Data Summary Report
Spring and Summer 2020 Drilling Investigation

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

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

U.S. Army Corps of Engineers
Kansas City District

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

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CDM Smith

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Acronyms and Abbreviations

amsl	above mean sea level
CDM Smith	CDM Federal Programs Corporation
DSR	data summary report
DQCR	data quality control reports
EPA	U.S. Environmental Protection Agency
ESS	East Side Springs
ft bgs	feet below ground surface
IDW	investigation-derived waste
Jacobs	Jacobs Engineering Group Inc.
mg/kg	milligram per kilogram
OU	operable unit
PCE	tetrachloroethene
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
QAPP	quality assurance project plan
QCSR	quality control summary report
RI	remedial investigation
ROW	right-of-way
SOP	standard operating procedure
SVP	soil vapor probe
TCE	trichloroethene
UDEQ	Utah Department of Environmental Quality
USACE	U.S. Army Corps of Engineers
VAMC	Veterans Affairs Medical Center
VHA	Veterans Health Administration
VOC	volatile organic compound
ZIST	zone isolation sampling technology
µg/L	micrograms per liter

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Section 1
Introduction

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

1.1 Background

The Salt Lake City Healthcare System George E. Wahlen Veterans Affairs Medical Center (VAMC) is in Salt Lake City, Utah (**Figure 1**). PCE contamination was first identified in groundwater in 1990 at the nearby Mt. Olivet Cemetery irrigation well during routine monitoring by the Salt Lake City Department of Public Utilities. This led to U.S. Environmental Protection Agency (EPA) and Utah Department of Environmental Quality (UDEQ) involvement at the site and the preliminary determination that the source of PCE in groundwater was the historic dry cleaning facility at the VAMC. The Veterans Health Administration (VHA) operated a part-time dry cleaning operation that used PCE over a 6-year period in the late 1970s and early 1980s. During this period, dry cleaning residuals were disposed in the sanitary sewer. The PCE plume is present beneath the VAMC property and in areas hydraulically downgradient, extending to the East Side Springs (ESS) neighborhood.

In 2018, as part of the former OU2 RI, 18 shallow monitoring wells (including 7 monitoring well pairs and 4 individual wells) were constructed at the site. Additionally, two deep monitoring wells were installed; MW-03R on the VAMC campus as a multilevel completion with four screened intervals and MW-08 installed on 700 South near 1300 East as a multilevel completion with three screened intervals (Jacobs 2019).

Soil vapor investigations and surface and groundwater sampling were also conducted as part of the RI effort. The soil vapor investigation identified elevated PCE concentrations around Buildings 6 and 7 on the VAMC campus and along the sanitary sewer line that runs from Building 7 through Sunnyside Park to the main sewer line on Sunnyside Ave, specifically near a manhole in Sunnyside Park (Jacobs 2019).

1.2 Purpose and Scope

The purpose of this DSR is to discuss the field work conducted and data collected during the spring and summer 2020 groundwater monitoring well installation event. Groundwater monitoring wells were installed at 11 boring locations. The boring locations were selected to evaluate subsurface conditions near suspected source areas to vertically and spatially delineate the extent of the plume. The boring investigation information will further define the hydrogeology and hydrostratigraphy characteristics for the plume. Seven boring locations (MW-23 through MW-29) were selected to evaluate conditions in and immediately downgradient of

suspected source areas. Four boring locations (MW-30, MW-31, MW-32, and MW-34) were advanced to laterally and vertically delineate the plume. Soil profiling included field screening of soil cores using a photoionization detector (PID) and collection of soil samples for laboratory analysis. Push-ahead groundwater samples were collected and screened using AQ Colortec and submitted for laboratory volatile organic compound (VOC) analysis to evaluate the vertical distribution of VOCs in the aquifer (CDM Smith 2019a). This report summarizes the field work conducted and presents the analytical and field data collected during the event. **Appendix A** includes the Daily Quality Control Reports (DQCR) submitted to USACE and VHA daily during the event. **Appendix B** includes copies of field logbook notes for the field work.

Section 2
Monitoring Well Installation

The following sections outline the field activities completed during the spring and summer 2020 drilling event. The field activities were conducted per the Agency-approved OU2 RI Work Plan (CH2M 2018, Section 5.2), OU2 RI Quality Assurance Project Plan (QAPP) (CDM Smith 2019a, Section 2.3, Sections 3 through 5), Modification #3 to the OU2 RI Work Plan and Sampling and Analysis Plan (CDM Smith 2019b), and Addendum A to Modification #3 (CDM Smith 2020).

2.1 Utility Clearance and Permitting

Prior to drilling, all locations were surveyed for utilities using geophysical survey methods. Location clearance requests were submitted to Blue Stakes of Utah, and the utility location notifications were updated as required during the drilling event. TWS Environmental conducted the geophysical surveys for the boring locations on the VAMC campus, Sunnyside Park, and 600 South. DPS conducted the geophysical survey for MW-34 at the Rowland Hall-St. Mark's School. Utility locate reports are included in **Appendix C.**

2.1.1 Hydrovac Excavation

Prior to drilling, all of the boring locations were hydrovac-excavated. Excavation to 15 feet below ground surface (ft bgs) was attempted on the VAMC campus. VHA safety approved the locations prior to drilling. The Sunnyside Park, 600 South, and Rowland Hall-St. Mark's School boring locations were excavated to at least 5 ft bgs. Hydrovac cuttings were managed as soil and water investigation-derived waste (IDW).

Table 1 summarizes the well locations, dates, depths, and issues/comments encountered during the hydrovac excavation.

Table 1 Hydrovac Summary

Well ID	Date	Depth (ft bgs)	Issues/Comments
MW-28	3/10/2020	10	Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-23	3/11/2020	14	Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-27	3/20/2020	12.9	The proposed MW-27 location encountered refusal at 2 feet bgs and was offset approximately 8 feet to the west. Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-26	4/10/2020	9	The proposed MW-24 location encountered an abandoned utility at approximately 7 feet bgs and was offset approximately 3 feet to the northwest. Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-25	4/15/2020	10	Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-24	5/6/2020	11	Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-30	5/6/2020	9.5	Unable to advance to 15 feet bgs. Approved by VHA Safety.
MW-29	5/26/2020	8.5	Off campus well located in Sunnyside Park.
MW-31	5/26/2020	10	Off campus well located in Sunnyside Park

Well ID	Date	Depth (ft bgs)	Issues/Comments
MW-32	6/15/2020	8	Off campus well located on 600 South.
MW-34	7/1/2020	8	The proposed MW-34 location encountered utilities and the location was moved approximately 2 feet to the north, leaving 10 feet between the utility and borehole location. Off campus well located on Rowland Hall-St. Mark's School property.

2.1.2 Permitting

The Salt Lake City Corporation Engineering Division issued a Right-of-Way (ROW) Permit for MW-32 located on 600 South. A Performance Bond and Certificate of Liability Insurance accompanied the ROW permit application. Utah Barricade created a Traffic Control Plan, included in **Appendix D**, which was submitted to the Salt Lake City Division of Transportation for a Traffic Control Permit along 600 South.

Copies of the ROW Permit, Traffic Control Permit, and associated documents can be found in **Appendix E**. Excavation permits were issued by VHA Safety for the duration of each boring on the VAMC campus. Daily Excavation checklists were completed by CDM Smith and are included in **Appendix F**.

2.2 Drilling

Drilling occurred between March 12, 2020, and July 14, 2020. Seven source area delineation borings were completed as either multilevel wells or single-screen intervals (CDM Smith 2019b). Six source delineation borings (MW-23 through MW-28) are around Buildings 6 and 7 on the VAMC campus. The MW-29 boring is near the Sunnyside Park sanitary sewer manhole that was identified as a potential release point during the soil gas investigation (Jacobs 2019).

Four plume delineation borings were completed as multilevel wells. MW-30 is located in the northwest corner of the VAMC campus. MW-31 is located along Sunnyside Avenue in Sunnyside Park. MW-32 is located on 600 South near 1300 East, which is west and downgradient of Mt. Olivet Cemetery. MW-34 is on the Rowland Hall-St. Mark's School property west of Guardsman Way.

Holt Services used two Terrasonic 150 track mounted mini-rotosonic drill rigs to advance the borings. Continuous soil cores were collected and field screened using a PID. The lithology was logged and photos were taken of the core intervals. Borehole logs are included in **Appendix G** and photos of the soil cores are included in **Appendix H**. Well construction details are discussed in Section 2.4 and presented in **Table 5**. Soil cuttings were managed as IDW.

2.2.1 Source Wells

The source area wells include MW-23 located between Buildings 6 and 7 adjacent to the former dry cleaning operation and near elevated subslab soil vapor concentrations in Building 6 (CDM Smith 2019b). The hydrovac excavation reached 14 feet bgs. The rotosonic boring began on April 7, 2020 and reached a total depth of 360 feet bgs on April 15, 2020. A perched groundwater zone was encountered at approximately 150 feet bgs and groundwater was encountered at

approximately 200 feet bgs. Well construction began on April 17, 2020 and was completed on April 20, 2020. MW-23 was completed as a multilevel well with three screened intervals and a 1-inch polyvinyl chloride (PVC) soil vapor monitoring point.

MW-24 is southwest of Building 6. This location is potentially downgradient of Building 6, where elevated subslab soil vapor concentrations were encountered. The hydrovac excavation encountered refusal at 11 feet bgs. The rotosonic boring began on May 11, 2020 and reached a total depth of 250 feet bgs on May 14, 2020. A perched groundwater zone was encountered at approximately 160 feet bgs and groundwater was encountered at approximately 200 feet bgs. MW-24 was completed as a single well completion with four soil vapor monitoring points. Well construction was completed on May 20, 2020.

MW-25 is west of Building 6, potentially downgradient of Building 6. The hydrovac excavation encountered refusal at 10 feet bgs. The rotosonic boring began on April 29, 2020 and reached a total depth of 320 feet bgs on May 6, 2020. A perched groundwater zone was encountered at approximately 165 feet bgs and groundwater was encountered at approximately 200 feet below bgs. MW-25 was completed on May 10, 2020, as a multilevel well with three screened intervals and two soil vapor points.

MW-26 is northwest of Buildings 6 and 7 and potentially downgradient from the former dry cleaning operations. The hydrovac excavation encountered refusal at 9 feet bgs. The rotosonic boring began on April 22, 2020 and reached a total depth of 360 feet bgs on May 11, 2020. Groundwater was encountered at approximately 190 feet bgs. MW-26 was completed as a multilevel well with four screened intervals on May 18, 2020.

MW-27 is between Buildings 6 and 7, near the former dry cleaning operations and near areas containing high soil vapor concentrations. The hydrovac excavation encountered refusal at 12.9 feet bgs. The rotosonic drilling began on March 22, 2020 and reached a total depth of 220 ft bgs on March 24, 2020. A perched groundwater zone was encountered at approximately 150 feet bgs and groundwater was encountered at approximately 190 feet bgs. MW-27 was completed with a single screen interval and five soil vapor points on March 26, 2020.

MW-28 is adjacent to the Building 7 loading dock near an area with elevated soil gas readings and potential former storage of chemicals, and near the sanitary sewer. The hydrovac excavation encountered refusal at 10 feet bgs. The rotosonic drilling began on March 12, 2020 and reached a total depth of 210 feet bgs on March 18, 2020. A perched groundwater zone was encountered at approximately 150 feet bgs and groundwater was encountered at approximately 185 feet bgs. MW-28 was installed as a single well with three soil vapor points on March 20, 2020.

MW-29 is near the Sunnyside Park sanitary sewer manhole. The hydrovac excavation was completed to a depth of 8.5 feet bgs. The rotosonic drilling began on May 27, 2020 and reached a total depth of 340 feet bgs on June 4, 2020. Groundwater was encountered at approximately 115 feet bgs. MW-29 was completed with three screen intervals and three soil vapor points on June 7, 2020.

2.2.2 Plume Delineation Wells

The plume delineation wells include MW-30, located in the northwest corner of the VAMC campus near Foothill Drive, north of MW-03R, and is part of the Guardsman Way transect to delineate the plume to the north. The hydrovac excavation encountered refusal at 9.5 feet bgs. The rotosonic drilling began May 22, 2020 and reached a total depth of 350 feet bgs on June 8, 2020. MW-30 was installed with three well screens and one soil vapor point on June 15, 2020. Groundwater was encountered at approximately 240 feet bgs. During development at MW-30 zones A and B, there was difficulty getting the pumps to depth and sediment prevented sufficient development. A downhole camera was deployed in MW-30 zones A and B, showing sediment to depth of the screen and indicating the wells were damaged during installation. A memorandum summarizing the issues related to MW-30 is included in **Appendix I**.

MW-31, in Sunnyside Park, is part of the Guardsman Way transect to delineate the plume to the south. The hydrovac excavation was completed to 10 feet bgs. The rotosonic drilling began on June 9, 2020 and reached a total depth of 290 feet bgs on June 12, 2020. Groundwater was encountered at approximately 130 feet bgs. MW-31 was completed with three screen intervals and no soil vapor points.

MW-32, on 600 South, north of MW-08 and west of Mt. Olivet Cemetery, is part of the 1400 East transect to delineate the plume to the north. The hydrovac excavation was completed to 8 feet bgs. The rotosonic drilling began on June 22, 2020 and reached a total depth of 272 feet bgs on June 28, 2020. Groundwater was encountered at approximately 95 feet bgs. MW-32 was completed with three screen intervals and one soil vapor point on July 1, 2020.

MW-34, on the Rowland-Hall St. Mark's School property, is south of Mt. Olivet Cemetery, west of Guardsmen Way, and east of 1400 East. The hydrovac excavation was completed to 8 feet bgs. The rotosonic drilling began on July 7, 2020 and reached a total depth of 350 feet bgs on July 12, 2020. Groundwater was encountered at approximately 130 feet bgs. MW-34 was completed with four screened intervals and one soil vapor point on July 14, 2020.

Plume delineation well MW-33, planned north of MW-32, was not installed during the spring and summer drilling event. Per discussions with EPA and UDEQ in December 2020, MW-33 will be installed during the next phase of drilling if PCE concentrations at MW-32 suggest an additional well is needed to define the northern boundary of the plume along the 1400 East transect.

2.3 Soil and Groundwater Sampling

2.3.1 Soil Sample Analysis

Soil samples were collected from the soil cores using Encore samplers and submitted to EMAX Laboratories in Torrance, California for VOC analysis. The soil cores were screened using the PID prior to opening the core bags. The interval with the highest PID VOC concentration was selected for sampling. If those intervals were gravel dominated, then the matrix surrounding the gravel was sampled. If there wasn't sufficient matrix to sample, the closest interval with finer-grained material was sampled.

Quality control samples were collected in accordance with the QAPP (CDM Smith 2019a). One quality control sample per ten normal soil samples was collected for duplicate analysis, and one

per twenty soil samples was collected for matrix spike/matrix spike duplicates. Complete laboratory packages and data validation are included in the Quality Control Summary Report (QCSR) in **Appendix J**. Soil sample detections of PCE and trichloroethene (TCE) are discussed below and presented in **Table 2**. Complete soil sample results are attached and included in **Table 3**. All of the soil sample PCE detections were below the laboratory reporting limit.

- The MW-23 boring had 34 soil samples, seven of which had PCE detections. TCE was not detected in any of the MW-23 soil samples.
- The MW-24 boring had 23 soil samples with no detections of PCE or TCE.
- The MW-25 boring had 31 soil samples with no detections of PCE or TCE.
- The MW-26 boring had 36 soil samples with no detections of PCE or TCE.
- The MW-27 boring had 23 soil samples, seven of which had PCE detections. TCE was not detected in any of the MW-27 soil samples.
- The MW-28 boring had 19 soil samples, one of which had PCE detections. TCE was not detected in any of the MW-28 samples.
- The MW-29 boring had 33 soil samples with no detections of PCE or TCE.
- The MW-30 boring had 20 soil samples with no detections of PCE or TCE.
- The MW-31 boring had 16 soil samples with no detections of PCE or TCE.
- The MW-32 boring had 12 soil samples with no detections of PCE or TCE.
- The MW-34 boring had 11 soil samples, two of which had PCE detections. TCE was not detected in any of the MW-34 samples.

Table 2 Soil Detection Summary

Well	Depth (ft bgs)	PCE Concentration (mg/kg)^
Screening Level (Protection of Groundwater Soil Screening Level)*		0.046
MW-23	30	0.0038 J
MW-23	54	0.0014 J
MW-23	63	0.0025 J
MW-23	75	0.0045 J
MW-23	85	0.005 J
MW-23	93	0.0016 J
MW-23	107	0.0025 J
MW-27	40	0.0026 J
MW-27	54.5	0.0014 J
MW-27	75	0.0018 J
MW-27	88	0.0011 J
MW-27	96	0.0024 J

Well	Depth (ft bgs)	PCE Concentration (mg/kg)^
Screening Level (Protection of Groundwater Soil Screening Level)*		0.046
MW-27	114	0.0014 J
MW-27	122	0.0016 J
MW-28	86	0.0015 J
MW-34	165	0.0039 J
MW-34	189	0.0014 J

Notes:

Highlight indicates values greater than the screening level.

* Soil screening level for groundwater protection using a dilution attenuation factor of 20 and soil saturation level corresponding to an excess lifetime cancer risk of 1 x 10-6 and a hazard quotient of 1 (EPA November 2019).

^ Laboratory reporting limit is 0.005 mg/kg and laboratory method detection limit is 0.001 mg/kg.

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

J = qualifier indicates estimated value

PCE = tetrachloroethene

2.3.2 Push-Ahead Groundwater Sampling

Push-ahead groundwater samples were collected in the water-bearing zones at approximately 20-foot intervals (CDM Smith 2019a). If a sample could not be collected because of lithology or moisture content, a sample was attempted in the next 10-foot interval. Push-ahead groundwater samples were collected for field screening by AQ Colortec and laboratory VOC analysis. AQ Colortec is a colorimetric indicator of total chlorinated compounds with a detection limit of approximately 10 micrograms per liter (µg/L) of total chlorinated compounds (CDM Smith 2020). Field screening of all groundwater samples were below AQ Colortec detection limits. Sample MW32-GW062420-120 had a detect in the initial sample but was not detected in the duplicate sample. Groundwater grab samples collected for laboratory analysis were submitted for a 24-hour turnaround. PCE was detected in 23 out of 49 samples, with concentrations ranging from 0.16 J µg/L to 14 µg/L. TCE was detected in 5 out of 49 samples, with concentrations ranging from 0.11 J µg/L to 0.36 J µg/L. Groundwater sample detections of PCE and TCE are discussed below and presented in **Table 4.** Results are further discussed in Section 2.4 Well Construction and all results are presented in **Table 5**. Complete laboratory packages for these data are included in the QCSR (**Appendix J**).

- The MW-23 boring had six groundwater grab samples, three of which had PCE detections. TCE was not detected in any of the MW-23 groundwater samples.
- The MW-24 boring had two groundwater grab samples, both of which had PCE detections. TCE was not detected in any of the MW-24 groundwater samples.
- The MW-25 boring had seven groundwater grab samples, four of which had PCE detections. TCE was not detected in any of the MW-25 groundwater samples.
- The MW-26 boring had six groundwater grab samples with no detections of PCE or TCE.

- The MW-27 boring had three groundwater grab samples, one of which had a PCE detection. TCE was not detected in any of the MW-27 groundwater samples.
- The MW-28 boring had one groundwater grab sample with no PCE or TCE detections.
- The MW-29 boring had four groundwater grab samples, two of which had PCE and TCE detections.
- The MW-30 boring had five groundwater grab samples; two had PCE detections and one had a TCE detection.
- The MW-31 boring had three groundwater grab samples, two of which had PCE detections. TCE was not detected in any of the MW-31 groundwater samples.
- The MW-32 boring had five groundwater grab samples, one of which had a PCE detection. TCE was not detected in any of the MW-32 groundwater samples.
- The MW-34 boring had seven groundwater grab samples, six of which had PCE detections and two of which had TCE detections.

Table 4 Analytical Groundwater Detection Summary

Well	Depth (ft bgs)	Analyte	Concentration (µg/L)
Screening Level (Maximum Contaminant Level)			**5**
MW-23	150	PCE	6
MW-23	220	PCE	0.2 J
MW-23	260	PCE	0.22 J
MW-24	160	PCE	1.2 J
MW-24	220	PCE	0.23 J
MW-25	212	PCE	0.83 J
MW-25	252	PCE	0.18 J
MW-25	272	PCE	0.22 J
MW-25	292	PCE	0.56 J
MW-27	168	PCE	9.1
MW-29	120	PCE	9.2
		TCE	0.17 J
MW-29	191	PCE	6.1
		TCE	0.11 J
MW-30	280	TCE	0.13 J
MW-30	320	PCE	0.2 J
MW-30	340	PCE	0.16 J
MW-31	138	PCE	0.59 J
MW-31	190	PCE	0.2 J
MW-32	175	PCE	0.2 J

Well	Depth (ft bgs)	Analyte	Concentration (µg/L)
Screening Level (Maximum Contaminant Level)			**5**
MW-34	150	PCE	6.7
		TCE	0.12 J
MW-34	180	PCE	14
		TCE	0.36 J
MW-34	210	PCE	1.5
MW-34	230	PCE	1.6
MW-34	320	PCE	0.43 J

Notes:
Highlight indicates values greater than the screening level.

ft bgs = feet below ground surface

µg/L = micrograms per liter

J = qualifier indicates estimated value
PCE = tetrachloroethene
TCE = trichloroethene

2.4 Well Construction

Final well construction designs were determined via teleconference with the CDM Smith field team leader, project technical leader, and project manager; USACE; and VHA following review of lithology and the push-ahead sample results. A summary of the well construction information for the wells installed during this event is presented in **Table 6**. PVC well casings (1-inch-diameter zone isolation sampling technology [ZIST] wells, or 2- or 4-inch-diameter conventional wells, depending on location) were installed with the rotosonic drill casing in place. Wells were installed according to the RI Work Plan (CH2M Hill 2018) and modification #3 (CDM Smith 2019b). Screens consisted of a 0.02-inch slot screen in 10- to 30-foot intervals. The filter pack was constructed using 10/20 silica sand and extended 2 to 3 feet above the top of the screened intervals. At locations where multilevel wells were installed, 3/8-inch coated bentonite pellets and chips were installed between filter pack intervals to seal the borehole between intervals. Bentonite grout was installed above the shallowest hydrated bentonite interval to approximately 3 ft bgs.

Soil vapor probes (SVPs) were installed at locations where elevated PID readings were observed in subsurface soil to support future pilot testing activities, or coarse grained intervals. SVPs are AMS, 6-inch-long, double-woven stainless-steel wire screens (0.0057-inch pore) with Swagelok fittings connected to 0.25-inch outer-diameter Teflon-lined tubing. SVPs were installed within a 5- to 6-foot sand pack using 10/20 silica sand.

Each monitoring well location was completed at the surface with a flush-mounted manhole vault. MW-32 required a Salt Lake City-approved concrete batch mix for the surface completion because the location was in the ROW. Well completion diagrams, including screen, sand, and bentonite intervals, and SVP depths, are included on the boring logs in **Appendix G**. Survey data for the well locations are presented in **Appendix K.**

2.4.1 MW-23

The MW-23 well design consists of three ZIST wells to allow for monitoring groundwater chemistry and water levels at three discrete intervals, and one 1-inch-diameter ZIST casing screened in the vadose zone, as follows:

- 130 to 140 ft bgs: 1-inch ZIST well screen was installed in the shallow interval for a vadose vapor monitoring point that can be sampled or used for vacuum monitoring and testing for future evaluation of potential vadose zone remedies. The perched water zone was encountered at 150 ft bgs, where PCE was detected at 6 µg/L (**Table 4**).
- 210 to 220 ft bgs: 1-inch ZIST monitoring well screened in the water producing zone with PID readings from 17.6 to 37.7 parts per million (ppm) and where PCE was detected at 0.2 J µg/L in groundwater.
- 250 to 260 ft bgs: 1-inch ZIST monitoring well installed in a water-bearing interval that with a PID reading of 470 ppm, where PCE was detected at 0.22 J µg/L, benzene was detected at 11 µg/L, and toluene was detected at 8.8 µg/L.
- 348 to 358 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole.

2.4.2 MW-24

The well design at MW-24 consists of one 4-inch conventional well and four SVPs installed at the following intervals:

- 209.5 to 239.5 ft bgs: 4-inch monitoring well screened across transmissive intervals encountered 210 to 212 ft bgs, 215 to 219 ft bgs, 230 to 232 ft bgs, and 236 to 239 ft bgs. PCE was detected at 0.23 J µg/L at 220 ft bgs.

SVPs

- 32 ft bgs: installed in a sandy interval above silt that contained a PID reading of 13.8 ppm.
- 60 ft bgs: installed in a sandy interval above a gravely silt/clay that contained a PID reading of 12.0 ppm.
- 104 ft bgs: installed in a sand/gravel interval above a silty gravel that contained a PID reading of 35.0 ppm.
- 130 ft bgs: installed in a sandy gravel above the perched water zone that contained a PID reading of 24.7 ppm.

2.4.3 MW-25

The well design at MW-25 consists of three ZIST wells and two SVPs installed at the following intervals:

- 201 to 211 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone where PCE was detected at 0.83 J µg/L.

- 231 to 241 ft bgs: 1-inch ZIST monitoring well installed in a water-bearing zone above a clay unit where PCE was not detected.
- 308 to 318 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole where PCE was not detected.

SVPs

- 28 ft bgs: installed in a gravelly sand unit above a silty/clayey unit that contained a PID reading of 54 ppm.
- 100 ft bgs: installed in a gravelly unit above clay that contained the highest PID readings in the vadose zone (280 ppm).

2.4.4 MW-26

The well design at MW-26 consists of four multilevel ZIST groundwater wells, as follows:

- 205 to 215 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone where PCE was not detected.
- 235 to 245 ft bgs: 1-inch ZIST monitoring well installed in a water-bearing zone above the clay unit where PCE was not detected.
- 315 to 325 ft bgs: 1-inch ZIST monitoring well installed in a water-bearing zone below the clay unit where PCE was not detected.
- 347.5 to 357.5 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole where PCE was not detected.

2.4.5 MW-27

The well design at MW-27 consists of one 4-inch conventional well with five SVPs installed at the following intervals:

- 200 to 220 ft bgs: 4-inch monitoring well screened in the transmissive zone. PCE was not detected in this transmissive zone but was detected at 9.1 µg/L in the perched zone (approximately 150 ft bgs).

SVPs

- 28 ft bgs: installed in a sand with gravel below a clayey layer.
- 48 ft bgs: installed in a clayey gravel with an elevated PID reading (44 ppm).
- 75 ft bgs: installed in gravelly clay with an elevated PID reading (20.9 ppm).
- 113 ft bgs: installed in gravelly sand with an elevated PID reading (103 ppm).
- 155 ft bgs: installed in a clay layer above a perched groundwater zone.

2.4.6 MW-28

The well design at MW-28 consists of one 4-inch conventional well with three SVPs installed at the following intervals:

- 190 to 210 ft bgs: 4-inch monitoring well screened in the transmissive zone. PCE was not detected in the transmissive zone.

SVPs

- 24 ft bgs: installed in a silty gravel with an elevated PID reading (48 ppm).
- 48 ft bgs: installed in a sandy gravel with an elevated PID reading (27.9 ppm).
- 118 ft bgs: installed in a sandy gravel with an elevated PID reading (130 ppm).

2.4.7 MW-29

The well design at MW-29 consists of three ZIST wells and three SVPs installed at the following intervals:

- 120 to 130 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone (potentially a perched zone) where PCE was detected at 9.2 µg/L.
- 190 to 200 ft bgs: 1-inch ZIST well installed in an intermediate water-bearing zone where PCE was detected at 6.1 µg/L.
- 230 to 240 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole where PCE was not detected. A groundwater sample was also collected at 260 ft bgs (PCE was not detected), however, a water-bearing zone was not observed at this depth and a well was not installed.

SVPs

- 42 ft bgs: installed approximately 15 feet below the deepest vapor point completion at SG-42. The highest PID reading was 92.5 ppm.
- 66 ft bgs: highest PID reading observed was 27.9 ppm.
- 98 ft bgs: highest PID reading observed was 29.4 ppm. SVP is approximately 20 feet above the first water-bearing zone.

2.4.8 MW-30

MW-30 was completed with three ZIST wells with one SVP installed at the following intervals:

- 240 to 250 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone where PCE was not detected.
- 282 to 292 ft bgs: 1-inch ZIST monitoring well installed in an intermediate water-bearing zone where PCE was not detected.

- 317 to 327 ft bgs: 1-inch ZIST well installed in the deepest water-bearing zone observed in the borehole where PCE was detected at 0.2 J µg/L. A groundwater sample was also collected at 340 ft bgs (0.16 J µg/L), however, a water-bearing zone was not observed in the lithologic log at this depth. As the lack of a water-bearing zone suggests there would not be adequate groundwater recharge for future sampling events, a well was not installed at this depth.

SVP

- 30 ft bgs: installed to evaluate soil vapor in the shallow subsurface.

2.4.9 MW-31

MW-31 was completed with three ZIST wells, as follows:

- 138 to 148 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone where PCE was detected at 0.59 J µg/L.
- 190 to 200 ft bgs: 1-inch ZIST monitoring well installed in an intermediate water-bearing zone where PCE was detected at 0.2 J µg/L.
- 228 to 238 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole.

2.4.10 MW-32

The well design at MW-32 consists of one 2-inch-diameter conventional well, two ZIST wells, and one SVP installed at the following intervals:

- 114 to 124 ft bgs: 2-inch monitoring well installed. This elevation generally correlates with the interval screened in MW-08A.
- 170 to 180 ft bgs: 1-inch ZIST monitoring well installed in the intermediate water-bearing zone. This location correlates with the interval screened in MW-08B. PCE was detected at 0.2 J µg/L.
- 260 to 270 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole.

SVP

- 20 ft bgs: installed to evaluate soil vapor in the shallow subsurface.

2.4.11 MW-34

The well design at MW-34 consists of four multilevel ZIST groundwater wells and one SVP, as follows:

- 140 to 150 ft bgs: 1-inch ZIST monitoring well installed in the shallowest water-bearing zone where PCE was detected at 6.7 µg/L.
- 175 to 185 ft bgs: 1-inch ZIST monitoring well installed in an intermediate water-bearing zone where PCE was detected at 14 µg/L.

- 250 to 260 ft bgs: 1-inch ZIST monitoring well installed in an intermediate water-bearing zone where PCE was detected at 0.66 J µg/L.
- 315 to 325 ft bgs: 1-inch ZIST monitoring well installed in the deepest water-bearing zone observed in the borehole where PCE was detected at 0.43 J µg/L.

SVP

- 18 ft bgs: installed to evaluate soil vapor in the shallow subsurface.

2.5 Well Development

The boreholes completed as 4-inch monitoring wells, MW-24, MW-27, and MW-28, were developed by Holt Services. Holt Services used a bailer and swab to remove sediment from the screened interval, then pumped the wells following the methods described in Section 5.1.8 of the RI Work Plan (CH2M Hill 2018). A minimum volume was calculated prior to pumping, and the wells were purged until the minimum volume had been removed from the well and parameter stabilization occurred and turbidity requirements were met. Well development field forms are included in **Appendix L**. The development water was handled as IDW.

The ZIST wells were developed in accordance with manufacturer recommendations (**Appendix L**), using a gas lifting method with compressed nitrogen to purge water and sediment from the well casing while simultaneously surging the well to remove sediment from the filter pack. The gas lifting method consists of lowering a stinger tube to approximately the center of the water column above the well screen, which delivers nitrogen to the water column and lifts the water in the well casing to the surface and into a tote. As ZIST wells have a receiver that restricts the placement of any objects into the well screen, surging refers to the agitation that occurs during gas lifting. Gas lifting continued until visible clearing of the extracted water. Water quality parameters were not measured during gas lifting because of the disturbance to the water during the process.

Gas lifting was only attempted at wells where sediment accumulation within the well casing and sump was observed based on total depth measurements. Gas lifting development was attempted at locations MW-23C, MW-25B, MW-26D, MW-29C, MW-30C, MW-31C, MW-32B, MW-32C, MW-34C, and MW-34D. Additionally, MW-32A was developed by purging the well with an SS-Hurricane pump.

For ZIST wells where sediment was not observed to have accumulated in the well, the pumps were installed and purged to determine appropriate pump settings for future sampling.

2.6 Decontamination and Investigation-Derived Waste

All decontamination waste produced during the drilling effort was collected and managed in accordance with Standard Operating Procedure (SOP) 4-5 *Field Equipment Decontamination at Nonradioactive Sites* (CDM Smith 2019a, Appendix D). Waste was produced from decontaminating all downhole drilling equipment prior to drilling activities, between boreholes, and after the drilling investigation, and the decontamination of the push-ahead groundwater sampler after each use. Additional equipment decontaminated after each use include the drilling tag line, water level meters, development pump, swab, and nondedicated bailer.

All IDW was handled per SOP 2-2, *Guide to Handling Investigation-Derived Waste* (CDM Smith 2019a, Appendix D). All decontamination water, hydrovac water, and purge/development water was transferred to the holding tanks on the VAMC Campus IDW yard. The excavated soils were placed in lined roll-off bins. Prior to disposal, groundwater and soil were characterized and determined to be nonhazardous. Approximately 7,000 gallons of decontamination and IDW water and approximately 103 tons of soil, contained in eight soil roll-off bins, was disposed off-site at Wasatch Regional Landfill.

Waste profiles and nonhazardous manifests are included in **Appendix M**.

2.7 Deviations from the Quality Assurance Project Plan

Minor deviations from field procedures were encountered during sampling activities associated with the drilling effort. Sample preparation and analyses were conducted within the method-specified holding times except for a few Encore samples, which were frozen approximately 40 minutes outside of holding times once received at the laboratory. This situation occurred because the laboratory had additional safety precautions in place for sample receipt because of COVID-19. The samples affected are MW23-SB041220-261 and MW25-SB050320-216.

Samples in one cooler arrived late to the laboratory because of a FedEx shipping delay. The following Encore samples were therefore frozen past the required holding time criteria: MW26-SB051020-299, MW26-SB051020-308, MW26-SB051020-314, MW26-SB051120-329, and MW26-SB051120-334. These deviations did not impact investigation results or data quality objectives.

Ten nondetect analyte results were rejected during validation as discussed in the QCSR: 2-butanone in two equipment blank samples and two trip blank samples; and 1,2-dibromo-3-chloropropane, bromodichloromethane, bromoform, cis-1,3-dichloropropene, dibromochloromethane, and trans-1,3-dichloropropene in sample MW25-SB050620-312. These results are not usable for project decisions but do not effect data quality objectives as they are not analytes of concern and completeness goals were met for both the number of samples collected and the number of measurements judged to be valid.

For this sampling event, validation was performed for the soil samples, equipment blanks, trip blanks, and select groundwater samples. Validation of groundwater grab samples collected during drilling was not required and this data is considered screening-level only.

Monitoring well MW-32A was developed by purging with a submersible pump. A well development form was not completed during development of this well. Purging was conducted until the water was clear. Approximately 35 gallons of water was purged during development. Well development forms were also not completed during development of the ZIST wells; a summary is provided in **Appendix L**. Because of limitations of applying gas lifting to wells without a sufficient water column, only wells with measurable sediment accumulation were developed.

For the vertical profiling sampling, the push-ahead groundwater samples were collected in the water-bearing zones at approximately 20-foot intervals (CDM Smith 2019a). If a sample could not be collected because of lithology or moisture content, a sample was attempted in the next 10-foot

interval. There were intervals in which the samples were not collected because lithology was too dense to deploy the sampler properly, there were no indications of water bearing zones, or the sampler did not function because of silt and clay clogging the screen. There was also a missed interval at MW-23 at 210 feet bgs where the soil core from 205–210 feet bgs slid out of the core barrel and the core was retrieved during the 210–220 feet bgs run. The groundwater sample was collected at 220 feet bgs instead of 210 feet bgs.

Section 3
Summary

This report presents the results from the spring and summer 2020 groundwater monitoring well installation event. Additional wells are planned to be installed in late fall 2020. Further analysis and evaluation of these results will be presented in the RI report.

Six source evaluation borings were completed around Buildings 6 and 7. MW-24, MW-27, and MW-28 were completed as conventional 4-inch groundwater monitoring wells. MW-23, MW-25, and MW-26 were completed as multilevel wells using the ZIST system for groundwater zone isolation. All the wells around Buildings 6 and 7 include soil vapor monitoring points except MW-26. MW-29 was installed near the Sunnyside Park manhole, which was identified as a possible release point from the 2018 soil vapor investigation. MW-29 was completed as a multilevel ZIST well with soil vapor monitoring points.

Four plume delineation borings were installed as part of this investigation. MW-30 was installed near Foothill Drive on the VAMC campus. MW-31 was installed in Sunnyside Park, and MW-32 was installed on 600 South, west of Mt. Olivet Cemetery. MW-34 was installed on the Rowland Hall-St. Mark's School property west of Guardsman Way and north of Sunnyside Avenue. The four plume delineation wells were installed as multilevel monitoring wells with an SVP except for MW-31, which does not have an SVP.

The addition of these 29 sampling points at 11 locations will lead to a better understanding of the groundwater gradients, lateral and vertical extent of the PCE plume, and the potential release points. Data collected during this investigation will be evaluated further to refine the conceptual site model and will be summarized in the RI report.

Section 4
References

CDM Smith. 2020. Addendum A to Modification #3 to *OU-2 Remedial Investigation Work Plan and Sampling and Analysis Plan, 700 South 1600 East PCE Plume, Salt Lake City, Utah*. Prepared for the U.S. Army Corps of Engineers.

CDM Smith. 2019a. *Quality Assurance Project Plan, Operable Unit 2 Remedial Investigation, 700 South 1600 East PCE Plume, Salt Lake City, Utah*. Prepared for the U.S. Army Corps of Engineers.

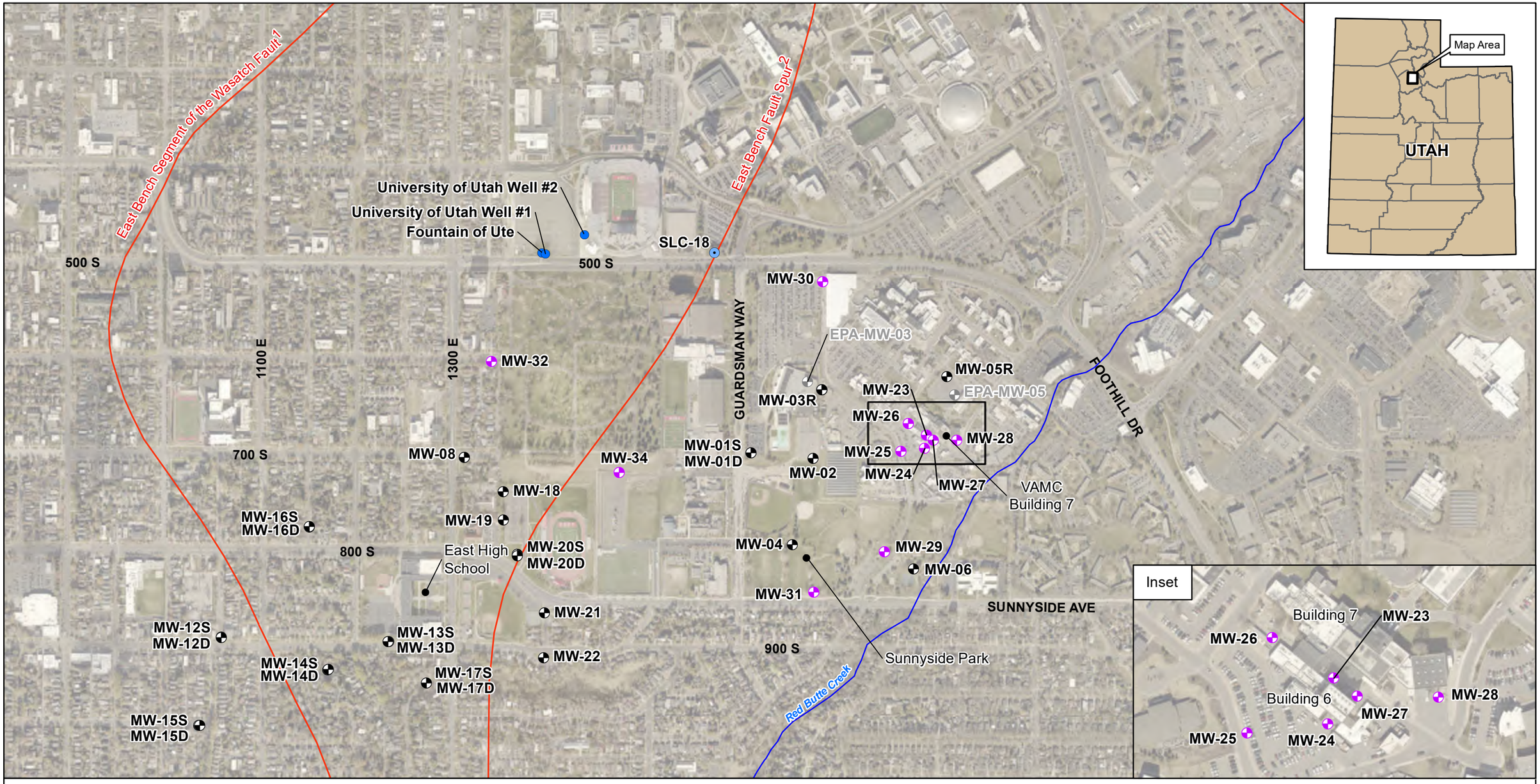
CDM Smith. 2019b. Modification #3 to *OU-2 Remedial Investigation Work Plan and Sampling and Analysis Plan, 700 South 1600 East PCE Plume, Salt Lake City, Utah*. Prepared for the U.S. Army Corps of Engineers.

CH2M Hill Inc. 2018. *Remedial Investigation Work Plan, OU-2 Remedial Investigation, 700 South 1600 East PCE Plume, Salt Lake City, Utah*. Prepared for the U.S. Army Corps of Engineers.

U.S. Environmental Protection Agency (EPA). 2020. *Regional Screening Levels (RSLs) Generic Tables*. November. Available online at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables.

Jacobs. 2019. 2018 *OU-2 Data Summary Report, Operable Unit 2 Remedial Investigation 700 South 1600 East PCE Plume, Salt Lake City, Utah*. Prepared for the U.S. Army Corps of Engineers.

Figures



Legend

- Monitoring Well
- Monitoring Well installed Spring/Summer 2020
- Abandoned Monitoring Well
- Drinking Water Supply Well
- Irrigation Well
- Landmark
- Red Butte Creek
- Fault Line

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

OU = operable unit
PCE = tetrachloroethene
VAMC = Veterans Affairs Medical Center

[1] Davis, F.D. 1983. Geologic Map of the Central Wasatch Front, Utah. Utah Geological and Mineral Survey. Map 54-A – Wasatch Front Series. May.

