane	7.40	101	6182036	96.51 ug/l	98
10) Acrolein	8.30	56	1528347	437.92 ug/l	73
11) 1,1,2-Trichloro-1,2,2-trif	8.32	151	3447966	99.21 ug/l	100
12) Acetone	8.42	43	2452878	452.75 ug/l	98
13) 1,1-Dichloroethene	8.70	61	7626743	98.55 ug/l	97
14) tert-Butyl alcohol	8.82	59	4308979	2412.62 ug/l	99
15) Acetonitrile	8.95	41	2438128	974.91 ug/l	98
16) Methyl acetate	9.29	43	1643344	102.37 ug/l	100
17) Iodomethane	9.35	142	6758816	98.73 ug/l	99
18) Methylene chloride	9.63	49	5749061	90.52 ug/l	98
19) Carbon disulfide	9.72	76	17908252	97.77 ug/l	98
20) Acrylonitrile	9.82	53	3534451	511.81 ug/l	99
21) tert-Butyl methyl ether (M	9.85	73	6651153	97.79 ug/l	98
22) trans-1,2-Dichloroethene	10.14	96	5080050	95.94 ug/l	99
24) Isopropyl ether (DIPE)	10.61	45	15300091	96.84 ug/l	94
25) Vinyl acetate	10.82	43	5466774	107.51 ug/l	100
26) 1,1-Dichloroethane	10.88	63	7714401	95.17 ug/l	98
27) 2-Butanol	11.20	45	4957922	2669.34 ug/l	100
28) tert-Butyl ethyl ether (ET	11.30	59	9512180	90.59 ug/l	98
29) 2-Butanone	11.54	72	1017929	515.28 ug/l	100

(#) = qualifier out of range (m) = manual integration SU 4/16/20
RDD109.D VO94D14.M Wed Apr 15 18:06:14 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD109.D Vial: 11
Acq On : 14 Apr 2020 11:14 pm Operator: VLu
Sample : VO94D1410 Inst : 94
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:55 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
30) 2,2-Dichloropropane	11.83	77	2542234	73.51 ug/l	99
31) cis-1,2-Dichloroethene	11.91	96	4997163	97.35 ug/l	98
32) Chloroform	12.17	83	6478676	91.93 ug/l	98
33) tert-Amyl alcohol	12.35	59	828197	556.83 ug/l	98
34) Bromochloromethane	12.46	130	2212754	100.39 ug/l	100
35) Tetrahydrofuran	12.49	42	518185	93.58 ug/l	97
37) 1,1,1-Trichloroethane	12.83	97	4275634	88.58 ug/l	99
38) 2,2,4-Trimethylpentane	12.86	57	19458891	88.92 ug/l	99
39) Cyclohexane	12.87	84	7562798	93.22 ug/l	100
40) 1,1-Dichloropropene	13.07	110	2133308	95.93 ug/l	99
41) tert-Amyl methyl ether (TA	13.17	73	7059567	87.82 ug/l	99
42) Carbon tetrachloride	13.26	119	3729561	99.21 ug/l	99
44) 1,2-Dichloroethane	13.46	62	2683575	96.17 ug/l	100
45) Benzene	13.52	78	15019878	88.59 ug/l	98
46) Trichloroethene	14.46	130	4849346	101.95 ug/l	99
47) Methylcyclohexane	14.56	83	8630564	97.39 ug/l	97
48) 1,2-Dichloropropane	14.72	63	3811421	96.62 ug/l	99
49) 1,4-Dioxane	15.08	88	340365	2112.26 ug/l	99
50) Bromodichloromethane	15.11	83	4279613	103.27 ug/l	98
51) Dibromomethane	15.22	93	1646459	104.14 ug/l	99
52) 2-Chloroethyl vinyl ether	15.44	63	1371718	111.62 ug/l	97
53) 4-Methyl-2-pentanone	15.47	43	10096765	506.31 ug/l	97
54) cis-1,3-Dichloropropene	15.88	75	5499671	104.96 ug/l	98
57) Toluene	16.43	91	15440742	83.91 ug/l	97
58) Ethyl methacrylate	16.50	69	2776771	99.13 ug/l	96
59) trans-1,3-Dichloropropene	16.63	75	3964578	97.34 ug/l	99
60) 2-Hexanone	16.81	43	6179360	461.18 ug/l	97
61) 1,1,2-Trichloroethane	16.91	97	2293692	93.61 ug/l	99
62) 1,3-Dichloropropane	17.29	76	4272353	96.27 ug/l	99
63) Tetrachloroethene	17.45	164	3652228	91.74 ug/l	99
64) Dibromochloromethane	17.79	129	2705326	104.36 ug/l	100
65) 1,2-Dibromoethane	18.12	107	2185145	102.56 ug/l	99
66) 1-Chlorohexane	18.19	91	7021001	92.91 ug/l	98
67) Chlorobenzene	18.73	112	9525762	90.57 ug/l	97
68) Ethylbenzene	18.76	91	16102746	79.22 ug/l	93
69) 1,1,1,2-Tetrachloroethane	18.78	131	3058578	94.31 ug/l	100
70) m-Xylene & p-Xylene	18.86	91	19505237	138.92 ug/l	87
71) o-Xylene	19.57	91	12069797	85.68 ug/l	95
72) Styrene	19.61	104	9498832	90.11 ug/l	98
73) Isopropylbenzene	20.09	105	15128358	85.71 ug/l	97
75) Bromoform	20.25	173	1332573	109.66 ug/l	98

(#) = qualifier out of range (m) = manual integration

Su 4/16/20

Data File : D:\HPCHEM\1\DATA\20D14\RDD109.D Vial: 11
Acq On : 14 Apr 2020 11:14 pm Operator: VLu
Sample : VO94D1410 Inst : 94
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:55 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	2586682	97.85	ug/l	100
78)	1,2,3-Trichloropropane	20.60	110	565553	98.58	ug/l	97
79)	trans-1,4-Dichloro-2-buten	20.64	53	479130	102.88	ug/l	98
80)	n-Propylbenzene	20.72	91	17269337	80.10	ug/l	94
81)	Bromobenzene	20.91	156	3537178	96.64	ug/l	99
82)	1,3,5-Trimethylbenzene	20.94	105	10597166	83.87	ug/l	97
83)	2-Chlorotoluene	21.07	91	10955960	84.85	ug/l	95
84)	4-Chlorotoluene	21.13	91	7880013	83.76	ug/l	96
85)	tert-Butylbenzene	21.51	134	2854015	92.27	ug/l	99
86)	1,2,4-Trimethylbenzene	21.58	105	10087267	85.37	ug/l	95
87)	sec-Butylbenzene	21.83	105	14678851	81.54	ug/l	95
88)	p-Isopropyltoluene	21.99	119	11264972	87.16	ug/l	98
89)	1,3-Dichlorobenzene	22.23	146	6495784	94.17	ug/l	99
90)	1,4-Dichlorobenzene	22.37	146	6005608	92.90	ug/l	100
91)	n-Butylbenzene	22.57	91	11167283	86.99	ug/l	98
92)	1,2-Dichlorobenzene	22.90	146	5446144	96.11	ug/l	99
93)	1,2-Dibromo-3-chloropropan	24.00	157	394387	117.88	ug/l	99
94)	1,2,4-Trichlorobenzene	25.35	180	3959253	117.72	ug/l	100
95)	Hexachlorobutadiene	25.53	225	2318128	103.79	ug/l	99
96)	Naphthalene	25.85	128	5362261	111.05	ug/l	99
97)	1,2,3-Trichlorobenzene	26.26	180	2925760	112.60	ug/l	100

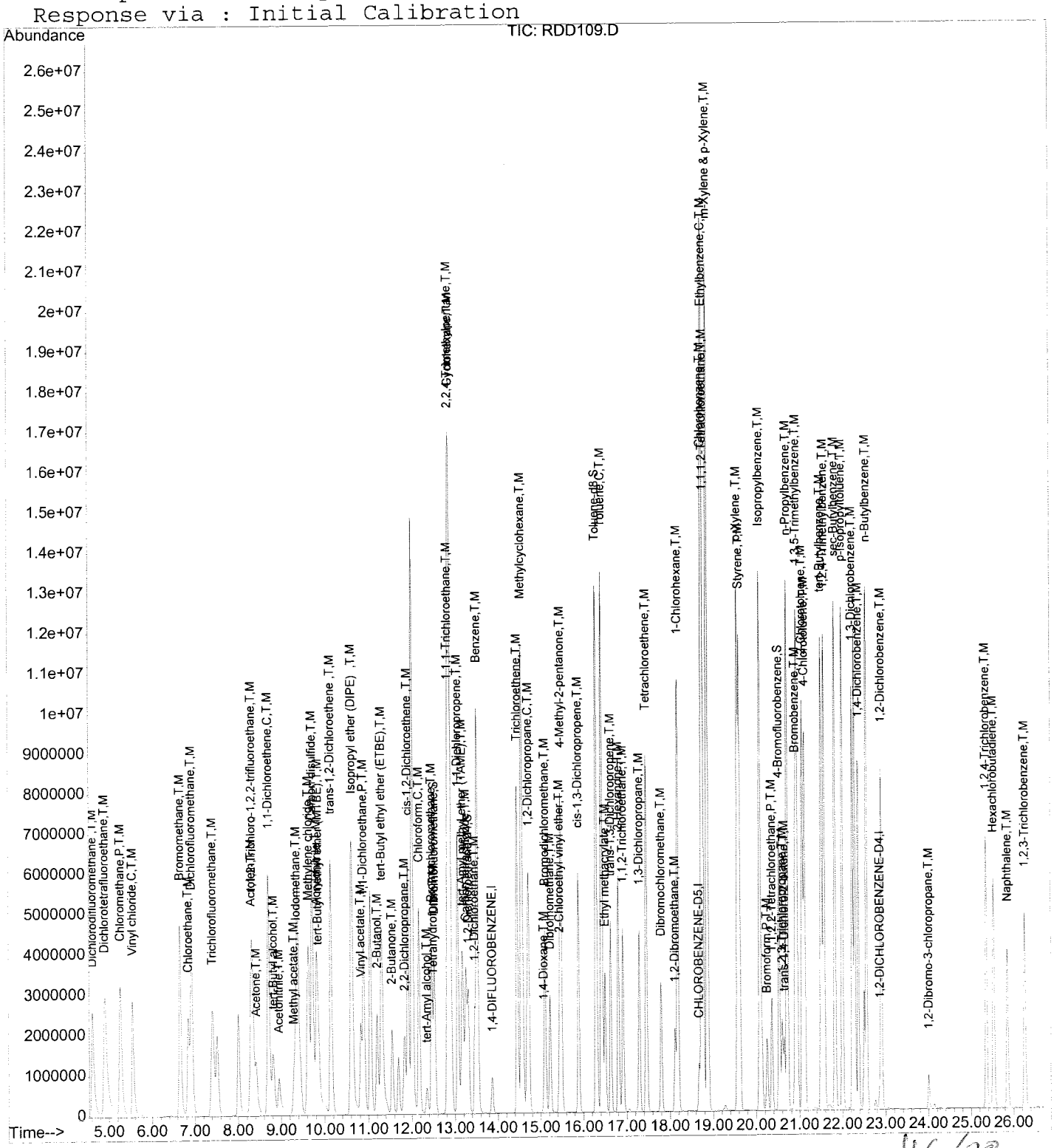
SA 4/16/20

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD109.D Vial: 11
Acq On : 14 Apr 2020 11:14 pm Operator: VLu
Sample : VO94D1410 Inst : 94
Misc : 100ppb 8260/500ppb KET-AA/2500ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:55 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :94
IC Beginning DateTime :04/14/20 18:31
Spike Amount :10 PPB
CC/CV File :RDD112
IC File :RDD105

Column Spec :RTX502.2 ID :0.25MM
IC Ending DateTime :04/14/20 23:14
HPChem Method :VO94D14
Date_Time :04/15/20 00:48

M	IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
	1	1,4-DIFLUOROBENZENE	10.000	0	1570119	1	1	13.859	13.875	0				
	2	Dichlorodifluoromethane	11.782	17.8	739638	0.471	0.400	4.614	4.622	13.60				
	3	Dichlorotetrafluoroethane	9.908	-0.9	764378	0.487	0.491	4.909	4.908	11.76				
	4	Chloromethane	11.229	12.3	1234886	0.786	0.633	5.263	5.269	15.21	-0.0194	0.7176		0.9994
	5	Vinyl chloride	10.826	8.3	860109	0.548	0.506	5.558	5.565	9.27				
	6	Bromomethane	9.910	-0.9	730022	0.465	0.469	6.663	6.666	14.18				
	7	Chloroethane	9.535	-4.7	600775	0.383	0.368	6.855	6.856	15.15	-0.0102	0.4120		0.9992
	8	Dichlorofluoromethane	11.539	15.4	1381124	0.880	0.762	6.929	6.930	9.42				
	9	Trichlorofluoromethane	11.271	12.7	926862	0.590	0.483	7.415	7.417	15.22	-0.0118	0.5342		0.9991
5	10	Acrolein	50.847	1.7	231844	0.030	0.029	8.285	8.304	6.98				
	11	1,1,2-Trichloro-1,2,2-trifluoroethane	10.544	5.4	478785	0.305	0.289	8.329	8.330	8.35				
5	12	Acetone	50.077	0.2	354454	0.045	0.045	8.403	8.417	9.68				
	13	1,1-Dichloroethene	10.641	6.4	1075910	0.685	0.644	8.698	8.705	8.72				
25	14	tert-Butyl alcohol	277.647	11.1	647867	0.017	0.015	8.801	8.807	7.22				
10	15	Acetonitrile	104.353	4.4	340959	0.022	0.021	8.934	8.951	3.57				
	16	Methyl acetate	11.488	14.9	240942	0.153	0.134	9.287	9.291	3.44				
	17	Iodomethane	11.797	18.0	1055104	0.672	0.570	9.346	9.349	6.75				
	18	Methylene chloride	10.251	2.5	850594	0.542	0.528	9.612	9.620	6.89				
	19	Carbon disulfide	11.234	12.3	2688515	1.712	1.524	9.715	9.718	11.59				
5	20	Acrylonitrile	54.129	8.3	488376	0.062	0.057	9.803	9.818	7.46				
	21	tert-Butyl methyl ether (MTBE)	10.019	0.2	890320	0.567	0.566	9.848	9.852	4.58				
	22	trans-1,2-Dichloroethene	10.655	6.5	737070	0.469	0.441	10.142	10.149	5.31				
	23	n-Hexane												
	24	Isopropyl ether (DIPE)	10.207	2.1	2106878	1.342	1.315	10.601	10.616	5.24				
	25	Vinyl acetate	10.330	3.3	686259	0.437	0.423	10.806	10.822	7.91				
	26	1,1-Dichloroethane	10.750	7.5	1138542	0.725	0.675	10.880	10.886	4.12				
25	27	2-Butanol	245.748	-1.7	596339	0.015	0.015	11.188	11.194	5.77				
	28	tert-Butyl ethyl ether (ETBE)	9.485	-5.2	1301181	0.829	0.874	11.305	11.306	9.32				
5	29	2-Butanone	53.103	6.2	137059	0.017	0.016	11.540	11.543	3.90				
	30	2,2-Dichloropropane	9.430	-5.7	426088	0.271	0.288	11.819	11.835	6.19				
	31	cis-1,2-Dichloroethene	10.498	5.0	704050	0.448	0.427	11.907	11.912	4.64				
	32	Chloroform	10.549	5.5	971219	0.619	0.586	12.157	12.174	3.40				
5	33	tert-Amyl alcohol	52.205	4.4	101445	0.013	0.012	12.347	12.349	8.73				
	34	Bromochloromethane	10.720	7.2	308700	0.197	0.183	12.465	12.467	4.77				
	35	Tetrahydrofuran	11.098	11.0	80288	0.051	0.046	12.494	12.495	5.67				
	36	Dibromofluoromethane	10.310	3.1	470290	0.300	0.291	12.524	12.525	3.47				
	37	1,1,1-Trichloroethane	10.540	5.4	664690	0.423	0.402	12.817	12.833	4.81				
	38	2,2,4-Trimethylpentane	10.172	1.7	2908218	1.852	1.821	12.861	12.861	7.78				
	39	Cyclohexane	11.566	15.7	1225928	0.781	0.675	12.876	12.877	3.92				
	40	1,1-Dichloropropene	10.323	3.2	299937	0.191	0.185	13.067	13.069	5.80				
	41	tert-Amyl methyl ether (TAME)	9.521	-4.8	999904	0.637	0.669	13.169	13.173	9.75				
	42	Carbon tetrachloride	10.721	7.2	526582	0.335	0.313	13.257	13.261	7.69				
	43	1,2-Dichloroethane-d4	10.232	2.3	314302	0.200	0.196	13.316	13.317	2.26				
	44	1,2-Dichloroethane	10.528	5.3	383823	0.244	0.232	13.463	13.465	3.26				
	45	Benzene	10.796	8.0	2391477	1.523	1.411	13.522	13.524	4.64				
	46	Trichloroethene	10.386	3.9	645435	0.411	0.396	14.446	14.462	4.86				
	47	Methylcyclohexane	11.928	19.3	1380919	0.879	0.737	14.564	14.563	2.11				
	48	1,2-Dichloropropane	10.123	1.2	521736	0.332	0.328	14.711	14.725	2.40				
20	49	1,4-Dioxane	212.881	6.4	44817	0.001	0.001	15.078	15.079	7.79				
	50	Bromodichloromethane	10.521	5.2	569626	0.363	0.345	15.107	15.108	4.98				
	51	Dibromomethane	10.130	1.3	209262	0.133	0.132	15.224	15.225	5.25				
	52	2-Chloroethyl vinyl ether	10.924	9.2	175405	0.112	0.102	15.430	15.444	8.53				
5	53	4-Methyl-2-pentanone	52.815	5.6	1376031	0.175	0.166	15.474	15.478	4.98				
	54	cis-1,3-Dichloropropene	10.747	7.5	735749	0.469	0.436	15.885	15.887	7.27				
	55	CHLOROBENZENE-D5	10.000	0	1316314	1	1	18.674	18.675	0				
	56	Toluene-d8	10.001	0.0	1866011	1.418	1.417	16.296	16.297	3.98				
	57	Toluene	10.116	1.2	2276830	1.730	1.710	16.428	16.429	7.04				
	58	Ethyl methacrylate	10.968	9.7	375770	0.285	0.260	16.501	16.502	3.46				
	59	trans-1,3-Dichloropropene	10.415	4.2	518843	0.394	0.378	16.634	16.634	3.88				
5	60	2-Hexanone	51.426	2.9	842788	0.128	0.125	16.795	16.809	5.45				
	61	1,1,2-Trichloroethane	9.705	-3.0	290831	0.221	0.228	16.913	16.912	4.45				
	62	1,3-Dichloropropane	10.249	2.5	556322	0.423	0.412	17.294	17.293	2.47				
	63	Tetrachloroethene	9.818	-1.8	478043	0.363	0.370	17.456	17.458	4.08				
	64	Dibromochloromethane	10.297	3.0	326473	0.248	0.241	17.793	17.795	6.65				
	65	1,2-Dibromoethane	10.244	2.4	266934	0.203	0.198	18.116	18.117	3.52				
	66	1-Chlorohexane	10.092	0.9	932853	0.709	0.702	18.175	18.189	3.51				
	67	Chlorobenzene	10.172	1.7	1308437	0.994	0.977	18.733	18.735	4.00				
	68	Ethylbenzene	9.769	-2.3	2428877	1.845	1.889	18.747	18.761	3.67				
	69	1,1,1,2-Tetrachloroethane	10.202	2.0	404679	0.307	0.301	18.762	18.776	4.54				
2	70	m-Xylene & p-Xylene	19.814	-0.9	3402717	1.293	1.305	18.865	18.866	5.87				
	71	o-Xylene	9.942	-0.6	1712953	1.301	1.309	19.569	19.570	2.39				
	72	Styrene	10.438	4.4	1345838	1.022	0.980	19.613	19.614	3.87				
	73	Isopropylbenzene	10.127	1.3	2186118	1.661	1.640	20.085	20.087	2.61				
	74	1,2-DICHLOROBENZENE-D4	10.000	0	440790	1	1	22.860	22.870	0				
	75	Bromoform	10.787	7.9	160042	0.363	0.337	20.247	20.258	8.56				
	76	1,1,2,2-Tetrachloroethane	9.623	-3.8	310627	0.705	0.732	20.364	20.364	3.25				
	77	4-Bromofluorobenzene	9.898	-1.0	510567	1.158	1.170	20.526	20.526	2.88				
	78	1,2,3-Trichloropropane	10.617	6.2	74374	0.169	0.159	20.599	20.599	3.33				
	79	trans-1,4-Dichloro-2-butene	10.872	8.7	61823	0.140	0.129	20.643	20.643	4.48				
	80	n-Propylbenzene	10.222	2.2	2690909	6.105	5.972	20.716	20.716	2.65				
	81	Bromobenzene	9.919	-0.8	443295	1.006	1.014	20.893	20.907	3.19				
	82	1,3,5-Trimethylbenzene	10.292	2.9	1587805	3.602	3.500	20.937	20.937	2.71				
	83	2-Chlorotoluene	9.131	-8.7	1439565	3.266	3.577	21.069	21.069	8.11				
	84	4-Chlorotoluene	11.812	18.1	1356812	3.078	2.606	21.113	21.116	9.40				
	85	tert-Butylbenzene	10.255	2.6	387315	0.879	0.857	21.509	21.511	4.19				
	86	1,2,4-Trimethylbenzene	10.342	3.4	1492138	3.385	3.273	21.568	21.583	2.56				
	87	sec-Butylbenzene	10.313	3.1	2266991	5.143	4.987	21.817	21.832	2.73				
	88	p-Isopropyltoluene	10.465	4.6	1651479	3.747	3.580	21.993	21.993	5.13				
	89	1,3-Dichlorobenzene	10.347	3.5	871522	1.977	1.911	22.228	22.228	2.95				
	90	1,4-Dichlorobenzene	10.103	1.0	797467	1.809	1.791	22.361	22.371	3.17				
	91	n-Butylbenzene	10.071	0.7	1578644	3.581	3.556	22.551	22.563	5.29				
	92	1,2-Dichlorobenzene	10.099	1.0	698692	1.585	1.570	22.904	22.904	2.49				
	93	1,2-Dibromo-3-chloropropane	10.082	0.8	41185	0.093	0.093	24.004	24.004	10.69				
	94	1,2,4-Trichlorobenzene	10.029	0.3	411843	0.934	0.932	25.355	25.365	12.73				
	95	Hexachlorobutadiene	10.580	5.8	288543	0.655	0.619	25.531	25.538	7.31				
	96	Naphthalene	10.381	3.8	612050	1.389	1.338	25.854	25.855	9.65				
	97	1,2,3-Trichlorobenzene	10.473	4.7	332293	0.754	0.720	26.265	26.265	10.96				

Spike Amount = Nominal Amount * M

SH 4/16/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	104	-0.01
2	T,M	Dichlorodifluoromethane	10.000	11.782	-17.8	124	0.00
3	T,M	Dichlorotetrafluoroethane	10.000	9.908	0.9	102	0.00
4	P,T,M	Chloromethane	10.000	11.229	-12.3	123	0.00
5	C,T,M	Vinyl chloride	10.000	10.826	-8.3	101	-0.01
6	T,M	Bromomethane	10.000	9.910	0.9	97	0.00
7	T,M	Chloroethane	10.000	9.535	4.6	101	0.00
8	T,M	Dichlorofluoromethane	10.000	11.539	-15.4	114	0.00
9	T,M	Trichlorofluoromethane	10.000	11.271	-12.7	117	0.00
10	T,M	Acrolein	50.000	50.847	-1.7	101	-0.02
11	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	10.544	-5.4	104	0.00
12	T,M	Acetone	50.000	50.077	-0.2	108	-0.01
13	C,T,M	1,1-Dichloroethene	10.000	10.641	-6.4	103	0.00
14	T,M	tert-Butyl alcohol	250.000	277.647	-11.1	110	0.00
15	T,M	Acetonitrile	100.000	104.353	-4.4	110	-0.01
16	T,M	Methyl acetate	10.000	11.488	-14.9	120	0.00
17	T,M	Iodomethane	10.000	11.797	-18.0	118	0.00
18	T,M	Methylene chloride	10.000	10.251	-2.5	108	-0.01
19	T,M	Carbon disulfide	10.000	11.234	-12.3	103	0.00
20	T,M	Acrylonitrile	50.000	54.129	-8.3	107	-0.02
21	T,M	tert-Butyl methyl ether (MT	10.000	10.019	-0.2	101	0.00
22	T,M	trans-1,2-Dichloroethene	10.000	10.654	-6.5	107	0.00
23	T,M	n-Hexane	-1.000	0.000	0.0	0	0.00
24	T,M	Isopropyl ether (DIPE)	10.000	10.207	-2.1	101	-0.01
25	T,M	Vinyl acetate	10.000	10.330	-3.3	103	-0.01
26	P,T,M	1,1-Dichloroethane	10.000	10.750	-7.5	109	-0.01
27	T,M	2-Butanol	250.000	245.748	1.7	98	0.00
28	T,M	tert-Butyl ethyl ether (ETB	10.000	9.485	5.2	101	0.00
29	T,M	2-Butanone	50.000	53.103	-6.2	111	0.00
30	T,M	2,2-Dichloropropane	10.000	9.430	5.7	98	-0.01
31	T,M	cis-1,2-Dichloroethene	10.000	10.498	-5.0	108	0.00
32	C,T,M	Chloroform	10.000	10.549	-5.5	109	-0.01
33	T,M	tert-Amyl alcohol	50.000	52.205	-4.4	102	0.00
34	T,M	Bromochloromethane	10.000	10.720	-7.2	112	0.00
35	T,M	Tetrahydrofuran	10.000	11.098	-11.0	116	0.00
36	S	Dibromofluoromethane	10.000	10.310	-3.1	102	0.00
37	T,M	1,1,1-Trichloroethane	10.000	10.540	-5.4	107	-0.01
38	T,M	2,2,4-Trimethylpentane	10.000	10.172	-1.7	94	0.00
39	T,M	Cyclohexane	10.000	11.566	-15.7	114	0.00
40	T,M	1,1-Dichloropropene	10.000	10.323	-3.2	105	0.00
41	T,M	tert-Amyl methyl ether (TAM	10.000	9.521	4.8	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Carbon tetrachloride	10.000	10.721	-7.2	108	0.00
43	S	1,2-Dichloroethane-d4	10.000	10.232	-2.3	101	0.00
44	T,M	1,2-Dichloroethane	10.000	10.528	-5.3	109	0.00
45	T,M	Benzene	10.000	10.796	-8.0	112	0.00
46	T,M	Trichloroethene	10.000	10.386	-3.9	109	-0.01
47	T,M	Methylcyclohexane	10.000	11.928	-19.3	120	0.00
48	C,T,M	1,2-Dichloropropane	10.000	10.123	-1.2	106	-0.01
49	T,M	1,4-Dioxane	200.000	212.881	-6.4	112	0.00
50	T,M	Bromodichloromethane	10.000	10.521	-5.2	110	0.00
51	T,M	Dibromomethane	10.000	10.131	-1.3	105	0.00
52	T,M	2-Chloroethyl vinyl ether	10.000	10.924	-9.2	114	-0.01
53	T,M	4-Methyl-2-pentanone	50.000	52.815	-5.6	108	0.00
54	T,M	cis-1,3-Dichloropropene	10.000	10.747	-7.5	111	0.00
55	I	CHLOROBENZENE-D5	10.000	10.000	0.0	103	0.00
56	S	Toluene-d8	10.000	10.001	-0.0	98	0.00
57	C,T,M	Toluene	10.000	10.116	-1.2	104	0.00
58	T,M	Ethyl methacrylate	10.000	10.968	-9.7	113	0.00
59	T,M	trans-1,3-Dichloropropene	10.000	10.415	-4.1	106	0.00
60	T,M	2-Hexanone	50.000	51.426	-2.9	107	-0.01
61	T,M	1,1,2-Trichloroethane	10.000	9.705	2.9	103	0.00
62	T,M	1,3-Dichloropropane	10.000	10.249	-2.5	107	0.00
63	T,M	Tetrachloroethene	10.000	9.818	1.8	104	0.00
64	T,M	Dibromochloromethane	10.000	10.297	-3.0	105	0.00
65	T,M	1,2-Dibromoethane	10.000	10.244	-2.4	107	0.00
66	T,M	1-Chlorohexane	10.000	10.093	-0.9	102	-0.01
67	T,M	Chlorobenzene	10.000	10.172	-1.7	104	0.00
68	C,T,M	Ethylbenzene	10.000	9.769	2.3	100	-0.01
69	T,M	1,1,1,2-Tetrachloroethane	10.000	10.202	-2.0	105	-0.01
70	T,M	m-Xylene & p-Xylene	20.000	19.814	0.9	102	0.00
71	T,M	o-Xylene	10.000	9.942	0.6	103	0.00
72	T,M	Styrene	10.000	10.438	-4.4	107	0.00
73	T,M	Isopropylbenzene	10.000	10.127	-1.3	104	0.00
74	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	97	0.00
75	P,T,M	Bromoform	10.000	10.787	-7.9	109	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	9.623	3.8	99	0.00
77	S	4-Bromofluorobenzene	10.000	9.898	1.0	95	0.00
78	T,M	1,2,3-Trichloropropane	10.000	10.617	-6.2	105	0.00
79	T,M	trans-1,4-Dichloro-2-butene	10.000	10.872	-8.7	111	0.00
80	T,M	n-Propylbenzene	10.000	10.222	-2.2	102	0.00

(#) = Out of Range

SM 4/16/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	Bromobenzene	10.000	9.919	0.8	101	-0.02
82	T,M	1,3,5-Trimethylbenzene	10.000	10.292	-2.9	102	0.00
83	T,M	2-Chlorotoluene	10.000	9.131	8.7	87	0.00
84	T,M	4-Chlorotoluene	10.000	11.812	-18.1	124	0.00
85	T,M	tert-Butylbenzene	10.000	10.255	-2.6	103	0.00
86	T,M	1,2,4-Trimethylbenzene	10.000	10.342	-3.4	103	-0.02
87	T,M	sec-Butylbenzene	10.000	10.313	-3.1	101	-0.01
88	T,M	p-Isopropyltoluene	10.000	10.465	-4.6	100	0.00
89	T,M	1,3-Dichlorobenzene	10.000	10.347	-3.5	103	0.00
90	T,M	1,4-Dichlorobenzene	10.000	10.103	-1.0	101	0.00
91	T,M	n-Butylbenzene	10.000	10.071	-0.7	98	0.00
92	T,M	1,2-Dichlorobenzene	10.000	10.099	-1.0	100	0.00
93	T,M	1,2-Dibromo-3-chloropropane	10.000	10.082	-0.8	100	0.00
94	T,M	1,2,4-Trichlorobenzene	10.000	10.029	-0.3	97	0.00
95	T,M	Hexachlorobutadiene	10.000	10.580	-5.8	99	0.00
96	T,M	Naphthalene	10.000	10.381	-3.8	100	0.00
97	T,M	1,2,3-Trichlorobenzene	10.000	10.473	-4.7	100	0.00

Su 4/16/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RDD112.D VO94D14.M Wed Apr 15 18:02:31 2020 Page 3

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	104	-0.01
2	T,M	Dichlorodifluoromethane	0.400	0.471	-17.7	124	0.00
3	T,M	Dichlorotetrafluoroethane	0.491	0.487	0.8	102	0.00
4	P,T,M	Chloromethane	0.633	0.786	-24.2#	123	0.00
5	C,T,M	Vinyl chloride	0.506	0.548	-8.3	101	-0.01
6	T,M	Bromomethane	0.469	0.465	0.9	97	0.00
7	T,M	Chloroethane	0.368	0.383	-4.1	101	0.00
8	T,M	Dichlorofluoromethane	0.762	0.880	-15.5	114	0.00
9	T,M	Trichlorofluoromethane	0.483	0.590	-22.2#	117	0.00
10	T,M	Acrolein	0.029	0.030	-3.4	101	-0.02
11	T,M	1,1,2-Trichloro-1,2,2-trifl	0.289	0.305	-5.5	104	0.00
12	T,M	Acetone	0.045	0.045	0.0	108	-0.01
13	C,T,M	1,1-Dichloroethene	0.644	0.685	-6.4	103	0.00
14	T,M	tert-Butyl alcohol	0.015	0.017	-13.3	110	0.00
15	T,M	Acetonitrile	0.021	0.022	-4.8	110	-0.01
16	T,M	Methyl acetate	0.134	0.153	-14.2	120	0.00
17	T,M	Iodomethane	0.570	0.672	-17.9	118	0.00
18	T,M	Methylene chloride	0.528	0.542	-2.7	108	-0.01
19	T,M	Carbon disulfide	1.524	1.712	-12.3	103	0.00
20	T,M	Acrylonitrile	0.057	0.062	-8.8	107	-0.02
21	T,M	tert-Butyl methyl ether (MT	0.566	0.567	-0.2	101	0.00
22	T,M	trans-1,2-Dichloroethene	0.441	0.469	-6.3	107	0.00
23	T,M	n-Hexane	0.000	0.000	0.0	0#	0.00
24	T,M	Isopropyl ether (DIPE)	1.315	1.342	-2.1	101	-0.01
25	T,M	Vinyl acetate	0.423	0.437	-3.3	103	-0.01
26	P,T,M	1,1-Dichloroethane	0.675	0.725	-7.4	109	-0.01
27	T,M	2-Butanol	0.015	0.015	0.0	98	0.00
28	T,M	tert-Butyl ethyl ether (ETB	0.874	0.829	5.1	101	0.00
29	T,M	2-Butanone	0.016	0.017	-6.3	111	0.00
30	T,M	2,2-Dichloropropane	0.288	0.271	5.9	98	-0.01
31	T,M	cis-1,2-Dichloroethene	0.427	0.448	-4.9	108	0.00
32	C,T,M	Chloroform	0.586	0.619	-5.6	109	-0.01
33	T,M	tert-Amyl alcohol	0.012	0.013	-8.3	102	0.00
34	T,M	Bromochloromethane	0.183	0.197	-7.7	112	0.00
35	T,M	Tetrahydrofuran	0.046	0.051	-10.9	116	0.00
36	S	Dibromofluoromethane	0.291	0.300	-3.1	102	0.00
37	T,M	1,1,1-Trichloroethane	0.402	0.423	-5.2	107	-0.01
38	T,M	2,2,4-Trimethylpentane	1.821	1.852	-1.7	94	0.00
39	T,M	Cyclohexane	0.675	0.781	-15.7	114	0.00
40	T,M	1,1-Dichloropropene	0.185	0.191	-3.2	105	0.00
41	T,M	tert-Amyl methyl ether (TAM	0.669	0.637	4.8	104	0.00

(#) = Out of Range

4/16/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Carbon tetrachloride	0.313	0.335	-7.0	108	0.00
43	S	1,2-Dichloroethane-d4	0.196	0.200	-2.0	101	0.00
44	T,M	1,2-Dichloroethane	0.232	0.244	-5.2	109	0.00
45	T,M	Benzene	1.411	1.523	-7.9	112	0.00
46	T,M	Trichloroethene	0.396	0.411	-3.8	109	-0.01
47	T,M	Methylcyclohexane	0.737	0.879	-19.3	120	0.00
48	C,T,M	1,2-Dichloropropane	0.328	0.332	-1.2	106	-0.01
49	T,M	1,4-Dioxane	0.001	0.001	0.0	112	0.00
50	T,M	Bromodichloromethane	0.345	0.363	-5.2	110	0.00
51	T,M	Dibromomethane	0.132	0.133	-0.8	105	0.00
52	T,M	2-Chloroethyl vinyl ether	0.102	0.112	-9.8	114	-0.01
53	T,M	4-Methyl-2-pentanone	0.166	0.175	-5.4	108	0.00
54	T,M	cis-1,3-Dichloropropene	0.436	0.469	-7.6	111	0.00
55	I	CHLOROBENZENE-D5	1.000	1.000	0.0	103	0.00
56	S	Toluene-d8	1.417	1.418	-0.1	98	0.00
57	C,T,M	Toluene	1.710	1.730	-1.2	104	0.00
58	T,M	Ethyl methacrylate	0.260	0.285	-9.6	113	0.00
59	T,M	trans-1,3-Dichloropropene	0.378	0.394	-4.2	106	0.00
60	T,M	2-Hexanone	0.125	0.128	-2.4	107	-0.01
61	T,M	1,1,2-Trichloroethane	0.228	0.221	3.1	103	0.00
62	T,M	1,3-Dichloropropane	0.412	0.423	-2.7	107	0.00
63	T,M	Tetrachloroethene	0.370	0.363	1.9	104	0.00
64	T,M	Dibromochloromethane	0.241	0.248	-2.9	105	0.00
65	T,M	1,2-Dibromoethane	0.198	0.203	-2.5	107	0.00
66	T,M	1-Chlorohexane	0.702	0.709	-1.0	102	-0.01
67	T,M	Chlorobenzene	0.977	0.994	-1.7	104	0.00
68	C,T,M	Ethylbenzene	1.889	1.845	2.3	100	-0.01
69	T,M	1,1,1,2-Tetrachloroethane	0.301	0.307	-2.0	105	-0.01
70	T,M	m-Xylene & p-Xylene	1.305	1.293	0.9	102	0.00
71	T,M	o-Xylene	1.309	1.301	0.6	103	0.00
72	T,M	Styrene	0.980	1.022	-4.3	107	0.00
73	T,M	Isopropylbenzene	1.640	1.661	-1.3	104	0.00
74	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	97	0.00
75	P,T,M	Bromoform	0.337	0.363	-7.7	109	-0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.732	0.705	3.7	99	0.00
77	S	4-Bromofluorobenzene	1.170	1.158	1.0	95	0.00
78	T,M	1,2,3-Trichloropropane	0.159	0.169	-6.3	105	0.00
79	T,M	trans-1,4-Dichloro-2-butene	0.129	0.140	-8.5	111	0.00
80	T,M	n-Propylbenzene	5.972	6.105	-2.2	102	0.00

(#) = Out of Range

4/16/20

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D
Acq On : 15 Apr 2020 12:48 am
Sample : IVO94D1401
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P

Vial: 14
Operator: VLu
Inst : 94
Multiplr: 1.00

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	Bromobenzene	1.014	1.006	0.8	101	-0.02
82	T,M	1,3,5-Trimethylbenzene	3.500	3.602	-2.9	102	0.00
83	T,M	2-Chlorotoluene	3.577	3.266	8.7	87	0.00
84	T,M	4-Chlorotoluene	2.606	3.078	-18.1	124	0.00
85	T,M	tert-Butylbenzene	0.857	0.879	-2.6	103	0.00
86	T,M	1,2,4-Trimethylbenzene	3.273	3.385	-3.4	103	-0.02
87	T,M	sec-Butylbenzene	4.987	5.143	-3.1	101	-0.01
88	T,M	p-Isopropyltoluene	3.580	3.747	-4.7	100	0.00
89	T,M	1,3-Dichlorobenzene	1.911	1.977	-3.5	103	0.00
90	T,M	1,4-Dichlorobenzene	1.791	1.809	-1.0	101	0.00
91	T,M	n-Butylbenzene	3.556	3.581	-0.7	98	0.00
92	T,M	1,2-Dichlorobenzene	1.570	1.585	-1.0	100	0.00
93	T,M	1,2-Dibromo-3-chloropropane	0.093	0.093	0.0	100	0.00
94	T,M	1,2,4-Trichlorobenzene	0.932	0.934	-0.2	97	0.00
95	T,M	Hexachlorobutadiene	0.619	0.655	-5.8	99	0.00
96	T,M	Naphthalene	1.338	1.389	-3.8	100	0.00
97	T,M	1,2,3-Trichlorobenzene	0.720	0.754	-4.7	100	0.00

Su 4/16/20

(#) = Out of Range SPCC's out = 0 CCC's out = 0
RDD112.D VO94D14.M Wed Apr 15 18:02:39 2020 Page 3

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:57 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.86	114	1570119	10.00	ug/l	-0.01
55) CHLOROBENZENE-D5	18.67	117	1316314	10.00	ug/l	0.00
74) 1,2-DICHLOROBENZENE-D4	22.86	152	440790	10.00	ug/l	0.00
System Monitoring Compounds						
36) Dibromofluoromethane	12.52	111	470290	10.31	ug/l	0.00
Spiked Amount 10.000			Recovery =	103.10%		
43) 1,2-Dichloroethane-d4	13.32	65	314302	10.23	ug/l	0.00
Spiked Amount 10.000			Recovery =	102.30%		
56) Toluene-d8	16.30	98	1866011	10.00	ug/l	0.00
Spiked Amount 10.000			Recovery =	100.00%		
77) 4-Bromofluorobenzene	20.53	95	510567	9.90	ug/l	0.00
Spiked Amount 10.000			Recovery =	99.00%		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.61	85	739638	11.78	ug/l	96
3) Dichlorotetrafluoroethane	4.91	85	764378	9.91	ug/l	92
4) Chloromethane	5.26	50	1234886	11.23	ug/l	100
5) Vinyl chloride	5.56	62	860109	10.83	ug/l	100
6) Bromomethane	6.66	94	730022	9.91	ug/l	98
7) Chloroethane	6.86	64	600775	9.53	ug/l	89
8) Dichlorofluoromethane	6.93	67	1381124	11.54	ug/l	99
9) Trichlorofluoromethane	7.42	101	926862	11.27	ug/l	100
10) Acrolein	8.28	56	231844	50.85	ug/l	88
11) 1,1,2-Trichloro-1,2,2-trif	8.33	151	478785	10.54	ug/l	100
12) Acetone	8.40	43	354454	50.08	ug/l	99
13) 1,1-Dichloroethene	8.70	61	1075910	10.64	ug/l	100
14) tert-Butyl alcohol	8.80	59	647867	277.65	ug/l	99
15) Acetonitrile	8.93	41	340959	104.35	ug/l	96
16) Methyl acetate	9.29	43	240942	11.49	ug/l	100
17) Iodomethane	9.35	142	1055104	11.80	ug/l	100
18) Methylene chloride	9.61	49	850594	10.25	ug/l	100
19) Carbon disulfide	9.71	76	2688515	11.23	ug/l	100
20) Acrylonitrile	9.80	53	488376	54.13	ug/l	99
21) tert-Butyl methyl ether (M	9.85	73	890320	10.02	ug/l	98
22) trans-1,2-Dichloroethene	10.14	96	737070	10.65	ug/l	99
24) Isopropyl ether (DIPE)	10.60	45	2106878	10.21	ug/l	100
25) Vinyl acetate	10.81	43	686259	10.33	ug/l	99
26) 1,1-Dichloroethane	10.88	63	1138542	10.75	ug/l	100
27) 2-Butanol	11.19	45	596339	245.75	ug/l	98
28) tert-Butyl ethyl ether (ET	11.31	59	1301181	9.48	ug/l	99
29) 2-Butanone	11.54	72	137059	53.10	ug/l	95

(#) = qualifier out of range (m) = manual integration
RDD112.D VO94D14.M Wed Apr 15 18:02:45 2020 4/16/20 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:57 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
30)	2,2-Dichloropropane	11.82	77	426088	9.43	ug/l	99
31)	cis-1,2-Dichloroethene	11.91	96	704050	10.50	ug/l	100
32)	Chloroform	12.16	83	971219	10.55	ug/l	99
33)	tert-Amyl alcohol	12.35	59	101445	52.20	ug/l	97
34)	Bromochloromethane	12.46	130	308700	10.72	ug/l	98
35)	Tetrahydrofuran	12.49	42	80288	11.10	ug/l	98
37)	1,1,1-Trichloroethane	12.82	97	664690	10.54	ug/l	98
38)	2,2,4-Trimethylpentane	12.86	57	2908218	10.17	ug/l	100
39)	Cyclohexane	12.88	84	1225928	11.57	ug/l	99
40)	1,1-Dichloropropene	13.07	110	299937	10.32	ug/l	99
41)	tert-Amyl methyl ether (TA	13.17	73	999904	9.52	ug/l	99
42)	Carbon tetrachloride	13.26	119	526582	10.72	ug/l	99
44)	1,2-Dichloroethane	13.46	62	383823	10.53	ug/l	100
45)	Benzene	13.52	78	2391477	10.80	ug/l	100
46)	Trichloroethene	14.45	130	645435	10.39	ug/l	100
47)	Methylcyclohexane	14.56	83	1380919	11.93	ug/l	99
48)	1,2-Dichloropropane	14.71	63	521736	10.12	ug/l	100
49)	1,4-Dioxane	15.08	88	44817	212.88	ug/l	98
50)	Bromodichloromethane	15.11	83	569626	10.52	ug/l	100
51)	Dibromomethane	15.22	93	209262	10.13	ug/l	100
52)	2-Chloroethyl vinyl ether	15.43	63	175405	10.92	ug/l	98
53)	4-Methyl-2-pentanone	15.47	43	1376031	52.81	ug/l	99
54)	cis-1,3-Dichloropropene	15.88	75	735749	10.75	ug/l	99
57)	Toluene	16.43	91	2276830	10.12	ug/l	100
58)	Ethyl methacrylate	16.50	69	375770	10.97	ug/l	97
59)	trans-1,3-Dichloropropene	16.63	75	518843	10.42	ug/l	100
60)	2-Hexanone	16.80	43	842788	51.43	ug/l	100
61)	1,1,2-Trichloroethane	16.91	97	290831	9.70	ug/l	99
62)	1,3-Dichloropropane	17.29	76	556322	10.25	ug/l	100
63)	Tetrachloroethene	17.46	164	478043	9.82	ug/l	99
64)	Dibromochloromethane	17.79	129	326473	10.30	ug/l	100
65)	1,2-Dibromoethane	18.12	107	266934	10.24	ug/l	99
66)	1-Chlorohexane	18.17	91	932853	10.09	ug/l	100
67)	Chlorobenzene	18.73	112	1308437	10.17	ug/l	100
68)	Ethylbenzene	18.75	91	2428877	9.77	ug/l	99
69)	1,1,1,2-Tetrachloroethane	18.76	131	404679	10.20	ug/l	100
70)	m-Xylene & p-Xylene	18.86	91	3402717	19.81	ug/l	99
71)	o-Xylene	19.57	91	1712953	9.94	ug/l	100
72)	Styrene	19.61	104	1345838	10.44	ug/l	100
73)	Isopropylbenzene	20.09	105	2186118	10.13	ug/l	100
75)	Bromoform	20.25	173	160042	10.79	ug/l	99

(#) = qualifier out of range (m) = manual integration
RDD112.D VO94D14.M Wed Apr 15 18:02:46 2020 SU 4/16/20 Page 2

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D
Acq On : 15 Apr 2020 12:48 am
Sample : IVO94D1401
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA
MS Integration Params: RTE.P
Quant Time: Apr 15 16:57 2020

Vial: 14
Operator: VLu
Inst : 94
Multiplr: 1.00
Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

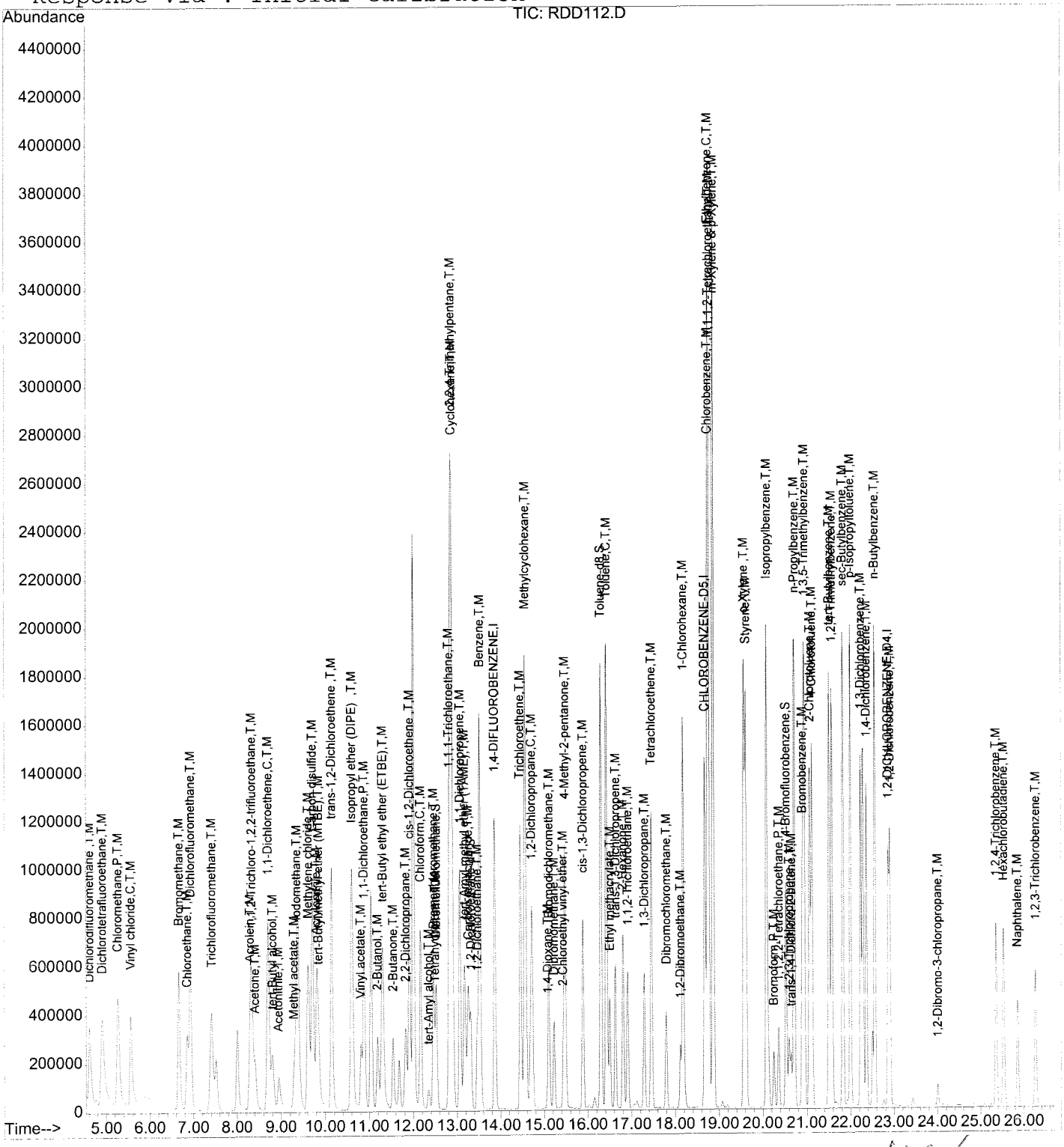
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
76)	1,1,2,2-Tetrachloroethane	20.36	83	310627	9.62	ug/l	99
78)	1,2,3-Trichloropropane	20.60	110	74374	10.62	ug/l	98
79)	trans-1,4-Dichloro-2-buten	20.64	53	61823	10.87	ug/l	100
80)	n-Propylbenzene	20.72	91	2690909	10.22	ug/l	100
81)	Bromobenzene	20.89	156	443295	9.92	ug/l	99
82)	1,3,5-Trimethylbenzene	20.94	105	1587805	10.29	ug/l	99
83)	2-Chlorotoluene	21.07	91	1439565	9.13	ug/l	87
84)	4-Chlorotoluene	21.11	91	1356812	11.81	ug/l	87
85)	tert-Butylbenzene	21.51	134	387315	10.26	ug/l	100
86)	1,2,4-Trimethylbenzene	21.57	105	1492138	10.34	ug/l	99
87)	sec-Butylbenzene	21.82	105	2266991	10.31	ug/l	100
88)	p-Isopropyltoluene	21.99	119	1651479	10.46	ug/l	100
89)	1,3-Dichlorobenzene	22.23	146	871522	10.35	ug/l	99
90)	1,4-Dichlorobenzene	22.36	146	797467	10.10	ug/l	100
91)	n-Butylbenzene	22.55	91	1578644	10.07	ug/l	100
92)	1,2-Dichlorobenzene	22.90	146	698692	10.10	ug/l	100
93)	1,2-Dibromo-3-chloropropan	24.00	157	41185	10.08	ug/l	99
94)	1,2,4-Trichlorobenzene	25.35	180	411843	10.03	ug/l	99
95)	Hexachlorobutadiene	25.53	225	288543	10.58	ug/l	99
96)	Naphthalene	25.85	128	612050	10.38	ug/l	99
97)	1,2,3-Trichlorobenzene	26.27	180	332293	10.47	ug/l	100

Su 4/16/20

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20D14\RDD112.D Vial: 14
Acq On : 15 Apr 2020 12:48 am Operator: VLu
Sample : IVO94D1401 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Apr 15 16:57 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



DAILY CALIBRATIONS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMAX Inc Contract: VA SALT LAKE CITY
Lab Code: EMXT Case No.: SAS No.: SDG No.: 20F210
Lab File ID: RFD394 BFB Injection Date : 06/26/20
Instrument ID: 94 BFB Injection Time : 15:22
GC Column:RTX502.2ID:0.25mm (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.22
75	30.0 - 60.0% of mass 95	47.49
95	Base peak, 100% relative abundance	100.00
96	5.0 - 9.0% of mass 95	7.14
173	Less than 2.0% of mass 174	0.00(0.0)1
174	Greater than 50% of mass 95	76.13
175	5.0 - 9.0% of mass 174	5.63(7.4)1
176	95.0 - 101.0% of mass 174	72.44(95.1)1
177	5.0 - 9.0% of mass 176	5.01(6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD,BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD010	CVO94D1444	RFD395	06/26/20	15:53
2	MBLK1W	VO94F18B	RFD400	06/26/20	17:58
3	LCS1W	VO94F18L	RFD397	06/26/20	16:24
4	LCD1W	VO94F18C	RFD398	06/26/20	16:55
5	MW23C-GW062320	F210-01	RFD401	06/26/20	18:29
6	TB19-GW062420	F210-02	RFD402	06/26/20	19:00
7	FB01-GW062420	F210-03	RFD403	06/26/20	19:32
8	MW27-GW062420	F210-04	RFD404	06/26/20	20:03
9	MW28-GW062420	F210-05	RFD405	06/26/20	20:34
10	TB18-GW062420	F210-06	RFD406	06/26/20	21:06
11	MW14S-GW062320	F210-07	RFD407	06/26/20	21:37
12	MW14D-GW062320	F210-08	RFD408	06/26/20	22:09
13	TB17-GW062420	F210-09	RFD409	06/26/20	22:40

FORM 8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name : EMAX Inc
Lab Code : EMXT
Lab File ID : RDD105
Instrument ID: 94
GC Column : RTX502.2ID:0.25mm (mm)

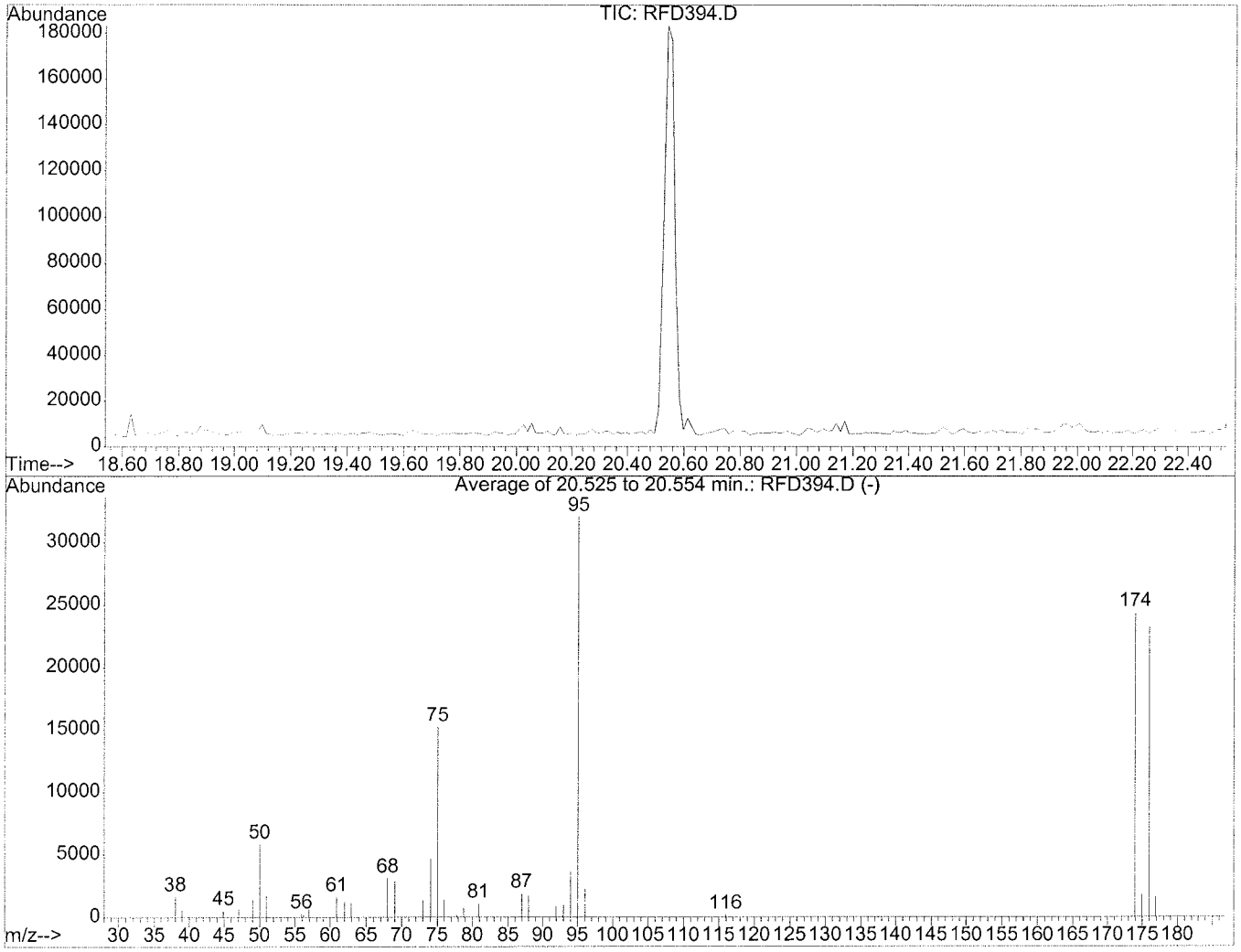
Project: VA SALT LAKE CITY
SDG No: 20F210
Date Analyzed: 04/14/2020
Time Analyzed: 21:08
Heated Purge (Y/N): N

		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5		1,2-DICHLOROBENZENE-D4	
		AREA #	RT(min)	AREA #	RT(min)	AREA #	RT(min)
	12 HOUR STD	1514502	13.87	1277044	18.67	452860	22.86
	UPPER LIMIT	3029004	14.04	2554088	18.84	905720	23.03
	LOWER LIMIT	757251	13.70	638522	18.50	226430	22.69
	SAMPLE ID						
1	VSTD010	1687258	13.89	1404734	18.69	475109	22.87
2	MBLK1W	2146235	13.89	1638937	18.69	514943	22.87
3	LCS1W	1575197	13.89	1363928	18.69	473376	22.87
4	LCD1W	1605748	13.89	1342048	18.69	441663	22.87
5	MW23C-GW062320	2051775	13.89	1594033	18.69	522291	22.87
6	TB19-GW062420	2101235	13.89	1611884	18.69	543196	22.87
7	FB01-GW062420	2074770	13.89	1618411	18.69	530847	22.87
8	MW27-GW062420	1978857	13.87	1535404	18.69	502298	22.87
9	MW28-GW062420	1764171	13.89	1418960	18.69	505062	22.87
10	TB18-GW062420	2017347	13.89	1562020	18.69	532406	22.87
11	MW14S-GW062320	2004998	13.89	1539798	18.69	518848	22.87
12	MW14D-GW062320	2018138	13.89	1544350	18.69	527922	22.87
13	TB17-GW062420	1994791	13.87	1535966	18.69	497018	22.87

Area Upper Limit = + 100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.167 min. (10 sec.) of internal standard RT
RT Lower Limit = - 0.167 min. (10 sec.) of internal standard RT

Data File : D:\HPCHEM\1\DATA\20F26\RFD394.D
Acq On : 26 Jun 2020 3:22 pm
Sample : BFB94F18
Misc : T/CHK
MS Integration Params: RTE.P
Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260

Vial: 1
Operator: FAdame/ODi
Inst : 94
Multiplr: 1.00



AutoFind: Scans 1086, 1087, 1088; Background Corrected with Scan 1083

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.2	5846	PASS
75	95	30	60	47.5	15242	PASS
95	95	100	100	100.0	32093	PASS
96	95	5	9	7.1	2293	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	24432	PASS
175	174	5	9	7.4	1808	PASS
176	174	95	101	95.1	23247	PASS
177	176	5	9	6.9	1608	PASS

RFD394.D VO94D14.M Mon Jun 29 11:47:46 2020

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	10.000	10.000	0.0	111	0.01
2	T,M	Dichlorodifluoromethane	10.000	10.648	-6.5	120	0.03
3	T,M	Dichlorotetrafluoroethane	10.000	0.023	99.8#	0	0.09
4	P,T,M	Chloromethane	10.000	8.959	10.4	105	0.03
5	C,T,M	Vinyl chloride	10.000	10.903	-9.0	110	0.02
6	T,M	Bromomethane	10.000	8.242	17.6	87	0.03
7	T,M	Chloroethane	10.000	9.090	9.1	103	0.03
8	T,M	Dichlorofluoromethane	10.000	9.826	1.7	104	0.03
9	T,M	Trichlorofluoromethane	10.000	9.574	4.3	106	0.03
10	T,M	Acrolein	50.000	40.906	18.2	88	0.02
11	T,M	1,1,2-Trichloro-1,2,2-trifl	10.000	8.739	12.6	93	0.03
12	T,M	Acetone	50.000	49.473	1.1	115	0.02
13	C,T,M	1,1-Dichloroethene	10.000	9.522	4.8	99	0.03
14	T,M	tert-Butyl alcohol	250.000	227.809	8.9	97	0.02
15	T,M	Acetonitrile	100.000	0.000	100.0#	0	-8.95#
16	T,M	Methyl acetate	10.000	9.361	6.4	105	0.02
17	T,M	Iodomethane	10.000	9.490	5.1	102	0.02
18	T,M	Methylene chloride	10.000	8.380	16.2	95	0.00
19	T,M	Carbon disulfide	10.000	9.034	9.7	89	0.03
20	T,M	Acrylonitrile	50.000	46.851	6.3	99	0.02
21	T,M	tert-Butyl methyl ether (MT	10.000	9.482	5.2	102	0.02
22	T,M	trans-1,2-Dichloroethene	10.000	9.188	8.1	99	0.03
23	T,M	n-Hexane	-1.000	0.000	0.0	0	0.00
24	T,M	Isopropyl ether (DIPE)	10.000	8.611	13.9	92	0.01
25	T,M	Vinyl acetate	10.000	9.132	8.7	97	0.01
26	P,T,M	1,1-Dichloroethane	10.000	9.716	2.8	106	0.01
27	T,M	2-Butanol	250.000	181.612	27.4#	78	0.03
28	T,M	tert-Butyl ethyl ether (ETB	10.000	8.079	19.2	92	0.02
29	T,M	2-Butanone	50.000	45.902	8.2	103	0.02
30	T,M	2,2-Dichloropropane	10.000	11.079	-10.8	124	0.02
31	T,M	cis-1,2-Dichloroethene	10.000	9.254	7.5	102	0.03
32	C,T,M	Chloroform	10.000	9.965	0.4	111	0.01
33	T,M	tert-Amyl alcohol	50.000	5.741	88.5#	12	0.03
34	T,M	Bromochloromethane	10.000	9.307	6.9	104	0.01
35	T,M	Tetrahydrofuran	10.000	7.893	21.1#	89	0.02
36	S	Dibromofluoromethane	10.000	10.439	-4.4	111	0.02
37	T,M	1,1,1-Trichloroethane	10.000	10.494	-4.9	115	0.01
38	T,M	2,2,4-Trimethylpentane	10.000	0.159	98.4#	2	0.03
39	T,M	Cyclohexane	10.000	8.689	13.1	92	0.03
40	T,M	1,1-Dichloropropene	10.000	8.968	10.3	98	0.01
41	T,M	tert-Amyl methyl ether (TAM	10.000	7.966	20.3#	94	0.02

(#) = Out of Range

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
42	T,M	Carbon tetrachloride	10.000	11.458	-14.6	124	0.03
43	S	1,2-Dichloroethane-d4	10.000	11.430	-14.3	122	0.02
44	T,M	1,2-Dichloroethane	10.000	10.595	-6.0	118	0.01
45	T,M	Benzene	10.000	8.714	12.9	97	0.01
46	T,M	Trichloroethene	10.000	9.044	9.6	102	0.01
47	T,M	Methylcyclohexane	10.000	8.752	12.5	95	0.01
48	C,T,M	1,2-Dichloropropane	10.000	8.931	10.7	101	0.01
49	T,M	1,4-Dioxane	200.000	150.527	24.7#	85	0.03
50	T,M	Bromodichloromethane	10.000	9.618	3.8	108	0.01
51	T,M	Dibromomethane	10.000	8.987	10.1	100	0.01
52	T,M	2-Chloroethyl vinyl ether	10.000	6.741	32.6#	76	0.02
53	T,M	4-Methyl-2-pentanone	50.000	42.988	14.0	95	0.02
54	T,M	cis-1,3-Dichloropropene	10.000	9.218	7.8	102	0.01
55	I	CHLOROBENZENE-D5	10.000	10.000	0.0	110	0.01
56	S	Toluene-d8	10.000	9.582	4.2	100	0.02
57	C,T,M	Toluene	10.000	8.698	13.0	96	0.01
58	T,M	Ethyl methacrylate	10.000	9.255	7.4	101	0.01
59	T,M	trans-1,3-Dichloropropene	10.000	9.505	4.9	104	0.01
60	T,M	2-Hexanone	50.000	42.308	15.4	94	0.01
61	T,M	1,1,2-Trichloroethane	10.000	8.873	11.3	101	0.01
62	T,M	1,3-Dichloropropane	10.000	9.249	7.5	103	0.01
63	T,M	Tetrachloroethene	10.000	8.386	16.1	95	0.01
64	T,M	Dibromochloromethane	10.000	9.758	2.4	107	0.01
65	T,M	1,2-Dibromoethane	10.000	8.882	11.2	99	0.01
66	T,M	1-Chlorohexane	10.000	8.400	16.0	91	0.01
67	T,M	Chlorobenzene	10.000	9.258	7.4	101	0.01
68	C,T,M	Ethylbenzene	10.000	9.014	9.9	99	0.01
69	T,M	1,1,1,2-Tetrachloroethane	10.000	10.195	-2.0	112	0.01
70	T,M	m-Xylene & p-Xylene	20.000	17.866	10.7	98	0.01
71	T,M	o-Xylene	10.000	8.747	12.5	97	0.01
72	T,M	Styrene	10.000	9.015	9.8	99	0.01
73	T,M	Isopropylbenzene	10.000	9.275	7.2	102	0.01
74	I	1,2-DICHLOROBENZENE-D4	10.000	10.000	0.0	105	0.01
75	P,T,M	Bromoform	10.000	9.131	8.7	99	0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	10.000	8.904	11.0	99	0.01
77	S	4-Bromofluorobenzene	10.000	9.472	5.3	97	0.01
78	T,M	1,2,3-Trichloropropane	10.000	9.975	0.3	106	0.01
79	T,M	trans-1,4-Dichloro-2-butene	10.000	8.188	18.1	90	0.01
80	T,M	n-Propylbenzene	10.000	9.007	9.9	97	0.01

(#) = Out of Range

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
81	T,M	Bromobenzene	10.000	8.622	13.8	94	0.01
82	T,M	1,3,5-Trimethylbenzene	10.000	9.099	9.0	98	0.01
83	T,M	2-Chlorotoluene	10.000	9.484	5.2	98	0.01
84	T,M	4-Chlorotoluene	10.000	8.553	14.5	97	0.01
85	T,M	tert-Butylbenzene	10.000	9.612	3.9	104	0.01
86	T,M	1,2,4-Trimethylbenzene	10.000	9.077	9.2	98	0.00
87	T,M	sec-Butylbenzene	10.000	9.216	7.8	98	0.00
88	T,M	p-Isopropyltoluene	10.000	9.965	0.4	103	0.01
89	T,M	1,3-Dichlorobenzene	10.000	9.156	8.4	98	0.01
90	T,M	1,4-Dichlorobenzene	10.000	9.237	7.6	100	0.01
91	T,M	n-Butylbenzene	10.000	9.189	8.1	96	0.01
92	T,M	1,2-Dichlorobenzene	10.000	9.077	9.2	96	0.01
93	T,M	1,2-Dibromo-3-chloropropane	10.000	8.052	19.5	86	0.01
94	T,M	1,2,4-Trichlorobenzene	10.000	9.784	2.2	102	0.01
95	T,M	Hexachlorobutadiene	10.000	11.693	-16.9	118	0.01
96	T,M	Naphthalene	10.000	9.626	3.7	100	0.01
97	T,M	1,2,3-Trichlorobenzene	10.000	10.145	-1.4	104	0.01

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	111	0.01
2	T,M	Dichlorodifluoromethane	0.400	0.426	-6.5	120	0.03
3	T,M	Dichlorotetrafluoroethane	0.491	0.001	99.8#	0#	0.09
4	P,T,M	Chloromethane	0.633	0.624	1.4	105	0.03
5	C,T,M	Vinyl chloride	0.506	0.552	-9.1	110	0.02
6	T,M	Bromomethane	0.469	0.387	17.5	87	0.03
7	T,M	Chloroethane	0.368	0.364	1.1	103	0.03
8	T,M	Dichlorofluoromethane	0.762	0.749	1.7	104	0.03
9	T,M	Trichlorofluoromethane	0.483	0.500	-3.5	106	0.03
10	T,M	Acrolein	0.029	0.024	17.2	88	0.02
11	T,M	1,1,2-Trichloro-1,2,2-trifl	0.289	0.253	12.5	93	0.03
12	T,M	Acetone	0.045	0.045	0.0	115	0.02
13	C,T,M	1,1-Dichloroethene	0.644	0.613	4.8	99	0.03
14	T,M	tert-Butyl alcohol	0.015	0.014	6.7	97	0.02
15	T,M	Acetonitrile	0.021	0.000	100.0#	0#	-8.95#
16	T,M	Methyl acetate	0.134	0.125	6.7	105	0.02
17	T,M	Iodomethane	0.570	0.541	5.1	102	0.02
18	T,M	Methylene chloride	0.528	0.443	16.1	95	0.00
19	T,M	Carbon disulfide	1.524	1.377	9.6	89	0.03
20	T,M	Acrylonitrile	0.057	0.054	5.3	99	0.02
21	T,M	tert-Butyl methyl ether (MT	0.566	0.537	5.1	102	0.02
22	T,M	trans-1,2-Dichloroethene	0.441	0.405	8.2	99	0.03
23	T,M	n-Hexane	0.000	0.000	0.0	0#	0.00
24	T,M	Isopropyl ether (DIPE)	1.315	1.132	13.9	92	0.01
25	T,M	Vinyl acetate	0.423	0.386	8.7	97	0.01
26	P,T,M	1,1-Dichloroethane	0.675	0.655	3.0	106	0.01
27	T,M	2-Butanol	0.015	0.011	26.7#	78	0.03
28	T,M	tert-Butyl ethyl ether (ETB	0.874	0.706	19.2	92	0.02
29	T,M	2-Butanone	0.016	0.015	6.3	103	0.02
30	T,M	2,2-Dichloropropane	0.288	0.319	-10.8	124	0.02
31	T,M	cis-1,2-Dichloroethene	0.427	0.395	7.5	102	0.03
32	C,T,M	Chloroform	0.586	0.584	0.3	111	0.01
33	T,M	tert-Amyl alcohol	0.012	0.001	91.7#	12#	0.03
34	T,M	Bromochloromethane	0.183	0.171	6.6	104	0.01
35	T,M	Tetrahydrofuran	0.046	0.036	21.7#	89	0.02
36	S	Dibromofluoromethane	0.291	0.303	-4.1	111	0.02
37	T,M	1,1,1-Trichloroethane	0.402	0.421	-4.7	115	0.01
38	T,M	2,2,4-Trimethylpentane	1.821	0.029	98.4#	2#	0.03
39	T,M	Cyclohexane	0.675	0.587	13.0	92	0.03
40	T,M	1,1-Dichloropropene	0.185	0.166	10.3	98	0.01
41	T,M	tert-Amyl methyl ether (TAM	0.669	0.533	20.3#	94	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
42	T,M	Carbon tetrachloride	0.313	0.358	-14.4	124	0.03
43	S	1,2-Dichloroethane-d4	0.196	0.224	-14.3	122	0.02
44	T,M	1,2-Dichloroethane	0.232	0.246	-6.0	118	0.01
45	T,M	Benzene	1.411	1.229	12.9	97	0.01
46	T,M	Trichloroethene	0.396	0.358	9.6	102	0.01
47	T,M	Methylcyclohexane	0.737	0.645	12.5	95	0.01
48	C,T,M	1,2-Dichloropropane	0.328	0.293	10.7	101	0.01
49	T,M	1,4-Dioxane	0.001	0.001	0.0	85	0.03
50	T,M	Bromodichloromethane	0.345	0.332	3.8	108	0.01
51	T,M	Dibromomethane	0.132	0.118	10.6	100	0.01
52	T,M	2-Chloroethyl vinyl ether	0.102	0.069	32.4#	76	0.02
53	T,M	4-Methyl-2-pentanone	0.166	0.143	13.9	95	0.02
54	T,M	cis-1,3-Dichloropropene	0.436	0.402	7.8	102	0.01
55	I	CHLOROBENZENE-D5	1.000	1.000	0.0	110	0.01
56	S	Toluene-d8	1.417	1.358	4.2	100	0.02
57	C,T,M	Toluene	1.710	1.487	13.0	96	0.01
58	T,M	Ethyl methacrylate	0.260	0.241	7.3	101	0.01
59	T,M	trans-1,3-Dichloropropene	0.378	0.360	4.8	104	0.01
60	T,M	2-Hexanone	0.125	0.105	16.0	94	0.01
61	T,M	1,1,2-Trichloroethane	0.228	0.202	11.4	101	0.01
62	T,M	1,3-Dichloropropane	0.412	0.381	7.5	103	0.01
63	T,M	Tetrachloroethene	0.370	0.310	16.2	95	0.01
64	T,M	Dibromochloromethane	0.241	0.235	2.5	107	0.01
65	T,M	1,2-Dibromoethane	0.198	0.176	11.1	99	0.01
66	T,M	1-Chlorohexane	0.702	0.590	16.0	91	0.01
67	T,M	Chlorobenzene	0.977	0.905	7.4	101	0.01
68	C,T,M	Ethylbenzene	1.889	1.703	9.8	99	0.01
69	T,M	1,1,1,2-Tetrachloroethane	0.301	0.307	-2.0	112	0.01
70	T,M	m-Xylene & p-Xylene	1.305	1.165	10.7	98	0.01
71	T,M	o-Xylene	1.309	1.145	12.5	97	0.01
72	T,M	Styrene	0.980	0.883	9.9	99	0.01
73	T,M	Isopropylbenzene	1.640	1.521	7.3	102	0.01
74	I	1,2-DICHLOROBENZENE-D4	1.000	1.000	0.0	105	0.01
75	P,T,M	Bromoform	0.337	0.307	8.9	99	0.01
76	P,T,M	1,1,2,2-Tetrachloroethane	0.732	0.652	10.9	99	0.01
77	S	4-Bromofluorobenzene	1.170	1.108	5.3	97	0.01
78	T,M	1,2,3-Trichloropropane	0.159	0.159	0.0	106	0.01
79	T,M	trans-1,4-Dichloro-2-butene	0.129	0.106	17.8	90	0.01
80	T,M	n-Propylbenzene	5.972	5.379	9.9	97	0.01

(#) = Out of Range

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.16min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
81	T,M	Bromobenzene	1.014	0.874	13.8	94	0.01
82	T,M	1,3,5-Trimethylbenzene	3.500	3.185	9.0	98	0.01
83	T,M	2-Chlorotoluene	3.577	3.392	5.2	98	0.01
84	T,M	4-Chlorotoluene	2.606	2.229	14.5	97	0.01
85	T,M	tert-Butylbenzene	0.857	0.824	3.9	104	0.01
86	T,M	1,2,4-Trimethylbenzene	3.273	2.971	9.2	98	0.00
87	T,M	sec-Butylbenzene	4.987	4.596	7.8	98	0.00
88	T,M	p-Isopropyltoluene	3.580	3.568	0.3	103	0.01
89	T,M	1,3-Dichlorobenzene	1.911	1.749	8.5	98	0.01
90	T,M	1,4-Dichlorobenzene	1.791	1.654	7.6	100	0.01
91	T,M	n-Butylbenzene	3.556	3.268	8.1	96	0.01
92	T,M	1,2-Dichlorobenzene	1.570	1.425	9.2	96	0.01
93	T,M	1,2-Dibromo-3-chloropropane	0.093	0.075	19.4	86	0.01
94	T,M	1,2,4-Trichlorobenzene	0.932	0.912	2.1	102	0.01
95	T,M	Hexachlorobutadiene	0.619	0.723	-16.8	118	0.01
96	T,M	Naphthalene	1.338	1.288	3.7	100	0.01
97	T,M	1,2,3-Trichlorobenzene	0.720	0.730	-1.4	104	0.01

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:20 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-DIFLUOROBENZENE	13.89	114	1687258	10.00	ug/l	0.01
55) CHLOROBENZENE-D5	18.69	117	1404734	10.00	ug/l	0.01
74) 1,2-DICHLOROBENZENE-D4	22.87	152	475109	10.00	ug/l	0.01
System Monitoring Compounds						
36) Dibromofluoromethane	12.54	111	511688	10.44	ug/l	0.02
Spiked Amount 10.000			Recovery = 104.40%			
43) 1,2-Dichloroethane-d4	13.33	65	377285	11.43	ug/l	0.02
Spiked Amount 10.000			Recovery = 114.30%			
56) Toluene-d8	16.31	98	1907904	9.58	ug/l	0.02
Spiked Amount 10.000			Recovery = 95.80%			
77) 4-Bromofluorobenzene	20.54	95	526643	9.47	ug/l	0.01
Spiked Amount 10.000			Recovery = 94.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.65	85	718350	10.65	ug/l	96
4) Chloromethane	5.30	50	1052169	8.96	ug/l	99
5) Vinyl chloride	5.59	62	930869	10.90	ug/l	100
6) Bromomethane	6.70	94	652422	8.24	ug/l	98
7) Chloroethane	6.89	64	614704	9.09	ug/l	100
8) Dichlorofluoromethane	6.96	67	1263777	9.83	ug/l	100
9) Trichlorofluoromethane	7.45	101	842995	9.57	ug/l	100
10) Acrolein	8.32	56	200434	40.91	ug/l	89
11) 1,1,2-Trichloro-1,2,2-trif	8.36	151	426435	8.74	ug/l	99
12) Acetone	8.44	43	376309	49.47	ug/l	93
13) 1,1-Dichloroethene	8.73	61	1034647	9.52	ug/l	97
14) tert-Butyl alcohol	8.82	59	571232	227.81	ug/l	98
16) Methyl acetate	9.31	43	210972	9.36	ug/l	99
17) Iodomethane	9.36	142	912042	9.49	ug/l	92
18) Methylene chloride	9.63	49	747279	8.38	ug/l	98
19) Carbon disulfide	9.75	76	2323291	9.03	ug/l	100
20) Acrylonitrile	9.84	53	454243	46.85	ug/l	99
21) tert-Butyl methyl ether (M	9.87	73	905395	9.48	ug/l	95
22) trans-1,2-Dichloroethene	10.18	96	683007	9.19	ug/l	99
24) Isopropyl ether (DIPE)	10.63	45	1910071	8.61	ug/l	95
25) Vinyl acetate	10.83	43	651926	9.13	ug/l	100
26) 1,1-Dichloroethane	10.91	63	1105733	9.72	ug/l	100
27) 2-Butanol	11.22	45	473582	181.61	ug/l	97
28) tert-Butyl ethyl ether (ET	11.32	59	1190996	8.08	ug/l	99
29) 2-Butanone	11.55	72	127311	45.90	ug/l	95
30) 2,2-Dichloropropane	11.85	77	537970	11.08	ug/l	98
31) cis-1,2-Dichloroethene	11.94	96	666926	9.25	ug/l	99

(#) = qualifier out of range (m) = manual integration
RFD395.D VO94D14.M Mon Jun 29 11:48:19 2020 Page 1

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:20 2020 Quant Results File: VO94D14.RES

Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
32)	Chloroform	12.19	83	985900	9.96	ug/l		99
33)	tert-Amyl alcohol	12.38	59	11989	5.74	ug/l		86
34)	Bromochloromethane	12.48	130	287994	9.31	ug/l		100
35)	Tetrahydrofuran	12.51	42	61362	7.89	ug/l		95
37)	1,1,1-Trichloroethane	12.85	97	711126	10.49	ug/l		81
38)	2,2,4-Trimethylpentane	12.89	57	48886	0.16	ug/l	#	87
39)	Cyclohexane	12.90	84	989650	8.69	ug/l		98
40)	1,1-Dichloropropene	13.08	110	280007	8.97	ug/l		98
41)	tert-Amyl methyl ether (TA	13.18	73	899026	7.97	ug/l		99
42)	Carbon tetrachloride	13.29	119	604790	11.46	ug/l		99
44)	1,2-Dichloroethane	13.48	62	415103	10.60	ug/l		99
45)	Benzene	13.54	78	2074154	8.71	ug/l		100
46)	Trichloroethene	14.48	130	603989	9.04	ug/l		97
47)	Methylcyclohexane	14.58	83	1088892	8.75	ug/l		99
48)	1,2-Dichloropropane	14.74	63	494634	8.93	ug/l		92
49)	1,4-Dioxane	15.11	88	34054	150.53	ug/l		96
50)	Bromodichloromethane	15.12	83	559547	9.62	ug/l		99
51)	Dibromomethane	15.24	93	199497	8.99	ug/l		98
52)	2-Chloroethyl vinyl ether	15.46	63	116314	6.74	ug/l		99
53)	4-Methyl-2-pentanone	15.49	43	1203571	42.99	ug/l		98
54)	cis-1,3-Dichloropropene	15.90	75	678105	9.22	ug/l		99
57)	Toluene	16.44	91	2089368	8.70	ug/l		99
58)	Ethyl methacrylate	16.52	69	338381	9.26	ug/l		94
59)	trans-1,3-Dichloropropene	16.65	75	505314	9.51	ug/l		97
60)	2-Hexanone	16.82	43	739923	42.31	ug/l		99
61)	1,1,2-Trichloroethane	16.93	97	283765	8.87	ug/l		99
62)	1,3-Dichloropropane	17.31	76	535733	9.25	ug/l		100
63)	Tetrachloroethene	17.47	164	435736	8.39	ug/l		96
64)	Dibromochloromethane	17.81	129	330156	9.76	ug/l		99
65)	1,2-Dibromoethane	18.13	107	246987	8.88	ug/l		99
66)	1-Chlorohexane	18.20	91	828556	8.40	ug/l		99
67)	Chlorobenzene	18.75	112	1270906	9.26	ug/l		99
68)	Ethylbenzene	18.78	91	2391738	9.01	ug/l		96
69)	1,1,1,2-Tetrachloroethane	18.79	131	431571	10.20	ug/l		99
70)	m-Xylene & p-Xylene	18.88	91	3274319	17.87	ug/l		97
71)	o-Xylene	19.58	91	1608357	8.75	ug/l		97
72)	Styrene	19.63	104	1240407	9.01	ug/l		98
73)	Isopropylbenzene	20.10	105	2136799	9.28	ug/l		99
75)	Bromoform	20.28	173	146032	9.13	ug/l		99
76)	1,1,2,2-Tetrachloroethane	20.38	83	309786	8.90	ug/l		99
78)	1,2,3-Trichloropropane	20.61	110	75317	9.98	ug/l		94

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:20 2020 Quant Results File: VO94D14.RES

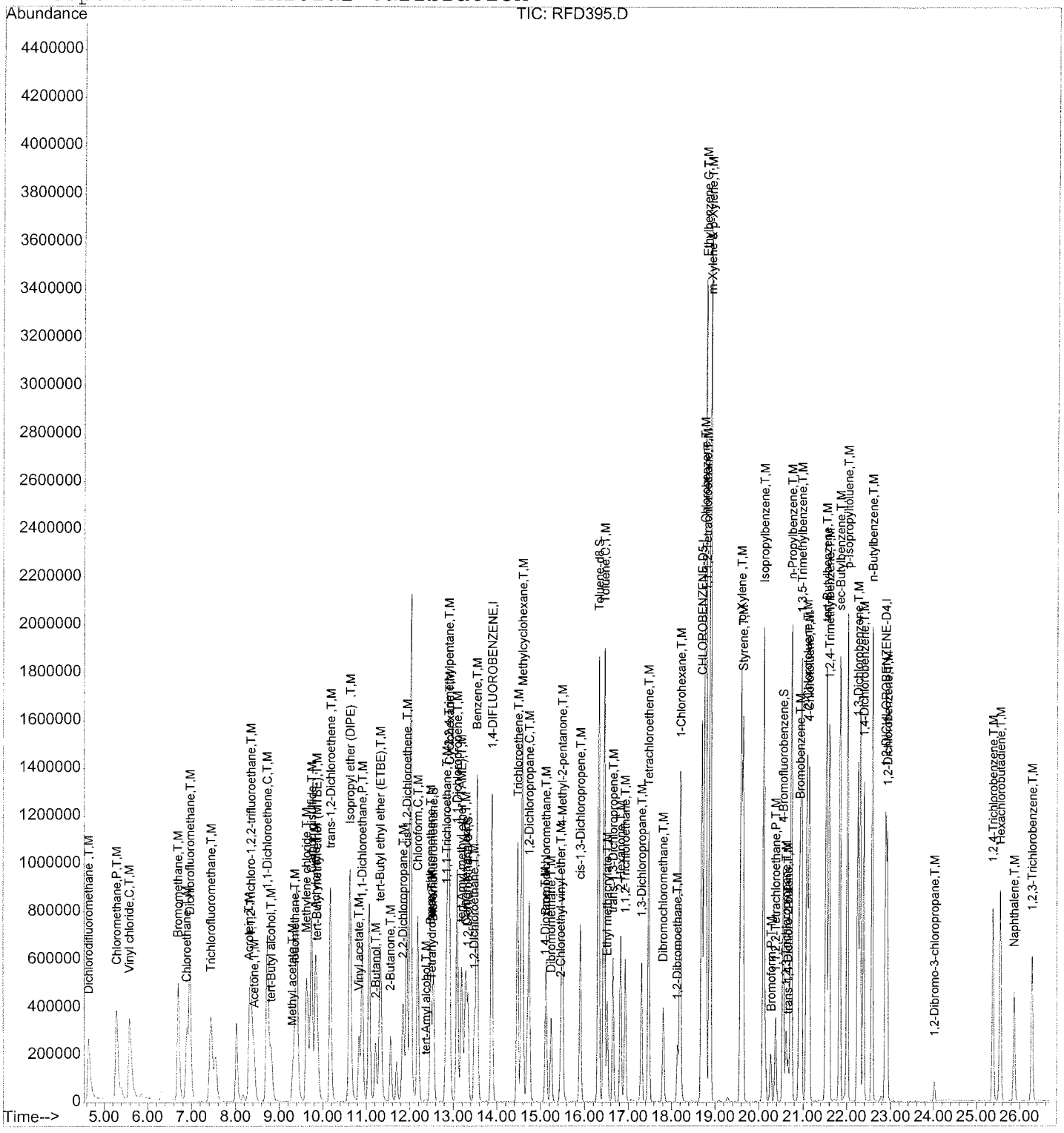
Quant Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration
DataAcq Meth : VO94D14

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79)	trans-1,4-Dichloro-2-buten	20.66	53	50188	8.19	ug/l	99
80)	n-Propylbenzene	20.73	91	2555703	9.01	ug/l	96
81)	Bromobenzene	20.92	156	415335	8.62	ug/l	100
82)	1,3,5-Trimethylbenzene	20.95	105	1513102	9.10	ug/l	98
83)	2-Chlorotoluene	21.08	91	1611721	9.48	ug/l	95
84)	4-Chlorotoluene	21.13	91	1058914	8.55	ug/l	96
85)	tert-Butylbenzene	21.52	134	391295	9.61	ug/l	98
86)	1,2,4-Trimethylbenzene	21.58	105	1411641	9.08	ug/l	98
87)	sec-Butylbenzene	21.83	105	2183667	9.22	ug/l	98
88)	p-Isopropyltoluene	22.01	119	1695071	9.97	ug/l	99
89)	1,3-Dichlorobenzene	22.24	146	831201	9.16	ug/l	99
90)	1,4-Dichlorobenzene	22.37	146	785856	9.24	ug/l	98
91)	n-Butylbenzene	22.57	91	1552551	9.19	ug/l	99
92)	1,2-Dichlorobenzene	22.92	146	676880	9.08	ug/l	99
93)	1,2-Dibromo-3-chloropropan	24.02	157	35453	8.05	ug/l	98
94)	1,2,4-Trichlorobenzene	25.37	180	433070	9.78	ug/l	99
95)	Hexachlorobutadiene	25.54	225	343707	11.69	ug/l	99
96)	Naphthalene	25.87	128	611751	9.63	ug/l	98
97)	1,2,3-Trichlorobenzene	26.28	180	346947	10.15	ug/l	99

(#) = qualifier out of range (m) = manual integration

Data File : D:\HPCHEM\1\DATA\20F26\RFD395.D Vial: 2
Acq On : 26 Jun 2020 3:53 pm Operator: FAdame/ODinh
Sample : CVO94D1444 Inst : 94
Misc : 10ppb 8260/50ppb KET-AA/250ppb TBA Multiplr: 1.00
MS Integration Params: RTE.P
Quant Time: Jun 26 16:20 2020 Quant Results File: VO94D14.RES

Method : D:\HPCHEM\1\METHODS\VO94D14.M (RTE Integrator)
Title : METHOD 8260
Last Update : Wed Apr 15 16:20:37 2020
Response via : Initial Calibration



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☑ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: 4/14/20 ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge **Book #:** A94-050

BATCH V094D14

Sample Prep ID	Data File Name	Lab Sample ID	(*) Sample Amount (mL)	DF	Matrix W pH < 2	Matrix W Cl_2 < 5ppm	Matrix S	Notes
01	RDD099	BFB94D04 ✓	A / B	NA	NA	NA		8260 Ket-AA TBA 17:42
02	100	V094D141 ✓	0.03/0.15					0.3 1.5 7.5 ppb
03	101	2 ✓	0.05/0.25					0.5 2.5 12.5
04	102	3 ✓	0.1/0.5					1.0 5.0 25
05	103	4 ✓	0.2/1.0					2.0 10 50
06	104	5 ✓	0.5/2.5					5.0 25 125
07	105	6 ✓	1.0/5.0					10 50 250
08	106	7 ✓	2.0/10					20 100 500
09	107	8 ✓	3.0/15					30 150 750
10	108	9 ✓	5.0/25					50 250 1250
11	109	10 ✓	10/50					100 500 2500
12	110	RINSE						
13	111	↓						00:48
14	112	IV094D1401 ✓						(A): GAS, CS_2, 4add, Freon114, TAA+224
15	113	RINSE						(B): 8260, ket-AA
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								VL 4/15/20

Instrument No. 94

INITIAL CALIBRATION REFERENCE

DATE 4/14/20

ICAL ID V094D14

VL 4/15/20 STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC 8260 Ket-AA	SVI-34-08-03 / -34-08-01	*	50/1250 / 250
DCC GAS CS_2 CS_2 GAS	-34-05-01 / -34-20-20		250 / 250
DCC 4add TAA+224	-34-13-01 / -34-19-03		250/6250 / 250/1250
DCC Freon 114	-34-19-01		250
BFB	-33-34-01	1	50
IS/SURR. IS / SS	-34-06-01 / -34-01-01	5 / *	50 / 250
ICV/LCS 8260 Ket-AA	-34-20-01 / -34-11-01	5 / 5	50/1250 / 250
ICV/LCS GAS CS_2 CS_2 GAS	-33-74-01 / -34-10-03	1 / 1	250 / 250
ICV/LCS 3add 2 but	-33-50-02 / -25-19-05	5 / 6.25	50 / 1000
ICV/LCS TAA 224	-34-02-03 / -34-05-03	5 / 5	250 / 50
Freon 114 Data File Folder	-34-19-02 20D14	5	50

	LOT #	Syringe Lot #
pH strip		MSV-02-01-05-1
Chlorine strip		-02-01-07-5
Methanol		-01-04-16
$NaHSO_4$		-02-01-02
Reagent Water	RWS-19-001	-01-05-08
Sand		N02-C6009

Electronic Data Archival Location	Date
HPCHEM_VOA/TO94	

Comments:

Analyzed By: VL

Date Disposed: 4/15/20 Disposed By: VL

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR VOLATILES

SOP ☑ EMAX-8260 Rev.No. 10 ☐ EMAX-8260C Rev. No. 1 ☐ EMAX-8260SIM Rev.No. 1 ☐ EMAX-M8260SIM Rev.No. 0 ☐ EMAX-TCPSIM Rev.No. 2 ☐ EMAX-624 Rev.No. 5 ☐ EMAX-624.1 Rev.No. 0

Start Date: ☐ 5-mL Purge ☐ 10-mL Purge ☑ 25-mL Purge

Book #: A94-050

BATCH V94D1444 CV094D1444

FA 6/29/2020

	Sample Prep ID	Data File Name	Lab Sample ID	Sample Amount	DF	Matrix W pH <2	Matrix W Cl_2 <5ppm	Matrix S	Notes
01	RFD	394	BFB94F18						3:22 PM
02		395	CV094D1444						
03		396	N/A						
04		397	V094F18L						
05		398	V094F18C						
06		399	RINSE						
07		400	V094F18B	25mL	1.0				
08		401	20F210-01	25mL	1.0	\	\		
09		402	-02	25mL	1.0	\	\		
10		403	-03	25mL	1.0	\	\		
11		404	-04	25mL	1.0	\	\		
12		405	-05	25mL	1.0	\	\		
13		406	-06	25mL	1.0	\	\		
14		407	-07	25mL	1.0	\	\		
15		408	-08	25mL	1.0	\	\		
16		409	-09	25mL	1.0	\	\		
17		410	20F209-05	25mL	1.0	\	\		
18		411	20F198-09	25mL	1.0	\	\		
19		412	20F195-01	25mL	1.0	\	\		
20		413	-02	25mL	1.0	\	\		
21		414	-03	25mL	1.0	\	\		
22		415	-03M	25mL	1.0	\	\		
23		416	-03S	25mL	1.0	\	\		
24		417	EV094D1444						2:51 AM
25		418	EV094D1444A						
26		419	EV094D1444B						
27									
28									
29									
30									FA 6/29/2020

Instrument No.	94
INITIAL CALIBRATION REFERENCE	
DATE	04/14/2020
ICAL ID	V094D14

STANDARDS

NAME	ID	Amount (µl)	Conc. (mg/L)
DCC CS_2/Cx1	54-39-25-02 / 32-01	1	
DCC 8260	-36-03	5	
DCC ref	-36-01	5	
DCC 4add	-27-02	1	
BFB	54-33-87-01	1	
IS/SURR.	54-34-40-67	5	581280
ICV/LCS	54-77-20-02/54-39-02-4	1	
ICV/LCS	-27-03	5	
ICV/LCS	-11-01	5	
ICV/LCS	54-37-56-02	5	
Data File Folder	20F26		

	LOT #	Syringe Lot #
pH strip	HC904495	HSV-01-04-01
Chlorine strip	002214	-02-01-04-05
Methanol		-02-01-05-06
$NaHSO_4$		
Reagent Water	RW3-19-001	
Sand		

Electronic Data Archival Location	Date
HPCHEM_VOA/TO94	

Comments:

Analyzed By: FA 6/29/20

Date Disposed: 6/29/2020 Disposed By: FA

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

SDG#: 20F210

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

A total of six(6) water samples were received on 06/25/20 to be analyzed for 1,4-Dioxane by GC/MS SIM in accordance with Method SW3520C/SW8270D SIM and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. There was one(1)CCV associated with this SDG CCV(Datafile ID:RFF123) was within calibration acceptance criteria. All calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. SVF022WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. SVF022WL/SVF022WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Surrogate
Surrogate was added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
1,4-DIOXANE BY GC/MS SIM

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F210
Instrument ID : F0

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	SVF022WB	1	NA	06/26/2012:33	06/25/2014:00	RFF124	RFF005	20SVF022W	Method Blank
LCS1W	SVF022WL	1	NA	06/26/2012:49	06/25/2014:00	RFF125	RFF005	20SVF022W	Lab Control Sample (LCS)
LCD1W	SVF022WC	1	NA	06/26/2013:08	06/25/2014:00	RFF126	RFF005	20SVF022W	LCS Duplicate
MW23C-GW062320	20F210-01	1	NA	06/26/2015:41	06/25/2014:00	RFF134	RFF005	20SVF022W	Field Sample
FB01-GW062420	20F210-03	1	NA	06/26/2016:00	06/25/2014:00	RFF135	RFF005	20SVF022W	Field Sample
MW27-GW062420	20F210-04	1	NA	06/26/2016:19	06/25/2014:00	RFF136	RFF005	20SVF022W	Field Sample
MW28-GW062420	20F210-05	1	NA	06/26/2016:39	06/25/2014:00	RFF137	RFF005	20SVF022W	Field Sample
MW14S-GW062320	20F210-07	1	NA	06/26/2016:58	06/25/2014:00	RFF138	RFF005	20SVF022W	Field Sample
MW14D-GW062320	20F210-08	1	NA	06/26/2017:17	06/25/2014:00	RFF139	RFF005	20SVF022W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/23/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MW23C-GW062320	Date Analyzed:	06/26/20 15:41
Lab Samp ID:	20F210-01	Dilution Factor:	1
Lab File ID:	RFF134	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	36.6	40.0	92	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

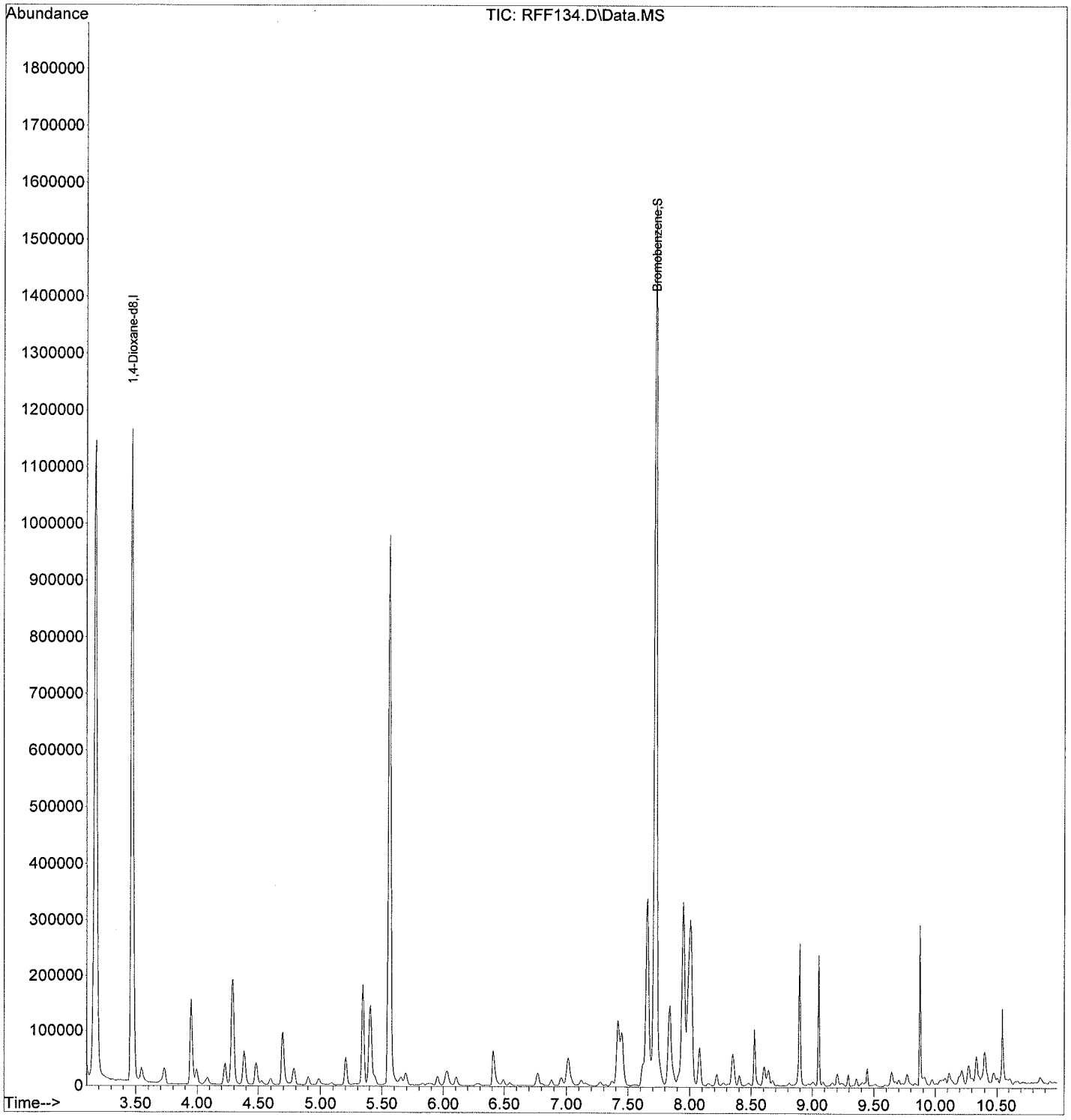
Data File : C:\msdchem\1\DATA\20F26\RFF134.D Vial: 14
Acq On : 26 Jun 2020 15:41 Operator: RMinam
Sample : 20F210-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:09:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	183723	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	282505	18.30	ppm	0.00
Spiked Amount 20.000			Recovery = 91.50%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF134.D Vial: 14
Acq On : 26 Jun 2020 15:41 Operator: RMinam
Sample : 20F210-01 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:09:31 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/24/20 16:00
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: FB01-GW062420	Date Analyzed:	06/26/20 16:00
Lab Samp ID:	20F210-03	Dilution Factor:	1
Lab File ID:	RFF135	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.42	0.21

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	37.3	42.0	89	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 950ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

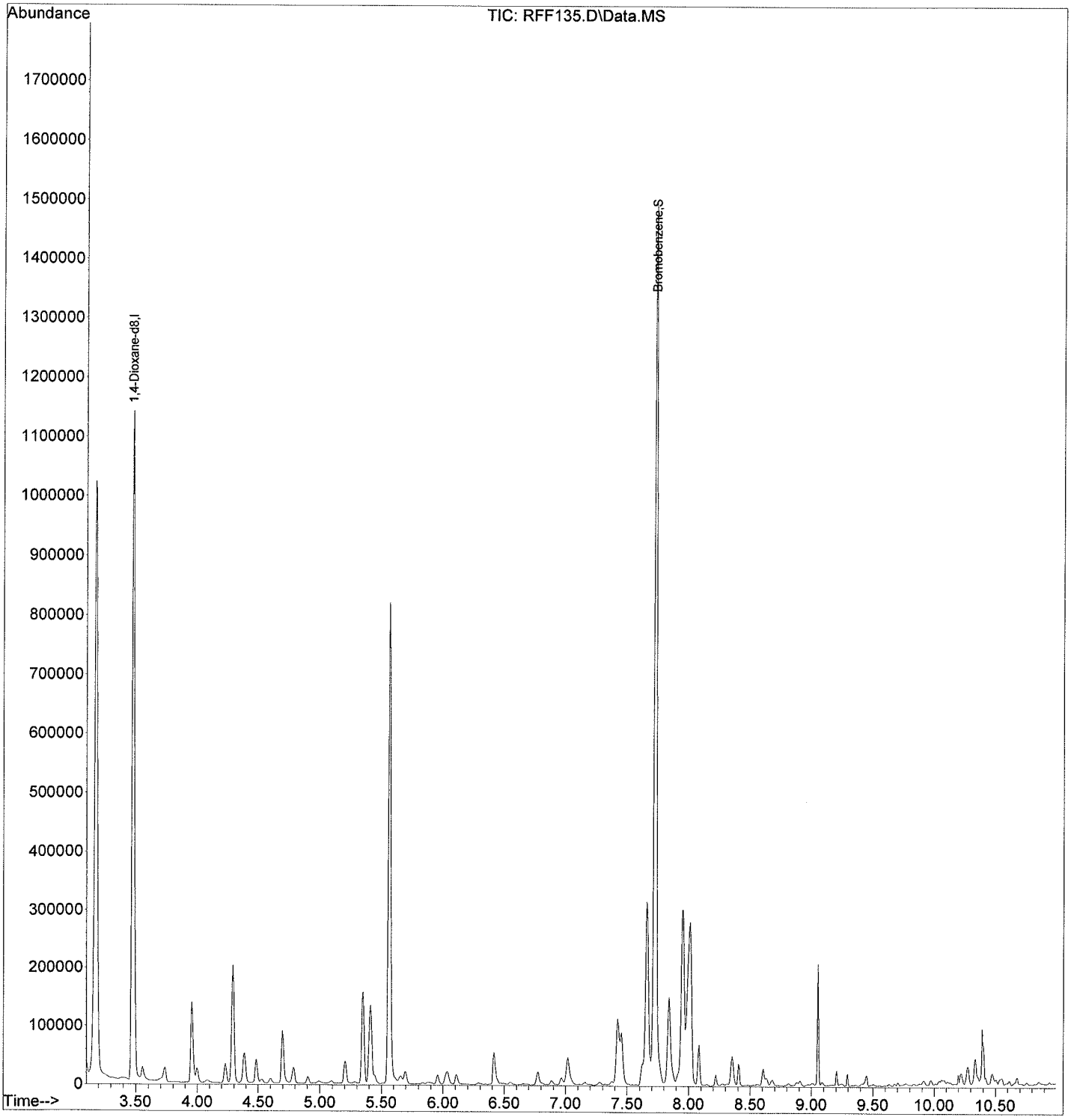
Data File : C:\msdchem\1\DATA\20F26\RFF135.D Vial: 15
Acq On : 26 Jun 2020 16:00 Operator: RMinam
Sample : 20F210-03 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	182816	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	272184	17.72	ppm	0.00
Spiked Amount 20.000			Recovery =	88.60%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF135.D Vial: 15
Acq On : 26 Jun 2020 16:00 Operator: RMinam
Sample : 20F210-03 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:00 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/24/20 09:35
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MW27-GW062420	Date Analyzed:	06/26/20 16:19
Lab Samp ID:	20F210-04	Dilution Factor:	1
Lab File ID:	RFF136	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.38	0.19

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	35.6	37.6	95	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1060ml	Final Volume	: 2ml
Prepared by	: HWang	Analyzed by	: RMinam

Quantitation Report (QT Reviewed)

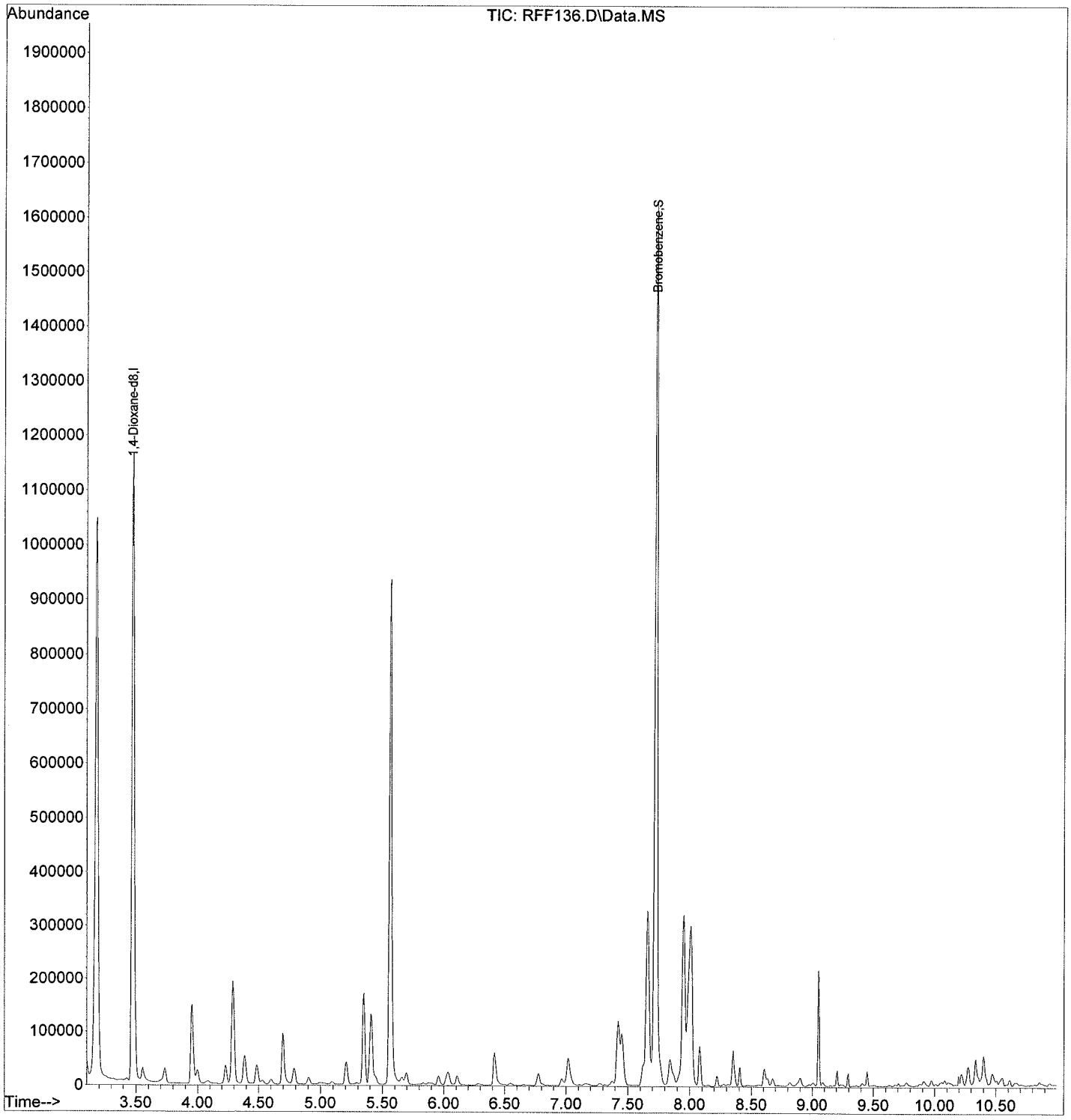
Data File : C:\msdchem\1\DATA\20F26\RFF136.D Vial: 16
Acq On : 26 Jun 2020 16:19 Operator: RMinam
Sample : 20F210-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185190	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	293334	18.85	ppm	0.00
Spiked Amount 20.000			Recovery =	94.25%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF136.D Vial: 16
Acq On : 26 Jun 2020 16:19 Operator: RMinam
Sample : 20F210-04 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:43 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/24/20 11:10
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MW28-GW062420	Date Analyzed:	06/26/20 16:39
Lab Samp ID:	20F210-05	Dilution Factor:	1
Lab File ID:	RFF137	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.46	0.23

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	40.1	46.0	87	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 870ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

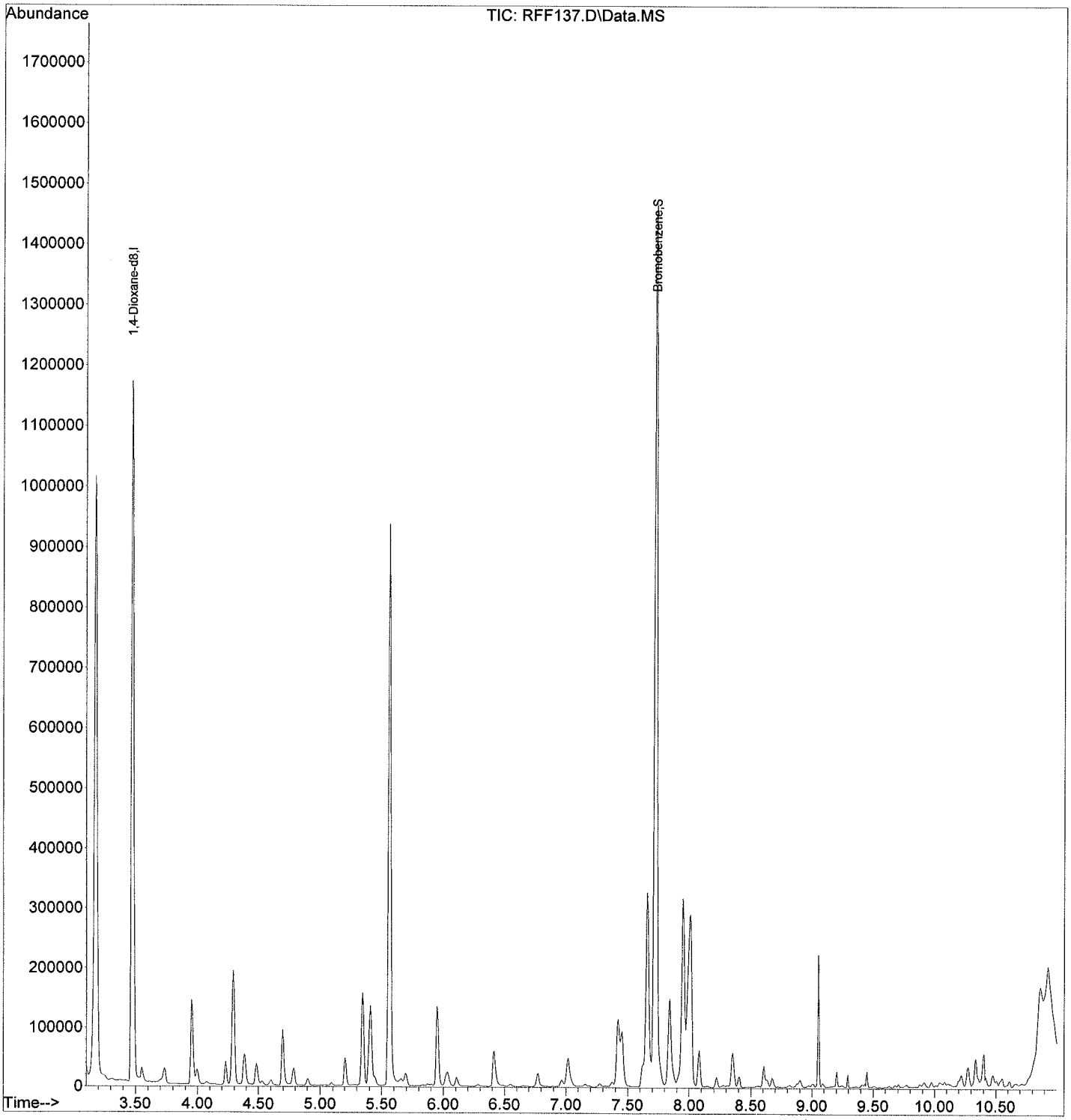
Data File : C:\msdchem\1\DATA\20F26\RFF137.D Vial: 17
Acq On : 26 Jun 2020 16:39 Operator: RMinam
Sample : 20F210-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:59 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	186868	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	273780	17.44	ppm	0.00
Spiked Amount 20.000			Recovery = 87.20%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF137.D Vial: 17
Acq On : 26 Jun 2020 16:39 Operator: RMinam
Sample : 20F210-05 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:10:59 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/23/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MW14S-GW062320	Date Analyzed:	06/26/20 16:58
Lab Samp ID:	20F210-07	Dilution Factor:	1
Lab File ID:	RFF138	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)	
1,4-Dioxane (P-Dioxane)	ND	0.41	0.21	
SURROGATE PARAMETERS	**RESULT**	**SPK_AMT**	**%RECOVERY**	**QC LIMIT**
Bromobenzene	29.7	41.2	72	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 970ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

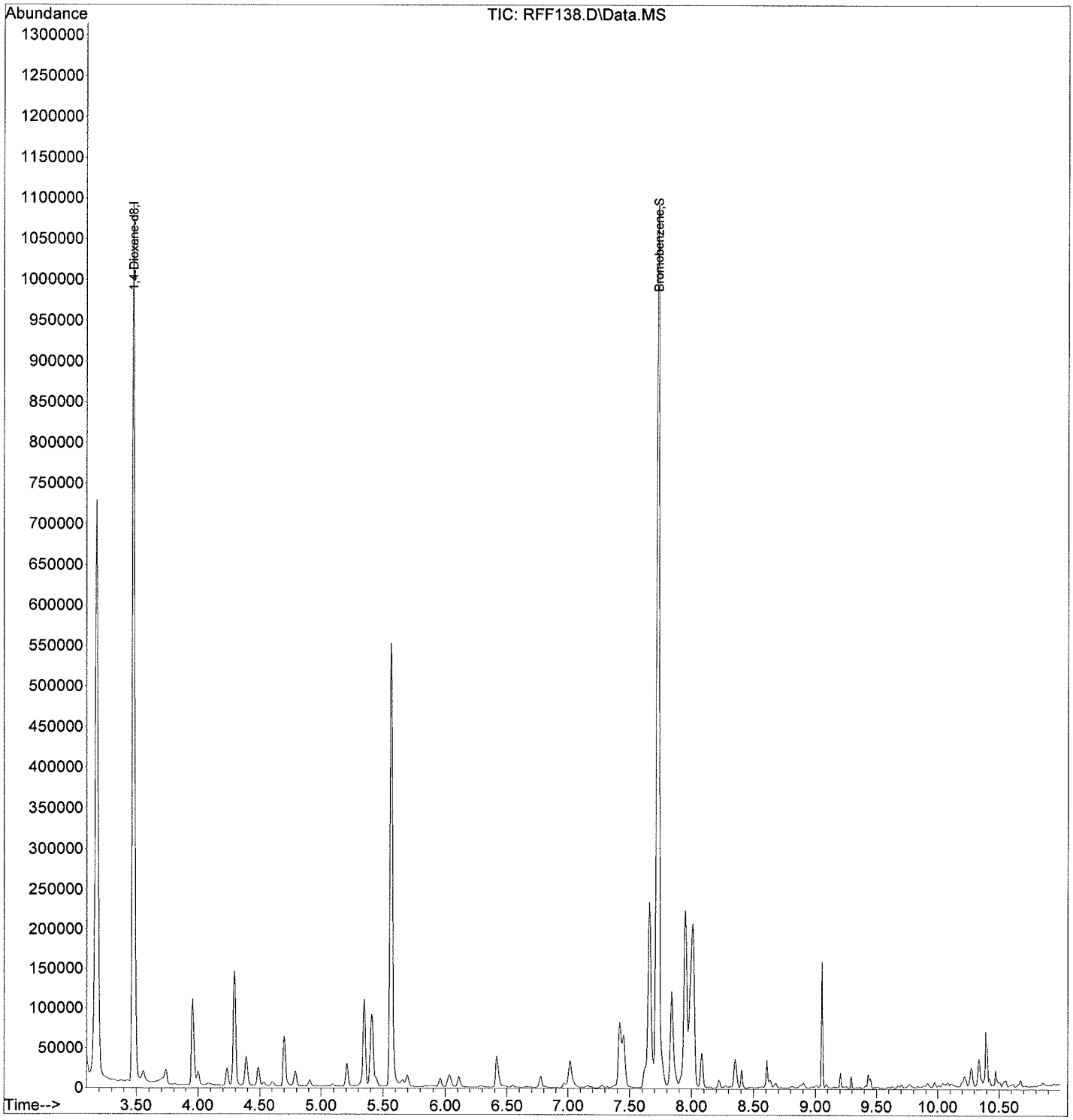
Data File : C:\msdchem\1\DATA\20F26\RFF138.D Vial: 18
Acq On : 26 Jun 2020 16:58 Operator: RMinam
Sample : 20F210-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:11:20 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	169233	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	205132	14.43	ppm	0.00
Spiked Amount 20.000			Recovery = 72.15%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF138.D Vial: 18
Acq On : 26 Jun 2020 16:58 Operator: RMinam
Sample : 20F210-07 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:11:20 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/23/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MW14D-GW062320	Date Analyzed:	06/26/20 17:17
Lab Samp ID:	20F210-08	Dilution Factor:	1
Lab File ID:	RFF139	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.44	0.22

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	39.9	44.4	90	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 900ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

Quantitation Report (QT Reviewed)

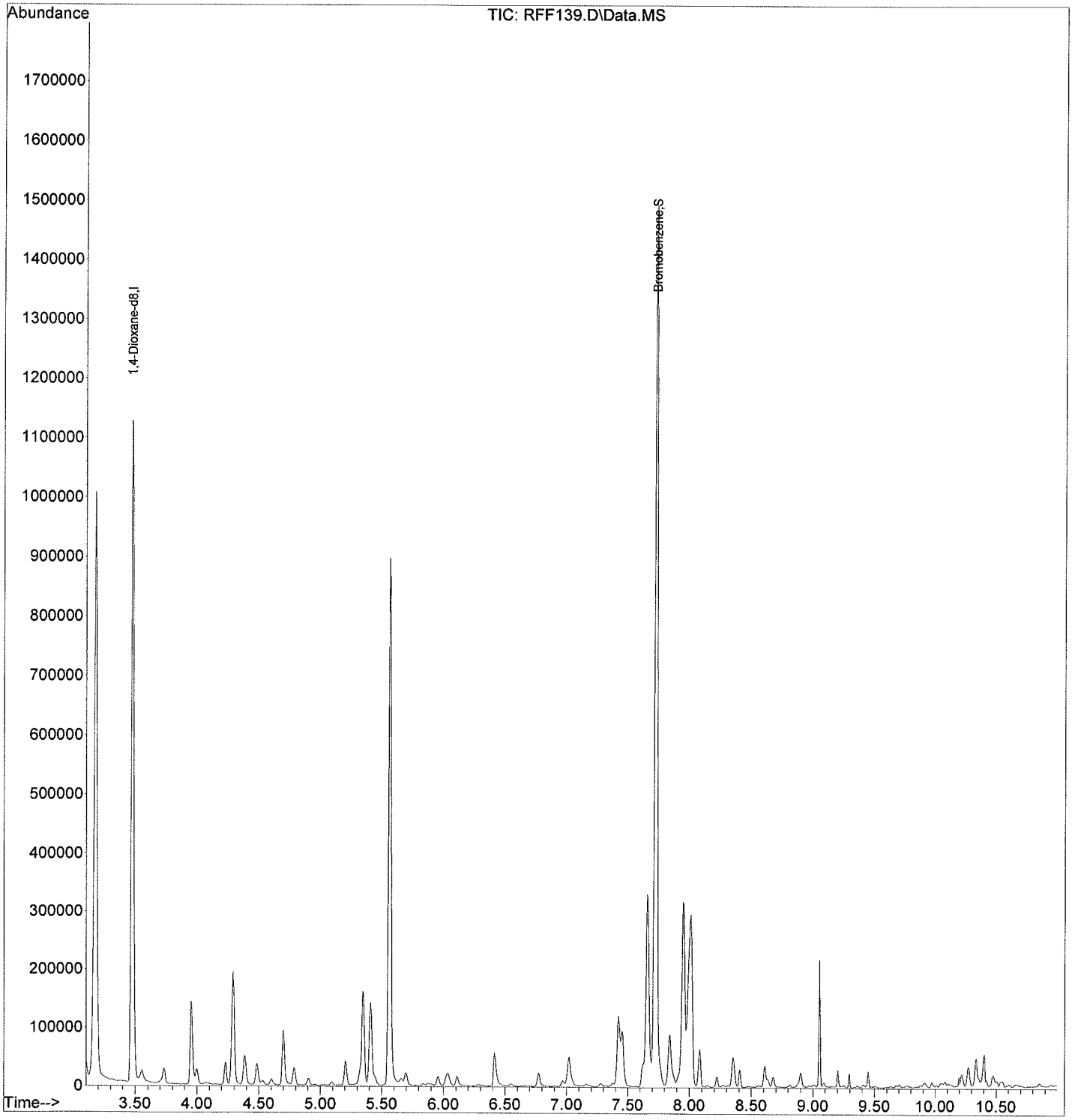
Data File : C:\msdchem\1\DATA\20F26\RFF139.D Via1: 19
Acq On : 26 Jun 2020 17:17 Operator: RMinam
Sample : 20F210-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:11:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	183350	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	276619	17.96	ppm	0.00
Spiked Amount 20.000			Recovery =	89.80%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF139.D Vial: 19
Acq On : 26 Jun 2020 17:17 Operator: RMinam
Sample : 20F210-08 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 30 16:11:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



QC SUMMARIES

METHOD SW3520C/SW8270D SIM
1,4-DIOXANE BY GC/MS SIM

Client	: CDM SMITH	Date Collected:	06/25/20 14:00
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
Batch No.	: 20F210	Date Extracted:	06/25/20 14:00
Sample ID	: MBLK1W	Date Analyzed:	06/26/20 12:33
Lab Samp ID:	SVF022WB	Dilution Factor:	1
Lab File ID:	RFF124	Matrix:	WATER
Ext Btch ID:	20SVF022W	% Moisture:	NA
Calib. Ref.:	RFF005	Instrument ID:	F0

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,4-Dioxane (P-Dioxane)	ND	0.40	0.20

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	34.1	40.0	85	30-160

Notes:

Detection limits are reported relative to sample result significant figures.

Sample Amount	: 1000ml	Final Volume :	2ml
Prepared by	: HWang	Analyzed by :	RMinam

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW3520C/SW8270D SIM

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: SVF022WB	SVF022WL	SVF022WC
LAB FILE ID	: RFF124	RFF125	RFF126
DATE PREPARED	: 06/25/20 14:00	06/25/20 14:00	06/25/20 14:00
DATE ANALYZED	: 06/26/20 12:33	06/26/20 12:49	06/26/20 13:08
PREP BATCH	: 20SVF022W	20SVF022W	20SVF022W
CALIBRATION REF	: RFF005	RFF005	RFF005

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
1,4-Dioxane (P-Dioxane)	ND	40.0	30.0	75	40.0	31.3	78	4	50-130	20

SURROGATE PARAMETER	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	QCLimit (%)
Bromobenzene	40.0	36.2	91	40.0	36.8	92	30-160

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

QC DATA

Quantitation Report (QT Reviewed)

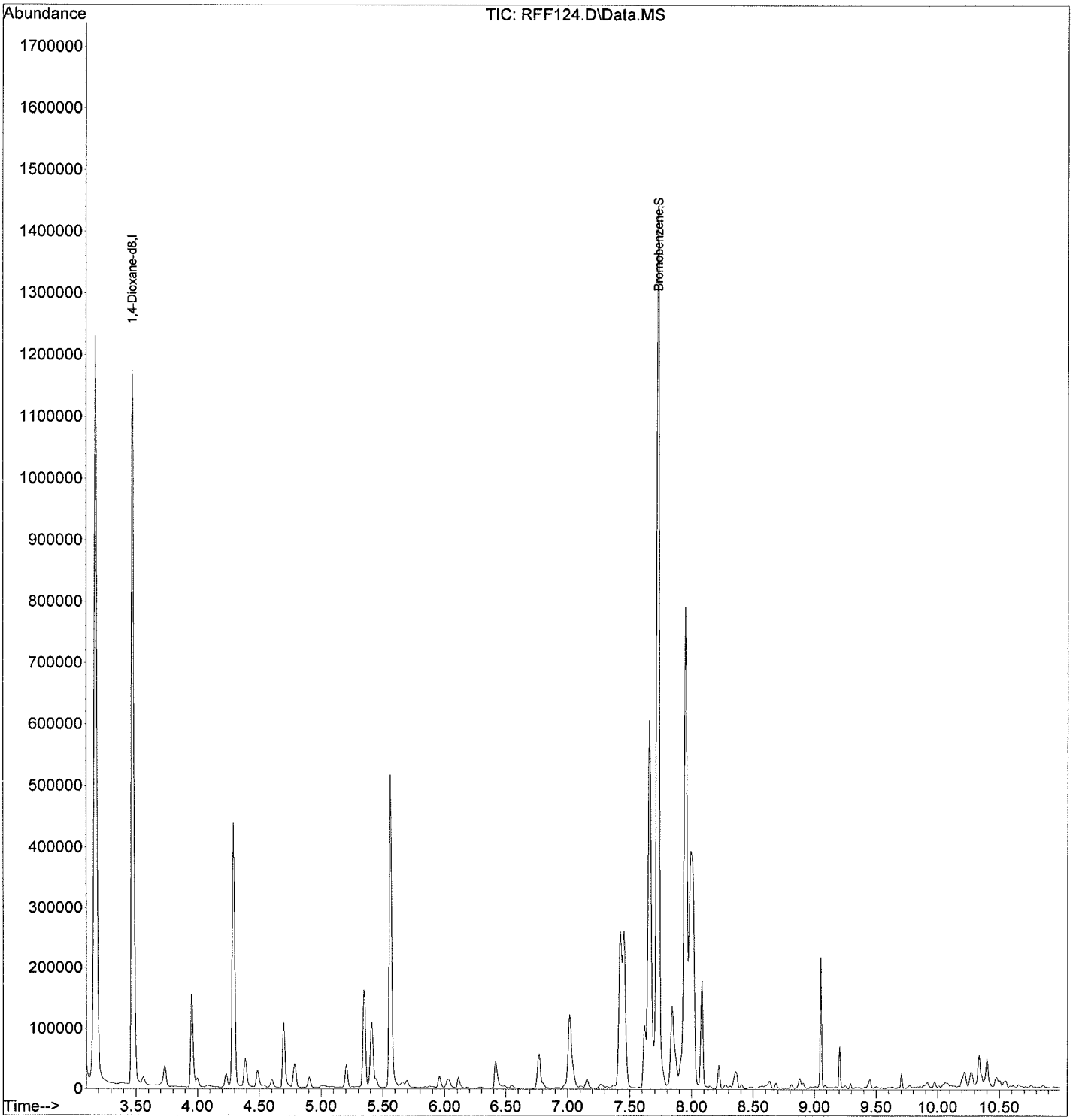
Data File : C:\msdchem\1\DATA\20F26\RFF124.D Vial: 4
Acq On : 26 Jun 2020 12:33 Operator: RMinam
Sample : SVF022WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	187628	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	268947	17.06	ppm	0.00
Spiked Amount 20.000			Recovery =	85.30%		
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF124.D Vial: 4
Acq On : 26 Jun 2020 12:33 Operator: RMinam
Sample : SVF022WB Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:04 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

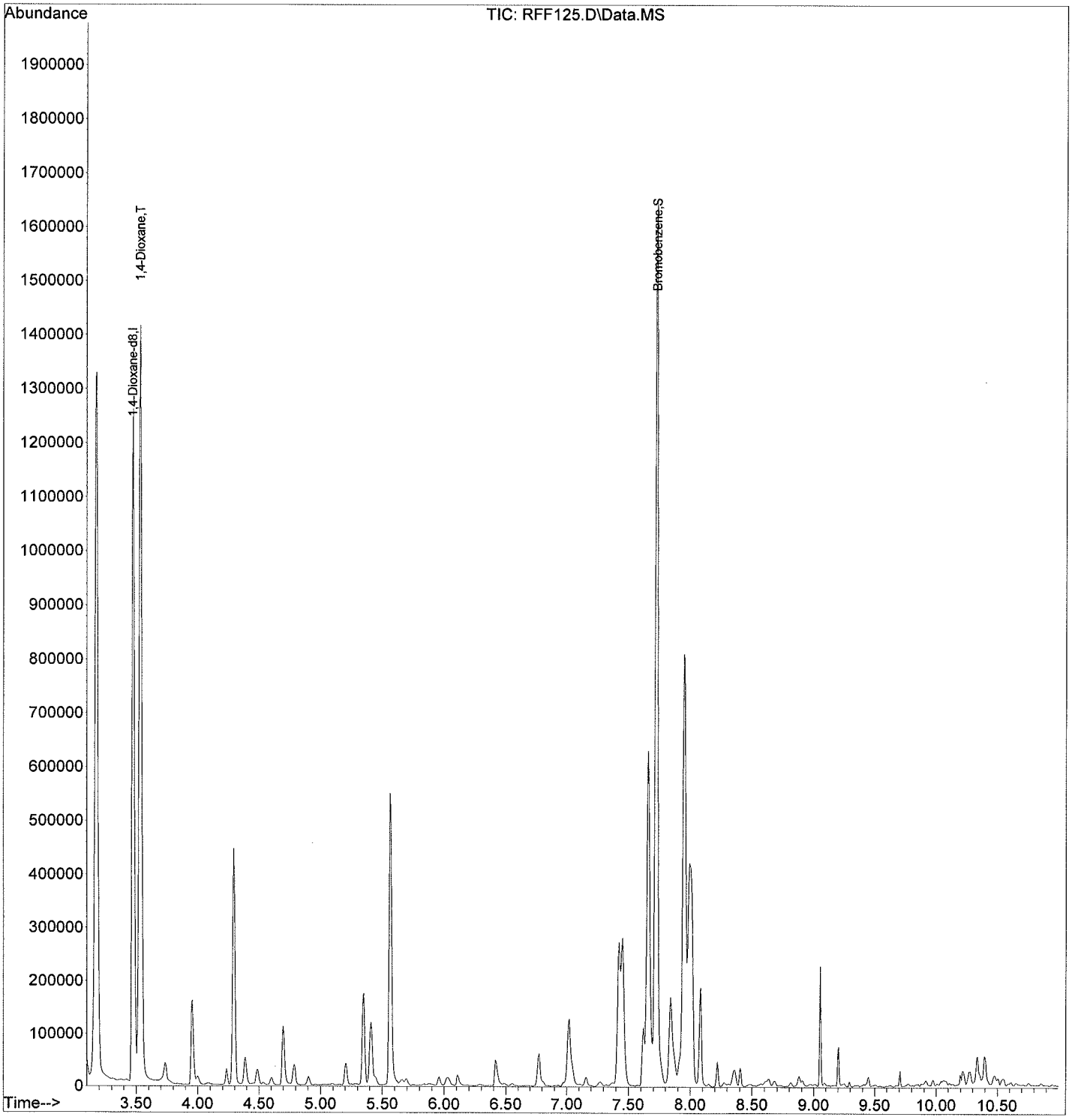
Data File : C:\msdchem\1\DATA\20F26\RFF125.D Vial: 5
Acq On : 26 Jun 2020 12:49 Operator: RMinam
Sample : SVF022WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	198367	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	301889	18.11	ppm	0.00
Spiked Amount 20.000			Recovery =	90.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	205275	15.00	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF125.D Vial: 5
Acq On : 26 Jun 2020 12:49 Operator: RMinam
Sample : SVF022WL Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:18 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

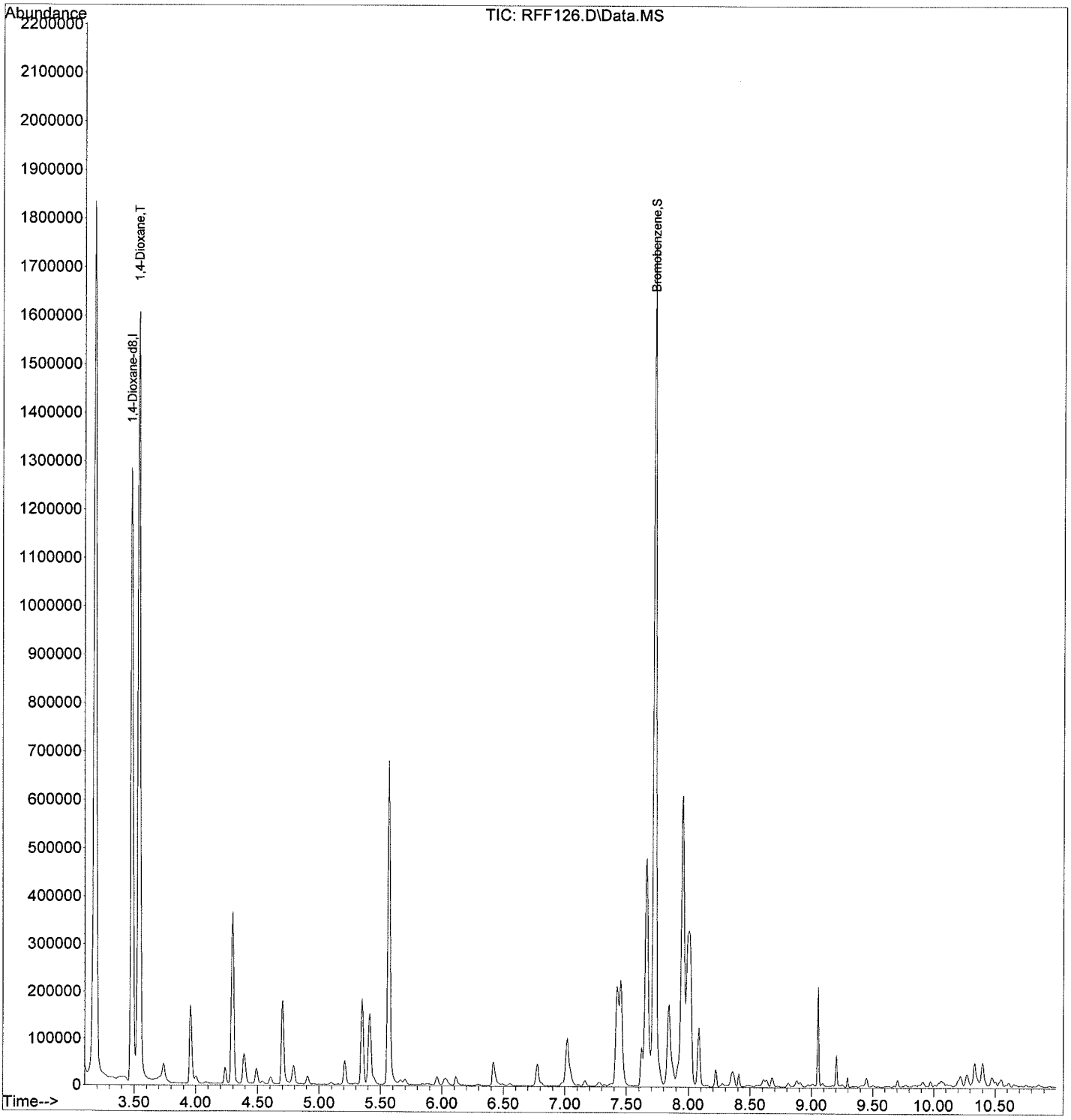
Data File : C:\msdchem\1\DATA\20F26\RFF126.D Vial: 6
Acq On : 26 Jun 2020 13:08 Operator: RMinam
Sample : SVF022WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:39 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	202812	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	313892	18.42	ppm	0.00
Spiked Amount 20.000			Recovery =	92.10%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	218816	15.64	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF126.D Vial: 6
Acq On : 26 Jun 2020 13:08 Operator: RMinam
Sample : SVF022WC Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 16:37:39 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



INITIAL CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name : EMAX Laboratories, Inc. Project :ICAL
Lab Code : EMAX SDG No :ICAL
Lab File ID: RFF002 DFTPP Injection Date:06/03/20
Instrument ID: F0 DFTPP Injection Time:12:50

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	36.510
75	30 - 60% of mass 95	32.259
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.552
173	Less than 2% of mass 174	0.284(.4)1
174	50 - 100% of mass 95	71.719
175	5 - 9% of mass 174	5.773(8.05)1
176	95 - 101% % of mass 174	70.230(97.92)1
177	5 - 9% % of mass 176	4.518(6.43)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD100	SVF0F03G1	RFF003	06/03/20	14:04
2	SSTD60	SVF0F03G2	RFF004	06/03/20	14:23
3	SSTD20	SVF0F03G3	RFF005	06/03/20	14:39
4	SSTD5	SVF0F03G4	RFF006	06/03/20	14:58
5	SSTD1	SVF0F03G5	RFF007	06/03/20	15:38
6	SSTD0.5	SVF0F03G6	RFF008	06/03/20	15:57
7	SSTD0.2	SVF0F03G7	RFF009	06/03/20	16:16
8	SSTD0.15	SVF0F03G8	RFF010	06/03/20	16:36
9	SSTD0.075	SVF0F03G9	RFF011	06/03/20	16:55
10	SSTD0.05	SVF0F03G10	RFF012	06/03/20	17:15
11	ISSTD20	ISVF0F03G1	RFF013	06/03/20	17:34

KW 6/5/20

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc.