[2] Personius, S.F. and Scott, W.E. 2009. Surficial Geologic Map of the Salt Lake City Segment and Parts of Adjacent Segments of the Wasatch Fault Zone, Davis, Salt Lake, and Utah Counties, Utah

N

0 500 1,000 Feet

CDM Smith

Figure 1
Site Location Map

Spring/Summer 2020
Drilling Data Summary Report
OU1 700 South 1600 East PCE Plume
Salt Lake City, Utah

File Path: J:\238824_VA_Medical_Salt_Lake\MXD\Sampling_2020\DSR_2020Q2\Fig1_DDSR_SiteMap.mxd WAGNERA 12/2/2020

Tables

Table 3
Soil VOC Analytical Results

Location		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23	
Sample Date		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07		2020-04-07	
Sample Name		MW23-SB040720-16		MW23-SB040720-24		MW23-SB040720-30		MW23-SB040720-49		MW23-SB040720-54		MW23-SB040720-63		MW23-SB040720-75		MW23-SB040720-85		MW23-SB040720-93		MW23-SB040720-97		MW23-SB040720-107	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,1-DICHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,1-DICHLOROETHENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2-DIBROMOETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2-DICHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2-DICHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,2-DICHLOROPROPANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,3,5-Trimethylbenzene	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,3-DICHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
1,4-DICHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
2-Butanone (MEK)	mg/kg	0.022	U	0.035	U	0.02	U	0.029	U	0.022	U	0.019	U	0.021	U	0.02	U	0.024	U	0.022	U	0.021	U
2-Hexanone	mg/kg	0.022	U	0.035	U	0.02	U	0.029	U	0.022	U	0.019	U	0.021	U	0.02	U	0.024	U	0.022	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.022	U	0.035	U	0.02	U	0.029	U	0.022	U	0.019	U	0.021	U	0.02	U	0.024	U	0.022	U	0.021	U
ACETONE	mg/kg	0.022	U	0.035	U	0.02	U	0.029	U	0.022	U	0.019	U	0.021	U	0.02	U	0.024	U	0.022	U	0.021	U
BENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
Bromochloromethane	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
BROMODICHLOROMETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
BROMOFORM	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
BROMOMETHANE	mg/kg	0.011	U	0.017	U	0.01	U	0.015	U	0.011	U	0.0097	U	0.011	U	0.01	U	0.012	U	0.011	U	0.011	U
CARBON DISULFIDE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CARBON TETRACHLORIDE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CHLOROBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CHLOROETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CHLOROFORM	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CHLOROMETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
DIBROMOCHLOROMETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
ETHYLBENZENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
Isopropylbenzene	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
M,P-XYLENE	mg/kg	0.011	U	0.017	U	0.01	U	0.015	U	0.011	U	0.0097	U	0.011	U	0.01	U	0.012	U	0.011	U	0.011	U
METHYL ACETATE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
METHYLENE CHLORIDE	mg/kg	0.011	UJ	0.017	UJ	0.01	UJ	0.015	UJ	0.011	UJ	0.0097	UJ	0.011	UJ	0.01	UJ	0.012	UJ	0.011	UJ	0.011	U
O-XYLENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
STYRENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
TETRACHLOROETHENE	mg/kg	0.0056	U	0.0086	U	**0.0038**	**J**	0.0073	U	**0.0014**	**J**	**0.0025**	**J**	**0.0045**	**J**	**0.005**	**J**	**0.0016**	**J**	0.0054	U	**0.0025**	**J**
TOLUENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
TRICHLOROETHENE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
VINYL ACETATE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U
VINYL CHLORIDE	mg/kg	0.0056	U	0.0086	U	0.005	U	0.0073	U	0.0054	U	0.0048	U	0.0053	U	0.0051	U	0.0059	U	0.0054	U	0.0053	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23	
Sample Date		2020-04-08		2020-04-08		2020-04-08		2020-04-08		2020-04-08		2020-04-09		2020-04-09		2020-04-09		2020-04-09		2020-04-09	
Sample Name		MW23-SB040820-110		MW23-SB040820-124		MW23-SB040820-133		MW23-SB040820-143		MW23-SB040820-155		MW23-SB040920-169		MW23-SB040920-175		MW23-SB040920-184		MW23-SB040920-199		MW23-SB040920-208		MW23-SB040920-218	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,1-DICHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,1-DICHLOROETHENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2-DIBROMOETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2-DICHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2-DICHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,2-DICHLOROPROPANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,3,5-Trimethylbenzene	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,3-DICHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
1,4-DICHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
2-Butanone (MEK)	mg/kg	0.023	U	0.028	U	0.021	U	0.029	U	0.02	U	0.027	U	0.021	U	0.022	U	0.018	U	0.022	U	0.021	U
2-Hexanone	mg/kg	0.023	U	0.028	U	0.021	U	0.029	U	0.02	U	0.027	U	0.021	U	0.022	U	0.018	U	0.022	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.023	U	0.028	U	0.021	U	0.029	U	0.02	U	0.027	U	0.021	U	0.022	U	0.018	U	0.022	U	0.021	U
ACETONE	mg/kg	0.023	U	0.028	U	0.021	U	0.029	U	0.02	U	0.027	U	0.021	U	0.022	U	0.018	U	0.022	U	0.021	U
BENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
Bromochloromethane	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
BROMODICHLOROMETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
BROMOFORM	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
BROMOMETHANE	mg/kg	0.011	U	0.014	U	0.011	U	0.014	U	0.01	U	0.013	U	0.011	U	0.011	U	0.0091	U	0.011	U	0.011	U
CARBON DISULFIDE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CARBON TETRACHLORIDE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CHLOROBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CHLOROETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CHLOROFORM	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CHLOROMETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
DIBROMOCHLOROMETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
ETHYLBENZENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
Isopropylbenzene	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
M,P-XYLENE	mg/kg	0.011	U	0.014	U	0.011	U	0.014	U	0.01	U	0.013	U	0.011	U	0.011	U	0.0091	U	0.011	U	0.011	U
METHYL ACETATE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
METHYLENE CHLORIDE	mg/kg	0.011	U	0.014	U	0.011	U	0.014	U	0.01	U	0.013	U	0.011	U	0.011	U	0.0091	U	0.011	U	0.011	U
O-XYLENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
STYRENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TETRACHLOROETHENE	mg/kg	0.0057	U	0.007	U	0.0015	J	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TOLUENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TRICHLOROETHENE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
VINYL ACETATE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U
VINYL CHLORIDE	mg/kg	0.0057	U	0.007	U	0.0053	U	0.0071	U	0.005	U	0.0067	U	0.0053	U	0.0055	U	0.0045	U	0.0055	U	0.0053	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23	
	Sample Date	2020-04-10		2020-04-10		2020-04-10		2020-04-10		2020-04-12		2020-04-12		2020-04-12		2020-04-13		2020-04-13		2020-04-14		2020-04-14	
	Sample Name	MW23-SB041020-226		MW23-SB041020-230		MW23-SB041020-244		MW23-SB041020-257		MW23-SB041220-261		MW23-SB041220-280		MW23-SB041220-307		MW23-SB041320-314		MW23-SB041320-324		MW23-SB041420-334		MW23-SB041420-340	
Analyte	Units	Result	Q	Result	Q	*Result*	*Q*	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,1-DICHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,1-DICHLOROETHENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	**0.0013**	**J**	0.0041	U	0.0047	U	0.0052	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2-DIBROMOETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2-DICHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2-DICHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,2-DICHLOROPROPANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,3,5-Trimethylbenzene	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,3-DICHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
1,4-DICHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
2-Butanone (MEK)	mg/kg	0.024	U	0.02	U	0.019	U	**0.048**		0.019	U	0.02	U	0.019	U	**0.019**		**0.0044**	**J**	**0.035**		**0.0076**	**J**
2-Hexanone	mg/kg	0.024	U	0.02	U	0.019	U	**0.01**	**J**	0.019	U	0.02	U	0.019	U	0.019	U	0.017	U	**0.0091**	**J**	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.024	U	0.02	U	0.019	U	0.022	U	0.019	U	0.02	U	0.019	U	0.019	U	0.017	U	0.019	U	0.021	U
ACETONE	mg/kg	**0.0073**	**J**	**0.0071**	**J**	0.019	U	**0.13**		**0.009**	**J**	0.02	U	0.019	U	**0.044**		**0.0087**	**J**	**0.067**		0.021	U
BENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	**0.014**	**J**	**0.0031**	**J**	**0.0023**	**J**	0.0052	U
Bromochloromethane	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
BROMODICHLOROMETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	UJ	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
BROMOFORM	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	UJ	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
BROMOMETHANE	mg/kg	0.012	U	0.0099	U	0.0097	U	0.011	U	0.0094	U	0.0099	U	0.0095	U	0.0095	U	0.0083	U	0.0093	U	0.01	U
CARBON DISULFIDE	mg/kg	0.0059	U	0.0018	J	0.0048	U	0.0055	U	**0.0018**	**J**	0.0049	U	0.0048	U	0.0048	U	0.0022	J	0.0047	U	**0.0024**	**J**
CARBON TETRACHLORIDE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CHLOROBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CHLOROETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CHLOROFORM	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CHLOROMETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	UJ	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
DIBROMOCHLOROMETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	UJ	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
ETHYLBENZENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	**0.0028**	**J**	**0.0013**	**J**	0.0047	U	0.0052	U
Isopropylbenzene	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
M,P-XYLENE	mg/kg	0.012	U	0.0099	U	0.0097	U	0.011	U	0.0094	U	0.0099	U	0.0095	U	**0.0034**	**J**	0.0022	J	0.0093	U	0.01	U
METHYL ACETATE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
METHYLENE CHLORIDE	mg/kg	0.012	U	0.0099	U	0.0097	U	0.011	U	0.0094	U	0.0099	U	0.0095	U	0.0095	U	0.0083	U	0.0093	U	0.01	U
O-XYLENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	**0.0021**	**J**	**0.0011**	**J**	**0.0011**	**J**	0.0052	U
STYRENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
TETRACHLOROETHENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
TOLUENE	mg/kg	0.0059	U	**0.0013**	**J**	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	**0.011**	**J**	**0.0043**		**0.0027**	**J**	0.0052	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	UJ	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
TRICHLOROETHENE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
VINYL ACETATE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U
VINYL CHLORIDE	mg/kg	0.0059	U	0.0049	U	0.0048	U	0.0055	U	0.0047	U	0.0049	U	0.0048	U	0.0048	U	0.0041	U	0.0047	U	0.0052	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-23		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24	
Sample Date		2020-04-15		2020-05-11		2020-05-11		2020-05-11		2020-05-12		2020-05-12		2020-05-12		2020-05-12		2020-05-12		2020-05-12	
Sample Name		MW23-SB041520-346		MW24-SB051120-14		MW24-SB051120-22		MW24-SB051120-34		MW24-SB051220-43		MW24-SB051220-56		MW24-SB051220-61		MW24-SB051220-71		MW24-SB051220-84		MW24-SB051220-104		MW24-SB051220-119	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,1-DICHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,1-DICHLOROETHENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2,4-TRIMETHYLBENZENE	mg/kg	**0.01**		0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2-DIBROMOETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2-DICHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2-DICHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,2-DICHLOROPROPANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,3,5-Trimethylbenzene	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,3-DICHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
1,4-DICHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
2-Butanone (MEK)	mg/kg	**0.12**		0.022	U	0.023	U	0.021	U	0.026	U	0.023	U	0.022	U	0.022	U	0.025	U	0.023	U	0.023	U
2-Hexanone	mg/kg	**0.044**		0.022	U	0.023	U	0.021	U	0.026	U	0.023	U	0.022	U	0.022	U	0.025	U	0.023	U	0.023	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.017	U	0.022	U	0.023	U	0.021	U	0.026	U	0.023	U	0.022	U	0.022	U	0.025	U	0.023	U	0.023	U
ACETONE	mg/kg	**0.21**		0.022	U	0.023	U	0.021	U	0.026	U	0.023	U	0.022	U	0.022	U	0.025	U	0.023	U	0.023	U
BENZENE	mg/kg	**0.044**		0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
Bromochloromethane	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
BROMODICHLOROMETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
BROMOFORM	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
BROMOMETHANE	mg/kg	0.0084	U	0.011	U	0.011	U	0.011	U	0.013	U	0.011	U	0.011	U	0.011	U	0.012	U	0.011	U	0.011	U
CARBON DISULFIDE	mg/kg	**0.00088**	J	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CARBON TETRACHLORIDE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CHLOROBENZENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CHLOROETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CHLOROFORM	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CHLOROMETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
DIBROMOCHLOROMETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
ETHYLBENZENE	mg/kg	**0.021**		0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
Isopropylbenzene	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
M,P-XYLENE	mg/kg	**0.023**		0.011	U	0.011	U	0.011	U	0.013	U	0.011	U	0.011	U	0.011	U	0.012	U	0.011	U	0.011	U
METHYL ACETATE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
METHYLENE CHLORIDE	mg/kg	0.0084	U	0.011	U	0.011	U	0.011	U	0.013	U	0.011	U	0.011	U	0.011	U	0.012	U	0.011	U	0.011	U
O-XYLENE	mg/kg	**0.024**		0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
STYRENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TETRACHLOROETHENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TOLUENE	mg/kg	**0.058**		0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TRICHLOROETHENE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
VINYL ACETATE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U
VINYL CHLORIDE	mg/kg	0.0042	U	0.0054	U	0.0057	U	0.0053	U	0.0065	U	0.0056	U	0.0054	U	0.0056	U	0.0062	U	0.0057	U	0.0056	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24		MW-24	
Sample Date		2020-05-13		2020-05-13		2020-05-13		2020-05-13		2020-05-13		2020-05-13		2020-05-14		2020-05-14		2020-05-14		2020-05-14		2020-05-15	
Sample Name		MW24-SB051320-132		MW24-SB051320-149		MW24-SB051320-152		MW24-SB051320-166		MW24-SB051320-170		MW24-SB051320-186		MW24-SB051420-192		MW24-SB051420-202		MW24-SB051420-215		MW24-SB051420-227		MW24-SB051520-239	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,1-DICHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,1-DICHLOROETHENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2-DIBROMOETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2-DICHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2-DICHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,2-DICHLOROPROPANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,3,5-Trimethylbenzene	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,3-DICHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
1,4-DICHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
2-Butanone (MEK)	mg/kg	0.019	U	0.018	U	0.021	U	0.025	U	0.025	U	0.021	U	0.019	U	0.023	U	0.021	U	0.023	U	0.023	U
2-Hexanone	mg/kg	0.019	U	0.018	U	0.021	U	0.025	U	0.025	U	0.021	U	0.019	U	0.023	U	0.021	U	0.023	U	0.023	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.019	U	0.018	U	0.021	U	0.025	U	0.025	U	0.021	U	0.019	U	0.023	U	0.021	U	0.023	U	0.023	U
ACETONE	mg/kg	0.019	U	0.018	U	0.021	U	0.025	U	0.025	U	0.021	U	0.019	U	0.023	U	0.021	U	0.023	U	0.023	U
BENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
Bromochloromethane	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
BROMODICHLOROMETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
BROMOFORM	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
BROMOMETHANE	mg/kg	0.0097	U	0.0092	U	0.011	U	0.012	U	0.012	U	0.01	U	0.0095	U	0.011	U	0.01	U	0.011	U	0.011	U
CARBON DISULFIDE	mg/kg	0.0049	U	**0.00092**	**J**	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	**0.0014**	**J**	**0.0011**	**J**
CARBON TETRACHLORIDE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CHLOROBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CHLOROETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CHLOROFORM	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CHLOROMETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
DIBROMOCHLOROMETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
ETHYLBENZENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
Isopropylbenzene	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
M,P-XYLENE	mg/kg	0.0097	U	0.0092	U	0.011	U	0.012	U	0.012	U	0.01	U	0.0095	U	0.011	U	0.01	U	0.011	U	0.011	U
METHYL ACETATE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
METHYLENE CHLORIDE	mg/kg	0.0097	U	0.0092	U	0.011	U	0.012	U	0.012	U	0.01	U	0.0095	U	0.011	U	0.01	U	0.011	U	0.011	U
O-XYLENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
STYRENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TETRACHLOROETHENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TOLUENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TRICHLOROETHENE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
VINYL ACETATE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U
VINYL CHLORIDE	mg/kg	0.0049	U	0.0046	U	0.0053	U	0.0062	U	0.0062	U	0.0052	U	0.0047	U	0.0057	U	0.0052	U	0.0056	U	0.0057	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-24		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25	
	Sample Date	2020-05-15		2020-04-29		2020-04-29		2020-04-29		2020-04-29		2020-04-29		2020-04-29		2020-04-29		2020-04-29		2020-04-30	
	Sample Name	MW24-SB051520-248		MW25-SB042920-14		MW25-SB042920-29		MW25-SB042920-35		MW25-SB042920-46		MW25-SB042920-54		MW25-SB042920-70		MW25-SB042920-73		MW25-SB042920-82		MW25-SB042920-94		MW25-SB043020-103	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,1,2-TRICHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,1-DICHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,1-DICHLOROETHENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2-DIBROMOETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2-DICHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2-DICHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,2-DICHLOROPROPANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,3,5-Trimethylbenzene	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,3-DICHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
1,4-DICHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
2-Butanone (MEK)	mg/kg	0.02	U	0.024	U	0.02	U	0.024	U	0.021	U	0.018	U	0.025	U	0.025	U	0.022	U	0.025	U	0.021	U
2-Hexanone	mg/kg	0.02	U	0.024	U	0.02	U	0.024	U	0.021	U	0.018	U	0.025	U	0.025	U	0.022	U	0.025	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.024	U	0.02	U	0.024	U	0.021	U	0.018	U	0.025	U	0.025	U	0.022	U	0.025	U	0.021	U
ACETONE	mg/kg	0.02	U	**0.01**	J	**0.0061**	J	0.024	U	**0.009**	J	0.018	U	0.025	U	0.025	U	**0.0058**	J	**0.0067**	J	**0.0059**	J
BENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
Bromochloromethane	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
BROMODICHLOROMETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
BROMOFORM	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
BROMOMETHANE	mg/kg	0.0099	U	0.012	U	0.0099	U	0.012	U	0.011	U	0.0092	U	0.013	U	0.012	U	0.011	U	0.013	U	0.011	U
CARBON DISULFIDE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CARBON TETRACHLORIDE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CHLOROBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CHLOROETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CHLOROFORM	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CHLOROMETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
DIBROMOCHLOROMETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
DICHLORODIFLUOROMETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
ETHYLBENZENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
Isopropylbenzene	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
M,P-XYLENE	mg/kg	0.0099	U	0.012	U	0.0099	U	0.012	U	0.011	U	0.0092	U	0.013	U	0.012	U	0.011	U	0.013	U	0.011	U
METHYL ACETATE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
METHYL TERT-BUTYL ETHER	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
METHYLENE CHLORIDE	mg/kg	0.0099	U	0.012	U	0.0099	U	0.012	U	0.011	U	0.0092	U	0.013	U	0.012	U	0.011	U	0.013	U	0.011	U
O-XYLENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
STYRENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TETRACHLOROETHENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TOLUENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TRICHLOROETHENE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
TRICHLOROFLUOROMETHANE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
VINYL ACETATE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U
VINYL CHLORIDE	mg/kg	0.005	U	0.0061	U	0.005	U	0.0059	U	0.0053	U	0.0046	U	0.0064	U	0.0062	U	0.0055	U	0.0063	U	0.0053	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25	
Sample Date		2020-04-30		2020-04-30		2020-04-30		2020-04-30		2020-05-01		2020-05-01		2020-05-01		2020-05-01		2020-05-01		2020-05-03	
Sample Name		MW25-SB043020-112		MW25-SB043020-120		MW25-SB043020-139		MW25-SB043020-150		MW25-SB050120-153		MW25-SB050120-164		MW25-SB050120-176		MW25-SB050120-187		MW25-SB050120-193		MW25-SB050120-205		MW25-SB050320-216	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,1,2-TRICHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,1-DICHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,1-DICHLOROETHENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	UJ	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	UJ	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2-DIBROMOETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2-DICHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2-DICHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,2-DICHLOROPROPANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,3,5-Trimethylbenzene	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,3-DICHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
1,4-DICHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
2-Butanone (MEK)	mg/kg	0.02	U	0.021	U	0.02	U	0.022	U	0.019	U	0.022	U	0.021	U	0.025	U	0.019	U	0.021	U	0.018	U
2-Hexanone	mg/kg	0.02	U	0.021	U	0.02	U	0.022	U	0.019	U	0.022	U	0.021	U	0.025	U	0.019	U	0.021	U	0.018	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.021	U	0.02	U	0.022	U	0.019	U	0.022	U	0.021	U	0.025	U	0.019	U	0.021	U	0.018	U
ACETONE	mg/kg	0.02	U	0.021	U	0.02	U	0.022	U	0.019	U	0.022	U	0.021	U	0.025	U	**0.0052**	**J**	**0.0072**	**J**	0.018	U
BENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
Bromochloromethane	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
BROMODICHLOROMETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
BROMOFORM	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
BROMOMETHANE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	U	0.0095	U	0.011	U	0.011	U	0.012	U	0.0094	U	0.01	U	0.0088	U
CARBON DISULFIDE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CARBON TETRACHLORIDE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CHLOROBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CHLOROETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CHLOROFORM	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CHLOROMETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
DIBROMOCHLOROMETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
DICHLORODIFLUOROMETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
ETHYLBENZENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
Isopropylbenzene	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
M,P-XYLENE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	U	0.0095	U	0.011	U	0.011	U	0.012	U	0.0094	U	0.01	U	0.0088	U
METHYL ACETATE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
METHYL TERT-BUTYL ETHER	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	UJ	0.0095	UJ	0.011	UJ	0.011	UJ	0.012	UJ	0.0094	UJ	0.01	UJ	**0.0041**	**J**
O-XYLENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
STYRENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TETRACHLOROETHENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TOLUENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TRICHLOROETHENE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
TRICHLOROFLUOROMETHANE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
VINYL ACETATE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U
VINYL CHLORIDE	mg/kg	0.005	U	0.0052	U	0.0051	U	0.0056	U	0.0048	U	0.0054	U	0.0053	U	0.0062	U	0.0047	U	0.0052	U	0.0044	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-26	
Sample Date		2020-05-03		2020-05-03		2020-05-03		2020-05-03		2020-05-04		2020-05-05		2020-05-05		2020-05-05		2020-05-05		2020-05-06		2020-04-22	
Sample Name		MW25-SB050320-223		MW25-SB050320-235		MW25-SB050320-246		MW25-SB050320-252		MW25-SB050420-264		MW25-SB050520-272		MW25-SB050520-281		MW25-SB050520-299		MW25-SB050520-301		MW25-SB050620-312		MW26-SB042220-20	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,1-DICHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,1-DICHLOROETHENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	UJ	0.0089	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	UJ	0.0089	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
1,2-DIBROMOETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	UJ	0.0089	U
1,2-DICHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,2-DICHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,2-DICHLOROPROPANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,3,5-Trimethylbenzene	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,3-DICHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
1,4-DICHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
2-Butanone (MEK)	mg/kg	0.017	U	0.021	U	0.019	U	0.02	U	0.02	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.036	U
2-Hexanone	mg/kg	0.017	U	0.021	U	0.019	U	0.02	U	0.02	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.036	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.017	U	0.021	U	0.019	U	0.02	U	0.02	U	0.019	U	0.019	U	0.02	U	0.019	U	0.017	U	0.036	U
ACETONE	mg/kg	0.017	U	0.021	U	0.019	U	0.02	U	0.02	U	0.019	U	0.019	U	0.02	U	0.019	U	**0.0068**	**J**	**0.012**	**J**
BENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
Bromochloromethane	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
BROMODICHLOROMETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
BROMOFORM	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
BROMOMETHANE	mg/kg	0.0086	U	0.011	U	0.0094	U	0.0098	U	0.0098	U	0.0094	U	0.0096	U	0.01	U	0.0096	U	0.0083	U	0.018	U
CARBON DISULFIDE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	**0.00087**	**J**	0.0089	U
CARBON TETRACHLORIDE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	UJ	0.0089	U
CHLOROBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
CHLOROETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
CHLOROFORM	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
CHLOROMETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
DIBROMOCHLOROMETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
ETHYLBENZENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
Isopropylbenzene	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
M,P-XYLENE	mg/kg	0.0086	U	0.011	U	0.0094	U	0.0098	U	0.0098	U	0.0094	U	0.0096	U	0.01	U	0.0096	U	0.0083	U	0.018	U
METHYL ACETATE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
METHYLENE CHLORIDE	mg/kg	**0.0048**	**J**	**0.0059**	**J**	**0.0048**	**J**	**0.0057**	**J**	**0.0045**	**J**	0.0094	UJ	0.0096	UJ	0.01	UJ	0.0096	UJ	0.0083	U	0.018	U
O-XYLENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
STYRENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
TETRACHLOROETHENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
TOLUENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	R	0.0089	U
TRICHLOROETHENE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
VINYL ACETATE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U
VINYL CHLORIDE	mg/kg	0.0043	U	0.0053	U	0.0047	U	0.0049	U	0.0049	U	0.0047	U	0.0048	U	0.005	U	0.0048	U	0.0041	U	0.0089	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26	
Sample Date		2020-04-22		2020-04-22		2020-04-23		2020-04-23		2020-04-23		2020-04-23		2020-04-23		2020-05-04		2020-05-04		2020-05-04	
Sample Name		MW26-SB042220-24		MW26-SB042220-39		MW26-SB042320-44		MW26-SB042320-56		MW26-SB042320-62		MW26-SB042320-77		MW26-SB042320-84		MW26-SB042320-97		MW26-SB050420-103		MW26-SB050420-116		MW26-SB050420-119	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,1-DICHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,1-DICHLOROETHENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2-DIBROMOETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2-DICHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2-DICHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,2-DICHLOROPROPANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,3,5-Trimethylbenzene	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,3-DICHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
1,4-DICHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
2-Butanone (MEK)	mg/kg	0.021	U	0.028	U	0.027	U	0.02	U	0.022	U	0.024	U	0.029	U	0.021	U	0.018	U	0.021	U	0.022	U
2-Hexanone	mg/kg	0.021	U	0.028	U	0.027	U	0.02	U	0.022	U	0.024	U	0.029	U	0.021	U	0.018	U	0.021	U	0.022	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.021	U	0.028	U	0.027	U	0.02	U	0.022	U	0.024	U	0.029	U	0.021	U	0.018	U	0.021	U	0.022	U
ACETONE	mg/kg	**0.011**	**J**	**0.0094**	**J**	**0.0083**	**J**	**0.011**	**J**	0.022	U	0.0083	J	0.029	U	0.021	U	0.018	U	0.021	U	0.022	U
BENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
Bromochloromethane	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
BROMODICHLOROMETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
BROMOFORM	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
BROMOMETHANE	mg/kg	0.01	U	0.014	U	0.013	U	0.0098	U	0.011	U	0.012	U	0.015	U	0.01	U	0.0092	U	0.011	U	0.011	U
CARBON DISULFIDE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CARBON TETRACHLORIDE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CHLOROBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CHLOROETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CHLOROFORM	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CHLOROMETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
DIBROMOCHLOROMETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
ETHYLBENZENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
Isopropylbenzene	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
M,P-XYLENE	mg/kg	0.01	U	0.014	U	0.013	U	0.0098	U	0.011	U	0.012	U	0.015	U	0.01	U	0.0092	U	0.011	U	0.011	U
METHYL ACETATE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.014	U	0.013	U	0.0098	U	0.011	U	0.012	U	0.015	U	0.01	U	**0.0055**	**J**	**0.0059**	**J**	**0.0057**	**J**
O-XYLENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
STYRENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TETRACHLOROETHENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TOLUENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TRICHLOROETHENE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
VINYL ACETATE	mg/kg	0.0052	U	0.007	UJ	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U
VINYL CHLORIDE	mg/kg	0.0052	U	0.007	U	0.0066	U	0.0049	U	0.0056	U	0.0059	U	0.0074	U	0.0052	U	0.0046	U	0.0053	U	0.0056	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26	
	Sample Date	2020-05-04		2020-05-04		2020-05-04		2020-05-05		2020-05-05		2020-05-05		2020-05-05		2020-05-06		2020-05-06		2020-05-06	
	Sample Name	MW26-SB050420-129		MW26-SB050420-133		MW26-SB050420-145		MW26-SB050520-154		MW26-SB050520-168		MW26-SB050520-172		MW26-SB050520-188		MW26-SB050520-195		MW26-SB050620-201		MW26-SB050620-215		MW26-SB050620-221	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,1-DICHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,1-DICHLOROETHENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	UJ	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	UJ	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	**0.0013**	**J**	**0.00096**	**J**	0.0049	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2-DIBROMOETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2-DICHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2-DICHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,2-DICHLOROPROPANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,3,5-Trimethylbenzene	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,3-DICHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
1,4-DICHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
2-Butanone (MEK)	mg/kg	0.02	U	0.019	U	0.021	U	0.02	U	0.019	U	0.022	U	0.024	U	0.018	U	0.016	U	0.018	U	0.02	U
2-Hexanone	mg/kg	0.02	U	0.019	U	0.021	U	0.02	U	0.019	U	0.022	U	0.024	U	0.018	U	0.016	U	0.018	U	0.02	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.019	U	0.021	U	0.02	U	0.019	U	0.022	U	0.024	U	0.018	U	0.016	U	0.018	U	0.02	U
ACETONE	mg/kg	0.02	U	0.019	U	0.021	U	0.02	U	0.019	U	0.022	U	0.024	U	0.018	U	0.016	U	0.018	U	0.02	U
BENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
Bromochloromethane	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
BROMODICHLOROMETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
BROMOFORM	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
BROMOMETHANE	mg/kg	0.01	U	0.0097	U	0.011	U	0.01	U	0.0096	U	0.011	U	0.012	U	0.009	U	0.0082	U	0.0092	U	0.0099	U
CARBON DISULFIDE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	**0.00086**	**J**	0.0046	U	**0.0011**	**J**
CARBON TETRACHLORIDE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CHLOROBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CHLOROETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CHLOROFORM	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CHLOROMETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
DIBROMOCHLOROMETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
ETHYLBENZENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	**0.00093**	**J**	0.0046	U	0.0049	U
Isopropylbenzene	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
M,P-XYLENE	mg/kg	0.01	U	0.0097	U	0.011	U	0.01	U	0.0096	U	0.011	U	0.012	U	0.009	U	0.0082	U	0.0092	U	0.0099	U
METHYL ACETATE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
METHYLENE CHLORIDE	mg/kg	**0.0053**	**J**	**0.005**	**J**	0.011	UJ	0.01	UJ	0.0096	UJ	0.011	UJ	0.012	UJ	0.009	UJ	0.0082	U	0.0092	U	0.0099	U
O-XYLENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
STYRENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
TETRACHLOROETHENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
TOLUENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	**0.0024**	**J**	**0.00095**	**J**	0.0049	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
TRICHLOROETHENE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
VINYL ACETATE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U
VINYL CHLORIDE	mg/kg	0.0051	U	0.0049	U	0.0053	U	0.0051	U	0.0048	U	0.0056	U	0.006	U	0.0045	U	0.0041	U	0.0046	U	0.0049	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26		MW-26	
	Sample Date	2020-05-06		2020-05-07		2020-05-07		2020-05-07		2020-05-08		2020-05-08		2020-05-10		2020-05-10		2020-05-10		2020-05-11		2020-05-11	
	Sample Name	MW26-SB050620-234		MW26-SB050720-247		MW26-SB050720-251		MW26-SB050720-269		MW26-SB050820-274		MW26-SB050820-285		MW26-SB051020-299		MW26-SB051020-308		MW26-SB051020-314		MW26-SB051120-329		MW26-SB051120-334	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,1-DICHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,1-DICHLOROETHENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	**0.0027**	**J**	0.0051	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2-DIBROMOETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2-DICHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2-DICHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,2-DICHLOROPROPANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,3,5-Trimethylbenzene	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	**0.0016**	**J**	0.0051	U
1,3-DICHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
1,4-DICHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
2-Butanone (MEK)	mg/kg	0.019	U	0.019	U	0.024	U	0.02	U	0.018	U	0.019	U	0.018	U	0.018	U	0.017	U	0.02	U	0.02	U
2-Hexanone	mg/kg	0.019	U	0.019	U	0.024	U	0.02	U	0.018	U	0.019	U	0.018	U	0.018	U	0.017	U	0.02	U	0.02	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.019	U	0.019	U	0.024	U	0.02	U	0.018	U	0.019	U	0.018	U	0.018	U	0.017	U	0.02	U	0.02	U
ACETONE	mg/kg	0.019	U	**0.017**	**J**	0.024	U	0.02	U	0.018	U	0.019	U	0.018	U	0.018	U	0.017	U	0.02	U	0.02	U
BENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	**0.0023**	**J**	0.0051	U
Bromochloromethane	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
BROMODICHLOROMETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
BROMOFORM	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
BROMOMETHANE	mg/kg	0.0094	U	0.0097	U	0.012	U	0.01	U	0.0089	U	0.0093	U	0.009	U	0.0091	U	0.0087	U	0.0099	U	0.01	U
CARBON DISULFIDE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CARBON TETRACHLORIDE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CHLOROBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CHLOROETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CHLOROFORM	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CHLOROMETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
DIBROMOCHLOROMETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
ETHYLBENZENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
Isopropylbenzene	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
M,P-XYLENE	mg/kg	0.0094	U	0.0097	U	0.012	U	0.01	U	0.0089	U	0.0093	U	0.009	U	0.0091	U	0.0087	U	**0.0044**	**J**	0.01	U
METHYL ACETATE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
METHYLENE CHLORIDE	mg/kg	0.0094	U	0.0097	U	0.012	U	0.01	UJ	0.0089	UJ	0.0093	UJ	0.009	U	0.0091	U	0.0087	U	0.0099	U	0.01	U
O-XYLENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	**0.0013**	**J**	0.0051	U
STYRENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
TETRACHLOROETHENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
TOLUENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	**0.00098**	**J**	0.0044	U	**0.0047**	**J**	0.0051	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
TRICHLOROETHENE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
VINYL ACETATE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U
VINYL CHLORIDE	mg/kg	0.0047	U	0.0048	U	0.0061	U	0.0051	U	0.0044	U	0.0047	U	0.0045	U	0.0046	U	0.0044	U	0.0049	U	0.0051	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-26		MW-26		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27	
	Sample Date	2020-05-11		2020-05-12		2020-03-22		2020-03-22		2020-03-22		2020-03-22		2020-03-22		2020-03-22		2020-03-22		2020-03-22	
	Sample Name	MW26-SB051120-348		MW26-SB051220-355		MW27-SB032220-13		MW27-SB032220-16		MW27-SB032220-30		MW27-SB032220-40		MW27-SB032220-50		MW27-SB032220-54.5		MW27-SB032220-70		MW27-SB032220-75		MW27-SB032220-88	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,1-DICHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,1-DICHLOROETHENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2-DIBROMOETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2-DICHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2-DICHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,2-DICHLOROPROPANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,3,5-Trimethylbenzene	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,3-DICHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
1,4-DICHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
2-Butanone (MEK)	mg/kg	**0.0066**	**J**	0.018	U	0.023	U	0.023	U	0.025	U	0.027	U	0.038	U	0.024	U	0.024	U	0.02	U	0.019	U
2-Hexanone	mg/kg	0.02	U	0.018	U	0.023	U	0.023	U	0.025	U	0.027	U	0.038	U	0.024	U	0.024	U	0.02	U	0.019	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.018	U	0.023	U	0.023	U	0.025	U	0.027	U	0.038	U	0.024	U	0.024	U	0.02	U	0.019	U
ACETONE	mg/kg	**0.0092**	**J**	0.018	U	0.023	U	0.023	U	0.025	U	0.027	U	0.038	U	0.024	U	0.024	U	0.02	U	0.019	U
BENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
Bromochloromethane	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
BROMODICHLOROMETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
BROMOFORM	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
BROMOMETHANE	mg/kg	0.01	U	0.0091	U	0.011	U	0.012	U	0.013	U	0.013	U	0.019	U	0.012	U	0.012	U	0.0098	U	0.0097	U
CARBON DISULFIDE	mg/kg	0.0051	U	**0.00095**	**J**	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CARBON TETRACHLORIDE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CHLOROBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CHLOROETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CHLOROFORM	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CHLOROMETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
DIBROMOCHLOROMETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
ETHYLBENZENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
Isopropylbenzene	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
M,P-XYLENE	mg/kg	0.01	U	0.0091	U	0.011	U	0.012	U	0.013	U	0.013	U	0.019	U	0.012	U	0.012	U	0.0098	U	0.0097	U
METHYL ACETATE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.0091	U	0.011	U	0.012	U	0.013	U	0.013	U	0.019	U	0.012	U	0.012	U	0.0098	U	0.0097	U
O-XYLENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
STYRENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
TETRACHLOROETHENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	**0.0026**	**J**	0.0095	U	**0.0014**	**J**	0.006	U	**0.0018**	**J**	**0.0011**	**J**
TOLUENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
TRICHLOROETHENE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
VINYL ACETATE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U
VINYL CHLORIDE	mg/kg	0.0051	U	0.0046	U	0.0057	U	0.0059	U	0.0063	U	0.0067	U	0.0095	U	0.0059	U	0.006	U	0.0049	U	0.0048	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27		MW-27	
Sample Date		2020-03-22		2020-03-23		2020-03-23		2020-03-23		2020-03-23		2020-03-23		2020-03-23		2020-03-23		2020-03-23		2020-03-24	
Sample Name		MW27-SB032220-96		MW27-SB032320-102		MW27-SB032320-114		MW27-SB032320-122		MW27-SB032320-130		MW27-SB032320-140		MW27-SB032320-150		MW27-SB032320-158		MW27-SB032320-166		MW27-SB032320-175		MW27-SB032420-185	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,1-DICHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,1-DICHLOROETHENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2-DIBROMOETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2-DICHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2-DICHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,2-DICHLOROPROPANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,3,5-Trimethylbenzene	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,3-DICHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
1,4-DICHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
2-Butanone (MEK)	mg/kg	0.021	U	0.023	U	0.025	U	0.025	U	0.026	U	0.018	U	0.025	U	0.025	U	0.021	U	0.021	U	0.018	U
2-Hexanone	mg/kg	0.021	U	0.023	U	0.025	U	0.025	U	0.026	U	0.018	U	0.025	U	0.025	U	0.021	U	0.021	U	0.018	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.021	U	0.023	U	0.025	U	0.025	U	0.026	U	0.018	U	0.025	U	0.025	U	0.021	U	0.021	U	0.018	U
ACETONE	mg/kg	0.021	U	0.023	U	0.025	U	0.025	U	0.026	U	0.018	U	0.025	U	0.025	U	0.021	U	0.021	U	0.018	U
BENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
Bromochloromethane	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
BROMODICHLOROMETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
BROMOFORM	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
BROMOMETHANE	mg/kg	0.01	U	0.011	U	0.012	U	0.012	U	0.013	U	0.0091	U	0.013	U	0.013	U	0.01	U	0.01	U	0.0091	U
CARBON DISULFIDE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CARBON TETRACHLORIDE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CHLOROBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CHLOROETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CHLOROFORM	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CHLOROMETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
DIBROMOCHLOROMETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
ETHYLBENZENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
Isopropylbenzene	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
M,P-XYLENE	mg/kg	0.01	U	0.011	U	0.012	U	0.012	U	0.013	U	0.0091	U	0.013	U	0.013	U	0.01	U	0.01	U	0.0091	U
METHYL ACETATE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.011	U	0.012	U	0.012	U	0.013	U	0.0091	U	0.013	U	0.013	U	0.01	U	0.01	U	0.0091	U
O-XYLENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
STYRENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TETRACHLOROETHENE	mg/kg	**0.0024**	J	0.0057	U	**0.0014**	J	**0.0016**	J	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TOLUENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TRICHLOROETHENE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
VINYL ACETATE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U
VINYL CHLORIDE	mg/kg	0.0052	U	0.0057	U	0.0062	U	0.0062	U	0.0065	U	0.0046	U	0.0064	U	0.0064	U	0.0052	U	0.0052	U	0.0046	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-27		MW-27		MW-27		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28	
	Sample Date	2020-03-24		2020-03-24		2020-03-24		2020-03-12		2020-03-12		2020-03-12		2020-03-13		2020-03-13		2020-03-13		2020-03-13		2020-03-13	
	Sample Name	MW27-SB032420-192.5		MW27-SB032420-205		MW27-SB032420-218		MW28-SB031220-16		MW28-SB031220-22		MW28-SB031220-35		MW28-SB031320-49		MW28-SB031320-59		MW28-SB031320-67		MW28-SB031320-86		MW28-SB031320-97	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,1-DICHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,1-DICHLOROETHENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2-DIBROMOETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2-DICHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2-DICHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,2-DICHLOROPROPANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,3,5-Trimethylbenzene	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,3-DICHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
1,4-DICHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
2-Butanone (MEK)	mg/kg	0.018	U	0.019	U	0.023	U	0.021	U	0.021	U	0.022	U	0.029	U	0.021	U	0.02	U	0.018	U	0.021	U
2-Hexanone	mg/kg	0.018	U	0.019	U	0.023	U	0.021	U	0.021	U	0.022	U	0.029	U	0.021	U	0.02	U	0.018	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.018	U	0.019	U	0.023	U	0.021	U	0.021	U	0.022	U	0.029	U	0.021	U	0.02	U	0.018	U	0.021	U
ACETONE	mg/kg	0.018	U	0.019	U	0.023	U	0.021	U	0.021	U	0.022	U	0.029	U	0.021	U	0.02	U	0.018	U	0.021	U
BENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
Bromochloromethane	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
BROMODICHLOROMETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
BROMOFORM	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
BROMOMETHANE	mg/kg	0.0092	U	0.0096	U	0.011	U	0.011	U	0.01	U	0.011	U	0.014	U	0.01	U	0.0099	U	0.0091	U	0.01	U
CARBON DISULFIDE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CARBON TETRACHLORIDE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CHLOROBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CHLOROETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CHLOROFORM	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CHLOROMETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
DIBROMOCHLOROMETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
ETHYLBENZENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
Isopropylbenzene	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
M,P-XYLENE	mg/kg	0.0092	U	0.0096	U	0.011	U	0.011	U	0.01	U	0.011	U	0.014	U	0.01	U	0.0099	U	0.0091	U	0.01	U
METHYL ACETATE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
METHYLENE CHLORIDE	mg/kg	0.0092	U	0.0096	U	0.011	U	0.011	U	0.01	U	0.011	U	0.014	U	0.01	U	0.0099	U	0.0091	U	0.01	U
O-XYLENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
STYRENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
TETRACHLOROETHENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	**0.0015**	J	0.0052	U
TOLUENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
TRICHLOROETHENE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
VINYL ACETATE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U
VINYL CHLORIDE	mg/kg	0.0046	U	0.0048	U	0.0057	U	0.0053	U	0.0052	U	0.0054	U	0.0071	U	0.0051	U	0.005	U	0.0046	U	0.0052	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28		MW-28	
Sample Date		2020-03-15		2020-03-15		2020-03-16		2020-03-16		2020-03-17		2020-03-17		2020-03-17		2020-03-17		2020-03-17		2020-03-17	
Sample Name		MW28-SB031520-107		MW28-SB031520-117		MW28-SB031620-121		MW28-SB031620-139		MW28-SB031720-149		MW28-SB031720-156		MW28-SB031720-165		MW28-SB031720-171		MW28-SB031720-185		MW28-SB031720-199		MW28-SB031720-206	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,1,2-TRICHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,1-DICHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,1-DICHLOROETHENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2-DIBROMOETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2-DICHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2-DICHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,2-DICHLOROPROPANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,3,5-Trimethylbenzene	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,3-DICHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
1,4-DICHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
2-Butanone (MEK)	mg/kg	0.024	U	0.024	U	0.019	U	0.017	U	0.023	U	0.02	U	0.019	U	0.02	U	0.023	U	0.019	U	0.021	U
2-Hexanone	mg/kg	0.024	U	0.024	U	0.019	U	0.017	U	0.023	U	0.02	U	0.019	U	0.02	U	0.023	U	0.019	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.024	U	0.024	U	0.019	U	0.017	U	0.023	U	0.02	U	0.019	U	0.02	U	0.023	U	0.019	U	0.021	U
ACETONE	mg/kg	0.024	U	0.024	U	0.019	U	0.017	U	0.023	U	0.02	U	0.019	U	0.02	U	0.023	U	0.019	U	0.021	U
BENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
Bromochloromethane	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
BROMODICHLOROMETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
BROMOFORM	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
BROMOMETHANE	mg/kg	0.012	U	0.012	U	0.0093	U	0.0087	U	0.012	U	0.0098	U	0.0097	U	0.0099	U	0.012	U	0.0094	U	0.011	U
CARBON DISULFIDE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CARBON TETRACHLORIDE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CHLOROBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CHLOROETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CHLOROFORM	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CHLOROMETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
DIBROMOCHLOROMETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
DICHLORODIFLUOROMETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
ETHYLBENZENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
Isopropylbenzene	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
M,P-XYLENE	mg/kg	0.012	U	0.012	U	0.0093	U	0.0087	U	0.012	U	0.0098	U	0.0097	U	0.0099	U	0.012	U	0.0094	U	0.011	U
METHYL ACETATE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
METHYL TERT-BUTYL ETHER	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
METHYLENE CHLORIDE	mg/kg	0.012	U	0.012	U	0.0093	U	0.0087	U	0.012	U	0.0098	U	0.0097	U	0.0099	U	0.012	U	0.0094	U	0.011	U
O-XYLENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
STYRENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TETRACHLOROETHENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TOLUENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TRICHLOROETHENE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
TRICHLOROFLUOROMETHANE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
VINYL ACETATE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U
VINYL CHLORIDE	mg/kg	0.006	U	0.0061	U	0.0047	U	0.0043	U	0.0059	U	0.0049	U	0.0048	U	0.0049	U	0.0059	U	0.0047	U	0.0053	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29	
	Sample Date	2020-05-27		2020-05-27		2020-05-27		2020-05-27		2020-05-28		2020-05-28		2020-05-28		2020-05-28		2020-05-28		2020-05-29	
	Sample Name	MW29-SB052720-16		MW29-SB052720-24		MW29-SB052720-32		MW29-SB052720-42		MW29-SB052820-56		MW29-SB052820-67		MW29-SB052820-72		MW29-SB052820-82		MW29-SB052820-97		MW29-SB052820-104		MW29-SB052920-115	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,1,2-TRICHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,1-DICHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,1-DICHLOROETHENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2-DIBROMOETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2-DICHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2-DICHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,2-DICHLOROPROPANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,3,5-Trimethylbenzene	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,3-DICHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
1,4-DICHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
2-Butanone (MEK)	mg/kg	0.02	U	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.018	U	0.021	U	0.021	U	0.019	U	0.018	U
2-Hexanone	mg/kg	0.02	U	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.018	U	0.021	U	0.021	U	0.019	U	0.018	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.018	U	0.021	U	0.021	U	0.019	U	0.018	U
ACETONE	mg/kg	0.02	U	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.018	U	0.021	U	0.021	U	0.019	U	0.018	U
BENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
Bromochloromethane	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
BROMODICHLOROMETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
BROMOFORM	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
BROMOMETHANE	mg/kg	0.01	U	0.0092	U	0.0093	U	0.01	U	0.0093	U	0.0091	U	0.0089	U	0.011	U	0.01	U	0.0097	U	0.0089	U
CARBON DISULFIDE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CARBON TETRACHLORIDE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CHLOROBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CHLOROETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CHLOROFORM	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	**0.0011**	J	0.0052	U	0.0048	U	0.0044	U
CHLOROMETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
DIBROMOCHLOROMETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
DICHLORODIFLUOROMETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
ETHYLBENZENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
Isopropylbenzene	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
M,P-XYLENE	mg/kg	0.01	U	0.0092	U	0.0093	U	0.01	U	0.0093	U	0.0091	U	0.0089	U	0.011	U	0.01	U	0.0097	U	0.0089	U
METHYL ACETATE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
METHYL TERT-BUTYL ETHER	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.0092	U	0.0093	U	0.01	U	0.0093	U	0.0091	U	0.0089	U	0.011	U	0.01	U	0.0097	U	0.0089	U
O-XYLENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
STYRENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TETRACHLOROETHENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TOLUENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TRICHLOROETHENE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
TRICHLOROFLUOROMETHANE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
VINYL ACETATE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U
VINYL CHLORIDE	mg/kg	0.005	U	0.0046	U	0.0046	U	0.0051	U	0.0046	U	0.0046	U	0.0044	U	0.0053	U	0.0052	U	0.0048	U	0.0044	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29	
Sample Date		2020-05-29		2020-05-29		2020-05-29		2020-05-29		2020-05-29		2020-05-29		2020-05-31		2020-05-31		2020-05-31		2020-05-31	
Sample Name		MW29-SB052920-122		MW29-SB052920-137		MW29-SB052920-144		MW29-SB052920-155		MW29-SB052920-167		MW29-SB052920-178		MW29-SB052920-187		MW29-SB053120-198		MW29-SB053120-207		MW29-SB053120-217		MW29-SB053120-227	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,1-DICHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,1-DICHLOROETHENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2-DIBROMOETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2-DICHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2-DICHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,2-DICHLOROPROPANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,3,5-Trimethylbenzene	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,3-DICHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
1,4-DICHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
2-Butanone (MEK)	mg/kg	0.018	U	0.02	U	0.018	U	0.017	U	0.018	U	0.017	U	0.02	U	0.018	U	0.018	U	0.016	U	0.017	U
2-Hexanone	mg/kg	0.018	U	0.02	U	0.018	U	0.017	U	0.018	U	0.017	U	0.02	U	0.018	U	0.018	U	0.016	U	0.017	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.018	U	0.02	U	0.018	U	0.017	U	0.018	U	0.017	U	0.02	U	0.018	U	0.018	U	0.016	U	0.017	U
ACETONE	mg/kg	0.018	U	**0.0085**	**J**	0.018	U	0.017	U	0.018	U	0.017	U	0.02	U	0.018	U	0.018	U	**0.0073**	**J**	**0.0055**	**J**
BENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
Bromochloromethane	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
BROMODICHLOROMETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
BROMOFORM	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
BROMOMETHANE	mg/kg	0.0092	U	0.01	U	0.0091	U	0.0087	U	0.0089	U	0.0084	U	0.0098	U	0.0091	U	0.0088	U	0.0082	U	0.0084	U
CARBON DISULFIDE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0009	J	0.0042	U
CARBON TETRACHLORIDE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CHLOROBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CHLOROETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CHLOROFORM	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CHLOROMETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
DIBROMOCHLOROMETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
ETHYLBENZENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
Isopropylbenzene	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
M,P-XYLENE	mg/kg	0.0092	U	0.01	U	0.0091	U	0.0087	U	0.0089	U	0.0084	U	0.0098	U	0.0091	U	0.0088	U	0.0082	U	0.0084	U
METHYL ACETATE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
METHYLENE CHLORIDE	mg/kg	0.0092	U	0.01	U	0.0091	U	0.0087	U	0.0089	U	0.0084	U	0.0098	U	0.0091	U	0.0088	U	0.0082	U	0.0084	U
O-XYLENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
STYRENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
TETRACHLOROETHENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
TOLUENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	**0.00088**	**J**
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
TRICHLOROETHENE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
VINYL ACETATE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U
VINYL CHLORIDE	mg/kg	0.0046	U	0.005	U	0.0045	U	0.0043	U	0.0045	U	0.0042	U	0.0049	U	0.0045	U	0.0044	U	0.0041	U	0.0042	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29		MW-29	
	Sample Date	2020-06-01		2020-06-01		2020-06-01		2020-06-02		2020-06-03		2020-06-03		2020-06-03		2020-06-03		2020-06-03		2020-06-04	
	Sample Name	MW29-SB060120-240		MW29-SB060120-250		MW29-SB060120-256		MW29-SB060220-267		MW29-SB060320-273		MW29-SB060320-282		MW29-SB060320-292		MW29-SB060320-302		MW29-SB060320-314		MW29-SB060320-328		MW29-SB060420-337	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,1-DICHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,1-DICHLOROETHENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2-DIBROMOETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2-DICHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2-DICHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,2-DICHLOROPROPANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,3,5-Trimethylbenzene	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,3-DICHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
1,4-DICHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
2-Butanone (MEK)	mg/kg	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.02	U	0.02	U	0.02	U	0.022	U	0.019	U	0.018	U
2-Hexanone	mg/kg	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.02	U	0.02	U	0.02	U	0.022	U	0.019	U	0.018	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.018	U	0.019	U	0.02	U	0.019	U	0.018	U	0.02	U	0.02	U	0.02	U	0.022	U	0.019	U	0.018	U
ACETONE	mg/kg	0.018	U	0.019	U	0.02	U	0.019	U	**0.0054**	J	0.02	U	0.02	U	0.02	U	0.022	U	0.019	U	**0.0074**	J
BENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
Bromochloromethane	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
BROMODICHLOROMETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
BROMOFORM	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
BROMOMETHANE	mg/kg	0.0089	U	0.0094	U	0.01	U	0.0096	U	0.0091	U	0.0099	U	0.01	U	0.01	U	0.011	U	0.0094	U	0.009	U
CARBON DISULFIDE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	**0.0015**	J
CARBON TETRACHLORIDE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CHLOROBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CHLOROETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CHLOROFORM	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CHLOROMETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
DIBROMOCHLOROMETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
ETHYLBENZENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
Isopropylbenzene	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
M,P-XYLENE	mg/kg	0.0089	U	0.0094	U	0.01	U	0.0096	U	0.0091	U	0.0099	U	0.01	U	0.01	U	0.011	U	0.0094	U	0.009	U
METHYL ACETATE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
METHYLENE CHLORIDE	mg/kg	0.0089	U	0.0094	U	0.01	U	0.0096	U	0.0091	U	0.0099	U	0.01	U	0.01	U	0.011	U	0.0094	U	0.009	U
O-XYLENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
STYRENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TETRACHLOROETHENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TOLUENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TRICHLOROETHENE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
VINYL ACETATE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U
VINYL CHLORIDE	mg/kg	0.0045	U	0.0047	U	0.005	U	0.0048	U	0.0045	U	0.005	U	0.005	U	0.005	U	0.0055	U	0.0047	U	0.0045	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30	
Sample Date		2020-05-22		2020-05-22		2020-05-22		2020-05-22		2020-05-22		2020-05-22		2020-06-02		2020-06-02		2020-06-02		2020-06-02	
Sample Name		MW30-SB052220-15		MW30-SB052220-29		MW30-SB052220-48		MW30-SB052220-53		MW30-SB052220-74		MW30-SB052220-95		MW30-SB052220-102		MW30-SB060220-111		MW30-SB060220-135		MW30-SB060220-151		MW30-SB060220-169	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,1-DICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,1-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2-DIBROMOETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2-DICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,2-DICHLOROPROPANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,3,5-Trimethylbenzene	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,3-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
1,4-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
2-Butanone (MEK)	mg/kg	0.019	U	0.019	U	0.018	U	0.019	U	0.021	U	0.017	U	0.018	U	0.019	U	0.018	U	0.02	U	0.02	U
2-Hexanone	mg/kg	0.019	U	0.019	U	0.018	U	0.019	U	0.021	U	0.017	U	0.018	U	0.019	U	0.018	U	0.02	U	0.02	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.019	U	0.019	U	0.018	U	0.019	U	0.021	U	0.017	U	0.018	U	0.019	U	0.018	U	0.02	U	0.02	U
ACETONE	mg/kg	0.019	U	0.019	U	0.018	U	0.019	U	0.021	U	0.017	U	0.018	U	0.019	U	0.018	U	0.02	U	0.02	U
BENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
Bromochloromethane	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
BROMODICHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
BROMOFORM	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
BROMOMETHANE	mg/kg	0.0097	U	0.0097	U	0.0089	U	0.0093	U	0.011	U	0.0083	U	0.0092	U	0.0096	U	0.0092	U	0.01	U	0.01	U
CARBON DISULFIDE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CARBON TETRACHLORIDE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CHLOROFORM	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
DIBROMOCHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
ETHYLBENZENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
Isopropylbenzene	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
M,P-XYLENE	mg/kg	0.0097	U	0.0097	U	0.0089	U	0.0093	U	0.011	U	0.0083	U	0.0092	U	0.0096	U	0.0092	U	0.01	U	0.01	U
METHYL ACETATE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
METHYLENE CHLORIDE	mg/kg	0.0097	U	0.0097	U	0.0089	U	0.0093	U	0.011	U	0.0083	U	0.0092	U	0.0096	U	0.0092	U	0.01	U	0.01	U
O-XYLENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
STYRENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TETRACHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TOLUENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TRICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
VINYL ACETATE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U
VINYL CHLORIDE	mg/kg	0.0048	U	0.0049	U	0.0045	U	0.0046	U	0.0054	U	0.0042	U	0.0046	U	0.0048	U	0.0046	U	0.005	U	0.0051	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-30		MW-31	
	Sample Date	2020-06-02		2020-06-03		2020-06-03		2020-06-03		2020-06-04		2020-06-05		2020-06-05		2020-06-05		2020-06-07		2020-06-08		2020-06-09	
	Sample Name	MW30-SB060220-178		MW30-SB060320-204		MW30-SB060320-222		MW30-SB060320-237		MW30-SB060420-266		MW30-SB060520-286		MW30-SB060520-306		MW30-SB060520-316.5		MW30-SB060720-336		MW30-SB060820-342		MW31-SB060920-15	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,1-DICHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,1-DICHLOROETHENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2-DIBROMOETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2-DICHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2-DICHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,2-DICHLOROPROPANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,3,5-Trimethylbenzene	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,3-DICHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
1,4-DICHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
2-Butanone (MEK)	mg/kg	0.019	U	**0.0068**	J	0.02	U	0.017	U	0.018	U	0.017	U	0.018	U	0.019	U	0.016	U	0.02	U	0.019	U
2-Hexanone	mg/kg	0.019	U	0.02	U	0.02	U	0.017	U	0.018	U	0.017	U	0.018	U	0.019	U	0.016	U	0.02	U	0.019	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.019	U	0.02	U	0.02	U	0.017	U	0.018	U	0.017	U	0.018	U	0.019	U	0.016	U	0.02	U	0.019	U
ACETONE	mg/kg	**0.0049**	J	**0.021**		0.02	U	0.017	U	0.018	U	0.017	U	**0.0082**	J	**0.0058**	J	0.016	U	**0.0078**	J	0.019	U
BENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
Bromochloromethane	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
BROMODICHLOROMETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
BROMOFORM	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
BROMOMETHANE	mg/kg	0.0095	U	0.01	U	0.0098	U	0.0087	U	0.0091	U	0.0087	U	0.009	U	0.0096	U	0.0082	U	0.0099	U	0.0096	U
CARBON DISULFIDE	mg/kg	0.0047	U	**0.0018**	J	0.0049	U	0.0044	U	0.0046	U	0.0044	U	**0.0013**	J	0.0048	U	0.0041	U	0.005	U	0.0048	U
CARBON TETRACHLORIDE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CHLOROBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CHLOROETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CHLOROFORM	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CHLOROMETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
DIBROMOCHLOROMETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
ETHYLBENZENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
Isopropylbenzene	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
M,P-XYLENE	mg/kg	0.0095	U	0.01	U	0.0098	U	0.0087	U	0.0091	U	0.0087	U	0.009	U	0.0096	U	0.0082	U	0.0099	U	0.0096	U
METHYL ACETATE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
METHYLENE CHLORIDE	mg/kg	0.0095	U	0.01	U	0.0098	U	0.0087	U	0.0091	U	0.0087	U	0.009	U	0.0096	U	0.0082	U	0.0099	U	0.0096	U
O-XYLENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
STYRENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TETRACHLOROETHENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TOLUENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TRICHLOROETHENE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
VINYL ACETATE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U
VINYL CHLORIDE	mg/kg	0.0047	U	0.005	U	0.0049	U	0.0044	U	0.0046	U	0.0044	U	0.0045	U	0.0048	U	0.0041	U	0.005	U	0.0048	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