Project: ICAL

Lab Code: EMAX SDG No: ICAL

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.97
	LOWER LIMIT	100003	2.97
		Area #	RT #
1	SSTD100	178424	3.47
2	SSTD60	184222	3.47
3	SSTD20	200006	3.47
4	SSTD5	183500	3.47
5	SSTD1	195391	3.48
6	SSTD0.5	194670	3.47
7	SSTD0.2	194659	3.47
8	SSTD0.15	185431	3.47
9	SSTD0.075	191368	3.47
10	SSTD0.05	202435	3.47
11	ISSTD20	175577	3.48

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

Retention Time(RT) Upper Limit = +30 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -30 seconds of ICAL Midpoint IS RT

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

		.05	.075	.15	.2	.5	1	5	20	60	100			
		17:15	16:55	16:36	16:16	15:57	15:38	14:58	14:39	14:23	14:04			
IDX	Parameters	RFF012	RFF011	RFF010	RFF009	RFF008	RFF007	RFF006	RFF005	RFF004	RFF003	Av_RRF	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	1.132	1.506	1.301	1.581	1.454	1.493	1.363	1.342	1.316	1.314	1.380	9.42	3.5360
3	Bromobenzene	------	------	------	1.608	1.721	1.733	1.671	1.707	1.664	1.658	1.680	2.58	7.7241

Ave_%RSD : 6 Max_%RSD : 9.4

6/5/20

INITIAL_CALIBRATION - RELATIVE_RESPONSE_FACTOR(%REC)

Instrument ID :F0
Beginning DateTime :06/03/20 14:04
Spike Units :PPM
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G

IDX	Parameters	.05 17:15 RFF012	.075 16:55 RFF011	.15 16:36 RFF010	.2 16:16 RFF009	.5 15:57 RFF008	1 15:38 RFF007	5 14:58 RFF006	20 14:39 RFF005	60 14:23 RFF004	100 14:04 RFF003	AvDRec	%_RSD	Av_Rt_M
1	1,4-Dioxane-d8	1	1	1	1	1	1	1	1	1	1	1	0	3.4721
2	1,4-Dioxane	82	109	94	115	105	108	99	97	95	95	7.4	9.42	3.5360
3	Bromobenzene	------	------	------	96	102	103	99	102	99	99	2	2.58	7.7241

MW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :FO Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVFOF03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 1
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 1

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.05	.001667	RFF012
3	Bromobenzene	.2	.2	.006667	RFF009

VW 6/5/20

Quantitation Limit from Lowest Initial Calibration Concentration

Instrument ID :F0 Column Spec :ZB-Semi-Voa ID :0.25MM
Beginning DateTime :06/03/20 14:04 Ending DateTime :06/03/20 17:15
IC File :RFF005 HPChem Method :SVF0F03G

WATER Init. Vol. (ml) : 1000 Final Vol. (ml) : 2
SOIL Init. Weight (gm) : 30 Final Vol. (ml) : 2

IDX	Parameters	ON_COL MG/L	WATER UG/L	SOIL MG/KG	R_FILE
1	1,4-Dioxane-d8	IntSTD	IntSTD	IntSTD	IntSTD
2	1,4-Dioxane	.05	.1	.003333	RFF012
3	Bromobenzene	.2	.4	.01333	RFF009

MW 6/5/20

Compound List Report DSQ

Method Path : C:\msdchem\1\METHODS\
Method File : SVF0F03G.M
Title : SEMIVOLATILES - SIM
Last Update : Thu Jun 04 12:32:03 2020
Response Via : Initial Calibration

Total Cpnds : 3

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	1,4-Dioxane-d8	96	3.471	1.000	A	1	A	B
2	T	1,4-Dioxane	88	3.528	1.016	A	2	A	B
3	S	Bromobenzene	77	7.720	2.224	A	1	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

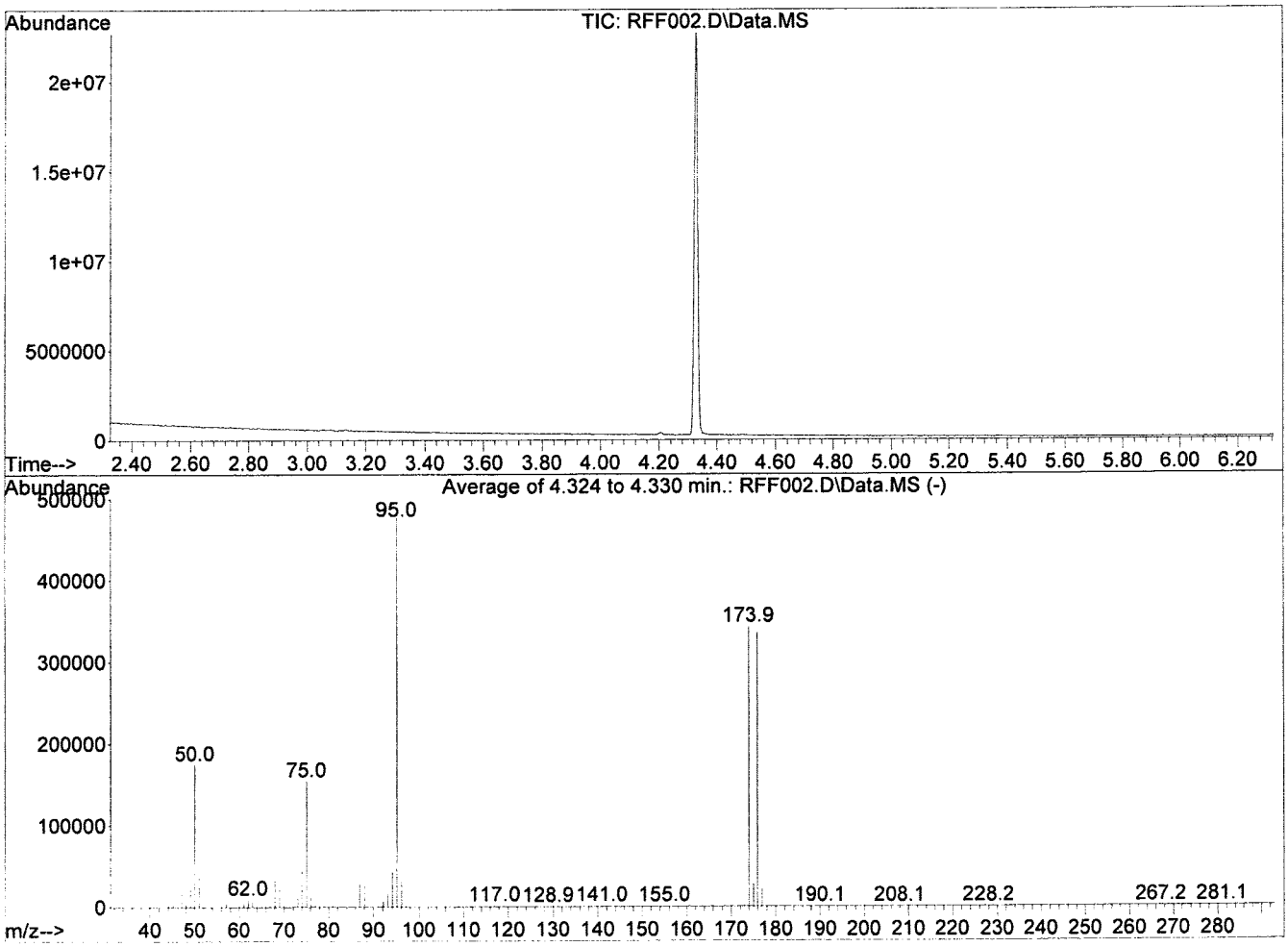
SVF0F03G.M Thu Jun 04 14:46:44 2020 F0

MV 6/5/20

Data Path : C:\msdchem\1\DATA\20F03\
Data File : RFF002.D
Acq On : 03 Jun 2020 12:50
Operator : RMinam
Sample : BFBF0F03G01
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	36.5	174217	PASS
75	95	30	60	32.3	153936	PASS
95	95	100	100	100.0	477182	PASS
96	95	5	9	6.6	31265	PASS
173	174	0.00	2	0.4	1356	PASS
174	95	50	100	71.7	342229	PASS
175	174	5	9	8.0	27549	PASS
176	174	95	101	97.9	335125	PASS
177	176	5	9	6.4	21557	PASS

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

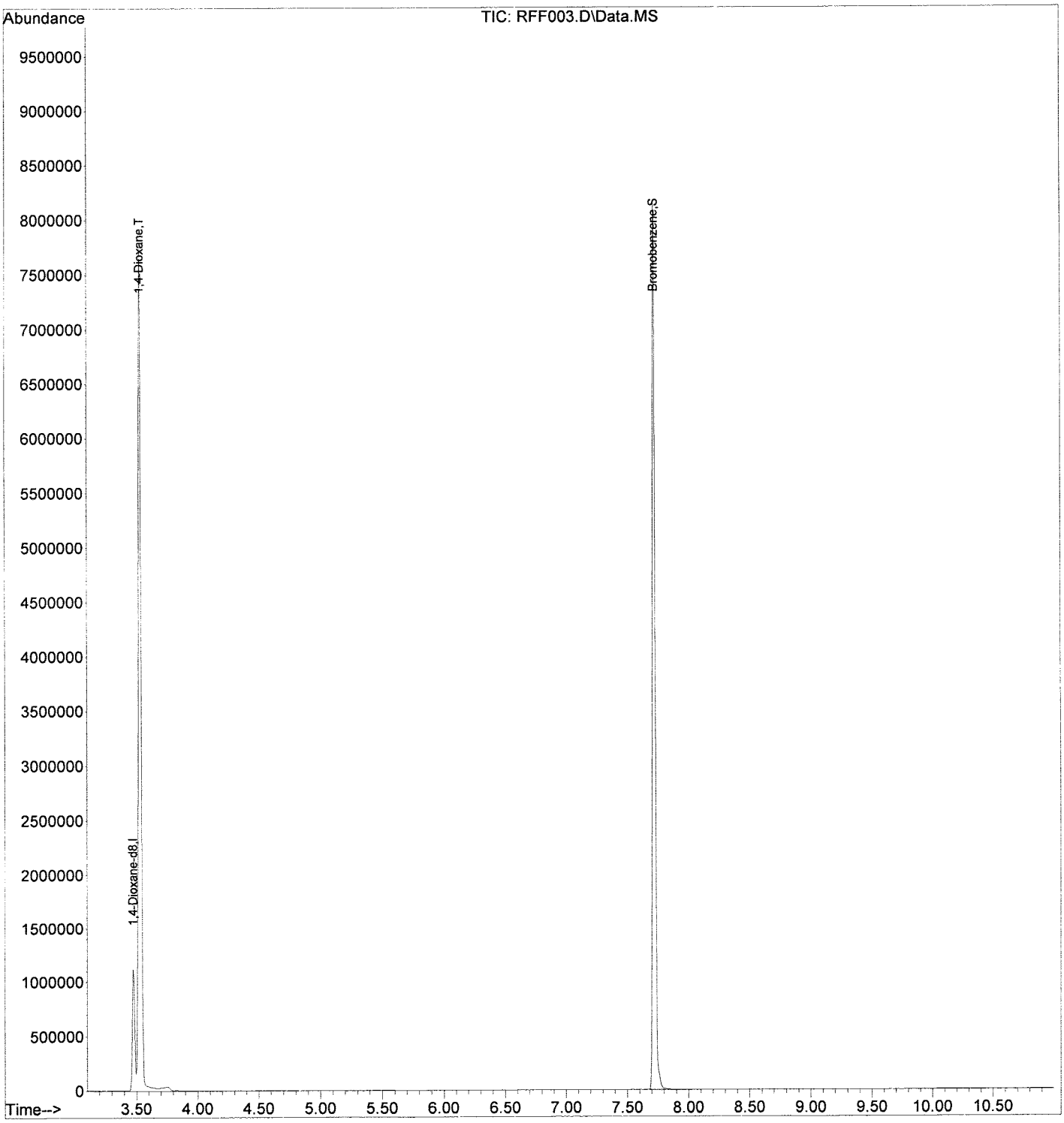
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	178424	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	1478715	98.65	ppm	0.00
Spiked Amount 20.000			Recovery = 493.25%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	1171877	95.18	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF003.D Vial: 3
Acq On : 03 Jun 2020 14:04 Operator: RMinam
Sample : SVF0F03G1 100PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:34 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

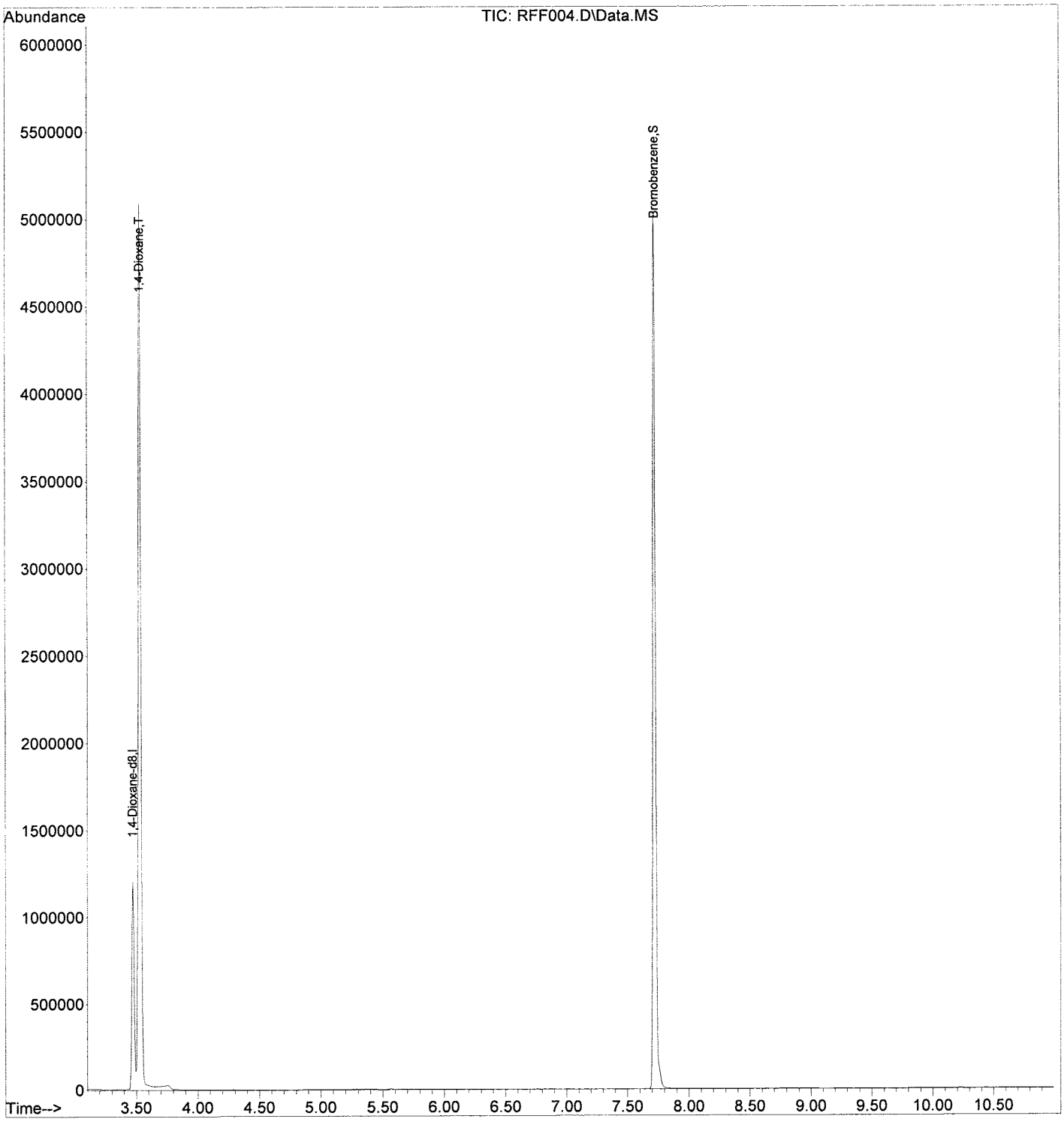
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	184222	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	919498	59.41	ppm	0.00
Spiked Amount 20.000			Recovery =	297.05%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	727249	57.21	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF004.D Vial: 4
Acq On : 03 Jun 2020 14:23 Operator: RMinam
Sample : SVF0F03G2 60PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:36 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

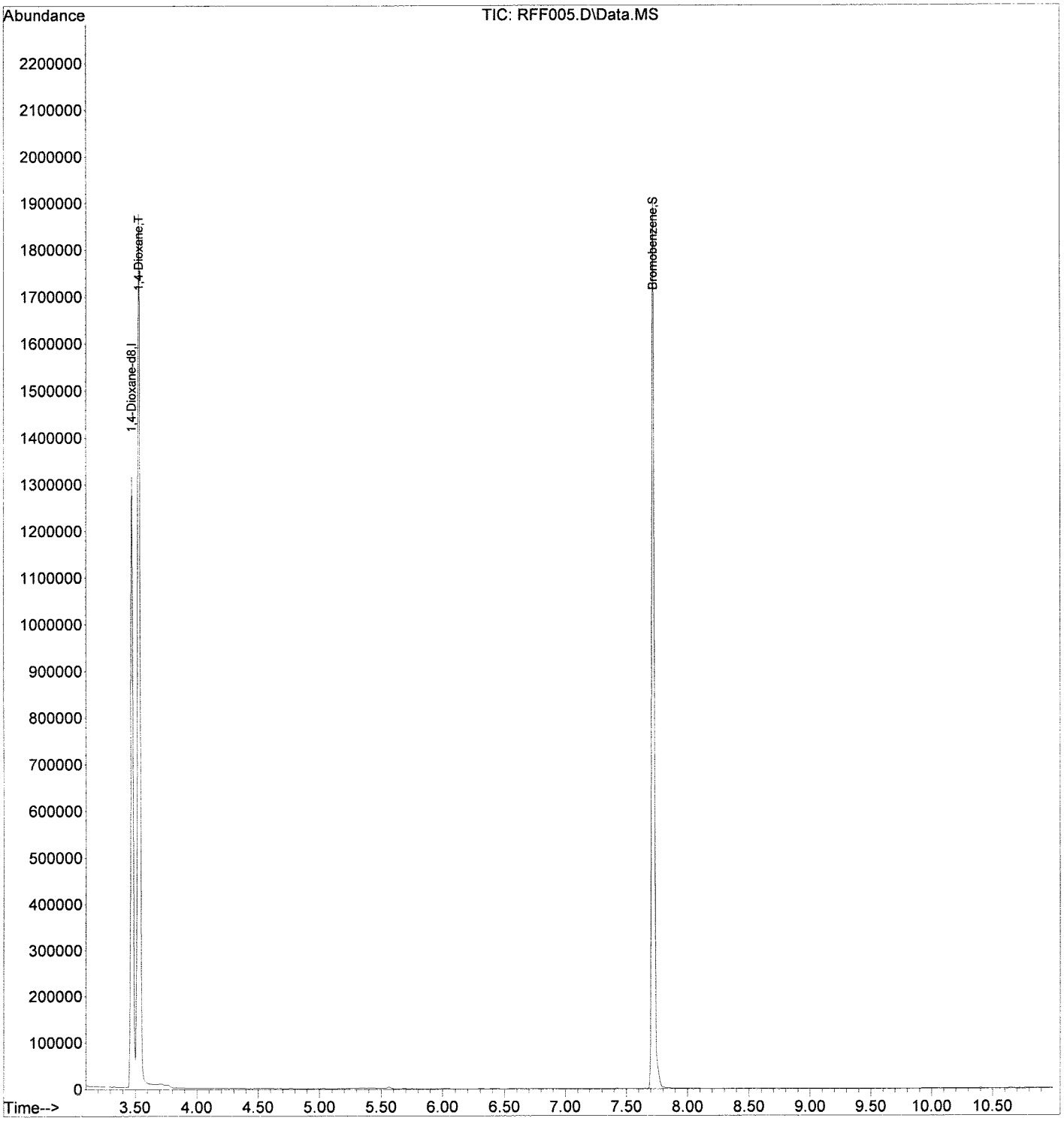
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	200006	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.720	77	341331	20.31	ppm	0.00
Spiked Amount 20.000			Recovery =	101.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	268376	19.45	ppm	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF005.D Vial: 5
Acq On : 03 Jun 2020 14:39 Operator: RMinam
Sample : SVF0F03G3 20PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:38 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

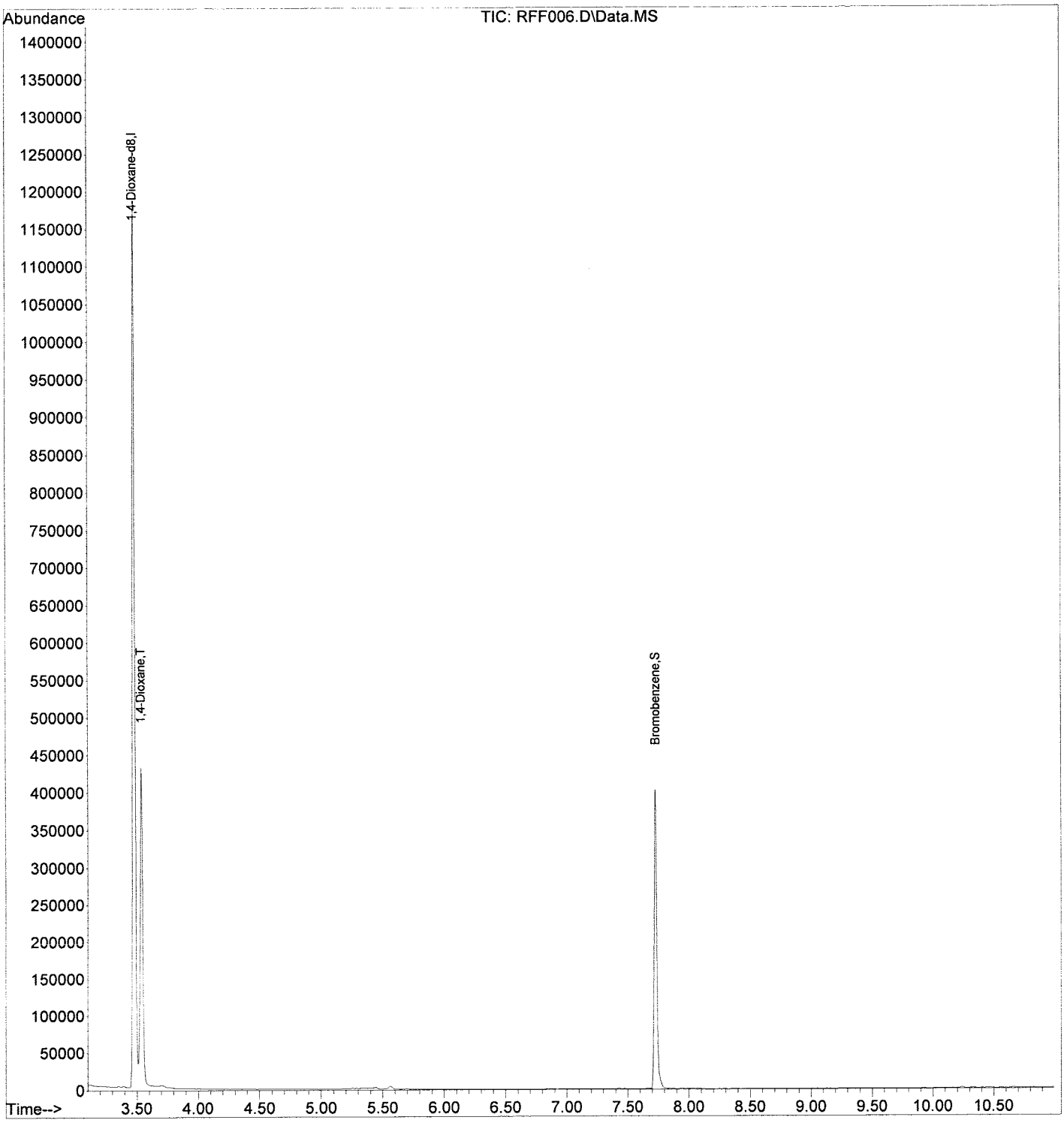
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	183500	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.729	77	76670	4.97	ppm	0.00
Spiked Amount 20.000			Recovery =	24.85%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.535	88	62508	4.94	ppm	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

dlw 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF006.D Vial: 6
Acq On : 03 Jun 2020 14:58 Operator: RMinam
Sample : SVF0F03G4 5PPM Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:40:28 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

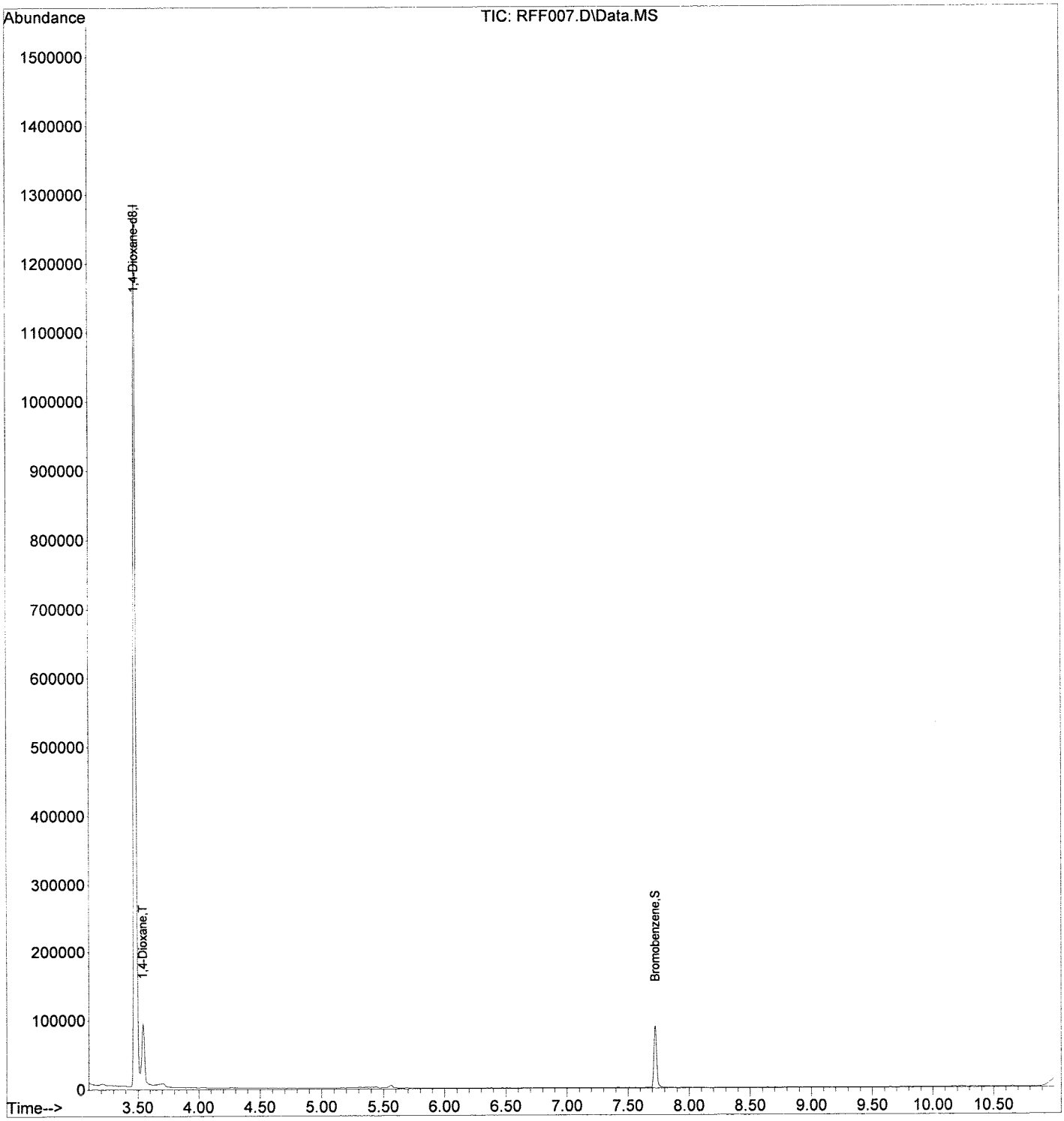
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	195391	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	16935	1.03	ppm	0.00
Spiked Amount 20.000			Recovery =	5.15%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	14584	1.08	ppm	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF007.D Vial: 7
Acq On : 03 Jun 2020 15:38 Operator: RMinam
Sample : SVF0F03G5 1ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:42 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

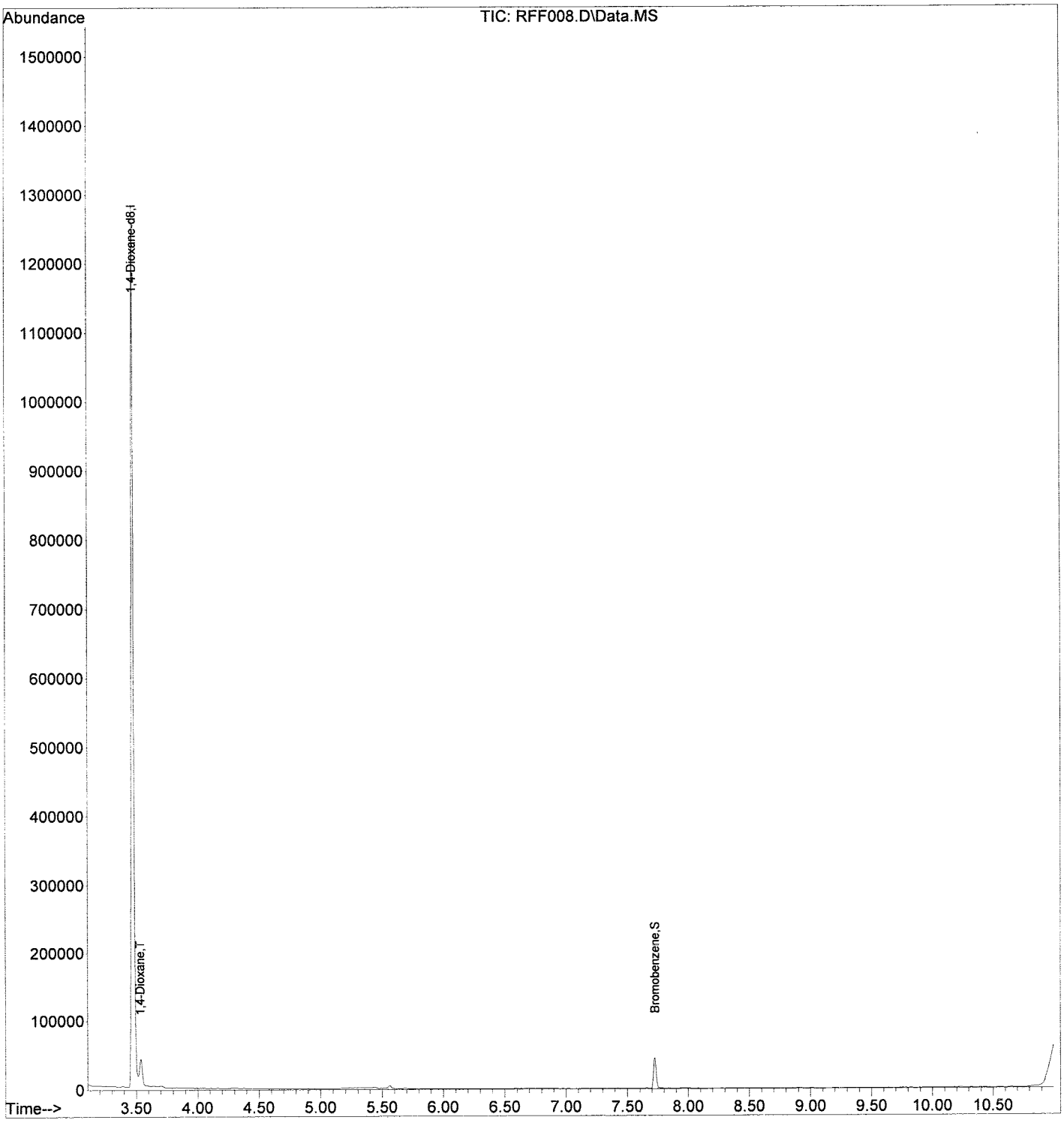
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194670	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	8377	0.51	ppm	0.00
Spiked Amount 20.000			Recovery =	2.55%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	7075	0.53	ppm	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

KW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF008.D Vial: 8
Acq On : 03 Jun 2020 15:57 Operator: RMinam
Sample : SVF0F03G6 0.5ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:44 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

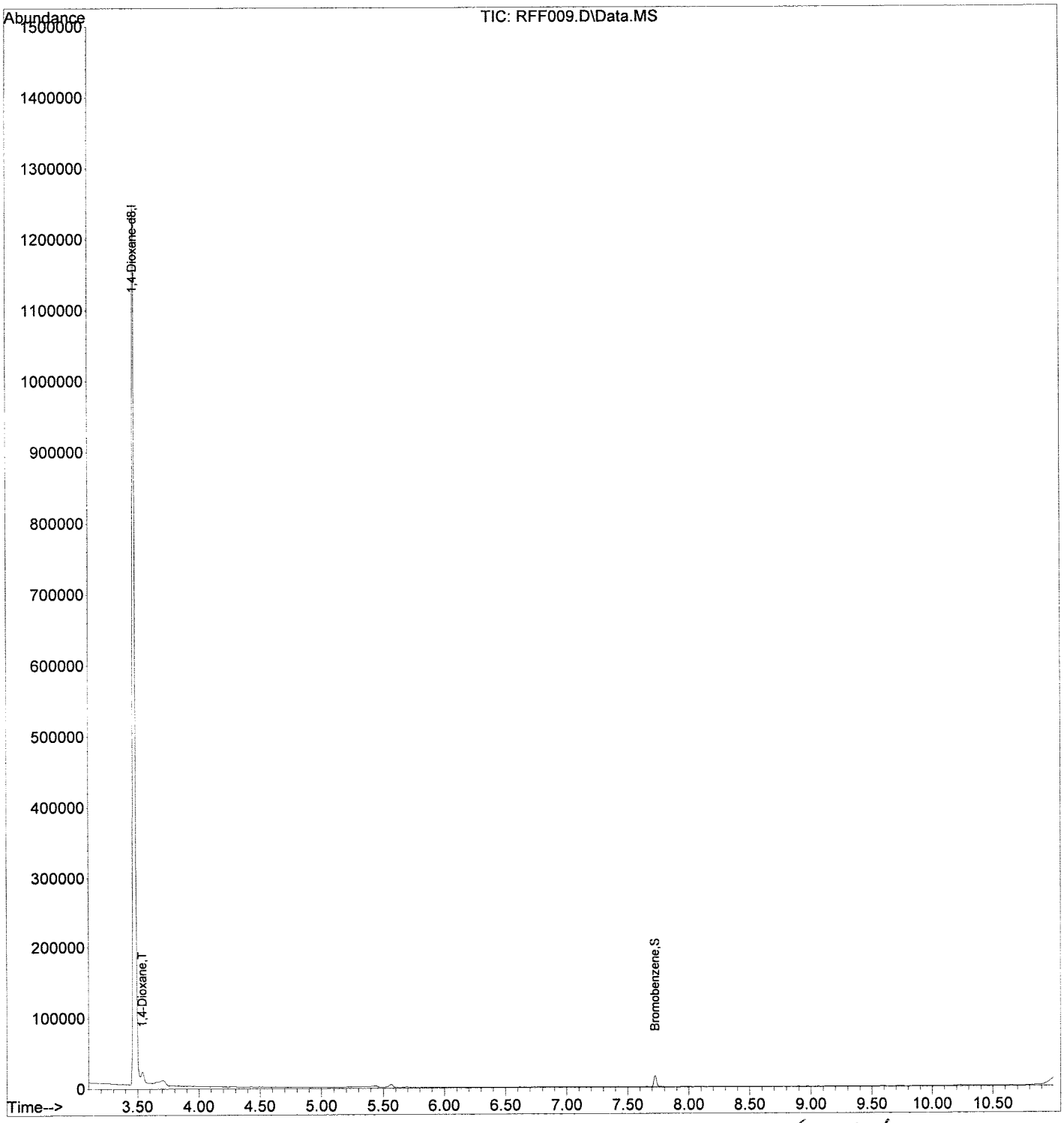
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	194659	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	3130	0.19	ppm	0.00
Spiked Amount 20.000			Recovery =	0.95%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	3077	0.23	ppm	58

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF009.D Vial: 9
Acq On : 03 Jun 2020 16:16 Operator: RMinam
Sample : SVF0F03G7 0.2ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:46 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

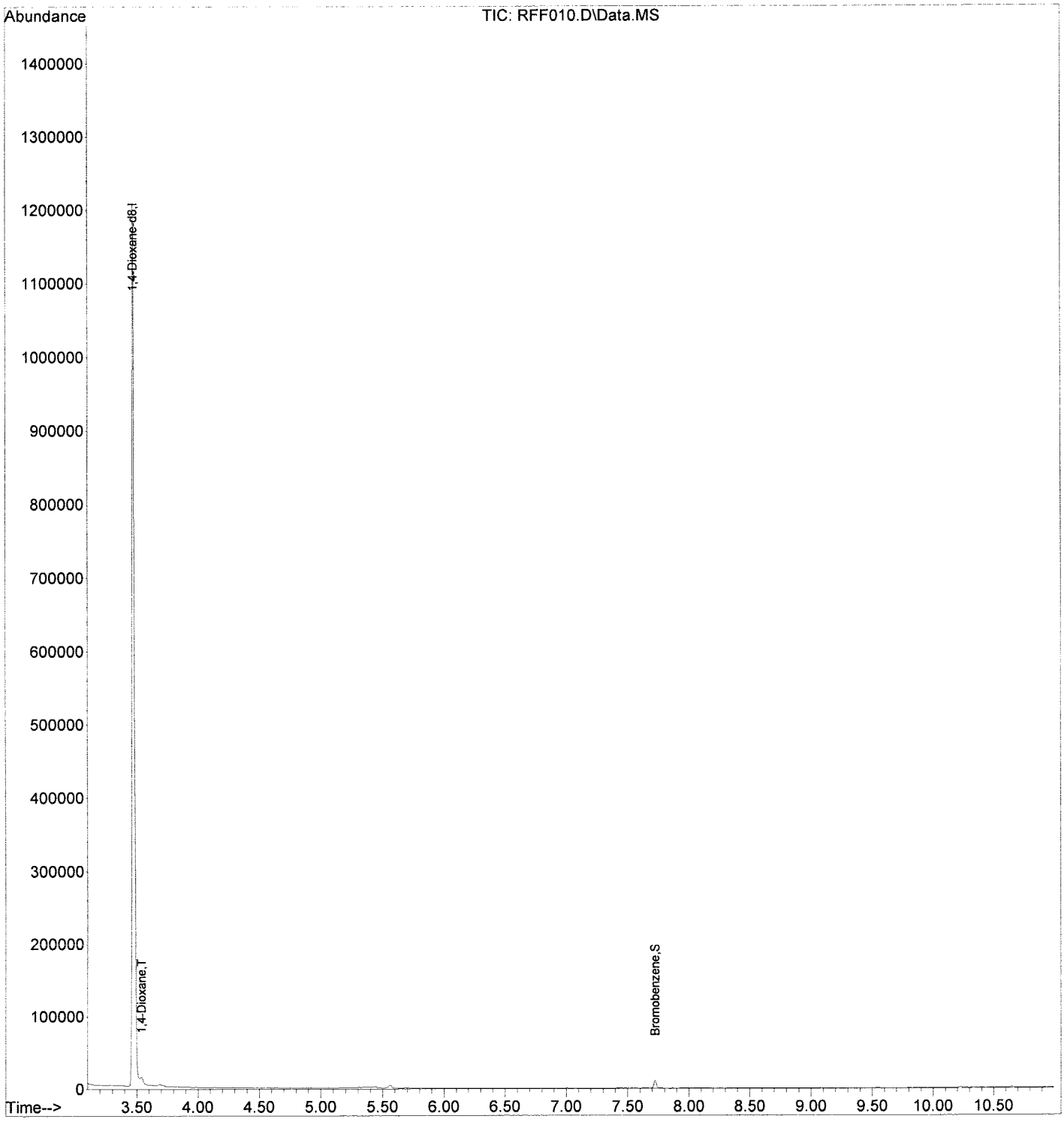
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	185431	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.725	77	1912	0.12	ppm	0.00
Spiked Amount 20.000			Recovery =	0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1810	0.14	ppm	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MW 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF010.D Vial: 10
Acq On : 03 Jun 2020 16:36 Operator: RMinam
Sample : SVF0F03G8 0.15ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:48 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

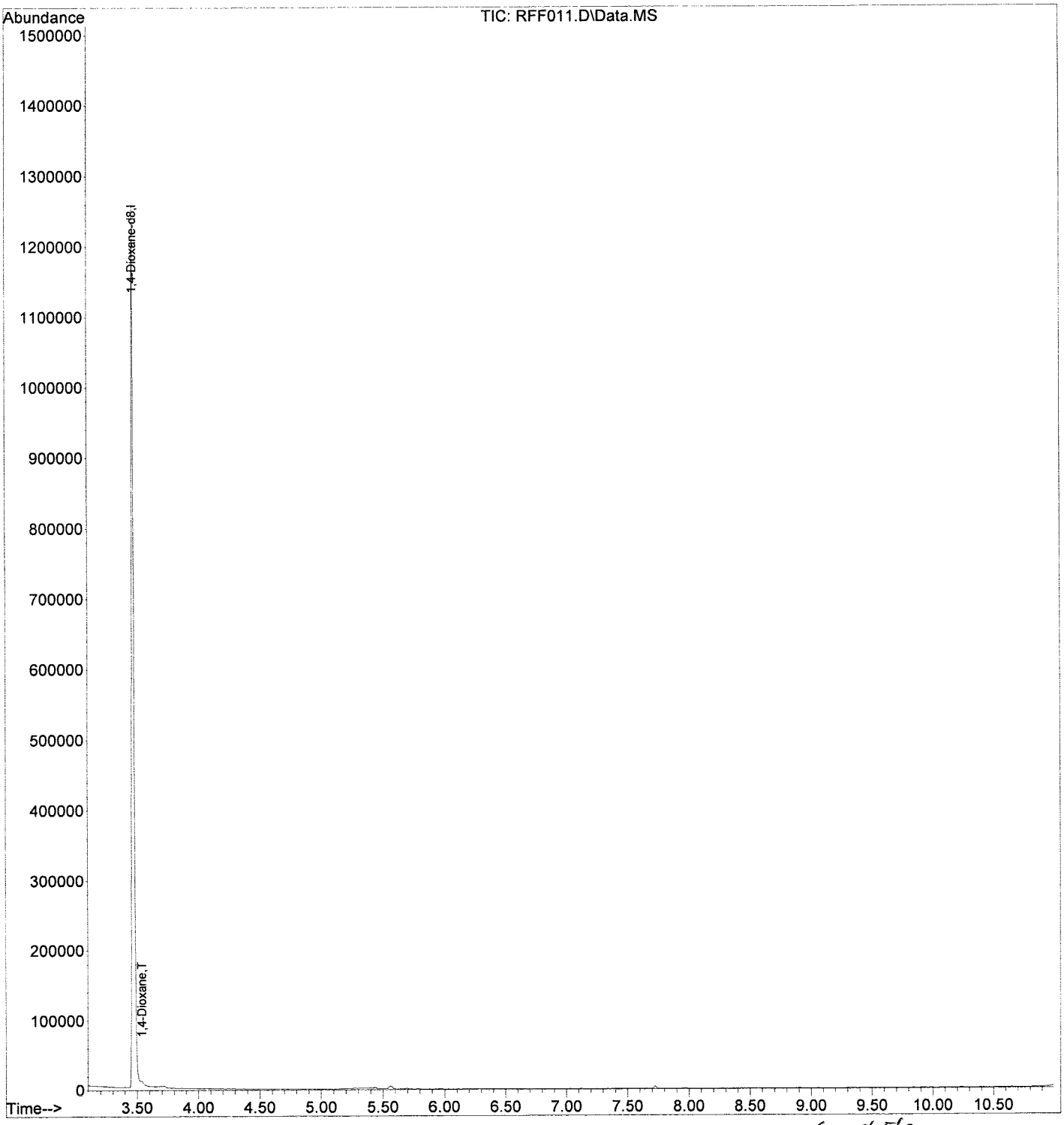
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	191368	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.540	88	1081	0.08	ppm	# 48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

MV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF011.D Vial: 11
Acq On : 03 Jun 2020 16:55 Operator: RMinam
Sample : SVF0F03G9 0.075ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:08 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SVF0F03G.M Thu Jun 04 14:42:14 2020 F0 Page: 2

VV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

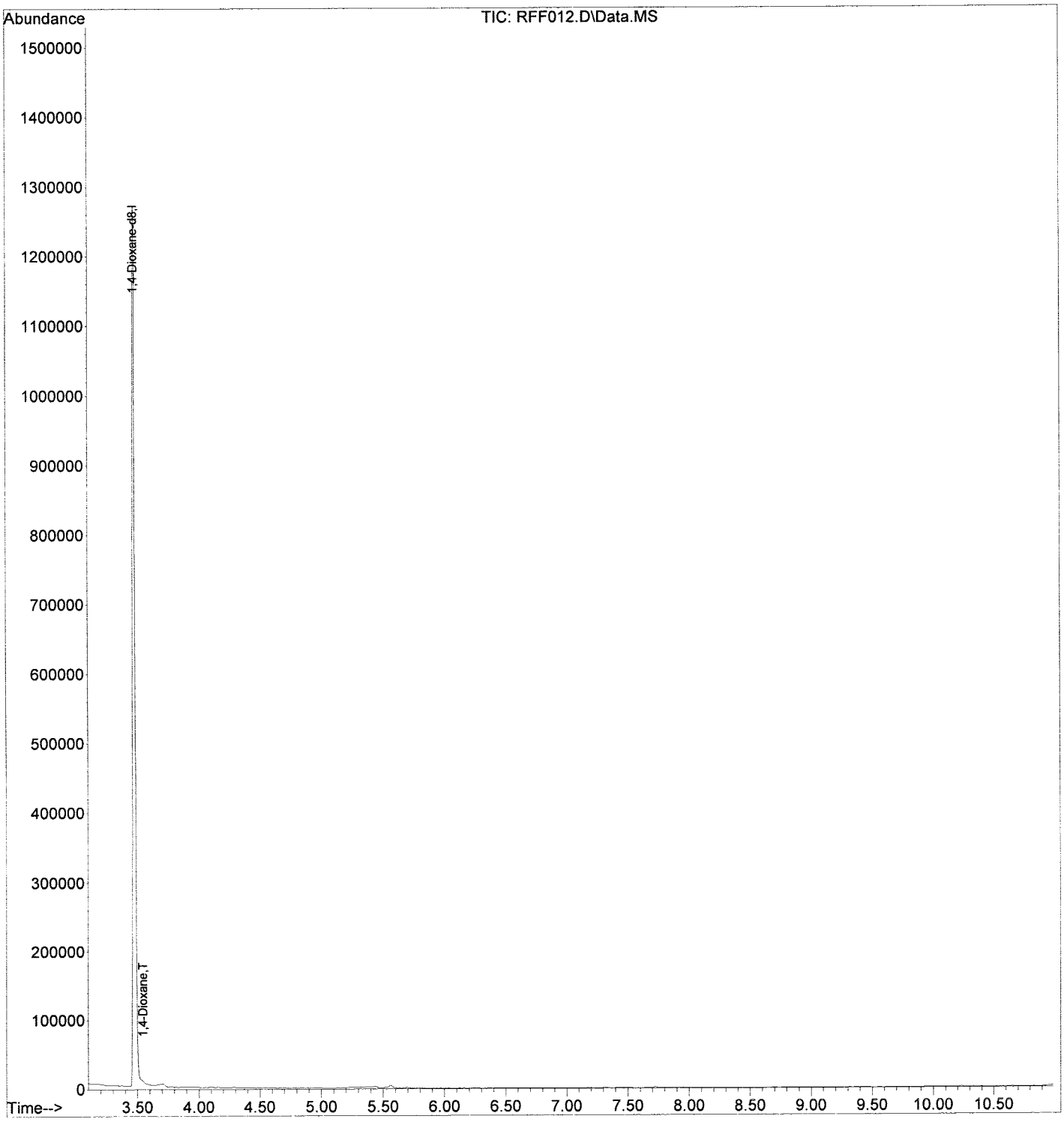
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.472	96	202435	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	0.000	77	0d	0.00	ppm	
Spiked Amount 20.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.546	88	573	0.04	ppm	# 45

(#) = qualifier out of range (m) = manual integration (+) = signals summed

VK 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF012.D Vial: 12
Acq On : 03 Jun 2020 17:15 Operator: RMinam
Sample : SVF0F03G10 0.05ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 14:42:21 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



SECOND SOURCE VERIFICATION

CONTINUE_CALIBRATION - CALIBRATION VERIFICATION

Instrument ID :F0
IC_Beginning DateTime :06/03/20 14:04
Spike Amount :20 PPM
CC/CV File :RFF013
IC File :RFF005

Column Spec :ZB-Semi-Voa ID :0.25MM
IC_Ending DateTime :06/03/20 17:15
HPChem Method :SVF0F03G
Date_Time :06/03/20 17:34

M IDX	Parameters	CC_Con	CC%_D	CC_Resp	CCRRF	AvRRF	CC_Rtm	AvRtm	%_RSD	Co_X0	Co_X1	Co_X2	Co_Cor
1	1,4-Dioxane-d8	20.000	0	175577	1	1	3.477	3.472	0				
2	1,4-Dioxane	22.299	11.5	270176	1.539	1.380	3.534	3.536	9.42				
3	Bromobenzene	21.540	7.7	317735	1.810	1.680	7.719	7.724	2.58				

6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	88	0.00
2	T	1,4-Dioxane	20.000	22.299	-11.5	101	0.00
3	S	Bromobenzene	20.000	21.540	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

MV 6/5/20

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	88	0.00
2	T	1,4-Dioxane	1.380	1.539	-11.5	101	0.00
3	S	Bromobenzene	1.680	1.810	-7.7	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

6/15/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D Vial: 13
Acq On : 03 Jun 2020 17:34 Operator: RMinam
Sample : ISVF0F03G1 20ppm Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.477	96	175577	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.719	77	317735	21.54	ppm	0.00
Spiked Amount 20.000			Recovery = 107.70%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.534	88	270176	22.30	ppm	99

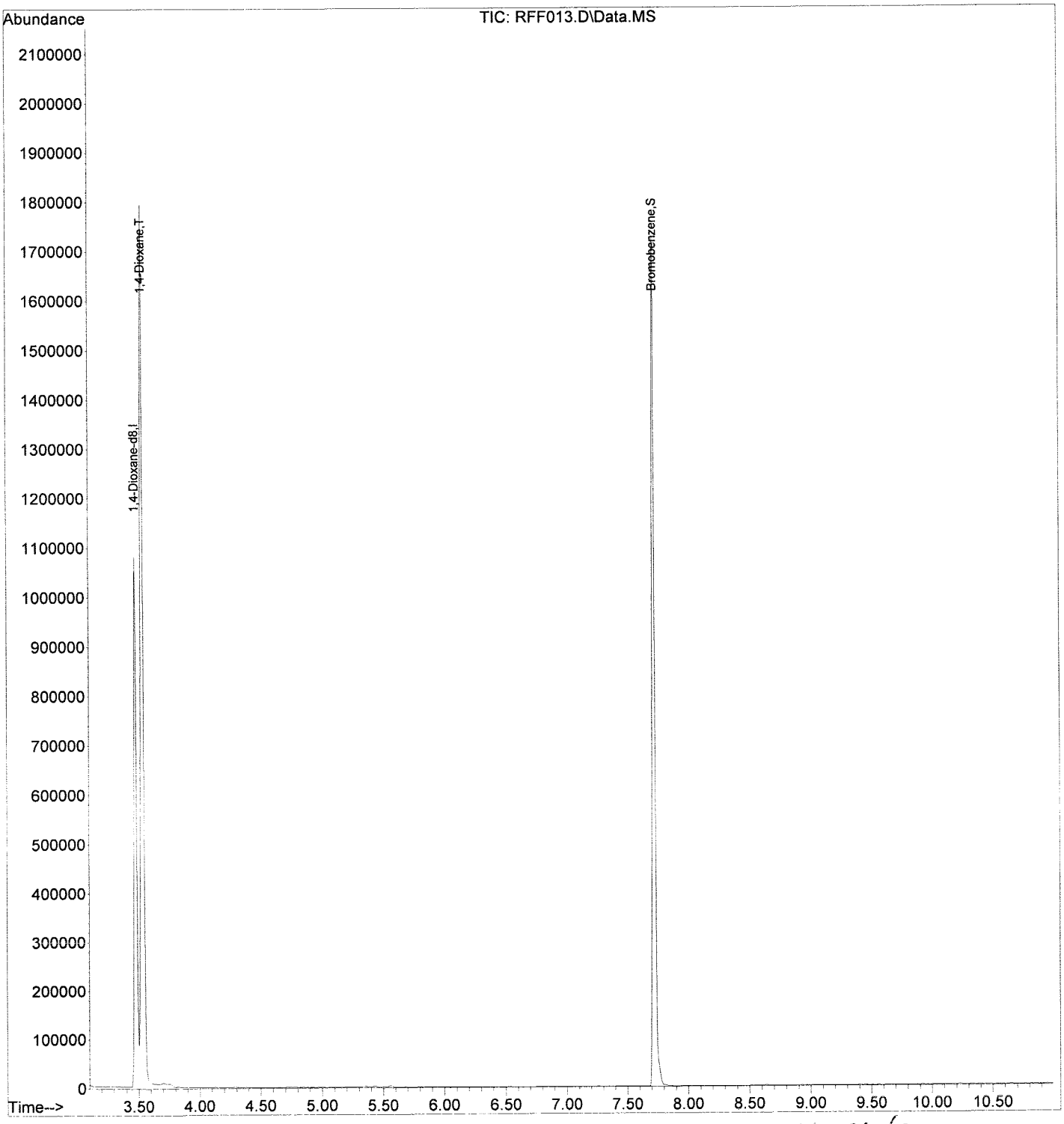
(#) = qualifier out of range (m) = manual integration (+) = signals summed

KV 6/5/20

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F03\RFF013.D
Acq On : 03 Jun 2020 17:34
Sample : ISVF0F03G1 20ppm
Misc : F0
Integrator: RTE
Quant Time: Jun 04 13:23:54 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Vial: 13
Operator: RMinam
Inst : DSQ
Multiplr: 1.00



KV 6/5/20

DAILY CALIBRATIONS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F210

Lab File ID: RFF122 DFTPP Injection Date: 06/26/20

Instrument ID: F0 DFTPP Injection Time: 11:58

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15 - 40% of mass 95	35.128
75	30 - 60% of mass 95	31.788
95	Base Peak, 100% relative abundance	100.000
96	5 - 9% of mass 95	6.703
173	Less than 2% of mass 174	0.167(.23)1
174	50 - 100% of mass 95	73.540
175	5 - 9% of mass 174	5.718(7.78)1
176	95 - 101% % of mass 174	71.263(96.9)1
177	5 - 9% % of mass 176	4.565(6.41)2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, Lab QCs and Standards:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	SSTD020	CSVF0F03G15	RFF123	06/26/20	12:14
2	MBLK1W	SVF022WB	RFF124	06/26/20	12:33
3	LCS1W	SVF022WL	RFF125	06/26/20	12:49
4	LCD1W	SVF022WC	RFF126	06/26/20	13:08
5	MW23C-GW062320	20F210-01	RFF134	06/26/20	15:41
6	FB01-GW062420	20F210-03	RFF135	06/26/20	16:00
7	MW27-GW062420	20F210-04	RFF136	06/26/20	16:19
8	MW28-GW062420	20F210-05	RFF137	06/26/20	16:39
9	MW14S-GW062320	20F210-07	RFF138	06/26/20	16:58
10	MW14D-GW062320	20F210-08	RFF139	06/26/20	17:17

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: EMAX Laboratories, Inc. Project: VA SALT LAKE CITY

Lab Code: EMAX SDG No: 20F210

Lab File ID: RFF005 Date Analyzed: 06/03/20

Instrument ID: F0 Time Analyzed: 14:39

	INTERNAL STANDARD (IS)	1,4-Dioxane-d8 Area #	1,4-Dioxane-d8 RT #
	12 HOUR STD	200006	3.47
	UPPER LIMIT	400012	3.64
	LOWER LIMIT	100003	3.30
		Area #	RT #
1	SSTD020	198146	3.47
2	MBLK1W	187628	3.47
3	LCS1W	198367	3.47
4	LCD1W	202812	3.48
5	MW23C-GW062320	183723	3.47
6	FB01-GW062420	182816	3.47
7	MW27-GW062420	185190	3.47
8	MW28-GW062420	186868	3.47
9	MW14S-GW062320	169233	3.48
10	MW14D-GW062320	183350	3.47

Area Upper Limit = +100% of ICAL Midpoint IS Area

Area Lower Limit = -50% of ICAL Midpoint IS Area

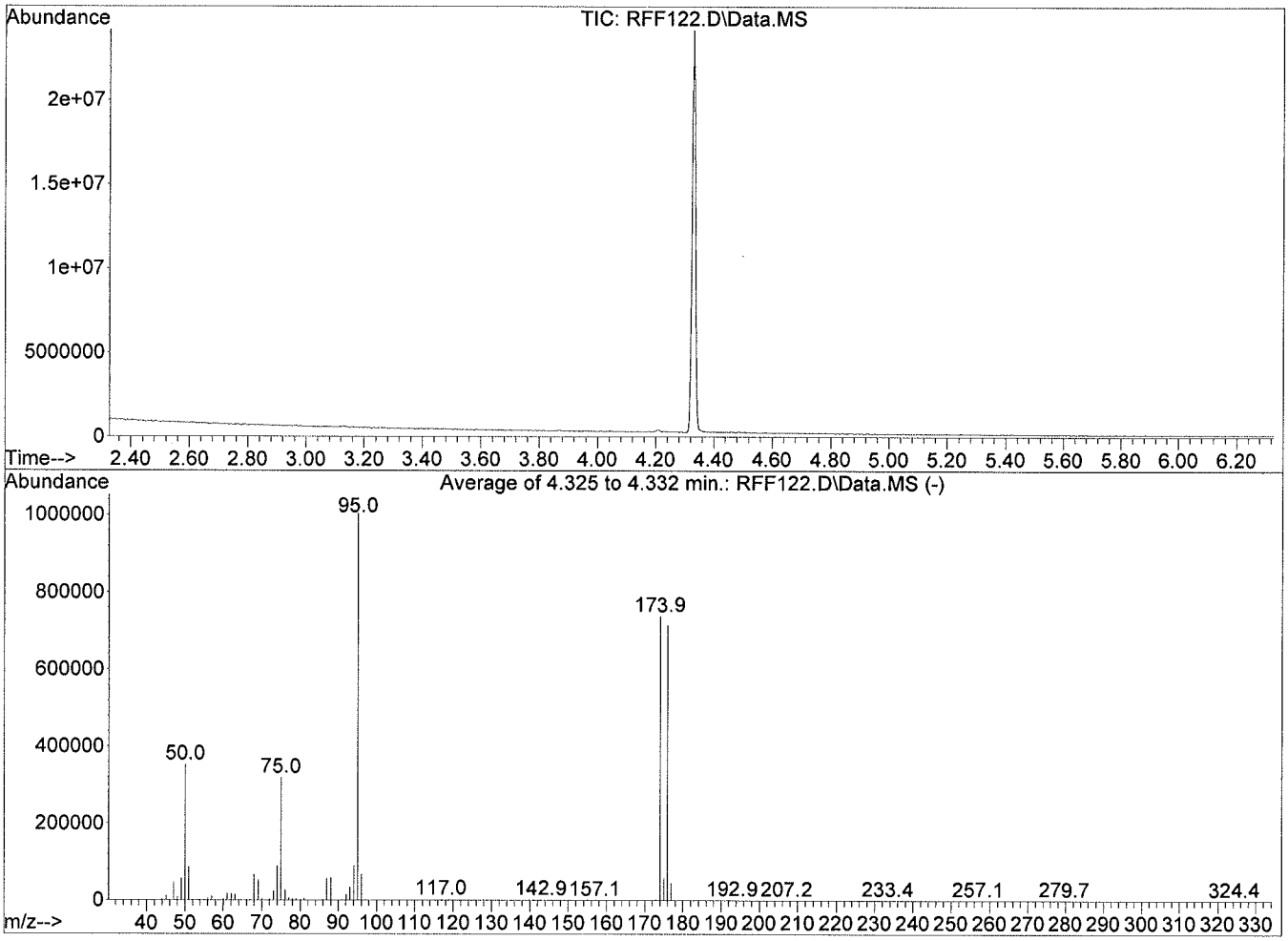
Retention Time(RT) Upper Limit = +10 seconds of ICAL Midpoint IS RT

Retention Time(RT) Lower Limit = -10 seconds of ICAL Midpoint IS RT

Data Path : C:\msdchem\1\DATA\20F26\
Data File : RFF122.D
Acq On : 26 Jun 2020 11:58
Operator : RMinam
Sample : BFBF0F03G15
Misc : F0
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\BFB.M
Title : BFB
Last Update : Wed Jun 03 11:20:52 2020



AutoFind: Scans 642, 643, 644; Background Corrected with Scan 633

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	35.1	352512	PASS
75	95	30	60	31.8	318996	PASS
95	95	100	100	100.0	1003520	PASS
96	95	5	9	6.7	67261	PASS
173	174	0.00	2	0.2	1671	PASS
174	95	50	100	73.5	737984	PASS
175	174	5	9	7.8	57384	PASS
176	174	95	101	96.9	715136	PASS
177	176	5	9	6.4	45815	PASS

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F26\RFF123.D Vial: 3
Acq On : 26 Jun 2020 12:14 Operator: RMinam
Sample : CSVF0F03G15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 12:32:40 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	20.000	20.000	0.0	99	0.00
2	T	1,4-Dioxane	20.000	19.121	4.4	97	0.00
3	S	Bromobenzene	20.000	20.159	-0.8	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\20F26\RFF123.D Vial: 3
Acq On : 26 Jun 2020 12:14 Operator: RMinam
Sample : CSVF0F03G15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 12:32:40 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dioxane-d8	1.000	1.000	0.0	99	0.00
2	T	1,4-Dioxane	1.380	1.319	4.4	97	0.00
3	S	Bromobenzene	1.680	1.694	-0.8	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

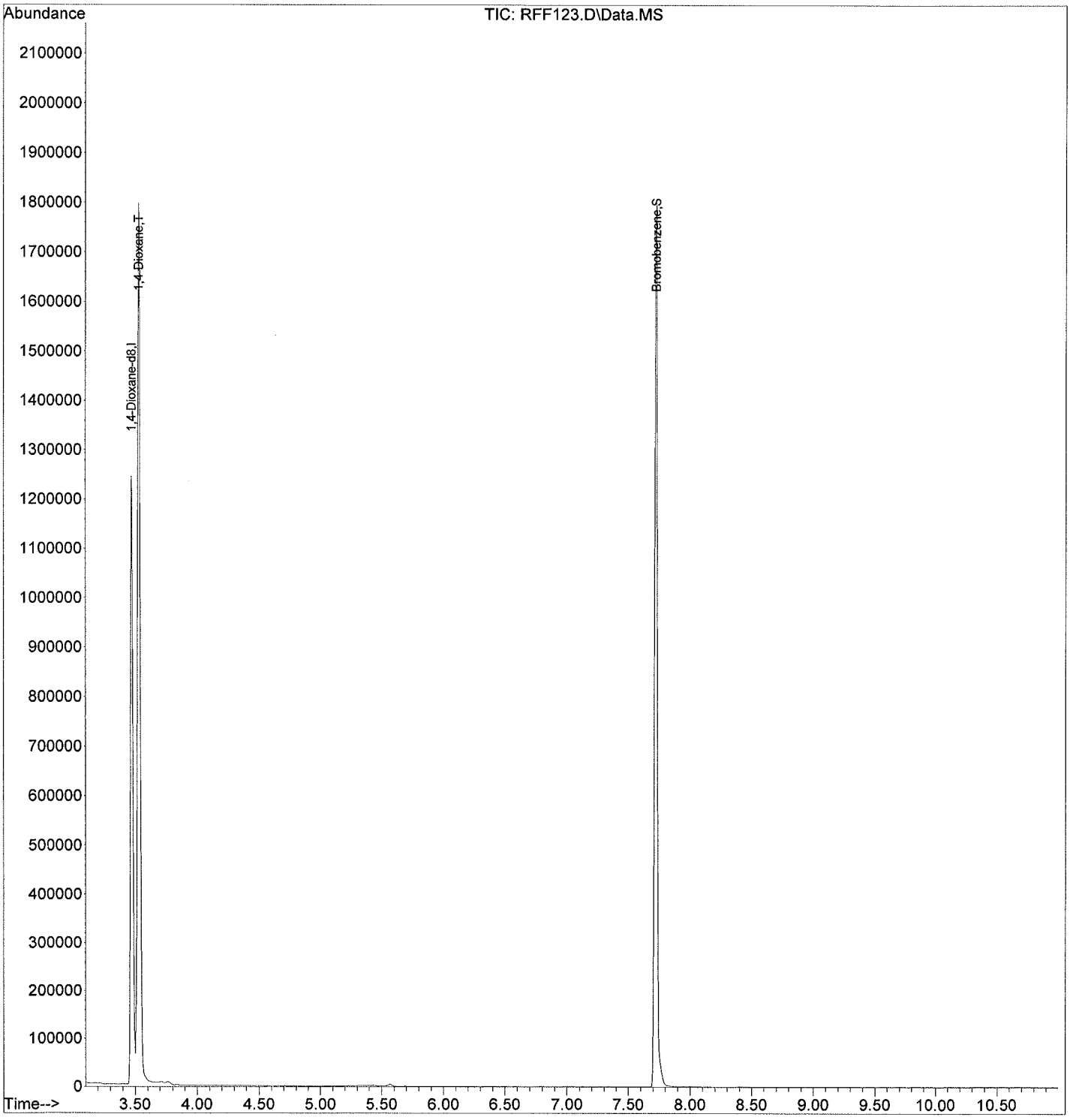
Data File : C:\msdchem\1\DATA\20F26\RFF123.D Vial: 3
Acq On : 26 Jun 2020 12:14 Operator: RMinam
Sample : CSVF0F03G15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 12:32:40 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dioxane-d8	3.471	96	198146	20.00	ppm	0.00
System Monitoring Compounds						
3) Bromobenzene	7.724	77	335587	20.16	ppm	0.00
Spiked Amount 20.000			Recovery =	100.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.528	88	261440	19.12	ppm	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\DATA\20F26\RFF123.D Vial: 3
Acq On : 26 Jun 2020 12:14 Operator: RMinam
Sample : CSVF0F03G15 Inst : DSQ
Misc : F0 Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 26 12:32:40 2020
Quant Results File: SVF0F03G.RES
Quant Method : C:\msdchem\1\METHODS\SVF0F03G.M
Quant Title : SEMIVOLATILES - SIM
QLast Update : Thu Jun 04 12:32:03 2020
Response via : Initial Calibration
DataAcq Meth:Adron.M



ANALYTICAL LOGS

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Method File: SVF0F036 Tune File: BFB Book #: AF0-007

Start Date/Time: 06/03/20 12:50 End Date/Time: 06/03/20 17:34

ANALYTICAL BATCH: SVF0F036

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
N/A	RFF001	IBF0F0301 (RM 6/5/20)	1			
↓	002	BFBF0F0301				
	003	SVF0F036 1				100 ppm
	004	2				60
	005	3				20
	006	4				5
	007	5				1
	008	6				0.5
	009	7				0.2
	010	8				0.15
	011	9				0.075
	012	↓ 10				0.05
↓	↓ 013	ISVF0F036 1				ICV

RM 06/04/20

Instrument No:	F0

INITIAL CALIBRATION REFERENCE

Date	SVF0F036 5
ICAL ID	06/03/20

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-17-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	0.05-100
BFB	↓ -09-02	50
ICV	↓ -09-03	20

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F03

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: RM

Date Disposed: N/A

Disposed By: N/A

This page is checked during data review.

EMAX LABORATORIES, INC.

ANALYSIS LOG FOR SEMIVOLATILES

SOP ☐ EMAX-8270 Rev. No. 7 ☐ EMAX-8270D Rev. No. 2 ☐ EMAX-8270SIM Rev. No. 2 ☑ EMAX-M8270SIM Rev. No. 2 ☐ EMAX-625 Rev. No. 1 ☐

Book #: AF0-007

Method File: SVF0F03G Tune File: BFB Start Date/Time: 06/26/20 11:58 End Date/Time: 06/26/20 17:52

ANALYTICAL BATCH: CSVF0F03G15

Preparative Batch	Data File Name	Run ID	DF	Matrix S	Matrix W	Notes
	RFF121	IBF0F03G15				
	122	BFBF0F03G15				
	123	CSVF0F03G15				
SVF 022W	124	SVF022WB	1x		X	
	125	L				
	126	C				
	127	20F194-~~03~~01 Rm 6/30/20				
	128	-03				
	129	20F199-01				
	130	20F207-01				
	131	-01M				
	132	-01S				
	133	-03				
	134	20F210-01				
	135	-~~03~~				
	136	-04				
	137	-05				
	138	-07				
	139	-08				
	140	ESVF0F0G16				

Rm 06/29/20

Instrument No:	F0
INITIAL CALIBRATION REFERENCE	
Date	06/03/20
ICAL ID	SVF0F03G

Standards

Name	ID	Conc. (mg/L)
DFTPP		
INT. STD.	SS2A-19-01-28	1,000
CCV - 8270		
CCV - 1,4-Dioxane	SS2B-19-08-03	20
BFB	↓ -09-02	50

Solvent	ID
CH_2Cl_2	59340
DATA FILE	20F26

Electronic Data Archival

Location	Date
HPCHEM_SVOA/TOF0	

Micropipette ID: ☑ PO97A-02 ☐ PO97A-03 ☐ PO00-01

Syringe ID: ☑ 503302-2 ☐

Comments:

Analyzed By: Rm

Date Disposed: 06/30/20

Disposed By: Rm

This page is checked during data review.

EXTRACTION LOGS

SOP	Rev. #
☑ EMAX-3520	5
☐ EMAX-3540	3
☐ EMAX-3546	0
☐ EMAX-3550	5
☐ EMAX-3580	3
☐ EMAX-625	1
☐ EMAX-	

Note: For samples and relevant QCs/Standards extracted, refer to attached extraction sequence.

☐ MS/MSD can not be extracted due to insufficient amount of samples

Comments:

Book #: ESV-112
Preparation Batch: SVF022W
Matrix: WATER
Micropipette ID: 1000 µl : PE00-03
Micropipette ID: 100 µl : PE97C-03
Micropipette ID:

Standards	ID	Amount Added (ml)
Surrogate	SS2B-19-09-01	0.1
LCS/MS/1,4-Dioxane	SS2B-19-06-03	1.0
LCS/MS		
LCS/MS		
LCS/MS		

Reagent	Lot# / ID
CH_2Cl_2	188890
Na_2SO_4	SWB-006-20-12
H_2SO_4	
NaOH	SPIB-12-93-01
Silica Sand	
Silica Gel	
Reagent Water	SWIA-009-03-05
Residual Chlorine Strip	002214B
pH Strip	HC998032
Filter Paper	16986363

Lab Sample ID	Sonicator #	Cell #	Concentrator #
SVF022-WB			6
-WL			6
-WC			6
F194-01			1
-03			1
F199-01			1
F207-01			1
-01M			1
-01S			1
-03			2
F210-01			2
-03			2
-04			2
-05			2
-07			2
-08			3

TUNING (Note: A free flowing mixture of soil and solvent must be achieved.)

Sonicator #	Power Output Reading	Acceptance Criteria
		< 15 g sample: at least 10% power output. > 15 g sample: at least 20% power output.

Concentrator	Water Bath Temperature Setting (°C)	Thermometer Reading (°C)
1	35	35
2	35	35
3	35	35
4		
5		
6	35	35
8		

Thermometer ID = SVOC-T1

Prepared By: HW — Witnessed By: JM
Standard Added By: HW — Checked By: JM
Extract Received By: FM 06/26/20 — Location: SE01-2A
Disposed By: — Disposed On:

EMAX LABORATORIES, INC.

EXTRACTION LOG FOR SEMIVOLATILES

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Ve(ml)	ExpAmt	ExpVe(ml)	PrepFctr	Comments
20SVF022W01	SVF022WB	1000	ml	6/25/20 14:30	2	1000	2	1	
20SVF022W02	SVF022WL	1000	ml	6/25/20 14:30	2	1000	2	1	1,4-Dioxane
20SVF022W03	SVF022WC	1000	ml	6/25/20 14:30	2	1000	2	1	1,4-Dioxane
20SVF022W04	F194-01	1000	ml	6/25/20 14:30	2	1000	2	1	Light yellow
20SVF022W05	F194-03	960	ml	6/25/20 14:30	2	1000	2	1.04	
20SVF022W06	F199-01	990	ml	6/25/20 14:30	2	1000	2	1.01	Light yellow
20SVF022W07	F207-01	880	ml	6/25/20 14:30	2	1000	2	1.14	
20SVF022W08	F207-01M	940	ml	6/25/20 14:30	2	1000	2	1.06	1,4-Dioxane
20SVF022W09	F207-01S	900	ml	6/25/20 14:30	2	1000	2	1.11	1,4-Dioxane
20SVF022W10	F207-03	870	ml	6/25/20 14:30	2	1000	2	1.15	Yellow
20SVF022W11	F210-01	1000	ml	6/25/20 14:30	2	1000	2	1	
20SVF022W12	F210-03	950	ml	6/25/20 14:31	2	1000	2	1.05	
20SVF022W13	F210-04	1060	ml	6/25/20 14:31	2	1000	2	0.94	
20SVF022W14	F210-05	870	ml	6/25/20 14:31	2	1000	2	1.15	
20SVF022W15	F210-07	970	ml	6/25/20 14:31	2	1000	2	1.03	Light yellow
20SVF022W16	F210-08	900	ml	6/25/20 14:31	2	1000	2	1.11	

Ve=extract volume PrepFctr=(ExpAmt/Aliquot)(Ve/ExpVe)

☑ Extraction Started @ 6/25/20 14:00 ☐ pHAdj(≤2) @ Vial Lot No.: 277518 Prepared By: HWang

☑ Extraction Ended @ 6/26/20 8:00 ☑ pHAdj(≥11) @ 6/25/20 14:00 Vial Cal Ref.: VC-19-020 Checked By: VM

Comments: volume enterd after extraction started, pH=6-7, chlorine not detected Date 6/26/20

SOP EMAX-3520 Rev. 5

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METHOD RSK-175
DISSOLVED GASES

SDG#: 20F210

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD RSK-175
DISSOLVED GASES

A total of five(5) water samples were received on 06/25/20 to be analyzed for Dissolved Gases in accordance with Method RSK-175 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. DGF015WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. DGF015WL/DGF015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED GASES

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F210
Instrument ID : GCT072

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	DGF015WB	1	NA	06/25/2009:34	06/25/2008:45	BF25003A	BF25002A	DGF015W	Method Blank
LCS1W	DGF015WL	1	NA	06/25/2009:49	06/25/2008:45	BF25004A	BF25002A	DGF015W	Lab Control Sample (LCS)
LCD1W	DGF015WC	1	NA	06/25/2011:57	06/25/2008:45	BF25013A	BF25002A	DGF015W	LCS Duplicate
MW23C-GW062320	F210-01	1	NA	06/25/2013:08	06/25/2008:45	BF25016A	BF25015A	DGF015W	Field Sample
MW27-GW062420	F210-04	1	NA	06/25/2013:22	06/25/2008:45	BF25017A	BF25015A	DGF015W	Field Sample
MW28-GW062420	F210-05	1	NA	06/25/2013:34	06/25/2008:45	BF25018A	BF25015A	DGF015W	Field Sample
MW14S-GW062320	F210-07	1	NA	06/25/2014:20	06/25/2008:45	BF25019A	BF25015A	DGF015W	Field Sample
MW14D-GW062320	F210-08	1	NA	06/25/2014:33	06/25/2008:45	BF25020A	BF25015A	DGF015W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/23/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MW23C-GW062320	Date Analyzed: 06/25/20 13:08
Lab Samp ID: F210-01	Dilution Factor: 1
Lab File ID: BF25016A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25015A	Instrument ID : GCT072

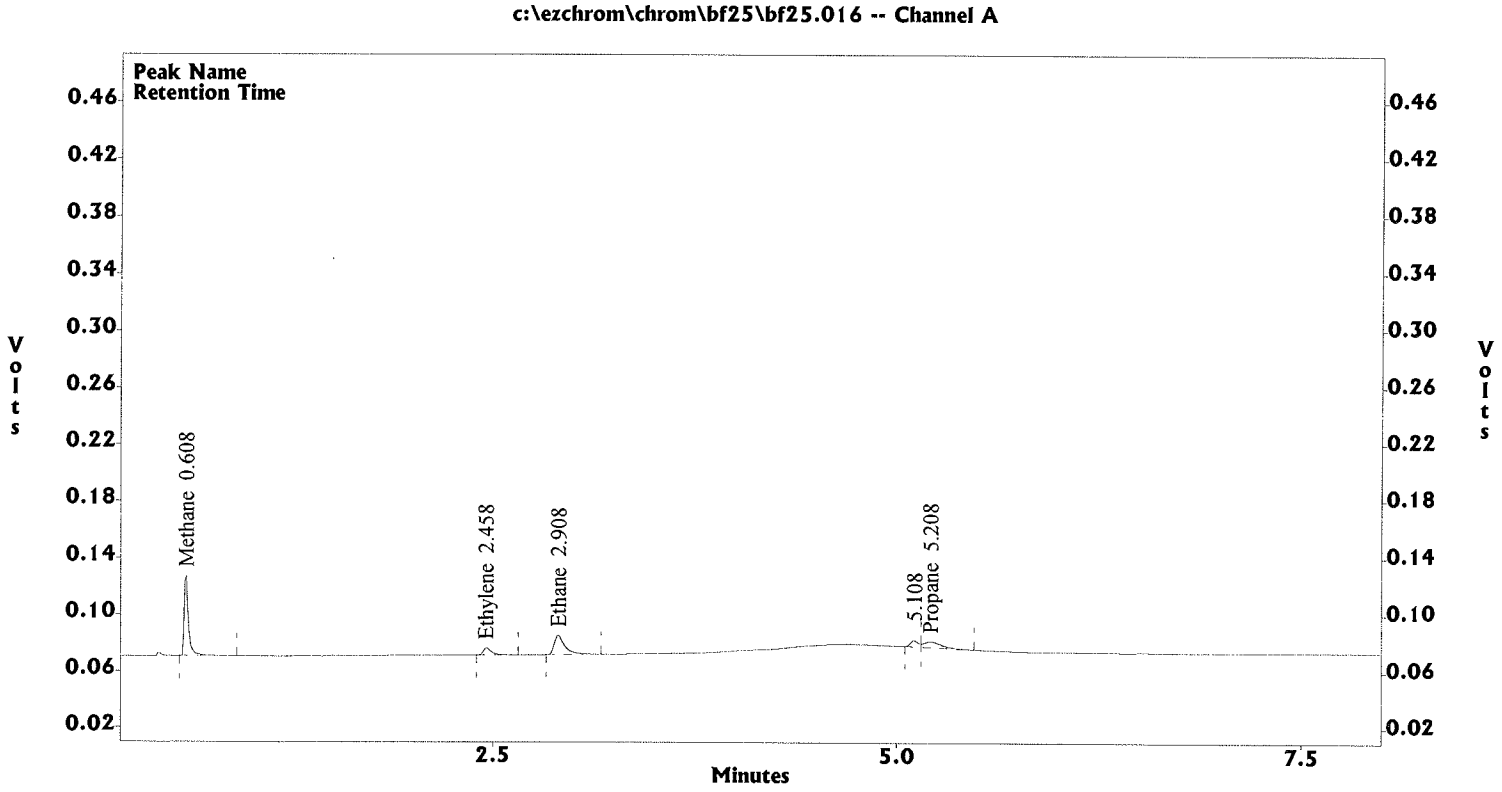
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	4.5	2.0	0.32
ETHENE	1.7J	2.0	0.30
METHANE	7.4	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\bf25.016
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : F210-01
Acquired : Jun 25, 2020 13:08:29
Printed : Jun 25, 2020 13:30:50
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	103757	13975.2	7.424
--	Acetylene	1.992	0	0.0	0.000
2	Ethylene	2.458	16515	9519.0	1.735
3	Ethane	2.908	58735	13110.4	4.480
5	Propane	5.208	30766	13914.6	2.211



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/24/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MW27-GW062420	Date Analyzed: 06/25/20 13:22
Lab Samp ID: F210-04	Dilution Factor: 1
Lab File ID: BF25017A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25015A	Instrument ID : GCT072

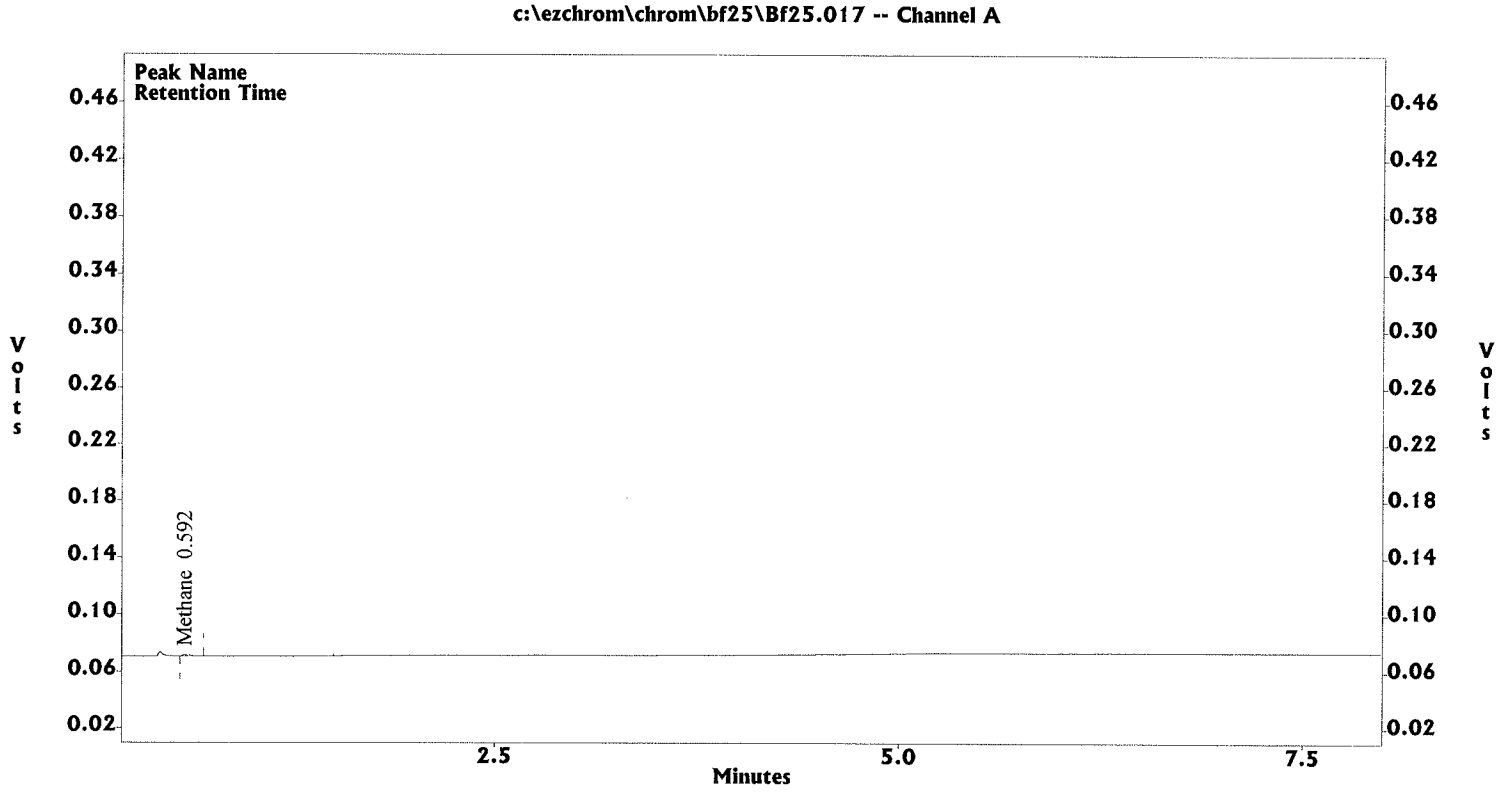
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.017
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F210-04
Acquired : Jun 25, 2020 13:22:02
Printed : Jun 25, 2020 13:30:03
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.592	2303	13975.2	0.165
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/24/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MW28-GW062420	Date Analyzed: 06/25/20 13:34
Lab Samp ID: F210-05	Dilution Factor: 1
Lab File ID: BF25018A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25015A	Instrument ID : GCT072

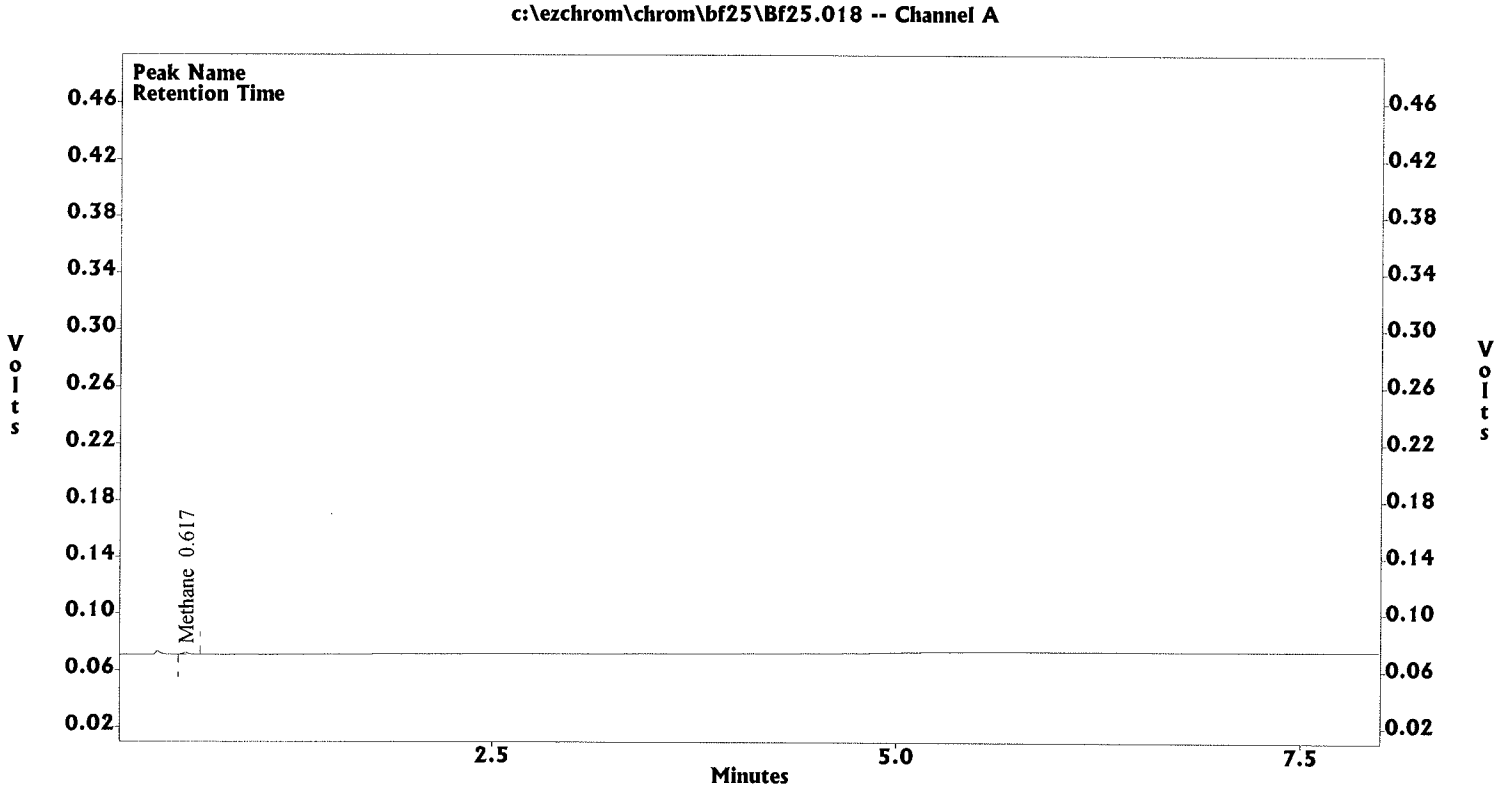
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.21J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.018
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F210-05
Acquired : Jun 25, 2020 13:34:39
Printed : Jun 25, 2020 13:42:40
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.617	2880	13975.2	0.206
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/23/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MW14S-GW062320	Date Analyzed: 06/25/20 14:20
Lab Samp ID: F210-07	Dilution Factor: 1
Lab File ID: BF25019A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25015A	Instrument ID : GCT072

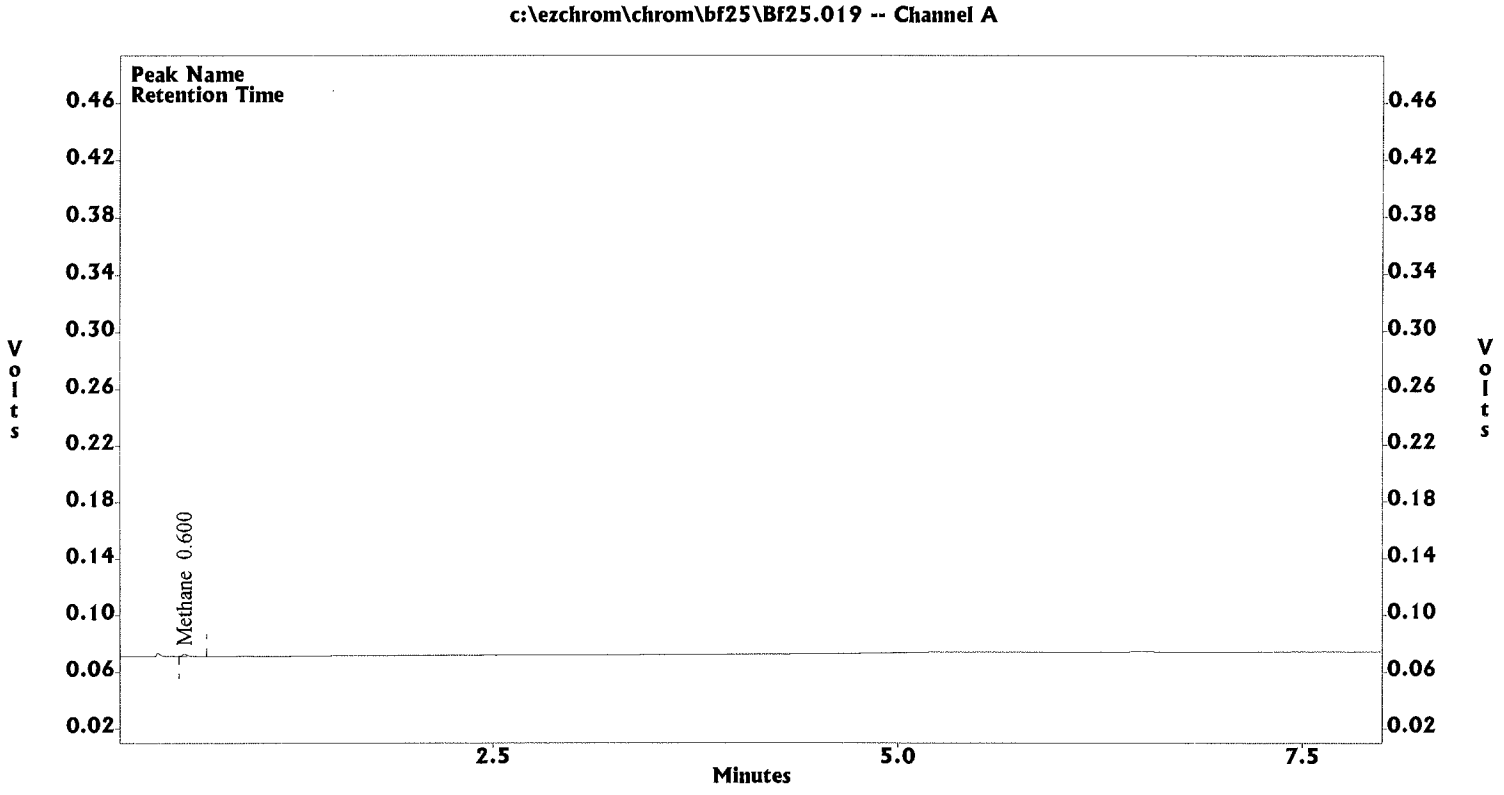
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.26J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.019
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F210-07
Acquired : Jun 25, 2020 14:20:06
Printed : Jun 25, 2020 14:28:07
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	3571	13975.2	0.256
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000



METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: 06/23/20
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MW14D-GW062320	Date Analyzed: 06/25/20 14:33
Lab Samp ID: F210-08	Dilution Factor: 1
Lab File ID: BF25020A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25015A	Instrument ID : GCT072

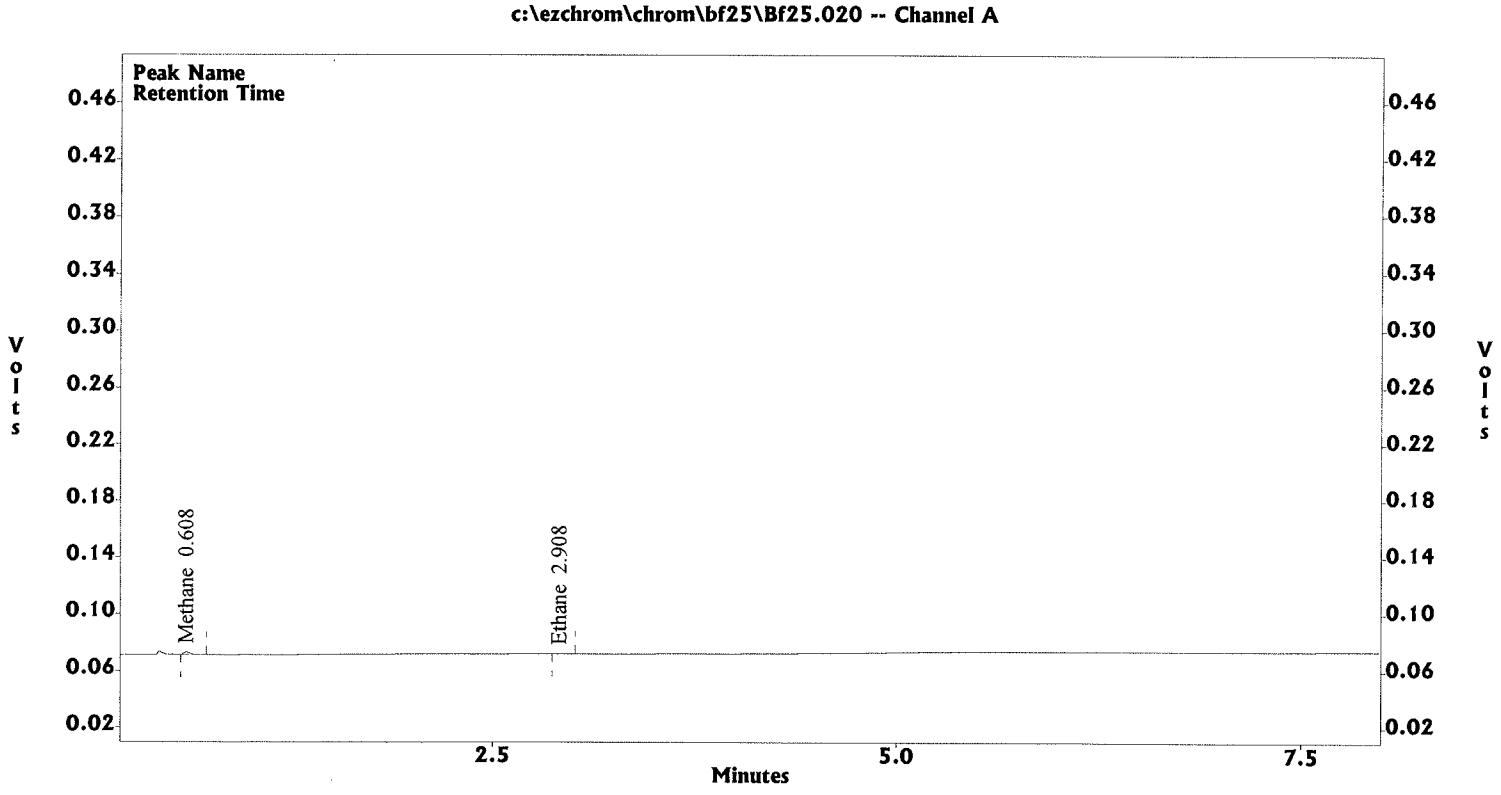
PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	0.30J	2.0	0.17

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.020
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : F210-08
Acquired : Jun 25, 2020 14:33:45
Printed : Jun 25, 2020 14:41:46
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	4216	13975.2	0.302
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
2	Ethane	2.908	747	13110.4	0.057
--	Propane	5.225	0	0.0	0.000



QC SUMMARIES

METHOD RSK-175
DISSOLVED GASES

Client : CDM SMITH	Date Collected: NA
Project : VA SALT LAKE CITY	Date Received: 06/25/20
Batch No. : 20F210	Date Extracted: 06/25/20 08:45
Sample ID: MBLK1W	Date Analyzed: 06/25/20 09:34
Lab Samp ID: DGF015WB	Dilution Factor: 1
Lab File ID: BF25003A	Matrix : WATER
Ext Btch ID: DGF015W	% Moisture : NA
Calib. Ref.: BF25002A	Instrument ID : GCT072

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ETHANE	ND	2.0	0.32
ETHENE	ND	2.0	0.30
METHANE	ND	2.0	0.17

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F210
METHOD: RSK-175

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DGF015WB	DGF015WL	DGF015WC		
LAB FILE ID:	BF25003A	BF25004A	BF25013A		
DATE EXTRACTED:	06/25/2008:45	06/25/2008:45	06/25/2008:45	DATE COLLECTED:	NA
DATE ANALYZED:	06/25/2009:34	06/25/2009:49	06/25/2011:57	DATE RECEIVED:	06/25/20
PREP. BATCH:	DGF015W	DGF015W	DGF015W		
CALIB. REF:	BF25002A	BF25002A	BF25002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Ethane	ND	25.5	26.0	102	25.5	25.9	102	0	70-140	30
Ethene	ND	23.8	23.8	100	23.8	23.8	100	0	70-140	30
Methane	ND	13.6	14.7	108	13.6	14.5	107	1	70-130	30

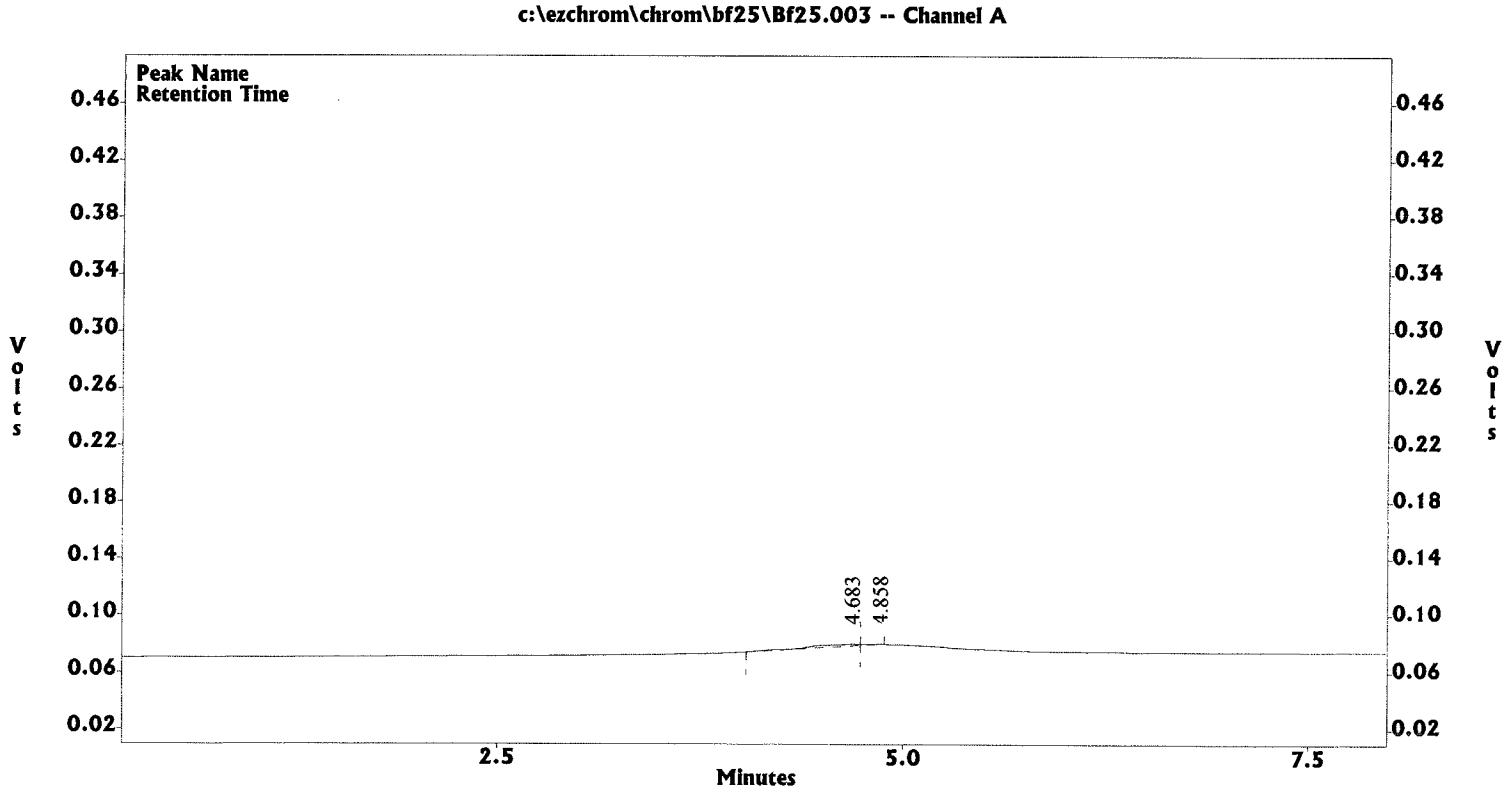
QC DATA

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.003
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : DGF015WB
Acquired : Jun 25, 2020 09:34:10
Printed : Jun 25, 2020 09:42:11
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
--	Methane	0.608	0	0.0	0.000
--	Acetylene	1.992	0	0.0	0.000
--	Ethylene	2.467	0	0.0	0.000
--	Ethane	2.908	0	0.0	0.000
--	Propane	5.225	0	0.0	0.000

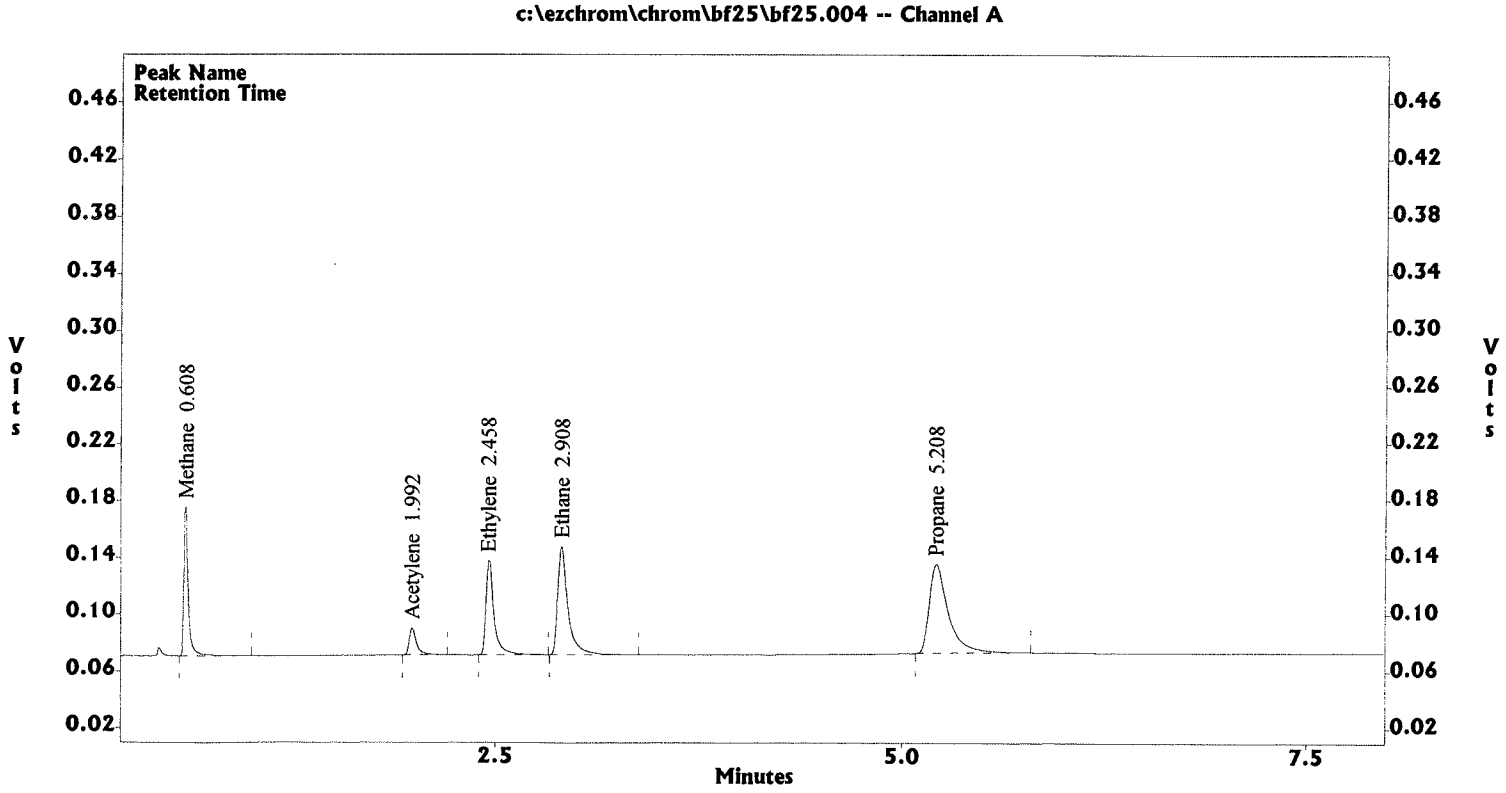


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\bf25.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DGF015WL
Acquired : Jun 25, 2020 09:49:17
Printed : Jun 25, 2020 10:11:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.608	204865	13975.2	14.659
2	Acetylene	1.992	58809	2483.4	23.681
3	Ethylene	2.458	226257	9519.0	23.769
4	Ethane	2.908	341076	13110.4	26.016
5	Propane	5.208	517014	13914.6	37.156

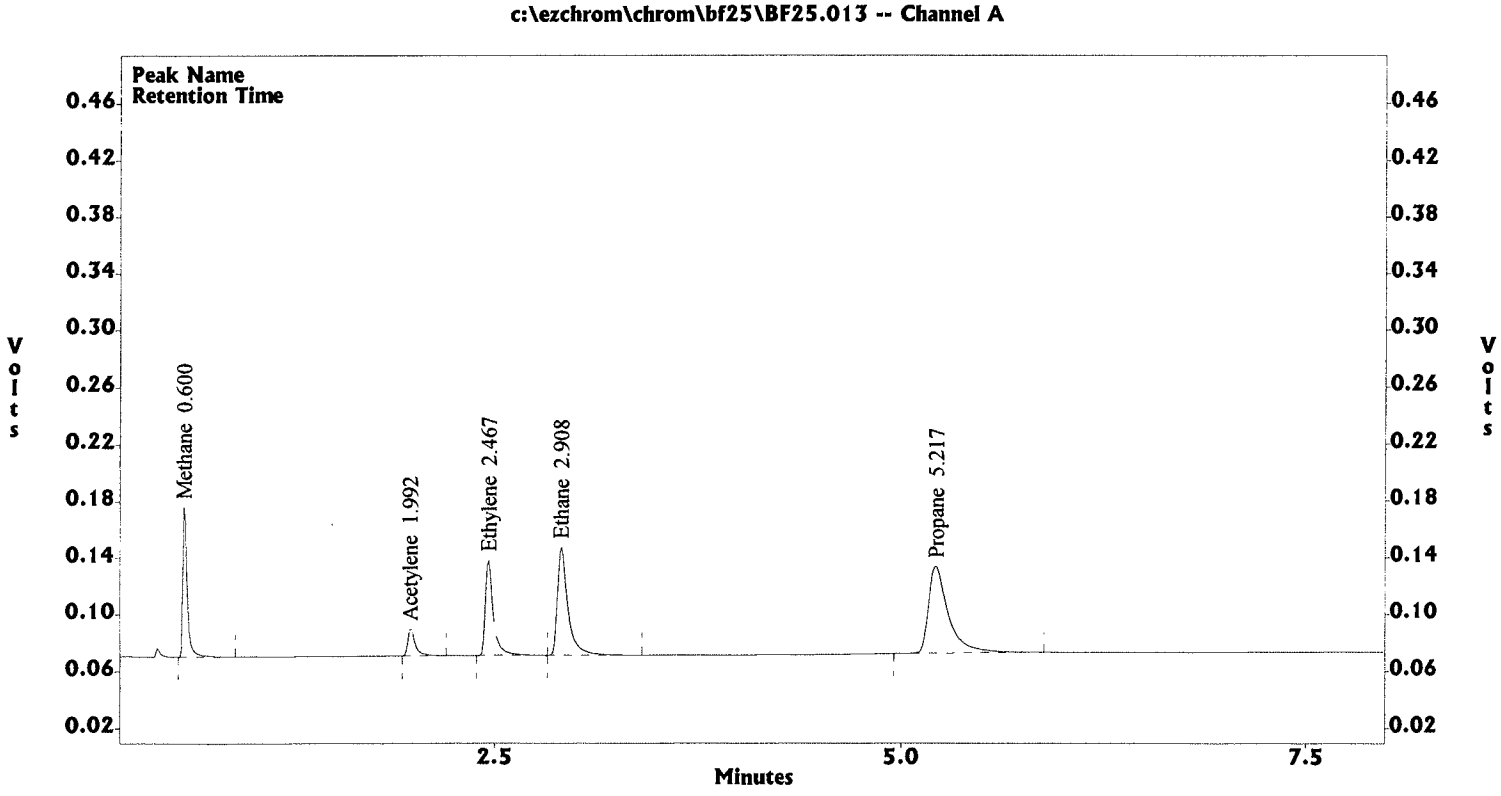


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\BF25.013
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DGF015WC
Acquired : Jun 25, 2020 11:57:01
Printed : Jun 25, 2020 12:29:34
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	202162	13975.2	14.466
2	Acetylene	1.992	59086	2483.4	23.793
3	Ethylene	2.467	226996	9519.0	23.847
4	Ethane	2.908	339394	13110.4	25.887
5	Propane	5.217	517949	13914.6	37.223



INITIAL CALIBRATIONS

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06
CONC UNIT: ppb

COMPOUND	CONC X	CALIBRATION FACTORS (AREA)/UNIT 2.00X	10.00X	25.00X	40.00X	75.00X	100.00X	MEAN	%RSD
Methane	0.34	15844	15625	13737	12982	12496	13168	13975.2	10.2
Acetylene	0.55	2837	2796	2436	2283	2225	2322	2483.4	10.8
Ethylene	0.60	11084	10815	9218	8751	8417	8830	9519.0	12.0
Ethane	0.64	14697	14960	12826	12138	11732	12310	13110.4	10.5
Propane	0.94	16216	14816	13670	13030	12584	13171	13914.6	9.8

DG72D29.MET

FORM VI DGAS -2 1/96 Rev 2/2006

5/6/20

INITIAL CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
LFID & Datetime: BD29002A 04/29/20 14:01
LFID & Datetime: BD29003A 04/29/20 14:14
LFID & Datetime: BD29004A 04/29/20 14:26
LFID & Datetime: BD29005A 04/29/20 14:39
LFID & Datetime: BD29006A 04/29/20 14:52
LFID & Datetime: BD29007A 04/29/20 15:06

COMPOUND	RT OF STANDARDS (MIN) 2.0X	10.0X	25.0X	40.0X	75.0X	100.0X	MEAN RT	RT WINDOW FROM	TO	RTWINDOW WIDTH
Methane	0.558	0.550	0.542	0.542	0.542	0.542	0.546	0.520	0.572	0.026
Acetylene	1.900	1.900	1.883	1.883	1.883	1.883	1.889	1.836	1.942	0.053
Ethylene	2.358	2.367	2.350	2.350	2.350	2.350	2.354	2.316	2.392	0.038
Ethane	2.800	2.800	2.792	2.792	2.792	2.792	2.795	2.757	2.833	0.038
Propane	5.067	5.075	5.050	5.058	5.050	5.050	5.058	5.006	5.110	0.052

DG72D29.MET

FORM VI DGAS -1 1/96 Rev 2/2006

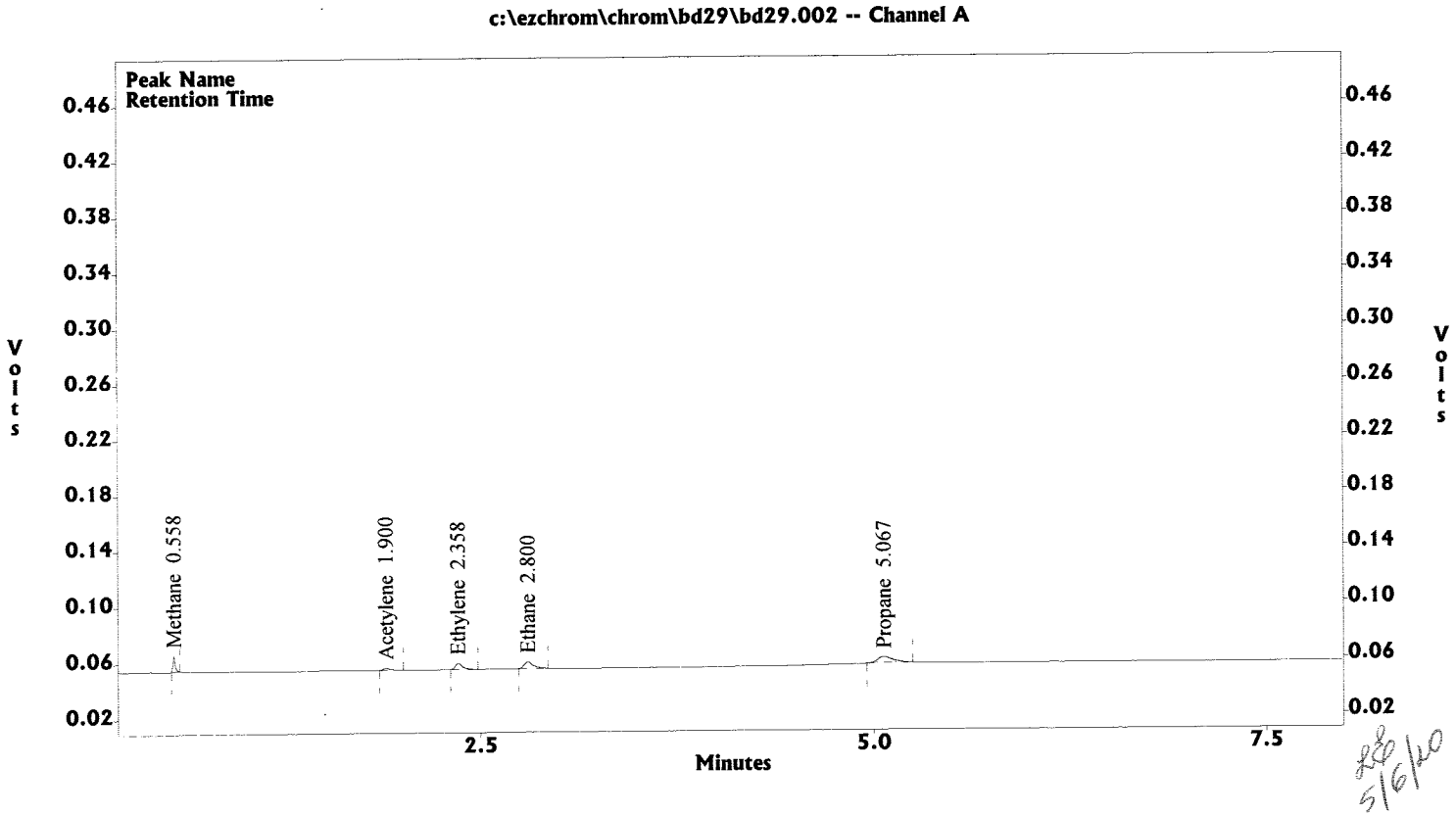
RL 5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2901
Acquired : Apr 29, 2020 14:01:33
Printed : Apr 30, 2020 11:05:49
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.558	10774	13975.2	0.680
2	Acetylene	1.900	3135	2483.4	1.105
3	Ethylene	2.358	13190	9519.0	1.190
4	Ethane	2.800	18739	13110.4	1.275
5	Propane	5.067	30324	13914.6	1.870



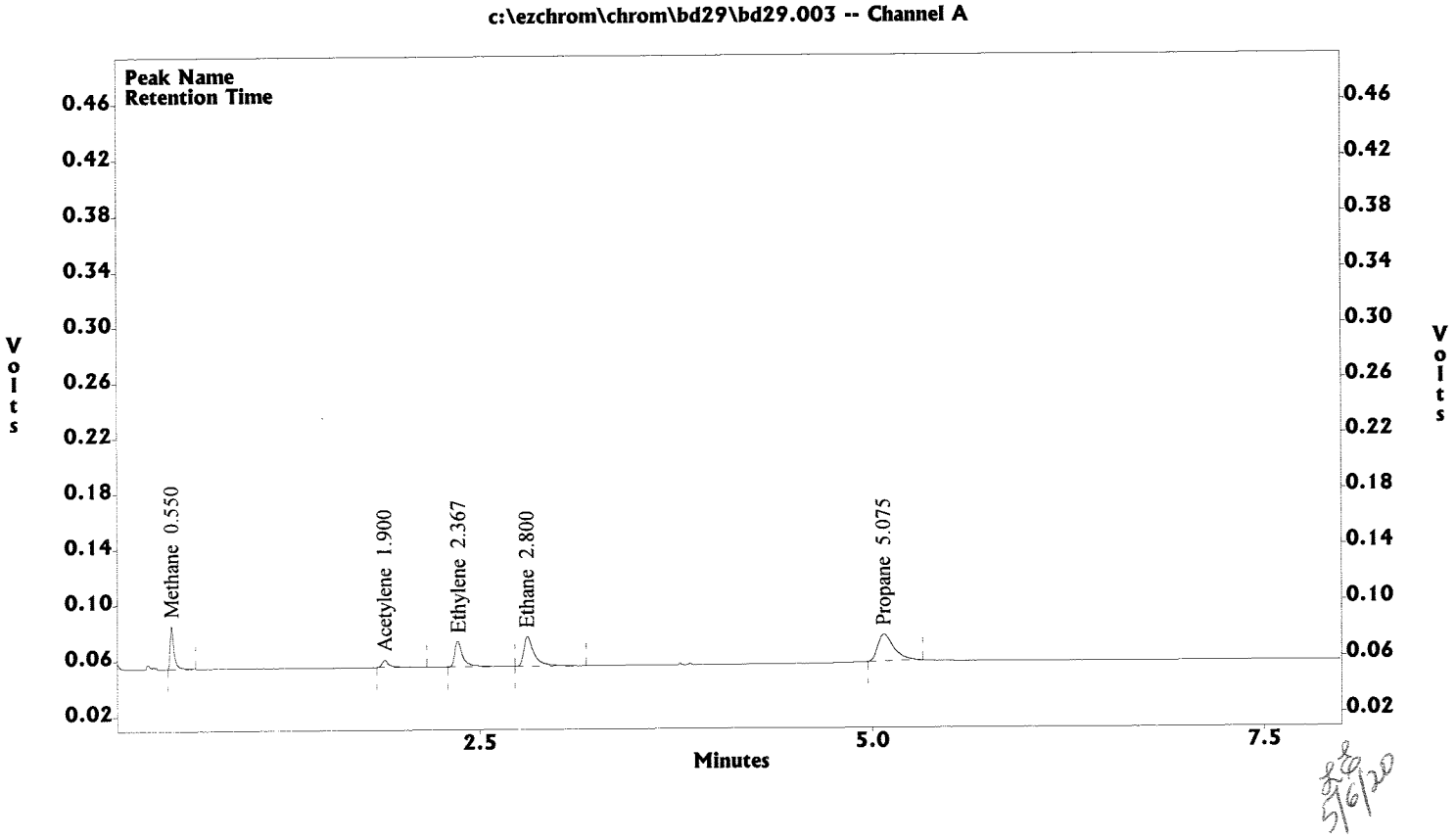
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.003
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2902
Acquired : Apr 29, 2020 14:14:03
Printed : Apr 30, 2020 11:05:58
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.550	53155	13975.2	3.402
2	Acetylene	1.900	15459	2483.4	5.528
3	Ethylene	2.367	64381	9519.0	5.953
4	Ethane	2.800	95413	13110.4	6.378
5	Propane	5.075	138530	13914.6	9.350

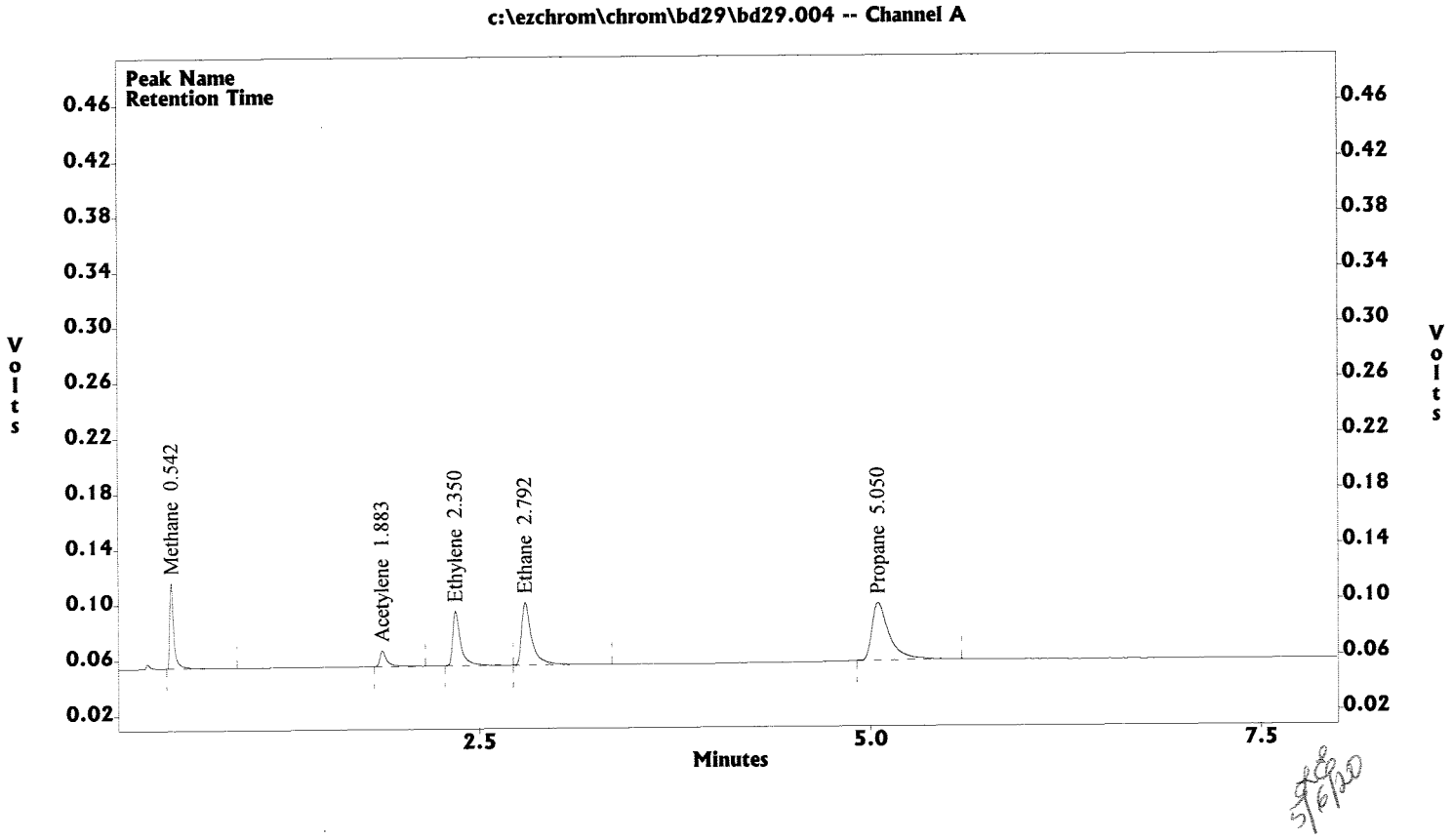


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.004
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2903
Acquired : Apr 29, 2020 14:26:21
Printed : Apr 30, 2020 11:06:03
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	116823	13975.2	8.504
2	Acetylene	1.883	33667	2483.4	13.820
3	Ethylene	2.350	137168	9519.0	14.880
4	Ethane	2.792	204569	13110.4	15.950
5	Propane	5.050	319746	13914.6	23.390



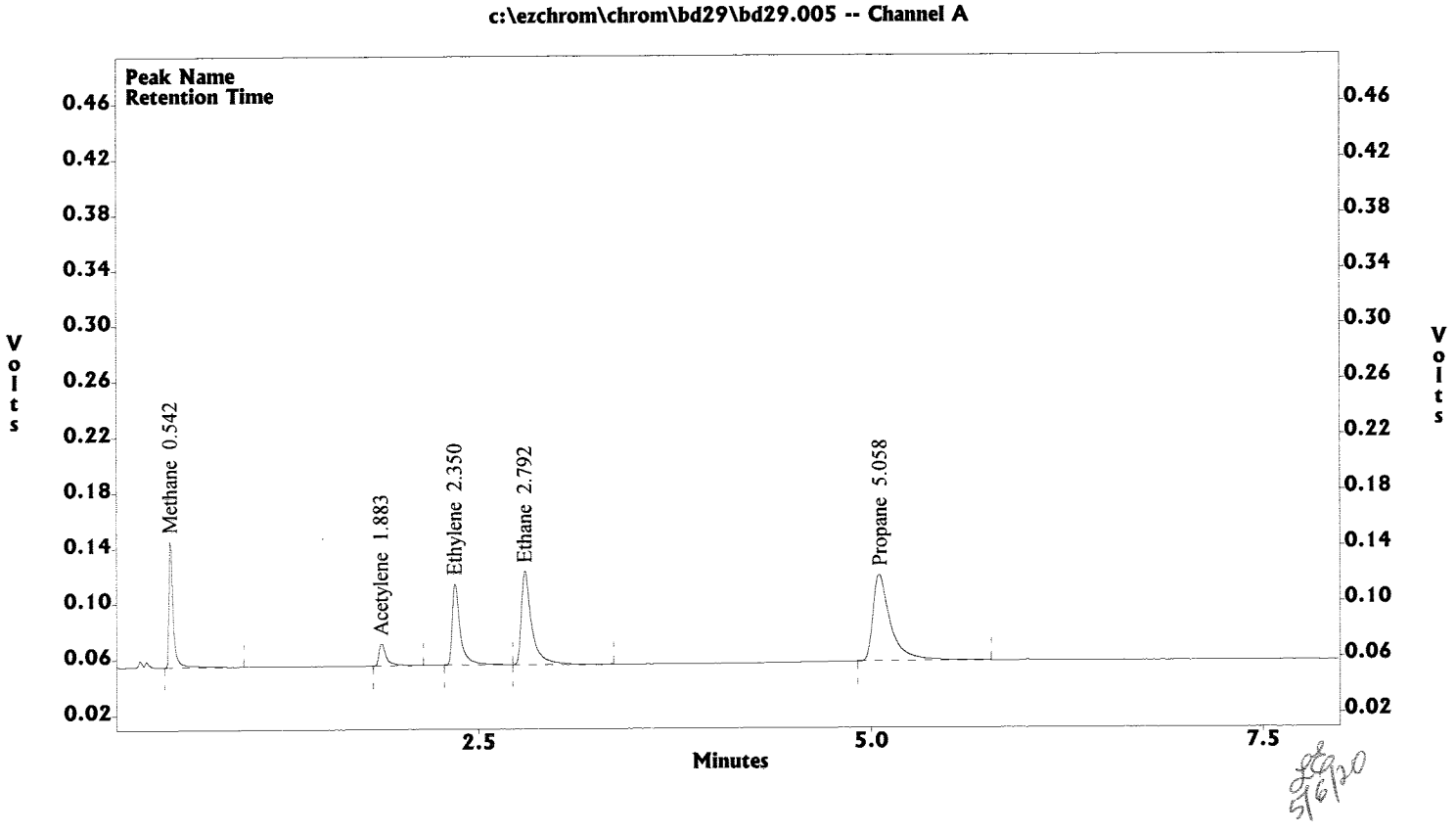
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.005
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2904
Acquired : Apr 29, 2020 14:39:09
Printed : Apr 30, 2020 11:06:10
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	176554	13975.2	13.600
2	Acetylene	1.883	50480	2483.4	22.110
3	Ethylene	2.350	208350	9519.0	23.810
4	Ethane	2.792	309628	13110.4	25.510
5	Propane	5.058	487465	13914.6	37.410

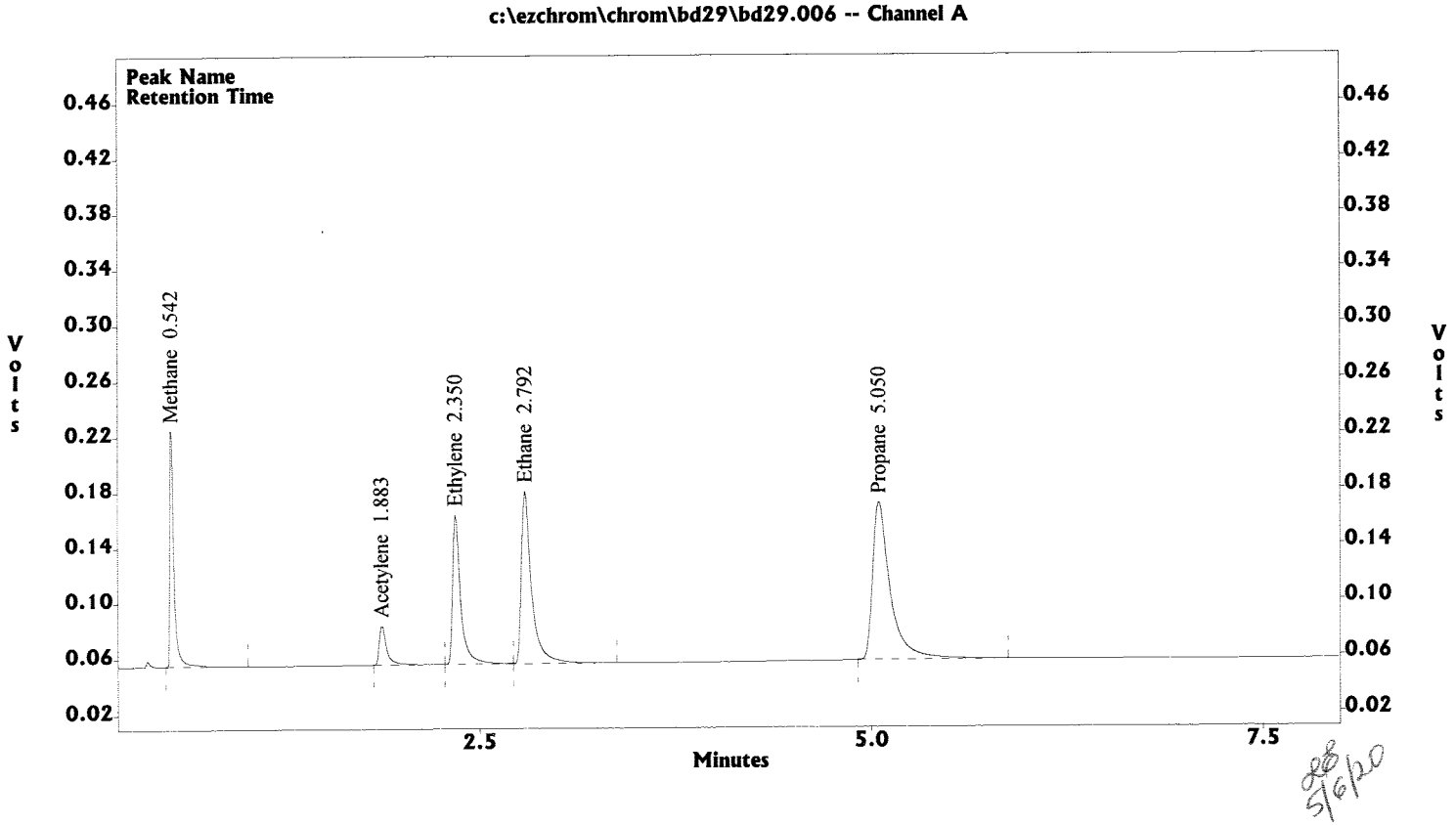


METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.006
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2905
Acquired : Apr 29, 2020 14:52:16
Printed : Apr 30, 2020 11:06:16
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	318762	13975.2	25.510
2	Acetylene	1.883	92228	2483.4	41.450
3	Ethylene	2.350	375713	9519.0	44.640
4	Ethane	2.792	561146	13110.4	47.830
5	Propane	5.050	882797	13914.6	70.150



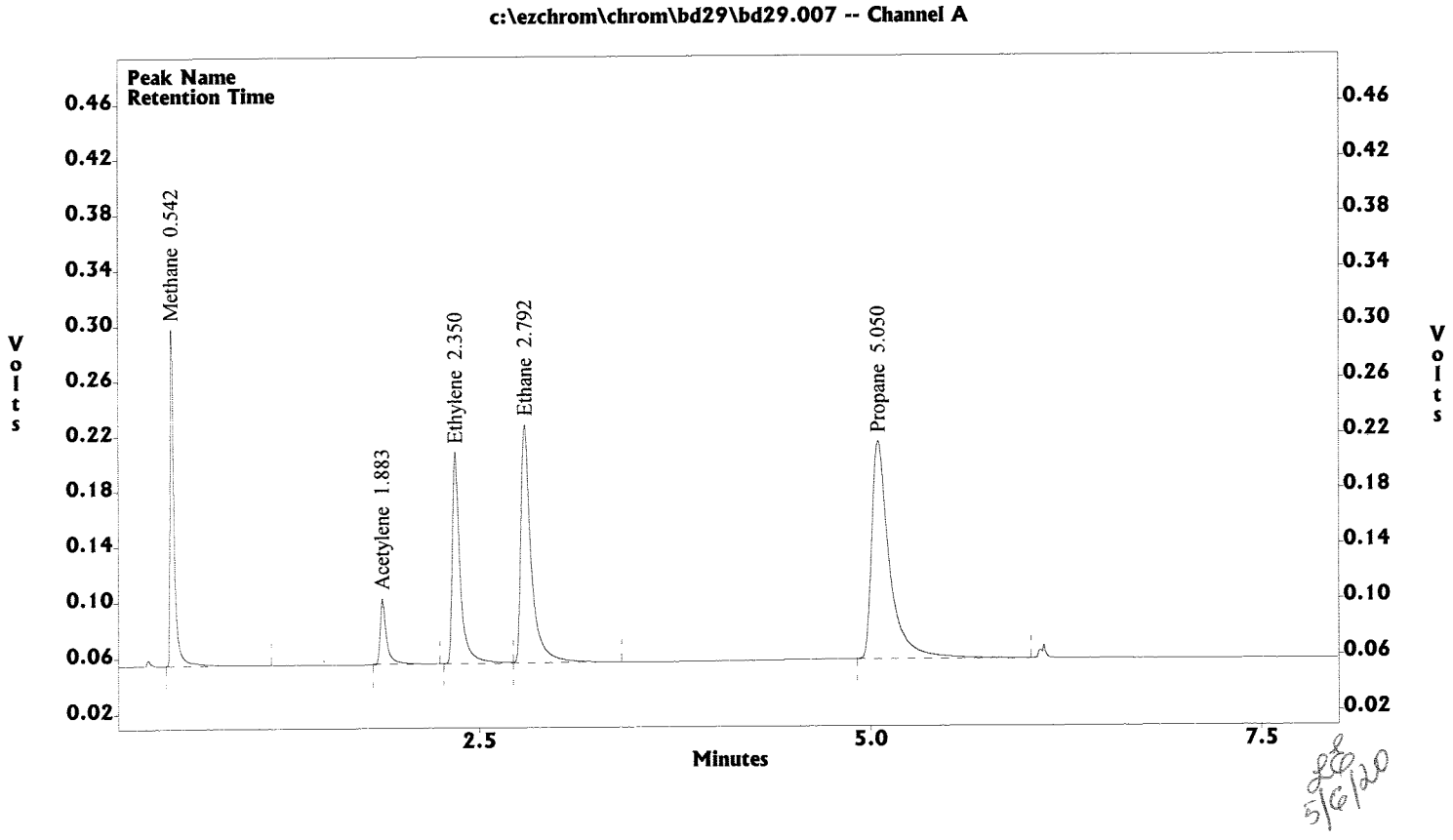
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.007
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : DG72D2906
Acquired : Apr 29, 2020 15:06:38
Printed : Apr 30, 2020 11:06:21
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	447831	13975.2	34.010
2	Acetylene	1.883	128359	2483.4	55.270
3	Ethylene	2.350	525533	9519.0	59.520
4	Ethane	2.792	785030	13110.4	63.770
5	Propane	5.050	1231861	13914.6	93.530



5/6/20

SECOND SOURCE VERIFICATION

INITIAL CALIBRATION VERIFICATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Column : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BD29008A 04/29/2020 15:22
CONC UNIT : ppb

COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.542	0.516	0.568	13.6	13975.2	190886	13.66	0		15
Acetylene	1.883	1.830	1.936	22.1	2483.4	53083	21.38	-3		15
Ethylene	2.350	2.312	2.388	23.8	9519.0	236366	24.83	4		15
Ethane	2.792	2.754	2.830	25.5	13110.4	345766	26.37	3		15
Propane	5.050	4.998	5.102	37.4	13914.6	523750	37.64	1		15

DG72D29.MET

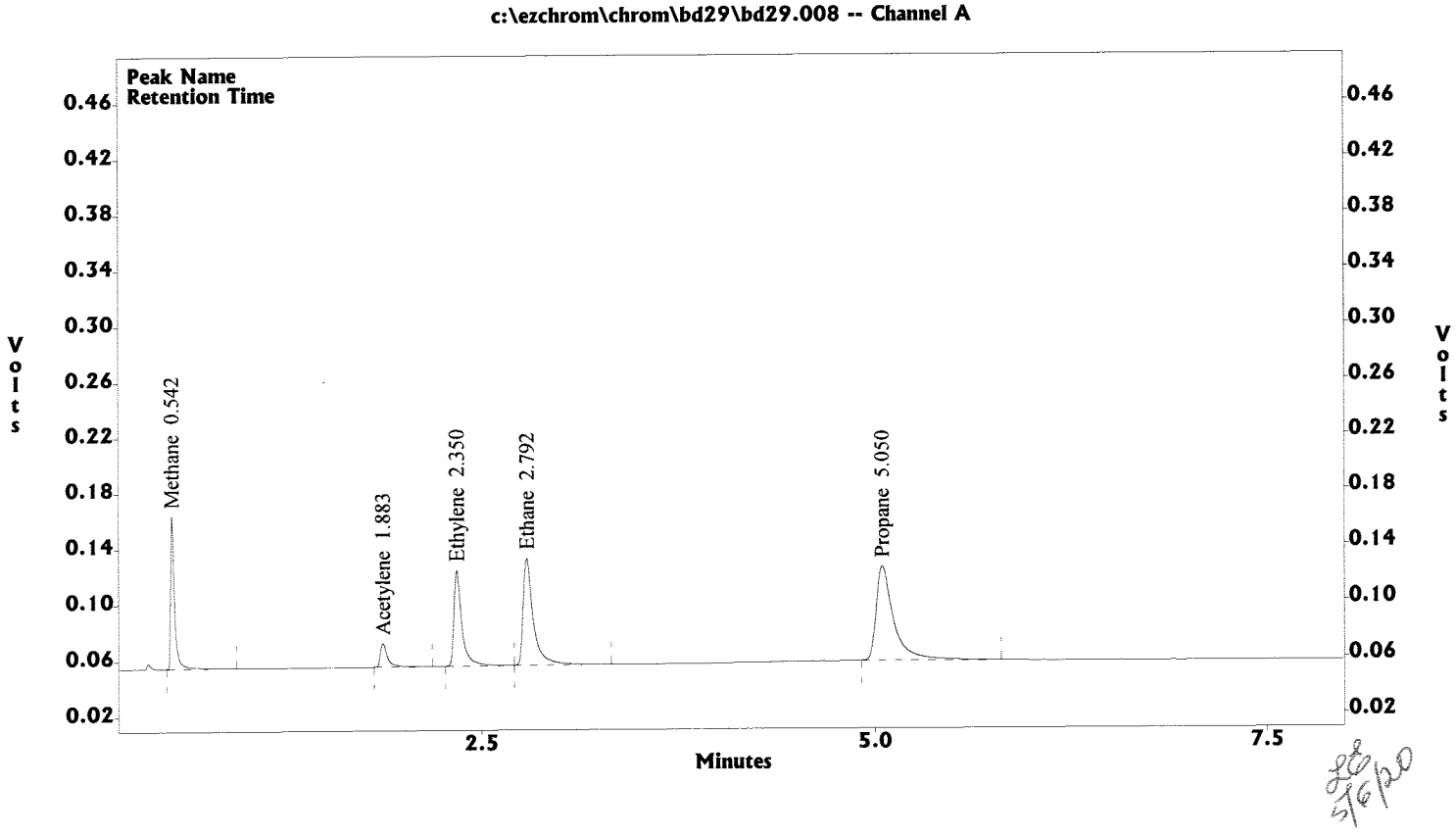
5/6/20

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bd29\bd29.008
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : IDG72D29001
Acquired : Apr 29, 2020 15:22:29
Printed : Apr 30, 2020 11:06:33
User : ASitu

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.542	190886	13975.2	13.659
2	Acetylene	1.883	53083	2483.4	21.375
3	Ethylene	2.350	236366	9519.0	24.831
4	Ethane	2.792	345766	13110.4	26.373
5	Propane	5.050	523750	13914.6	37.640



DAILY CALIBRATIONS

CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF25002A 06/25/2020 09:20
CONC UNIT : ppb

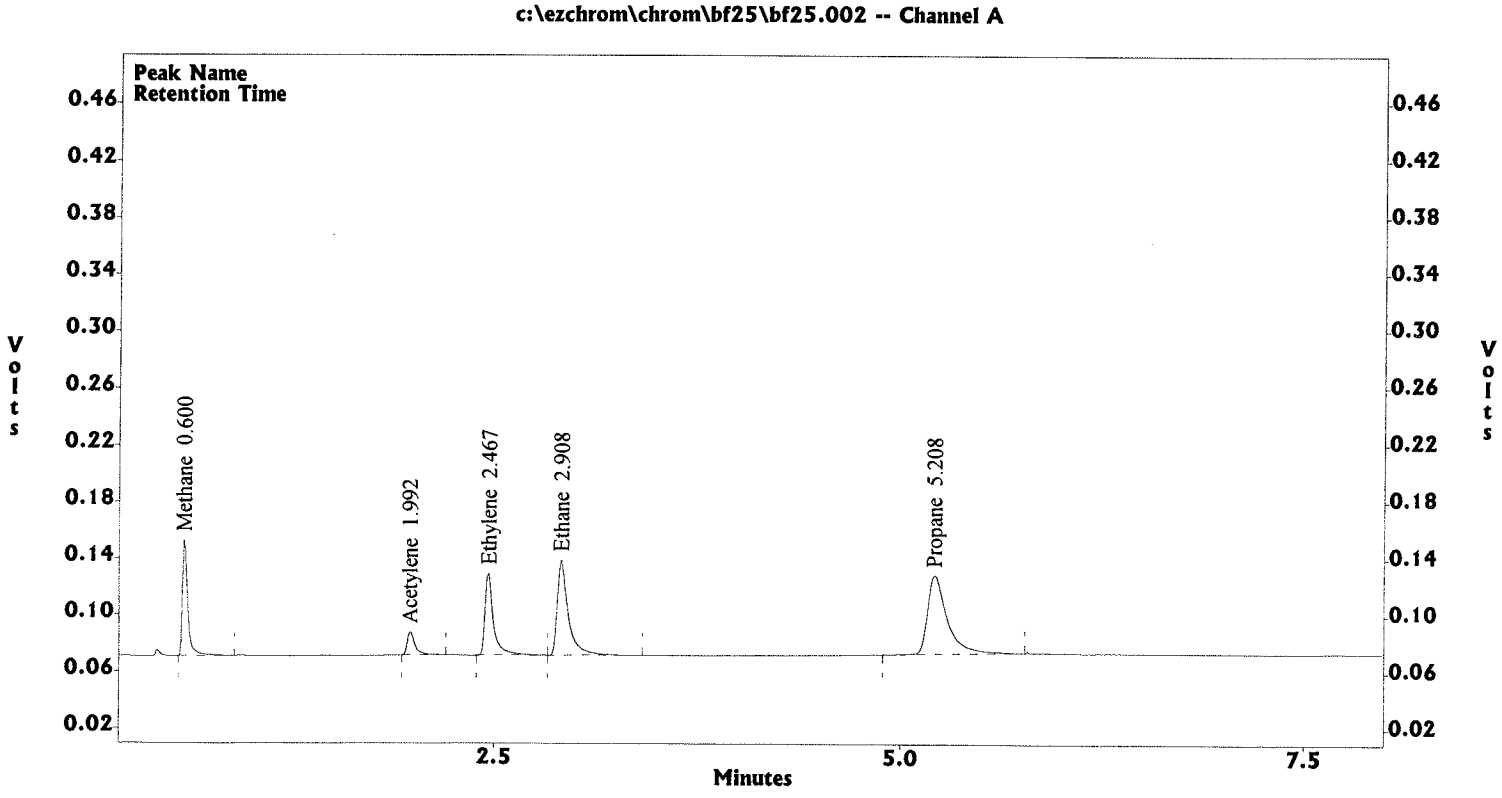
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	181607	12.99	-4		15
Ethylene	2.467	2.429	2.505	23.8	9519.0	204899	21.52	-10		15
Ethane	2.908	2.870	2.946	25.5	13110.4	307853	23.48	-8		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\bf25.002
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : CDG72D29124
Acquired : Jun 25, 2020 09:20:14
Printed : Jun 25, 2020 09:36:01
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	181607	13975.2	12.995
2	Acetylene	1.992	53159	2483.4	21.406
3	Ethylene	2.467	204899	9519.0	21.525
4	Ethane	2.908	307853	13110.4	23.482
5	Propane	5.208	467950	13914.6	33.630



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF25015A 06/25/2020 12:33
CONC UNIT : ppb

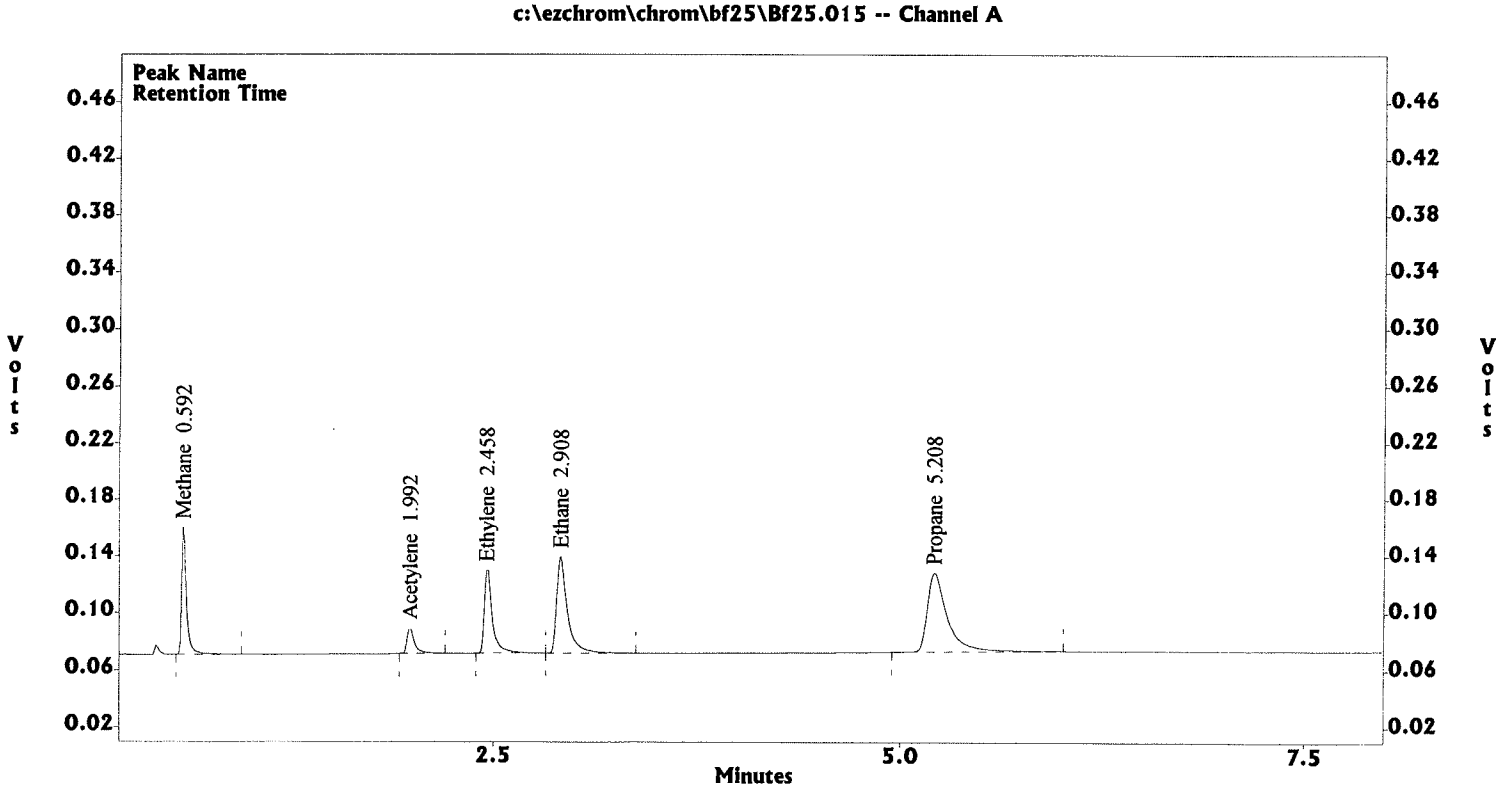
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.592	0.566	0.618	13.6	13975.2	182283	13.04	-4		15
Ethylene	2.458	2.420	2.496	23.8	9519.0	205077	21.54	-9		15
Ethane	2.908	2.870	2.946	25.5	13110.4	304307	23.21	-9		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\Bf25.015
Method : c:\ezchrom\methods\Dg72d29.met
Sample ID : CDG72D29125
Acquired : Jun 25, 2020 12:33:44
Printed : Jun 25, 2020 12:41:46
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.592	182283	13975.2	13.043
2	Acetylene	1.992	57169	2483.4	23.021
3	Ethylene	2.458	205077	9519.0	21.544
4	Ethane	2.908	304307	13110.4	23.211
5	Propane	5.208	471300	13914.6	33.871



CONTINUE CALIBRATION
DISSOLVED GASES

Lab Name : EMAX Inc
Instrument ID : GCT072
GC Columm : CARBOXEN 1006PLOT
Column size ID : 30MX0.53MM
Mid Conc Init LFID & Datetime: BD29005A 04/29/2020 14:39
Conc Cont LFID & Datetime: BF25021A 06/25/2020 14:46
CONC UNIT : ppb

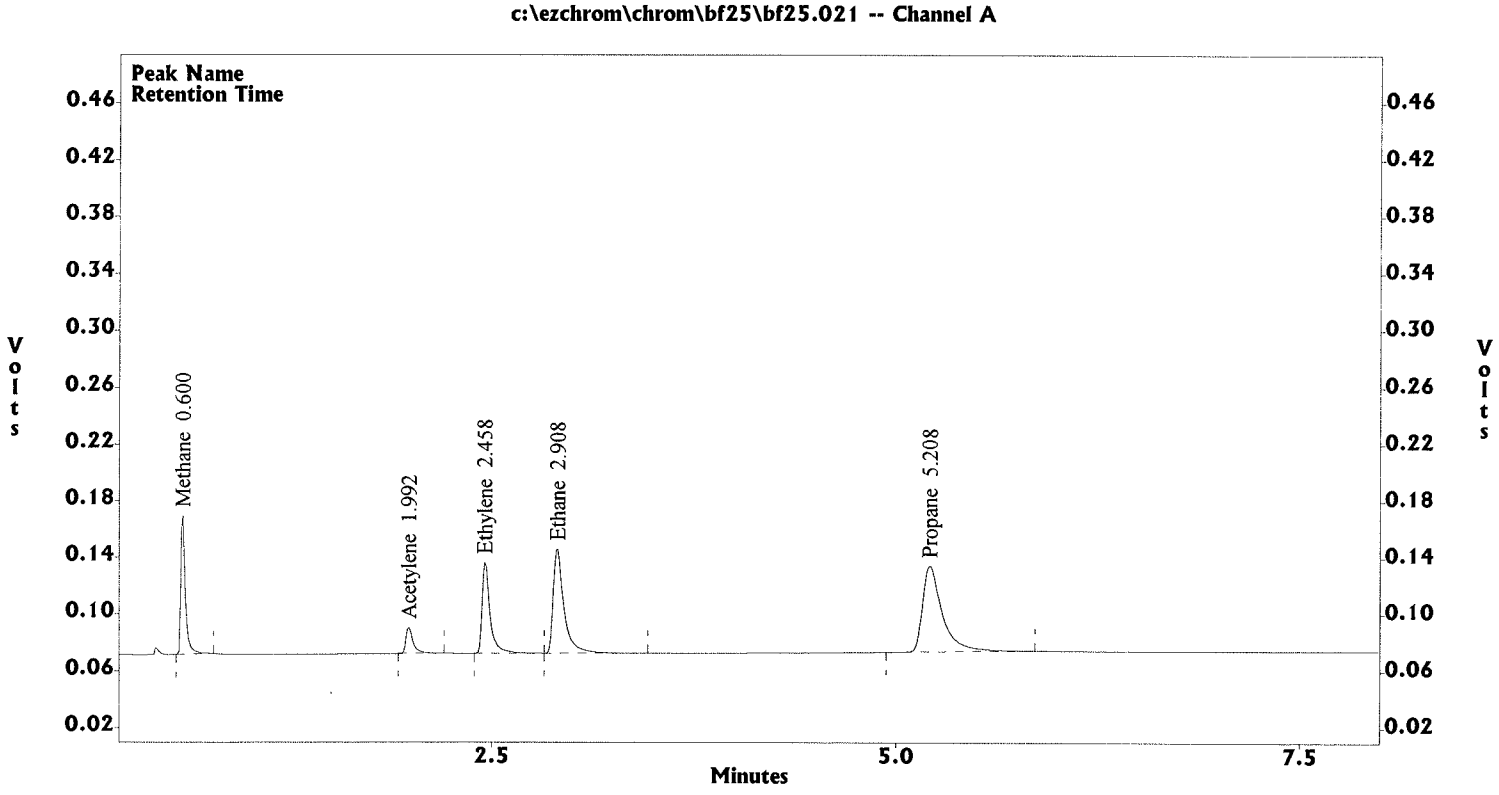
COMPOUND	RT MINUTES	RT WINDOW FROM	RT WINDOW TO	TRUE CONC	AVERAGE CF	RESULT AREA	RESULT CONC	%D	QL	%D LIMITS
Methane	0.600	0.574	0.626	13.6	13975.2	195266	13.97	3		15
Ethylene	2.458	2.420	2.496	23.8	9519.0	221474	23.27	-2		15
Ethane	2.908	2.870	2.946	25.5	13110.4	335858	25.62	0		15

METHOD EPA DGAS by GC/FID
EMAX Analytical Laboratories, Inc.

File : c:\ezchrom\chrom\bf25\bf25.021
Method : c:\ezchrom\methods\dg72d29.met
Sample ID : CDG72D29126
Acquired : Jun 25, 2020 14:46:14
Printed : Jun 25, 2020 14:54:29
User : SCerva

Channel A Results

#	Peak Name	Ret.Time(Min)	Area	Ave. CF	ESTD Conc.(ppb)
1	Methane	0.600	195266	13975.2	13.972
2	Acetylene	1.992	57573	2483.4	23.183
3	Ethylene	2.458	221474	9519.0	23.267
4	Ethane	2.908	335858	13110.4	25.618
5	Propane	5.208	510303	13914.6	36.674



ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
DISSOLVED GAS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGAS ICAL

Book #: A72-019
Instrument No.: 72
Analytical Sequence: BD29
Method File: DG72D29
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
ICAL	SSSB-18-22-01	10-7500
ICV	↓ -02	200
Temperature (°C) 21		
Data File		

SYRINGES
☐ 500 µL - MSF-01-03-21
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: AS
Date: 4/29/20
Disposed By:
Date Disposed:

Batch: bd29.seq

1	IB72D2901	dg72d29.met	BD29.001	0	500uL	1
2	DG72D2901	dg72d29.met	BD29.002	1	500uL	1
3	DG72D2902	dg72d29.met	BD29.003	2	500uL	1
4	DG72D2903	dg72d29.met	BD29.004	3	500uL	1
5	DG72D2904	dg72d29.met	BD29.005	4	500uL	1
6	DG72D2905	dg72d29.met	BD29.006	5	500uL	1
7	DG72D2906	dg72d29.met	BD29.007	6	500uL	1
8	IDG72D29001	dg72d29.met	BD29.008	0	500uL	1

FINAL

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

DGF015w: F193, F206, F210

Book #:	A72-020
Instrument No.:	72
Analytical Sequence:	SC 6/25/20 ~~BF24~~ BF25
Method File:	DG72D29
Analytical Batch:	CDG72D29124

SOP #	Rev. #
☐ EMAX-RSK175	4
☐ EMAX-D1945	0
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		Conc (µL/L)
DCC	SSSB-18-33-02	200
Temperature (°C)	21	
Data File		

SYRINGES
☐ 500 µL - MSF-02-01-01
☑ 500 µL - MSF-01-02-12
☐ 100 µL - MSF-01-03-05
☐ 100 µL - MSF-01-02-01
☐ 100 µL - MSF-01-02-20
☐ 100 µL - MSF-01-03-08
☐ 100 µL - MSF-01-02-13
☐ 10 µL - MSF-01-02-05
☐

ELECTRONIC DATA ARCHIVAL	
Location	Date
Labbkup/Ezchrom/EZC_9_DGAS	

Analyzed By: SC 6/25/20

Date: 6/25/20

Disposed By:

Date Disposed:

Batch: bf25.seq

Run	Sample ID	Method	Filename	Sample Amt.	Mult.	Description
1	IB72F2501	dg72d29.met	BF25.001	500uL	1	
2	CDG72D29124	dg72d29.met	BF25.002	500uL	1	
3	DGF015WB	dg72d29.met	BF25.003	500uL	1	
4	DGF015WL	dg72d29.met	BF25.004	500uL	1	
5	DGF015WC NOT evaluated	dg72d29.met	BF25.005	500uL	1	
6	F193-02	dg72d29.met	BF25.006	500uL	1	
7	F193-03	dg72d29.met	BF25.007	500uL	1	
8	F193-04	dg72d29.met	BF25.008	500uL	1	
9	F193-04M	dg72d29.met	BF25.009	500uL	1	
10	F193-04S	dg72d29.met	BF25.010	500uL	1	
11	F206-04	dg72d29.met	BF25.011	500uL	1	
12	F206-05	dg72d29.met	BF25.012	500uL	1	
13	DGF015WC	dg72d29.met	BF25.013	500uL	1	
14	F206-03	dg72d29.met	BF25.014	500uL	1	
15	CDG72D29125	dg72d29.met	BF25.015	500uL	1	
16	F210-01	dg72d29.met	BF25.016	500uL	1	
17	F210-04	dg72d29.met	BF25.017	500uL	1	
18	F210-05	dg72d29.met	BF25.018	500uL	1	
19	F210-07	dg72d29.met	BF25.019	500uL	1	
20	F210-08	dg72d29.met	BF25.020	500uL	1	
21	CDG72D29126	dg72d29.met	BF25.021	500uL	1	

FINAL

EXTRACTION LOG(S)

EXTRACTION LOG FOR DISSOLVED GAS

SOP ☑ EMAX-RSK175 Rev. 4 ☐ CO2 ☐ Room Temp. (°C): 21

Start Date: 4/29/20 Time: 13:00 End Date: 4/29/20 Time: 13:45 Book #: EDG-046

PREPARATION BATCH# N/A

Sample Prep ID	Lab Sample ID	Sample Amount (ml)	Extract Volume (ml)	pH (<2)	Notes
01	D672D29-01	39	4	N/A	
02	-02			N/A	
03	-03			N/A	
04	-04			N/A	
05	-05			N/A	
06	-06			N/A	
07	I672D29-001			N/A	
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					AS

Standards	ID	Amount Added (ul)
LCS/MS ICV	SSSA-10-02-03	1600
ICAL	V -04	*

Reagent	Source
H_2O	RW2-18-091
He	SSSA-11-01-01
Thermometer ID #:	RSK175-01
Tedlar Bag Lot#:	28180128
pH Strips:	N/A
Vial Manufacturer:	FR249828 2 20066

Syringes

- ☐ 10 mL - MSF-01-01-24
- ☑ 5 mL - MSF-01-01-25
- ☑ 5 mL - MSF-01-01-13
- ☐ 5 mL - MSF-01-03-06
- ☑ 1 mL - MSF-01-02~~-24~~25 AS 4/29/20
- ☐

Comments: *

	DGAS Std. (mL)		Helium (mL)
1)	0.08 mL	+	3.92 mL
2)	0.40	+	3.60
3)	1.00	+	3.00
4)	1.60	+	2.40
5)	2.00	+	1.00
6)	4.00	+	—

Prepared By: AS

Standard Added By: AS

EXTRACTION LOG FOR DISSOLVED GAS

SOP ☐ EMAX-RSK175 Rev. 4 ☐ CO2 ☐

Start Date: 6/25/20 Time: 8:45 Room Temp. (°C): 21

End Date: 6/25/20 Time: 13:00 Book #: EDG-046

PREPARATION BATCH* DGF015W

Sample Prep ID	Lab Sample ID	Sample Amount (ml)	Extract Volume (ml)	pH (< 2)	Notes
01	DGF015WB	39	4	N/A	
02	L			N/A	
03	C			N/A	
04	F193-02 ~~07~~ x			✓	
05	03 ~~02~~ 6/25/20			✓	
06	-04			✓	
07	-04M			✓	
08	-04C			✓	
09	F206-03			✓	
10	-04			✓	
11	-05			✓	
12	F210-01			✓	
13	-04			✓	
14	-05			✓	
15	-07			✓	
16	-08			✓	
17					
18					
19					
20					
21					
22					SC 6/25/20
23					
24					
25					
26					
27					
28					
29					
30					

Standards	ID	Amount Added (ul)
LCS/MS	SSSA-10-02-03	1600

Reagent	Source
H_2O	RW2-18-04
He	SSSA-11-01-01
Thermometer ID #:	RSK175-01
Tedlar Bag Lot#:	28150508
pH Strips:	HC998032
Vial Manufacturer:	ESS# FB 2498282 20066

Syringes

- ☐ 10 mL - MSF-01-01-24
- ☑ 5 mL - MSF-01-01-25
- ☐ 5 mL - MSF-01-01-13
- ☑ 5 mL - MSF-01-03-06
- ☐ 1 mL - MSF-01-02-24
- ☐

Comments:

Prepared By: SC

Standard Added By: SC

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

METALS / MERCURY

SDG#: 20F210

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SW6020A
METALS BY ICP-MS

A total of five(5) water samples were received on 06/25/20 to be analyzed for Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. IMF038WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. IMF038WL/IMF038WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed and the following were noted: F210-01M/F210-01S - Percent recovery for Calcium(44X) was not within MS/MSD QC limits. Percent recovery for Magnesium(13X) was not within MSD QC limit. The enclosed value(#X) is the ratio of parent sample result and spike amount. Presence of matrix interference was suspected. The rest of the analytes were in control. Analytical spike and serial dilution were analyzed and evaluated as appropriate. Results were within expected values. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met with the exception of those that were discussed within the associated QC parameter.

LAB CHRONICLE
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Instrument ID : H6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MW23C-GW062320MS	F210-01M	10	NA	07/30/2012:07	06/29/2009:59	H6G23047	H6G23045	IMF038W	Matrix Spike Sample (MS)
MW23C-GW062320MSD	F210-01S	10	NA	07/30/2012:10	06/29/2009:59	H6G23048	H6G23045	IMF038W	MS Duplicate (MSD)
MW23C-GW062320	F210-01A	10	NA	07/30/2012:12	06/29/2009:59	H6G23049	H6G23045	IMF038W	Analytical Spike Sample
MW23C-GW062320	F210-01I	10	NA	07/30/2012:15	06/29/2009:59	H6G23050	H6G23045	IMF038W	Diluted Sample
MW23C-GW062320	F210-01J	50	NA	07/30/2012:18	06/29/2009:59	H6G23051	H6G23045	IMF038W	Diluted Sample
MW27-GW062420	F210-04I	10	NA	07/30/2012:21	06/29/2009:59	H6G23052	H6G23045	IMF038W	Diluted Sample
MW28-GW062420	F210-05I	10	NA	07/30/2012:24	06/29/2009:59	H6G23053	H6G23045	IMF038W	Diluted Sample
MW14S-GW062320	F210-07I	10	NA	07/30/2012:27	06/29/2009:59	H6G23054	H6G23045	IMF038W	Diluted Sample
MW14D-GW062320	F210-08I	10	NA	07/30/2012:30	06/29/2009:59	H6G23055	H6G23045	IMF038W	Diluted Sample
MW23C-GW062320MS	F210-01M	1	NA	07/31/2014:43	06/29/2009:59	H6G24075	H6G24073	IMF038W	Matrix Spike Sample (MS)
MW23C-GW062320MSD	F210-01S	1	NA	07/31/2014:46	06/29/2009:59	H6G24076	H6G24073	IMF038W	MS Duplicate (MSD)
MW23C-GW062320	F210-01A	1	NA	07/31/2014:49	06/29/2009:59	H6G24077	H6G24073	IMF038W	Analytical Spike Sample
MW23C-GW062320	F210-01N	1	NA	07/31/2014:51	06/29/2009:59	H6G24078	H6G24073	IMF038W	Field Sample
MW23C-GW062320	F210-01J	5	NA	07/31/2014:54	06/29/2009:59	H6G24079	H6G24073	IMF038W	Diluted Sample
MW27-GW062420	F210-04N	1	NA	07/31/2014:57	06/29/2009:59	H6G24080	H6G24073	IMF038W	Field Sample
MW28-GW062420	F210-05N	1	NA	07/31/2015:00	06/29/2009:59	H6G24081	H6G24073	IMF038W	Field Sample
MW14S-GW062320	F210-07N	1	NA	07/31/2015:03	06/29/2009:59	H6G24082	H6G24073	IMF038W	Field Sample
MW14D-GW062320	F210-08N	1	NA	07/31/2015:06	06/29/2009:59	H6G24083	H6G24073	IMF038W	Field Sample
MBLK1W	IMF038WB	1	NA	08/01/2010:34	06/29/2009:59	H6H01017	H6H01015	IMF038W	Method Blank
LCS1W	IMF038WL	1	NA	08/01/2010:37	06/29/2009:59	H6H01018	H6H01015	IMF038W	Lab Control Sample (LCS)
LCD1W	IMF038WC	1	NA	08/01/2010:40	06/29/2009:59	H6H01019	H6H01015	IMF038W	LCS Duplicate

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW23C-GW062320	Date Analyzed:	07/31/20 14:51
Lab Samp ID:	F210-01N	Dilution Factor:	1
Lab File ID:	H6G24078	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.344J	1.00	0.125
Barium	30.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.184J	1.00	0.100
Cobalt	0.862J	1.00	0.100
Copper	ND	2.00	0.500
Iron	183	100	25.0
Lead	ND	1.00	0.0500
Magnesium	39400	100	25.0
Manganese	325	1.00	0.250
Nickel	6.97	1.00	0.250
Potassium	2510	100	25.0
Selenium	0.933J	1.00	0.150
Silver	0.103J	1.00	0.100
Sodium	27200	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.657J	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID:	MW23C-GW062320	Date Analyzed:	07/30/20 12:15
Lab Samp ID:	F210-01I	Dilution Factor:	10
Lab File ID:	H6G23050	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	133000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW23C-GW062320	Date Analyzed:	07/31/20 14:51
Lab Samp ID:	F210-01N	Dilution Factor:	1
Lab File ID:	H6G24078	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.344J	1.00	0.125
Barium	30.6	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	134000E	100	25.0
Chromium	0.184J	1.00	0.100
Cobalt	0.862J	1.00	0.100
Copper	ND	2.00	0.500
Iron	183	100	25.0
Lead	ND	1.00	0.0500
Magnesium	39400	100	25.0
Manganese	325	1.00	0.250
Nickel	6.97	1.00	0.250
Potassium	2510	100	25.0
Selenium	0.933J	1.00	0.150
Silver	0.103J	1.00	0.100
Sodium	27200	100	25.0
Thallium	ND	1.00	0.100
Vanadium	0.657J	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 12:50
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW23C-GW062320	Date Analyzed:	07/30/20 12:15
Lab Samp ID:	F210-01I	Dilution Factor:	10
Lab File ID:	H6G23050	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	30.2	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	133000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	38200	1000	250
Manganese	314	10.0	2.50
Nickel	5.74J	10.0	2.50
Potassium	2430	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	26900	1000	250
Thallium	ND	10.0	1.00
Vanadium	2.62J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Sample ID: MW27-GW062420
Lab Samp ID: F210-04N
Lab File ID: H6G24080
Ext Btch ID: IMF038W
Calib. Ref.: H6G24073

Date Collected: 06/24/20 09:35
Date Received: 06/25/20
Date Extracted: 06/29/20 09:59
Date Analyzed: 07/31/20 14:57
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.20	1.00	0.125
Barium	69.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.786J	1.00	0.100
Cobalt	0.174J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Manganese	20.9	1.00	0.250
Nickel	0.682J	1.00	0.250
Potassium	2610	100	25.0
Selenium	0.789J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	2.64	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID: MW27-GW062420
Lab Samp ID: F210-04I
Lab File ID: H6G23052
Ext Btch ID: IMF038W
Calib. Ref.: H6G23045

Date Analyzed: 07/30/20 12:21
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	158000	1000	250
Magnesium	53200	1000	250
Sodium	122000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/24/20 09:35
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW27-GW062420	Date Analyzed:	07/31/20 14:57
Lab Samp ID:	F210-04N	Dilution Factor:	1
Lab File ID:	H6G24080	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	1.20	1.00	0.125
Barium	69.8	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	163000E	100	25.0
Chromium	0.786J	1.00	0.100
Cobalt	0.174J	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	55200E	100	25.0
Manganese	20.9	1.00	0.250
Nickel	0.682J	1.00	0.250
Potassium	2610	100	25.0
Selenium	0.789J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	125000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	2.64	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/24/20 09:35
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID	: MW27-GW062420	Date Analyzed:	07/30/20 12:21
Lab Samp ID	: F210-04I	Dilution Factor:	10
Lab File ID	: H6G23052	Matrix:	WATER
Ext Btch ID	: IMF038W	% Moisture:	NA
Calib. Ref.	: H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	1.36J	10.0	1.25
Barium	65.1	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	158000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	53200	1000	250
Manganese	19.8	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2570	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	122000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.56J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Sample ID: MW28-GW062420
Lab Samp ID: F210-05N
Lab File ID: H6G24081
Ext Btch ID: IMF038W
Calib. Ref.: H6G24073

Date Collected: 06/24/20 11:10
Date Received: 06/25/20
Date Extracted: 06/29/20 09:59
Date Analyzed: 07/31/20 15:00
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.822J	1.00	0.125
Barium	86.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.524J	1.00	0.100
Cobalt	0.718J	1.00	0.100
Copper	ND	2.00	0.500
Iron	63.8J	100	25.0
Lead	ND	1.00	0.0500
Manganese	162	1.00	0.250
Nickel	2.75	1.00	0.250
Potassium	2770	100	25.0
Selenium	0.774J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.76	1.00	0.250
Zinc	7.01J	20.0	5.00

Sample ID: MW28-GW062420
Lab Samp ID: F210-05I
Lab File ID: H6G23053
Ext Btch ID: IMF038W
Calib. Ref.: H6G23045

Date Analyzed: 07/30/20 12:24
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	163000	1000	250
Magnesium	53800	1000	250
Sodium	143000	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/24/20 11:10
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW28-GW062420	Date Analyzed:	07/31/20 15:00
Lab Samp ID:	F210-05N	Dilution Factor:	1
Lab File ID:	H6G24081	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.822J	1.00	0.125
Barium	86.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	165000E	100	25.0
Chromium	0.524J	1.00	0.100
Cobalt	0.718J	1.00	0.100
Copper	ND	2.00	0.500
Iron	63.8J	100	25.0
Lead	ND	1.00	0.0500
Magnesium	55600E	100	25.0
Manganese	162	1.00	0.250
Nickel	2.75	1.00	0.250
Potassium	2770	100	25.0
Selenium	0.774J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	142000E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.76	1.00	0.250
Zinc	7.01J	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/24/20 11:10
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW28-GW062420	Date Analyzed:	07/30/20 12:24
Lab Samp ID:	F210-05I	Dilution Factor:	10
Lab File ID:	H6G23053	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	81.2	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	163000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	53800	1000	250
Manganese	157	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2710	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	143000	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.43J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Sample ID: MW14S-GW062320
Lab Samp ID: F210-07N
Lab File ID: H6G24082
Ext Btch ID: IMF038W
Calib. Ref.: H6G24073

Date Collected: 06/23/20 10:40
Date Received: 06/25/20
Date Extracted: 06/29/20 09:59
Date Analyzed: 07/31/20 15:03
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	160	100	25.0
Antimony	ND	1.00	0.250
Arsenic	2.28	1.00	0.125
Barium	76.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	2.99	1.00	0.100
Cobalt	2.51	1.00	0.100
Copper	ND	2.00	0.500
Iron	740	100	25.0
Lead	0.285J	1.00	0.0500
Manganese	201	1.00	0.250
Nickel	4.39	1.00	0.250
Potassium	3260	100	25.0
Selenium	0.585J	1.00	0.150
Silver	0.137J	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.00	1.00	0.250
Zinc	ND	20.0	5.00

Sample ID: MW14S-GW062320
Lab Samp ID: F210-07I
Lab File ID: H6G23054
Ext Btch ID: IMF038W
Calib. Ref.: H6G23045

Date Analyzed: 07/30/20 12:27
Dilution Factor: 10
Matrix: WATER
% Moisture: NA
Instrument ID: H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	145000	1000	250
Magnesium	48900	1000	250
Sodium	70500	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW14S-GW062320	Date Analyzed:	07/31/20 15:03
Lab Samp ID:	F210-07N	Dilution Factor:	1
Lab File ID:	H6G24082	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	160	100	25.0
Antimony	ND	1.00	0.250
Arsenic	2.28	1.00	0.125
Barium	76.7	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	146000E	100	25.0
Chromium	2.99	1.00	0.100
Cobalt	2.51	1.00	0.100
Copper	ND	2.00	0.500
Iron	740	100	25.0
Lead	0.285J	1.00	0.0500
Magnesium	49900E	100	25.0
Manganese	201	1.00	0.250
Nickel	4.39	1.00	0.250
Potassium	3260	100	25.0
Selenium	0.585J	1.00	0.150
Silver	0.137J	1.00	0.100
Sodium	70400E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.00	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 10:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW14S-GW062320	Date Analyzed:	07/30/20 12:27
Lab Samp ID:	F210-07I	Dilution Factor:	10
Lab File ID:	H6G23054	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	2.56J	10.0	1.25
Barium	73.5	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	145000	1000	250
Chromium	2.53J	10.0	1.00
Cobalt	2.39J	10.0	1.00
Copper	ND	20.0	5.00
Iron	746J	1000	250
Lead	ND	10.0	0.500
Magnesium	48900	1000	250
Manganese	198	10.0	2.50
Nickel	3.19J	10.0	2.50
Potassium	3210	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	70500	1000	250
Thallium	ND	10.0	1.00
Vanadium	5.20J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW14D-GW062320	Date Analyzed:	07/31/20 15:06
Lab Samp ID:	F210-08N	Dilution Factor:	1
Lab File ID:	H6G24083	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.582J	1.00	0.125
Barium	47.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Chromium	0.930J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	0.877J	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Manganese	0.571J	1.00	0.250
Nickel	1.41	1.00	0.250
Potassium	2500	100	25.0
Selenium	0.869J	1.00	0.150
Silver	ND	1.00	0.100
Thallium	ND	1.00	0.100
Vanadium	1.69	1.00	0.250
Zinc	46.0	20.0	5.00

Sample ID:	MW14D-GW062320	Date Analyzed:	07/30/20 12:30
Lab Samp ID:	F210-08I	Dilution Factor:	10
Lab File ID:	H6G23055	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Calcium	135000	1000	250
Magnesium	46800	1000	250
Sodium	54900	1000	250

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW14D-GW062320	Date Analyzed:	07/31/20 15:06
Lab Samp ID:	F210-08N	Dilution Factor:	1
Lab File ID:	H6G24083	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G24073	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	0.582J	1.00	0.125
Barium	47.2	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	137000E	100	25.0
Chromium	0.930J	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	0.877J	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	48400E	100	25.0
Manganese	0.571J	1.00	0.250
Nickel	1.41	1.00	0.250
Potassium	2500	100	25.0
Selenium	0.869J	1.00	0.150
Silver	ND	1.00	0.100
Sodium	55300E	100	25.0
Thallium	ND	1.00	0.100
Vanadium	1.69	1.00	0.250
Zinc	46.0	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	06/23/20 11:40
Project	: VA SALT LAKE CITY	Date Received:	06/25/20
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID:	MW14D-GW062320	Date Analyzed:	07/30/20 12:30
Lab Samp ID:	F210-08I	Dilution Factor:	10
Lab File ID:	H6G23055	Matrix:	WATER
Ext Btch ID:	IMF038W	% Moisture:	NA
Calib. Ref.:	H6G23045	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	1000	250
Antimony	ND	10.0	2.50
Arsenic	ND	10.0	1.25
Barium	45.3	10.0	2.50
Beryllium	ND	10.0	1.00
Cadmium	ND	10.0	1.00
Calcium	135000	1000	250
Chromium	ND	10.0	1.00
Cobalt	ND	10.0	1.00
Copper	ND	20.0	5.00
Iron	ND	1000	250
Lead	ND	10.0	0.500
Magnesium	46800	1000	250
Manganese	ND	10.0	2.50
Nickel	ND	10.0	2.50
Potassium	2500	1000	250
Selenium	ND	10.0	1.50
Silver	ND	10.0	1.00
Sodium	54900	1000	250
Thallium	ND	10.0	1.00
Vanadium	6.15J	10.0	2.50
Zinc	ND	200	50.0

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

METHOD SW6020A
METALS BY ICP-MS

Client	: CDM SMITH	Date Collected:	NA
Project	: VA SALT LAKE CITY	Date Received:	NA
SDG NO.	: 20F210	Date Extracted:	06/29/20 09:59
Sample ID	: MBLK1W	Date Analyzed:	08/01/20 10:34
Lab Samp ID	: IMF038WB	Dilution Factor:	1
Lab File ID	: H6H01017	Matrix:	WATER
Ext Btch ID	: IMF038W	% Moisture:	NA
Calib. Ref.	: H6H01015	Instrument ID:	H6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	100	25.0
Antimony	ND	1.00	0.250
Arsenic	ND	1.00	0.125
Barium	ND	1.00	0.250
Beryllium	ND	1.00	0.100
Cadmium	ND	1.00	0.100
Calcium	ND	100	25.0
Chromium	ND	1.00	0.100
Cobalt	ND	1.00	0.100
Copper	ND	2.00	0.500
Iron	ND	100	25.0
Lead	ND	1.00	0.0500
Magnesium	ND	100	25.0
Manganese	ND	1.00	0.250
Nickel	ND	1.00	0.250
Potassium	ND	100	25.0
Selenium	ND	1.00	0.150
Silver	ND	1.00	0.100
Sodium	ND	100	25.0
Thallium	ND	1.00	0.100
Vanadium	ND	1.00	0.250
Zinc	ND	20.0	5.00

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount	: 50ml	Final Volume:	50ml
Prepared by	: CKaing/MCande	Analyzed by:	LYaman

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IMF038WB	IMF038WL	IMF038WC
LAB FILE ID	: H6H01017	H6H01018	H6H01019
DATE PREPARED	: 06/29/20 09:59	06/29/20 09:59	06/29/20 09:59
DATE ANALYZED	: 08/01/20 10:34	08/01/20 10:37	08/01/20 10:40
PREP BATCH	: IMF038W	IMF038W	IMF038W
CALIBRATION REF	: H6H01015	H6H01015	H6H01015

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	2910	97	3000	2950	98	1	80-120	20
Antimony	ND	30	28.4	95	30	28.4	95	0	80-120	20
Arsenic	ND	30	29.8	99	30	29.9	100	0	80-120	20
Barium	ND	30	27.8	93	30	28.0	93	1	80-120	20
Beryllium	ND	30	29.3	98	30	29.7	99	1	80-120	20
Cadmium	ND	30	28.6	95	30	28.3	94	1	80-120	20
Calcium	ND	3000	3010	100	3000	3050	102	1	80-120	20
Chromium	ND	30	31.4	105	30	31.4	105	0	80-120	20
Cobalt	ND	30	30.1	100	30	30.2	101	0	80-120	20
Copper	ND	30	32.2	107	30	32.2	107	0	80-120	20
Iron	ND	3000	3070	102	3000	3110	104	1	80-120	20
Lead	ND	30	29.4	98	30	29.7	99	1	80-120	20
Magnesium	ND	3000	2940	98	3000	2960	99	1	80-120	20
Manganese	ND	30	30.2	101	30	30.3	101	0	80-120	20
Nickel	ND	30	31.1	104	30	31.1	104	0	80-120	20
Potassium	ND	3000	3050	102	3000	3050	102	0	80-120	20
Selenium	ND	30	30.3	101	30	30.5	102	1	80-120	20
Silver	ND	30	29.4	98	30	29.4	98	0	80-120	20
Sodium	ND	3000	2980	99	3000	3030	101	2	80-120	20
Thallium	ND	30	29.5	98	30	29.7	99	1	80-120	20
Vanadium	ND	30	30.4	101	30	30.6	102	1	80-120	20
Zinc	ND	60	61.0	102	60	60.2	100	1	80-120	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID : MW23C-GW062320 MW23C-GW062320MS MW23C-GW062320MSD
LAB SAMPLE ID : F210-01N F210-01M F210-01S
LAB FILE ID : H6G24078 H6G24075 H6G24076
DATE PREPARED : 06/29/20 09:59 06/29/20 09:59 06/29/20 09:59
DATE ANALYZED : 07/31/20 14:51 07/31/20 14:43 07/31/20 14:46
PREP BATCH : IMF038W IMF038W IMF038W
CALIBRATION REF: H6G24073 H6G24073 H6G24073

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Aluminum	ND	3000	2960	99	3000	2860	95	3	75-125	20
Antimony	ND	30	29.5	98	30	28.9	96	2	75-125	20
Arsenic	0.344J	30	29.7	98	30	29.9	99	1	75-125	20
Barium	30.6	30	59.8	97	30	58.3	92	3	75-125	20
Beryllium	ND	30	30.3	101	30	29.3	98	3	75-125	20
Cadmium	ND	30	29.0	97	30	28.2	94	3	75-125	20
Chromium	0.184J	30	30.9	102	30	31.8	105	3	75-125	20
Cobalt	0.862J	30	30.7	99	30	30.1	97	2	75-125	20
Copper	ND	30	30.8	103	30	30.8	103	0	75-125	20
Iron	183	3000	3200	101	3000	3210	101	0	75-125	20
Lead	ND	30	29.9	100	30	29.2	97	2	75-125	20
Magnesium	39400	3000	41900	83	3000	41000	53*	2	75-125	20
Manganese	325	30	354	97	30	349	80	1	75-125	20
Nickel	6.97	30	36.7	99	30	36.8	99	0	75-125	20
Potassium	2510	3000	5530	101	3000	5470	99	1	75-125	20
Selenium	0.933J	30	31.3	101	30	30.6	99	2	75-125	20
Silver	0.103J	30	29.7	99	30	29.0	96	2	75-125	20
Sodium	27200	3000	29800	87	3000	29600	80	1	75-125	20
Thallium	ND	30	30.5	102	30	29.8	99	2	75-125	20
Vanadium	0.657J	30	30.8	100	30	30.6	100	1	75-125	20
Zinc	ND	60	63.5	106	60	63.1	105	1	75-125	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 10 10 10
SAMPLE ID : MW23C-GW062320 MW23C-GW062320MS MW23C-GW062320MSD
LAB SAMPLE ID : F210-01I F210-01M F210-01S
LAB FILE ID : H6G23050 H6G23047 H6G23048
DATE PREPARED : 06/29/20 09:59 06/29/20 09:59 06/29/20 09:59
DATE ANALYZED : 07/30/20 12:15 07/30/20 12:07 07/30/20 12:10
PREP BATCH : IMF038W IMF038W IMF038W
CALIBRATION REF: H6G23045 H6G23045 H6G23045

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Calcium	133000	3000	133000	0.00*	3000	132000	-33*	1	75-125	20

PSResult - Parent Sample Result
* Out of QC limit

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	5
SAMPLE ID	: MW23C-GW062320	MW23C-GW062320
LAB SAMPLE ID	: F210-01N	F210-01J
LAB FILE ID	: H6G24078	H6G24079
DATE PREPARED	: 06/29/20 09:59	06/29/20 09:59
DATE ANALYZED	: 07/31/20 14:51	07/31/20 14:54
PREP BATCH	: IMF038W	IMF038W
CALIBRATION REF	: H6G24073	H6G24073

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Aluminum	ND	ND	0	10
Antimony	ND	ND	0	10
Arsenic	0.344J	ND	NA	10
Barium	30.6	31.7	4	10
Beryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
Chromium	0.184J	1.70J	NA	10
Cobalt	0.862J	0.882J	NA	10
Copper	ND	ND	0	10
Iron	183	260J	NA	10
Lead	ND	ND	0	10
Magnesium	39400	41100	4	10
Manganese	325	335	3	10
Nickel	6.97	6.80	2	10
Potassium	2510	2600	4	10
Selenium	0.933J	0.836J	NA	10
Silver	0.103J	ND	NA	10
Sodium	27200	28400	4	10
Thallium	ND	ND	0	10
Vanadium	0.657J	2.93J	NA	10
Zinc	ND	ND	0	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	50
SAMPLE ID	: MW23C-GW062320	MW23C-GW062320
LAB SAMPLE ID	: F210-01I	F210-01J
LAB FILE ID	: H6G23050	H6G23051
DATE PREPARED	: 06/29/20 09:59	06/29/20 09:59
DATE ANALYZED	: 07/30/20 12:15	07/30/20 12:18
PREP BATCH	: IMF038W	IMF038W
CALIBRATION REF	: H6G23045	H6G23045

ACCESSION:

PARAMETERS	Sample Result (ug/L)	SD Result (ug/L)	%Difference (%)	Max %D (%)
Calcium	133000	129000	3	10

SD - Serial Dilution

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW23C-GW062320	MW23C-GW062320
LAB SAMPLE ID	: F210-01N	F210-01A
LAB FILE ID	: H6G24078	H6G24077
DATE PREPARED	: 06/29/20 09:59	06/29/20 09:59
DATE ANALYZED	: 07/31/20 14:51	07/31/20 14:49
PREP BATCH	: IMF038W	IMF038W
CALIBRATION REF	: H6G24073	H6G24073

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Aluminum	ND	3000	3090	103	80-120
Antimony	ND	30	30.1	100	80-120
Arsenic	0.344J	30	31.5	104	80-120
Barium	30.6	30	60.9	101	80-120
Beryllium	ND	30	31.0	103	80-120
Cadmium	ND	30	30.2	101	80-120
Chromium	0.184J	30	40.6	135*	80-120
Cobalt	0.862J	30	31.7	103	80-120
Copper	ND	30	33.7	112	80-120
Iron	183	3000	3450	109	80-120
Lead	ND	30	30.8	103	80-120
Magnesium	39400	3000	42300	97	80-120
Manganese	325	30	356	103	80-120
Nickel	6.97	30	38.8	106	80-120
Potassium	2510	3000	5730	107	80-120
Selenium	0.933J	30	32.7	106	80-120
Silver	0.103J	30	27.0	90	80-120
Sodium	27200	3000	30300	103	80-120
Thallium	ND	30	31.6	105	80-120
Vanadium	0.657J	30	33.0	108	80-120
Zinc	ND	60	66.6	111	80-120

AS - Analytical Spike
* Out of QC limit

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SW6020A

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 10	10
SAMPLE ID	: MW23C-GW062320	MW23C-GW062320
LAB SAMPLE ID	: F210-01I	F210-01A
LAB FILE ID	: H6G23050	H6G23049
DATE PREPARED	: 06/29/20 09:59	06/29/20 09:59
DATE ANALYZED	: 07/30/20 12:15	07/30/20 12:12
PREP BATCH	: IMF038W	IMF038W
CALIBRATION REF	: H6G23045	H6G23045

ACCESSION:

PARAMETERS	Sample Result (ug/L)	Spike Amt (ug/L)	AS Result (ug/L)	AS Rec (%)	QC Limit (%)
Calcium	133000	30000	163000	100	80-120

AS - Analytical Spike

ICP-MS QC CHECK TABLE

QC	HIGH STD	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07|30|20 09:55

End Date: 07|30|20 16:15

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	IH6G23
Analytical Sequence:	H6G23
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	Sm6B-19-67-02	MRL1(1)	Sm6B-19-89-01
S1	68-01	MRL2(04)	65-01
S2	68-02	MRL3(CAL)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	Sm6B-19-11-02
S7	↓	Post-Spike 1	Sm6A-007-06-25
ICV	Sm6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	87-02	Post-Spike 4	↓
ICSAB	88-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	Sm6B-19-11-01		

Analyzed By: LY

Date: 07|30|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6G23
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6G23008				H6G23012			H6G23013		
DateAnalyed :		07/30/2010:14				07/30/2010:25			07/30/2010:28		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.88	30	4.7	100	0.42487	0	>0	20.033	20	100
Beryllium	T	29.96	30	4.5	100	0.0037595	0	<0.10	20.151	20	101
Boron		29.77	30	7.9	99	0.67227	0	<5.0	18.954	20	95
Sodium	T	30610	30000	2.6	102	100920	100000	101	99189	100000	99
Magnesium	T	31180	30000	5.1	104	99109	100000	99	97881	100000	98
Aluminum	T	31440	30000	6.5	105	100730	100000	101	99241	100000	99
Silicon		3288	3000	2.2	110	5.4440	0	<20	216.29	200	108
Phosphorus		301.6	300	5.8	101	99017	100000	99	98279	100000	98
Potassium	T	30080	30000	0.3	100	101850	100000	102	101370	100000	101
Calcium	T	30960	30000	3.0	103	102860	100000	103	101630	100000	102
Titanium		319.9	300	5.9	107	2099.9	2000	105	2095.7	2000	105
Vanadium	T	319.9	300	0.6	107	0.021239	0	<0.25	20.250	20	101
Chromium	T	320.3	300	0.6	107	0.31311	0	>0.1	20.658	20	103
Manganese	T	2075	2000	6.2	104	0.24675	0	<0.25	19.815	20	99
Iron	T	30600	30000	2.7	102	102400	100000	102	101450	100000	101
Cobalt	T	323.5	300	4.9	108	0.36516	0	>0.1	20.188	20	101
Nickel	T	323.3	300	1.6	108	0.28796	0	>0.25	20.270	20	101
Copper	T	318.9	300	1.6	106	0.18468	0	<0.50	20.423	20	102
Zinc	T	329.0	300	5.8	110	1.2148	0	<5	21.157	20	106
Arsenic	T	320.7	300	1.4	107	0.094472	0	<0.125	20.529	20	103
Selenium	T	315.4	300	2.7	105	0.22438	0	>0.15	20.642	20	103
Strontium		323.1	300	6.4	108	0.84528	0	<1.0	20.651	20	103
Zirconium		29.46	30	5.3	98	0.12118	0	<2.0	5.4366	20	27*
Molybdenum		312.8	300	5.8	104	2058.8	2000	103	2012.0	2000	101
Silver	T	29.95	30	4.7	100	0.013301	0	<0.1	19.354	20	97
Cadmium	T	316.1	300	3.9	105	0.073516	0	<0.1	19.633	20	98
Tin		319.2	300	5.1	106	0.33692	0	>0.2	19.957	20	100
Antimony	T	59.61	60	4.6	99	0.16539	0	<0.25	19.863	20	99
Barium	T	319.9	300	5.1	107	0.36829	0	>0.25	20.137	20	101
Tungsten		32.01	30	4.7	107	0.18290	0	<1.0	18.956	20	95
Mercury		3.124	3	5.2	104	0.0010967	0	<0.1	2.0046	2	100
Thallium	T	324.8	300	4.9	108	0.011548	0	<0.1	19.523	20	98
Lead	T	324.4	300	5.0	108	0.11837	0	>0.05	19.762	20	99
Uranium		319.0	300	5.5	106	0.0067438	0	<0.1	19.465	20	97

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6G23
Instrument ID: H6

CCV SampleID		: CCV4				CCV5		
CCV DataFileID		: H6G23045				H6G23056		
CCV DateTime		: 07/30/20 12:01				07/30/20 12:33		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	23.8	95	2.3	24.5	98	1.2
Beryllium	T	25	23.3	93	2.4	24.1	96	1.5
Boron		50	45.8	92	2.9	47.7	95	2.4
Sodium	T	25000	24600	98	1.2	24600	98	0.8
Magnesium	T	25000	24600	98	2.5	24200	97	0.6
Aluminum	T	25000	24000	96	2.7	23700	95	1.1
Silicon		2500	2450	98	1.6	2430	97	0.4
Phosphorus		250	232	93	3.1	236	94	1.6
Potassium	T	25000	24600	98	1.2	24300	97	0.1
Calcium	T	25000	24600	98	1.2	24700	99	0.4
Titanium		250	242	97	2.3	246	98	0.4
Vanadium	T	250	247	99	1.2	247	99	0.5
Chromium	T	250	246	98	1.7	245	98	0.7
Manganese	T	1500	1480	98	3.0	1470	98	0.5
Iron	T	25000	24600	98	1.4	25100	101	0.3
Cobalt	T	250	244	98	1.7	245	98	0.8
Nickel	T	250	246	98	1.2	248	99	0.6
Copper	T	250	248	99	1.1	248	99	0.2
Zinc	T	250	238	95	3.1	239	96	1.7
Arsenic	T	250	245	98	0.5	243	97	0.7
Selenium	T	250	242	97	1.7	245	98	0.2
Strontium		250	243	97	3.0	240	96	1.5
Zirconium		25	24.2	97	3.6	24.2	97	1.6
Molybdenum		250	237	95	2.4	236	95	2.0
Silver	T	25	24.0	96	1.9	24.3	97	1.2
Cadmium	T	250	239	95	2.7	243	97	1.3
Tin		250	242	97	2.6	242	97	2.0
Antimony	T	50	47.6	95	2.3	48.7	97	1.2
Barium	T	500	480	96	3.1	483	97	2.0
Tungsten		25	24.3	97	1.2	24.7	99	2.2
Mercury		2.5	2.43	97	3.7	2.43	97	1.5
Thallium	T	250	247	99	0.9	243	97	0.4
Lead	T	250	246	99	1.0	243	97	0.4
Uranium		250	243	97	2.0	240	96	0.5

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : SW6020A
Sequence : IH6G23
Instrument ID: H6

CB SampleID		: ICB	CCB4	CCB5
CB DataFileID		: H6G23009	H6G23046	H6G23057
CB DateTime		: 07/30/2010:17	07/30/2012:04	07/30/2012:36

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.07	>0	0.05	>0	0.2	>0
Beryllium	T	0.10	0.02	<0.10	0.01	<0.10	0.01	<0.10
Boron		5.0	0.4	<5.0	4	<5.0	4	<5.0
Sodium	T	25	0.6	<25	20	<25	3	<25
Magnesium	T	25	1	<25	4	<25	5	<25
Aluminum	T	25	0.8	<25	2	<25	4	<25
Silicon		20	3	<20	0.4	<20	0.1	<20
Phosphorus		25	0.7	<25	1	<25	1	<25
Potassium	T	25	4	<25	4	<25	1	<25
Calcium	T	25	0.9	<25	3	<25	0.4	<25
Titanium		0.5	0.002	<0.5	0.06	<0.5	0.07	<0.5
Vanadium	T	0.25	0.04	<0.25	0.03	<0.25	0.04	<0.25
Chromium	T	0.1	0.01	<0.1	0.02	<0.1	0.03	<0.1
Manganese	T	0.25	0.1	<0.25	0.1	<0.25	0.2	<0.25
Iron	T	25	1.0	<25	0.4	<25	0.6	<25
Cobalt	T	0.1	0.01	<0.1	0.02	<0.1	0.05	<0.1
Nickel	T	0.25	0.02	<0.25	0.1	<0.25	0.1	<0.25
Copper	T	0.50	0.07	<0.50	0.3	<0.50	0.4	<0.50
Zinc	T	5	0.03	<5	0.02	<5	0.002	<5
Arsenic	T	0.125	0.007	<0.125	0.04	<0.125	0.008	<0.125
Selenium	T	0.15	0.06	<0.15	0.02	<0.15	0.05	<0.15
Strontium		1.0	0.01	<1.0	0.05	<1.0	0.05	<1.0
Zirconium		2.0	0.0004	<2.0	0.004	<2.0	0.003	<2.0
Molybdenum		0.5	0.07	<0.5	0.05	<0.5	0.06	<0.5
Silver	T	0.1	0.003	<0.1	0.002	<0.1	0.002	<0.1
Cadmium	T	0.1	0.07	<0.1	0.06	<0.1	0.07	<0.1
Tin		0.2	0.08	<0.2	0.009	<0.2	0.01	<0.2
Antimony	T	0.25	0.006	<0.25	0.008	<0.25	0.008	<0.25
Barium	T	0.25	0.02	<0.25	0.04	<0.25	0.08	<0.25
Tungsten		1.0	0.006	<1.0	0.003	<1.0	0.004	<1.0
Mercury		0.1	0.03	<0.1	0.008	<0.1	0.007	<0.1
Thallium	T	0.1	0.1	>0.1	0.07	<0.1	0.09	<0.1
Lead	T	0.05	0.06	>0.05	0.03	<0.05	0.04	<0.05
Uranium		0.1	0.01	<0.1	0.03	<0.1	0.04	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G23001.d		1	
2		CalBlk	BLANK		1101	H6G23002.d		1	
3		CalStd	S0		1102	H6G23003.d		1	
4		CalStd	S1		1104	H6G23004.d		2	
5		CalStd	S2		1105	H6G23005.d		3	
6		CalStd	S3		1106	H6G23006.d		4	
7		CalStd	S4		1107	H6G23007.d		5	
8		ICV	ICV		1204	H6G23008.d			1
9		ICB	ICB		1102	H6G23009.d			1
10		LLCCV	MRLG3001	1/100/10 ppb CG <80·1·	1306	H6G23010.d			1
11		LLCCV2	MRLG3002	0.4/40/4 ppb ↓	1307	H6G23011.d			1
12		ICS-A	ICSA		1304	H6G23012.d			1
13		ICSB	ICSAB		1305	H6G23013.d			1
14		Sample	MRLG3003 ✓	500 ppb CAT	1207	H6G23014.d			1
15		CCV	CCV1		1206	H6G23015.d			1
16		CCB	CCB1		1102	H6G23016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF037WB		2101	H6G23017.d			1
2		LCSW	IMF037WL X	reprep	2102	H6G23018.d			1
3		LCSW	IMF037WC		2103	H6G23019.d			1
4		Blank	IMG004WB		2104	H6G23020.d			1
5		LCSW	IMG004WL		2105	H6G23021.d			1
6		LCSW	IMG004WC		2106	H6G23022.d			1
7		LCSW	IMF037WL		2102	H6G23023.d			1
8		Blank	IMF038WB		2107	H6G23024.d			1
9		LCSW	IMF038WL		2108	H6G23025.d			1
10		LCSW	IMF038WC		2109	H6G23026.d			1
11		CCV	CCV2		1206	H6G23027.d			1
12		CCB	CCB2		1102	H6G23028.d			1
13		Sample	F206-01	EB	2110	H6G23029.d			1
14		Sample	F206-06	EB	2111	H6G23030.d			1
15		Sample	F216-10	EB	2112	H6G23031.d			1
16		Sample	F216-14	EB	2201	H6G23032.d			1
17		Sample	F223-02	EB	2202	H6G23033.d			1
18		CCV	CCV3		1206	H6G23034.d			1
19		CCB	CCB3		1102	H6G23035.d			1
20		Sample	F210-01M CG	↑	2203	H6G23036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	F210-01S cal		2204	H6G23037.d			1
22		Sample	F210-01A		2205	H6G23038.d			1
23		Sample	F210-01		2206	H6G23039.d			1
24		Sample	F210-01J		2207	H6G23040.d			5
25		Sample	F210-04 Namg cal		2208	H6G23041.d			1
26		Sample	F210-05 Namg cal		2209	H6G23042.d			1
27		Sample	F210-07 Namg cal		2210	H6G23043.d			1
28		Sample	F210-08 Namg cal		2211	H6G23044.d			1
29		CCV	CCV4		1206	H6G23045.d			1
30		CCB	CCB4		1102	H6G23046.d			1
31		Sample	F210-01M		2212	H6G23047.d			10
32		Sample	F210-01S		2301	H6G23048.d			10
33		Sample	F210-01A ✓		2302	H6G23049.d			10
34		Sample	F210-01I		2303	H6G23050.d			10
35		Sample	F210-01J		2304	H6G23051.d			50
36		Sample	F210-04I		2305	H6G23052.d			10
37		Sample	F210-05I		2306	H6G23053.d			10
38		Sample	F210-07I		2307	H6G23054.d			10
39		Sample	F210-08I		2308	H6G23055.d			10
40		CCV	CCV5		1206	H6G23056.d			1
41		CCB	CCB5		1102	H6G23057.d			1
42		LLCCV	MRLG3004	1/100/10 ppb cal	1306	H6G23058.d			1
43		LLCCV2	MRLG3005	0.4/40/4 ppb	1307	H6G23059.d			1
44		Sample	G079-02	UNDIG	3101	H6G23060.d			1
45		Sample	F206-06	UNDIG	3102	H6G23061.d			1
46		Sample	F216-10	UNDIG	3103	H6G23062.d			1
47		Sample	F216-14	UNDIG	3104	H6G23063.d			1
48		Sample	F247-02		2309	H6G23064.d			1
49		Sample	F247-03		2310	H6G23065.d			1
50		Sample	F247-02G		2311	H6G23066.d			5
51		Sample	F247-03G		2312	H6G23067.d			5
52		CCV	CCV6		1206	H6G23068.d			1
53		CCB	CCB6		1102	H6G23069.d			1
54		Sample	F216-10N	EB	2112	H6G23070.d			1
55		Sample	F223-01 mol	TOT	2401	H6G23071.d			1
56		Sample	F223-04	TOT	2402	H6G23072.d			1
57		Sample	F223-05 Asl	TOT	2403	H6G23073.d			1
58		Sample	F223-01 mol	DISS	2404	H6G23074.d			1
59		Sample	F223-04	DISS	2405	H6G23075.d			1
60		Sample	F223-05 Asl	DISS	2406	H6G23076.d			1
61		CCV	CCV7		1206	H6G23077.d			1
62		CCB	CCB7 Na½100		1102	H6G23078.d			1
63		Sample	F193-02	TOT	2407	H6G23079.d			1
64		Sample	F193-03	TOT	2408	H6G23080.d			1
65		Sample	F193-04M	TOT	2409	H6G23081.d			1
66		Sample	F193-04S	TOT	2410	H6G23082.d			1
67		Sample	F193-04A	TOT	2411	H6G23083.d			1
68		Sample	F193-04	TOT	2412	H6G23084.d			1
69		Sample	F193-04J	TOT	2501	H6G23085.d			5
70		CCV	CCV8		1206	H6G23086.d			1
71		CCB	CCB8		1102	H6G23087.d			1
72		Sample	F193-02	DISS	2502	H6G23088.d			1

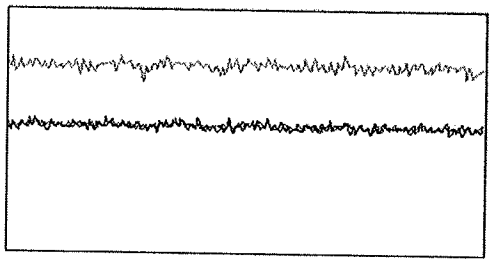
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil
73		Sample	F193-03	DISS	2503	H6G23089.d			1
74		Sample	F193-04M	DISS	2504	H6G23090.d			1
75		Sample	F193-04S	DISS	2505	H6G23091.d			1
76		Sample	F193-04A	DISS	2506	H6G23092.d			1
77		Sample	F193-04	DISS	2507	H6G23093.d			1
78		Sample	F193-04J	DISS	2508	H6G23094.d			5
79		CCV	CCV9		1206	H6G23095.d			1
80		CCB	CCB9		1102	H6G23096.d			1
81		Sample	F206-03	TOT	2509	H6G23097.d			1
82		Sample	F206-04	TOT	2510	H6G23098.d			1
83		Sample	F206-05	TOT	2511	H6G23099.d			1
84		Sample	F206-03	DISS	2512	H6G23100.d			1
85		Sample	F206-04	DISS	3101	H6G23101.d			1
86		Sample	F206-05	DISS	3102	H6G23102.d			1
87		CCV	CCV10		1206	H6G23103.d			1
88		CCB	CCB10		1102	H6G23104.d			1
89		Sample	F223-01G	TOT	3103	H6G23105.d			5
90		Sample	F223-05G	TOT	3104	H6G23106.d			5
91		Sample	F223-01G	DISS	3105	H6G23107.d			5
92		Sample	F223-05G	DISS	3106	H6G23108.d			5
93		CCV	CCV11		1206	H6G23109.d			1
94		CCB	CCB11		1102	H6G23110.d			1
95		Blank	IMG045SB		3107	H6G23111.d			1
96		LCSS	IMG045SL		3108	H6G23112.d			1
97		LCSS	IMG045SC		3109	H6G23113.d			1
98		Sample	G282-06M		3110	H6G23114.d			1
99		Sample	G282-06S		3111	H6G23115.d			1
100		Sample	G282-06A		3112	H6G23116.d			1
101		Sample	G282-06		3201	H6G23117.d			1
102		Sample	G282-06J		3202	H6G23118.d			5
103		Sample	G282-07		3203	H6G23119.d			1
104		Sample	G282-08		3204	H6G23120.d			1
105		CCV	CCV12		1206	H6G23121.d			1
106		CCB	CCB12		1102	H6G23122.d			1
107		Sample	G282-09		3205	H6G23123.d			1
108		Sample	G282-10		3206	H6G23124.d			1
109		Sample	G282-11		3207	H6G23125.d			1
110		Sample	G282-12		3208	H6G23126.d			1
111		Sample	G282-17		3209	H6G23127.d			1
112		Sample	G282-18		3210	H6G23128.d			1
113		CCV	CCV13		1206	H6G23129.d			1
114		CCB	CCB13		1102	H6G23130.d			1
115		LLCCV	MRLG3006	1/100/10 ppb	1306	H6G23131.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-30 08:47:34
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



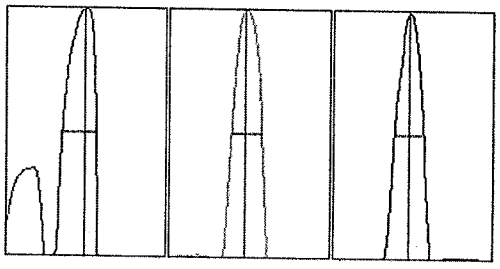
Mass	Range	Count	RSD%	Background
7	10000	5244	2.287	0.100
89	20000	15466	2.290	0.850
205	20000	10524	2.440	3.050

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.244 %
Doubly Charged	70 / 140 1.659 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	5291.62	7.00	0.62	0.73
89	15374.35	88.95	0.57	0.75
205	10812.33	204.95	0.55	0.76

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.6 V	Deflect	13.0 V
Extract 2	-140.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-70 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.4 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9994		
Mass Offset	124	Axis Offset	-0.05		

EM

Discriminator	4.1 mV	Analog HV	2452 V	Pulse HV	1648 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.00	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.02E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	31.7	°C
Nebulizer Gas(DP)	6.07E+0	kPa
MU./Dil. Gas(DP)	-1.54E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.56E+2	kPa
MU./Dil. Gas(BP)	-2.16E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	3.95E+1	kPa
S/C Temp (H)	16.4	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.21E+2	Pa
Analyzer Press	6.20E-5	Pa
IG HV	178	V
IG Emission	4.97	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.2	%
TMP Current	2.49	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.16	V
OctP RF (Avg)	202.6	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.97	V
OctP RF(+)	176.2	V
OctP RF(-)	231.5	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.0	V
+U Voltage	10.3	V

Name	Value	Unit
-U Voltage	-15.9	V
V Voltage	45.7	V
QPRF Fader	0.0	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	609.6	V
-120V	-133.8	V
-720V	-738.3	V
Prefilter Bias	-5.06	V
Pickup Heater I	0.07	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2456	V
Pulse HV	1660	V
EM Gate	-32.0	V
Pulse Gate	367.5	V
EM Entrance	0.2	V
EM HV Gain	-1105.1	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	63.6	V
RF PS +48V	47.8	V
Forward Power	1550	W
Reflected Power	2	W
Plasma Freq.	26.75	MHz
Drain I 1	11.42	A
Drain I 2	10.95	A
Drain I 3	10.91	A
Drain I 4	10.24	A
Temp Sensor	2.7	V
Driver I	5.60	A

Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.46	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.83E-1	kPa
ORS AMFC Temp	31.0	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-140.3	V
Omega Bias	-70.1	V
Omega Lens	7.6	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.1	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	238	V
HV-360V	-357	V
Inlet Temp	30.3	°C
Internal Temp	36.3	°C
+24V	23.6	V
Water Temp	18.8	°C
Water RF/WC/IF	1.48	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

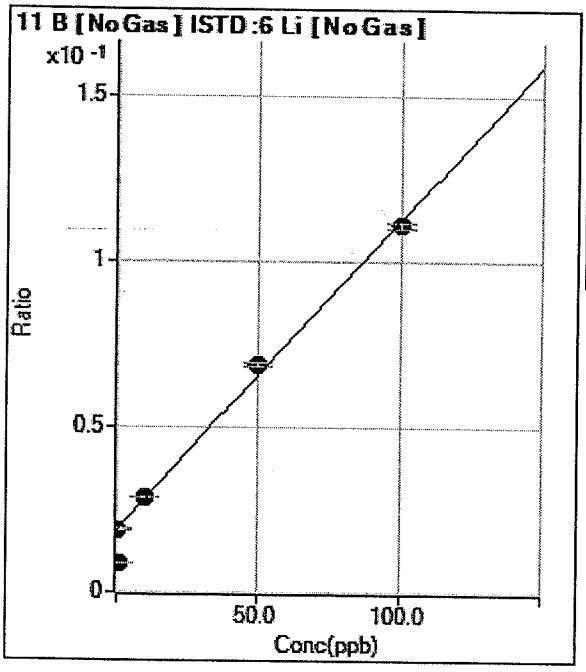
Performance Report History

Sensitivity

Calibration for H6G23131.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b\
Analysis File:	IH6G23.batch.bin
DA Date-Time:	2020-07-30 16:17:15
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

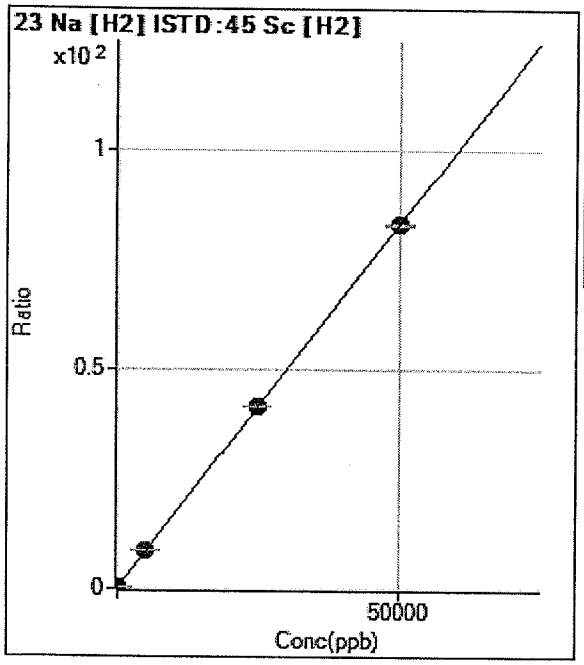
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G23003.d	S0	2020-07-30 09:59:02
2	H6G23004.d	S1	2020-07-30 10:02:00
3	H6G23005.d	S2	2020-07-30 10:04:59
4	H6G23006.d	S3	2020-07-30 10:08:28
5	H6G23007.d	S4	2020-07-30 10:11:25



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36490.55	0.0189	P	3.1
2	☐	0.500	-10.953	16788.93	0.0087	P	3.5
3	☐	10.000	10.512	55969.88	0.0288	P	1.1
4	☐	50.000	53.343	131003.20	0.0688	P	1.9
5	☐	100.000	98.334	210136.98	0.1108	P	1.7

y = 9.3455E-004 * x + 0.0189
R = 0.9929
DL = 1.895
BEC = 20.25

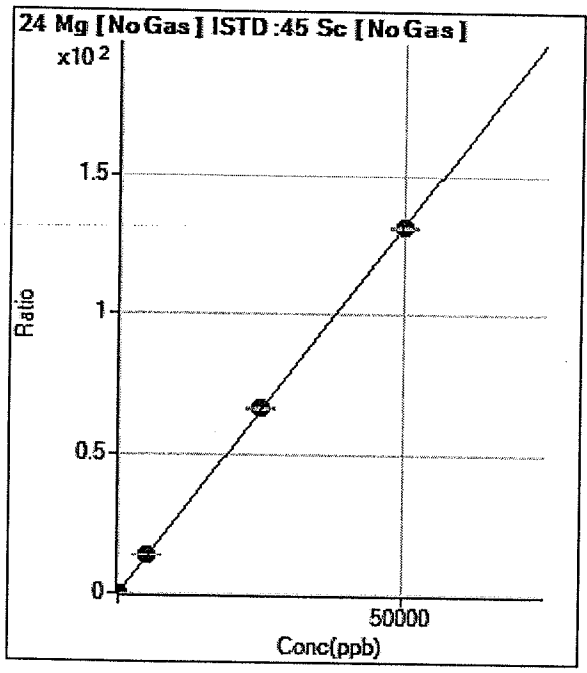
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	381226.06	0.1601	P	0.6
2	☐	50.000	51.796	585452.39	0.2460	P	1.7
3	☐	5000.000	5208.300	21294463.33	8.7998	A	0.9
4	☐	25000.000	25110.928	100491181.33	41.8150	A	0.7
5	☐	50000.000	49923.704	199703456.00	82.9753	A	0.7

y = 0.0017 * x + 0.1601
R = 1.0000
DL = 1.787
BEC = 96.51

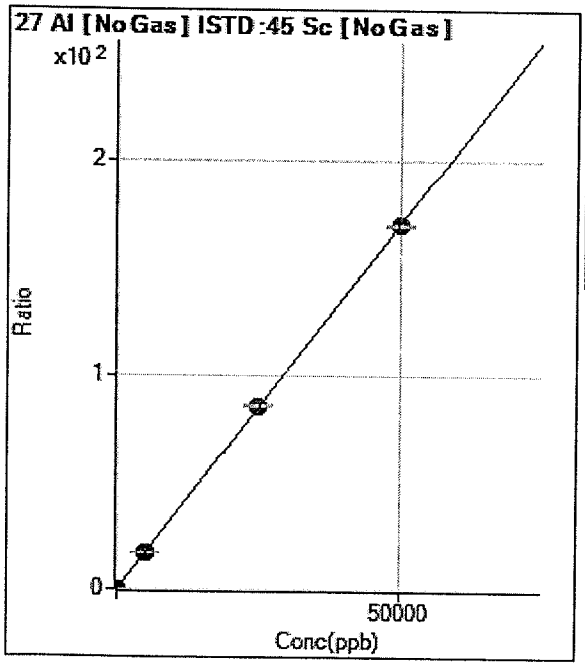
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26534.51	0.0065	P	5.2
2	☐	50.000	51.912	595428.58	0.1433	P	1.3
3	☐	5000.000	5198.908	58090049.33	13.7130	A	0.9
4	☐	25000.000	25261.989	281630272.00	66.6079	A	0.6
5	☐	50000.000	49849.113	554836928.00	131.4301	A	0.8

y = 0.0026 * x + 0.0065
R = 1.0000
DL = 0.3853
BEC = 2.447

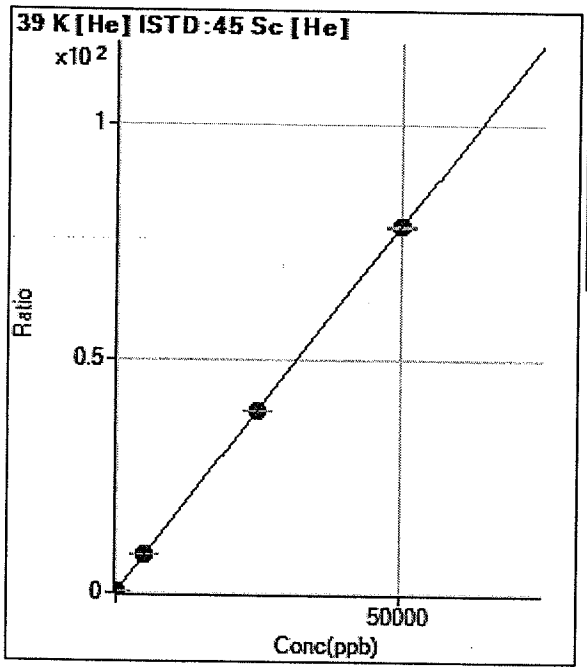
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25954.13	0.0064	P	41.7
2	☐	50.000	51.540	755521.92	0.1818	P	0.9
3	☐	5000.000	5104.865	73648270.57	17.3864	A	1.6
4	☐	25000.000	25207.949	362902727.92	85.8293	A	0.7
5	☐	50000.000	49885.537	717021962.65	169.8467	A	0.8

y = 0.0034 * x + 0.0064
R = 1.0000
DL = 2.341
BEC = 1.87

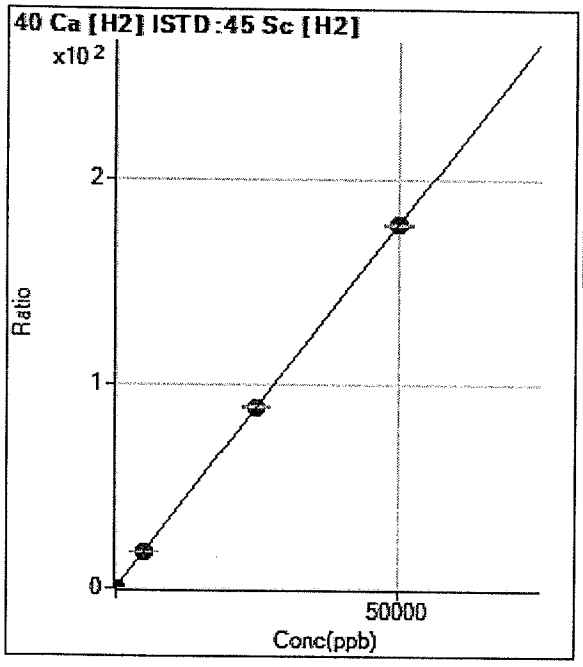
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	94918.65	0.2156	P	2.0
2	☐	50.000	53.834	129787.51	0.2998	P	3.9
3	☐	5000.000	5130.323	3668865.50	8.2381	A	1.2
4	☐	25000.000	24923.052	17328409.33	39.1888	A	0.5
5	☐	50000.000	50025.438	34381814.67	78.4424	A	0.6

y = 0.0016 * x + 0.2156
R = 1.0000
DL = 8.067
BEC = 137.9

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	317635.53	0.1334	P	0.0
2	☐	50.000	22.494	507964.46	0.2135	P	1.9
3	☐	5000.000	5091.971	44184542.67	18.2589	A	0.8
4	☐	25000.000	24983.383	214053962.67	89.0647	A	0.6
5	☐	50000.000	49999.139	428679520.00	178.1113	A	0.5

y = 0.0036 * x + 0.1334
R = 1.0000
DL = 0.05468
BEC = 37.47

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq. Date-Time	2020-07-30 09:08:52
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

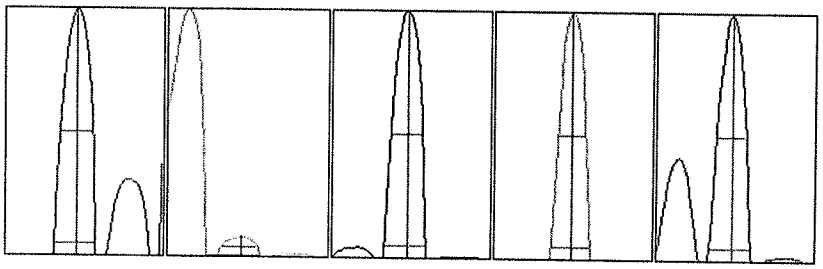
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1670	16698.64			2.329	5.000
24	10.00	7066	70660.84			1.076	5.000
59	10.00	11112	111116.44			2.808	5.000
115	10.00	14893	148927.70			2.684	5.000
208	10.00	7253	72533.64			1.548	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1669	1608	1715	1679	1679
24	7075	6955	7035	7111	7154
59	10619	11022	11218	11432	11267
115	14245	14782	15075	15115	15247
208	7062	7246	7315	7310	7335

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2930.91	8.90	8.90 - 9.10	
24	11879.11	23.90	23.90 - 24.10	
59	19362.57	58.95	58.90 - 59.10	
115	29278.11	115.00	114.90 - 115.10	
208	13856.36	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.61	0.783	0.900	
24	0.65	0.787	0.900	
59	0.60	0.783	0.900	
115	0.53	0.730	0.900	
208	0.55	0.772	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.8 V	Deflect	13.4 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-95 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9994	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	-0.05		

Hardware Settings

Torch

Torch H	0.4 mm	Torch V	-0.2 mm		

EM

Discriminator	4.1 mV	Analog HV	2452 V	Pulse HV	1648 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6G23002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 09:55:42
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	110374.46	1.5
Be	9	6	No Gas	36.67	27.3
B	11	6	No Gas	35944.73	0.7
Na	23	45	H2	372183.79	0.2
Mg	24	45	No Gas	13986.35	4.2
Al	27	45	No Gas	5007.59	8.8
Si	28	45	H2	3630.47	3.6
P	31	45	No Gas	25046.57	1.8
K	39	45	He	93490.53	4.3
Ca	40	45	H2	63672.28	0.5
Ti	47	45	No Gas	202.00	8.1
V	51	45	He	4629.45	4.3
Cr	52	45	He	769.35	3.9
Mn	55	45	No Gas	9354.53	2.1
Fe	56	45	H2	6813.70	2.3
Co	59	45	No Gas	215.33	6.0
Ni	60	45	He	490.68	4.7
Cu	63	45	He	3101.69	2.0
Zn	66	72	No Gas	932.03	8.9
As	75	72	He	215.33	11.2
Se	78	72	H2	20.33	12.4
Sr	88	72	No Gas	408.90	9.4
Zr	90	72	No Gas	280.00	12.9
Mo	95	115	No Gas	72.22	14.8
Mo	98	115	No Gas	171.11	10.0
[Cd]	106	115	No Gas	10.00	26.5
Ag	107	115	No Gas	78.89	9.8
[Cd]	108	115	No Gas	8.00	21.7
Cd	111	115	No Gas	59.72	4.7
Sn	118	115	No Gas	1087.82	3.6
Sn	118	115	H2	817.80	3.9
Sb	123	115	No Gas	117.78	1.6
Ba	137	115	No Gas	47.78	29.0
W	182	159	No Gas	103.33	27.9
Hg	201	159	No Gas	33.33	16.5

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	20.17	12.7
Tl	205	159	No Gas	945.59	6.5
Pb	206	159	No Gas	366.68	9.6
Pb	207	159	No Gas	280.00	46.4
Pb	208	159	No Gas	1352.25	9.3
Th	232	159	No Gas	38.89	13.1
U	238	159	No Gas	74.45	14.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1956537.38	0.7
Sc	45	No Gas	4192405.17	0.5
Sc	45	H2	2362881.83	0.6
Sc	45	He	438124.68	0.3
Ge	72	No Gas	1013334.19	2.5
Ge	72	H2	662101.66	0.5
Ge	72	He	261902.36	0.8
In	115	No Gas	6149835.41	1.4
Tb	159	No Gas	7818138.86	0.7
Tb	159	He	4239548.33	0.4

Calibration Standard Report

Sample Name	S0
File Name	H6G23003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 09:59:02
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	108094.80	4.0
Be	9	6	No Gas	43.33	33.5
B	11	6	No Gas	36490.55	0.2
Na	23	45	H2	381226.06	0.4
Mg	24	45	No Gas	26534.51	1.6
Al	27	45	No Gas	25954.13	37.7
Si	28	45	H2	3744.51	1.0
P	31	45	No Gas	24876.24	1.5
K	39	45	He	94918.65	3.2
Ca	40	45	H2	317635.53	0.7
Ti	47	45	No Gas	222.00	17.3
V	51	45	He	4802.18	3.9
Cr	52	45	He	817.36	3.7
Mn	55	45	No Gas	11316.68	3.3
Fe	56	45	H2	21693.86	0.5
Co	59	45	No Gas	445.34	1.8
Ni	60	45	He	512.01	4.0
Cu	63	45	He	3285.07	1.1
Zn	66	72	No Gas	3240.39	1.0
As	75	72	He	237.00	6.5
Se	78	72	H2	19.00	26.3
Sr	88	72	No Gas	1037.82	6.8
Zr	90	72	No Gas	210.00	40.7
Mo	95	115	No Gas	133.33	9.0
Ag	107	115	No Gas	105.56	19.0
Cd	111	115	No Gas	76.57	16.9
Sn	118	115	No Gas	1576.76	7.9
Sb	123	115	No Gas	140.00	25.2
Ba	137	115	No Gas	160.00	11.6
W	182	159	No Gas	83.33	30.2
Hg	201	159	He	16.00	16.2
Tl	205	159	No Gas	1041.16	5.4
Pb	208	159	No Gas	1430.04	5.4
U	238	159	No Gas	338.90	5.6

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1929118.07	3.2	1956537.38	98.6	60	120	
Sc	45	No Gas	4117343.67	3.5	4192405.17	98.21	60	120	
Sc	45	H2	2381369.67	0.7	2362881.83	100.78	60	120	
Sc	45	He	440111.83	1.3	438124.68	100.45	60	120	
Ge	72	No Gas	978810.52	4.9	1013334.19	96.59	60	120	
Ge	72	H2	658427.23	0.4	662101.66	99.45	60	120	
Ge	72	He	262908.72	1.0	261902.36	100.38	60	120	
In	115	No Gas	6043753.98	3.5	6149835.41	98.28	60	120	
Tb	159	No Gas	7785231.64	3.0	7818138.86	99.58	60	120	
Tb	159	He	4270797.00	0.1	4239548.33	100.74	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G23004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:02:00
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	114013.98	1.0
Be	9	6	No Gas	1684.55	1.4
B	11	6	No Gas	16788.93	4.1
Na	23	45	H2	585452.39	0.4
Mg	24	45	No Gas	595428.58	0.8
Al	27	45	No Gas	755521.92	1.2
Si	28	45	H2	118383.69	0.7
P	31	45	No Gas	46731.76	1.0
K	39	45	He	129787.51	2.7
Ca	40	45	H2	507964.46	0.6
Ti	47	45	No Gas	1050.71	5.3
V	51	45	He	9020.30	1.0
Cr	52	45	He	4386.70	1.4
Mn	55	45	No Gas	24305.55	1.4
Fe	56	45	H2	649849.10	0.2
Co	59	45	No Gas	11929.22	1.4
Ni	60	45	He	1690.77	3.6
Cu	63	45	He	7294.62	0.9
Zn	66	72	No Gas	6560.92	0.6
As	75	72	He	843.03	1.2
Se	78	72	H2	216.33	2.8
Sr	88	72	No Gas	16125.25	1.9
Zr	90	72	No Gas	75914.73	2.1
Mo	95	115	No Gas	3039.24	2.3
Ag	107	115	No Gas	7944.61	3.3
Cd	111	115	No Gas	1694.42	1.1
Sn	118	115	No Gas	6353.76	3.2
Sb	123	115	No Gas	5324.42	1.1
Ba	137	115	No Gas	2516.92	5.2
W	182	159	No Gas	2563.60	3.5
Hg	201	159	He	54.83	3.5
Tl	205	159	No Gas	12798.79	2.5
Pb	208	159	No Gas	17702.68	2.1
U	238	159	No Gas	15176.06	0.8

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1931285.10	1.0	1956537.38	98.71	60	120	
Sc	45	No Gas	4154848.33	0.5	4192405.17	99.1	60	120	
Sc	45	H2	2380139.50	1.4	2362881.83	100.73	60	120	
Sc	45	He	433045.79	1.8	438124.68	98.84	60	120	
Ge	72	No Gas	1009781.98	0.7	1013334.19	99.65	60	120	
Ge	72	H2	681110.59	1.0	662101.66	102.87	60	120	
Ge	72	He	262269.39	1.5	261902.36	100.14	60	120	
In	115	No Gas	6068427.12	0.9	6149835.41	98.68	60	120	
Tb	159	No Gas	7844232.47	1.8	7818138.86	100.33	60	120	
Tb	159	He	4171721.83	1.3	4239548.33	98.4	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G23005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:04:59
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	164315.98	0.4
Be	9	6	No Gas	17316.19	0.6
B	11	6	No Gas	55969.88	1.1
Na	23	45	H2	21294463.33	0.4
Mg	24	45	No Gas	58090049.33	0.2
Al	27	45	No Gas	73648270.57	0.9
Si	28	45	H2	608157.27	0.8
P	31	45	No Gas	66532.11	0.3
K	39	45	He	3668865.50	0.8
Ca	40	45	H2	44184542.67	0.3
Ti	47	45	No Gas	84617.29	1.6
V	51	45	He	285241.03	0.8
Cr	52	45	He	326156.49	1.2
Mn	55	45	No Gas	8529506.00	0.2
Fe	56	45	H2	62961216.00	0.5
Co	59	45	No Gas	1166111.08	1.1
Ni	60	45	He	112388.06	0.9
Cu	63	45	He	300604.75	0.6
Zn	66	72	No Gas	186927.03	0.9
As	75	72	He	55670.36	2.1
Se	78	72	H2	19630.60	0.8
Sr	88	72	No Gas	1589540.01	0.3
Zr	90	72	No Gas	162753.30	0.3
Mo	95	115	No Gas	298346.61	0.9
Ag	107	115	No Gas	78616.86	0.8
Cd	111	115	No Gas	158006.85	0.6
Sn	118	115	No Gas	451069.22	1.4
Sb	123	115	No Gas	105778.96	0.3
Ba	137	115	No Gas	477933.94	0.4
W	182	159	No Gas	53633.43	1.8
Hg	201	159	He	465.51	1.1
Tl	205	159	No Gas	1216284.15	1.2
Pb	208	159	No Gas	1652656.12	0.3
U	238	159	No Gas	1505512.58	1.0

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1946670.62	1.0	1956537.38	99.5	60	120	
Sc	45	No Gas	4236336.67	0.9	4192405.17	101.05	60	120	
Sc	45	H2	2419969.50	0.6	2362881.83	102.42	60	120	
Sc	45	He	445397.15	1.5	438124.68	101.66	60	120	
Ge	72	No Gas	1035523.06	0.5	1013334.19	102.19	60	120	
Ge	72	H2	689993.40	1.1	662101.66	104.21	60	120	
Ge	72	He	272175.59	0.9	261902.36	103.92	60	120	
In	115	No Gas	6112185.15	0.2	6149835.41	99.39	60	120	
Tb	159	No Gas	7920431.63	1.3	7818138.86	101.31	60	120	
Tb	159	He	4289702.50	0.7	4239548.33	101.18	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G23006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:08:28
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	362199.11	0.6
Be	9	6	No Gas	82475.96	0.4
B	11	6	No Gas	131003.20	1.4
Na	23	45	H2	100491181.33	0.6
Mg	24	45	No Gas	281630272.00	0.2
Al	27	45	No Gas	362902727.92	0.5
Si	28	45	H2	2891563.33	1.2
P	31	45	No Gas	243828.21	1.2
K	39	45	He	17328409.33	0.4
Ca	40	45	H2	214053962.67	1.3
Ti	47	45	No Gas	417816.95	0.6
V	51	45	He	1345721.67	1.0
Cr	52	45	He	1536285.00	0.7
Mn	55	45	No Gas	41103826.67	0.3
Fe	56	45	H2	301914336.00	0.7
Co	59	45	No Gas	5580257.17	0.1
Ni	60	45	He	524858.31	0.5
Cu	63	45	He	1356497.34	0.8
Zn	66	72	No Gas	884806.60	0.3
As	75	72	He	268901.04	0.5
Se	78	72	H2	94057.54	0.5
Sr	88	72	No Gas	7752829.14	0.1
Zr	90	72	No Gas	474506.52	0.5
Mo	95	115	No Gas	1474759.59	0.5
Ag	107	115	No Gas	372407.22	0.9
Cd	111	115	No Gas	758628.85	0.3
Sn	118	115	No Gas	2245619.91	0.9
Sb	123	115	No Gas	518714.67	0.6
Ba	137	115	No Gas	2367102.89	0.7
W	182	159	No Gas	260358.24	0.8
Hg	201	159	He	2248.54	1.9
Tl	205	159	No Gas	5900529.49	1.1
Pb	208	159	No Gas	7950343.32	0.5
U	238	159	No Gas	7345185.82	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1904794.45	0.6	1956537.38	97.36	60	120	
Sc	45	No Gas	4228255.33	0.4	4192405.17	100.86	60	120	
Sc	45	H2	2403301.67	0.8	2362881.83	101.71	60	120	
Sc	45	He	442190.32	0.9	438124.68	100.93	60	120	
Ge	72	No Gas	1032616.98	0.9	1013334.19	101.9	60	120	
Ge	72	H2	669350.85	0.5	662101.66	101.09	60	120	
Ge	72	He	266830.11	1.4	261902.36	101.88	60	120	
In	115	No Gas	5963875.54	0.2	6149835.41	96.98	60	120	
Tb	159	No Gas	7918442.74	0.9	7818138.86	101.28	60	120	
Tb	159	He	4243810.67	1.4	4239548.33	100.1	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G23007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 10:11:25
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	608054.07	0.2
Be	9	6	No Gas	161523.00	0.8
B	11	6	No Gas	210136.98	0.9
Na	23	45	H2	199703456.00	0.1
Mg	24	45	No Gas	554836928.00	0.7
Al	27	45	No Gas	717021962.65	0.9
Si	28	45	H2	5677512.00	0.8
P	31	45	No Gas	457880.79	0.7
K	39	45	He	34381814.67	0.8
Ca	40	45	H2	428679520.00	0.4
Ti	47	45	No Gas	823564.52	1.5
V	51	45	He	2669435.50	1.0
Cr	52	45	He	3030591.67	0.6
Mn	55	45	No Gas	81087909.33	1.0
Fe	56	45	H2	597968661.33	1.3
Co	59	45	No Gas	10913585.67	0.9
Ni	60	45	He	1022455.79	0.2
Cu	63	45	He	2629282.75	0.4
Zn	66	72	No Gas	1741101.62	0.2
As	75	72	He	531178.04	0.4
Se	78	72	H2	183824.19	0.5
Sr	88	72	No Gas	15338305.50	0.7
Zr	90	72	No Gas	965749.91	0.7
Mo	95	115	No Gas	2939776.00	0.9
Ag	107	115	No Gas	730470.56	0.6
Cd	111	115	No Gas	1490167.31	0.2
Sn	118	115	No Gas	4465613.43	0.2
Sb	123	115	No Gas	1031925.17	0.8
Ba	137	115	No Gas	4694584.54	0.6
W	182	159	No Gas	514575.79	1.5
Hg	201	159	He	4398.61	1.5
Tl	205	159	No Gas	11516524.82	1.0
Pb	208	159	No Gas	15597272.41	0.4
U	238	159	No Gas	14535726.65	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1896338.88	1.4	1956537.38	96.92	60	120	
Sc	45	No Gas	4221578.83	0.3	4192405.17	100.7	60	120	
Sc	45	H2	2406843.08	0.6	2362881.83	101.86	60	120	
Sc	45	He	438325.48	1.3	438124.68	100.05	60	120	
Ge	72	No Gas	1011614.67	1.0	1013334.19	99.83	60	120	
Ge	72	H2	663519.46	0.1	662101.66	100.21	60	120	
Ge	72	He	263814.04	1.4	261902.36	100.73	60	120	
In	115	No Gas	5855880.92	0.9	6149835.41	95.22	60	120	
Tb	159	No Gas	7834137.47	0.2	7818138.86	100.2	60	120	
Tb	159	He	4211906.50	1.0	4239548.33	99.35	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G23008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:14:18
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.879	ppb	4.7	393469.26	30	99.6	90	110	
Be	9	6	No Gas	29.962	ppb	4.5	93885.54	30	99.87	90	110	
B	11	6	No Gas	29.771	ppb	7.9	85648.62	30	99.24	90	110	
Na	23	45	H2	30610.375	ppb	2.6	122254717.33	30000	102.03	90	110	
Mg	24	45	No Gas	31176.440	ppb	5.1	329067840.00	30000	103.92	90	110	
Al	27	45	No Gas	31435.607	ppb	6.5	428303726.95	30000	104.79	90	110	
Si	28	45	H2	3288.132	ppb	2.2	3740947.83	3000	109.6	90	110	
P	31	45	No Gas	301.567	ppb	5.8	271733.37	300	100.52	90	110	
K	39	45	He	30081.831	ppb	0.3	20467121.33	30000	100.27	90	110	
Ca	40	45	H2	30960.351	ppb	3.0	264805392.00	30000	103.2	90	110	
Ti	47	45	No Gas	319.912	ppb	5.9	500943.50	300	106.64	90	110	
V	51	45	He	319.890	ppb	0.6	1689155.17	300	106.63	90	110	
Cr	52	45	He	320.269	ppb	0.6	1921263.92	300	106.76	90	110	
Mn	55	45	No Gas	2075.240	ppb	6.2	53320860.00	2000	103.76	90	110	
Fe	56	45	H2	30596.499	ppb	2.7	365837664.00	30000	101.99	90	110	
Co	59	45	No Gas	323.494	ppb	4.9	6726955.50	300	107.83	90	110	
Ni	60	45	He	323.331	ppb	1.6	656153.08	300	107.78	90	110	
Cu	63	45	He	318.912	ppb	1.6	1666955.79	300	106.3	90	110	
Zn	66	72	No Gas	329.010	ppb	5.8	1095072.21	300	109.67	90	110	
As	75	72	He	320.693	ppb	1.4	336245.56	300	106.9	90	110	
Se	78	72	H2	315.394	ppb	2.7	115879.93	300	105.13	90	110	
Sr	88	72	No Gas	323.137	ppb	6.4	9457353.51	300	107.71	90	110	
Zr	90	72	No Gas	29.462	ppb	5.3	536301.41	30	98.21	90	110	
Mo	95	115	No Gas	312.843	ppb	5.8	1805594.44	300	104.28	90	110	
Ag	107	115	No Gas	29.949	ppb	4.7	431127.57	30	99.83	90	110	
Cd	111	115	No Gas	316.108	ppb	3.9	928057.63	300	105.37	90	110	
Sn	118	115	No Gas	319.186	ppb	5.1	2799729.82	300	106.4	90	110	
Sb	123	115	No Gas	59.610	ppb	4.6	604165.86	60	99.35	90	110	
Ba	137	115	No Gas	319.929	ppb	5.1	1476016.26	300	106.64	90	110	
W	182	159	No Gas	32.012	ppb	4.7	318718.86	30	106.71	90	110	
Hg	201	159	He	3.067	ppb	0.5	2694.79	3	102.23	90	110	
Tl	205	159	No Gas	324.819	ppb	4.9	7257255.54	300	108.27	90	110	
Pb	208	159	No Gas	324.369	ppb	5.0	9804376.60	300	108.12	90	110	
U	238	159	No Gas	318.974	ppb	5.5	9021852.42	300	106.32	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1834271.92	4.2	1956537.38	93.75	60	120	
Sc	45	No Gas	4008793.25	4.7	4192405.17	95.62	60	120	
Sc	45	H2	2401275.08	2.9	2362881.83	101.62	60	120	
Sc	45	He	433120.84	0.8	438124.68	98.86	60	120	
Ge	72	No Gas	968334.60	4.4	1013334.19	95.56	60	120	
Ge	72	H2	661341.04	2.7	662101.66	99.89	60	120	
Ge	72	He	260253.54	1.5	261902.36	99.37	60	120	
In	115	No Gas	5774443.81	4.6	6149835.41	93.9	60	120	
Tb	159	No Gas	7584602.20	4.2	7818138.86	97.01	60	120	
Tb	159	He	4188210.33	0.1	4239548.33	98.79	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G23009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:17:12
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.072	ppb	248.9	108961.51	0.4	
Be	9	6	No Gas	0.019	ppb	22.2	105.55	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	35762.00	4	
Na	23	45	H2	<0.000	ppb	N/A	377021.13	40	
Mg	24	45	No Gas	1.446	ppb	29.8	42812.23	10	
Al	27	45	No Gas	0.839	ppb	42.2	38460.82	15	
Si	28	45	H2	3.064	ppb	1.9	7166.52	8	
P	31	45	No Gas	<0.000	ppb	N/A	24629.80	10	
K	39	45	He	4.010	ppb	130.8	97891.48	20	
Ca	40	45	H2	0.860	ppb	88.5	323371.72	25	
Ti	47	45	No Gas	0.002	ppb	926.0	229.33	0.5	
V	51	45	He	<0.000	ppb	N/A	4587.43	0.5	
Cr	52	45	He	0.012	ppb	34.0	891.36	0.2	
Mn	55	45	No Gas	0.111	ppb	33.0	14434.30	0.2	
Fe	56	45	H2	0.972	ppb	5.2	33069.27	10	
Co	59	45	No Gas	0.015	ppb	35.9	773.36	0.15	
Ni	60	45	He	<0.000	ppb	N/A	478.01	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2936.32	0.4	
Zn	66	72	No Gas	0.030	ppb	49.4	3387.76	2	
As	75	72	He	0.007	ppb	325.8	244.33	0.2	
Se	78	72	H2	0.063	ppb	23.1	42.00	0.2	
Sr	88	72	No Gas	0.012	ppb	33.7	1426.74	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	206.67	2	
Mo	95	115	No Gas	0.067	ppb	11.5	544.46	0.2	
Ag	107	115	No Gas	0.003	ppb	35.3	150.00	0.08	
Cd	111	115	No Gas	0.073	ppb	25.6	305.31	0.2	
Sn	118	115	No Gas	0.079	ppb	11.2	2343.55	0.2	
Sb	123	115	No Gas	0.006	ppb	21.5	203.34	0.4	
Ba	137	115	No Gas	0.019	ppb	29.0	253.34	0.2	
W	182	159	No Gas	0.006	ppb	119.4	143.33	0.3	
Hg	201	159	He	0.026	ppb	17.8	38.83	0.1	
Tl	205	159	No Gas	0.136	ppb	18.5	4196.28	0.1	>LOD
Pb	208	159	No Gas	0.056	ppb	11.6	3199.05	0.1	
U	238	159	No Gas	0.014	ppb	38.0	744.47	0.05	

W 07/30/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1931897.19	1.2	1956537.38	98.74	60	120	
Sc	45	No Gas	4173650.67	1.0	4192405.17	99.55	60	120	
Sc	45	H2	2370701.92	2.2	2362881.83	100.33	60	120	
Sc	45	He	441118.00	0.3	438124.68	100.68	60	120	
Ge	72	No Gas	990993.25	0.9	1013334.19	97.8	60	120	
Ge	72	H2	659535.31	2.4	662101.66	99.61	60	120	
Ge	72	He	262635.26	1.5	261902.36	100.28	60	120	
In	115	No Gas	6130193.93	0.7	6149835.41	99.68	60	120	
Tb	159	No Gas	7863570.80	0.4	7818138.86	100.58	60	120	
Tb	159	He	4246198.83	0.7	4239548.33	100.16	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG3001
File Name	H6G23010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 10:20:06
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.961	ppb	6.9	119386.29	1	96.1	80	120	
Be	9	6	No Gas	0.953	ppb	3.0	3228.15	1	95.3	80	120	
B	11	6	No Gas	3.042	ppb	9.1	42521.89	10	30.42	80	120	> +/- 20%
Na	23	45	H2	96.478	ppb	1.5	766379.73	100	96.48	80	120	
Mg	24	45	No Gas	100.009	ppb	1.2	1124763.25	100	100.01	80	120	
Al	27	45	No Gas	98.651	ppb	1.3	1424990.39	100	98.65	80	120	
Si	28	45	H2	98.299	ppb	0.5	115200.36	100	98.3	80	120	
P	31	45	No Gas	46.408	ppb	0.9	64808.10	50	92.82	80	120	
K	39	45	He	101.865	ppb	5.2	164671.70	100	101.86	80	120	
Ca	40	45	H2	72.864	ppb	2.0	940210.04	100	72.86	80	120	> +/- 20%
Ti	47	45	No Gas	0.994	ppb	4.3	1844.12	1	99.4	80	120	
V	51	45	He	1.054	ppb	2.3	10419.29	1	105.4	80	120	
Cr	52	45	He	1.063	ppb	1.3	7279.94	1	106.3	80	120	
Mn	55	45	No Gas	0.974	ppb	3.1	37488.60	1	97.4	80	120	
Fe	56	45	H2	100.381	ppb	1.5	1218908.96	100	100.38	80	120	
Co	59	45	No Gas	0.996	ppb	0.9	21990.38	1	99.6	80	120	
Ni	60	45	He	1.024	ppb	4.7	2617.59	1	102.4	80	120	
Cu	63	45	He	1.121	ppb	2.5	9211.79	1	112.1	80	120	
Zn	66	72	No Gas	9.989	ppb	1.9	37818.55	10	99.89	80	120	
As	75	72	He	1.047	ppb	0.7	1357.40	1	104.7	80	120	
Se	78	72	H2	1.002	ppb	10.9	396.34	1	100.2	80	120	
Sr	88	72	No Gas	2.025	ppb	0.8	62715.30	2	101.25	80	120	
Zr	90	72	No Gas	3.764	ppb	0.1	71457.01	5	75.28	80	120	> +/- 20%
Mo	95	115	No Gas	0.954	ppb	3.2	5965.79	1	95.4	80	120	
Ag	107	115	No Gas	0.975	ppb	1.8	14958.46	1	97.5	80	120	
Cd	111	115	No Gas	1.009	ppb	0.9	3210.63	1	100.9	80	120	
Sn	118	115	No Gas	0.969	ppb	0.3	10586.50	1	96.9	80	120	
Sb	123	115	No Gas	0.950	ppb	2.9	10327.41	1	95	80	120	
Ba	137	115	No Gas	0.968	ppb	3.2	4888.70	1	96.8	80	120	
W	182	159	No Gas	1.990	ppb	1.4	20757.08	2	99.5	80	120	
Hg	201	159	He	0.097	ppb	9.3	102.83	0.1	97	80	120	
Tl	205	159	No Gas	1.013	ppb	3.0	24678.79	1	101.3	80	120	
Pb	208	159	No Gas	1.021	ppb	2.7	33665.57	1	102.1	80	120	
U	238	159	No Gas	0.952	ppb	1.6	28448.52	1	95.2	80	120	

TH 8/3/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1953203.74	1.8	1956537.38	99.83	60	120	
Sc	45	No Gas	4163649.67	1.5	4192405.17	99.31	60	120	
Sc	45	H2	2394063.83	0.9	2362881.83	101.32	60	120	
Sc	45	He	439218.25	0.3	438124.68	100.25	60	120	
Ge	72	No Gas	1005716.90	0.9	1013334.19	99.25	60	120	
Ge	72	H2	677063.73	0.6	662101.66	102.26	60	120	
Ge	72	He	265331.36	0.7	261902.36	101.31	60	120	
In	115	No Gas	6104026.34	0.4	6149835.41	99.26	60	120	
Tb	159	No Gas	7908154.13	2.0	7818138.86	101.15	60	120	
Tb	159	He	4277429.50	0.7	4239548.33	100.89	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G23012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 10:25:54
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.425	ppb	32.7	104870.36	2	-50	50	
Be	9	6	No Gas	0.004	ppb	68.1	52.22	0.4	-50	50	
B	11	6	No Gas	<0.000	ppb	N/A	32915.15	10	-50	50	
Na	23	45	H2	100916.835	ppb	0.5	394984096.00	100000	80	120	
Mg	24	45	No Gas	99109.548	ppb	1.6	1058879296.00	100000	80	120	
Al	27	45	No Gas	100727.002	ppb	1.2	1389615659.29	100000	80	120	
Si	28	45	H2	5.444	ppb	5.2	9780.79	50	-50	50	
P	31	45	No Gas	99017.235	ppb	0.6	82295010.67	100000	80	120	
K	39	45	He	101851.601	ppb	0.3	68386269.33	100000	80	120	
Ca	40	45	H2	102857.461	ppb	0.7	863339221.33	100000	80	120	
Ti	47	45	No Gas	2099.878	ppb	0.6	3327634.75	2000	80	120	
V	51	45	He	0.021	ppb	28.6	4790.17	1	-50	50	
Cr	52	45	He	0.313	ppb	4.5	2654.92	1	-50	50	
Mn	55	45	No Gas	0.247	ppb	6.6	17559.27	1	-50	50	
Fe	56	45	H2	102400.075	ppb	0.9	1202415274.67	100000	80	120	
Co	59	45	No Gas	0.365	ppb	1.8	8121.10	0.75	-50	50	
Ni	60	45	He	0.288	ppb	8.0	1076.71	1	-50	50	
Cu	63	45	He	0.185	ppb	10.5	4154.63	2	-50	50	
Zn	66	72	No Gas	1.215	ppb	5.8	7259.94	20	-50	50	
As	75	72	He	0.094	ppb	7.3	328.00	1	-50	50	
Se	78	72	H2	0.224	ppb	13.6	98.00	1	-50	50	
Sr	88	72	No Gas	0.845	ppb	1.7	25847.16	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.121	ppb	29.1	2420.23	10	-50	50	
Mo	95	115	No Gas	2058.829	ppb	0.7	11605271.48	2000	80	120	
Ag	107	115	No Gas	0.013	ppb	19.4	285.56	0.4	-50	50	
Cd	111	115	No Gas	0.074	ppb	48.4	282.15	1	-50	50	
Sn	118	115	No Gas	0.337	ppb	1.5	4357.39	1	-50	50	
Ba	137	115	No Gas	0.368	ppb	2.5	1807.91	1	-50	50	
W	182	159	No Gas	0.183	ppb	11.1	1936.82	1	-50	50	
Hg	201	159	He	0.004	ppb	64.1	18.83	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	768.92	0.5	-50	50	
Pb	208	159	No Gas	0.118	ppb	5.2	5065.97	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	142.22	0.25	-50	50	

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1799516.88	1.7	1956537.38	91.97	60	120	
Sc	45	No Gas	4051403.83	2.1	4192405.17	96.64	60	120	
Sc	45	H2	2357258.58	1.3	2362881.83	99.76	60	120	
Sc	45	He	428797.04	0.8	438124.68	97.87	60	120	
Ge	72	No Gas	969787.54	1.4	1013334.19	95.7	60	120	
Ge	72	H2	638269.83	0.4	662101.66	96.4	60	120	
Ge	72	He	255866.76	0.3	261902.36	97.7	60	120	
In	115	No Gas	5631450.62	1.2	6149835.41	91.57	60	120	
Tb	159	No Gas	7721948.86	1.9	7818138.86	98.77	60	120	
Tb	159	He	4188348.33	0.2	4239548.33	98.79	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G23013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 10:28:48
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	20.033	ppb	0.4	294779.23	20	80	120	
Be	9	6	No Gas	20.151	ppb	0.7	62566.63	20	80	120	
B	11	6	No Gas	18.954	ppb	4.4	66486.70	20	80	120	
Na	23	45	H2	99189.441	ppb	0.5	398737472.00	100000	80	120	
Mg	24	45	No Gas	97880.851	ppb	0.9	1074145962.67	100000	80	120	
Al	27	45	No Gas	99240.892	ppb	1.2	1406388619.05	100000	80	120	
Si	28	45	H2	216.291	ppb	0.8	251753.95	200	80	120	
P	31	45	No Gas	98279.108	ppb	0.7	83908696.00	100000	80	120	
K	39	45	He	101368.405	ppb	1.5	69513088.00	100000	80	120	
Ca	40	45	H2	101631.387	ppb	0.6	876153536.00	100000	80	120	
Ti	47	45	No Gas	2095.710	ppb	0.8	3411875.00	2000	80	120	
V	51	45	He	20.250	ppb	0.5	112596.37	20	80	120	
Cr	52	45	He	20.658	ppb	0.2	126067.73	20	80	120	
Mn	55	45	No Gas	19.815	ppb	0.5	540862.67	20	80	120	
Fe	56	45	H2	101447.596	ppb	0.6	1223518634.67	100000	80	120	
Co	59	45	No Gas	20.188	ppb	0.1	436873.58	20	80	120	
Ni	60	45	He	20.270	ppb	0.9	42072.75	20	80	120	
Cu	63	45	He	20.423	ppb	0.2	111002.89	20	80	120	
Zn	66	72	No Gas	21.157	ppb	0.9	75971.06	20	80	120	
As	75	72	He	20.529	ppb	0.6	21632.96	20	80	120	
Se	78	72	H2	20.642	ppb	0.5	7591.80	20	80	120	
Sr	88	72	No Gas	20.651	ppb	0.6	626465.81	20	80	120	
Zr	90	72	No Gas	5.437	ppb	1.1	102568.88	20	80	120	> +/- 20%
Mo	95	115	No Gas	2011.988	ppb	1.5	11787028.70	2000	80	120	
Ag	107	115	No Gas	19.354	ppb	0.1	282789.64	20	80	120	
Cd	111	115	No Gas	19.633	ppb	0.8	58555.03	20	80	120	
Sn	118	115	No Gas	19.957	ppb	0.8	179109.60	20	80	120	
Sb	123	115	No Gas	19.863	ppb	0.7	204399.99	20	80	120	
Ba	137	115	No Gas	20.137	ppb	0.1	94440.51	20	80	120	
W	182	159	No Gas	18.956	ppb	0.9	196300.19	20	80	120	
Hg	201	159	He	2.034	ppb	1.2	1799.80	2	80	120	
Tl	205	159	No Gas	19.523	ppb	0.5	454586.30	20	80	120	
Pb	208	159	No Gas	19.762	ppb	1.4	622494.07	20	80	120	
U	238	159	No Gas	19.465	ppb	0.6	572968.60	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1814992.99	2.0	1956537.38	92.77	60	120	
Sc	45	No Gas	4161907.58	1.9	4192405.17	99.27	60	120	
Sc	45	H2	2421004.83	0.5	2362881.83	102.46	60	120	
Sc	45	He	437930.03	0.5	438124.68	99.96	60	120	
Ge	72	No Gas	1000496.63	0.9	1013334.19	98.73	60	120	
Ge	72	H2	660168.63	1.0	662101.66	99.71	60	120	
Ge	72	He	258891.28	0.3	261902.36	98.85	60	120	
In	115	No Gas	5852760.82	1.4	6149835.41	95.17	60	120	
Tb	159	No Gas	7877906.91	1.7	7818138.86	100.76	60	120	
Tb	159	He	4204629.50	1.1	4239548.33	99.18	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G23015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 10:34:36
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.419	ppb	0.5	341039.65	25	97.68	90	110	
Be	9	6	No Gas	24.538	ppb	1.6	77081.76	25	98.15	90	110	
B	11	6	No Gas	48.906	ppb	1.2	118702.13	50	97.81	90	110	
Na	23	45	H2	24550.097	ppb	1.0	99167770.67	25000	98.2	90	110	
Mg	24	45	No Gas	24625.089	ppb	0.7	270622149.33	25000	98.5	90	110	
Al	27	45	No Gas	24549.268	ppb	1.1	348371941.47	25000	98.2	90	110	
Si	28	45	H2	2499.774	ppb	0.9	2874875.67	2500	99.99	90	110	
P	31	45	No Gas	244.484	ppb	0.9	234150.26	250	97.79	90	110	
K	39	45	He	25026.665	ppb	1.5	17314493.33	25000	100.11	90	110	
Ca	40	45	H2	24689.123	ppb	0.3	213479989.33	25000	98.76	90	110	
Ti	47	45	No Gas	248.624	ppb	0.4	405501.52	250	99.45	90	110	
V	51	45	He	247.989	ppb	0.8	1331429.05	250	99.2	90	110	
Cr	52	45	He	247.395	ppb	0.5	1507959.46	250	98.96	90	110	
Mn	55	45	No Gas	1502.444	ppb	0.6	40208957.33	1500	100.16	90	110	
Fe	56	45	H2	24783.696	ppb	0.7	299462346.67	25000	99.13	90	110	
Co	59	45	No Gas	251.336	ppb	1.3	5441914.83	250	100.53	90	110	
Ni	60	45	He	249.195	ppb	0.9	513901.03	250	99.68	90	110	
Cu	63	45	He	251.249	ppb	1.1	1334941.08	250	100.5	90	110	
Zn	66	72	No Gas	243.427	ppb	0.8	860454.02	250	97.37	90	110	
As	75	72	He	247.699	ppb	0.7	266085.67	250	99.08	90	110	
Se	78	72	H2	245.983	ppb	0.6	92628.00	250	98.39	90	110	
Sr	88	72	No Gas	245.369	ppb	1.0	7619638.31	250	98.15	90	110	
Zr	90	72	No Gas	24.715	ppb	0.6	477249.62	25	98.86	90	110	
Mo	95	115	No Gas	241.144	ppb	1.0	1457042.30	250	96.46	90	110	
Ag	107	115	No Gas	24.299	ppb	0.7	366109.51	25	97.2	90	110	
Cd	111	115	No Gas	241.827	ppb	0.5	742979.07	250	96.73	90	110	
Sn	118	115	No Gas	242.186	ppb	0.5	2224033.52	250	96.87	90	110	
Sb	123	115	No Gas	48.528	ppb	0.8	514784.16	50	97.06	90	110	
Ba	137	115	No Gas	484.642	ppb	0.3	2340288.73	500	96.93	90	110	
W	182	159	No Gas	24.395	ppb	1.8	256275.74	25	97.58	90	110	
Hg	201	159	He	2.450	ppb	2.4	2211.03	2.5	98	90	110	
Tl	205	159	No Gas	245.474	ppb	1.1	5785983.38	250	98.19	90	110	
Pb	208	159	No Gas	243.617	ppb	1.9	7768252.40	250	97.45	90	110	
U	238	159	No Gas	239.673	ppb	1.7	7152714.44	250	95.87	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1836506.53	1.5	1956537.38	93.87	60	120	
Sc	45	No Gas	4167769.50	1.2	4192405.17	99.41	60	120	
Sc	45	H2	2425449.25	1.0	2362881.83	102.65	60	120	
Sc	45	He	440035.55	1.2	438124.68	100.44	60	120	
Ge	72	No Gas	1025747.87	1.0	1013334.19	101.23	60	120	
Ge	72	H2	677479.83	0.7	662101.66	102.32	60	120	
Ge	72	He	266556.63	0.5	261902.36	101.78	60	120	
In	115	No Gas	6035748.97	1.4	6149835.41	98.14	60	120	
Tb	159	No Gas	7991852.46	1.5	7818138.86	102.22	60	120	
Tb	159	He	4294958.50	1.2	4239548.33	101.31	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G23016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 10:37:30
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	106386.18	0.4	
Be	9	6	No Gas	0.007	ppb	23.7	66.66	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	30330.45	4	
Na	23	45	H2	2.139	ppb	26.5	392698.09	40	
Mg	24	45	No Gas	4.079	ppb	31.8	71634.88	10	
Al	27	45	No Gas	3.124	ppb	42.1	70761.78	15	
Si	28	45	H2	0.899	ppb	9.0	4794.83	8	
P	31	45	No Gas	<0.000	ppb	N/A	22927.57	10	
K	39	45	He	7.529	ppb	75.0	99292.09	20	
Ca	40	45	H2	1.609	ppb	2.4	333842.12	25	
Ti	47	45	No Gas	0.058	ppb	41.9	319.33	0.5	
V	51	45	He	0.085	ppb	42.7	5218.33	0.5	
Cr	52	45	He	<0.000	ppb	N/A	800.69	0.2	
Mn	55	45	No Gas	0.109	ppb	58.1	14380.95	0.2	
Fe	56	45	H2	2.331	ppb	5.4	49726.93	10	
Co	59	45	No Gas	0.021	ppb	41.4	907.37	0.15	
Ni	60	45	He	<0.000	ppb	N/A	396.68	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1896.80	0.4	
Zn	66	72	No Gas	0.010	ppb	399.6	3372.42	2	
As	75	72	He	0.008	ppb	315.8	246.67	0.2	
Se	78	72	H2	0.030	ppb	92.0	30.67	0.2	
Sr	88	72	No Gas	0.020	ppb	50.6	1685.66	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	123.33	2	
Mo	95	115	No Gas	0.098	ppb	22.1	745.58	0.2	
Ag	107	115	No Gas	0.002	ppb	83.9	136.67	0.08	
Cd	111	115	No Gas	0.048	ppb	26.8	231.31	0.2	
Sn	118	115	No Gas	0.020	ppb	35.0	1812.35	0.2	
Sb	123	115	No Gas	0.006	ppb	6.3	212.23	0.4	
Ba	137	115	No Gas	0.042	ppb	14.0	374.45	0.2	
W	182	159	No Gas	0.008	ppb	110.4	173.33	0.3	
Hg	201	159	He	0.006	ppb	4.1	21.50	0.1	
Tl	205	159	No Gas	0.066	ppb	37.0	2613.62	0.1	
Pb	208	159	No Gas	0.043	ppb	25.5	2821.24	0.1	
U	238	159	No Gas	0.020	ppb	42.5	926.70	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1906447.33	0.5	1956537.38	97.44	60	120	
Sc	45	No Gas	4169331.67	1.1	4192405.17	99.45	60	120	
Sc	45	H2	2399815.67	0.3	2362881.83	101.56	60	120	
Sc	45	He	436627.87	0.1	438124.68	99.66	60	120	
Ge	72	No Gas	1007318.86	2.4	1013334.19	99.41	60	120	
Ge	72	H2	675698.21	1.0	662101.66	102.05	60	120	
Ge	72	He	263909.03	1.1	261902.36	100.77	60	120	
In	115	No Gas	6218213.11	1.5	6149835.41	101.11	60	120	
Tb	159	No Gas	7970868.29	1.5	7818138.86	101.95	60	120	
Tb	159	He	4278174.17	1.0	4239548.33	100.91	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV4
File Name	H6G23045.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:01:25
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.815	ppb	2.3	344441.27	25	95.26	90	110	
Be	9	6	No Gas	23.340	ppb	2.4	75346.75	25	93.36	90	110	
B	11	6	No Gas	45.836	ppb	2.9	116573.56	50	91.67	90	110	
Na	23	45	H2	24583.643	ppb	1.2	97293624.00	25000	98.33	90	110	
Mg	24	45	No Gas	24560.320	ppb	2.5	264603120.00	25000	98.24	90	110	
Al	27	45	No Gas	23966.617	ppb	2.7	333432475.03	25000	95.87	90	110	
Si	28	45	H2	2447.507	ppb	1.6	2757825.42	2500	97.9	90	110	
P	31	45	No Gas	231.814	ppb	3.1	218953.26	250	92.73	90	110	
K	39	45	He	24578.571	ppb	1.2	16810063.33	25000	98.31	90	110	
Ca	40	45	H2	24558.177	ppb	1.2	208065829.33	25000	98.23	90	110	
Ti	47	45	No Gas	241.842	ppb	2.3	386710.77	250	96.74	90	110	
V	51	45	He	246.756	ppb	1.2	1309528.17	250	98.7	90	110	
Cr	52	45	He	246.116	ppb	1.7	1482757.87	250	98.45	90	110	
Mn	55	45	No Gas	1475.616	ppb	3.0	38716397.33	1500	98.37	90	110	
Fe	56	45	H2	24583.439	ppb	1.4	291053653.33	25000	98.33	90	110	
Co	59	45	No Gas	244.182	ppb	1.7	5183057.33	250	97.67	90	110	
Ni	60	45	He	246.017	ppb	1.2	501506.74	250	98.41	90	110	
Cu	63	45	He	247.763	ppb	1.1	1301287.09	250	99.11	90	110	
Zn	66	72	No Gas	238.499	ppb	3.1	830987.44	250	95.4	90	110	
As	75	72	He	245.263	ppb	0.5	258593.26	250	98.11	90	110	
Se	78	72	H2	242.354	ppb	1.7	90095.65	250	96.94	90	110	
Sr	88	72	No Gas	243.302	ppb	3.0	7446558.87	250	97.32	90	110	
Zr	90	72	No Gas	24.245	ppb	3.6	461457.08	25	96.98	90	110	
Mo	95	115	No Gas	236.546	ppb	2.4	1429277.86	250	94.62	90	110	
Ag	107	115	No Gas	24.025	ppb	1.9	362039.86	25	96.1	90	110	
Cd	111	115	No Gas	238.739	ppb	2.7	733535.07	250	95.5	90	110	
Sn	118	115	No Gas	241.986	ppb	2.6	2222353.18	250	96.79	90	110	
Sb	123	115	No Gas	47.645	ppb	2.3	505485.14	50	95.29	90	110	
Ba	137	115	No Gas	480.027	ppb	3.1	2318100.12	500	96.01	90	110	
W	182	159	No Gas	24.326	ppb	1.2	256630.82	25	97.3	90	110	
Hg	201	159	He	2.465	ppb	1.0	2254.04	2.5	98.6	90	110	
Tl	205	159	No Gas	247.097	ppb	0.9	5849000.88	250	98.84	90	110	
Pb	208	159	No Gas	246.287	ppb	1.0	7887153.57	250	98.51	90	110	
U	238	159	No Gas	242.598	ppb	2.0	7271009.99	250	97.04	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1887245.81	0.7	1956537.38	96.46	60	120	
Sc	45	No Gas	4086248.50	0.8	4192405.17	97.47	60	120	
Sc	45	H2	2376776.25	1.5	2362881.83	100.59	60	120	
Sc	45	He	434970.96	1.2	438124.68	99.28	60	120	
Ge	72	No Gas	1011310.58	1.5	1013334.19	99.8	60	120	
Ge	72	H2	668893.14	1.5	662101.66	101.03	60	120	
Ge	72	He	261622.70	0.8	261902.36	99.89	60	120	
In	115	No Gas	6037128.49	1.1	6149835.41	98.17	60	120	
Tb	159	No Gas	8025650.52	1.7	7818138.86	102.65	60	120	
Tb	159	He	4352346.00	0.8	4239548.33	102.66	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB4
File Name	H6G23046.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:04:19
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	106490.49	0.4	
Be	9	6	No Gas	0.011	ppb	31.7	80.00	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	29782.59	4	
Na	23	45	H2	17.544	ppb	7.0	458401.59	40	
Mg	24	45	No Gas	4.176	ppb	50.9	72124.60	10	
Al	27	45	No Gas	2.007	ppb	91.4	54437.48	15	
Si	28	45	H2	0.409	ppb	14.3	4279.99	8	
P	31	45	No Gas	<0.000	ppb	N/A	23829.76	10	
K	39	45	He	4.158	ppb	135.0	99194.14	20	
Ca	40	45	H2	2.697	ppb	24.5	346427.57	25	
Ti	47	45	No Gas	0.055	ppb	21.3	314.00	0.5	
V	51	45	He	0.029	ppb	4.1	5029.59	0.5	
Cr	52	45	He	<0.000	ppb	N/A	684.02	0.2	
Mn	55	45	No Gas	0.148	ppb	79.7	15312.15	0.2	
Fe	56	45	H2	0.401	ppb	20.6	26923.17	10	
Co	59	45	No Gas	0.022	ppb	86.4	910.70	0.15	
Ni	60	45	He	<0.000	ppb	N/A	288.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1606.09	0.4	
Zn	66	72	No Gas	0.022	ppb	114.2	3443.11	2	
As	75	72	He	0.035	ppb	91.9	281.00	0.2	
Se	78	72	H2	0.024	ppb	47.6	29.00	0.2	
Sr	88	72	No Gas	0.050	ppb	41.4	2620.27	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	150.00	2	
Mo	95	115	No Gas	0.046	ppb	42.2	430.01	0.2	
Ag	107	115	No Gas	0.002	ppb	38.6	136.67	0.08	
Cd	111	115	No Gas	0.059	ppb	38.7	266.84	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1554.54	0.2	
Sb	123	115	No Gas	0.008	ppb	62.3	237.78	0.4	
Ba	137	115	No Gas	0.044	ppb	62.1	388.90	0.2	
W	182	159	No Gas	0.003	ppb	98.8	123.33	0.3	
Hg	201	159	He	0.001	ppb	388.6	17.67	0.1	
Tl	205	159	No Gas	0.070	ppb	43.8	2726.99	0.1	
Pb	208	159	No Gas	0.025	ppb	68.6	2286.76	0.1	
U	238	159	No Gas	0.026	ppb	84.3	1138.96	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1910077.53	1.3	1956537.38	97.63	60	120	
Sc	45	No Gas	4144591.00	1.7	4192405.17	98.86	60	120	
Sc	45	H2	2423043.50	0.7	2362881.83	102.55	60	120	
Sc	45	He	446549.76	0.8	438124.68	101.92	60	120	
Ge	72	No Gas	1015680.67	1.1	1013334.19	100.23	60	120	
Ge	72	H2	688533.04	0.1	662101.66	103.99	60	120	
Ge	72	He	269252.24	0.6	261902.36	102.81	60	120	
In	115	No Gas	6278820.29	0.5	6149835.41	102.1	60	120	
Tb	159	No Gas	8060167.18	1.7	7818138.86	103.1	60	120	
Tb	159	He	4370170.83	0.5	4239548.33	103.08	60	120	

Sample Report

Sample Name	F210-01M
File Name	H6G23047.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 12:07:13
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.608	4.661	ppb	1.5	153001.01	50	
Be	9	6	No Gas	28.370	2.837	ppb	1.6	9227.48	50	
B	11	6	No Gas	37.465	3.746	ppb	3.6	42484.03	100	
Na	23	45	H2	29764.262	2976.426	ppb	0.9	12531041.00	50000	
Mg	24	45	No Gas	41425.803	4142.580	ppb	1.1	45539744.00	50000	
Al	27	45	No Gas	2864.977	286.498	ppb	0.7	4090998.69	50000	
Si	28	45	H2	8723.629	872.363	ppb	1.5	1019348.00	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	23897.87	500	
K	39	45	He	5421.140	542.114	ppb	1.6	476211.70	50000	
Ca	40	45	H2	133484.904	13348.490	ppb	0.5	117135989.33	50000	
Ti	47	45	No Gas	29.656	2.966	ppb	2.2	5060.27	500	
V	51	45	He	31.362	3.136	ppb	1.4	21962.90	500	
Cr	52	45	He	29.931	2.993	ppb	0.7	19390.36	500	
Mn	55	45	No Gas	346.505	34.651	ppb	0.7	938394.29	3000	
Fe	56	45	H2	3166.131	316.613	ppb	0.7	3899743.25	50000	
Co	59	45	No Gas	30.563	3.056	ppb	1.9	66610.32	500	
Ni	60	45	He	36.159	3.616	ppb	0.6	8103.08	500	
Cu	63	45	He	28.106	2.811	ppb	2.7	18503.90	500	
Zn	66	72	No Gas	64.038	6.404	ppb	1.4	26348.86	500	
As	75	72	He	29.301	2.930	ppb	3.0	3468.45	500	
Se	78	72	H2	28.595	2.859	ppb	4.1	1137.05	500	
Sr	88	72	No Gas	1284.878	128.488	ppb	1.6	4052530.54	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	200.00	50	
Mo	95	115	No Gas	33.227	3.323	ppb	1.6	21009.89	500	
Ag	107	115	No Gas	28.706	2.871	ppb	1.4	45081.14	50	
Cd	111	115	No Gas	28.151	2.815	ppb	0.6	9073.38	500	
Sn	118	115	No Gas	26.952	2.695	ppb	3.1	27352.86	500	
Sb	123	115	No Gas	28.413	2.841	ppb	0.5	31481.07	100	
Ba	137	115	No Gas	57.540	5.754	ppb	1.0	29062.45	1000	
W	182	159	No Gas	0.001	0.000	ppb	729.6	86.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.50	5	
Tl	205	159	No Gas	29.319	2.932	ppb	1.4	70203.26	500	
Pb	208	159	No Gas	28.896	2.890	ppb	2.4	93649.45	500	
U	238	159	No Gas	28.781	2.878	ppb	0.8	86297.05	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1894196.99	1.6	1956537.38	96.81	60	120	
Sc	45	No Gas	4167154.00	2.0	4192405.17	99.4	60	120	
Sc	45	H2	2458345.33	0.6	2362881.83	104.04	60	120	
Sc	45	He	447848.59	0.7	438124.68	102.22	60	120	
Ge	72	No Gas	1041603.96	1.1	1013334.19	102.79	60	120	
Ge	72	H2	702753.25	0.8	662101.66	106.14	60	120	
Ge	72	He	273109.40	0.3	261902.36	104.28	60	120	
In	115	No Gas	6276760.58	1.9	6149835.41	102.06	60	120	
Tb	159	No Gas	7997434.13	1.7	7818138.86	102.29	60	120	
Tb	159	He	4313943.00	0.4	4239548.33	101.75	60	120	

Sample Report

Sample Name	F210-01S
File Name	H6G23048.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:10:06
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	46.100	4.610	ppb	3.9	151680.23	50	
Be	9	6	No Gas	27.479	2.748	ppb	2.2	8891.71	50	
B	11	6	No Gas	35.486	3.549	ppb	8.1	41906.75	100	
Na	23	45	H2	29651.150	2965.115	ppb	1.6	12315430.67	50000	
Mg	24	45	No Gas	40879.530	4087.953	ppb	1.8	44837265.33	50000	
Al	27	45	No Gas	2816.768	281.677	ppb	1.0	4013391.82	50000	
Si	28	45	H2	8686.993	868.699	ppb	1.2	1001304.31	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	23493.84	500	
K	39	45	He	5297.314	529.731	ppb	1.9	468113.11	50000	
Ca	40	45	H2	132363.860	13236.386	ppb	0.9	114578954.67	50000	
Ti	47	45	No Gas	28.926	2.893	ppb	0.6	4928.22	500	
V	51	45	He	31.620	3.162	ppb	0.9	22128.50	500	
Cr	52	45	He	29.583	2.958	ppb	0.8	19196.10	500	
Mn	55	45	No Gas	339.938	33.994	ppb	1.2	918690.54	3000	
Fe	56	45	H2	3131.402	313.140	ppb	0.9	3804880.17	50000	
Co	59	45	No Gas	29.858	2.986	ppb	1.7	64933.69	500	
Ni	60	45	He	35.021	3.502	ppb	1.5	7873.61	500	
Cu	63	45	He	27.458	2.746	ppb	1.0	18176.79	500	
Zn	66	72	No Gas	64.100	6.410	ppb	1.2	26107.12	500	
As	75	72	He	28.409	2.841	ppb	1.3	3371.09	500	
Se	78	72	H2	29.357	2.936	ppb	5.3	1152.72	500	
Sr	88	72	No Gas	1277.125	127.712	ppb	0.9	3987294.29	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	136.67	50	
Mo	95	115	No Gas	32.729	3.273	ppb	1.5	20482.42	500	
Ag	107	115	No Gas	28.166	2.817	ppb	2.9	43765.61	50	
Cd	111	115	No Gas	27.288	2.729	ppb	2.3	8704.84	500	
Sn	118	115	No Gas	26.536	2.654	ppb	1.4	26680.37	500	
Sb	123	115	No Gas	27.436	2.744	ppb	1.6	30085.61	100	
Ba	137	115	No Gas	56.250	5.625	ppb	0.9	28109.27	1000	
W	182	159	No Gas	0.035	0.004	ppb	40.7	123.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.67	5	
Tl	205	159	No Gas	28.415	2.841	ppb	2.7	68123.02	500	
Pb	208	159	No Gas	28.535	2.854	ppb	2.9	92577.53	500	
U	238	159	No Gas	28.584	2.858	ppb	1.5	85768.85	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1884094.37	1.4	1956537.38	96.3	60	120	
Sc	45	No Gas	4157065.83	1.5	4192405.17	99.16	60	120	
Sc	45	H2	2425020.17	0.5	2362881.83	102.63	60	120	
Sc	45	He	448357.22	0.8	438124.68	102.34	60	120	
Ge	72	No Gas	1031085.40	1.6	1013334.19	101.75	60	120	
Ge	72	H2	694548.48	1.1	662101.66	104.9	60	120	
Ge	72	He	273188.20	0.4	261902.36	104.31	60	120	
In	115	No Gas	6210312.73	0.8	6149835.41	100.98	60	120	
Tb	159	No Gas	8002158.01	0.1	7818138.86	102.35	60	120	
Tb	159	He	4348801.00	0.8	4239548.33	102.58	60	120	

Sample Report

Sample Name	F210-01A
File Name	H6G23049.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:12:59
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	314.238	31.424	ppb	2.7	419288.80	50	
Be	9	6	No Gas	290.445	29.044	ppb	1.9	93430.85	50	
B	11	6	No Gas	324.663	32.466	ppb	3.3	92673.30	100	
Na	23	45	H2	57765.834	5776.583	ppb	1.1	23408546.00	50000	
Mg	24	45	No Gas	69343.553	6934.355	ppb	2.7	75228370.67	50000	
Al	27	45	No Gas	29688.779	2968.878	ppb	3.5	41604001.88	50000	
Si	28	45	H2	8842.709	884.271	ppb	0.9	1009847.54	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	23455.79	500	
K	39	45	He	32911.756	3291.176	ppb	0.3	2365536.83	50000	
Ca	40	45	H2	163356.427	16335.643	ppb	1.1	140034421.33	50000	
Ti	47	45	No Gas	305.233	30.523	ppb	2.5	49329.16	500	
V	51	45	He	305.693	30.569	ppb	0.3	168767.33	500	
Cr	52	45	He	309.128	30.913	ppb	0.2	189624.37	500	
Mn	55	45	No Gas	632.069	63.207	ppb	2.3	1680332.08	3000	
Fe	56	45	H2	31160.727	3116.073	ppb	1.1	37319168.00	50000	
Co	59	45	No Gas	305.990	30.599	ppb	1.8	654245.77	500	
Ni	60	45	He	311.956	31.196	ppb	0.5	64948.11	500	
Cu	63	45	He	319.258	31.926	ppb	0.9	172939.79	500	
Zn	66	72	No Gas	597.512	59.751	ppb	1.6	213312.60	500	
As	75	72	He	299.450	29.945	ppb	0.8	32466.60	500	
Se	78	72	H2	299.062	29.906	ppb	0.6	11419.83	500	
Sr	88	72	No Gas	1584.842	158.484	ppb	1.6	4911284.94	500	
Zr	90	72	No Gas	0.102	0.010	ppb	57.3	420.02	50	
Mo	95	115	No Gas	283.459	28.346	ppb	2.1	175817.35	500	
Ag	107	115	No Gas	266.481	26.648	ppb	1.2	411894.52	50	
Cd	111	115	No Gas	288.423	28.842	ppb	1.6	90978.54	500	
Sn	118	115	No Gas	285.127	28.513	ppb	1.3	270049.99	500	
Sb	123	115	No Gas	284.803	28.480	ppb	1.3	310014.55	100	
Ba	137	115	No Gas	311.071	31.107	ppb	1.1	154247.78	1000	
W	182	159	No Gas	0.082	0.008	ppb	22.1	170.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.67	5	
Tl	205	159	No Gas	306.142	30.614	ppb	0.4	715636.19	500	
Pb	208	159	No Gas	303.661	30.366	ppb	1.3	960470.24	500	
U	238	159	No Gas	298.853	29.885	ppb	0.9	883746.01	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1880815.57	1.0	1956537.38	96.13	60	120	
Sc	45	No Gas	4113445.92	0.3	4192405.17	98.12	60	120	
Sc	45	H2	2402835.67	0.8	2362881.83	101.69	60	120	
Sc	45	He	441148.14	0.5	438124.68	100.69	60	120	
Ge	72	No Gas	1023494.90	1.1	1013334.19	101	60	120	
Ge	72	H2	685958.69	0.6	662101.66	103.6	60	120	
Ge	72	He	267270.69	0.4	261902.36	102.05	60	120	
In	115	No Gas	6191815.62	0.8	6149835.41	100.68	60	120	
Tb	159	No Gas	7915174.41	0.9	7818138.86	101.24	60	120	
Tb	159	He	4302129.83	0.7	4239548.33	101.48	60	120	

Sample Report

Sample Name	F210-01I
File Name	H6G23050.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:15:53
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.767	1.977	ppb	6.5	126238.82	50	
Be	9	6	No Gas	0.118	0.012	ppb	46.5	81.11	50	
B	11	6	No Gas	4.284	0.428	ppb	24.4	36677.74	100	
Na	23	45	H2	26900.710	2690.071	ppb	0.5	11258992.67	50000	
Mg	24	45	No Gas	38234.025	3823.403	ppb	2.2	42130377.33	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	23069.50	50000	
Si	28	45	H2	8730.992	873.099	ppb	1.0	1010834.29	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	23630.74	500	
K	39	45	He	2432.826	243.283	ppb	2.2	267591.19	50000	
Ca	40	45	H2	132585.378	13258.538	ppb	0.6	115279765.33	50000	
Ti	47	45	No Gas	0.633	0.063	ppb	29.4	329.33	500	
V	51	45	He	2.618	0.262	ppb	6.3	6326.80	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	780.02	500	
Mn	55	45	No Gas	313.969	31.397	ppb	0.6	853172.92	3000	
Fe	56	45	H2	180.271	18.027	ppb	1.0	240929.27	50000	
Co	59	45	No Gas	0.796	0.080	ppb	3.4	2178.18	500	
Ni	60	45	He	5.741	0.574	ppb	2.0	1728.78	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1638.77	500	
Zn	66	72	No Gas	5.243	0.524	ppb	5.2	5282.36	500	
As	75	72	He	0.664	0.066	ppb	17.0	315.67	500	
Se	78	72	H2	0.820	0.082	ppb	37.8	51.67	500	
Sr	88	72	No Gas	1265.479	126.548	ppb	1.0	3956515.81	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	140.00	50	
Mo	95	115	No Gas	6.173	0.617	ppb	1.4	3990.60	500	
Ag	107	115	No Gas	0.090	0.009	ppb	21.9	248.89	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	77.60	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1052.27	500	
Sb	123	115	No Gas	0.245	0.024	ppb	23.0	412.23	100	
Ba	137	115	No Gas	30.233	3.023	ppb	2.0	15246.73	1000	
W	182	159	No Gas	0.022	0.002	ppb	72.3	110.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	563.35	500	
Pb	208	159	No Gas	0.073	0.007	ppb	63.5	1713.38	500	
U	238	159	No Gas	1.048	0.105	ppb	2.2	3498.28	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1897682.05	1.7	1956537.38	96.99	60	120	
Sc	45	No Gas	4175891.33	1.7	4192405.17	99.61	60	120	
Sc	45	H2	2435727.58	0.3	2362881.83	103.08	60	120	
Sc	45	He	448889.34	1.0	438124.68	102.46	60	120	
Ge	72	No Gas	1032589.39	0.8	1013334.19	101.9	60	120	
Ge	72	H2	694167.67	0.3	662101.66	104.84	60	120	
Ge	72	He	270092.76	0.6	261902.36	103.13	60	120	
In	115	No Gas	6235432.09	0.8	6149835.41	101.39	60	120	
Tb	159	No Gas	8039039.96	0.5	7818138.86	102.83	60	120	
Tb	159	He	4323020.33	0.5	4239548.33	101.97	60	120	

Sample Report

Sample Name	F210-01J
File Name	H6G23051.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:18:46
Sample Type	Sample
Total Dilution	50.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	26.482	0.530	ppb	13.6	110090.44	50	
Be	9	6	No Gas	0.083	0.002	ppb	179.8	47.78	50	
B	11	6	No Gas	<0.000	<0.000	ppb	N/A	29746.95	100	
Na	23	45	H2	27043.317	540.866	ppb	0.5	2569084.33	50000	
Mg	24	45	No Gas	38751.984	775.040	ppb	4.7	8408345.33	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	9676.73	50000	
Si	28	45	H2	8556.024	171.120	ppb	1.6	200705.64	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	23513.88	500	
K	39	45	He	2532.119	50.642	ppb	7.0	132486.84	50000	
Ca	40	45	H2	128565.326	2571.307	ppb	0.9	22563944.67	50000	
Ti	47	45	No Gas	0.525	0.010	ppb	124.1	238.67	500	
V	51	45	He	12.471	0.249	ppb	8.7	6266.77	500	
Cr	52	45	He	<0.000	<0.000	ppb	N/A	602.68	500	
Mn	55	45	No Gas	315.140	6.303	ppb	3.6	177245.99	3000	
Fe	56	45	H2	115.054	2.301	ppb	0.6	49990.48	50000	
Co	59	45	No Gas	0.330	0.007	ppb	10.9	584.68	500	
Ni	60	45	He	0.210	0.004	ppb	333.4	531.34	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1456.08	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	1244.72	500	
As	75	72	He	1.230	0.025	ppb	17.6	272.00	500	
Se	78	72	H2	<0.000	<0.000	ppb	N/A	19.67	500	
Sr	88	72	No Gas	1259.191	25.184	ppb	2.2	782263.56	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	150.00	50	
Mo	95	115	No Gas	5.201	0.104	ppb	8.4	785.58	500	
Ag	107	115	No Gas	<0.000	<0.000	ppb	N/A	104.44	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	31.53	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	543.34	500	
Sb	123	115	No Gas	0.083	0.002	ppb	110.6	162.22	100	
Ba	137	115	No Gas	28.202	0.564	ppb	2.0	2972.57	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	70.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	12.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	407.78	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	855.56	500	
U	238	159	No Gas	0.651	0.013	ppb	7.3	732.24	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1871086.58	1.6	1956537.38	95.63	60	120	
Sc	45	No Gas	4102882.50	1.4	4192405.17	97.86	60	120	
Sc	45	H2	2429882.00	0.4	2362881.83	102.84	60	120	
Sc	45	He	449369.78	0.8	438124.68	102.57	60	120	
Ge	72	No Gas	1024737.44	0.3	1013334.19	101.13	60	120	
Ge	72	H2	691117.23	1.4	662101.66	104.38	60	120	
Ge	72	He	271829.67	0.7	261902.36	103.79	60	120	
In	115	No Gas	6223873.42	0.7	6149835.41	101.2	60	120	
Tb	159	No Gas	7939446.91	0.8	7818138.86	101.55	60	120	
Tb	159	He	4291274.17	0.4	4239548.33	101.22	60	120	

Sample Report

Sample Name	F210-04l
File Name	H6G23052.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 12:21:39
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	16.437	1.644	ppb	6.5	122591.46	50	
Be	9	6	No Gas	0.033	0.003	ppb	120.9	53.33	50	
B	11	6	No Gas	42.035	4.204	ppb	6.8	43270.87	100	
Na	23	45	H2	121883.617	12188.362	ppb	1.7	49971072.00	50000	
Mg	24	45	No Gas	53244.065	5324.407	ppb	2.1	58288005.33	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	23616.81	50000	
Si	28	45	H2	7412.066	741.207	ppb	1.2	864517.27	5000	
P	31	45	No Gas	2.253	0.225	ppb	331.2	25284.99	500	
K	39	45	He	2565.772	256.577	ppb	2.0	277469.50	50000	
Ca	40	45	H2	157728.813	15772.881	ppb	0.9	138008634.67	50000	
Ti	47	45	No Gas	2.969	0.297	ppb	11.5	706.69	500	
V	51	45	He	5.557	0.556	ppb	0.2	7947.64	500	
Cr	52	45	He	0.505	0.051	ppb	13.5	1150.05	500	
Mn	55	45	No Gas	19.830	1.983	ppb	0.8	64240.54	3000	
Fe	56	45	H2	3.606	0.361	ppb	5.0	26747.46	50000	
Co	59	45	No Gas	0.078	0.008	ppb	12.0	616.68	500	
Ni	60	45	He	<0.000	<0.000	ppb	N/A	414.68	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1602.76	500	
Zn	66	72	No Gas	4.673	0.467	ppb	6.0	5099.63	500	
As	75	72	He	1.358	0.136	ppb	17.8	394.34	500	
Se	78	72	H2	0.598	0.060	ppb	42.8	43.33	500	
Sr	88	72	No Gas	1055.309	105.531	ppb	1.8	3312479.59	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	100.00	50	
Mo	95	115	No Gas	0.385	0.039	ppb	19.7	378.90	500	
Ag	107	115	No Gas	0.031	0.003	ppb	29.2	156.67	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	35.60	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	925.59	500	
Sb	123	115	No Gas	0.022	0.002	ppb	29.3	168.89	100	
Ba	137	115	No Gas	65.060	6.506	ppb	0.9	32693.31	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	43.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	10.67	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	417.79	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1086.69	500	
U	238	159	No Gas	1.444	0.144	ppb	2.5	4665.34	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1893382.06	1.8	1956537.38	96.77	60	120	
Sc	45	No Gas	4149682.67	1.3	4192405.17	98.98	60	120	
Sc	45	H2	2452347.25	0.8	2362881.83	103.79	60	120	
Sc	45	He	449784.57	0.8	438124.68	102.66	60	120	
Ge	72	No Gas	1036575.58	0.8	1013334.19	102.29	60	120	
Ge	72	H2	696341.69	1.3	662101.66	105.17	60	120	
Ge	72	He	272254.90	0.1	261902.36	103.95	60	120	
In	115	No Gas	6249601.47	1.2	6149835.41	101.62	60	120	
Tb	159	No Gas	8006743.02	0.9	7818138.86	102.41	60	120	
Tb	159	He	4350502.50	0.7	4239548.33	102.62	60	120	

Sample Report

Sample Name	F210-05l
File Name	H6G23053.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:24:32
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.904	1.590	ppb	2.6	122568.14	50	
Be	9	6	No Gas	<0.000	<0.000	ppb	N/A	41.11	50	
B	11	6	No Gas	61.938	6.194	ppb	3.9	46989.46	100	
Na	23	45	H2	142727.683	14272.768	ppb	0.4	58319562.67	50000	
Mg	24	45	No Gas	53766.086	5376.609	ppb	2.4	59574046.67	50000	
Al	27	45	No Gas	10.991	1.099	ppb	14.1	42458.64	50000	
Si	28	45	H2	7427.944	742.794	ppb	0.5	864409.85	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	24596.40	500	
K	39	45	He	2711.469	271.147	ppb	1.9	288221.10	50000	
Ca	40	45	H2	163079.771	16307.977	ppb	0.5	142355845.33	50000	
Ti	47	45	No Gas	0.309	0.031	ppb	13.0	278.00	500	
V	51	45	He	5.429	0.543	ppb	1.7	7891.60	500	
Cr	52	45	He	0.127	0.013	ppb	31.0	916.03	500	
Mn	55	45	No Gas	157.012	15.701	ppb	1.5	434916.02	3000	
Fe	56	45	H2	51.713	5.171	ppb	1.5	85317.79	50000	
Co	59	45	No Gas	0.613	0.061	ppb	7.8	1790.12	500	
Ni	60	45	He	1.529	0.153	ppb	2.3	846.70	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1598.76	500	
Zn	66	72	No Gas	1.163	0.116	ppb	15.1	3824.54	500	
As	75	72	He	1.089	0.109	ppb	6.1	365.67	500	
Se	78	72	H2	0.459	0.046	ppb	57.7	37.67	500	
Sr	88	72	No Gas	1096.477	109.648	ppb	0.9	3417672.08	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	110.00	50	
Mo	95	115	No Gas	0.979	0.098	ppb	4.4	747.80	500	
Ag	107	115	No Gas	0.018	0.002	ppb	69.3	136.67	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	31.13	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	527.79	500	
Sb	123	115	No Gas	0.020	0.002	ppb	193.2	166.67	100	
Ba	137	115	No Gas	81.164	8.116	ppb	0.3	40592.21	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	83.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	355.56	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	906.68	500	
U	238	159	No Gas	1.534	0.153	ppb	3.2	4906.54	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1901220.13	2.0	1956537.38	97.17	60	120	
Sc	45	No Gas	4199996.00	1.6	4192405.17	100.18	60	120	
Sc	45	H2	2446668.67	0.1	2362881.83	103.55	60	120	
Sc	45	He	450592.44	1.3	438124.68	102.85	60	120	
Ge	72	No Gas	1029403.66	1.3	1013334.19	101.59	60	120	
Ge	72	H2	692662.81	0.3	662101.66	104.62	60	120	
Ge	72	He	272898.57	1.0	261902.36	104.2	60	120	
In	115	No Gas	6226581.45	2.3	6149835.41	101.25	60	120	
Tb	159	No Gas	7962664.40	1.2	7818138.86	101.85	60	120	
Tb	159	He	4311130.33	0.5	4239548.33	101.69	60	120	

Sample Report

Sample Name	F210-07I
File Name	H6G23054.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:27:25
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Flal	Pass
ISTD QC Pass/Fall	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	24.627	2.463	ppb	5.1	132358.18	50	
Be	9	6	No Gas	0.014	0.001	ppb	96.7	47.78	50	
B	11	6	No Gas	50.335	5.033	ppb	2.3	45260.50	100	
Na	23	45	H2	70488.230	7048.823	ppb	1.1	28866677.33	50000	
Mg	24	45	No Gas	48865.480	4888.548	ppb	1.5	54029997.33	50000	
Al	27	45	No Gas	137.041	13.704	ppb	2.9	222194.22	50000	
Si	28	45	H2	7464.441	746.444	ppb	0.7	864648.71	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	25047.26	500	
K	39	45	He	3214.581	321.458	ppb	2.6	328339.72	50000	
Ca	40	45	H2	144568.541	14456.854	ppb	0.5	125655573.33	50000	
Ti	47	45	No Gas	2.055	0.206	ppb	7.8	563.34	500	
V	51	45	He	5.197	0.520	ppb	9.2	7876.93	500	
Cr	52	45	He	2.534	0.253	ppb	5.1	2452.22	500	
Mn	55	45	No Gas	198.241	19.824	ppb	0.2	544678.52	3000	
Fe	56	45	H2	746.484	74.648	ppb	0.1	927868.02	50000	
Co	59	45	No Gas	2.395	0.239	ppb	0.7	5664.51	500	
Ni	60	45	He	3.195	0.319	ppb	1.7	1215.39	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1642.10	500	
Zn	66	72	No Gas	<0.000	<0.000	ppb	N/A	2798.96	500	
As	75	72	He	2.556	0.256	ppb	4.6	529.01	500	
Se	78	72	H2	0.190	0.019	ppb	44.4	27.67	500	
Sr	88	72	No Gas	1060.137	106.014	ppb	1.6	3363638.13	500	
Zr	90	72	No Gas	0.130	0.013	ppb	10.6	483.34	50	
Mo	95	115	No Gas	2.851	0.285	ppb	4.0	1930.14	500	
Ag	107	115	No Gas	0.080	0.008	ppb	31.6	234.45	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	36.59	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	573.35	500	
Sb	123	115	No Gas	<0.000	<0.000	ppb	N/A	143.33	100	
Ba	137	115	No Gas	73.530	7.353	ppb	3.2	37082.80	1000	
W	182	159	No Gas	0.007	0.001	ppb	710.3	93.33	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	8.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	392.23	500	
Pb	208	159	No Gas	0.068	0.007	ppb	31.8	1687.83	500	
U	238	159	No Gas	2.696	0.270	ppb	1.2	8391.77	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1915233.79	1.1	1956537.38	97.89	60	120	
Sc	45	No Gas	4189430.92	1.6	4192405.17	99.93	60	120	
Sc	45	H2	2435490.25	0.5	2362881.83	103.07	60	120	
Sc	45	He	457105.88	0.2	438124.68	104.33	60	120	
Ge	72	No Gas	1047890.79	1.0	1013334.19	103.41	60	120	
Ge	72	H2	701859.75	0.5	662101.66	106	60	120	
Ge	72	He	274011.10	0.6	261902.36	104.62	60	120	
In	115	No Gas	6277003.64	1.9	6149835.41	102.07	60	120	
Tb	159	No Gas	7989466.90	1.5	7818138.86	102.19	60	120	
Tb	159	He	4297550.17	0.8	4239548.33	101.37	60	120	

Sample Report

Sample Name	F210-08I
File Name	H6G23055.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:30:19
Sample Type	Sample
Total Dilution	10.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	21.466	2.147	ppb	2.3	129738.28	50	
Be	9	6	No Gas	0.010	0.001	ppb	292.2	46.67	50	
B	11	6	No Gas	41.871	4.187	ppb	6.9	43949.62	100	
Na	23	45	H2	54923.886	5492.389	ppb	0.8	23018383.33	50000	
Mg	24	45	No Gas	46751.263	4675.126	ppb	2.7	51945914.67	50000	
Al	27	45	No Gas	<0.000	<0.000	ppb	N/A	10730.85	50000	
Si	28	45	H2	8184.341	818.434	ppb	0.7	966152.82	5000	
P	31	45	No Gas	<0.000	<0.000	ppb	N/A	24858.21	500	
K	39	45	He	2496.172	249.617	ppb	4.2	277141.56	50000	
Ca	40	45	H2	135000.290	13500.029	ppb	0.4	119644800.00	50000	
Ti	47	45	No Gas	0.482	0.048	ppb	45.4	307.33	500	
V	51	45	He	6.152	0.615	ppb	3.0	8411.25	500	
Cr	52	45	He	0.524	0.052	ppb	16.0	1180.72	500	
Mn	55	45	No Gas	<0.000	<0.000	ppb	N/A	11019.10	3000	
Fe	56	45	H2	<0.000	<0.000	ppb	N/A	20889.28	50000	
Co	59	45	No Gas	<0.000	<0.000	ppb	N/A	398.68	500	
Ni	60	45	He	0.281	0.028	ppb	24.6	592.01	500	
Cu	63	45	He	<0.000	<0.000	ppb	N/A	1993.48	500	
Zn	66	72	No Gas	40.559	4.056	ppb	3.6	18044.68	500	
As	75	72	He	0.947	0.095	ppb	9.3	351.00	500	
Se	78	72	H2	0.501	0.050	ppb	18.6	40.00	500	
Sr	88	72	No Gas	978.723	97.872	ppb	1.6	3102134.81	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	96.67	50	
Mo	95	115	No Gas	0.115	0.011	ppb	30.7	208.89	500	
Ag	107	115	No Gas	0.038	0.004	ppb	25.3	167.78	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	24.19	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	850.03	500	
Sb	123	115	No Gas	0.012	0.001	ppb	236.3	156.67	100	
Ba	137	115	No Gas	45.301	4.530	ppb	0.8	22700.93	1000	
W	182	159	No Gas	<0.000	<0.000	ppb	N/A	30.00	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	9.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	353.34	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1035.57	500	
U	238	159	No Gas	1.362	0.136	ppb	1.7	4385.23	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1924193.52	1.2	1956537.38	98.35	60	120	
Sc	45	No Gas	4211757.83	0.7	4192405.17	100.46	60	120	
Sc	45	H2	2482931.25	1.1	2362881.83	105.08	60	120	
Sc	45	He	457312.77	0.5	438124.68	104.38	60	120	
Ge	72	No Gas	1046622.37	1.3	1013334.19	103.29	60	120	
Ge	72	H2	705600.87	1.0	662101.66	106.57	60	120	
Ge	72	He	273684.23	0.6	261902.36	104.5	60	120	
In	115	No Gas	6218861.16	1.5	6149835.41	101.12	60	120	
Tb	159	No Gas	7941270.80	0.3	7818138.86	101.57	60	120	
Tb	159	He	4282819.33	0.4	4239548.33	101.02	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV5
File Name	H6G23056.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G23.b
Acq Time	2020-07-30 12:33:13
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.550	ppb	1.2	343074.97	25	98.2	90	110	
Be	9	6	No Gas	24.070	ppb	1.5	75777.87	25	96.28	90	110	
B	11	6	No Gas	47.692	ppb	2.4	116873.40	50	95.38	90	110	
Na	23	45	H2	24560.145	ppb	0.8	97240605.33	25000	98.24	90	110	
Mg	24	45	No Gas	24223.882	ppb	0.6	264395994.67	25000	96.9	90	110	
Al	27	45	No Gas	23707.187	ppb	1.1	334099161.69	25000	94.83	90	110	
Si	28	45	H2	2427.701	ppb	0.4	2736676.42	2500	97.11	90	110	
P	31	45	No Gas	236.069	ppb	1.6	225393.60	250	94.43	90	110	
K	39	45	He	24327.102	ppb	0.1	16827685.33	25000	97.31	90	110	
Ca	40	45	H2	24737.295	ppb	0.4	209656677.33	25000	98.95	90	110	
Ti	47	45	No Gas	246.240	ppb	0.4	398873.51	250	98.5	90	110	
V	51	45	He	247.448	ppb	0.5	1328065.25	250	98.98	90	110	
Cr	52	45	He	245.338	ppb	0.7	1494899.33	250	98.14	90	110	
Mn	55	45	No Gas	1474.765	ppb	0.5	39201797.33	1500	98.32	90	110	
Fe	56	45	H2	25131.622	ppb	0.3	297658048.00	25000	100.53	90	110	
Co	59	45	No Gas	245.323	ppb	0.8	5274898.67	250	98.13	90	110	
Ni	60	45	He	248.493	ppb	0.6	512278.71	250	99.4	90	110	
Cu	63	45	He	247.510	ppb	0.2	1314680.96	250	99	90	110	
Zn	66	72	No Gas	238.828	ppb	1.7	848799.48	250	95.53	90	110	
As	75	72	He	243.413	ppb	0.7	261187.38	250	97.37	90	110	
Se	78	72	H2	244.593	ppb	0.2	91868.83	250	97.84	90	110	
Sr	88	72	No Gas	240.358	ppb	1.5	7503877.20	250	96.14	90	110	
Zr	90	72	No Gas	24.184	ppb	1.6	469500.08	25	96.74	90	110	
Mo	95	115	No Gas	236.320	ppb	2.0	1433151.40	250	94.53	90	110	
Ag	107	115	No Gas	24.303	ppb	1.2	367588.15	25	97.21	90	110	
Cd	111	115	No Gas	242.609	ppb	1.3	748243.00	250	97.04	90	110	
Sn	118	115	No Gas	241.497	ppb	2.0	2226173.73	250	96.6	90	110	
Sb	123	115	No Gas	48.744	ppb	1.2	519079.48	50	97.49	90	110	
Ba	137	115	No Gas	482.648	ppb	2.0	2339454.00	500	96.53	90	110	
W	182	159	No Gas	24.670	ppb	2.2	263250.24	25	98.68	90	110	
Hg	201	159	He	2.475	ppb	1.5	2265.37	2.5	99	90	110	
Tl	205	159	No Gas	243.382	ppb	0.4	5827407.82	250	97.35	90	110	
Pb	208	159	No Gas	242.815	ppb	0.4	7866009.70	250	97.13	90	110	
U	238	159	No Gas	239.544	ppb	0.5	7262060.27	250	95.82	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1840693.07	1.8	1956537.38	94.08	60	120	
Sc	45	No Gas	4139501.42	1.7	4192405.17	98.74	60	120	
Sc	45	H2	2377384.00	0.5	2362881.83	100.61	60	120	
Sc	45	He	439859.81	0.6	438124.68	100.4	60	120	
Ge	72	No Gas	1031330.42	1.1	1013334.19	101.78	60	120	
Ge	72	H2	675732.33	0.2	662101.66	102.06	60	120	
Ge	72	He	266258.91	1.3	261902.36	101.66	60	120	
In	115	No Gas	6058870.42	0.9	6149835.41	98.52	60	120	
Tb	159	No Gas	8118098.84	1.8	7818138.86	103.84	60	120	
Tb	159	He	4355854.67	0.4	4239548.33	102.74	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB5
File Name	H6G23057.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:36:07
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	0.153	ppb	56.6	107117.30	0.4	
Be	9	6	No Gas	0.011	ppb	35.2	78.89	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	29039.93	4	
Na	23	45	H2	2.863	ppb	17.7	399502.24	40	
Mg	24	45	No Gas	4.502	ppb	62.2	75574.27	10	
Al	27	45	No Gas	3.675	ppb	69.8	77791.52	15	
Si	28	45	H2	<0.000	ppb	N/A	3687.16	8	
P	31	45	No Gas	<0.000	ppb	N/A	23959.30	10	
K	39	45	He	1.412	ppb	340.4	97997.56	20	
Ca	40	45	H2	0.365	ppb	143.6	326424.62	25	
Ti	47	45	No Gas	0.070	ppb	50.7	336.67	0.5	
V	51	45	He	<0.000	ppb	N/A	4676.13	0.5	
Cr	52	45	He	<0.000	ppb	N/A	618.68	0.2	
Mn	55	45	No Gas	0.236	ppb	72.8	17639.83	0.2	~~>LOD~~
Fe	56	45	H2	0.640	ppb	29.2	29807.25	10	
Co	59	45	No Gas	0.045	ppb	59.6	1411.42	0.15	
Ni	60	45	He	<0.000	ppb	N/A	264.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1412.74	0.4	
Zn	66	72	No Gas	0.002	ppb	2230.2	3393.10	2	
As	75	72	He	0.008	ppb	130.5	252.33	0.2	
Se	78	72	H2	0.054	ppb	21.0	40.33	0.2	
Sr	88	72	No Gas	0.047	ppb	57.1	2530.26	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	160.00	2	
Mo	95	115	No Gas	0.065	ppb	43.0	546.68	0.2	
Ag	107	115	No Gas	0.002	ppb	141.6	148.89	0.08	
Cd	111	115	No Gas	0.069	ppb	43.4	300.27	0.2	
Sn	118	115	No Gas	0.012	ppb	206.8	1769.01	0.2	
Sb	123	115	No Gas	0.008	ppb	50.4	237.78	0.4	
Ba	137	115	No Gas	0.077	ppb	61.5	552.24	0.2	
W	182	159	No Gas	0.004	ppb	131.1	130.00	0.3	
Hg	201	159	He	0.006	ppb	53.6	21.50	0.1	
Tl	205	159	No Gas	0.086	ppb	43.4	3130.42	0.1	
Pb	208	159	No Gas	0.039	ppb	68.3	2739.02	0.1	
U	238	159	No Gas	0.039	ppb	54.4	1534.55	0.05	

LY 07/30/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1884876.15	1.6	1956537.38	96.34	60	120	
Sc	45	No Gas	4152573.75	2.5	4192405.17	99.05	60	120	
Sc	45	H2	2423609.00	0.6	2362881.83	102.57	60	120	
Sc	45	He	449816.55	0.4	438124.68	102.67	60	120	
Ge	72	No Gas	1022093.06	1.9	1013334.19	100.86	60	120	
Ge	72	H2	685969.67	0.7	662101.66	103.6	60	120	
Ge	72	He	270488.57	0.9	261902.36	103.28	60	120	
In	115	No Gas	6315874.78	1.6	6149835.41	102.7	60	120	
Tb	159	No Gas	8101737.46	0.8	7818138.86	103.63	60	120	
Tb	159	He	4332055.67	0.3	4239548.33	102.18	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG3004
File Name	H6G23058.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G23.b
Acq Time	2020-07-30 12:39:00
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G23002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.111	ppb	8.3	116701.87	1	111.1	80	120	
Be	9	6	No Gas	0.937	ppb	3.3	3061.44	1	93.7	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	35573.81	10	-0.54	80	120	> +/- 20%
Na	23	45	H2	99.113	ppb	7.9	774173.46	100	99.11	80	120	
Mg	24	45	No Gas	94.899	ppb	1.0	1078760.31	100	94.9	80	120	
Al	27	45	No Gas	93.600	ppb	1.3	1366216.44	100	93.6	80	120	
Si	28	45	H2	95.984	ppb	4.9	112160.98	100	95.98	80	120	
P	31	45	No Gas	43.522	ppb	0.6	62928.84	50	87.04	80	120	
K	39	45	He	97.794	ppb	5.1	166620.48	100	97.79	80	120	
Ca	40	45	H2	73.979	ppb	7.4	946225.13	100	73.98	80	120	> +/- 20%
Ti	47	45	No Gas	1.006	ppb	4.0	1882.13	1	100.6	80	120	
V	51	45	He	1.068	ppb	2.3	10804.25	1	106.8	80	120	
Cr	52	45	He	1.001	ppb	2.4	7100.51	1	100.1	80	120	
Mn	55	45	No Gas	0.903	ppb	0.8	35925.11	1	90.3	80	120	
Fe	56	45	H2	101.492	ppb	5.8	1227368.08	100	101.49	80	120	
Co	59	45	No Gas	0.975	ppb	1.3	21738.65	1	97.5	80	120	
Ni	60	45	He	0.907	ppb	0.9	2446.22	1	90.7	80	120	
Cu	63	45	He	0.683	ppb	4.2	7092.52	1	68.3	80	120	> +/- 20%
Zn	66	72	No Gas	9.379	ppb	1.0	36947.53	10	93.79	80	120	
As	75	72	He	1.015	ppb	2.4	1371.74	1	101.5	80	120	
Se	78	72	H2	1.000	ppb	8.7	403.01	1	100	80	120	
Sr	88	72	No Gas	1.977	ppb	0.7	63376.26	2	98.85	80	120	
Zr	90	72	No Gas	3.681	ppb	2.4	72298.45	5	73.62	80	120	> +/- 20%
Mo	95	115	No Gas	0.896	ppb	0.6	5765.70	1	89.6	80	120	
Ag	107	115	No Gas	0.944	ppb	2.0	14886.16	1	94.4	80	120	
Cd	111	115	No Gas	0.979	ppb	2.0	3205.31	1	97.9	80	120	
Sn	118	115	No Gas	0.831	ppb	4.0	9563.49	1	83.1	80	120	
Sb	123	115	No Gas	0.911	ppb	1.4	10193.97	1	91.1	80	120	
Ba	137	115	No Gas	0.944	ppb	2.5	4904.26	1	94.4	80	120	
W	182	159	No Gas	1.998	ppb	0.9	21284.61	2	99.9	80	120	
Hg	201	159	He	0.084	ppb	11.3	92.33	0.1	84	80	120	
Tl	205	159	No Gas	0.957	ppb	0.4	23888.39	1	95.7	80	120	
Pb	208	159	No Gas	0.961	ppb	1.5	32441.06	1	96.1	80	120	
U	238	159	No Gas	0.912	ppb	0.7	27851.61	1	91.2	80	120	

LY 07/30/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1884481.72	1.5	1956537.38	96.32	60	120	
Sc	45	No Gas	4202787.08	2.0	4192405.17	100.25	60	120	
Sc	45	H2	2388365.92	4.2	2362881.83	101.08	60	120	
Sc	45	He	452043.05	1.2	438124.68	103.18	60	120	
Ge	72	No Gas	1040426.14	1.4	1013334.19	102.67	60	120	
Ge	72	H2	690342.81	3.4	662101.66	104.27	60	120	
Ge	72	He	274887.08	0.0	261902.36	104.96	60	120	
In	115	No Gas	6274215.62	1.3	6149835.41	102.02	60	120	
Tb	159	No Gas	8073883.01	2.1	7818138.86	103.27	60	120	
Tb	159	He	4328676.50	1.2	4239548.33	102.1	60	120	

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 07|31|20 10:50

End Date: 07|31|20 17:32

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

G055-02 MS|MSD not analyzed. Sample is an equipment blank.