	Location	MW-31		MW-31		MW-31		MW-31		MW-31		MW-31		MW-31		MW-31		MW-31		MW-31	
	Sample Date	2020-06-09		2020-06-09		2020-06-09		2020-06-09		2020-06-09		2020-06-09		2020-06-10		2020-06-10		2020-06-10		2020-06-11	
	Sample Name	MW31-SB060920-23		MW31-SB060920-45		MW31-SB060920-62		MW31-SB060920-82		MW31-SB060920-94		MW31-SB060920-112		MW31-SB061020-133		MW31-SB061020-159		MW31-SB061020-176		MW31-SB061120-190	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,1,2-TRICHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,1-DICHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,1-DICHLOROETHENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	**0.0011**	**J**
1,2-Dibromo-3-Chloropropane	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2-DIBROMOETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2-DICHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2-DICHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,2-DICHLOROPROPANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,3,5-Trimethylbenzene	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,3-DICHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
1,4-DICHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
2-Butanone (MEK)	mg/kg	0.02	U	0.021	U	0.02	U	0.021	U	0.02	U	0.018	U	0.019	U	0.019	U	0.023	U	0.021	U
2-Hexanone	mg/kg	0.02	U	0.021	U	0.02	U	0.021	U	0.02	U	0.018	U	0.019	U	0.019	U	0.023	U	0.021	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.02	U	0.021	U	0.02	U	0.021	U	0.02	U	0.018	U	0.019	U	0.019	U	0.023	U	0.021	U
ACETONE	mg/kg	0.02	U	0.021	U	0.02	U	0.021	U	0.02	U	0.018	U	0.019	U	0.019	U	0.023	U	0.021	U
BENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
Bromochloromethane	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
BROMODICHLOROMETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
BROMOFORM	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
BROMOMETHANE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.0089	U	0.0096	U	0.0095	U	0.011	U	0.01	U
CARBON DISULFIDE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	**0.0022**	**J**
CARBON TETRACHLORIDE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
CHLOROBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
CHLOROETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
CHLOROFORM	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
CHLOROMETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	**0.0012**	**J**
CIS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
DIBROMOCHLOROMETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
DICHLORODIFLUOROMETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
ETHYLBENZENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
Isopropylbenzene	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
M,P-XYLENE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.0089	U	0.0096	U	0.0095	U	0.011	U	0.01	U
METHYL ACETATE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
METHYL TERT-BUTYL ETHER	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.0089	U	0.0096	U	0.0095	U	0.011	U	0.01	U
O-XYLENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
STYRENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TETRACHLOROETHENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TOLUENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TRICHLOROETHENE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
TRICHLOROFLUOROMETHANE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
VINYL ACETATE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U
VINYL CHLORIDE	mg/kg	0.005	U	0.0051	U	0.0051	U	0.0053	U	0.0051	U	0.0044	U	0.0048	U	0.0047	U	0.0056	U	0.0052	U

	Location	MW-31		MW-31	
	Sample Date	2020-06-11		2020-06-11	
	Sample Name	MW31-SB061120-215			
Analyte	Units	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0055	U		
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0055	U		
1,1,2-TRICHLOROETHANE	mg/kg	0.0055	U		
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0055	U		
1,1-DICHLOROETHANE	mg/kg	0.0055	U		
1,1-DICHLOROETHENE	mg/kg	0.0055	U		
1,2,3-TRICHLOROBENZENE	mg/kg	0.0055	U		
1,2,4-TRICHLOROBENZENE	mg/kg	0.0055	U		
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0055	U		
1,2-Dibromo-3-Chloropropane	mg/kg	0.0055	U		
1,2-DIBROMOETHANE	mg/kg	0.0055	U		
1,2-DICHLOROBENZENE	mg/kg	0.0055	U		
1,2-DICHLOROETHANE	mg/kg	0.0055	U		
1,2-DICHLOROPROPANE	mg/kg	0.0055	U		
1,3,5-Trimethylbenzene	mg/kg	0.0055	U		
1,3-DICHLOROBENZENE	mg/kg	0.0055	U		
1,4-DICHLOROBENZENE	mg/kg	0.0055	U		
2-Butanone (MEK)	mg/kg	0.022	U		
2-Hexanone	mg/kg	0.022	U		
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.022	U		
ACETONE	mg/kg	0.022	U		
BENZENE	mg/kg	0.0055	U		
Bromochloromethane	mg/kg	0.0055	U		
BROMODICHLOROMETHANE	mg/kg	0.0055	U		
BROMOFORM	mg/kg	0.0055	U		
BROMOMETHANE	mg/kg	0.011	U		
CARBON DISULFIDE	mg/kg	0.0055	U		
CARBON TETRACHLORIDE	mg/kg	0.0055	U		
CHLOROBENZENE	mg/kg	0.0055	U		
CHLOROETHANE	mg/kg	0.0055	U		
CHLOROFORM	mg/kg	0.0055	U		
CHLOROMETHANE	mg/kg	0.0055	U		
CIS-1,2-DICHLOROETHENE	mg/kg	0.0055	U		
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0055	U		
DIBROMOCHLOROMETHANE	mg/kg	0.0055	U		
DICHLORODIFLUOROMETHANE	mg/kg	0.0055	U		
ETHYLBENZENE	mg/kg	0.0055	U		
Isopropylbenzene	mg/kg	0.0055	U		
M,P-XYLENE	mg/kg	0.011	U		
METHYL ACETATE	mg/kg	0.0055	U		
METHYL TERT-BUTYL ETHER	mg/kg	0.0055	U		
METHYLENE CHLORIDE	mg/kg	0.011	U		
O-XYLENE	mg/kg	0.0055	U		
STYRENE	mg/kg	0.0055	U		
TETRACHLOROETHENE	mg/kg	0.0055	U		
TOLUENE	mg/kg	0.0055	U		
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0055	U		
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0055	U		
TRICHLOROETHENE	mg/kg	0.0055	U		
TRICHLOROFLUOROMETHANE	mg/kg	0.0055	U		
VINYL ACETATE	mg/kg	0.0055	U		
VINYL CHLORIDE	mg/kg	0.0055	U		

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-31		MW-31		MW-31		MW-31		MW-32		MW-32		MW-32		MW-32		MW-32		MW-32		MW-32	
Sample Date		2020-06-12		2020-06-12		2020-06-12		2020-06-12		2020-06-22		2020-06-22		2020-06-22		2020-06-23		2020-06-24		2020-06-24		2020-06-24	
Sample Name		MW31-SB061220-236		MW31-SB061220-252		MW31-SB061220-270		MW31-SB061220-289		MW32-SB062220-14		MW32-SB062220-27		MW32-SB062220-55		MW32-SB062320-84		MW32-SB062420-105		MW32-SB062420-127		MW32-SB062420-142	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,1-DICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,1-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2-DIBROMOETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2-DICHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,2-DICHLOROPROPANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,3,5-Trimethylbenzene	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,3-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
1,4-DICHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
2-Butanone (MEK)	mg/kg	0.019	U	0.02	U	0.019	U	0.021	U	0.02	U	0.022	U	0.02	U	0.025	U	0.023	U	0.019	U	0.017	U
2-Hexanone	mg/kg	0.019	U	0.02	U	0.019	U	0.021	U	0.02	U	0.022	U	0.02	U	0.025	U	0.023	U	0.019	U	0.017	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.019	U	0.02	U	0.019	U	0.021	U	0.02	U	0.022	U	0.02	U	0.025	U	0.023	U	0.019	U	0.017	U
ACETONE	mg/kg	0.019	U	0.02	U	0.019	U	0.021	U	0.02	U	0.022	U	0.02	U	0.025	U	0.023	U	0.019	U	0.017	U
BENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
Bromochloromethane	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
BROMODICHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
BROMOFORM	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
BROMOMETHANE	mg/kg	0.0095	U	0.0098	U	0.0095	U	0.01	U	0.01	U	0.011	U	0.0098	U	0.012	U	0.011	U	0.0093	U	0.0087	U
CARBON DISULFIDE	mg/kg	0.0048	U	0.0049	U	**0.0013**	**J**	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CARBON TETRACHLORIDE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CHLOROBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CHLOROETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CHLOROFORM	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
DIBROMOCHLOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
ETHYLBENZENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
Isopropylbenzene	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
M,P-XYLENE	mg/kg	0.0095	U	0.0098	U	0.0095	U	0.01	U	0.01	U	0.011	U	0.0098	U	0.012	U	0.011	U	0.0093	U	0.0087	U
METHYL ACETATE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
METHYLENE CHLORIDE	mg/kg	0.0095	U	0.0098	U	0.0095	U	0.01	U	0.01	U	0.011	U	0.0098	U	0.012	U	0.011	U	0.0093	U	0.0087	U
O-XYLENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
STYRENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TETRACHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TOLUENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TRICHLOROETHENE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
VINYL ACETATE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U
VINYL CHLORIDE	mg/kg	0.0048	U	0.0049	U	0.0047	U	0.0051	U	0.005	U	0.0055	U	0.0049	U	0.0062	U	0.0057	U	0.0047	U	0.0043	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-32		MW-32		MW-32		MW-32		MW-32		MW-34		MW-34		MW-34		MW-34		MW-34		MW-34	
Sample Date		2020-06-25		2020-06-25		2020-06-25		2020-06-26		2020-06-26		2020-07-08		2020-07-08		2020-07-08		2020-07-08		2020-07-09		2020-07-09	
Sample Name		MW32-SB062520-165		MW32-SB062520-186		MW32-SB062520-203		MW32-SB062620-223		MW32-SB062620-250		MW34-SB070820-141		MW34-SB070820-165		MW34-SB070820-189		MW34-SB070820-205		MW34-SB070920-226		MW34-SB070920-247	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	UJ
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,1-DICHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,1-DICHLOROETHENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	UJ
1,2-Dibromo-3-Chloropropane	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2-DIBROMOETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2-DICHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2-DICHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,2-DICHLOROPROPANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,3,5-Trimethylbenzene	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	UJ
1,3-DICHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
1,4-DICHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
2-Butanone (MEK)	mg/kg	0.018	U	0.017	U	0.018	U	0.018	U	0.019	U	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.02	U
2-Hexanone	mg/kg	0.018	U	0.017	U	0.018	U	0.018	U	0.019	U	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.02	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.018	U	0.017	U	0.018	U	0.018	U	0.019	U	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.02	U
ACETONE	mg/kg	0.018	U	0.017	U	0.018	U	0.018	U	0.019	U	0.019	U	0.02	U	0.022	U	0.018	U	0.02	U	0.02	U
BENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
Bromochloromethane	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
BROMODICHLOROMETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
BROMOFORM	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
BROMOMETHANE	mg/kg	0.009	U	0.0085	U	0.0092	U	0.0091	U	0.0097	U	0.0096	U	0.01	U	0.011	U	0.0088	U	0.01	U	0.0099	U
CARBON DISULFIDE	mg/kg	0.0045	U	**0.00087**	J	0.0046	U	0.0046	U	0.0049	U	**0.0016**	J	0.0051	U	0.0055	U	**0.0018**	J	0.0051	U	0.0049	U
CARBON TETRACHLORIDE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CHLOROBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CHLOROETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CHLOROFORM	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CHLOROMETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
DIBROMOCHLOROMETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
ETHYLBENZENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
Isopropylbenzene	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
M,P-XYLENE	mg/kg	0.009	U	0.0085	U	0.0092	U	0.0091	U	0.0097	U	0.0096	U	0.01	U	0.011	U	0.0088	U	0.01	U	0.0099	UJ
METHYL ACETATE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
METHYLENE CHLORIDE	mg/kg	0.009	U	0.0085	U	0.0092	U	0.0091	U	0.0097	U	0.0096	U	0.01	U	0.011	U	0.0088	U	0.01	U	0.0099	U
O-XYLENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
STYRENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
TETRACHLOROETHENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	**0.0039**	J	**0.0014**	J	0.0044	U	0.0051	U	0.0049	U
TOLUENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
TRICHLOROETHENE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
VINYL ACETATE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U
VINYL CHLORIDE	mg/kg	0.0045	U	0.0043	U	0.0046	U	0.0046	U	0.0049	U	0.0048	U	0.0051	U	0.0055	U	0.0044	U	0.0051	U	0.0049	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 3
Soil VOC Analytical Results

Location		MW-34		MW-34		MW-34		MW-34		MW-34	
Sample Date		2020-07-10		2020-07-10		2020-07-10		2020-07-12		2020-07-12	
Sample Name		MW34-SB071020-264		MW34-SB071020-285		MW34-SB071020-300		MW34-SB071220-321		MW34-SB071220-349	
Analyte	Units	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-TRICHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,1,2,2-TETRACHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,1,2-TRICHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,1-DICHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,1-DICHLOROETHENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2,3-TRICHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2,4-TRICHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2,4-TRIMETHYLBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2-DIBROMOETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2-DICHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2-DICHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,2-DICHLOROPROPANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,3,5-Trimethylbenzene	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,3-DICHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
1,4-DICHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
2-Butanone (MEK)	mg/kg	0.021	U	0.018	U	0.015	U	0.019	U	0.023	U
2-Hexanone	mg/kg	0.021	U	0.018	U	0.015	U	0.019	U	0.023	U
4-Methyl-2-Pentanone (MIBK)	mg/kg	0.021	U	0.018	U	0.015	U	0.019	U	0.023	U
ACETONE	mg/kg	0.021	U	0.018	U	**0.0078**	**J**	0.019	U	0.023	U
BENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
Bromochloromethane	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
BROMODICHLOROMETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
BROMOFORM	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
BROMOMETHANE	mg/kg	0.01	U	0.0088	U	0.0075	U	0.0095	U	0.011	U
CARBON DISULFIDE	mg/kg	0.0052	U	0.0044	U	**0.0023**	**J**	0.0048	U	0.0057	U
CARBON TETRACHLORIDE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CHLOROBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CHLOROETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CHLOROFORM	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CHLOROMETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CIS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
CIS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
DIBROMOCHLOROMETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
DICHLORODIFLUOROMETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
ETHYLBENZENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
Isopropylbenzene	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
M,P-XYLENE	mg/kg	0.01	U	0.0088	U	0.0075	U	0.0095	U	0.011	U
METHYL ACETATE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
METHYL TERT-BUTYL ETHER	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
METHYLENE CHLORIDE	mg/kg	0.01	U	0.0088	U	0.0075	U	0.0095	U	0.011	U
O-XYLENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
STYRENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TETRACHLOROETHENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TOLUENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TRANS-1,2-DICHLOROETHENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TRANS-1,3-DICHLOROPROPENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TRICHLOROETHENE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
TRICHLOROFLUOROMETHANE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
VINYL ACETATE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U
VINYL CHLORIDE	mg/kg	0.0052	U	0.0044	U	0.0038	U	0.0048	U	0.0057	U

Notes/Acronyms:
Bold indicates detected values
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value
R = Analysis Rejected
VOC = volatile organic compound
mg/kg = milligram per kilogram

Table 5
Groundwater VOC Analytical Results

			Location	MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-23		MW-24		MW-24	
			Sample Date	2020-04-08		2020-04-09		2020-04-10		2020-04-10		2020-04-12		2020-04-13		2020-04-14		2020-05-13		2020-05-14	
			Sample Name	MW23-GW040820-150		MW23-GW040920-220		MW23-GW041020-240		MW23-GW041020-260		MW23-DW041220		MW23-GW041320-310		MW23-GW041420-340		MW24-GW051320-160		MW24-GW051420-220	
Chemical Name	**Screening Level‡**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
1,1,1-Trichloroethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	1	U	**0.14**	**J**	**0.56**	**J**	**0.28**	**J**	1	U	1	U	2	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	4	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,3-Dichlorobenzene	--	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	20	U	20	U	**6.4**	**J**	**7.8**	**J**	20	U	20	U	**12**	**J**	20	U	20	U
2-Hexanone	3.8	µg/L	20	U	20	U	20	U	20	U	20	U	20	U	40	U	20	U	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	20	U	20	U	20	U	20	U	20	U	40	U	20	U	20	U
Acetone	1400	µg/L	**4.7**	**J**	20	U	**19**	**J**	**20**		20	U	20	U	**46**		**4.9**	**J**	20	U
Benzene	5	µg/L	**0.21**	**J**	**0.62**	**J**	**18**		**11**		1	U	**0.15**	**J**	**0.89**	**J**	1	U	**0.34**	**J**
Bromochloromethane	8.3	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Bromodichloromethane	80	µg/L	**0.28**	**J**	1	U	1	U	1	U	**1.7**		**0.37**	**J**	2	U	**0.38**	**J**	1	U
Bromoform	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Chloroform	80	µg/L	**4.1**		**3.8**		**4.5**		**4**		**5.2**		**4.2**		2	U	**3.6**		**4.5**	
Chloromethane	19	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	**1.2**	**J**	1	U	**0.95**	**J**
cis-1,2-Dichloroethene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
cis-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	1	U	1	U	1	U	**0.59**	**J**	1	U	2	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Ethylbenzene	700	µg/L	1	U	**0.16**	**J**	**2.5**		**1.2**		1	U	1	U	2	U	1	U	1	U
Isopropylbenzene	450	µg/L	1	U	1	U	**0.1**	**J**	1	U	1	U	1	U	2	U	1	U	1	U
m,p-Xylene	19	µg/L	2	U	**0.39**	**J**	**3.6**		**1.6**	**J**	2	U	2	U	4	U	2	U	**0.22**	**J**
Methyl Acetate	20000	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	4	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	4	U	2	U	2	U
o-Xylene	190	µg/L	1	U	**0.16**	**J**	**2**		**0.93**	**J**	1	U	1	U	2	U	1	U	1	U
Styrene	100	µg/L	1	U	1	U	**0.54**	**J**	1	U	1	U	1	U	2	U	1	U	1	U
Tetrachloroethene	5	µg/L	**6**		**0.2**	**J**	1	U	**0.22**	**J**	1	U	1	U	2	U	**1.2**		**0.23**	**J**
Toluene	1000	µg/L	**0.23**	**J**	**0.88**	**J**	**17**		**8.8**		1	U	**11**		**0.79**	**J**	1	U	**0.46**	**J**
trans-1,2-Dichloroethene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Trichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Trichlorofluoromethane	5200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	4	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	2	U	1	U	1	U

Notes:
Highlight indicates values greater than screening level
‡ If an MCL is set for the analyte, the screening level is the MCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)
Bold indicates detected values
VOC = volatile organic compound
µg/L = micrograms per liter
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value

Table 5
Groundwater VOC Analytical Results

		Location	MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-25		MW-26		MW-26	
		Sample Date	2020-05-01		2020-05-03		2020-05-03		2020-05-03		2020-05-04		2020-05-05		2020-05-06		2020-05-06		2020-05-07	
		Sample Name	MW25-GW050120-164		MW25-GW050320-212		MW25-GW050320-232		MW25-GW050320-252		MW25-GW050420-272		MW25-GW050520-292		MW25-GW050620-320		MW26-GW050620-210		MW26-GW050720-240	
Chemical Name	**Screening Level‡**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
1,1,1-Trichloroethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	**0.14**	**J**	**0.12**	**J**	1	U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	--	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	20	U	20	U	20	U	**4.6**	**J**	20	U	**5.2**	**J**	**9.3**	**J**	**4.8**	**J**	**9.9**	**J**
2-Hexanone	3.8	µg/L	20	U	**4.5**	**J**	20	U	**3**	**J**	20	U	20	U	**2.8**	**J**	20	U	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Acetone	1400	µg/L	**12**	**J**	**8.1**	**J**	**3.6**	**J**	**26**		**13**	**J**	20	U	20	U	20	U	20	U
Benzene	5	µg/L	**0.23**	**J**	1	U	1	U	**1.1**		**0.3**	**J**	**0.34**	**J**	**0.57**	**J**	**0.4**	**J**	**0.83**	**J**
Bromochloromethane	8.3	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	80	µg/L	1	U	**0.25**	**J**	**0.5**	**J**	**0.14**	**J**	1	U	1	U	1	U	1	U	1	U
Bromoform	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	80	µg/L	**0.21**	**J**	**5**		**6.3**		**4.8**		**4.9**		**4.5**		**1.1**		**4.2**		**3.5**	
Chloromethane	19	µg/L	1	U	1	U	1	U	1	U	1	U	**0.74**	**J**	**0.87**	**J**	**0.83**	**J**	**1.7**	
cis-1,2-Dichloroethene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	µg/L	1	U	1	U	1	U	**0.17**	**J**	1	U	1	U	**0.17**	**J**	**0.15**	**J**	1	U
Isopropylbenzene	450	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylene	19	µg/L	2	U	2	U	2	U	**0.4**	**J**	2	U	2	U	**0.33**	**J**	**0.3**	**J**	**0.33**	**J**
Methyl Acetate	20000	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	190	µg/L	1	U	1	U	1	U	**0.16**	**J**	1	U	1	U	**0.15**	**J**	**0.13**	**J**	**0.13**	**J**
Styrene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	µg/L	1	U	**0.83**	**J**	1	U	**0.18**	**J**	**0.22**	**J**	**0.56**	**J**	1	U	1	U	1	U
Toluene	1000	µg/L	**0.27**	**J**	1	U	1	U	**1**		**0.57**	**J**	**0.7**	**J**	**1**		**0.73**	**J**	**1.3**	
trans-1,2-Dichloroethene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:
Highlight indicates values greater than screening level
‡ If an MCL is set for the analyte, the screening level is the MCL, oMCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)
Bold indicates detected values
VOC = volatile organic compound
µg/L = micrograms per liter
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value

Table 5
Groundwater VOC Analytical Results

		Location	MW-26		MW-26		MW-26		MW-26		MW-27		MW-27		MW-27		MW-28		MW-29	
		Sample Date	2020-05-07		2020-05-08		2020-05-11		2020-05-12		2020-03-23		2020-03-24		2020-03-24		2020-03-18		2020-05-29	
		Sample Name	MW26-GW050720-250		MW26-GW050820-270		MW26-GW051120-320		MW26-GW051220-360		MW27-GW032320-168		MW27-GW032420-210		MW27-GW032420-220		MW28-GW031820-211		MW29-GW052920-120	
Chemical Name	Screening Level‡	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	200	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	**0.12**	**J**	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	--	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	**4.3**	**J**	**15**	**J**	**54**		**11**	**J**	**21**		20	U	**2.8**	**J**	20	U	20	U
2-Hexanone	3.8	µg/L	20	U	100	U	**10**	**J**	**3.4**	**J**	**7.1**	**J**	20	U	20	U	20	U	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	100	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Acetone	1400	µg/L	20	U	100	U	20	U	**28**		**51**		**9.3**	**J**	**12**	**J**	**21**		20	U
Benzene	5	µg/L	**0.8**	**J**	**1.1**	**J**	**0.9**	**J**	**0.53**	**J**	**0.42**	**J**	**0.31**	**J**	**0.28**	**J**	**0.62**	**J**	1	U
Bromochloromethane	8.3	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	80	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.41**	**J**
Bromoform	80	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	80	µg/L	**5**		**1.7**	**J**	**0.27**	**J**	**1.3**		**1.2**		**4.4**		**4.7**		**4.2**		**6.3**	
Chloromethane	19	µg/L	**1.1**		5	U	**2**		**0.86**	**J**	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	70	µg/L	1	U	5	U	1	U	1	U	**0.1**	**J**	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	0.47	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	µg/L	**0.12**	**J**	5	U	1	U	1	U	1	U	1	U	1	U	**0.13**	**J**	1	U
Isopropylbenzene	450	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylene	19	µg/L	**0.41**	**J**	10	U	2	U	2	U	2	U	**0.21**	**J**	2	U	**0.31**	**J**	2	U
Methyl Acetate	20000	µg/L	2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	190	µg/L	**0.15**	**J**	5	U	1	U	1	U	1	U	1	U	1	U	**0.12**	**J**	1	U
Styrene	100	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	µg/L	1	U	5	U	1	U	1	U	**9.1**		1	U	1	U	1	U	**9.2**	
Toluene	1000	µg/L	**0.93**	**J**	**0.77**	**J**	**0.55**	**J**	**0.48**	**J**	**0.39**	**J**	**0.4**	**J**	**0.36**	**J**	**0.72**	**J**	1	U
trans-1,2-Dichloroethene	100	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.17**	**J**
Trichlorofluoromethane	5200	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	5	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:
Highlight indicates values greater than screening level
‡ If an MCL is set for the analyte, the screening level is the MCL, oMCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)
Bold indicates detected values
VOC = volatile organic compound
µg/L = micrograms per liter
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value

Table 5
Groundwater VOC Analytical Results

		Location	MW-29		MW-29		MW-29		MW-30		MW-30		MW-30		MW-30		MW-30		MW-31	
		Sample Date	2020-05-31		2020-06-01		2020-06-02		2020-06-04		2020-06-05		2020-06-05		2020-06-07		2020-06-07		2020-06-10	
		Sample Name	MW29-GW053120-191		MW29-GW060120-230		MW29-GW060220-260		MW30-GW060420-237		MW30-GW060520-280		MW30-GW060520-298		MW30-GW060720-320		MW30-GW060720-340		MW31-GW061020-138	
Chemical Name	**Screening Level‡**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
1,1,1-Trichloroethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	**0.35**	**J**	**1.1**		**0.4**	**J**
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.24**	**J**	**0.18**	**J**
1,3-Dichlorobenzene	--	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	20	U	20	U	20	U	**9.1**	**J**	**4.8**	**J**	**5.6**	**J**	**12**	**J**	**28**		20	U
2-Hexanone	3.8	µg/L	20	U	20	U	20	U	**3.5**	**J**	**3**	**J**	**3.2**	**J**	**5.2**	**J**	**12**	**J**	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Acetone	1400	µg/L	20	U	20	U	20	U	**22**		**21**		**21**		**28**		**55**		**5.7**	**J**
Benzene	5	µg/L	**0.24**	**J**	**0.32**	**J**	**0.27**	**J**	**0.52**	**J**	**0.26**	**J**	**0.25**	J	**4.9**		**20**		**2**	
Bromochloromethane	8.3	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	80	µg/L	1	U	**0.27**	**J**	1	U	1	U	1	U	1	U	1	U	1	U	**0.26**	**J**
Bromoform	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	**0.27**	**J**	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	80	µg/L	**5.1**		**3.7**		**1.9**		**3.3**		**5.2**		**3.9**		**3**		**3.8**		**2.3**	
Chloromethane	19	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.48**	**J**
cis-1,2-Dichloroethene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	µg/L	1	U	**0.12**	**J**	1	U	1	U	1	U	1	U	**0.89**	**J**	**3.3**		**0.79**	**J**
Isopropylbenzene	450	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.13**	**J**	1	U
m,p-Xylene	19	µg/L	2	U	2	U	2	U	**0.26**	**J**	2	U	2	U	**1.4**	**J**	**4.7**		**1.2**	**J**
Methyl Acetate	20000	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	190	µg/L	1	U	1	U	1	U	**0.11**	**J**	1	U	1	U	**0.96**	**J**	**3.4**		0.66	J
Styrene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	µg/L	**6.1**		1	U	1	U	1	U	1	U	1	U	**0.2**	**J**	**0.16**	**J**	**0.59**	**J**
Toluene	1000	µg/L	**0.32**	**J**	**0.55**	**J**	0.46	J	1	U	**0.31**	**J**	**0.26**	**J**	**5.3**		**18**		**3.6**	
trans-1,2-Dichloroethene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	µg/L	**0.11**	**J**	1	U	1	U	1	U	**0.13**	**J**	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:
Highlight indicates values greater than screening level
‡ If an MCL is set for the analyte, the screening level is the MCL, oMCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)
Bold indicates detected values
VOC = volatile organic compound
µg/L = micrograms per liter
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value

Table 5
Groundwater VOC Analytical Results

		Location	MW-31		MW-31		MW-32		MW-32		MW-32		MW-32		MW-32		MW-34		MW-34	
		Sample Date	2020-06-11		2020-06-11		2020-06-23		2020-06-24		2020-06-25		2020-06-26		2020-06-28		2020-07-08		2020-07-08	
		Sample Name	MW31-GW061120-190		MW31-GW061120-230		MW32-GW062320-100		MW32-GW062420-120		MW32-GW062520-175		MW32-GW062620-210		MW32-GW062820-270		MW34-GW070820-150		MW34-GW070820-180	
Chemical Name	**Screening Level‡**	**Unit**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**	**Result**	**Q**
1,1,1-Trichloroethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.21**	**J**	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	**1.2**		**0.61**	**J**	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	**0.25**	**J**	**0.17**	**J**	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	--	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	**10**	**J**	**11**	**J**	20	U	20	U	20	U	20	U	20	U	20	U	20	U
2-Hexanone	3.8	µg/L	**4.3**	**J**	**4.5**	**J**	20	U	20	U	20	U	20	U	20	U	20	U	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Acetone	1400	µg/L	**21**		**23**		**3.1**	**J**	**6.8**	**J**	**5.5**	**J**	**23**		**5.9**	**J**	**6.5**	**J**	**6.2**	**J**
Benzene	5	µg/L	**12**		**7.8**		**0.11**	**J**	**0.28**	**J**	**0.23**	**J**	**0.24**	**J**	**0.34**	**J**	**0.27**	**J**	**0.2**	**J**
Bromochloromethane	8.3	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	80	µg/L	1	U	1	U	**0.91**	**J**	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	80	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
Chloroform	80	µg/L	**3.1**		**2.4**		**7.4**		**3.8**		**1.8**		**0.4**	**J**	**0.7**	**J**	**0.65**	**J**	**1.6**	
Chloromethane	19	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.22**	**J**	1	U
cis-1,2-Dichloroethene	70	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.25**	**J**
cis-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	1	U	**0.16**	**J**	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	µg/L	**2.3**		**1.5**		1	U	1	U	1	U	1	U	**0.1**	**J**	1	U	1	U
Isopropylbenzene	450	µg/L	**0.13**	**J**	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylene	19	µg/L	**3.3**		**2.2**		2	U	2	U	2	U	2	U	**0.24**	**J**	2	U	2	U
Methyl Acetate	20000	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	190	µg/L	**2.3**		**1.5**		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100	µg/L	**1.1**		**0.53**	**J**	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	µg/L	**0.2**	**J**	1	U	1	U	1	U	**0.2**	**J**	1	U	1	U	**6.7**		**14**	
Toluene	1000	µg/L	**11**		**7.8**		**0.12**	**J**	**0.29**	**J**	**0.25**	**J**	**0.27**	**J**	**0.51**	**J**	**0.31**	**J**	**0.24**	**J**
trans-1,2-Dichloroethene	100	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	**0.12**	**J**	**0.36**	**J**
Trichlorofluoromethane	5200	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:

Highlight indicates values greater than screening level

‡ If an MCL is set for the analyte, the screening level is the MCL, oMCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)

Bold indicates detected values

VOC = volatile organic compound

µg/L = micrograms per liter

Q = qualifier

J = Result is estimated

U = Analyte was not detected at the associated value

Table 5
Groundwater VOC Analytical Results

		Location	MW-34		MW-34		MW-34		MW-34		MW-34	
		Sample Date	2020-07-09		2020-07-09		2020-07-09		2020-07-10		2020-07-12	
		Sample Name	MW34-GW070920-210		MW34-GW070920-230		MW34-GW070920-260		MW34-GW071020-300		MW34-GW071220-320	
Chemical Name	Screening Level‡	Unit	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	200	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	0.076	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichlorotrifluoroethane	1000	µg/L	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	2.8	µg/L	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	7	µg/L	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	0.7	µg/L	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	70	µg/L	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1.5	µg/L	1	U	1	U	1	U	**0.13**	**J**	1	U
1,2-Dibromo-3-Chloropropane	0.2	µg/L	2	U	2	U	2	U	2	U	2	U
1,2-Dibromomethane	0.05	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	600	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	5	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	5	µg/L	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	12	µg/L	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	--	µg/L	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	75	µg/L	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	560	µg/L	20	U	20	U	20	U	20	U	20	U
2-Hexanone	3.8	µg/L	20	U	20	U	20	U	20	U	20	U
4-Methyl-2-Pentanone (MIBK)	630	µg/L	20	U	20	U	20	U	20	U	20	U
Acetone	1400	µg/L	**7.8**	**J**	**5.9**	**J**	**8.1**	**J**	**9.7**	**J**	**18**	**J**
Benzene	5	µg/L	**0.54**	**J**	**0.2**	**J**	**0.22**	**J**	**0.74**	**J**	**0.61**	**J**
Bromochloromethane	8.3	µg/L	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	80	µg/L	1	U	1	U	1	U	1	U	1	U
Bromoform	80	µg/L	1	U	1	U	1	U	1	U	1	U
Bromomethane	0.75	µg/L	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	81	µg/L	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	5	µg/L	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	100	µg/L	1	U	1	U	1	U	1	U	1	U
Chloroethane	2100	µg/L	1	U	1	U	1	U	1	U	1	U
Chloroform	80	µg/L	**0.5**	**J**	**0.34**	**J**	**0.17**	**J**	1	U	**0.19**	**J**
Chloromethane	19	µg/L	1	U	1	U	1	U	**0.42**	**J**	1	U
cis-1,2-Dichloroethene	70	µg/L	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	80	µg/L	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	200	µg/L	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	700	µg/L	1	U	1	U	1	U	**0.11**	**J**	**0.11**	**J**
Isopropylbenzene	450	µg/L	1	U	1	U	1	U	1	U	1	U
m,p-Xylene	19	µg/L	**0.25**	**J**	2	U	2	U	**0.36**	**J**	**0.23**	**J**
Methyl Acetate	20000	µg/L	2	U	2	U	2	U	2	U	2	U
Methyl tert-butyl ether	14	µg/L	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	5	µg/L	2	U	2	U	2	U	2	U	2	U
o-Xylene	190	µg/L	1	U	1	U	1	U	**0.14**	**J**	**0.11**	**J**
Styrene	100	µg/L	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	µg/L	**1.5**		**1.6**		**0.66**	**J**	1	U	**0.43**	**J**
Toluene	1000	µg/L	**0.57**	**J**	**0.21**	**J**	**0.22**	**J**	**0.69**	**J**	**0.59**	**J**
trans-1,2-Dichloroethene	100	µg/L	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	0.47	µg/L	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	5200	µg/L	1	U	1	U	1	U	1	U	1	U
Vinyl Acetate	410	µg/L	2	U	2	U	2	U	2	U	2	U
Vinyl Chloride	2	µg/L	1	U	1	U	1	U	1	U	1	U

Notes:
Highlight indicates values greater than screening level
‡ If an MCL is set for the analyte, the screening level is the MCL, oMCL, otherwise the screening level is the Regional Screening Level for tap water (cancer risk = 1 x 10-6, HQ =1, November 2019)
Bold indicates detected values
VOC = volatile organic compound
µg/L = micrograms per liter
Q = qualifier
J = Result is estimated
U = Analyte was not detected at the associated value

Table 6
Monitoring Well Survey Data and Construction Details

Location	Sample Interval	Soil Vapor Point Depth (ft bgs)	Y Coordinate (Utah State Plane, ft)[1]	X Coordinate (Utah State Plane, ft)[1]	Surface Elevation (ft amsl)[2]	Top of Casing Elevation (ft amsl)[2]	Total Well Depth (ft bgs)	Screen Start (ft bgs)	Screen End (ft bgs)	Pump Depth (ft bgs)	Pump Type
MW-23	A	-	7443809.38	1546280.59	4712.47	4711.80	222	210	220	210	ZIST w/ reciever
	B	-				4711.77	262	250	260	250	ZIST w/ reciever
	C	-				4711.69	360	348	358	348	ZIST w/ reciever
	-	130-140				-	-	130	140	-	-
MW-24	-	-	7443698.74	1546266.48	4709.77	4709.19	250	209.5	239.5	211	Solinst bladder pump
	-	32				-	-	-	-	-	-
	-	60				-	-	-	-	-	-
	-	104				-	-	-	-	-	-
	-	130				-	-	-	-	-	-
MW-25	A	-	7443676.94	1546071.97	4703.04	4702.02	213	201	211	201	ZIST w/ reciever
	B	-				4702.09	243	231	241	231	ZIST w/ reciever
	C	-				4702.07	320	307.5	317.5	308	ZIST w/ reciever
	-	28				-	-	-	-	-	-
	-	100				-	-	-	-	-	-
MW-26	A	-	7443907.17	1546132.96	4713.25	4712.29	217	205	215	205	ZIST w/ reciever
	B	-				4712.55	247	235	245	235	ZIST w/ reciever
	C	-				4712.51	327	315	325	315	ZIST w/ reciever
	D	-				4712.50	360	347.75	357.75	348	ZIST w/ reciever
MW-27	-	-	7443766.76	1546337.14	4712.61	4712.34	220	200	220	210	Solinst bladder pump
	-	28				-	-	-	-	-	-
	-	48				-	-	-	-	-	-
	-	75				-	-	-	-	-	-
	-	113				-	-	-	-	-	-
	-	155				-	-	-	-	-	-
MW-28	-	-	7443764.76	1546532.92	4712.80	4712.54	210	190	210	204	Solinst bladder pump
	-	24				-	-	-	-	-	-
	-	48				-	-	-	-	-	-
	-	118				-	-	-	-	-	-
MW-29	A	-	7442845.95	1545935.59	4679.35	4678.46	132	120	130	128	ZIST w/o reciever
	B	-				4678.45	202	190	200	190	ZIST - w/ reciever
	C	-				4678.68	242	230	240	230	ZIST - w/ reciever
	-	42				-	-	-	-	-	-
	-	66				-	-	-	-	-	-
	-	98				-	-	-	-	-	-
MW-30	A	-	7445073.45	1545424.98	4723.07	4722.00	252	240	250	-	-
	B	-				4721.79	294	282	292	-	-
	C	-				4721.92	329	317	327	317	ZIST w/ reciever
	-	30				-	-	-	-	-	-
MW-31	A	-	7442512.47	1545351.52	4655.22	4654.27	150	138	148	138	ZIST w/o reciever
	B	-				4654.39	202	190	200	190	ZIST w/ reciever
	C	-				4654.35	230	228	238	228	ZIST w/ reciever
MW-32	A	-	7444416.40	1542692.62	4566.22	4565.67	126	114	124	119	Solinst bladder pump
	B	-				4565.63	182	170	180	170	ZIST w/o reciever
	C	-				4565.59	272	260	270	260	ZIST w/o reciever
	-	20				-	-	-	-	-	-
MW-34	A	-	7443498.84	1543745.66	4623.61	4623.09	152	140	150	148	ZIST w/o reciever
	B	-				4622.71	187	175	185	175	ZIST w/o reciever
	C	-				4622.63	262	250	260	250	ZIST w/o reciever
	D	-				4622.58	327	315	325	315	ZIST w/o reciever
	-	18				-	-	-	-	-	-

Notes:
[1] X/Y Coordinates measured using NAD 83 State Plane Coordinate System
[2] Elevations measured using NAVD 88 vertical datum

Acronyms:
amsl = above mean sea level
bgs = below ground surface
ft = feet
ZIST = Zone Isolation Sampling Technology

Appendix A

Daily Quality Control Reports

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

DATE: 3/9/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg Holt Services – Michael Leui Holt Services – Scottie Lampman Holt Services – Colby McCarthy VA – Shannon Smith VA – Marc Yalom VA – Carlos Aguilar EPA – Mark Aguilar Weston – Roy Weindorf
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

Holt arrived at 1230 with drill rig hauler (semi), rig tender truck, equipment trailer, support truck. Vehicles currently staged near CERCLA IDW storage area. Site orientation and Health and Safety meeting occurred at the CERCLA conference room. Holt Personnel were badged. Pete (driller) walked boring locations with Joe Miller. Boring locations have been adjusted due to space requirements. All locations are still within areas surveyed by TWS.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

3/10/2020: Holt Services will mobilize drill rig to EPA-MW-01S to attempt to remove pump from well. Badger Vacuum services will be onsite to vacuum excavate borings around Buildings 6 and 7.

Other Activities/Remarks:

Approximately 150 gallons of rainwater was pumped from secondary containment to water tank onsite.

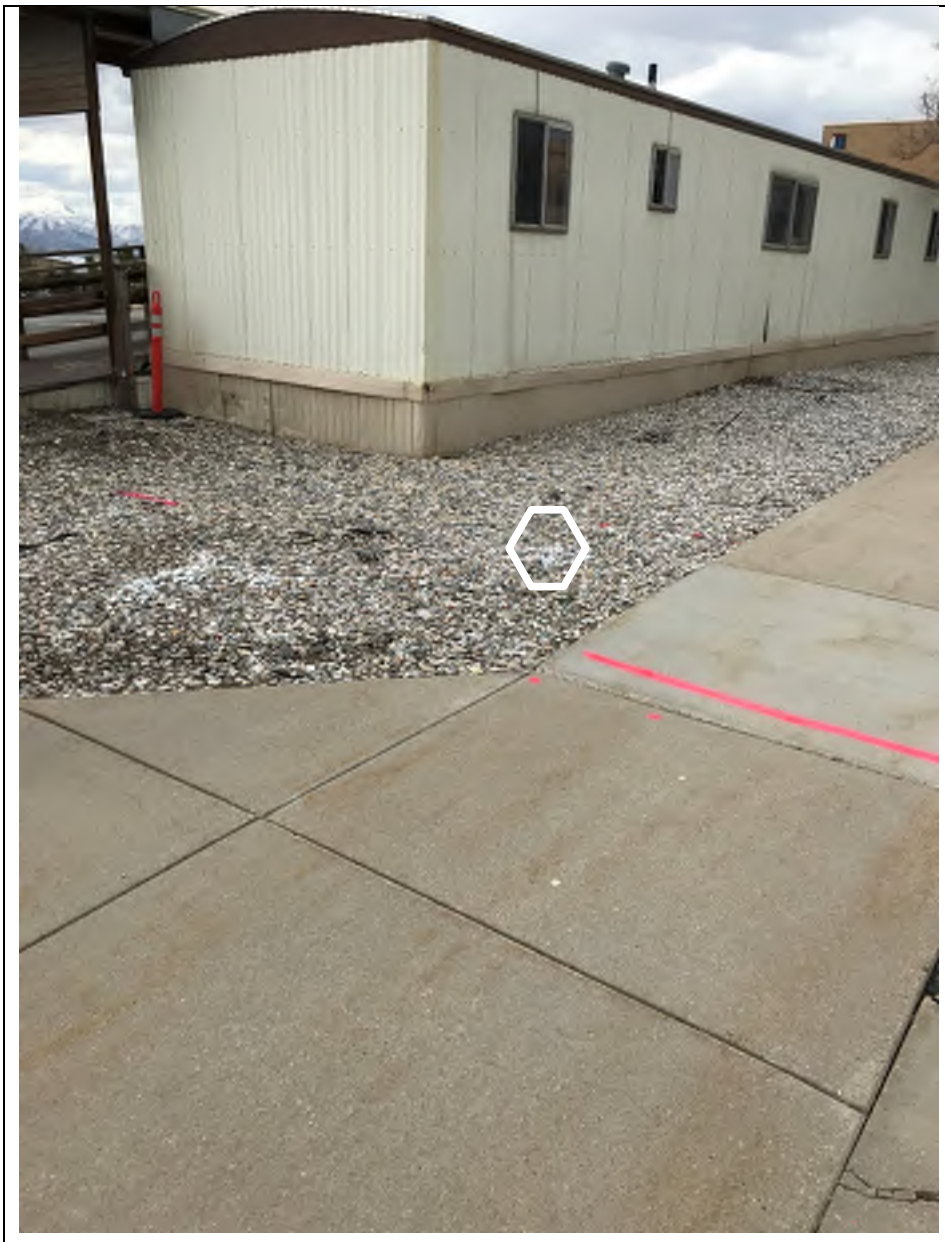
3/10/2020: Worksite fencing and toilet will be delivered.

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

Photos:

	Date: 3/9/2020 **Location:** MW-23 **Description:** MW-23 between Buildings 6 and 7. Driller requests boring location moved to SE to accommodate area needed for work.
	Date: 3/9/2020 **Location:** MW-28 **Description:** MW-28 near the Building 7 loading dock. Driller requests boring location moved to the south to accommodate area needed for work.

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



Date: 3/9/2020

Location: MW-26

Description: Boring location (white polygon) north of Building 6 moved to the north to be more than 3 feet from marked utility.

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

Date: 3/9/2020

Location: MW-24

Description: MW-24 south alcove of Building 6. Boring location moved to the west to allow access for rig and equipment.

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

DATE: 3/10/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman Holt Services – Sean Sewell (Holt Safety) Badger Daylighting – Vernon Lipse Badger Daylighting – Elizabeth Harris VA – Carlos Aguilar VA – Marc Yalom
Visitors/Others:	EPA – Mark Aguilar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Hydrovac (Badger Daylighting)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted in the south parking lot.

Drilling prep:

Holt off loaded backfilling materials at the CERCLA IDW area, and received delivery of well materials (PVC, bentonite, sand).

Joe Miller and Marc Yalom walked boring locations. Notified engineering, laundry, RHI contractors, and warehouse about access to boring locations.

MW-01S pump fishing:

Holt mobilized the drill rig to EPA-MW-01S to retrieve pump from boring, and fished tubing and string from well. While attempting to grab onto pump, fishing tool twisted off with ~85-ft of pipe. Holt obtained additional materials to retrieve tooling, and retrieved all tooling from boring. Pump was tagged at ~221 feet, it is resting on the bottom of the well.

Hydrovac:

Badger Daylighting arrived late morning and completed H&S tailgate. Badger did not have asphalt coring tools on Vac truck, and considered starting at MW-26 (boring is in rock), but truck is too heavy to access through courtyard. Will have to access through parking lot west of annex office.

Wasatch Environmental provided drill/mini-hammer to clear asphalt for vacuum excavating at MW-28. MW-28 boring asphalt was cleared, and vacuum excavating completed to approximately 10 feet before Vac truck was full and headed offsite for the day. MW-28 boring secured with pallet and coned off at completion of the day.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Holt twisted off fishing tool and piping, retrieved from EPA-MW-01S. Pump still in well, will attempt to retrieve again tomorrow.

Badger Daylighting didn't have equipment to remove asphalt. Wasatch removed today, Holt will remove asphalt for other borings tomorrow.

Projected Work – Near Term:

3/11/2020: Holt will attempt to remove EPA-MW-01S again, Badger Vacuum services will be onsite to vacuum excavate borings around Buildings 6 and 7.

Other Activities/Remarks:

3/11/2020: Worksite fencing and toilet will be delivered.

Photos:

Date: 3/10/2020

Location: EPA-MW-01S

Description: Terrasonic TS150 set up at EPA-MW-01S.

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

	Date: 3/9/2020 **Location:** EPA-MW-01S **Description:** Retrieving tubing and string from EPA-MW-01S to allow access to the pump.
	Date: 3/10/2020 **Location:** MW-28 location **Description:** Vacuum excavating of MW-28 boring location.

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

	Date: 3/10/2020 **Location:** MW-28 **Description:** Interior of MW-28 boring. Note large cobbles. Additional cobbles measured 6x10”.
	Date: 3/10/2020 **Location:** MW-28 **Description:** Pallet of sand over boring location since currently only excavated to 11’10” bgs.

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

DATE: 3/11/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman Holt Services – Sean Sewell (Holt Safety) Badger Daylighting – Dustin Savage Badger Daylighting – Logan Jenson VA – Carlos Aguilar VA – Marc Yalom
Visitors/Others:	EPA – Mark Aguilar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Hydrovac (Badger Daylighting)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted in the south parking lot.

Drilling prep:

Holt mobilized rig to MW-28 location and deconned drill tooling.

Hydrovac:

Holt cut asphalt at MW-23, MW-24 and MW-27 boring locations.

Badger Daylighting completed H&S tailgate. Badger was unable to advance MW-28 boring location to 15' bgs. Carlos Aguilar, VA Occupational Health and Safety verified that boring couldn't advance and appeared to be in native material. The boring had a PID reading of 9.6ppm. It was backfilled with sand and sealed with concrete.

Badger moved to MW-27 boring location. A boulder was encountered at 1' below ground. Holt assisted Badger by using skid steer with strap to remove boulder. Badger encountered flat concrete at 2' below ground and advancement was ceased. The boring was back filled with sand and patched with concrete.

Badger moved to MW-23 and cleared to 15'.

Badger dumped waste at IDW containment area; ~900 gallons of water and ~1.5 cu yard of soil.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

MW-28 not able to be advanced to 15' below ground using vacuum excavation. Hole clearance was approved for drilling by Carlos Aguilar.

MW-27 vacuum excavation encountered concrete at 2' below ground surface. Boring location will have to be moved.

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

Projected Work – Near Term:

3/12/2020 – Back fill MW-23 boring location. Set drill rig up at MW-28 location.

TBD – Holt will provide a downhole camera for inspecting MW-01S. Camera will allow for confirmation that tubing and other materials have been removed, the well is in good condition, and the pump is at the bottom of the well, as well as potential for pump retrieval. If it is determined that the pump cannot be removed or removal risks damage to the well, a new pump can be used for future sampling efforts, as the sampling depth is approximately 15 to 20 feet above the bottom of the well (and current position of the lost pump).

Other Activities/Remarks:

3/12/2020: Worksite fencing and toilet will be delivered.

Photos:

Date: 3/11/2020

Location: Laydown area

Description: Holt decontamination pad.

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

	Date: 3/11/2020 **Location:** MW-27 Location **Description:** Boulder encountered ~1-ft below ground.
	Date: 3/11/2020 **Location:** MW-27 location **Description:** Concrete encountered ~2-ft below ground. Boring not advanced.

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

	Date: 3/10/2020 **Location:** MW-23 Location **Description:** Vacuum excavating MW-23 location.
	Date: 3/10/2020 **Location:** CERLCA IDW area **Description:** Cuttings and vac truck cleanout in containment at CERCLA IDW area.

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

DATE: 3/12/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Carlos Aguilar VA – Shannon Smith VA – Marc Yalom
Visitors/Others:	EPA – Mark Aguilar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted in the south parking lot.

Drilling prep:

Holt deconned remaining drill tooling. Holt mobilized drill steel and set up at MW-28 location. United Rentals delivered fencing and set up around MW-28 location. Excavation permit for MW-28 was acquired.

Hydrovac:

No preclearing activities occurred today, but VA Safety (Carlos Aguilar) approved preclearing of MW-23. Precleared boring was backfilled and patched.

Drilling:

MW-28 drilling began at 1345. The boring was advanced to 40' bgs with the 8" core barrel. 10" casing is currently at 30' bgs. Three samples were collected for VOC analysis at 16', 22' and 35' bgs. The highest VOC screening was 48.2ppm at 22' bgs. Analytical samples collected are identified as follows:

- MW28-SB031220-16
- MW28-SB031220-22
- MW28-SB031220-35

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

3/13/2020 – Advance MW-28 boring.

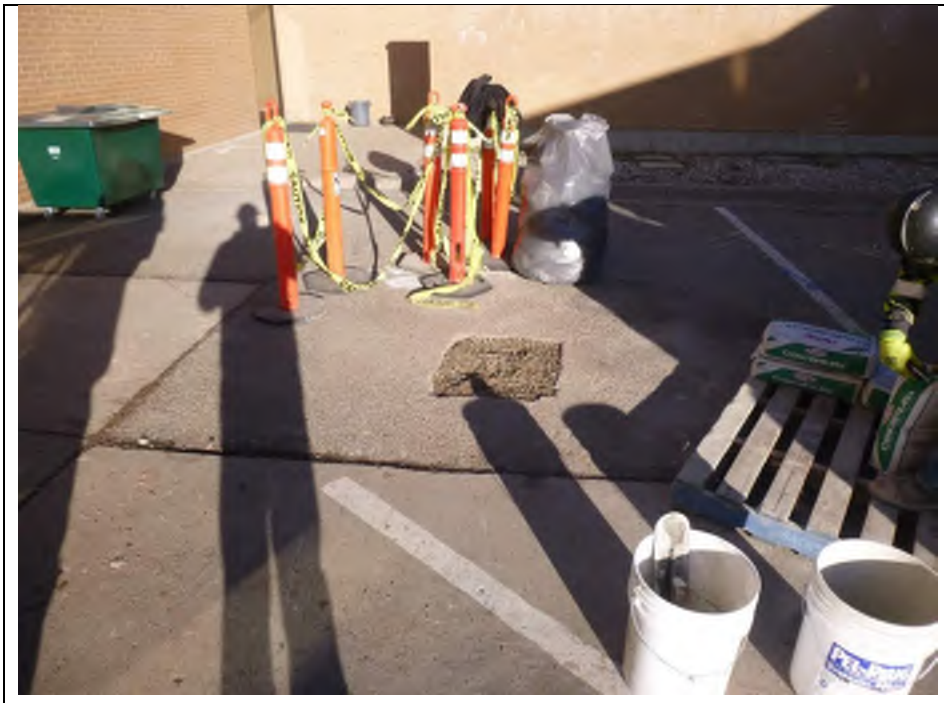
TBD – Holt will provide a downhole camera for inspecting MW-01S. Camera will allow for confirmation that tubing and other materials have been removed, the well is in good condition, and the pump is at the bottom of the well, as well as potential for

pump retrieval. If it is determined that the pump cannot be removed or removal risks damage to the well, a new pump can be used for future sampling efforts, as the sampling depth is approximately 15 to 20 feet above the bottom of the well (and current position of the lost pump).

Other Activities/Remarks:

3/13/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:



Date: 3/12/2020

Location: MW-23 Location

Description: Precleared boring backfilled with sand and pea-gravel prior to patching

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

	Date: 3/12/2020 **Location:** MW-28 Location **Description:** TS150 sonic drill rig set up at MW-28 location. Area has been fenced off.
	Date: 3/12/2020 **Location:** MW-28 **Description:** Soil core from 20-22' interval. The 21-22' interval had highest PID reading today (48.2ppm)

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

Date: 3/12/2020

Location: MW-28

Description: Soil core from 29-30' interval. Several intervals had 6-8" diameter cobbles.

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

DATE: 3/13/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	SLC Utilities – Adriaan Boogaard

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Drilling:

MW-28 drilling resumed drilling 0815. The boring was advanced to 98' bgs with the 8" core barrel. 9" casing is currently at 90' bgs. The 10" casing was removed to limit vertical deviation of the boring. Five samples were collected, along with one duplicate sample. The highest PID reading was 29.7ppm at 49' bgs. The 49' interval was sampled with the duplicate. No PID readings greater than 20ppm were observed between 50 and 98'.

Samples Collected:
MW28-SB031320-49 + Duplicate
MW28-SB031320-59
MW28-SB031320-67
MW28-SB031320-86
MW28-SB031320-97

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

The 10" sonic casing was installed to 40' below ground surface. Holt attempted to advance 9" casing below 40' bgs but identified the 10" casing was off of vertical. The 10" casing was removed, and the 9" casing was advanced confirming vertically. The driller believes a cutting through a boulder caused the 10" casing to deviate.

Projected Work – Near Term:

3/14/2020 – No onsite work is planned

3/15/2020 – Advance MW-28 boring

Other Activities/Remarks:

3/15/2020: Safety Tailgate will be conducted at MW-28 location.

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

Photos:

	Date: 3/13/2020 **Location:** MW-28 **Description:** Drill helpers removing drill rods while tripping the sampler out of the boring.
	Date: 3/13/2020 **Location:** MW-28 **Description:** Soil core from 48-50' bgs. The MW28-SB031320-49 sample included the highest PID reading of the day (27.9ppm).

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

Date: 3/13/2020

Location: MW-28

Description: Soil core from 66-69' interval. A lithologic transition at 68' from sand with gravel to clayey silt with gravel. (Top to the left)

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

DATE: 3/15/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Drilling:

MW-28 drilling resumed drilling 0815. The boring was advanced to 119' bgs with the 8" core barrel. 9" casing is currently at 110' bgs. Two samples were collected, along with MS/MSD QC sample. The highest PID reading was 130.3ppm at 117' bgs.

MW28-SB031320-107
MW28-SB031320-117 + MS/MSD

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

The Holt driller noticed a small hydraulic leak on the sonic head. Work was stopped, the boring was protected with plastic. Sorbent pads were used to wipe the sonic head and identify the leak. No hydraulic fluid spilled. An O-ring was replaced, and the leak was stopped. Downtime was ~3 hours.

While tripping in the 8" sonic casing the noticed the casing getting snagged on the 9" casing. To alleviate the drag and possible deviation of the boring, Holt plans to trip out the 9" casing, then resume drilling with the 8" casing.

Projected Work – Near Term:

3/16/2020 – Advance MW-28 boring

Other Activities/Remarks:

3/16/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:

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

	Date: 3/15/2020 **Location:** MW-28 **Description:** Drill helpers removing drill rods while tripping the 8” casing into the boring.
	Date: 3/15/2020 **Location:** MW-28 **Description:** Moderatly cemented Gravel with sand matrix from 107-108’ interval. This unit was just below a sandy unit with an elevated PID reading of 39.0ppm.

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

Date: 3/15/2020

Location: MW-28

Description: Soil core from 115-117' interval. This interval had a 130.3ppm PID reading.

Note the moist silt unit above (to the left) the gravel.

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

DATE: 3/16/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Drilling:

Holt tripped out 9" casing and installed the 8" casing. MW-28 drilling resumed at 1245. The boring was advanced to 140' bgs with the 8" core barrel. 8" casing is currently at 140' bgs. Two samples were collected. The highest PID was in the 119-120' sample at 175ppm. The PID readings decreased with lithologic changes below the 120' interval.

MW28-SB031320-121
MW28-SB031320-139

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

The Holt driller noticed a different hydraulic leak on the sonic head. This leak likely came about from the repairs yesterday. Work was stopped, the boring was protected with plastic. Sorbent pads were used to wipe the sonic head and identify the leak. No hydraulic fluid spilled. An O-ring was replaced, and the leak was stopped. Downtime was ~2.5 hours. During downtime, dried soils from hydrovac cleanout were transferred into the rolloff.

Projected Work – Near Term:

3/17/2020 – Advance MW-28 boring

Other Activities/Remarks:

3/17/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:

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

Date: 3/16/2020

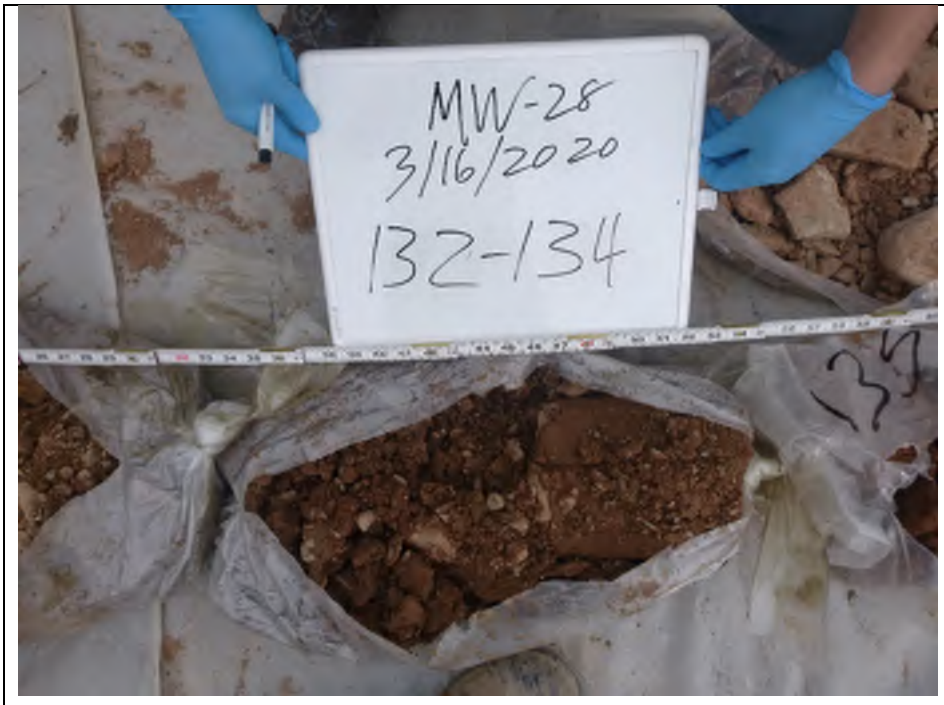
Location: MW-28

Description: Holt identified a hydraulic leak on the drill head. The boring was protected and plastic sheeting was used to capture any fluid during repairs.

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

	Date: 3/16/2020 **Location:** MW-28 **Description:** O-Ring seal failed, leaking hydraulic fluid.
	Date: 3/16/2020 **Location:** MW-28 **Description:** Screening soil core interval 119-120'.

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



Date: 3/16/2020

Location: MW-28

Description: Soil core from 132-134' interval.

Note the cohesive silt unit below (to the left) the gravel.

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

DATE: 3/17/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Drilling:

Drilling resumed at 0825. The MW-28 boring was advanced to 207' bgs today. A perched groundwater zone was encountered ~148' bgs. After the sonic casing was installed to 160', no water was encountered until ~194' bgs. The highest PID encountered was 35ppm at 149' bgs. Currently 8" sonic casing is to 190' bgs. At the end of the shift the boring was open to 200' and the DTW in the boring was 163.7'. Seven soil samples were collected plus 1 duplicate.

Samples:
MW28-SB031720-149
MW28-SB031720-156
MW28-SB031720-165
MW28-SB031720-171
MW28-SB031720-185
MW28-SB031720-199
MW28-SB031720-206 + FD02-SB031719

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

3/18/2020 – Verify water level, collect groundwater push ahead groundwater sample, begin well installation pending design.

Other Activities/Remarks:

3/18/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:

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

	Date: 3/17/2020 **Location:** MW-28 **Description:** Tripping out sonic sampler from 200-207' advancement. Water in drill rods while disconnecting.
	Date: 3/17/2020 **Location:** MW-28 **Description:** Sonic core from 195-198' bgs. The unit is a silty Sand, the core was wet and cool to the touch.

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

Date: 3/17/2020

Location: MW-28

Description: Sonic core from 198-200' bgs. The unit is Sand, the core was wet and cool to the touch.

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

DATE: 3/18/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Drilling:

Depth to water this morning was 184.9' bgs. Drilling resumed at 0825. The MW-28 boring was advanced to 210' bgs and cased to depth. A push ahead ground water sample was collected from 211' bgs. The boring was cleared and prepped for well construction.

Sample collected:
MW28-GW031820-211

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

A 5.7 magnitude earthquake occurred at 0709, prior to the morning tailgate. No impacts on the drilling due to the earthquake. None of the aftershocks were felt at the drill site.

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

The push ahead groundwater sampler stop needed to be modified to fit in the drill rods. Then the o-rings did not provide enough friction to keep the sampler closed during deployment. Teflon tape was added to the o-rings to provide friction.

Projected Work – Near Term:

3/19/2020 – Install MW-28 and soil vapor points. Target well screen interval ~ 190-210 feet bgs (depth to water in the drill casing was about 185 feet bgs. Target depths (approximate) of soil vapor points: 24', 48', and 118'. Each of these depths is targeting a zone where slightly elevated to elevated PID readings were noted in the soil core samples.

3/19/2020 – Drilling oversight transition with Kimberly Yauk and Connor Kelly (CDM Smith)

Other Activities/Remarks:

3/19/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:

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

	Date: 3/17/2020 **Location:** MW-28 **Description:** Holt changing jaw plates on rig to improve grip on the drill rods and casing.
	Date: 3/18/2020 **Location:** MW-28 **Description:** Sampler stop that needed to be ground down to fit in drill rods.

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

Date: 3/18/2020

Location: MW-28

Description: Driller helper applying Teflon tape to sampler o-rings to increase friction and hold sampler in place during deployment.

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

DATE: 3/19/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom VA – Shannon Smith
Visitors/Others:	VA – Carlos Aguilar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Monitoring well and Soil Vapor Probe Construction:

Depth to water this morning was 200.22' bgs. No drilling was performed today. No samples were collected. Total depth of borehole was 210'. Four-inch, schedule 40 PVC was used for well construction with a 20-foot screen from 190 to 210 feet bgs. Soil vapor probes were installed at depths of 24, 48, and 118 feet bgs. Drilling oversight and sampling was turned over to Kimberly Yauk and Connor Kelley.

Samples collected:
None.

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

A small aftershock from the earthquake yesterday was felt prior to the health and safety meeting. No other aftershocks were felt at the drill site.

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

The bottom four feet of the borehole was very tight and difficult for the driller to remove casing. Casing was able to be removed with difficulty.

Projected Work – Near Term:

3/20/2020 – Complete MW-28 annular materials from 0 to 23 feet bgs, add surface completion and well box, decontaminate drill equipment, vacuum location at MW-27 to 15 feet bgs. Contact Carlos if drilling is expected on Sunday 3/22.

3/22/2020 – Drilling to begin at MW-27; will contact Carlos for excavation permit.

Other Activities/Remarks:

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

3/20/2020: Safety Tailgate will be conducted at MW-28 location.

Photos:

	Date: 3/19/2020 **Location:** MW-28 **Description:** Holt opening monitoring well PVC casing.
	Date: 3/19/2020 **Location:** MW-28 **Description:** Holt constructs monitoring well.

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

	Date: 3/19/2020 **Location:** MW-28 **Description:** CDM assembles the soil vapor probes and tubing.
	Date: 3/19/2020 **Location:** MW-28 **Description:** Holt and CDM place the soil vapor probes at targeted depths.

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

	Date: 3/19/2020 **Location:** MW-28 **Description:** Holt places annular materials with #2/12 sand filter pack at 21'-27' (to be completed), 45'-51', 114.6'-120', and 186.5'-210'.
	Date: 3/19/2020 **Location:** MW-28 **Description:** Holt removes drill pipe from borehole while filling annular materials.

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

DATE: 3/20/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman Badger – Logan Jensen Badger – Johnny Shelley VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet • Vacuum Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-28 boring location.

Well Completion:

Annular materials were finished being installed at MW-28, and a flush-mounted well box was completed. The drill rig and equipment were moved to MW-27. Casing and push-ahead sampler were decontaminated, and equipment blanks were collected off each one. A trip blank was included with the equipment blanks.

Samples collected:
EB01-GW032020 (sampler)
EB02-GW032020 (casing)
TB06-SB032020

Hydrovac Clearance:

A Badger hydrovac truck was on site to clear MW-27 of utilities. Advancement of the borehole slowed greatly after 11 feet deep, and the borehole was ultimately able to be cleared to 12.875 feet deep before progress halted. Carlos Aguilar visited the site to sign the excavation permit for drilling at MW-27 on Sunday. A pallet of bentonite was placed over the hole to protect it. The water from the hydrovac truck was pumped into the containment tanks. Currently one tank is full, and the second tank is 1/3 full. The soil from the hydrovac truck was unloaded into the modified secondary containment area lined with visqueen and left to dry out.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

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

No aftershocks from the March 18th earthquake were felt at the site.

The borehole at MW-27 was not able to be cleared the full 15 feet, but the clearance made was deemed sufficient by Carlos Aguilar (VA).

Only half the casing was decontaminated. The remaining casing will be decontaminated on Sunday.

Projected Work – Near Term:

3/21/2020 – Day off; Connor will stop by the site to check on the soil containment (make sure it is holding up and confirm soil rolloff bin is closed).

3/22/2020 – Decontamination of casing will be completed, drilling, logging, and sampling will begin at MW-27.

Other Activities/Remarks:

3/22/2020: Safety Tailgate will be conducted at MW-27 location.

Photos:

Date: 3/20/2020

Location: MW-28

Description: Holt mixing cement for sealing the top ten feet of the borehole.

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

	Date: 3/20/2020 **Location:** MW-28 **Description:** Grouted with cement to within two feet of ground surface.
	Date: 3/20/2020 **Location:** MW-28 **Description:** Holt installs the surface completion well box in concrete.

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

	Date: 3/20/2020 **Location:** MW-28 **Description:** Holt loads casing to the decontamination area.
	Date: 3/20/2020 **Location:** Decontamination Area **Description:** Holt decontaminates drilling equipment with steam cleaners.

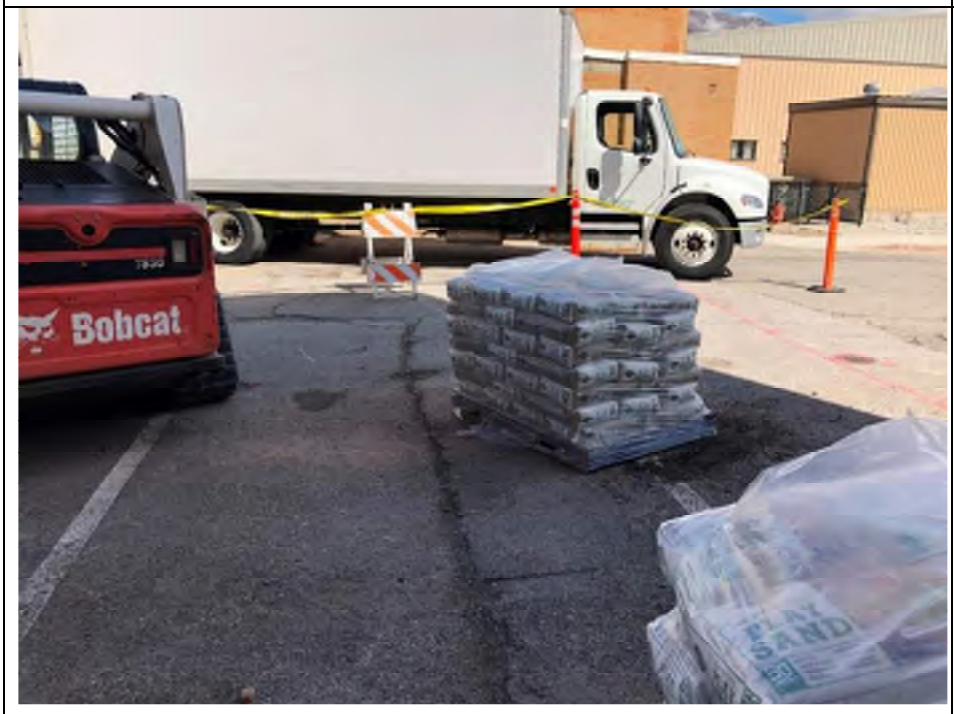
Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 3/20/2020 **Location:** Decontamination Area **Description:** Equipment Blank EB01-032020.
	Date: 3/20/2020 **Location:** Decontamination Area **Description:** Equipment Blank EB02-032020.

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

	Date: 3/20/2020 **Location:** MW-27 **Description:** Badger cuts asphalt with a jackhammer chisel.
	Date: 3/20/2020 **Location:** MW-27 **Description:** Badger hydrovacs the borehole to clear utilities.