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	IH6624
Analytical Sequence:	H6624
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☑ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☑ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-89-02	MRL1 (1)	SM6B-19-89-01
S1	90-01	MRL2 (0.4)	65-01
S2	90-02	MRL3 (CAT)	65-02
S3	91-01	MRL4 (B)	8701
S4	91-02	MRL5	NA
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A-007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	92-01	Post-Spike 3	NA
ICSA	87-02	Post-Spike 4	↓
ICSAB	88-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 07|31|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6G24
InstrumentID: H6

Lab Samp ID :	ICV	ICSA	ICSAB
QC Limit :	%R:90-110/RSD:<5	%R:80-120/<LOD	%R:80-120
Lab File ID :	H6G24008	H6G24012	H6G24013
DateAnalyed :	07/31/2011:09	07/31/2011:24	07/31/2011:33

Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		28.65	30	1.4	95	0.43742	0	>0	19.560	20	98
Beryllium	T	28.60	30	2.6	95	0.0017222	0	<0.10	19.986	20	100
Boron		30.23	30	1.3	101	2.1965	0	<5.0	20.736	20	104
Sodium	T	30550	30000	1.1	102	102400	100000	102	97817	100000	98
Magnesium	T	29680	30000	2.9	99	99508	100000	100	94800	100000	95
Aluminum	T	29610	30000	2.7	99	100530	100000	101	94694	100000	95
Silicon		3307	3000	1.1	110	5.6882	0	<20	217.95	200	109
Phosphorus		281.8	300	1.7	94	98035	100000	98	93213	100000	93
Potassium	T	29900	30000	1.5	100	103970	100000	104	97905	100000	98
Calcium	T	30600	30000	0.7	102	104060	100000	104	99145	100000	99
Titanium		300.2	300	1.3	100	2115.9	2000	106	2020.0	2000	101
Vanadium	T	311.4	300	0.9	104	0.047859	0	<0.25	19.920	20	100
Chromium	T	315.5	300	1.1	105	0.31841	0	>0.1	20.305	20	102
Manganese	T	1947	2000	0.9	97	0.25416	0	>0.25	19.586	20	98
Iron	T	30540	30000	0.9	102	101850	100000	102	99416	100000	99
Cobalt	T	303.4	300	1.6	101	0.35118	0	>0.1	19.535	20	98
Nickel	T	318.9	300	1.0	106	0.34459	0	>0.25	20.359	20	102
Copper	T	314.0	300	1.0	105	0.24775	0	<0.50	20.283	20	101
Zinc	T	308.5	300	2.1	103	1.9083	0	<5	21.371	20	107
Arsenic	T	313.3	300	0.4	104	0.090648	0	<0.125	19.617	20	98
Selenium	T	310.8	300	0.5	104	0.26804	0	>0.15	20.715	20	104
Strontium		309.2	300	1.9	103	0.85677	0	<1.0	20.634	20	103
Zirconium		29.03	30	1.0	97	0.22566	0	<2.0	19.871	20	99
Molybdenum		303.1	300	1.4	101	2036.9	2000	102	1976.8	2000	99
Silver	T	28.91	30	1.5	96	0.012623	0	<0.1	19.093	20	95
Cadmium	T	302.9	300	0.9	101	0.060413	0	<0.1	19.544	20	98
Tin		307.7	300	1.4	103	0.38661	0	>0.2	19.744	20	99
Antimony	T	57.53	60	1.1	96	0.15634	0	<0.25	19.347	20	97
Barium	T	307.8	300	1.2	103	0.34564	0	>0.25	19.506	20	98
Tungsten		31.08	30	1.4	104	0.19228	0	<1.0	18.628	20	93
Mercury		2.893	3	1.9	96	0.0047114	0	<0.1	2.0028	2	100
Thallium	T	311.3	300	2.8	104	0.022512	0	<0.1	19.434	20	97
Lead	T	313.3	300	1.9	104	0.099522	0	>0.05	19.344	20	97
Uranium		304.6	300	2.4	102	0.0082610	0	<0.1	19.588	20	98

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6G24
Instrument ID: H6

CCV SampleID		: CCV7				CCV8		
CCV DataFileID		: H6G24073				H6G24084		
CCV DateTime		: 07/31/20 14:37				07/31/20 15:09		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.6	98	2.7	24.1	96	0.7
Beryllium	T	25	24.9	100	3.0	23.9	95	0.6
Boron		50	47.7	95	3.4	44.8	90	0.2
Sodium	T	25000	24900	100	0.6	25300	101	2.5
Magnesium	T	25000	24600	98	1.8	25000	100	0.8
Aluminum	T	25000	24300	97	2.0	24700	99	2.0
Silicon		2500	2530	101	0.9	2540	102	1.8
Phosphorus		250	248	99	1.9	245	98	0.3
Potassium	T	25000	25200	101	0.5	25100	100	1.3
Calcium	T	25000	24700	99	0.3	24900	99	1.8
Titanium		250	248	99	1.7	245	98	0.8
Vanadium	T	250	246	99	0.3	252	101	0.4
Chromium	T	250	250	100	0.8	254	102	1.6
Manganese	T	1500	1490	99	1.2	1500	100	1.0
Iron	T	25000	24900	100	0.6	25200	101	1.7
Cobalt	T	250	247	99	1.8	249	100	0.5
Nickel	T	250	253	101	0.5	257	103	1.4
Copper	T	250	254	101	0.4	259	104	1.2
Zinc	T	250	246	98	2.0	247	99	0.9
Arsenic	T	250	247	99	0.6	245	98	0.8
Selenium	T	250	252	101	1.0	253	101	1.2
Strontium		250	244	98	2.3	247	99	0.5
Zirconium		25	24.6	98	1.1	24.9	100	0.8
Molybdenum		250	240	96	2.2	241	96	1.0
Silver	T	25	24.7	99	2.1	24.1	96	0.6
Cadmium	T	250	244	97	0.9	240	96	1.0
Tin		250	246	99	1.7	245	98	0.5
Antimony	T	50	49.4	99	1.3	48.2	96	1.6
Barium	T	500	487	97	1.1	485	97	0.3
Tungsten		25	25.1	100	2.0	24.8	99	2.3
Mercury		2.5	2.42	97	1.0	2.48	99	0.2
Thallium	T	250	244	98	2.1	251	100	1.4
Lead	T	250	245	98	1.7	250	100	1.2
Uranium		250	240	96	0.7	247	99	0.7

| Unit: ug/L
| T: Target analyte
|%Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : SW6020A
Sequence : IH6G24
Instrument ID: H6

CB SampleID			: ICB		CCB7		CCB8	
CB DataFileID			: H6G24009		H6G24074		H6G24085	
CB DateTime			: 07/31/2011:15		07/31/2014:40		07/31/2015:12	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.02	>0	0.01	>0	0.1	>0
Beryllium	T	0.10	0.005	<0.10	0.02	<0.10	0.01	<0.10
Boron		5.0	0.6	<5.0	4	<5.0	5	<5.0
Sodium	T	25	2	<25	20	<25	4	<25
Magnesium	T	25	2	<25	5	<25	8	<25
Aluminum	T	25	2	<25	5	<25	3	<25
Silicon		20	1	<20	0.2	<20	1.0	<20
Phosphorus		25	0.4	<25	2	<25	3	<25
Potassium	T	25	4	<25	5	<25	20	<25
Calcium	T	25	1	<25	0.3	<25	8	<25
Titanium		0.5	0.02	<0.5	0.08	<0.5	0.08	<0.5
Vanadium	T	0.25	0.04	<0.25	0.2	<0.25	0.1	<0.25
Chromium	T	0.1	0.009	<0.1	0.01	<0.1	0.01	<0.1
Manganese	T	0.25	0.1	<0.25	0.2	<0.25	0.2	<0.25
Iron	T	25	1	<25	2	<25	1	<25
Cobalt	T	0.1	0.02	<0.1	0.05	<0.1	0.03	<0.1
Nickel	T	0.25	0.009	<0.25	0.03	<0.25	0.05	<0.25
Copper	T	0.50	0.09	<0.50	0.2	<0.50	0.1	<0.50
Zinc	T	5	0.03	<5	0.04	<5	0.04	<5
Arsenic	T	0.125	0.02	<0.125	0.0002	<0.125	0.08	<0.125
Selenium	T	0.15	0.01	<0.15	0.03	<0.15	0.02	<0.15
Strontium		1.0	0.02	<1.0	0.04	<1.0	0.1	<1.0
Zirconium		2.0	0.01	<2.0	0.0008	<2.0	0.002	<2.0
Molybdenum		0.5	0.03	<0.5	0.08	<0.5	0.06	<0.5
Silver	T	0.1	0.004	<0.1	0.06	<0.1	0.03	<0.1
Cadmium	T	0.1	0.04	<0.1	0.08	<0.1	0.07	<0.1
Tin		0.2	0.04	<0.2	0.04	<0.2	0.03	<0.2
Antimony	T	0.25	0.008	<0.25	0.02	<0.25	0.02	<0.25
Barium	T	0.25	0.02	<0.25	0.08	<0.25	0.07	<0.25
Tungsten		1.0	0.0004	<1.0	0.003	<1.0	0.003	<1.0
Mercury		0.1	0.01	<0.1	0.005	<0.1	0.008	<0.1
Thallium	T	0.1	0.05	<0.1	0.09	<0.1	0.07	<0.1
Lead	T	0.05	0.03	<0.05	0.06	>0.05	0.03	<0.05
Uranium		0.1	0.02	<0.1	0.04	<0.1	0.03	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6G24001.d		1	
2		CalBlk	BLANK		1101	H6G24002.d		1	
3		CalStd	S0		1102	H6G24003.d		1	
4		CalStd	S1		1104	H6G24004.d		2	
5		CalStd	S2		1105	H6G24005.d		3	
6		CalStd	S3		1106	H6G24006.d		4	
7		CalStd	S4		1107	H6G24007.d		5	
8		ICV	ICV		1204	H6G24008.d			1
9		ICB	ICB		1102	H6G24009.d			1
10		LLCCV	MRLG3101 ✓	1/100/10 ppb B↓	1306	H6G24010.d			1
11		LLCCV2	MRLG3102	0.4/40/4 ppb ↓	1307	H6G24011.d			1
12		ICS-A	ICSA		1304	H6G24012.d			1
13		ICSB	ICSAB		1305	H6G24013.d			1
14		Sample	MRLG3103	500 ppb CAT	1207	H6G24014.d			1
15		Sample	MRLG3104 ✓	B @ 10 ppb	1301	H6G24015.d			1
16		CCV	CCV1		1206	H6G24016.d			1
17		CCB	CCB1		1102	H6G24017.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMG004WB		2101	H6G24018.d			1
2		LCSW	IMG004WL		2102	H6G24019.d			1
3		LCSW	IMG004WC		2103	H6G24020.d			1
4		Sample	F216-10N		2104	H6G24021.d			1
5		Sample	F216-14N		2105	H6G24022.d			1
6		CCV	CCV2		1206	H6G24023.d			1
7		CCB	CCB2		1102	H6G24024.d			1
8		Sample	IDL-01		1101	H6G24025.d			1
9		Sample	IDL-02		1101	H6G24026.d			1
10		Sample	IDL-03		1101	H6G24027.d			1
11		Sample	IDL-04		1101	H6G24028.d			1
12		Sample	IDL-05		1101	H6G24029.d			1
13		Sample	IDL-06		1101	H6G24030.d			1
14		Sample	IDL-07		1101	H6G24031.d			1
15		CCV	CCV3		1206	H6G24032.d			1
16		CCB	CCB3		1102	H6G24033.d			1
17		Blank	IMG046WB		2106	H6G24034.d			1
18		LCSW	IMG046WL		2107	H6G24035.d			1
19		LCSW	IMG046WC		2108	H6G24036.d			1

Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
20		Blank	IMG047WB		2109	H6G24037.d			1
21		LCSW	IMG047WL		2110	H6G24038.d			1
22		LCSW	IMG047WC		2111	H6G24039.d			1
23		Sample	G297-06 ✓	EB	2112	H6G24040.d			1
24		CCV	CCV4		1206	H6G24041.d			1
25		CCB	CCB4		1102	H6G24042.d			1
26		Sample	G183-01 Be B	6020 Cr Co Ni Zn Se Ag↑	2201	H6G24043.d Cd Sb Ba Tl Pb↑			1
27		Sample	G183-01I B↑	6020 Ag↑	2202	H6G24044.d			10
28		Sample	G183-01K	6020	2203	H6G24045.d			50
29		Sample	G183-02K	6020	2204	H6G24046.d			100
30		Sample	G183-03 Sn↑	6020	2205	H6G24047.d			1
31		Sample	G183-02I	6020	3101	H6G24048.d			10
32		Sample	G183-07 Na↑	6020	2206	H6G24049.d			1
33		Sample	G183-07I	6020	2207	H6G24050.d			10
34		Sample	G183-25I Li↑	6020	2208	H6G24051.d			10
35		Sample	G183-03I	6020	3102	H6G24052.d			10
36		CCV	CCV5		1206	H6G24053.d			1
37		CCB	CCB5		1102	H6G24054.d			1
38		Sample	G183-25I	6020	3103	H6G24055.d			20
39		LLCCV	MRLG3105 ✓	1/100/10 ppb B↓	1306	H6G24056.d			1
40		LLCCV2	MRLG3106	0.4/40/4 ppb ↓	1307	H6G24057.d			1
41		Sample	MRLG3107 ✓	B @ 10 ppb	1301	H6G24058.d			1
42		Sample	G185-01 B V	Ni Cu Zn Ba↑	2209	H6G24059.d			1
43		Sample	G185-01I B↑		2210	H6G24060.d			10
44		Sample	G185-01K		3104	H6G24061.d			50
45		CCV	CCV6		1206	H6G24062.d			1
46		CCB	CCB6		1102	H6G24063.d			1
47		Sample	G183-01 Be B	200.8 Cr Co Ni Zn Se Ag↑	2211	H6G24064.d Cd Sb Ba Tl Pb↑			1
48		Sample	G183-01I B↑	200.8	2212	H6G24065.d			10
49		Sample	G183-01K	200.8	2301	H6G24066.d			50
50		Sample	G183-03 Sn↑	200.8	2302	H6G24067.d			1
51		Sample	G183-03I	200.8	2303	H6G24068.d			10
52		Sample	G183-07 Na↑	200.8 Ca↑	2304	H6G24069.d			1
53		Sample	G183-07I	200.8	2305	H6G24070.d			10
54		Sample	G183-25I Li↑	200.8	2306	H6G24071.d			10
55		Sample	G183-25I	200.8	2307	H6G24072.d			20
56		CCV	CCV7		1206	H6G24073.d			1
57		CCB	CCB7		1102	H6G24074.d			1
58		Sample	F210-01M Ca↑		3201	H6G24075.d			1
59		Sample	F210-01S		3202	H6G24076.d			1
60		Sample	F210-01A		3203	H6G24077.d			1
61		Sample	F210-01N		3204	H6G24078.d			1
62		Sample	F210-01J		3205	H6G24079.d			5
63		Sample	F210-04N Na Mg Ca↑		3206	H6G24080.d			1
64		Sample	F210-05N Na Mg Ca↑		3207	H6G24081.d			1
65		Sample	F210-07N Na Mg Ca↑		3208	H6G24082.d			1
66		Sample	F210-08N Na Mg Ca↑		3209	H6G24083.d			1
67		CCV	CCV8		1206	H6G24084.d			1
68		CCB	CCB8		1102	H6G24085.d			1
69		Blank	IMF038WB		3105	H6G24086.d			1
70		LCSW	IMF038WL		3106	H6G24087.d			1
71		LCSW	IMF038WC		3107	H6G24088.d			1

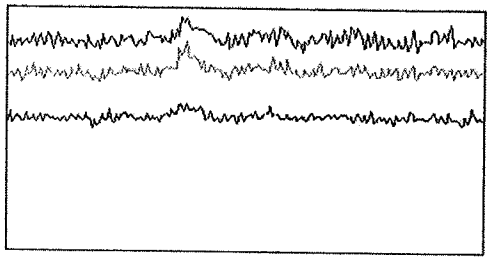
Sample List

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
72		LLCCV	MRLG3108	1/100/10 ppb Ca ↑	1306	H6G24089.d			1
73		LLCCV2	MRLG3109	0.4/40/4 ppb Ca OK ✓	1307	H6G24090.d			1
74		Sample	G441-01		2308	H6G24091.d Tb IS fail			1
75		Sample	G441-01M		2309	H6G24092.d ↓			1
76		Sample	G441-01I		3301	H6G24093.d Li Sc IS fail			10
77		Sample	G441-01M		3302	H6G24094.d ↓			10
78		Sample	G441-01S		3303	H6G24095.d ↓			10
79		Sample	G441-02I		3304	H6G24096.d Sc IS fail			10
80		CCV	CCV9		1206	H6G24097.d Li Sc Ge#3 IS fail			1
81		CCB	CCB9		1102	H6G24098.d Li Sc#3 IS fail			1
82		Sample	BLANK		1101	H6G24099.d			1
83		Sample	BLANK		1101	H6G24100.d			1
84		Sample	BLANK		1101	H6G24101.d			1
85		Sample	BLANK		1101	H6G24102.d			1
86		Sample	BLANK		1101	H6G24103.d			1
87		CCV	CCV10		1206	H6G24104.d			1
88		CCB	CCB10		1102	H6G24105.d			1
89		Blank	IMG030WB		2312	H6G24106.d			1
90		LCSW	IMG030WL		2401	H6G24107.d			1
91		LCSW	IMG030WC		2402	H6G24108.d			1
92		Sample	G055-02	EB	2403	H6G24109.d			1
93		Sample	G169-06	EB	2404	H6G24110.d			1
94		CCV	CCV11		1206	H6G24111.d			1
95		CCB	CCB11		1102	H6G24112.d			1
96		Sample	G055-03G	TOT	2405	H6G24113.d			5
97		Sample	G055-04G	TOT	2406	H6G24114.d			5
98		Sample	G055-05G	TOT	2407	H6G24115.d			5
99		Sample	G055-06G	TOT	2408	H6G24116.d			5
100		Sample	G055-03G	DISS	2409	H6G24117.d			5
101		Sample	G055-04G	DISS	2410	H6G24118.d			5
102		Sample	G055-05G	DISS	2411	H6G24119.d			5
103		Sample	G055-06G	DISS	2412	H6G24120.d			5
104		CCV	CCV12		1206	H6G24121.d			1
105		CCB	CCB12		1102	H6G24122.d			1
106		Sample	G169-01		2501	H6G24123.d			1
107		Sample	G169-02		2502	H6G24124.d			1
108		Sample	G169-03		2503	H6G24125.d			1
109		Sample	G169-04		2504	H6G24126.d			1
110		Sample	G169-05M		2505	H6G24127.d			1
111		Sample	G169-05S		2506	H6G24128.d			1
112		Sample	G169-05A		2507	H6G24129.d			1
113		Sample	G169-05		2508	H6G24130.d			1
114		Sample	G169-05J ✓		2509	H6G24131.d			5
115		CCV	CCV13		1206	H6G24132.d			1
116		CCB	CCB13		1102	H6G24133.d			1

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-07-31 09:04:32
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



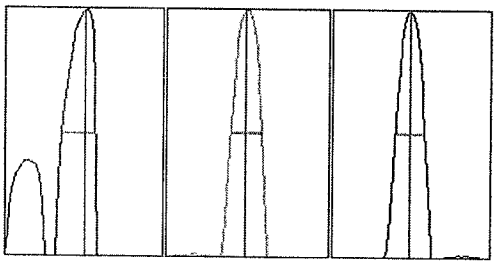
Mass	Range	Count	RSD%	Background
7	5000	4389	3.091	0.200
89	20000	14907	3.305	0.950
205	20000	11079	3.074	3.150

Sampling Period [sec]	0.311
Integration Time [sec]	0.1

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.211 %
Doubly Charged	70 / 140 1.444 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	4406.77	7.05	0.66	0.78
89	14962.43	89.00	0.58	0.78
205	11158.54	205.00	0.57	0.79

Integration Time [sec]	0.1
Acquisition Time [sec]	22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.06 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.2 V	Deflect	14.0 V
Extract 2	-140.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-70 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.6 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.3 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.01 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9994
Mass Offset	124	Axis Offset	0.00

EM

Discriminator	4.1 mV	Analog HV	2452 V	Pulse HV	1648 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.06	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.02	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.07E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	28.4	°C
Nebulizer Gas(DP)	6.05E+0	kPa
MU./Dil. Gas(DP)	-1.23E-1	kPa
Aux Gas(DP)	1.22E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.50E+2	kPa
MU./Dil. Gas(BP)	-1.85E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	4.02E+1	kPa
S/C Temp (H)	16.2	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.7	V
IF/BK Press	2.25E+2	Pa
Analyzer Press	6.18E-5	Pa
IG HV	178	V
IG Emission	4.98	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.1	%
TMP Current	2.73	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.18	V
OctP RF (Avg)	203.9	V
OctP RF Set	4.0	V
OctP FET Bias Set	3.97	V
OctP RF(+)	176.2	V
OctP RF(-)	231.5	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.0	V
+U Voltage	409.6	V

Name	Value	Unit
-U Voltage	-415.4	V
V Voltage	1785.9	V
QPRF Fader	1.3	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	608.2	V
-120V	-129.9	V
-720V	-738.5	V
Prefilter Bias	-5.10	V
Pickup Heater I	0.09	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2456	V
Pulse HV	1660	V
EM Gate	-47.9	V
Pulse Gate	370.6	V
EM Entrance	0.2	V
EM HV Gain	-1105.1	V
Inner Pole	-300.3	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.1	V
RF PS +48V	47.6	V
Forward Power	1551	W
Reflected Power	3	W
Plasma Freq.	26.72	MHz
Drain I 1	11.38	A
Drain I 2	10.93	A
Drain I 3	10.80	A
Drain I 4	10.09	A
Temp Sensor	2.8	V
Driver I	5.60	A

Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.44	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	0.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.38E-1	kPa
ORS AMFC Temp	29.5	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-140.2	V
Omega Bias	-70.1	V
Omega Lens	8.0	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	13.9	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	26.7	°C
Internal Temp	32.5	°C
+24V	23.6	V
Water Temp	18.3	°C
Water RF/WC/IF	1.46	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

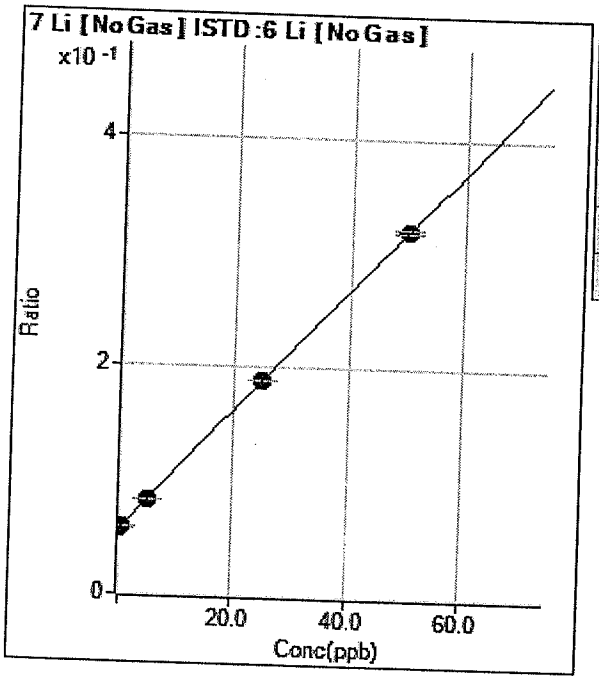
Performance Report History

Sensitivity

Calibration for H6G24133.d

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b\
Analysis File:	IH6G24.batch.bin
DA Date-Time:	2020-07-31 17:33:52
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

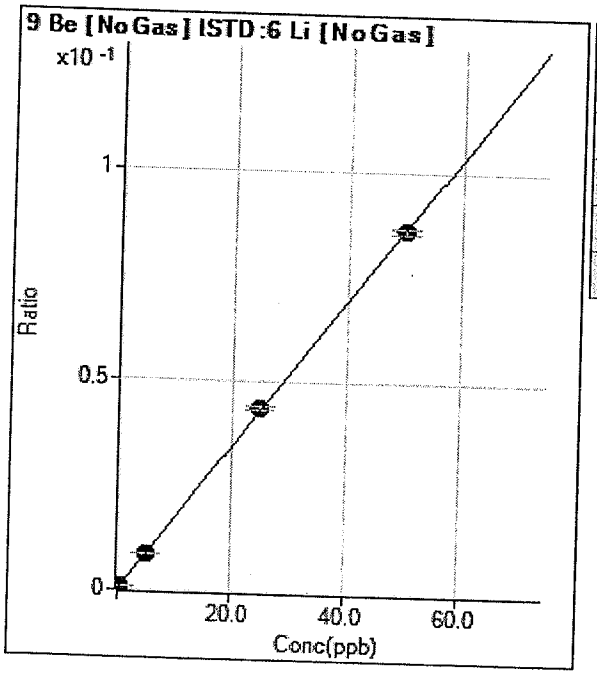
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6G24003.d	S0	2020-07-31 10:53:53
2	H6G24004.d	S1	2020-07-31 10:56:52
3	H6G24005.d	S2	2020-07-31 10:59:51
4	H6G24006.d	S3	2020-07-31 11:03:44
5	H6G24007.d	S4	2020-07-31 11:06:41



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	112543.45	0.0570	P	0.4
2	☐	0.500	0.438	115996.81	0.0593	P	0.5
3	☐	5.000	4.895	163302.11	0.0827	P	1.3
4	☐	25.000	25.007	360296.84	0.1883	P	0.4
5	☐	50.000	50.008	607377.61	0.3196	P	1.2

y = 0.0052 * x + 0.0570
R = 1.0000
DL = 0.1297
BEC = 10.87

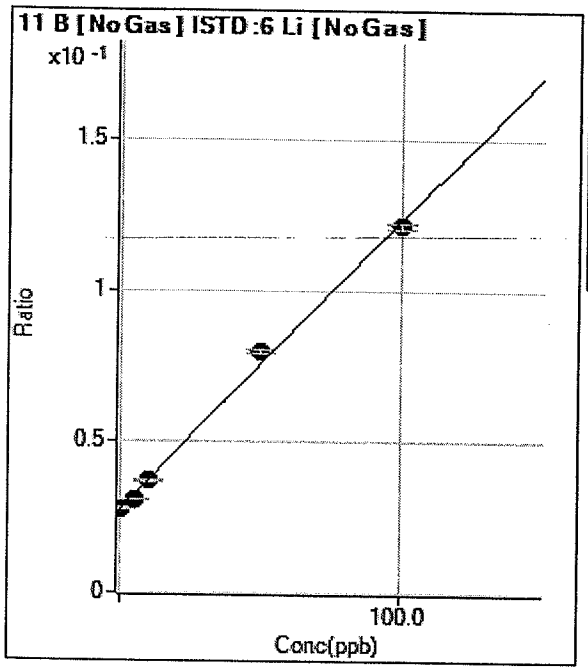
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	22.5
2	☐	0.500	0.487	1712.33	0.0009	P	3.5
3	☐	5.000	4.991	17088.13	0.0087	P	0.9
4	☐	25.000	25.330	83783.84	0.0438	P	2.0
5	☐	50.000	49.836	163723.49	0.0861	P	1.4

y = 0.0017 * x + 3.3770E-005
R = 1.0000
DL = 0.01319
BEC = 0.01954

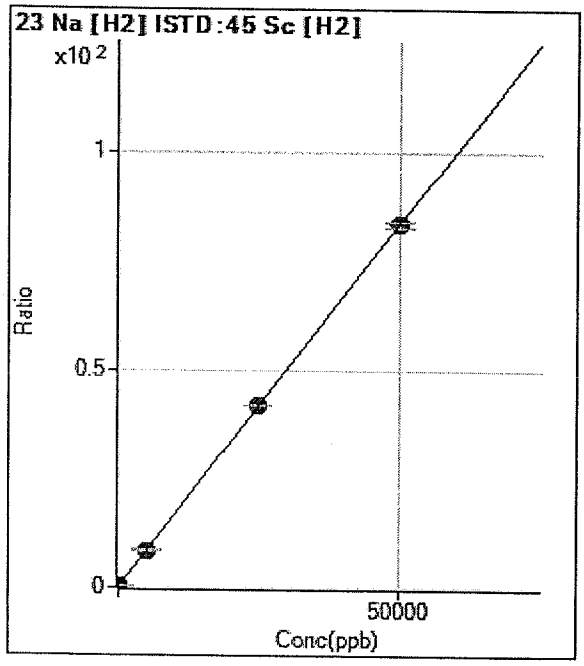
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54933.63	0.0278	P	1.7
2	☐	5.000	3.153	60317.83	0.0309	P	0.6
3	☐	10.000	9.623	73109.23	0.0370	P	0.9
4	☐	50.000	54.317	152549.53	0.0797	P	1.9
5	☐	100.000	97.972	230851.92	0.1215	P	1.3

y = 9.5554E-004 * x + 0.0278
R = 0.9982
DL = 1.496
BEC = 29.14

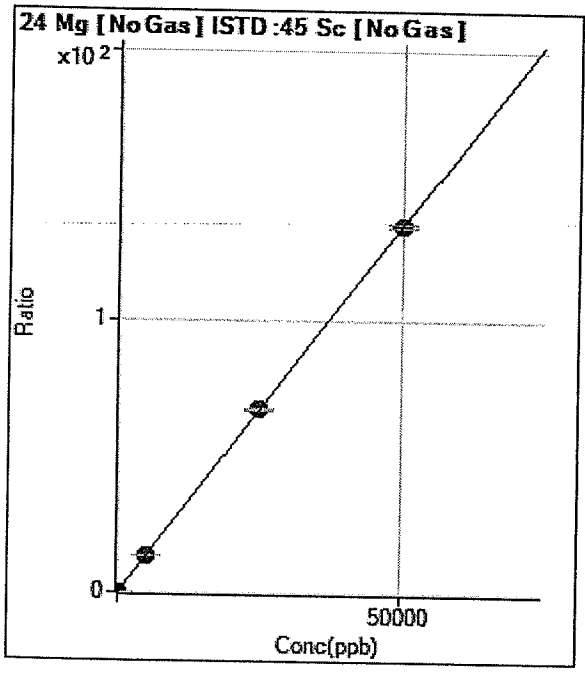
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	405040.17	0.1735	P	1.1
2	☐	50.000	58.076	602328.27	0.2705	P	4.8
3	☐	5000.000	5034.962	20283066.67	8.5838	A	2.0
4	☐	25000.000	25168.954	99977344.00	42.2155	A	0.3
5	☐	50000.000	49912.019	197304250.67	83.5460	A	1.6

y = 0.0017 * x + 0.1735
R = 1.0000
DL = 3.434
BEC = 103.8

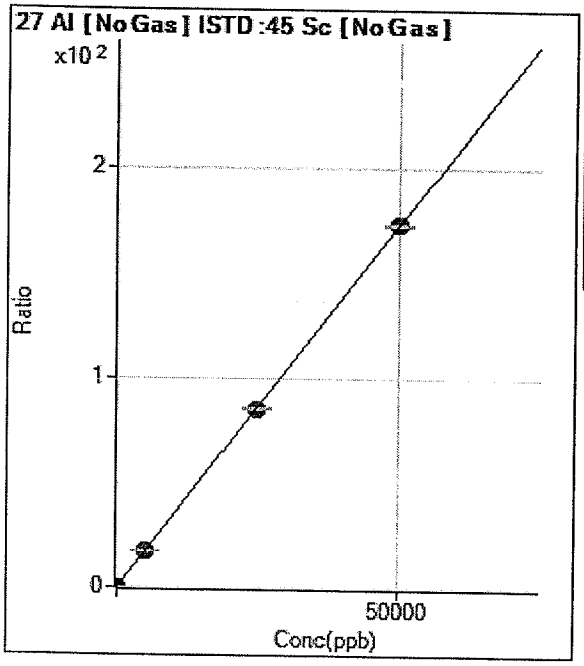
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	41865.31	0.0103	P	0.7
2	☐	50.000	50.955	591212.69	0.1480	P	1.3
3	☐	5000.000	5115.824	56140842.67	13.8397	A	0.4
4	☐	25000.000	25043.885	276204298.67	67.7104	A	1.2
5	☐	50000.000	49966.474	547954090.67	135.0825	A	1.0

y = 0.0027 * x + 0.0103
R = 1.0000
DL = 0.08289
BEC = 3.801

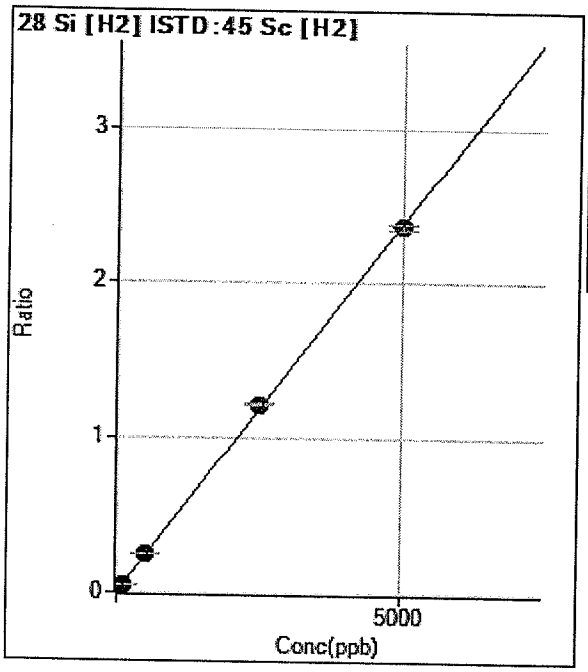
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34776.90	0.0085	P	1.0
2	☐	50.000	50.012	724257.85	0.1813	P	0.7
3	☐	5000.000	4972.550	69727797.30	17.1887	A	2.0
4	☐	25000.000	24770.435	349129274.80	85.5906	A	1.5
5	☐	50000.000	50117.527	702487082.87	173.1650	A	0.4

y = 0.0035 * x + 0.0085
R = 1.0000
DL = 0.07142
BEC = 2.47

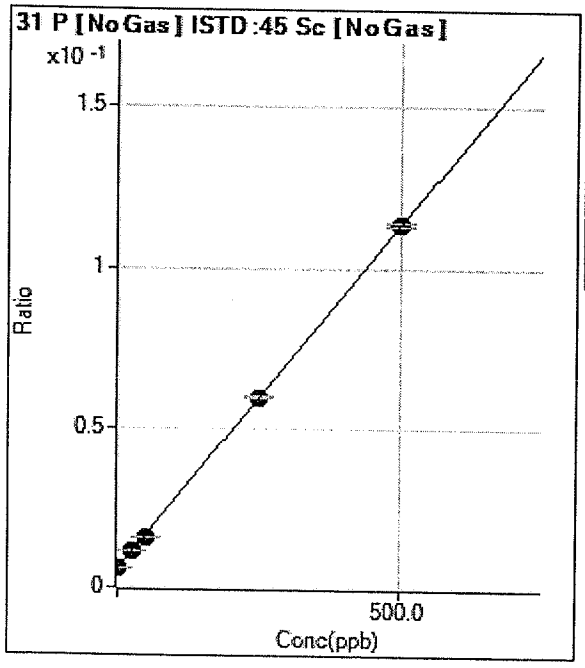
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3303.73	0.0014	P	2.1
2	☐	100.000	106.551	115985.44	0.0521	P	6.0
3	☐	500.000	520.256	588196.92	0.2489	P	1.9
4	☐	2500.000	2563.731	2891847.08	1.2211	A	1.2
5	☐	5000.000	4965.978	5582642.50	2.3640	A	1.3

y = 4.7575E-004 * x + 0.0014
R = 0.9999
DL = 0.1859
BEC = 2.974

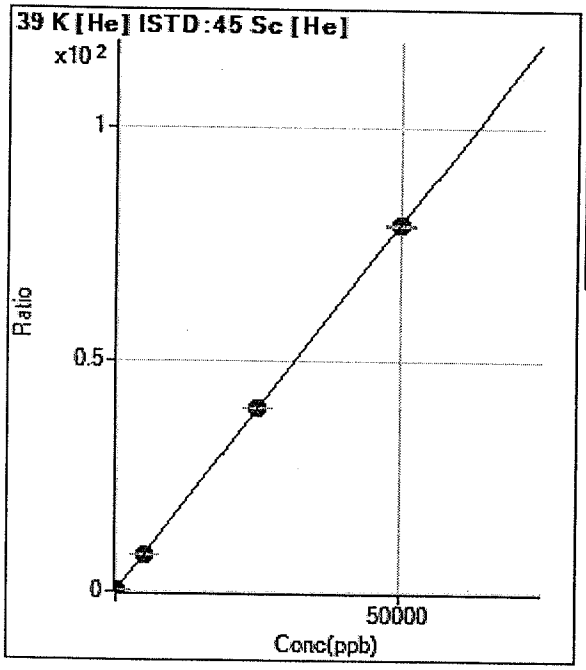
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24170.34	0.0059	P	0.4
2	☐	25.000	24.933	45085.65	0.0113	P	0.2
3	☐	50.000	46.168	64294.34	0.0158	P	0.5
4	☐	250.000	250.159	243391.45	0.0597	P	1.1
5	☐	500.000	500.307	460039.01	0.1134	P	1.0

y = 2.1481E-004 * x + 0.0059
R = 1.0000
DL = 0.3652
BEC = 27.61

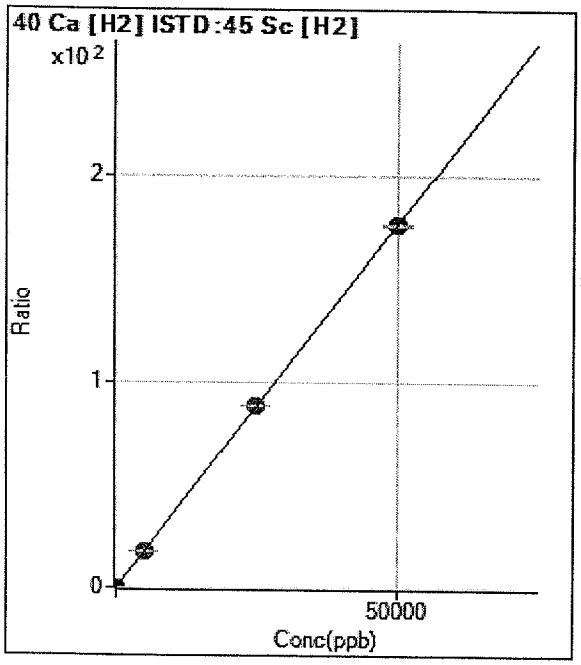
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	102256.15	0.2342	P	3.5
2	☐	50.000	51.450	136582.56	0.3154	P	3.2
3	☐	5000.000	4949.414	3540727.00	8.0423	A	1.5
4	☐	25000.000	25096.971	17556305.33	39.8269	A	0.2
5	☐	50000.000	49956.572	34799362.67	79.0451	A	0.7

y = 0.0016 * x + 0.2342
R = 1.0000
DL = 15.39
BEC = 148.5

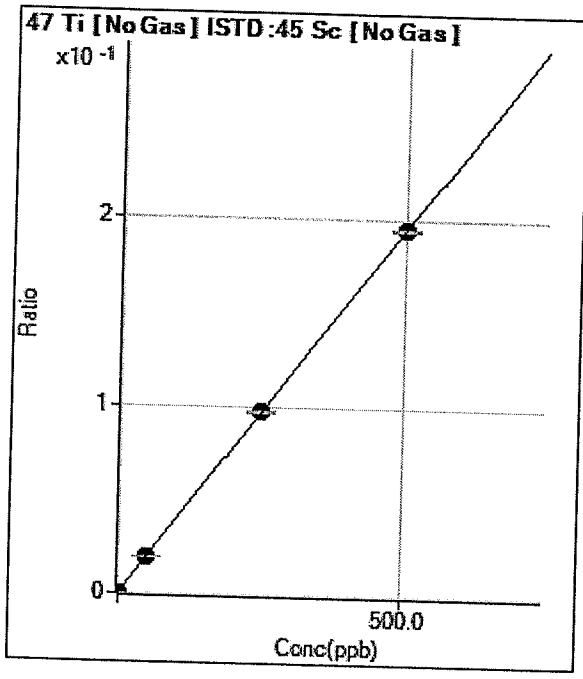
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	87981.75	0.0377	P	0.9
2	☐	50.000	54.319	509631.55	0.2290	P	6.2
3	☐	5000.000	4974.360	41481222.67	17.5551	A	2.0
4	☐	25000.000	25102.290	209440629.33	88.4366	A	0.4
5	☐	50000.000	49951.415	415509344.00	175.9439	A	0.4

y = 0.0035 * x + 0.0377
R = 1.0000
DL = 0.2892
BEC = 10.7

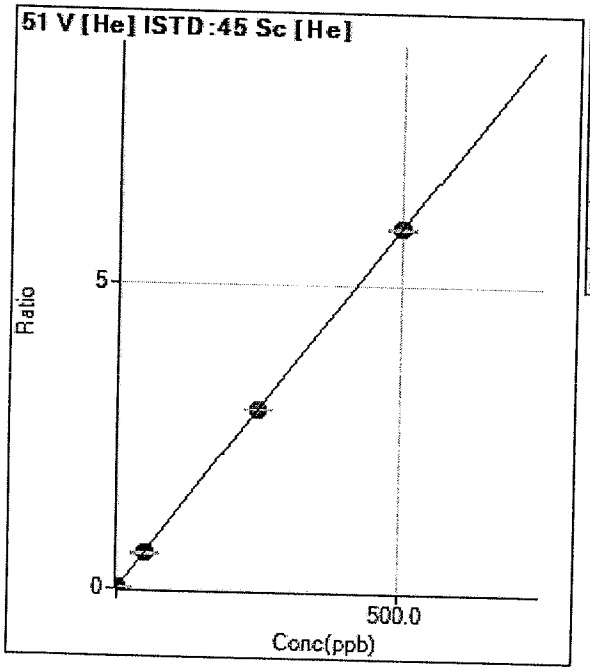
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	228.67	0.0001	P	1.7
2	☐	0.500	0.553	1082.71	0.0003	P	3.1
3	☐	50.000	49.996	78987.36	0.0195	P	0.9
4	☐	250.000	250.550	397131.72	0.0974	P	0.4
5	☐	500.000	499.725	787455.73	0.1941	P	0.6

y = 3.8834E-004 * x + 5.6122E-005
R = 1.0000
DL = 0.007405
BEC = 0.1445

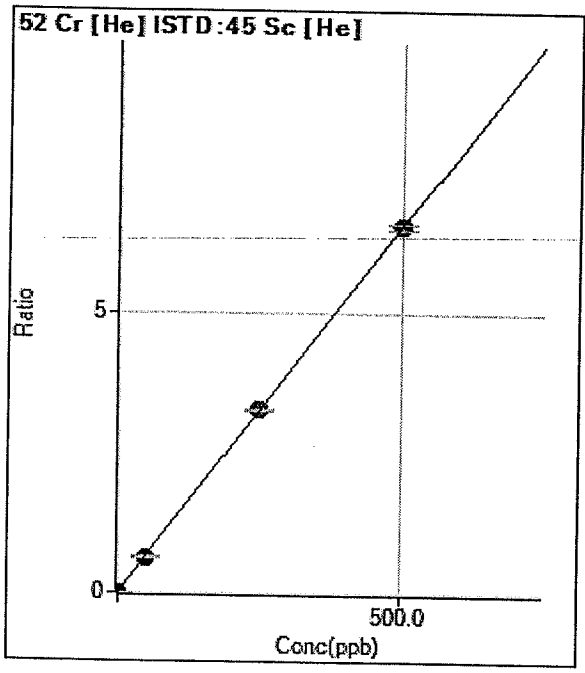
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6454.19	0.0148	P	1.0
2	☐	0.500	0.894	10967.05	0.0253	P	0.5
3	☐	50.000	48.111	256380.36	0.5823	P	2.6
4	☐	250.000	249.092	1301849.96	2.9533	A	0.2
5	☐	500.000	500.643	2606578.33	5.9208	A	0.6

y = 0.0118 * x + 0.0148
R = 1.0000
DL = 0.03736
BEC = 1.253

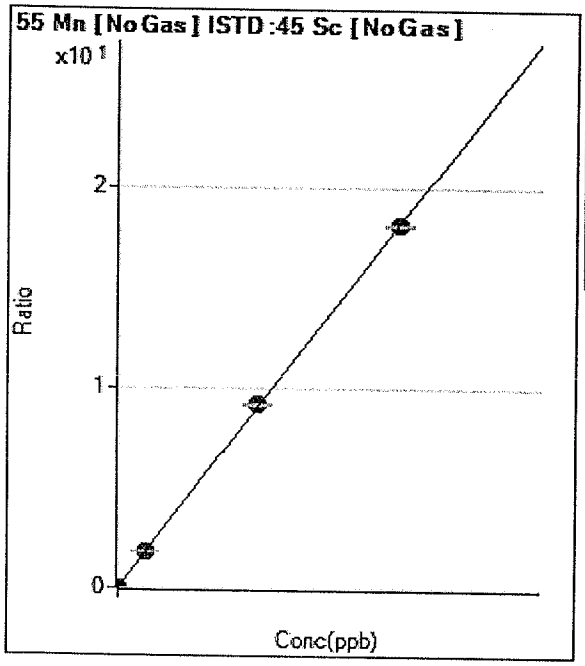
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	847.36	0.0019	P	2.0
2	☐	0.500	0.582	4152.63	0.0096	P	2.6
3	☐	50.000	48.850	283477.40	0.6439	P	3.2
4	☐	250.000	250.893	1454228.96	3.2989	A	0.6
5	☐	500.000	499.668	2891443.75	6.5681	A	1.3

y = 0.0131 * x + 0.0019
R = 1.0000
DL = 0.008866
BEC = 0.1477

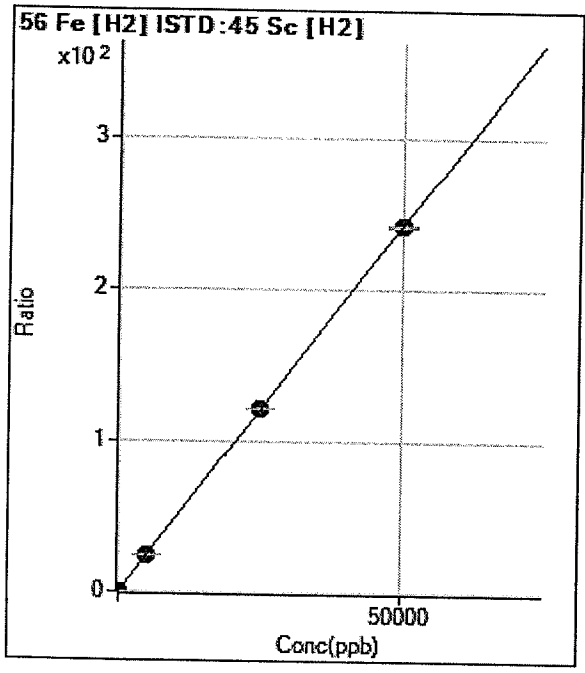
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13323.15	0.0033	P	1.1
2	☐	0.500	0.475	24574.72	0.0062	P	1.1
3	☐	300.000	307.348	7579694.50	1.8685	A	0.3
4	☐	1500.000	1515.091	37518958.67	9.1981	A	1.3
5	☐	3000.000	2991.720	73664352.00	18.1594	A	0.7

y = 0.0061 * x + 0.0033
R = 1.0000
DL = 0.01733
BEC = 0.5388

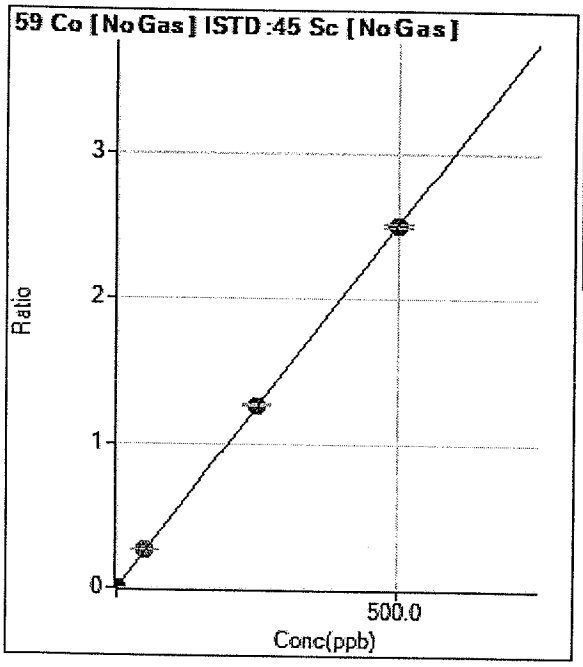
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	32433.06	0.0139	P	0.9
2	☐	50.000	54.910	623026.06	0.2799	P	5.8
3	☐	5000.000	5042.566	57745878.67	24.4397	A	2.4
4	☐	25000.000	25136.681	288392576.00	121.7740	A	0.4
5	☐	50000.000	49927.398	571167338.67	241.8582	A	0.4

y = 0.0048 * x + 0.0139
R = 1.0000
DL = 0.07714
BEC = 2.867

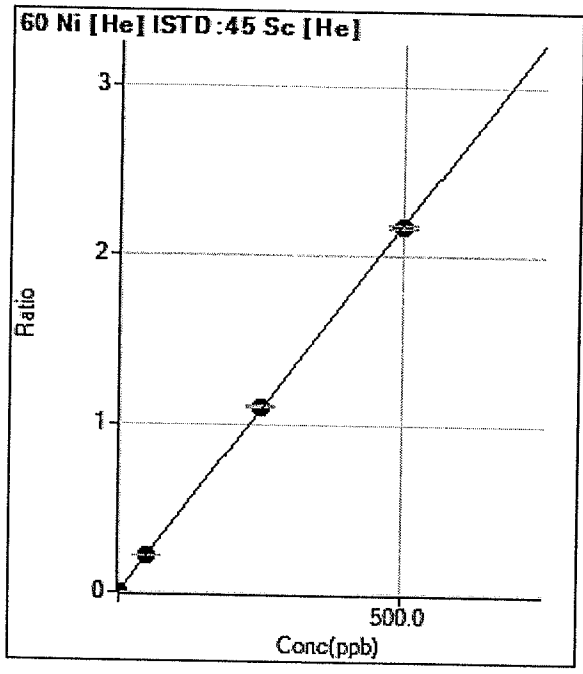
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	714.69	0.0002	P	4.4
2	☐	0.500	0.499	10724.22	0.0027	P	0.5
3	☐	50.000	51.617	1052888.88	0.2596	M	0.4
4	☐	250.000	252.250	5171133.17	1.2677	A	1.3
5	☐	500.000	498.713	10166422.67	2.5062	A	1.1

y = 0.0050 * x + 1.7542E-004
R = 1.0000
DL = 0.004613
BEC = 0.03491

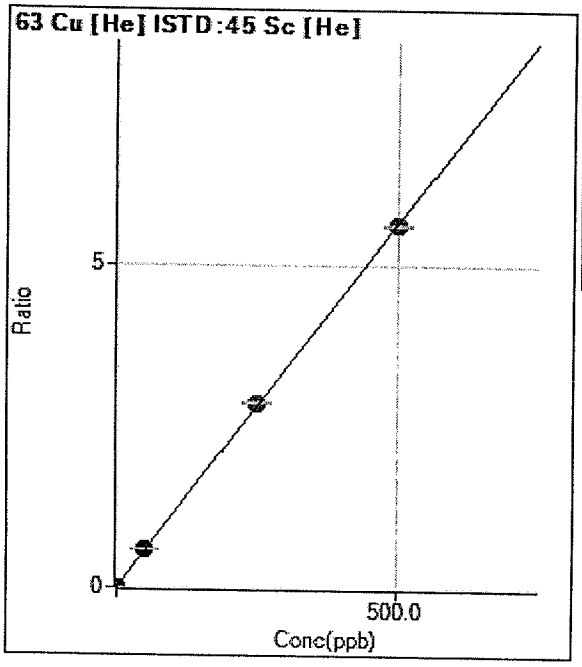
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	438.68	0.0010	P	3.0
2	☐	0.500	0.554	1478.75	0.0034	P	8.0
3	☐	50.000	49.793	95882.97	0.2178	P	2.2
4	☐	250.000	254.154	488212.54	1.1075	P	0.4
5	☐	500.000	497.943	954838.40	2.1689	P	1.0

y = 0.0044 * x + 0.0010
R = 0.9999
DL = 0.02097
BEC = 0.2307

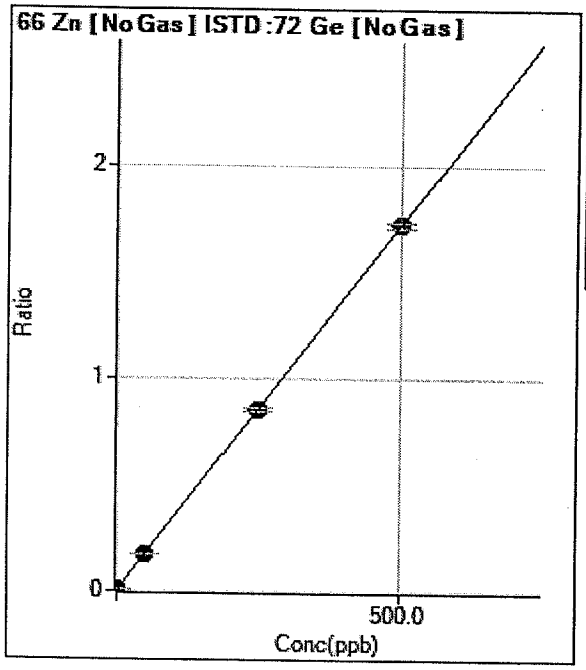
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2652.26	0.0061	P	0.5
2	☐	0.500	0.752	6310.13	0.0146	P	2.1
3	☐	50.000	51.713	259857.95	0.5902	P	2.0
4	☐	250.000	254.014	1267532.84	2.8755	A	0.7
5	☐	500.000	497.821	2478337.25	5.6296	A	0.9

y = 0.0113 * x + 0.0061
R = 0.9999
DL = 0.00757
BEC = 0.5378

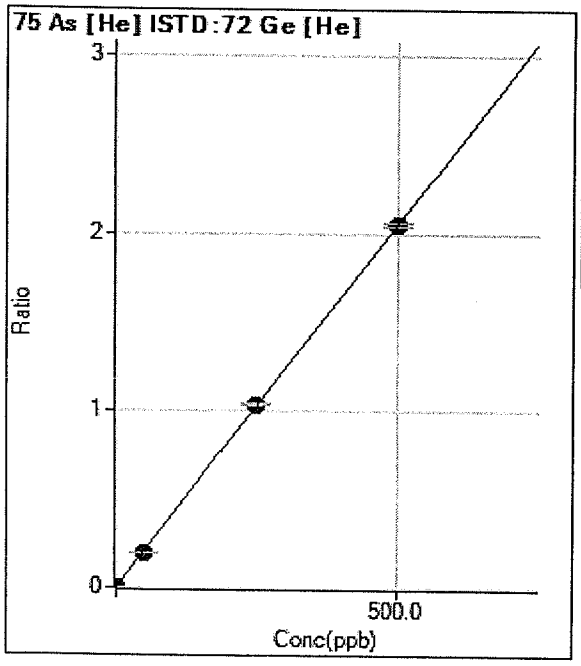
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1170.72	0.0012	P	10.7
2	☐	1.000	1.644	6517.56	0.0069	P	1.0
3	☐	50.000	51.146	169542.26	0.1772	P	0.1
4	☐	250.000	249.454	824890.94	0.8595	P	1.5
5	☐	500.000	500.157	1637457.67	1.7221	A	1.6

y = 0.0034 * x + 0.0012
R = 1.0000
DL = 0.1167
BEC = 0.3629

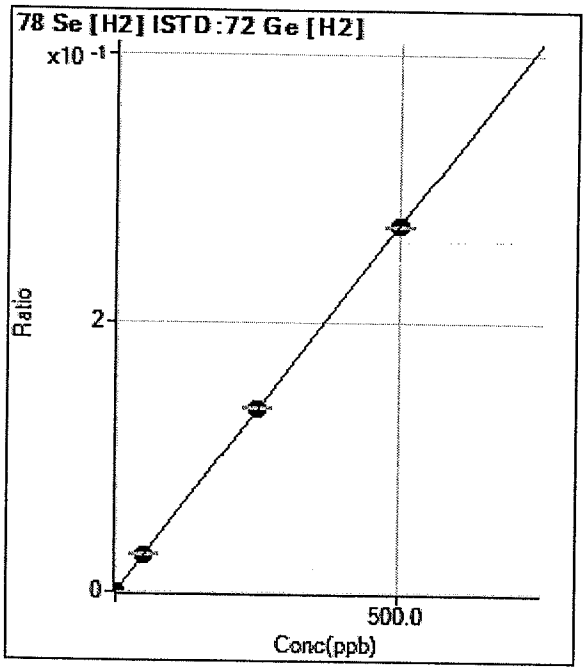
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	283.33	0.0011	P	3.2
2	☐	0.500	0.599	903.03	0.0036	P	2.9
3	☐	50.000	47.692	50334.54	0.1971	P	3.5
4	☐	250.000	251.683	259479.12	1.0356	P	0.9
5	☐	500.000	499.389	514981.22	2.0536	P	1.2

y = 0.0041 * x + 0.0011
R = 1.0000
DL = 0.02646
BEC = 0.2759

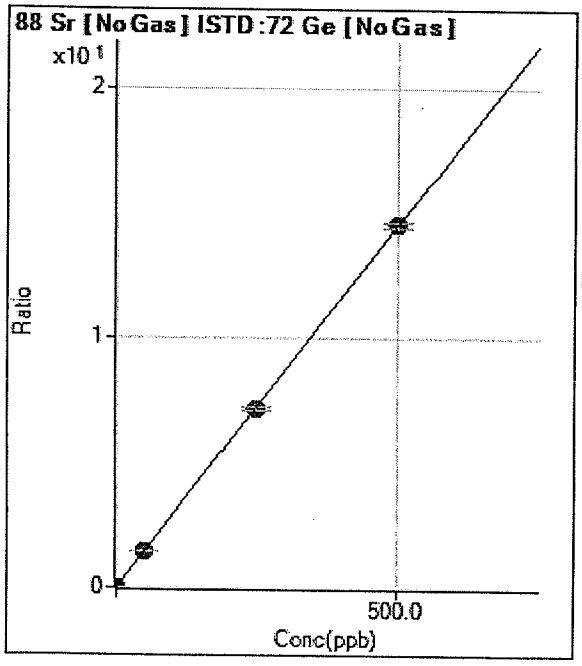
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	33.00	0.0001	P	25.3
2	☐	0.500	0.533	214.00	0.0003	P	8.5
3	☐	50.000	50.694	17994.33	0.0277	P	3.2
4	☐	250.000	251.712	88487.08	0.1374	P	0.8
5	☐	500.000	499.075	174567.88	0.2724	P	0.5

y = 5.4562E-004 * x + 5.2434E-005
R = 1.0000
DL = 0.07306
BEC = 0.0961

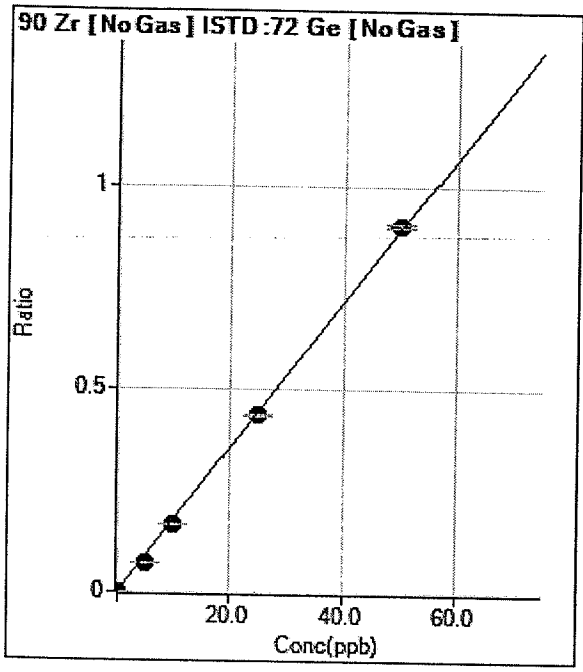
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1044.49	0.0011	P	7.6
2	☐	0.500	0.499	14723.65	0.0156	P	1.6
3	☐	50.000	49.688	1380731.58	1.4433	A	0.6
4	☐	250.000	247.846	6904654.73	7.1948	A	1.8
5	☐	500.000	501.108	13830851.12	14.5457	A	1.6

y = 0.0290 * x + 0.0011
R = 1.0000
DL = 0.008798
BEC = 0.03839

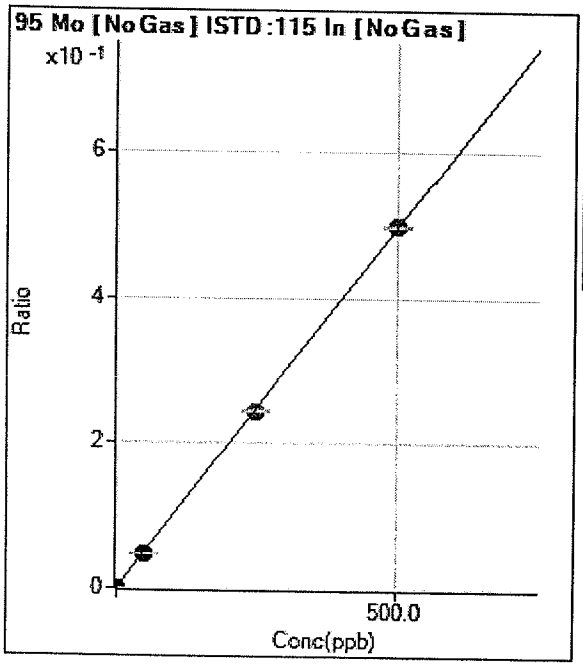
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	166.67	0.0002	P	9.2
2	☐	5.000	3.997	67510.06	0.0715	P	1.7
3	☐	10.000	9.290	158822.94	0.1660	P	0.6
4	☐	25.000	24.488	419749.07	0.4373	P	0.4
5	☐	50.000	50.498	857347.83	0.9016	P	1.1

y = 0.0179 * x + 1.7781E-004
R = 0.9998
DL = 0.002758
BEC = 0.009961

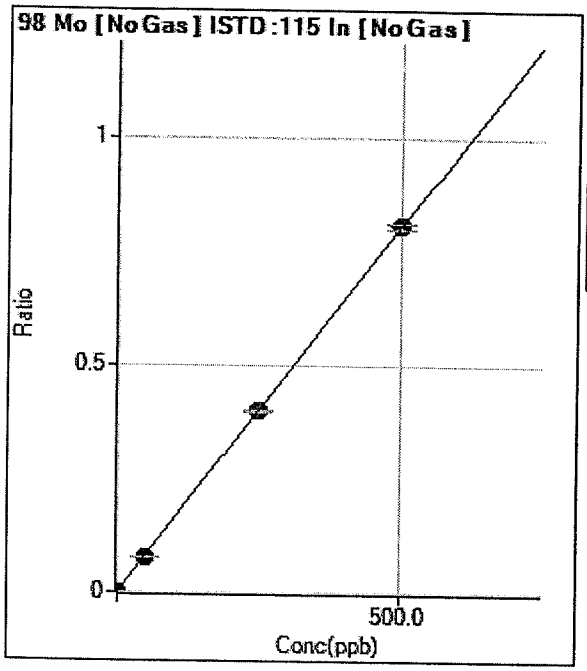
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	173.33	0.0000	P	16.3
2	☐	0.500	0.454	2598.03	0.0005	P	6.1
3	☐	50.000	46.880	255226.32	0.0466	P	0.6
4	☐	250.000	246.198	1296029.71	0.2445	A	1.4
5	☐	500.000	502.213	2619626.70	0.4987	A	0.7

y = 9.9292E-004 * x + 3.1894E-005
R = 0.9999
DL = 0.01571
BEC = 0.03212

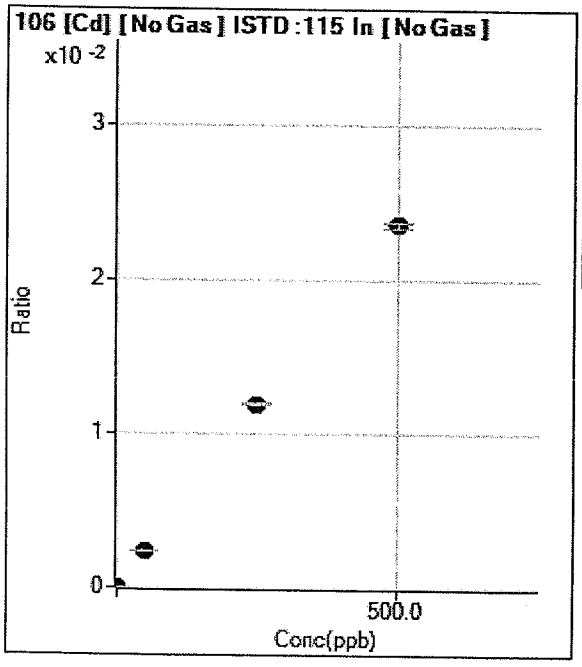
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	322.23	0.0001	P	3.4
2	☐	0.500	0.459	4306.26	0.0008	P	2.5
3	☐	50.000	46.809	413449.67	0.0755	P	0.9
4	☐	250.000	248.453	2121754.15	0.4003	A	1.3
5	☐	500.000	501.092	4239967.89	0.8072	A	1.5

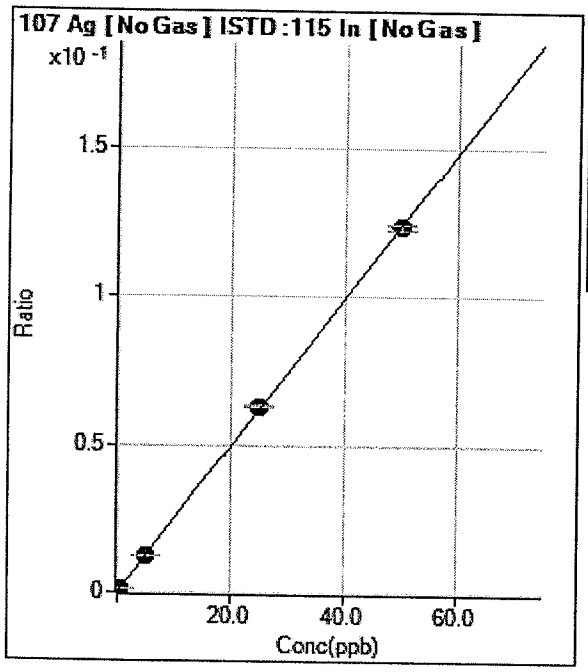
y = 0.0016 * x + 5.9314E-005
R = 1.0000
DL = 0.00374
BEC = 0.03682

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		14.67	0.0000	P	7.9
2	☐	0.500		291.00	0.0001	P	3.5
3	☐	50.000		13059.09	0.0024	P	0.8
4	☐	250.000		63129.50	0.0119	P	1.2
5	☐	500.000		123824.02	0.0236	P	1.3

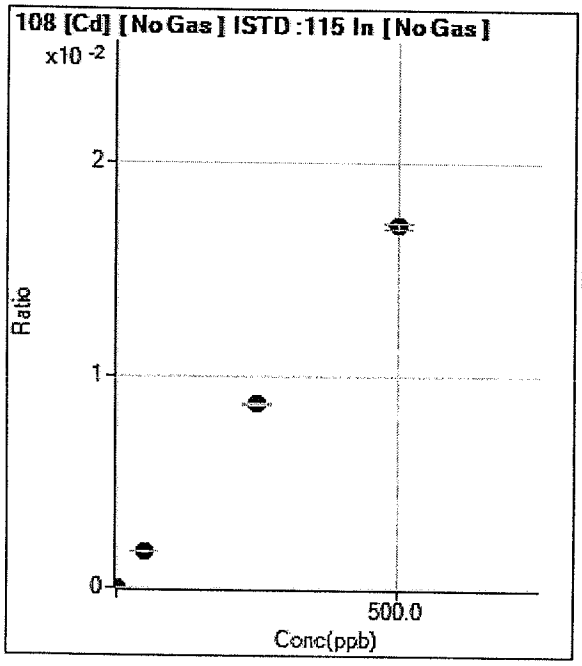
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	94.44	0.0000	P	10.7
2	☐	0.500	0.509	6897.35	0.0013	P	2.6
3	☐	5.000	4.933	67185.45	0.0123	P	0.9
4	☐	25.000	25.415	334459.26	0.0631	P	1.1
5	☐	50.000	49.799	649258.45	0.1236	P	1.8

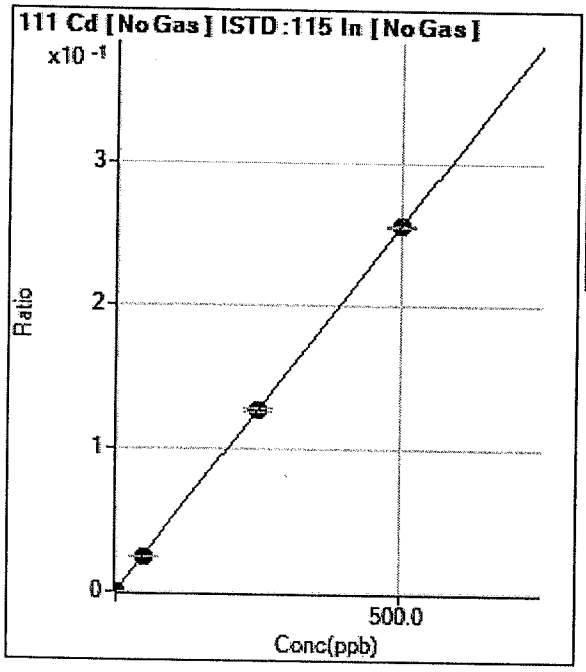
y = 0.0025 * x + 1.7384E-005
R = 0.9999
DL = 0.00224
BEC = 0.007005

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		14.00	0.0000	P	32.4
2	☐	0.500		171.33	0.0000	P	8.6
3	☐	50.000		9265.57	0.0017	P	0.4
4	☐	250.000		45912.73	0.0087	P	1.1
5	☐	500.000		89818.01	0.0171	P	1.6

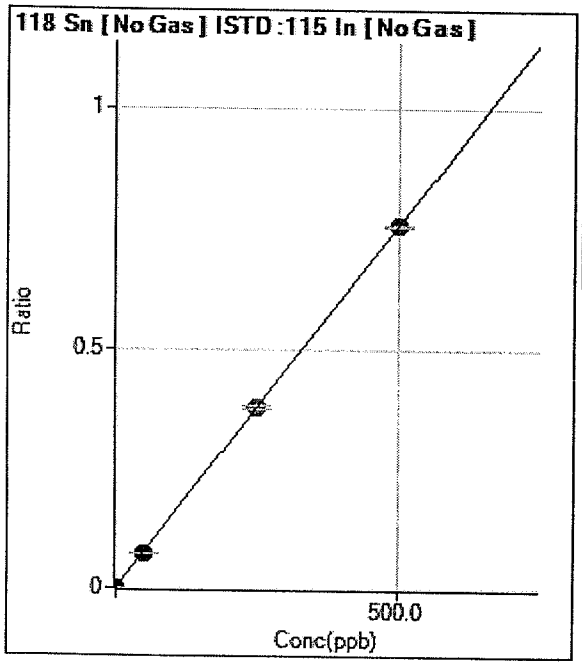
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	104.18	0.0000	P	7.0
2	☐	0.500	0.496	1469.89	0.0003	P	3.3
3	☐	50.000	48.365	135523.55	0.0247	P	0.6
4	☐	250.000	249.317	675451.40	0.1274	P	1.3
5	☐	500.000	500.505	1343533.96	0.2558	A	0.9

y = 5.1099E-004 * x + 1.9179E-005
R = 1.0000
DL = 0.007839
BEC = 0.03753

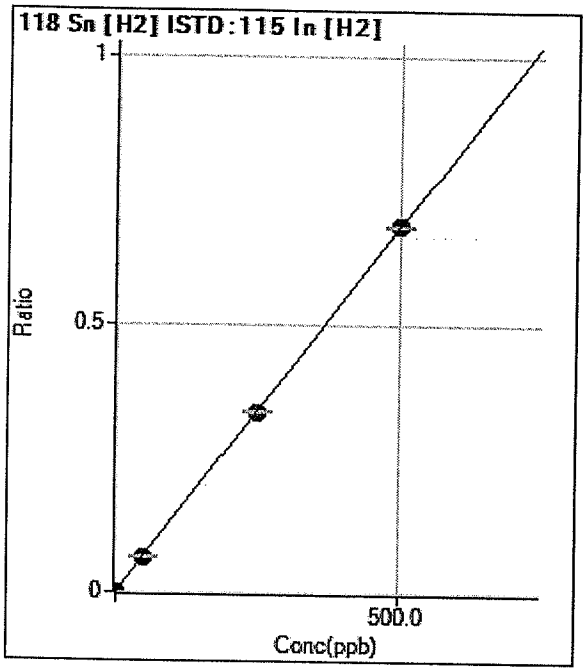
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1063.38	0.0002	P	4.0
2	☐	0.500	0.552	5564.52	0.0010	P	1.9
3	☐	50.000	47.019	391542.54	0.0715	P	0.6
4	☐	250.000	249.920	2008933.67	0.3790	A	1.7
5	☐	500.000	500.338	3984423.59	0.7585	A	0.8

y = 0.0015 * x + 1.9573E-004
R = 1.0000
DL = 0.01567
BEC = 0.1291

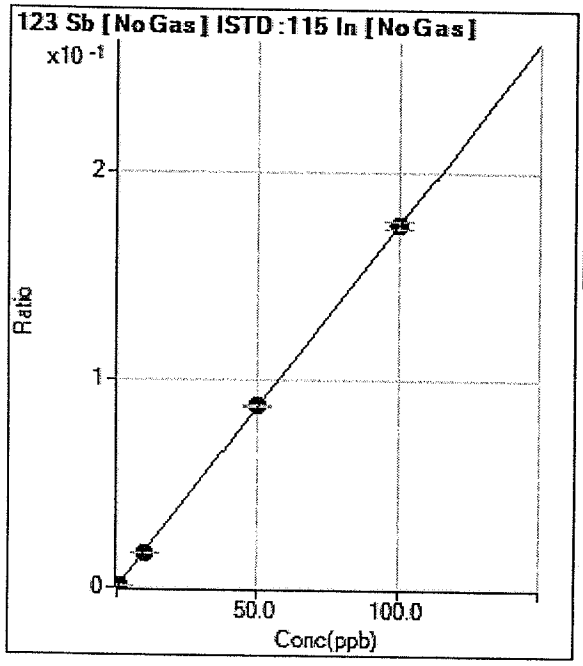
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	776.69	0.0002	P	3.9
2	☐	0.500	0.620	4495.22	0.0010	P	7.1
3	☐	50.000	48.643	305549.93	0.0665	P	2.3
4	☐	250.000	247.888	1521273.27	0.3380	A	0.6
5	☐	500.000	501.191	3056845.09	0.6832	A	0.6

y = 0.0014 * x + 1.6859E-004
R = 1.0000
DL = 0.01441
BEC = 0.1237

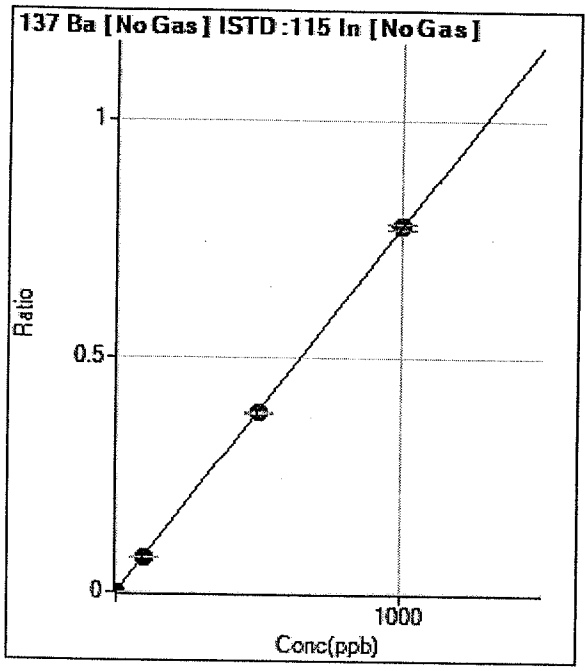
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	112.22	0.0000	P	23.1
2	☐	0.500	0.493	4749.76	0.0009	P	3.3
3	☐	10.000	9.617	92127.61	0.0168	P	0.9
4	☐	50.000	50.120	464043.61	0.0875	P	1.7
5	☐	100.000	99.978	917122.60	0.1746	P	2.0

y = 0.0017 * x + 2.0672E-005
R = 1.0000
DL = 0.008215
BEC = 0.01184

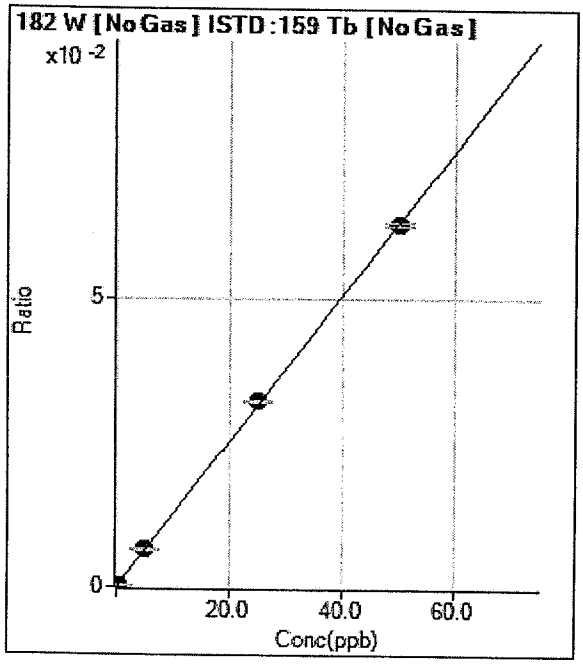
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	230.00	0.0000	P	23.7
2	☐	0.500	0.463	2157.96	0.0004	P	0.8
3	☐	100.000	94.345	400476.21	0.0731	P	1.6
4	☐	500.000	493.254	2024762.91	0.3820	A	1.7
5	☐	1000.000	1003.938	4083255.26	0.7774	A	1.6

y = 7.7428E-004 * x + 4.2314E-005
R = 1.0000
DL = 0.03886
BEC = 0.05465

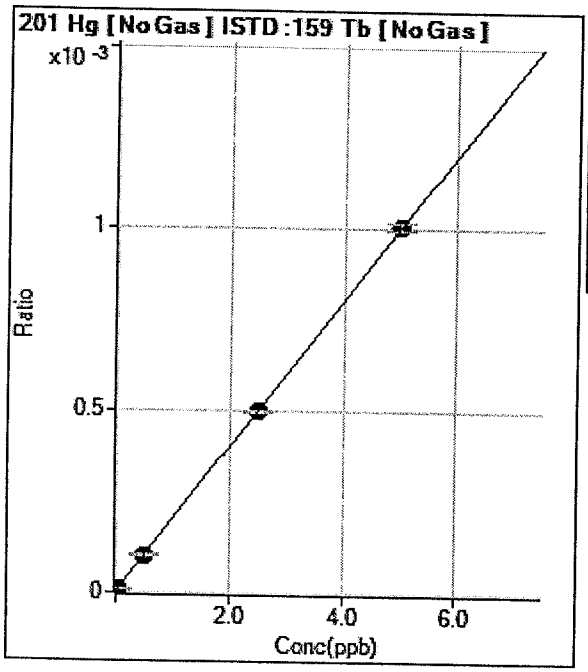
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0000	P	35.4
2	☐	0.500	0.229	2070.18	0.0003	P	3.5
3	☐	5.000	5.146	44856.19	0.0065	P	1.2
4	☐	25.000	25.469	220856.64	0.0322	P	0.9
5	☐	50.000	49.753	433367.17	0.0628	P	1.2

y = 0.0013 * x + 1.3629E-005
R = 0.9999
DL = 0.01148
BEC = 0.01079

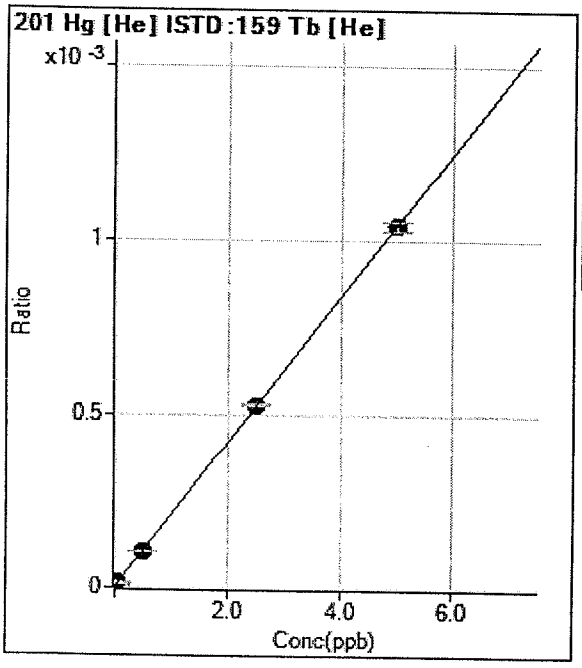
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21.17	0.0000	P	12.2
2	☐	0.050	0.046	83.67	0.0000	P	6.9
3	☐	0.500	0.492	700.02	0.0001	P	4.7
4	☐	2.500	2.481	3430.47	0.0005	P	1.6
5	☐	5.000	5.010	6936.75	0.0010	P	2.1

y = 2.0013E-004 * x + 3.0862E-006
R = 1.0000
DL = 0.005629
BEC = 0.01542

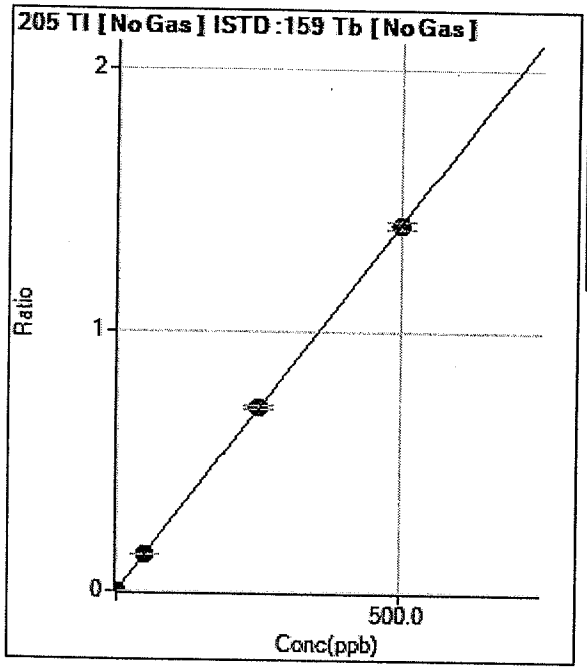
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12.17	0.0000	P	11.9
2	☐	0.050	0.052	51.50	0.0000	P	7.4
3	☐	0.500	0.492	387.34	0.0001	P	2.9
4	☐	2.500	2.517	1906.64	0.0005	P	1.9
5	☐	5.000	4.992	3787.40	0.0010	P	2.6

y = 2.0831E-004 * x + 3.3601E-006
R = 1.0000
DL = 0.005747
BEC = 0.01613

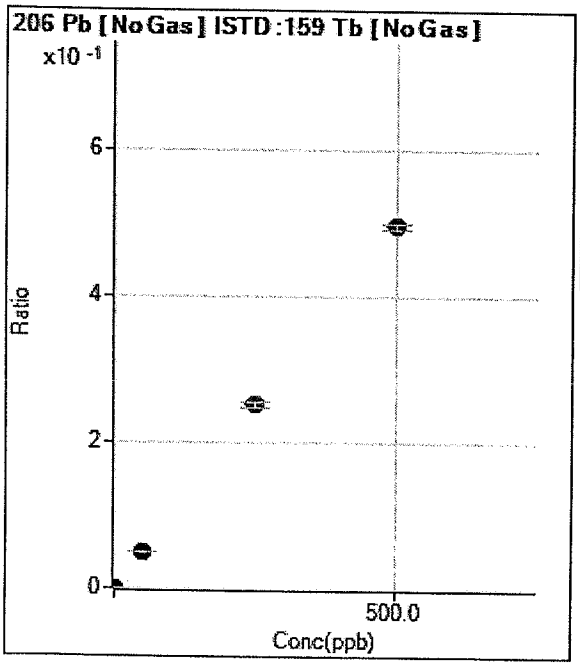
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1314.52	0.0002	P	6.0
2	☐	0.500	0.481	10553.36	0.0015	P	5.3
3	☐	50.000	50.573	982020.06	0.1425	P	1.0
4	☐	250.000	251.661	4863441.61	0.7085	A	1.7
5	☐	500.000	499.112	9690306.84	1.4049	A	2.2

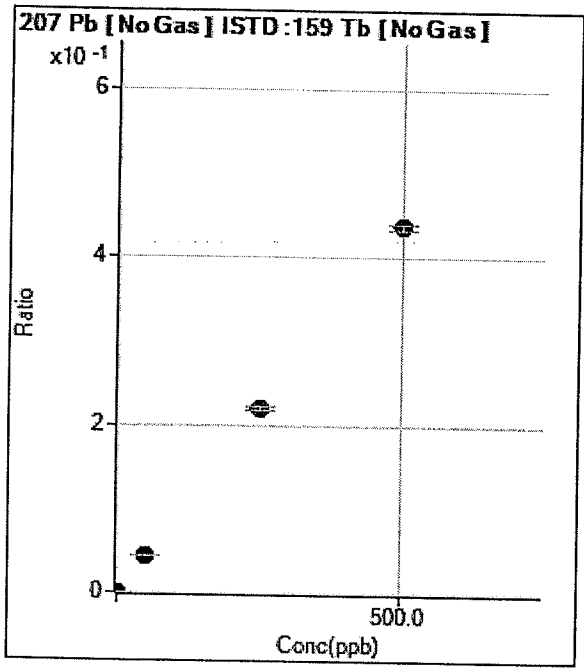
y = 0.0028 * x + 1.9151E-004
R = 1.0000
DL = 0.01229
BEC = 0.06804

Weight: <None>
Min Conc: 0



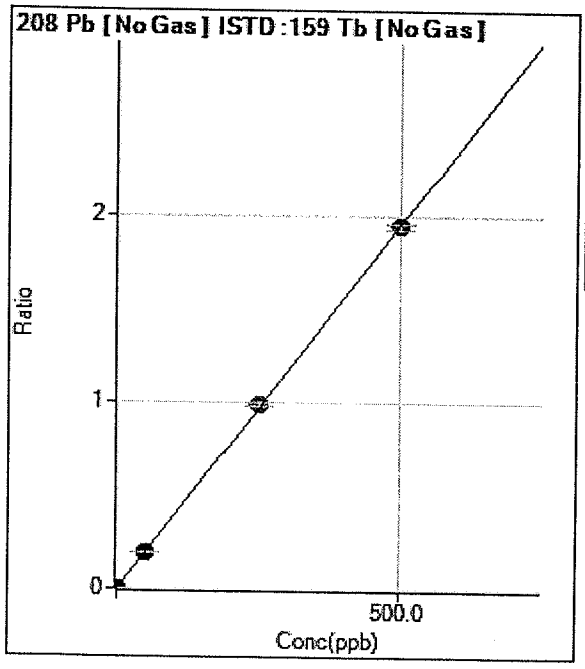
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		430.01	0.0001	P	3.8
2	☐	0.500		3810.61	0.0006	P	1.1
3	☐	50.000		343195.58	0.0498	P	0.5
4	☐	250.000		1722830.39	0.2510	A	2.7
5	☐	500.000		3419325.16	0.4957	A	1.8

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		346.67	0.0001	P	7.4
2	☐	0.500		3373.80	0.0005	P	6.6
3	☐	50.000		298076.63	0.0433	P	0.5
4	☐	250.000		1503936.75	0.2191	A	2.1
5	☐	500.000		3013119.75	0.4368	A	1.3

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1661.16	0.0002	P	6.1
2	☐	0.500	0.507	15151.41	0.0022	P	2.1
3	☐	50.000	50.586	1360112.63	0.1974	P	0.6
4	☐	250.000	252.461	6756058.38	0.9842	A	2.1
5	☐	500.000	498.711	13408926.15	1.9440	A	1.4

y = 0.0039 * x + 2.4203E-004
R = 1.0000
DL = 0.01142
BEC = 0.0621

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq. Date-Time	2020-07-31 09:27:27
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

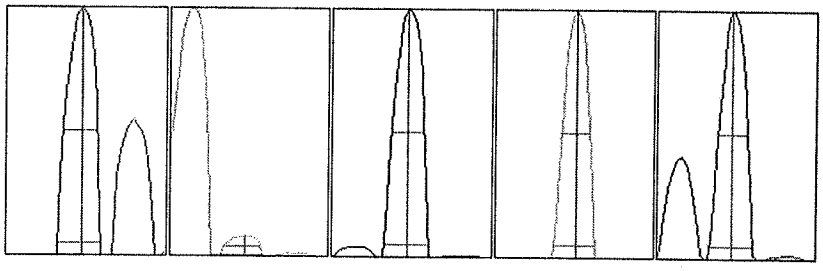
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1685	16846.35			1.247	5.000
24	10.00	7618	76180.75			0.850	5.000
59	10.00	10801	108008.97			0.329	5.000
115	10.00	14175	141752.72			0.482	5.000
208	10.00	6550	65495.42			0.631	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1707	1694	1681	1690	1651
24	7528	7601	7599	7686	7676
59	10830	10807	10795	10743	10830
115	14128	14211	14262	14187	14089
208	6605	6568	6536	6494	6545

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2850.59	8.95	8.90 - 9.10	
24	12241.61	23.95	23.90 - 24.10	
59	18374.58	58.95	58.90 - 59.10	
115	27366.36	115.05	114.90 - 115.10	
208	12051.16	207.95	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.63	0.786	0.900	
24	0.66	0.799	0.900	
59	0.62	0.824	0.900	
115	0.54	0.766	0.900	
208	0.57	0.813	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.60 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.6 V	Deflect	13.4 V
Extract 2	-190.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-95 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9994	QP Bias	-3.0 V
Mass Offset	124	Axis Offset	0.00		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.3 mm

EM

Discriminator	4.1 mV	Analog HV	2452 V	Pulse HV	1648 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6G24002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 10:50:38
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	113207.69	0.2
Be	9	6	No Gas	70.00	21.8
B	11	6	No Gas	56011.17	0.7
Na	23	45	H2	399203.47	0.2
Mg	24	45	No Gas	25955.46	3.0
Al	27	45	No Gas	14991.49	6.7
Si	28	45	H2	3343.74	3.2
P	31	45	No Gas	24595.76	0.9
K	39	45	He	100878.80	3.4
Ca	40	45	H2	74645.59	1.4
Ti	47	45	No Gas	204.00	9.9
V	51	45	He	6246.09	0.3
Cr	52	45	He	753.35	0.4
Mn	55	45	No Gas	11322.69	1.7
Fe	56	45	H2	11862.48	2.0
Co	59	45	No Gas	409.34	8.2
Ni	60	45	He	375.34	2.6
Cu	63	45	He	2730.28	4.9
Zn	66	72	No Gas	1184.05	3.5
As	75	72	He	274.33	4.6
Se	78	72	H2	19.33	11.9
Sr	88	72	No Gas	580.01	13.1
Zr	90	72	No Gas	286.67	13.2
Mo	95	115	No Gas	110.00	6.1
Mo	98	115	No Gas	242.22	22.4
[Cd]	106	115	No Gas	14.33	24.5
Ag	107	115	No Gas	81.11	28.9
[Cd]	108	115	No Gas	11.33	48.6
Cd	111	115	No Gas	94.79	16.1
Sn	118	115	No Gas	1023.37	5.6
Sn	118	115	H2	682.24	4.9
Sb	123	115	No Gas	102.22	19.9
Ba	137	115	No Gas	80.00	26.0
W	182	159	No Gas	53.33	21.7
Hg	201	159	No Gas	29.50	25.0

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	18.00	14.7
Tl	205	159	No Gas	1164.50	4.9
Pb	206	159	No Gas	320.01	19.0
Pb	207	159	No Gas	320.01	14.3
Pb	208	159	No Gas	1374.49	6.6
Th	232	159	No Gas	37.78	13.5
U	238	159	No Gas	204.45	20.4

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1983803.01	0.2
Sc	45	No Gas	4044567.83	0.1
Sc	45	H2	2320461.00	0.8
Sc	45	He	436164.47	0.1
Ge	72	No Gas	946826.77	0.8
Ge	72	H2	631498.31	1.5
Ge	72	He	251670.34	0.5
In	115	No Gas	5505923.82	1.3
Tb	159	No Gas	6877615.70	1.7
Tb	159	He	3654549.92	0.5

Calibration Standard Report

Sample Name	S0
File Name	H6G24003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 10:53:53
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	112543.45	0.1
Be	9	6	No Gas	66.67	22.9
B	11	6	No Gas	54933.63	1.2
Na	23	45	H2	405040.17	0.4
Mg	24	45	No Gas	41865.31	0.2
Al	27	45	No Gas	34776.90	1.4
Si	28	45	H2	3303.73	2.5
P	31	45	No Gas	24170.34	0.5
K	39	45	He	102256.15	3.4
Ca	40	45	H2	87981.75	0.8
Ti	47	45	No Gas	228.67	1.3
V	51	45	He	6454.19	1.4
Cr	52	45	He	847.36	2.1
Mn	55	45	No Gas	13323.15	1.0
Fe	56	45	H2	32433.06	0.9
Co	59	45	No Gas	714.69	3.9
Ni	60	45	He	438.68	3.7
Cu	63	45	He	2652.26	0.2
Zn	66	72	No Gas	1170.72	11.0
As	75	72	He	283.33	2.6
Se	78	72	H2	33.00	24.8
Sr	88	72	No Gas	1044.49	7.5
Zr	90	72	No Gas	166.67	9.2
Mo	95	115	No Gas	173.33	16.7
Ag	107	115	No Gas	94.44	10.8
Cd	111	115	No Gas	104.18	6.9
Sn	118	115	No Gas	1063.38	4.4
Sb	123	115	No Gas	112.22	22.7
Ba	137	115	No Gas	230.00	24.1
W	182	159	No Gas	93.33	34.4
Hg	201	159	He	12.17	11.9
Tl	205	159	No Gas	1314.52	7.0
Pb	208	159	No Gas	1661.16	6.9
U	238	159	No Gas	527.79	15.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1972750.34	0.5	1983803.01	99.44	60	120	
Sc	45	No Gas	4074677.67	0.5	4044567.83	100.74	60	120	
Sc	45	H2	2335046.42	0.7	2320461	100.63	60	120	
Sc	45	He	436598.13	0.7	436164.47	100.1	60	120	
Ge	72	No Gas	937377.71	0.7	946826.77	99	60	120	
Ge	72	H2	629944.92	0.6	631498.31	99.75	60	120	
Ge	72	He	249850.92	0.6	251670.34	99.28	60	120	
In	115	No Gas	5432288.88	0.4	5505923.82	98.66	60	120	
Tb	159	No Gas	6861678.06	1.4	6877615.7	99.77	60	120	
Tb	159	He	3621084.17	0.9	3654549.92	99.08	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6G24004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 10:56:52
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	115996.81	0.6
Be	9	6	No Gas	1712.33	3.7
B	11	6	No Gas	60317.83	1.1
Na	23	45	H2	602328.27	0.6
Mg	24	45	No Gas	591212.69	1.3
Al	27	45	No Gas	724257.85	0.8
Si	28	45	H2	115985.44	0.7
P	31	45	No Gas	45085.65	0.2
K	39	45	He	136582.56	3.1
Ca	40	45	H2	509631.55	0.9
Ti	47	45	No Gas	1082.71	3.2
V	51	45	He	10967.05	0.8
Cr	52	45	He	4152.63	3.0
Mn	55	45	No Gas	24574.72	1.0
Fe	56	45	H2	623026.06	0.5
Co	59	45	No Gas	10724.22	0.5
Ni	60	45	He	1478.75	7.9
Cu	63	45	He	6310.13	1.7
Zn	66	72	No Gas	6517.56	1.0
As	75	72	He	903.03	3.3
Se	78	72	H2	214.00	8.6
Sr	88	72	No Gas	14723.65	1.7
Zr	90	72	No Gas	67510.06	1.9
Mo	95	115	No Gas	2598.03	6.1
Ag	107	115	No Gas	6897.35	2.3
Cd	111	115	No Gas	1469.89	3.9
Sn	118	115	No Gas	5564.52	2.6
Sb	123	115	No Gas	4749.76	2.5
Ba	137	115	No Gas	2157.96	0.8
W	182	159	No Gas	2070.18	2.9
Hg	201	159	He	51.50	6.8
Tl	205	159	No Gas	10553.36	4.8
Pb	208	159	No Gas	15151.41	2.4
U	238	159	No Gas	12395.17	0.7

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1954490.01	0.6	1983803.01	98.52	60	120	
Sc	45	No Gas	3994188.42	0.2	4044567.83	98.75	60	120	
Sc	45	H2	2230520.67	5.1	2320461	96.12	60	120	
Sc	45	He	433079.81	0.6	436164.47	99.29	60	120	
Ge	72	No Gas	943718.60	0.2	946826.77	99.67	60	120	
Ge	72	H2	623593.19	4.8	631498.31	98.75	60	120	
Ge	72	He	251200.76	0.3	251670.34	99.81	60	120	
In	115	No Gas	5388046.45	0.8	5505923.82	97.86	60	120	
Tb	159	No Gas	6834152.37	0.6	6877615.7	99.37	60	120	
Tb	159	He	3605451.92	0.9	3654549.92	98.66	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6G24005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 10:59:51
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	163302.11	0.6
Be	9	6	No Gas	17088.13	0.8
B	11	6	No Gas	73109.23	1.0
Na	23	45	H2	20283066.67	0.8
Mg	24	45	No Gas	56140842.67	0.4
Al	27	45	No Gas	69727797.30	2.1
Si	28	45	H2	588196.92	0.5
P	31	45	No Gas	64294.34	1.0
K	39	45	He	3540727.00	1.5
Ca	40	45	H2	41481222.67	0.6
Ti	47	45	No Gas	78987.36	1.1
V	51	45	He	256380.36	2.6
Cr	52	45	He	283477.40	3.2
Mn	55	45	No Gas	7579694.50	0.6
Fe	56	45	H2	57745878.67	0.5
Co	59	45	No Gas	1052888.88	0.5
Ni	60	45	He	95882.97	1.9
Cu	63	45	He	259857.95	1.9
Zn	66	72	No Gas	169542.26	0.2
As	75	72	He	50334.54	2.7
Se	78	72	H2	17994.33	2.2
Sr	88	72	No Gas	1380731.58	0.5
Zr	90	72	No Gas	158822.94	0.4
Mo	95	115	No Gas	255226.32	0.6
Ag	107	115	No Gas	67185.45	1.6
Cd	111	115	No Gas	135523.55	1.0
Sn	118	115	No Gas	391542.54	0.5
Sb	123	115	No Gas	92127.61	0.7
Ba	137	115	No Gas	400476.21	0.9
W	182	159	No Gas	44856.19	2.0
Hg	201	159	He	387.34	2.9
Tl	205	159	No Gas	982020.06	1.8
Pb	208	159	No Gas	1360112.63	1.6
U	238	159	No Gas	1228988.36	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1973686.10	0.8	1983803.01	99.49	60	120	
Sc	45	No Gas	4056556.83	0.5	4044567.83	100.3	60	120	
Sc	45	H2	2363621.17	2.3	2320461	101.86	60	120	
Sc	45	He	440270.85	0.7	436164.47	100.94	60	120	
Ge	72	No Gas	956663.21	0.2	946826.77	101.04	60	120	
Ge	72	H2	649490.17	1.5	631498.31	102.85	60	120	
Ge	72	He	255362.88	0.8	251670.34	101.47	60	120	
In	115	No Gas	5479418.43	0.7	5505923.82	99.52	60	120	
Tb	159	No Gas	6889826.95	1.0	6877615.7	100.18	60	120	
Tb	159	He	3656373.50	0.1	3654549.92	100.05	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6G24006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:03:44
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	360296.84	1.1
Be	9	6	No Gas	83783.84	0.9
B	11	6	No Gas	152549.53	0.5
Na	23	45	H2	99977344.00	0.2
Mg	24	45	No Gas	276204298.67	1.3
Al	27	45	No Gas	349129274.80	1.1
Si	28	45	H2	2891847.08	1.0
P	31	45	No Gas	243391.45	0.3
K	39	45	He	17556305.33	0.6
Ca	40	45	H2	209440629.33	0.2
Ti	47	45	No Gas	397131.72	0.6
V	51	45	He	1301849.96	0.6
Cr	52	45	He	1454228.96	0.9
Mn	55	45	No Gas	37518958.67	0.6
Fe	56	45	H2	288392576.00	0.3
Co	59	45	No Gas	5171133.17	0.5
Ni	60	45	He	488212.54	0.2
Cu	63	45	He	1267532.84	0.4
Zn	66	72	No Gas	824890.94	0.3
As	75	72	He	259479.12	0.6
Se	78	72	H2	88487.08	0.3
Sr	88	72	No Gas	6904654.73	0.1
Zr	90	72	No Gas	419749.07	1.6
Mo	95	115	No Gas	1296029.71	0.5
Ag	107	115	No Gas	334459.26	0.4
Cd	111	115	No Gas	675451.40	0.6
Sn	118	115	No Gas	2008933.67	0.9
Sb	123	115	No Gas	464043.61	0.8
Ba	137	115	No Gas	2024762.91	0.9
W	182	159	No Gas	220856.64	1.0
Hg	201	159	He	1906.64	2.1
Tl	205	159	No Gas	4863441.61	0.7
Pb	208	159	No Gas	6756058.38	0.8
U	238	159	No Gas	6124455.03	0.5

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1913195.99	1.4	1983803.01	96.44	60	120	
Sc	45	No Gas	4079290.58	0.8	4044567.83	100.86	60	120	
Sc	45	H2	2368283.75	0.4	2320461	102.06	60	120	
Sc	45	He	440814.24	0.5	436164.47	101.07	60	120	
Ge	72	No Gas	959878.79	1.8	946826.77	101.38	60	120	
Ge	72	H2	644068.21	0.6	631498.31	101.99	60	120	
Ge	72	He	250575.00	0.4	251670.34	99.56	60	120	
In	115	No Gas	5301468.65	0.9	5505923.82	96.29	60	120	
Tb	159	No Gas	6865604.03	1.3	6877615.7	99.83	60	120	
Tb	159	He	3612854.83	0.4	3654549.92	98.86	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6G24007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:06:41
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	607377.61	1.1
Be	9	6	No Gas	163723.49	1.0
B	11	6	No Gas	230851.92	1.1
Na	23	45	H2	197304250.67	1.7
Mg	24	45	No Gas	547954090.67	0.1
Al	27	45	No Gas	702487082.87	1.2
Si	28	45	H2	5582642.50	1.2
P	31	45	No Gas	460039.01	1.3
K	39	45	He	34799362.67	0.8
Ca	40	45	H2	415509344.00	0.5
Ti	47	45	No Gas	787455.73	0.6
V	51	45	He	2606578.33	0.5
Cr	52	45	He	2891443.75	0.6
Mn	55	45	No Gas	73664352.00	0.4
Fe	56	45	H2	571167338.67	0.1
Co	59	45	No Gas	10166422.67	0.5
Ni	60	45	He	954838.40	0.4
Cu	63	45	He	2478337.25	0.2
Zn	66	72	No Gas	1637457.67	0.3
As	75	72	He	514981.22	0.5
Se	78	72	H2	174567.88	0.5
Sr	88	72	No Gas	13830851.12	0.6
Zr	90	72	No Gas	857347.83	0.3
Mo	95	115	No Gas	2619626.70	0.8
Ag	107	115	No Gas	649258.45	0.8
Cd	111	115	No Gas	1343533.96	0.3
Sn	118	115	No Gas	3984423.59	0.4
Sb	123	115	No Gas	917122.60	1.3
Ba	137	115	No Gas	4083255.26	0.7
W	182	159	No Gas	433367.17	0.9
Hg	201	159	He	3787.40	2.5
Tl	205	159	No Gas	9690306.84	2.1
Pb	208	159	No Gas	13408926.15	1.5
U	238	159	No Gas	12322670.34	0.8

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1900685.54	1.0	1983803.01	95.81	60	120	
Sc	45	No Gas	4056696.58	1.0	4044567.83	100.3	60	120	
Sc	45	H2	2361609.75	0.5	2320461	101.77	60	120	
Sc	45	He	440254.91	0.8	436164.47	100.94	60	120	
Ge	72	No Gas	950990.13	1.4	946826.77	100.44	60	120	
Ge	72	H2	640961.00	0.7	631498.31	101.5	60	120	
Ge	72	He	250780.29	0.8	251670.34	99.65	60	120	
In	115	No Gas	5253184.70	1.0	5505923.82	95.41	60	120	
Tb	159	No Gas	6897971.12	1.3	6877615.7	100.3	60	120	
Tb	159	He	3630482.83	0.2	3654549.92	99.34	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6G24008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 11:09:35
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.650	ppb	1.4	397642.91	30	95.5	90	110	
Be	9	6	No Gas	28.605	ppb	2.6	94815.48	30	95.35	90	110	
B	11	6	No Gas	30.234	ppb	1.3	108750.76	30	100.78	90	110	
Na	23	45	H2	30546.484	ppb	1.1	120237818.67	30000	101.82	90	110	
Mg	24	45	No Gas	29680.731	ppb	2.9	325881824.00	30000	98.94	90	110	
Al	27	45	No Gas	29613.349	ppb	2.7	415546847.14	30000	98.71	90	110	
Si	28	45	H2	3306.738	ppb	1.1	3698119.83	3000	110.22	90	110	> +/- 10%
P	31	45	No Gas	281.783	ppb	1.7	269882.52	300	93.93	90	110	
K	39	45	He	29903.025	ppb	1.5	20816169.33	30000	99.68	90	110	
Ca	40	45	H2	30600.120	ppb	0.7	253168864.00	30000	102	90	110	
Ti	47	45	No Gas	300.187	ppb	1.3	473619.37	300	100.06	90	110	
V	51	45	He	311.367	ppb	0.9	1619381.21	300	103.79	90	110	
Cr	52	45	He	315.478	ppb	1.1	1821198.54	300	105.16	90	110	
Mn	55	45	No Gas	1947.271	ppb	0.9	48001918.67	2000	97.36	90	110	
Fe	56	45	H2	30540.216	ppb	0.9	347457952.00	30000	101.8	90	110	
Co	59	45	No Gas	303.419	ppb	1.6	6192252.00	300	101.14	90	110	
Ni	60	45	He	318.864	ppb	1.0	610018.19	300	106.29	90	110	
Cu	63	45	He	314.042	ppb	1.0	1560382.79	300	104.68	90	110	
Zn	66	72	No Gas	308.549	ppb	2.1	1001502.83	300	102.85	90	110	
As	75	72	He	313.349	ppb	0.4	322854.68	300	104.45	90	110	
Se	78	72	H2	310.766	ppb	0.5	108449.83	300	103.59	90	110	
Sr	88	72	No Gas	309.184	ppb	1.9	8457395.50	300	103.06	90	110	
Zr	90	72	No Gas	29.027	ppb	1.0	488425.80	30	96.76	90	110	
Mo	95	115	No Gas	303.111	ppb	1.4	1594755.80	300	101.04	90	110	
Ag	107	115	No Gas	28.907	ppb	1.5	380188.00	30	96.36	90	110	
Cd	111	115	No Gas	302.867	ppb	0.9	820052.98	300	100.96	90	110	
Sn	118	115	No Gas	307.686	ppb	1.4	2471789.49	300	102.56	90	110	
Sb	123	115	No Gas	57.531	ppb	1.1	532369.60	60	95.88	90	110	
Ba	137	115	No Gas	307.764	ppb	1.2	1262782.00	300	102.59	90	110	
W	182	159	No Gas	31.078	ppb	1.4	268730.09	30	103.59	90	110	
Hg	201	159	He	2.951	ppb	0.9	2257.20	3	98.37	90	110	
Tl	205	159	No Gas	311.339	ppb	2.8	6000692.96	300	103.78	90	110	
Pb	208	159	No Gas	313.329	ppb	1.9	8362812.95	300	104.44	90	110	
U	238	159	No Gas	304.647	ppb	2.4	7497178.59	300	101.55	90	110	

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Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1916621.07	1.6	1983803.01	96.61	60	120	
Sc	45	No Gas	4060520.50	1.0	4044567.83	100.39	60	120	
Sc	45	H2	2348647.17	0.9	2320461	101.21	60	120	
Sc	45	He	439124.97	1.1	436164.47	100.68	60	120	
Ge	72	No Gas	942323.50	0.9	946826.77	99.52	60	120	
Ge	72	H2	639389.50	0.3	631498.31	101.25	60	120	
Ge	72	He	250469.59	0.6	251670.34	99.52	60	120	
In	115	No Gas	5298040.18	0.5	5505923.82	96.22	60	120	
Tb	159	No Gas	6846388.20	0.4	6877615.7	99.55	60	120	
Tb	159	He	3651787.08	0.6	3654549.92	99.92	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6G24009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:15:55
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	111213.42	0.4	
Be	9	6	No Gas	0.005	ppb	145.0	83.33	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	53243.79	4	
Na	23	45	H2	<0.000	ppb	N/A	402342.76	40	
Mg	24	45	No Gas	1.653	ppb	10.3	59683.31	10	
Al	27	45	No Gas	1.541	ppb	3.6	56113.03	15	
Si	28	45	H2	1.228	ppb	5.4	4738.81	8	
P	31	45	No Gas	0.369	ppb	227.1	24336.64	10	
K	39	45	He	3.755	ppb	163.0	106691.06	20	
Ca	40	45	H2	1.110	ppb	15.2	98588.92	25	
Ti	47	45	No Gas	0.018	ppb	77.0	255.33	0.5	
V	51	45	He	<0.000	ppb	N/A	6360.81	0.5	
Cr	52	45	He	0.009	ppb	76.3	916.70	0.2	
Mn	55	45	No Gas	0.117	ppb	27.3	16110.16	0.2	
Fe	56	45	H2	1.444	ppb	3.6	49504.71	10	
Co	59	45	No Gas	0.017	ppb	5.8	1046.04	0.15	
Ni	60	45	He	<0.000	ppb	N/A	428.01	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2270.19	0.4	
Zn	66	72	No Gas	0.028	ppb	79.2	1266.73	2	
As	75	72	He	0.024	ppb	37.8	312.67	0.2	
Se	78	72	H2	0.012	ppb	173.1	37.67	0.2	
Sr	88	72	No Gas	0.016	ppb	26.5	1487.86	0.2	
Zr	90	72	No Gas	0.013	ppb	23.5	393.34	2	
Mo	95	115	No Gas	0.028	ppb	11.3	326.67	0.2	
Ag	107	115	No Gas	0.004	ppb	57.9	146.67	0.08	
Cd	111	115	No Gas	0.040	ppb	10.0	215.60	0.2	
Sn	118	115	No Gas	0.041	ppb	20.8	1410.08	0.2	
Sb	123	115	No Gas	0.008	ppb	40.8	184.44	0.4	
Ba	137	115	No Gas	0.017	ppb	56.5	302.23	0.2	
W	182	159	No Gas	0.000	ppb	925.5	96.67	0.3	
Hg	201	159	He	0.014	ppb	26.7	23.17	0.1	
Tl	205	159	No Gas	0.047	ppb	8.9	2210.20	0.1	
Pb	208	159	No Gas	0.031	ppb	11.8	2467.88	0.1	
U	238	159	No Gas	0.016	ppb	14.9	915.59	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1952950.70	1.1	1983803.01	98.44	60	120	
Sc	45	No Gas	4049474.58	1.3	4044567.83	100.12	60	120	
Sc	45	H2	2370852.42	1.2	2320461	102.17	60	120	
Sc	45	He	444216.96	0.6	436164.47	101.85	60	120	
Ge	72	No Gas	941841.98	1.9	946826.77	99.47	60	120	
Ge	72	H2	636095.52	0.8	631498.31	100.73	60	120	
Ge	72	He	253725.69	0.8	251670.34	100.82	60	120	
In	115	No Gas	5452609.16	0.9	5505923.82	99.03	60	120	
Tb	159	No Gas	6838944.59	1.6	6877615.7	99.44	60	120	
Tb	159	He	3636009.00	0.7	3654549.92	99.49	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG3101
File Name	H6G24010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:18:49
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	1.041	ppb	8.8	119786.40	1	104.1	80	120	
Be	9	6	No Gas	1.015	ppb	5.0	3424.86	1	101.5	80	120	
B	11	6	No Gas	4.082	ppb	34.8	60788.78	10	40.82	80	120	> +/- 20%
Na	23	45	H2	95.058	ppb	1.9	786398.44	100	95.06	80	120	
Mg	24	45	No Gas	102.306	ppb	2.0	1129280.59	100	102.31	80	120	
Al	27	45	No Gas	100.710	ppb	1.1	1403795.34	100	100.71	80	120	
Si	28	45	H2	99.978	ppb	0.8	115927.15	100	99.98	80	120	
P	31	45	No Gas	49.234	ppb	4.2	64971.58	50	98.47	80	120	
K	39	45	He	102.044	ppb	8.0	175211.88	100	102.04	80	120	
Ca	40	45	H2	102.770	ppb	1.1	945769.98	100	102.77	80	120	
Ti	47	45	No Gas	1.054	ppb	7.1	1830.79	1	105.4	80	120	
V	51	45	He	1.054	ppb	3.0	12063.30	1	105.4	80	120	
Cr	52	45	He	1.062	ppb	1.5	7049.81	1	106.2	80	120	
Mn	55	45	No Gas	1.047	ppb	3.0	37872.34	1	104.7	80	120	
Fe	56	45	H2	100.872	ppb	0.4	1189404.75	100	100.87	80	120	
Co	59	45	No Gas	1.020	ppb	0.8	20873.98	1	102	80	120	
Ni	60	45	He	1.071	ppb	2.6	2512.23	1	107.1	80	120	
Cu	63	45	He	1.000	ppb	2.5	7698.85	1	100	80	120	
Zn	66	72	No Gas	10.998	ppb	2.0	36126.67	10	109.98	80	120	
As	75	72	He	1.000	ppb	1.2	1340.07	1	100	80	120	
Se	78	72	H2	0.991	ppb	1.6	384.68	1	99.1	80	120	
Sr	88	72	No Gas	2.070	ppb	1.7	56567.02	2	103.5	80	120	
Zr	90	72	No Gas	3.918	ppb	1.7	64820.27	5	78.36	80	120	> +/- 20%
Mo	95	115	No Gas	0.944	ppb	2.1	5073.19	1	94.4	80	120	
Ag	107	115	No Gas	1.011	ppb	2.3	13217.71	1	101.1	80	120	
Cd	111	115	No Gas	1.028	ppb	4.3	2849.46	1	102.8	80	120	
Sn	118	115	No Gas	1.012	ppb	4.1	9050.90	1	101.2	80	120	
Sb	123	115	No Gas	0.978	ppb	5.0	9039.79	1	97.8	80	120	
Ba	137	115	No Gas	1.015	ppb	5.3	4331.84	1	101.5	80	120	
W	182	159	No Gas	2.162	ppb	5.4	17842.61	2	108.1	80	120	
Hg	201	159	He	0.108	ppb	7.0	94.67	0.1	108	80	120	
Tl	205	159	No Gas	1.033	ppb	4.0	20152.92	1	103.3	80	120	
Pb	208	159	No Gas	1.054	ppb	3.8	28303.68	1	105.4	80	120	
U	238	159	No Gas	1.002	ppb	4.2	23936.71	1	100.2	80	120	

LY 07/31/20

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1916504.90	3.4	1983803.01	96.61	60	120	
Sc	45	No Gas	3937806.33	2.9	4044567.83	97.36	60	120	
Sc	45	H2	2366959.50	0.7	2320461	102	60	120	
Sc	45	He	443308.34	0.5	436164.47	101.64	60	120	
Ge	72	No Gas	924531.65	3.3	946826.77	97.65	60	120	
Ge	72	H2	648815.44	0.9	631498.31	102.74	60	120	
Ge	72	He	255447.72	0.6	251670.34	101.5	60	120	
In	115	No Gas	5236713.03	3.8	5505923.82	95.11	60	120	
Tb	159	No Gas	6511330.30	3.9	6877615.7	94.67	60	120	
Tb	159	He	3654987.25	0.6	3654549.92	100.01	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG3102
File Name	H6G24011.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 11:21:43
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.248	ppb	54.4	114498.16	0.4	62	80	120	> +/- 20%
Be	9	6	No Gas	0.362	ppb	1.0	1294.51	0.4	90.5	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	41847.70	0.4	-1705.25	80	120	> +/- 20%
Na	23	45	H2	39.832	ppb	2.5	567247.25	40	99.58	80	120	
Mg	24	45	No Gas	39.033	ppb	1.5	472180.44	40	97.58	80	120	
Al	27	45	No Gas	38.387	ppb	1.8	575545.73	40	95.97	80	120	
K	39	45	He	44.954	ppb	10.7	135584.90	40	112.38	80	120	
Ca	40	45	H2	84.558	ppb	0.6	792828.02	40	211.4	80	120	> +/- 20%
Ti	47	45	No Gas	0.376	ppb	7.3	824.02	0.4	94	80	120	
V	51	45	He	0.435	ppb	4.2	8846.19	0.4	108.75	80	120	
Cr	52	45	He	0.412	ppb	5.6	3268.39	0.4	103	80	120	
Mn	55	45	No Gas	0.392	ppb	2.5	23026.02	0.4	98	80	120	
Fe	56	45	H2	40.665	ppb	0.8	498371.51	40	101.66	80	120	
Co	59	45	No Gas	0.383	ppb	1.0	8566.70	0.4	95.75	80	120	
Ni	60	45	He	0.406	ppb	2.5	1232.06	0.4	101.5	80	120	
Cu	63	45	He	0.382	ppb	3.0	4614.12	0.4	95.5	80	120	
Zn	66	72	No Gas	10.373	ppb	1.1	34578.64	4	259.32	80	120	> +/- 20%
As	75	72	He	0.416	ppb	8.9	716.02	0.4	104	80	120	
Se	78	72	H2	0.396	ppb	5.8	171.67	0.4	99	80	120	
Sr	88	72	No Gas	0.407	ppb	0.9	12095.47	0.4	101.75	80	120	
Mo	95	115	No Gas	0.357	ppb	6.4	2109.06	0.4	89.25	80	120	
Ag	107	115	No Gas	0.382	ppb	1.7	5271.05	0.4	95.5	80	120	
Cd	111	115	No Gas	0.373	ppb	2.4	1143.39	0.4	93.25	80	120	
Sn	118	115	No Gas	0.409	ppb	8.5	4452.99	0.4	102.25	80	120	
Sb	123	115	No Gas	0.368	ppb	2.2	3622.73	0.4	92	80	120	
Ba	137	115	No Gas	0.485	ppb	4.9	2281.32	0.4	121.25	80	120	> +/- 20%
Tl	205	159	No Gas	0.373	ppb	0.7	8541.83	0.4	93.25	80	120	
Pb	208	159	No Gas	0.402	ppb	3.8	12442.42	0.4	100.5	80	120	
U	238	159	No Gas	0.370	ppb	3.2	9679.39	0.4	92.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1962428.58	1.4	1983803.01	98.92	60	120	
Sc	45	No Gas	4077461.92	1.5	4044567.83	100.81	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	2363479.33	0.5	2320461	101.85	60	120	
Sc	45	He	444292.89	0.7	436164.47	101.86	60	120	
Ge	72	No Gas	936025.37	1.2	946826.77	98.86	60	120	
Ge	72	H2	639809.65	0.3	631498.31	101.32	60	120	
Ge	72	He	251752.08	0.6	251670.34	100.03	60	120	
In	115	No Gas	5456704.51	1.1	5505923.82	99.11	60	120	
Tb	159	No Gas	6874948.89	0.6	6877615.7	99.96	60	120	
Tb	159	He	3620453.00	0.7	3654549.92	99.07	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6G24012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 11:24:36
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.437	ppb	22.7	109199.79	2	-50	50	
Be	9	6	No Gas	<0.000	ppb	N/A	56.67	0.4	-50	50	
B	11	6	No Gas	2.197	ppb	63.3	55090.97	10	-50	50	
Na	23	45	H2	102403.196	ppb	0.9	402158304.00	100000	80	120	
Mg	24	45	No Gas	99507.538	ppb	2.3	1070014720.00	100000	80	120	
Al	27	45	No Gas	100531.259	ppb	3.2	1381739739.41	100000	80	120	
Si	28	45	H2	5.688	ppb	3.6	9678.71	50	-50	50	
P	31	45	No Gas	98034.540	ppb	2.5	83790128.00	100000	80	120	
K	39	45	He	103965.464	ppb	1.8	70589824.00	100000	80	120	
Ca	40	45	H2	104064.621	ppb	0.4	860823018.67	100000	80	120	
Ti	47	45	No Gas	2115.935	ppb	1.6	3268476.75	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	6110.70	1	-50	50	
Cr	52	45	He	0.318	ppb	6.4	2632.26	1	-50	50	
Mn	55	45	No Gas	0.254	ppb	0.9	19138.04	1	-50	50	
Fe	56	45	H2	101853.926	ppb	0.2	1158837461.33	100000	80	120	
Co	59	45	No Gas	0.351	ppb	2.3	7716.85	0.75	-50	50	
Ni	60	45	He	0.345	ppb	8.6	1076.71	1	-50	50	
Cu	63	45	He	0.248	ppb	13.1	3813.87	2	-50	50	
Zn	66	72	No Gas	1.908	ppb	3.7	7046.50	20	-50	50	
As	75	72	He	0.091	ppb	25.4	365.00	1	-50	50	
Se	78	72	H2	0.268	ppb	11.0	121.33	1	-50	50	
Sr	88	72	No Gas	0.857	ppb	2.5	23428.28	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.226	ppb	33.1	3790.67	10	-50	50	
Mo	95	115	No Gas	2036.897	ppb	1.5	10341650.14	2000	80	120	
Ag	107	115	No Gas	0.013	ppb	11.8	248.89	0.4	-50	50	
Cd	111	115	No Gas	0.060	ppb	9.6	255.98	1	-50	50	
Sn	118	115	No Gas	0.387	ppb	2.4	3996.17	1	-50	50	
Ba	137	115	No Gas	0.346	ppb	3.8	1584.54	1	-50	50	
W	182	159	No Gas	0.192	ppb	0.5	1730.13	1	-50	50	
Hg	201	159	He	0.010	ppb	38.4	20.00	0.5	-50	50	
Tl	205	159	No Gas	<0.000	ppb	N/A	864.48	0.5	-50	50	
Pb	208	159	No Gas	0.100	ppb	7.0	4251.42	0.5	-50	50	
U	238	159	No Gas	<0.000	ppb	N/A	318.89	0.25	-50	50	

LY 07/31/20

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1840152.33	0.9	1983803.01	92.76	60	120	
Sc	45	No Gas	3976836.33	1.4	4044567.83	98.33	60	120	
Sc	45	H2	2348760.67	0.7	2320461	101.22	60	120	
Sc	45	He	429790.79	0.4	436164.47	98.54	60	120	
Ge	72	No Gas	901678.81	0.2	946826.77	95.23	60	120	
Ge	72	H2	610133.37	1.7	631498.31	96.62	60	120	
Ge	72	He	242198.56	1.1	251670.34	96.24	60	120	
In	115	No Gas	5112655.58	1.2	5505923.82	92.86	60	120	
Tb	159	No Gas	6747594.87	1.0	6877615.7	98.11	60	120	
Tb	159	He	3610618.25	0.1	3654549.92	98.8	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6G24013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:33:17
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.560	ppb	0.8	300152.34	20	80	120	
Be	9	6	No Gas	19.986	ppb	2.0	64969.91	20	80	120	
B	11	6	No Gas	20.736	ppb	6.7	89527.09	20	80	120	
Na	23	45	H2	97817.343	ppb	1.5	384877386.67	100000	80	120	
Mg	24	45	No Gas	94799.530	ppb	2.5	1043810560.00	100000	80	120	
Al	27	45	No Gas	94693.929	ppb	2.7	1332557446.81	100000	80	120	
Si	28	45	H2	217.952	ppb	1.1	247316.76	200	80	120	
P	31	45	No Gas	93212.742	ppb	2.1	81573352.00	100000	80	120	
K	39	45	He	97905.028	ppb	1.7	67916986.67	100000	80	120	
Ca	40	45	H2	99145.047	ppb	1.2	821642538.67	100000	80	120	
Ti	47	45	No Gas	2019.961	ppb	1.8	3194940.75	2000	80	120	
V	51	45	He	19.920	ppb	1.3	109674.29	20	80	120	
Cr	52	45	He	20.305	ppb	2.8	117993.18	20	80	120	
Mn	55	45	No Gas	19.586	ppb	1.4	497345.16	20	80	120	
Fe	56	45	H2	99415.854	ppb	1.4	1133164074.67	100000	80	120	
Co	59	45	No Gas	19.535	ppb	1.8	400426.73	20	80	120	
Ni	60	45	He	20.359	ppb	2.9	39354.01	20	80	120	
Cu	63	45	He	20.283	ppb	2.1	103257.72	20	80	120	
Zn	66	72	No Gas	21.371	ppb	1.1	69781.54	20	80	120	
As	75	72	He	19.617	ppb	1.0	20387.35	20	80	120	
Se	78	72	H2	20.715	ppb	1.8	7058.18	20	80	120	
Sr	88	72	No Gas	20.634	ppb	2.2	559915.62	20	80	120	
Zr	90	72	No Gas	19.871	ppb	7.4	331201.98	20	80	120	
Mo	95	115	No Gas	1976.764	ppb	1.9	10195701.82	2000	80	120	
Ag	107	115	No Gas	19.093	ppb	1.3	246211.08	20	80	120	
Cd	111	115	No Gas	19.544	ppb	0.6	51967.42	20	80	120	
Sn	118	115	No Gas	19.744	ppb	0.8	156431.67	20	80	120	
Sb	123	115	No Gas	19.347	ppb	0.9	175566.53	20	80	120	
Ba	137	115	No Gas	19.506	ppb	1.4	78662.95	20	80	120	
W	182	159	No Gas	18.628	ppb	1.5	161007.14	20	80	120	
Hg	201	159	He	1.976	ppb	1.0	1513.42	2	80	120	
Tl	205	159	No Gas	19.434	ppb	1.3	375545.26	20	80	120	
Pb	208	159	No Gas	19.344	ppb	1.3	517521.01	20	80	120	
U	238	159	No Gas	19.588	ppb	0.6	482293.80	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1879029.28	1.8	1983803.01	94.72	60	120	
Sc	45	No Gas	4071960.83	1.6	4044567.83	100.68	60	120	
Sc	45	H2	2353134.58	0.5	2320461	101.41	60	120	
Sc	45	He	439137.05	1.7	436164.47	100.68	60	120	
Ge	72	No Gas	933128.75	1.0	946826.77	98.55	60	120	
Ge	72	H2	621636.02	0.4	631498.31	98.44	60	120	
Ge	72	He	249383.96	1.5	251670.34	99.09	60	120	
In	115	No Gas	5193993.42	1.5	5505923.82	94.33	60	120	
Tb	159	No Gas	6843386.67	2.2	6877615.7	99.5	60	120	
Tb	159	He	3647561.17	1.6	3654549.92	99.81	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6G24016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 11:45:28
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.595	ppb	0.8	350495.37	25	98.38	90	110	
Be	9	6	No Gas	24.973	ppb	0.1	81298.70	25	99.89	90	110	
B	11	6	No Gas	50.121	ppb	0.2	142589.01	50	100.24	90	110	
Na	23	45	H2	25089.776	ppb	2.1	98950216.00	25000	100.36	90	110	
Mg	24	45	No Gas	24526.053	ppb	1.5	267644714.67	25000	98.1	90	110	
Al	27	45	No Gas	24438.187	ppb	1.2	340791728.25	25000	97.75	90	110	
Si	28	45	H2	2536.474	ppb	3.2	2840093.25	2500	101.46	90	110	
P	31	45	No Gas	242.512	ppb	1.2	234157.42	250	97	90	110	
K	39	45	He	25136.659	ppb	0.8	17454727.33	25000	100.55	90	110	
Ca	40	45	H2	24894.661	ppb	3.2	206178949.33	25000	99.58	90	110	
Ti	47	45	No Gas	247.461	ppb	0.5	388066.35	250	98.98	90	110	
V	51	45	He	252.053	ppb	0.7	1307484.12	250	100.82	90	110	
Cr	52	45	He	252.514	ppb	0.2	1452805.63	250	101.01	90	110	
Mn	55	45	No Gas	1487.246	ppb	0.5	36438146.67	1500	99.15	90	110	
Fe	56	45	H2	25272.433	ppb	2.7	287842485.33	25000	101.09	90	110	
Co	59	45	No Gas	248.324	ppb	1.4	5037077.83	250	99.33	90	110	
Ni	60	45	He	254.722	ppb	0.6	485686.47	250	101.89	90	110	
Cu	63	45	He	255.376	ppb	0.7	1264942.92	250	102.15	90	110	
Zn	66	72	No Gas	246.706	ppb	1.0	809794.08	250	98.68	90	110	
As	75	72	He	248.570	ppb	0.4	257145.39	250	99.43	90	110	
Se	78	72	H2	253.044	ppb	2.6	88843.06	250	101.22	90	110	
Sr	88	72	No Gas	246.288	ppb	1.6	6811256.39	250	98.52	90	110	
Zr	90	72	No Gas	25.429	ppb	0.9	432624.21	25	101.72	90	110	
Mo	95	115	No Gas	245.844	ppb	0.9	1299347.79	250	98.34	90	110	
Ag	107	115	No Gas	24.816	ppb	0.3	327818.61	25	99.26	90	110	
Cd	111	115	No Gas	244.647	ppb	1.7	665214.94	250	97.86	90	110	
Sn	118	115	No Gas	244.212	ppb	0.3	1970721.38	250	97.68	90	110	
Sb	123	115	No Gas	48.942	ppb	1.3	454825.59	50	97.88	90	110	
Ba	137	115	No Gas	489.796	ppb	1.2	2018523.67	500	97.96	90	110	
W	182	159	No Gas	24.988	ppb	2.5	217388.75	25	99.95	90	110	
Hg	201	159	He	2.456	ppb	1.3	1885.47	2.5	98.24	90	110	
Tl	205	159	No Gas	248.209	ppb	0.6	4813385.92	250	99.28	90	110	
Pb	208	159	No Gas	247.785	ppb	0.7	6653821.74	250	99.11	90	110	
U	238	159	No Gas	243.290	ppb	1.2	6023358.79	250	97.32	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1882627.57	1.8	1983803.01	94.9	60	120	
Sc	45	No Gas	4035680.42	1.8	4044567.83	99.78	60	120	
Sc	45	H2	2352131.92	2.6	2320461	101.36	60	120	
Sc	45	He	437560.34	0.7	436164.47	100.32	60	120	
Ge	72	No Gas	952616.79	1.3	946826.77	100.61	60	120	
Ge	72	H2	643484.23	2.5	631498.31	101.9	60	120	
Ge	72	He	251424.69	0.4	251670.34	99.9	60	120	
In	115	No Gas	5321607.69	2.1	5505923.82	96.65	60	120	
Tb	159	No Gas	6888712.92	2.1	6877615.7	100.16	60	120	
Tb	159	He	3662194.00	0.7	3654549.92	100.21	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6G24017.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 11:48:22
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	109742.77	0.4	
Be	9	6	No Gas	0.009	ppb	99.1	95.55	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	50870.63	4	
Na	23	45	H2	<0.000	ppb	N/A	394011.71	40	
Mg	24	45	No Gas	6.314	ppb	39.0	110078.99	10	
Al	27	45	No Gas	5.550	ppb	42.4	111514.74	15	
Si	28	45	H2	1.026	ppb	9.5	4484.72	8	
P	31	45	No Gas	<0.000	ppb	N/A	23305.52	10	
K	39	45	He	4.735	ppb	122.9	105881.36	20	
Ca	40	45	H2	0.169	ppb	36.8	90212.00	25	
Ti	47	45	No Gas	0.091	ppb	52.1	368.00	0.5	
V	51	45	He	0.136	ppb	26.9	7179.88	0.5	
Cr	52	45	He	0.002	ppb	330.6	862.70	0.2	
Mn	55	45	No Gas	0.288	ppb	53.0	20218.61	0.2	~~>LOD~~ LY 07/31/20
Fe	56	45	H2	2.868	ppb	5.0	65486.41	10	
Co	59	45	No Gas	0.050	ppb	48.7	1721.45	0.15	
Ni	60	45	He	<0.000	ppb	N/A	400.68	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1641.43	0.4	
Zn	66	72	No Gas	0.008	ppb	280.4	1186.72	2	
As	75	72	He	0.042	ppb	35.9	326.67	0.2	
Se	78	72	H2	0.018	ppb	163.4	39.33	0.2	
Sr	88	72	No Gas	0.042	ppb	46.8	2171.30	0.2	
Zr	90	72	No Gas	0.003	ppb	141.0	213.33	2	
Mo	95	115	No Gas	0.107	ppb	28.3	756.69	0.2	
Ag	107	115	No Gas	0.005	ppb	90.9	167.78	0.08	
Cd	111	115	No Gas	0.087	ppb	34.2	347.96	0.2	
Sn	118	115	No Gas	0.067	ppb	37.4	1628.99	0.2	
Sb	123	115	No Gas	0.016	ppb	35.5	266.67	0.4	
Ba	137	115	No Gas	0.090	ppb	53.7	616.68	0.2	
W	182	159	No Gas	0.010	ppb	19.3	183.33	0.3	
Hg	201	159	He	0.005	ppb	101.9	16.33	0.1	
Tl	205	159	No Gas	0.084	ppb	47.2	2947.04	0.1	
Pb	208	159	No Gas	0.056	ppb	58.8	3174.62	0.1	
U	238	159	No Gas	0.049	ppb	50.8	1739.02	0.05	

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1934707.35	1.6	1983803.01	97.53	60	120	
Sc	45	No Gas	4032619.25	1.1	4044567.83	99.7	60	120	
Sc	45	H2	2356996.00	0.3	2320461	101.57	60	120	
Sc	45	He	438079.96	0.7	436164.47	100.44	60	120	
Ge	72	No Gas	929973.00	0.9	946826.77	98.22	60	120	
Ge	72	H2	633397.14	0.9	631498.31	100.3	60	120	
Ge	72	He	249702.81	0.8	251670.34	99.22	60	120	
In	115	No Gas	5496020.80	0.7	5505923.82	99.82	60	120	
Tb	159	No Gas	6881372.37	1.1	6877615.7	100.05	60	120	
Tb	159	He	3647479.75	1.2	3654549.92	99.81	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV7
File Name	H6G24073.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 14:37:24
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.605	ppb	2.7	356139.67	25	98.42	90	110	
Be	9	6	No Gas	24.877	ppb	3.0	82272.19	25	99.51	90	110	
B	11	6	No Gas	47.677	ppb	3.4	140386.62	50	95.35	90	110	
Na	23	45	H2	24877.555	ppb	0.6	98898765.33	25000	99.51	90	110	
Mg	24	45	No Gas	24600.969	ppb	1.8	268404277.33	25000	98.4	90	110	
Al	27	45	No Gas	24251.506	ppb	2.0	338155248.29	25000	97.01	90	110	
Si	28	45	H2	2533.890	ppb	0.9	2860211.50	2500	101.36	90	110	
P	31	45	No Gas	247.536	ppb	1.9	238511.27	250	99.01	90	110	
K	39	45	He	25162.244	ppb	0.5	17492698.00	25000	100.65	90	110	
Ca	40	45	H2	24655.472	ppb	0.3	205859573.33	25000	98.62	90	110	
Ti	47	45	No Gas	247.707	ppb	1.7	388396.51	250	99.08	90	110	
V	51	45	He	246.448	ppb	0.3	1280111.00	250	98.58	90	110	
Cr	52	45	He	249.975	ppb	0.8	1439909.88	250	99.99	90	110	
Mn	55	45	No Gas	1489.363	ppb	1.2	36486653.33	1500	99.29	90	110	
Fe	56	45	H2	24938.558	ppb	0.6	286317578.67	25000	99.75	90	110	
Co	59	45	No Gas	247.033	ppb	1.8	5009887.50	250	98.81	90	110	
Ni	60	45	He	252.971	ppb	0.5	482930.26	250	101.19	90	110	
Cu	63	45	He	253.663	ppb	0.4	1257960.13	250	101.47	90	110	
Zn	66	72	No Gas	245.879	ppb	2.0	812507.25	250	98.35	90	110	
As	75	72	He	247.398	ppb	0.6	257795.18	250	98.96	90	110	
Se	78	72	H2	251.608	ppb	1.0	88328.00	250	100.64	90	110	
Sr	88	72	No Gas	243.748	ppb	2.3	6785857.09	250	97.5	90	110	
Zr	90	72	No Gas	24.619	ppb	1.1	421636.80	25	98.48	90	110	
Mo	95	115	No Gas	239.999	ppb	2.2	1276852.69	250	96	90	110	
Ag	107	115	No Gas	24.663	ppb	2.1	327988.64	25	98.65	90	110	
Cd	111	115	No Gas	243.710	ppb	0.9	667224.30	250	97.48	90	110	
Sn	118	115	No Gas	246.480	ppb	1.7	2002507.77	250	98.59	90	110	
Sb	123	115	No Gas	49.427	ppb	1.3	462469.72	50	98.85	90	110	
Ba	137	115	No Gas	486.864	ppb	1.1	2019673.53	500	97.37	90	110	
W	182	159	No Gas	25.069	ppb	2.0	219801.78	25	100.28	90	110	
Hg	201	159	He	2.484	ppb	1.3	1900.48	2.5	99.36	90	110	
Tl	205	159	No Gas	244.311	ppb	2.1	4775854.95	250	97.72	90	110	
Pb	208	159	No Gas	245.085	ppb	1.7	6633996.81	250	98.03	90	110	
U	238	159	No Gas	239.845	ppb	0.7	5985650.32	250	95.94	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912518.62	0.1	1983803.01	96.41	60	120	
Sc	45	No Gas	4035045.33	0.7	4044567.83	99.76	60	120	
Sc	45	H2	2369965.83	0.8	2320461	102.13	60	120	
Sc	45	He	438079.80	0.5	436164.47	100.44	60	120	
Ge	72	No Gas	959034.58	0.1	946826.77	101.29	60	120	
Ge	72	H2	643176.38	0.8	631498.31	101.85	60	120	
Ge	72	He	253258.19	0.8	251670.34	100.63	60	120	
In	115	No Gas	5357320.77	1.2	5505923.82	97.3	60	120	
Tb	159	No Gas	6942882.36	1.3	6877615.7	100.95	60	120	
Tb	159	He	3649621.08	0.5	3654549.92	99.87	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB7
File Name	H6G24074.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 14:40:17
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	110972.14	0.4	
Be	9	6	No Gas	0.015	ppb	53.7	116.67	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	46185.61	4	
Na	23	45	H2	<0.000	ppb	N/A	339055.46	40	
Mg	24	45	No Gas	4.808	ppb	38.6	92593.72	10	
Al	27	45	No Gas	4.685	ppb	38.9	98328.91	15	
Si	28	45	H2	0.168	ppb	63.0	3503.78	8	
P	31	45	No Gas	1.678	ppb	41.4	25060.58	10	
K	39	45	He	4.596	ppb	152.5	104889.90	20	
Ca	40	45	H2	0.345	ppb	84.6	91179.34	25	
Ti	47	45	No Gas	0.077	ppb	13.3	342.67	0.5	
V	51	45	He	<0.000	ppb	N/A	5582.47	0.5	
Cr	52	45	He	<0.000	ppb	N/A	762.69	0.2	
Mn	55	45	No Gas	0.247	ppb	47.1	18972.68	0.2	>LOD
Fe	56	45	H2	2.447	ppb	10.4	60351.80	10	
Co	59	45	No Gas	0.047	ppb	38.1	1628.10	0.15	
Ni	60	45	He	<0.000	ppb	N/A	386.01	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1843.46	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1046.04	2	
As	75	72	He	0.000	ppb	9178.0	283.67	0.2	
Se	78	72	H2	0.031	ppb	57.6	44.33	0.2	
Sr	88	72	No Gas	0.040	ppb	42.8	2125.73	0.2	
Zr	90	72	No Gas	0.001	ppb	151.0	180.00	2	
Mo	95	115	No Gas	0.078	ppb	29.0	598.91	0.2	
Ag	107	115	No Gas	0.058	ppb	8.3	885.58	0.08	
Cd	111	115	No Gas	0.083	ppb	31.6	338.64	0.2	
Sn	118	115	No Gas	0.040	ppb	11.6	1401.19	0.2	
Sb	123	115	No Gas	0.016	ppb	44.6	268.89	0.4	
Ba	137	115	No Gas	0.084	ppb	29.0	590.01	0.2	
W	182	159	No Gas	0.003	ppb	160.3	123.33	0.3	
Hg	201	159	He	0.006	ppb	40.5	16.50	0.1	
Tl	205	159	No Gas	0.090	ppb	38.6	3054.83	0.1	
Pb	208	159	No Gas	0.059	ppb	45.7	3231.28	0.1	
U	238	159	No Gas	0.044	ppb	44.8	1619.01	0.05	

LY 07/31/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1947956.57	1.0	1983803.01	98.19	60	120	
Sc	45	No Gas	3983253.67	0.9	4044567.83	98.48	60	120	
Sc	45	H2	2344372.67	0.6	2320461	101.03	60	120	
Sc	45	He	434415.14	0.4	436164.47	99.6	60	120	
Ge	72	No Gas	936922.31	0.9	946826.77	98.95	60	120	
Ge	72	H2	637713.09	0.6	631498.31	100.98	60	120	
Ge	72	He	249985.36	0.9	251670.34	99.33	60	120	
In	115	No Gas	5479197.37	0.4	5505923.82	99.51	60	120	
Tb	159	No Gas	6860309.73	1.2	6877615.7	99.75	60	120	
Tb	159	He	3654486.67	0.6	3654549.92	100	60	120	

Sample Report

Sample Name	F210-01M
File Name	H6G24075.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 14:43:12
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	48.097	48.097	ppb	1.4	581554.37	50	>LDR
Be	9	6	No Gas	30.345	30.345	ppb	2.0	98579.25	50	
B	11	6	No Gas	75.683	75.683	ppb	1.4	188189.49	100	
Na	23	45	H2	29838.925	29838.925	ppb	1.4	119705325.33	50000	
Mg	24	45	No Gas	41901.515	41901.515	ppb	1.7	455565429.33	50000	
Al	27	45	No Gas	2958.661	2958.661	ppb	2.2	41140298.55	50000	
Si	28	45	H2	9020.249	9020.249	ppb	1.6	10273993.00	5000	>LDR
P	31	45	No Gas	2.820	2.820	ppb	44.0	26277.50	500	
K	39	45	He	5526.117	5526.117	ppb	1.4	3943573.50	50000	
Ca	40	45	H2	134322.895	134322.895	ppb	1.3	1132202709.33	50000	>LDR
Ti	47	45	No Gas	30.423	30.423	ppb	1.7	47732.71	500	
V	51	45	He	30.782	30.782	ppb	0.5	166477.96	500	
Cr	52	45	He	30.891	30.891	ppb	0.5	179681.48	500	
Mn	55	45	No Gas	353.881	353.881	ppb	1.1	8649689.33	3000	
Fe	56	45	H2	3199.505	3199.505	ppb	0.6	37126941.33	50000	
Co	59	45	No Gas	30.713	30.713	ppb	0.5	621262.54	500	
Ni	60	45	He	36.701	36.701	ppb	0.9	70832.00	500	
Cu	63	45	He	30.789	30.789	ppb	0.5	155888.21	500	
Zn	66	72	No Gas	63.549	63.549	ppb	0.7	209909.29	500	
As	75	72	He	29.655	29.655	ppb	0.6	31446.19	500	
Se	78	72	H2	31.267	31.267	ppb	2.4	11110.91	500	
Sr	88	72	No Gas	1322.709	1322.709	ppb	1.3	36650215.21	500	>LDR
Zr	90	72	No Gas	0.033	0.033	ppb	22.6	733.36	50	
Mo	95	115	No Gas	35.406	35.406	ppb	1.0	188992.69	500	
Ag	107	115	No Gas	29.715	29.715	ppb	1.7	396229.11	50	
Cd	111	115	No Gas	29.036	29.036	ppb	0.7	79796.22	500	
Sn	118	115	No Gas	29.156	29.156	ppb	0.2	238414.10	500	
Sb	123	115	No Gas	29.492	29.492	ppb	1.7	276707.86	100	
Ba	137	115	No Gas	59.794	59.794	ppb	1.2	248918.13	1000	
W	182	159	No Gas	0.080	0.080	ppb	31.8	786.69	50	
Hg	201	159	He	0.008	0.008	ppb	41.2	18.17	5	
Tl	205	159	No Gas	30.535	30.535	ppb	0.4	588122.22	500	
Pb	208	159	No Gas	29.873	29.873	ppb	0.9	796637.06	500	
U	238	159	No Gas	31.043	31.043	ppb	1.5	762324.33	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1878673.30	0.8	1983803.01	94.7	60	120	
Sc	45	No Gas	4021091.58	1.8	4044567.83	99.42	60	120	
Sc	45	H2	2393460.83	0.6	2320461	103.15	60	120	
Sc	45	He	440525.31	0.3	436164.47	101	60	120	
Ge	72	No Gas	954629.52	1.3	946826.77	100.82	60	120	
Ge	72	H2	649264.15	1.1	631498.31	102.81	60	120	
Ge	72	He	255628.96	0.4	251670.34	101.57	60	120	
In	115	No Gas	5371582.10	1.6	5505923.82	97.56	60	120	
Tb	159	No Gas	6828672.37	1.7	6877615.7	99.29	60	120	
Tb	159	He	3669053.25	0.9	3654549.92	100.4	60	120	

Sample Report

Sample Name	F210-01S
File Name	H6G24076.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 14:46:07
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	47.018	47.018	ppb	2.3	579376.56	50	>LDR
Be	9	6	No Gas	29.308	29.308	ppb	1.8	96615.51	50	
B	11	6	No Gas	74.968	74.968	ppb	3.3	189677.99	100	
Na	23	45	H2	29572.127	29572.127	ppb	1.4	118742181.33	50000	
Mg	24	45	No Gas	41015.647	41015.647	ppb	1.1	452800864.00	50000	
Al	27	45	No Gas	2858.885	2858.885	ppb	0.4	40367796.06	50000	
Si	28	45	H2	8972.528	8972.528	ppb	0.9	10229291.00	5000	>LDR
P	31	45	No Gas	1.788	1.788	ppb	72.4	25783.24	500	
K	39	45	He	5471.773	5471.773	ppb	0.4	3841253.08	50000	
Ca	40	45	H2	133987.844	133987.844	ppb	0.7	1130447317.33	50000	>LDR
Ti	47	45	No Gas	29.649	29.649	ppb	1.4	47240.99	500	
V	51	45	He	30.601	30.601	ppb	1.5	162797.62	500	
Cr	52	45	He	31.751	31.751	ppb	0.8	181600.26	500	
Mn	55	45	No Gas	349.034	349.034	ppb	1.0	8663431.33	3000	
Fe	56	45	H2	3208.858	3208.858	ppb	1.4	37266636.00	50000	
Co	59	45	No Gas	30.061	30.061	ppb	0.9	617512.17	500	
Ni	60	45	He	36.808	36.808	ppb	1.5	69863.04	500	
Cu	63	45	He	30.767	30.767	ppb	1.2	153196.37	500	
Zn	66	72	No Gas	63.103	63.103	ppb	1.0	209546.02	500	
As	75	72	He	29.854	29.854	ppb	1.1	30835.78	500	
Se	78	72	H2	30.594	30.594	ppb	1.4	10860.37	500	
Sr	88	72	No Gas	1318.400	1318.400	ppb	2.3	36720731.87	500	>LDR
Zr	90	72	No Gas	0.017	0.017	ppb	14.4	456.68	50	
Mo	95	115	No Gas	35.108	35.108	ppb	1.4	190006.33	500	
Ag	107	115	No Gas	29.027	29.027	ppb	2.2	392311.96	50	
Cd	111	115	No Gas	28.216	28.216	ppb	1.0	78612.90	500	
Sn	118	115	No Gas	28.133	28.133	ppb	0.8	233245.38	500	
Sb	123	115	No Gas	28.869	28.869	ppb	1.0	274607.71	100	
Ba	137	115	No Gas	58.322	58.322	ppb	0.2	246125.11	1000	
W	182	159	No Gas	0.077	0.077	ppb	10.9	763.36	50	
Hg	201	159	He	0.003	0.003	ppb	210.0	14.17	5	
Tl	205	159	No Gas	29.814	29.814	ppb	1.1	581754.56	500	
Pb	208	159	No Gas	29.185	29.185	ppb	0.4	788561.00	500	
U	238	159	No Gas	30.314	30.314	ppb	1.9	754195.32	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1906631.06	0.1	1983803.01	96.11	60	120	
Sc	45	No Gas	4083434.75	1.2	4044567.83	100.96	60	120	
Sc	45	H2	2395791.67	1.6	2320461	103.25	60	120	
Sc	45	He	433232.69	0.7	436164.47	99.33	60	120	
Ge	72	No Gas	959641.67	0.4	946826.77	101.35	60	120	
Ge	72	H2	648589.89	0.6	631498.31	102.71	60	120	
Ge	72	He	249034.44	1.6	251670.34	98.95	60	120	
In	115	No Gas	5445307.58	1.3	5505923.82	98.9	60	120	
Tb	159	No Gas	6917854.44	0.9	6877615.7	100.59	60	120	
Tb	159	He	3627862.33	1.1	3654549.92	99.27	60	120	

Sample Report

Sample Name	F210-01A
File Name	H6G24077.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 14:49:02
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	48.694	48.694	ppb	1.0	597820.67	50	>LDR
Be	9	6	No Gas	31.039	31.039	ppb	1.3	102606.78	50	
B	11	6	No Gas	77.303	77.303	ppb	2.2	194453.69	100	
Na	23	45	H2	30285.773	30285.773	ppb	0.9	119802482.67	50000	
Mg	24	45	No Gas	42326.721	42326.721	ppb	1.1	460780042.67	50000	
Al	27	45	No Gas	3089.161	3089.161	ppb	2.0	43018318.52	50000	
Si	28	45	H2	8986.644	8986.644	ppb	0.5	10093345.00	5000	>LDR
P	31	45	No Gas	2.232	2.232	ppb	50.0	25808.61	500	
K	39	45	He	5725.650	5725.650	ppb	0.4	3959873.17	50000	
Ca	40	45	H2	135487.308	135487.308	ppb	0.9	1126120533.33	50000	>LDR
Ti	47	45	No Gas	31.415	31.415	ppb	0.9	49347.03	500	
V	51	45	He	33.043	33.043	ppb	0.4	172878.20	500	
Cr	52	45	He	40.609	40.609	ppb	0.6	228854.94	500	
Mn	55	45	No Gas	355.738	355.738	ppb	1.4	8706134.67	3000	
Fe	56	45	H2	3453.298	3453.298	ppb	0.4	39510336.00	50000	
Co	59	45	No Gas	31.720	31.720	ppb	1.9	642486.31	500	
Ni	60	45	He	38.847	38.847	ppb	0.8	72701.07	500	
Cu	63	45	He	33.725	33.725	ppb	1.2	165376.74	500	
Zn	66	72	No Gas	66.598	66.598	ppb	1.6	220504.47	500	
As	75	72	He	31.513	31.513	ppb	1.5	32315.24	500	
Se	78	72	H2	32.665	32.665	ppb	0.8	11396.81	500	
Sr	88	72	No Gas	1325.794	1325.794	ppb	0.9	36831380.76	500	>LDR
Zr	90	72	No Gas	0.018	0.018	ppb	8.6	470.01	50	
Mo	95	115	No Gas	36.726	36.726	ppb	0.6	195653.23	500	
Ag	107	115	No Gas	27.024	27.024	ppb	1.1	359641.98	50	
Cd	111	115	No Gas	30.183	30.183	ppb	0.6	82782.56	500	
Sn	118	115	No Gas	29.762	29.762	ppb	0.5	242860.65	500	
Sb	123	115	No Gas	30.101	30.101	ppb	1.3	281883.39	100	
Ba	137	115	No Gas	60.925	60.925	ppb	0.8	253109.45	1000	
W	182	159	No Gas	0.087	0.087	ppb	15.7	853.36	50	
Hg	201	159	He	0.009	0.009	ppb	82.9	18.83	5	
Tl	205	159	No Gas	31.567	31.567	ppb	0.5	612993.57	500	
Pb	208	159	No Gas	30.838	30.838	ppb	0.6	829194.90	500	
U	238	159	No Gas	32.077	32.077	ppb	0.7	794351.29	497	

Sample Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1912055.02	1.7	1983803.01	96.38	60	120	
Sc	45	No Gas	4026739.92	1.3	4044567.83	99.56	60	120	
Sc	45	H2	2360060.42	0.5	2320461	101.71	60	120	
Sc	45	He	427303.54	0.9	436164.47	97.97	60	120	
Ge	72	No Gas	957109.25	0.2	946826.77	101.09	60	120	
Ge	72	H2	637605.71	1.4	631498.31	100.97	60	120	
Ge	72	He	247338.53	0.1	251670.34	98.28	60	120	
In	115	No Gas	5360729.29	0.6	5505923.82	97.36	60	120	
Tb	159	No Gas	6885171.39	1.4	6877615.7	100.11	60	120	
Tb	159	He	3599198.67	1.0	3654549.92	98.49	60	120	

Sample Report

Sample Name	F210-01N
File Name	H6G24078.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 14:51:58
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	18.263	18.263	ppb	0.6	296599.65	50	
Be	9	6	No Gas	0.030	0.030	ppb	24.1	164.44	50	
B	11	6	No Gas	43.420	43.420	ppb	1.1	134470.19	100	
Na	23	45	H2	27204.243	27204.243	ppb	0.8	107782856.00	50000	
Mg	24	45	No Gas	39384.381	39384.381	ppb	1.0	429796576.00	50000	
Al	27	45	No Gas	3.031	3.031	ppb	12.2	76728.95	50000	
Si	28	45	H2	9207.669	9207.669	ppb	1.3	10353325.67	5000	>LDR
P	31	45	No Gas	1.491	1.491	ppb	43.7	25237.58	500	
K	39	45	He	2514.543	2514.543	ppb	0.4	1811139.04	50000	
Ca	40	45	H2	134312.554	134312.554	ppb	1.5	1117647402.67	50000	>LDR
Ti	47	45	No Gas	0.398	0.398	ppb	0.9	850.70	500	
V	51	45	He	0.657	0.657	ppb	4.6	9712.78	500	
Cr	52	45	He	0.184	0.184	ppb	2.5	1880.80	500	
Mn	55	45	No Gas	325.240	325.240	ppb	1.5	7980535.67	3000	
Fe	56	45	H2	182.801	182.801	ppb	1.2	2125009.17	50000	
Co	59	45	No Gas	0.862	0.862	ppb	0.9	18183.44	500	
Ni	60	45	He	6.968	6.968	ppb	1.8	13510.03	500	
Cu	63	45	He	0.061	0.061	ppb	42.8	2917.65	500	
Zn	66	72	No Gas	4.745	4.745	ppb	0.9	16714.95	500	
As	75	72	He	0.344	0.344	ppb	1.1	637.02	500	
Se	78	72	H2	0.933	0.933	ppb	10.1	357.67	500	
Sr	88	72	No Gas	1317.380	1317.380	ppb	1.5	36361895.22	500	>LDR
Zr	90	72	No Gas	0.007	0.007	ppb	52.7	293.34	50	
Mo	95	115	No Gas	6.523	6.523	ppb	1.6	35318.91	500	
Ag	107	115	No Gas	0.103	0.103	ppb	7.4	1482.31	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	76.03	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	1032.27	500	
Sb	123	115	No Gas	0.106	0.106	ppb	5.4	1113.38	100	
Ba	137	115	No Gas	30.582	30.582	ppb	0.8	128724.58	1000	
W	182	159	No Gas	0.071	0.071	ppb	6.8	716.69	50	
Hg	201	159	He	0.006	0.006	ppb	84.4	16.83	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	1000.04	500	
Pb	208	159	No Gas	0.012	0.012	ppb	29.3	2016.73	500	
U	238	159	No Gas	1.154	1.154	ppb	0.7	29421.94	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1939465.47	1.0	1983803.01	97.77	60	120	
Sc	45	No Gas	4036595.17	0.3	4044567.83	99.8	60	120	
Sc	45	H2	2362942.25	1.0	2320461	101.83	60	120	
Sc	45	He	431098.02	1.1	436164.47	98.84	60	120	
Ge	72	No Gas	950980.90	1.0	946826.77	100.44	60	120	
Ge	72	H2	636406.90	0.9	631498.31	100.78	60	120	
Ge	72	He	249919.56	0.7	251670.34	99.3	60	120	
In	115	No Gas	5426743.27	0.7	5505923.82	98.56	60	120	
Tb	159	No Gas	6965408.75	0.4	6877615.7	101.28	60	120	
Tb	159	He	3649530.75	0.8	3654549.92	99.86	60	120	

Sample Report

Sample Name	F210-01J
File Name	H6G24079.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 14:54:53
Sample Type	Sample
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	18.767	3.753	ppb	1.6	153219.53	50	
Be	9	6	No Gas	0.054	0.011	ppb	40.1	104.44	50	
B	11	6	No Gas	29.339	5.868	ppb	9.4	66777.97	100	
Na	23	45	H2	28398.018	5679.604	ppb	1.5	23230638.00	50000	
Mg	24	45	No Gas	41105.246	8221.049	ppb	2.4	91225394.67	50000	
Al	27	45	No Gas	2.492	0.498	ppb	3.3	42083.68	50000	
Si	28	45	H2	9357.014	1871.403	ppb	0.8	2144362.33	5000	
P	31	45	No Gas	2.122	0.424	ppb	96.7	24713.28	500	
K	39	45	He	2603.730	520.746	ppb	1.1	464446.30	50000	
Ca	40	45	H2	137660.346	27532.069	ppb	1.2	233230437.33	50000	
Ti	47	45	No Gas	0.477	0.095	ppb	33.0	382.01	500	
V	51	45	He	2.934	0.587	ppb	7.7	9547.99	500	
Cr	52	45	He	1.696	0.339	ppb	3.4	2814.96	500	
Mn	55	45	No Gas	334.879	66.976	ppb	2.6	1681122.83	3000	
Fe	56	45	H2	259.692	51.938	ppb	0.5	638386.52	50000	
Co	59	45	No Gas	0.882	0.176	ppb	2.7	4355.36	500	
Ni	60	45	He	6.803	1.361	ppb	1.2	3047.67	500	
Cu	63	45	He	0.313	0.063	ppb	26.2	2983.66	500	
Zn	66	72	No Gas	6.700	1.340	ppb	1.0	5665.18	500	
As	75	72	He	0.528	0.106	ppb	15.5	400.34	500	
Se	78	72	H2	0.836	0.167	ppb	21.4	94.00	500	
Sr	88	72	No Gas	1337.185	267.437	ppb	1.7	7506924.15	500	
Zr	90	72	No Gas	<0.000	<0.000	ppb	N/A	116.67	50	
Mo	95	115	No Gas	6.802	1.360	ppb	3.4	7584.38	500	
Ag	107	115	No Gas	0.244	0.049	ppb	4.5	760.02	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	103.66	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	876.70	500	
Sb	123	115	No Gas	0.141	0.028	ppb	13.5	384.45	100	
Ba	137	115	No Gas	31.687	6.337	ppb	0.8	27155.00	1000	
W	182	159	No Gas	0.054	0.011	ppb	63.9	190.00	50	
Hg	201	159	He	0.006	0.001	ppb	369.3	13.17	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	860.03	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1652.27	500	
U	238	159	No Gas	1.196	0.239	ppb	2.0	6526.19	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1996255.18	0.9	1983803.01	100.63	60	120	
Sc	45	No Gas	4103123.17	0.5	4044567.83	101.45	60	120	
Sc	45	H2	2404748.58	0.8	2320461	103.63	60	120	
Sc	45	He	439908.45	1.4	436164.47	100.86	60	120	
Ge	72	No Gas	966920.52	0.4	946826.77	102.12	60	120	
Ge	72	H2	653976.79	0.8	631498.31	103.56	60	120	
Ge	72	He	255261.18	0.1	251670.34	101.43	60	120	
In	115	No Gas	5486642.42	1.1	5505923.82	99.65	60	120	
Tb	159	No Gas	6967220.00	1.3	6877615.7	101.3	60	120	
Tb	159	He	3652944.25	1.1	3654549.92	99.96	60	120	

Sample Report

Sample Name	F210-04N
File Name	H6G24080.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 14:57:47
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	14.890	14.890	ppb	1.7	258650.96	50	
Be	9	6	No Gas	0.009	0.009	ppb	46.7	94.44	50	
B	11	6	No Gas	80.578	80.578	ppb	1.1	200562.21	100	
Na	23	45	H2	125429.258	125429.258	ppb	0.5	496036608.00	50000	>LDR
Mg	24	45	No Gas	55239.238	55239.238	ppb	0.5	596685738.67	50000	>LDR
Al	27	45	No Gas	7.426	7.426	ppb	18.2	136344.74	50000	
Si	28	45	H2	7785.849	7785.849	ppb	0.2	8765707.00	5000	>LDR
P	31	45	No Gas	18.697	18.697	ppb	4.6	39736.72	500	
K	39	45	He	2612.660	2612.660	ppb	0.5	1897626.67	50000	
Ca	40	45	H2	162856.265	162856.265	ppb	0.7	1356812714.67	50000	>LDR
Ti	47	45	No Gas	3.338	3.338	ppb	2.3	5401.73	500	
V	51	45	He	2.643	2.643	ppb	2.6	20023.95	500	
Cr	52	45	He	0.786	0.786	ppb	2.4	5343.05	500	
Mn	55	45	No Gas	20.915	20.915	ppb	0.6	520169.26	3000	
Fe	56	45	H2	12.334	12.334	ppb	2.9	174154.89	50000	
Co	59	45	No Gas	0.174	0.174	ppb	1.3	4197.98	500	
Ni	60	45	He	0.682	0.682	ppb	4.2	1732.11	500	
Cu	63	45	He	0.075	0.075	ppb	6.1	3013.67	500	
Zn	66	72	No Gas	1.933	1.933	ppb	2.2	7435.37	500	
As	75	72	He	1.197	1.197	ppb	2.6	1505.75	500	
Se	78	72	H2	0.789	0.789	ppb	8.4	305.33	500	
Sr	88	72	No Gas	1106.508	1106.508	ppb	1.5	30234954.36	500	>LDR
Zr	90	72	No Gas	0.017	0.017	ppb	24.0	450.01	50	
Mo	95	115	No Gas	0.509	0.509	ppb	1.7	2846.97	500	
Ag	107	115	No Gas	0.087	0.087	ppb	4.6	1233.39	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	72.45	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	730.02	500	
Sb	123	115	No Gas	0.062	0.062	ppb	5.4	680.02	100	
Ba	137	115	No Gas	69.833	69.833	ppb	1.8	286754.91	1000	
W	182	159	No Gas	0.003	0.003	ppb	127.5	120.00	50	
Hg	201	159	He	0.006	0.006	ppb	81.8	16.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	566.68	500	
Pb	208	159	No Gas	0.009	0.009	ppb	20.0	1877.84	500	
U	238	159	No Gas	1.623	1.623	ppb	1.7	40059.73	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1913131.46	2.6	1983803.01	96.44	60	120	
Sc	45	No Gas	3995349.00	2.2	4044567.83	98.78	60	120	
Sc	45	H2	2365561.42	1.3	2320461	101.94	60	120	
Sc	45	He	435643.98	0.3	436164.47	99.88	60	120	
Ge	72	No Gas	941333.29	0.8	946826.77	99.42	60	120	
Ge	72	H2	632815.77	0.7	631498.31	100.21	60	120	
Ge	72	He	248799.85	0.9	251670.34	98.86	60	120	
In	115	No Gas	5300464.08	2.0	5505923.82	96.27	60	120	
Tb	159	No Gas	6780366.40	1.8	6877615.7	98.59	60	120	
Tb	159	He	3598070.25	0.7	3654549.92	98.45	60	120	

Sample Report

Sample Name	F210-05N
File Name	H6G24081.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:00:42
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Flal	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	15.545	15.545	ppb	1.4	267897.54	50	
Be	9	6	No Gas	0.008	0.008	ppb	50.5	91.11	50	
B	11	6	No Gas	106.116	106.116	ppb	1.9	249749.19	100	>LDR
Na	23	45	H2	141970.790	141970.790	ppb	1.1	567315498.67	50000	>LDR
Mg	24	45	No Gas	55633.445	55633.445	ppb	0.7	604271210.67	50000	>LDR
Al	27	45	No Gas	24.066	24.066	ppb	2.7	368317.66	50000	
Si	28	45	H2	7679.871	7679.871	ppb	1.4	8737260.67	5000	>LDR
P	31	45	No Gas	13.298	13.298	ppb	9.1	35301.44	500	
K	39	45	He	2765.501	2765.501	ppb	1.1	1976069.54	50000	
Ca	40	45	H2	165266.985	165266.985	ppb	1.3	1391325525.33	50000	>LDR
Ti	47	45	No Gas	0.394	0.394	ppb	3.9	840.69	500	
V	51	45	He	1.759	1.759	ppb	2.2	15271.83	500	
Cr	52	45	He	0.524	0.524	ppb	2.2	3796.52	500	
Mn	55	45	No Gas	161.799	161.799	ppb	0.8	3958125.83	3000	
Fe	56	45	H2	63.765	63.765	ppb	0.3	771596.59	50000	
Co	59	45	No Gas	0.718	0.718	ppb	1.0	15207.14	500	
Ni	60	45	He	2.749	2.749	ppb	5.0	5576.48	500	
Cu	63	45	He	0.108	0.108	ppb	17.5	3138.37	500	
Zn	66	72	No Gas	7.014	7.014	ppb	3.1	23755.42	500	
As	75	72	He	0.822	0.822	ppb	2.2	1103.38	500	
Se	78	72	H2	0.774	0.774	ppb	5.5	299.67	500	
Sr	88	72	No Gas	1139.326	1139.326	ppb	1.4	30955372.10	500	>LDR
Zr	90	72	No Gas	0.027	0.027	ppb	3.7	610.01	50	
Mo	95	115	No Gas	1.318	1.318	ppb	4.4	7009.63	500	
Ag	107	115	No Gas	0.091	0.091	ppb	1.4	1275.62	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	46.11	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	800.03	500	
Sb	123	115	No Gas	0.072	0.072	ppb	5.5	765.58	100	
Ba	137	115	No Gas	86.712	86.712	ppb	1.8	351298.48	1000	
W	182	159	No Gas	0.026	0.026	ppb	41.6	313.34	50	
Hg	201	159	He	0.000	0.000	ppb	1029.3	12.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	663.35	500	
Pb	208	159	No Gas	<0.000	<0.000	ppb	N/A	1620.05	500	
U	238	159	No Gas	1.722	1.722	ppb	1.5	42273.87	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1932304.72	1.6	1983803.01	97.4	60	120	
Sc	45	No Gas	4017527.42	1.0	4044567.83	99.33	60	120	
Sc	45	H2	2390643.25	1.0	2320461	103.02	60	120	
Sc	45	He	429845.13	0.5	436164.47	98.55	60	120	
Ge	72	No Gas	936113.08	0.9	946826.77	98.87	60	120	
Ge	72	H2	631314.75	1.3	631498.31	99.97	60	120	
Ge	72	He	244602.42	0.7	251670.34	97.19	60	120	
In	115	No Gas	5230133.94	1.8	5505923.82	94.99	60	120	
Tb	159	No Gas	6747107.37	1.6	6877615.7	98.1	60	120	
Tb	159	He	3513861.92	0.5	3654549.92	96.15	60	120	

Sample Report

Sample Name	F210-07N
File Name	H6G24082.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:03:36
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	22.562	22.562	ppb	2.4	343935.56	50	
Be	9	6	No Gas	0.040	0.040	ppb	17.8	201.11	50	
B	11	6	No Gas	90.566	90.566	ppb	1.3	224173.94	100	>LDR
Na	23	45	H2	70395.370	70395.370	ppb	0.2	280154464.00	50000	>LDR
Mg	24	45	No Gas	49903.413	49903.413	ppb	1.5	544040362.67	50000	>LDR
Al	27	45	No Gas	160.243	160.243	ppb	2.7	2266400.80	50000	
Si	28	45	H2	7675.055	7675.055	ppb	0.5	8689950.00	5000	>LDR
P	31	45	No Gas	12.300	12.300	ppb	6.1	34567.60	500	
K	39	45	He	3259.711	3259.711	ppb	1.9	2329124.83	50000	
Ca	40	45	H2	145918.738	145918.738	ppb	0.9	1222582528.00	50000	>LDR
Ti	47	45	No Gas	1.990	1.990	ppb	6.0	3340.42	500	
V	51	45	He	1.001	1.001	ppb	4.0	11521.51	500	
Cr	52	45	He	2.985	2.985	ppb	0.3	17834.27	500	
Mn	55	45	No Gas	201.450	201.450	ppb	0.3	4942684.17	3000	
Fe	56	45	H2	739.701	739.701	ppb	0.8	8557036.00	50000	
Co	59	45	No Gas	2.510	2.510	ppb	1.8	51563.91	500	
Ni	60	45	He	4.395	4.395	ppb	2.2	8723.47	500	
Cu	63	45	He	0.272	0.272	ppb	1.4	3962.58	500	
Zn	66	72	No Gas	3.618	3.618	ppb	1.2	12912.14	500	
As	75	72	He	2.275	2.275	ppb	1.2	2571.58	500	
Se	78	72	H2	0.585	0.585	ppb	9.7	235.33	500	
Sr	88	72	No Gas	1103.899	1103.899	ppb	2.4	30205354.35	500	>LDR
Zr	90	72	No Gas	0.242	0.242	ppb	7.4	4237.36	50	
Mo	95	115	No Gas	3.058	3.058	ppb	0.5	16381.19	500	
Ag	107	115	No Gas	0.137	0.137	ppb	3.5	1910.14	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	98.50	500	
Sn	118	115	No Gas	<0.000	<0.000	ppb	N/A	814.47	500	
Sb	123	115	No Gas	0.065	0.065	ppb	9.6	715.57	100	
Ba	137	115	No Gas	76.667	76.667	ppb	0.5	317187.16	1000	
W	182	159	No Gas	0.027	0.027	ppb	8.6	326.67	50	
Hg	201	159	He	<0.000	<0.000	ppb	N/A	11.00	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	1081.16	500	
Pb	208	159	No Gas	0.285	0.285	ppb	3.2	9251.37	500	
U	238	159	No Gas	2.916	2.916	ppb	1.4	72208.60	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1959941.09	1.7	1983803.01	98.8	60	120	
Sc	45	No Gas	4032153.42	1.0	4044567.83	99.69	60	120	
Sc	45	H2	2379022.08	0.6	2320461	102.52	60	120	
Sc	45	He	433178.24	0.5	436164.47	99.32	60	120	
Ge	72	No Gas	942600.69	0.6	946826.77	99.55	60	120	
Ge	72	H2	632718.23	1.6	631498.31	100.19	60	120	
Ge	72	He	245278.20	0.6	251670.34	97.46	60	120	
In	115	No Gas	5339708.98	1.8	5505923.82	96.98	60	120	
Tb	159	No Gas	6840474.45	1.8	6877615.7	99.46	60	120	
Tb	159	He	3603172.33	0.7	3654549.92	98.59	60	120	

Sample Report

Sample Name	F210-08N
File Name	H6G24083.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:06:31
Sample Type	Sample
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Meas. Conc.	Units	RSD	CPS	LDR	QC Flag
Li	7	6	No Gas	19.589	19.589	ppb	2.6	315170.38	50	
Be	9	6	No Gas	0.005	0.005	ppb	70.4	83.34	50	
B	11	6	No Gas	78.202	78.202	ppb	1.8	202183.46	100	
Na	23	45	H2	55295.009	55295.009	ppb	0.7	220014981.33	50000	>LDR
Mg	24	45	No Gas	48413.787	48413.787	ppb	1.9	525441472.00	50000	>LDR
Al	27	45	No Gas	0.895	0.895	ppb	7.1	46668.39	50000	
Si	28	45	H2	8572.782	8572.782	ppb	0.8	9700097.33	5000	>LDR
P	31	45	No Gas	8.709	8.709	ppb	10.6	31317.90	500	
K	39	45	He	2500.524	2500.524	ppb	0.5	1815164.54	50000	
Ca	40	45	H2	136694.425	136694.425	ppb	0.8	1144589909.33	50000	>LDR
Ti	47	45	No Gas	0.399	0.399	ppb	14.2	846.69	500	
V	51	45	He	1.691	1.691	ppb	1.8	15086.29	500	
Cr	52	45	He	0.930	0.930	ppb	1.4	6151.38	500	
Mn	55	45	No Gas	0.571	0.571	ppb	3.2	27040.00	3000	
Fe	56	45	H2	13.283	13.283	ppb	1.8	185989.25	50000	
Co	59	45	No Gas	0.087	0.087	ppb	6.2	2452.22	500	
Ni	60	45	He	1.410	1.410	ppb	2.1	3101.69	500	
Cu	63	45	He	0.877	0.877	ppb	1.7	6940.44	500	
Zn	66	72	No Gas	45.985	45.985	ppb	1.7	150787.78	500	
As	75	72	He	0.582	0.582	ppb	4.2	870.03	500	
Se	78	72	H2	0.869	0.869	ppb	5.0	334.00	500	
Sr	88	72	No Gas	1007.758	1007.758	ppb	1.9	27659571.68	500	>LDR
Zr	90	72	No Gas	0.001	0.001	ppb	318.5	190.00	50	
Mo	95	115	No Gas	0.279	0.279	ppb	3.9	1653.44	500	
Ag	107	115	No Gas	0.089	0.089	ppb	3.5	1274.51	50	
Cd	111	115	No Gas	<0.000	<0.000	ppb	N/A	44.96	500	
Sn	118	115	No Gas	0.274	0.274	ppb	5.4	3270.41	500	
Sb	123	115	No Gas	0.052	0.052	ppb	8.3	600.01	100	
Ba	137	115	No Gas	47.241	47.241	ppb	1.1	196030.88	1000	
W	182	159	No Gas	0.006	0.006	ppb	4.7	150.00	50	
Hg	201	159	He	0.001	0.001	ppb	380.0	12.50	5	
Tl	205	159	No Gas	<0.000	<0.000	ppb	N/A	620.02	500	
Pb	208	159	No Gas	0.039	0.039	ppb	11.1	2722.34	500	
U	238	159	No Gas	1.500	1.500	ppb	1.8	37578.67	497	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1971391.43	1.7	1983803.01	99.37	60	120	
Sc	45	No Gas	4014163.42	1.1	4044567.83	99.25	60	120	
Sc	45	H2	2377665.67	0.9	2320461	102.47	60	120	
Sc	45	He	434348.48	1.1	436164.47	99.58	60	120	
Ge	72	No Gas	945619.23	0.6	946826.77	99.87	60	120	
Ge	72	H2	634191.21	1.0	631498.31	100.43	60	120	
Ge	72	He	246664.37	0.9	251670.34	98.01	60	120	
In	115	No Gas	5352984.40	0.7	5505923.82	97.22	60	120	
Tb	159	No Gas	6873737.78	1.7	6877615.7	99.94	60	120	
Tb	159	He	3589949.58	0.8	3654549.92	98.23	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV8
File Name	H6G24084.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:09:25
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.076	ppb	0.7	360261.25	25	96.3	90	110	
Be	9	6	No Gas	23.851	ppb	0.6	81001.38	25	95.4	90	110	
B	11	6	No Gas	44.811	ppb	0.2	138781.88	50	89.62	90	110	> +/- 10%
Na	23	45	H2	25345.440	ppb	2.5	97170952.00	25000	101.38	90	110	
Mg	24	45	No Gas	25012.205	ppb	0.8	267268416.00	25000	100.05	90	110	
Al	27	45	No Gas	24716.057	ppb	2.0	337540434.97	25000	98.86	90	110	
Si	28	45	H2	2541.877	ppb	1.8	2767683.08	2500	101.68	90	110	
P	31	45	No Gas	245.367	ppb	0.3	231744.24	250	98.15	90	110	
K	39	45	He	25083.622	ppb	1.3	16833947.67	25000	100.33	90	110	
Ca	40	45	H2	24867.032	ppb	1.8	200275605.33	25000	99.47	90	110	
Ti	47	45	No Gas	245.445	ppb	0.8	376900.15	250	98.18	90	110	
V	51	45	He	251.630	ppb	0.4	1261650.87	250	100.65	90	110	
Cr	52	45	He	253.978	ppb	1.6	1412191.87	250	101.59	90	110	
Mn	55	45	No Gas	1496.204	ppb	1.0	35900970.67	1500	99.75	90	110	
Fe	56	45	H2	25154.193	ppb	1.7	278577450.67	25000	100.62	90	110	
Co	59	45	No Gas	249.007	ppb	0.5	4945971.33	250	99.6	90	110	
Ni	60	45	He	256.577	ppb	1.4	472813.98	250	102.63	90	110	
Cu	63	45	He	258.943	ppb	1.2	1239537.05	250	103.58	90	110	
Zn	66	72	No Gas	247.444	ppb	0.9	798093.98	250	98.98	90	110	
As	75	72	He	245.382	ppb	0.8	249381.36	250	98.15	90	110	
Se	78	72	H2	252.864	ppb	1.2	85829.97	250	101.15	90	110	
Sr	88	72	No Gas	247.221	ppb	0.5	6717634.87	250	98.89	90	110	
Zr	90	72	No Gas	24.914	ppb	0.8	416441.17	25	99.66	90	110	
Mo	95	115	No Gas	241.064	ppb	1.0	1280076.55	250	96.43	90	110	
Ag	107	115	No Gas	24.120	ppb	0.6	320156.62	25	96.48	90	110	
Cd	111	115	No Gas	239.829	ppb	1.0	655257.30	250	95.93	90	110	
Sn	118	115	No Gas	245.346	ppb	0.5	1989137.28	250	98.14	90	110	
Sb	123	115	No Gas	48.206	ppb	1.6	450096.65	50	96.41	90	110	
Ba	137	115	No Gas	485.040	ppb	0.3	2008266.31	500	97.01	90	110	
W	182	159	No Gas	24.827	ppb	2.3	217578.50	25	99.31	90	110	
Hg	201	159	He	2.546	ppb	0.4	1940.65	2.5	101.84	90	110	
Tl	205	159	No Gas	251.133	ppb	1.4	4905772.17	250	100.45	90	110	
Pb	208	159	No Gas	249.596	ppb	1.2	6752109.60	250	99.84	90	110	
U	238	159	No Gas	246.795	ppb	0.7	6156104.90	250	98.72	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1963864.08	1.8	1983803.01	98.99	60	120	
Sc	45	No Gas	3952066.92	1.4	4044567.83	97.71	60	120	
Sc	45	H2	2286510.17	1.8	2320461	98.54	60	120	
Sc	45	He	422930.68	1.4	436164.47	96.97	60	120	
Ge	72	No Gas	935993.52	1.4	946826.77	98.86	60	120	
Ge	72	H2	621930.25	1.5	631498.31	98.48	60	120	
Ge	72	He	246998.62	0.5	251670.34	98.14	60	120	
In	115	No Gas	5346807.89	2.0	5505923.82	97.11	60	120	
Tb	159	No Gas	6939034.31	1.7	6877615.7	100.89	60	120	
Tb	159	He	3636256.75	1.2	3654549.92	99.5	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB8
File Name	H6G24085.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\IH6G24.b
Acq Time	2020-07-31 15:12:18
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	110057.68	0.4	
Be	9	6	No Gas	0.012	ppb	10.5	105.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	45315.06	4	
Na	23	45	H2	3.923	ppb	48.6	426205.62	40	
Mg	24	45	No Gas	8.400	ppb	22.3	130056.62	10	
Al	27	45	No Gas	3.407	ppb	41.3	80035.76	15	
Si	28	45	H2	0.980	ppb	8.3	4454.05	8	
P	31	45	No Gas	3.244	ppb	10.6	26152.59	10	
K	39	45	He	19.752	ppb	116.3	106748.89	20	
Ca	40	45	H2	8.216	ppb	6.7	157716.99	25	
Ti	47	45	No Gas	0.080	ppb	34.7	344.67	0.5	
V	51	45	He	0.106	ppb	187.5	6441.51	0.5	
Cr	52	45	He	<0.000	ppb	N/A	714.69	0.2	
Mn	55	45	No Gas	0.222	ppb	39.1	18203.55	0.2	>LOD
Fe	56	45	H2	1.409	ppb	3.0	49048.47	10	
Co	59	45	No Gas	0.035	ppb	44.0	1381.41	0.15	
Ni	60	45	He	<0.000	ppb	N/A	320.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1768.12	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1026.04	2	
As	75	72	He	0.076	ppb	27.3	334.33	0.2	
Se	78	72	H2	0.023	ppb	63.1	41.33	0.2	
Sr	88	72	No Gas	0.119	ppb	14.4	4235.12	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	126.67	2	
Mo	95	115	No Gas	0.064	ppb	27.8	515.57	0.2	
Ag	107	115	No Gas	0.035	ppb	5.1	561.12	0.08	
Cd	111	115	No Gas	0.075	ppb	25.2	308.92	0.2	
Sn	118	115	No Gas	0.025	ppb	77.4	1264.51	0.2	
Sb	123	115	No Gas	0.018	ppb	23.4	284.45	0.4	
Ba	137	115	No Gas	0.068	ppb	17.2	514.45	0.2	
W	182	159	No Gas	0.003	ppb	47.8	123.33	0.3	
Hg	201	159	He	0.012	ppb	32.5	19.67	0.1	
Tl	205	159	No Gas	0.072	ppb	43.2	2709.20	0.1	
Pb	208	159	No Gas	0.033	ppb	50.3	2547.89	0.1	
U	238	159	No Gas	0.031	ppb	44.0	1305.63	0.05	

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1950028.69	0.9	1983803.01	98.3	60	120	
Sc	45	No Gas	3945607.50	0.8	4044567.83	97.55	60	120	
Sc	45	H2	2368035.92	1.9	2320461	102.05	60	120	
Sc	45	He	406616.01	12.2	436164.47	93.23	60	120	
Ge	72	No Gas	926355.46	0.5	946826.77	97.84	60	120	
Ge	72	H2	635742.02	1.8	631498.31	100.67	60	120	
Ge	72	He	231657.29	9.3	251670.34	92.05	60	120	
In	115	No Gas	5406686.08	2.2	5505923.82	98.2	60	120	
Tb	159	No Gas	6888404.59	1.6	6877615.7	100.16	60	120	
Tb	159	He	3341561.83	9.6	3654549.92	91.44	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLG3108
File Name	H6G24089.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:23:56
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.922	ppb	14.2	123705.64	1	92.2	80	120	
Be	9	6	No Gas	0.979	ppb	1.1	3448.21	1	97.9	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	53689.96	10	-10.3	80	120	> +/- 20%
Na	23	45	H2	94.872	ppb	2.0	781504.29	100	94.87	80	120	
Mg	24	45	No Gas	100.880	ppb	1.0	1150072.17	100	100.88	80	120	
Al	27	45	No Gas	97.623	ppb	0.6	1405563.94	100	97.62	80	120	
Si	28	45	H2	98.233	ppb	1.9	113349.37	100	98.23	80	120	
P	31	45	No Gas	48.939	ppb	2.4	66816.92	50	97.88	80	120	
K	39	45	He	104.891	ppb	4.0	174641.74	100	104.89	80	120	
Ca	40	45	H2	130.877	ppb	0.3	1173867.75	100	130.88	80	120	> +/- 20%
Tl	47	45	No Gas	1.042	ppb	8.1	1870.80	1	104.2	80	120	
V	51	45	He	1.126	ppb	2.5	12259.48	1	112.6	80	120	
Cr	52	45	He	1.048	ppb	2.2	6861.72	1	104.8	80	120	
Mn	55	45	No Gas	0.931	ppb	2.0	36253.32	1	93.1	80	120	
Fe	56	45	H2	101.811	ppb	0.9	1193775.63	100	101.81	80	120	
Co	59	45	No Gas	0.974	ppb	0.8	20593.57	1	97.4	80	120	
Ni	60	45	He	0.985	ppb	5.1	2311.53	1	98.5	80	120	
Cu	63	45	He	0.887	ppb	1.1	7033.15	1	88.7	80	120	
Zn	66	72	No Gas	11.357	ppb	1.0	38203.69	10	113.57	80	120	
As	75	72	He	1.055	ppb	3.4	1366.74	1	105.5	80	120	
Se	78	72	H2	0.990	ppb	4.2	383.34	1	99	80	120	
Sr	88	72	No Gas	2.030	ppb	1.2	56882.77	2	101.5	80	120	
Zr	90	72	No Gas	3.965	ppb	4.0	67232.24	5	79.3	80	120	> +/- 20%
Mo	95	115	No Gas	0.915	ppb	5.8	5171.01	1	91.5	80	120	
Ag	107	115	No Gas	0.969	ppb	2.2	13325.62	1	96.9	80	120	
Cd	111	115	No Gas	0.939	ppb	2.3	2745.61	1	93.9	80	120	
Sn	118	115	No Gas	1.041	ppb	2.5	9755.85	1	104.1	80	120	
Sb	123	115	No Gas	0.936	ppb	4.0	9104.28	1	93.6	80	120	
Ba	137	115	No Gas	0.911	ppb	2.3	4113.99	1	91.1	80	120	
W	182	159	No Gas	2.051	ppb	3.1	17946.20	2	102.55	80	120	
Hg	201	159	He	0.106	ppb	2.7	91.50	0.1	106	80	120	
Tl	205	159	No Gas	0.954	ppb	1.6	19827.96	1	95.4	80	120	
Pb	208	159	No Gas	0.961	ppb	0.6	27504.17	1	96.1	80	120	
U	238	159	No Gas	0.920	ppb	0.7	23321.07	1	92	80	120	

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QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1999058.83	2.4	1983803.01	100.77	60	120	
Sc	45	No Gas	4064017.17	2.7	4044567.83	100.48	60	120	
Sc	45	H2	2354476.00	1.1	2320461	101.47	60	120	
Sc	45	He	436867.37	1.7	436164.47	100.16	60	120	
Ge	72	No Gas	947408.65	1.7	946826.77	100.06	60	120	
Ge	72	H2	646896.27	0.4	631498.31	102.44	60	120	
Ge	72	He	249863.98	0.6	251670.34	99.28	60	120	
In	115	No Gas	5502524.11	2.0	5505923.82	99.94	60	120	
Tb	159	No Gas	6895326.81	1.7	6877615.7	100.26	60	120	
Tb	159	He	3609414.75	0.7	3654549.92	98.76	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV9
File Name	H6G24097.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:48:07
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Fail
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	23.521	ppb	3.6	462440.05	25	94.08	90	110	
Be	9	6	No Gas	23.673	ppb	1.6	104876.54	25	94.69	90	110	
B	11	6	No Gas	55.905	ppb	1.2	208217.81	50	111.81	90	110	> +/- 10%
Na	23	45	H2	27185.217	ppb	1.2	130175456.00	25000	108.74	90	110	
Mg	24	45	No Gas	25710.034	ppb	1.8	357473429.33	25000	102.84	90	110	
Al	27	45	No Gas	25267.652	ppb	2.4	448990566.64	25000	101.07	90	110	
Si	28	45	H2	2788.270	ppb	1.0	3792412.33	2500	111.53	90	110	> +/- 10%
P	31	45	No Gas	259.438	ppb	1.6	317109.02	250	103.78	90	110	
K	39	45	He	27028.534	ppb	0.8	24034818.00	25000	108.11	90	110	
Ca	40	45	H2	25466.256	ppb	0.5	256223061.33	25000	101.87	90	110	
Ti	47	45	No Gas	240.952	ppb	1.0	481498.81	250	96.38	90	110	
V	51	45	He	238.412	ppb	0.7	1584921.29	250	95.36	90	110	
Cr	52	45	He	233.784	ppb	0.7	1723269.50	250	93.51	90	110	
Mn	55	45	No Gas	1433.380	ppb	1.5	44752350.67	1500	95.56	90	110	
Fe	56	45	H2	24669.215	ppb	1.0	341291360.00	25000	98.68	90	110	
Co	59	45	No Gas	239.897	ppb	1.1	6200381.33	250	95.96	90	110	
Ni	60	45	He	225.806	ppb	0.1	551681.11	250	90.32	90	110	
Cu	63	45	He	227.271	ppb	0.3	1442595.08	250	90.91	90	110	
Zn	66	72	No Gas	247.335	ppb	2.5	950964.17	250	98.93	90	110	
As	75	72	He	247.009	ppb	0.7	308933.01	250	98.8	90	110	
Se	78	72	H2	246.424	ppb	1.3	101549.15	250	98.57	90	110	
Sr	88	72	No Gas	241.172	ppb	2.5	7812045.52	250	96.47	90	110	
Zr	90	72	No Gas	23.859	ppb	2.5	475434.55	25	95.44	90	110	
Mo	95	115	No Gas	253.321	ppb	1.4	1439095.95	250	101.33	90	110	
Ag	107	115	No Gas	24.578	ppb	0.9	349047.46	25	98.31	90	110	
Cd	111	115	No Gas	239.166	ppb	1.0	699245.97	250	95.67	90	110	
Sn	118	115	No Gas	242.257	ppb	1.3	2101615.26	250	96.9	90	110	
Sb	123	115	No Gas	46.962	ppb	0.8	469248.35	50	93.92	90	110	
Ba	137	115	No Gas	470.730	ppb	2.3	2085368.18	500	94.15	90	110	
W	182	159	No Gas	23.706	ppb	2.6	200582.06	25	94.82	90	110	
Hg	201	159	He	2.239	ppb	0.1	1784.80	2.5	89.56	90	110	> +/- 10%
Tl	205	159	No Gas	238.452	ppb	3.2	4496982.88	250	95.38	90	110	
Pb	208	159	No Gas	235.733	ppb	2.5	6156338.41	250	94.29	90	110	
U	238	159	No Gas	224.466	ppb	1.5	5404843.54	250	89.79	90	110	> +/- 10%

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2562031.36	1.1	1983803.01	129.15	60	120	ISTD Failed
Sc	45	No Gas	5142841.17	0.4	4044567.83	127.15	60	120	ISTD Failed
Sc	45	H2	2855947.08	0.9	2320461	123.08	60	120	ISTD Failed
Sc	45	He	560585.08	0.4	436164.47	128.53	60	120	ISTD Failed
Ge	72	No Gas	1116004.33	0.9	946826.77	117.87	60	120	
Ge	72	H2	755001.52	0.7	631498.31	119.56	60	120	
Ge	72	He	303966.74	0.5	251670.34	120.78	60	120	ISTD Failed
In	115	No Gas	5720732.26	0.1	5505923.82	103.9	60	120	
Tb	159	No Gas	6698350.57	0.4	6877615.7	97.39	60	120	
Tb	159	He	3799463.25	0.3	3654549.92	103.97	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB9
File Name	H6G24098.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\G\H6G24.b
Acq Time	2020-07-31 15:51:01
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6G24002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Fail
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	138403.58	0.4	
Be	9	6	No Gas	0.000	ppb	761.0	85.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	67010.14	4	
Na	23	45	H2	783.599	ppb	0.6	4087684.58	40	>LOD
Mg	24	45	No Gas	24.680	ppb	19.7	369137.99	10	>LOD
Al	27	45	No Gas	1.834	ppb	66.9	71208.25	15	
Si	28	45	H2	0.605	ppb	52.0	4694.88	8	
P	31	45	No Gas	3.329	ppb	9.8	31936.67	10	
K	39	45	He	31.005	ppb	27.4	153698.22	20	>LOD
Ca	40	45	H2	3.216	ppb	4.4	135132.70	25	
Ti	47	45	No Gas	0.090	ppb	4.0	437.34	0.5	
V	51	45	He	0.100	ppb	11.5	8664.07	0.5	
Cr	52	45	He	<0.000	ppb	N/A	841.36	0.2	
Mn	55	45	No Gas	0.093	ppb	90.9	18405.17	0.2	
Fe	56	45	H2	0.495	ppb	15.5	44906.93	10	
Co	59	45	No Gas	0.023	ppb	61.0	1404.74	0.15	
Ni	60	45	He	<0.000	ppb	N/A	200.00	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1424.08	0.4	
Zn	66	72	No Gas	0.025	ppb	103.0	1411.41	2	
As	75	72	He	0.108	ppb	20.9	465.68	0.2	
Se	78	72	H2	0.013	ppb	149.4	43.00	0.2	
Sr	88	72	No Gas	0.128	ppb	24.7	5117.67	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	156.67	2	
Mo	95	115	No Gas	0.048	ppb	34.8	457.79	0.2	
Ag	107	115	No Gas	0.025	ppb	34.2	454.46	0.08	
Cd	111	115	No Gas	0.010	ppb	86.4	138.65	0.2	
Sn	118	115	No Gas	<0.000	ppb	N/A	1043.38	0.2	
Sb	123	115	No Gas	0.008	ppb	57.8	194.45	0.4	
Ba	137	115	No Gas	0.032	ppb	83.4	385.56	0.2	
W	182	159	No Gas	0.002	ppb	108.9	106.67	0.3	
Hg	201	159	He	0.012	ppb	27.0	22.17	0.1	
Tl	205	159	No Gas	0.025	ppb	107.0	1776.81	0.1	
Pb	208	159	No Gas	0.005	ppb	189.5	1777.84	0.1	
U	238	159	No Gas	0.017	ppb	66.6	936.70	0.05	

LY 07/31/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2488182.48	1.7	1983803.01	125.42	60	120	ISTD Failed
Sc	45	No Gas	4805349.83	2.0	4044567.83	118.81	60	120	
Sc	45	H2	2757497.67	0.1	2320461	118.83	60	120	
Sc	45	He	542894.89	0.7	436164.47	124.47	60	120	ISTD Failed
Ge	72	No Gas	1058991.29	1.8	946826.77	111.85	60	120	
Ge	72	H2	724295.58	0.2	631498.31	114.69	60	120	
Ge	72	He	294762.96	0.4	251670.34	117.12	60	120	
In	115	No Gas	5747458.77	0.7	5505923.82	104.39	60	120	
Tb	159	No Gas	6799986.82	0.6	6877615.7	98.87	60	120	
Tb	159	He	3828787.08	0.4	3654549.92	104.77	60	120	

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 08|01|20 09:49

End Date: 08|01|20 13:28

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

CCB 5 V 7½ LOQ
↓ 6
↓ 7 ↓

Book #:	AH6-005
Instrument No.:	H6
Analytical Batch:	1H6H01
Analytical Sequence:	H6H01
Method File:	E6020H63
Micropipette ID:	☐ 142781004
Micropipette ID:	☒ ICP-06
Micropipette ID:	☒ 339362028
Micropipette ID:	☒ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☒ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

SOP #	Rev. #
☐ EMAX-200.8	6
☒ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B-19-67-02	MRL1 (1)	SM6B-19-89-01
S1	68-01	MRL2 (0.4)	65-01
S2	68-02	MRL3 (0.1)	65-02
S3	69-01	MRL4	NA
S4	69-02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B-19-11-02
S7	↓	Post-Spike 1	SM6A007-06-25
ICV	SM6B-19-49-01	Post-Spike 2	↓ 06-26
CCV	70-01	Post-Spike 3	NA
ICSA	87-02	Post-Spike 4	↓
ICSAB	88-01		
6020 TUNE SOLN.	NA		
200.8 TUNE SOLN.	SM6B-19-11-01		

Analyzed By: LY

Date: 08|01|20

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6H01
InstrumentID: H6

Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		H6H01008				H6H01012			H6H01013		
DateAnalyed :		08/01/2010:08				08/01/2010:20			08/01/2010:22		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.03	30	1.6	97	0.39687	0	>0	19.717	20	99
Beryllium	T	28.81	30	1.8	96	0.0057935	0	<0.10	20.260	20	101
Boron		30.35	30	1.9	101	1.4378	0	<5.0	19.734	20	99
Sodium	T	30180	30000	2.3	101	100270	100000	100	97616	100000	98
Magnesium	T	29700	30000	2.0	99	100140	100000	100	94654	100000	95
Aluminum	T	29950	30000	1.4	100	100580	100000	101	95056	100000	95
Silicon		3264	3000	2.1	109	5.7361	0	<20	213.46	200	107
Phosphorus		284.3	300	1.7	95	99399	100000	99	94428	100000	94
Potassium	T	29880	30000	0.8	100	103570	100000	104	99600	100000	100
Calcium	T	30500	30000	1.8	102	103230	100000	103	99573	100000	100
Titanium		306.6	300	0.3	102	2125.4	2000	106	2020.8	2000	101
Vanadium	T	312.3	300	1.5	104	0.030270	0	<0.25	20.012	20	100
Chromium	T	313.5	300	0.9	104	0.34049	0	>0.1	20.392	20	102
Manganese	T	1973	2000	1.9	99	0.33124	0	>0.25	19.763	20	99
Iron	T	30410	30000	1.1	101	102360	100000	102	99261	100000	99
Cobalt	T	307.7	300	1.5	103	0.38359	0	>0.1	19.841	20	99
Nickel	T	316.7	300	0.9	106	0.36744	0	>0.25	20.240	20	101
Copper	T	313.1	300	1.4	104	0.24624	0	<0.50	20.382	20	102
Zinc	T	309.5	300	1.7	103	1.8731	0	<5	21.436	20	107
Arsenic	T	313.9	300	1.1	105	0.092074	0	<0.125	19.769	20	99
Selenium	T	311.7	300	1.3	104	0.25241	0	>0.15	20.608	20	103
Strontium		308.7	300	3.0	103	0.87508	0	<1.0	20.479	20	102
Zirconium		29.29	30	2.0	98	0.14648	0	<2.0	15.289	20	76*
Molybdenum		300.4	300	2.6	100	2057.1	2000	103	1961.3	2000	98
Silver	T	28.99	30	0.4	97	0.0065867	0	<0.1	19.089	20	95
Cadmium	T	306.2	300	0.4	102	0.11326	0	>0.1	19.326	20	97
Tin		307.9	300	1.4	103	0.39634	0	>0.2	19.497	20	97
Antimony	T	58.25	60	0.7	97	0.17171	0	<0.25	19.774	20	99
Barium	T	310.5	300	1.0	103	0.39684	0	>0.25	19.793	20	99
Tungsten		31.02	30	1.3	103	0.17059	0	<1.0	18.651	20	93
Mercury		2.968	3	2.0	99	0.0090815	0	<0.1	2.0096	2	100
Thallium	T	312.6	300	2.3	104	0.0028758	0	<0.1	19.119	20	96
Lead	T	313.4	300	2.3	104	0.12173	0	>0.05	19.499	20	97
Uranium		304.1	300	1.7	101	0.0046649	0	<0.1	19.382	20	97

Unit: ug/L
T: Target analyte
EV: Expected Value
Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : METHOD SW6020A
Sequence : IH6H01
Instrument ID: H6

CCV SampleID		: CCV1				CCV2		
CCV DataFileID		: H6H01015				H6H01022		
CCV DateTime		: 08/01/20 10:28				08/01/20 10:49		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	24.5	98	2.0	24.5	98	0.6
Beryllium	T	25	25.0	100	1.0	24.8	99	2.1
Boron		50	49.6	99	1.4	49.4	99	2.5
Sodium	T	25000	24700	99	1.2	24800	99	0.9
Magnesium	T	25000	24200	97	1.9	24000	96	2.7
Aluminum	T	25000	24300	97	1.7	24200	97	3.2
Silicon		2500	2480	99	0.8	2490	100	0.7
Phosphorus		250	237	95	0.6	240	96	1.6
Potassium	T	25000	24500	98	0.5	24700	99	0.1
Calcium	T	25000	24800	99	1.4	24900	100	0.5
Titanium		250	246	98	0.5	245	98	1.7
Vanadium	T	250	247	99	0.9	248	99	1.2
Chromium	T	250	249	100	1.0	250	100	0.9
Manganese	T	1500	1490	99	1.3	1480	99	2.2
Iron	T	25000	25000	100	0.9	24900	100	1.4
Cobalt	T	250	249	100	1.7	248	99	2.6
Nickel	T	250	250	100	1.0	252	101	0.8
Copper	T	250	251	101	1.2	252	101	1.3
Zinc	T	250	244	98	2.3	240	96	1.2
Arsenic	T	250	245	98	1.4	245	98	0.8
Selenium	T	250	251	101	0.3	249	99	0.4
Strontium		250	247	99	2.3	243	97	2.1
Zirconium		25	25.6	103	1.2	24.8	99	2.0
Molybdenum		250	240	96	1.3	236	95	1.0
Silver	T	25	24.4	98	1.8	24.3	97	0.4
Cadmium	T	250	239	96	0.7	240	96	1.1
Tin		250	242	97	1.1	240	96	0.4
Antimony	T	50	47.9	96	1.2	48.1	96	0.2
Barium	T	500	488	98	1.9	486	97	1.0
Tungsten		25	24.7	99	0.9	24.4	98	1.3
Mercury		2.5	2.43	97	1.3	2.43	97	0.8
Thallium	T	250	247	99	0.6	243	97	2.9
Lead	T	250	246	98	0.9	246	98	2.5
Uranium		250	241	97	1.7	238	95	2.1

Unit: ug/L
T: Target analyte
%Rec QC Limit: 90-110
RSD QC Limit: <5
CCV EV: CCV Expected Value ug/L
Comment:

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG NO. : 20F210
Method : SW6020A
Sequence : IH6H01
Instrument ID: H6

CB SampleID			: ICB		CCB1		CCB2	
CB DataFileID			: H6H01009		H6H01016		H6H01023	
CB DateTime			: 08/01/2010:11		08/01/2010:31		08/01/2010:51	
PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		0	0.04	>0	0.05	>0	0.02	>0
Beryllium	T	0.10	0.02	<0.10	0.02	<0.10	0.02	<0.10
Boron		5.0	0.5	<5.0	1	<5.0	1	<5.0
Sodium	T	25	4	<25	3	<25	10	<25
Magnesium	T	25	5	<25	6	<25	6	<25
Aluminum	T	25	5	<25	6	<25	6	<25
Silicon		20	2	<20	1	<20	0.7	<20
Phosphorus		25	0.08	<25	2	<25	2	<25
Potassium	T	25	1	<25	3	<25	4	<25
Calcium	T	25	2	<25	3	<25	4	<25
Titanium		0.5	0.05	<0.5	0.08	<0.5	0.06	<0.5
Vanadium	T	0.25	0.09	<0.25	0.08	<0.25	0.2	<0.25
Chromium	T	0.1	0.02	<0.1	0.02	<0.1	0.02	<0.1
Manganese	T	0.25	0.3	>0.25	0.3	>0.25	0.3	>0.25
Iron	T	25	2	<25	4	<25	3	<25
Cobalt	T	0.1	0.06	<0.1	0.05	<0.1	0.06	<0.1
Nickel	T	0.25	0.007	<0.25	0.001	<0.25	0.001	<0.25
Copper	T	0.50	0.02	<0.50	0.2	<0.50	0.1	<0.50
Zinc	T	5	0.06	<5	0.05	<5	0.02	<5
Arsenic	T	0.125	0.03	<0.125	0.04	<0.125	0.05	<0.125
Selenium	T	0.15	0.07	<0.15	0.05	<0.15	0.05	<0.15
Strontium		1.0	0.05	<1.0	0.05	<1.0	0.05	<1.0
Zirconium		2.0	0.004	<2.0	0.002	<2.0	0.003	<2.0
Molybdenum		0.5	0.09	<0.5	0.1	<0.5	0.09	<0.5
Silver	T	0.1	0.007	<0.1	0.005	<0.1	0.007	<0.1
Cadmium	T	0.1	0.08	<0.1	0.07	<0.1	0.07	<0.1
Tin		0.2	0.1	<0.2	0.08	<0.2	0.1	<0.2
Antimony	T	0.25	0.01	<0.25	0.03	<0.25	0.04	<0.25
Barium	T	0.25	0.05	<0.25	0.07	<0.25	0.09	<0.25
Tungsten		1.0	0.009	<1.0	0.009	<1.0	0.02	<1.0
Mercury		0.1	0.03	<0.1	0.02	<0.1	0.008	<0.1
Thallium	T	0.1	0.2	>0.1	0.07	<0.1	0.07	<0.1
Lead	T	0.05	0.09	>0.05	0.07	>0.05	0.06	>0.05
Uranium		0.1	0.05	<0.1	0.05	<0.1	0.05	<0.1

Unit: ug/L
CB: Calibration Blank
T: Target analyte
Acceptance Criteria: CCB Result <LOD
Comment:

Sample List

Acq/Data Batch D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b

Block List

Acquisition Order

Sequence Order	Block Name
1	Calibration Standards
2	Unknown Samples

Blocks

Calibration Standards

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		CalBlk	BLANK		1101	H6H01001.d		1	
2		CalBlk	BLANK		1101	H6H01002.d		1	
3		CalStd	S0		1102	H6H01003.d		1	
4		CalStd	S1		1104	H6H01004.d		2	
5		CalStd	S2		1105	H6H01005.d		3	
6		CalStd	S3		1106	H6H01006.d		4	
7		CalStd	S4		1107	H6H01007.d		5	
8		ICV	ICV		1204	H6H01008.d			1
9		ICB	ICB		1102	H6H01009.d			1
10		LLCCV	MRLH0101 ✓	1/100/10 ppb	1306	H6H01010.d			1
11		LLCCV2	MRLH0102	0.4/40/4 ppb	1307	H6H01011.d			1
12		ICS-A	ICSA		1304	H6H01012.d			1
13		ICSB	ICSAB		1305	H6H01013.d			1
14		Sample	MRLH0103	500 ppb CAT	1207	H6H01014.d			1
15		CCV	CCV1		1206	H6H01015.d			1
16		CCB	CCB1		1102	H6H01016.d			1

Unknown Samples

#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
1		Blank	IMF038WB		2101	H6H01017.d			1
2		LCSW	IMF038WL		2102	H6H01018.d			1
3		LCSW	IMF038WC		2103	H6H01019.d			1
4		LLCCV	MRLH0104 ✓	1/100/10 ppb	1306	H6H01020.d			1
5		LLCCV2	MRLH0105	0.4/40/4 ppb	1307	H6H01021.d			1
6		CCV	CCV2		1206	H6H01022.d			1
7		CCB	CCB2		1102	H6H01023.d			1
8		Blank	IMG006WB		2104	H6H01024.d			1
9		LCSW	IMG006WL		2105	H6H01025.d			1
10		LCSW	IMG006WC		2106	H6H01026.d			1
11		Blank	IMG015WB		2107	H6H01027.d			1
12		LCSW	IMG015WL		2108	H6H01028.d			1
13		LCSW	IMG015WC		2109	H6H01029.d			1
14		Sample	G003-06 ✓	EB	2110	H6H01030.d			1
15		Sample	G003-07	EB	2111	H6H01031.d			1
16		Sample	G015-09	EB	2112	H6H01032.d			1
17		CCV	CCV3		1206	H6H01033.d			1
18		CCB	CCB3		1102	H6H01034.d			1
19		Sample	G003-01M	TOT	2201	H6H01035.d			5
20		Sample	G003-01S	TOT	2202	H6H01036.d			5

Sample List

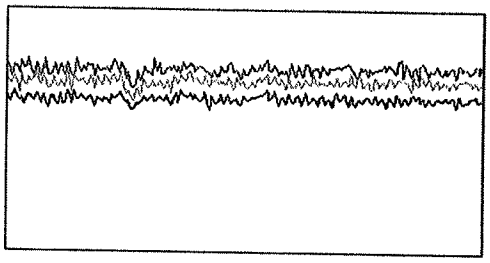
#	Skip	Sample Type	Sample Name	Comment	Vial#	File Name	Replicates	Level	Total Dil.
21		Sample	G003-01A	TOT	2203	H6H01037.d			5
22		Sample	G003-01G	TOT	2204	H6H01038.d			5
23		Sample	G003-01J	TOT	2205	H6H01039.d			25
24		Sample	G003-03G	TOT	2206	H6H01040.d			5
25		Sample	G003-04G	TOT	2207	H6H01041.d			5
26		Sample	G003-05G	TOT	2208	H6H01042.d			5
27		CCV	CCV4		1206	H6H01043.d			1
28		CCB	CCB4		1102	H6H01044.d			1
29		Sample	G003-01G	DISS	2209	H6H01045.d			5
30		Sample	G003-03G	DISS	2210	H6H01046.d			5
31		Sample	G003-04G	DISS	2211	H6H01047.d			5
32		Sample	G003-05G	DISS	2212	H6H01048.d			5
33		Sample	G003-01J	TOT	3101	H6H01049.d			25
34		Sample	G015-01G	TOT	2301	H6H01050.d			5
35		Sample	G015-02G	TOT	2302	H6H01051.d			5
36		Sample	G015-03G	TOT	2303	H6H01052.d			5
37		Sample	G015-04G	TOT	2304	H6H01053.d			5
38		CCV	CCV5		1206	H6H01054.d			1
39		CCB	CCB5 V7½L00		1102	H6H01055.d			1
40		Sample	G015-05M	TOT	2305	H6H01056.d			5
41		Sample	G015-05S	TOT	2306	H6H01057.d			5
42		Sample	G015-05A	TOT	2307	H6H01058.d			5
43		Sample	G015-05G	TOT	2308	H6H01059.d			5
44		Sample	G015-05J	TOT	2309	H6H01060.d			25
45		Sample	G015-06G	TOT	2310	H6H01061.d			5
46		Sample	G015-07G	TOT	2311	H6H01062.d			5
47		Sample	G015-01G	DISS	2312	H6H01063.d			5
48		Sample	G015-02G	DISS	2401	H6H01064.d			5
49		Sample	G015-03G	DISS	2402	H6H01065.d			5
50		CCV	CCV6		1206	H6H01066.d			1
51		CCB	CCB6 V7½L00		1102	H6H01067.d			1
52		Sample	G015-04G	DISS	2403	H6H01068.d			5
53		Sample	G015-05M	DISS	2404	H6H01069.d			5
54		Sample	G015-05S	DISS	2405	H6H01070.d			5
55		Sample	G015-05A	DISS	2406	H6H01071.d			5
56		Sample	G015-05G	DISS	2407	H6H01072.d			5
57		Sample	G015-05J	DISS	2408	H6H01073.d			25
58		Sample	G015-06G	DISS	2409	H6H01074.d			5
59		Sample	G015-07G	DISS	2410	H6H01075.d			5
60		CCV	CCV7		1206	H6H01076.d			1
61		CCB	CCB7 V7½L00		1102	H6H01077.d			1

Cr fail

Performance Report

Operator Name	LYaman
Acq. Date-Time	2020-08-01 08:50:14
Instrument Name	G8421A SG19253823
Sample Introduction	ISIS
Nebulizer Type	MicroMist
Ion Lens Model	x-Lens
Tune Parameters	Standard Tune

Sensitivity



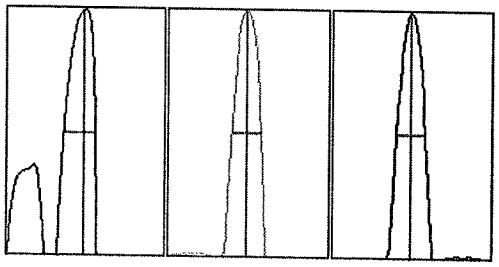
Mass	Range	Count	RSD%	Background
7	5000	3777	2.794	0.150
89	20000	14050	2.911	0.750
205	20000	12655	2.549	2.400

Sampling Period [sec] 0.311
Integration Time [sec] 0.1

Oxide/Doubly Charged Ratio

Oxide 156 / 140 1.162 %
Doubly Charged 70 / 140 1.294 %

Resolution/Axis



Mass	Peak Height	Axis	W-50%	W-10%
7	3792.22	7.00	0.60	0.72
89	14007.70	89.00	0.56	0.72
205	12636.07	205.00	0.55	0.74

Integration Time [sec] 0.1
Acquisition Time [sec] 22.74

Tune Parameters

Plasma Parameters

RF Power	1550 W	Option Gas	---	Makeup Gas	0.00 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Auxiliary Gas	0.90 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C	Plasma Gas	15.0 L/min
Nebulizer Gas	1.07 L/min				

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.2 V	Deflect	15.8 V
Extract 2	-145.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-70 V	Cell Exit	-50 V		

Performance Report

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

QP Bias	-3.0 V

Hardware Settings

Torch

Torch H	0.6 mm	Torch H (Hot)	---	Torch H (Cool)	---
Torch V	-0.2 mm	Torch V (Hot)	---	Torch V (Cool)	---

Plasma Correction

Nebulizer Gas Offset	0.02 L/min	Makeup Gas (Hot)	---	Makeup Gas (Cool)	---
		Sample Depth (Hot)	---		

Resolution/Axis

Mass Gain	123	Axis Gain	0.9996
Mass Offset	125	Axis Offset	-0.04

EM

Discriminator	4.1 mV	Analog HV	2462 V	Pulse HV	1652 V

Performance Report

Meter

Name	Value	Unit
Nebulizer Gas	1.07	L/min
MU./Dil. Gas	0.00	L/min
Plasma Gas	15.02	L/min
Aux Gas	0.90	L/min
Ar Gas Tank Press	7.18E+2	kPa
+5V (Press Gage)	5.0	V
Ar AMFC Temp	29.0	°C
Nebulizer Gas(DP)	6.02E+0	kPa
MU./Dil. Gas(DP)	-1.23E-1	kPa
Aux Gas(DP)	1.23E+1	kPa
Plasma Gas(DP)	1.11E+1	kPa
Nebulizer Gas(BP)	3.57E+2	kPa
MU./Dil. Gas(BP)	-2.47E+0	kPa
Aux Gas(BP)	5.93E+1	kPa
Plasma Gas(BP)	4.00E+1	kPa
S/C Temp (H)	16.3	°C
S/C Temp (L)	2.0	°C
Peltier Voltage	2.6	V
IF/BK Press	2.24E+2	Pa
Analyzer Press	6.03E-5	Pa
IG HV	178	V
IG Emission	5.00	µA
TMP Revolution	100.0	%
TMP Rev (RAW)	100.0	%
TMP Current	2.37	A
PWR AMP Drain I	0.2	A
PWR AMP Bias	4.12	V
OctP RF (Avg)	193.5	V
OctP RF Set	3.7	V
OctP FET Bias Set	3.75	V
OctP RF(+)	167.7	V
OctP RF(-)	219.4	V
OctP Bias	-8.0	V
Cell Temp.	65.0	°C
Cell Heater Volt.	4.1	V
+U Voltage	407.7	V

Name	Value	Unit
-U Voltage	-412.5	V
V Voltage	1775.4	V
QPRF Fader	1.3	V
Pickup Temp	55.0	°C
PWR Amp Temp	0.1	V
+600V	607.6	V
-120V	-129.5	V
-720V	-738.5	V
Prefilter Bias	-5.05	V
Pickup Heater I	0.07	A
QP PS +48V	47.5	V
QP PS +48V I	0.00	A
Analog HV	-2466	V
Pulse HV	1664	V
EM Gate	-43.2	V
Pulse Gate	360.6	V
EM Entrance	0.2	V
EM HV Gain	-1115.5	V
Inner Pole	-300.2	V
Outer Pole	20.0	V
Analog -5V	-5.1	V
Analog +15V	14.5	V
Analog -15V	-14.4	V
Analog +5V	5.2	V
Shunt C Pos	1.2	V
Drain Volt.(max)	62.9	V
RF PS +48V	47.5	V
Forward Power	1550	W
Reflected Power	3	W
Plasma Freq.	26.73	MHz
Drain I 1	11.36	A
Drain I 2	10.93	A
Drain I 3	10.83	A
Drain I 4	10.11	A
Temp Sensor	2.8	V
Driver I	5.55	A

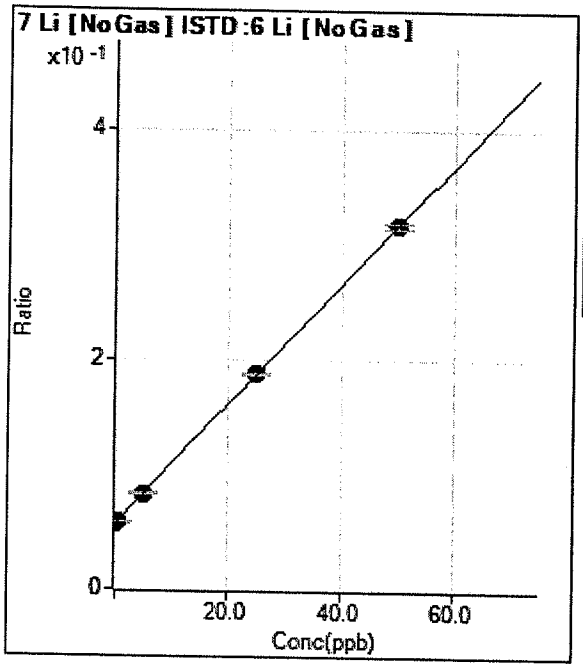
Name	Value	Unit
Igniter	0.0	V
Driver Voltage Set	6.5	V
Unbalance Current	0.44	A
PWM Threshold Set	0.2	V
Driver Voltage	5.1	V
PWM Threshold	0.2	V
Phase Detector	-2.0	mV
H2 Gas	0.00	mL/min
He Gas	0.00	mL/min
H2 Gas Press	1.70E+2	kPa
He Gas Press	9.18E-1	kPa
ORS AMFC Temp	29.3	°C
Atmospheric Press	1.01E+2	kPa
Extract 1	-0.1	V
Extract 2	-145.3	V
Omega Bias	-70.1	V
Omega Lens	8.0	V
Cell Entrance	-29.9	V
Cell Exit	-50.2	V
Deflect	15.8	V
Plate Bias	-35.0	V
HV+530V	524	V
HV+240V	237	V
HV-360V	-357	V
Inlet Temp	28.9	°C
Internal Temp	35.0	°C
+24V	23.6	V
Water Temp	18.6	°C
Water RF/WC/IF	1.47	L/min
ISIS 3 Pump Speed	0.0	%
Valve Position		
Tune/ISTD Valve		

Performance Report History

Sensitivity

Batch Folder:	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b\
Analysis File:	IH6H01.batch.bin
DA Date-Time:	2020-08-01 10:24:42
Calibration Title:	
Calibration Method:	External Calibration
VIS Interpolation Fit:	

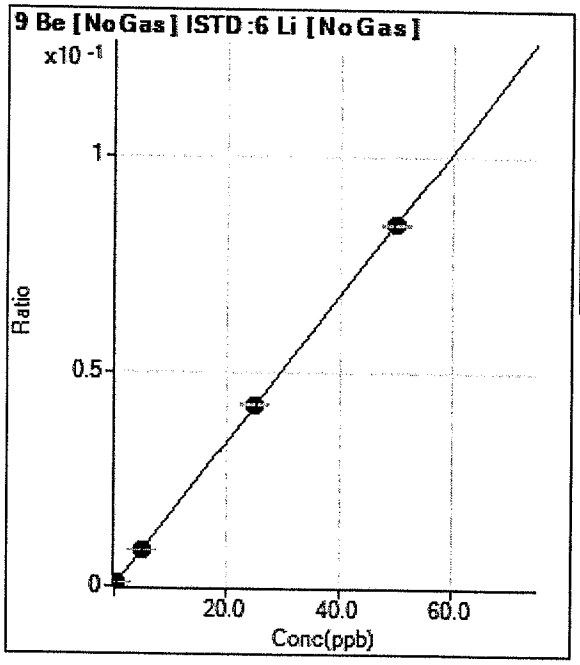
Level	Standard Data File	Sample Name	Acq. Date-Time
1	H6H01003.d	S0	2020-08-01 09:52:57
2	H6H01004.d	S1	2020-08-01 09:55:56
3	H6H01005.d	S2	2020-08-01 09:58:54
4	H6H01006.d	S3	2020-08-01 10:02:37
5	H6H01007.d	S4	2020-08-01 10:05:33



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103060.28	0.0570	P	0.9
2	☐	0.500	0.433	105966.29	0.0593	P	0.2
3	☐	5.000	5.023	151695.98	0.0832	P	0.5
4	☐	25.000	25.124	335870.43	0.1882	P	0.5
5	☐	50.000	49.936	560551.52	0.3177	P	1.3

y = 0.0052 * x + 0.0570
R = 1.0000
DL = 0.3028
BEC = 10.92

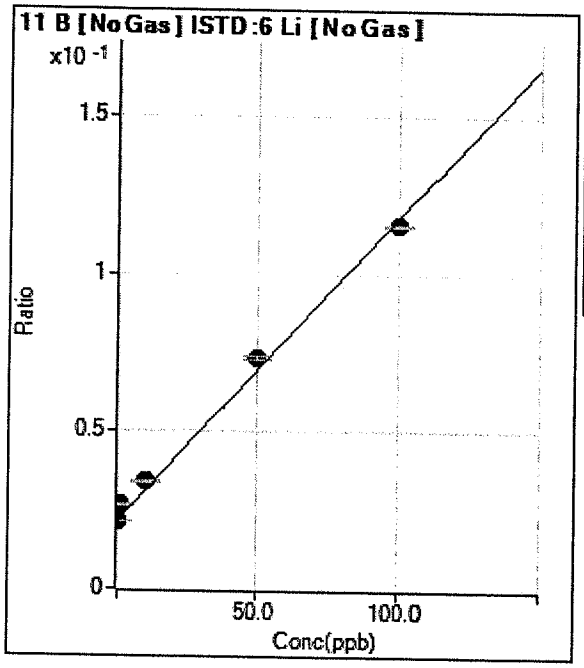
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34.44	0.0000	P	14.2
2	☐	0.500	0.517	1597.87	0.0009	P	3.1
3	☐	5.000	5.089	15715.43	0.0086	P	0.7
4	☐	25.000	25.213	76121.55	0.0427	P	0.5
5	☐	50.000	49.885	148843.30	0.0844	P	0.7

y = 0.0017 * x + 1.9044E-005
R = 1.0000
DL = 0.004805
BEC = 0.01126

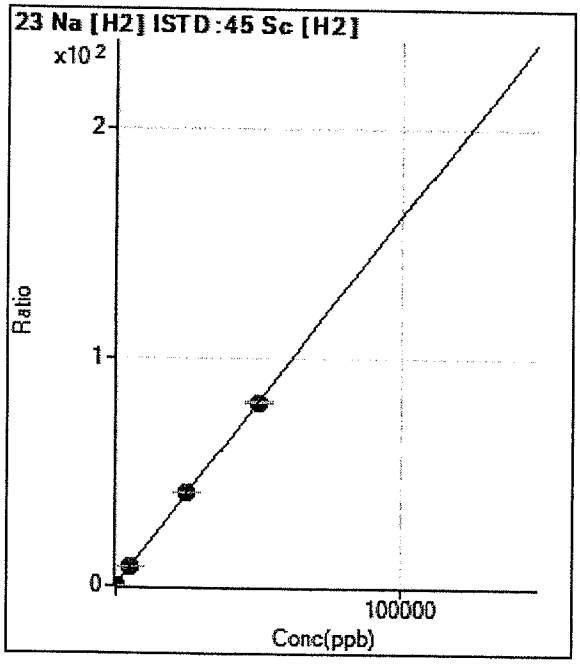
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	38912.58	0.0215	P	1.7
2	☐	0.500	5.422	47815.51	0.0267	P	1.2
3	☐	10.000	12.933	61934.76	0.0340	P	0.6
4	☐	50.000	54.184	131541.32	0.0737	P	1.6
5	☐	100.000	97.590	203793.87	0.1155	P	0.8

y = 9.6306E-004 * x + 0.0215
R = 0.9982
DL = 1.131
BEC = 22.35

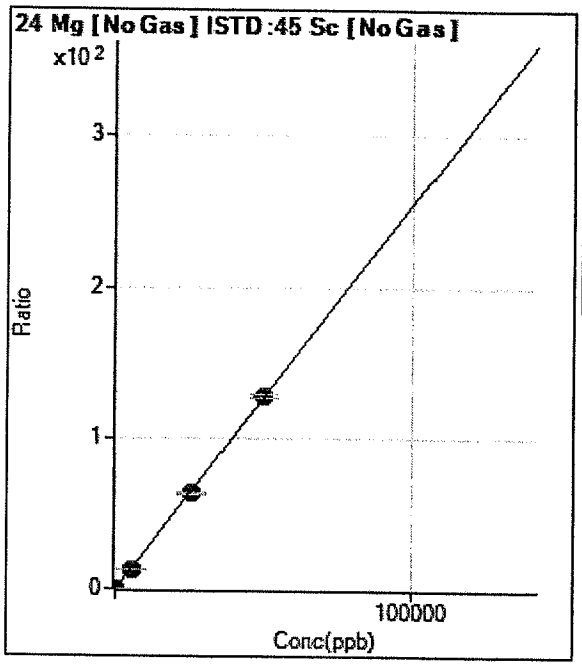
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	519817.33	0.2184	P	0.8
2	☐	50.000	53.015	722122.92	0.3043	P	0.7
3	☐	5000.000	5016.972	20451256.00	8.3473	A	0.4
4	☐	25000.000	25334.603	99160453.33	41.2673	A	0.6
5	☐	50000.000	49830.998	194159466.67	80.9581	A	0.9

y = 0.0016 * x + 0.2184
R = 1.0000
DL = 3.16
BEC = 134.8

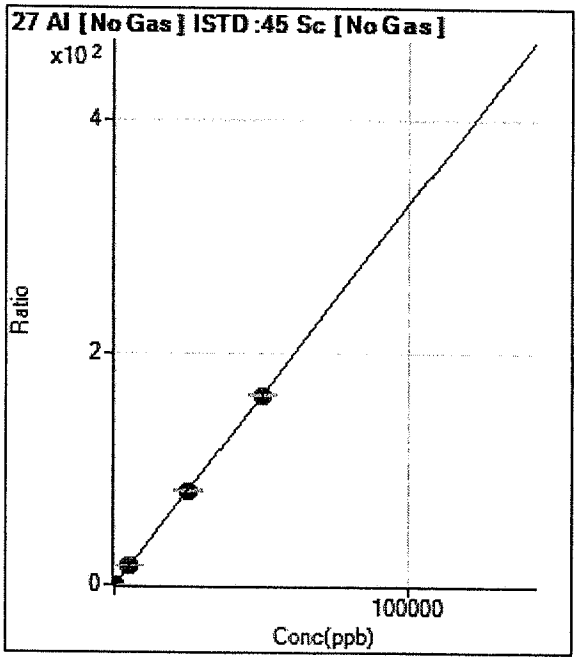
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29240.59	0.0070	P	2.0
2	☐	50.000	51.475	577828.00	0.1382	P	0.3
3	☐	5000.000	5007.439	55008524.00	12.7739	A	0.5
4	☐	25000.000	24969.613	272151061.33	63.6695	A	1.8
5	☐	50000.000	50014.448	534079893.33	127.5237	A	1.7

y = 0.0025 * x + 0.0070
R = 1.0000
DL = 0.1664
BEC = 2.738

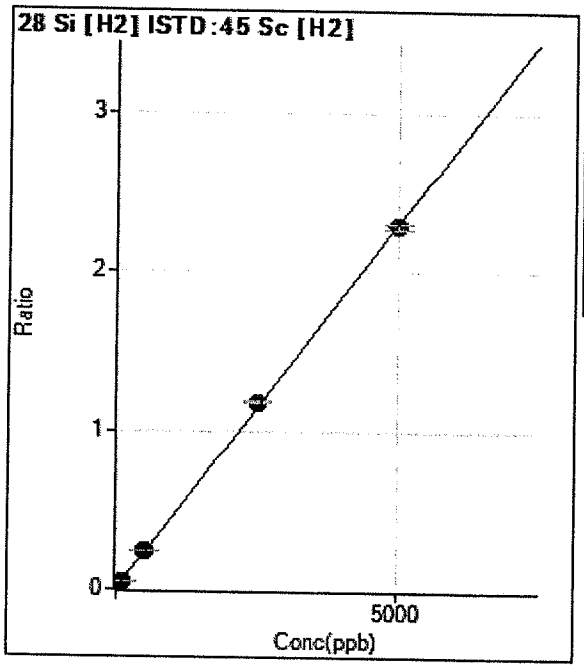
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10457.31	0.0025	P	4.9
2	☐	50.000	51.706	719979.57	0.1722	P	0.5
3	☐	5000.000	4928.088	69672323.96	16.1792	A	0.5
4	☐	25000.000	24794.121	347907234.81	81.3903	A	1.3
5	☐	50000.000	50110.129	688928389.73	164.4912	A	0.7

y = 0.0033 * x + 0.0025
R = 1.0000
DL = 0.1127
BEC = 0.7605

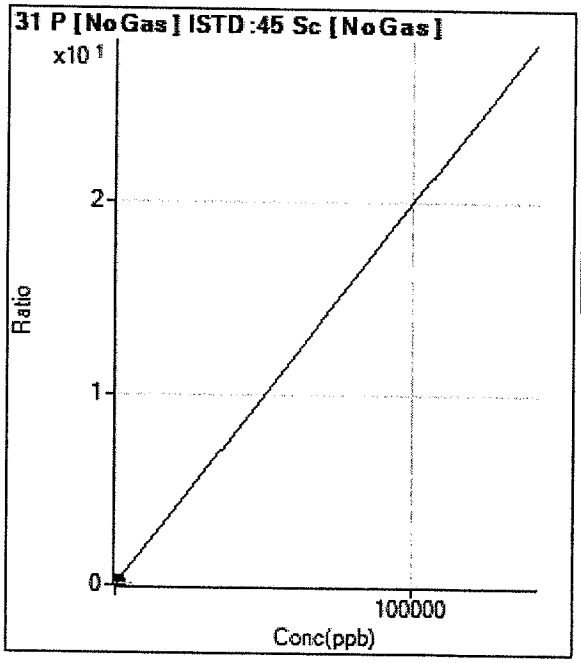
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3210.37	0.0013	P	3.1
2	☐	100.000	101.210	113969.61	0.0480	P	1.0
3	☐	500.000	513.797	583897.71	0.2383	P	0.4
4	☐	2500.000	2558.825	2839000.42	1.1815	A	0.9
5	☐	5000.000	4969.184	5499873.50	2.2932	A	1.4

y = 4.6122E-004 * x + 0.0013
R = 0.9999
DL = 0.2763
BEC = 2.925

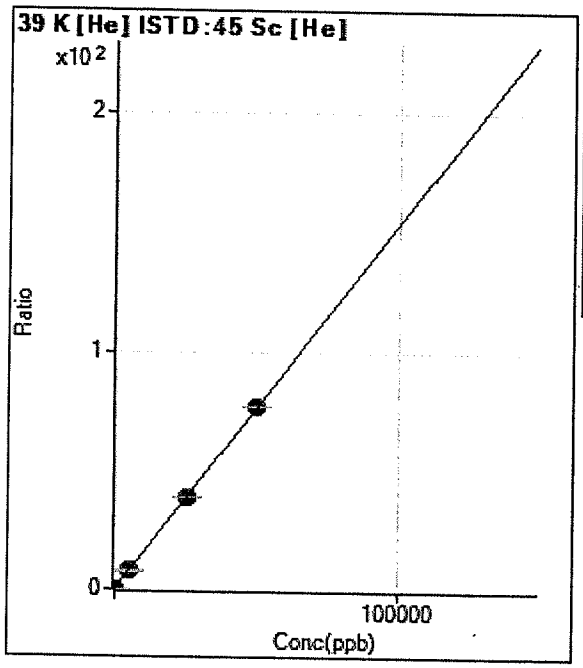
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21845.16	0.0052	P	0.5
2	☐	25.000	26.424	43873.14	0.0105	P	0.3
3	☐	50.000	46.458	62435.19	0.0145	P	0.4
4	☐	250.000	248.917	234917.73	0.0550	P	1.4
5	☐	500.000	500.825	441016.74	0.1053	P	0.9

y = 1.9984E-004 * x + 0.0052
R = 1.0000
DL = 0.3655
BEC = 26.09

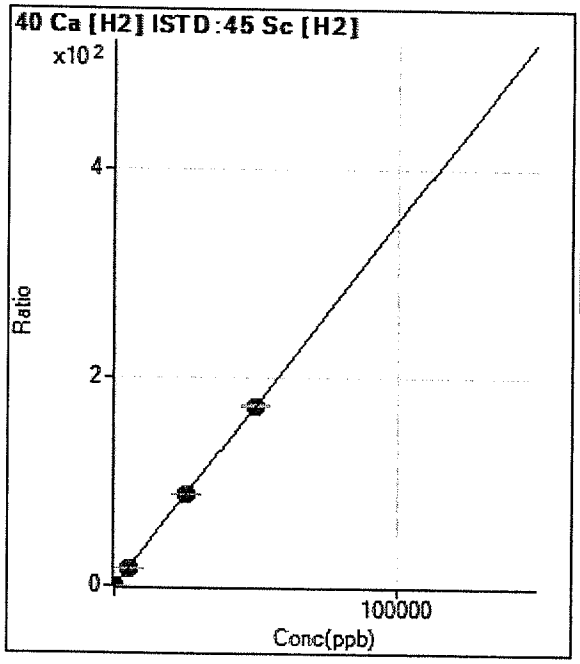
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	91009.37	0.2089	P	2.8
2	☐	50.000	51.440	123689.41	0.2878	P	2.3
3	☐	5000.000	4921.963	3449563.17	7.7548	A	1.8
4	☐	25000.000	25166.480	16752113.67	38.7918	A	1.4
5	☐	50000.000	49924.563	32882255.33	76.7487	A	0.1

y = 0.0015 * x + 0.2089
R = 1.0000
DL = 11.51
BEC = 136.3

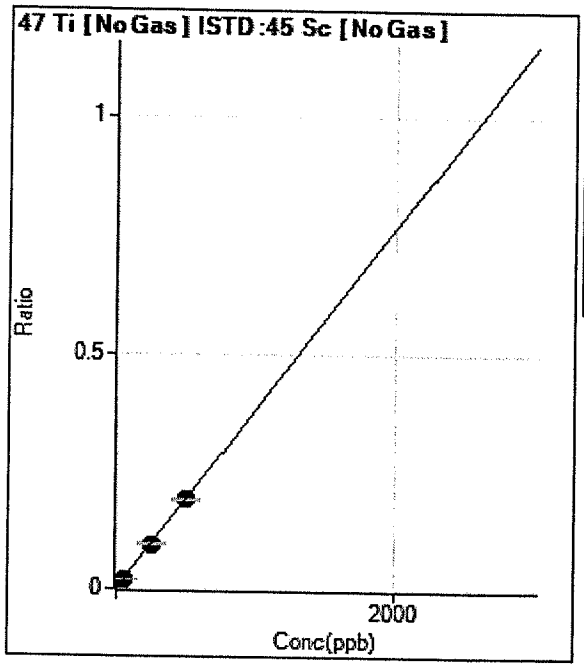
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	94026.74	0.0395	P	1.1
2	☐	50.000	52.137	525204.96	0.2213	P	1.3
3	☐	5000.000	4987.583	42712576.00	17.4333	A	0.4
4	☐	25000.000	25311.677	212200341.33	88.3121	A	0.8
5	☐	50000.000	49845.401	416984853.33	173.8716	A	0.3

y = 0.0035 * x + 0.0395
R = 1.0000
DL = 0.3757
BEC = 11.33

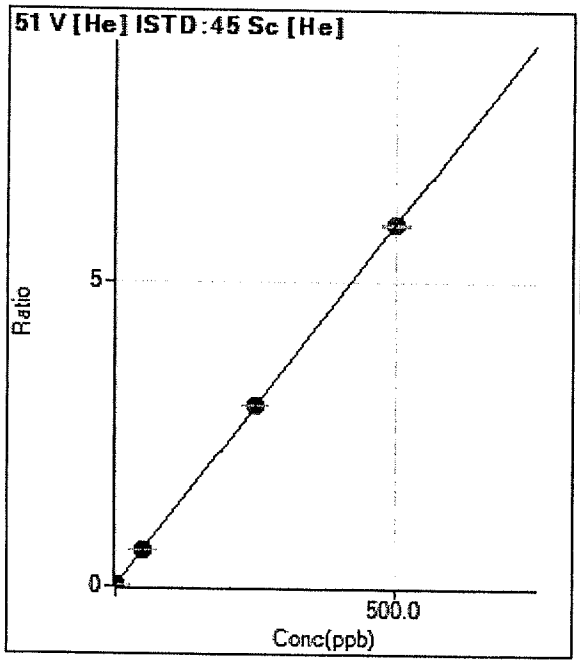
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	188.00	0.0000	P	15.9
2	☐	0.500	0.543	1053.37	0.0003	P	3.9
3	☐	50.000	49.923	82227.60	0.0191	P	0.3
4	☐	250.000	250.615	408982.83	0.0957	P	1.1
5	☐	500.000	499.700	798767.41	0.1907	P	1.1

y = 3.8158E-004 * x + 4.4852E-005
R = 1.0000
DL = 0.05599
BEC = 0.1175

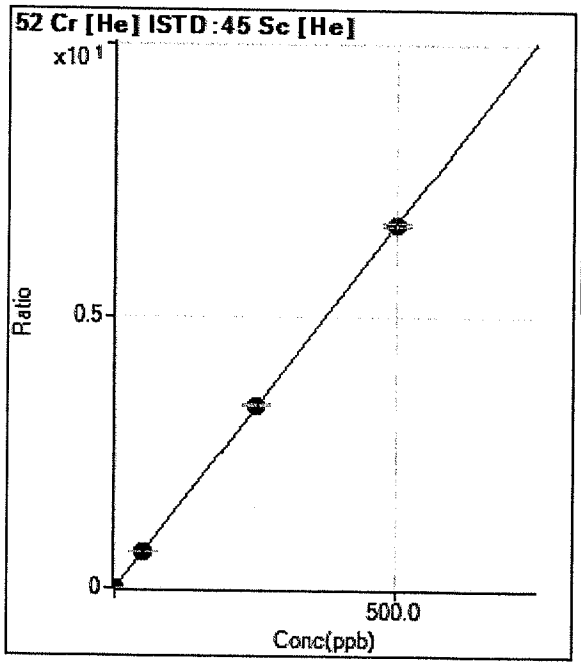
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5342.38	0.0123	P	2.0
2	☐	0.500	0.785	9278.47	0.0216	P	1.3
3	☐	50.000	49.212	265403.60	0.5967	P	0.9
4	☐	250.000	251.413	1294747.04	2.9980	A	0.6
5	☐	500.000	499.372	2546067.42	5.9427	A	0.6

y = 0.0119 * x + 0.0123
R = 1.0000
DL = 0.06173
BEC = 1.033

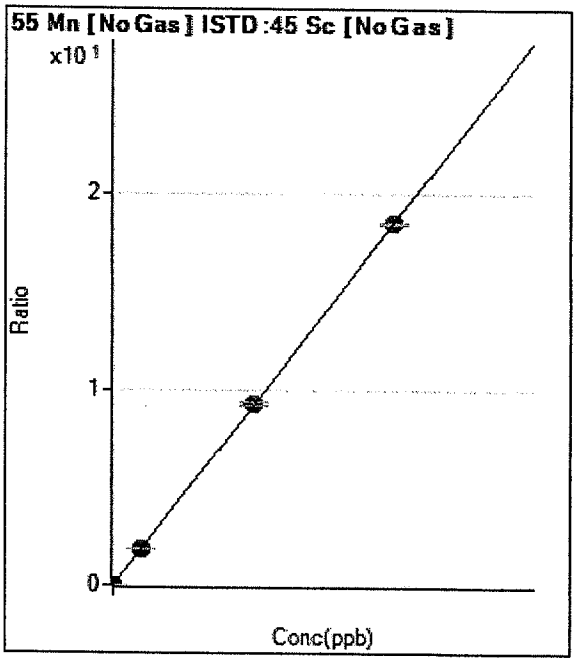
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	696.02	0.0016	P	3.5
2	☐	0.500	0.575	4006.59	0.0093	P	4.8
3	☐	50.000	49.959	299159.08	0.6726	P	0.9
4	☐	250.000	252.259	1463820.09	3.3896	A	1.1
5	☐	500.000	498.875	2871200.58	6.7018	A	1.1

y = 0.0134 * x + 0.0016
R = 1.0000
DL = 0.01246
BEC = 0.119

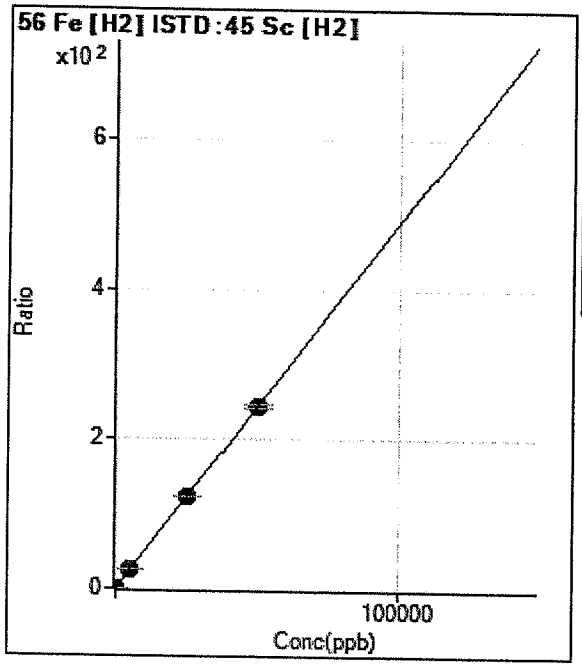
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10560.08	0.0025	P	1.3
2	☐	0.500	0.560	24967.42	0.0060	P	0.3
3	☐	300.000	305.902	8126015.50	1.8870	A	0.1
4	☐	1500.000	1505.109	39643460.00	9.2745	A	1.8
5	☐	3000.000	2996.855	77335346.67	18.4642	A	0.2

y = 0.0062 * x + 0.0025
R = 1.0000
DL = 0.01604
BEC = 0.4092

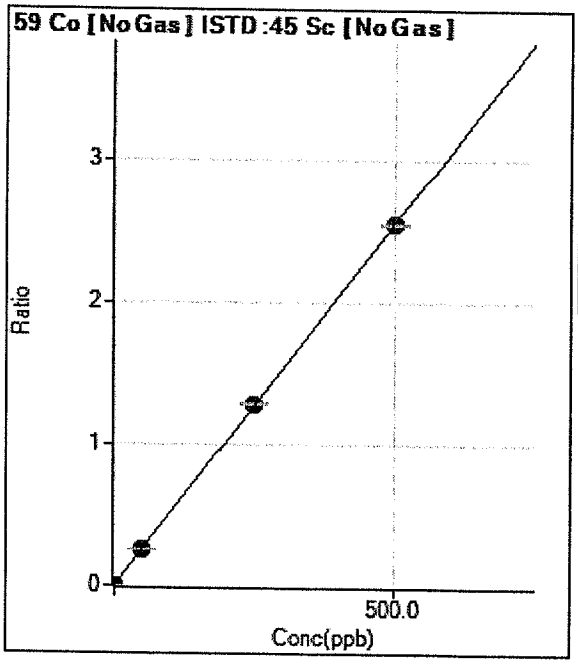
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12176.10	0.0051	P	1.9
2	☐	50.000	53.537	633285.08	0.2669	P	0.5
3	☐	5000.000	5024.629	60204493.33	24.5730	A	0.6
4	☐	25000.000	25176.281	295797824.00	123.1044	A	0.9
5	☐	50000.000	49909.393	585237098.67	244.0368	A	1.4

y = 0.0049 * x + 0.0051
R = 1.0000
DL = 0.05821
BEC = 1.046

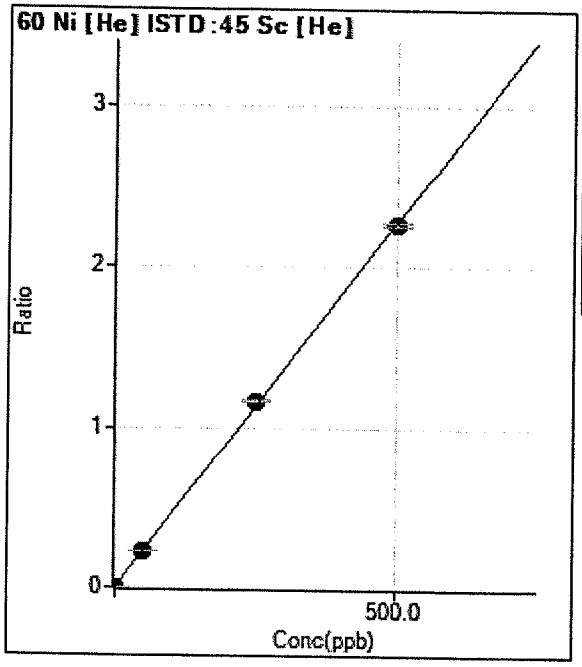
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	313.33	0.0001	P	9.1
2	☐	0.500	0.524	11494.17	0.0027	P	0.8
3	☐	50.000	51.377	1130322.63	0.2625	A	0.6
4	☐	250.000	251.828	5498489.17	1.2863	A	0.8
5	☐	500.000	498.949	10673812.33	2.5485	A	0.3

y = 0.0051 * x + 7.4782E-005
R = 1.0000
DL = 0.004008
BEC = 0.01464

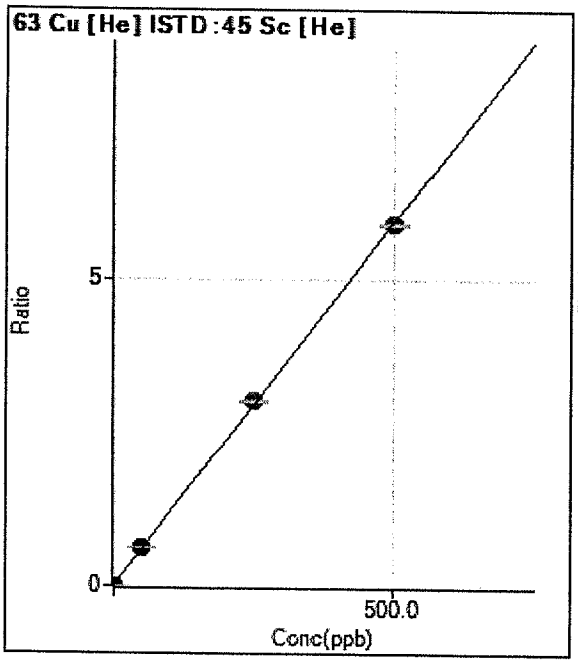
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	273.33	0.0006	P	6.3
2	☐	0.500	0.564	1373.40	0.0032	P	1.7
3	☐	50.000	50.562	102711.04	0.2309	P	1.8
4	☐	250.000	256.471	504703.19	1.1687	P	1.7
5	☐	500.000	496.708	969479.25	2.2629	P	1.0

y = 0.0046 * x + 6.2717E-004
R = 0.9999
DL = 0.02613
BEC = 0.1377

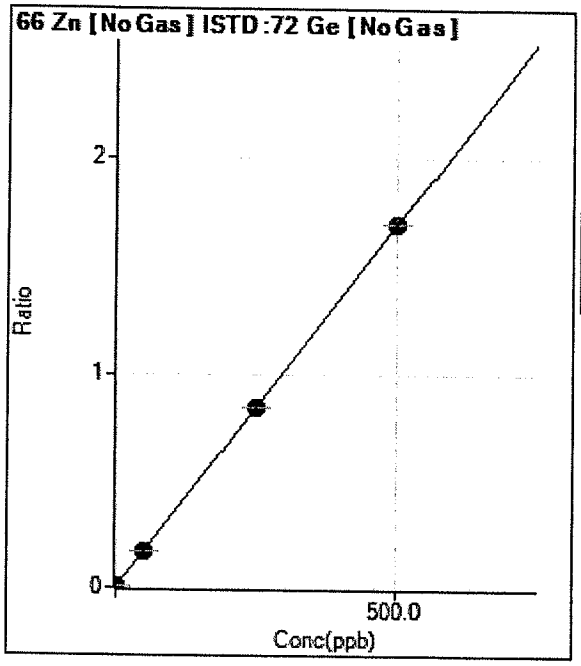
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2396.21	0.0055	P	3.7
2	☐	0.500	0.728	6064.02	0.0141	P	0.5
3	☐	50.000	52.053	276247.09	0.6211	P	1.2
4	☐	250.000	254.416	1301632.25	3.0141	A	1.6
5	☐	500.000	497.586	2523379.00	5.8897	A	0.4

y = 0.0118 * x + 0.0055
R = 0.9999
DL = 0.05228
BEC = 0.4653

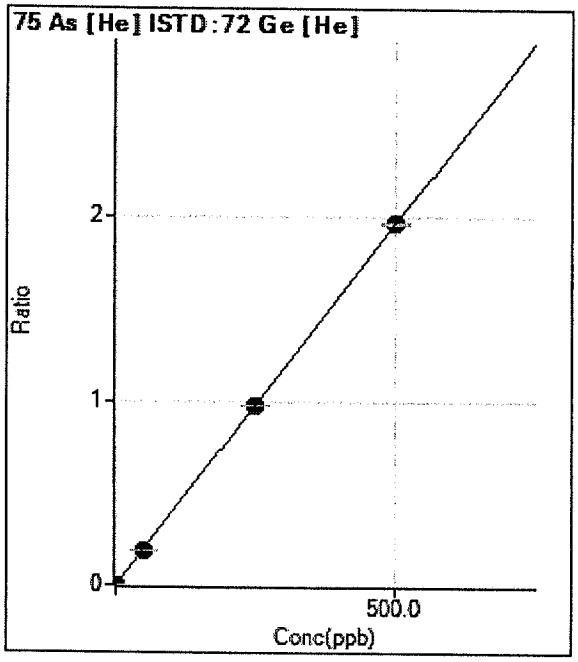
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1596.76	0.0016	P	1.5
2	☐	1.000	1.680	7404.69	0.0073	P	2.9
3	☐	50.000	50.636	179955.13	0.1729	P	1.0
4	☐	250.000	248.985	876256.31	0.8440	P	0.8
5	☐	500.000	500.443	1709281.09	1.6948	A	0.1

y = 0.0034 * x + 0.0016
R = 1.0000
DL = 0.02156
BEC = 0.4684

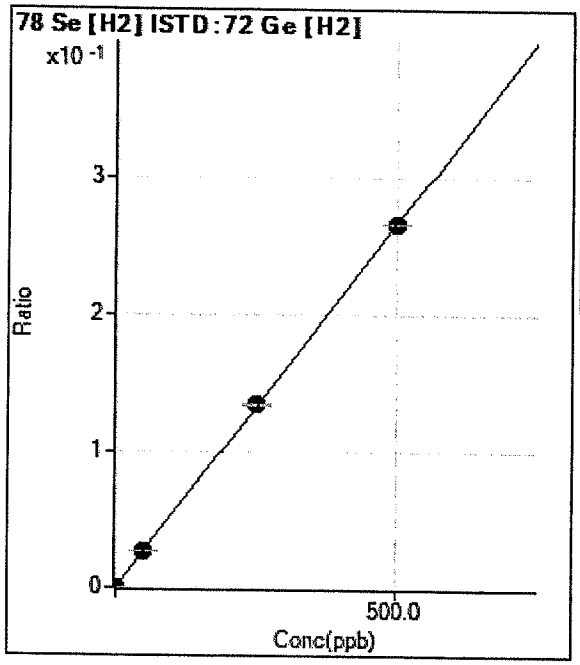
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	237.67	0.0009	P	3.0
2	☐	0.500	0.600	863.36	0.0033	P	0.3
3	☐	50.000	48.540	51855.57	0.1919	P	0.9
4	☐	250.000	249.895	257140.48	0.9841	P	0.2
5	☐	500.000	500.198	509780.50	1.9689	P	0.6

y = 0.0039 * x + 9.1428E-004
R = 1.0000
DL = 0.02105
BEC = 0.2324

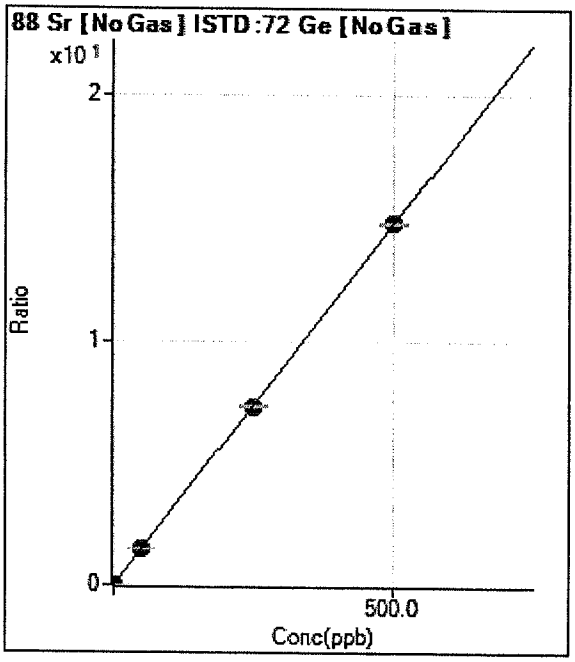
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18.00	0.0000	P	11.2
2	☐	0.500	0.513	201.00	0.0003	P	7.4
3	☐	50.000	50.343	18566.44	0.0268	P	0.9
4	☐	250.000	252.482	90654.03	0.1344	P	0.7
5	☐	500.000	498.725	176223.53	0.2655	P	0.1

y = 5.3230E-004 * x + 2.7260E-005
R = 1.0000
DL = 0.01715
BEC = 0.05121

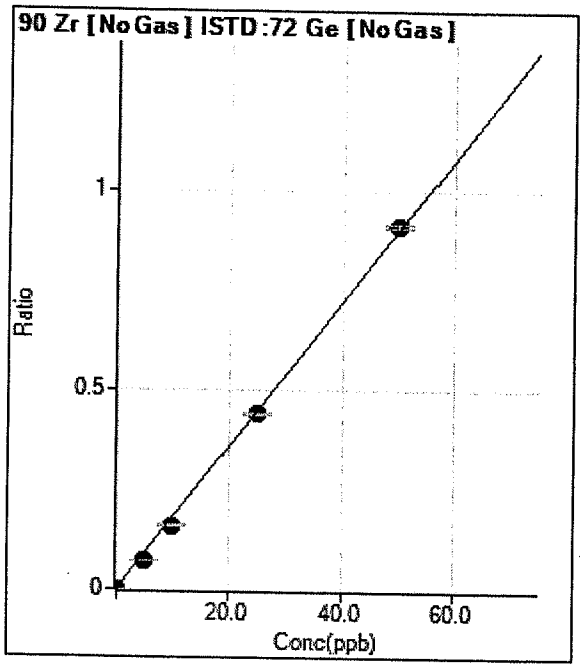
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	623.35	0.0006	P	5.3
2	☐	0.500	0.507	15898.33	0.0156	P	2.9
3	☐	50.000	49.679	1529254.45	1.4694	A	0.8
4	☐	250.000	248.195	7618812.47	7.3386	A	0.9
5	☐	500.000	500.935	14937166.07	14.8110	A	0.3

y = 0.0296 * x + 6.1866E-004
R = 1.0000
DL = 0.003336
BEC = 0.02092

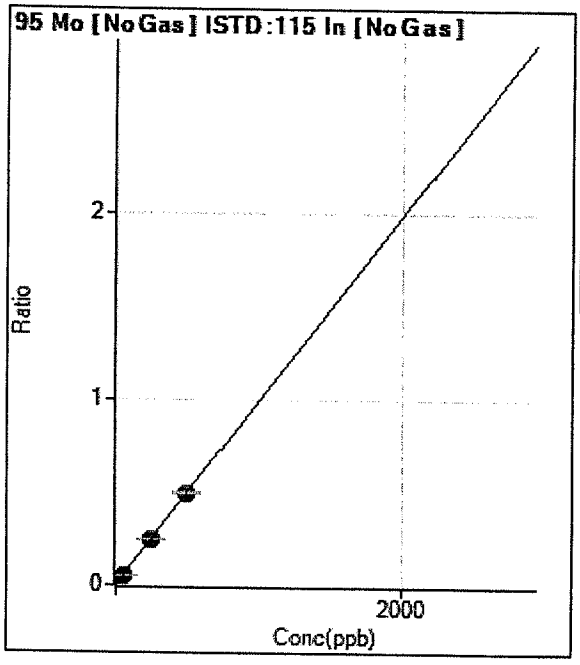
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0002	P	16.2
2	☐	5.000	3.973	73079.06	0.0717	P	1.9
3	☐	10.000	8.963	168277.40	0.1617	P	0.7
4	☐	25.000	24.564	459778.17	0.4428	P	0.6
5	☐	50.000	50.528	918517.49	0.9108	P	1.2

y = 0.0180 * x + 1.5215E-004
R = 0.9997
DL = 0.004114
BEC = 0.008443

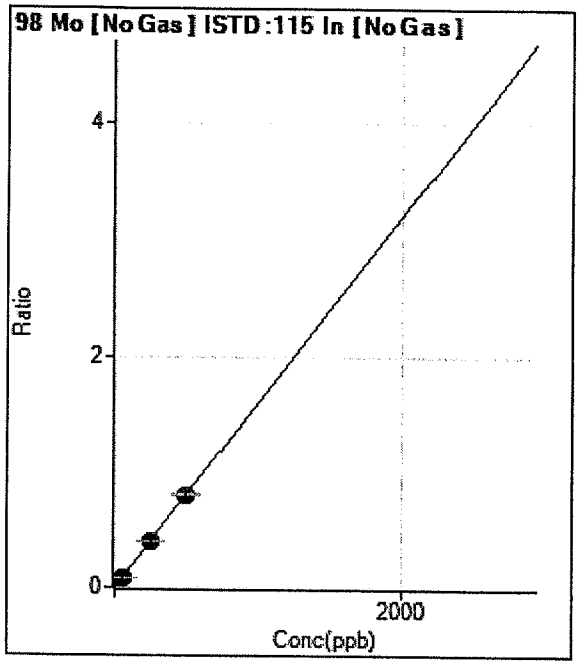
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	91.11	0.0000	P	18.8
2	☐	0.500	0.465	2861.42	0.0005	P	1.3
3	☐	50.000	47.933	287481.72	0.0475	P	0.7
4	☐	250.000	246.332	1442164.56	0.2438	A	0.7
5	☐	500.000	502.041	2869648.15	0.4969	A	1.5

y = 9.8978E-004 * x + 1.5061E-005
R = 1.0000
DL = 0.008563
BEC = 0.01522

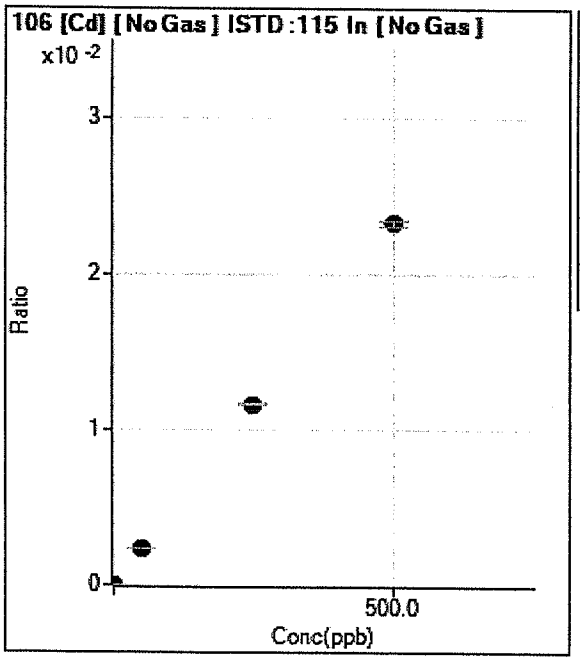
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	161.11	0.0000	P	18.2
2	☐	0.500	0.477	4763.08	0.0008	P	3.3
3	☐	50.000	46.976	456549.65	0.0754	P	0.4
4	☐	250.000	245.135	2325531.57	0.3932	A	0.8
5	☐	500.000	502.735	4656462.18	0.8063	A	1.1

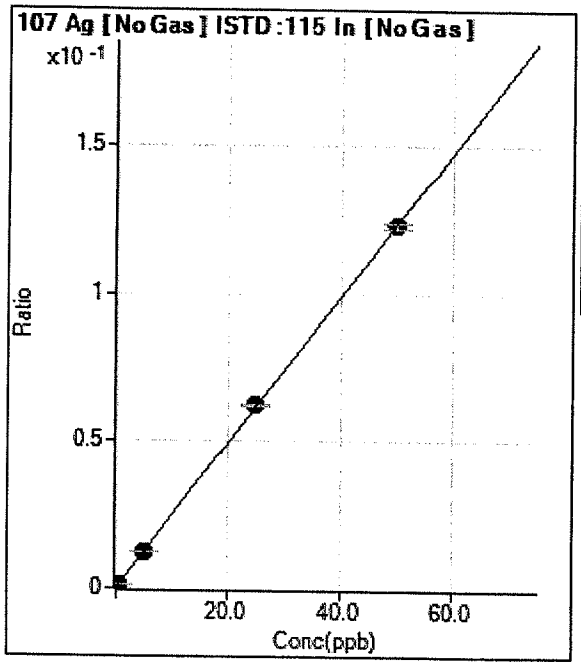
y = 0.0016 * x + 2.6623E-005
R = 0.9999
DL = 0.009045
BEC = 0.0166

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		9.00	0.0000	P	33.0
2	☐	0.500		336.00	0.0001	P	7.7
3	☐	50.000		14112.18	0.0023	P	1.9
4	☐	250.000		68719.20	0.0116	P	0.8
5	☐	500.000		134398.82	0.0233	P	1.3

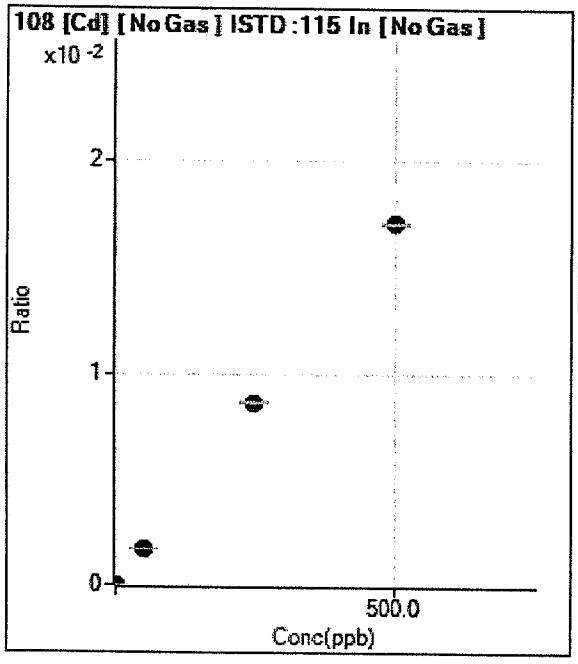
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	396.67	0.0001	P	5.4
2	☐	0.500	0.490	7671.12	0.0013	P	0.9
3	☐	5.000	4.985	74911.10	0.0124	P	0.5
4	☐	25.000	25.259	369025.01	0.0624	P	0.3
5	☐	50.000	49.872	710991.38	0.1231	P	1.6

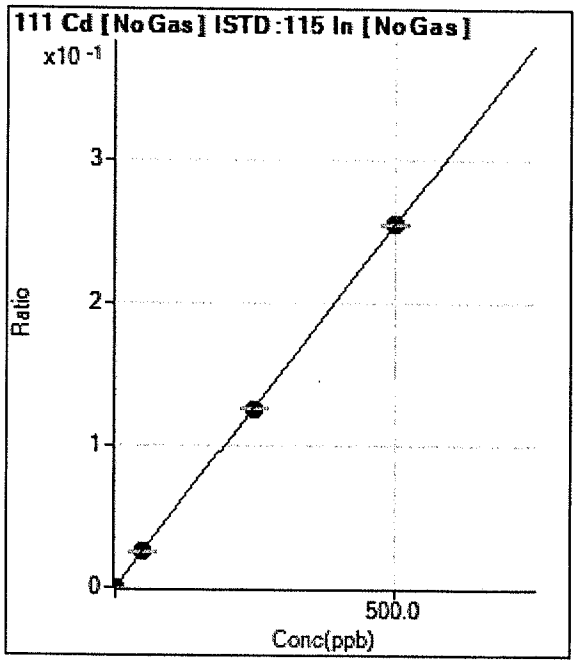
y = 0.0025 * x + 6.5546E-005
R = 1.0000
DL = 0.004314
BEC = 0.02656

Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		6.00	0.0000	P	34.2
2	☐	0.500		189.67	0.0000	P	5.7
3	☐	50.000		10439.45	0.0017	P	0.8
4	☐	250.000		51119.41	0.0086	P	0.9
5	☐	500.000		98794.56	0.0171	P	0.7

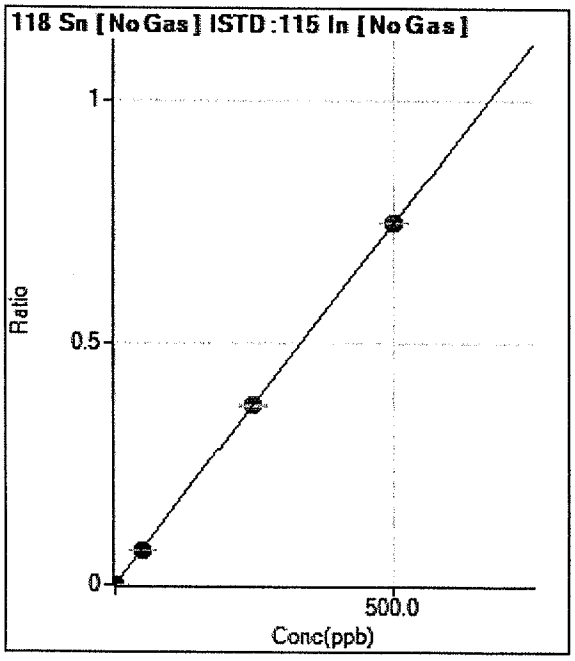
Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	49.11	0.0000	P	11.4
2	☐	0.500	0.512	1619.62	0.0003	P	1.4
3	☐	50.000	49.179	151922.22	0.0251	P	0.7
4	☐	250.000	248.124	748231.03	0.1265	P	0.3
5	☐	500.000	501.020	1475213.05	0.2554	A	0.2

y = 5.0981E-004 * x + 8.1183E-006
R = 1.0000
DL = 0.005425
BEC = 0.01592

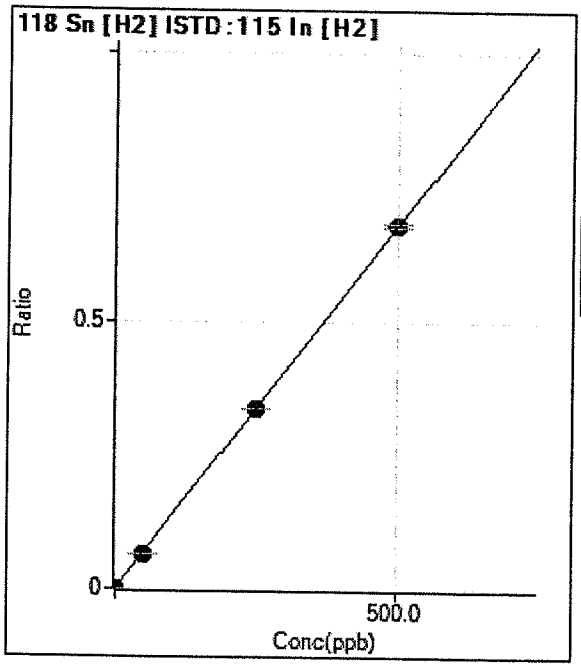
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	756.69	0.0001	P	6.2
2	☐	0.500	0.539	5595.64	0.0009	P	2.4
3	☐	50.000	47.350	428819.04	0.0708	P	1.7
4	☐	250.000	248.426	2193601.58	0.3709	A	1.2
5	☐	500.000	501.052	4319436.91	0.7479	A	0.1

y = 0.0015 * x + 1.2500E-004
R = 1.0000
DL = 0.01569
BEC = 0.08375

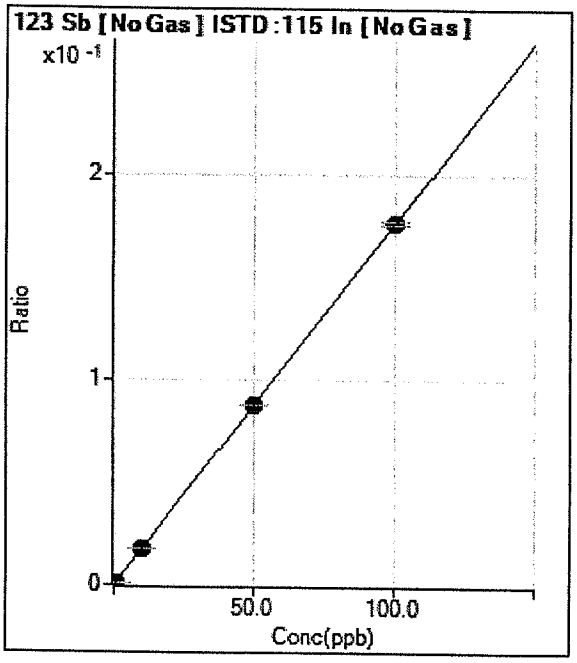
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	571.12	0.0001	P	11.8
2	☐	0.500	0.568	4301.82	0.0009	P	4.5
3	☐	50.000	48.474	324126.39	0.0659	P	0.9
4	☐	250.000	249.246	1631850.21	0.3385	A	0.7
5	☐	500.000	500.529	3169764.39	0.6796	A	1.2

y = 0.0014 * x + 1.1779E-004
R = 1.0000
DL = 0.0306
BEC = 0.08676

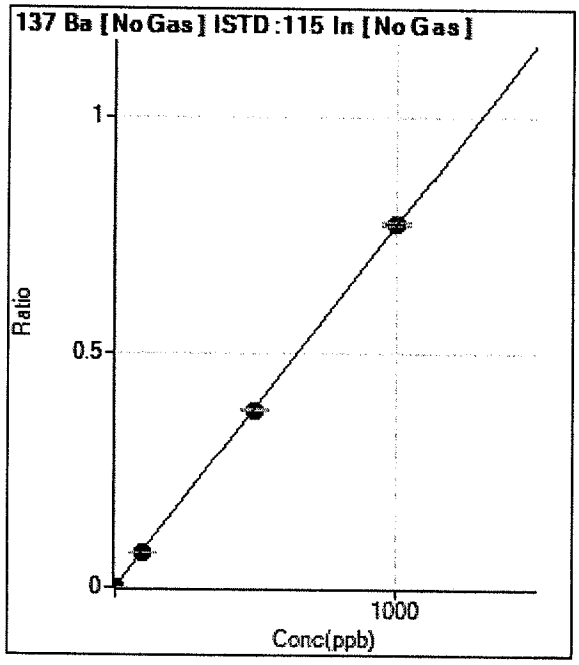
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	98.89	0.0000	P	16.1
2	☐	0.500	0.495	5339.98	0.0009	P	2.1
3	☐	10.000	9.873	105370.07	0.0174	P	0.8
4	☐	50.000	49.922	519854.39	0.0879	P	0.4
5	☐	100.000	100.052	1017265.41	0.1761	P	0.9

y = 0.0018 * x + 1.6353E-005
R = 1.0000
DL = 0.004476
BEC = 0.00929

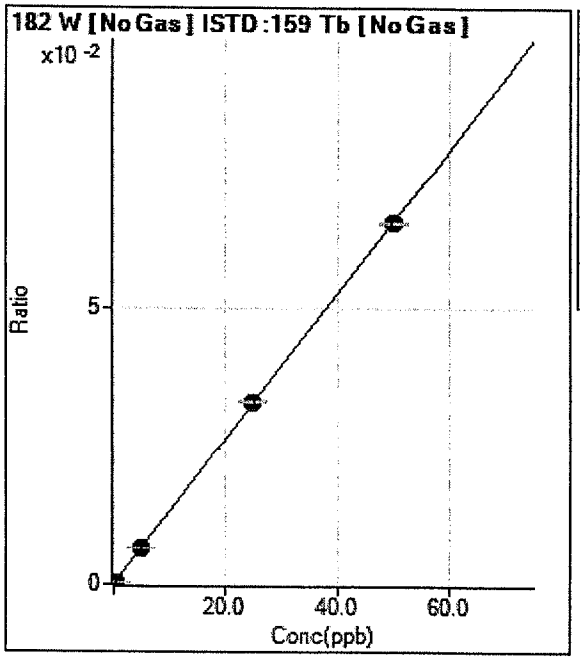
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	114.44	0.0000	P	9.1
2	☐	0.500	0.491	2381.33	0.0004	P	1.9
3	☐	100.000	95.732	445694.10	0.0736	P	0.7
4	☐	500.000	491.367	2233241.44	0.3776	A	0.9
5	☐	1000.000	1004.744	4459115.93	0.7720	A	1.2

y = 7.6838E-004 * x + 1.8916E-005
R = 0.9999
DL = 0.006715
BEC = 0.02462

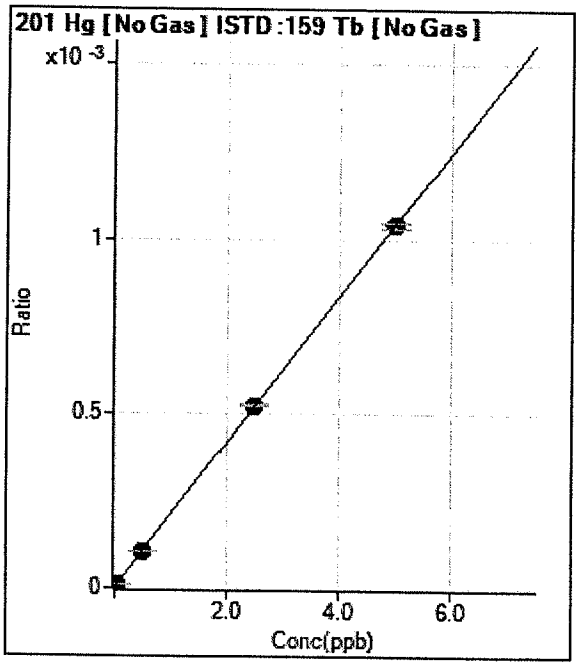
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	293.41	0.0000	P	141.4
2	☐	0.500	0.229	2616.94	0.0003	P	8.1
3	☐	5.000	5.054	53017.58	0.0067	P	0.9
4	☐	25.000	25.223	257834.10	0.0332	P	0.9
5	☐	50.000	49.886	512604.38	0.0656	P	0.8

y = 0.0013 * x + 3.7947E-005
R = 1.0000
DL = 0.1224
BEC = 0.02887

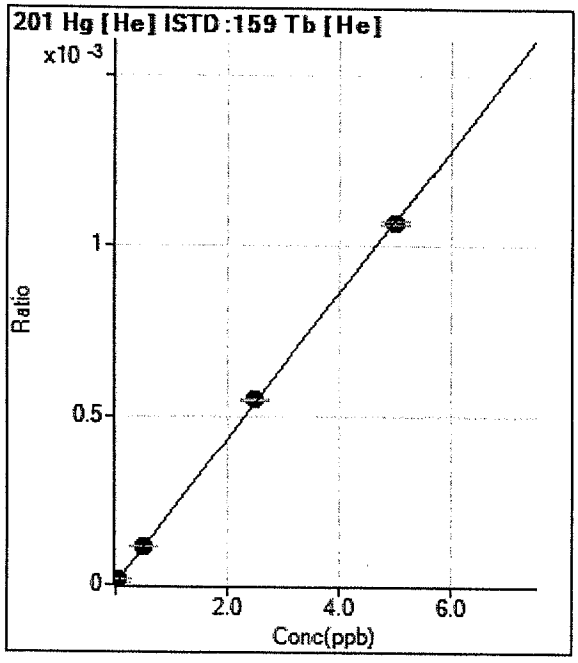
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18.67	0.0000	P	18.0
2	☐	0.050	0.053	104.00	0.0000	P	0.6
3	☐	0.500	0.487	822.70	0.0001	P	1.8
4	☐	2.500	2.517	4083.17	0.0005	P	0.8
5	☐	5.000	4.993	8128.64	0.0010	P	1.9

y = 2.0791E-004 * x + 2.4053E-006
R = 1.0000
DL = 0.00624
BEC = 0.01157

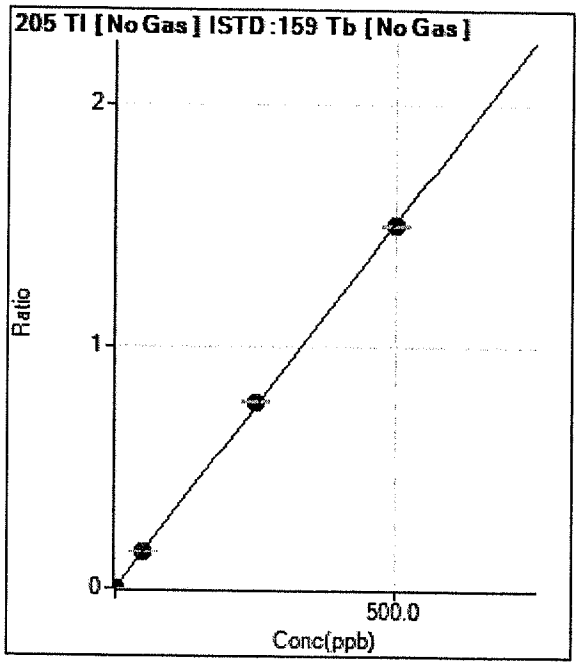
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14.50	0.0000	P	14.5
2	☐	0.050	0.052	59.67	0.0000	P	4.4
3	☐	0.500	0.508	470.34	0.0001	P	2.4
4	☐	2.500	2.545	2246.20	0.0005	P	1.0
5	☐	5.000	4.977	4391.77	0.0011	P	1.0

y = 2.1351E-004 * x + 3.5134E-006
R = 0.9999
DL = 0.00718
BEC = 0.01646

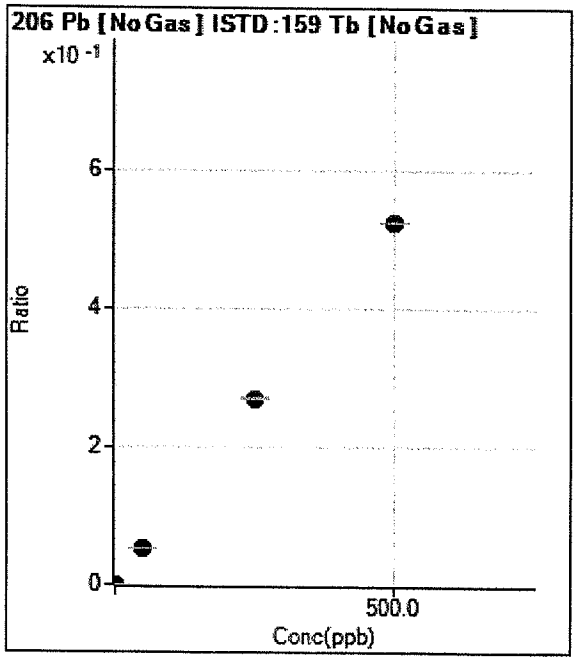
Weight: <None>
Min Conc: 0



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	811.14	0.0001	P	6.6
2	☐	0.500	0.512	12720.92	0.0017	P	1.6
3	☐	50.000	50.735	1216698.81	0.1533	A	0.3
4	☐	250.000	256.265	6012130.87	0.7740	A	0.7
5	☐	500.000	496.794	11720903.15	1.5004	A	0.4