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

	Date: 3/20/2020 **Location:** MW-27 **Description:** Boring location has abundant cobbles and boulders.
	**Date: 3/20/2020** **Location:** MW-27 **Description:** Open borehole secured with a pallet of bentonite.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 3/20/2020 **Location:** IDW Containment Area **Description:** Soil containment area.
	Date: 3/20/2020 **Location:** IDW Containment Area **Description:** Water from hydrovac is containerized in water tanks.

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

Date: 3/20/2020

Location: IDW Containment Area

Description: Hydrovac truck empties soil into soil containment area.

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

DATE: 3/22/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-27 boring location.

Well Completion:

Decontamination of the casing was completed in the morning. Drilling then began at MW-27. The borehole was advanced to nearly 110 feet when the drill rod broke. Drilling and sampling ended for the day while the driller attempted to retrieve the broken drill rod from the hole without success. Tomorrow, the driller will try renting a tool to tap into the broken rod and remove so that drilling may continue.

Samples collected:
MW27-SB032220-13
MW27-SB032220-16
MW27-SB032220-30
MW27-SB032220-40
MW27-SB032220-50
FD03-SB032220 (duplicate of 50-foot sample)
MW27-SB032220-54.5 (+MS/MSD)
MW27-SB032220-70
MW27-SB032220-75
MW27-SB032220-88
MW27-SB032220-96
FD04-SB032220 (duplicate of 96-foot sample)

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

No aftershocks from the March 18th earthquake were felt at the site.

The drill rod broke at MW-27 near 110 feet bgs. The broken-off piece of rod is still being retrieved. Drilling tomorrow will be delayed while Holt locates and rents proper tooling for removal.

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

Projected Work – Near Term:

3/23/2020 – Drillers will remove broken drill rod from MW-27 and drilling will continue. Samples collected before 4PM will be prepared for shipping to EMAX Laboratory.

Other Activities/Remarks:

3/23/2020: Safety Tailgate will be conducted at MW-27 location.

Photos:

Date: 3/22/2020

Location: MW-28

Description: Completed monitoring well and multi-depth soil vapor probe at MW-28.

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

	Date: 3/22/2020 **Location:** Decontamination Area **Description:** Drill rod and casing is decontaminated prior to drilling at MW-27.
	Date: 3/22/2020 **Location:** MW-27 **Description:** Drilling begins at MW-27.

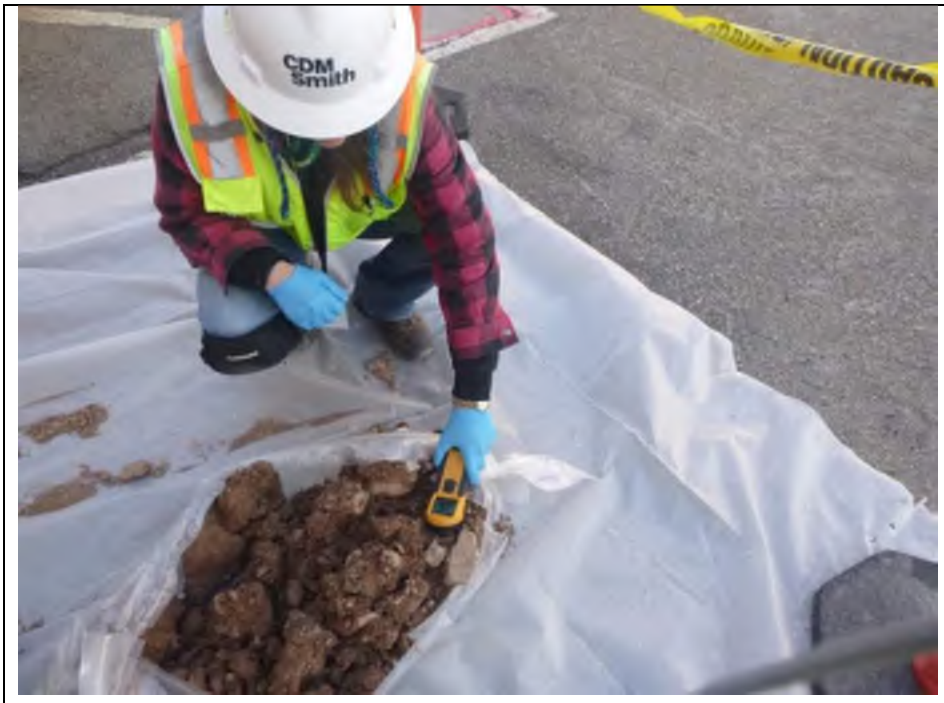
Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 3/22/2020 **Location:** MW-27 **Description:** Logging the soil core.
	Date: 3/22/2020 **Location:** MW-27 **Description:** A 10-inch layer of sandstone was encountered at 50 feet below ground surface.

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

	Date: 3/22/2020 **Location:** MW-27 **Description:** Soil cores from the sonic rig prior to screening for VOCs and sampling.
	Date: 3/22/2020 **Location:** MW-27 **Description:** CDM Smith collecting VOC samples.

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

	**Date: 3/22/2020** **Location:** MW-27 **Description:** CDM Smith screens soil core with a magnetic susceptibility meter.
	Date: 3/22/2020 **Location:** MW-27 **Description:** Rig and drilling area secured at the end of the day.

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

DATE: 3/23/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	Wasatch Environmental – Kiel Keller

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-27 boring location.

Drilling:

The broken drill rod was removed from the borehole in the morning, and drilling resumed at 1000. The MW-27 boring was advanced to 180 feet bgs and cased to depth. High detections on the PID (over 100 ppm) were encountered from 110 to 120 feet. Water was encountered at 164 feet bgs (likely a perched zone), and a water sample was collected using a hand bailer. Samples from today (except the last two), yesterday, and Friday were shipped to the laboratory.

Samples collected:
MW27-SB032320-102
MW27-SB032320-114
MW27-SB032320-122
MW27-SB032320-130
MW27-SB032320-140
MW27-SB032320-150
MW27-SB032320-158
MW27-SB032320-166
MW27-GW032320-168
MW27-SB032320-175

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

No aftershocks from the March 18th earthquake were felt at the site.

Projected Work – Near Term:

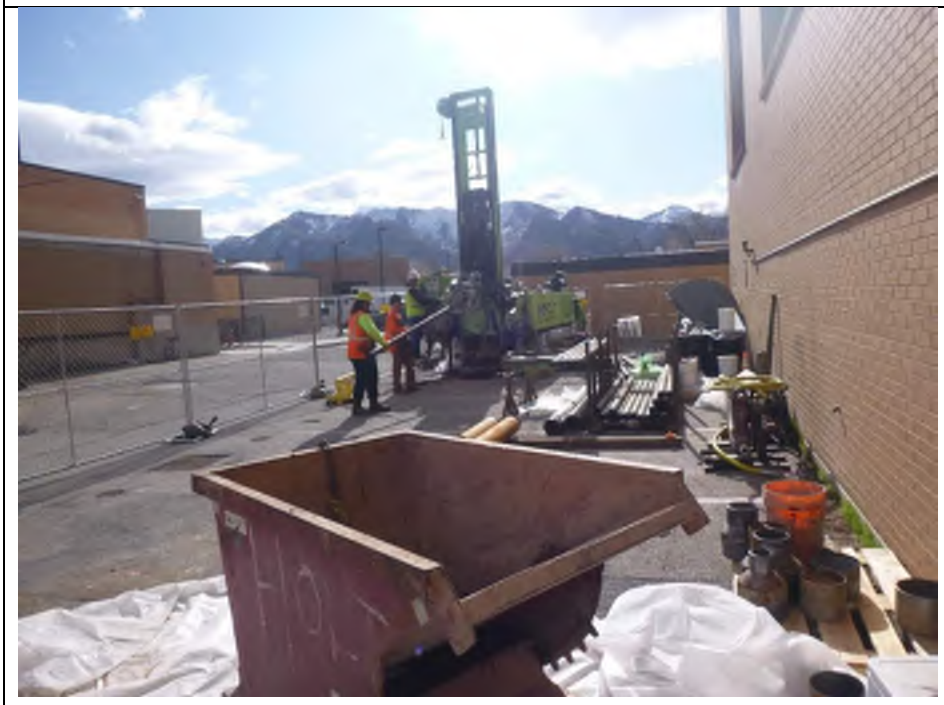
3/24/2020 – Depth to water will be measured prior to the start of drilling. Drilling will continue at MW-27. Total depth is expected to be reached and water sampling may take place.

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

Other Activities/Remarks:

3/22/2020: Safety Tailgate will be conducted at MW-27 location.

Photos:

	Date: 3/23/2020 **Location:** MW-27 **Description:** Tapping tool used by Holt to retrieve the broken drill rod.
	**Date: 3/23/2020** **Location:** MW-27 **Description:** Holt advancing the MW-27 borehole.

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

	Date: 3/23/2020 **Location:** MW-27 **Description:** Soil core with detections on the PID exceeding 100 ppm.
	Date: 3/23/2020 **Location:** MW-27 **Description:** Soil from 110 to 122.5 feet was drummed separately due to high detections on the PID.

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

	Date: 3/23/2020 **Location:** MW-27 **Description:** Clay with gravel encountered at 170 feet bgs.
	Date: 3/23/2020 **Location:** MW-27 **Description:** Several layers of quartzite were encountered throughout the day.

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

DATE: 3/24/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-27 boring location.

Drilling:

Drilling began at 0800. No water was in the borehole at the beginning of the day. The MW-27 boring was advanced to 220 feet bgs. High detections on the PID (over 30 but under 100 ppm) were encountered from 181' to 187' (43.8-80.8 ppm) and 193' (32.5 ppm). Wet soils were encountered beginning at 193 feet bgs, but there was not any free-flowing water to allow for groundwater sample collection. The formation was very tight after 200 feet bgs, and the core barrel became stuck between 200 and 210 feet with little to no recovery. Water was free flowing at 210 feet, and push-ahead samples were able to be collected at 210' and 220'. A wastewater characterization sample was collected from the water containment tank. All samples collected today and two from yesterday were shipped to the laboratory.

Samples collected:
MW27-SB032420-185
MW27-SB032420-192.5
MW27-SB032420-205
MW27-GW032420-210
MW27-SB032420-218
MW27-GW032420-220
TB07-SB032420
IDW01-GW032420

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

3/25/2020 – Depth to water will be measured prior to well construction. Screen zone depths will be confirmed prior to well construction. Likewise, soil vapor probe depths will be confirmed in the morning. Once depths are confirmed, well construction will begin. Well construction is expected to be completed by Thursday 3/26.

Other Activities/Remarks:

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

3/25/2020: Safety Tailgate will be conducted at MW-27 location.

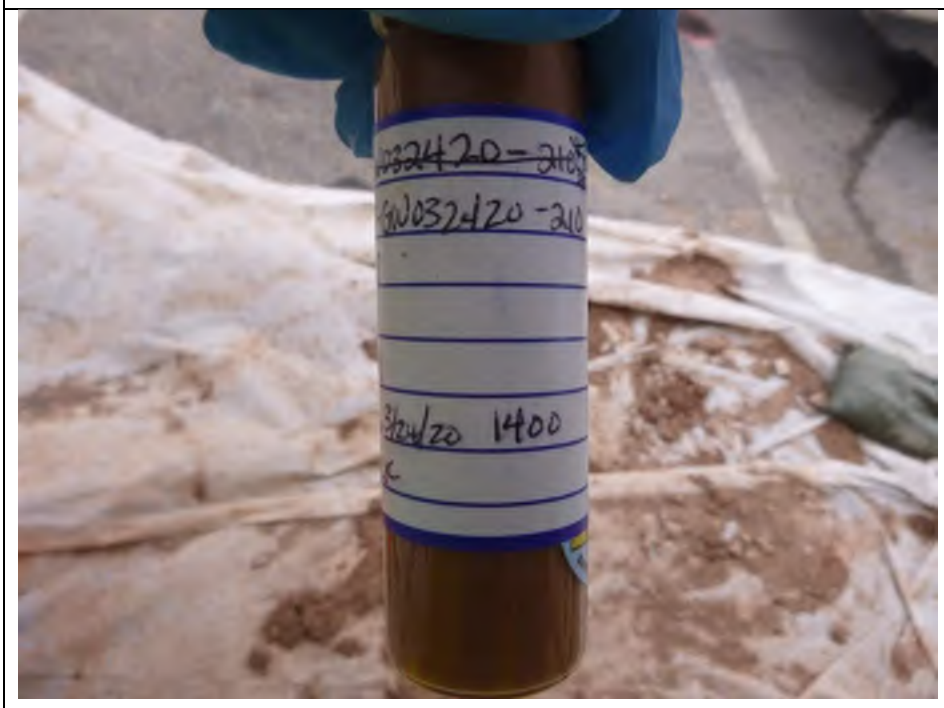
Photos:

	Date: 3/24/2020 **Location:** MW-27 **Description:** High readings on the magnetic susceptibility meter at 181.5 feet bgs.
	Date: 3/24/2020 **Location:** MW-27 **Description:** Holt advancing the MW-27 borehole.

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

	Date: 3/24/2020 **Location:** MW-27 **Description:** A water level measurement was taken between 200 to 210 feet bgs. Static water was measured at 184.5 feet bgs.
	Date: 3/24/2020 **Location:** MW-28 **Description:** The water level at MW-27 was compared to the static water level at MW-28. Water at MW-28 was measured at 183.64 feet bgs.

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

	Date: 3/24/2020 **Location:** MW-27 **Description:** Drillers use the push-ahead water sampler shown.
	**Date: 3/24/2020** **Location:** MW-27 **Description:** Groundwater sample at 210 feet bgs.

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

DATE: 3/25/2020	**Prepared by:** Kimberly Yauk

Personnel Onsite, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-27 boring location.

Well Installation:

The static water level at MW-27 was 196.19 feet bgs in the morning. Total depth of the borehole is 220 feet bgs. The screen was installed from 200 to 220 feet bgs (sand from 197 to 220) with vapor probes at 28, 48, 75, 113, and 155 feet and sand from 25 to 30.7 feet, 44 to 51 feet, 73 to 79 feet, 109 to 116 feet, and 151 to 157 feet.

Samples collected:
No samples were collected today.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

3/26/2020 – The 10-foot surface seal at MW-27 will be grouted with cement, and a surface completion will be installed. Drill casing and the push-ahead sampler will be decontaminated, and an equipment blank sample will be collected from each. Soil will be containerized in the rolloff bin, and a soil waste characterization sample will be collected. Samples will be sent to the laboratory. Drillers will secure their equipment prior to shift break next week.

Other Activities/Remarks:

3/26/2020: Safety Tailgate will be conducted at MW-27 location.

Photos:

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

	Date: 3/25/2020 **Location:** MW-27 **Description:** Soil vapor probe assembly.
	Date: 3/25/2020 **Location:** MW-27 **Description:** CDM attaches soil vapor probes to tubing.

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

	Date: 3/25/2020 **Location:** MW-27 **Description:** Holt begins well construction with a 20-foot screen zone from 200 to 220 feet bgs.
	Date: 3/25/2020 **Location:** MW-27 **Description:** Holt constructs soil vapor probes, attaching probe tips to the outside of well casing with zip ties. Probe depths are installed at 28, 48, 75, 113, and 155 feet.

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

	Date: 3/25/2020 **Location:** MW-27 **Description:** Probe depths are measured as PVC casing is installed.
	Date: 3/25/2020 **Location:** MW-27 **Description:** Annular materials are installed around the well casing and probes.

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

DATE: 3/26/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Connor Kelley Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	Mark Augustyn

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-27 boring location.

Well Installation:

The drillers grouted the final 10 feet of MW-27 with neat cement grout mixed with sand. The surface was completed with an Augustyn-style well box. Mark Augustyn delivered the surface completions and discussed with the drillers how to properly install his completion design. Soil vapor tubing was wrapped up inside the surface completion at MW-27 and the well was locked. A lock was attached to the well cap at MW-28 also.

Decontamination:
Drillers began decontamination of the drill casing and push-ahead sampler. Equipment blanks were collected from each. They did not complete decontamination and will finish decontaminating the remaining drill casing when they arrive back onsite next week.

Investigation-Derived Waste:
Drillers consolidated all the soil IDW into the soil roll-off bin. An IDW sample was collected for waste characterization.

Color-Tec:
Groundwater samples from MW-28 at 211 feet and from MW-27 at 220 feet were run on the Color-Tec system. Both samples had no detections of VOCs, which was consistent with the laboratory analysis for those same samples.

Samples collected:
IDW02-SB032620
EB03-GW032630
EB04-GW032620
TB08-GW032620

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered.

Projected Work – Near Term:

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3/27/2020 – CDM will call Carlos Aguilar to close out the MW-27 excavation permit. Samples collected will be shipped to the laboratory.

4/6/2020 – The project will be on break until April 6, when the drillers and CDM crew will be back to begin work at MW-23.

Other Activities/Remarks:

4/6/2020: Safety Tailgate will be conducted at the decontamination location.

Photos:

Date: 3/26/2020

Location: MW-27

Description: Holt mixes cement grout for the 10-foot surface seal.

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Salt Lake City, Utah

	Date: 3/26/2020 **Location:** MW-27 **Description:** Holt pumps grout into the MW-27 borehole.
	Date: 3/26/2020 **Location:** MW-27 **Description:** Cement grouting to near-ground surface before surface completion is installed in concrete.

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Salt Lake City, Utah

	Date: 3/26/2020 **Location:** MW-27 **Description:** Mark Augustyn delivers surface completions and instructs Holt on proper installation.
	Date: 3/26/2020 **Location:** MW-27 **Description:** Surface completion is installed on concrete that has set for one hour. Completion will sit level for 30 minutes to ensure concrete holds firm before more concrete is poured around it.

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	Date: 3/26/2020 **Location:** MW-27 **Description:** Holt concretes surface completion into place. Black dye is used in the concrete to better match the asphalt around the well.
	Date: 3/26/2020 **Location:** IDW Containment Area **Description:** CDM analyzes groundwater samples from MW-27 and MW-28 on the Color-Tec system.

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	Date: 3/26/2020 **Location:** IDW Containment Area **Description:** Holt and CDM move soil IDW from secondary containment area to soil roll-off bin.
	Date: 3/26/2020 **Location:** IDW Containment Area **Description:** All remaining soil from the hopper is moved to the soil roll-off bin. Holt grades the gravel around the soil bin.

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

DATE: 4/6/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom VA – Shannon Smith
Visitors/Others:	VA Safety – Carlos Aguilar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the Holt laydown area in the southwest parking area.

Drilling Prep:

Holt received a delivery of additional drill steel, 320'-7" and 380'-6" sonic casing. The newly arrived sonic casing and the additional 8" casing were decontaminated. The drill rig was setup at the MW-23 boring location. The work zone was delineated with temporary fencing. Carlos Aguilar – VA safety issued the MW-23 excavation permit.

The MW-23 concrete surface patch was cut. The backfill material was removed to 10' and 9" casing was installed.

No Samples were collected.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

Projected Work – Near Term:

4/7/2020 – Advance MW-23 boring

4/7/2020 – Anticipate delivery of additional roll-off for soil cuttings and ZIST well materials.

Other Activities/Remarks:

4/7/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

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Salt Lake City, Utah

	Date: 4/6/2020 **Location:** Holt Laydown area **Description:** Holt preparing to decontaminate sonic casing
	Date: 4/6/2020 **Location:** MW-23 between Buildings 6 and 7 **Description:** Concrete patch removed and preparing to remove backfill material with sonic drill rig.

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Date: 4/6/2020

Location: MW-23 between Buildings 6 and 7

Description: MW-23 work zone setup with temporary fencing installed.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 4/7/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 110' bgs. The 9" sonic casing was advanced to 20' bgs. The 8" sonic casing is currently to 100' bgs. Eleven soil samples were collected along with 2 duplicates and 1 MS/MSD sample. The highest PID was 237ppm at 97' bgs. Other than the 97-100' interval the highest PID encountered was 50.4ppm at 30' bgs.

Samples collected:

MW23-SB040720-16 + duplicate FD05-SB040720
MW23-SB040720-24
MW23-SB040720-30
MW23-SB040720-49
MW23-SB040720-54 + MS/MSD
MW23-SB040720-63
MW23-SB040720-75
MW23-SB040720-85
MW23-SB040720-93
MW23-SB040720-97 + duplicate FD-SB040720
MW23-SB040720-107

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

Projected Work – Near Term:

4/8/2020 – Advance MW-23 boring

Other Activities/Remarks:

Received delivery of second 20 cu yd roll off for soil cuttings. Received delivery of ZIST well materials from BESST Systems.

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4/8/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

	Date: 4/7/2020 **Location:** MW-23 Soil Cuttings **Description:** Moist Sandy Gravel from 97-99' had highest PID reading. Unit pictured from 99-100' was a silt with gravel and was weakly cemented.
	Date: 4/7/2020 **Location:** MW-23 Soil Cuttings **Description:** Second highest PID interval from 30-31' bgs in moist gravelly silt. Unit was just above large sandstone clast.

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	Date: 4/7/2020 **Location:** Holt staging area **Description:** Delivery of second roll off for soil cuttings.
	Date: 4/7/2020 **Location:** MW-23 between Buildings 6 and 7 **Description:** Holt adding 8” sonic casing to drill head.

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Salt Lake City, Utah

DATE: 4/8/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 160' bgs. The 8" sonic casing is currently to 150' bgs. Five soil samples were collected. The highest PID observed was 51ppm in the 110-112' bgs interval. A perched groundwater unit was encountered between 147-151' bgs. A grab sample was collected and submitted for VOC analysis.

Samples collected:

MW23-SB040820-110
MW23-SB040820-124
MW23-SB040820-133
MW23-SB040820-143
MW23-SB040820-155
MW23-GW040820-150

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

Holt prepared to drill with 7" casing and 6" core barrel sampler but did not have a 6" core barrel onsite. Holt resumed advancing boring with 8" casing. A 6" core barrel sampler is expected to arrive on 4/9.

Projected Work – Near Term:

4/9/2020 – Advance MW-23 boring

Other Activities/Remarks:

4/9/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

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	Date: 4/8/2020 **Location:** MW-23 Work Area **Description:** Holt work crew social distancing.
	Date: 4/8/2020 **Location:** MW-23 Soil Cuttings **Description:** Perched groundwater unit. Wet gravel above a clayey silt.

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	Date: 4/8/2020 **Location:** MW-23 Soil Cuttings **Description:** Close up of clayey Silt below wet gravel 148' bgs. Unit has secondary cementation.
	Date: 4/8/2020 **Location:** MW-23 Soil Cuttings **Description:** Soil cuttings from 149.5-152' bgs. Soil was wet above 151' and moist below.

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

DATE: 4/9/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 220' bgs. The 7" sonic casing is currently to 220' bgs. Six soil samples were collected along with 1 duplicate sample. The highest PID observed was 95ppm in the 174-175' bgs interval. Groundwater was encountered at ~190' bgs. A push-ahead groundwater sample was attempted at 200' and one was collected at 220' and submitted for VOC analysis.

Samples collected:

MW23-SB040920-169
MW23-SB040920-174
MW23-SB040920-184
MW23-SB040920-199 + Duplicate
MW23-SB040920-208
MW23-SB040920-218
MW23-GW040920-220

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

A push-ahead groundwater sample was attempted at 200'. The sonic casing was advanced to 200', the boring was cleared out with the core barrel. The push ahead sampler was deployed and vibed. No water was recovered. The sampler was vibed and pulled back ~1.5'. After 20 minutes of recharge, the sample recovered was too muddy to submit for analysis.

Projected Work – Near Term:

4/10/2020 – Advance MW-23 boring

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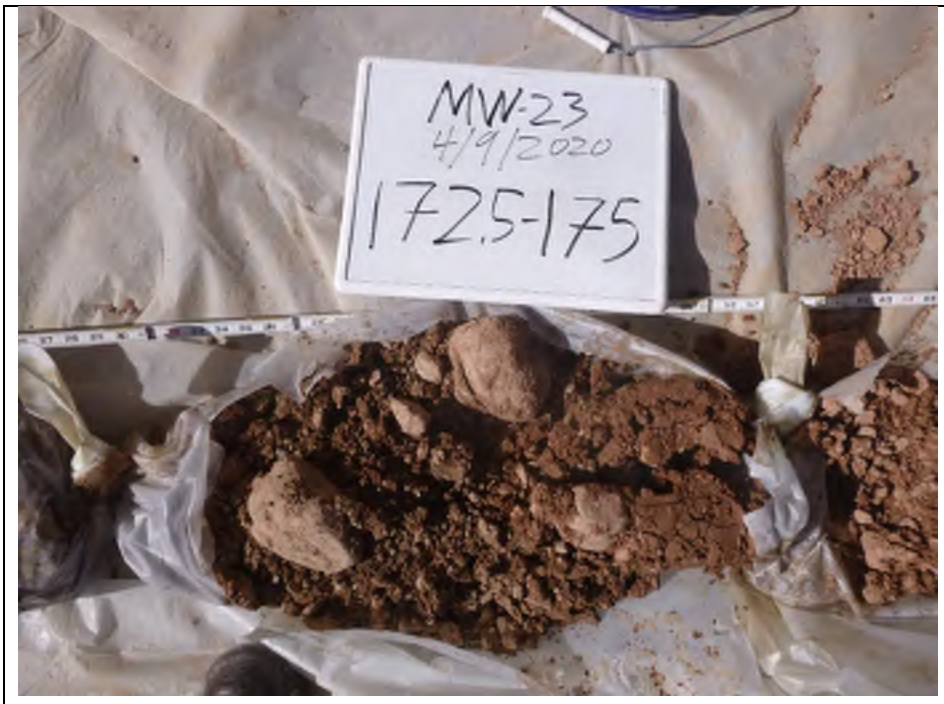
Other Activities/Remarks:

4/10/2020: Safety Tailgate will be conducted at MW-23 location.

4/10/2020: Badger Daylighting will be onsite to preclear MW-26.

Photos:



Date: 4/9/2020

Location: MW-23 Soil Cuttings

Description: Soil core from 172.5-175'. Today's highest PID (95ppm) was in gravelly interval above cohesive silt.

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	Date: 4/9/2020 **Location:** MW-23 Soil Cuttings **Description:** Unit from 192-195' was wet, coarse grained sand and gravel.
	Date: 4/9/2020 **Location:** MW-23 Push ahead sampler **Description:** Push ahead sampler after 200' sample attempt. Sampler screen clogged, no sample recovery.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 4/10/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom Badger Daylighting – Jesus Rojas
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 260' bgs. The 7" sonic casing is currently to 260' bgs. Four soil samples were collected. The highest PID observed was 470ppm in the 255-257' bgs interval. Static Groundwater was measured at ~192' bgs. Two push-ahead groundwater VOC samples were collected at 240' and 260' bgs.

Samples collected:

Soil:
MW23-SB041020-226
MW23-SB041020-230
MW23-SB041020-244
MW23-SB041020-257

GW:
MW23-GW041020-240
MW23-GW041020-260

Hydrovac clearing:

Badger Daylighting was onsite to preclear the MW-26 boring location. The boring location was cleared to beyond 9' and could not be advanced further. An irrigation line was encountered just below the surface and the location was shifted less than a foot. At 5' below ground surface an apparent wire/ground/coax (~1/4" diameter) was exposed. VA safety and electrical inspected and determined the boring can be advanced. VA safety approved the preclearing with termination at just greater than 9' bgs.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

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The Badger hydrovac crew arrived without sufficient hose to access the boring location. Badger waited an hour to get the hose extension to site.

Projected Work – Near Term:

4/12/2020 – Advance MW-23 boring

Other Activities/Remarks:

4/12/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

	Date: 4/10/2020 **Location:** MW-23 Soil Cuttings **Description:** Soil core from 255-260'. Today's highest PID (470ppm) was at 257' bgs. The unit was a silty gravel above a loose sand (258-259) above a cemented gravel (259-260).

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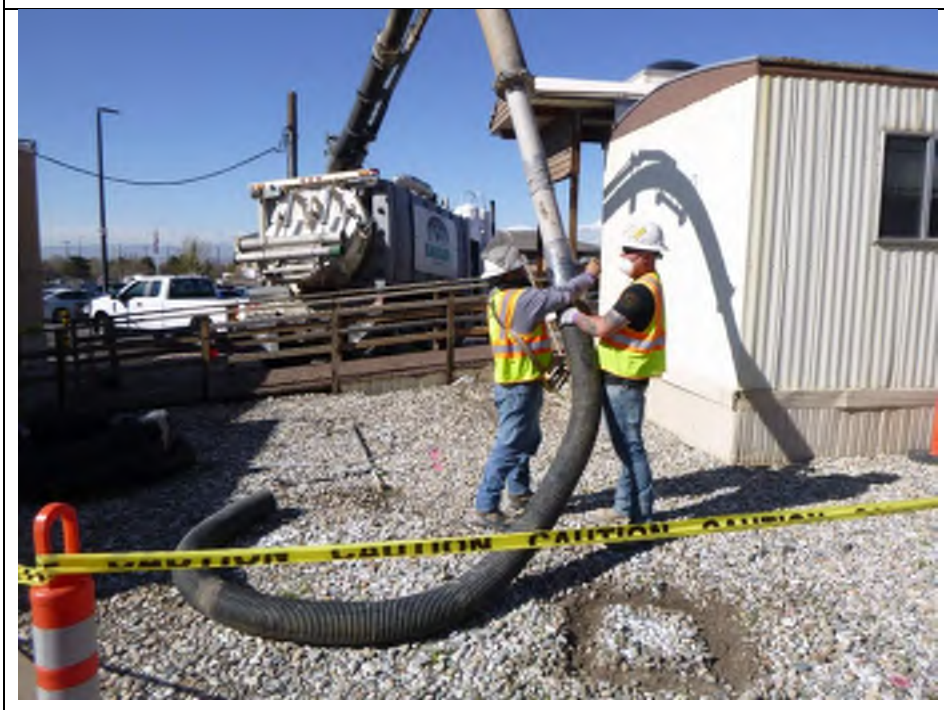
	Date: 4/10/2020 **Location:** MW-23 Soil Cuttings **Description:** Cemented gravel from 260' bgs interval. PID reading in this interval was 350ppm.
	**Date: 4/10/2020** **Location:** MW-26 **Description:** Badger daylighting setting up at MW-26 boring location.

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Salt Lake City, Utah

Date: 4/10/2020

Location: MW-26 vacuum clearing

Description: Wire/coax/ground line encountered 5’ bgs. VA electrician determined it was not a live wire.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 4/12/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 310' bgs. The 6" sonic casing is currently to 310' bgs. Three soil samples were collected. The highest PID observed was 52.8ppm in the 261-262 bgs interval. Static Groundwater was measured at ~212' bgs. Two push-ahead groundwater VOC samples were attempted at 280' and 300' bgs. Neither unit produced a sample.

Samples collected:

Soil:
MW23-SB041220-261
MW23-SB041220-280
MW23-SB041220-307

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

The sonic core barrel sampler got seized while tripping out from the 270-280' interval. The driller had to wash over the casing by adding water while advancing the casing around the core barrel. The core barrel with sampler was then removed. Approximately 300 gal of water was used to wash over the casing. A sample of the water used was collected for VOC analysis.

Projected Work – Near Term:

4/13/2020 – Advance MW-23 boring

Other Activities/Remarks:

4/13/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

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

	Date: 4/12/2020 **Location:** MW-23 **Description:** Drilling activities at MW-23
	Date: 4/12/2020 **Location:** MW-23 Soil Cuttings **Description:** Clayey Silt unit from 297.5-300. A push ahead groundwater sample was attempted, and failed to yield water.

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Date: 4/12/2020

Location: MW-23

Description: Push ahead sampler clogged with sediment after 300’ sample attempt.

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

Date: 4/12/2020

Location: MW-23 Soil cuttings

Description: Sonic core from 307.5-310’ bgs. Dry cemented gravel above moist silt unit.

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

DATE: 4/13/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 330' bgs. The 6" sonic casing is currently to 330' bgs. Two soil samples were collected. The highest PID observed was 1500+ppm in the 312-315' bgs interval. Static Groundwater was measured at ~220' bgs. One push-ahead groundwater VOC samples was collected at 310 bgs.

Samples collected:

Soil:
MW23-SB041320-314 + Duplicate
MW23-SB041320-324
GW:
MW23-SB041320-310 + Duplicate

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

After tripping the GW sampler to depth @330', water was in the interior of the drill rods indicating the sampler had opened while being deployed. The sampler was tripped out and an O-ring was replaced. Water again entered the drill rods, Holt determined all three O-rings need replaced. They are acquiring new rings for the sampler and will deploy again in the morning.

Projected Work – Near Term:

4/14/2020 – Advance MW-23 boring

Other Activities/Remarks:

4/14/2020: Safety Tailgate will be conducted at MW-23 location.

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

Photos:

	Date: 4/13/2020 **Location:** MW-23 Soil Cuttings **Description:** Soil core from 312.5-315. Today's highest PID (1500+ppm) was at 312 and 314' bgs. The unit was a silty gravel below a cemented gravel (312.5-314).
	Date: 4/13/2020 **Location:** MW-23 **Description:** Push ahead sampler. One of the O-rings was removed after deployment. Note: the top two O-rings have damage.

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

DATE: 4/14/2020	**Prepared by:** Joe Miller

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Betsy Bott Wasatch Environmental – Kiel Keller Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

The MW-23 boring was advanced to 350' bgs. The 6" sonic casing is currently to 340' bgs. Two soil samples were collected. The highest PID observed was 85.1 ppm in the 334-335' bgs interval. Static Groundwater was measured at ~220' bgs. One push-ahead groundwater VOC samples was collected at 340 bgs. A GW sample was attempted at 330' but was unsuccessful.

Samples collected:

Soil:
MW23-SB041420-334
MW23-SB041420-340
GW:
MW23-GW041420-340

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 6th, the SLC VA is encouraging "Universal Masking."

Projected Work – Near Term:

4/15/2020 – Advance MW-23 boring, Begin Well construction

4/15/2020 – Preclear MW-24 with Badger Daylighting

Other Activities/Remarks:

4/15/2020: Safety Tailgate will be conducted at MW-23 location.

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

Photos:

	Date: 4/14/2020 **Location:** MW-23 **Description:** GW sample collected from 340' interval.
	Date: 4/14/2020 **Location:** MW-23 Soil cuttings **Description:** Interval from 333-335' bgs. The silty gravel had the highest PID reading today, 85.1ppm.

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Salt Lake City, Utah

DATE: 4/15/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman Badger Daylighting VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-24 boring location.

Drilling:

The MW-23 boring was advanced to 360' bgs. The 6" sonic casing is currently to 350' bgs. One soil sample was collected. The highest PID observed was 706 ppm in the 344-347' bgs interval.

Hydrovac:

Hydrovac was attempted at MW-24. At approximately 2.5' feet 2 electrical lines were observed and appeared to have previously been cut. At approximately 3', yellow tape indicating a natural gas line was observed. Hydrovac was stopped and Carlos Aguilar was notified. The location of MW-24 will need further review and moved to another location. Holt filled the excavation with play sand up to approximately 2 inches below ground surface. They will buy material to restore surface to existing tonight.

MW-25 was hydrovac cleared to approximately 10'. Badger was unable to hydrovac further due to hard sediment. Carlos Aguilar was notified and approved the location for drilling.

Samples collected:

Soil:
MW23-SB041520-346

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

The driller went to urgent care this morning due to some pain in his chest. They did an EKG and he checked out fine; he was cleared to continue working. They diagnosed it as likely stress-related. The field crew will continue to monitor his condition. Start of work today was delayed by about 2 hours.

The rig bottom jaw broke today; bolts holding the jaw appeared to break due to hydraulic pressure. Holt ordered new parts that will be delivered in the morning for repair.

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

Projected Work – Near Term:

4/16/2020 – Collect groundwater sample at 360', begin well construction.

Other Activities/Remarks:

4/16/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

	Date: 4/15/2020 **Location:** MW-24 **Description:** Electrical lines at approximately 3' bgs.

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

	Date: 4/15/2020 **Location:** MW-23 Soil cuttings **Description:** Interval from 344-347' bgs. The clayey gravel had the highest PID reading today, 706 ppm.
	Date: 4/15/2020 **Location:** MW-23 **Description:** Broken rig jaw.

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

DATE: 4/16/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman United Site Services
Visitors/Others:	United Site Services onsite to service portable toilet

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

No drilling was completed. Holt spent day repairing rig bottom jaws and replacing bolts holding the jaw. Replacement parts arrived today and were installed. Holt anticipates resuming drilling in the morning on 4/17/20.

Samples collected:

No samples were collected.

Well Repairs:
Well repairs were made at MW-1D, MW-5R, MW-12S/D, and MW-15S/D. Repairs included pulling out pumps, tightening and securing tubing and well equipment, and attaching well labels.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/17/2020 – Collect groundwater sample at 360 at MW-23', begin well construction.

Other Activities/Remarks:

4/17/2020: Safety Tailgate will be conducted at MW-23 location.

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

Photos:

	Date: 4/16/2020 **Location:** MW-23 **Description:** Holt working on rig repairs.
	Date: 4/16/2020 **Location:** MW-12s/d **Description:** Making well repairs at MW-12s/d.

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

DATE: 4/17/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Joe Miller CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

Holt completed rig repairs and cleaned out casing to retrieve soil from the 354-360' interval. PID readings were low and no soil samples were collected. A groundwater sample was attempted at 360' but was unsuccessful.

Samples collected:

No samples were collected.

Well Construction:
The static water level at MW-23 was 224.64' in the morning. Total depth of the borehole is 360 feet bgs. The deepest screen interval was installed from 348 to 358 feet bgs (sand from 344 to 360). Bentonite pellets were installed from 264 to 344 feet bgs. Sand was installed from 263.5-264 feet bgs. The rest of the well will be completed on 4/19/20.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/19/2020 – Complete well construction of MW-23 including 3 other screened intervals.

Other Activities/Remarks:

Prior to well installation, Holt expressed concern about accommodating three 1" diameter wells in the 6" diameter sonic casing due to lack of adequate annular space. Holt was only able to advance the 7" sonic casing to 240 feet due to lithology. CDM Smith proposed eliminating the 310' to 320' interval and installing a 1" well screen in the vadose zone above the perched groundwater interval from 130-140 feet bgs, in lieu of a proposed soil vapor monitoring point. Proposed modifications were reviewed with VA (Marc Yalom) and USACE (Josephine Newton-Lund and Greg Hattan).

4/19/2020: Safety Tailgate will be conducted at MW-23 location.

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Salt Lake City, Utah

Photos:

	Date: 4/17/2020 **Location:** MW-23 **Description:** Interval from 354-360 feet bgs. The silty gravel had a PID reading of 2.8 ppm.
	Date: 4/172020 **Location:** MW-23 **Description:** Marking and taking average measurements from riser piping to ensure enough annular space at surface for ZIST installation.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 4/17/2020 **Location:** MW-23 **Description:** Holt placing sand in borehole.
	Date: 4/172020 **Location:** MW-23 **Description:** Visual of (3) 1" risers in a 6" borehole.

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

DATE: 4/19/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

No drilling took place.

Samples collected:

No samples were collected.

Well Construction.
The second screen interval was installed from 250 to 260 feet bgs (sand from 247 to 264). Bentonite pellets were installed from 224 to 247. The third screen interval was installed from 210 to 220 feet bgs (sand from 207 to 223).

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/20/2020 – Complete well construction of MW-23

Other Activities/Remarks:

4/20/2020: Safety Tailgate will be conducted at MW-23 location.

Photos:

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

	Date: 4/19/2020 **Location:** MW-23 **Description:** Holt installing riser pipe at MW-23.
	Date: 4/19/2020 **Location:** MW-23 **Description:** Holt checking depth to sand pack interval.

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

DATE: 4/20/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

No drilling took place.

Samples collected:

No samples were collected.

Well Construction.
The fourth screen interval was installed from 130 to 140 feet bgs (sand from 127 to 143'). Bentonite chips were installed from 30 to 127 feet bgs. A bentonite grout containing 30% solids mixed with fine sand was installed from 2 to 30 feet bgs.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

The VA has received complaints regarding the drillers not wearing facial covers. A **Stop Work** meeting was held at MW-23 regarding facial covers and complying with this issue. Holt bought cooler, lighter weight bandanas to wear as face covers during lunch.

Projected Work – Near Term:

4/21/2020 – Complete well vault installation at MW-23 and decon piping.

Other Activities/Remarks:

4/21/2020: Safety Tailgate will be conducted by the large propane tank near the park gate.

Holt was asked to move flatbed truck from where it is parked as the VA will be doing work on the propane tank tomorrow. Upon arriving to the area, two concrete barriers were present blocking Holt from backing the flatbed truck out of the area. Holt did not think that their bobcat would be able to move the concrete barriers and other options would require the truck to go over curbs possible breaking them. Mark Yalom was notified of the situation. We are planning on meeting at that area first thing tomorrow to talk about options for moving the truck.

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Salt Lake City, Utah

Photos:

	Date: 4/20/2020 **Location:** MW-23 **Description:** Holt checking depth to sand pack interval.
	Date: 4/20/020 **Location:** MW-23 **Description:** Holt installing riser pipe at MW-23.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 4/20/2020 **Location:** MW-23 **Description:** Holt mixing bentonite grout.
	Date: 4/20/2020 **Location:** MW-23 **Description:** Holt taking out last 8” casing.

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Salt Lake City, Utah

DATE: 4/21/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-23 boring location.

Drilling:

No drilling took place.

Samples collected:

No samples were collected.

Well Construction.
The remaining casing was pulled from the well. The Augustyn well vault was installed.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/22/2020 –Arrange fencing, portable bathroom, rig, equipment and tools at MW-26. Begin drilling MW-26.

Other Activities/Remarks:

4/22/2020: Safety Tailgate will be conducted by MW-26.

MW-23 excavation permit was signed off by Carlos Aguilar. He will be ready to sign the MW-26 excavation tomorrow morning at 7:30 am.

Holt moved the flatbed truck to the laydown area as requested by the VA to make room for construction involving the large propane tank.

Concrete was placed in the MW-24 void to match existing surface conditions. Pea gravel was placed in MW-25 to fill hydrovac void.

Holt decontaminated enough piping to begin drilling tomorrow.

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Salt Lake City, Utah

Photos:

	Date: 4/21/2020 **Location:** MW-23 **Description:** Picture shows depth from ground surface to top of riser pipe.
	Date: 4/21/020 **Location:** MW-23 **Description:** Surface completion at MW-23.

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

	Date: 4/21/2020 **Location:** MW-24 **Description:** Concrete placed at MW-24 to match existing conditions.
	Date: 4/21/2020 **Location:** MW-25 **Description:** Pea gravel used as fill at MW-25.

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Salt Lake City, Utah

Date: 4/21/2020

Location: Laydown Yard

Description: Holt deconning casing at laydown yard.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 4/22/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-26 boring location.

Drilling:

The MW-26 boring was advanced to 40' bgs. Three soil samples were collected. The highest PID observed was 131.6 ppm in the 23-24 bgs interval.

Samples collected:

Soil:
MW26-SB042220-20 (PID reading = 12.6 ppm)
MW26- SB042220-24 (PID reading = 131.6 ppm)
MW26- SB042220-39 (PID reading = 16.0 ppm)

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/23/2020 – Continue drilling at MW-26. Prepare site for week break, including securing rig, fencing, equipment.

Other Activities/Remarks:

4/23/2020: Safety Tailgate will be conducted by MW-26.

MW-26 excavation permit was approved and signed by Carlos Aguilar. Excavation inspection checklists for MW-23 were electronically submitted to Carlos.

Holt moved and arranged fencing to surround MW-26 drilling location and drilling equipment. Holt was asked to leave room between Building 6 and a jobsite trailer to provide a handicap accessible walkway.

Two bolts attached to the previously replaced lower rig jaw became loose. Holt determined that they needed to be replaced and left site to buy new bolts. After returning to the site to replace the bolts, the two bolts broke again. Holt is returning to the store and will replace bolts tonight.

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Salt Lake City, Utah

The PID meter was reading 15,000 ppm in fresh air as the 30 to 40-foot interval core was being collected. CDM Smith attempted to recalibrate the meter without success, called Pine Environmental to troubleshoot, and ultimately determined the equipment lamp needed to be replaced. CDM Smith borrowed a PID from Wasatch Environmental and was able to keep sampling.

Photos:

	Date: 4/22/2020 **Location:** MW-26 **Description:** Fencing surrounding MW-26 drilling location.
	Date: 4/22/2020 **Location:** MW-26 **Description:** Holt placing (1) 10” casing to 10 feet in order to protect sprinkler and ground line.

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Salt Lake City, Utah

Date: 4/22/2020

Location: MW-26

Description: The 22 to 24 foot sample interval. A soil sample (MW26-SB042220-24) was collected in the 23 to 24 foot interval. The highest PID reading of the day (131.6 ppm) was recorded at this interval.

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

DATE: 4/23/2020	**Prepared by:** Betsy Bott

Personnel Onsite, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Emilie Rott Holt Services – Pete Rosenburg (Driller) Holt Services – Michael Leui Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	All Welding Mobile

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-26 boring location.

Drilling:

The MW-26 boring was advanced to 100' bgs. Six soil samples were collected. The highest PID observed was 156 ppm in the 44-45 bgs interval.

Samples collected:

Soil:
MW26-SB042320-44 (PID reading = 156 ppm)
MW26-SB042320-56 (PID reading = 30 ppm)
MW26-SB042320-62 (PID reading = 6.3 ppm)
MW26-SB042320-77 (PID reading = 14.8 ppm)
MW26-SB042320-84 (PID reading = 39.4 ppm)
MW26-SB042320-97 (PID reading = 12.6 ppm)

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

The Holt crew is mobilizing back to Seattle for their 1-week break tomorrow. Holt will return to MW-26 on 5/4/2020. A second Holt crew is mobilizing to the site 4/28/2020 and will begin drilling at MW-25.

Other Activities/Remarks:

After starting work this morning, Holt determined that the rig jaws are not able to tighten the pipe enough and a fabrication welder would be required. All Welding Mobile was called and mobilized to the site. CDM Smith escorted All Welding Mobile to MW-26. A hot work permit was issued and signed by Carlos Aguilar.

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Salt Lake City, Utah

The replaced PID meter would not start after the 50-60 interval was collected. CDM Smith called Pine Environmental to troubleshoot and ultimately got the PID functioning with minimal downtime. While troubleshooting, CDM Smith mobilized to Wasatch to borrow a PID in case the rented PID stopped working. Two PIDs are onsite in case of breakdown.

Holt moved and arranged fencing to fully surround the MW-26 drilling location and drilling equipment. Holt cleaned up the site and secured all equipment.

Photos:

	Date: 4/23/2020 **Location:** MW-26 **Description:** All Welding Mobile working on rig.
	Date: 4/23/2020 **Location:** MW-26 **Description:** The 44 to 45-foot sample interval. The highest PID reading of the day (156 ppm) was recorded at this interval.

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Salt Lake City, Utah

	Date: 4/23/2020 **Location:** MW-26 **Description:** View of fencing surrounding MW-26 drilling area.
	Date: 4/23/2020 **Location:** MW-26 **Description:** View of rig and fencing surrounding MW-26 drilling area.

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

DATE: 4/27/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Kimberly Yauk
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• PID (health and safety)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Well Repairs:
Well repairs were completed at MW-14S/D, MW-16S/D, MW-08a, MW-08b, MW-02, MW-04, and MW-06. Additionally, well repairs were conducted at MW-13S/D and MW-17S/D on Friday, April 24. These repairs included pulling pumps, switching nylon cord for steel cable, tightening and securing tubing and well equipment, installing tamper-resistant bolts at unlocked wells, and attaching well tags.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/28/2020 – Complete well repairs on MW-18, MW-19, MW-20S/D, MW-21, MW-22, and MW-01S. New bladders will be installed at MW-21 and MW-22. The pump from MW-17D will be decontaminated and installed in MW-01S. An equipment blank will be collected after decontamination, prior to installation. The new drillers are expected to arrive, decon equipment, and begin setting up at MW-25.

Other Activities/Remarks:

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Salt Lake City, Utah

Photos:

Date: 4/27/2020

Location: MW-06

Description: Well repairs completed at MW-06, and the well tag was connected to the well.

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

DATE: 4/28/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar Wasatch Environmental – Kiel Keller Holt Drilling – Aaron Kuper Holt Drilling – Alex Langdon Holt Drilling – Jeff Toms
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• PID (health and safety) • Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Drilling:
The drilling crew arrived onsite, deconned their equipment and set up at MW-25.

Well Repairs:
Well repairs were completed at MW-21, MW-22, and MW-01S. The pump bladders were replaced on MW-21 and MW-22. The tubing connections on the pump were replaced on MW-21 and 22 due to corrosion and apparent wear on the parts. A small hole was noticed in the tubing near the pump was noticed on MW-21. The team trimmed the tubing to eliminate the hole, and reconnected it to the pump. The pumps and transducers were re-hung using cables. The pump from MW-17D was decontaminated and an equipment blank was collected from the pump. The pump was then re-installed using a cable, new tubing, and the surface fitting from MW-17D. After installation, the field team checked the connections and found that the air line was disconnected and had lodged the pump in the well. The water line and the steel cable are still connected to the pump. The field team could not retrieve the tubing with the equipment on hand. CDM Smith will return and attempt to fish the disconnected tubing out at a later date. If unsuccessful, Holt will attempt to retrieve the pump and the tubing.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking."

Projected Work – Near Term:

4/28/2020 – Drilling at MW-25 will commence.

Other Activities/Remarks:

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

Photos:

	Date: 4/28/2020 **Location:** MW-22 **Description:** Well repairs completed at MW-22. The threads on the fitting connecting to the top of the pump were found to be deteriorated and replaced appropriately.
	Date: 4/28/2020 **Location:** MW-21 **Description:** Well repairs completed at MW-21. The top connection between the tubing and the pump was replaced as shown in this photograph.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 4/28/2020 **Location:** MW-21 **Description:** Hole in tubing on MW-21. The tubing was cut and replaced to eliminate this hole.
	Date: 4/28/2020 **Location:** MW-25 **Description:** Drilling crew set up drill rig at MW-25 to begin drilling tomorrow.

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

DATE: 4/29/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar Holt Services – Jeff Toms (Driller) Holt Services – Aaron Kuper Holt Services – Alex Langdon VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

The drillers began drilling at MW-25, advancing the borehole from 10 feet to 100 feet bgs.

Samples collected:
MW25-SB042920-14
MW25-SB042920-29
MW25-SB042920-35
MW25-SB042920-46
TB09-SB042920

MW25-SB042920-54
MW25-SB042920-70
MW25-SB042920-73
MW25-SB042920-82
MW25-SB042920-94
FD11-SB042920

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking", however this mandate has now been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

4/30/2020 – Drilling at MW-25 will continue.

Other Activities/Remarks:

4/30/2020: Safety Tailgate will be conducted at the MW-25 location.

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

Photos:

	Date: 4/29/2020 **Location:** MW-25 **Description:** Holt prepares to begin drilling at MW-25.
	Date: 4/29/2020 **Location:** MW-25 **Description:** Drilling begins at MW-25.

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

	Date: 4/29/2020 **Location:** MW-25 **Description:** Soil cores laid out from 10 feet (top left) to 50 feet (bottom right).
	Date: 4/29/2020 **Location:** MW-25 **Description:** Soil core at 80 feet bgs.

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

DATE: 4/30/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar Holt Services – Jeff Jones (Driller) Holt Services – Aaron Kuper Holt Services – Alex Langdon VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

The drillers advanced the 8-inch casing to 120 feet bgs. Drilling continued with 7-inch casing to 150 feet. Decontamination water in a 55-gallon drum was transferred to the tank in the IDW yard.

Samples collected:

TB19-SB043020
MW25-SB043020-103
MW25- SB043020-112
MW25- SB043020-120
MW25- SB043020-139
MW25-SB043020-150

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking", however this mandate has now been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

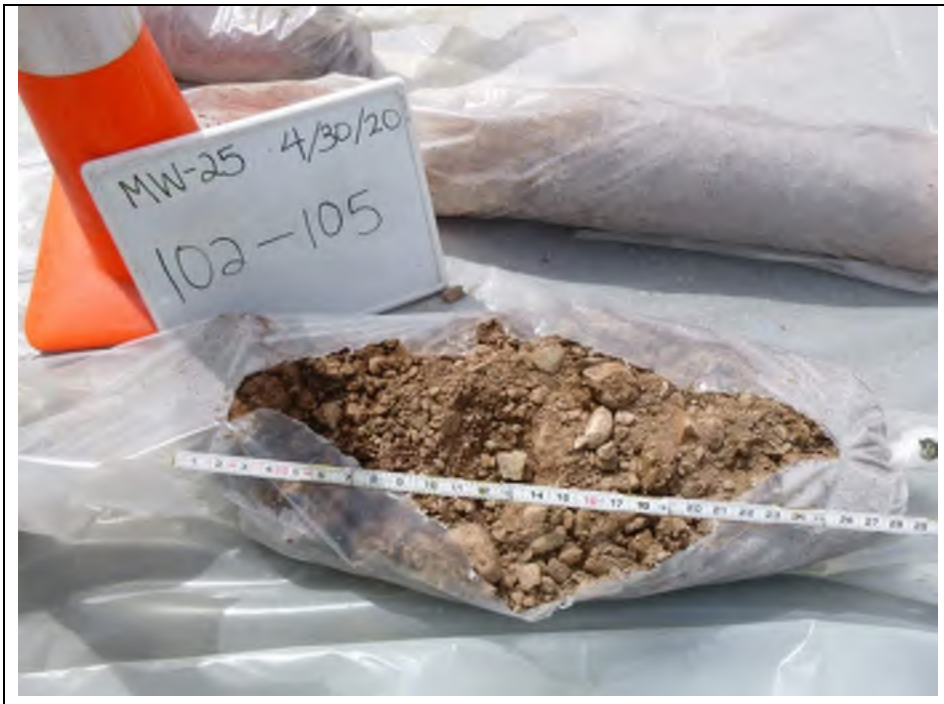
5/1/2020 – Drilling at MW-25 will continue.

Other Activities/Remarks:

5/1/2020: Safety Tailgate will be conducted at the MW-25 location.

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

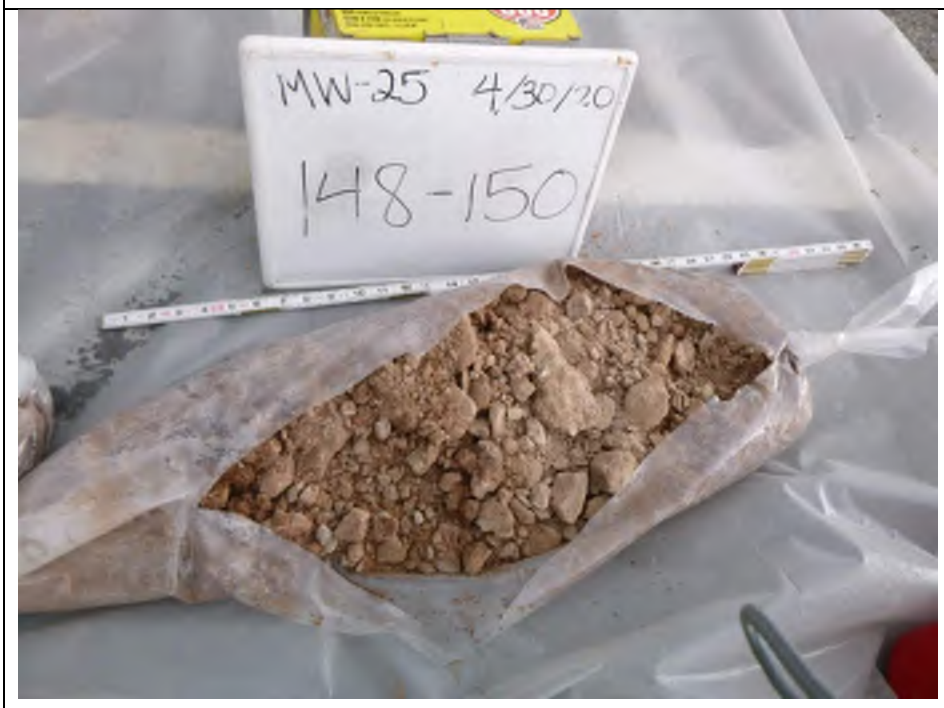
Photos:

	**Date: 4/30/2020** **Location:** MW-25 **Description:** The PID reading at 103 feet was 321.4 ppm. PID readings from 101 to 105 were over 200 ppm.
	Date: 4/30/2020 **Location:** MW-25 **Description:** Soil cores with readings over 100 were containerized in the 55-gallon drum. Remaining soil core disposed of in hopper and ultimately the soil rolloff bin.

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

	Date: 4/30/2020 **Location:** MW-25 **Description:** Holt decontaminates the 7-inch casing.
	Date: 4/30/2020 **Location:** MW-25 **Description:** Holt prepares to advance 7-inch casing.

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

	Date: 4/30/2020 **Location:** MW-25 **Description:** Clay from 141 to 143 feet bgs.
	**Date: 4/30/2020** **Location:** MW-25 **Description:** Sandy silt with gravel at 148 to 150 feet bgs.

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

DATE: 5/1/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar Holt Services – Jeff Jones (Driller) Holt Services – Aaron Kuper Holt Services – Alex Langdon VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

The drillers advanced the 7-inch casing to 210 feet bgs. Perched groundwater was encountered at approximately 164 feet bgs. Water was encountered in the 200 to 210-foot run. Soil recovery was lost between 205.5 feet and 208 feet. The push-ahead sampler was advanced to 212 feet and one foot of screen was exposed. Water in the sampler was measured at a depth of 209.29 feet bgs. A groundwater sample will be collected at the start of the day on Sunday.

Samples collected:

MW25-SB050120-153
MW25-SB050120-164
MW25-GW050120-164
FD12-GW050120
MW25-SB050120-176
MW25-SB050120-187
MW25-SB050120-193
MW25-SB050120-205
FD13-SB050120
TB20-SB050120

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking", however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

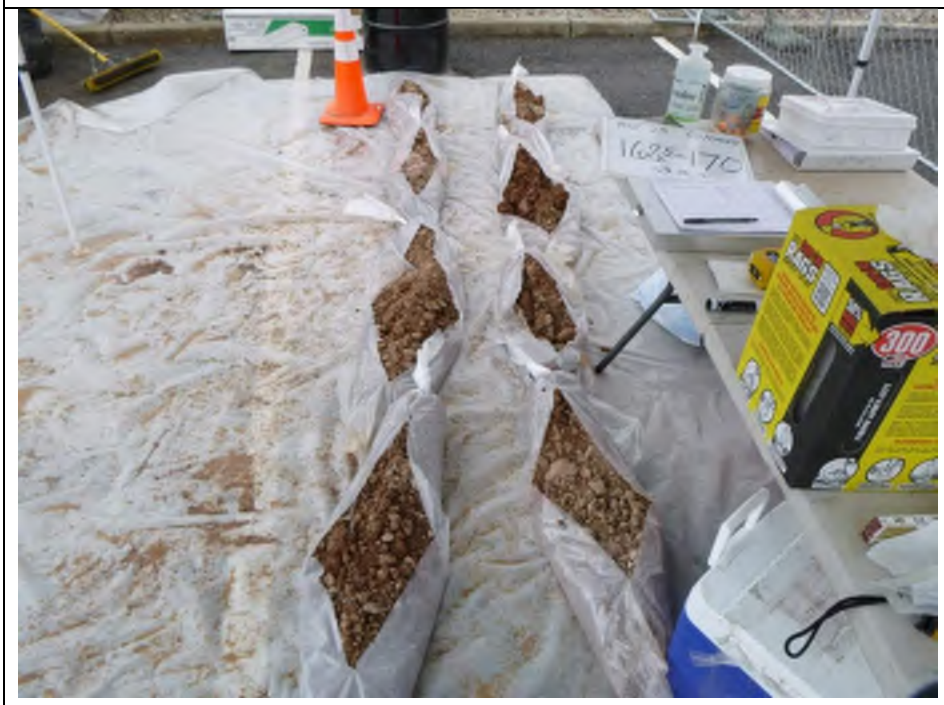
5/3/2020 – A groundwater sample at MW-25 at 212 feet will be collected first in the morning. Drilling will resume and groundwater profiling will be conducted.

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

Other Activities/Remarks:

5/3/2020: Safety Tailgate will be conducted at the MW-25 location.

Photos:

	Date: 5/1/2020 **Location:** MW-25 **Description:** The rig set up with sampling station and fencing.
	**Date: 5/1/2020** **Location:** MW-25 **Description:** Soil cores from 150 (bottom right) to 160 (top right) and 160 (bottom left) to 170 (top left).

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

	Date: 5/1/2020 **Location:** MW-25 **Description:** Holt bails perched water from the borehole at 164 feet.
	Date: 5/1/2020 **Location:** MW-25 **Description:** Water was effervescent in the sample bottle, but samples were collected without headspace.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 5/1/2020 **Location:** MW-25 **Description:** Water from the perched zone was measured for water quality parameters.
	Date: 5/1/2020 **Location:** MW-25 **Description:** Water was encountered in the 200 to 210-foot run. Soil core at 210 feet is saturated.

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

DATE: 5/3/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar Holt Services – Jeff Jones (Driller) Holt Services – Aaron Kuper Holt Services – Alex Langdon
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

The drillers advanced the 7-inch casing to 260 feet bgs. Water samples were collected at 212, 232, and 252 feet bgs. The push-ahead sampler was lost down hole at 252 feet after difficulty vibrating it into the formation. The drillers were able to recover it, but a part of it broke in the process. A replacement part was sourced for replacement tomorrow.

Samples collected:

MW25-GW050320-212
EB09-GW050320
MW25-SB050320-216
MW25-SB050320-223
MW25-GW050320-232
MW25-SB050320-235
MW25-SB050320-246
MW-25-GW050320-252
MW25-SB050320-252
TB21-SB050320

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking", however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The push-ahead sampler needs a replacement part that has already been sourced through Boart Longyear. Delays may happen on Monday as the crew gets the sampler working again.

Projected Work – Near Term:

5/4/2020 – Crew 2: The push-ahead sampler will be replaced/repaired. Drilling will continue. Smaller casing may be used if the formation is very tight. Crew 1: Work will start up again at MW-26.

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

Other Activities/Remarks:

5/4/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

	Date: 5/3/2020 **Location:** MW-25 **Description:** CDM Smith calibrates the YSI and PID.
	Date: 5/3/2020 **Location:** MW-25 **Description:** Holt assists CDM Smith with an equipment blank collected off of the push-ahead sampler.

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

	Date: 5/3/2020 **Location:** MW-25 **Description:** Holt prepares to collect a groundwater sample with the push-ahead sampler.
	Date: 5/3/2020 **Location:** MW-25 **Description:** Groundwater sample collected at 212 feet bgs had low turbidity and no headspace.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 5/3/2020 **Location:** MW-25 **Description:** Clay-rich soil cores are photographed before and after breaking open the core. This is the before photo.
	Date: 5/3/2020 **Location:** MW-25 **Description:** Clay-rich soil cores are photographed before and after breaking open the core. This is the after photo.

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

DATE: 5/4/2020	**Prepared by:** Joe Miller/Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar CDM Smith – Joe Miller Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom
Visitors/Others:	MP Environmental – Luciano Salazar

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
The drillers advanced 6-inch casing to 270 feet bgs. A water sample was collected at 272 feet bgs. The push-ahead sampler was replaced, and new O-rings were sourced for the sampler. The core barrel is advanced to 280 feet, and the soil core is ready to be retrieved in the morning.

Samples collected:
MW25-SB050420-264
MW25-GW050420-272

MW-26:
Drilling resumed at MW-26. The 8" sonic casing has been advanced to 140' bgs, while the boring has been advanced to 150' bgs. The highest PID was 109.1 ppm at 119' bgs.

Samples collected:
MW26-SB050420-103
MW26-SB050420-116
MW26-SB050420-119
MW26-SB050420-129
MW26-SB050420-133
MW26-SB050420-145

IDW Removal and Characterization:

MP Environmental was onsite to remove IDW water. Approximately 3,000 gallons were removed. A soil waste characterization sample was collected from the second rolloff bin.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The push-ahead sampler and O-rings of Crew 2 were replaced and drilling continued.

Projected Work – Near Term:

5/5/2020 – Crew 1: Drilling will continue at MW-26 starting at 150 feet bgs.

– Crew 2: Drilling will continue at MW-25. 6-inch casing will be advanced from 280 feet bgs.

Other Activities/Remarks:

5/5/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/4/2020

Location: MW-26

Description: Holt Drill crew tripping in drill rods at MW-26 location.

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

	Date: 5/4/2020 **Location:** MW-26 Soil cuttings **Description:** The highest PID (109.1ppm) reading observed today was in the 119-120' interval.
	Date: 5/4/2020 **Location:** IDW Yard **Description:** MP Environmental removes water from the first tank with 6 to 8 inches of sediment remaining on the bottom.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 5/4/2020 **Location:** IDW Yard **Description:** MP Environmental pumps groundwater IDW from the tanks to the semi for removal.
	Date: 5/4/2020 **Location:** IDW Yard **Description:** MP Environmental removes water from the second tank with 3 inches of sediment remaining on the bottom.

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

Date: 5/4/2020

Location: MW-25

Description: Holt Crew #2 advances 6-inch casing beginning at 260 feet bgs at MW-25 location.

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

DATE: 5/5/2020	**Prepared by:** Joe Miller/Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar CDM Smith – Joe Miller Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom
Visitors/Others:	MP Environmental

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2) • Soil Rolloff Bin (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
The drillers advanced 6-inch casing to 310 feet bgs. A water sample was collected at 292 feet bgs. The sample was non-detect on the Color-Tec reading. The new O-rings are getting torn apart after each use. The drillers stopped early to go buy more O-rings for both drill crews.

Samples collected:
MW25-SB050520-272
MW25-SB050520-281
MW25-GW050520-292
MW25-SB050520-299
MW25-SB050520-301
EB10-GW050520
EB12-GW050520

MW-26:
Drilling resumed at MW-26. The 7" sonic casing has been advanced to 200' bgs. The highest PID was 74 ppm at 171' bgs. After the 190-200' sample collection, depth to water was 186' bgs. A push ahead sample was attempted at 200'. After no sample was collected, the sampler was tripped out of the boring and the interior of the screen was clogged.

Samples collected:
MW26-SB050520-154 + MS/MSD
MW26-SB050520-168
MW26-SB050520-172

Daily Quality Control Report
700 South 1600 East PCE Plume
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MW26-SB050520-188 + Dup
MW26-SB050520-198

IDW Removal and Characterization:

MP Environmental was onsite to remove IDW soil. The roll off bin #RBR251581 was removed from site.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The O-rings for both drill crews will be replaced tomorrow.

Projected Work – Near Term:

5/6/2020 – Crew 1: Drilling will continue at MW-26 starting at 200 feet bgs.

– Crew 2: Drilling will continue at MW-25 starting with a groundwater sample at 312 feet bgs.

Badger Daylighting is scheduled to be onsite for preclearing at MW-24 and MW-30 locations.

Other Activities/Remarks:

5/6/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/5/2020

Location: IDW area

Description: MP Environmental hauling the roll-off bin away.

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

	Date: 5/5/2020 **Location:** MW-26 **Description:** Clogged interior of channel of the push ahead GW sampler.
	Date: 5/5/2020 **Location:** MW-26 Soil Cuttings **Description:** Cuttings from 192.5-195' bgs. Heterogeneous wet gravel and clay.

Daily Quality Control Report
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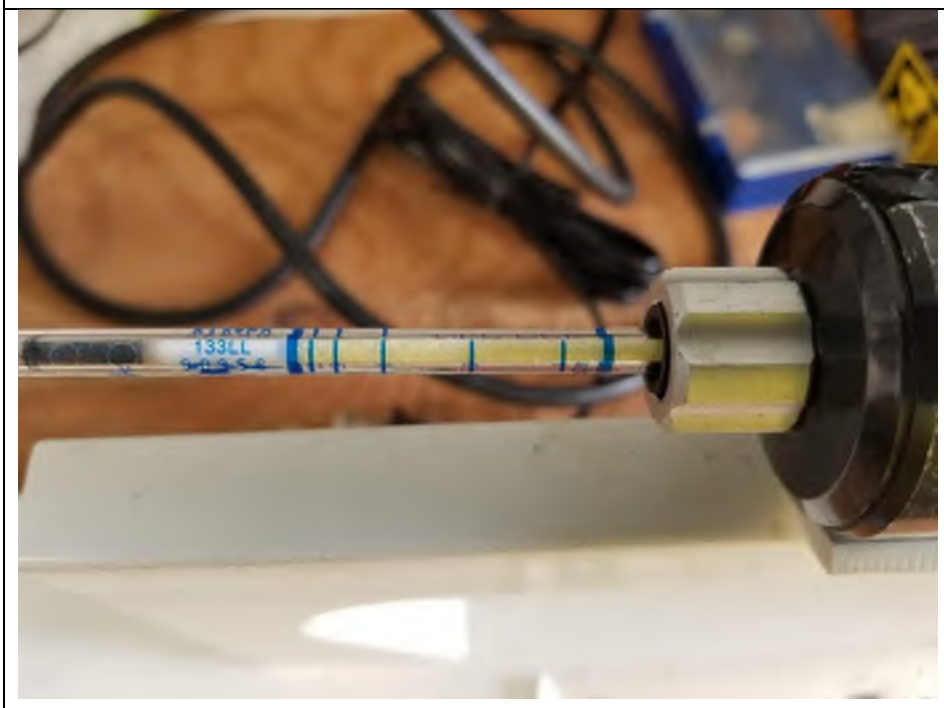
Salt Lake City, Utah

	Date: 5/5/2020 **Location:** MW-25 **Description:** Lithology dominated by clay and clay with gravel from 275 feet and below with notable exceptions (see below).
	Date: 5/5/2020 **Location:** MW-25 **Description:** Saturated clayey gravel at 308 to 310 feet bgs.

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

	Date: 5/5/2020 **Location:** IDW Yard **Description:** Groundwater sample from 292 feet bgs at MW-25 was non-detect for VOCs on the Color-Tec.
	**Date: 5/5/2020** **Location:** IDW Yard **Description:** Low level indicator tube shows no color change after purging 100 ccs through each of the two VOAs.

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

DATE: 5/6/2020	**Prepared by:** Joe Miller/Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Tea Vrtlar CDM Smith – Joe Miller CDM Smith – Ben Carreon Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. Wasatch Environmental – Kiel Keller VA – Marc Yalom
Visitors/Others:	Badger Daylighting

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
The drillers advanced 6-inch casing to 320 feet bgs. The highest PID reading was 64 ppm at 312 feet bgs. A push-ahead water sample as attempted at 310 feet bgs, but the sampler was dry. Drillers continued another 10 feet and a water sample was collected at 320 feet bgs. The groundwater sample was non-detect on the Color-Tec.

Samples collected:
MW25-SB050620-312
MW25-GW050620-320

MW-26:
The drillers advanced MW-26 to 240’ bgs. The highest PID was 74 ppm at 171’ bgs. Prior to drilling DTW was 188’ bgs. A push ahead sample was collected at 210’. A push ahead sampler was attempted at 230’, no sample was collected. The bailer had about 4 inches of mud and no water. After no sample was collected, the sampler was tripped out of the boring, and the formation clogged the screen. Another GW sample will be collected at 240’. The groundwater sample collected at 210’ was non-detect on the Color-Tec.

Samples collected:
MW26-SB050620-201
MW26-GW050620-210
MW26-SB050620-215
MW26-SB050620-221
MW26-SB050620-234

Daily Quality Control Report
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Salt Lake City, Utah

Hydrovac Preclearing:

MW-24 location was precleared to 11' bgs. A wire was identified at 10' bgs. Carlos Aguilar and a VA electrician determined that it was a remnant and was no longer in use. The preclearing was deemed acceptable and ready to drill.

MW-30 location was precleared to 9.5'. Carlos Aguilar deemed the preclearing ready to drill.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

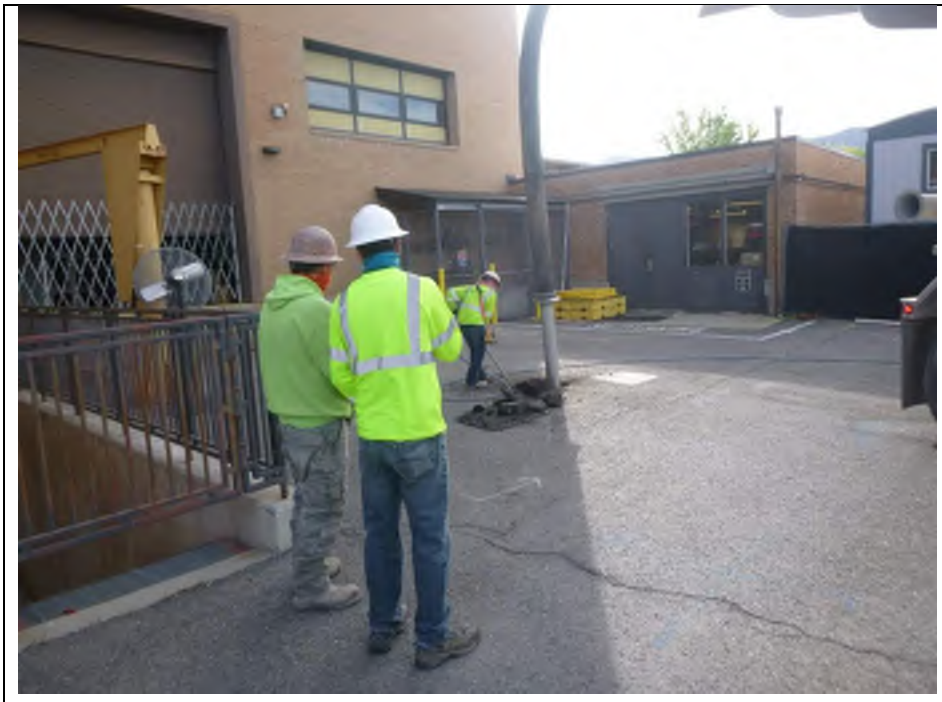
5/7/2020 – Crew 1: Drilling will continue at MW-26 starting at 240 feet bgs.

– Crew 2: Drilling will continue at MW-25. 6-inch casing will be advanced from 320 feet bgs.

Other Activities/Remarks:

5/7/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:



Date: 5/6/2020

Location: MW-24

Description: Badger Daylighting vacuum excavating at MW-24.

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Salt Lake City, Utah

	Date: 5/6/2020 **Location:** MW-26 Cuttings **Description:** Boulder encountered at ~227'. Total core of boulder was ~18".
	Date: 5/6/2020 **Location:** MW-26 Bailer sample **Description:** On third attempt to collect groundwater sample at 230' bgs, we recovered about 4" of mud. No water sample was collected.

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Salt Lake City, Utah

	Date: 5/6/2020 **Location:** MW-25 **Description:** Soil core from 310 to 312 feet bgs. Soil was sampled from the core. A groundwater sample was attempted at this depth.
	Date: 5/6/2020 **Location:** MW-25 **Description:** Soil core from 318 to 320 feet bgs. A water sample was collected from the bottom of this depth.

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

DATE: 5/7/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. Wasatch Environmental – Kiel Keller VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
The MW-25 boring was terminated at 320' bgs. The depth of the boring was measured to 319.8' bgs. The deep ZIST zone was installed with 10' of screen from 307.5-317.5' bgs. The sand pack was installed to 305' bgs and bentonite pellets were added to 272' bgs while backing out the 6" casing.

MW-26:
The drillers advanced MW-26 from 240' to 270' bgs. The highest PID reading was 27.6 ppm at 247' bgs. A push-ahead groundwater sample was collected at 240' and 250' bgs. Push-ahead sampling difficulties were encountered at the 240' bgs sample. Both the 240' and 250' bgs groundwater samples were non-detect on the Color-Tec. The next groundwater sample is planned at 270' bgs.

Samples collected:
MW26-GW050720-240
MW26-SB050720-247
MW26-GW050720-250
MW26-SB050620-251
MW26-SB050620-269

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

As mentioned under the description of field activities, difficulties were encountered before and during collection of the 240' bgs groundwater sample.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/8/2020 – Crew 1: Continue Drilling MW-26 from 270' bgs.

– Crew 2: Drillers will continue building MW-25 with 3 zones (307.5-317.5', ~230-240', and 200-210') and 2 soil vapor points (~100' and 28').

Other Activities/Remarks:

5/8/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/7/2020

Location: MW-25

Description: Holt installing 1" PVC well for deep ZIST zone.

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

	Date: 5/7/2020 **Location:** MW-25 **Description:** Holt tripping out 6” sonic casing during backfill.
	Date: 5/7/2020 **Location:** MW-26 **Description:** Push-ahead sampler after 240’ bgs sample.

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

Date: 5/7/2020

Location: MW-26

Description: Soil core from 247.5 to 250’ bgs. Groundwater was sampled via bailer at 250’ bgs through the push-ahead sampler screen.

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

DATE: 5/8/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. Wasatch Environmental – Kiel Keller VA – Marc Yalom VA – Carlos Aguilar
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
The two remaining ZIST zones were installed. The middle zone is screened from 231-241' bgs. The shallow zone is screened from 201-211' bgs with soil vapor points at 100' and 28' bgs. The boring has been backfilled to 157' bgs.

Carlos Aguilar issued the VA Excavation permit for MW-24.

MW-26:
The drillers advanced MW-26 from 270' to 290' bgs. A push-ahead groundwater sample was collected at 270' bgs. Push-ahead sampling difficulties were encountered at the 290' bgs sample. The sampler opened but the formation did not produce water. The 270' bgs groundwater sample was non-detect on the Color-Tec.

Samples collected:
MW26-GW050820-270
MW26-SB050820-274
MW26-SB050820-285

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

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

Projected Work – Near Term:

5/10/2020 – Crew 1: Continue Drilling MW-26 from 290' bgs.

– Crew 2: Drillers will continue backfilling MW-25, Decon drill tooling and move to MW-24.

Other Activities/Remarks:

5/10/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/8/2020

Location: MW-25

Description: Holt installing 1" PVC well for shallow ZIST zone, with soil vapor probe.

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

	Date: 5/8/2020 **Location:** MW-25 **Description:** Holt installing 1" PVC for ZIST Well.
	Date: 5/8/2020 **Location:** MW-26 Soil Cuttings **Description:** Soil cuttings from 287.5-289'. Cohesive clayey silt unit. Unit did not yield groundwater at 290'.

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

DATE: 5/10/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr.
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-25:
Bentonite was installed from 157 to 103 ft-bgs. Sand was installed from 97 to 103 ft-bgs. Bentonite was installed from 30 to 97 ft-bgs. Sand was installed from 26 to 30 ft-bgs. Bentonite was installed from 20 to 26 ft-bgs. The well was grouted to approximately 3 ft-bgs using Portland Cement.

MW-26:
The drillers advanced MW-26 from 290 ft-bgs to 320 ft-bgs. Push-ahead sampling difficulties were encountered at 310 ft and 320 ft-bgs and no groundwater samples were collected. The sampler opened but the formation did not produce water. The sampler was left open overnight with the screen exposed at 320 ft-bgs.

Samples collected:
MW26-SB051020-299
MW26-SB051020-308
MW26-SB051020-314

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

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

Projected Work – Near Term:

5/11/2020 – Crew 1: Attempt to sample groundwater with push-ahead sampler deployed at 320 ft-bgs. Continue Drilling MW-26 from 320 ft-bgs.

Crew 2: Drillers will finish deconing drill tooling and move to MW-24.

Other Activities/Remarks:

MW-29 and MW-31 were re-staked in Sunnyside Park.

5/11/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/10/2020

Location: MW-29

Description: MW-29 was re-staked in Sunnyside Park.

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

	Date: 5/10/2020 **Location:** MW-30 **Description:** MW-30 was re-staked in Sunnyside Park.
	Date: 5/10/2020 **Location:** Decon Pad **Description:** Holt deconing drill pipe from MW-25.

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

Date: 5/10/2020

Location: MW-25

Description: Small fracture in sidewalk next to MW-25

Date: 5/10/2020

Location: MW-26 Push-Ahead Sampler from 310 ft

Description: Tripped out push-ahead sampler after 310 ft sampling attempt.

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

Date: 5/10/2020

Location: MW-26-320 ft Push-Ahead Sampler

Description: Push-ahead sampler being tripped in to 320 ft.

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

DATE: 5/11/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom VA – Carlos Aguilar
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-25 boring location.

Drilling:

MW-24:
The drillers advanced MW-26 to 40 ft-bgs. Three soil samples were collected. The highest PID observed was 13.8 ppm in the 34-35 ft-bgs interval.

Samples collected:
MW24-SB051120-14
MW24-SB051120-22
MW24-SB051120-34

MW-25:
The Augustyn well vault was installed approximately 4" above ground surface. The equipment, fencing, and supplies were moved to MW-24 and the area surrounding MW-25 was restored to original condition.

MW-26:
The drillers advanced MW-26 from 320 to 350 ft-bgs. A push-ahead sample was collected at 320 ft-bgs and attempted at 340 ft-bgs. At 340 ft-bgs, the sampler opened but the formation did not produce water. The sampler was left open overnight with the screen exposed at 350 ft-bgs. Groundwater (320 ft-bgs) and solid (348 ft-bgs) color-tec samples were ND.

Samples collected:
MW26-GW051120-320
MW26-SB051120-329
MW26-SB051120-334
MW26-SB051120-348

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

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/12/2020 – Crew 1: Attempt groundwater sample collection at 350 ft-bgs at MW-26 and either continue drilling from 350 ft-bgs or begin well construction (pending discussion).

Crew 2: Continue drilling MW-24 from 40 ft-bgs.

Other Activities/Remarks:

5/12/2020: A joint Safety Tailgate will be conducted at the MW-24 location for both crews working this week.

Photos:

Date: 5/11/2020

Location: MW-25

Description: View of completed vault installation.

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

	Date: 5/11/2020 **Location:** MW-24 **Description:** View of rig setup at MW-24
	Date: 5/11/2020 **Location:** MW-24 **Description:** The 34 to 35-foot sample interval. The highest PID reading of the day (13.6 ppm) was recorded at this interval. The interval was a moist gravelly silt.

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

	Date: 5/11/2020 **Location:** MW-26 **Description:** MW-26 push-ahead sampler from 320 ft.
	Date: 5/11/2020 **Location:** MW-26 **Description:** Gravelly sand from 348-350 ft-bgs with a PID reading of 149.4 ppm.

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

DATE: 5/12/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-25 boring location.

Drilling:

MW-24:
The drillers advanced MW-24 from 40 to 125 ft-bgs. Seven soil samples were collected. The highest PID observed was 58.8 ppm in the 119-120 ft-bgs interval. The drillers broke a drill rod and successfully retrieved it with minimal down time.

Samples collected:
MW24-SB051220-43
MW24-SB051220-56
MW24-SB051220-61
MW24-SB051220-71
MW24-SB051220-84
MW24-SB051220-104
MW24-SB051220-119

MW-26:
A push-ahead sample was attempted at the 350 ft-bgs interval left overnight. When tripping out the sampler, it was discovered that the sampler had cracked and that may have been the reason that a sample was not able to be retrieved at 350 ft-bgs. Drillers advanced MW-26 from 350 to 360 ft-bgs. A Push-ahead sample was collected at 360 ft-bgs using the other crew's sampler. MW-26 GW (360 ft-bgs) color-tec sample was ND. The first ZIST well was installed with a screened interval of 347.5 – 357.5 ft-bgs. At 1530, the drillers noted a crack on the rig that needed to be repaired before any further work could be performed. A welder will be on site 5/13 at 08:00 to fix the damage.

Samples collected:
MW26-SB051220-355
MW26-GW051220-360

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The sample shipment on Monday evening 5/11 was not received by the Emax laboratories. FedEx tracking indicated it was out for delivery at 0800. A follow up call to FedEx indicated the cooler was at the sorting facility and would be delivered by COB. As of 5pm PDT, Emax had not yet received the sample shipment.

Projected Work – Near Term:

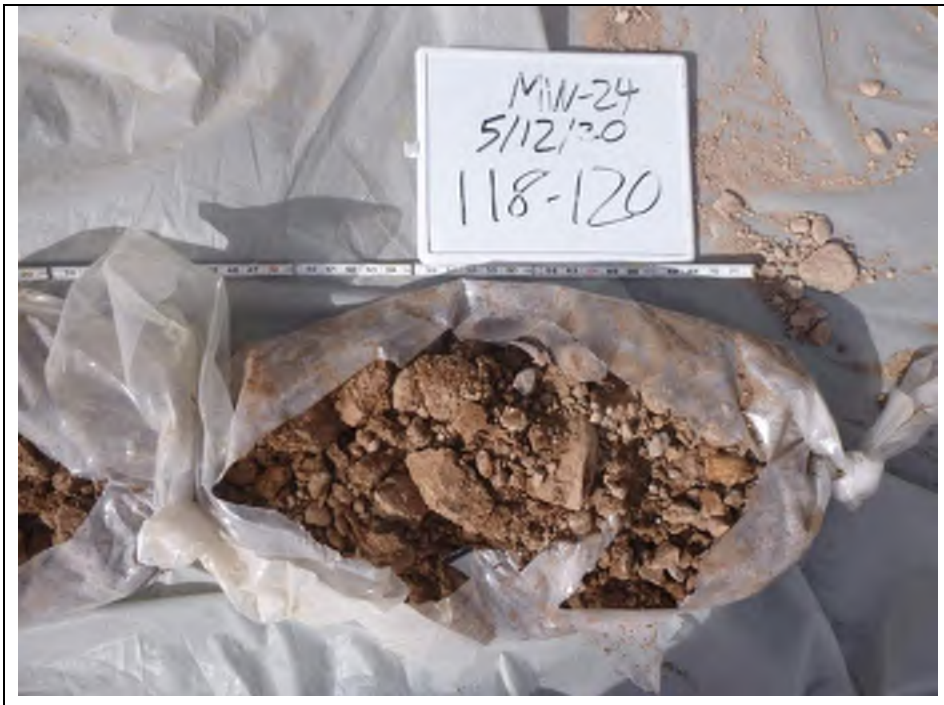
5/13/2020 – Crew 1: Fix weld on rig after acquiring hot work permit, continue well construction.

Crew 2: Continue drilling MW-24 from 125 ft-bgs.

Other Activities/Remarks:

5/13/2020: A joint Safety Tailgate will be conducted at the MW-24 location for both crews working this week.

Photos:



Date: 5/12/2020

Location: MW-24

Description: The 119-120 foot sample interval. The highest PID reading of the day (58.8 ppm) was recorded at this interval. The unit was a cemented silty gravel.