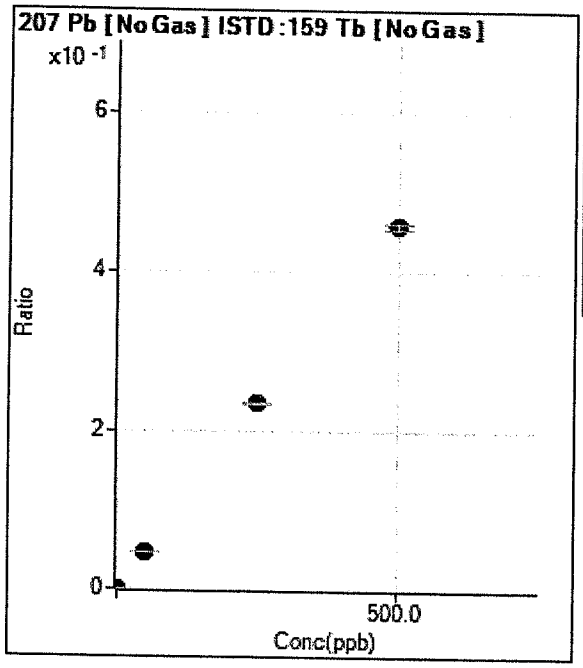
y = 0.0030 * x + 1.0456E-004
R = 0.9999
DL = 0.006896
BEC = 0.03462

Weight: <None>
Min Conc: 0



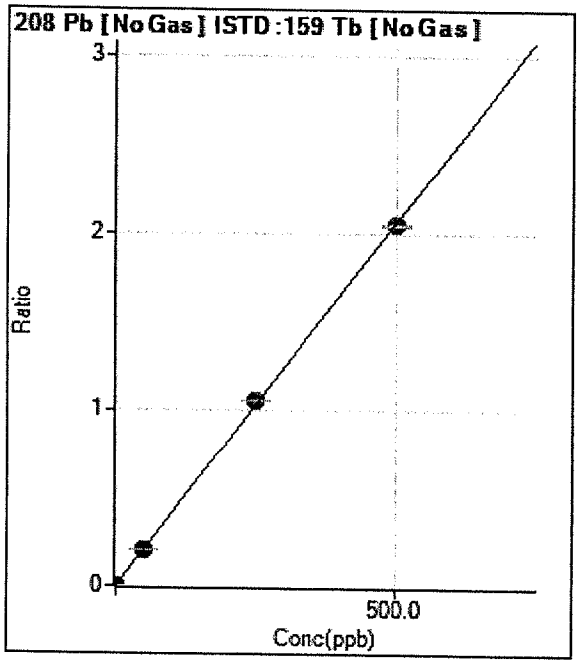
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		343.34	0.0000	P	16.9
2	☐	0.500		4600.87	0.0006	P	8.3
3	☐	50.000		417114.42	0.0526	P	0.7
4	☐	250.000		2090661.53	0.2692	A	1.1
5	☐	500.000		4087655.04	0.5233	A	0.1

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000		283.34	0.0000	P	16.8
2	☐	0.500		3877.29	0.0005	P	7.4
3	☐	50.000		367050.24	0.0463	P	0.2
4	☐	250.000		1821772.52	0.2346	A	1.1
5	☐	500.000		3577814.43	0.4580	A	1.4

Excluded



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1308.92	0.0002	P	6.6
2	☐	0.500	0.534	18237.54	0.0024	P	2.3
3	☐	50.000	50.844	1663371.91	0.2096	P	0.4
4	☐	250.000	255.759	8184695.69	1.0537	A	0.6
5	☐	500.000	497.036	15995949.97	2.0477	A	0.9

y = 0.0041 * x + 1.6873E-004
R = 0.9999
DL = 0.008086
BEC = 0.04096

Weight: <None>
Min Conc: 0

US EPA Tune Check Report

Operator Name	LYaman
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq. Date-Time	2020-08-01 09:11:37
Report Comment	---
Instrument Name	G8421A SG19253823

[No Gas]

Sensitivity

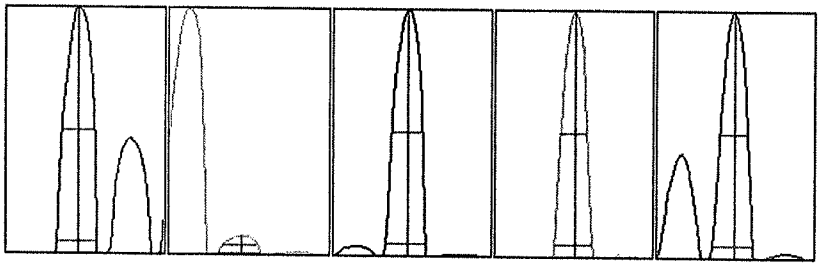
Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	1532	15321.21			3.873	5.000
24	10.00	8652	86523.58			2.517	5.000
59	10.00	10884	108837.04			2.151	5.000
115	10.00	14658	146578.77			2.021	5.000
208	10.00	7158	71584.22			0.823	5.000

Mass	RSD% (Flag)
9	
24	
59	
115	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	1563	1572	1562	1429	1535
24	8670	8720	8797	8275	8800
59	11005	10906	10925	10487	11096
115	14574	14821	14972	14195	14727
208	7240	7165	7086	7120	7181

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2720.10	8.90	8.90 - 9.10	
24	14717.67	23.90	23.90 - 24.10	
59	19621.60	58.95	58.90 - 59.10	
115	29779.84	115.05	114.90 - 115.10	
208	13884.49	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.60	0.738	0.900	
24	0.63	0.784	0.900	
59	0.59	0.767	0.900	
115	0.52	0.723	0.900	
208	0.54	0.770	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	153.699999999999
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	HMI	Nebulizer Gas	0.61 L/min	Dilution Gas	0.36 L/min
RF Power	1600 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.10 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.6 V	Deflect	13.2 V
Extract 2	-190.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-85 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	123	Axis Gain	0.9996	QP Bias	-3.0 V
Mass Offset	125	Axis Offset	-0.04		

Hardware Settings

Torch

Torch H	0.6 mm	Torch V	-0.2 mm

EM

Discriminator	4.1 mV	Analog HV	2462 V	Pulse HV	1652 V

Calibration Blank Report

Sample Name	BLANK
File Name	H6H01002.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 09:49:34
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	104324.98	0.5
Be	9	6	No Gas	68.89	31.5
B	11	6	No Gas	39802.86	1.2
Na	23	45	H2	521385.65	0.2
Mg	24	45	No Gas	26739.60	4.4
Al	27	45	No Gas	10437.31	12.4
Si	28	45	H2	3573.80	1.5
P	31	45	No Gas	21841.82	1.4
K	39	45	He	88963.86	2.7
Ca	40	45	H2	73386.26	0.8
Ti	47	45	No Gas	213.33	8.2
V	51	45	He	5040.93	4.2
Cr	52	45	He	673.35	3.7
Mn	55	45	No Gas	10266.52	2.0
Fe	56	45	H2	12459.68	2.1
Co	59	45	No Gas	316.00	4.6
Ni	60	45	He	281.33	10.4
Cu	63	45	He	2590.25	3.0
Zn	66	72	No Gas	1335.40	6.3
As	75	72	He	233.33	6.0
Se	78	72	H2	23.67	27.5
Sr	88	72	No Gas	558.90	6.5
Zr	90	72	No Gas	356.67	8.6
Mo	95	115	No Gas	105.56	17.4
Mo	98	115	No Gas	228.89	7.5
[Cd]	106	115	No Gas	11.67	19.8
Ag	107	115	No Gas	197.78	20.4
[Cd]	108	115	No Gas	7.67	49.4
Cd	111	115	No Gas	54.68	16.2
Sn	118	115	No Gas	782.25	4.6
Sn	118	115	H2	592.24	8.0
Sb	123	115	No Gas	93.33	9.5
Ba	137	115	No Gas	96.67	13.8
W	182	159	No Gas	210.02	108.2
Hg	201	159	No Gas	30.50	0.0

Calibration Blank Report

Name	Mass	ISTD	Tune	CPS	RSD
Hg	201	159	He	15.50	9.7
Tl	205	159	No Gas	1006.71	8.6
Pb	206	159	No Gas	313.34	15.1
Pb	207	159	No Gas	260.00	23.4
Pb	208	159	No Gas	1320.03	8.7
Th	232	159	No Gas	33.33	55.7
U	238	159	No Gas	203.34	8.2

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	1837279.48	1.0
Sc	45	No Gas	4204849.92	0.9
Sc	45	H2	2384904.67	0.6
Sc	45	He	432553.11	0.3
Ge	72	No Gas	1012531.62	0.7
Ge	72	H2	669719.92	0.9
Ge	72	He	262162.10	0.6
In	115	No Gas	6050657.52	1.2
Tb	159	No Gas	7848396.08	0.6
Tb	159	He	4144402.33	0.7

Calibration Standard Report

Sample Name	S0
File Name	H6H01003.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 09:52:57
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	103060.28	1.0
Be	9	6	No Gas	34.44	14.8
B	11	6	No Gas	38912.58	1.5
Na	23	45	H2	519817.33	0.3
Mg	24	45	No Gas	29240.59	2.0
Al	27	45	No Gas	10457.31	4.5
Si	28	45	H2	3210.37	3.0
P	31	45	No Gas	21845.16	0.9
K	39	45	He	91009.37	3.9
Ca	40	45	H2	94026.74	1.3
Tl	47	45	No Gas	188.00	16.4
V	51	45	He	5342.38	2.8
Cr	52	45	He	696.02	3.2
Mn	55	45	No Gas	10560.08	1.7
Fe	56	45	H2	12176.10	1.2
Co	59	45	No Gas	313.33	9.3
Ni	60	45	He	273.33	7.6
Cu	63	45	He	2396.21	2.7
Zn	66	72	No Gas	1596.76	1.0
As	75	72	He	237.67	3.4
Se	78	72	H2	18.00	11.1
Sr	88	72	No Gas	623.35	5.2
Zr	90	72	No Gas	153.33	16.4
Mo	95	115	No Gas	91.11	18.4
Ag	107	115	No Gas	396.67	5.0
Cd	111	115	No Gas	49.11	10.5
Sn	118	115	No Gas	756.69	6.7
Sb	123	115	No Gas	98.89	15.2
Ba	137	115	No Gas	114.44	8.4
W	182	159	No Gas	293.41	141.2
Hg	201	159	He	14.50	15.0
Tl	205	159	No Gas	811.14	6.4
Pb	208	159	No Gas	1308.92	6.2
U	238	159	No Gas	174.45	18.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1807683.83	0.6	1837279.48	98.39	60	120	
Sc	45	No Gas	4189460.50	0.5	4204849.92	99.63	60	120	
Sc	45	H2	2379920.00	0.7	2384904.67	99.79	60	120	
Sc	45	He	435576.90	1.4	432553.11	100.7	60	120	
Ge	72	No Gas	1007646.10	0.6	1012531.62	99.52	60	120	
Ge	72	H2	660334.90	0.3	669719.92	98.6	60	120	
Ge	72	He	259938.42	1.1	262162.1	99.15	60	120	
In	115	No Gas	6052806.76	0.9	6050657.52	100.04	60	120	
Tb	159	No Gas	7756534.14	0.4	7848396.08	98.86	60	120	
Tb	159	He	4125580.42	1.3	4144402.33	99.55	60	120	

Calibration Standard Report

Sample Name	S1
File Name	H6H01004.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 09:55:56
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	105966.29	1.0
Be	9	6	No Gas	1597.87	3.8
B	11	6	No Gas	47815.51	1.1
Na	23	45	H2	722122.92	0.6
Mg	24	45	No Gas	577828.00	0.5
Al	27	45	No Gas	719979.57	0.8
Si	28	45	H2	113969.61	1.3
P	31	45	No Gas	43873.14	0.3
K	39	45	He	123689.41	3.1
Ca	40	45	H2	526204.96	1.5
Ti	47	45	No Gas	1053.37	3.6
V	51	45	He	9278.47	1.9
Cr	52	45	He	4006.59	5.0
Mn	55	45	No Gas	24967.42	0.2
Fe	56	45	H2	633285.08	0.2
Co	59	45	No Gas	11494.17	1.2
Ni	60	45	He	1373.40	2.6
Cu	63	45	He	6064.02	0.8
Zn	66	72	No Gas	7404.69	1.8
As	75	72	He	863.36	0.4
Se	78	72	H2	201.00	6.2
Sr	88	72	No Gas	15898.33	2.1
Zr	90	72	No Gas	73079.06	1.1
Mo	95	115	No Gas	2861.42	1.4
Ag	107	115	No Gas	7671.12	1.4
Cd	111	115	No Gas	1619.62	0.7
Sn	118	115	No Gas	5595.64	2.5
Sb	123	115	No Gas	5339.98	2.6
Ba	137	115	No Gas	2381.33	2.4
W	182	159	No Gas	2616.94	8.0
Hg	201	159	He	59.67	4.1
Tl	205	159	No Gas	12720.92	1.4
Pb	208	159	No Gas	18237.54	2.1
U	238	159	No Gas	16105.03	1.1

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1787682.30	0.8	1837279.48	97.3	60	120	
Sc	45	No Gas	4180498.92	0.4	4204849.92	99.42	60	120	
Sc	45	H2	2372896.17	0.2	2384904.67	99.5	60	120	
Sc	45	He	429773.86	0.8	432553.11	99.36	60	120	
Ge	72	No Gas	1018682.32	1.1	1012531.62	100.61	60	120	
Ge	72	H2	669760.81	1.2	669719.92	100.01	60	120	
Ge	72	He	263537.78	0.7	262162.1	100.52	60	120	
In	115	No Gas	6015732.87	0.8	6050657.52	99.42	60	120	
Tb	159	No Gas	7706829.97	0.2	7848396.08	98.2	60	120	
Tb	159	He	4064801.58	0.4	4144402.33	98.08	60	120	

Calibration Standard Report

Sample Name	S2
File Name	H6H01005.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 09:58:54
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	151695.98	0.4
Be	9	6	No Gas	15715.43	0.3
B	11	6	No Gas	61934.76	1.1
Na	23	45	H2	20451256.00	0.5
Mg	24	45	No Gas	55008524.00	0.3
Al	27	45	No Gas	89672323.96	0.2
Si	28	45	H2	583897.71	0.4
P	31	45	No Gas	62435.19	0.7
K	39	45	He	3449563.17	2.3
Ca	40	45	H2	42712576.00	0.5
Ti	47	45	No Gas	82227.60	0.4
V	51	45	He	265403.60	0.8
Cr	52	45	He	299159.08	1.0
Mn	55	45	No Gas	8126015.50	0.4
Fe	56	45	H2	60204493.33	0.4
Co	59	45	No Gas	1130322.63	0.5
Ni	60	45	He	102711.04	2.0
Cu	63	45	He	276247.09	1.4
Zn	66	72	No Gas	179955.13	0.5
As	75	72	He	51855.57	1.8
Se	78	72	H2	18566.44	1.0
Sr	88	72	No Gas	1529254.45	0.2
Zr	90	72	No Gas	168277.40	0.3
Mo	95	115	No Gas	287481.72	0.5
Ag	107	115	No Gas	74911.10	0.4
Cd	111	115	No Gas	151922.22	0.5
Sn	118	115	No Gas	428819.04	1.5
Sb	123	115	No Gas	105370.07	0.6
Ba	137	115	No Gas	445694.10	0.5
W	182	159	No Gas	53017.58	0.5
Hg	201	159	He	470.34	2.0
Tl	205	159	No Gas	1216698.81	1.3
Pb	208	159	No Gas	1663371.91	0.8
U	238	159	No Gas	1597157.47	0.4

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1822547.87	0.8	1837279.48	99.2	60	120	
Sc	45	No Gas	4306358.67	0.4	4204849.92	102.41	60	120	
Sc	45	H2	2450076.08	0.7	2384904.67	102.73	60	120	
Sc	45	He	444800.02	0.6	432553.11	102.83	60	120	
Ge	72	No Gas	1040779.19	1.0	1012531.62	102.79	60	120	
Ge	72	H2	692134.04	0.1	669719.92	103.35	60	120	
Ge	72	He	270228.80	1.0	262162.1	103.08	60	120	
In	115	No Gas	6057584.35	0.3	6050657.52	100.11	60	120	
Tb	159	No Gas	7935606.90	1.2	7848396.08	101.11	60	120	
Tb	159	He	4202846.67	0.6	4144402.33	101.41	60	120	

Calibration Standard Report

Sample Name	S3
File Name	H6H01006.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:02:37
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	335870.43	1.3
Be	9	6	No Gas	76121.55	1.1
B	11	6	No Gas	131541.32	0.8
Na	23	45	H2	99160453.33	0.6
Mg	24	45	No Gas	272151061.33	0.9
Al	27	45	No Gas	347907234.81	0.4
Sl	28	45	H2	2839000.42	0.5
P	31	45	No Gas	234917.73	0.7
K	39	45	He	16752113.67	0.4
Ca	40	45	H2	212200341.33	0.6
Tl	47	45	No Gas	408982.83	1.0
V	51	45	He	1294747.04	0.6
Cr	52	45	He	1463820.09	0.3
Mn	55	45	No Gas	39643460.00	0.9
Fe	56	45	H2	295797824.00	0.4
Co	59	45	No Gas	5498489.17	0.2
Ni	60	45	He	504703.19	0.8
Cu	63	45	He	1301632.25	0.7
Zn	66	72	No Gas	876256.31	0.1
As	75	72	He	257140.48	0.5
Se	78	72	H2	90654.03	1.4
Sr	88	72	No Gas	7618812.47	0.4
Zr	90	72	No Gas	459778.17	1.3
Mo	95	115	No Gas	1442164.56	0.7
Ag	107	115	No Gas	369025.01	1.0
Cd	111	115	No Gas	748231.03	0.5
Sn	118	115	No Gas	2193601.58	0.8
Sb	123	115	No Gas	519854.39	0.8
Ba	137	115	No Gas	2233241.44	1.1
W	182	159	No Gas	257834.10	0.0
Hg	201	159	He	2246.20	1.1
Tl	205	159	No Gas	6012130.87	1.1
Pb	208	159	No Gas	8184695.69	0.5
U	238	159	No Gas	7927322.74	0.2

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1784760.68	0.9	1837279.48	97.14	60	120	
Sc	45	No Gas	4274903.67	0.9	4204849.92	101.67	60	120	
Sc	45	H2	2402925.00	0.8	2384904.67	100.76	60	120	
Sc	45	He	431888.24	1.0	432553.11	99.85	60	120	
Ge	72	No Gas	1038213.25	0.7	1012531.82	102.54	60	120	
Ge	72	H2	874393.73	1.1	669719.92	100.7	60	120	
Ge	72	He	261296.36	0.3	262162.1	99.67	60	120	
In	115	No Gas	5914717.14	0.6	6050657.52	97.75	60	120	
Tb	159	No Gas	7767514.69	0.9	7848396.08	98.97	60	120	
Tb	159	He	4106665.25	0.2	4144402.33	99.09	60	120	

Calibration Standard Report

Sample Name	S4
File Name	H6H01007.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:05:33
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	CPS	RSD
Li	7	6	No Gas	560551.52	1.4
Be	9	6	No Gas	148843.30	0.6
B	11	6	No Gas	203793.87	1.2
Na	23	45	H2	194159466.67	1.3
Mg	24	45	No Gas	534079893.33	1.2
Al	27	45	No Gas	688928389.73	0.3
Si	28	45	H2	5499873.50	1.8
P	31	45	No Gas	441016.74	0.8
K	39	45	He	32882255.33	0.6
Ca	40	45	H2	416984853.33	0.6
Ti	47	45	No Gas	798767.41	0.6
V	51	45	He	2546067.42	0.6
Cr	52	45	He	2871200.58	0.6
Mn	55	45	No Gas	77335346.67	0.8
Fe	56	45	H2	585237098.67	1.1
Co	59	45	No Gas	10673812.33	0.6
Ni	60	45	He	969479.25	0.6
Cu	63	45	He	2523379.00	0.3
Zn	66	72	No Gas	1709281.09	0.4
As	75	72	He	509780.50	0.2
Se	78	72	H2	176223.53	0.3
Sr	88	72	No Gas	14937166.07	0.5
Zr	90	72	No Gas	918517.49	1.2
Mo	95	115	No Gas	2869648.15	0.8
Ag	107	115	No Gas	710991.38	0.7
Cd	111	115	No Gas	1475213.05	1.1
Sn	118	115	No Gas	4319436.91	1.0
Sb	123	115	No Gas	1017265.41	1.7
Ba	137	115	No Gas	4459115.93	2.2
W	182	159	No Gas	512604.38	1.2
Hg	201	159	He	4391.77	0.8
Tl	205	159	No Gas	11720903.15	0.2
Pb	208	159	No Gas	15995949.97	0.8
U	238	159	No Gas	15695532.71	1.8

Calibration Standard Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1764234.52	0.3	1837279.48	96.02	60	120	
Sc	45	No Gas	4188398.33	0.8	4204849.92	99.61	60	120	
Sc	45	H2	2398222.67	0.4	2384904.67	100.56	60	120	
Sc	45	He	428440.71	0.6	432553.11	99.05	60	120	
Ge	72	No Gas	1008516.00	0.4	1012531.62	99.6	60	120	
Ge	72	H2	663752.08	0.3	669719.92	99.11	60	120	
Ge	72	He	258926.80	0.8	262162.1	98.77	60	120	
In	115	No Gas	5775291.14	1.0	6050657.52	95.45	60	120	
Tb	159	No Gas	7811926.36	0.4	7848396.08	99.54	60	120	
Tb	159	He	4119648.67	0.6	4144402.33	99.4	60	120	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	H6H01008.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:08:29
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.034	ppb	1.6	369436.06	30	96.78	90	110	
Be	9	6	No Gas	28.812	ppb	1.8	86316.21	30	96.04	90	110	
B	11	6	No Gas	30.355	ppb	1.9	89891.68	30	101.18	90	110	
Na	23	45	H2	30178.875	ppb	2.3	117379690.67	30000	100.6	90	110	
Mg	24	45	No Gas	29697.331	ppb	2.0	316797002.67	30000	98.99	90	110	
Al	27	45	No Gas	29947.658	ppb	1.4	411283987.21	30000	99.83	90	110	
Si	28	45	H2	3263.723	ppb	2.1	3600792.08	3000	108.79	90	110	
P	31	45	No Gas	284.340	ppb	1.7	259523.40	300	94.78	90	110	
K	39	45	He	29878.111	ppb	0.8	19791936.00	30000	99.59	90	110	
Ca	40	45	H2	30496.735	ppb	1.8	254283674.67	30000	101.66	90	110	
Ti	47	45	No Gas	306.636	ppb	0.3	489646.32	300	102.21	90	110	
V	51	45	He	312.303	ppb	1.5	1600226.62	300	104.1	90	110	
Cr	52	45	He	313.487	ppb	0.9	1811420.63	300	104.5	90	110	
Mn	55	45	No Gas	1972.775	ppb	1.9	50853608.00	2000	98.64	90	110	
Fe	56	45	H2	30407.381	ppb	1.1	355364256.00	30000	101.36	90	110	
Co	59	45	No Gas	307.731	ppb	1.5	6575618.50	300	102.58	90	110	
Ni	60	45	He	316.689	ppb	0.9	620586.09	300	105.56	90	110	
Cu	63	45	He	313.127	ppb	1.4	1594822.87	300	104.38	90	110	
Zn	66	72	No Gas	309.504	ppb	1.7	1051476.21	300	103.17	90	110	
As	75	72	He	313.921	ppb	1.1	320224.33	300	104.64	90	110	
Se	78	72	H2	311.734	ppb	1.3	110197.92	300	103.91	90	110	
Sr	88	72	No Gas	308.736	ppb	3.0	9152251.58	300	102.91	90	110	
Zr	90	72	No Gas	29.287	ppb	2.0	529298.81	30	97.62	90	110	
Mo	95	115	No Gas	300.387	ppb	2.6	1742795.83	300	100.13	90	110	
Ag	107	115	No Gas	28.985	ppb	0.4	419600.19	30	96.62	90	110	
Cd	111	115	No Gas	306.214	ppb	0.4	915132.14	300	102.07	90	110	
Sn	118	115	No Gas	307.865	ppb	1.4	2694121.91	300	102.62	90	110	
Sb	123	115	No Gas	58.247	ppb	0.7	601097.21	60	97.08	90	110	
Ba	137	115	No Gas	310.472	ppb	1.0	1398461.58	300	103.49	90	110	
W	182	159	No Gas	31.021	ppb	1.3	317515.71	30	103.4	90	110	
Hg	201	159	He	2.968	ppb	1.9	2656.12	3	98.93	90	110	
Tl	205	159	No Gas	312.649	ppb	2.3	7345278.86	300	104.22	90	110	
Pb	206	159	No Gas	313.358	ppb	2.3	10042362.97	300	104.45	90	110	
U	238	159	No Gas	304.111	ppb	1.7	9594895.45	300	101.37	90	110	

Initial Calibration Verification (ICV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1771114.71	2.1	1837279.48	96.4	60	120	
Sc	45	No Gas	4183132.08	0.9	4204849.92	99.48	60	120	
Sc	45	H2	2390318.58	1.3	2384904.67	100.23	60	120	
Sc	45	He	430102.05	1.4	432553.11	99.43	60	120	
Ge	72	No Gas	1002604.96	0.6	1012531.62	99.02	60	120	
Ge	72	H2	664068.34	1.3	669719.92	99.16	60	120	
Ge	72	He	259109.93	1.4	262162.1	98.84	60	120	
In	115	No Gas	5861667.01	0.6	6050657.52	96.88	60	120	
Tb	159	No Gas	7778658.30	0.2	7848396.08	99.11	60	120	
Tb	159	He	4168648.33	1.0	4144402.33	100.59	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	ICB
File Name	H6H01009.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:11:23
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	103070.99	0.4	
Be	9	6	No Gas	0.024	ppb	18.3	107.78	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	38164.99	4	
Na	23	45	H2	<0.000	ppb	N/A	508227.98	40	
Mg	24	45	No Gas	4.854	ppb	63.0	80993.86	10	
Al	27	45	No Gas	5.285	ppb	59.1	83034.27	15	
Si	28	45	H2	2.403	ppb	7.5	5871.24	8	
P	31	45	No Gas	0.078	ppb	309.4	21895.91	10	
K	39	45	He	1.474	ppb	212.0	92324.61	20	
Ca	40	45	H2	1.600	ppb	8.1	107739.46	25	
Ti	47	45	No Gas	0.052	ppb	72.5	270.00	0.5	
V	51	45	He	<0.000	ppb	N/A	4894.21	0.5	
Cr	52	45	He	0.018	ppb	39.0	802.69	0.2	
Mn	55	45	No Gas	0.341	ppb	58.3	19351.08	0.2	>LOD
Fe	56	45	H2	2.105	ppb	6.8	36820.87	10	
Co	59	45	No Gas	0.058	ppb	53.1	1550.77	0.15	
Ni	60	45	He	0.007	ppb	136.2	288.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	2306.86	0.4	
Zn	66	72	No Gas	0.059	ppb	46.5	1781.45	2	
As	75	72	He	0.031	ppb	34.9	272.00	0.2	
Se	78	72	H2	0.074	ppb	26.0	44.33	0.2	
Sr	88	72	No Gas	0.051	ppb	63.7	2122.42	0.2	
Zr	90	72	No Gas	0.004	ppb	41.7	220.00	2	
Mo	95	115	No Gas	0.088	ppb	35.7	616.68	0.2	
Ag	107	115	No Gas	0.007	ppb	58.1	503.35	0.08	
Cd	111	115	No Gas	0.082	ppb	48.6	301.75	0.2	
Sn	118	115	No Gas	0.109	ppb	41.8	1741.23	0.2	
Sb	123	115	No Gas	0.012	ppb	48.6	228.89	0.4	
Ba	137	115	No Gas	0.051	ppb	44.4	351.12	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	200.00	0.3	
Hg	201	159	He	0.018	ppb	20.6	31.00	0.1	
Tl	205	159	No Gas	0.156	ppb	42.8	4454.21	0.1	>LOD
Pb	208	159	No Gas	0.088	ppb	47.0	4122.51	0.1	
U	238	159	No Gas	0.052	ppb	51.6	1819.05	0.05	>LOD

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1814946.16	1.4	1837279.48	98.78	60	120	
Sc	45	No Gas	4186793.58	0.3	4204849.92	99.57	60	120	
Sc	45	H2	2389449.25	0.3	2384904.67	100.19	60	120	
Sc	45	He	437151.35	1.6	432553.11	101.06	60	120	
Ge	72	No Gas	998733.23	1.0	1012531.62	98.64	60	120	
Ge	72	H2	666174.65	0.8	669719.92	99.47	60	120	
Ge	72	He	262862.24	1.6	262162.1	100.27	60	120	
In	115	No Gas	6067951.76	1.7	6050657.52	100.29	60	120	
Tb	159	No Gas	7777460.52	1.4	7848396.08	99.1	60	120	
Tb	159	He	4195396.08	1.8	4144402.33	101.23	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLH0101
File Name	H6H01010.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:14:17
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.776	ppb	5.7	109735.21	1	77.6	80	120	> +/- 20%
Be	9	6	No Gas	0.985	ppb	1.2	3028.10	1	98.5	80	120	
B	11	6	No Gas	3.059	ppb	16.7	43968.52	10	30.59	80	120	> +/- 20%
Na	23	45	H2	94.730	ppb	0.8	887407.46	100	94.73	80	120	
Mg	24	45	No Gas	97.780	ppb	1.9	1069842.25	100	97.78	80	120	
Al	27	45	No Gas	97.722	ppb	1.3	1349385.81	100	97.72	80	120	
Si	28	45	H2	96.799	ppb	0.2	109745.43	100	96.8	80	120	
P	31	45	No Gas	46.445	ppb	2.6	60490.78	50	92.89	80	120	
K	39	45	He	97.081	ppb	7.0	155972.27	100	97.08	80	120	
Ca	40	45	H2	126.103	ppb	0.1	1143599.00	100	126.1	80	120	> +/- 20%
Ti	47	45	No Gas	0.985	ppb	2.6	1756.11	1	98.5	80	120	
V	51	45	He	1.022	ppb	5.0	10636.79	1	102.2	80	120	
Cr	52	45	He	1.055	ppb	1.1	6873.73	1	105.5	80	120	
Mn	55	45	No Gas	1.069	ppb	0.9	38013.43	1	106.9	80	120	
Fe	56	45	H2	100.736	ppb	1.3	1187431.17	100	100.74	80	120	
Co	59	45	No Gas	0.987	ppb	1.2	21342.69	1	98.7	80	120	
Ni	60	45	He	1.063	ppb	1.8	2383.54	1	106.3	80	120	
Cu	63	45	He	1.099	ppb	2.4	8062.39	1	109.9	80	120	
Zn	66	72	No Gas	10.752	ppb	0.5	38391.52	10	107.52	80	120	
As	75	72	He	0.992	ppb	7.7	1288.73	1	99.2	80	120	
Se	78	72	H2	1.020	ppb	6.1	383.34	1	102	80	120	
Sr	88	72	No Gas	2.007	ppb	0.6	60648.21	2	100.35	80	120	
Zr	90	72	No Gas	4.012	ppb	2.8	73291.50	5	80.24	80	120	
Mo	95	115	No Gas	0.936	ppb	2.6	5677.88	1	93.6	80	120	
Ag	107	115	No Gas	0.932	ppb	0.5	14258.80	1	93.2	80	120	
Cd	111	115	No Gas	0.966	ppb	0.7	3018.80	1	96.6	80	120	
Sn	118	115	No Gas	1.038	ppb	1.2	10098.33	1	103.8	80	120	
Sb	123	115	No Gas	0.928	ppb	2.7	9952.69	1	92.8	80	120	
Ba	137	115	No Gas	0.944	ppb	2.2	4487.44	1	94.4	80	120	
W	182	159	No Gas	1.976	ppb	2.1	20530.05	2	98.8	80	120	
Hg	201	159	He	0.098	ppb	11.0	102.83	0.1	98	80	120	
Tl	205	159	No Gas	0.993	ppb	1.2	24165.58	1	99.3	80	120	
Pb	208	159	No Gas	0.998	ppb	1.2	33338.48	1	99.8	80	120	
U	238	159	No Gas	0.949	ppb	1.5	30148.17	1	94.9	80	120	

<130% LY 08/03/20

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1797132.27	2.3	1837279.48	97.81	60	120	
Sc	45	No Gas	4174017.50	2.2	4204849.92	99.27	60	120	
Sc	45	H2	2386052.75	0.5	2384904.67	100.05	60	120	
Sc	45	He	435959.30	0.5	432553.11	100.79	60	120	
Ge	72	No Gas	1011266.83	2.1	1012531.62	99.88	60	120	
Ge	72	H2	672543.96	0.6	669719.92	100.42	60	120	
Ge	72	He	267671.90	1.3	262162.1	102.1	60	120	
In	115	No Gas	6028970.27	1.8	6050657.52	99.64	60	120	
Tb	159	No Gas	7787336.91	1.0	7848396.08	99.22	60	120	
Tb	159	He	4215778.50	0.8	4144402.33	101.72	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLH0102
File Name	H6H01011.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:17:11
Sample Type	LLCCV2
Total Dilution	1.0000
Comment	0.4/40/4 ppb
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.233	ppb	4.9	103537.11	0.4	58.25	80	120	> +/- 20%
Be	9	6	No Gas	0.407	ppb	2.9	1257.83	0.4	101.75	80	120	
B	11	6	No Gas	<0.000	ppb	N/A	35919.12	0.4	-344.25	80	120	> +/- 20%
Na	23	45	H2	34.805	ppb	3.3	656668.25	40	87.01	80	120	
Mg	24	45	No Gas	39.703	ppb	1.3	451083.90	40	99.26	80	120	
Al	27	45	No Gas	39.972	ppb	2.4	557463.75	40	99.93	80	120	
K	39	45	He	40.573	ppb	12.5	116997.56	40	101.43	80	120	
Ca	40	45	H2	45.201	ppb	1.3	471062.52	40	113	80	120	
Ti	47	45	No Gas	0.413	ppb	4.1	844.03	0.4	103.25	80	120	
V	51	45	He	0.428	ppb	1.9	7484.71	0.4	107	80	120	
Cr	52	45	He	0.423	ppb	2.4	3142.36	0.4	105.75	80	120	
Mn	55	45	No Gas	0.430	ppb	0.7	21558.97	0.4	107.5	80	120	
Fe	56	45	H2	42.113	ppb	0.5	504248.60	40	105.28	80	120	
Co	59	45	No Gas	0.414	ppb	1.1	9126.40	0.4	103.5	80	120	
Ni	60	45	He	0.392	ppb	3.6	1040.71	0.4	98	80	120	
Cu	63	45	He	0.444	ppb	7.2	4638.80	0.4	111	80	120	
Zn	66	72	No Gas	5.007	ppb	3.3	18502.62	4	125.18	80	120	> +/- 20%
As	75	72	He	0.397	ppb	5.7	649.02	0.4	99.25	80	120	
Se	78	72	H2	0.429	ppb	5.7	172.00	0.4	107.25	80	120	
Sr	88	72	No Gas	0.413	ppb	0.8	12801.68	0.4	103.25	80	120	
Mo	95	115	No Gas	0.379	ppb	2.7	2370.21	0.4	94.75	80	120	
Ag	107	115	No Gas	0.382	ppb	5.3	6123.64	0.4	95.5	80	120	
Cd	111	115	No Gas	0.389	ppb	2.8	1254.12	0.4	97.25	80	120	
Sn	118	115	No Gas	0.399	ppb	2.6	4376.29	0.4	99.75	80	120	
Sb	123	115	No Gas	0.368	ppb	1.9	4041.74	0.4	92	80	120	
Ba	137	115	No Gas	0.416	ppb	1.0	2056.83	0.4	104	80	120	
Tl	205	159	No Gas	0.410	ppb	4.9	10432.15	0.4	102.5	80	120	
Pb	208	159	No Gas	0.423	ppb	2.9	14837.90	0.4	105.75	80	120	
U	238	159	No Gas	0.394	ppb	5.6	12580.91	0.4	98.5	80	120	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1778131.25	0.3	1837279.48	96.78	60	120	
Sc	45	No Gas	4168332.67	1.5	4204849.92	99.13	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Sc	45	H2	2389488.17	0.3	2384904.67	100.19	60	120	
Sc	45	He	431545.29	1.0	432553.11	99.77	60	120	
Ge	72	No Gas	998839.00	1.0	1012531.62	98.65	60	120	
Ge	72	H2	672260.81	1.0	669719.92	100.38	60	120	
Ge	72	He	262035.17	0.6	262162.1	99.95	60	120	
In	115	No Gas	6078678.49	0.9	6050657.52	100.46	60	120	
Tb	159	No Gas	7765837.19	1.2	7848396.08	98.95	60	120	
Tb	159	He	4174231.67	0.2	4144402.33	100.72	60	120	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	H6H01012.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:20:05
Sample Type	ICS-A
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	0.397	ppb	20.3	98059.79	2	-50	50	
Be	9	6	No Gas	0.006	ppb	38.0	47.78	0.4	-50	50	
B	11	6	No Gas	1.438	ppb	36.2	38015.72	10	-50	50	
Na	23	45	H2	100271.066	ppb	1.5	391387392.00	100000	80	120	
Mg	24	45	No Gas	100141.179	ppb	2.8	1039493440.00	100000	80	120	
Al	27	45	No Gas	100579.526	ppb	2.4	1344133046.64	100000	80	120	
Si	28	45	H2	5.736	ppb	7.6	9606.69	50	-50	50	
P	31	45	No Gas	99399.233	ppb	2.7	80891240.00	100000	80	120	
K	39	45	He	103574.683	ppb	0.6	67044729.33	100000	80	120	
Ca	40	45	H2	103234.226	ppb	0.5	866284501.33	100000	80	120	
Ti	47	45	No Gas	2125.423	ppb	2.2	3302129.17	2000	80	120	
V	51	45	He	<0.000	ppb	N/A	5019.59	1	-50	50	
Cr	52	45	He	0.340	ppb	2.5	2602.25	1	-50	50	
Mn	55	45	No Gas	0.331	ppb	5.2	18565.27	1	-50	50	
Fe	56	45	H2	102355.509	ppb	0.6	1204089130.67	100000	80	120	
Co	59	45	No Gas	0.384	ppb	2.4	8281.19	0.75	-50	50	> +/- 20%
Ni	60	45	He	0.367	ppb	4.8	970.04	1	-50	50	
Cu	63	45	He	0.246	ppb	10.1	3548.47	2	-50	50	
Zn	66	72	No Gas	1.873	ppb	2.5	7734.21	20	-50	50	
As	75	72	He	0.092	ppb	24.3	321.67	1	-50	50	
Se	78	72	H2	0.252	ppb	15.8	104.67	1	-50	50	
Sr	88	72	No Gas	0.875	ppb	1.8	25860.56	1	-50	50	> +/- 20%
Zr	90	72	No Gas	0.146	ppb	17.5	2723.62	10	-50	50	
Mo	95	115	No Gas	2057.127	ppb	1.0	11531013.43	2000	80	120	
Ag	107	115	No Gas	<0.000	ppb	N/A	278.89	0.4	-50	50	
Cd	111	115	No Gas	0.113	ppb	29.7	373.86	1	-50	50	
Sn	118	115	No Gas	0.396	ppb	1.0	4057.30	1	-50	50	
Ba	137	115	No Gas	0.397	ppb	1.9	1833.47	1	-50	50	
W	182	159	No Gas	0.171	ppb	7.8	2026.83	1	-50	50	
Hg	201	159	He	0.004	ppb	116.8	18.00	0.5	-50	50	
Tl	205	159	No Gas	0.003	ppb	21.8	875.59	0.5	-50	50	
Pb	208	159	No Gas	0.122	ppb	1.6	5181.55	0.5	-50	50	
U	238	159	No Gas	0.005	ppb	26.1	320.00	0.25	-50	50	

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Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1659750.49	2.2	1837279.48	90.34	60	120	
Sc	45	No Gas	4071155.00	2.2	4204849.92	96.82	60	120	
Sc	45	H2	2406066.83	1.7	2384904.67	100.89	60	120	
Sc	45	He	421675.52	0.7	432553.11	97.49	60	120	
Ge	72	No Gas	976291.69	1.8	1012531.62	96.42	60	120	
Ge	72	H2	647390.05	0.4	669719.92	96.67	60	120	
Ge	72	He	251978.68	1.0	262162.1	96.12	60	120	
In	115	No Gas	5662702.78	1.8	6050657.52	93.59	60	120	
Tb	159	No Gas	7731114.42	1.0	7848396.08	98.51	60	120	
Tb	159	He	4106387.08	1.2	4144402.33	99.08	60	120	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	H6H01013.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:22:59
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Li	7	6	No Gas	19.717	ppb	1.9	269778.52	20	80	120	
Be	9	6	No Gas	20.260	ppb	1.6	57814.29	20	80	120	
B	11	6	No Gas	19.734	ppb	4.0	68339.93	20	80	120	
Na	23	45	H2	97616.000	ppb	0.8	382214218.87	100000	80	120	
Mg	24	45	No Gas	94654.269	ppb	1.8	1022728106.67	100000	80	120	
Al	27	45	No Gas	95055.469	ppb	1.6	1322231340.30	100000	80	120	
Si	28	45	H2	213.464	ppb	0.8	240847.89	200	80	120	
P	31	45	No Gas	94427.922	ppb	1.3	79985930.67	100000	80	120	
K	39	45	He	99600.348	ppb	0.4	65551678.67	100000	80	120	
Ca	40	45	H2	99572.580	ppb	0.6	838105728.00	100000	80	120	
Tl	47	45	No Gas	2020.769	ppb	1.2	3267617.50	2000	80	120	
V	51	45	He	20.012	ppb	0.8	107141.72	20	80	120	
Cr	52	45	He	20.392	ppb	0.9	118093.37	20	80	120	
Mn	55	45	No Gas	19.763	ppb	0.6	526511.09	20	80	120	
Fe	56	45	H2	99260.637	ppb	0.1	1171301290.67	100000	80	120	
Co	59	45	No Gas	19.841	ppb	0.6	429686.37	20	80	120	
Ni	60	45	He	20.240	ppb	0.4	39787.94	20	80	120	
Cu	63	45	He	20.382	ppb	1.7	105685.60	20	80	120	
Zn	66	72	No Gas	21.436	ppb	1.3	74245.65	20	80	120	
As	75	72	He	19.769	ppb	0.4	20288.55	20	80	120	
Se	78	72	H2	20.608	ppb	1.7	7257.29	20	80	120	
Sr	88	72	No Gas	20.479	ppb	1.0	607153.09	20	80	120	
Zr	90	72	No Gas	15.289	ppb	0.2	276176.62	20	80	120	> +/- 20%
Mo	95	115	No Gas	1961.272	ppb	0.5	11345355.66	2000	80	120	
Ag	107	115	No Gas	19.089	ppb	1.0	275657.35	20	80	120	
Cd	111	115	No Gas	19.326	ppb	0.6	57624.59	20	80	120	
Sn	118	115	No Gas	19.497	ppb	0.9	170769.44	20	80	120	
Sb	123	115	No Gas	19.774	ppb	0.5	203504.33	20	80	120	
Ba	137	115	No Gas	19.793	ppb	1.5	88991.15	20	80	120	
W	182	159	No Gas	18.651	ppb	1.4	192851.33	20	80	120	
Hg	201	159	He	2.006	ppb	1.0	1794.46	2	80	120	
Tl	205	159	No Gas	19.119	ppb	0.8	464328.47	20	80	120	
Pb	208	159	No Gas	19.499	ppb	1.4	632156.90	20	80	120	
U	238	159	No Gas	19.362	ppb	2.3	617494.18	20	80	120	

Interference Check Solution AB (ICS-AB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1686388.68	1.7	1837279.48	91.79	60	120	
Sc	45	No Gas	4237042.33	1.6	4204849.92	100.77	60	120	
Sc	45	H2	2413354.17	1.0	2384904.67	101.19	60	120	
Sc	45	He	428709.43	0.6	432553.11	99.11	60	120	
Ge	72	No Gas	1001743.19	0.5	1012531.62	98.93	60	120	
Ge	72	H2	660017.31	1.1	669719.92	98.55	60	120	
Ge	72	He	257824.77	0.2	262162.1	98.35	60	120	
In	115	No Gas	5844236.48	1.7	6050657.52	96.59	60	120	
Tb	159	No Gas	7854853.85	2.0	7848396.08	100.08	60	120	
Tb	159	He	4156212.75	0.4	4144402.33	100.28	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV1
File Name	H6H01015.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:28:47
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.480	ppb	2.0	311707.12	25	97.92	90	110	
Be	9	6	No Gas	24.982	ppb	1.0	71286.89	25	99.93	90	110	
B	11	6	No Gas	49.555	ppb	1.4	116800.54	50	99.11	90	110	
Na	23	45	H2	24728.299	ppb	1.2	97951304.00	25000	98.91	90	110	
Mg	24	45	No Gas	24211.692	ppb	1.9	260212986.67	25000	96.85	90	110	
Al	27	45	No Gas	24295.686	ppb	1.7	338149041.66	25000	97.18	90	110	
Si	28	45	H2	2481.440	ppb	0.8	2786092.50	2500	99.26	90	110	
P	31	45	No Gas	237.415	ppb	0.6	221916.11	250	94.97	90	110	
K	39	45	He	24499.650	ppb	0.5	16482717.33	25000	98	90	110	
Ca	40	45	H2	24801.350	ppb	1.4	210403829.33	25000	99.21	90	110	
Ti	47	45	No Gas	245.512	ppb	0.5	394990.08	250	98.2	90	110	
V	51	45	He	247.281	ppb	0.9	1286869.79	250	98.91	90	110	
Cr	52	45	He	249.363	ppb	1.0	1462203.00	250	99.75	90	110	
Mn	55	45	No Gas	1489.805	ppb	1.3	38690753.33	1500	99.32	90	110	
Fe	56	45	H2	25037.083	ppb	0.9	297872160.00	25000	100.15	90	110	
Co	59	45	No Gas	249.108	ppb	1.7	5362807.33	250	99.64	90	110	
Ni	60	45	He	250.431	ppb	1.0	498007.18	250	100.17	90	110	
Cu	63	45	He	251.386	ppb	1.2	1299660.50	250	100.55	90	110	
Zn	66	72	No Gas	243.846	ppb	2.3	849572.50	250	97.54	90	110	
As	75	72	He	244.676	ppb	1.4	254120.98	250	97.87	90	110	
Se	78	72	H2	251.330	ppb	0.3	90808.05	250	100.53	90	110	
Sr	88	72	No Gas	247.049	ppb	2.3	7507407.76	250	98.82	90	110	
Zr	90	72	No Gas	25.645	ppb	1.2	475176.88	25	102.58	90	110	
Mo	95	115	No Gas	240.351	ppb	1.3	1429163.59	250	96.14	90	110	
Ag	107	115	No Gas	24.380	ppb	1.8	361717.39	25	97.52	90	110	
Cd	111	115	No Gas	239.354	ppb	0.7	733046.42	250	95.74	90	110	
Sn	118	115	No Gas	241.995	ppb	1.1	2170276.65	250	96.8	90	110	
Sb	123	115	No Gas	47.853	ppb	1.2	506088.00	50	95.71	90	110	
Ba	137	115	No Gas	487.682	ppb	1.9	2251044.63	500	97.54	90	110	
W	182	159	No Gas	24.739	ppb	0.9	258764.55	25	98.96	90	110	
Hg	201	159	He	2.509	ppb	2.1	2253.87	2.5	100.36	90	110	
Tl	205	159	No Gas	246.840	ppb	0.6	5925221.57	250	98.74	90	110	
Pb	208	159	No Gas	245.931	ppb	0.9	8052566.60	250	98.37	90	110	
U	238	159	No Ges	241.349	ppb	1.7	7780600.80	250	96.54	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1686624.84	2.3	1837279.48	91.8	60	120	
Sc	45	No Gas	4214185.25	1.3	4204849.92	100.22	60	120	
Sc	45	H2	2431563.92	0.5	2384904.67	101.96	60	120	
Sc	45	He	436412.07	1.0	432553.11	100.89	60	120	
Ge	72	No Gas	1027825.23	0.6	1012531.62	101.51	60	120	
Ge	72	H2	678628.25	0.7	669719.92	101.33	60	120	
Ge	72	He	263747.41	0.8	262162.1	100.6	60	120	
In	115	No Gas	6007139.78	1.3	6050657.52	99.28	60	120	
Tb	159	No Gas	7946968.85	1.7	7848396.08	101.26	60	120	
Tb	159	He	4181077.25	1.8	4144402.33	100.88	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB1
File Name	H6H01016.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:31:41
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	97782.24	0.4	
Be	9	6	No Gas	0.018	ppb	58.2	85.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	35261.89	4	
Na	23	45	H2	<0.000	ppb	N/A	514477.10	40	
Mg	24	45	No Gas	5.641	ppb	33.2	88675.79	10	
Al	27	45	No Gas	5.587	ppb	33.0	86409.06	15	
Si	28	45	H2	1.124	ppb	13.1	4481.39	8	
P	31	45	No Gas	<0.000	ppb	N/A	20228.72	10	
K	39	45	He	3.175	ppb	158.4	92055.74	20	
Ca	40	45	H2	2.976	ppb	6.4	119728.02	25	
Tl	47	45	No Gas	0.079	ppb	33.9	312.67	0.5	
V	51	45	He	0.080	ppb	21.5	5691.85	0.5	
Cr	52	45	He	0.015	ppb	30.8	776.02	0.2	
Mn	55	45	No Gas	0.286	ppb	42.2	17783.76	0.2	~~>LOD~~
Fe	56	45	H2	3.955	ppb	1.7	58695.67	10	
Co	59	45	No Gas	0.051	ppb	34.2	1384.08	0.15	
Ni	60	45	He	0.001	ppb	783.3	272.67	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1483.42	0.4	
Zn	66	72	No Gas	0.052	ppb	48.5	1764.12	2	
As	75	72	He	0.039	ppb	53.7	279.00	0.2	
Se	78	72	H2	0.054	ppb	34.9	37.67	0.2	
Sr	88	72	No Gas	0.049	ppb	37.1	2072.39	0.2	
Zr	90	72	No Gas	0.002	ppb	277.2	183.33	2	
Mo	95	115	No Gas	0.112	ppb	19.9	762.25	0.2	
Ag	107	115	No Gas	0.005	ppb	25.8	471.12	0.08	
Cd	111	115	No Gas	0.066	ppb	37.1	253.84	0.2	
Sn	118	115	No Gas	0.078	ppb	42.0	1464.53	0.2	
Sb	123	115	No Gas	0.030	ppb	12.0	418.89	0.4	
Ba	137	115	No Gas	0.072	ppb	43.4	448.90	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	200.00	0.3	
Hg	201	159	He	0.001	ppb	339.6	15.50	0.1	
Tl	205	159	No Gas	0.066	ppb	26.7	2364.68	0.1	
Pb	208	159	No Gas	0.068	ppb	20.2	3502.42	0.1	
U	238	159	No Gas	0.050	ppb	37.4	1763.47	0.05	>LOD

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Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1722944.40	1.7	1837279.48	93.78	60	120	
Sc	45	No Gas	4165198.50	2.3	4204849.92	99.06	60	120	
Sc	45	H2	2400222.25	1.2	2384904.67	100.64	60	120	
Sc	45	He	430572.71	1.2	432553.11	99.54	60	120	
Ge	72	No Gas	1002212.08	1.6	1012531.62	98.98	60	120	
Ge	72	H2	672770.54	0.8	669719.92	100.46	60	120	
Ge	72	He	261462.88	0.6	262162.1	99.73	60	120	
In	115	No Gas	6082732.02	2.0	6050857.52	100.53	60	120	
Tb	159	No Gas	7787491.91	1.6	7848396.08	99.22	60	120	
Tb	159	He	4158283.00	0.3	4144402.33	100.33	60	120	

Blank Report

Sample Name	IMF038WB
File Name	H6H01017.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:34:34
Sample Type	Blank
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	96851.28	0.4	
Be	9	6	No Gas	0.010	ppb	78.2	60.00	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	34074.54	4	
Na	23	45	H2	<0.000	ppb	N/A	494301.64	40	
Mg	24	45	No Gas	1.165	ppb	19.1	41667.52	10	
Al	27	45	No Gas	1.215	ppb	14.0	27150.12	15	
Si	28	45	H2	<0.000	ppb	N/A	3259.05	8	
P	31	45	No Gas	<0.000	ppb	N/A	20121.91	10	
K	39	45	He	0.814	ppb	589.1	91113.95	20	
Ca	40	45	H2	<0.000	ppb	N/A	88641.59	25	
Ti	47	45	No Gas	0.049	ppb	28.1	266.00	0.5	
V	51	45	He	0.228	ppb	1.8	6490.21	0.5	
Cr	52	45	He	0.004	ppb	133.7	718.02	0.2	
Mn	55	45	No Gas	0.015	ppb	103.1	10955.73	0.2	
Fe	56	45	H2	1.475	ppb	4.5	29814.52	10	
Co	59	45	No Gas	0.007	ppb	14.4	454.68	0.15	
Ni	60	45	He	<0.000	ppb	N/A	241.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1448.08	0.4	
Zn	66	72	No Gas	<0.000	ppb	N/A	1384.74	2	
As	75	72	He	0.045	ppb	30.3	284.67	0.2	
Se	78	72	H2	0.003	ppb	413.3	19.33	0.2	
Sr	88	72	No Gas	0.007	ppb	24.4	815.58	0.2	
Zr	90	72	No Gas	<0.000	ppb	N/A	86.67	2	
Mo	95	115	No Gas	0.039	ppb	14.4	332.23	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	91.11	0.08	
Cd	111	115	No Gas	0.009	ppb	36.2	77.45	0.2	
Sn	118	115	No Gas	0.028	ppb	37.7	1032.27	0.2	
Sb	123	115	No Gas	0.009	ppb	19.2	195.56	0.4	
Ba	137	115	No Gas	0.006	ppb	69.5	146.67	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	83.33	0.3	
Hg	201	159	He	0.001	ppb	258.9	15.17	0.1	
Tl	205	159	No Gas	0.004	ppb	38.0	931.14	0.1	
Pb	208	159	No Gas	0.013	ppb	13.7	1768.94	0.1	
U	238	159	No Gas	0.004	ppb	41.4	304.45	0.05	

Blank Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1713681.41	1.9	1837279.48	93.27	60	120	
Sc	45	No Gas	4189653.83	1.5	4204849.92	99.64	60	120	
Sc	45	H2	2418628.08	0.4	2384904.67	101.41	60	120	
Sc	45	He	433568.31	0.5	432553.11	100.23	60	120	
Ge	72	No Gas	1004931.12	1.5	1012531.62	99.25	60	120	
Ge	72	H2	665705.31	0.5	669719.92	99.4	60	120	
Ge	72	He	261194.84	0.6	262162.1	99.63	60	120	
In	115	No Gas	6177140.74	0.9	6050657.52	102.09	60	120	
Tb	159	No Gas	7957442.18	0.3	7848396.08	101.39	60	120	
Tb	159	He	4185421.33	0.3	4144402.33	100.99	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF038WL
File Name	H6H01018.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:37:28
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	28.824	ppb	3.0	361336.12	30	96.08	85	115	
Be	9	6	No Gas	29.350	ppb	4.0	86464.44	30	97.83	83	121	
B	11	6	No Gas	18.034	ppb	6.4	67733.84	30	60.11	85	115	FAIL
Na	23	45	H2	2979.420	ppb	2.6	12270983.00	3000	99.31	85	117	
Mg	24	45	No Gas	2939.582	ppb	1.3	31868373.33	3000	97.99	83	118	
Al	27	45	No Gas	2913.740	ppb	1.5	40643302.73	3000	97.12	84	117	
Si	28	45	H2	3.025	ppb	2.7	6674.27	3000	0.1	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	20318.18	300	-0.71	85	115	FAIL
K	39	45	He	3048.165	ppb	1.9	2123525.83	3000	101.61	87	115	
Ca	40	45	H2	3013.982	ppb	2.0	25658817.33	3000	100.47	87	118	
Ti	47	45	No Gas	29.225	ppb	2.3	47557.66	30	97.42	85	115	
V	51	45	He	30.365	ppb	1.3	162191.82	30	101.22	86	115	
Cr	52	45	He	31.371	ppb	1.0	183967.59	30	104.57	85	116	
Mn	55	45	No Gas	30.203	ppb	0.8	801048.38	30	100.68	87	115	
Fe	56	45	H2	3070.226	ppb	1.5	36522413.33	3000	102.34	87	118	
Co	59	45	No Gas	30.099	ppb	1.0	653334.67	30	100.33	86	115	
Ni	60	45	He	31.108	ppb	1.1	61900.74	30	103.69	85	117	
Cu	63	45	He	32.191	ppb	1.7	167977.73	30	107.3	85	118	
Zn	66	72	No Gas	60.982	ppb	2.3	213038.50	60	101.64	83	119	
As	75	72	He	29.830	ppb	0.8	31489.96	30	99.43	84	116	
Se	78	72	H2	30.341	ppb	2.0	11095.23	30	101.14	80	120	
Sr	88	72	No Gas	29.948	ppb	1.2	907873.85	30	99.83	85	115	
Zr	90	72	No Gas	0.012	ppb	21.2	380.01	30	0.04	85	115	FAIL
Mo	95	115	No Gas	27.557	ppb	2.0	167795.25	30	91.86	85	115	
Ag	107	115	No Gas	29.445	ppb	1.1	447101.56	30	98.15	85	117	
Cd	111	115	No Gas	28.550	ppb	2.1	89543.93	30	95.17	87	115	
Sn	118	115	No Gas	27.981	ppb	1.4	257545.51	30	93.27	85	115	
Sb	123	115	No Gas	28.425	ppb	1.2	307740.15	30	94.75	85	117	
Ba	137	115	No Gas	27.842	ppb	1.7	131642.06	30	92.81	86	114	
W	182	159	No Gas	<0.000	ppb	N/A	126.67	30	-0.06	85	115	FAIL
Hg	201	159	He	0.001	ppb	69.9	15.50	2.5	0.04	82	119	FAIL
Tl	205	159	No Gas	29.452	ppb	2.3	712006.09	30	98.17	82	116	
Pb	208	159	No Gas	29.383	ppb	2.1	969088.67	30	97.94	88	115	
U	238	159	No Gas	28.473	ppb	2.1	923474.10	30	94.91	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1741091.15	1.2	1837279.48	94.76	60	120	
Sc	45	No Gas	4247218.67	2.5	4204849.92	101.01	60	120	
Sc	45	H2	2432547.83	1.9	2384904.67	102	60	120	
Sc	45	He	435009.68	0.9	432553.11	100.57	60	120	
Ge	72	No Gas	1024578.96	1.8	1012531.62	101.19	60	120	
Ge	72	H2	685916.65	1.0	669719.92	102.42	60	120	
Ge	72	He	266241.32	0.5	262162.1	101.56	60	120	
In	115	No Gas	6148193.19	1.4	6050657.52	101.61	60	120	
Tb	159	No Gas	7995306.62	1.3	7848396.08	101.87	60	120	
Tb	159	He	4202577.75	0.5	4144402.33	101.4	60	120	

Laboratory Control Sample (LCS) Report

Sample Name	IMF038WC
File Name	H6H01019.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:40:21
Sample Type	LCSW
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**LYaman**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	29.328	ppb	0.6	363493.40	30	97.76	85	115	
Be	9	6	No Gas	29.709	ppb	1.1	86938.03	30	99.03	83	121	
B	11	6	No Gas	18.741	ppb	1.4	68450.50	30	62.47	85	115	FAIL
Na	23	45	H2	3026.459	ppb	1.3	12369155.67	3000	100.88	85	117	
Mg	24	45	No Gas	2955.610	ppb	1.6	32090283.33	3000	98.52	83	118	
Al	27	45	No Gas	2953.417	ppb	0.9	41254300.22	3000	98.45	84	117	
Si	28	45	H2	1.884	ppb	9.3	5355.03	3000	0.06	85	115	FAIL
P	31	45	No Gas	<0.000	ppb	N/A	20442.36	300	-0.68	85	115	FAIL
K	39	45	He	3050.807	ppb	0.3	2133334.58	3000	101.69	87	115	
Ca	40	45	H2	3053.351	ppb	0.9	25809920.00	3000	101.78	87	118	
Ti	47	45	No Gas	29.347	ppb	1.0	47830.52	30	97.82	85	115	
V	51	45	He	30.637	ppb	0.4	164210.94	30	102.12	86	115	
Cr	52	45	He	31.382	ppb	0.4	184714.97	30	104.61	85	116	
Mn	55	45	No Gas	30.341	ppb	1.0	805925.67	30	101.14	87	115	
Fe	56	45	H2	3113.745	ppb	1.0	36778474.67	3000	103.79	87	118	
Co	59	45	No Gas	30.220	ppb	1.3	657024.60	30	100.73	86	115	
Ni	60	45	He	31.119	ppb	0.7	62154.53	30	103.73	85	117	
Cu	63	45	He	32.202	ppb	0.6	168661.96	30	107.34	85	118	
Zn	66	72	No Gas	60.169	ppb	2.1	210077.02	60	100.28	83	119	
As	75	72	He	29.927	ppb	1.3	31520.37	30	99.76	84	116	
Se	78	72	H2	30.490	ppb	1.0	11093.23	30	101.63	80	120	
Sr	88	72	No Gas	29.731	ppb	1.1	900633.47	30	99.1	85	115	
Zr	90	72	No Gas	0.005	ppb	27.0	250.00	30	0.02	85	115	FAIL
Mo	95	115	No Gas	27.585	ppb	1.7	168416.14	30	91.95	85	115	
Ag	107	115	No Gas	29.375	ppb	1.6	447262.83	30	97.92	85	117	
Cd	111	115	No Gas	28.312	ppb	1.3	89035.69	30	94.37	87	115	
Sn	118	115	No Gas	28.137	ppb	0.9	259676.01	30	93.79	85	115	
Sb	123	115	No Gas	28.370	ppb	1.9	307995.14	30	94.57	85	117	
Ba	137	115	No Gas	27.955	ppb	0.0	132544.33	30	93.18	86	114	
W	182	159	No Gas	<0.000	ppb	N/A	176.67	30	-0.04	85	115	FAIL
Hg	201	159	He	0.001	ppb	661.1	15.17	2.5	0.04	82	119	FAIL
Tl	205	159	No Gas	29.697	ppb	1.3	713278.15	30	98.99	82	116	
Pb	208	159	No Gas	29.734	ppb	0.7	974367.30	30	99.11	88	115	
U	238	159	No Gas	28.550	ppb	1.7	920095.27	30	95.17	85	115	

Laboratory Control Sample (LCS) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1729752.19	2.1	1837279.48	94.15	60	120	
Sc	45	No Gas	4254066.67	1.7	4204849.92	101.17	60	120	
Sc	45	H2	2415090.67	1.4	2384904.67	101.27	60	120	
Sc	45	He	436609.41	0.7	432553.11	100.94	60	120	
Ge	72	No Gas	1023800.29	1.0	1012531.62	101.11	60	120	
Ge	72	H2	682377.75	0.2	669719.92	101.89	60	120	
Ge	72	He	265636.51	0.4	262162.1	101.33	60	120	
In	115	No Gas	6165139.66	1.5	6050657.52	101.89	60	120	
Tb	159	No Gas	7944404.96	1.3	7848396.08	101.22	60	120	
Tb	159	He	4192012.92	1.2	4144402.33	101.15	60	120	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Name	MRLH0104
File Name	H6H01020.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:43:15
Sample Type	LLCCV
Total Dilution	1.0000
Comment	1/100/10 ppb
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
Li	7	6	No Gas	0.876	ppb	14.1	106747.83	1	87.6	80	120	
Be	9	6	No Gas	0.968	ppb	4.0	2871.41	1	96.8	80	120	
B	11	6	No Gas	2.575	ppb	2.3	41610.26	10	25.75	80	120	> +/- 20%
Na	23	45	H2	89.555	ppb	3.3	875989.19	100	89.56	80	120	
Mg	24	45	No Gas	96.003	ppb	1.9	1061464.77	100	96	80	120	
Al	27	45	No Gas	95.727	ppb	2.2	1335430.03	100	95.73	80	120	
Si	28	45	H2	95.889	ppb	1.8	109817.16	100	95.89	80	120	
P	31	45	No Gas	42.949	ppb	0.9	58171.57	50	85.9	80	120	
K	39	45	He	98.892	ppb	5.9	157455.99	100	98.89	80	120	
Ca	40	45	H2	126.175	ppb	1.0	1155591.13	100	126.18	80	120	> +/- 20%
Tl	47	45	No Gas	1.003	ppb	7.2	1802.79	1	100.3	80	120	
V	51	45	He	1.244	ppb	2.8	11805.09	1	124.4	80	120	> +/- 20%
Cr	52	45	He	1.044	ppb	1.7	6823.70	1	104.4	80	120	
Mn	55	45	No Gas	1.007	ppb	1.1	36773.38	1	100.7	80	120	
Fe	56	45	H2	101.265	ppb	1.2	1205458.71	100	101.26	80	120	
Co	59	45	No Gas	0.994	ppb	1.0	21717.28	1	99.4	80	120	
Ni	60	45	He	1.045	ppb	1.3	2352.20	1	104.5	80	120	
Cu	63	45	He	0.876	ppb	0.8	6925.76	1	87.6	80	120	
Zn	66	72	No Gas	10.701	ppb	2.3	38252.48	10	107.01	80	120	
As	75	72	He	1.035	ppb	2.8	1318.73	1	103.5	80	120	
Se	78	72	H2	0.999	ppb	11.7	381.01	1	99.9	80	120	
Sr	88	72	No Gas	2.009	ppb	2.8	60738.54	2	100.45	80	120	
Zr	90	72	No Gas	3.904	ppb	3.3	71380.40	5	78.08	80	120	> +/- 20%
Mo	95	115	No Gas	0.935	ppb	4.1	5800.16	1	93.5	80	120	
Ag	107	115	No Gas	0.916	ppb	1.5	14337.77	1	91.6	80	120	
Cd	111	115	No Gas	0.950	ppb	1.9	3035.79	1	95	80	120	
Sn	118	115	No Gas	1.012	ppb	3.9	10084.99	1	101.2	80	120	
Sb	123	115	No Gas	0.917	ppb	0.8	10056.08	1	91.7	80	120	
Ba	137	115	No Gas	0.912	ppb	1.8	4438.54	1	91.2	80	120	
W	182	159	No Gas	1.954	ppb	1.2	20503.32	2	97.7	80	120	
Hg	201	159	He	0.088	ppb	8.5	92.83	0.1	88	80	120	
Tl	205	159	No Gas	0.965	ppb	1.6	23742.54	1	96.5	80	120	
Pb	208	159	No Gas	0.996	ppb	1.4	33601.05	1	99.6	80	120	
U	238	159	No Gas	0.925	ppb	4.0	29669.24	1	92.5	80	120	

70-130%

<130% LY 08/01/20

Low Level Continuing Calibration Verification (LLCCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1733316.54	0.5	1837279.48	94.34	60	120	
Sc	45	No Gas	4216176.50	0.5	4204849.92	100.27	60	120	
Sc	45	H2	2409901.50	1.1	2384904.67	101.05	60	120	
Sc	45	He	436715.85	0.7	432553.11	100.96	60	120	
Ge	72	No Gas	1012091.69	1.1	1012531.62	99.96	60	120	
Ge	72	H2	681570.44	0.7	669719.92	101.77	60	120	
Ge	72	He	264375.75	0.9	262162.1	100.84	60	120	
In	115	No Gas	6167175.76	1.2	6050657.52	101.93	60	120	
Tb	159	No Gas	7863896.36	0.3	7848396.08	100.2	60	120	
Tb	159	He	4156555.08	0.3	4144402.33	100.29	60	120	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV2
File Name	H6H01022.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\H6H01.b
Acq Time	2020-08-01 10:49:03
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Li	7	6	No Gas	24.506	ppb	0.6	313748.17	25	98.02	90	110	
Be	9	6	No Gas	24.829	ppb	2.1	71251.17	25	99.32	90	110	
B	11	6	No Gas	49.424	ppb	2.5	117263.43	50	98.85	90	110	
Na	23	45	H2	24761.724	ppb	0.9	96073856.00	25000	99.05	90	110	
Mg	24	45	No Gas	24022.883	ppb	2.7	255950149.33	25000	96.09	90	110	
Al	27	45	No Gas	24241.781	ppb	3.2	332503708.38	25000	96.97	90	110	
Si	28	45	H2	2492.682	ppb	0.7	2741359.83	2500	99.71	90	110	
P	31	45	No Gas	239.952	ppb	1.6	222148.54	250	95.98	90	110	
K	39	45	He	24707.304	ppb	0.1	16330403.33	25000	98.83	90	110	
Ca	40	45	H2	24891.883	ppb	0.5	206852112.00	25000	99.57	90	110	
Ti	47	45	No Gas	244.961	ppb	1.7	390748.85	250	97.98	90	110	
V	51	45	He	247.949	ppb	1.2	1267595.29	250	99.18	90	110	
Cr	52	45	He	250.265	ppb	0.9	1441677.46	250	100.11	90	110	
Mn	55	45	No Gas	1484.598	ppb	2.2	38224424.00	1500	98.97	90	110	
Fe	56	45	H2	24882.966	ppb	1.4	289770730.67	25000	99.53	90	110	
Co	59	45	No Gas	247.654	ppb	2.6	5285517.00	250	99.06	90	110	
Ni	60	45	He	252.354	ppb	0.8	493012.34	250	100.94	90	110	
Cu	63	45	He	251.761	ppb	1.3	1278673.79	250	100.7	90	110	
Zn	66	72	No Gas	240.224	ppb	1.2	843088.63	250	96.09	90	110	
As	75	72	He	245.083	ppb	0.8	253689.87	250	98.03	90	110	
Se	78	72	H2	248.535	ppb	0.4	89415.13	250	99.41	90	110	
Sr	88	72	No Gas	242.521	ppb	2.1	7423470.82	250	97.01	90	110	
Zr	90	72	No Gas	24.819	ppb	2.0	463200.20	25	99.28	90	110	
Mo	95	115	No Gas	236.442	ppb	1.0	1404203.73	250	94.58	90	110	
Ag	107	115	No Gas	24.350	ppb	0.4	360848.53	25	97.4	90	110	
Cd	111	115	No Gas	239.598	ppb	1.1	732908.73	250	95.84	90	110	
Sn	118	115	No Gas	240.480	ppb	0.4	2153954.36	250	96.19	90	110	
Sb	123	115	No Gas	48.067	ppb	0.2	507703.35	50	96.13	90	110	
Ba	137	115	No Gas	486.162	ppb	1.0	2241367.34	500	97.23	90	110	
W	182	159	No Gas	24.377	ppb	1.3	255521.53	25	97.51	90	110	
Hg	201	159	He	2.443	ppb	1.4	2203.03	2.5	97.72	90	110	
Tl	205	159	No Gas	243.367	ppb	2.9	5854020.04	250	97.35	90	110	
Pb	208	159	No Gas	245.848	ppb	2.5	8067005.11	250	98.34	90	110	
U	238	159	No Gas	237.560	ppb	2.1	7673973.31	250	95.02	90	110	

Continuing Calibration Verification (CCV) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1696317.97	0.9	1837279.48	92.33	60	120	
Sc	45	No Gas	4178485.50	0.3	4204849.92	99.37	60	120	
Sc	45	H2	2381760.83	0.8	2384904.67	99.87	60	120	
Sc	45	He	428750.40	1.6	432553.11	99.12	60	120	
Ge	72	No Gas	1035243.94	0.2	1012531.62	102.24	60	120	
Ge	72	H2	675750.04	0.5	669719.92	100.9	60	120	
Ge	72	He	262853.59	0.5	262162.1	100.26	60	120	
In	115	No Gas	5999362.32	1.1	6050657.52	99.15	60	120	
Tb	159	No Gas	7964572.16	0.4	7848396.08	101.48	60	120	
Tb	159	He	4194757.25	0.3	4144402.33	101.22	60	120	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB2
File Name	H6H01023.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2020\H\IH6H01.b
Acq Time	2020-08-01 10:51:56
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	H6H01002.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	LYaman

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Li	7	6	No Gas	<0.000	ppb	N/A	98778.03	0.4	
Be	9	6	No Gas	0.018	ppb	47.2	85.56	0.08	
B	11	6	No Gas	<0.000	ppb	N/A	34865.32	4	
Na	23	45	H2	<0.000	ppb	N/A	481146.93	40	
Mg	24	45	No Gas	5.893	ppb	38.5	91284.77	10	
Al	27	45	No Gas	5.993	ppb	36.5	91964.53	15	
Si	28	45	H2	0.744	ppb	15.8	4015.25	8	
P	31	45	No Gas	<0.000	ppb	N/A	20147.26	10	
K	39	45	He	3.562	ppb	154.4	91144.83	20	
Ca	40	45	H2	3.698	ppb	3.6	124368.27	25	
Tl	47	45	No Gas	0.060	ppb	41.8	281.33	0.5	
V	51	45	He	0.211	ppb	12.7	6280.77	0.5	
Cr	52	45	He	0.018	ppb	62.5	783.36	0.2	
Mn	55	45	No Gas	0.322	ppb	42.9	18694.45	0.2	>LOD
Fe	56	45	H2	3.151	ppb	6.4	48698.66	10	
Co	59	45	No Gas	0.057	ppb	38.6	1512.76	0.15	
Ni	60	45	He	0.001	ppb	725.5	269.33	0.2	
Cu	63	45	He	<0.000	ppb	N/A	1664.77	0.4	
Zn	66	72	No Gas	0.024	ppb	165.1	1680.77	2	
As	75	72	He	0.054	ppb	24.8	289.00	0.2	
Se	78	72	H2	0.046	ppb	55.2	34.33	0.2	
Sr	88	72	No Gas	0.051	ppb	38.0	2140.18	0.2	
Zr	90	72	No Gas	0.003	ppb	140.7	200.00	2	
Mo	95	115	No Gas	0.090	ppb	31.8	640.02	0.2	
Ag	107	115	No Gas	<0.000	ppb	N/A	301.11	0.08	
Cd	111	115	No Gas	0.075	ppb	32.8	283.41	0.2	
Sn	118	115	No Gas	0.103	ppb	20.0	1710.11	0.2	
Sb	123	115	No Gas	0.037	ppb	21.3	500.01	0.4	
Ba	137	115	No Gas	0.087	ppb	40.6	527.79	0.2	
W	182	159	No Gas	<0.000	ppb	N/A	140.00	0.3	
Hg	201	159	He	0.003	ppb	5.0	16.83	0.1	
Tl	205	159	No Gas	0.073	ppb	47.2	2598.07	0.1	
Pb	208	159	No Gas	0.061	ppb	37.3	3352.41	0.1	
U	238	159	No Gas	0.054	ppb	33.5	1934.61	0.05	>LOD

LY 08/01/20

Continuing Calibration Blank (CCB) Report

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1736106.57	0.9	1837279.48	94.49	60	120	
Sc	45	No Gas	4147294.25	0.4	4204849.92	98.63	60	120	
Sc	45	H2	2373276.00	0.7	2384904.67	99.51	60	120	
Sc	45	He	425292.41	1.0	432553.11	98.32	60	120	
Ge	72	No Gas	1009158.85	0.2	1012531.62	99.67	60	120	
Ge	72	H2	663768.19	0.5	669719.92	99.11	80	120	
Ge	72	He	256636.47	1.0	262162.1	97.89	60	120	
In	115	No Gas	6144434.75	0.4	6050657.52	101.55	60	120	
Tb	159	No Gas	7948566.35	0.7	7848396.08	101.28	60	120	
Tb	159	He	4158410.50	1.1	4144402.33	100.34	60	120	

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # SM5A-04-04-10

ALL SAMPLES PH<2

Book #: EIM-081
Batch: IMF038W
Matrix: WATER
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	6
☑ EMAX-6020	13
☐ EMAX-6020CA	2
☐ EMAX-	

Start	Temp	End	Temp
	91.4 °C		93.8 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A-007-06-25	0.15
LCS-2	-06-26	0.15
MS	SAME SPIKE SOLN AND VOL AS LCS 1,2	
Blank Soil (Bead)		
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SW1A-009-02-08	0.5+1.0
HCl	↓ -02-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	↓	↓
Au	SM5A-04-03-09	0.1
pH Strip (0-14)		N/A
Digestate Location	METALS	
Extract Location	N/A	
☑ Reagent Water ID:	SM5A-04-03-10	
☑ Thermometer ID:	192272442/E17	
☑ Pipette ID:	74276331	
☐ Pipette ID:		
☐ Pipette ID:		
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: CK/TH

Standard Added By: CK Witnessed By: TH

Extract Rcvd By: TH Checked By: TH

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20IMF038W01	IMF038WB	50	ml	6/29/20 9:12	50	50	50	1	
20IMF038W02	IMF038WL	50	ml	6/29/20 9:12	50	50	50	1	
20IMF038W03	IMF038WC	50	ml	6/29/20 9:12	50	50	50	1	
20IMF038W04	F210-01	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W05	F210-01M	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W06	F210-01S	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W07	F210-04	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W08	F210-05	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W09	F210-07	50	ml	6/29/20 9:12	50	50	50	1	TOTAL
20IMF038W10	F210-08	50	ml	6/29/20 9:12	50	50	50	1	TOTAL

CK

6/29/20

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 6/29/20 9:59

☑ Digestion Ended @ 6/29/20 12:31

Prepared By: CKaing/MCande

Checked By: CK/TH

Comments:

Date 6/29/20

SOP EMAX-6020 Rev. 13

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SW7470A
MERCURY BY COLD VAPOR

A total of five(5) water samples were received on 06/25/20 to be analyzed for Mercury by Cold Vapor in accordance with Method SW7470A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Mercury was not detected in HGG005WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. HGG005WL/HGG005WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY

SDG NO. : 20F210
Instrument ID : 47

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	HGG005WB	1	NA	07/08/2014:30	07/08/2011:02	M47G004012	M47G004	20HGG005W	Method Blank
LCS1W	HGG005WL	1	NA	07/08/2014:33	07/08/2011:02	M47G004013	M47G004	20HGG005W	Lab Control Sample (LCS)
LCD1W	HGG005WC	1	NA	07/08/2014:35	07/08/2011:02	M47G004014	M47G004	20HGG005W	LCS Duplicate
MW23C-GW062320	F210-01	1	NA	07/08/2015:31	07/08/2011:02	M47G004038	M47G004	20HGG005W	Field Sample
MW27-GW062420	F210-04	1	NA	07/08/2015:33	07/08/2011:02	M47G004039	M47G004	20HGG005W	Field Sample
MW28-GW062420	F210-05	1	NA	07/08/2015:35	07/08/2011:02	M47G004040	M47G004	20HGG005W	Field Sample
MW14S-GW062320	F210-07	1	NA	07/08/2015:37	07/08/2011:02	M47G004041	M47G004	20HGG005W	Field Sample
MW14D-GW062320	F210-08	1	NA	07/08/2015:40	07/08/2011:02	M47G004042	M47G004	20HGG005W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW7470A
MERCURY BY COLD VAPOR

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210

Matrix : WATER
InstrumentID : 47

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DILT'N FACTOR	MOIST (%)	RL (ug/L)	MDL (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HGG005WB	ND	1	NA	0.500	0.100	07/08/2014:30	07/08/2011:02	M47G004012	M47G004	20HGG005W	NA	NA
LCS1W	HGG005WL	2.65	1	NA	0.500	0.100	07/08/2014:33	07/08/2011:02	M47G004013	M47G004	20HGG005W	NA	NA
LCD1W	HGG005WC	2.64	1	NA	0.500	0.100	07/08/2014:35	07/08/2011:02	M47G004014	M47G004	20HGG005W	NA	NA
MW23C-GW062320	F210-01	ND	1	NA	0.500	0.100	07/08/2015:31	07/08/2011:02	M47G004038	M47G004	20HGG005W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04	ND	1	NA	0.500	0.100	07/08/2015:33	07/08/2011:02	M47G004039	M47G004	20HGG005W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05	ND	1	NA	0.500	0.100	07/08/2015:35	07/08/2011:02	M47G004040	M47G004	20HGG005W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07	ND	1	NA	0.500	0.100	07/08/2015:37	07/08/2011:02	M47G004041	M47G004	20HGG005W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08	ND	1	NA	0.500	0.100	07/08/2015:40	07/08/2011:02	M47G004042	M47G004	20HGG005W	06/23/2011:40	06/25/20

Note: Detection limits are reported relative to sample result significant figures.

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : METHOD SW7470A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HGG005WB	HGG005WL	HGG005WC
LAB FILE ID	: M47G004012	M47G004013	M47G004014
DATE PREPARED	: 07/08/2011:02	07/08/2011:02	07/08/2011:02
DATE ANALYZED	: 07/08/2014:30	07/08/2014:33	07/08/2014:35
PREP BATCH	: 20HGG005W	20HGG005W	20HGG005W
CALIBRATION REF	: M47G004	M47G004	M47G004

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Mercury	ND	2.50	2.65	106	2.50	2.64	106	0	80-120	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
MERCURY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 7/8/20 Start Time: 14:04

End Date: 7/8/20 End Time: 17:09

Comments:

QC OK

Book #: A47-121

Instrument No.: 47

Analytical Sequence/Batch: M47G004

Method File: HG1

Micropipette ID: ☑ 339342032

Micropipette ID: ☑ HG-03

Micropipette ID: ☑ 742781062

Micropipette ID: ☑ HG-06

Micropipette ID: ☐

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

STANDARDS ID	
S1	Blank
S2	SM3B-19-22-06
S3	
S4	
S5	
S6	
CCV	
ICV	SM3B-19-22-07
LCS	
Analytical Spike	
	SM3B-19-22-08 TV 3ug/L

Analyzed By: MC

Date: 7/9/20

Disposed By:

Date:

"M47G004"

EMAX1fid	EMAX1sid	conc	Raw_resp	rsd/rf	adatetime	DF
M47G004001	STD01REP1	0	11805		07/08/2014:04	1
M47G004002	STD02REP1	.2	47835		07/08/2014:06	1
M47G004003	STD03REP1	.5	97531		07/08/2014:08	1
M47G004004	STD04REP1	1	176666		07/08/2014:11	1
M47G004005	STD05REP1	2	328547		07/08/2014:13	1
M47G004006	STD06REP1	5	802492		07/08/2014:15	1
M47G004007	ICV	2.18	359528	0	07/08/2014:18	1
M47G004008	ICB	.015	18349	0	07/08/2014:21	1
M47G004009	MRLG0801	.475	90707	0	07/08/2014:23	1
M47G004010	CCV1	2.1	346029	0	07/08/2014:26	1
M47G004011	CCB1	-.078	3715	0	07/08/2014:28	1
M47G004012	HGG005WB	-.044	9125	0	07/08/2014:30	1
M47G004013	HGG005WL	2.65	432275	0	07/08/2014:33	1
M47G004014	HGG005WC	2.64	431534	0	07/08/2014:35	1
M47G004015	F193-02	-.063	6071	0	07/08/2014:37	1
M47G004016	F193-03	-.032	11058	0	07/08/2014:39	1
M47G004017	F193-04A	2.85	463856	0	07/08/2014:42	1
M47G004018	F193-04	-.033	10796	0	07/08/2014:44	1
M47G004019	F193-04J	-.003	15531	0	07/08/2014:47	5
M47G004020	F193-04M	2.39	391319	0	07/08/2014:49	1
M47G004021	F193-04S	2.37	388812	0	07/08/2014:51	1
M47G004022	CCV2	2.15	354123	0	07/08/2014:54	1
M47G004023	CCB2	-.036	10343	0	07/08/2014:56	1
M47G004024	F193-02	-.049	8290	0	07/08/2014:59	1
M47G004025	F193-03	-.059	6741	0	07/08/2015:01	1
M47G004026	F193-04A	2.9	471650	0	07/08/2015:04	1
M47G004027	F193-04	-.052	7865	0	07/08/2015:06	1
M47G004028	F193-04J	-.002	15682	0	07/08/2015:08	5
M47G004029	F193-04M	2.39	391772	0	07/08/2015:10	1
M47G004030	F193-04S	2.36	387575	0	07/08/2015:13	1
M47G004031	F206-01	-.041	9611	0	07/08/2015:15	1
M47G004032	F206-03	.028	20487	0	07/08/2015:17	1
M47G004033	F206-04	-.004	15435	0	07/08/2015:19	1
M47G004034	CCV3	2.13	351020	0	07/08/2015:21	1
M47G004035	CCB3	-.046	8715	0	07/08/2015:24	1
M47G004036	F206-05	-.082	3147	0	07/08/2015:26	1
M47G004037	F206-06	-.03	11335	0	07/08/2015:29	1
M47G004038	F210-01	-.048	8447	0	07/08/2015:31	1
M47G004039	F210-04	-.063	6122	0	07/08/2015:33	1
M47G004040	F210-05	-.042	9412	0	07/08/2015:35	1
M47G004041	F210-07	-.033	10838	0	07/08/2015:37	1
M47G004042	F210-08	-.055	7303	0	07/08/2015:40	1
M47G004043	F216-10	-.023	12347	0	07/08/2015:42	1
M47G004044	F216-14	-.01	14450	0	07/08/2015:44	1
M47G004045	F235-10	.016	18509	0	07/08/2015:46	1
M47G004046	CCV4	2.14	352056	0	07/08/2015:49	1
M47G004047	CCB4	-.052	7828	0	07/08/2015:51	1
M47G004048	HGG006WB	.001	16103	0	07/08/2015:54	1
M47G004049	HGG006WL	2.49	408357	0	07/08/2015:56	1
M47G004050	HGG006WC	2.59	422805	0	07/08/2015:58	1
M47G004051	F208-02A	3.09	502567	0	07/08/2016:01	1
M47G004052	F208-02	-.02	12900	0	07/08/2016:03	1
M47G004053	F208-02J	.006	16940	0	07/08/2016:05	5
M47G004054	F208-02M	2.66	434745	0	07/08/2016:08	1
M47G004055	F208-02S	2.66	433938	0	07/08/2016:10	1
M47G004056	F208-03	.005	16798	0	07/08/2016:12	1
M47G004057	F222-02	-.039	9932	0	07/08/2016:15	1
M47G004058	CCV5	2.09	345055	0	07/08/2016:17	1
M47G004059	CCB5	-.016	13521	0	07/08/2016:19	1
M47G004060	F222-03	-.031	11139	0	07/08/2016:22	1
M47G004061	F222-04	-.043	9191	0	07/08/2016:24	1
M47G004062	F223-01	-.048	8537	0	07/08/2016:26	1
M47G004063	F223-02	-.014	13759	0	07/08/2016:28	1
M47G004064	F223-04	-.002	15779	0	07/08/2016:31	1
M47G004065	F223-05	.024	19722	0	07/08/2016:33	1
M47G004066	F223-01	-.007	14927	0	07/08/2016:35	1
M47G004067	F223-04	-.052	7817	0	07/08/2016:37	1
M47G004068	F223-05	-.071	4807	0	07/08/2016:39	1
M47G004069	F233-01	-.056	7192	0	07/08/2016:42	1
M47G004070	CCV6	2.13	351484	0	07/08/2016:44	1
M47G004071	CCB6	-.025	12032	0	07/08/2016:47	1
M47G004072	F233-02	-.018	13182	0	07/08/2016:49	1
M47G004073	F233-03	-.039	9848	0	07/08/2016:51	1

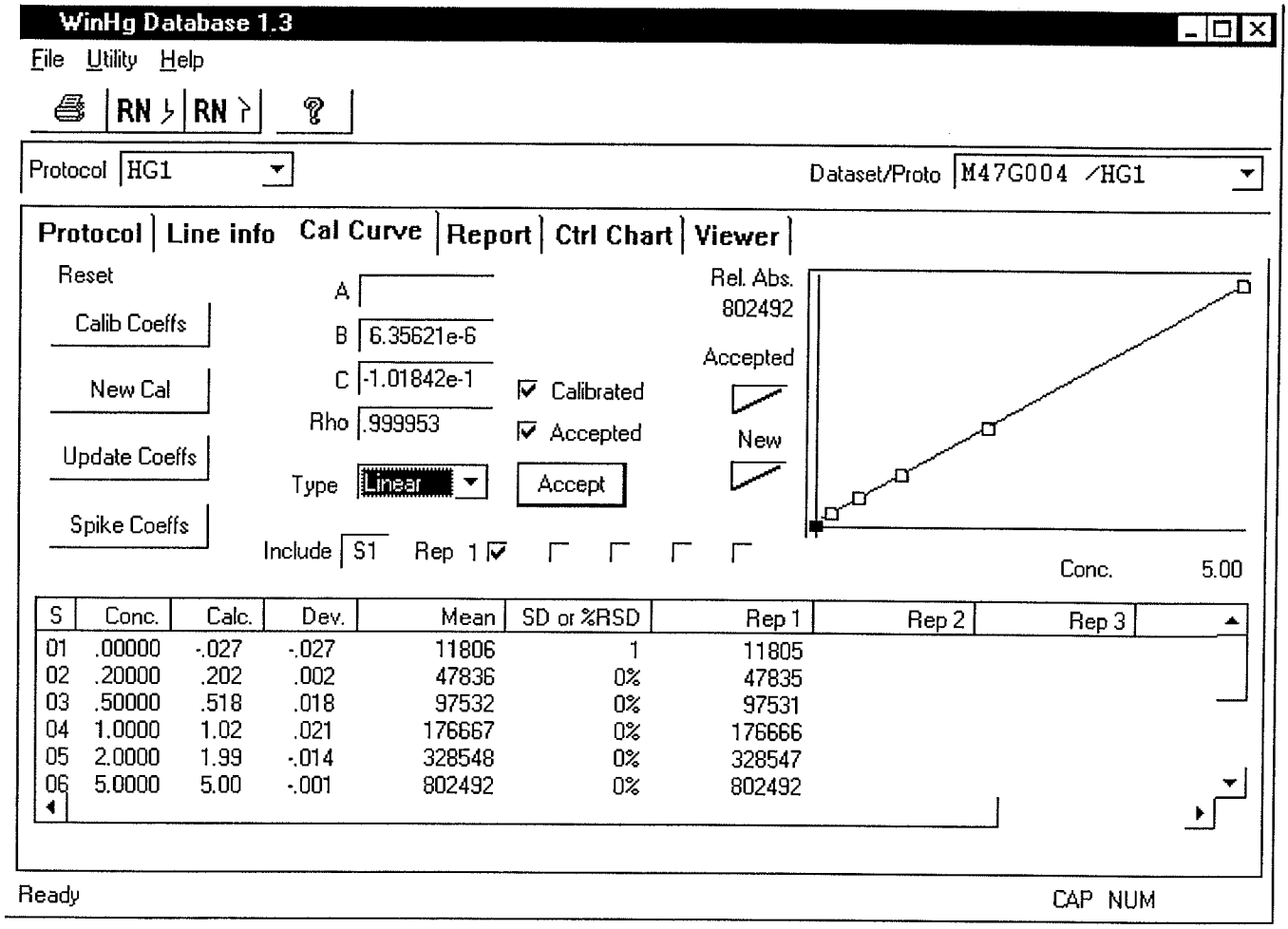
M47G004074	F233-05	-.03	11369	0	07/08/2016:53	1
M47G004075	F233-06	-.008	14780	0	07/08/2016:56	1
M47G004076	F233-01	.007	17117	0	07/08/2016:59	1
M47G004077	F233-02	-.021	12753	0	07/08/2017:01	1
M47G004078	F233-03	-.03	11229	0	07/08/2017:04	1
M47G004079	CCV7	2.15	354198	0	07/08/2017:06	1
M47G004080	CCB7	-.032	11041	0	07/08/2017:09	1
**********	**********	**********	**********	**********	**********	***
EMAX1fid	EMAX1sid	Xint	Yint	rrf	adatetime	DF
M47G004000		0	0	0	07/08/2017:09	1
M47G004001	BLANK	-.1019899	16044.19	.9999525	07/08/2017:09	1

MM76004

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	ICV		1.0000	1.0000	
2	ICB		1.0000	1.0000	
3	MRLG0801	0.5	1.0000	1.0000	
4	CCV1		1.0000	1.0000	
5	CCB1		1.0000	1.0000	
6	HGG005WB		1.0000	1.0000	
7	HGG005WL		1.0000	1.0000	
8	HGG005WC		1.0000	1.0000	
9	F193-02	TOTAL	1.0000	1.0000	
10	F193-03	TOTAL	1.0000	1.0000	
11	F193-04A	TOTAL	1.0000	1.0000	
12	F193-04	TOTAL	1.0000	1.0000	
13	F193-04J	5X, TOTAL	1.0000	1.0000	
14	F193-04M	TOTAL	1.0000	1.0000	
15	F193-04S	TOTAL	1.0000	1.0000	
16	CCV2		1.0000	1.0000	
17	CCB2		1.0000	1.0000	
18	F193-02	DISS	1.0000	1.0000	
19	F193-03	DISS	1.0000	1.0000	
20	F193-04A	DISS	1.0000	1.0000	
21	F193-04	DISS	1.0000	1.0000	
22	F193-04J	5X, DISS	1.0000	1.0000	
23	F193-04M	DISS	1.0000	1.0000	
24	F193-04S	DISS	1.0000	1.0000	
25	F206-01		1.0000	1.0000	
26	F206-03		1.0000	1.0000	
27	F206-04		1.0000	1.0000	
28	CCV3		1.0000	1.0000	
29	CCB3		1.0000	1.0000	
30	F206-05		1.0000	1.0000	
31	F206-06		1.0000	1.0000	
32	F210-01		1.0000	1.0000	
33	F210-04		1.0000	1.0000	
34	F210-05		1.0000	1.0000	
35	F210-07		1.0000	1.0000	
36	F210-08		1.0000	1.0000	
37	F216-10		1.0000	1.0000	
38	F216-14		1.0000	1.0000	
39	F235-10		1.0000	1.0000	
40	CCV4		1.0000	1.0000	
41	CCB4		1.0000	1.0000	
42	HGG006WB		1.0000	1.0000	
43	HGG006WL		1.0000	1.0000	
44	HGG006WC		1.0000	1.0000	

MC 7/8/2020

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	F208-02A		1.0000	1.0000	
2	F208-02		1.0000	1.0000	
3	F208-02J	5X	1.0000	1.0000	
4	F208-02M		1.0000	1.0000	
5	F208-02S		1.0000	1.0000	
6	F208-03		1.0000	1.0000	
7	F222-02		1.0000	1.0000	
8	CCV5		1.0000	1.0000	
9	CCB5		1.0000	1.0000	
10	F222-03		1.0000	1.0000	
11	F222-04		1.0000	1.0000	
12	F223-01	TOTAL	1.0000	1.0000	
13	F223-02	TOTAL	1.0000	1.0000	
14	F223-04	TOTAL	1.0000	1.0000	
15	F223-05	TOTAL	1.0000	1.0000	
16	F223-01	DISS	1.0000	1.0000	
17	F223-04	DISS	1.0000	1.0000	
18	F223-05	DISS	1.0000	1.0000	
19	F233-01	TOTAL	1.0000	1.0000	
20	CCV6		1.0000	1.0000	
21	CCB6		1.0000	1.0000	
22	F233-02	TOTAL	1.0000	1.0000	
23	F233-03	TOTAL	1.0000	1.0000	
24	F233-05	TOTAL	1.0000	1.0000	
25	F233-06	TOTAL	1.0000	1.0000	
26	F233-01	DISS	1.0000	1.0000	
27	F233-02	DISS	1.0000	1.0000	
28	F233-03	DISS	1.0000	1.0000	
29	CCV7		1.0000	1.0000	
30	CCB7		1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	
43			1.0000	1.0000	
44			1.0000	1.0000	


WinHg Database 1.3
File Utility Help
RN
RN
Protocol HG1
Dataset/Proto M47G004 /HG1
Protocol
Line info
Cal Curve
Report
Ctrl Chart
Viewer
Reset
Calib Coeffs
New Cal
Update Coeffs
Spike Coeffs
A
B 6.35621e-6
C -1.01842e-1
Rho .999953
Type Linear
Calibrated
Accepted
Accept
Include S1
Rep 1
Rel. Abs.
802492
Accepted
New
Conc. 5.00
S Conc. Calc. Dev. Mean SD or %RSD Rep 1 Rep 2 Rep 3
01 .00000 -.027 -.027 11806 1 11805
02 .20000 .202 .002 47836 0% 47835
03 .50000 .518 .018 97532 0% 97531
04 1.0000 1.02 .021 176667 0% 176666
05 2.0000 1.99 -.014 328548 0% 328547
06 5.0000 5.00 -.001 802492 0% 802492
Ready
CAP NUM

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Standard: 1 Rep: 1				Seq: 1		14:04:16 08 Jul 20			HG
Hg	.000	ppb	11805						
*** Standard: 2 Rep: 1				Seq: 2		14:06:29 08 Jul 20			HG
Hg	.200	ppb	47835						
*** Standard: 3 Rep: 1				Seq: 3		14:08:49 08 Jul 20			HG
Hg	.500	ppb	97531						
*** Standard: 4 Rep: 1				Seq: 4		14:11:13 08 Jul 20			HG
Hg	1.00	ppb	176666						
*** Standard: 5 Rep: 1				Seq: 5		14:13:30 08 Jul 20			HG
Hg	2.00	ppb	328547						
*** Standard: 6 Rep: 1				Seq: 6		14:15:43 08 Jul 20			HG
Hg	5.00	ppb	802492						
*** Sample ID: ICV				Seq: 7		14:18:57 08 Jul 20			HG
Hg	2.18	ppb	359528						
*** Sample ID: ICB				Seq: 8		14:21:08 08 Jul 20			HG
Hg	.015	ppb	18349						
*** Sample ID: MRLG0801				Seq: 9		14:23:39 08 Jul 20			HG
			0.5						
Hg	.475	ppb	90707						
*** Sample ID: CCV1				Seq: 10		14:26:11 08 Jul 20			HG
Hg	2.10	ppb	346029						
*** Sample ID: CCB1				Seq: 11		14:28:29 08 Jul 20			HG
Hg	-.078	ppb	3715						
*** Sample ID: HGG005WB				Seq: 12		14:30:53 08 Jul 20			HG
Hg	-.044	ppb	9125						
*** Sample ID: HGG005WL				Seq: 13		14:33:16 08 Jul 20			HG
Hg	2.65	ppb	432275						
*** Sample ID: HGG005WC				Seq: 14		14:35:26 08 Jul 20			HG
Hg	2.64	ppb	431534						
*** Sample ID: F193-02				Seq: 15		14:37:38 08 Jul 20			HG
			TOTAL						
Hg	-.063	ppb	6071						

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F193-03				Seq: 16	14:39:53 08 Jul 20	HG		
			TOTAL					
Hg	-.032	ppb	11058					
*** Sample ID: F193-04A				Seq: 17	14:42:08 08 Jul 20	HG		
			TOTAL					
Hg	2.85	ppb	463856					
*** Sample ID: F193-04				Seq: 18	14:44:48 08 Jul 20	HG		
			TOTAL					
Hg	-.033	ppb	10796					
*** Sample ID: F193-04J				Seq: 19	14:47:02 08 Jul 20	HG		
			5X, TOTAL					
Hg	-.003	ppb	15531					
*** Sample ID: F193-04M				Seq: 20	14:49:14 08 Jul 20	HG		
			TOTAL					
Hg	2.39	ppb	391319					
*** Sample ID: F193-04S				Seq: 21	14:51:24 08 Jul 20	HG		
			TOTAL					
Hg	2.37	ppb	388812					
*** Sample ID: CCV2				Seq: 22	14:54:17 08 Jul 20	HG		
Hg	2.15	ppb	354123					
*** Sample ID: CCB2				Seq: 23	14:56:58 08 Jul 20	HG		
Hg	-.036	ppb	10343					
*** Sample ID: F193-02				Seq: 24	14:59:12 08 Jul 20	HG		
			DISS					
Hg	-.049	ppb	8290					
*** Sample ID: F193-03				Seq: 25	15:01:54 08 Jul 20	HG		
			DISS					
Hg	-.059	ppb	6741					
*** Sample ID: F193-04A				Seq: 26	15:04:05 08 Jul 20	HG		
			DISS					
Hg	2.90	ppb	471650					
*** Sample ID: F193-04				Seq: 27	15:06:20 08 Jul 20	HG		
			DISS					
Hg	-.052	ppb	7865					
*** Sample ID: F193-04J				Seq: 28	15:08:42 08 Jul 20	HG		
			5X, DISS					
Hg	-.002	ppb	15682					
*** Sample ID: F193-04M				Seq: 29	15:10:55 08 Jul 20	HG		
			DISS					
Hg	2.39	ppb	391772					
*** Sample ID: F193-04S				Seq: 30	15:13:08 08 Jul 20	HG		
			DISS					
Hg	2.36	ppb	387575					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: F206-01				Seq: 31	15:15:21 08 Jul 20	HG		
Hg	-.041	ppb	9611					
*** Sample ID: F206-03				Seq: 32	15:17:30 08 Jul 20	HG		
Hg	.028	ppb	20487					
*** Sample ID: F206-04				Seq: 33	15:19:40 08 Jul 20	HG		
Hg	-.004	ppb	15435					
*** Sample ID: CCV3				Seq: 34	15:21:50 08 Jul 20	HG		
Hg	2.13	ppb	351020					
*** Sample ID: CCB3				Seq: 35	15:24:00 08 Jul 20	HG		
Hg	-.046	ppb	8715					
*** Sample ID: F206-05				Seq: 36	15:26:29 08 Jul 20	HG		
Hg	-.082	ppb	3147					
*** Sample ID: F206-06				Seq: 37	15:29:03 08 Jul 20	HG		
Hg	-.030	ppb	11335					
*** Sample ID: F210-01				Seq: 38	15:31:25 08 Jul 20	HG		
Hg	-.048	ppb	8447					
*** Sample ID: F210-04				Seq: 39	15:33:36 08 Jul 20	HG		
Hg	-.063	ppb	6122					
*** Sample ID: F210-05				Seq: 40	15:35:50 08 Jul 20	HG		
Hg	-.042	ppb	9412					
*** Sample ID: F210-07				Seq: 41	15:37:59 08 Jul 20	HG		
Hg	-.033	ppb	10838					
*** Sample ID: F210-08				Seq: 42	15:40:10 08 Jul 20	HG		
Hg	-.055	ppb	7303					
*** Sample ID: F216-10				Seq: 43	15:42:19 08 Jul 20	HG		
Hg	-.023	ppb	12347					
*** Sample ID: F216-14				Seq: 44	15:44:28 08 Jul 20	HG		
Hg	-.010	ppb	14450					
*** Sample ID: F235-10				Seq: 45	15:46:42 08 Jul 20	HG		
Hg	.016	ppb	18509					

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: CCV4				Seq: 46	15:49:25 08 Jul 20	HG		
Hg	2.14	ppb	352056					
*** Sample ID: CCB4				Seq: 47	15:51:37 08 Jul 20	HG		
Hg	-.052	ppb	7828					
*** Sample ID: HGG006WB				Seq: 48	15:54:02 08 Jul 20	HG		
Hg	.001	ppb	16103					
*** Sample ID: HGG006WL				Seq: 49	15:56:32 08 Jul 20	HG		
Hg	2.49	ppb	408357					
*** Sample ID: HGG006WC				Seq: 50	15:58:46 08 Jul 20	HG		
Hg	2.59	ppb	422805					
*** Sample ID: F208-02A				Seq: 51	16:01:07 08 Jul 20	HG		
Hg	3.09	ppb	502567					
*** Sample ID: F208-02				Seq: 52	16:03:37 08 Jul 20	HG		
Hg	-.020	ppb	12900					
*** Sample ID: F208-02J				Seq: 53	16:05:52 08 Jul 20	HG		
			5X					
Hg	.006	ppb	16940					
*** Sample ID: F208-02M				Seq: 54	16:08:13 08 Jul 20	HG		
Hg	2.66	ppb	434745					
*** Sample ID: F208-02S				Seq: 55	16:10:34 08 Jul 20	HG		
Hg	2.66	ppb	433938					
*** Sample ID: F208-03				Seq: 56	16:12:50 08 Jul 20	HG		
Hg	.005	ppb	16798					
*** Sample ID: F222-02				Seq: 57	16:15:14 08 Jul 20	HG		
Hg	-.039	ppb	9932					
*** Sample ID: CCV5				Seq: 58	16:17:27 08 Jul 20	HG		
Hg	2.09	ppb	345055					
*** Sample ID: CCB5				Seq: 59	16:19:58 08 Jul 20	HG		
Hg	-.016	ppb	13521					
*** Sample ID: F222-03				Seq: 60	16:22:09 08 Jul 20	HG		
Hg	-.031	ppb	11139					

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: F222-04 Seq: 61 16:24:21 08 Jul 20 HG

Hg -.043 ppb 9191

*** Sample ID: F223-01 Seq: 62 16:26:37 08 Jul 20 HG
TOTAL
Hg -.048 ppb 8537

*** Sample ID: F223-02 Seq: 63 16:28:52 08 Jul 20 HG
TOTAL
Hg -.014 ppb 13759

*** Sample ID: F223-04 Seq: 64 16:31:03 08 Jul 20 HG
TOTAL
Hg -.002 ppb 15779

*** Sample ID: F223-05 Seq: 65 16:33:13 08 Jul 20 HG
TOTAL
Hg .024 ppb 19722

*** Sample ID: F223-01 Seq: 66 16:35:33 08 Jul 20 HG
DISS
Hg -.007 ppb 14927

*** Sample ID: F223-04 Seq: 67 16:37:44 08 Jul 20 HG
DISS
Hg -.052 ppb 7817

*** Sample ID: F223-05 Seq: 68 16:39:55 08 Jul 20 HG
DISS
Hg -.071 ppb 4807

*** Sample ID: F233-01 Seq: 69 16:42:25 08 Jul 20 HG
TOTAL
Hg -.056 ppb 7192

*** Sample ID: CCV6 Seq: 70 16:44:49 08 Jul 20 HG

Hg 2.13 ppb 351484

*** Sample ID: CCB6 Seq: 71 16:47:14 08 Jul 20 HG

Hg -.025 ppb 12032

*** Sample ID: F233-02 Seq: 72 16:49:27 08 Jul 20 HG
TOTAL
Hg -.018 ppb 13182

*** Sample ID: F233-03 Seq: 73 16:51:40 08 Jul 20 HG
TOTAL
Hg -.039 ppb 9848

*** Sample ID: F233-05 Seq: 74 16:53:52 08 Jul 20 HG
TOTAL
Hg -.030 ppb 11369

*** Sample ID: F233-06 Seq: 75 16:56:13 08 Jul 20 HG
TOTAL
Hg -.008 ppb 14780

Line	Conc.	Units	SD/RSD	1	2	3	4	5	
*** Sample ID: F233-01				Seq: 76	16:59:16 08 Jul 20				HG
			DISS						
Hg	.007	ppb	17117						
*** Sample ID: F233-02				Seq: 77	17:01:50 08 Jul 20				HG
			DISS						
Hg	-.021	ppb	12753						
*** Sample ID: F233-03				Seq: 78	17:04:25 08 Jul 20				HG
			DISS						
Hg	-.030	ppb	11229						
*** Sample ID: CCV7				Seq: 79	17:06:49 08 Jul 20				HG
Hg	2.15	ppb	354198						
*** Sample ID: CCB7				Seq: 80	17:09:31 08 Jul 20				HG
Hg	-.032	ppb	11041						

EMAX LABORATORIES, INC.

DIGESTION LOG
for
MERCURY

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot #: 28619010

Aqua Regia Prep. Vessel Lot#: N/A

All samples pH<2

Book #: E47-116

Batch No.: HGG00SW

Matrix: water

SOP #	Rev. #
☑ EMAX-7470	8
☐ EMAX-7471	9
☐ EMAX-245.1	4
☐ EMAX-	

Standards	ID	Conc. (µg/L)	Amount Added (ml)
ICAL	SM3B-19-22-06	50	0.2,0.5,1,2.5
CCV	↓	↓	2
ICV	SM3B-19-22-07	↓	2
LCS/MS	↓	↓	2.5

Reagent	ID / Lot #
HNO_3	SW1A-009-02-08
HCl	N/A
H_2SO_4	SW1A-08-24-05
$KMnO_4$	SMSB-04-14-04
$K_2S_2O_8$	SMSB-04-13-04
$NH_2OH \cdot HCl \cdot NaCl$	SMSB-04-15-01
$SnCl_2$	SMSB-04-14-03
Silica Sand	N/A
Reagent Water	RW1-19-003
pH strip 0-14	MC863463

Digestor ID/ Temp (°C) A / 95.1 B / 95.3

Thermometer ID/LOC: 192062809 / A19

Thermometer ID/LOC: 170233083 / B15

Pipette ID: MG-06, 742781062, MG-03, 339342032

☐ H_2SO_4 dispenser checked @ 2.5 ml with Class A graduated cylinder

☐ HCl dispenser checked @ ___ ml with Class A graduated cylinder

☐ HNO_3 dispenser checked @ ___ ml with Class A graduated cylinder

Prepared By: MC

Standard Added By: MC Witnessed By: TH

EMAX LABORATORIES, INC.

DIGESTION LOG FOR MERCURY

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
20HGG005W01	HGG005WB	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W02	HGG005WL	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W03	HGG005WC	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W04	F193-02	50	ml	7/8/20 9:57	80	50	80	1	TOTAL
20HGG005W05	F193-03	50	ml	7/8/20 9:57	80	50	80	1	TOTAL
20HGG005W06	F193-04	50	ml	7/8/20 9:57	80	50	80	1	TOTAL
20HGG005W07	F193-04M	50	ml	7/8/20 9:57	80	50	80	1	TOTAL
20HGG005W08	F193-04S	50	ml	7/8/20 9:57	80	50	80	1	TOTAL
20HGG005W09	F193-02	50	ml	7/8/20 9:57	80	50	80	1	DISSOLVED
20HGG005W10	F193-03	50	ml	7/8/20 9:57	80	50	80	1	DISSOLVED
20HGG005W11	F193-04	50	ml	7/8/20 9:57	80	50	80	1	DISSOLVED
20HGG005W12	F193-04M	50	ml	7/8/20 9:57	80	50	80	1	DISSOLVED
20HGG005W13	F193-04S	50	ml	7/8/20 9:57	80	50	80	1	DISSOLVED
20HGG005W14	F206-01	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W15	F206-03	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W16	F206-04	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W17	F206-05	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W18	F206-06	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W19	F210-01	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W20	F210-04	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W21	F210-05	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W22	F210-07	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W23	F210-08	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W24	F216-10	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W25	F216-14	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W26	F235-10	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W27	S-0/CCB/ICB	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W28	S-0.2	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W29	S-0.5	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W30	S-1	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W31	S-2/CCV	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W32	S-5	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W33	ICV	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W34	PS H2O	50	ml	7/8/20 9:57	80	50	80	1	
20HGG005W35	MRL-0.5	50	ml	7/8/20 9:57	80	50	80	1	

MC
7/8/2020

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 7/8/20 11:02 Prepared By: MCande

☑ Digestion Ended @ 7/8/20 13:08 Checked By: MC

Comments: Date 7/8/2020

LABORATORY REPORT FOR

CDM SMITH

VA SALT LAKE CITY

WET CHEMICAL ANALYSES

SDG#: 20F210

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD E300.0
CHLORIDE

A total of five(5) water samples were received on 06/25/20 to be analyzed for Chloride in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Chloride was not detected in ICF037WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF037WL/ICF037WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD E300.0
SULFATE

A total of five(5) water samples were received on 06/25/20 to be analyzed for Sulfate in accordance with Method E300.0 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Sulfate was not detected in ICF037WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ICF037WL/ICF037WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

SAMPLE RESULTS

METHOD E300.0
CHLORIDE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210

Matrix : WATER
InstrumentID : DO

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF037WB	ND	1	NA	0.2	0.05	06/26/2010:24	NA	AF35-03	AF35-01	ICF037W	NA	NA
LCS1W	ICF037WL	1.99	1	NA	0.2	0.05	06/26/2010:41	NA	AF35-04	AF35-01	ICF037W	NA	NA
LCD1W	ICF037WC	2.03	1	NA	0.2	0.05	06/26/2010:58	NA	AF35-05	AF35-01	ICF037W	NA	NA
MW23C-GW062320	F210-01I	63.4	20	NA	4	1	06/27/2018:48	NA	AF35-66	AF35-60	ICF037W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04J	338	200	NA	40	10	06/27/2019:39	NA	AF35-69	AF35-60	ICF037W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05J	373	200	NA	40	10	06/27/2020:13	NA	AF35-71	AF35-60	ICF037W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07J	251	100	NA	20	5	06/27/2021:22	NA	AF35-75	AF35-72	ICF037W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08J	213	50	NA	10	2.5	06/27/2021:56	NA	AF35-77	AF35-72	ICF037W	06/23/2011:40	06/25/20

METHOD E300.0
SULFATE

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210

Matrix : WATER
InstrumentID : DO

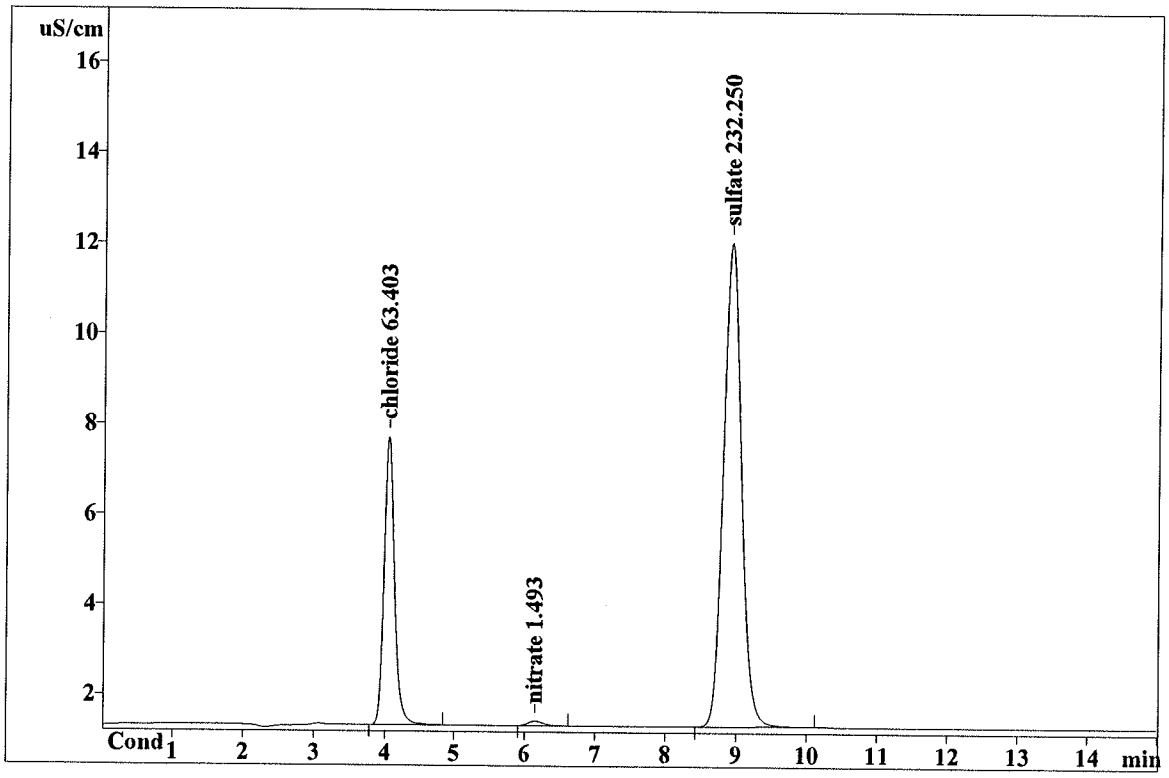
CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ICF037WB	ND	1	NA	0.5	0.13	06/26/2010:24	NA	AF35-03	AF35-01	ICF037W	NA	NA
LCS1W	ICF037WL	4.83	1	NA	0.5	0.13	06/26/2010:41	NA	AF35-04	AF35-01	ICF037W	NA	NA
LCD1W	ICF037WC	4.92	1	NA	0.5	0.13	06/26/2010:58	NA	AF35-05	AF35-01	ICF037W	NA	NA
MW23C-GW062320	F210-01I	232	20	NA	10	2.6	06/27/2018:48	NA	AF35-66	AF35-60	ICF037W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04I	106	20	NA	10	2.6	06/27/2019:22	NA	AF35-68	AF35-60	ICF037W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05I	110	20	NA	10	2.6	06/27/2019:56	NA	AF35-70	AF35-60	ICF037W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07I	127	20	NA	10	2.6	06/27/2021:05	NA	AF35-74	AF35-72	ICF037W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08I	105	20	NA	10	2.6	06/27/2021:39	NA	AF35-76	AF35-72	ICF037W	06/23/2011:40	06/25/20

Report date: 6/29/2020 4:11:05 PM
Printed by: TWangc

Ident: AF35-66 F210-01I DF=20
Analysis from: 6/27/2020 6:48:24 PM
File: _2020-06-27_18-48.chw Last save: 6/27/2020 7:03:21 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159537

SAMPLE: METHOD300/9056/4110B
:
Vial number: 66
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	6.39	65.608	63.403	chloride ✓
2	6.15	0.10	1.489	1.493	nitrate
3	8.91	10.71	190.668	232.250	sulfate ✓
3	15.00	17.20	257.766	297.145	

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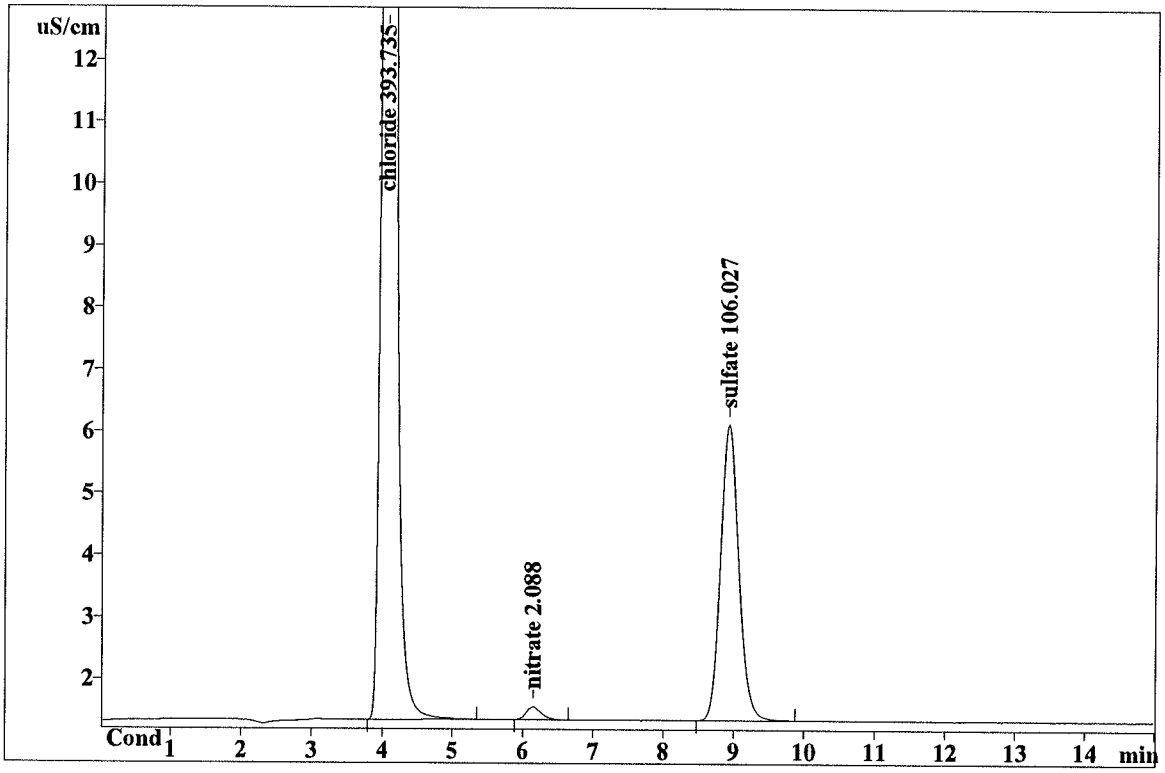
Report date: 6/29/2020 4:11:12 PM
Printed by: TWangc

Ident: AF35-68 F210-04I DF=20
Analysis from: 6/27/2020 7:22:33 PM
File: _2020-06-27_19-22.chw Last save: 6/27/2020 7:37:30 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159539

SAMPLE: METHOD300/9056/4110B
:
Vial number: 68
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	39.01	417.526	393.735	chloride
2	6.15	0.21	3.066	2.088	nitrate
3	8.92	4.77	85.063	106.027	sulfate ✓
3	15.00	43.99	505.655	501.850	

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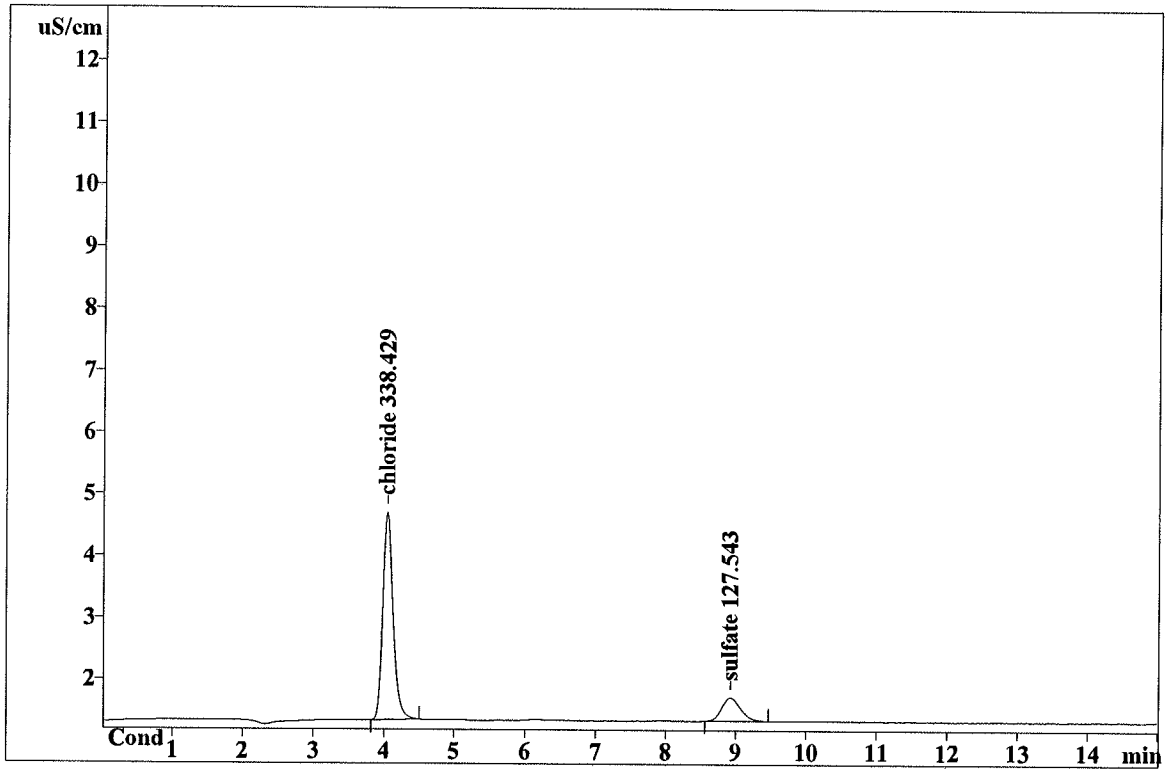
Report date: 6/29/2020 4:11:17 PM
Printed by: TWangc

Ident: AF35-69 F210-04J DF=200
Analysis from: 6/27/2020 7:39:38 PM
File: _2020-06-27_19-39.chw Last save: 6/27/2020 7:54:34 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159540

SAMPLE: METHOD300/9056/4110B
:
Vial number: 69
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	3.35	34.117	338.429	chloride ✓
2	8.92	0.38	7.025	127.543	sulfate
2	15.00	3.72	41.142	465.973	

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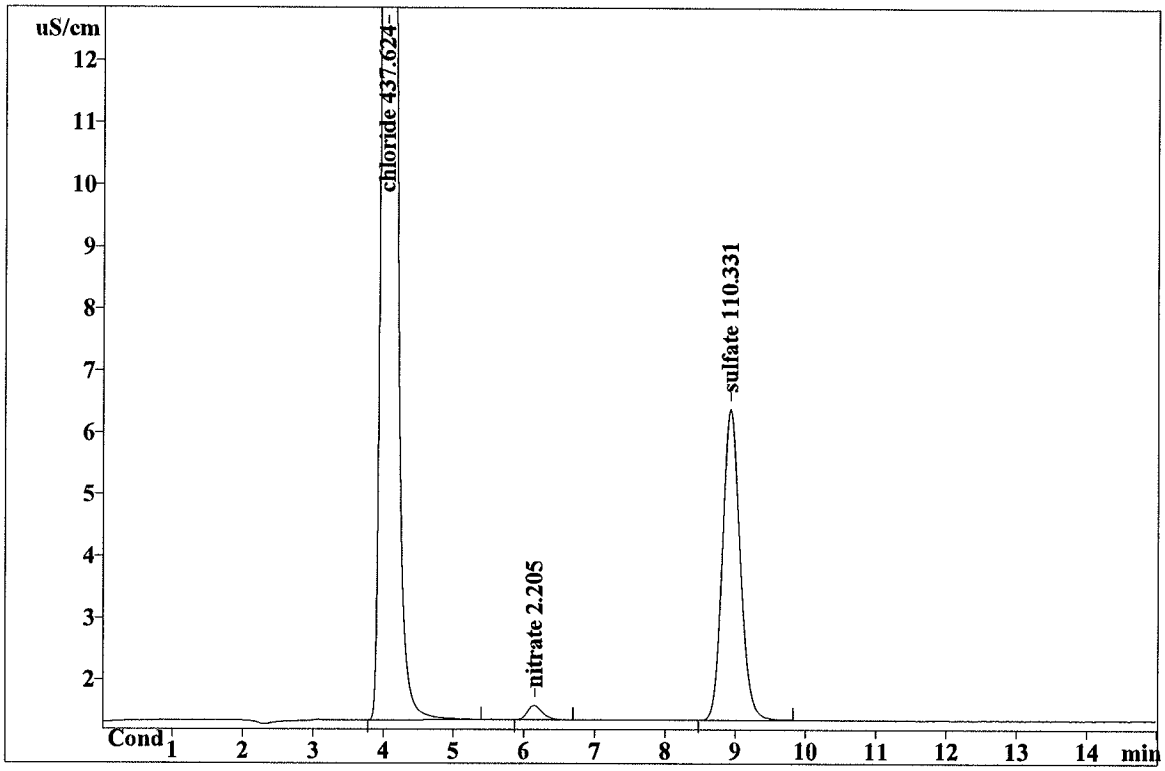
Report date: 6/29/2020 4:11:23 PM
Printed by: TWangc

Ident: AF35-70 F210-05I DF=20
Analysis from: 6/27/2020 7:56:42 PM
File: _2020-06-27_19-56.chw Last save: 6/27/2020 8:11:39 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159541

SAMPLE: METHOD300/9056/4110B
:
Vial number: 70
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	43.98	464.283	437.624	chloride
2	6.15	0.23	3.378	2.205	nitrate
3	8.92	5.03	88.664	110.331	sulfate ✓
3	15.00	49.24	556.325	550.160	

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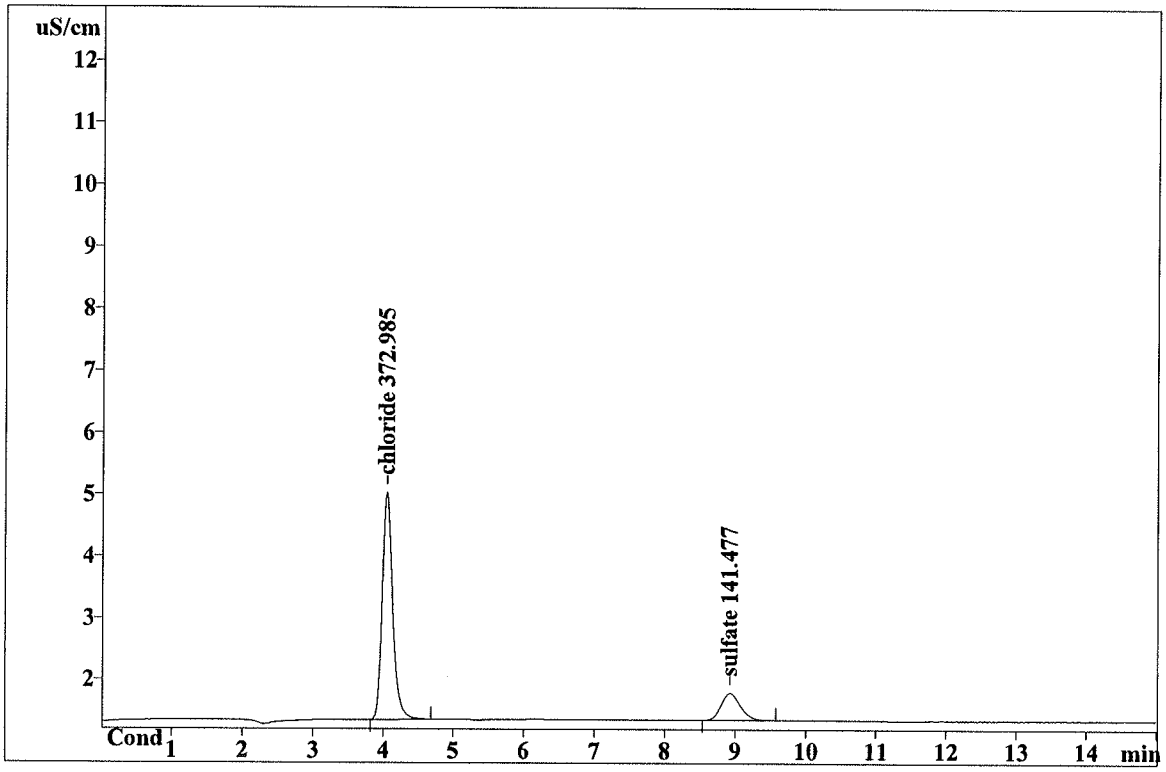
Report date: 6/29/2020 4:11:28 PM
Printed by: TWangc

Ident: AF35-71 F210-05J DF=200
Analysis from: 6/27/2020 8:13:47 PM
File: _2020-06-27_20-13.chw Last save: 6/27/2020 8:28:44 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159542

SAMPLE: METHOD300/9056/4110B
:
Vial number: 71
Volume: 1.0 µL
Dilution: 200.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	3.68	37.798	372.985	chloride
2	8.93	0.44	8.191	141.477	sulfate
2	15.00	4.12	45.989	514.463	

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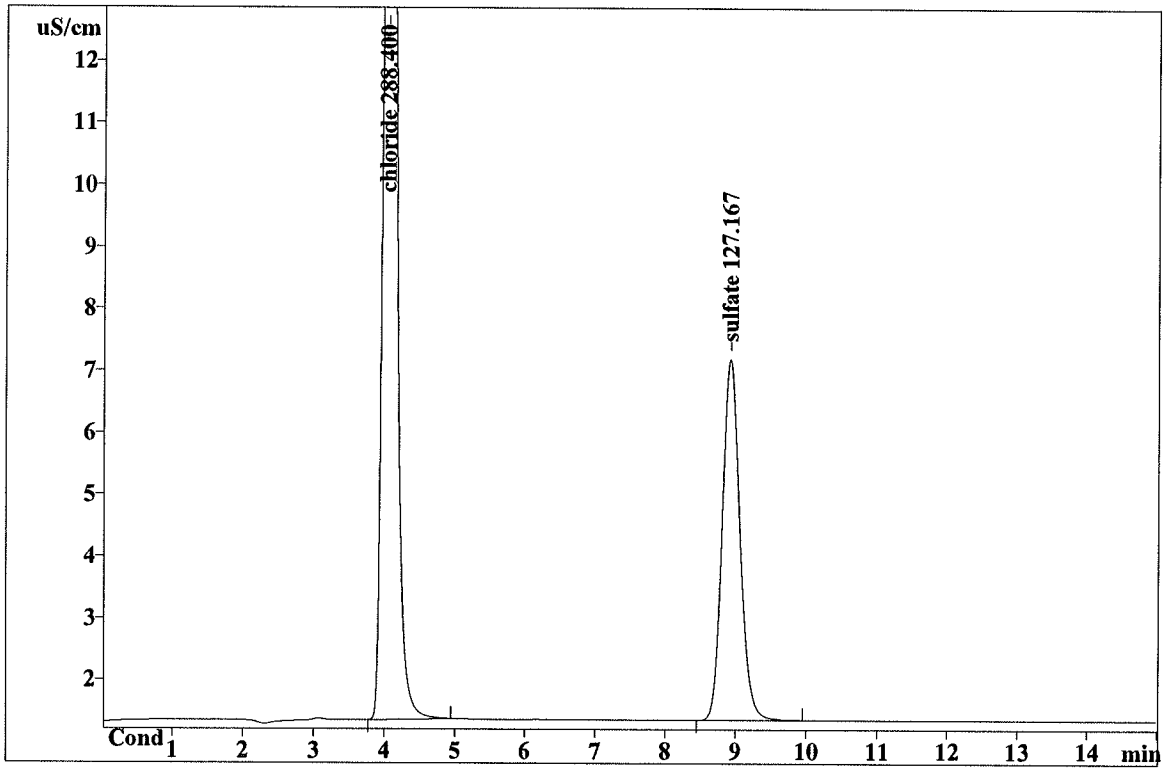
Report date: 6/29/2020 4:11:36 PM
Printed by: TWangc

Ident: AF35-74 F210-07I DF=20
Analysis from: 6/27/2020 9:05:00 PM
File: _2020-06-27_21-05.chw Last save: 6/27/2020 9:19:57 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159545

SAMPLE: METHOD300/9056/4110B
:
Vial number: 74
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	29.17	305.308	288.400	chloride
2	8.92	5.84	102.749	127.167	sulfate
2	15.00	35.01	408.057	415.566	

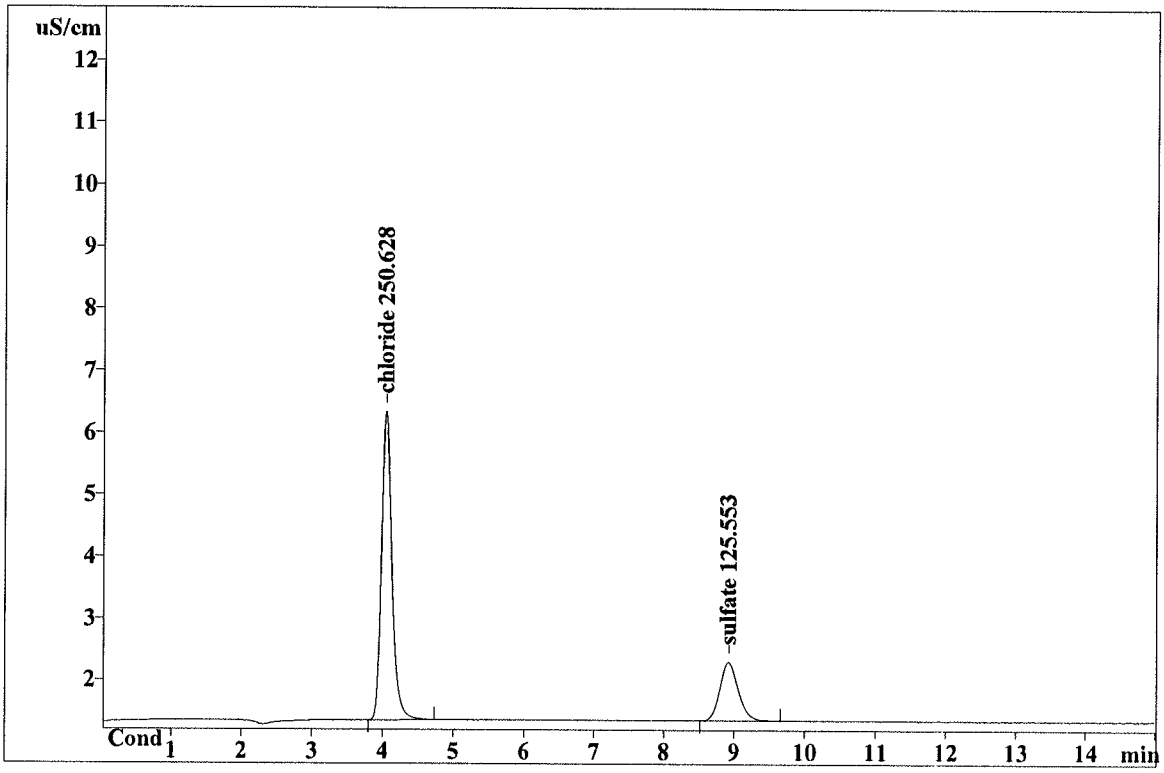
This report has been created by IC Net
METROHM LTD

Report date: 6/29/2020 4:11:42 PM
Printed by: TWangc

Ident: AF35-75 F210-07J DF=100
Analysis from: 6/27/2020 9:22:05 PM
File: _2020-06-27_21-22.chw Last save: 6/27/2020 9:37:02 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159546

SAMPLE: METHOD300/9056/4110B
:
Vial number: 75
Volume: 1.0 µL
Dilution: 100.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	5.00	51.463	250.628	chloride ✓
2	8.92	0.95	17.363	125.553	sulfate
2	15.00	5.95	68.826	376.181	

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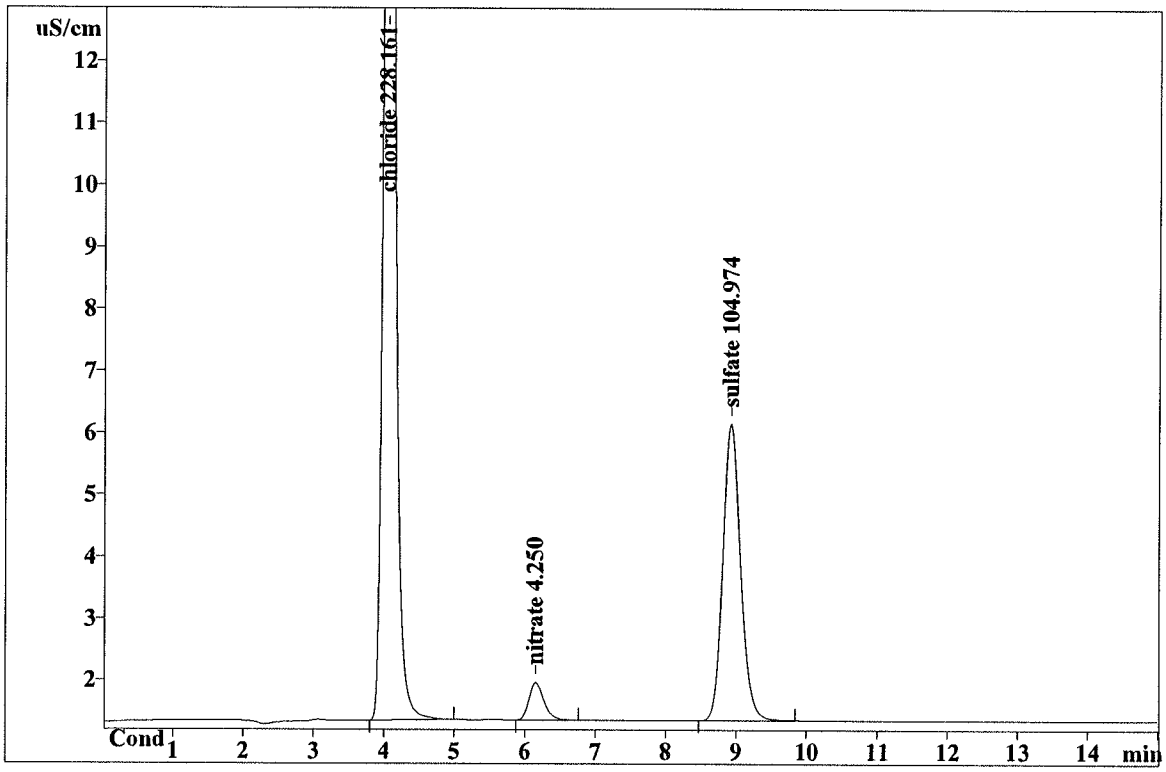
METROHM LTD