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

	Date: 5/12/2020 **Location:** MW-26 Description: Broken push-ahead sampler.
	Date: 5/12/2020 **Location:** MW-26 Description: Installing lower zone PVC riser.

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

Date: 5/12/2020

Location: MW-26

Description: Rig damage.

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

DATE: 5/13/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom All Welding – Juan Perez All Welding – Pablo Dasalvia
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-25 boring location.

Drilling:

MW-24:
The drillers advanced MW-26 from 125 to 190 ft-bgs. Six soil samples were collected. The highest PID observed was 51.1 ppm in the 151 – 152.5 ft-bgs interval. A groundwater samples was collected using a bailer from the perched water zone at 160 ft-bgs (Color-tec result ND). The drill rig brace broke that holds the head on the rails and needs to be welded back together. Holt took part that needs to be welded to offsite welder to be repaired tonight.

Samples collected:
MW24-GW051320-160
MW24-SB051320-132
MW24-SB051320-149
MW24-SB051320-152
MW24-SB051320-166
MW24-SB051320-170
MW24-SB051320-186

MW-26:
All Welding was on site to return the rig to operation. The first ZIST well was installed with a screened interval of 347.75 – 357.75 ft-bgs. Sand was installed from 344 to 360 ft-bgs. Bentonite pellets were installed from 328 to 344 ft-bgs. When installing the second ZIST well, the bottom 42 ft of well casing was accidentally dropped and the bottom of the second well now presumably rests from 286 to 328 ft-bgs. The drill crew was unsuccessful in attempting to retrieve the dropped casing and will continue efforts 5/14/20.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The sample cooler shipped on Monday 5/11, which was scheduled for delivery on Tuesday morning, arrived at the lab this morning. Holding times will be missed for VOC soil samples included in that cooler, though the cooler temperature was within limits. CDM Smith will proceed with analyzing the samples and will validate and qualify the data as necessary.

Projected Work – Near Term:

5/14/2020 – Crew 1: Continue attempt to retrieve the second ZIST well. Continue well construction on MW-26.

Crew 2: Continue drilling MW-24 from 190 ft-bgs.

Other Activities/Remarks:

5/14/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/13/2020

Location: MW-24

Description: The 151-152.5 foot sample interval. The highest PID reading of the day (51.1 ppm) was recorded at this interval.

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

Date: 5/13/2020

Location: MW-24

Description: Perched water sample collected from bailer at 160 ft-bgs.

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

Date: 5/13/2020

Location: MW-24

Description: View of broken drill rig brace.

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

Date: 5/13/2020

Location: MW-26

Description: View of welding repair.

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

Date: 5/13/2020

Location: MW-26

Description: View of second ZIST well installation.

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

DATE: 5/14/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom VA – Shannon Smith
Visitors/Others:	A1 to service portable toilet MP Environmental to deliver 10 cu yrd roll off

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-25 boring location.

Drilling:

MW-24:
Holt reinstalled brace back onto rig. The drillers advanced MW-26 from 190 to 230 ft-bgs. Four soil samples were collected. The highest PID observed was 47.9 ppm in the 227 – 228 ft-bgs interval. A groundwater sample was collected using the push ahead water sample from 220 ft-bgs (color-tec result ND).

Samples collected:
MW24-GW051420-220
MW24-SB051420-192
MW24-SB051420-202
MW24-SB051420-215
MW24-SB051420-227

MW-26:
The drill crew continued to attempt to retrieve the dropped casing but was unsuccessful. The well was re-drilled to total depth (360 ft-bgs) to remove the dropped screen and casing and removed the installed PVC for the deepest well screen and all annular materials. The process consisted of coring the borehole first to remove PVC, bentonite, and sand filter pack, followed by advancing casing to the original total depth and cleaning out the borehole. This process should have reduced the likelihood of pushing down bentonite and smearing the borehole wall, therefore the team decided that it was appropriate to install the deepest interval at the originally-planned interval (348-358 feet bgs) after completion of the cleanout. Well D was reconstructed and the sand pack was started.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Issues related to MW-26 casing retrieval and re-drilling discussed above and in the May 13th DQCR.

Projected Work – Near Term:

5/15/2020 – Crew 1: Continue well construction on MW-26.

Crew 2: Continue drilling MW-24 from 230 ft-bgs and/or begin well construction.

Other Activities/Remarks:

5/15/2020: A joint Safety Tailgate will be conducted at the MW-25 location for both crews working this week.

Photos:

Date: 5/14/2020

Location: MW-24

Description: The 227-228 -foot sample interval. The highest PID reading of the day (47.9 ppm) was recorded at this interval.

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

Date: 5/14/2020

Location: MW-24

Description: Soil Cuttings from MW-24. The interval from 218-220 was wet sand and gravel.

Date: 5/14/2020

Location: Staging Area

Description: Rolloff box delivery. Box will be repositioned before loading.

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

DATE: 5/15/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Aaron Kuper Holt Services – Alex Langdon Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA – Marc Yalom
Visitors/Others:	Badger to scout drilling locations in park area

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler (x2) • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-25 boring location.

Drilling:

MW-24:
The drillers advanced MW-26 from 230 to 250 ft-bgs. Two soil samples were collected. The highest PID observed was 31.2 ppm in the 239 - 240 ft-bgs interval.

Samples collected:
MW24-SB051520-239
MW24-SB051520-248

MW-26:
Well D seal and filter pack were completed with an interval of 328 to 342 ft-bgs and 342 to 360 ft-bgs, respectively. Well C casing was constructed with a screened interval of 315 to 325 ft-bgs. Well C seal and filter pack were completed with an interval of and 250 to 311.5 ft-bgs and 311.5 to 328 ft-bgs, respectively. Well B casing was constructed with a screened interval of 235 to 245 ft-bgs. 360 ft of 6" casing was removed from the borehole after the well seal rose above the termination of the 7 in casing at 260 ft-bgs.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/16/2020 – Crew 1: Off

Crew 2 leaving for 1-week break. Crew 1 will complete installation of MW-24 after completion of MW-26.

Daily Quality Control Report
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Salt Lake City, Utah

5/17/2020 – Crew 1: Continue well construction on MW-26.

Other Activities/Remarks:

Holt Crew 2 cleaned up area around MW-24, secured area, decon'd piping from MW-24.

5/17/2020: A safety Tailgate will be conducted at the MW-26.

Photos:

	Date: 5/15/2020 **Location:** MW-24 **Description:** The 239-240 -foot sample interval. The highest PID reading of the day (31.2 ppm) was recorded at this interval.
	Date: 5/15/2020 **Location:** MW-24 **Description:** View of MW-24 secure prior to Holt Crew 2's break.

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	Date: 5/15/2020 **Location:** MW-26 **Description:** Well C sump, slotted casing, and ZIST receiver.
	Date: 5/15/2020 **Location:** MW-26 **Description:** Removing 6 in casing.

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

DATE: 5/17/2020	**Prepared by:** Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Betsy Bott Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr.
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-26 boring location.

Drilling:

MW-26:
Well B filter pack and seal were completed with an interval of 231-250 ft-bgs and 218-231 ft-bgs, respectively. Well A casing was constructed with a screened interval of 205-215 ft-bgs. Well A filter pack and seal were completed with an interval 201-218 ft bgs and 34-201 ft-bgs, respectively. Bentonite grouting materials and equipment were staged for work to be completed 5/18.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/18/2020 – Crew 1: Finish well construction on MW-26, move to MW-24 and begin well construction. Close out trenching and excavation permit.

Other Activities/Remarks:

5/18/2020: A safety Tailgate will be conducted at the MW-26 location.

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Salt Lake City, Utah

Photos:

	Date: 5/17/2020 **Location:** MW-26 **Description:** Holt installing the shallowest ZIST well (Well A).
	Date: 5/17/2020 **Location:** MW-26 **Description:** Holt adding bentonite chips.

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

DATE: 5/18/2020	**Prepared by:** Joe Miller/Ben Carreon/Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Betsy Bott CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr.
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-26 boring location.

Drilling:

MW-26:
Bentonite grout was installed from 4-30 ft-bgs. Drill pipe, equipment, fencing, and other supplies were moved to the laydown area. The area was swept and put back to original condition. Temporary fencing was placed around the MW-26 borehole to protect it until the well vault is installed.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/19/2020 – Crew 1: Begin well construction at MW-24.

Other Activities/Remarks:

5/19/2020: A safety Tailgate will be conducted at the MW-24 location.

5/18/2020: Additional activities

MW-01S Pump tubing fished from well.

A composite soil sample was collected from Roll-off Bin RBR 250327 for characterization.

PID readings were measured at vapor monitoring points and depth to water measurements were taken at wells at MW-23, MW-25, MW-27, and MW-28 based on the type of well. The results are listed below:

MW-23	
Well	**Depth to Water (ft-btoc)**
MW-23A	185.32

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MW-23B	196.62
MW-23C	215.16

MW-25	
Well	**Depth to Water (ft-btoc)**
MW-25A	176.82
MW-25B	182.07
MW-25C	205.72
Well Vapor Point	**PID Reading (PPM)**
28 ft	0.0
100 ft	0.2

MW-27	
Depth to water (ft-btoc) = 185.15	
Well Vapor Point	**PID Reading (PPM)**
28 ft	8.7
48 ft	1.8
75 ft	2.6
113 ft	3.3
155 ft	0.3

MW-28	
Depth to water (ft-btoc) = 184.37	
Well Vapor Point	**PID Reading (PPM)**
24 ft	0.0
48 ft	0.3
118 ft	1.2

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Salt Lake City, Utah

Photos:

	Date: 5/18/2020 **Location:** MW-26 **Description:** Holt mixing grout.
	Date: 5/18/2020 **Location:** MW-26 **Description:** View of fencing surrounding MW-26. A well vault will be installed once received.

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Salt Lake City, Utah

	Date: 5/18/2020 **Location:** SLC VA **Description:** Holt transporting drilling equipment to laydown area for decontamination.
	Date: 5/18/2020 **Location:** MW-30 Location **Description:** Holt transporting equipment to MW-30 location.

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Salt Lake City, Utah

DATE: 5/19/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr.
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-24 boring location.

Drilling:

MW-24: The well and soil vapor points were installed. The well is screened from 209.5-239.5' bgs. The sand filter pack was installed to 201' bgs. Bentonite chips have been placed and hydrated to 135' bgs. The soil vapor points were installed at 130', 104', 60' and 32' bgs.
Depth to water before installation was 186.30' bgs.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The batteries were dead on the drill rig at MW-24 and had to be jump started.

Projected Work – Near Term:

5/20/2020 – Crew 1: Finish well construction at MW-24

Other Activities/Remarks:

5/20/2020: A safety Tailgate will be conducted at the MW-24 location.

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Photos:

Date: 5/19/2020

Location: MW-24

Description: Four inch PVC riser with soil vapor point installed at 130'.

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Date: 5/19/2020

Location: MW-24

Description: Feeding tubing for soil vapor points while installing well.

Daily Quality Control Report
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Date: 5/19/2020

Location: MW-24

Description: Holt vibing back casing to settle sand pack.

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

DATE: 5/20/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. Wasatch – Kiel Keller Wasatch – Anna Fiorini VA- Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted near the MW-24 boring location.

Drilling:

MW-24: Well construction resumed. The soil vapor points were sand packed and the boring was backfilled with bentonite to 28' bgs. The well was grouted from 28 to ~2' bgs.

The MW-24 equipment was mobed to the laydown area.

Well Repairs:
Well repairs were completed at MW-18, MW-19, and MW-20S/D. These repairs included pulling pumps, switching nylon cord for steel cable, tightening and securing tubing and well equipment, and attaching well tags. As the pump fittings were corroded, everything was cleaned prior to redeployment of the pumps.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

A 30-minute delay was encountered due to hail.

Projected Work – Near Term:

5/21/2020 – Crew 1: Decon drill rods and casing. Set up at MW-30

Other Activities/Remarks:

5/21/2020: A safety Tailgate will be conducted at the laydown yard.

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Photos:

	Date: 5/20/2020 **Location:** MW-24 **Description:** Holt pumping grout for surface seal.
	Date: 5/20/2020 **Location:** MW-24 **Description:** Holt mobing equipment from MW-24 well site.

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Date: 5/20/2020

Location: MW-19

Description: Fitting on MW-19 shows corrosion. Build up was cleaned prior to redeployment.

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

DATE: 5/21/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA- Marc Yalom VA – Carlos Aguilar
Visitors/Others:	A1 Services – portable toilet service

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted in the Laydown area.

Drilling:

Holt Deconned drill steel from MW-26 boring location. The drill rig and pipe were staged at the MW-30 work area. Carlos Aguilar issued the excavation permit for MW-30 and received the completed permits for MW-24 and MW-26.

Photos were taken of Sunnyside park locations prior in anticipation of work beginning next week.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

The Augustyn surface completions for MW-24 and MW-26 were delayed at the foundry and will be installed next week upon arrival.

Projected Work – Near Term:

5/22/2020 – Crew 1: Begin drilling MW-30

Other Activities/Remarks:

5/22/2020: A safety Tailgate will be conducted at the MW-30 location.

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

Photos:

	Date: 5/21/2020 **Location:** SLC VA **Description:** Holt moving equipment to MW-30 location from laydown area.
	Date: 5/20/2020 **Location:** MW-30 **Description:** Work zone setup and fencing

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Salt Lake City, Utah

	Date: 5/21/2020 **Location:** MW-29 **Description:** MW-29 area in grass near manhole at Sunnyside park. Note: distressed vegetation near boring prior to work.
	Date: 5/21/2020 **Location:** MW-31 **Description:** Grassy area in park.

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

DATE: 5/22/2020	**Prepared by:** Joe Miller/Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Ben Carreon CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Scottie Lampman Holt Services – Michael Leui Jr. VA- Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-30 drilling site.

Drilling:

The MW-30 boring was advanced to 110' bgs. Seven soil samples were collected. The highest PID was 154.4 ppm in the 101-103' interval. This unit was cemented gravel and was likely due to heat produced by the drilling and extrusion of the sample from the core barrel. The 9" sonic casing was advanced to 30' bgs. The 8" sonic casing is currently advanced to 100' bgs.

Samples collected
MW30-SB052220-15
MW30-SB052220-29 + Dup
MW30-SB052220-48
MW30-SB052220-53
MW30-SB052220-74
MW30-SB052220-95
MW30-SB052220-102 (PID 154.4 ppm)

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained.

Projected Work – Near Term:

5/26/2020 – Crew 2: Prepare for Sunnyside park wells; Hydrovac MW-29 and MW-31

Other Activities/Remarks:

5/26/2020: A safety Tailgate will be conducted at the laydown area; Holt Crew 2 expected to be onsite around 1030.

Daily Quality Control Report
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Salt Lake City, Utah

Photos:

	Date: 5/22/2020 **Location:** MW-30 Soil cuttings **Description:** Interval from 100-103',had highest PID reading encountered. Note: cemented portions on left side of core bag.
	Date: 5/22/2020 **Location:** MW-30 **Description:** Holt drilling at MW-30.

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700 South 1600 East PCE Plume
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Date: 5/22/2020

Location: MW-30 Soil cuttings

Description: Pale gray clayey silt unit from 35'-39' bgs. The unit was cohesive and moist to wet.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

DATE: 5/26/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konan Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Wasatch – Blake Downey
Visitors/Others:	MP Environmental – Roll-off delivery ZIST material delivery

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown area.

Utility Clearance:

Badger Daylighting was on site to clear boreholes at MW-29 and MW-31 in Sunnyside Park. MW-29 was cleared to 8.5 feet (maximum PID reading was 0.3 ppm). The soil was very cobbled, similar to previous holes cleared. MW-31 did not have cobbles and was cleared to 10 feet bgs (maximum PID reading was 0.6 ppm). Both holes were backfilled with pea gravel (and bentonite at MW-31). Fencing was placed around each borehole location. Soil and water generated during clearance were emptied into the containment area in the IDW yard. Some of the water was pumped into the poly tank, but the rest will have to be pumped tomorrow.

Drilling:

The drillers installed the Augustyn completion at MW-24 and emptied soil from the containment area into the soil rolloff bin to make room for more soil and water generated today. They adjusted the heights of the PVC casings at MW-26 and are prepared to install the surface completion tomorrow if the remaining stickup can be shortened. No drilling was performed, and no samples were collected.

Samples collected
None

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained. Universal temperature checks are being conducted at the gate prior to entry.

PVC casing stickups at MW-26 are high enough that the Augustyn completion would have to stick up 6 inches or so above ground surface. The drillers will evaluate options to shorten the stickups to mount the completion flush.

Projected Work – Near Term:

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5/27/2020 – Crew 2: Mobilize drill rig to MW-29, pump water from IDW containment into poly tanks, install the surface completion at MW-26.

Other Activities/Remarks:

5/27/2020: A safety Tailgate will be conducted at the laydown area; Holt Crew 2 will meet at 7 am.

Photos:

	Date: 5/26/2020 **Location:** Sunnyside Park **Description:** Soil rolloff bin was delivered to south side of Sunnyside Park in preparation for drilling.
	Date: 5/26/2020 **Location:** MW-29 **Description:** Badger Daylighting clears MW-29 of utilities to 8.5 feet bgs.

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Salt Lake City, Utah

	Date: 5/26/2020 **Location:** MW-29 **Description:** Borehole location was cleared to 8.5 feet bgs. Badger encountered many large cobbles and boulders.
	Date: 5/26/2020 **Location:** MW-31 **Description:** Cleared boreholes were backfilled with pea gravel, coned off, and fenced in.

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

	Date: 5/26/2020 **Location:** IDW Yard **Description:** Badger unloads their soil and water into the soil containment area.
	Date: 5/26/2020 **Location:** MW-24 **Description:** Holt installs an Augustyn surface completion at MW-24.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

Date: 5/26/2020

Location: MW-26

Description: Holt prepares borehole and PVC stickups at MW-26 for Augustyn surface completion. Area fenced off at the end of the day.

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

DATE: 5/27/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown area.

VA Dispatch Activity:

The VA dispatch sent officers to the Sunnyside Gate to help oversee movement of equipment from the laydown area to MW-29 in Sunnyside Park. Officers Ferris and Dennis assisted in controlling the gate while drillers moved the rig off site. They allowed us to continue moving casing, bobcat, and hopper to the drilling location through the gate as long as we didn't allow any cars in. Once we moved drilling equipment out, we called back in to dispatch and officers were sent to lock the gate.

Drilling:

The drillers mobilized equipment to MW-29 and began drilling. The borehole was advanced to 50 feet bgs. The core barrel has been advanced to 60 feet but remains in place. The 50 to 60-foot core sample is ready to be removed, sampled, and logged in the morning. The highest PID reading (92.5 ppm) was measured at 42 feet deep. Other elevated readings were measured from 21 to 37 feet bgs with highs at 24 feet (75.3 ppm), 32 feet (80.4 ppm), and 35 feet (75.9 ppm). Four parent samples were collected.

Samples collected
MW29-SB052720-16
MW29-SB052720-24
MW29-SB052720-32
MW29-SB052720-42
FD21-SB052720
TB33-SB052720

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained. Universal temperature checks are being conducted at the gate prior to entry.

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The gate traffic and closure will be one of the biggest issues to mitigate. Drillers will use flaggers to safely move equipment across the road and/or through the Sunnyside Gate. Dispatch and the VA police officers have been very helpful in our mobilization.

Projected Work – Near Term:

5/28/2020 – Crew 2: Drilling will continue at MW-29. Surface completion at MW-26 is on hold while we examine ways to lower the casing levels of all four probes.

Other Activities/Remarks:

5/28/2020: A safety Tailgate will be conducted at the laydown area; Holt Crew 2 will meet at 7 am. If traffic before 7am is light, they will call dispatch and ask about getting assistance out the Sunnyside gate.

Photos:

	Date: 5/27/2020 **Location:** MW-29 **Description:** The rig set up at MW-29 with view facing south.
	Date: 5/27/2020 **Location:** MW-29 **Description:** Holt laid out plywood to minimize damage to the grass as they mobilized the rig at MW-29.

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	Date: 5/27/2020 **Location:** MW-29 **Description:** Soil sample being collected at 24 feet bgs by CDM Smith.
	Date: 5/27/2020 **Location:** MW-29 **Description:** Soil core from 30 feet (bottom of frame) to 40 feet (top of frame) being measured by CDM Smith**.**

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Date: 5/27/2020

Location: MW-29

Description: Highest detection today on the PID was at 42 feet deep measuring 92.5 ppm.

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

DATE: 5/28/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-29 location.

VA Dispatch Activity:

A conversation between VA police, Sunnyside Gate staff, and CDM Smith was held to clarify gate use and availability of staff to open the Sunnyside gate for the drill crew. Mandatory temperature screening and oversight will continue. When the drillers have to access the laydown area to bring equipment, the VA dispatch number will be called, officers will oversee opening the gate, and a gate staff member will come to the gate to screen the drillers in and out while they get what they need. Police reiterated with CDM Smith and Holt that the gate will not be accessible without VA police oversight.

Drilling:

Drilling continued at MW-29 beginning at 60 feet bgs. Samples were collected at approximately 10-foot intervals, targeting the highest PID readings. The highest detection was 29.4 ppm measured at 97 feet bgs. At 115 feet, the core barrel broke for the third time today. Drillers were able to fish the broken casing out each time, but drilling was delayed as a result. The soil core from 110 to 115 was not able to be recovered after the final piece of broken casing was removed. Five feet of soil core will be lost. The borehole is currently advanced to 115 feet bgs. Drilling will begin tomorrow using 7-inch casing. The 8-inch casing extends to 100 feet bgs.

Samples collected
MW29-SB052820-56
MW29-SB052820-67
MW29-SB052820-72
MW29-SB052820-82
MW29-SB052820-97
MW29-SB052820-104

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained. Universal temperature checks are being conducted at the gate prior to entry.

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

The grout at MW-26 was dug out slightly to expose the threaded joint of the top segment of casing D. Attempting to twist the PVC seems to result in loosening a threaded joint lower down on a different segment. In order to un-thread the top joint, a pair of pliers may be of use to hold the PVC still while loosening the top segment.

Holt would like to explore the option of setting up a laydown area in the Sunnyside Park parking lot as a way to minimize traffic through Sunnyside gate.

Projected Work – Near Term:

5/29/2020 – Crew 2: Drilling will continue at MW-29 using 7-inch casing beyond 100 feet.

Other Activities/Remarks:

5/29/2020: A safety Tailgate will be conducted at MW-29; Holt Crew 2 will meet at 7 am.

Photos:

	Date: 5/28/2020 **Location:** MW-29 **Description:** The rig closed up for the day at MW-29 with fencing surrounding the work area.
	Date: 5/28/2020 **Location:** MW-29 **Description:** Holt laid out plywood to minimize damage to the grass as they work at MW-29.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 5/28/2020 **Location:** MW-29 **Description:** Mostly clay from 71 to 77.5 feet bgs and from 80 to 95 feet bgs.
	Date: 5/28/2020 **Location:** MW-29 **Description:** Mostly Silty gravel with sand from 95 to 110 feet bgs.

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

Date: 5/28/2020

Location: MW-26

Description: Bentonite grout was dug out to below the threaded joint of casing D (far left stickup with spiral black tape).

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

DATE: 5/29/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-29 location.

Drilling:

Drilling continued at MW-29 beginning at 115 feet bgs. Samples were collected at approximately 10-foot intervals, targeting the highest PID readings. The highest detection was 46.0 ppm measured at 172 feet bgs. Elevated PID readings were measured at 122 feet (43.4 ppm), 134 feet (37.7 ppm), 164 to 167 feet (up to 42.2 ppm), 171 to 172 feet (up to 46.0 ppm), 177 to 180 feet (up to 51.2 ppm), and 185 to 187 feet (up to 45.8 ppm).

A groundwater sample was able to be collected at 120 feet bgs. Soil cores below 120 became dry and did not produce water until approximately 188 feet bgs. Drilling will begin tomorrow with a water sample collected near 192 feet bgs.

Samples collected
MW29-SB052920-115
MW29-SB052920-122
MW29-GW052920-120
MW29-SB052920-137
MW29-SB052920-144
MW29-SB052920-155
MW29-SB052920-167
MW29-SB052920-178
MW29-SB052920-187
TB34-SB052920

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained. Universal temperature checks are being conducted at the gate prior to entry.

Holt would like to explore the option of setting up a laydown area in the Sunnyside Park parking lot as a way to minimize traffic through Sunnyside gate. Sunday would be an ideal day to move equipment through Sunnyside Gate with minimal traffic.

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Salt Lake City, Utah

Projected Work – Near Term:

5/30/2020 – Day Off.

5/31/2020 – Crew 2: Drilling will continue at MW-29 at 190 feet using 7-inch casing. Water sampling will begin at 20-foot intervals.

Other Activities/Remarks:

5/31/2020: A safety Tailgate will be conducted at MW-29; Holt Crew 2 will meet at 7 am.

Photos:

	Date: 5/29/2020 **Location:** MW-29 **Description:** The rig outriggers do not line up with any underground utilities that were located in the vicinity.
	Date: 5/29/2020 **Location:** MW-29 **Description:** A view of the MW-29 location looking south with the fire hydrant and water line in view.

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Salt Lake City, Utah

	Date: 5/29/2020 **Location:** IDW Yard **Description:** The groundwater sample from 120 feet bgs did not have any Color Tec detection.
	Date: 5/29/2020 **Location:** IDW Area **Description:** Water was removed from the spill containment area and soil from Badger's work on Tuesday remains. The third poly tank is nearly full. The first two remain empty apart from some sediment on the bottom.

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

DATE: 5/31/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-29 location.

Drilling:

Drilling continued at MW-29 beginning at 190 feet bgs. Samples were collected at approximately 10-foot intervals, targeting the highest PID readings. The highest reading was 62.8 ppm at 199 feet bgs. In contrast, the soil cores deeper than 200 feet were all 0.0 ppm on the PID. The borehole was advanced to 230 feet bgs.

A groundwater sample was able to be collected at 191 feet bgs. Soil cores below 190 feet became very clay-rich and did not produce water. A groundwater sample was not attempted at 210 feet bgs due to the lithology. Drilling will begin tomorrow with a water sample collected at 230 feet bgs. If no water is produced, the groundwater sample will be attempted at 240 feet bgs.

Samples collected
MW29-GW053120-191
MW29-SB053120-198
MW29-SB053120-207
FD22-SB053120 (from 207 feet bgs)
MW29-SB053120-217
MW29-SB053120-227
TB35-SB053120

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA was requiring "Universal Masking," however this mandate has been modified to allow for unmasking outdoors if required distance is maintained. Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake City went under curfew at 8pm on Saturday, May 30. Curfew will be lifted at 6am on Monday, June 1. Under the curfew, those allowed on public streets will be limited to law enforcement, news media, medical personnel, and those transporting food, traveling to somewhere, patronizing businesses, fleeing danger, or experiencing homelessness. Work at the site was not impacted by the curfew.

Projected Work – Near Term:

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

6/1/2020 – Crew 2: A groundwater sample will be collected from MW-29 at 230 feet bgs. Drilling will then continue from 230 feet using 7-inch casing. Water sampling will continue at 20-foot intervals.

Crew 1: Pete's crew will mobilize back on site and begin drilling operations at MW-30 next to the parking garage.

Other Activities/Remarks:

6/1/2020: A safety Tailgate will be conducted at MW-29; Holt Crew 2 and three staff from CDM Smith will meet at 7 am.

Photos:

	Date: 5/31/2020 **Location:** MW-29 **Description:** First attempt at water sampling at 191 feet is not successful due to clogged screen on the push-ahead sampler.
	Date: 5/31/2020 **Location:** MW-29 **Description:** The sampler is deconned and another attempt is made to place the sampler and get it to open.

Daily Quality Control Report
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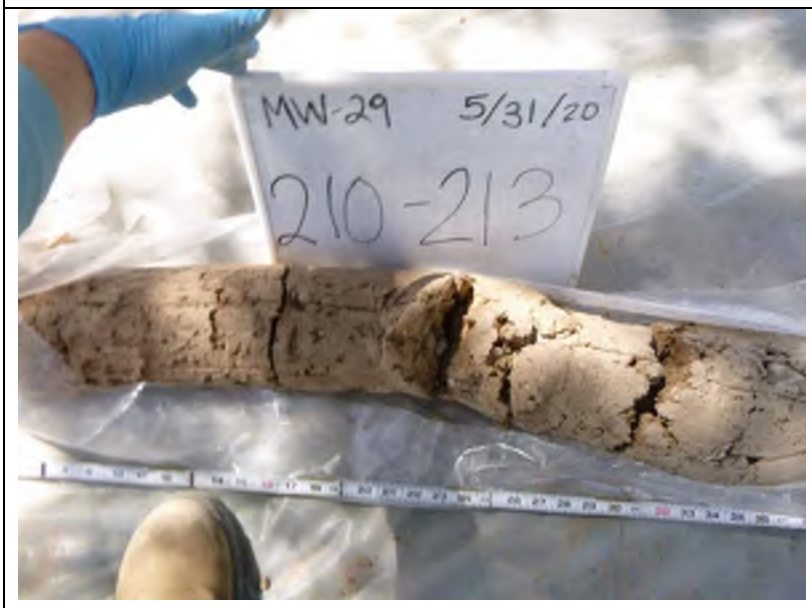
	Date: 5/31/2020 **Location:** MW-29 **Description:** Soil cores in 10-foot intervals from 190 feet (lower left) to 230 feet (upper right). There was a distinct drop in PID readings in soil cores deeper than 200 feet. (All readings were 0.0 ppm). There was also a distinct color change in the soil from reddish brown to gray at 210 feet bgs.
	**Date: 5/31/2020** **Location:** MW-29 **Description:** The lithology at 210 feet was very clay-rich and did not appear to be saturated with water.

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

	Date: 5/31/2020 **Location:** MW-29 **Description:** The soil core (gravelly clay) at 220 to 222.5 feet bgs prior to splitting the core open.
	Date: 5/31/2020 **Location:** MW-29 **Description:** The soil core (gravelly clay) at 220 to 222.5 feet bgs after splitting the core open.

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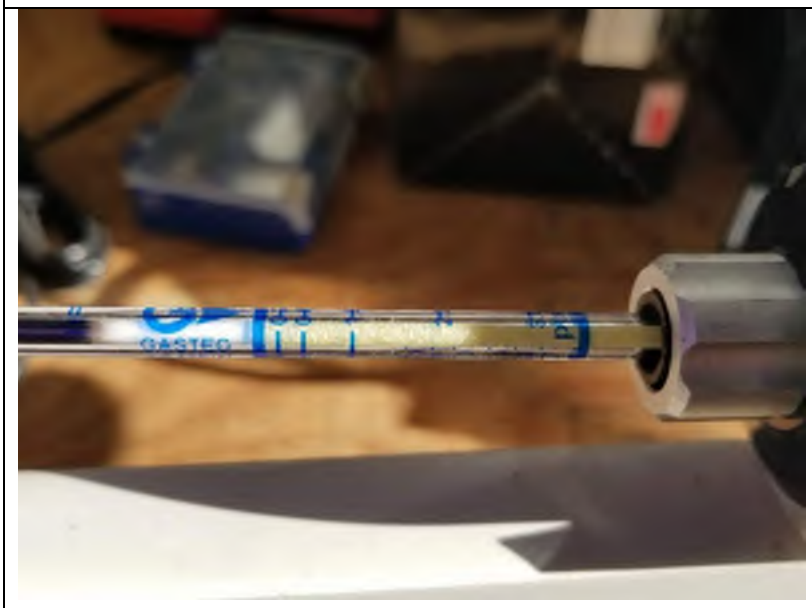
Salt Lake City, Utah

	Date: 5/31/2020 **Location:** IDW Yard **Description:** The groundwater sample from 191 feet bgs during purge of the second VOA. No color change was observed during the process.
	**Date: 5/31/2020** **Location:** IDW Yard **Description:** The groundwater sample from 191 feet bgs did not have a Color Tec detection.

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

DATE: 6/1/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen CDM Smith – Frank Morris Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr.
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the MW-29 location.

Drilling:

Drilling continued at MW-29 beginning at 230 feet bgs. Soil samples were collected at approximately 10-foot intervals, targeting the highest PID readings. The highest detection was 88.2 ppm at 256 feet bgs. The borehole was advanced to 260 feet bgs.

A groundwater sample was able to be collected at 230 feet bgs. The soil core from 235 to 240 was saturated with water but was followed by a thick clay. A groundwater sample from this saturated interval was not able to be collected. The soil core became saturated again at 256 feet to 260 feet, and the push-ahead sampler was advanced in order to collect a sample at 260 feet in the morning. Drilling will begin tomorrow with a water sample collected at 260 feet bgs.

Pete and Mike from Crew #2 were briefly on site after arriving in Salt Lake City. They checked on equipment to make sure everything is ready to go in the morning.

Samples collected
MW29-GW06120-230
MW29-SB060120-240
MW29-SB060120-250
MW29-SB060120-256

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking," requiring a face cover be worn at all times while working on the campus. Universal temperature checks are being conducted at the gate prior to entry.

The State of Utah is going into a State of Emergency as of June 1st. As a part of this, the City of Salt Lake is going under curfew every weekday this week from 8pm to 6am. Under the curfew, those allowed on public streets will be limited to law

enforcement, news media, medical personnel, and those transporting food, traveling to somewhere, patronizing businesses, fleeing danger, experiencing homelessness, or those given permission to be on the streets by the City of Salt Lake. Work at the site is not expected to be impacted by the curfew.

Projected Work – Near Term:

6/2/2020 – Crew 2: A groundwater sample will be collected from MW-29 at 260 feet bgs. Drilling will then continue from 260 feet using 6-inch casing. Water sampling will continue at 20-foot intervals.

Crew 1: Pete's crew will resume drilling operations at MW-30, next to the parking garage.

Other Activities/Remarks:

6/2/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and three staff from CDM Smith will meet at 7 am.

Photos:

	Date: 6/1/2020 **Location:** MW-29 **Description:** Collected a GW sample at 230 feet bgs. Color Tec sample from this depth was non-detect for VOCs.

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

	Date: 6/1/2020 **Location:** MW-29 **Description:** Soil core was saturated from 235 to 240 feet bgs. Lithology just below 240 changed into clay and a groundwater sample was not able to be collected.
	Date: 6/1/2020 **Location:** MW-29 **Description:** Clay and clay with gravel from 240 feet to 255 feet bgs was not saturated and did not produce water.

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Salt Lake City, Utah

	Date: 5/31/2020 **Location:** MW-29 **Description:** The lithology at 250 feet was very clay-rich and did not produce a water sample.
	Date: 6/1/2020 **Location:** MW-29 **Description:** The push-ahead sampler after attempting to collect a groundwater sample at 250 feet. Clay clogged the screen.

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Salt Lake City, Utah

Date: 6/1/2020

Location: MW-29

Description: The soil core (gravelly clay) at 256 to 260 feet bgs was saturated with water. The push-ahead sampler was advanced into the formation and will be opened in the morning to collect a water sample.

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

DATE: 6/2/2020	**Prepared by:** Kimberly Yauk and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen CDM Smith – Frank Morris Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
Drilling resumed at MW-30 beginning at 110 feet bgs. Soil samples are being collected at approximately 20-foot intervals, targeting the highest PID readings. The highest detection was 168 ppm at 127 feet bgs, with readings over 100 ppm at 169-170 feet bgs. Soil cores with detections over 100 ppm were containerized in drums for separate characterization. The borehole was advanced to 190 feet bgs.

Drill Crew #2:
Drilling continued at MW-29 beginning at 260 feet bgs. Soil samples are being collected at approximately 10-foot intervals, targeting the highest PID readings. The highest detection was 32.4 ppm at 267 feet bgs. The borehole was advanced to 271 feet bgs. Drillers advanced the core barrel to 280 feet and a soil core will be removed at the start of the day tomorrow. A cemented gravel layer was encountered from 270 to 271 feet bgs.

A groundwater sample was able to be collected at 260 feet bgs, although the volume collected was low. Color-Tec samples were not able to be collected. Water samples will continue to be collected at approximately 20-foot intervals.

Samples collected
MW29-GW060220-260
MW29-SB060220-267
MW30-SB060220-111
MW30-SB060220-135
MW30-SB060220-169
MW30-SB060220-178

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700 South 1600 East PCE Plume
Salt Lake City, Utah

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. Beginning on April 15th, the SLC VA is requiring "Universal Masking," requiring a face cover be worn at all times while working on the campus. Universal temperature checks are being conducted at the gate prior to entry.

The State of Utah is in a State of Emergency as of June 1st. As a part of this, the City of Salt Lake is going under curfew every weekday this week from 8pm to 6am. Under the curfew, those allowed on public streets will be limited to law enforcement, news media, medical personnel, and those transporting food, traveling to somewhere, patronizing businesses, fleeing danger, experiencing homelessness, or those given permission to be on the streets by the City of Salt Lake. Work at the site is not expected to be impacted by the curfew.

The casing height of MW-26D was adjusted to allow the surface completion to be flush or nearly flush with the ground surface. Holt crew #1 will set the Augustyn surface completion in concrete tomorrow.

Projected Work – Near Term:

6/3/2020 – Crew 1: Pete's crew will continue drilling at MW-30, next to the parking garage. Once groundwater is encountered they will collect water samples at approximately 20 foot intervals.

Crew 2: Drilling will continue at MW-29 from 270 feet using 6-inch casing. Water sampling will continue at 20-foot intervals.

Other Activities/Remarks:

6/3/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and three staff from CDM Smith will meet at 7 am.

Photos:

Date: 6/2/2020

Location: MW-29

Description: The push-ahead sampler was having difficulty opening during collection of a groundwater sample at MW-29 at 260 feet bgs. The sampler would open above ground without difficulty, but at depth, air pressure, vibrations, and pulling back on the sampler only resulted in an opening less than 1 inch.

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Salt Lake City, Utah

	Date: 6/2/2020 **Location:** MW-29 **Description:** Soil core was wet at 260 to 262 feet bgs and has a light gray color like that seen at 210 to 230 feet bgs.
	Date: 6/2/2020 **Location:** MW-29 **Description:** Clay and clay with gravel from 267.5 to 270 feet bgs.

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

	Date: 6/2/2020 **Location:** MW-29 **Description:** The drillers noted a cemented gravel layer at 270 to 271 feet bgs.
	Date: 6/2/2020 **Location:** MW-30 **Description:** The soil core at 110 to 113 feet bgs is a well graded mix of sand, silt and gravel.

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Salt Lake City, Utah

	Date: 6/2/2020 **Location:** MW-30 **Description:** The soil core at 150 to 152 feet bgs.
	Date: 6/2/2020 **Location:** MW-30 **Description:** The soil core at 187 to 190 feet bgs. This was the final soil core removed today from MW-30.

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Salt Lake City, Utah

	Date: 6/2/2020 **Location:** MW-26 **Description:** The casing at MW-26D was lowered by first inserting a bottle brush on a string to below the threaded joint in order to prevent rocks or particles from falling into the casing.
/	**Date: 6/2/2020** **Location:** MW-26 **Description:** The photo shows the approximate depths of each casing stickup at MW-26 relative to the surface completion.

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

DATE: 6/3/2020	**Prepared by:** Kimberly Yauk and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen CDM Smith – Frank Morris Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
Drilling continued at MW-30 beginning at 190 feet bgs. Soil samples are being collected at approximately 20-foot intervals, targeting the highest PID readings. PID detections over 100 ppm from were measured at 204 feet, 222 feet, and 237 feet. Groundwater was encountered at approximately 240 feet bgs. 7-inch casing was advanced to 240 feet, and a water sample will be collected tomorrow morning. Soil cores with detections over 100 ppm were containerized in drums for separate characterization.

Drill Crew #2:
Drilling continued at MW-29 beginning at 271 feet bgs. Soil samples were collected at approximately 10-foot intervals, targeting the highest PID readings. The lithology was mostly clay without any water-bearing zones. The highest detection was 28.8 ppm at 318 feet bgs. The borehole was advanced to 330 feet bgs into a hard, silted gravel that was dry to moist.

No groundwater samples were collected.

MW-26: The Augustyn completion was installed at MW-26.

Samples collected
MW29-SB060320-273
MW29-SB060320-282
MW29-SB060320-292
MW29-SB060320-302
MW29-SB060320-314
MW29-SB060320-328

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700 South 1600 East PCE Plume
Salt Lake City, Utah

MW30-SB060320-204
MW30-SB060320-222

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

The State of Utah is in a State of Emergency as of June 1st. As a part of this, the City of Salt Lake is going under curfew every weekday this week from 8pm to 6am. Under the curfew, those allowed on public streets will be limited to law enforcement, news media, medical personnel, and those transporting food, traveling to somewhere, patronizing businesses, fleeing danger, experiencing homelessness, or those given permission to be on the streets by the City of Salt Lake. Work at the site is not expected to be impacted by the curfew.

Projected Work – Near Term:

6/4/2020 – Crew 1: Groundwater sampling will begin at MW-30 and soil sampling will continue at 20-foot intervals.

Crew 2: Drilling will continue at MW-29 from 320 feet using 6-inch casing. The borehole will be advanced in 10-foot intervals up to 350 feet to look for water-bearing zones.

Other Activities/Remarks:

6/4/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and three staff from CDM Smith will meet at 7 am.

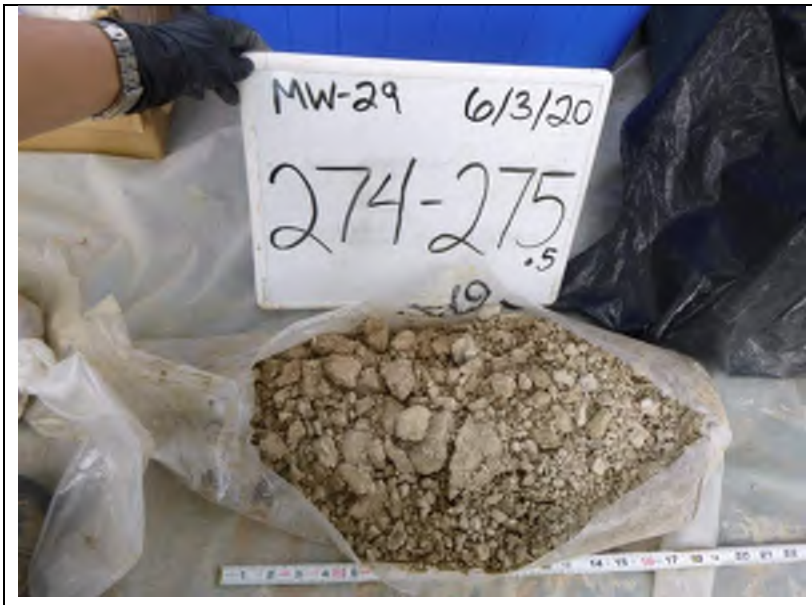
Photos:

Date: 6/3/2020

Location: MW-26

Description: Holt installed the surface completion at MW-26.

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

	**Date: 6/3/2020** **Location:** MW-29 **Description:** Soil core was dry from 273 to 275.5 feet bgs and has a light gray color like that seen at 210 to 230 and 260 feet bgs.
	Date: 6/3/2020 **Location:** MW-29 **Description:** The lithology was clay or clay with gravel from 280 to 313.5 feet bgs.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 6/3/2020 **Location:** MW-29 **Description:** Clayey sand with gravel and gravelly clay from 238 to 330 feet bgs.
	Date: 6/3/2020 **Location:** MW-30 **Description:** The soil core at 198 to 200 feet bgs.