Report date: 6/29/2020 4:11:49 PM
Printed by: TWangc

Ident: AF35-76 F210-08I DF=20
Analysis from: 6/27/2020 9:39:10 PM
File: _2020-06-27_21-39.chw Last save: 6/27/2020 9:54:07 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159547

SAMPLE: METHOD300/9056/4110B
:
Vial number: 76
Volume: 1.0 µL
Dilution: 20.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	22.90	241.132	228.161	chloride
2	6.15	0.61	8.799	4.250	nitrate
3	8.92	4.78	84.182	104.974	sulfate ✓
3	15.00	28.29	334.113	337.385	

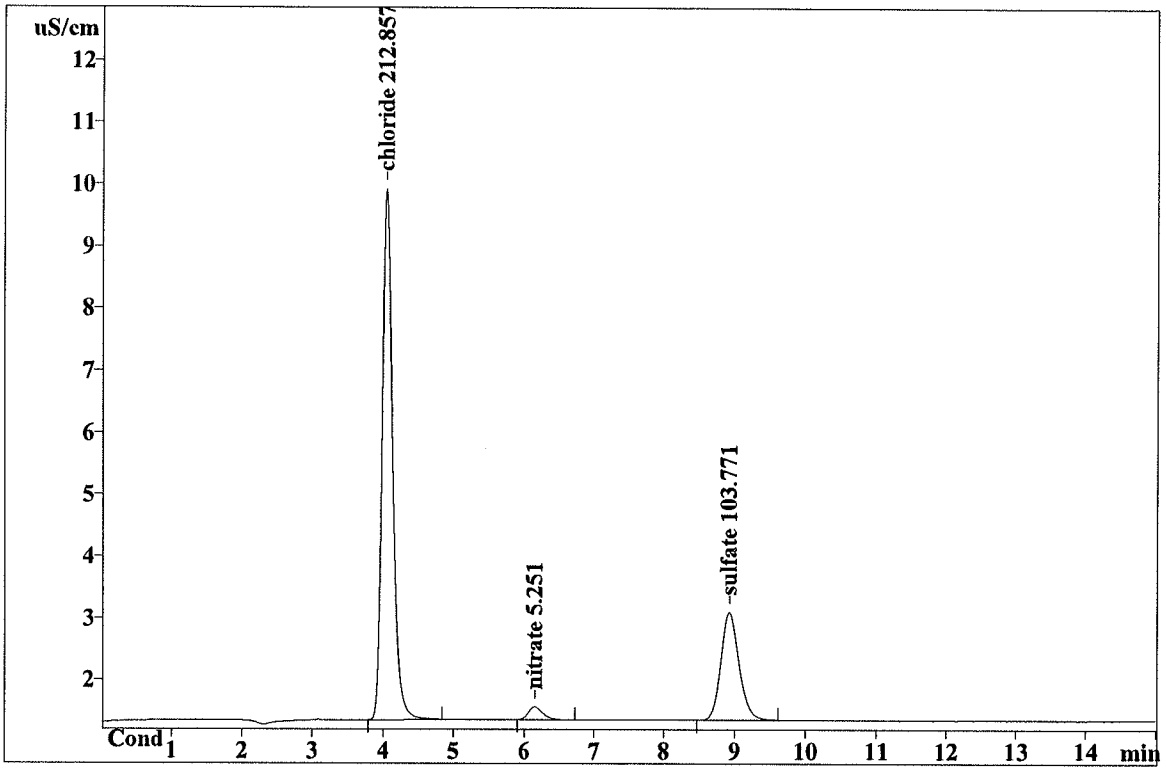
This report has been created by IC Net
METROHM LTD

Report date: 6/29/2020 4:11:54 PM
Printed by: TWangc

Ident: AF35-77 F210-08J DF=50
Analysis from: 6/27/2020 9:56:14 PM
File: _2020-06-27_21-56.chw Last save: 6/27/2020 10:11:11 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159548

SAMPLE: METHOD300/9056/4110B
:
Vial number: 77
Volume: 1.0 µL
Dilution: 50.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	4.04	8.57	88.769	212.857	chloride ✓
2	6.16	0.21	3.100	5.251	nitrate
3	8.92	1.74	31.083	103.771	sulfate
3	15.00	10.52	122.951	321.879	

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QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ICF037WB	ICF037WL	ICF037WC
LAB FILE ID :	AF35-03	AF35-04	AF35-05
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	06/26/2010:24	06/26/2010:41	06/26/2010:58
PREP BATCH :	ICF037W	ICF037W	ICF037W
CALIBRATION REF:	AF35-01	AF35-01	AF35-01

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Chloride	ND	2	1.99	100	2	2.03	101	2	87-111	20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : E300.0

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	ICF037WB	ICF037WL	ICF037WC
LAB FILE ID	AF35-03	AF35-04	AF35-05
DATE PREPARED	NA	NA	NA
DATE ANALYZED	06/26/2010:24	06/26/2010:41	06/26/2010:58
PREP BATCH	ICF037W	ICF037W	ICF037W
CALIBRATION REF:	AF35-01	AF35-01	AF35-01

ACCESSION:

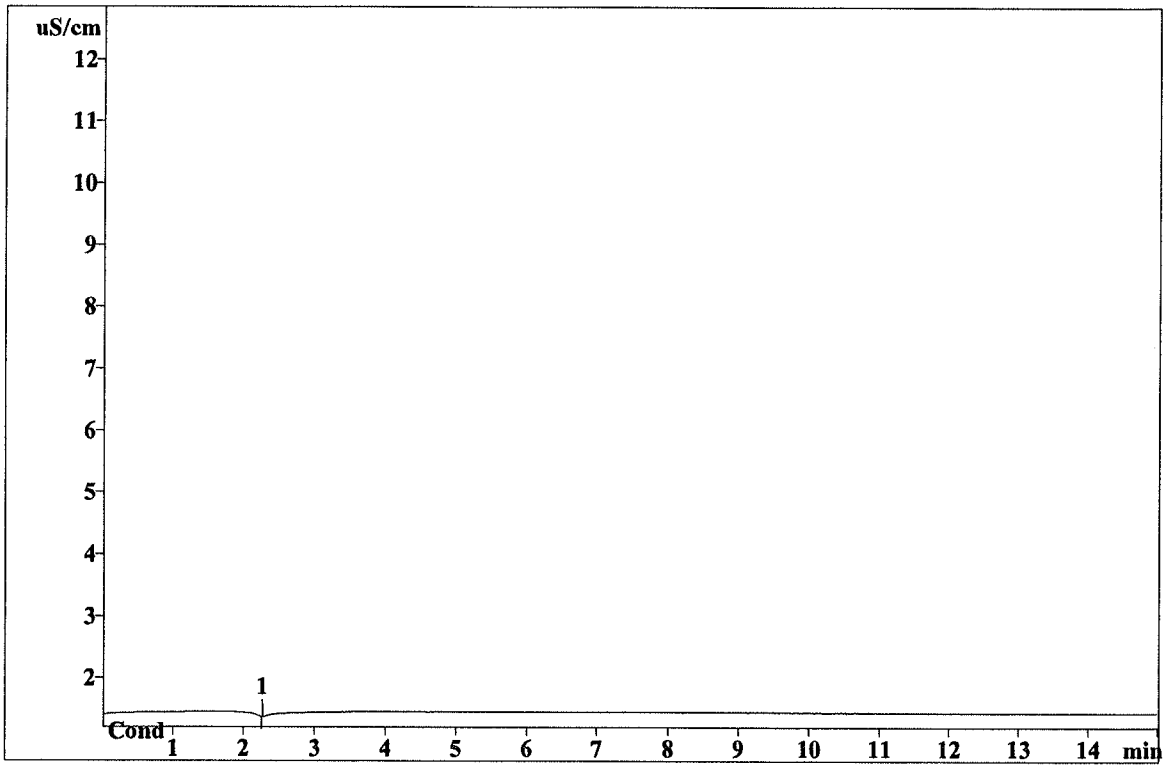
PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Sulfate	ND	5	4.83	97	5	4.92	98	2	87-112	20

QC DATA

Report date: 6/29/2020 1:59:31 PM
Printed by: TWangc

Ident: AF35-03 ICF037WB
Analysis from: 6/26/2020 10:24:13 AM
File: _2020-06-26_10-24.chw Last save: 6/26/2020 10:39:10 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159474

SAMPLE: METHOD300/9056/4110B
:
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	0.000	0.000	

This report has been created by IC Net
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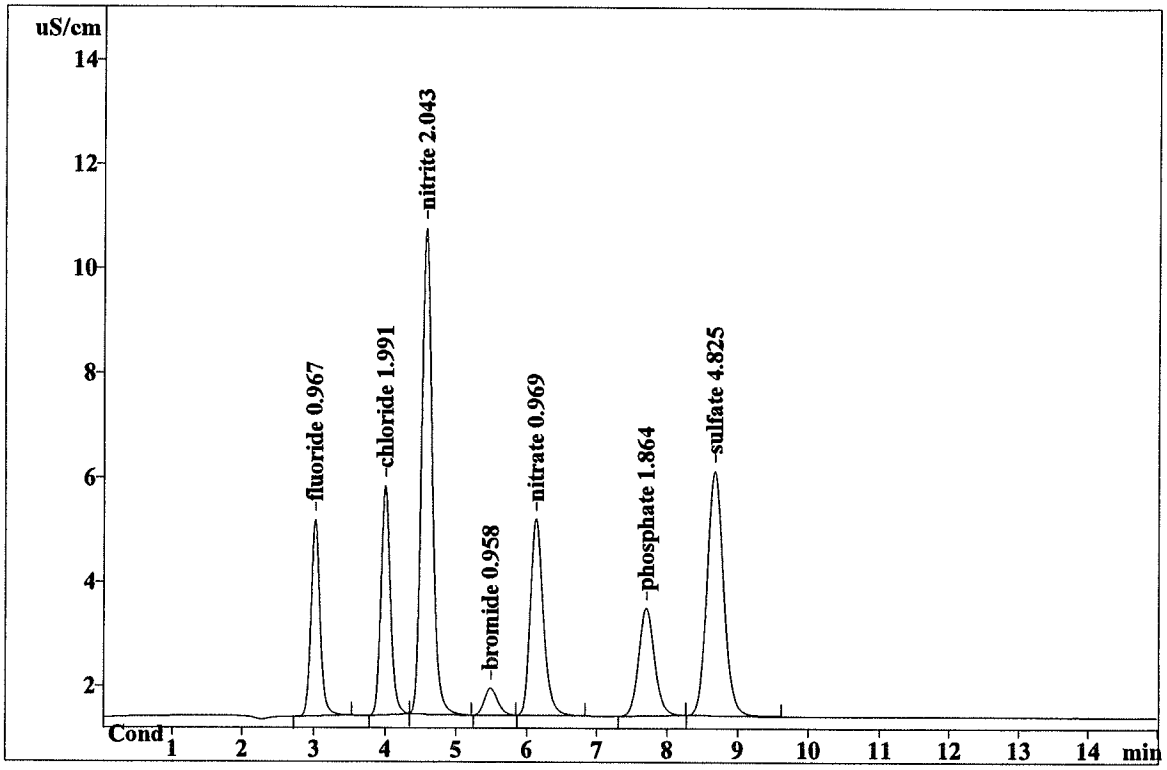
Report date: 6/29/2020 1:59:41 PM
Printed by: TWangc

Ident: AF35-04 ICF037WL
Analysis from: 6/26/2020 10:41:18 AM
File: _2020-06-26_10-41.chw Last save: 6/26/2020 10:56:15 AM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159475

SAMPLE: METHOD300/9056/4110B
:
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.77	33.580	0.967	fluoride
2	3.99	4.39	40.486	1.991	chloride
3	4.57	9.30	99.294	2.043	nitrite
4	5.49	0.52	6.781	0.958	bromide
5	6.13	3.77	48.913	0.969	nitrate
6	7.70	2.06	32.665	1.864	phosphate
7	8.67	4.69	77.099	4.825	sulfate
7	15.00	28.51	338.819	15.618	

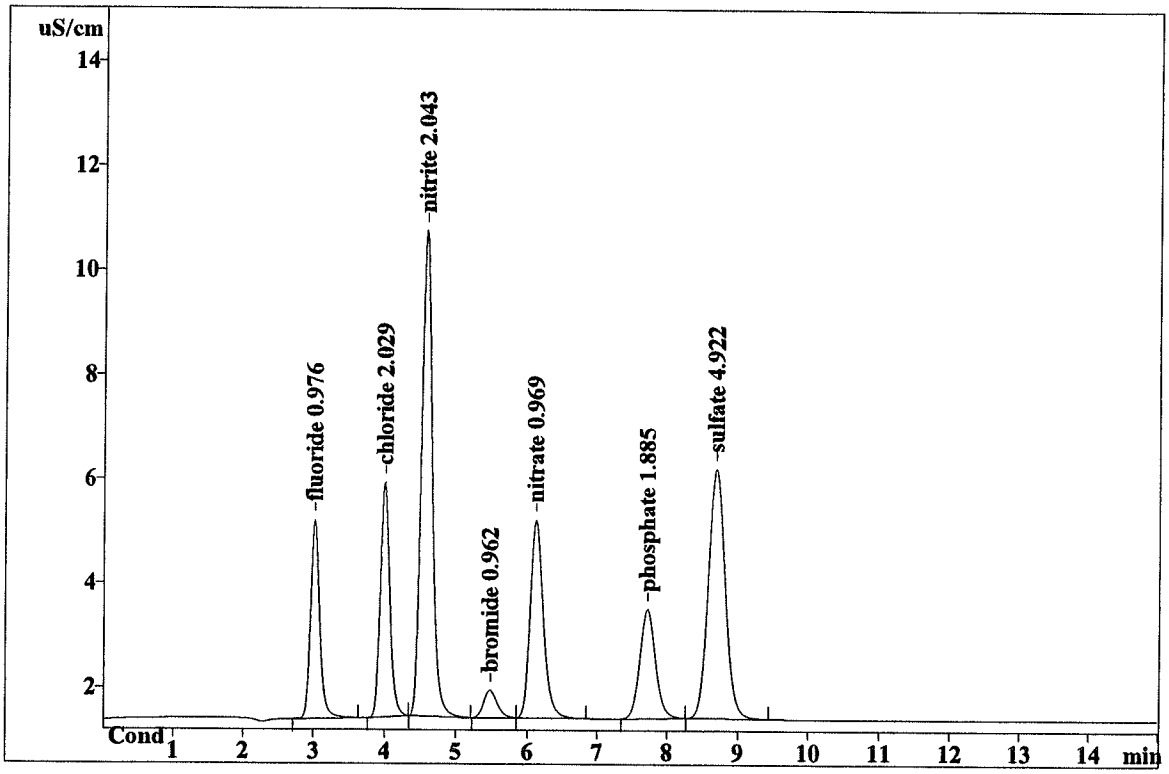
This report has been created by IC Net
METROHM LTD

Report date: 6/29/2020 1:59:48 PM
Printed by: TWangc

Ident: AF35-05 ICF037WC
Analysis from: 6/26/2020 10:58:22 AM
File: _2020-06-26_10-58.chw Last save: 6/26/2020 11:13:19 AM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159476

SAMPLE: METHOD300/9056/4110B
:
Vial number: 5
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.80	33.918	0.976	fluoride
2	3.99	4.49	41.294	2.029	chloride
3	4.56	9.31	99.264	2.043	nitrite
4	5.48	0.52	6.813	0.962	bromide
5	6.11	3.79	48.925	0.969	nitrate
6	7.71	2.08	33.058	1.885	phosphate
7	8.68	4.78	78.711	4.922	sulfate
7	15.00	28.76	341.984	13.785	

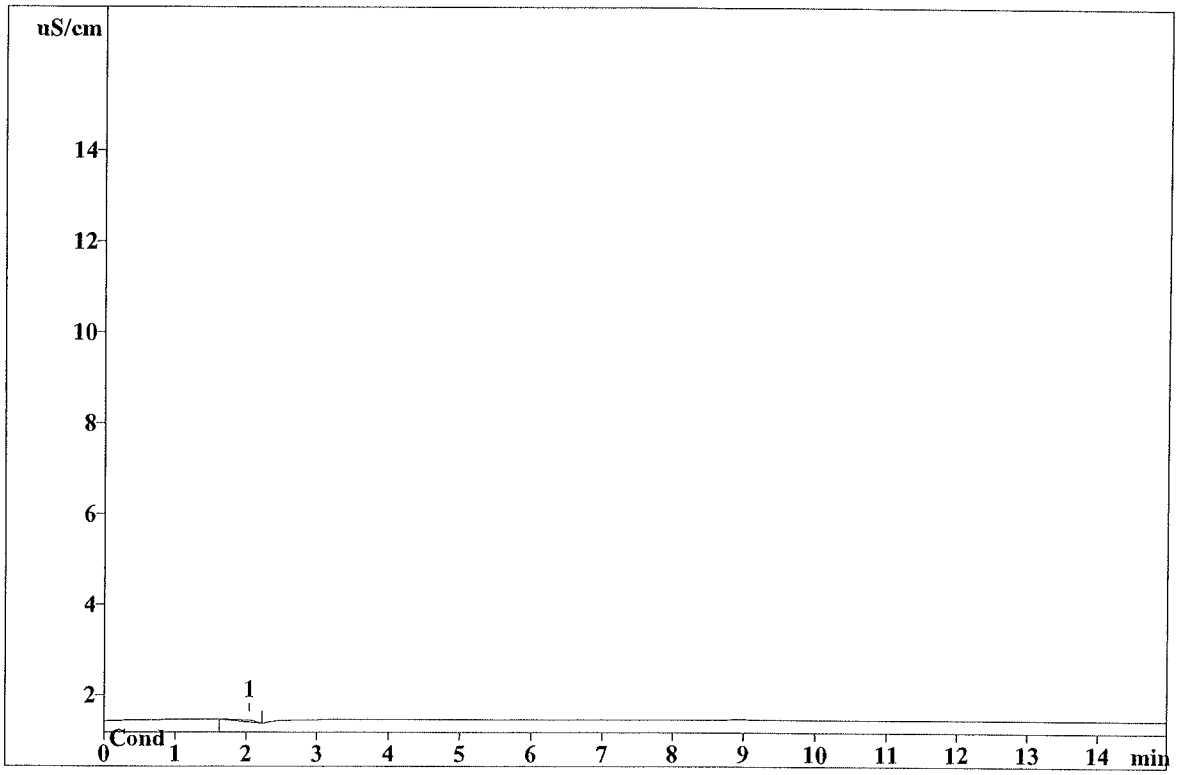
This report has been created by IC Net
METROHM LTD

INITIAL CALIBRATION(S)

IC Result Check FormVersion : B24/AB25(2020)

LFID	LSID	Selection	iodide	chloride	fluoride	nitrite	bromide	nitrate	phosphate	sulfate	RawNetID	DF
AB25-01	IB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-02	S0	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-24_20-47	1
AB25-03	S1	OCFIBNPS	0	0.130932	0.0736569	0.0777071	0.262476	0.0835989	0.194145	0.268643	_2020-02-24_21-04	1
AB25-04	S2	OCFIBNPS	0	0.164605	0.106859	0.111126	0.294912	0.119582	0.213056	0.302238	_2020-02-24_21-21	1
AB25-05	S3	OCFIBNPS	0	0.23743	0.182756	0.194941	0.367787	0.19938	0.278602	0.370165	_2020-02-24_21-39	1
AB25-06	S4	OCFIBNPS	0	0.479227	0.467048	0.463725	0.590591	0.467839	0.473997	0.59173	_2020-02-24_21-56	1
AB25-07	S5	OCFIBNPS	0	0.907337	0.953599	0.917912	0.969488	0.952213	0.838299	0.964092	_2020-02-24_22-13	1
AB25-08	S6	OCFIBNPS	0	1.8697	1.99933	1.99949	1.79754	2.02739	1.75229	1.79408	_2020-02-24_22-30	1
AB25-09	S7	OCFIBNPS	0	5.06077	5.12498	5.1581	4.61476	5.46023	5.09961	4.62219	_2020-02-24_22-47	1
AB25-10	S8	OCFIBNPS	0	10.5296	9.94178	9.92699	9.72349	11.2469	11.2045	9.69729	_2020-02-24_23-04	1
AB25-11	S9	OCFIBNPS	0	21.5568	18.5889	21.4357	20.229	22.8079	23.7145	20.2396	_2020-02-24_23-21	1
AB25-12	ICV	OCFIBNPS	0%*	95.1%	96.9%	100.8%	97.7%	98.3%	91.5%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	OCFIBNPS	0%*	91.8%	98.3%	95.5%	98.1%	97%	88.2%*	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	OCFIBNPS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date:	2/25/2020 12:19:29 PM		
Printed by:	LDip		
Ident:	AB25-02 S0		
Analysis from:	2/24/2020 8:47:50 PM		
File:	_2020-02-24_20-47.chw	Last save:	2/25/2020 12:15:05 PM
Method:	ICD0-B24.mtw	Last save:	2/24/2020 9:54:01 PM
Run operator:	LDip		
Analysis number:	155970		
SAMPLE:	METHOD300/9056/4110B		
:			
Vial number:	2		
Volume:	1.0 µL		
Dilution:	1.00		
Amount:	1.0000		



Quantitation method: Custom

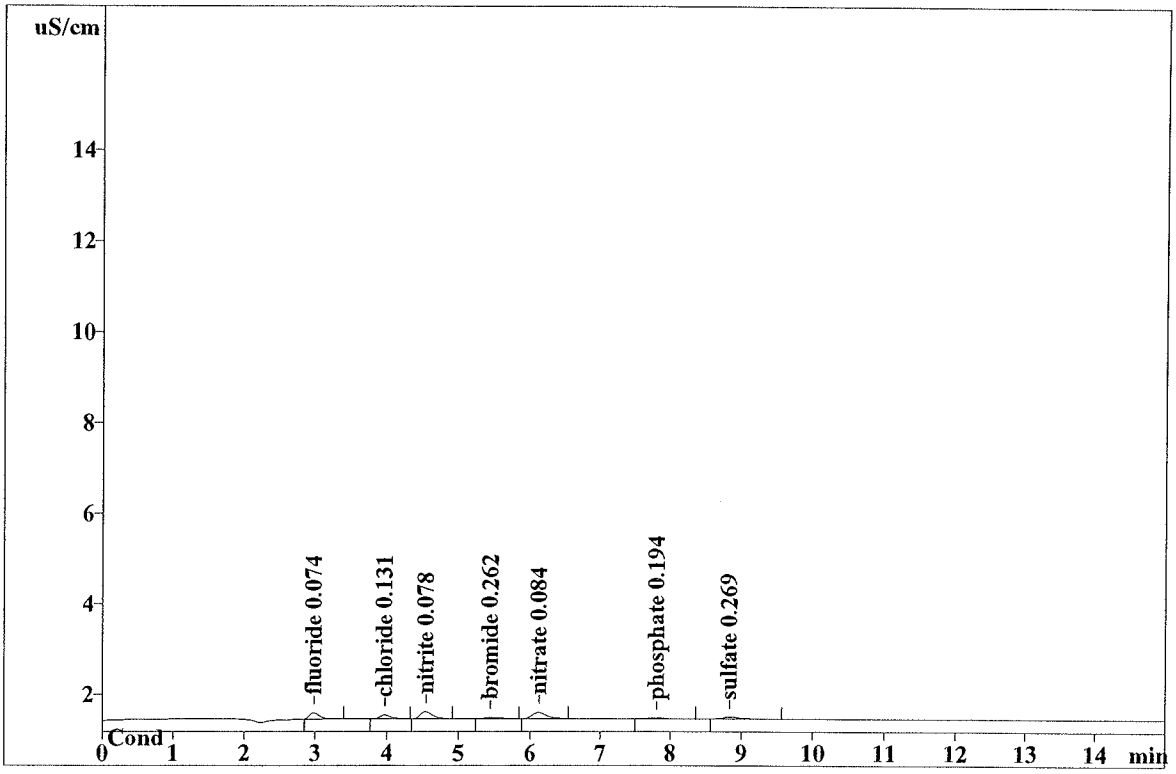
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.891	0.000	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:02 PM
Printed by: LDip

Ident: AB25-03 S1
Analysis from: 2/24/2020 9:04:55 PM
File: _2020-02-24_21-04.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155971

SAMPLE: METHOD300/9056/4110B
: 0.05 PPM
Vial number: 3
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.14	1.336	0.074	fluoride
2	3.96	0.08	0.852	0.131	chloride
3	4.54	0.16	1.770	0.078	nitrite
4	5.45	0.03	0.395	0.262	bromide
5	6.12	0.14	1.964	0.084	nitrate
6	7.79	0.02	0.341	0.194	phosphate
7	8.84	0.04	0.849	0.269	sulfate
7	15.00	0.60	7.507	1.091	

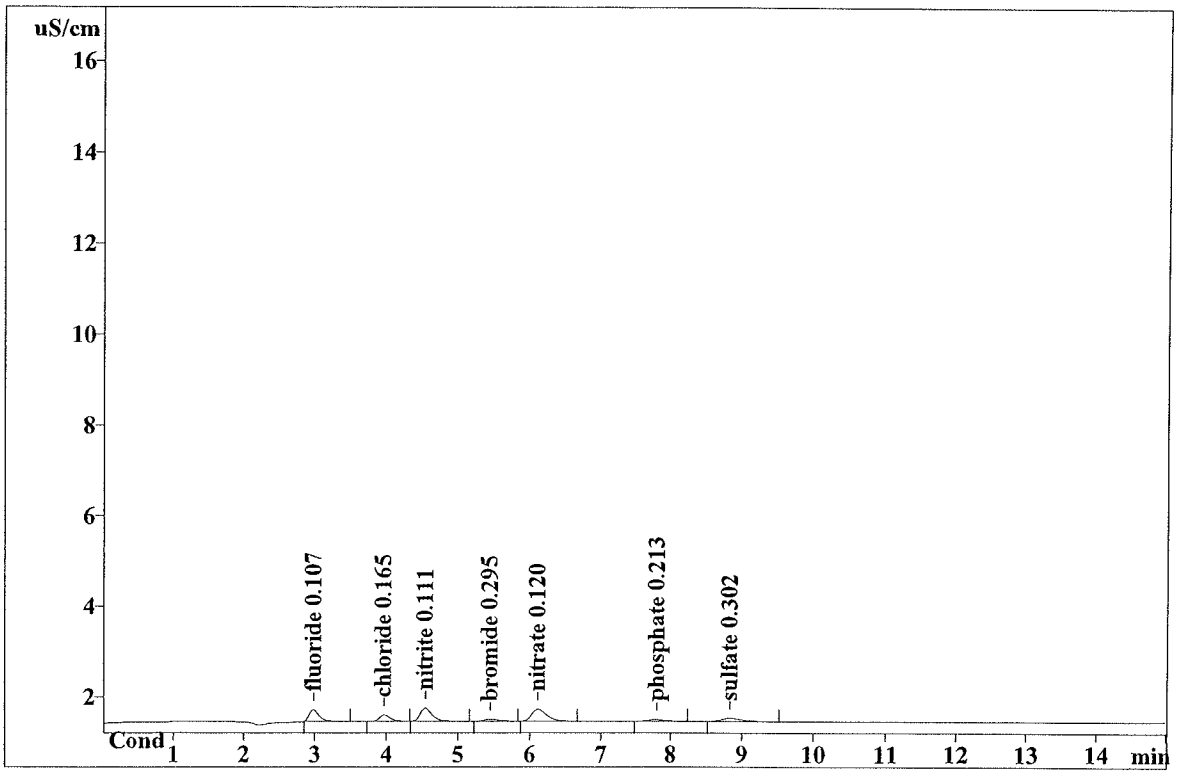
This report has been created by IC Net
METROHM LTD

IK 02/26/20

Report date: 2/25/2020 12:20:17 PM
Printed by: LDip

Ident: AB25-04 S2
Analysis from: 2/24/2020 9:21:59 PM
File: _2020-02-24_21-21.chw Last save: 2/25/2020 12:15:05 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155972

SAMPLE: METHOD300/9056/4110B
: 0.1 PPM
Vial number: 4
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000

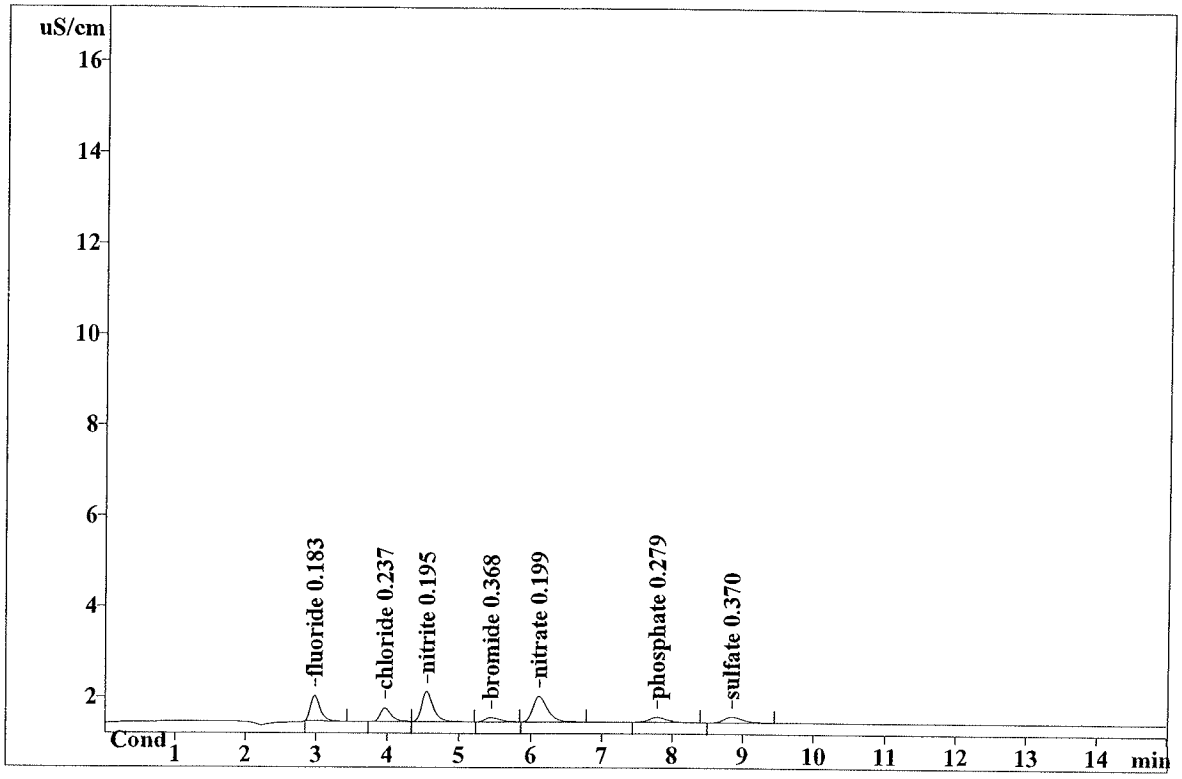


Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.26	2.535	0.107	fluoride
2	3.96	0.15	1.570	0.165	chloride
3	4.54	0.29	3.428	0.111	nitrite
4	5.45	0.05	0.692	0.295	bromide
5	6.12	0.26	3.872	0.120	nitrate
6	7.79	0.04	0.707	0.213	phosphate
7	8.84	0.07	1.412	0.302	sulfate
7	15.00	1.13	14.215	1.312	

This report has been created by IC Net
METROHM LTD

Report date:	2/25/2020 12:20:25 PM	
Printed by:	LDip	
Ident:	AB25-05 S3	
Analysis from:	2/24/2020 9:39:04 PM	
File:	_2020-02-24_21-39.chw	Last save: 2/25/2020 12:15:06 PM
Method:	ICD0-B24.mtw	Last save: 2/24/2020 9:54:01 PM
Run operator:	LDip	
Analysis number:	155973	
SAMPLE:	METHOD300/9056/4110B	
:	0.2 PPM	
Vial number:	5	
Volume:	1.0 µL	
Dilution:	1.00	
Amount:	1.0000	



Quantitation method: Custom

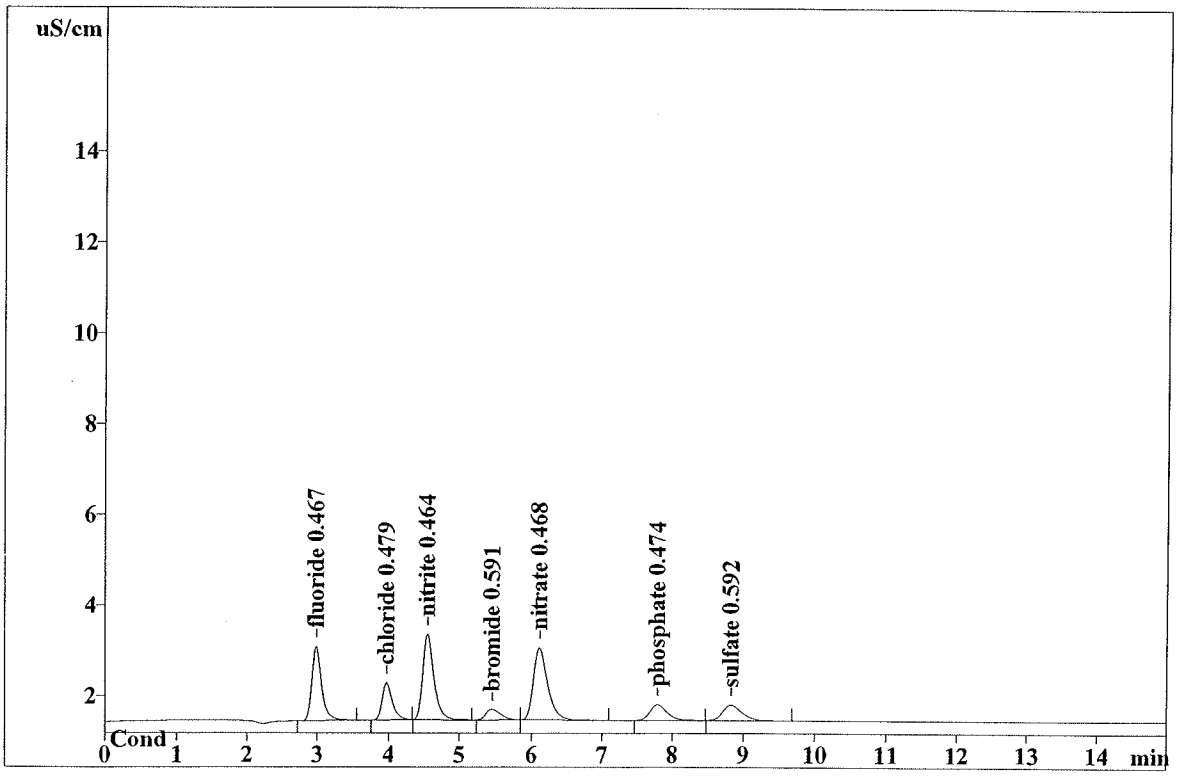
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	0.56	5.276	0.183	fluoride
2	3.97	0.30	3.121	0.237	chloride
3	4.54	0.67	7.587	0.195	nitrite
4	5.45	0.09	1.361	0.368	bromide
5	6.12	0.56	8.103	0.199	nitrate
6	7.80	0.11	1.975	0.279	phosphate
7	8.85	0.13	2.548	0.370	sulfate
7	15.00	2.43	29.971	1.831	

This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:38 PM
Printed by: LDip

Ident: AB25-06 S4
Analysis from: 2/24/2020 9:56:09 PM
File: _2020-02-24_21-56.chw Last save: 2/25/2020 12:15:06 PM
Modified!
Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155974

SAMPLE: METHOD300/9056/4110B
: 0.5 PPM
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	1.64	15.542	0.467	fluoride
2	3.97	0.82	8.273	0.479	chloride
3	4.54	1.89	20.923	0.464	nitrite
4	5.45	0.24	3.406	0.591	bromide
5	6.11	1.59	22.337	0.468	nitrate
6	7.79	0.34	5.757	0.474	phosphate
7	8.83	0.34	6.256	0.592	sulfate
7	15.00	6.86	82.494	3.534	

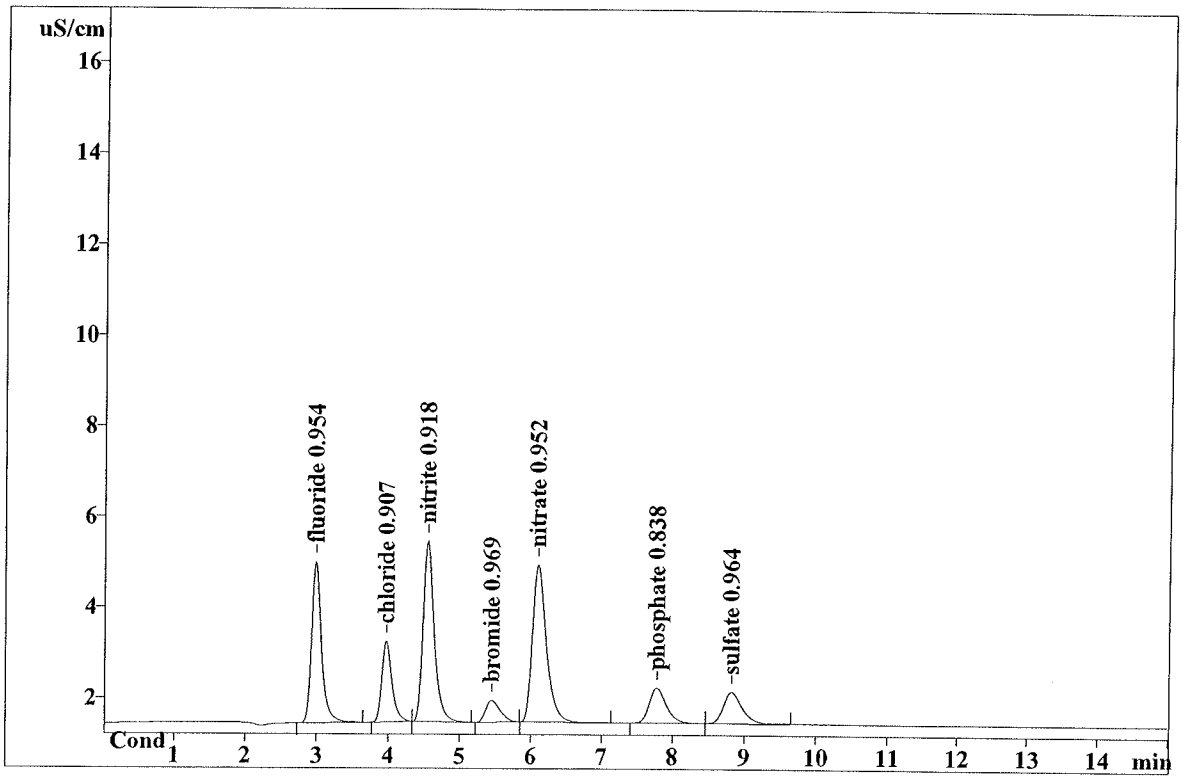
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:46 PM
Printed by: LDip

Ident: AB25-07 S5
Analysis from: 2/24/2020 10:13:14 PM
File: _2020-02-24_22-13.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155975

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.55	33.112	0.954	fluoride
2	3.96	1.78	17.395	0.907	chloride
3	4.54	3.97	43.459	0.918	nitrite
4	5.44	0.48	6.884	0.969	bromide
5	6.10	3.47	48.019	0.952	nitrate
6	7.78	0.78	12.807	0.838	phosphate
7	8.82	0.70	12.486	0.964	sulfate
7	15.00	14.72	174.163	6.503	

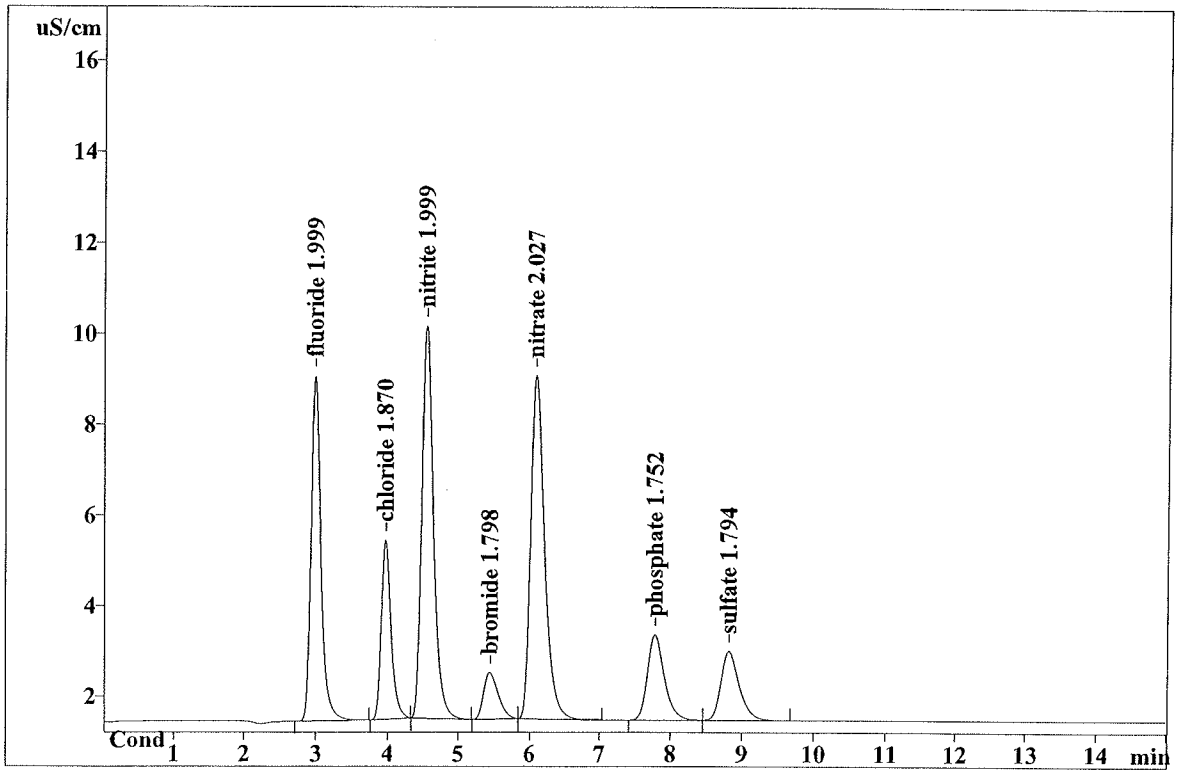
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:51 PM
Printed by: LDip

Ident: AB25-08 S6
Analysis from: 2/24/2020 10:30:19 PM
File: _2020-02-24_22-30.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155976

SAMPLE: METHOD300/9056/4110B
: 2.0 PPM
Vial number: 8
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	7.62	70.876	1.999	fluoride
2	3.96	3.97	37.900	1.870	chloride
3	4.54	8.67	97.125	1.999	nitrite
4	5.44	1.03	14.483	1.798	bromide
5	6.09	7.58	105.026	2.027	nitrate
6	7.78	1.88	30.496	1.752	phosphate
7	8.82	1.52	26.375	1.794	sulfate
7	15.00	32.27	382.281	13.240	

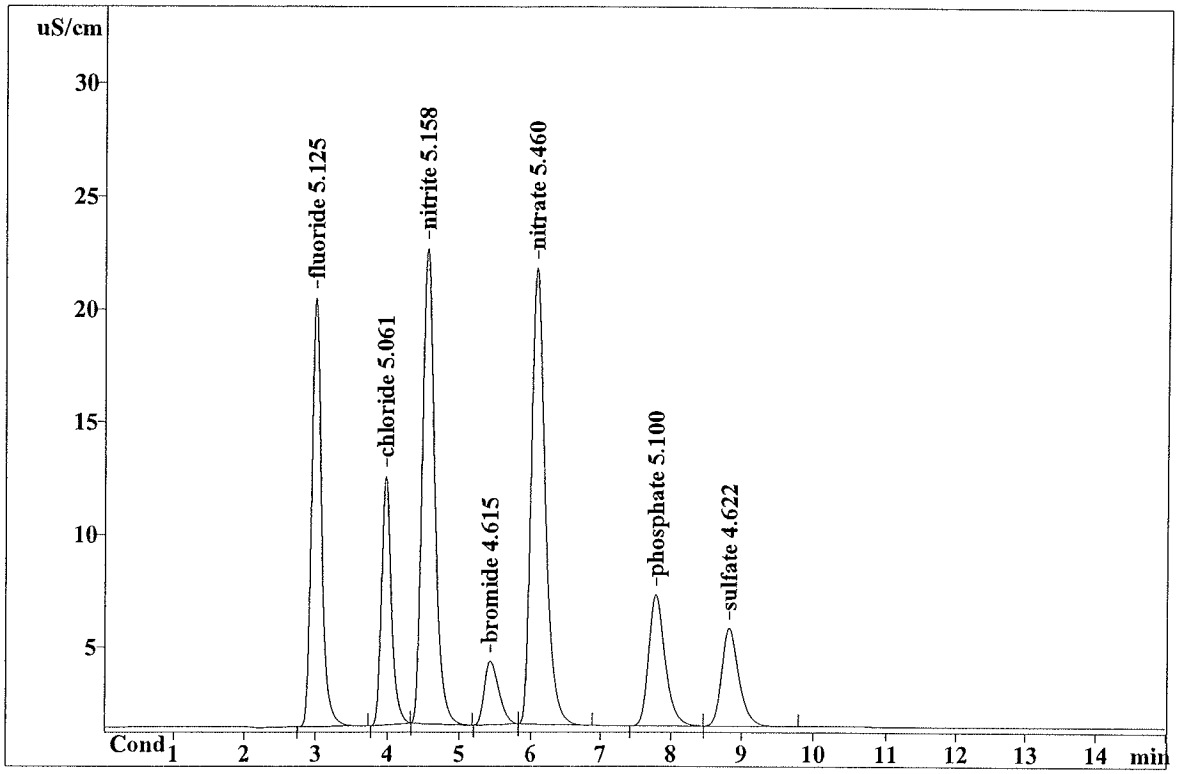
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:20:59 PM
Printed by: LDip

Ident: AB25-09 S7
Analysis from: 2/24/2020 10:47:23 PM
File: _2020-02-24_22-47.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155977

SAMPLE: METHOD300/9056/4110B
: 5.0 PPM
Vial number: 9
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.99	19.07	183.749	5.125	fluoride
2	3.96	11.09	105.892	5.061	chloride
3	4.54	21.13	253.850	5.158	nitrite
4	5.43	2.84	40.339	4.615	bromide
5	6.07	20.29	287.039	5.460	nitrate
6	7.78	5.85	95.279	5.100	phosphate
7	8.82	4.37	73.698	4.622	sulfate
7	15.00	84.64	1039.846	35.141	

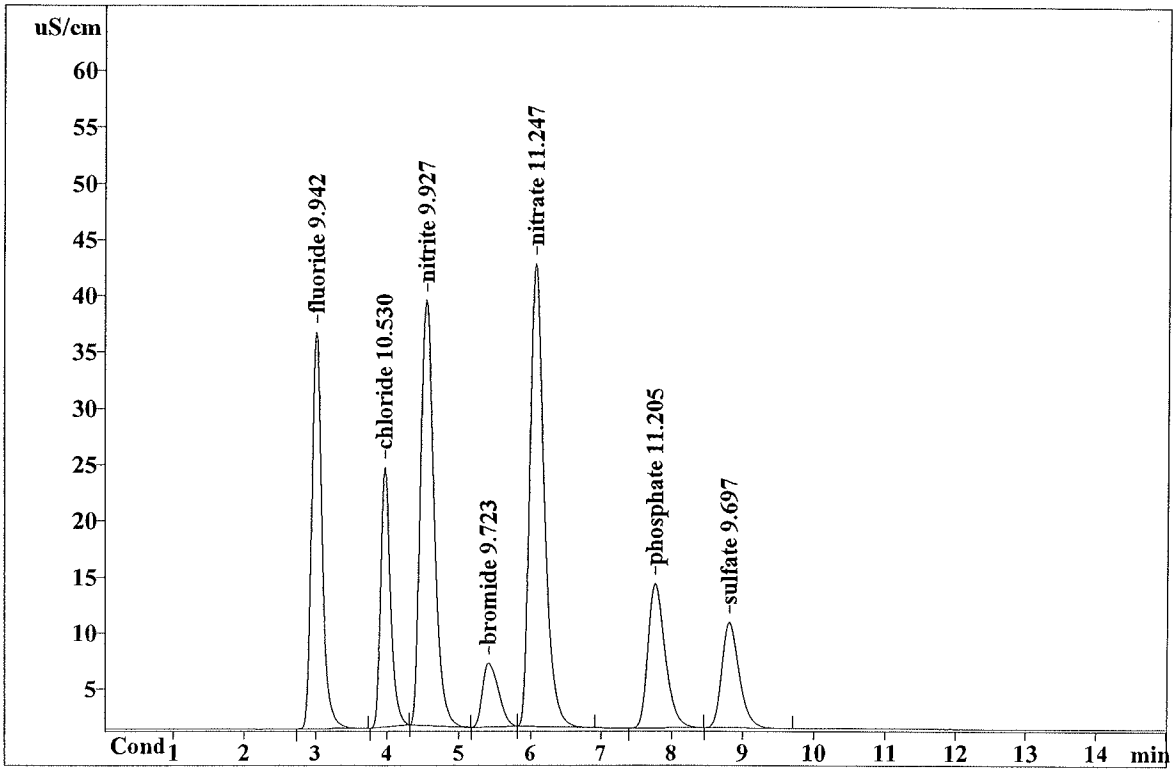
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:07 PM
Printed by: LDip

Ident: AB25-10 S8
Analysis from: 2/24/2020 11:04:28 PM
File: _2020-02-24_23-04.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155978

SAMPLE: METHOD300/9056/4110B
: 10.0 PPM
Vial number: 10
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.00	35.35	357.692	9.942	fluoride
2	3.96	23.13	222.415	10.530	chloride
3	4.54	37.88	490.473	9.927	nitrite
4	5.41	5.69	87.226	9.723	bromide
5	6.06	41.27	593.856	11.247	nitrate
6	7.77	12.84	213.432	11.205	phosphate
7	8.81	9.41	158.621	9.697	sulfate
7	15.00	165.57	2123.716	72.271	

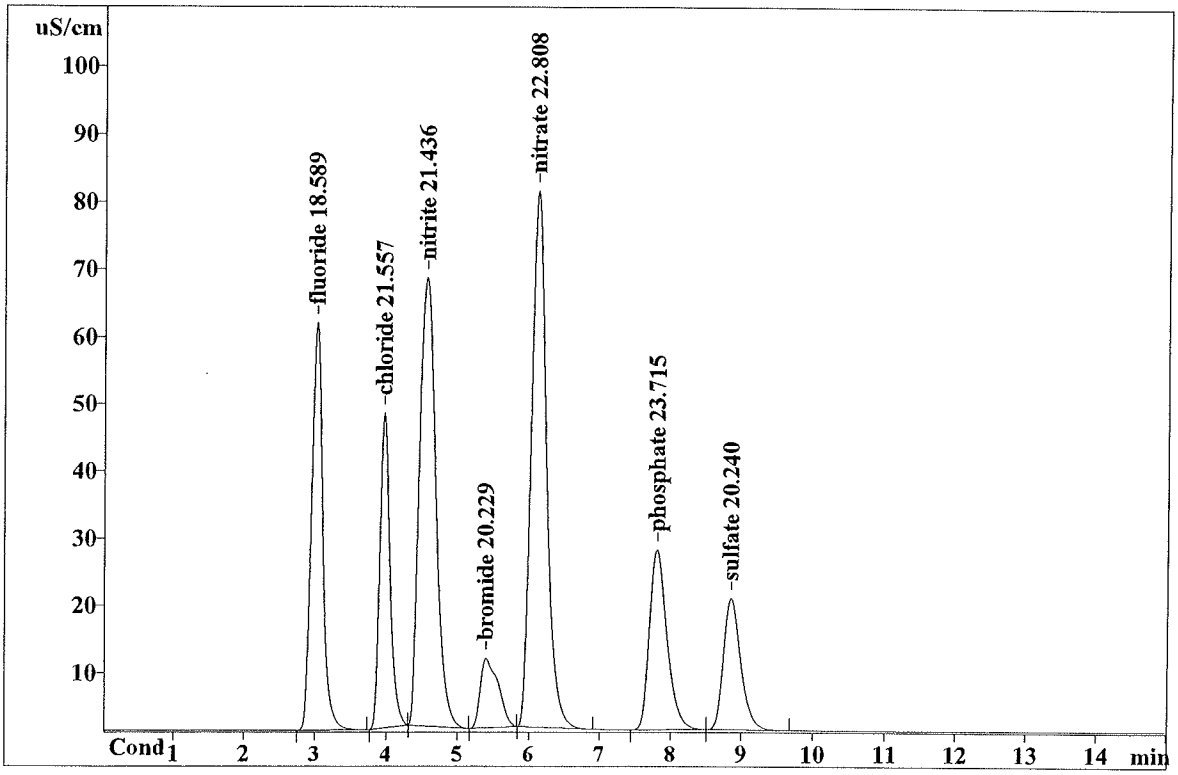
This report has been created by IC Net
METROHM LTD

Report date: 2/25/2020 12:21:13 PM
Printed by: LDip

Ident: AB25-11 S9
Analysis from: 2/24/2020 11:21:33 PM
File: _2020-02-24_23-21.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155979

SAMPLE: METHOD300/9056/4110B
: 20.0 PPM
Vial number: 11
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	60.60	669.957	18.589	fluoride
2	3.96	46.92	457.371	21.557	chloride
3	4.55	66.71	1061.515	21.436	nitrite
4	5.40	10.32	183.643	20.229	bromide
5	6.11	79.75	1206.835	22.808	nitrate
6	7.80	26.69	455.548	23.715	phosphate
7	8.85	19.55	335.027	20.240	sulfate
7	15.00	310.55	4369.897	148.572	

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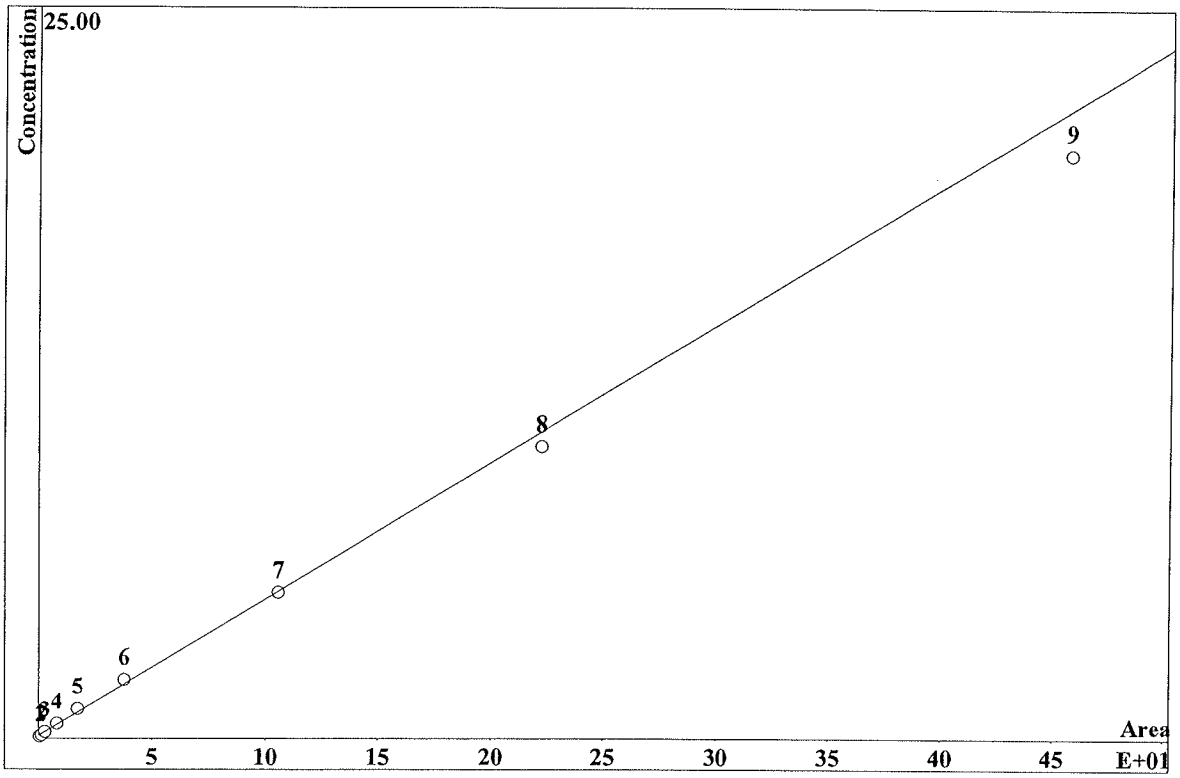
TK 02/26/20

CALIBRATION OF COMPONENT chloride

Method: ICD0-B24.mtw
Equation: Q = 0.0469332·A + 0.0909434
RSD: 7.233 %
Correlation coefficient: 0.998906

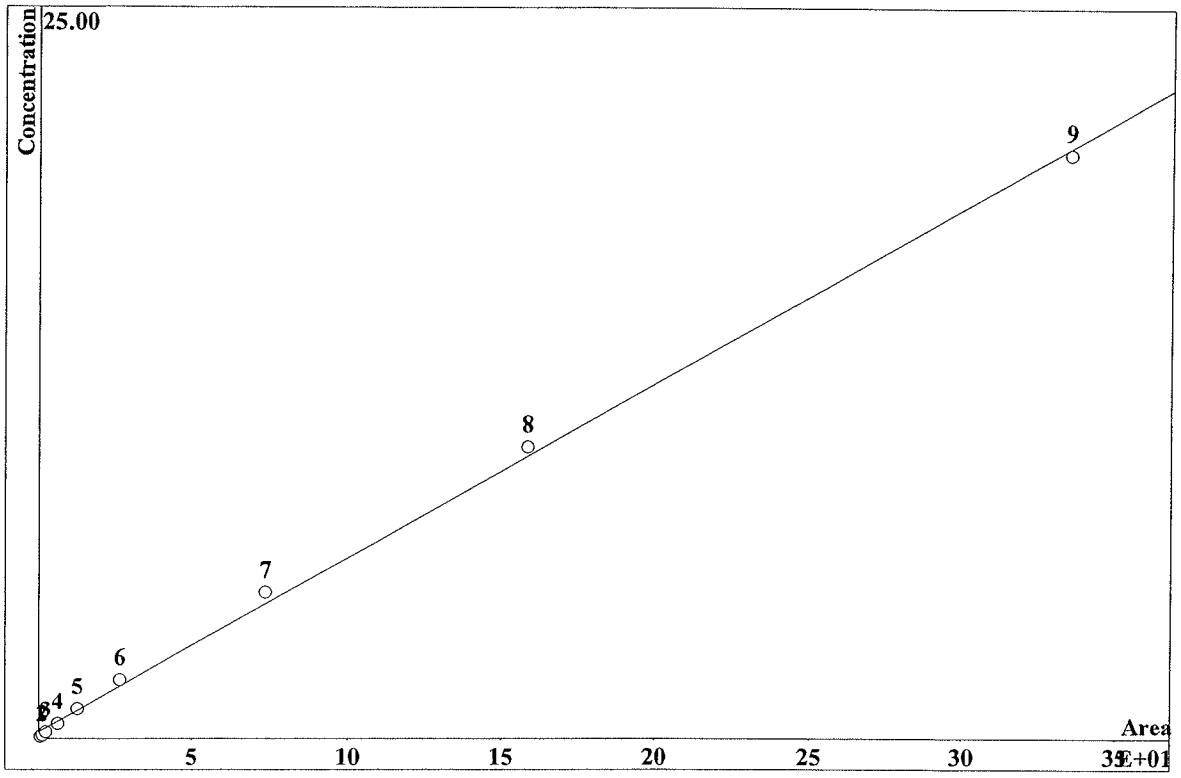


K3 = 0 K2 = 0 K1 = 0.0469332 K0 = 0.0909434
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.08183	0.852	0.05	1	3.96	Yes	_2020-02-24_2□
2	0.1492	1.57	0.1	1	3.96	Yes	_2020-02-24_2□
3	0.3042	3.121	0.2	1	3.96	Yes	_2020-02-24_2□
4	0.8241	8.273	0.5	1	3.96	Yes	_2020-02-24_2□
5	1.778	17.39	1	1	3.96	Yes	_2020-02-24_2□
6	3.966	37.9	2	1	3.96	Yes	_2020-02-24_2□
7	11.09	105.9	5	1	3.96	Yes	_2020-02-24_2□
8	23.13	222.4	10	1	3.96	No	_2020-02-24_2
9	46.92	457.4	20	1	3.96	No	_2020-02-24_2

CALIBRATION OF COMPONENT sulfate

Method: ICD0-B24.mtw
Equation: Q = 0.0597613·A + 0.217884
RSD: 5.948 %
Correlation coefficient: 0.999363



K3 = 0 K2 = 0 K1 = 0.0597613 K0 = 0.217884
Base: Area
Ref.channel: Cond
ISTD:
Formula: Linear
Weight: 1

Level	Height	Area	Conc.	Vol/Dil	Retention	Used	File
1	0.04145	0.8494	0.05	1	8.83	Yes	_2020-02-24_20
2	0.07188	1.412	0.1	1	8.83	Yes	_2020-02-24_20
3	0.1354	2.548	0.2	1	8.83	Yes	_2020-02-24_20
4	0.3422	6.256	0.5	1	8.83	Yes	_2020-02-24_20
5	0.6991	12.49	1	1	8.83	Yes	_2020-02-24_20
6	1.523	26.37	2	1	8.83	Yes	_2020-02-24_20
7	4.368	73.7	5	1	8.83	Yes	_2020-02-24_20
8	9.407	158.6	10	1	8.83	Yes	_2020-02-24_2
9	19.55	335	20	1	8.83	Yes	_2020-02-24_2

SECOND SOURCE VERIFICATION

IC Result Check FormVersion : B24/AB25(2020)

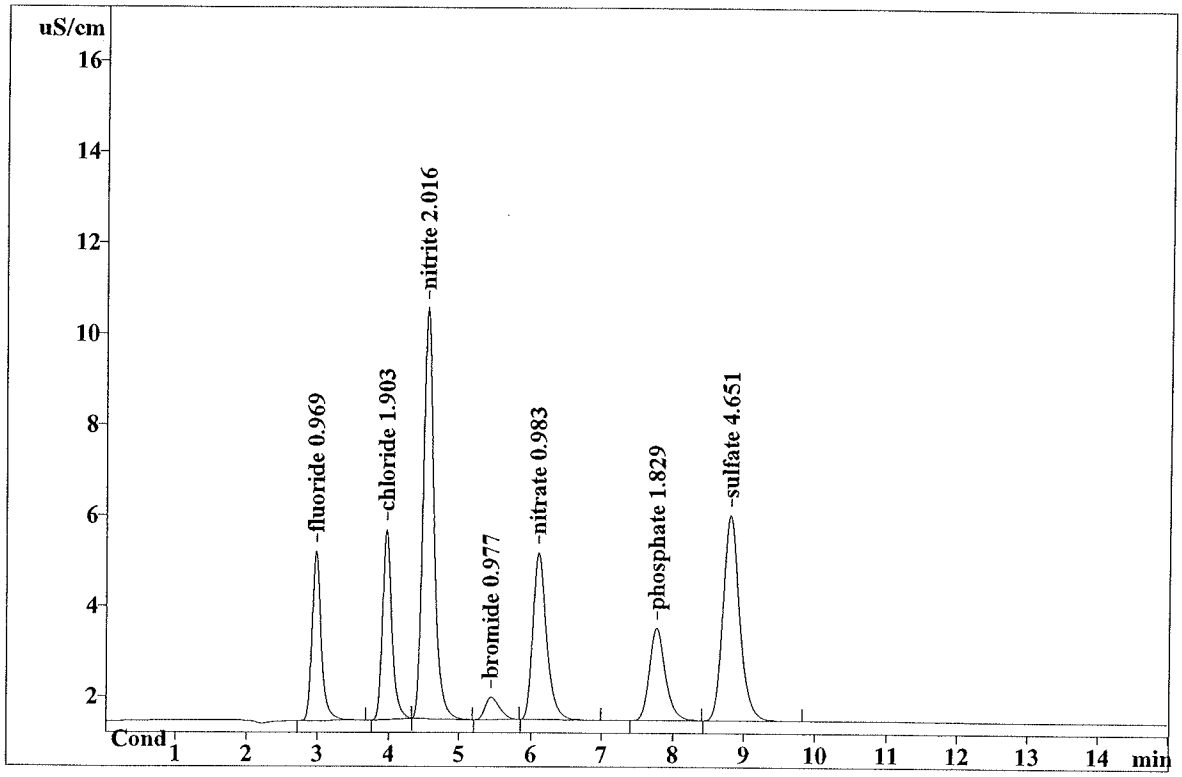
LFID	LSID	Selection	phosphate	nitrite	nitrate	iodide	fluoride	chloride	bromide	sulfate	RawNetID	DF
AB25-01	IB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-24_20-30	1
AB25-12	ICV	PINOFCBS	91.5%	100.8%	98.3%	0%*	96.9%	95.1%	97.7%	93%	_2020-02-24_23-38	1
AB25-13	ICV1	PINOFCBS	88.2%*	95.5%	97%	0%*	98.3%	91.8%	98.1%	96.4%	_2020-02-24_23-55	1
AB25-14	ICB	PINOFCBS	0	0	0	0	0	0	0	0	_2020-02-25_00-12	1

Report date: 2/25/2020 12:21:18 PM
Printed by: LDip

Ident: AB25-12 ICV
Analysis from: 2/24/2020 11:38:38 PM
File: _2020-02-24_23-38.chw Last save: 2/25/2020 12:15:06 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155980

SAMPLE: METHOD300/9056/4110B
:
Vial number: 12
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.97	3.75	33.675	0.969	fluoride
2	3.96	4.21	38.609	1.903	chloride
3	4.53	9.07	97.933	2.016	nitrite
4	5.44	0.50	6.951	0.977	bromide
5	6.10	3.69	49.671	0.983	nitrate
6	7.76	2.05	31.988	1.829	phosphate
7	8.80	4.54	74.179	4.651	sulfate
7	15.00	27.80	333.006	13.328	

This report has been created by IC Net
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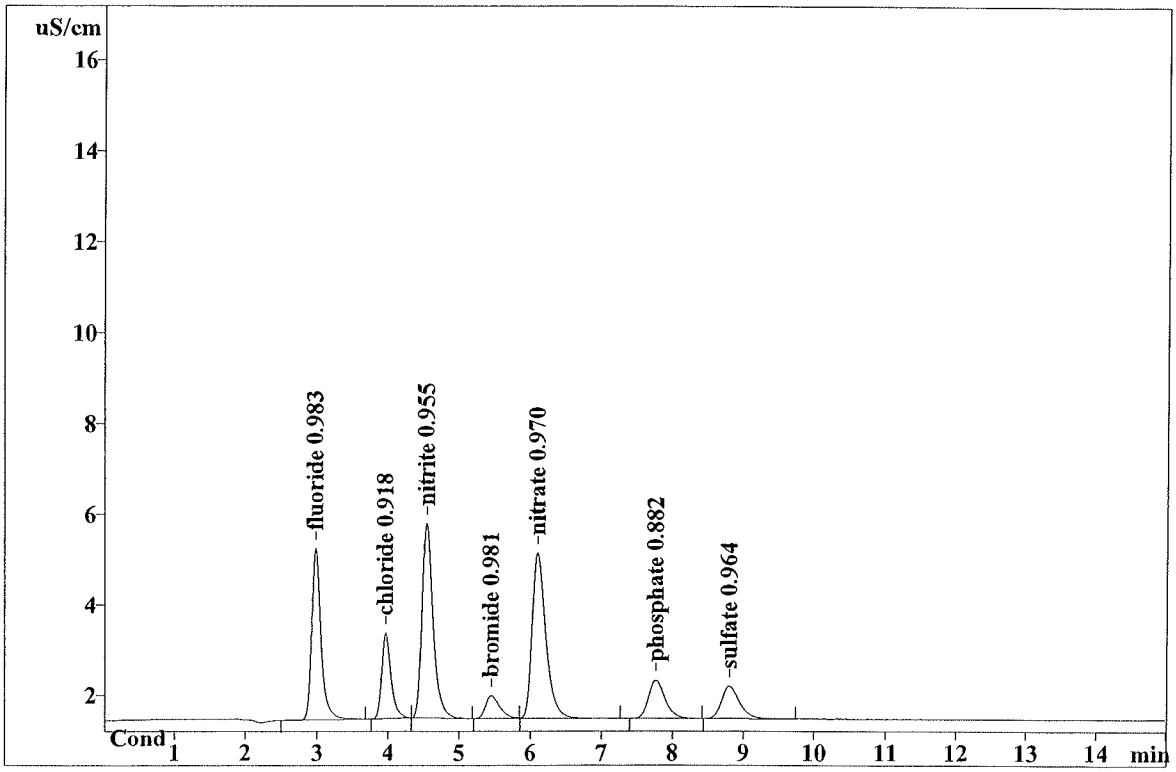
Report date: 2/25/2020 12:21:23 PM
Printed by: LDip

Ident: AB25-13 ICV1
Analysis from: 2/24/2020 11:55:43 PM
File: _2020-02-24_23-55.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155981

SAMPLE: METHOD300/9056/4110B
: 1.0 PPM
Vial number: 13
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.98	3.79	34.158	0.983	fluoride
2	3.96	1.88	17.616	0.918	chloride
3	4.54	4.31	45.313	0.955	nitrite
4	5.45	0.51	6.985	0.981	bromide
5	6.10	3.65	48.958	0.970	nitrate
6	7.77	0.85	13.652	0.882	phosphate
7	8.80	0.72	12.482	0.964	sulfate
7	15.00	15.70	179.164	6.652	

This report has been created by IC Net
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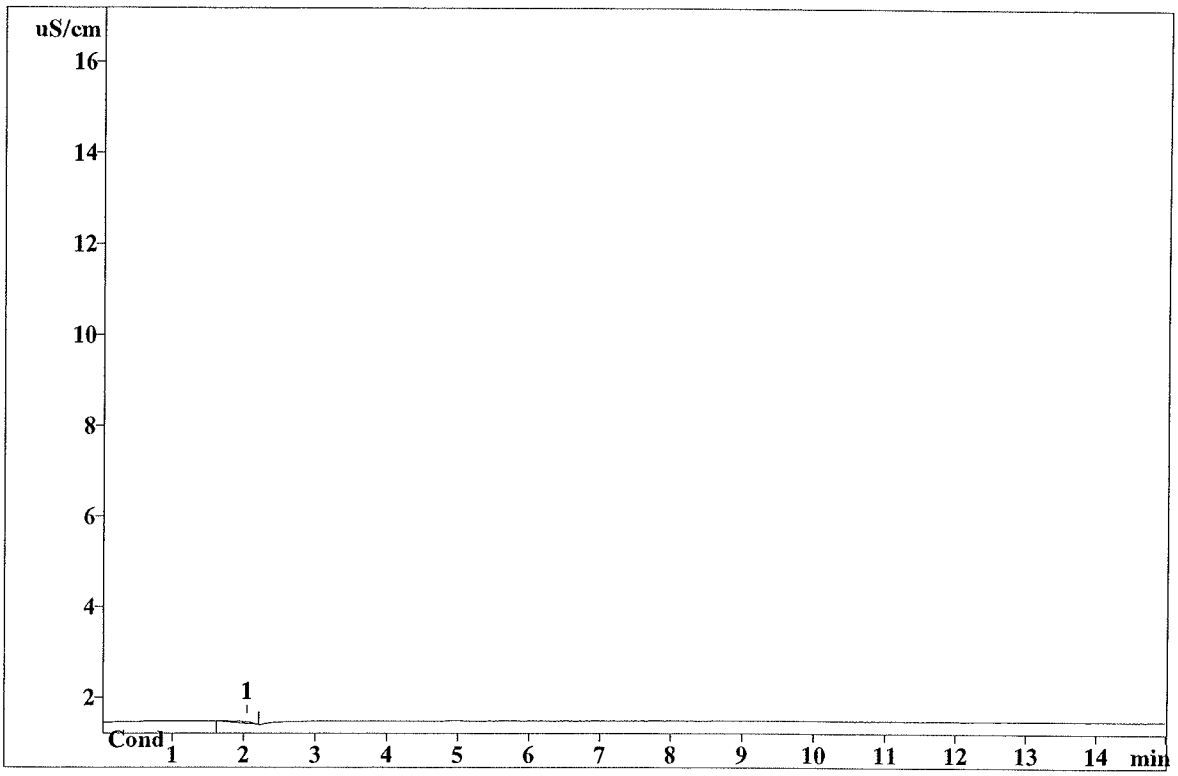
TR 02/26/20

Report date: 2/25/2020 12:21:29 PM
Printed by: LDip

Ident: AB25-14 ICB
Analysis from: 2/25/2020 12:12:47 AM
File: _2020-02-25_00-12.chw Last save: 2/25/2020 12:15:07 PM

Method: ICD0-B24.mtw Last save: 2/24/2020 9:54:01 PM
Run operator: LDip
Analysis number: 155982

SAMPLE: METHOD300/9056/4110B
:
Vial number: 14
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.04	0.04	0.898	0.000	

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02/26/20

DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F210
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : CHLORIDE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF35-01	CCV769	94.5	06/26/2009:50
AF35-06	CCV771	95.4	06/26/2011:15
AF35-60	CCV781	102.7	06/27/2017:05
AF35-72	CCV783	96.1	06/27/2020:30
AF35-82	CCV785	95.5	06/27/2023:21

CCV Acceptance Criteria: 90-110%

Continuing Calibration Summary Form

Client : CDM SMITH
Project : VA SALT LAKE CITY
SDG : 20F210
Method : E300.0
ICAL Ref. : 20AB25
InstrumentID: DO
Parameter : SULFATE

LFID	LSID	Recovery (%)	AnalysisDateTime
AF35-01	CCV769	92.1	06/26/2009:50
AF35-06	CCV771	92.4	06/26/2011:15
AF35-60	CCV781	99.1	06/27/2017:05
AF35-72	CCV783	96.1	06/27/2020:30
AF35-82	CCV785	96.2	06/27/2023:21

CCV Acceptance Criteria: 90-110%

IC Result Check FormVersion : 824/AB25(2020)

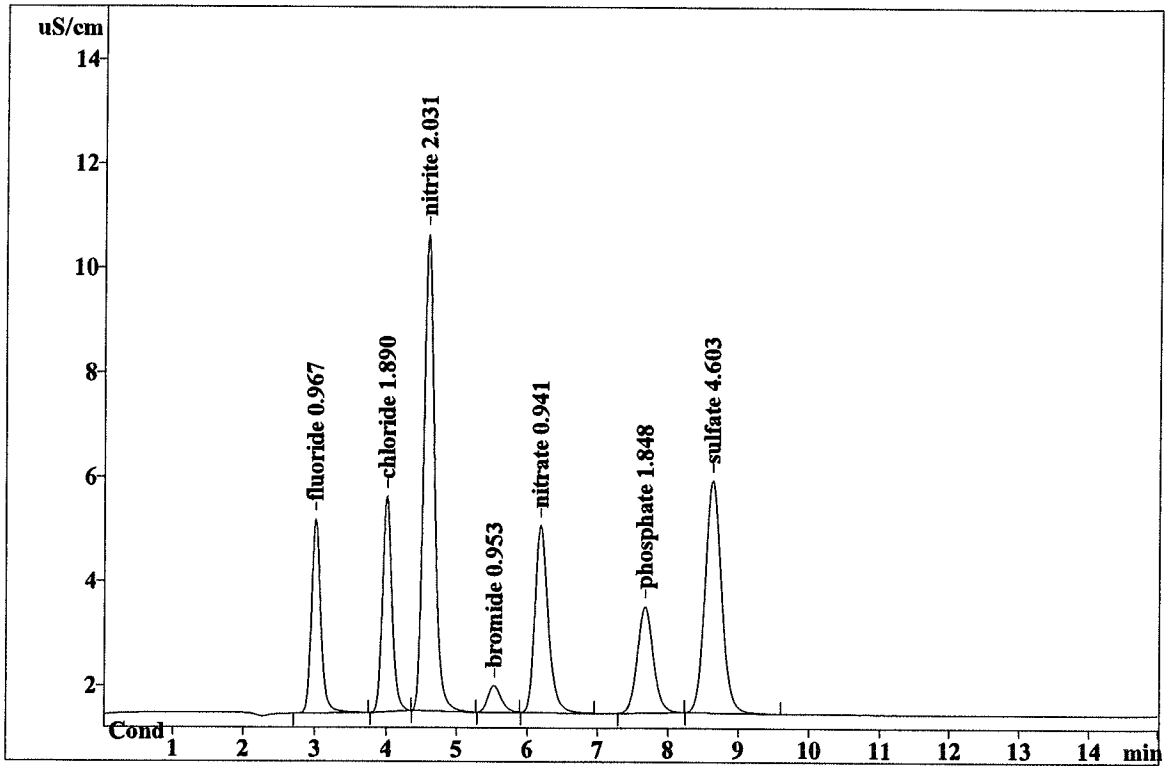
LFID	LSID	Selection	sulfate	nitrite	fluoride	iodide	nitrate	chloride	bromide	phosphate	RawNetID	DF
AF35-01	CCV769	SIFONCBP	92.1%	101.5%	96.7%	0%*	94.1%	94.5%	95.3%	92.4%	_2020-06-26_09-50	1
AF35-02	CCB769	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-26_10-07	1
AF35-06	CCV771	SIFONCBP	92.4%	102%	97%	0%*	94%	95.4%	95.3%	93.6%	_2020-06-26_11-15	1
AF35-07	CCB771	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-26_11-32	1
AF35-18	CCV773	SIFONCBP	92.7%	102.2%	97.4%	0%*	94%	96.2%	96.5%	93%	_2020-06-26_15-00	1
AF35-19	CCB773	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-26_15-17	1
AF35-30	CCV775	SIFONCBP	99.5%	99.5%	96%	0%*	93.7%	100.3%	93.5%	92.7%	_2020-06-27_08-30	1
AF35-31	CCB775	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_08-47	1
AF35-36	CCV777	SIFONCBP	92.9%	102.2%	97.3%	0%*	94.1%	95.1%	95.1%	95%	_2020-06-27_10-12	1
AF35-37	CCB777	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_10-30	1
AF35-48	CCV779	SIFONCBP	94.4%	102.7%	97.3%	0%*	94.2%	97%	96.1%	94.3%	_2020-06-27_13-41	1
AF35-49	CCB779	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_13-58	1
AF35-60	CCV781	SIFONCBP	99.1%	102.9%	97.4%	0%*	94.5%	102.7%	95.8%	95.7%	_2020-06-27_17-05	1
AF35-61	CCB781	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_17-23	1
AF35-72	CCV783	SIFONCBP	96.1%	102.8%	98.3%	0%*	95%	96.1%	95.3%	94.7%	_2020-06-27_20-30	1
AF35-73	CCB783	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_20-47	1
AF35-82	CCV785	SIFONCBP	96.2%	101.4%	98%	0%*	94.7%	95.5%	95%	93.9%	_2020-06-27_23-21	1
AF35-83	CCB785	SIFONCBP	0	0	0	0	0	0	0	0	_2020-06-27_23-38	1

Report date: 6/29/2020 1:58:39 PM
Printed by: TWangc

Ident: AF35-01 CCV769
Analysis from: 6/26/2020 9:50:04 AM
File: _2020-06-26_09-50.chw Last save: 6/26/2020 10:05:01 AM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159472

SAMPLE: METHOD300/9056/4110B
:
Vial number: 1
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.01	3.71	33.593	0.967	fluoride
2	4.00	4.12	38.341	1.890	chloride
3	4.58	9.13	98.673	2.031	nitrite
4	5.53	0.51	6.729	0.953	bromide
5	6.19	3.58	47.402	0.941	nitrate
6	7.66	2.03	32.344	1.848	phosphate
7	8.63	4.45	73.371	4.603	sulfate
7	15.00	27.54	330.452	13.232	

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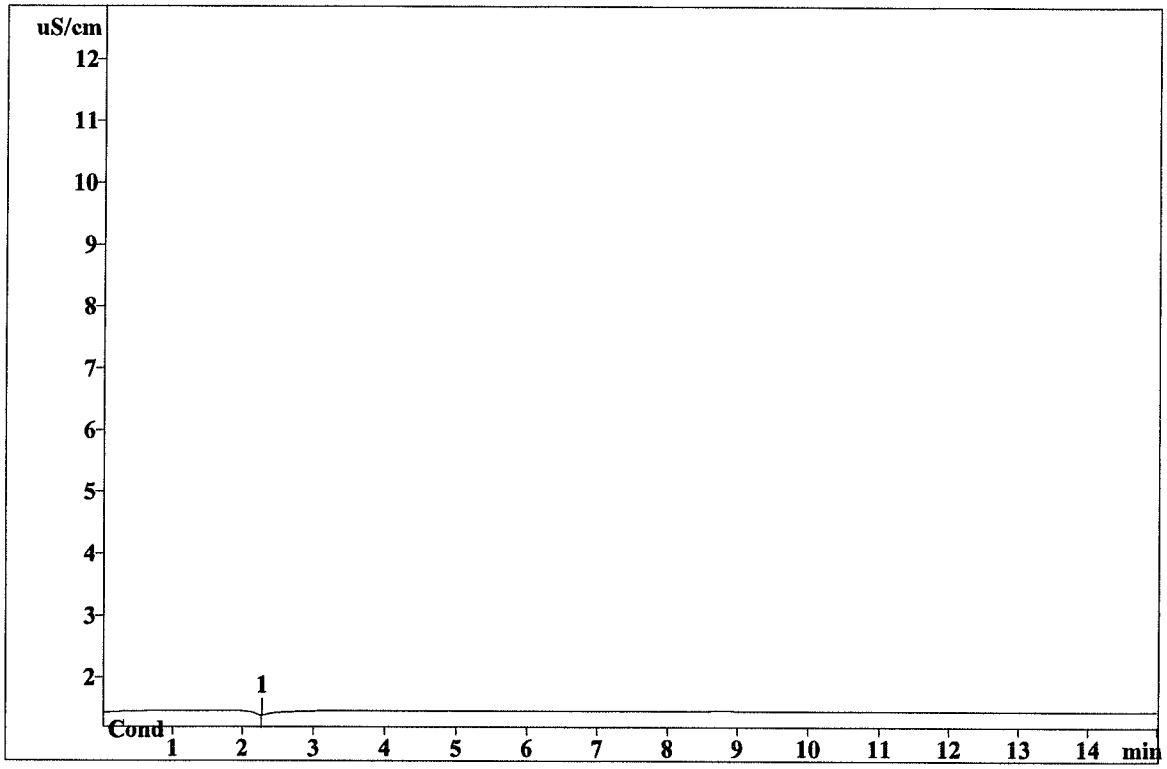
Report date: 6/29/2020 1:58:59 PM
Printed by: TWangc

Ident: AF35-02 CCB769
Analysis from: 6/26/2020 10:07:09 AM
File: _2020-06-26_10-07.chw Last save: 6/26/2020 10:22:05 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159473

SAMPLE: METHOD300/9056/4110B
:
Vial number: 2
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	0.000	0.000	

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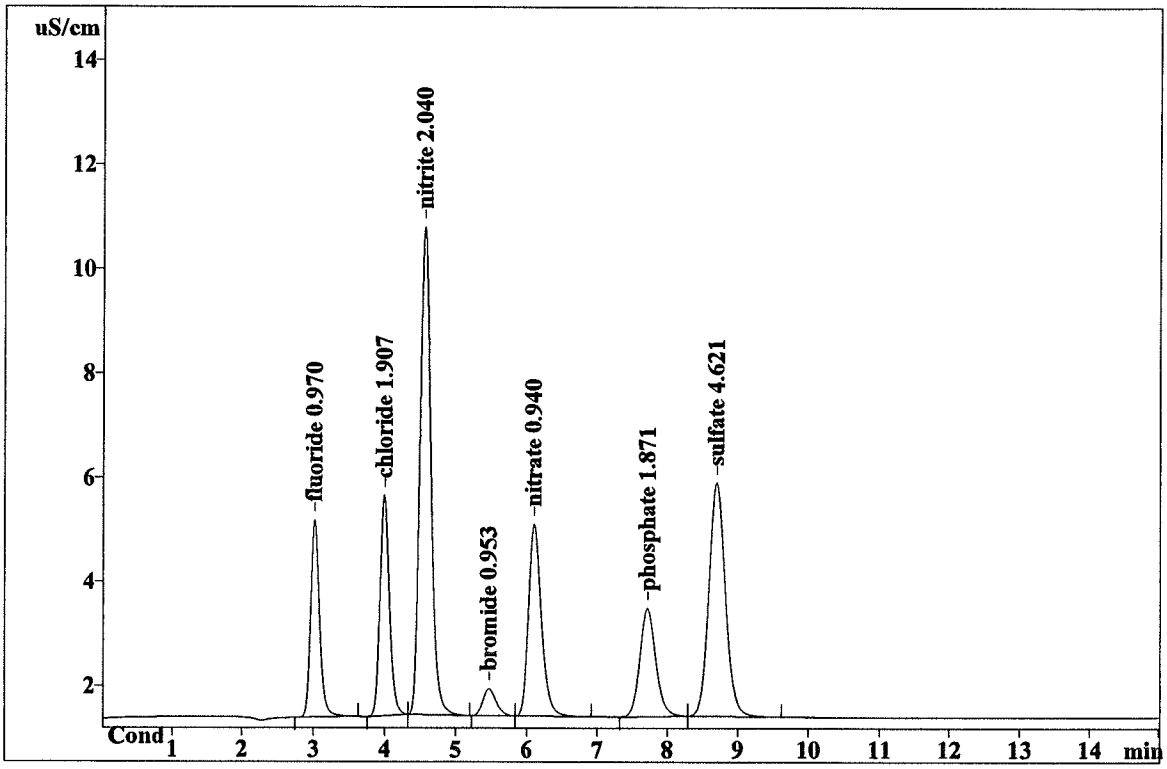
Report date: 6/29/2020 2:03:06 PM
Printed by: TWangc

Ident: AF35-06 CCV771
Analysis from: 6/26/2020 11:15:27 AM
File: _2020-06-26_11-15.chw Last save: 6/26/2020 11:30:24 AM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159477

SAMPLE: METHOD300/9056/4110B
:
Vial number: 6
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.02	3.79	33.700	0.970	fluoride
2	3.99	4.23	38.698	1.907	chloride
3	4.56	9.36	99.145	2.040	nitrite
4	5.47	0.52	6.737	0.953	bromide
5	6.10	3.69	47.389	0.940	nitrate
6	7.72	2.07	32.794	1.871	phosphate
7	8.69	4.48	73.677	4.621	sulfate
7	15.00	28.12	332.139	13.303	

This report has been created by IC Net
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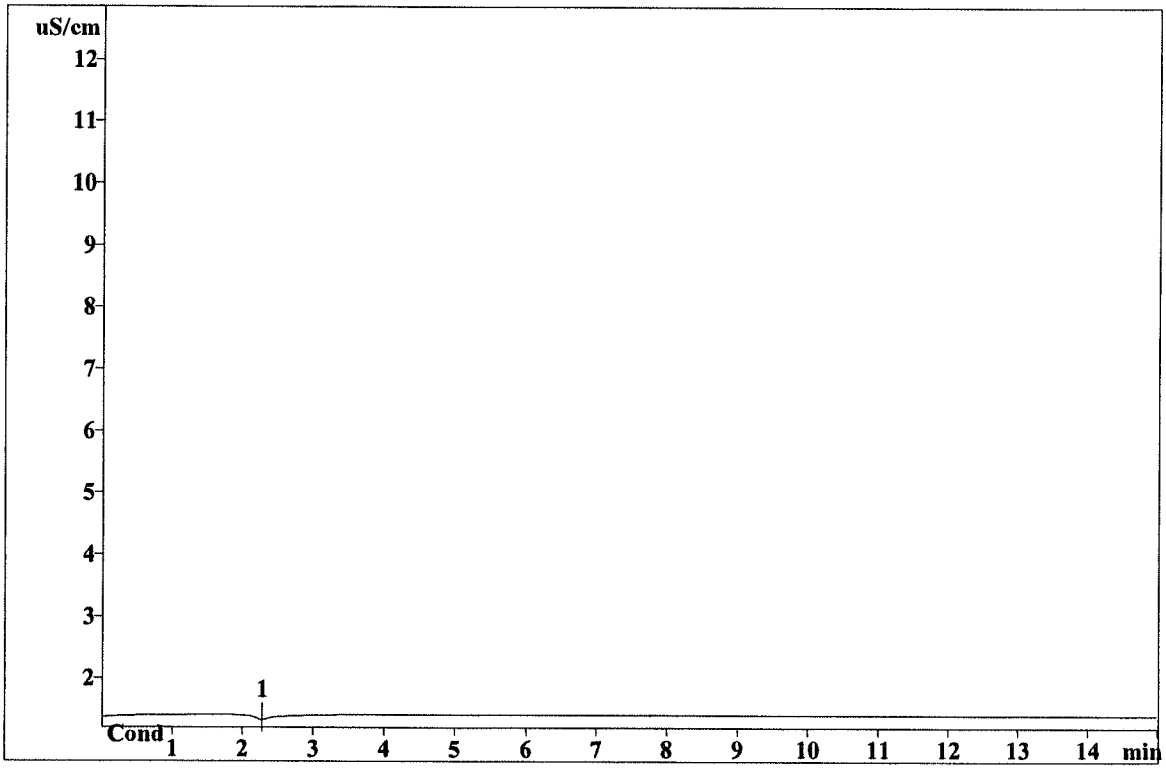
Report date: 6/29/2020 2:03:15 PM
Printed by: TWangc

Ident: AF35-07 CCB771
Analysis from: 6/26/2020 11:32:32 AM
File: _2020-06-26_11-32.chw Last save: 6/26/2020 11:47:28 AM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159478

SAMPLE: METHOD300/9056/4110B
:
Vial number: 7
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.27	-0.00	0.000	0.000	

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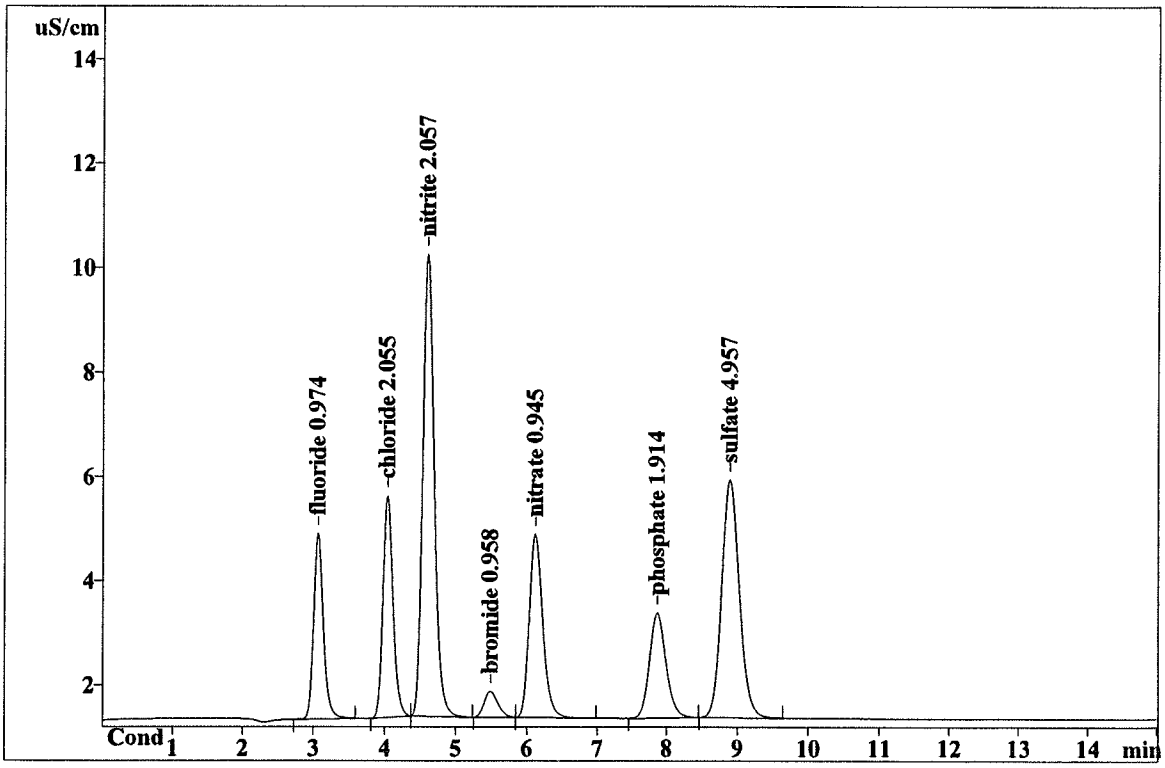
Report date: 6/29/2020 2:01:11 PM
Printed by: TWangc

Ident: AF35-60 CCV781
Analysis from: 6/27/2020 5:05:57 PM
File: _2020-06-27_17-05.chw Last save: 6/27/2020 5:20:53 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159531

SAMPLE: METHOD300/9056/4110B
:
Vial number: 60
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.06	3.56	33.861	0.974	fluoride
2	4.03	4.24	41.842	2.055	chloride
3	4.60	8.85	99.984	2.057	nitrite
4	5.49	0.50	6.782	0.958	bromide
5	6.12	3.51	47.646	0.945	nitrate
6	7.86	2.01	33.634	1.914	phosphate
7	8.88	4.56	79.293	4.957	sulfate
7	15.00	27.22	343.041	13.861	

This report has been created by IC Net
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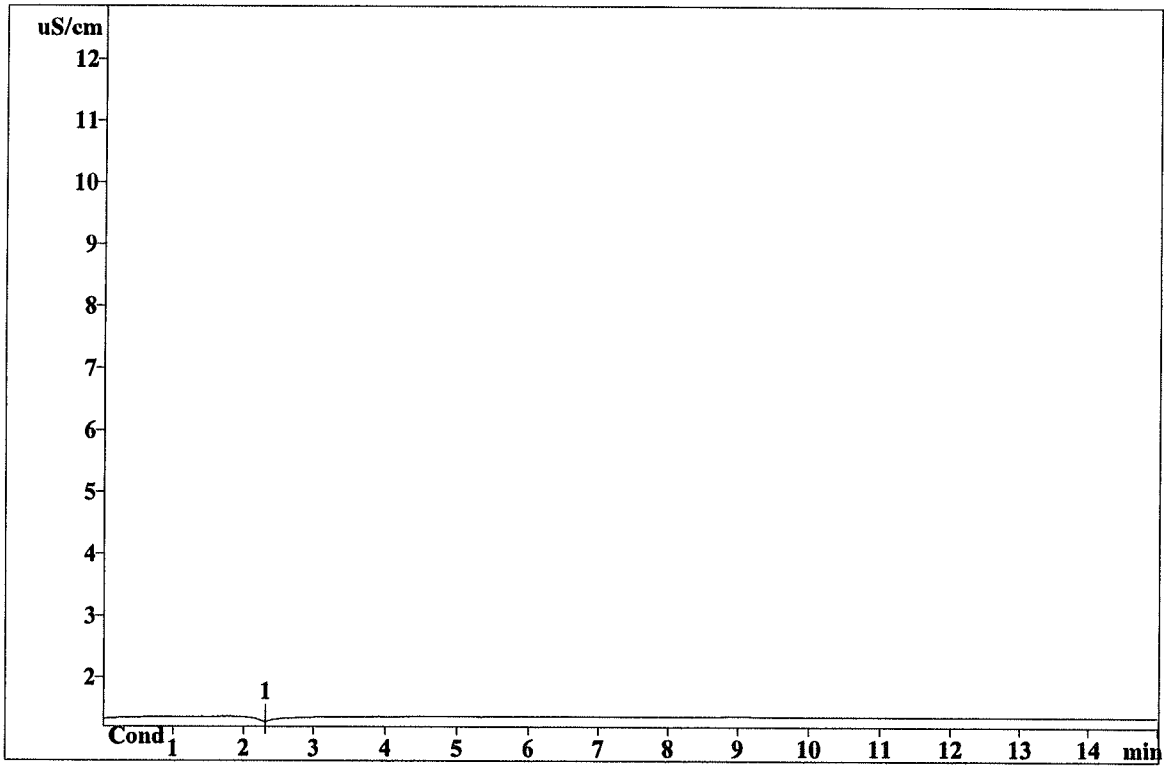
Report date: 6/29/2020 2:01:20 PM
Printed by: TWangc

Ident: AF35-61 CCB781
Analysis from: 6/27/2020 5:23:01 PM
File: _2020-06-27_17-23.chw Last save: 6/27/2020 5:37:58 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159532

SAMPLE: METHOD300/9056/4110B
:
Vial number: 61
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.31	-0.00	-0.000	0.000	

This report has been created by IC Net
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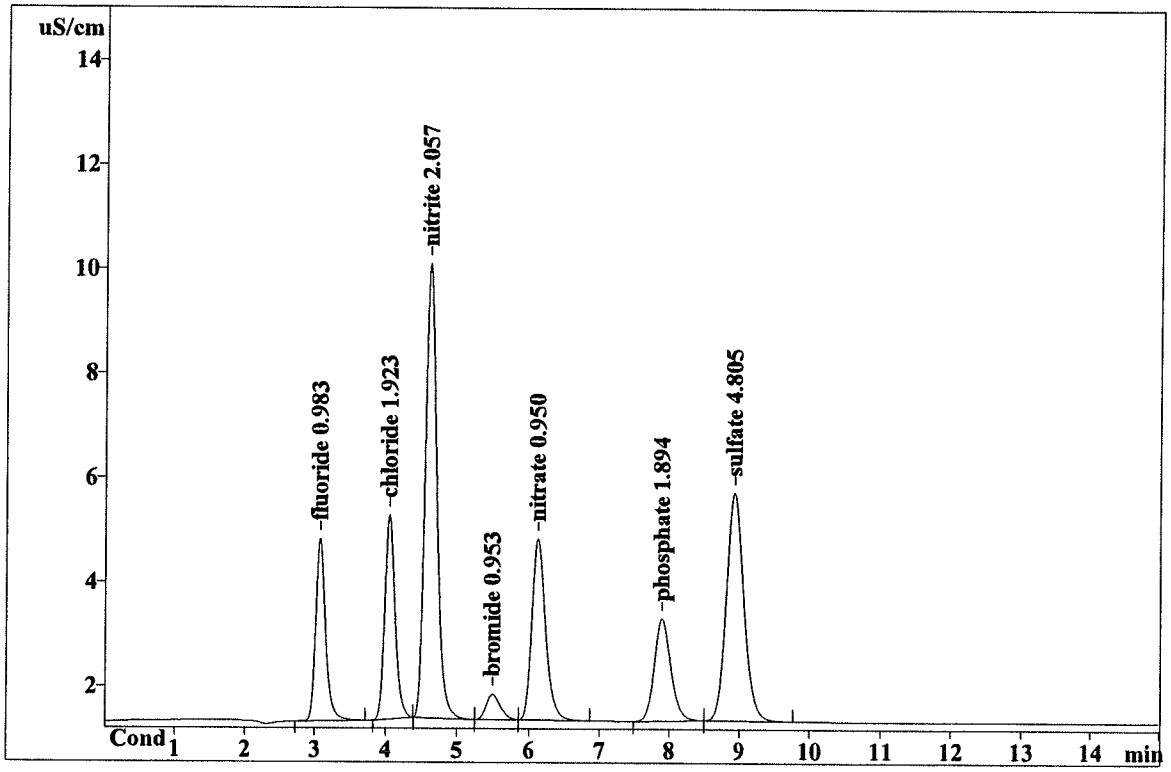
Report date: 6/29/2020 2:01:31 PM
Printed by: TWangc

Ident: AF35-72 CCV783
Analysis from: 6/27/2020 8:30:51 PM
File: _2020-06-27_20-30.chw Last save: 6/27/2020 8:45:48 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159543

SAMPLE: METHOD300/9056/4110B
:
Vial number: 72
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.07	3.50	34.173	0.983	fluoride
2	4.04	3.90	39.027	1.923	chloride
3	4.61	8.70	99.978	2.057	nitrite
4	5.50	0.49	6.733	0.953	bromide
5	6.12	3.48	47.881	0.950	nitrate
6	7.89	1.97	33.239	1.894	phosphate
7	8.92	4.37	76.758	4.805	sulfate
7	15.00	26.41	337.789	13.564	

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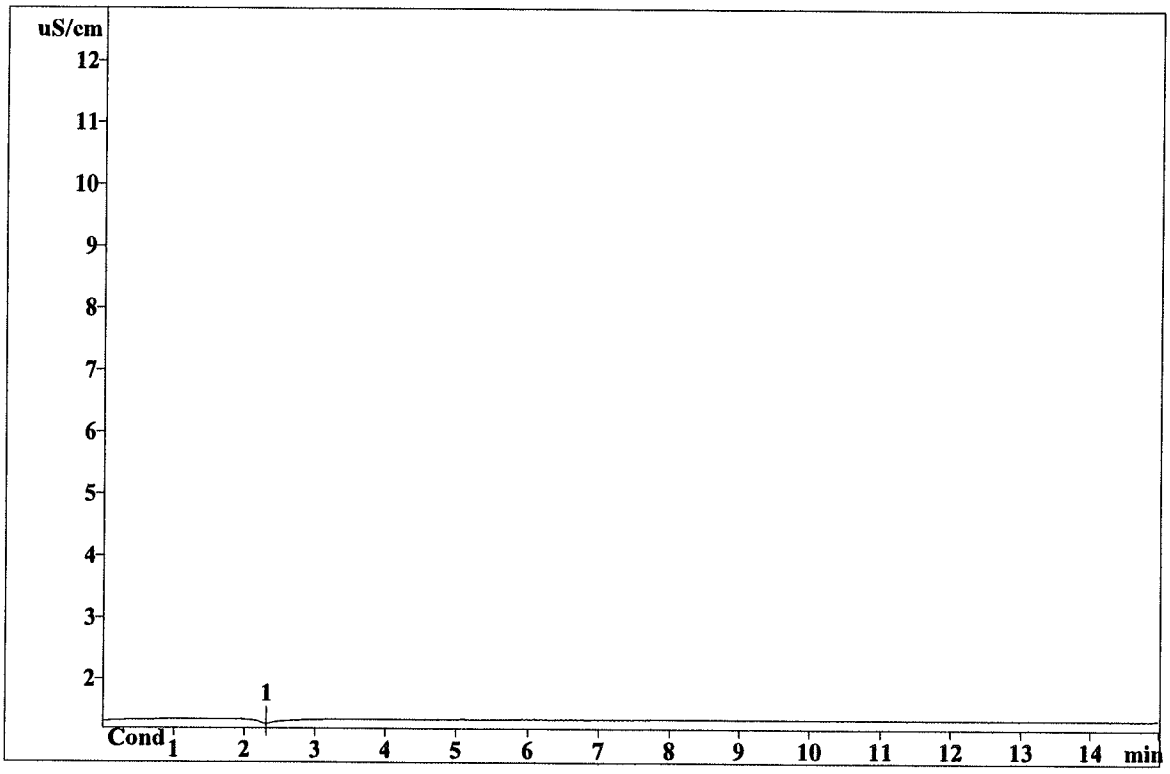
Report date: 6/29/2020 2:01:40 PM
Printed by: TWangc

Ident: AF35-73 CCB783
Analysis from: 6/27/2020 8:47:56 PM
File: _2020-06-27_20-47.chw Last save: 6/27/2020 9:02:53 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159544

SAMPLE: METHOD300/9056/4110B
:
Vial number: 73
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.30	-0.00	-0.000	0.000	

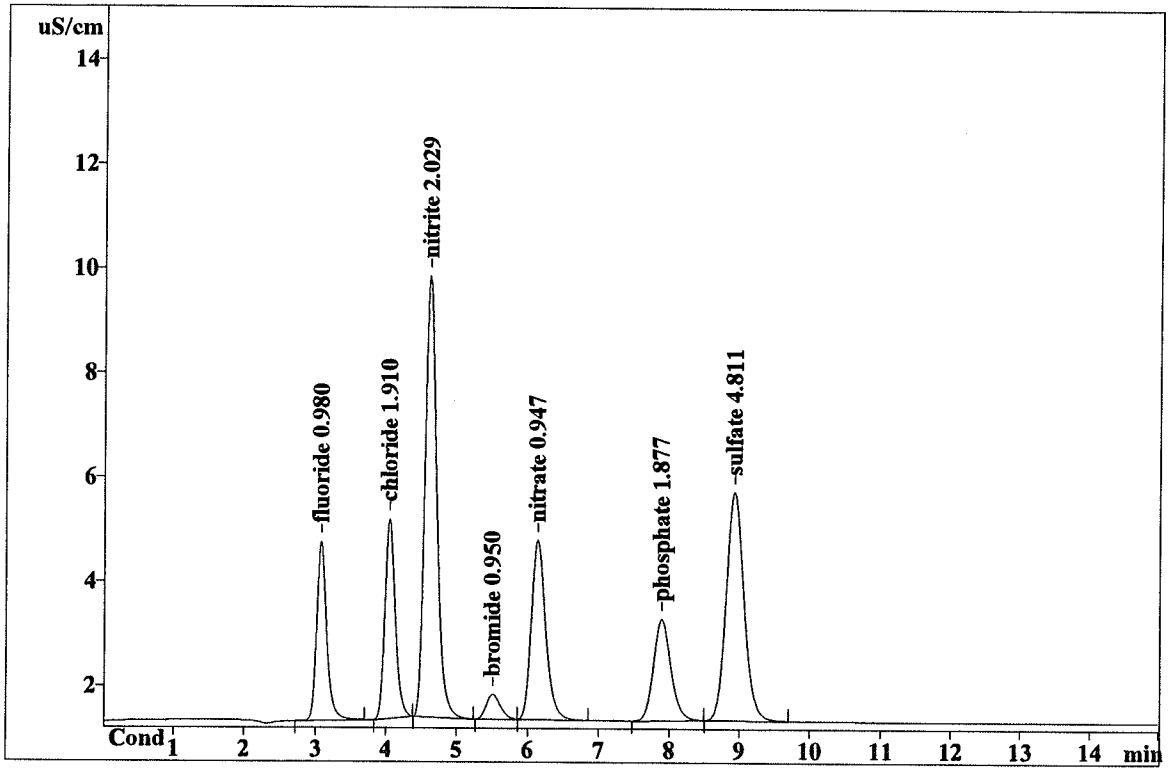
This report has been created by IC Net
METROHM LTD

Report date: 6/29/2020 2:01:53 PM
Printed by: TWangc

Ident: AF35-82 CCV785
Analysis from: 6/27/2020 11:21:37 PM
File: _2020-06-27_23-21.chw Last save: 6/27/2020 11:36:34 PM

Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159553

SAMPLE: METHOD300/9056/4110B
: 1
Vial number: 82
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

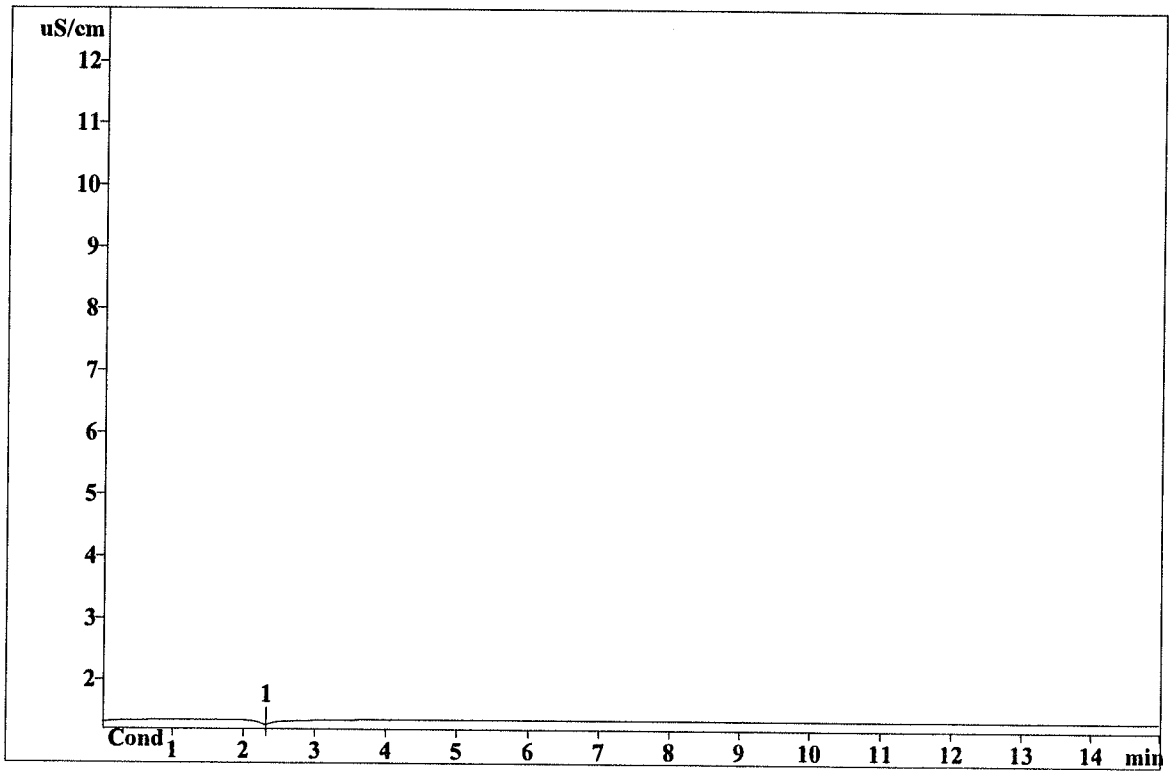
No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	3.07	3.43	34.068	0.980	fluoride
2	4.04	3.82	38.759	1.910	chloride
3	4.61	8.45	98.571	2.029	nitrite
4	5.50	0.48	6.706	0.950	bromide
5	6.13	3.43	47.748	0.947	nitrate
6	7.89	1.94	32.916	1.877	phosphate
7	8.92	4.37	76.850	4.811	sulfate
7	15.00	25.94	335.618	13.504	

This report has been created by IC Net
METROHM LTD

Report date: 6/29/2020 2:02:08 PM
Printed by: TWangc

Ident: AF35-83 CCB785
Analysis from: 6/27/2020 11:38:42 PM
File: _2020-06-27_23-38.chw Last save: 6/27/2020 11:53:39 PM
Modified!
Method: ICD0-B24.mtw Last save: 6/26/2020 9:52:30 AM
Run operator: TWangc
Analysis number: 159554

SAMPLE: METHOD300/9056/4110B
:
Vial number: 83
Volume: 1.0 µL
Dilution: 1.00
Amount: 1.0000



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.32	-0.00	-0.000	0.000	

This report has been created by IC Net
METROHM LTD

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

	Concentrations (ppm)
S_1	0.05
S_2	0.1
S_3	0.2
S_4	0.5
S_5	1.0
S_6	2.0
S_7	5.0
S_8	10.0
S_9	20.0

	LINEARITY (ppm)
F	10
Cl	5
NO_2	10
Br	20
NO_3	2
PO_4	5
SO_4	20

Book #: AD0-067
Instrument No.: D0
Pipette ID's: 039380124
SW3-02-02-02
439350100
Analytical Sequence: AB25
Method File: ICD0 - B24. mtw
Analytical Batch: N/A

SOP #	Rev. #
☑ EMAX-300.0	12
☑ EMAX-4110B	5
☑ EMAX-9056	9
☐ EMAX-	
STANDARDS ID	
ICAL	SW3B-11-42-03
ICV	SW3B-11-42-01
~~CCV~~ ICV1	SW3B-11-43-01
LCS	—
MS	—

Filters Lot #: Snap Seal Containers Lot #:
0.45 µm: 4 oz: 04119002
0.2 µm: 1.5 oz:

Column: Metrosep A Supp 5-100
Flow Rate: 0.70 ml/min

IC ELUENT PREPARATION Expiration Date: 03/20/20

Std ID	Aliquot	Final Vol*
SP2-01-07-01	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 03/21/20

Std ID	Aliquot	Final Vol*
SP2-01-22-02	100 mL	1 L

* Reagent Water ID: SWIA-08-21-09

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

Analyzed By: LO
Date: 2/24/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-02-24_20-30.chw	ICD0-B24.mtw	AB25-01 IB	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_20-47.chw	ICD0-B24.mtw	AB25-02 S0	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_21-04.chw	ICD0-B24.mtw	AB25-03 S1	3	1.0	1.0	1.0	100.0	1	METHOD300/9056/4110B	0.05 PPM
_2020-02-24_21-21.chw	ICD0-B24.mtw	AB25-04 S2	4	1.0	1.0	1.0	100.0	2	METHOD300/9056/4110B	0.1 PPM
_2020-02-24_21-39.chw	ICD0-B24.mtw	AB25-05 S3	5	1.0	1.0	1.0	100.0	3	METHOD300/9056/4110B	0.2 PPM
_2020-02-24_21-56.chw	ICD0-B24.mtw	AB25-06 S4	6	1.0	1.0	1.0	100.0	4	METHOD300/9056/4110B	0.5 PPM
_2020-02-24_22-13.chw	ICD0-B24.mtw	AB25-07 S5	7	1.0	1.0	1.0	100.0	5	METHOD300/9056/4110B	1.0 PPM
_2020-02-24_22-30.chw	ICD0-B24.mtw	AB25-08 S6	8	1.0	1.0	1.0	100.0	6	METHOD300/9056/4110B	2.0 PPM
_2020-02-24_22-47.chw	ICD0-B24.mtw	AB25-09 S7	9	1.0	1.0	1.0	100.0	7	METHOD300/9056/4110B	5.0 PPM
_2020-02-24_23-04.chw	ICD0-B24.mtw	AB25-10 S8	10	1.0	1.0	1.0	100.0	8	METHOD300/9056/4110B	10.0 PPM
_2020-02-24_23-21.chw	ICD0-B24.mtw	AB25-11 S9	11	1.0	1.0	1.0	100.0	9	METHOD300/9056/4110B	20.0 PPM
_2020-02-24_23-38.chw	ICD0-B24.mtw	AB25-12 ICV	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-02-24_23-55.chw	ICD0-B24.mtw	AB25-13 ICV1	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1.0 PPM
_2020-02-25_00-12.chw	ICD0-B24.mtw	AB25-14 ICB	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

FINAL 02/25/20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ION CHROMATOGRAPHY

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

Book #:	AD0-068
Instrument No.:	D0
Pipette ID's:	039380124
	SW3-02-02-02
	439350100
Analytical Sequence:	AF35
Method File:	ICD0-B24.mtw
Analytical Batch:	ICF037W

SOP #	Rev. #
☑ EMAX-300.0	13
☐ EMAX-4110B	6
☑ EMAX-9056	9
☐ EMAX-	

STANDARDS ID	
ICAL	–
ICV	–
CCV	SW3B-13-10-03 / ~~SW3B-13-11~~ Lo 7/1/20
LCS	SW3B-13-11-01
MS	SCP refer to LCS Parent ID

Filters Lot #: ~~0.22 0.45~~ 00191103 (cl/cl₂ TW) Snap Seal Containers Lot #:

~~0.45~~ µm: ~~91478103~~ TW 6/26/20 4 oz:

~~0.22~~ ~~0.2~~ µm: 91478103 TW 6/26/20 1.5 oz: 22319008

Column: Metrosep A Supp 5-100

Flow Rate: 0.70 ml/min

TW 6/26/20

IC ELUENT PREPARATION Expiration Date: 7/25/20

Std ID	Aliquot	Final Vol*
SP2-01-24-04	20 mL	2 L

IC REGENERANT PREPARATION Expiration Date: 7/25/20

Std ID	Aliquot	Final Vol*
SP2-01-28-01	100 mL	1 L

* Reagent Water ID: SWIA-009-03-03

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ IC-METROHM	
☐ External Hard Drive	

*Analyzed By: TW

Date: 6/26/20

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-26_09-50.chw	ICD0-B24.mtw	AF35-01 CCV769	1	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_10-07.chw	ICD0-B24.mtw	AF35-02 CCB769	2	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_10-24.chw	ICD0-B24.mtw	AF35-03 ICF037WB	3	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_10-41.chw	ICD0-B24.mtw	AF35-04 ICF037WL	4	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_10-58.chw	ICD0-B24.mtw	AF35-05 ICF037WC	5	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_11-15.chw	ICD0-B24.mtw	AF35-06 CCV771	6	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_11-32.chw	ICD0-B24.mtw	AF35-07 CCB771	7	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_11-57.chw	ICD0-B24.mtw	AF35-08 F222-02	8	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_12-14.chw	ICD0-B24.mtw	AF35-09 F222-03	9	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_12-31.chw	ICD0-B24.mtw	AF35-10 F222-04	10	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_13-01.chw	ICD0-B24.mtw	AF35-11 F223-01	11	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_13-18.chw	ICD0-B24.mtw	AF35-12 F223-04	12	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_13-35.chw	ICD0-B24.mtw	AF35-13 F223-05	13	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_13-52.chw	ICD0-B24.mtw	AF35-14 F223-02	14	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_14-09.chw	ICD0-B24.mtw	AF35-15 F222-02I DF=5	15	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_14-26.chw	ICD0-B24.mtw	AF35-16 F222-03I DF=5	16	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_14-43.chw	ICD0-B24.mtw	AF35-17 F223-01D	17	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_15-00.chw	ICD0-B24.mtw	AF35-18 CCV773	18	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_15-17.chw	ICD0-B24.mtw	AF35-19 CCB773	19	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_15-34.chw	ICD0-B24.mtw	AF35-20 F223-01I DF=2	20	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_15-51.chw	ICD0-B24.mtw	AF35-21 F223-04I DF=5	21	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_16-08.chw	ICD0-B24.mtw	AF35-22 F223-05I DF=5	22	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_16-26.chw	ICD0-B24.mtw	AF35-23 F223-01M	23	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_16-43.chw	ICD0-B24.mtw	AF35-24 F223-01S	24	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_17-00.chw	ICD0-B24.mtw	AF35-25 F223-04J DF=10	25	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_17-18.chw	ICD0-B24.mtw	AF35-26 F223-05J DF=10	26	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_17-35.chw	ICD0-B24.mtw	AF35-27 F223-01J DF=5	27	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-26_17-52.chw	ICD0-B24.mtw	AF35-28 F223-01JM DF=5	28	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_08-12.chw	ICD0-B24.mtw	AF35-29 F223-01JD DF=5	29	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_08-30.chw	ICD0-B24.mtw	AF35-30 CCV775	30	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_08-47.chw	ICD0-B24.mtw	AF35-31 CCB775	31	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_09-04.chw	ICD0-B24.mtw	AF35-32 F223-01JS DF=5	32	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_09-21.chw	ICD0-B24.mtw	AF35-33 F222-04I DF=2	33	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_09-38.chw	ICD0-B24.mtw	AF35-34 F223-04K DF=20	34	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_09-55.chw	ICD0-B24.mtw	AF35-35 F223-05K DF=20	35	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_10-12.chw	ICD0-B24.mtw	AF35-36 CCV777	36	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_10-30.chw	ICD0-B24.mtw	AF35-37 CCB777	37	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_10-50.chw	ICD0-B24.mtw	AF35-38 F223-01K DF=100	38	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_11-07.chw	ICD0-B24.mtw	AF35-39 F223-01KM DF=100	39	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_11-24.chw	ICD0-B24.mtw	AF35-40 F233-01	40	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_11-41.chw	ICD0-B24.mtw	AF35-41 F233-02I DF=10	41	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_11-58.chw	ICD0-B24.mtw	AF35-42 F233-03	42	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_12-15.chw	ICD0-B24.mtw	AF35-43 F234-02	43	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_12-32.chw	ICD0-B24.mtw	AF35-44 F233-05	44	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_12-49.chw	ICD0-B24.mtw	AF35-45 F233-06	45	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_13-06.chw	ICD0-B24.mtw	AF35-46 F233-01I DF=5	46	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_13-23.chw	ICD0-B24.mtw	AF35-47 F233-01J DF=10	47	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_13-41.chw	ICD0-B24.mtw	AF35-48 CCV779	48	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_13-58.chw	ICD0-B24.mtw	AF35-49 CCB779	49	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_14-15.chw	ICD0-B24.mtw	AF35-50 F233-01K DF=20	50	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_14-32.chw	ICD0-B24.mtw	AF35-51 F233-02J DF=5	51	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_14-49.chw	ICD0-B24.mtw	AF35-52 F233-02K DF=20	52	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_15-06.chw	ICD0-B24.mtw	AF35-53 F233-01T DF=2	53	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_15-23.chw	ICD0-B24.mtw	AF35-54 F233-03I DF=5	54	1.0	5.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_15-40.chw	ICD0-B24.mtw	AF35-55 F233-03J DF=10	55	1.0	10.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_15-57.chw	ICD0-B24.mtw	AF35-56 F233-03K DF=20	56	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_16-14.chw	ICD0-B24.mtw	AF35-57 F233-03T DF=2	57	1.0	2.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_16-31.chw	ICD0-B24.mtw	AF35-58 F223-01KD DF=100	58	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	

File Name	Method	Ident	Vial	Volume	Dilution	Amount	Internal Standard Amount	Calibration Level	Sample Info 1	Sample Info 2
_2020-06-27_16-48.chw	ICD0-B24.mtw	AF35-59 F223-01KS DF=100	59	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_17-05.chw	ICD0-B24.mtw	AF35-60 CCV781	60	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_17-23.chw	ICD0-B24.mtw	AF35-61 CCB781	61	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_17-40.chw	ICD0-B24.mtw	AF35-62 F223-04T DF=100	62	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_17-57.chw	ICD0-B24.mtw	AF35-63 F222-02J DF=20	63	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_18-14.chw	ICD0-B24.mtw	AF35-64 F222-03J DF=20	64	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_18-31.chw	ICD0-B24.mtw	AF35-65 F222-04J DF=20	65	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_18-48.chw	ICD0-B24.mtw	AF35-66 F210-01I DF=20	66	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_19-05.chw	ICD0-B24.mtw	AF35-67 F210-01J DF=50	67	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_19-22.chw	ICD0-B24.mtw	AF35-68 F210-04I DF=20	68	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_19-39.chw	ICD0-B24.mtw	AF35-69 F210-04J DF=200	69	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_19-56.chw	ICD0-B24.mtw	AF35-70 F210-05I DF=20	70	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_20-13.chw	ICD0-B24.mtw	AF35-71 F210-05J DF=200	71	1.0	200.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_20-30.chw	ICD0-B24.mtw	AF35-72 CCV783	72	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_20-47.chw	ICD0-B24.mtw	AF35-73 CCB783	73	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_21-05.chw	ICD0-B24.mtw	AF35-74 F210-07I DF=20	74	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_21-22.chw	ICD0-B24.mtw	AF35-75 F210-07J DF=100	75	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_21-39.chw	ICD0-B24.mtw	AF35-76 F210-08I DF=20	76	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_21-56.chw	ICD0-B24.mtw	AF35-77 F210-08J DF=50	77	1.0	50.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_22-13.chw	ICD0-B24.mtw	AF35-78 F233-01G DF=100	78	1.0	100.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_22-30.chw	ICD0-B24.mtw	AF35-79 F233-02T DF=40	79	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_22-47.chw	ICD0-B24.mtw	AF35-80 F233-03G DF=40	80	1.0	40.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_23-04.chw	ICD0-B24.mtw	AF35-81 F234-02I DF=20	81	1.0	20.0	1.0	100.0	0	METHOD300/9056/4110B	
_2020-06-27_23-21.chw	ICD0-B24.mtw	AF35-82 CCV785	82	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	1
_2020-06-27_23-38.chw	ICD0-B24.mtw	AF35-83 CCB785	83	1.0	1.0	1.0	100.0	0	METHOD300/9056/4110B	

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 300.0

Lab name: **EMAX** **Method:** **EMAX-300.0**

Instrument ID: D0 (761 IC) IC column: METROSEP A SUPP 5
Column size: 100X4.0mm

Compound	ICAL Mean RT	from	to	RTW
FLUORIDE	**2.99**	2.90	3.08	**0.090**
CHLORIDE	**3.96**	3.86	4.07	**0.104**
NITRITE	**4.54**	4.38	4.70	**0.159**
BROMIDE	**5.44**	5.11	5.76	**0.329**
NITRATE	**6.10**	5.68	6.52	**0.420**
PHOSPHATE	**7.79**	7.26	8.31	**0.528**
SULFATE	**8.83**	8.03	9.63	**0.797**

ICD0-B24.mtw

TK 02/26/20

RETENTION TIME WINDOW
METHOD 300.0

Lab name:	**EMAX**	**Method:**	**EMAX-300.0**
Instrument ID:	D0 (761 IC)	IC column: Column size:	METROSEP A SUPP 5 100X4.0mm

Compound		Retention time Window
FLUORIDE	**(+/-)**	**0.090**
CHLORIDE	**(+/-)**	**0.104**
NITRITE	**(+/-)**	**0.159**
BROMIDE	**(+/-)**	**0.329**
NITRATE	**(+/-)**	**0.420**
PHOSPHATE	**(+/-)**	**0.528**
SULFATE	**(+/-)**	**0.797**
IODIDE	**(+/-)**	**0.652**

06/03/14

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SM2320B
TOTAL ALKALINITY

A total of five(5) water samples were received on 06/25/20 to be analyzed for Total Alkalinity in accordance with Method SM2320B and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Alkalinity was not detected in ALF016WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. ALF016WL/ALF016WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2320B
TOTAL ALKALINITY

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210
Matrix : WATER
InstrumentID : E5

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	PREP. FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	ALF016WB	ND	1	NA	5	5	06/30/2019:23	NA	20E5F1027	20E5F10	ALF016W	NA	NA
LCS1W	ALF016WL	73.9	1	NA	5	5	06/30/2019:30	NA	20E5F1028	20E5F10	ALF016W	NA	NA
LCD1W	ALF016WC	74.5	1	NA	5	5	06/30/2019:38	NA	20E5F1029	20E5F10	ALF016W	NA	NA
MW23C-GW062320	F210-01	288	1	NA	5	5	06/30/2021:48	NA	20E5F1042	20E5F10	ALF016W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04	288	1	NA	5	5	06/30/2021:55	NA	20E5F1043	20E5F10	ALF016W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05	297	1	NA	5	5	06/30/2022:03	NA	20E5F1044	20E5F10	ALF016W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07	253	1	NA	5	5	06/30/2022:12	NA	20E5F1045	20E5F10	ALF016W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08	248	1	NA	5	5	06/30/2022:19	NA	20E5F1046	20E5F10	ALF016W	06/23/2011:40	06/25/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : METHOD SM2320B

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	ALF016WB	ALF016WL	ALF016WC
LAB FILE ID :	20E5F1027	20E5F1028	20E5F1029
DATE EXTRACTED :	NA	NA	NA
DATE ANALYZED :	06/30/2019:23	06/30/2019:30	06/30/2019:38
PREP BATCH :	ALF016W	ALF016W	ALF016W
CALIBRATION REF:	20E5F10	20E5F10	20E5F10

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	SPIKE AMT (mg/L)	BSD RESULT (mg/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
ALKALINITY	ND	75.8	73.9	97	75.8	74.5	98	1	80-120	20

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ALKALINITY

Note: For samples and relevent QCs/Standards analyzed, refer to attached analytical sequence.

☑ Titration end point: pH 4.5 ± 0.04

☑ Low alkalinity: pH 4.2 ± 0.04

Micropipette ID: NA

MS/MSD amount of spike: NA

Reagent Water: RWI-19-003

Comments:

Book#: AAL-043

Instrument No.: ☐ 53 ☑ E5

Analytical Batch: 20E5F10

Analytical Sequence: ALF015 / ALF016

SOP #	Rev. #
☑ EMAX-2320B	6
☐ EMAX-	

STANDARDS ID	Conc. (mg/L)
0.02N HCL SWRI-02-24-10	0.02 N
LCS SWI-02-05-02	75.8
MS/MSD NA	NA
ICV NA	NA

pH Buffer	ID
pH 4	SWI-02-05-21
pH 7	SWI-02-05-22
pH 10	SWI-02-05-23
pH 8.0 (Check)	SWI-02-05-19
pH Strip	HC99 8032

Analyzed By: LO / TK

Date: 6/30/20

PC-TitratION PLUS

pH and Alkalinity In-Run Report

Run Number 1168 **Analytical Batch#** 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
1	ICV PH7.96	20E5F10	06/30/20	4:10 PM	7.93	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	
2	ICB	20E5F10	06/30/20	4:17 PM	8.27	.00	1.57	-1.00	.00	62.65	62.65	.00	.00	
3	ALF015WB	20E5F10	06/30/20	4:24 PM	6.72	.00	.07	.12	.00	1.18	1.18	.00	.00	
4	ALF015WL	20E5F10	06/30/20	4:31 PM	9.06	1.15	1.80	-1.00	46.11	72.00	.00	51.78	20.23	
5	ALF015WC	20E5F10	06/30/20	4:38 PM	9.09	1.22	1.85	-1.00	48.74	74.07	.00	50.65	23.41	
6	F183-01	20E5F10	06/30/20	4:46 PM	7.42	.00	7.75	-1.00	.00	309.88	309.88	.00	.00	
7	F183-02	20E5F10	06/30/20	4:53 PM	7.38	.00	7.14	-1.00	.00	285.59	285.59	.00	.00	
8	F183-03	20E5F10	06/30/20	5:02 PM	7.69	.00	6.66	-1.00	.00	266.34	266.34	.00	.00	
9	F183-05	20E5F10	06/30/20	5:10 PM	7.50	.00	6.63	-1.00	.00	265.29	265.29	.00	.00	
10	F183-06	20E5F10	06/30/20	5:17 PM	7.60	.00	5.73	-1.00	.00	229.09	229.09	.00	.00	
11	F183-07	20E5F10	06/30/20	5:24 PM	7.50	.00	7.10	-1.00	.00	283.87	283.87	.00	.00	
12	F183-08	20E5F10	06/30/20	5:33 PM	7.44	.00	6.67	-1.00	.00	266.82	266.82	.00	.00	
13	F183-08D	20E5F10	06/30/20	5:40 PM	7.45	.00	6.41	-1.00	.00	256.57	256.57	.00	.00	
14	F183-12	20E5F10	06/30/20	5:48 PM	7.51	.00	6.68	-1.00	.00	267.26	267.26	.00	.00	
15	F183-13	20E5F10	06/30/20	5:55 PM	7.52	.00	6.72	-1.00	.00	268.62	268.62	.00	.00	
16	F183-14	20E5F10	06/30/20	6:04 PM	7.62	.00	6.05	-1.00	.00	242.07	242.07	.00	.00	
17	F183-15	20E5F10	06/30/20	6:11 PM	7.58	.00	5.96	-1.00	.00	238.30	238.30	.00	.00	
18	F183-16	20E5F10	06/30/20	6:18 PM	7.55	.00	5.92	-1.00	.00	236.91	236.91	.00	.00	

Analyzed by: LD / TK Reviewed by: TK Date: 07/06/20

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Run Number 1168 **Analytical Batch#** 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
19	F190-01	20E5F10	06/30/20	6:25 PM	7.05	.00	6.88	-1.00	.00	275.34	275.34	.00	.00	
20	F190-02	20E5F10	06/30/20	6:32 PM	6.64	.00	.08	.12	.00	1.43	1.43	.00	.00	
21	F190-03	20E5F10	06/30/20	6:40 PM	8.34	.03	3.22	-1.00	1.01	128.68	126.66	2.03	.00	
22	F190-04	20E5F10	06/30/20	6:49 PM	10.94	1.64	2.15	-1.00	65.70	85.88	.00	40.36	45.52	
23	F193-02	20E5F10	06/30/20	6:55 PM	8.08	.00	3.02	-1.00	.00	120.93	120.93	.00	.00	
24	F193-03	20E5F10	06/30/20	7:03 PM	7.75	.00	2.86	-1.00	.00	114.47	114.47	.00	.00	
25	F193-04	20E5F10	06/30/20	7:10 PM	8.05	.00	5.02	-1.00	.00	200.61	200.61	.00	.00	
26	RINSE	20E5F10	06/30/20	7:16 PM	6.60	.00	.07	.11	.00	1.08	1.08	.00	.00	
27	ALF016WB	20E5F10	06/30/20	7:23 PM	6.34	.00	.06	.10	.00	.87	.87	.00	.00	
28	ALF016WL	20E5F10	06/30/20	7:30 PM	9.06	1.17	1.85	-1.00	46.78	73.91	.00	54.25	19.65	
29	ALF016WC	20E5F10	06/30/20	7:38 PM	9.06	1.17	1.86	-1.00	46.90	74.49	.00	55.18	19.31	
30	F215-01	20E5F10	06/30/20	7:51 PM	7.32	.00	21.35	-1.00	.00	854.05	854.05	.00	.00	
31	F215-02	20E5F10	06/30/20	8:01 PM	7.66	.00	10.01	-1.00	.00	400.42	400.42	.00	.00	
32	F215-03	20E5F10	06/30/20	8:12 PM	7.96	.00	19.89	-1.00	.00	795.44	795.44	.00	.00	
33	F215-04	20E5F10	06/30/20	8:26 PM	7.25	.00	23.12	-1.00	.00	924.90	924.90	.00	.00	
34	F215-04D	20E5F10	06/30/20	8:41 PM	7.24	.00	24.23	-1.00	.00	969.39	969.39	.00	.00	
35	F215-05	20E5F10	06/30/20	8:51 PM	7.39	.00	12.31	-1.00	.00	492.59	492.59	.00	.00	
36	F215-06	20E5F10	06/30/20	8:59 PM	7.75	.00	6.48	-1.00	.00	259.40	259.40	.00	.00	
37	F182-01	20E5F10	06/30/20	9:06 PM	7.46	.00	6.52	-1.00	.00	260.63	260.63	.00	.00	
38	F195-01	20E5F10	06/30/20	9:15 PM	7.75	.00	6.51	-1.00	.00	260.33	260.33	.00	.00	

Analyzed by: LD / TK

Reviewed by: [illegible] TK

Date: 07/06/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

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Run Number 1168 Analytical Batch# 20E5F10

Seq. #	SampleID	Data File Name	RunDate	RunTime	pH	Volume @pH 8.3	Volume @pH 4.5	Volume @pH 4.2	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	Review Notes
39	F206-03	20E5F10	06/30/20	9:22 PM	7.93	.00	4.35	-1.00	.00	173.92	173.92	.00	.00	
40	F206-04	20E5F10	06/30/20	9:30 PM	8.02	.00	6.89	-1.00	.00	275.73	275.73	.00	.00	
41	F206-05	20E5F10	06/30/20	9:38 PM	8.00	.00	6.89	-1.00	.00	275.43	275.43	.00	.00	
42	F210-01	20E5F10	06/30/20	9:48 PM	7.82	.00	7.21	-1.00	.00	288.42	288.42	.00	.00	
43	F210-04	20E5F10	06/30/20	9:55 PM	7.67	.00	7.20	-1.00	.00	287.81	287.81	.00	.00	
44	F210-05	20E5F10	06/30/20	10:03 PM	7.59	.00	7.44	-1.00	.00	297.42	297.42	.00	.00	
45	F210-07	20E5F10	06/30/20	10:12 PM	7.68	.00	6.32	-1.00	.00	252.69	252.69	.00	.00	
46	F210-08	20E5F10	06/30/20	10:19 PM	7.70	.00	6.20	-1.00	.00	247.87	247.87	.00	.00	
47	RINSE	20E5F10	06/30/20	10:26 PM	6.64	.00	.07	.11	.00	1.26	1.26	.00	.00	

Analyzed by: LO / TK Reviewed by: TK Date: 07/06/20

PC-TitratION PLUS by Man-Tech Associates, Inc.

pH AND ALKALINITY IN-RUN REPORT.SRW

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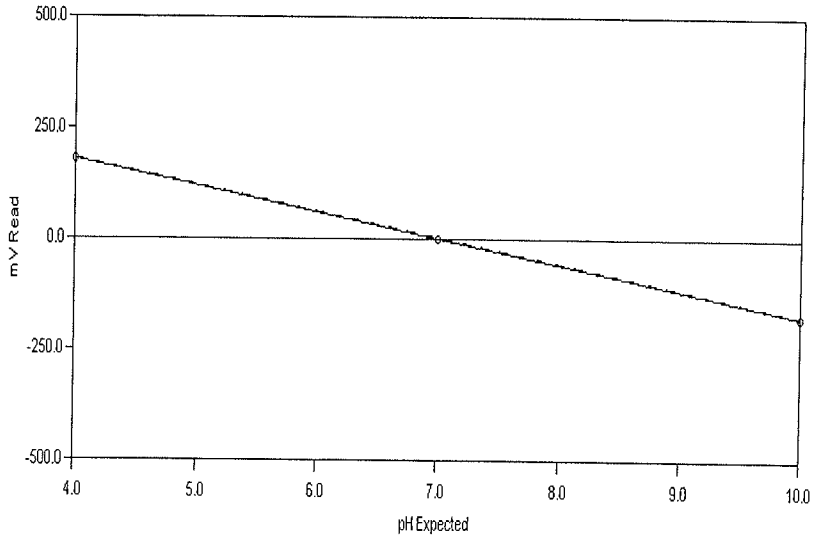
PC-TitratION PLUS
Calibration Report

Calibration Record # 826



Calibration Settings

Calibration ID	PH CAL 4-7-10	Date	06/30/2020
Channel	1	Time	4:07 PM
Probe Type	pH	Temperature	299.14 K 25.99 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.447	CorrCoeff	1.0000
Intercept	0.770	Equation: Y = (-59.447) X + (0.770)	

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-59.447	-65.00	-53.00
Intercept	0.770	-40.00	40.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	4.00	179.07
	7.00	0.85
	10.00	-177.61

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PC-Titrate For Windows

Running List Report

Order Number - 20E5F10

	Schedule	Sample Id	Vial	Weight	Volume
1	PH CAL	CAL	1	.00	25.00
2	PH ONLY	ICV PH7.96	4	.00	25.00
3	PH-ALK	ICB	5	.00	25.00
4	PH-ALK	ALF015WB	6	.00	25.00
5	PH-ALK	ALF015WL	7	.00	25.00
6	PH-ALK	ALF015WC	8	.00	25.00
7	PH-ALK	F183-01	9	.00	25.00
8	PH-ALK	F183-02	10	.00	25.00
9	PH-ALK	F183-03	11	.00	25.00
10	PH-ALK	F183-05	12	.00	25.00
11	PH-ALK	F183-06	13	.00	25.00
12	PH-ALK	F183-07	14	.00	25.00
13	PH-ALK	F183-08	15	.00	25.00
14	PH-ALK	F183-08D	16	.00	25.00
15	PH-ALK	F183-12	17	.00	25.00
16	PH-ALK	F183-13	18	.00	25.00
17	PH-ALK	F183-14	19	.00	25.00
18	PH-ALK	F183-15	20	.00	25.00
19	PH-ALK	F183-16	21	.00	25.00
20	PH-ALK	F190-01	22	.00	25.00
21	PH-ALK	F190-02	23	.00	25.00
22	PH-ALK	F190-03	24	.00	25.00
23	PH-ALK	F190-04	25	.00	25.00
24	PH-ALK	F193-02	26	.00	25.00
25	PH-ALK	F193-03	27	.00	25.00
26	PH-ALK	F193-04	28	.00	25.00
27	PH-ALK	RINSE	29	.00	25.00
28	PH-ALK	ALF016WB	30	.00	25.00
29	PH-ALK	ALF016WL	31	.00	25.00
30	PH-ALK	ALF016WC	32	.00	25.00
31	PH-ALK	F215-01	33	.00	25.00
32	PH-ALK	F215-02	34	.00	25.00
33	PH-ALK	F215-03	35	.00	25.00
34	PH-ALK	F215-04	36	.00	25.00
35	PH-ALK	F215-04D	37	.00	25.00
36	PH-ALK	F215-05	38	.00	25.00
37	PH-ALK	F215-06	39	.00	25.00
38	PH-ALK	F182-01	40	.00	25.00
39	PH-ALK	F195-01	41	.00	25.00
40	PH-ALK	F206-03	42	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

runninglist.SRW

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Running List Report

Order Number - 20E5F10

	Schedule	Sample Id	Vial	Weight	Volume
41	PH-ALK	F206-04	43	.00	25.00
42	PH-ALK	F206-05	44	.00	25.00
43	PH-ALK	F210-01	45	.00	25.00
44	PH-ALK	F210-04	46	.00	25.00
45	PH-ALK	F210-05	47	.00	25.00
46	PH-ALK	F210-07	48	.00	25.00
47	PH-ALK	F210-08	49	.00	25.00
48	PH-ALK	RINSE	50	.00	25.00

PC-TitratION PLUS by Man-Tech Associates, Inc.

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CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

A total of five(5) water samples were received on 06/25/20 to be analyzed for Total Dissolved Solids in accordance with Method SM2540C and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Balance calibration verifications were carried out on a frequency specified by the method. All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Dissolved Solids was not detected in TDF011WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) LCS was analyzed. Percent recovery for Total Dissolved Solids was within LCS QC limits in TDF011WL. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM2540C
TOTAL DISSOLVED SOLIDS

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210
Matrix : WATER
InstrumentID : 402426

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	TDF011WB	ND	1	NA	10	10	06/29/2014:08	NA	20TDF01101	20TDF011	TDF011W	NA	NA
LCS1W	TDF011WL	979	1	NA	10	10	06/29/2014:08	NA	20TDF01102	20TDF011	TDF011W	NA	NA
MW23C-GW062320	F210-01	1410	1	NA	10	10	06/29/2014:08	NA	20TDF01111	20TDF011	TDF011W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04	1160	1	NA	10	10	06/29/2014:08	NA	20TDF01112	20TDF011	TDF011W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05	1230	1	NA	10	10	06/29/2014:08	NA	20TDF01113	20TDF011	TDF011W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07	960	1	NA	10	10	06/29/2014:08	NA	20TDF01114	20TDF011	TDF011W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08	872	1	NA	10	10	06/29/2014:08	NA	20TDF01115	20TDF011	TDF011W	06/23/2011:40	06/25/20

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SM2540C

MATRIX : WATER
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : TDF011WB TDF011WL
LAB FILE ID : 20TDF01101 20TDF01102
DATE PREPARED : NA NA
DATE ANALYZED : 06/29/2014:08 06/29/2014:08
PREP BATCH : TDF011W TDF011W
CALIBRATION REF: 20TDF011 20TDF011

ACCESSION:

PARAMETER	MB RESULT (mg/L)	SPIKE AMT (mg/L)	BS RESULT (mg/L)	BS REC (%)	QC LIMIT (%)
Total Dissolved Solids	ND	1000	979	98	80-120

EMAX LABORATORIES, INC.

TOTAL DISSOLVED SOLIDS

20TDF011

DataFileID	Sample ID	Sample Amt(ml)	Dish #	Dish (g)	1stDry Wt+Dish(g)	DateTime	2ndDry Wt+Dish(g)	DateTime	FinalDry Wt+Dish(g)	DateTime	Rdgs(<0.5mg)	Solids (mg)	TDS (mg/L)	Result (mg/L)
20TDF01101	TDF011WB	100	B	90.3633	90.3616	6/30/20 14:52	90.3615	6/30/20 17:05	90.3616	7/1/20 9:29	0.1	-1.8	-18	ND
20TDF01102	TDF011WL	20	L	21.85018	21.86985	6/30/20 14:53	21.86976	6/30/20 17:06	21.8695	7/1/20 9:30	0.09	19.58	979	979
20TDF01103	F193-02	10	1	20.96087	21.02009	6/30/20 14:53	21.02074	6/30/20 17:07	21.0206	7/1/20 9:31	0.17	59.87	5987	5990
20TDF01104	F193-03	10	2	20.81611	20.87665	6/30/20 14:54	20.87655	6/30/20 17:08	20.8761	7/1/20 9:33	0.1	60.44	6044	6040
20TDF01105	F193-04	20	3	21.49448	21.54349	6/30/20 14:54	21.54384	6/30/20 17:09	21.5434	7/1/20 9:33	0.35	49.36	2468	2470
20TDF01106	F193-04D	20	4	21.06239	21.11153	6/30/20 14:55	21.11186	6/30/20 17:09	21.1118	7/1/20 9:34	0.33	49.47	2473.5	2470
20TDF01107	F195-01	100	5	89.5842	89.6135	6/30/20 14:55	89.6138	6/30/20 17:10	89.6132	7/1/20 9:35	0.3	29.6	296	296
20TDF01108	F206-03	10	6	20.899	20.94673	6/30/20 14:55	20.94698	6/30/20 17:10	20.9466	7/1/20 9:36	0.25	47.98	4798	4800
20TDF01109	F206-04	20	7	21.86234	21.91391	6/30/20 14:56	21.91395	6/30/20 17:11	21.9143	7/1/20 9:36	0.04	51.61	2580.5	2580
20TDF01110	F206-05	20	8	21.79294	21.84368	6/30/20 14:56	21.8439	6/30/20 17:11	21.8437	7/1/20 9:37	0.22	50.96	2548	2550
20TDF01111	F210-01	50	9	84.18921	84.2593	6/30/20 14:56	84.2598	6/30/20 17:12	84.2594	7/1/20 9:38	0.4	70.59	1411.8	1410
20TDF01112	F210-04	20	10	21.03109	21.0546	6/30/20 14:57	21.0543	6/30/20 17:12	21.0525	7/1/20 9:38	0.3	23.21	1160.5	1160
20TDF01113	F210-05	20	11	20.80103	20.8257	6/30/20 14:58	20.8256	6/30/20 17:12	20.8235	7/1/20 9:39	0.1	24.57	1228.5	1230
20TDF01114	F210-07	20	12	21.62	21.6393	6/30/20 14:58	21.6392	6/30/20 17:13	21.6375	7/1/20 9:40	0.1	19.2	960	960
20TDF01115	F210-08	20	13	21.00796	21.02564	6/30/20 14:58	21.0254	6/30/20 17:13	21.0238	7/1/20 9:41	0.24	17.44	872	872
20TDF01116	F218-09	100	14	78.81236	78.85371	6/30/20 14:59	78.85425	6/30/20 17:13	78.8545	7/1/20 9:41	0.25	41.89	418.9	419
20TDF01117	F218-15	100	15	84.2859	84.3106	6/30/20 14:59	84.3112	6/30/20 17:14	84.3109	7/1/20 9:42	0.3	25.3	253	253
20TDF01118	F223-01	20	16	21.94244	21.9815	6/30/20 15:00	21.98162	6/30/20 17:14	21.9816	7/1/20 9:42	0.12	39.18	1959	1960
20TDF01119	F223-04	5	17	21.15524	21.1943	6/30/20 15:00	21.19435	6/30/20 17:15	21.1945	7/1/20 9:43	0.05	39.11	7822	7820
20TDF01120	F223-05	10	18	20.9161	20.97592	6/30/20 15:00	20.97556	6/30/20 17:15	20.9757	7/1/20 9:43	0.36	59.46	5946	5950
20TDF01121	F233-01	5	19	21.88435	21.94101	6/30/20 15:00	21.94409	6/30/20 17:15	21.9440	7/1/20 9:44	0.14	59.74	11948	11900
20TDF01122	F233-01D	5	20	21.8193	21.87932	6/30/20 15:01	21.88012	6/30/20 17:16	21.8801	7/1/20 9:45	0.01	60.82	12164	12200
20TDF01123	F233-02	20	21	21.12386	21.1841	6/30/20 15:01	21.18428	6/30/20 17:17	21.1842	7/1/20 9:45	0.18	60.42	3021	3020
20TDF01124	F233-03	5	22	21.96569	21.99164	6/30/20 15:02	21.99183	6/30/20 17:17	21.9918	7/1/20 9:46	0.19	26.14	5228	5230

Beginning Balance Check

Std. Wt. (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/29/20 14:06	PASSED
5	4.9997	6/29/20 14:07	PASSED
100	99.9997	6/29/20 14:08	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/29/20 14:20	PASSED
5	4.9997	6/29/20 14:20	PASSED
100	100.0000	6/29/20 14:21	PASSED

Beginning Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1001	6/30/20 14:51	PASSED
5	4.9998	6/30/20 14:51	PASSED
100	99.9998	6/30/20 14:52	PASSED

Ending Balance Check

Std. Wt (g)	Balance Rdg (g)	Date	Comments
0.1	0.1000	7/1/20 9:46	PASSED
5	4.9998	7/1/20 9:47	PASSED
100	99.9998	7/1/20 9:47	PASSED

Balance ID: 402426 Weight ID: 31116

Acceptance Criteria: +/- 0.1% or +/- 0.5 mg whichever is greater

StandardID	Desc.	Conc. (mg/L)	ExpDate
RW1-19-003	MB	ND	NA
SW2B-28-26-04	LCS	1000	02/20/21
HC998032	pH strip	0-14	02/18/30

QC Check

LabSampleID	Result	Expected Value	QC Result
TDF011WB	-18	ND	MB Passed
TDF011WL	979	1000	%R=98
#N/A	#N/A	#N/A	#N/A
F193-04D	2473.5	2468	%D=
F233-01D	121	11948	%D=2

Oven Drying Thermometer ID: 3078

Evaporating			
☑ Start	6/29/2020 16:19	Temp	90 °C
☑ End	6/30/2020 12:35	Temp	90 °C
1st Drying			
☑ Start	6/30/20 12:54	Temp	180 °C
☑ End	6/30/20 13:54	Temp	180 °C
2nd Drying			
☑ Start	6/30/20 15:03	Temp	180 °C
☑ End	6/30/20 16:03	Temp	180 °C
Final Drying			
☑ Start	7/1/20 7:35	Temp	180 °C
☑ End	7/1/20 8:36	Temp	180 °C

Notes:

SOP

☑ EMAX-2540C Rev. 9

Analyzedby: ODinh

Checked by: TR

Date: 07/06/20

LOQ: 10 mg/L

0.45 micron Filter Lot#: J352548-20190927PZ80M-070

Micropipette ID: 442781398

EMAX LABORATORIES, INC.

SPECIFIC CONDUCTIVITY ANALYSIS LOG

SOP: EMAX-2510B Rev.1 Analytical Batch: **TDECF011** Book #: Page:

Data File Name	Lab Sample ID	Sample Amount (ml)	Final Volume (ml)	DF	Conductivity µS/cm	Analysis Date mm:dd:yy	Analysis Time hh:mm:ss	Result µS/cm
TDECF01101	CCV	20	20	1	1415	06/29/20	13:27:44	100%
TDECF01102	F193-02	20	20	1	9050	06/29/20	13:29:40	9050
TDECF01103	F193-03	20	20	1	8740	06/29/20	13:30:12	8740
TDECF01104	F193-04	20	20	1	3890	06/29/20	13:30:34	3890
TDECF01104	F193-04D	20	20	1	-	06/29/20	14:15:29	#VALUE!
TDECF01105	F195-01	20	20	1	502	06/29/20	13:31:17	502
TDECF01106	F206-03	20	20	1	7290	06/29/20	13:33:01	7290
TDECF01107	F206-04	20	20	1	4300	06/29/20	13:34:14	4300
TDECF01108	F206-05	20	20	1	4240	06/29/20	13:38:14	4240
TDECF01109	F210-01	20	20	1	805	06/29/20	13:39:27	805
TDECF01110	F210-04	20	20	1	1367	06/29/20	13:40:13	1370
TDECF01111	F210-05	20	20	1	1470	06/29/20	13:41:02	1470
TDECF01112	F210-07	20	20	1	1106	06/29/20	13:41:29	1110
TDECF01113	F210-08	20	20	1	1020	06/29/20	13:41:55	1020
TDECF01114	F218-09	20	20	1	614	06/29/20	13:42:25	614
TDECF01115	F218-15	20	20	1	396	06/29/20	13:47:26	396
TDECF01116	F223-01	20	20	1	2980	06/29/20	13:48:37	2980
TDECF01117	F223-04	20	20	1	10410	06/29/20	13:50:00	10400
TDECF01118	F223-05	20	20	1	8770	06/29/20	13:51:58	8770
TDECF01119	F233-01	20	20	1	13490	06/29/20	13:53:52	13500
TDECF01119	F233-01D	20	20	1	-	06/29/20	14:12:39	#VALUE!
TDECF01120	F233-02	20	20	1	4920	06/29/20	13:55:56	4920
TDECF01121	F233-03	20	20	1	9820	06/29/20	13:58:14	9820
Comments:								

INSTRUMENT NUMBER		D4
CALIBRATION		
Calibration Temperature	25 °C	
☑ Verified Cell Constant (K)	1.00 S/cm	
ICAL Range	10-10000 µS/cm	
ICAL Standard	ID	µS/cm
1	SW1-02-04-15	98.7
2	SW1-02-04-16	998
3	SW1-02-04-17	10001
4	SW1-02-04-18	99959
CCV/LCS StdID/Value(µS/cm)	SW1-02-04-19	1415
DETECTION LIMIT		
MDL:	2	µS/cm
RL:	2	µS/cm
SAMPLE DUPLICATE		
LAB SAMPLE ID	RESULT	RPD
QCLIMIT	5	%

Analyzed By: Odinh

Reviewed By:

Date:

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SM4500-NO3E
NITRATE/NITRITE-N

A total of five(5) water samples were received on 06/25/20 to be analyzed for Nitrate/Nitrite-N in accordance with Method SM4500-NO3E and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Nitrogen, Nitrate-Nitrite was not detected in NAG002WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. NAG002WL/NAG002WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) MS was analyzed. Percent recovery for Nitrogen, Nitrate-Nitrite was within MS QC limits in F210-08IM. Sample duplicate was analyzed and RPD was within expected value. Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SM4500-NO3E
NITRATE/NITRITE-N

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210

Matrix : WATER
InstrumentID : 70

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DFxPREP FACTOR	MOIST (%)	RL (mg/L)	MDL (mg/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	NAG002WB	ND	1	NA	0.05	0.01	07/08/2016:17	NA	20NAG00210	20NAG002	NAG002W	NA	NA
LCS1W	NAG002WL	0.515	1	NA	0.05	0.01	07/08/2016:18	NA	20NAG00211	20NAG002	NAG002W	NA	NA
LCD1W	NAG002WC	0.522	1	NA	0.05	0.01	07/08/2016:18	NA	20NAG00212	20NAG002	NAG002W	NA	NA
MW23C-GW062320	F210-01I	3.59	5	NA	0.25	0.05	07/08/2016:20	NA	20NAG00223	20NAG002	NAG002W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04I	1.56	5	NA	0.25	0.05	07/08/2016:20	NA	20NAG00224	20NAG002	NAG002W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05I	2.52	5	NA	0.25	0.05	07/08/2016:20	NA	20NAG00225	20NAG002	NAG002W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07I	1.86	5	NA	0.25	0.05	07/08/2016:21	NA	20NAG00226	20NAG002	NAG002W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08I	0.916	5	NA	0.25	0.05	07/08/2016:21	NA	20NAG00227	20NAG002	NAG002W	06/23/2011:40	06/25/20
MW14D-GW062320DUP	F210-08ID	0.961	5	NA	0.25	0.05	07/08/2016:21	NA	20NAG00228	20NAG002	NAG002W	06/23/2011:40	06/25/20
MW14D-GW062320MS	F210-08IM	3.54	5	NA	0.25	0.05	07/08/2016:21	NA	20NAG00229	20NAG002	NAG002W	06/23/2011:40	06/25/20

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SM4500-NO3E

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: NAG002WB	NAG002WL	NAG002WC
LAB FILE ID	: 20NAG00210	20NAG00211	20NAG00212
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 07/08/2016:17	07/08/2016:18	07/08/2016:18
PREP BATCH	: NAG002W	NAG002W	NAG002W
CALIBRATION REF	: 20NAG002	20NAG002	20NAG002

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Nitrogen, Nitrate-Nitrite	ND	0.500	0.515	103	0.500	0.522	104	1	80-120	10

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SM4500-NO3E

MATRIX : WATER

DILUTION FACTOR:	5	5
SAMPLE ID :	MW14D-GW062320	MW14D-GW062320DUP
LAB SAMPLE ID :	F210-08I	F210-08ID
LAB FILE ID :	20NAG00227	20NAG00228
DATE PREPARED :	NA	NA
DATE ANALYZED :	07/08/2016:21	07/08/2016:21
PREP BATCH :	NAG002W	NAG002W
CALIBRATION REF:	20NAG002	20NAG002

ACCESSION:

PARAMETER	PSResult (mg/L)	DUPResult (mg/L)	RPD (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	0.916	0.961	5	10

PS: Parent Sample DUP: Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : CDM SMITH
PROJECT : VA SALT LAKE CITY
BATCH NO. : 20F210
METHOD : SM4500-NO3E

MATRIX	: WATER	% Moisture: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW14D-GW062320	MW14D-GW062320MS
LAB SAMPLE ID	: F210-08I	F210-08IM
LAB FILE ID	: 20NAG00227	20NAG00229
DATE PREPARED	: NA	NA
DATE ANALYZED	: 07/08/2016:21	07/08/2016:21
PREP BATCH	: NAG002W	NAG002W
CALIBRATION REF	: 20NAG002	20NAG002

ACCESSION:

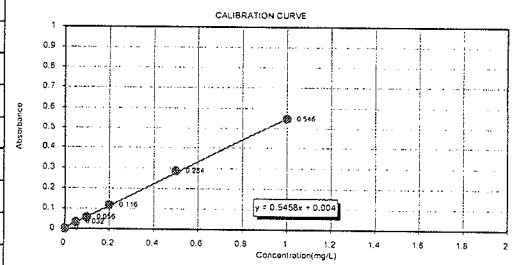
PARAMETER	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	QCLimit (%)
Nitrogen, Nitrate-Nitrite	0.916	2.50	3.54	105	75-125

PS: Parent Sample MS: Matrix Spike

Data File Name	Calibration ID	Conc. mg/L	WL	Abs	CalDate	FC	%Rec
20NAG00201	S0	0	543nm	0	7/8/20 15:25	-0.00740146	ND
20NAG00202	S1	0.05	543nm	0.032	7/8/20 15:25	0.051226277	102
20NAG00203	S2	0.1	543nm	0.056	7/8/20 15:26	0.09519708	95
20NAG00204	S3	0.2	543nm	0.116	7/8/20 15:26	0.205124088	103
20NAG00205	S4	0.5	543nm	0.284	7/8/20 15:26	0.512919708	103
20NAG00206	S5	1	543nm	0.546	7/8/20 15:26	0.992934307	99
20NAG00207	NO2-N Std Check	0.5	543nm	0.282	7/8/20 15:26	0.509255474	102
20NAG00208	ICV	0.5	543nm	0.257	7/8/20 15:26	0.463452555	93
20NAG00209	ICB	0	543nm	0	7/8/20 15:26	-0.00740146	ND
20NAG00220	CCV1	0.5	543nm	0.269	7/8/20 16:19	0.485437956	97
20NAG00221	CCB1	0	543nm	0.001	7/8/20 16:20	-0.005569343	ND
20NAG00230	CCV2	0.5	543nm	0.263	7/8/20 16:21	0.474445255	95
20NAG00231	CCB2	0	543nm	0.003	7/8/20 16:22	-0.001905109	ND

Reduction Time	Coloring Time
7/8/20 14:26	7/8/20 14:27
7/8/20 14:30	7/8/20 14:31
7/8/20 14:32	7/8/20 14:33
7/8/20 14:35	7/8/20 14:36
7/8/20 14:38	7/8/20 14:39
7/8/20 14:41	7/8/20 14:42
NA	7/8/20 14:42
7/8/20 14:44	7/8/20 14:45
7/8/20 14:49	7/8/20 14:50

InstrumentID: H9



$$FC = [(A * CF) - Y] * DF$$

CF= 1.832116788 Y= 0.00740 r= 0.999780

DL Water(mg/L)	0.01	DL Soil(mg/Kg)	0.1
LOD Water(mg/L)	0.02	LOD Soil(mg/Kg)	0.2
LOQ Water(mg/L)	0.05	LOQ Soil(mg/Kg)	0.5

SOP

☑ EMAX-4500-NO3E Rev. 5

Standard / Reagent ID	Description	Conc.	Exp.Date
SW2B-30-17-02	ICAL CCV (mg/L)	10	07/08/20
SW2B-30-17-03	ICV LCS MS Std (mg/L)	10	07/08/20
SW2B-30-17-04	NO2 CHK	10	07/08/20
SW1A-009-03-04	Reagent Water	N/A	02/28/21
N/A	Sand	N/A	N/A
SWP1-56-46-01	Coloring Reagent	**	07/22/20
SWP1-56-50-01	NH4Cl-EDTA Soln	**	01/07/21
SWP1-56-49-03	HCl	1N	07/07/21
SWR1-01-819	NH4OH	CONC	04/30/25
N/A	Extraction Solvent	N/A	N/A
N/A	ZnSO4	N/A	N/A
SWP1-54-36-03	NaOH	10N	02/18/21
SWP1-54-37--01	NaOH	1N	02/18/21
SWP1-48-33-02	Cadmium Reduction Column	N/A	08/01/22
01220001	Snap Seal	1.5 OZ	N/A

Standard Prep	Intermediate Std Aliquot (ml)	Final Vol (ml)	DateTime
S0	0	20	7/8/20 15:15
S1	0.1	20	7/8/20 15:15
S2	0.2	20	7/8/20 15:15
S3	0.4	20	7/8/20 15:15
S4	1	20	7/8/20 15:15
S5	2	20	7/8/20 15:15
ICV	1	20	7/8/20 15:15
CCV	1	20	7/8/20 15:15
NO2 CHK	1	20	7/8/20 15:15
LCS EV	1	20	7/8/20 15:15
MS EV	1	20	7/8/20 15:15

MicropipetteID: 842750082 239360174 342780143

Expected Sample Amount: 20

Notes: **Concentration can be found in Reagent Log SWP1-56

LAB QC CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00210	NAG002WB	ND	ND	MB Passed
20NAG00211	NAG002WL	0.515	0.5	%R=103
20NAG00212	NAG002WC	0.522	0.5	%R=104

MS CHECK

DataFileID	LabSampleID	Result	Expected Value	QC Result
20NAG00227	F210-08I	0.92		
20NAG00229	F210-08IM	3.54	2.5	%R=105

DUP CHECK

DataFileID	LabSampleID	Result	Expected Value	RPD
20NAG00227	F210-08I	0.92		5
20NAG00228	F210-08ID	0.96	0.92	

☐ Leaching Date Time Start: ☐ End:

Filter: 0.45 µm

Analyzed by: VDuran

CALIBRATION CHECK pH Meter ID: 53

Buffer ID	Buffer	Rdg	Date
SW1-02-04-12	0.99	1.01	7/8/20 9:45
SW1-02-05-11	7.01	7	7/8/20 9:46
SW1-02-05-12	10.02	9.99	7/8/20 9:47
SW1-02-05-08	Check Std (7.96)	7.99	7/8/20 9:48

Reviewed by: VD

Date: 7/8/2020

DataFileID	LabSampleID	Result	Flag	RUnit	Sample Amt	SUnit	PDateTime	FinalVol (ml)	WL	Abs	ADateTime	Sample Bkgnd	DF	%M	Conc.	DFxPrep Factor	Notes	Analyst	Sample pH	Sample pH Adj	Reduction Time	Coloring Time
20NAG00210	NAG002WB	ND		mg/L	20	ml	NA	20	543nm	0.001 a	7/8/20 16:17	0	1		-0.00557	1		VDuran	5.77	8.52	7/8/20 14:52	7/8/20 14:53
20NAG00211	NAG002WL	0.515		mg/L	20	ml	NA	20	543nm	0.285 a	7/8/20 16:18	0	1		0.514752	1		VDuran	5.77	8.52	7/8/20 14:55	7/8/20 14:56
20NAG00212	NAG002WC	0.522		mg/L	20	ml	NA	20	543nm	0.289 a	7/8/20 16:18	0	1		0.52208	1		VDuran	5.77	8.52	7/8/20 14:58	7/8/20 14:59
20NAG00213	F178-01I	3.096		mg/L	20	ml	NA	20	543nm	0.342 a	7/8/20 16:18	0	5		3.095912	5		VDuran	1.41	8.51	7/8/20 15:01	7/8/20 15:02
20NAG00214	F178-02I	1.978		mg/L	20	ml	NA	20	543nm	0.22 a	7/8/20 16:18	0	5		1.978321	5		VDuran	1.41	8.55	7/8/20 15:04	7/8/20 15:05
20NAG00215	F178-04I	2.4		mg/L	20	ml	NA	20	543nm	0.266 a	7/8/20 16:18	0	5		2.399708	5		VDuran	1.5	8.49	7/8/20 15:07	7/8/20 15:08
20NAG00216	F178-05I	3.242		mg/L	20	ml	NA	20	543nm	0.358 a	7/8/20 16:19	0	5		3.242482	5		VDuran	1.44	8.53	7/8/20 15:10	7/8/20 15:11
20NAG00217	F178-07I	3.114		mg/L	20	ml	NA	20	543nm	0.344 a	7/8/20 16:19	0	5		3.114234	5		VDuran	1.55	8.55	7/8/20 15:13	7/8/20 15:14
20NAG00218	F178-08I	2.345		mg/L	20	ml	NA	20	543nm	0.26 a	7/8/20 16:19	0	5		2.344745	5		VDuran	1.53	8.55	7/8/20 15:16	7/8/20 15:17
20NAG00219	F178-10I	2.354		mg/L	20	ml	NA	20	543nm	0.261 a	7/8/20 16:19	0	5		2.353905	5		VDuran	1.42	8.5	7/8/20 15:19	7/8/20 15:20
20NAG00220	CCV1	0.485		mg/L	20	ml	NA	20	543nm	0.269 a	7/8/20 16:19	0	1		0.485438	1		VDuran			7/8/20 15:22	7/8/20 15:23
20NAG00221	CCB1	ND		mg/L	20	ml	NA	20	543nm	0.001 a	7/8/20 16:20	0	1		-0.00557	1		VDuran			7/8/20 15:27	7/8/20 15:28
20NAG00222	F178-11I	2.253		mg/L	20	ml	NA	20	543nm	0.25 a	7/8/20 16:20	0	5		2.253139	5		VDuran	1.48	8.54	7/8/20 15:30	7/8/20 15:31
20NAG00223	F210-01I	3.591		mg/L	20	ml	NA	20	543nm	0.396 a	7/8/20 16:20	0	5		3.590584	5		VDuran	1.44	8.56	7/8/20 15:33	7/8/20 15:34
20NAG00224	F210-04I	1.557		mg/L	20	ml	NA	20	543nm	0.174 a	7/8/20 16:20	0	5		1.556934	5		VDuran	1.52	8.52	7/8/20 15:36	7/8/20 15:37
20NAG00225	F210-05I	2.519		mg/L	20	ml	NA	20	543nm	0.279 a	7/8/20 16:20	0	5		2.518796	5		VDuran	1.51	8.55	7/8/20 15:39	7/8/20 15:40
20NAG00226	F210-07I	1.859		mg/L	20	ml	NA	20	543nm	0.207 a	7/8/20 16:21	0	5		1.859234	5		VDuran	1.47	8.56	7/8/20 15:42	7/8/20 15:43
20NAG00227	F210-08I	0.916		mg/L	20	ml	NA	20	543nm	0.104 a	7/8/20 16:21	0	5		0.915693	5		VDuran	1.47	8.55	7/8/20 15:45	7/8/20 15:46
20NAG00228	F210-08ID	0.961		mg/L	20	ml	NA	20	543nm	0.109 a	7/8/20 16:21	0	5		0.961496	5		VDuran	1.47	8.55	7/8/20 15:49	7/8/20 15:50
20NAG00229	F210-08IM	3.536		mg/L	20	ml	NA	20	543nm	0.39 a	7/8/20 16:21	0	5		3.53562	5		VDuran	1.47	8.55	7/8/20 15:52	7/8/20 15:53
20NAG00230	CCV2	0.474		mg/L	20	ml	NA	20	543nm	0.263 a	7/8/20 16:21	0	1		0.474445	1		VDuran			7/8/20 15:55	7/8/20 15:56
20NAG00231	CCB2	ND		mg/L	20	ml	NA	20	543nm	0.003 a	7/8/20 16:22	0	1		-0.00191	1		VDuran			7/8/20 16:04	7/8/20 16:05

Reviewed by: VD 07/08/20

CASE NARRATIVE

Client : CDM SMITH

Project: VA SALT LAKE CITY

SDG : 20F210

METHOD SW9060
TOC

A total of five(5) water samples were received on 06/25/20 to be analyzed for TOC in accordance with Method SW9060 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one(1) method blank was analyzed. Total Organic Carbon was not detected in TCG005WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of LCS/LCD was analyzed. TCG005WL/TCG005WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

METHOD SW9060
TOC

Client : CDM SMITH
Project : VA SALT LAKE CITY
Batch No. : 20F210

Matrix : WATER
Instrument ID : I62

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	TCG005WB	ND	1	NA	1.00	0.250	07/14/2007:38	NA	TCG005-40	TCG005-38	TCG005W	NA	NA
LCS1W	TCG005WL	25.1	1	NA	1.00	0.250	07/14/2007:54	NA	TCG005-41	TCG005-38	TCG005W	NA	NA
LCD1W	TCG005WC	25.1	1	NA	1.00	0.250	07/14/2008:10	NA	TCG005-42	TCG005-38	TCG005W	NA	NA
MW23C-GW062320	F210-01	0.971J	1	NA	1.00	0.250	07/14/2011:58	NA	TCG005-56	TCG005-50	TCG005W	06/23/2012:50	06/25/20
MW27-GW062420	F210-04	0.450J	1	NA	1.00	0.250	07/14/2012:12	NA	TCG005-57	TCG005-50	TCG005W	06/24/2009:35	06/25/20
MW28-GW062420	F210-05	0.491J	1	NA	1.00	0.250	07/14/2012:27	NA	TCG005-58	TCG005-50	TCG005W	06/24/2011:10	06/25/20
MW14S-GW062320	F210-07	0.913J	1	NA	1.00	0.250	07/14/2012:42	NA	TCG005-59	TCG005-50	TCG005W	06/23/2010:40	06/25/20
MW14D-GW062320	F210-08	0.443J	1	NA	1.00	0.250	07/14/2012:57	NA	TCG005-60	TCG005-50	TCG005W	06/23/2011:40	06/25/20

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: CDM SMITH
PROJECT: VA SALT LAKE CITY
BATCH NO.: 20F210
METHOD: SW9060

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	TCG005WB	TCG005WL	TCG005WC		
LAB FILE ID:	TCG005-40	TCG005-41	TCG005-42		
DATE EXTRACTED:	NA	NA	NA	DATE COLLECTED:	NA
DATE ANALYZED:	07/14/2007:38	07/14/2007:54	07/14/2008:10	DATE RECEIVED:	NA
PREP. BATCH:	TCG005W	TCG005W	TCG005W		
CALIB. REF:	TCG005-38	TCG005-38	TCG005-38		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Total Organic Carbon	ND	25	25.1	100	25	25.1	100	0	80-120	20

	Date	Time
Start	07/13/20	18:52
End	07/14/20	16:58

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

☑ Sample was filtered. Filter ID: 9147803

Comments: TCG004W: 20F183
20F215
20F490
20F491
TCG005W: 20F214
20F190
20F193
20F210
20F206
20F205
20F228

Reagent Water ID #: RWI-19-003

pH Strips Lot #: 1fc99803 2

2 M HCl SWPI-50-36-02

Book #: A62-039

Instrument No.: 62

Micropipette ID: ☑ 439350020

Micropipette ID: ☑ 539360056

Micropipette ID: ☑ 642780221

Micropipette ID: ☐

Analytical Sequence: TCG005

Method File: TCG005

Analytical Batch: TCG004L/SW

SOP #	Rev. #
☑ EMAX-5310B	4
☑ EMAX-9060	4
☐ EMAX-	

STANDARDS ID		CONC. (mg/L)
S0	RWI-19-003	0
S1	SW7B-01-18-06	1
S2	↓	5
S3	↓	10
S4	↓	40
S5	↓	80
S6	—	—
ICV/LCS	SW7B-01-18-07	25
CCV	SW7B-01-18-04	25
	—	—

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ TOC	
☐	

Analyzed By: WZ

Date: 07/13/20

	Type	Analysis	Sample Name	Sample ID	Dilutio	Result	Comment
1	Standard	NPOC	ICAL - Instrume	TCG005-01	1.000		TOC METHOD 9060/5310B
2	Control	NPOC	ICV	TCG005 02	1.000	NPOC:24.94 mg/L	
3	Unknown	NPOC	ICB	TCG005-03	1.000	NPOC:0.2168 mg/	
4	Unknown	NPOC	HCO3/CO3	TCG005-04	1.000	NPOC:0.1488 mg/	
5	Unknown	NPOC	TCG004WB	TCG005-05	1.000	NPOC:0.1374 mg/	FILTERED
6	Unknown	NPOC	TCG004WL	TCG005-06	1.000	NPOC:24.79 mg/L	FILTERED
7	Unknown	NPOC	TCG004WC	TCG005-07	1.000	NPOC:24.87 mg/L	FILTERED
8	Unknown	NPOC	F183-01	TCG005-08	1.000	NPOC:0.8595 mg/	PH<2
9	Unknown	NPOC	F183-02	TCG005-09	1.000	NPOC:0.5195 mg/	PH<2
10	Unknown	NPOC	F183-03	TCG005-10	1.000	NPOC:0.5233 mg/	PH<2
11	Unknown	NPOC	F183-05	TCG005-11	1.000	NPOC:0.4775 mg/	PH<2
12	Unknown	NPOC	F183-06	TCG005-12	1.000	NPOC:0.2940 mg/	PH<2
13	Unknown	NPOC	F183-07	TCG005-13	1.000	NPOC:0.5187 mg/	PH<2
14	Control	NPOC	CCV1	TCG005-14	1.000	NPOC:24.19 mg/L	
15	Unknown	NPOC	CCB1	TCG005-15	1.000	NPOC:0.1464 mg/	
16	Unknown	NPOC	F183-08	TCG005-16	1.000	NPOC:0.4563 mg/	PH<2
17	Unknown	NPOC	F183-08D	TCG005-17	1.000	NPOC:0.4795 mg/	PH<2
18	Unknown	NPOC	F183-08M	TCG005-18	1.000	NPOC:23.60 mg/L	PH<2
19	Unknown	NPOC	F183-08S	TCG005-19	1.000	NPOC:23.80 mg/L	PH<2
20	Unknown	NPOC	F183-12	TCG005-20	1.000	NPOC:0.4724 mg/	PH<2
21	Unknown	NPOC	F183-13	TCG005-21	1.000	NPOC:0.4360 mg/	PH<2
22	Unknown	NPOC	F183-14	TCG005-22	1.000	NPOC:6.638 mg/L	PH<2
23	Unknown	NPOC	F183-15	TCG005-23	1.000	NPOC:0.3329 mg/	PH<2
24	Unknown	NPOC	F183-16	TCG005-24	1.000	NPOC:0.3334 mg/	PH<2
25	Unknown	NPOC	F215-01	TCG005-25	1.000	NPOC:6.108 mg/L	PH<2
26	Control	NPOC	CCV2	TCG005-26	1.000	NPOC:24.19 mg/L	
27	Unknown	NPOC	CCB2	TCG005-27	1.000	NPOC:0.1715 mg/	
28	Unknown	NPOC	F215-02	TCG005-28	1.000	NPOC:4.297 mg/L	PH<2
29	Unknown	NPOC	F215-03	TCG005-29	1.000	NPOC:3.117 mg/L	PH<2
30	Unknown	NPOC	F215-04I	TCG005-30	3.000	NPOC:18.10 mg/L	DF=3; YELLOW; PH<2
31	Unknown	NPOC	F215-04ID	TCG005-31	3.000	NPOC:18.15 mg/L	DF=3; YELLOW; PH<2
32	Unknown	NPOC	F215-04IM	TCG005-32	3.000	NPOC:89.61 mg/L	DF=3; YELLOW; PH<2
33	Unknown	NPOC	F215-04IS	TCG005-33	3.000	NPOC:89.63 mg/L	DF=3; YELLOW; PH<2
34	Unknown	NPOC	F215-05	TCG005-34	1.000	NPOC:4.065 mg/L	PH<2
35	Unknown	NPOC	F215-06	TCG005-35	1.000	NPOC:4.410 mg/L	PH<2
36	Unknown	NPOC	F490-01I	TCG005-36	100.0	NPOC:76.42 mg/L	DF=100; FILTERED; DIRTY; ODOR; PH<2
37	Unknown	NPOC	F491-01I	TCG005-37	500.0	NPOC:2142 mg/L	DF=500; FILTERED; BROWN; DIRTY; ODOR; PH<
38	Control	NPOC	CCV3	TCG005-38	1.000	NPOC:23.98 mg/L	
39	Unknown	NPOC	CCB3	TCG005-39	1.000	NPOC:0.1745 mg/	
40	Unknown	NPOC	TCG005WB	TCG005-40	1.000	NPOC:0.1928 mg/	
41	Unknown	NPOC	TCG005WL	TCG005-41	1.000	NPOC:25.08 mg/L	
42	Unknown	NPOC	TCG005WC	TCG005-42	1.000	NPOC:25.06 mg/L	
43	Unknown	NPOC	F524-01I	TCG005-43	10.00	NPOC:341.1 mg/L	DF=10; LIGHT BROWN; PH<2
44	Unknown	NPOC	F190-01	TCG005-44	1.000	NPOC:6.452 mg/L	PH<2
45	Unknown	NPOC	F190-02	TCG005-45	1.000	NPOC:0.6472 mg/	PH<2
46	Unknown	NPOC	F190-02D	TCG005-46	1.000	NPOC:0.5666 mg/	PH<2
47	Unknown	NPOC	F190-02M	TCG005-47	1.000	NPOC:24.34 mg/L	PH<2
48	Unknown	NPOC	F190-02S	TCG005-48	1.000	NPOC:24.60 mg/L	PH<2
49	Unknown	NPOC	F190-03	TCG005-49	1.000	NPOC:1.324 mg/L	PH<2
50	Control	NPOC	CCV4	TCG005-50	1.000	NPOC:23.91 mg/L	
51	Unknown	NPOC	CCB5	TCG005-51	1.000	NPOC:0.1232 mg/	
52	Unknown	NPOC	F190-04	TCG005-52	1.000	NPOC:2.194 mg/L	PH<2
53	Unknown	NPOC	F193-02	TCG005-53	1.000	NPOC:1.895 mg/L	PH<2
54	Unknown	NPOC	F193-03	TCG005-54	1.000	NPOC:2.139 mg/L	PH<2
55	Unknown	NPOC	F193-04	TCG005-55	1.000	NPOC:2.191 mg/L	PH<2
56	Unknown	NPOC	F210-01	TCG005-56	1.000	NPOC:0.9706 mg/	PH<2
57	Unknown	NPOC	F210-04	TCG005-57	1.000	NPOC:0.4500 mg/	PH<2
58	Unknown	NPOC	F210-05	TCG005-58	1.000	NPOC:0.4911 mg/	PH<2
59	Unknown	NPOC	F210-07	TCG005-59	1.000	NPOC:0.9126 mg/	PH<2
60	Unknown	NPOC	F210-08	TCG005-60	1.000	NPOC:0.4428 mg/	PH<2
61	Unknown	NPOC	F206-03	TCG005-61	1.000	NPOC:4.333 mg/L	PH<2
62	Control	NPOC	CCV5	TCG005-62	1.000	NPOC:24.02 mg/L	
63	Unknown	NPOC	CCB5	TCG005-63	1.000	NPOC:0.1241 mg/	
64	Unknown	NPOC	F206-04	TCG005-64	1.000	NPOC:3.514 mg/L	PH<2
65	Unknown	NPOC	F206-05	TCG005-65	1.000	NPOC:3.443 mg/L	PH<2
66	Unknown	NPOC	F208-02	TCG005-66	1.000	NPOC:0.7294 mg/	PH<2
67	Unknown	NPOC	F208-02D	TCG005-67	1.000	NPOC:0.6978 mg/	PH<2

	Type	Analysis	Sample Name	Sample ID	Dilutio	Result	Comment
68	Unknown	NPOC	F208-02M	TCG005-68	1.000	NPOC:24.27 mg/L	PH<2
69	Unknown	NPOC	F208-02S	TCG005-69	1.000	NPOC:24.35 mg/L	PH<2
70	Unknown	NPOC	F208-03	TCG005-70	1.000	NPOC:0.6135 mg/	PH<2
71	Unknown	NPOC	F228-01	TCG005-71	1.000	NPOC:1.591 mg/L	PH<2
72	Unknown	NPOC	F228-02	TCG005-72	1.000	NPOC:0.3731 mg/	PH<2
73	Control	NPOC	CCV6	TCG005-73	1.000	NPOC:24.64 mg/L	
74	Unknown	NPOC	CCB6	TCG005-74	1.000	NPOC:0.1667 mg/	
75							
76							
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100							

7/15/20

Instr.Information

System	TOC-9060/415.1/5310B
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

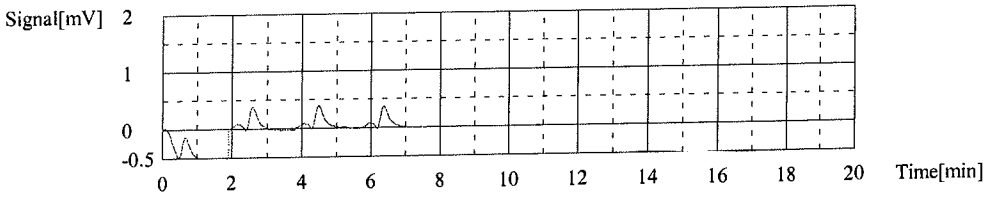
Sample Name:	ICAL - Instrument 62
Sample ID:	TCG005-01
Cal. Curve:	TCG005.2020_07_13_18_43_42.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	0.4655	50uL	1	*******		07/13/20 06:52:12 PM
2	0.7011	50uL	1	*******		07/13/20 06:54:16 PM
3	0.5562	50uL	1	*******		07/13/20 06:56:21 PM
4	0.6379	50uL	1	*******		07/13/20 06:58:25 PM

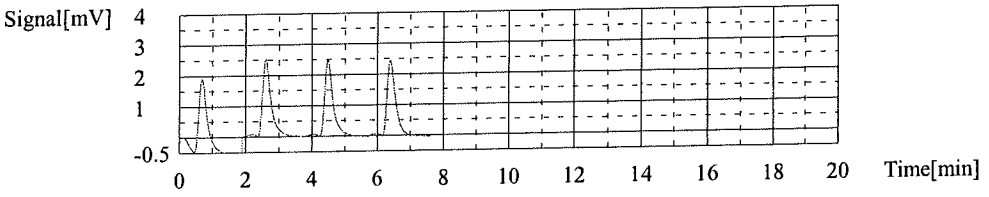
Acid Add.	2.500%
Sp. Time	90.00sec
Mean Area	0.5902



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	3.920	50uL	1	*******		07/13/20 07:07:11 PM
2	4.486	50uL	1	*******		07/13/20 07:09:16 PM
3	4.336	50uL	1	*******		07/13/20 07:11:21 PM
4	4.289	50uL	1	*******		07/13/20 07:13:25 PM

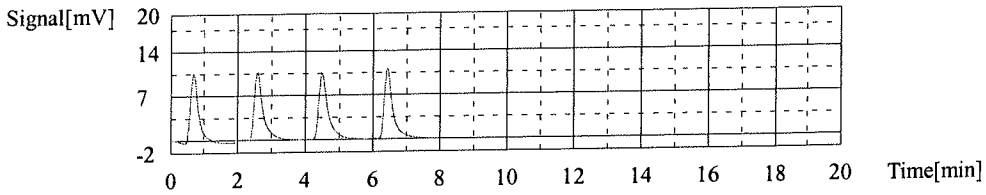
Acid Add.	2.500%
Sp. Time	90.00sec
Mean Area	4.258



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	19.63	50uL	1	*******		07/13/20 07:22:11 PM
2	19.67	50uL	1	*******		07/13/20 07:24:16 PM
3	20.20	50uL	1	*******		07/13/20 07:26:23 PM
4	20.53	50uL	1	*******		07/13/20 07:28:34 PM

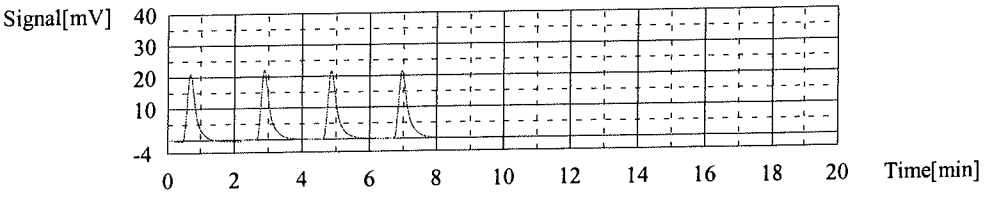
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 20.01



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	40.65	50uL	1	*******		07/13/20 07:37:39 PM
2	41.30	50uL	1	*******		07/13/20 07:39:50 PM
3	41.37	50uL	1	*******		07/13/20 07:42:06 PM
4	40.80	50uL	1	*******		07/13/20 07:44:17 PM

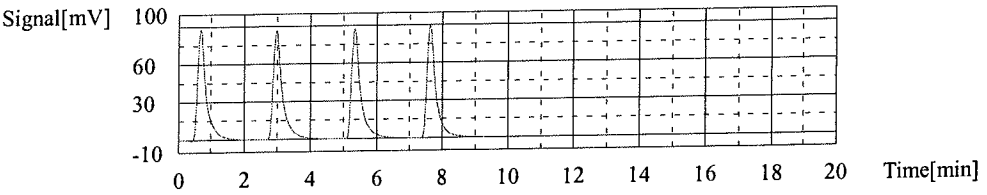
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 41.03



Conc: 40.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	169.0	50uL	1	*******		07/13/20 07:53:29 PM
2	170.0	50uL	1	*******		07/13/20 07:56:02 PM
3	169.5	50uL	1	*******		07/13/20 07:58:30 PM
4	171.0	50uL	1	*******		07/13/20 08:01:03 PM

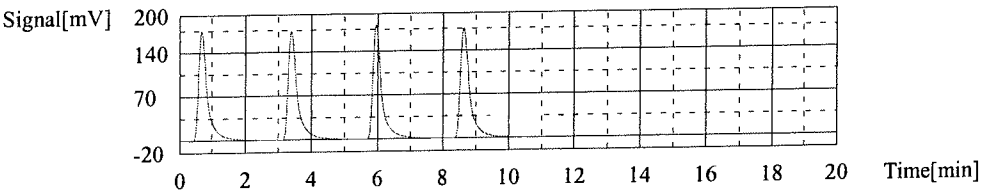
Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 169.9



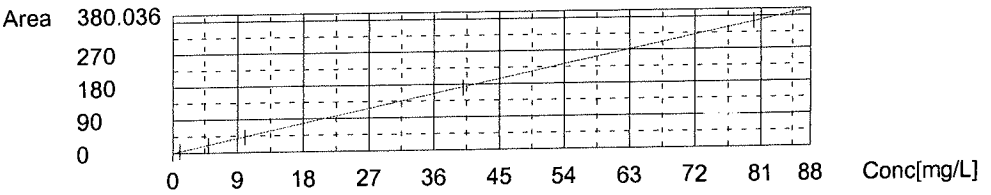
Conc: 80.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	346.2	50uL	1	*******		07/13/20 08:10:40 PM
2	341.3	50uL	1	*******		07/13/20 08:13:24 PM
3	345.6	50uL	1	*******		07/13/20 08:16:14 PM
4	349.3	50uL	1	*******		07/13/20 08:19:03 PM

Acid Add. 2.500%
Sp. Time 90.00sec
Mean Area 345.6



Slope: 4.319
Intercept 0.000
r^2 0.999896



Control Sample

Sample Name: ICV
Sample ID: TCG005-02
Method: TCG005.tpl
Chk. Result Control value: 24.94 / Control exceeds range!

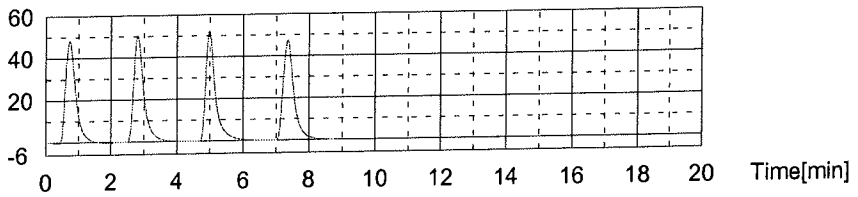
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.94 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.3	24.85mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:28:09 PM
2	108.5	25.12mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:30:32 PM
3	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:33:01 PM
4	107.3	24.85mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:35:23 PM

Mean Area 107.7
Mean Conc. 24.94mg/L



Sample

Sample Name: ICB
Sample ID: TCG005-03
Origin: TCG005.cal
Chk. Result

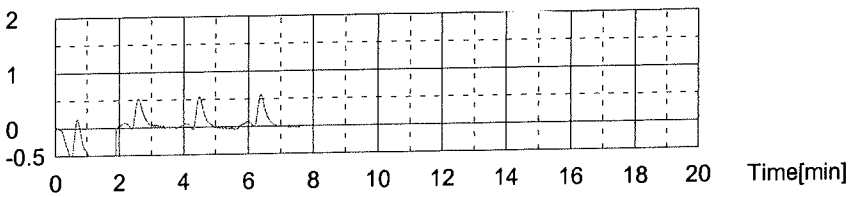
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2168 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9552	0.2212mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:44:13 PM
2	0.8481	0.1964mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:46:18 PM
3	0.9180	0.2126mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:48:23 PM
4	1.024	0.2371mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 08:50:28 PM

Mean Area 0.9363
Mean Conc. 0.2168mg/L



Sample

Sample Name: HCO3/CO3
Sample ID: TCG005-04
Origin: TCG005.cal
Chk. Result

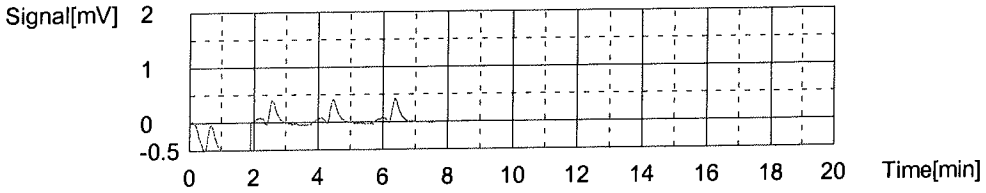
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1488 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.6751	0.1563mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:12:10 PM
2	0.6157	0.1426mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:14:15 PM
3	0.6956	0.1611mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:16:20 PM
4	0.5837	0.1352mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:18:25 PM

Mean Area 0.6425
Mean Conc. 0.1488mg/L



Sample

Sample Name: TCG004WB
Sample ID: TCG005-05
Origin: TCG005.cal
Chk. Result

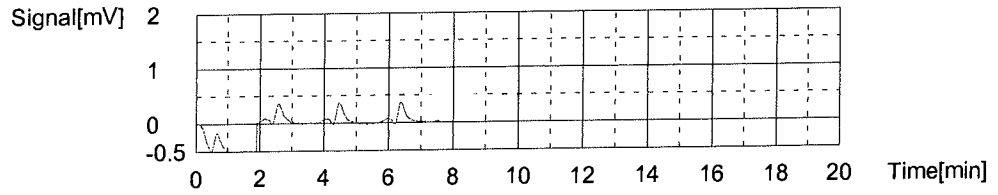
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1374 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4609	0.1067mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:40:05 PM
2	0.6359	0.1472mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:42:10 PM
3	0.6619	0.1533mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:44:15 PM
4	0.6155	0.1425mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:46:20 PM

Mean Area 0.5936
Mean Conc. 0.1374mg/L



Sample

Sample Name: TCG004WL
Sample ID: TCG005-06
Origin: TCG005.cal
Chk. Result

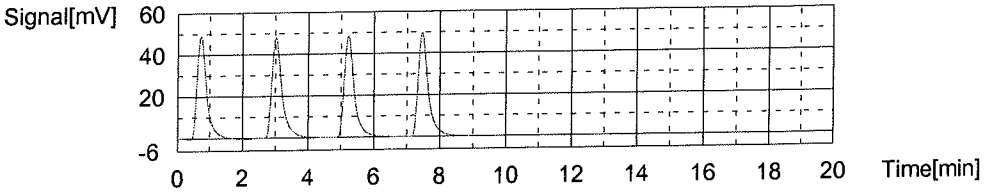
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.79 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.8	24.73mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:55:29 PM
2	106.7	24.71mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 09:57:52 PM
3	107.2	24.82mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:00:18 PM
4	107.5	24.89mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:02:39 PM

Mean Area 107.1
Mean Conc. 24.79mg/L



Sample

Sample Name: TCG004WC
Sample ID: TCG005-07
Origin: TCG005.cal
Chk. Result

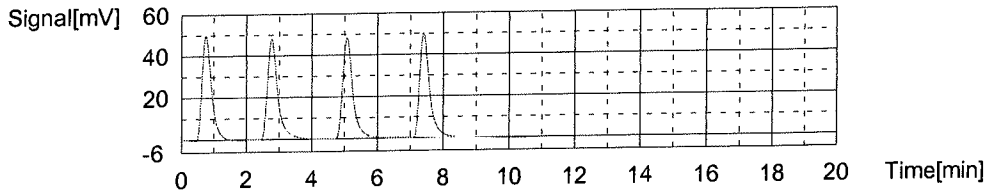
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.87 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.0	24.78mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:11:32 PM
2	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:14:03 PM
3	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:16:35 PM
4	107.2	24.82mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:18:51 PM

Mean Area 107.4
Mean Conc. 24.87mg/L



Sample

Sample Name: F183-01
Sample ID: TCG005-08
Origin: TCG005.cal
Chk. Result

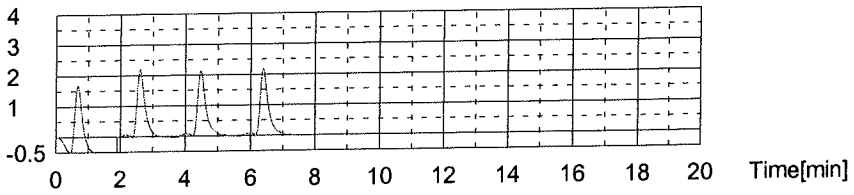
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.8595 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.532	0.8179mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:27:38 PM
2	3.937	0.9116mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:29:43 PM
3	3.662	0.8480mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:31:49 PM
4	3.716	0.8605mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:33:54 PM

Mean Area 3.712
Mean Conc. 0.8595mg/L



Sample

Sample Name: F183-02
Sample ID: TCG005-09
Origin: TCG005.cal
Chk. Result

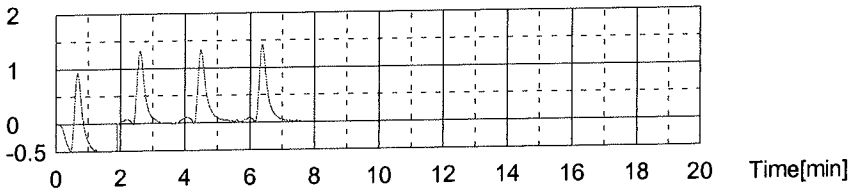
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5195 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.306	0.5340mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:42:41 PM
2	2.181	0.5050mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:44:46 PM
3	2.230	0.5164mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:46:52 PM
4	2.257	0.5226mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:48:57 PM

Mean Area 2.244
Mean Conc. 0.5195mg/L



Sample

Sample Name: F183-03
Sample ID: TCG005-10
Origin: TCG005.cal
Chk. Result

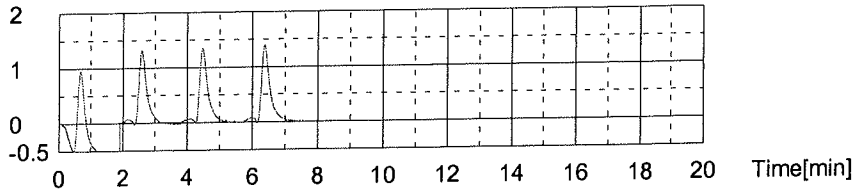
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5233 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.326	0.5386mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:57:44 PM
2	2.192	0.5076mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 10:59:49 PM
3	2.115	0.4897mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:01:54 PM
4	2.406	0.5571mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:04:00 PM

Mean Area 2.260
Mean Conc. 0.5233mg/L



Sample

Sample Name: F183-05
Sample ID: TCG005-11
Origin: TCG005.cal
Chk. Result

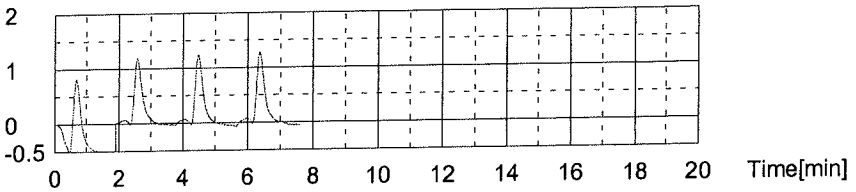
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4775 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.085	0.4828mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:12:46 PM
2	2.026	0.4691mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:14:51 PM
3	2.114	0.4895mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:16:56 PM
4	2.024	0.4687mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:19:02 PM

Mean Area 2.062
Mean Conc. 0.4775mg/L



Sample

Sample Name: F183-06
Sample ID: TCG005-12
Origin: TCG005.cal
Chk. Result

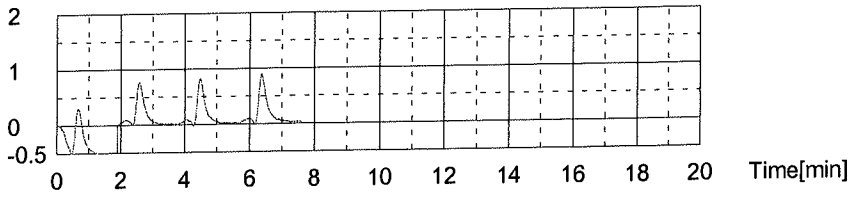
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.2940 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.287	0.2980mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:27:48 PM
2	1.178	0.2728mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:29:53 PM
3	1.233	0.2855mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:31:58 PM
4	1.381	0.3198mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:34:04 PM

Mean Area 1.270
Mean Conc. 0.2940mg/L



Sample

Sample Name: F183-07
Sample ID: TCG005-13
Origin: TCG005.cal
Chk. Result

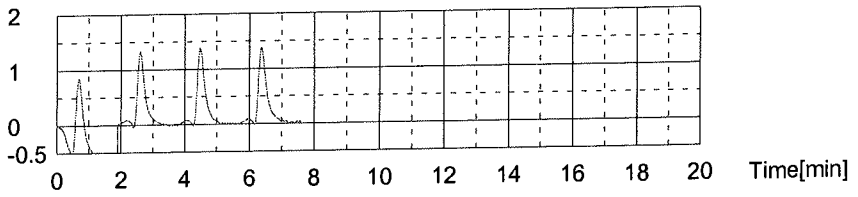
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5187 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.285	0.5291mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:42:51 PM
2	2.140	0.4955mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:44:56 PM
3	2.218	0.5136mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:47:01 PM
4	2.318	0.5367mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:49:07 PM

Mean Area 2.240
Mean Conc. 0.5187mg/L



Control Sample

Sample Name: CCV1
Sample ID: TCG005-14
Method: TCG005.tpl
Chk. Result Control value: 24.19 / Control exceeds range!

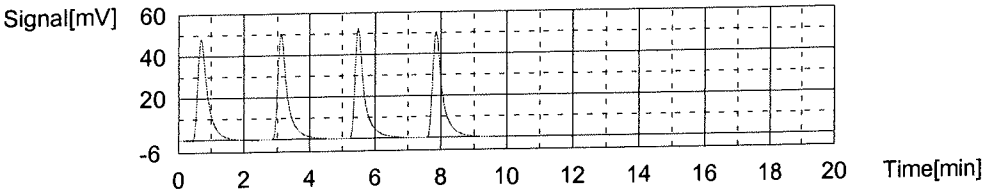
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.19 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/13/20 11:58:24 PM
2	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:00:58 AM
3	104.0	24.08mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:03:32 AM
4	103.8	24.04mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:06:01 AM

Mean Area 104.5
Mean Conc. 24.19mg/L



Sample

Sample Name: CCB1
Sample ID: TCG005-15
Origin: TCG005.cal
Chk. Result

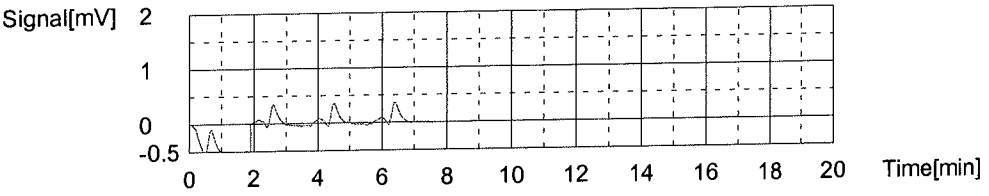
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1464 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.7150	0.1656mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:27:41 AM
2	0.5958	0.1380mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:29:46 AM
3	0.5762	0.1334mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:31:51 AM
4	0.6412	0.1485mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:33:56 AM

Mean Area 0.6321
Mean Conc. 0.1464mg/L



Sample

Sample Name: F183-08
Sample ID: TCG005-16
Origin: TCG005.cal
Chk. Result

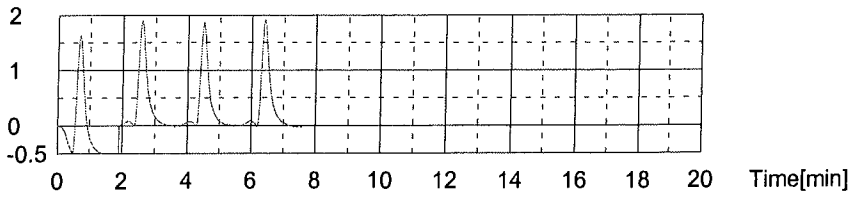
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4563 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.365	77.92mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:03:52 AM
2	3.260	75.49mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:05:57 AM
3	3.165	73.29mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:08:02 AM
4	3.411	78.98mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:10:07 AM

Mean Area 3.300
Mean Conc. 76.42mg/L



Sample

Sample Name: F491-01I
Sample ID: TCG005-37
Origin: TCG005.cal
Chk. Result

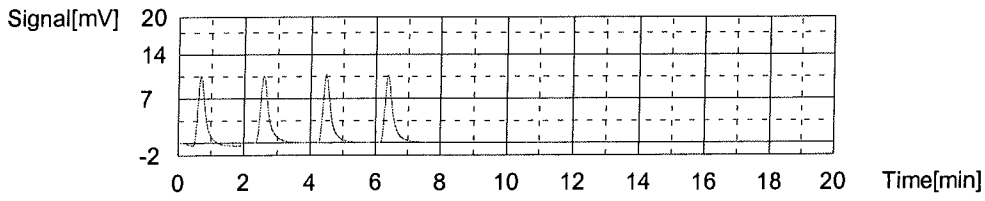
Type	Anal.	Dil.	Result
Unknown	NPOC	500.0	NPOC:2142 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.56	2149mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:18:56 AM
2	18.52	2144mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:21:01 AM
3	18.23	2111mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:23:06 AM
4	18.69	2164mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:25:11 AM

Mean Area 18.50
Mean Conc. 2142mg/L



Control Sample

Sample Name: CCV3
Sample ID: TCG005-38
Method: TCG005.tpl
Chk. Result Control value: 23.98 / Control exceeds range!

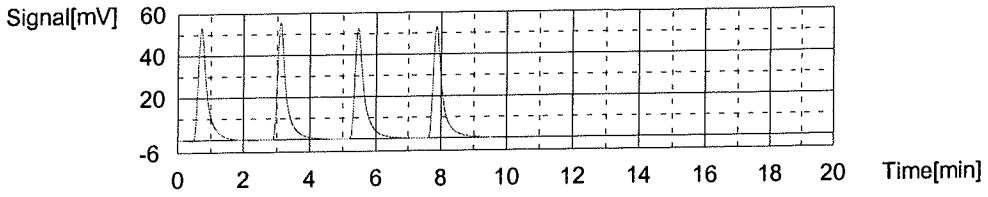
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:23.98 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.8	24.04mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:47:23 AM
2	103.6	23.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:49:54 AM
3	103.4	23.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:52:29 AM
4	103.5	23.97mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 06:55:01 AM

Mean Area 103.6
Mean Conc. 23.98mg/L



Sample

Sample Name: CCB3
Sample ID: TCG005-39
Origin: TCG005.cal
Chk. Result

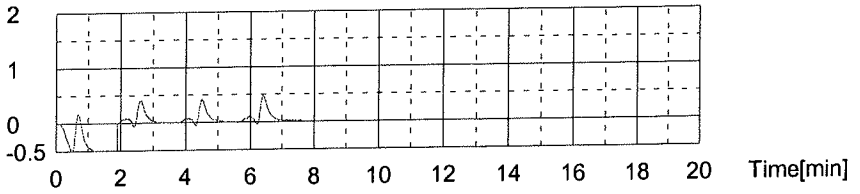
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1745 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9648	0.2234mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:16:42 AM
2	0.6808	0.1576mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:18:47 AM
3	0.6184	0.1432mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:20:53 AM
4	0.7504	0.1738mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:22:58 AM

Mean Area 0.7536
Mean Conc. 0.1745mg/L



Sample

Sample Name: TCG005WB
Sample ID: TCG005-40
Origin: TCG005.cal
Chk. Result

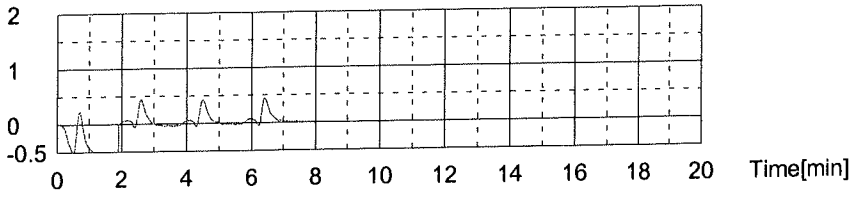
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1928 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.067	0.2471mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:31:45 AM
2	0.7329	0.1697mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:33:50 AM
3	0.7708	0.1785mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:35:56 AM
4	0.7600	0.1760mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:38:01 AM

Mean Area 0.8327
Mean Conc. 0.1928mg/L



Sample

Sample Name: TCG005WL
Sample ID: TCG005-41
Origin: TCG005.cal
Chk. Result

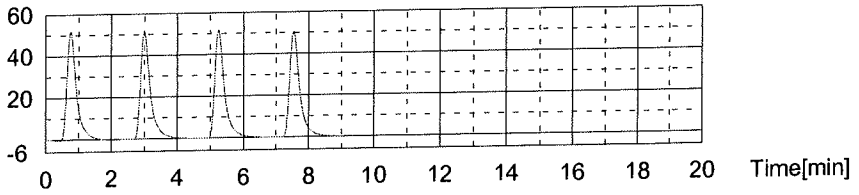
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:25.08 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.0	25.24mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:47:03 AM
2	107.8	24.96mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:49:30 AM
3	107.6	24.92mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:51:59 AM
4	108.9	25.22mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 07:54:23 AM

Mean Area 108.3
Mean Conc. 25.08mg/L



Sample

Sample Name: TCG005WC
Sample ID: TCG005-42
Origin: TCG005.cal
Chk. Result

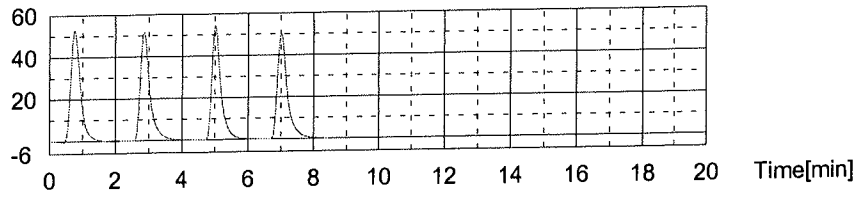
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:25.06 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	109.2	25.29mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:03:17 AM
2	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:05:37 AM
3	108.3	25.08mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:07:50 AM
4	107.7	24.94mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:10:11 AM

Mean Area 108.2
Mean Conc. 25.06mg/L



Sample

Sample Name: F524-011
Sample ID: TCG005-43
Origin: TCG005.cal
Chk. Result

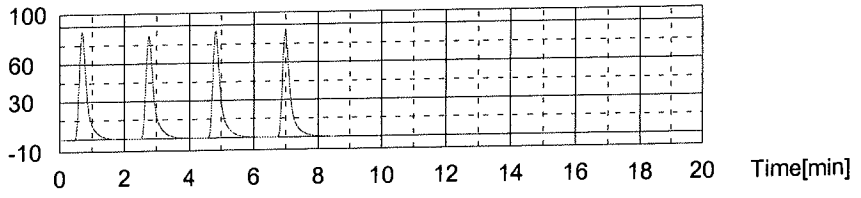
Type	Anal.	Dil.	Result
Unknown	NPOC	10.00	NPOC:341.1 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	146.4	339.0mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:19:09 AM
2	147.1	340.6mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:21:24 AM
3	148.1	342.9mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:23:45 AM
4	147.7	342.0mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:26:08 AM

Mean Area 147.3
Mean Conc. 341.1mg/L



Sample

Sample Name: F190-01
Sample ID: TCG005-44
Origin: TCG005.cal
Chk. Result

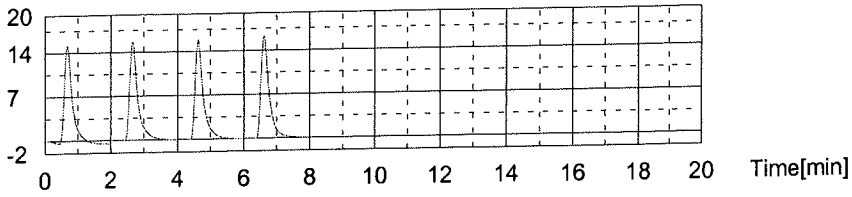
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:6.452 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.31	6.324mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:35:01 AM
2	27.55	6.379mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:37:08 AM
3	28.20	6.530mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:39:20 AM
4	28.40	6.576mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:41:25 AM

Mean Area 27.87
Mean Conc. 6.452mg/L



Sample

Sample Name: F190-02
Sample ID: TCG005-45
Origin: TCG005.cal
Chk. Result

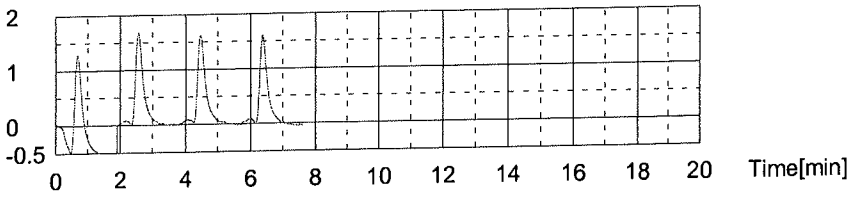
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6472 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.832	0.6558mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:50:02 AM
2	2.954	0.6840mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:52:07 AM
3	2.764	0.6400mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:54:12 AM
4	2.630	0.6090mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 08:56:18 AM

Mean Area 2.795
Mean Conc. 0.6472mg/L



Sample

Sample Name: F190-02D
Sample ID: TCG005-46
Origin: TCG005.cal
Chk. Result

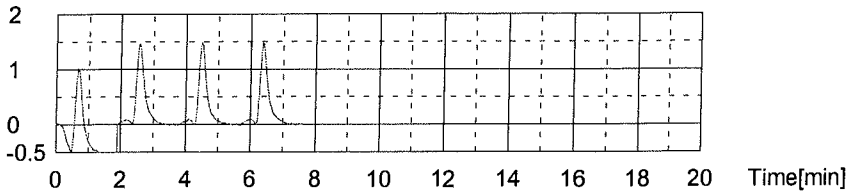
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.5666 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2.254	0.5219mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:05:06 AM
2	2.509	0.5810mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:07:11 AM
3	2.390	0.5534mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:09:16 AM
4	2.634	0.6099mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:11:22 AM

Mean Area 2.447
Mean Conc. 0.5666mg/L



Sample

Sample Name: F190-02M
Sample ID: TCG005-47
Origin: TCG005.cal
Chk. Result

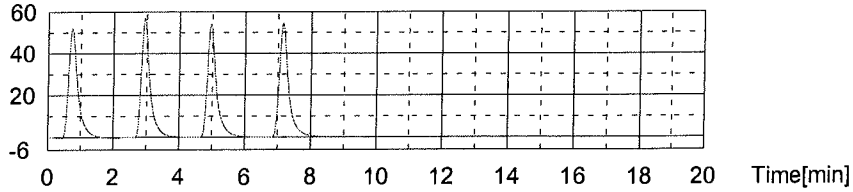
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.34 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.8	24.50mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:20:29 AM
2	104.6	24.22mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:22:41 AM
3	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:25:03 AM
4	105.0	24.31mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:27:22 AM

Mean Area 105.1
Mean Conc. 24.34mg/L



Sample

Sample Name: F190-02S
Sample ID: TCG005-48
Origin: TCG005.cal
Chk. Result

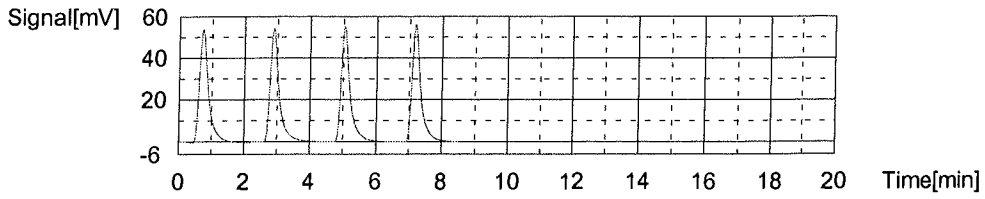
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.60 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.1	24.80mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:36:27 AM
2	105.5	24.43mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:38:46 AM
3	106.5	24.66mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:41:05 AM
4	105.9	24.52mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:43:22 AM

Mean Area 106.3
Mean Conc. 24.60mg/L



Sample

Sample Name: F190-03
Sample ID: TCG005-49
Origin: TCG005.cal
Chk. Result

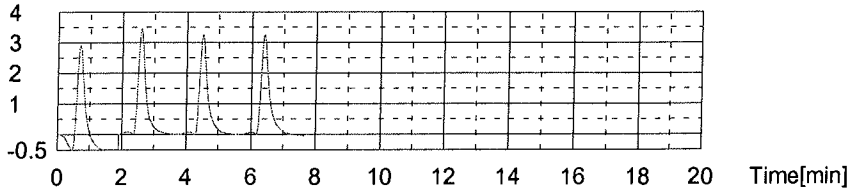
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.324 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.583	1.293mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:52:10 AM
2	5.867	1.359mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:54:15 AM
3	5.842	1.353mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:56:20 AM
4	5.583	1.293mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 09:58:26 AM

Mean Area 5.719
Mean Conc. 1.324mg/L



Control Sample

Sample Name: CCV4
Sample ID: TCG005-50
Method: TCG005.tpl
Chk. Result Control value: 23.91 / Control exceeds range!

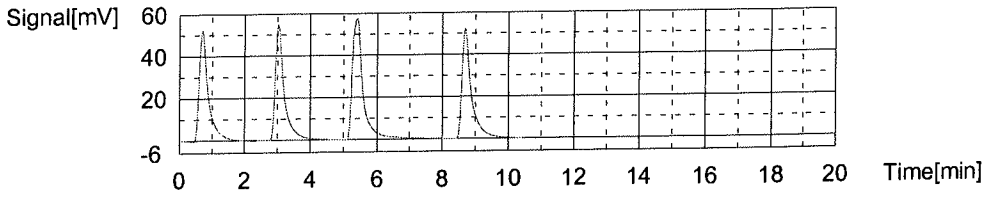
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:23.91 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.0	23.85mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:07:40 AM
2	103.6	23.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:10:09 AM
3	103.3	23.92mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:12:39 AM
4	103.2	23.90mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:15:13 AM

Mean Area 103.3
Mean Conc. 23.91mg/L



Sample

Sample Name: CCB5
Sample ID: TCG005-51
Origin: TCG005.cal
Chk. Result

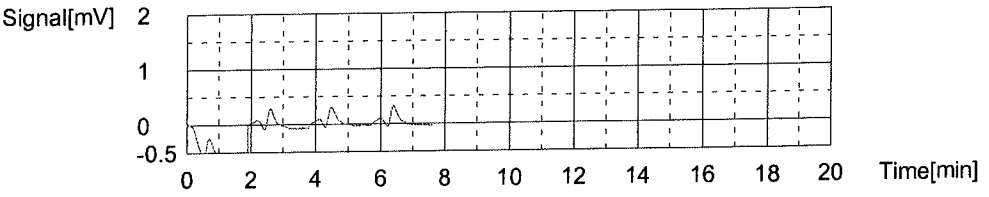
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1232 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5270	0.1220mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:36:51 AM
2	0.5130	0.1188mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:38:55 AM
3	0.5205	0.1205mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:41:00 AM
4	0.5682	0.1316mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:43:05 AM

Mean Area 0.5322
Mean Conc. 0.1232mg/L



Sample

Sample Name: F190-04
Sample ID: TCG005-52
Origin: TCG005.cal
Chk. Result

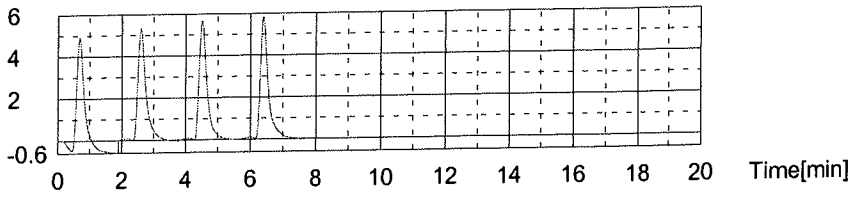
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.194 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.221	2.135mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:51:52 AM
2	9.546	2.210mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:53:56 AM
3	9.558	2.213mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:56:01 AM
4	9.578	2.218mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 10:58:06 AM

Mean Area 9.476
Mean Conc. 2.194mg/L



Sample

Sample Name: F193-02
Sample ID: TCG005-53
Origin: TCG005.cal
Chk. Result

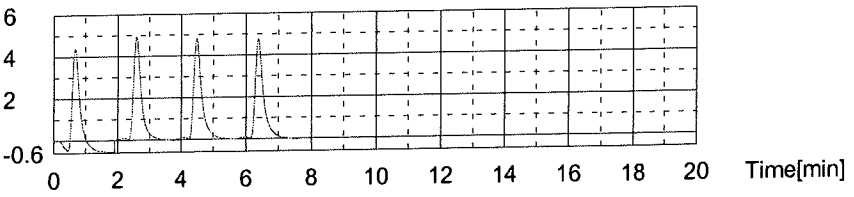
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.895 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.124	1.881mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:06:53 AM
2	8.481	1.964mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:08:57 AM
3	7.983	1.849mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:11:02 AM
4	8.143	1.886mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:13:07 AM

Mean Area 8.183
Mean Conc. 1.895mg/L



Sample

Sample Name: F193-03
Sample ID: TCG005-54
Origin: TCG005.cal
Chk. Result

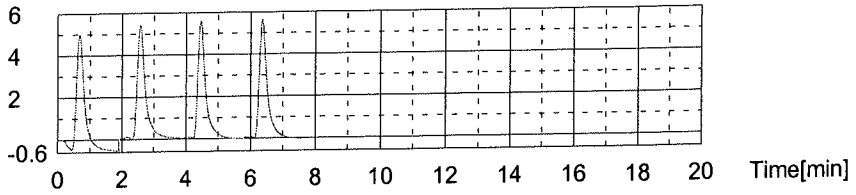
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.139 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.952	2.073mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:21:54 AM
2	9.354	2.166mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:23:58 AM
3	9.260	2.144mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:26:03 AM
4	9.381	2.172mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:28:07 AM

Mean Area 9.237
Mean Conc. 2.139mg/L



Sample

Sample Name: F193-04
Sample ID: TCG005-55
Origin: TCG005.cal
Chk. Result

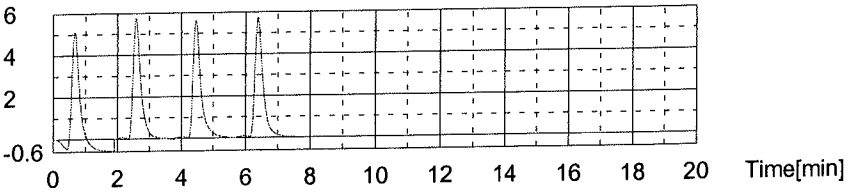
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.191 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.158	2.121mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:36:55 AM
2	9.507	2.201mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:38:59 AM
3	9.506	2.201mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:41:04 AM
4	9.679	2.241mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:43:08 AM

Mean Area 9.463
Mean Conc. 2.191mg/L



Sample

Sample Name: F210-01
Sample ID: TCG005-56
Origin: TCG005.cal
Chk. Result

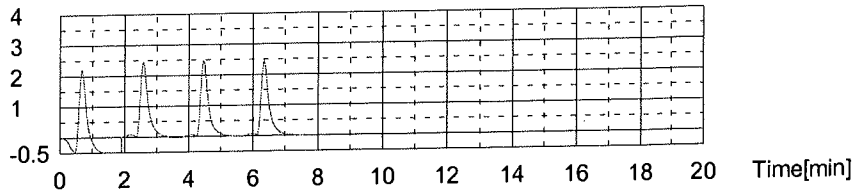
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.9706 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.349	1.007mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:51:50 AM
2	4.309	0.9978mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:53:54 AM
3	4.119	0.9538mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:55:59 AM
4	3.989	0.9237mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 11:58:03 AM

Mean Area 4.192
Mean Conc. 0.9706mg/L



Sample

Sample Name: F210-04
Sample ID: TCG005-57
Origin: TCG005.cal
Chk. Result

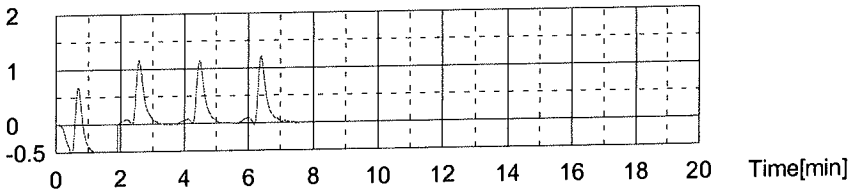
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4500 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.880	0.4353mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:06:41 PM
2	2.073	0.4800mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:08:45 PM
3	1.870	0.4330mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:10:50 PM
4	1.950	0.4515mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:12:54 PM

Mean Area 1.943
Mean Conc. 0.4500mg/L



Sample

Sample Name: F210-05
Sample ID: TCG005-58
Origin: TCG005.cal
Chk. Result

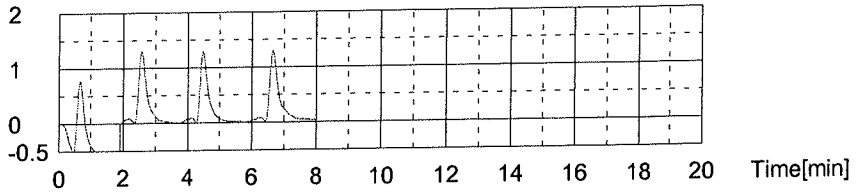
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4911 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.902	0.4404mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:21:32 PM
2	2.235	0.5175mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:23:36 PM
3	2.028	0.4696mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:25:41 PM
4	2.318	0.5367mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:27:45 PM

Mean Area 2.121
Mean Conc. 0.4911mg/L



Sample

Sample Name: F210-07
Sample ID: TCG005-59
Origin: TCG005.cal
Chk. Result

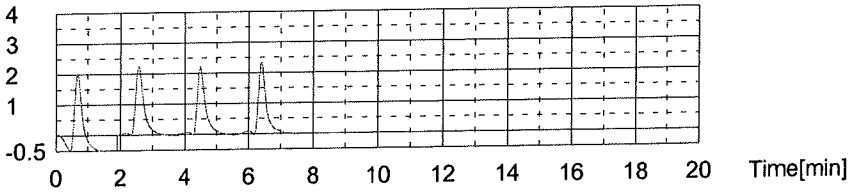
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.9126 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.114	0.9526mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:36:28 PM
2	3.993	0.9246mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:38:32 PM
3	3.744	0.8669mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:40:36 PM
4	3.913	0.9061mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:42:41 PM

Mean Area 3.941
Mean Conc. 0.9126mg/L



Sample

Sample Name: F210-08
Sample ID: TCG005-60
Origin: TCG005.cal
Chk. Result

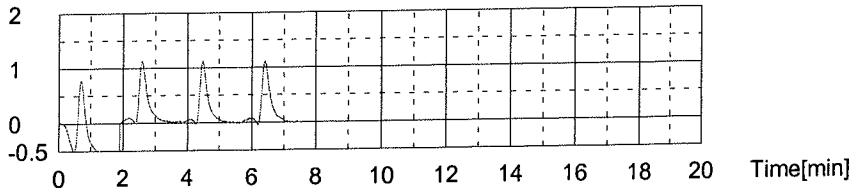
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.4428 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.953	0.4522mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:51:22 PM
2	1.933	0.4476mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:53:27 PM
3	1.865	0.4319mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:55:31 PM
4	1.898	0.4395mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 12:57:36 PM

Mean Area 1.912
Mean Conc. 0.4428mg/L



Sample

Sample Name: F206-03
Sample ID: TCG005-61
Origin: TCG005.cal
Chk. Result

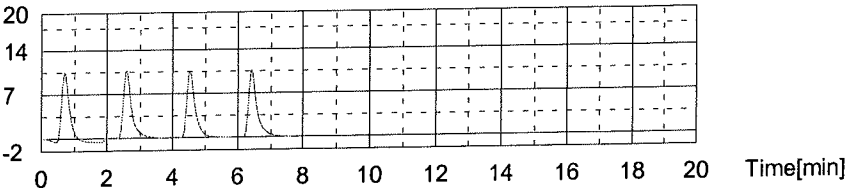
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:4.333 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.69	4.328mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:06:17 PM
2	18.94	4.386mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:08:24 PM
3	18.33	4.244mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:10:28 PM
4	18.89	4.374mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:12:33 PM

Mean Area 18.71
Mean Conc. 4.333mg/L



Control Sample

Sample Name: CCV5
Sample ID: TCG005-62
Method: TCG005.tpl
Chk. Result Control value: 24.02 / Control exceeds range!

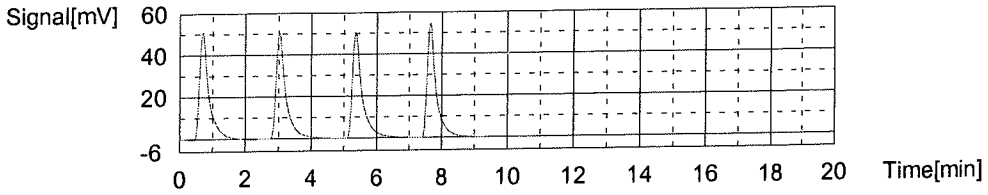
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.02 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	103.6	23.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:21:41 PM
2	103.5	23.97mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:24:12 PM
3	103.6	23.99mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:26:39 PM
4	104.3	24.15mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:29:09 PM

Mean Area 103.8
Mean Conc. 24.02mg/L



Sample

Sample Name: CCB5
Sample ID: TCG005-63
Origin: TCG005.cal
Chk. Result

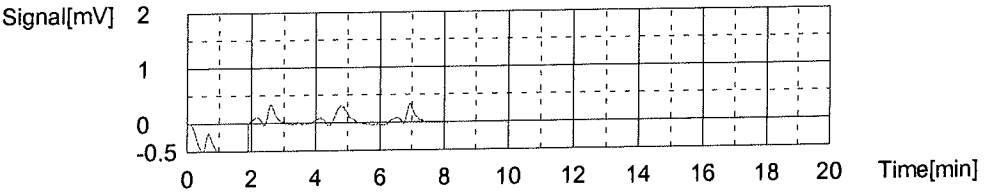
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1241 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5141	0.1190mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:50:44 PM
2	0.5872	0.1360mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:52:49 PM
3	0.5304	0.1228mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:54:53 PM
4	0.5119	0.1185mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 01:56:58 PM

Mean Area 0.5359
Mean Conc. 0.1241mg/L



Sample

Sample Name: F206-04
Sample ID: TCG005-64
Origin: TCG005.cal
Chk. Result

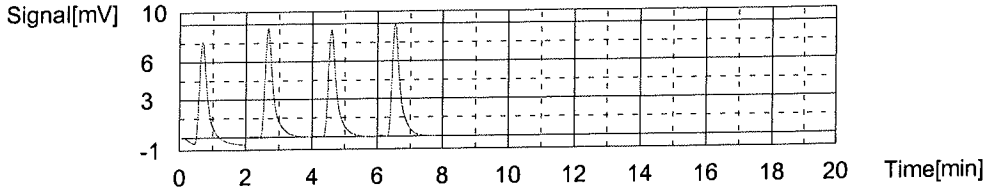
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.514 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.75	3.415mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:05:53 PM
2	15.14	3.506mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:07:58 PM
3	15.33	3.550mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:10:06 PM
4	15.49	3.587mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:12:11 PM

Mean Area 15.18
Mean Conc. 3.514mg/L



Sample

Sample Name: F206-05
Sample ID: TCG005-65
Origin: TCG005.cal
Chk. Result

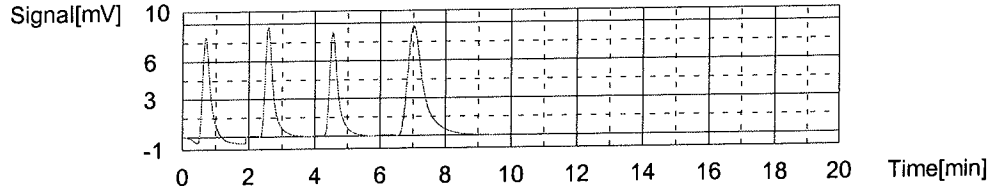
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.443 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.51	3.360mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:20:53 PM
2	14.68	3.399mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:23:01 PM
3	15.11	3.499mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:25:06 PM
4	15.18	3.515mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:27:10 PM

Mean Area 14.87
Mean Conc. 3.443mg/L



Sample

Sample Name: F208-02
Sample ID: TCG005-66
Origin: TCG005.cal
Chk. Result

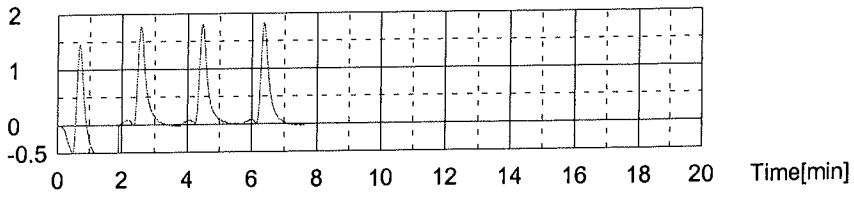
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.7294 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.087	0.7148mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:35:58 PM
2	3.083	0.7139mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:38:02 PM
3	3.176	0.7354mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:40:07 PM
4	3.254	0.7535mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:42:11 PM

Mean Area 3.150
Mean Conc. 0.7294mg/L



Sample

Sample Name: F208-02D
Sample ID: TCG005-67
Origin: TCG005.cal
Chk. Result

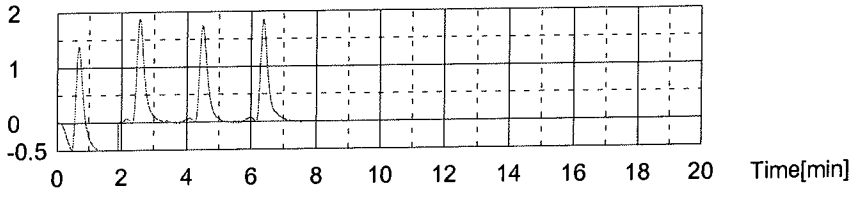
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6978 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.026	0.7007mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:50:58 PM
2	3.054	0.7072mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:53:02 PM
3	2.972	0.6882mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:55:06 PM
4	3.002	0.6951mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 02:57:11 PM

Mean Area 3.014
Mean Conc. 0.6978mg/L



Sample

Sample Name: F208-02M
Sample ID: TCG005-68
Origin: TCG005.cal
Chk. Result

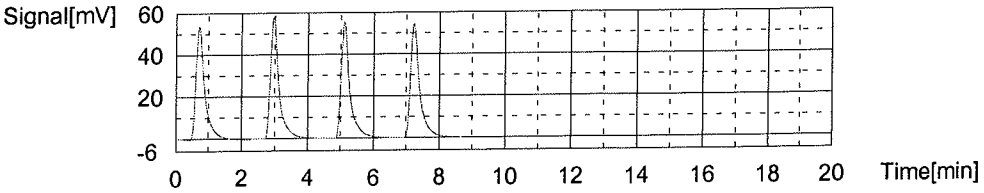
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.27 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.6	24.22mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:06:19 PM
2	104.6	24.22mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:08:38 PM
3	105.1	24.34mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:10:55 PM
4	104.9	24.29mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:13:15 PM

Mean Area 104.8
Mean Conc. 24.27mg/L



Sample

Sample Name: F208-02S
Sample ID: TCG005-69
Origin: TCG005.cal
Chk. Result

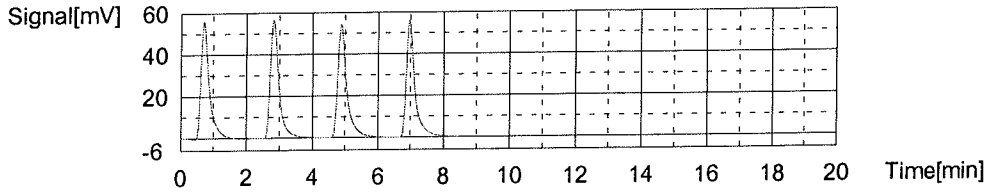
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:24.35 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.1	24.34mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:22:13 PM
2	104.4	24.17mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:24:28 PM
3	105.8	24.50mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:26:43 PM
4	105.3	24.38mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:29:05 PM

Mean Area 105.2
Mean Conc. 24.35mg/L



Sample

Sample Name: F208-03
Sample ID: TCG005-70
Origin: TCG005.cal
Chk. Result

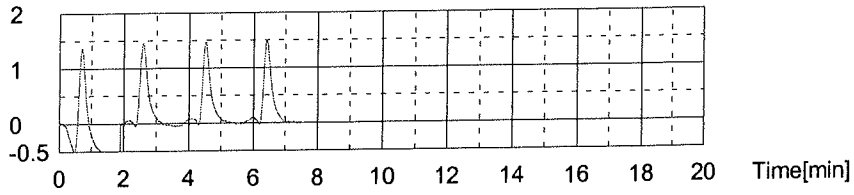
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6135 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3.152	0.7299mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:37:53 PM
2	2.400	0.5557mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:39:57 PM
3	2.428	0.5622mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:42:01 PM
4	2.617	0.6060mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:44:06 PM

Mean Area 2.649
Mean Conc. 0.6135mg/L



Sample

Sample Name: F228-01
Sample ID: TCG005-71
Origin: TCG005.cal
Chk. Result

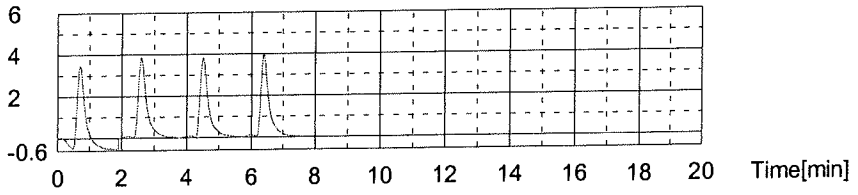
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.591 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.671	1.545mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:52:54 PM
2	6.893	1.596mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:54:58 PM
3	6.917	1.602mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:57:02 PM
4	6.995	1.620mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 03:59:06 PM

Mean Area 6.869
Mean Conc. 1.591mg/L



Sample

Sample Name: F228-02
Sample ID: TCG005-72
Origin: TCG005.cal
Chk. Result

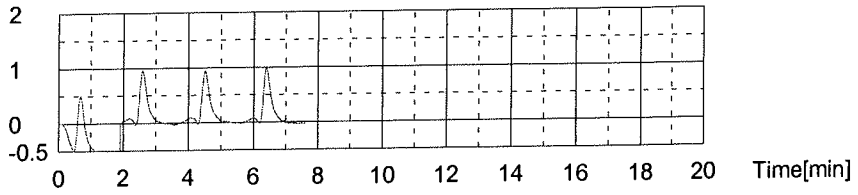
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.3731 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.498	0.3469mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:07:54 PM
2	1.601	0.3707mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:09:58 PM
3	1.609	0.3726mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:12:02 PM
4	1.737	0.4022mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:14:06 PM

Mean Area 1.611
Mean Conc. 0.3731mg/L



Control Sample

Sample Name: CCV6
Sample ID: TCG005-73
Method: TCG005.tpl
Chk. Result Control value: 24.64 / Control exceeds range!

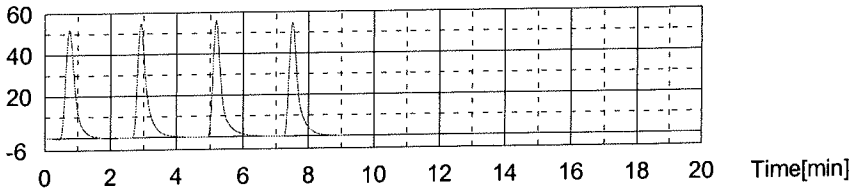
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:24.64 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.6	24.68mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:23:14 PM
2	106.5	24.66mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:25:38 PM
3	106.0	24.55mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:28:08 PM
4	106.5	24.66mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:30:33 PM

Mean Area 106.4
Mean Conc. 24.64mg/L



Sample

Sample Name: CCB6
Sample ID: TCG005-74
Origin: TCG005.cal
Chk. Result

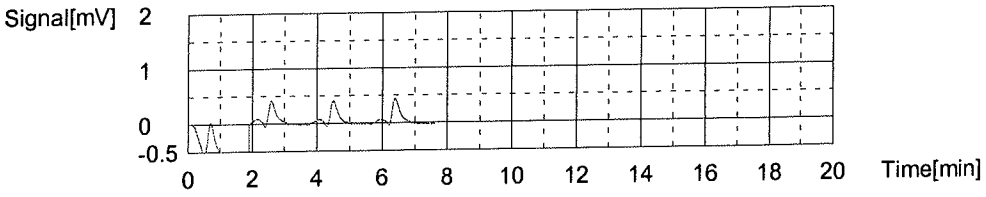
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.1667 mg/L

1. Det

Anal.: NPOC

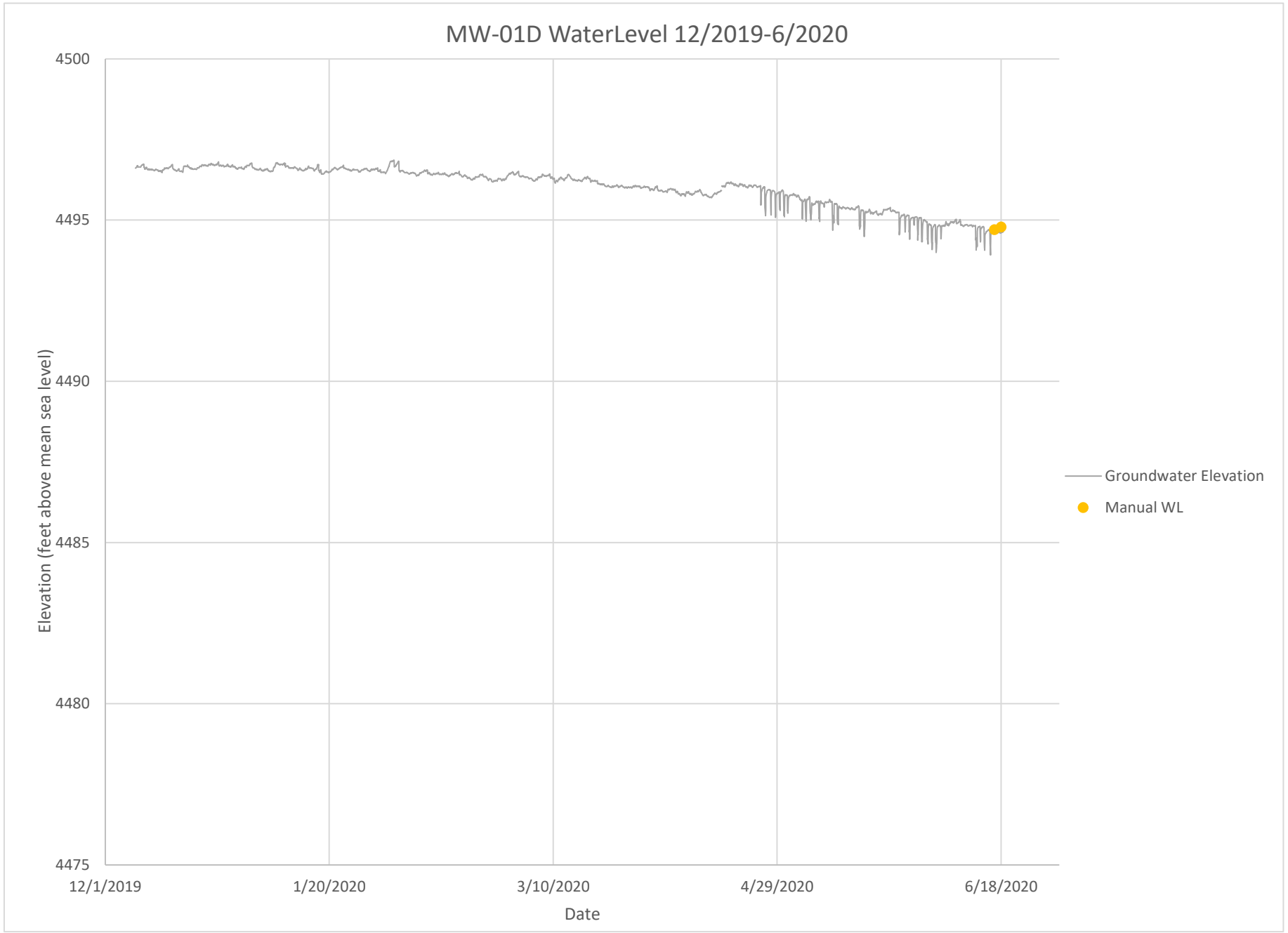
No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8616	0.1995mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:52:07 PM
2	0.6901	0.1598mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:54:12 PM
3	0.6417	0.1486mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:56:16 PM
4	0.6864	0.1589mg/L	50uL	1		TCG005.2020_07_13_18_43_42.cal	07/14/20 04:58:20 PM

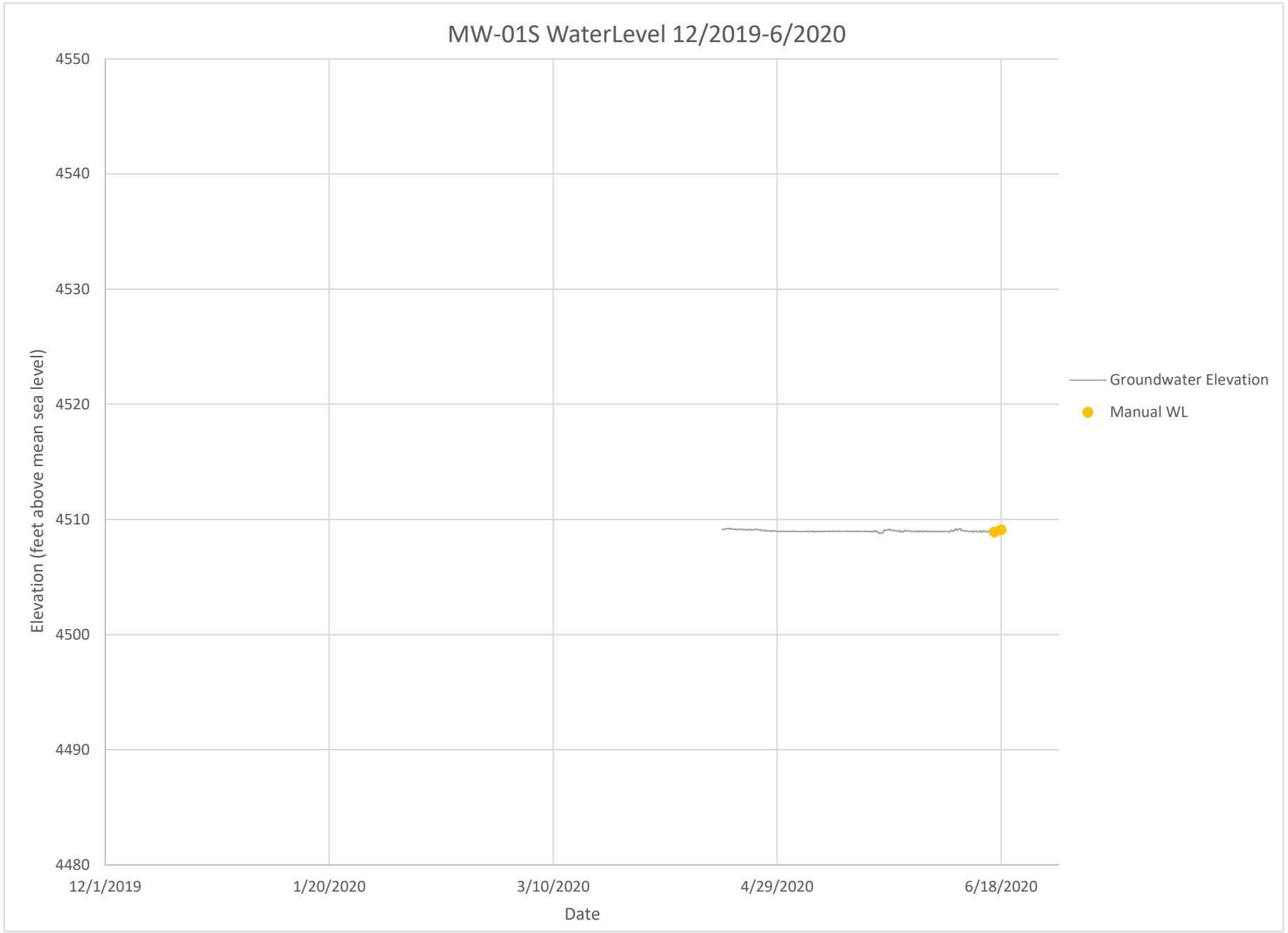
Mean Area 0.7199
Mean Conc. 0.1667mg/L

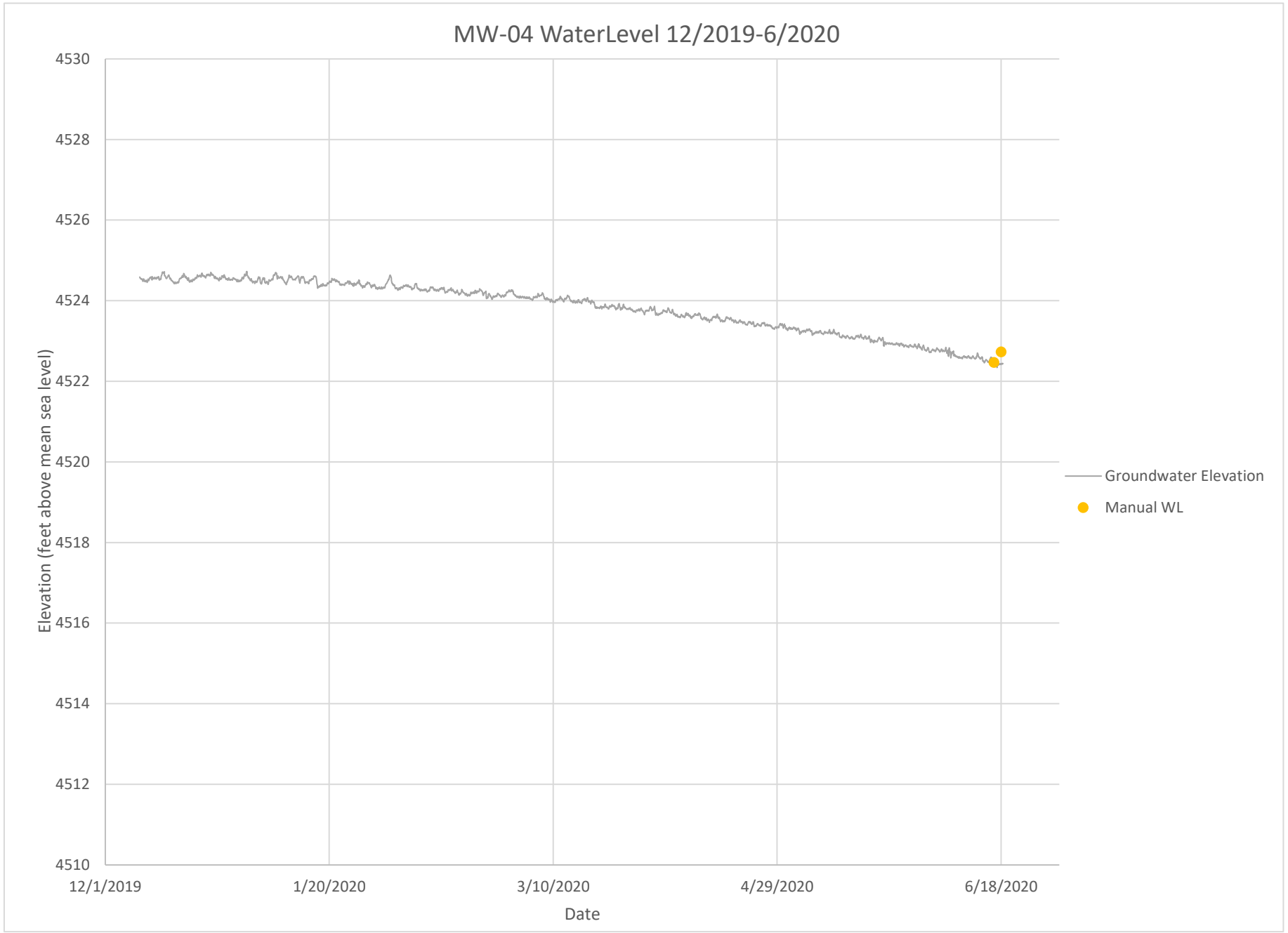


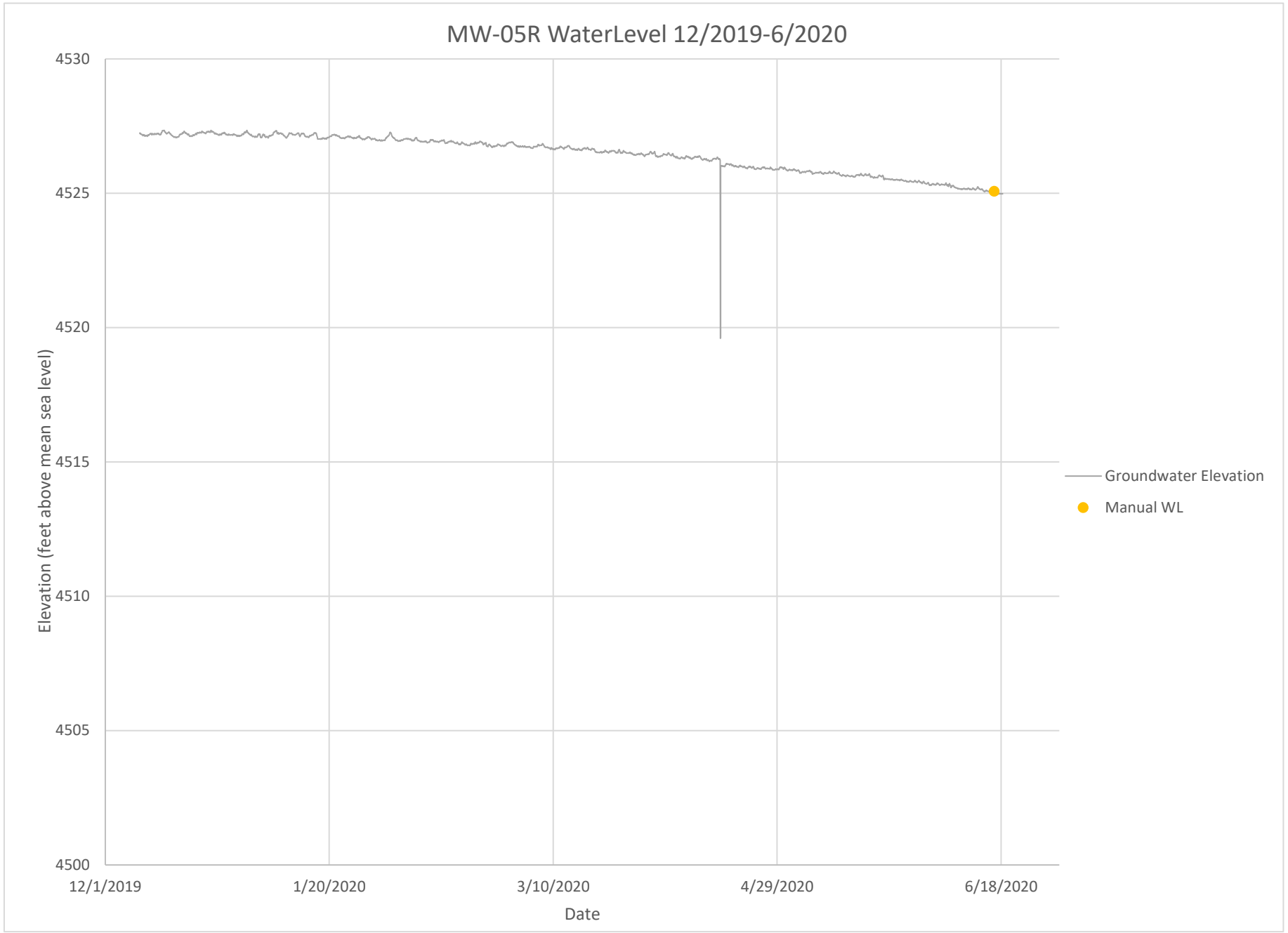
Appendix D

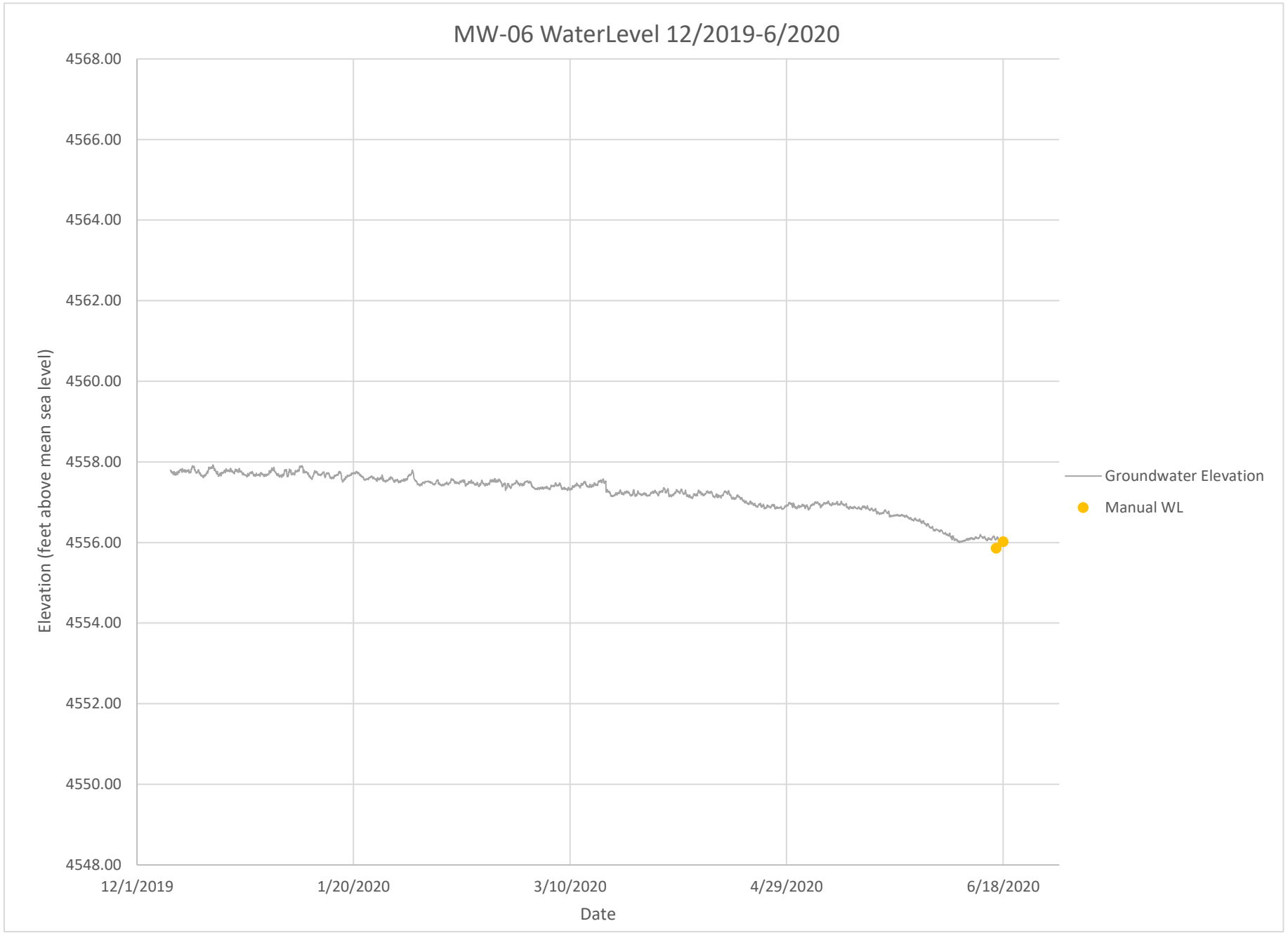
Transducer Hydrographs

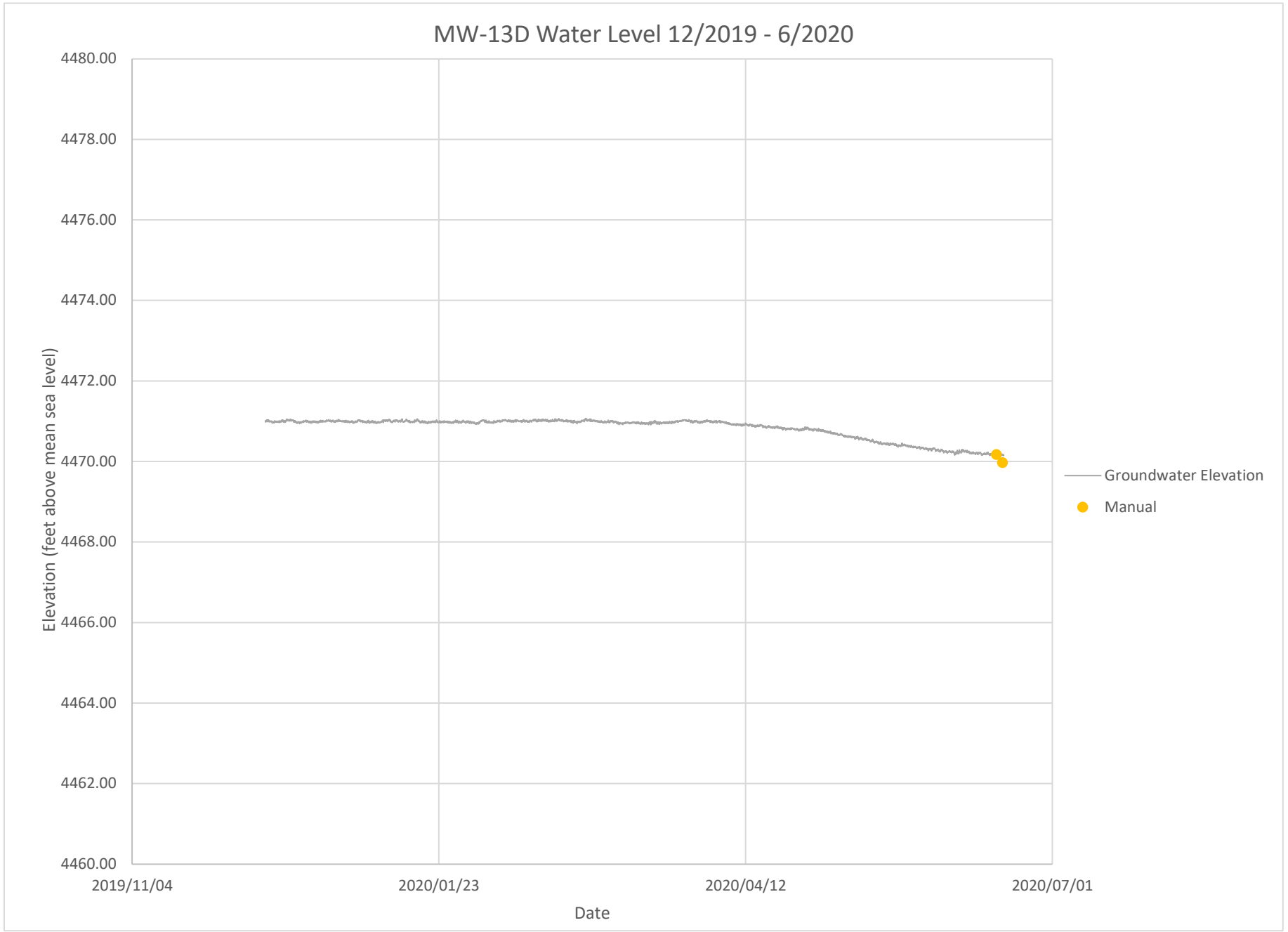

MW-01D WaterLevel 12/2019-6/2020
4500
4495
4490
4485
4480
4475
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

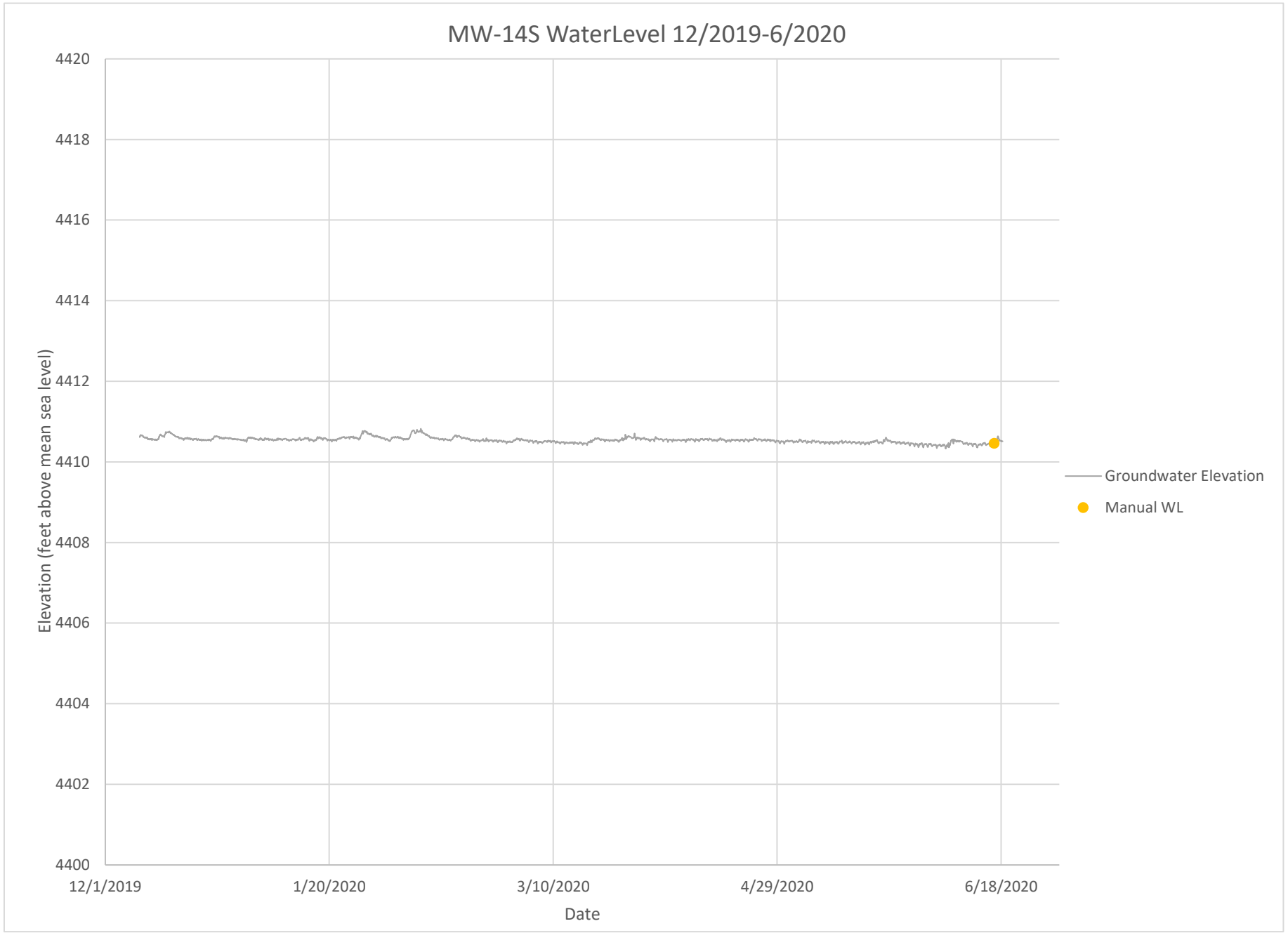

MW-01S WaterLevel 12/2019-6/2020
4550
4540
4530
4520
4510
4500
4490
4480
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

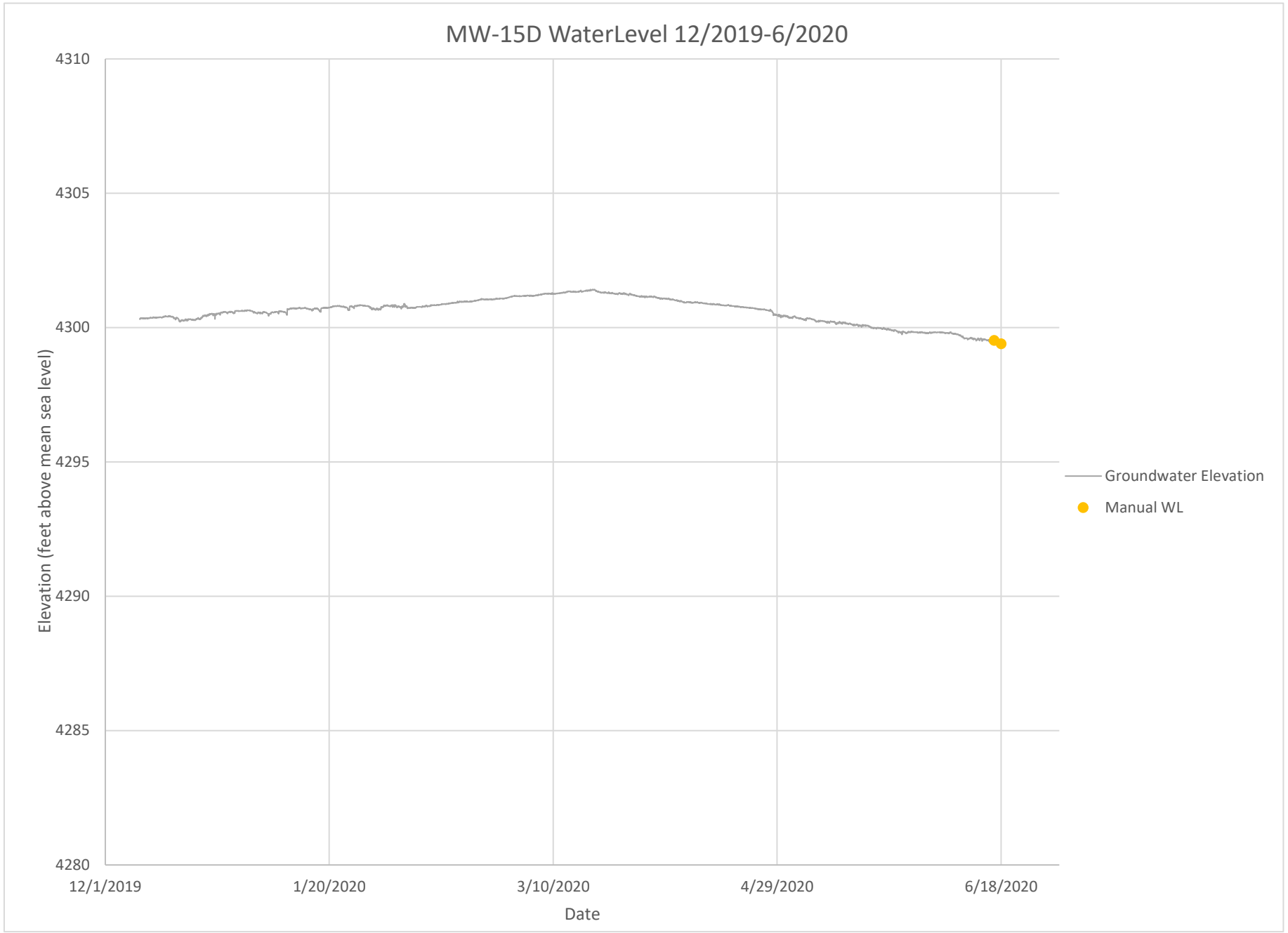

MW-04 WaterLevel 12/2019-6/2020
4530
4528
4526
4524
4522
4520
4518
4516
4514
4512
4510
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

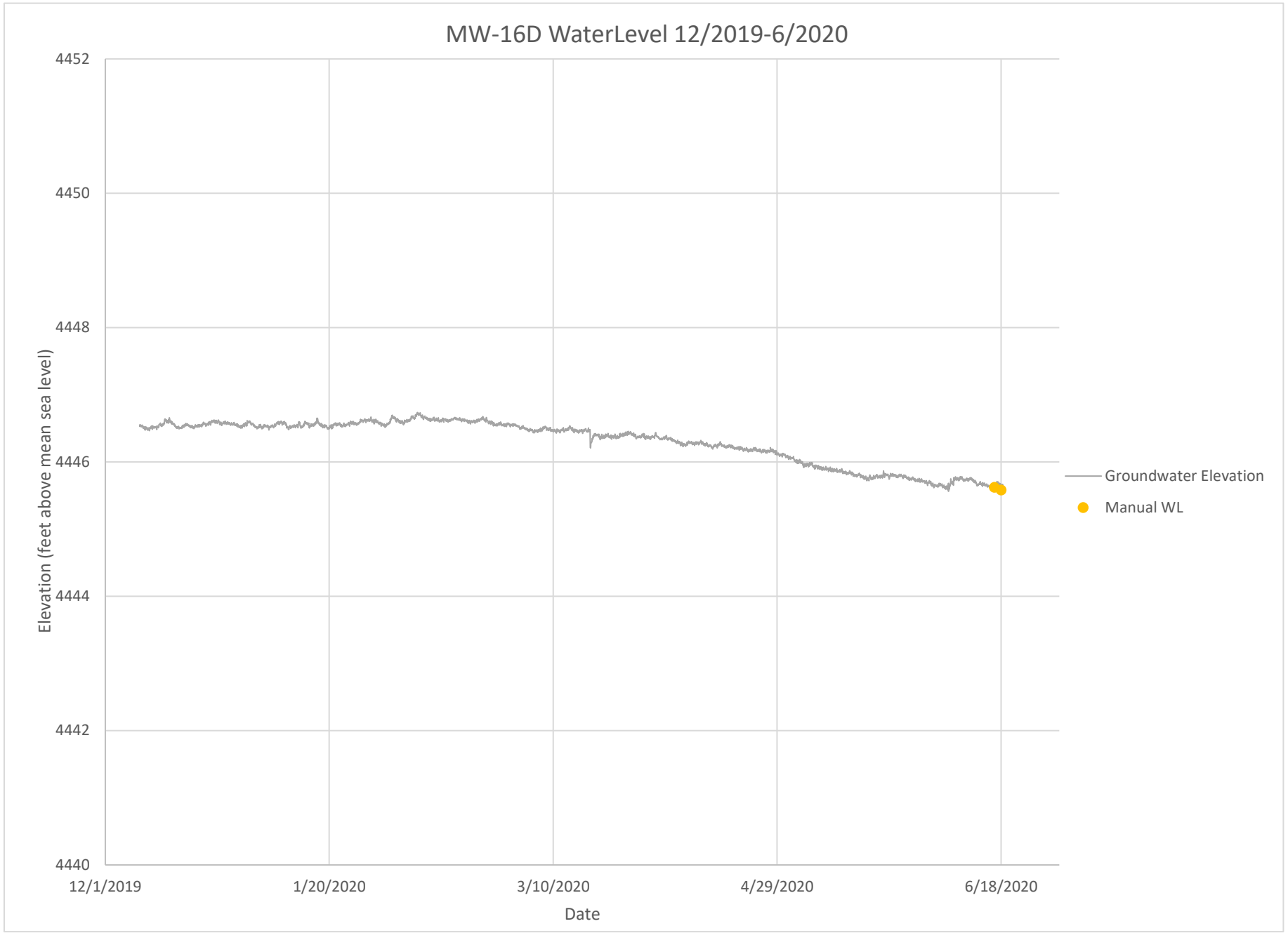

MW-05R WaterLevel 12/2019-6/2020
4530
4525
4520
4515
4510
4505
4500
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

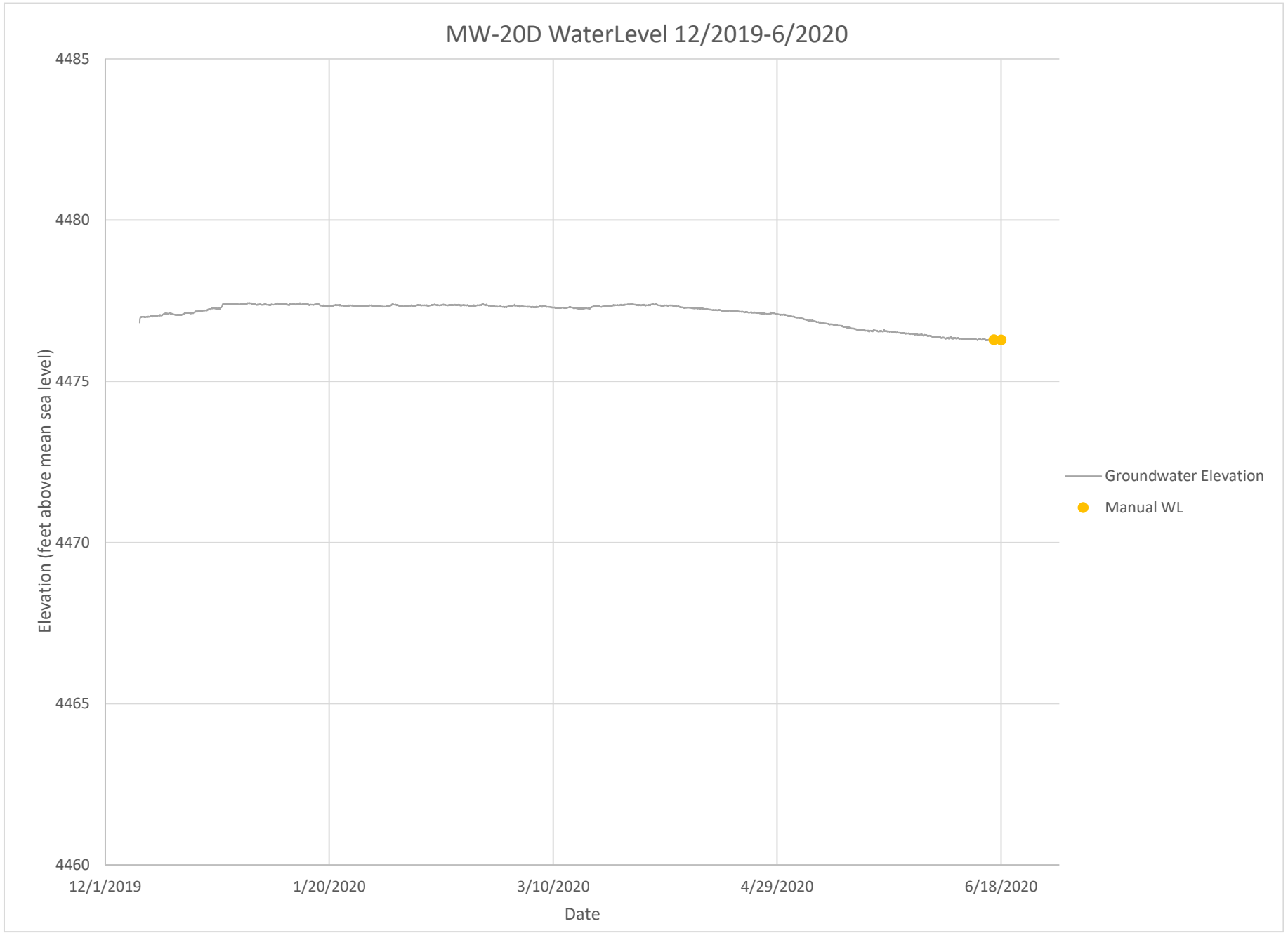

MW-06 WaterLevel 12/2019-6/2020
4568.00
4566.00
4564.00
4562.00
4560.00
4558.00
4556.00
4554.00
4552.00
4550.00
4548.00
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

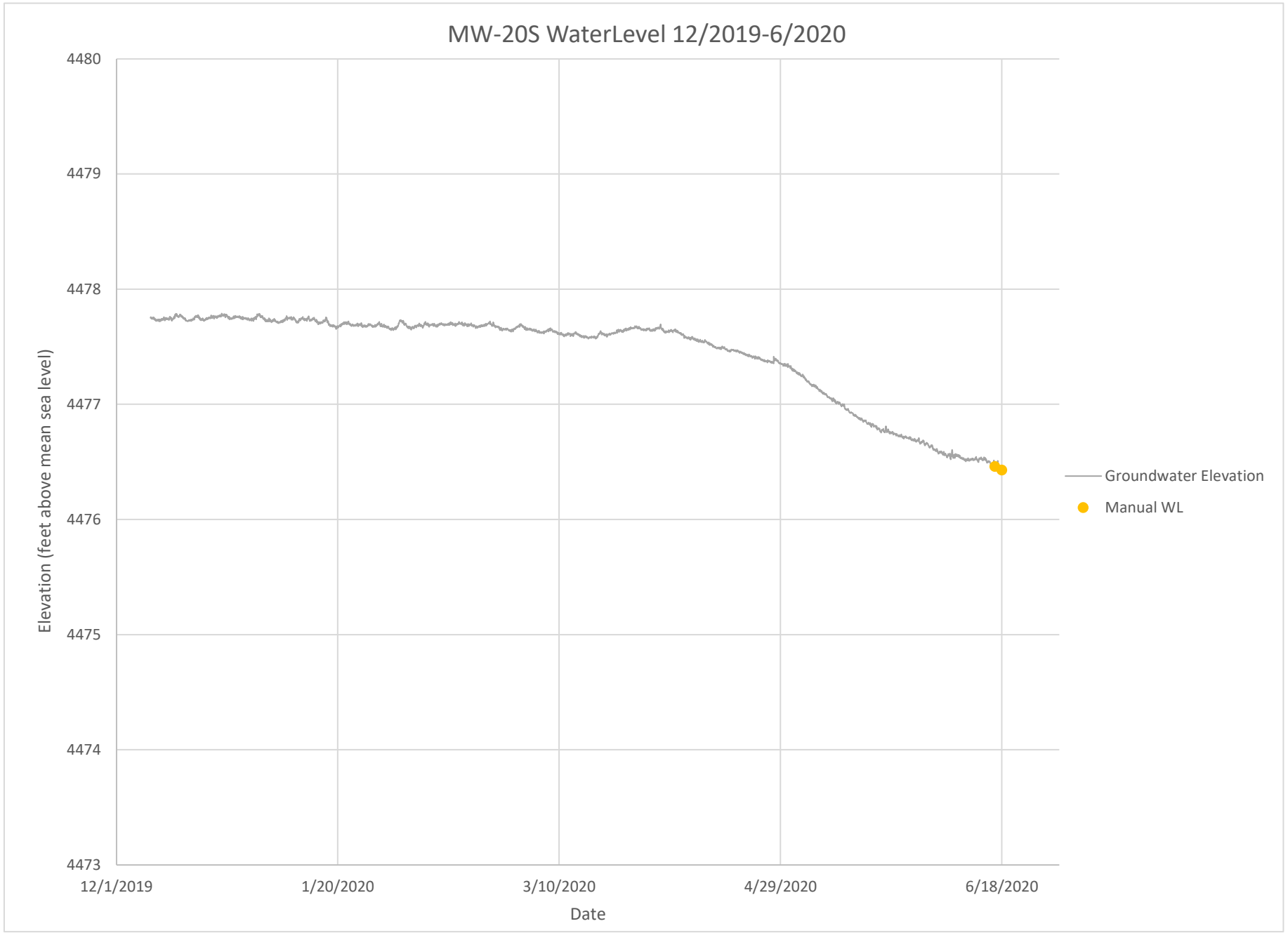

MW-13D Water Level 12/2019 - 6/2020
4480.00
4478.00
4476.00
4474.00
4472.00
4470.00
4468.00
4466.00
4464.00
4462.00
4460.00
Elevation (feet above mean sea level)
2019/11/04
2020/01/23
2020/04/12
2020/07/01
Date
Groundwater Elevation
Manual

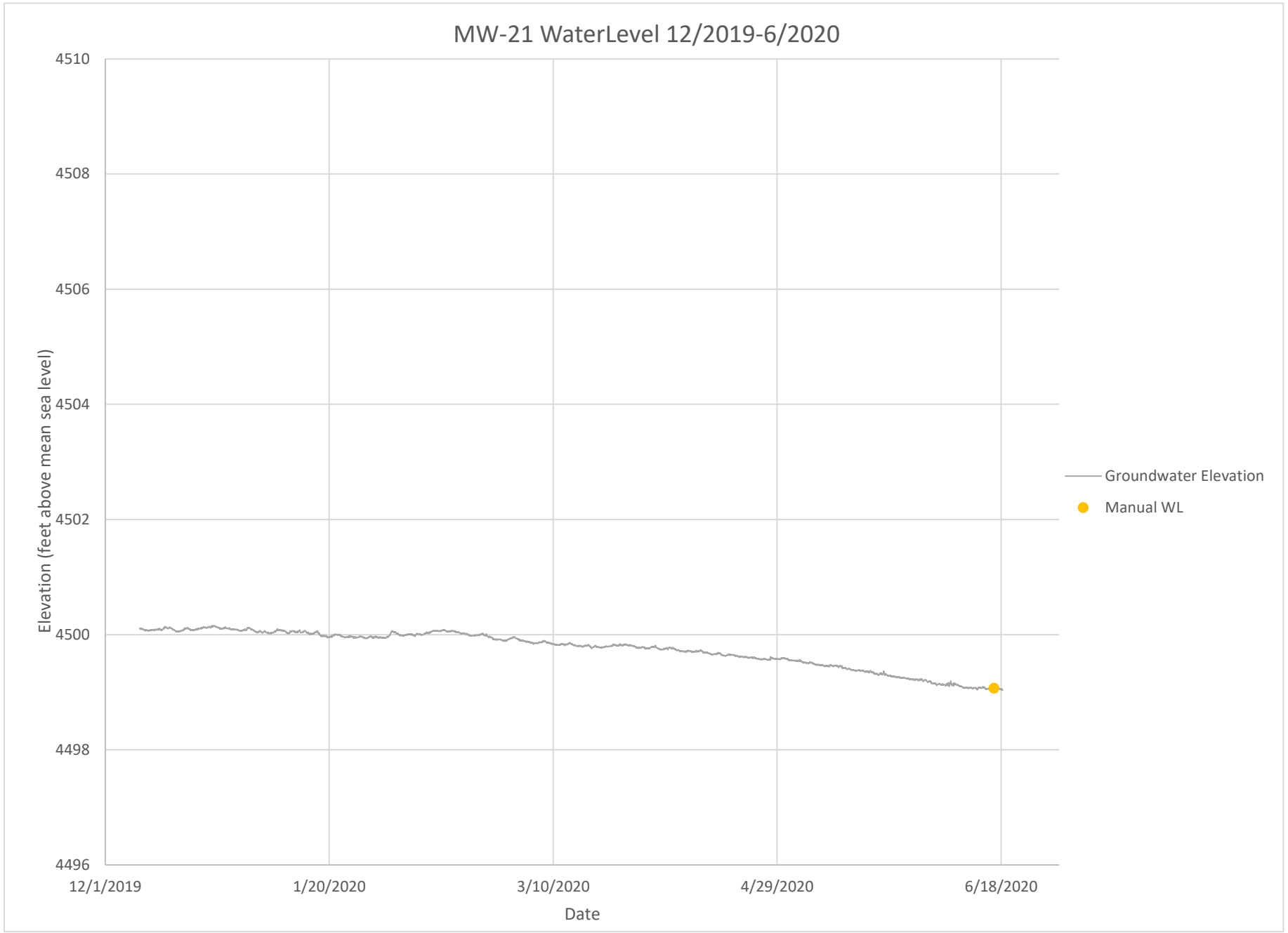

MW-14S WaterLevel 12/2019-6/2020
4420
4418
4416
4414
4412
4410
4408
4406
4404
4402
4400
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL

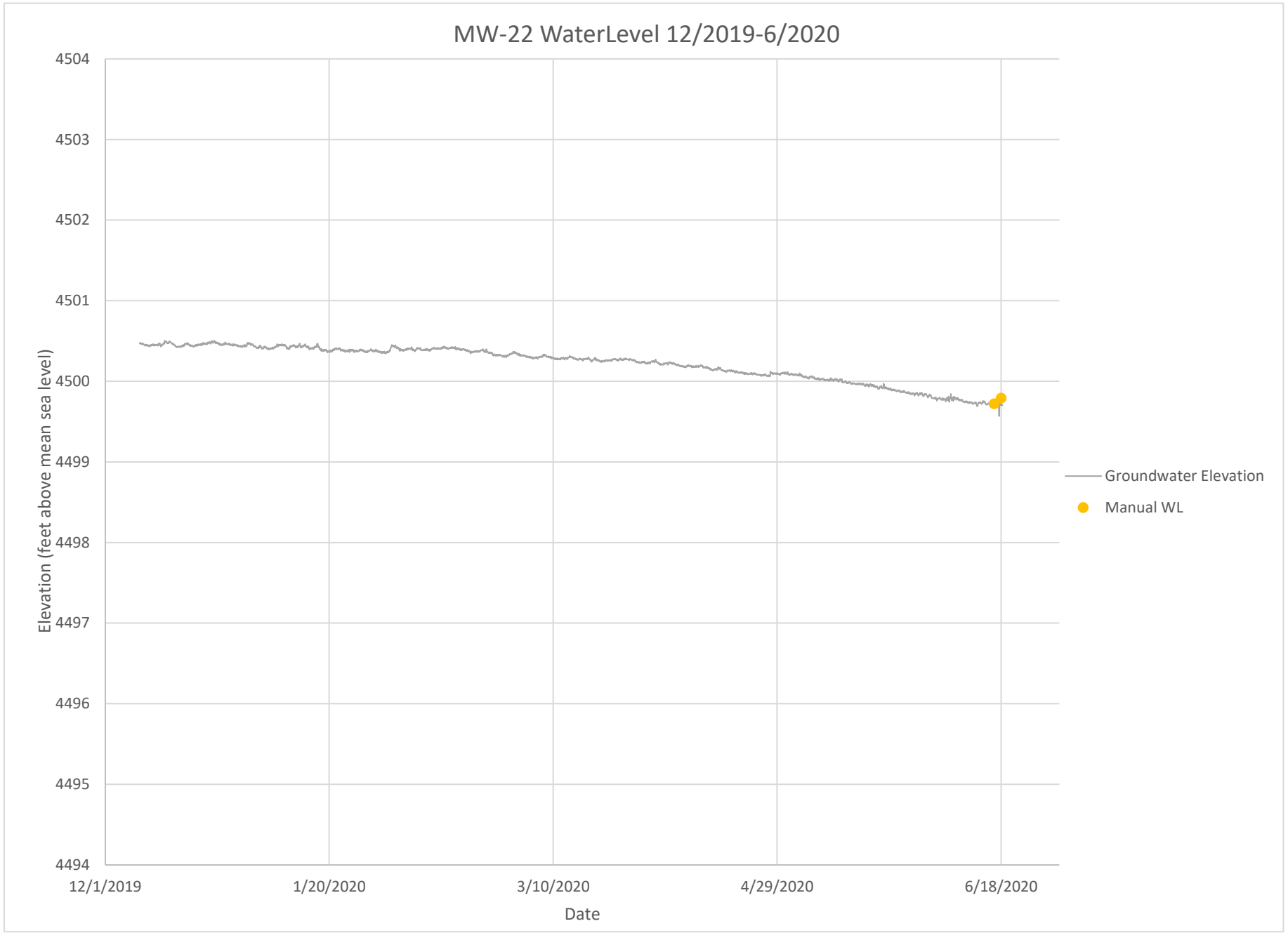

MW-15D WaterLevel 12/2019-6/2020
4310
4305
4300
4295
4290
4285
4280
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL


MW-16D WaterLevel 12/2019-6/2020
4452
4450
4448
4446
4444
4442
4440
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL


MW-20D WaterLevel 12/2019-6/2020
4485
4480
4475
4470
4465
4460
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL


MW-20S WaterLevel 12/2019-6/2020
4480
4479
4478
4477
4476
4475
4474
4473
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL


MW-21 WaterLevel 12/2019-6/2020
4510
4508
4506
4504
4502
4500
4498
4496
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL


MW-22 WaterLevel 12/2019-6/2020
4504
4503
4502
4501
4500
4499
4498
4497
4496
4495
4494
Elevation (feet above mean sea level)
12/1/2019
1/20/2020
3/10/2020
4/29/2020
6/18/2020
Date
Groundwater Elevation
Manual WL