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700 South 1600 East PCE Plume
Salt Lake City, Utah

	Date: 6/3/2020 **Location:** MW-30 **Description:** The soil core from 230 to 233 feet bgs.
	Date: 6/3/2020 **Location:** MW-30 **Description:** Soil core from 243 to 245. Water was encountered near 240 feet bgs. The 7-inch casing was advanced to 240 feet, and a groundwater sample will be collected at this depth tomorrow.

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

DATE: 6/4/2020	**Prepared by:** Kimberly Yauk and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Nolan Konen CDM Smith – Frank Morris Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	Alex (delivered ZIST casing)

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
Overnight, 7-inch casing was set at 240 feet bgs with 5 feet of open hole. The static water level in the morning was measured at approximately 228 feet bgs. After two cleanout runs, the hole still had slough up to 237 feet, which was the depth of first encountered water yesterday. It was decided to advance the push-ahead sampler to 237 to collect the groundwater sample. Drilling continued to 260 feet where a groundwater sample was attempted, however thick clay clogged the screen of the sampler. No saturated zones were encountered after the ones from 235 to 241 feet and 245 to 246 feet. The borehole was advanced to 280 feet by the end of the day. The highest PID reading was 58.6 ppm at approximately 276 feet bgs in a coarse sandy gravel, but was not saturated (moist to dry).

Samples collected:
MW30-SB060320-237
MW30-GW060420-237
MW30-SB060420-266

Drill Crew #2:
The borehole at MW-29 was advanced ten more feet to look for a saturated zone, but the lithology at 340 feet was very similar to that at 330 feet: a dry to moist gravel, in a cemented silt and clay (unsaturated). A final soil sample was collected, and it was decided to end the boring at 340 feet and backfill with bentonite in order to install ZIST wells in the saturated zones encounter at 120, 190, and (230 or 260) feet, pending laboratory analysis results. Drillers staged grouting materials near the well and are prepared to begin well installation tomorrow.

Samples collected
MW29-SB060420-337

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

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

On Wednesday, the Mayor of Salt Lake City rescinded the curfew that had been placed on the city every night from 8pm to 6am.

Projected Work – Near Term:

6/5/2020 – Crew 1: Drilling will continue at MW-30 with soil and groundwater sampling occurring at approximately 20-foot intervals.

Crew 2: Well installation will begin at MW-29 beginning with backfilling the borehole to 267 feet with bentonite chips or pellets. The depth of the deepest probe will be determined based on analytical results of the groundwater sample collected at 260 feet bgs. Betsy Bott will take over as field team lead for Kimberly Yauk.

Other Activities/Remarks:

6/5/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews, two staff from CDM Smith, and one from Wasatch will meet at 7 am.

Photos:

Date: 6/4/2020

Location: MW-29

Description: The lithology at 340 feet. The bottom of the borehole was moist to dry with hard, broken cemented gravel with silt and clay.

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

	Date: 6/4/2020 **Location:** MW-29 **Description:** Holt crew #2 built a small staging area in the parking lot of Sunnyside Park to decrease the number of trips needed through the gate into the VA campus. Three parking spaces are being used.
	Date: 6/4/2020 **Location:** MW-30 **Description:** The lithology from 245 to 247.5 shows a transition to clay.

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

	Date: 6/4/2020 **Location:** MW-30 **Description:** Fine-grained clay and silt clogs the screen of the push-ahead sampler.
	Date: 6/4/2020 **Location:** MW-30 **Description:** The lithology from 260 to 262 is very clay-rich.

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

	Date: 6/4/2020 **Location:** MW-30 **Description:** The soil core at 277.5 to 280 feet bgs. This is the extent drilled today.
	Date: 6/4/2020 **Location:** IDW Area **Description:** The groundwater sample collected at MW-30 at 237 feet showed no detection on the Color-Tec.

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

DATE: 6/5/2020	**Prepared by:** Betsy Bott and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Frank Morris Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman Wasatch – Blake Downey
Visitors/Others:	MP Environmental Services – Picked up roll-off RBR 250707

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
Sonic drilling at MW-30 advanced from 280' to 320' bgs. Groundwater sampling was conducted at 280 and 298 feet bgs. Both groundwater Color-Tec samples were ND. Soil samples were collected at 286, 306, and 316 feet bgs. The soil at 316 feet was collected due to the highest PID readings seen thus far in the MW-30 boring (greater than 400 ppm) and adjacent to the most continuous saturated zone from 316 to 320 feet bgs.

MW-30 was secured Friday night with 6" casing set at 320 feet and cleaned out ready for collecting a groundwater screening sample Sunday morning

Samples collected:
MW30-SB060520-286
MW30-GW060520-280
MW30-SB060520-306
MW30-SB060520-316.5
MW30-GW060520-298

Drill Crew #2:
The borehole was backfilled from 242 to 340 ft-bgs. The deepest well was installed with a screen interval from 230 – 240 ft-bgs. Sand was installed from 227 to 242 ft-bgs. Bentonite was installed from 202 to 227 ft-bgs. The second well was installed with a screen interval from 190 to 200 ft-bgs. Sand was installed from 187 to 202 ft-bgs. Bentonite was installed from 161 to 202 ft-bgs.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

On Wednesday, the Mayor of Salt Lake City rescinded the curfew that had been placed on the city every night from 8pm to 6am.

Projected Work – Near Term:

6/7/2020 – Crew 1: Drilling will continue at MW-30 with soil and groundwater sampling occurring at approximately 20-foot intervals.

Crew 2: Continue well construction at MW-29.

Other Activities/Remarks:

6/7/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and two staff from CDM Smith will meet at 7:15 am.

Photos:

Date: 6/5/2020

Location: MW-29

Description: Holt removing 6" casing from well and backfilling with bentonite.

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

	Date: 6/5/2020 **Location:** MW-29 **Description:** Holt installing deepest well interval at MW-29.
	Date: 6/5/2020 **Location:** MW-30 **Description:** Soil sample at 316.5 contained the highest PID readings seen thus far in the MW-30 boring (greater than 400 ppm).

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

DATE: 6/7/2020	**Prepared by:** Betsy Bott and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Frank Morris CDM Smith - Kelby Depner Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
MW-30 was advanced from 320 to 350' bgs. Groundwater sampling was conducted at 320 and 340 feet bgs. Both groundwater Color-Tec samples were ND. Soil sampling was conducted at 336 feet bgs. The core barrel became stuck while trying to retrieve the 340-350 ft sample. It was decided that the rig should sit overnight, and Holt will attempt to retrieve the sample in the morning.

Samples collected:
MW30-GW060720-320
MW30-SB060720-336
MW30-GW060720-340

Drill Crew #2:
Bentonite was installed from 132-161. The shallowest ZIST well was installed with a screen interval from 120-130 ft-bgs. Three (3) soil vapor probes were installed at 42, 66, and 98 ft-bgs. Sand filter pack interval around the probe were installed at 40-44 ft-bgs, 64-68 ft-bgs, and 96-100 ft-bgs. Bentonite was installed from 11-40 ft-bgs and the well was grouted to approximately 2 ft-bgs.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Work was stopped briefly due to lightning in the area. Downtime was approximately 1.5 hours.

Projected Work – Near Term:

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

6/8/2020 – Crew 1: Retrieve core barrel, begin well construction pending discussion on construction details.

Crew 2: Clean up MW-29 area, begin drill casing decon and setup on MW-31.

Other Activities/Remarks:

6/8/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and three staff from CDM Smith will meet at 7:15 am.

Photos:

	Date: 6/7/2020 **Location:** MW-29 **Description:** Holt installing shallowest well with soil vapor probes and tubing.
	Date: 6/7/2020 **Location:** MW-29 **Description:** Holt removing last drill pipe from well.

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

	Date: 6/7/2020 **Location:** MW-25 **Description:** Four parking spaces were coned off for ZIST development tomorrow.
	Date: 6/7/2020 **Location:** MW-30 **Description:** View of soil sample collected at 336 ft-bgs.

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

DATE: 6/8/2020	**Prepared by:** Betsy Bott and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Frank Morris CDM Smith - Kelby Depner CDM Smith – Neil Smith Wasatch – Blake Downey Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
The core barrel was retrieved and MW-30 was advanced from 340 to 350' bgs. A final soil sample was collected at 342 ft-bgs. A discussion is set up for first thing Tuesday morning regarding screen intervals, as all parties were not available to discuss today. Holt Crew 1 had approximately ½ day of rig standby time incurred.

Samples collected:
MW30-SB060820-342

Drill Crew #2:
Casing from MW-29 was deconned. The drill rig, fencing, drill pipe and other drilling materials were moved to MW-31. Holt will return to MW-29 to install well vault once received.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

At approximately 2:20 P.M., a vehicular accident occurred on Sunnyside Avenue, adjacent to MW-31, causing a pickup truck to overturn into the center of the street. Holt immediately stopped work and went to assist. Holt aided each driver and assessed their condition, helped the pickup truck driver get out of the truck, and set up traffic cones to redirect traffic. Holt remained on scene until the fire department and ambulance arrived. Holt showed exemplary safety performance by acting calmly, quickly and while keeping safety the priority.

Daily Quality Control Report
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Salt Lake City, Utah

Mark Augustyn indicated that all well completions planned for this project are currently at the foundry being galvanized, and will hopefully be available later this week for installation. MW-29 will be covered and fenced in the meantime.

Initial well development via air lifting was attempted at MW-25B. Water was initially clear but turned turbid, and did not clear by the end of the day. Discussion with BESST Inc. indicates that development of the deepest wells may still be warranted using air lifting, but that shallower wells (i.e. those with less than about 50 feet of water column above the top of the pump receiver) are more appropriate to prepare for sampling by installing the ZIST pumps and purging at low to moderate rates rather than more aggressive methods. This will be attempted on 6/9/20.

Projected Work – Near Term:

6/9/2020 – Crew 1: Begin well construction at MW-30 after discussion on construction details.

Crew 2: Begin drilling at MW-31.

Other Activities/Remarks:

6/9/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and four staff from CDM Smith will meet at 7:15 am.

Photos:

Date: 6/8/2020

Location: Laydown Yard

Description: Holt deconning casing from MW-29.

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

	Date: 6/8/2020 **Location:** MW-29 **Description:** View of well after cleanup. Holt will return and install vault once vaults are received at the site.
	Date: 6/8/2020 **Location:** MW-31 **Description:** View of rig and setup at MW-31.

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

	Date: 6/8/2020 **Location:** MW-31 **Description:** View of vehicle accident proximity to MW-31.
	Date: 6/8/2020 **Location:** MW-30 **Description:** View of 342.5-345 ft sample. A soil sample was taken at 342 that had a PID reading of 33.6 ppm.

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

DATE: 6/9/2020	**Prepared by:** Betsy Bott and Frank Morris

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Frank Morris CDM Smith - Kelby Depner CDM Smith – Neil Smith Wasatch – Blake Downey Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
After receiving approval for the recommended ZIST completion intervals this morning for MW-30, well installation was started. Total depth of the boring is 350 feet bgs. The boring was backfilled with bentonite chips to 330' bgs. The deepest ZIST completion (C) had the sump set at 329.2' bgs. screening the interval from 327' to 317' with a filter pack installed from 330' to 313.8'. The boring was then sealed between the deepest ZIST and the middle ZIST (B) with bentonite pellets from 313.8' to 295.2'. The screened interval for ZIST (B) is from 292' to 282' with a filter pack installed from 295.2' to 279.5'. The uppermost screened zone (A) will not contain a ZIST pump receiver due to the expected lower head for the shallowest zone (240' to 250'). The boring was sealed up to 273 feet today and will be left overnight with 3 feet of open hole below casing to allow the bentonite pellets to swell.

Drill Crew #2:
MW-31 was advanced from surface to 110 ft-bgs. The 8" casing was advanced to 100'. Six soil samples were collected. The highest PID reading was 82.1 ppm taken at the 15-16 ft-bgs interval.

Samples collected:
MW31-SB060920-15
MW31-SB060920-23
MW31-SB060920-45
MW31-SB060920-62
MW31-SB060920-82
MW31-SB060920-94
MW31-SB060920-112

Daily Quality Control Report
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Salt Lake City, Utah

Well Development/Pump Installation

ZIST pumps were installed at MW-25A, B, and C. Purging was attempted at all wells and all zones were able to be purged at sustained flow rates. Extracted water was clear.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/9/2020 – Crew 1: Continue well construction at MW-30.

Crew 2: Continue drilling at MW-31.

Other Activities/Remarks:

6/10/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and two staff from CDM Smith will meet at 7:15 am.

Photos:

Date: 6/9/2020

Location: Laydown Yard

Description: Roll off from Sunnyside Park was moved to the laydown yard.

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

	Date: 6/9/2020 **Location:** MW-31 **Description:** View of soil sample interval 15 to 17.5 ft-bgs. This interval had the highest PID reading of 82.1 ppm.
	Date: 6/9/2020 **Location:** MW-32 **Description:** View of MW-32 location. Cones were setup on curb next to cars that will need to be moved.

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

DATE: 6/10/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith – Frank Morris CDM Smith - Kelby Depner CDM Smith – Neil Smith Wasatch – Blake Downey Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
The shallowest interval well was installed. In the afternoon, while pulling 7" casing out, an apparent bentonite bridge occurred within the sonic casing and the three well PVC casings were pulled up out of the ground by about 8 feet. All well materials will need to be removed from the borehole. The plan is to overdrill the borehole with the next largest size casing (7" diameter rather than 6") and attempt to reinstall the well.

Drill Crew #2:
MW-31 was advanced from 115 to 190 ft-bgs. The 7" casing was advanced to 190'. Three soil samples were collected. One groundwater sample was collected. The highest PID reading was 31.8 ppm taken at the 133-134 ft-bgs interval. The groundwater sampler was installed at 190 ft-bgs and a groundwater sample will attempt to be collected in the morning.

Samples collected:
MW31-SB061020-133
MW31-GW061020-138
MW31-SB061020-159
MW31-SB061020-176

Well Development/Pump Installation
ZIST pumps were installed at MW-23A, B, and C. Purging was attempted at all three zones, but due to low recharge purging rates could not be sustained. Additional development such as air lifting may be attempted at these locations to improve flows.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/11/2020 – Crew 1: Begin to overdrill MW-30.

Crew 2: Continue drilling at MW-31.

Other Activities/Remarks:

6/11/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and CDM Smith/Wasatch staff will meet at 7:15 am.

Photos:

Date: 6/10/2020

Location: MW-32

Description: View of traffic control signs dropped at MW-32 this morning.

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

	Date: 6/10/2020 **Location:** MW-32 **Description:** View of traffic control barriers dropped at MW-32 this morning.
	Date: 6/10/2020 **Location:** MW-31 **Description:** View of sample with the highest PID reading, 31.8 ppm, taken at the 133-134 ft

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

Date: 6/10/2020

Location: MW-30

Description: View of well casing pulled from well.

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

DATE: 6/11/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith - Kelby Depner CDM Smith – Neil Smith Wasatch – Blake Downey Wasatch – Kiel Keller VA – Marc Yalom Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	MP Environmental dropped off empty roll-off at MW-30 A-1 serviced portable toilet at Sunnyside Park

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Drill Crew #1:
All previous well construction materials have been removed from the well and the borehole was overdrilled to 320' ft-bgs with 7" casing.

Drill Crew #2:
MW-31 was advanced from 190 to 230 ft-bgs. Two soil samples were collected. Two groundwater samples were collected at 190 and 230 ft-bgs. The color tec results were ND for both groundwater samples.

Samples collected:
MW31-SB061120-190
MW31-GW061120-190
MW31-SB061120-215
MW31-GW061120-230 (will be shipped 6/12/20)

Well Development/Pump Installation:

ZIST pumps were installed at MW-26A, B, C, and D. Additional development via air lifting was completed in the D interval due to sediment measured. Purging was completed in the A and D zones. A defective check valve was replaced in the B zone well and will be purged on 6/12. The pump from the C interval will need to be pulled and the tubing sent to the manufacturer (see Issues below).

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

The VA received a complaint about Holt exiting through the Sunnyside Gate this morning referencing an incident that took place Wednesday (6/10/20) morning. The Sunnyside Park entrance is open from 7:00 to 9:00 am every day for traffic entering the VA Campus. Holt used the forklift to enter the VA Campus from Sunnyside Park while the gate was open following procedure. Holt attempted to exit Sunnyside Park during a break in traffic, disregarding the gate screeners. Following notification of the incident, a discussion was had with Holt about their actions, and the importance of the gate procedures were reiterated to them. Additional discussion will be had in the morning safety tailgate.

One spool of ZIST tubing, and at least 100 feet of a second roll of tubing, could not be used because the outer sheath is stuck to the tubing and cannot be separated in the field. After discussion with the vendor, CDM Smith will ship the defective tubing back for repair or replacement.

Projected Work – Near Term:

6/12/2020 – Crew 1: Finish drilling well and begin well construction at MW-30.

Crew 2: Continue drilling at MW-31.

Other Activities/Remarks:

6/12/2020: A safety Tailgate will be conducted at the laydown yard; both Holt crews and staff from CDM Smith will meet at 7:15 am.

Photos:

Date: 6/11/2020

Location: MW-31

Description: View of sample with the highest PID reading, 31.0 ppm, taken at the 215-216 ft-bgs core.

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

	Date: 6/11/2020 **Location:** MW-31 **Description:** View of water sampler after groundwater attempt at 190 ft-bgs.
	Date: 6/11/2020 **Location:** MW-30 **Description:** View of additional roll-off delivered this morning to MW-30.

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

DATE: 6/12/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith - Kelby Depner CDM Smith – Neil Smith Wasatch – Blake Downey Wasatch – Kiel Keller Holt Services – Jeff Jones (Driller – Crew 2) Holt Services – Alex Langdon Holt Services – Jacob Oaks Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard. Additional discussion regarding the Sunnyside Gate and the importance of gate procedures took place.

The asphalt surface was cut at MW-32, filled with sand and covered with plywood in preparation for hydro-vac on Monday.

Drilling:

Drill Crew #1:
Installation of the replacement well at MW-30 commenced. The deep screen interval was installed from 317-327 feet bgs, with sand filter pack between 314-330 ft bgs. Bentonite seal was emplaced from 296-314 ft bgs. The middle zone well was installed with a screen interval between 282-292 feet bgs.

Drill Crew #2:
MW-31 was advanced from 230 to 290 ft-bgs. Four soil samples were collected. The 230-290 ft interval was predominantly clay, and no water bearing zones were observed during drilling, therefore no groundwater samples were collected.

Samples collected:
MW31-SB061220-236
MW31-SB061220-252
MW31-SB061220-270
MW31-SB061220-289

Well Development/Pump Installation:

Attempted to reinstall pump and purge at MW-26B but check valve on replacement pump failed similar to the attempt made on 6/11. Additional air lifting for development/sediment removal was completed at MW-23D.

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

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

During installation of the middle screen at MW-30, a potential sand bridge or natural borehole collapse occurred while setting sand pack. Only two bags of sand were installed and borehole had collapsed to approximately 273 feet bgs, with casing at 20 feet bgs. The depth will be checked again on Sunday prior to installation of additional annular materials.

The pump from well MW-26B with the failed check valve, as well as the tubing from MW-26C, will be returned to the manufacturer for repairs to the pump and tubing. One additional spool (1,000') of bonded tubing will be returned due to the outer jacket being fused to the tubing.

Projected Work – Near Term:

6/14/2020 – Crew 1: Continue well construction at MW-30. Begin decon.

Crew 2: Mobilized offsite, has 1-week break. Will return 6/22/2020.

Other Activities/Remarks:

6/14/2020: A safety Tailgate will be conducted at the laydown yard; Holt Crew 1 and three staff from CDM Smith will meet at 7:15 am.

Photos:

Date: 6/12/202020

Location: MW-31

Description: View of sample bag from 287-290 ft-bgs. A soil sample was collected at 289 ft-bgs.

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

	Date: 6/12/202020 **Location:** MW-32 **Description:** View of surface cutting at MW-32. Cut was filled with sand.
	Date: 6/12/202020 **Location:** MW-32 **Description:** View surface cutting covered with plywood and cuttings.

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

Date: 6/12/202020

Location: MW-30

Description: Preparing for installation of PVC screen and riser in middle interval at MW-30

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

DATE: 6/14/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott CDM Smith - Kelby Depner CDM Smith – Whitney Treadway Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

The rig in Sunnyside Park was checked twice, once in the morning, once in the afternoon to ensure that it is still secure.

Drilling:

Drill Crew #1:
The shallowest well with a screen interval from 240-250 was installed. A soil vapor probe was installed on the casing at 30 ft-bgs. Sand was installed from 237 to 253 ft-bgs. Bentonite was installed from 40 to 237 ft-bgs.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/15/2020 – Crew 1: Finish well construction at MW-30, move equipment and rig to laydown yard, install vault at MW-30 if vaults arrive.

Crew 2: Mobilized offsite, has 1-week break. Will return 6/22/2020.

Attempt additional air lifting and pump installation/purging at MW-23.

Other Activities/Remarks:

6/15/2020: A safety Tailgate will be conducted at the laydown yard; Holt Crew 1 and three staff from CDM Smith will meet at 7:15 am.

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

Photos:

	Date: 6/14/2020 **Location:** MW-30 **Description:** View of shallowest well installation.
	Date: 6/14/2020 **Location:** MW-30 **Description:** View of soil vapor probe installation at 30 ft-bgs.

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

DATE: 6/15/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith - Kelby Depner CDM Smith – Whitney Treadway Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman Wasatch – Blake Downey
Visitors/Others:	Airgas – Delivery of Nitrogen for development/Groundwater sampling Badger – Jaime Preciado Badger – Deno Gonzales

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

The rig in Sunnyside Park was checked twice, once in the morning, once in the afternoon to ensure that it is still secure.

Drilling:

MW-30: Sand pack added from 33 to 27' bgs around the soil vapor point. Hydrated bentonite chips were added from 22-27' bgs. The boring was grouted from 22' to 3.5' bgs. The rig and drilling equipment were relocated to the laydown area from the MW-30 location.

Pre-Clearing:
The MW-32 location on E 600 S was vacuum excavated from 0-8' bgs. No utilitlies were identified, and the location was backfilled with play sand until Holt can setup a drill rig at that location.

Development:
MW-23B and MW-23C were airlifted and developed, and had pumps installed. An airlift was attempted at MW-23A and did not have sufficient recharge to pump.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

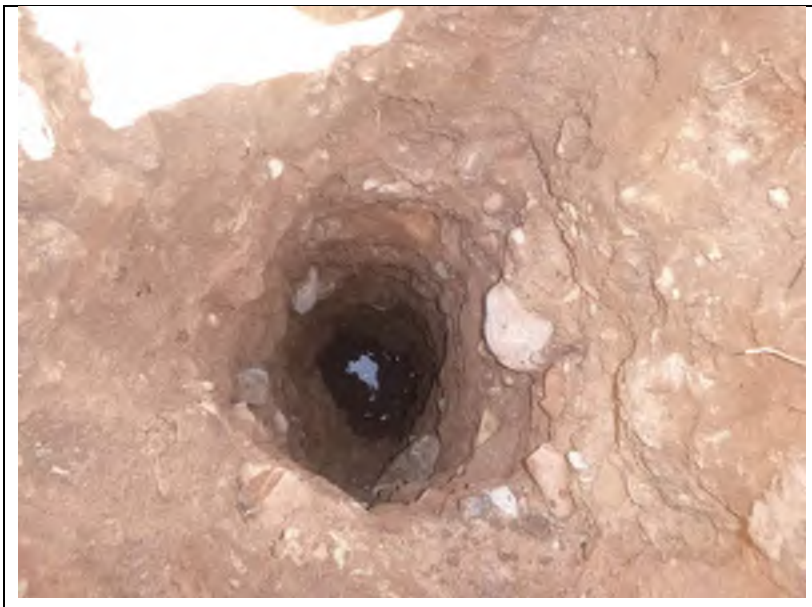
6/16/2020 – Crew 1: Decon drill steel from MW-30, begin install on MW-31

Other Activities/Remarks:

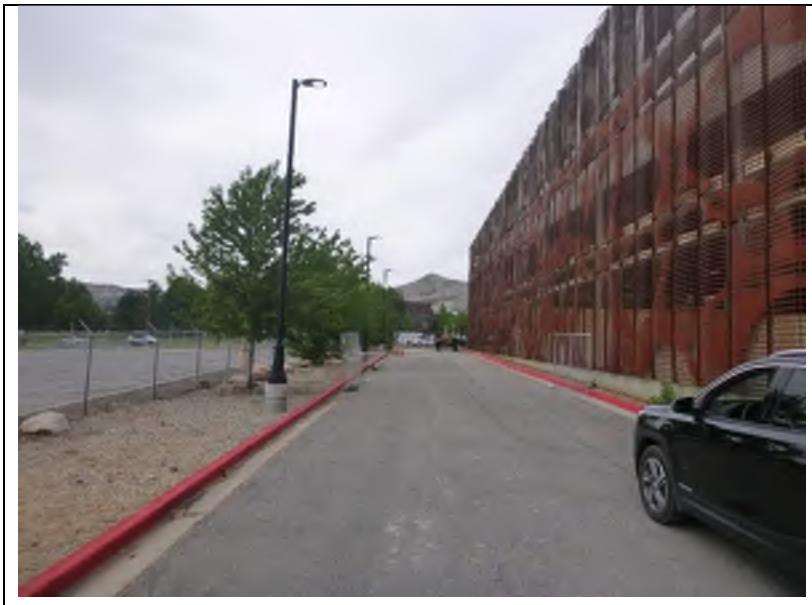
6/16/2020: A safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	**Date: 6/15/2020** **Location:** MW-32 **Description:** Vacuum excavation of MW-32 to 8' bgs.
	Date: 6/15/2020 **Location:** MW-32 **Description:** Badger Daylighting vacuum excavating MW-32.

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



Date: 6/15/2020

Location: MW-30

Description: Holt moved drill and equipment to the laydown area.

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

DATE: 6/16/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

The MW-31 boring was backfilled 240' bgs with bentonite. The deep well was installed with 0.020 slot screen from 228-238' bgs. The sand pack interval was installed from 225-240' bgs. Bentonite pellets have been added to 204' bgs and the 7" sonic casing was pulled back to 200' in preparation for installing the middle ZIST zone.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Rig Service: A sonic head filter was replaced. Also, the Head release pin was seized on the rig at MW-31. The pin was removed and well construction began at 14:45

Projected Work – Near Term:

6/17/2020 – Crew 1: Resume install on MW-31

6/17/2020 – Development team: Holt's development team will arrive mid-morning and begin development on the 4" wells.

Other Activities/Remarks:

6/17/2020: A safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 6/16/2020 **Location:** MW-31 **Description:** Installing 1” PVC for deep zone at MW-31 in Sunnyside park.
	Date: 6/16/2020 **Location:** MW-31 **Description:** Holt removing 7” casing as they backfill boring with bentonite chips.

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

DATE: 6/17/2020	**Prepared by:** Joe Miller/Whitney Treadway

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman Holt Services – Ronnie Barrett – Development Operator Holt Services – Justin Ramirez - Development VA – Marc Yalom VA – Carlos Aguilar Wasatch – Kiel Keller
Visitors/Others:	Adriaan Boogard – City of Salt Lake Water Utilities

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Cable truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

The rig in Sunnyside Park was checked twice, once in the morning, once in the afternoon to ensure that it is still secure.

Drilling:

The MW-31 second zone was installed with 0.020 slot screen from 190-200' bgs. The sand pack interval is from 187-202' bgs. Bentonite pellets were added from 187 to 151' bgs. The shallow screen interval is installed from 138-148' bgs. The ZIST pump receiver was omitted from the shallow zone well to allow deeper placement of the pump. The sand pack around the shallow interval is 135' to 151 bgs. The boring has been backfilled with bentonite to 12' bgs.

Development:

Holt's Development crew arrived onsite today. After badging, they deconned the downhole tools. Development began at MW-27. There was little accumulation of sediment after 45 minutes of swabbing. While deploying the pump, the operator activated the wrong lever which lifted the swab and caused the hopper to tip. The hopper released less than 20 gallons of silty water to the ground which ran towards the storm drain. Sorbent pads and wattles were deployed, the VA was immediately notified. Less than 10 gallons of the water reached the storm drain. Carlos Aguilar and Marc Yalom assessed the spill.

After the surface run off was brushed up, the pump was deployed. Approximately 360 gallons was purged from MW-27 at 7.5 gpm with turbidity less than 10 NTU after ~ 300 gallon purge.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

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

Projected Work – Near Term:

6/18/2020 – Crew 1: Complete MW-31 installation, mob rig and equipment from Sunnyside park back to the VA campus.

6/18/2020 – Development team: Develop MW-24

Other Activities/Remarks:

6/18/2020: A safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

Date: 6/17/2020

Location: MW-31

Description: Installing 1" PVC for shallow zone at MW-31 in Sunnyside park.

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

Date: 6/17/2020

Location: MW-27

Description: Holt development crew removing pump after development from MW-27.

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

	Date: 6/17/2020 **Location:** MW-27 **Description:** Wattles, sorbent pads, and sand bags over storm drain
	Date: 6/17/2020 **Location:** MW-27 **Description:** Holt development crew sweeping surface to remove the silt released from the hopper.

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

DATE: 6/18/2020	**Prepared by:** Joe Miller/Whitney Treadway

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman Holt Services – Ronnie Barrett – Development Operator Holt Services – Justin Ramirez - Development VA – Marc Yalom Wasatch – Kiel Keller
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Cable truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

The grout surface seal was installed at MW-31 from 3' to 12' bgs. The rig and support equipment were relocated to the VA campus from Sunnyside park. The MW-31 well is ready for the surface completion.

Holt deconned drill pipe from MW-30 and is preparing to demob Crew and rig 1 from site. An equipment blank was collected. Rig 2 and support equipment will still be onsite to finish the remaining borings.

Development:

The development team has completed development of the 4" diameter wells.

MW-24 was developed. The swabbing produced little sediment, and the pumping yielded 640 gallons pumping at ~8 gallons per min. The development tools were deconned and an equipment blank sample was collected.

MW-28 was developed. The swabbing produced little sediment and the pumping yielded ~370 gallons of water while pumping at ~10 gallons per minute. The development tools were deconned and another blank was collected.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/19/2020 – Crew 1: Continue deconning and prepare for demobilization from site.

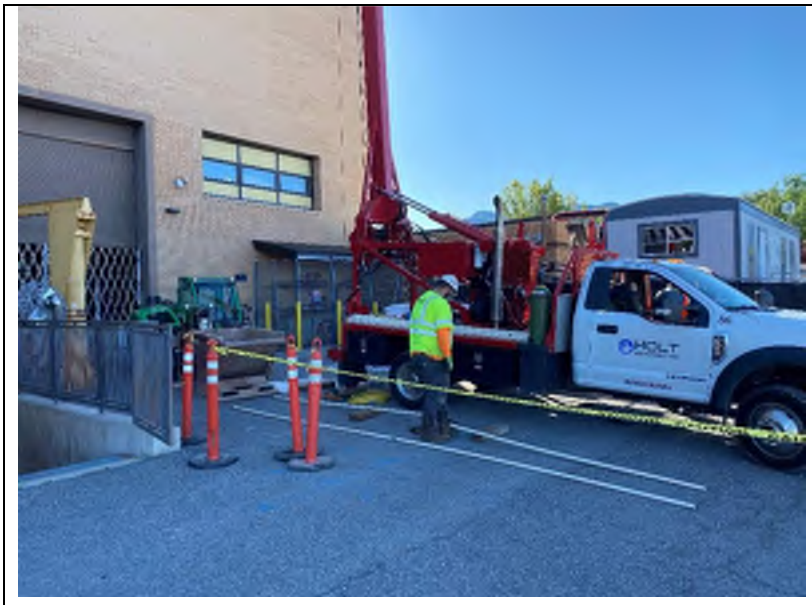
Daily Quality Control Report
700 South 1600 East PCE Plume
Salt Lake City, Utah

6/19/2020 – Development team: Mobilize home

Other Activities/Remarks:

6/19/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	**Date: 6/18/2020** **Location:** MW-24 **Description:** Holt development crew setting up at MW-24.
	Date: 6/18/2020 **Location:** MW-28 **Description:** Holt development crew removing bailer after pumping to see if any sediment accumulated.

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

Date: 6/18/2020

Location: MW-31

Description: Holt pumping grout for surface seal.

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

DATE: 6/19/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller Holt Services – Pete Rosenburg (Driller – Crew 1) Holt Services – Michael Leui Jr. Holt Services – Scottie Lampman VA – Marc Yalom VA – Carlos Aguilar
Visitors/Others:	MP Environmental Tire Service Center Slims Trucking

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig (x2) • Skid Steer (Bobcat) (x2) • Rig Hauler • Tender/Water Truck • Cable truck • Portable Toilet (x2)

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Holt Crew 1 Demobilization:

Holt loaded extra drill piping and materials on a flat bed semi for transport to Washington. Additional equipment was deconned and loaded for transport by the Holt crew including one drill rig and skid steer. During inspections, Holt identified a bulge in a tire on the rig hauler. Tire Service center was called to site to replace the tire.

IDW Removal:

MP Environmental relocated the roll off in Sunnyside park to the VA campus laydown area. A roll off bin was staged and locked at the MW-32 location. MP hauled away roll off bin RBR250327 with Carlos Aguilar as the manifest signatory.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/21/2020 – Crew 1: Continue deconning and prepare for demobilization from site.

6/22/2020 – Crew 2: Return to site, decon equipment, mob to MW-32

Other Activities/Remarks:

6/22/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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

	Date: 6/19/2020 **Location:** Laydown Area **Description:** Holt loading equipment on flatbed trailer for transport to Washington
	Date: 6/19/2020 **Location:** Laydown area **Description:** MP Environmental removing soil roll off bin.

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

Date: 6/19/2020

Location: Laydown Area

Description: Back blading gravel lot to smooth out areas disturbed by the skid steer.

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

DATE: 6/22/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper VA – Marc Yalom
Visitors/Others:	Mark Augustyn

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Holt Crew 2 returned to site. They deconned drill tooling from MW-31. The Drill rig was mobilized to MW-32 and the boring was advanced to 80' bgs with 8" casing currently to 70' bgs. The highest PID encountered was 93.5ppm at 34' bgs. No sample was collected in this interval, the PID reading was suspect due to hot soil cores melting the plastic core bags. The same run had a PID of 56ppm. The max PID outside of that interval was 37.3ppm. The drill site was fenced and the roll off bin was locked at the end of shift.

Samples Collected:

EB36-SB0622020
MW32-SB062220-14
MW32-SB062220-27
MW32-SB062220-55

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

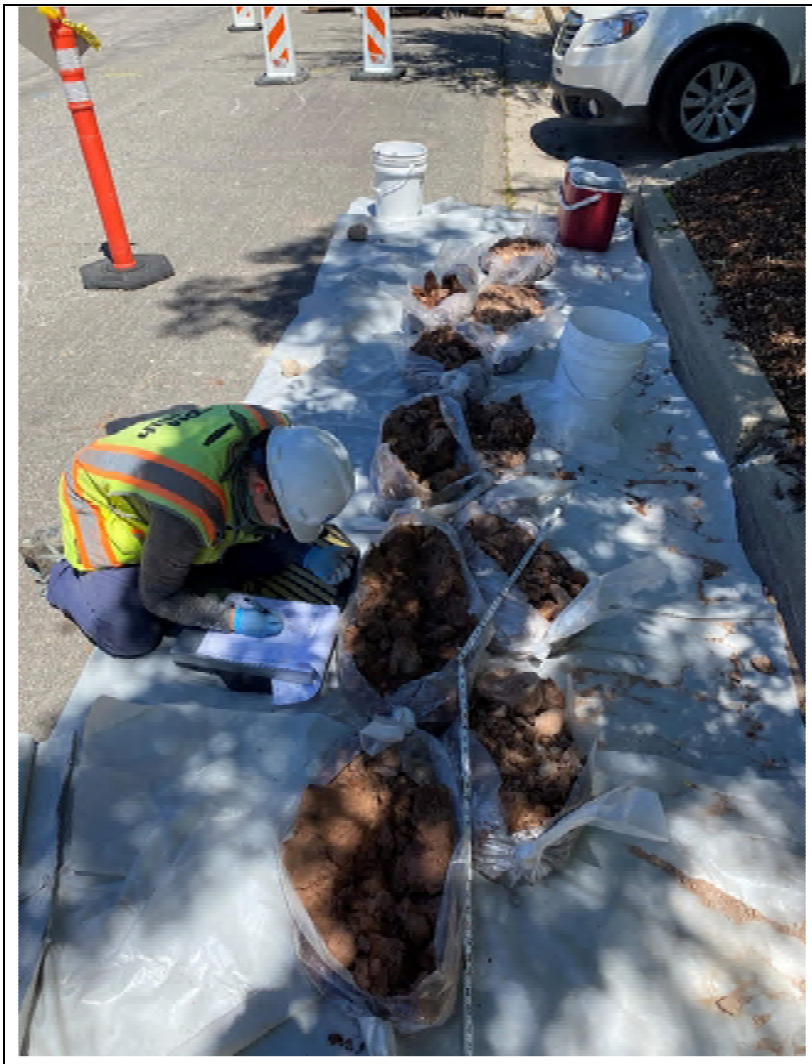
6/22/2020 – Crew 2: Install Augustyn Completions, continue to advance MW-32

Other Activities/Remarks:

6/23/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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



Date: 6/22/2020

Location: MW-32

Description: CDM Smith geologist logging soil cores

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

	Date: 6/22/2020 **Location:** MW-32 **Description:** Holt setting up work area at MW-32 along E 600 S.
	Date: 6/22/2020 **Location:** MW-32 **Description:** Drill rig secured in fencing at MW-32 location.

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

DATE: 6/23/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

The Augustyn completions were installed at MW-29, MW-30 and MW-31. At the request of the VA the forms were removed from the completions at MW-25 and MW-26.

The MW-32 boring was advanced to 100' bgs. Groundwater was encountered during the 90 to 100' bgs sonic run and a grab groundwater sample was collected for lab and Colortec analyses.

Samples Collected:

IDW06-SB062320
MW32-SB062220-84 + Dup
MW32-GW062220-100

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/24/2020 – Crew 2: Continue to advance MW-32

Other Activities/Remarks:

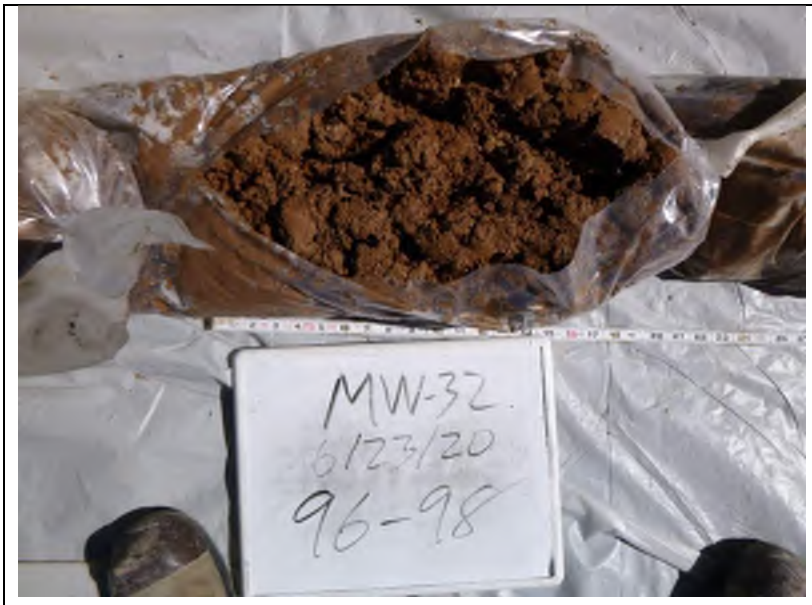
6/24/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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

	Date: 6/23/2020 **Location:** MW-30 **Description:** Holt installing MW-30 surface completion
	Date: 6/23/2020 **Location:** MW-31 **Description:** Holt setting concrete for Augustyn vault at MW-31.

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



Date: 6/23/2020

Location: MW-32

Description: Wet sandy gravel with silt encountered during 90-100’ bgs sonic run.

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

DATE: 6/24/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Joe Miller CDM Smith – Whitney Treadway CDM Smith – Kimberly Yauk CDM Smith – Maria Day CDM Smith – Breanna Moak Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

The MW-32 boring was advanced to 150' bgs. A groundwater sample was collected at 120 feet bgs for lab and Colortec analyses. The Color-Tec analysis indicated detectable chlorinated VOCs. A groundwater sample was attempted at 150 feet, but no water was able to be collected. Soil samples were collected at approximate 20-foot intervals.

Samples Collected:

MW32-SB062420-105
MW32-GW062420-120
MW32-SB062420-127
MW32-SB062420-142
EB37-GW062420

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/24/2020 – Crew 2: Continue to advance MW-32 with next groundwater sample attempt at 160 feet bgs.

Other Activities/Remarks:

6/25/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 6/24/2020 **Location:** MW-32 **Description:** Holt drill rig set up with traffic control at MW-32.
	Date: 6/24/2020 **Location:** MW-32 **Description:** Soil core at 120 to 122 feet bgs. A groundwater sample was collected at 120 feet bgs.

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

	Date: 6/24/2020 **Location:** IDW Yard **Description:** ColorTec analysis of MW-32 groundwater sample at 120 feet bgs shows a detection (purple color on tube).
	Date: 6/24/2020 **Location:** IDW Yard **Description:** The detection of MW-32 groundwater at 120 feet bgs of 0.5 corresponds to approximately 35 ug/L.

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

DATE: 6/25/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Maria Day CDM Smith – Breanna Moak Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper VA – Marc Yalom
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

The MW-32 boring was advanced to 210' bgs. A groundwater sample was collected at 175 feet bgs for lab and Colortec analyses. The groundwater sampler was advanced at 210 feet, but water was in the casing prior to opening. The sampler will be redeployed in the morning. Soil samples were collected at approximate 20-foot intervals.

Samples Collected:

MW32-SB062520-165
MW32-GW062520-175
MW32-SB062520-186
MW32-SB062520-203
TB49-SB062520
EB38-GW062520

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Projected Work – Near Term:

6/25/2020 – Crew 2: Continue to advance MW-32 with next groundwater sample attempt at 210 feet bgs. Preview Rowland Hall well location with drill crew and VA. Color-Tec sample from 175 feet bgs will be analyzed.

Other Activities/Remarks:

6/26/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 6/25/2020 **Location:** MW-32 **Description:** MW-32 soil core at 190 feet was dry to moist and not water-bearing.
	Date: 6/25/2020 **Location:** MW-32 **Description:** Holt advanced the borehole to 210 feet. The soil core transitions to a clayey sand and gravel at the bottom.

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

DATE: 6/26/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Kelby Depner Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper VA – Marc Yalom
Visitors/Others:	Ann Burnett (Rowland Hall)

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Site Walk:

Ann Burnett met with Holt, CDM Smith, and the VA at Rowland Hall to perform a site walk of the MW-34 borehole. All present agreed on an acceptable location for the borehole which is on the north side of the access road, a little west of the community garden. Underground service alert arrows were marked on the ground for utility clearance, and a stake was placed to mark the approximate drilling location.

Drilling:

The MW-32 boring was advanced to 260' bgs. A groundwater sample was collected at 210 feet bgs for lab analysis only due to low volume. The soil core from beyond 210 to 260 was dry to moist silt and clay. No other water samples were collected in that interval. The drillers continued drilling to 270 but left the 260 to 270 soil core in place to be removed in the morning on Sunday. They reported the drilling felt slightly easier and drill rotation increased, indicating clay content may have decreased at 270 feet. A groundwater sample will be attempted at 270. Soil samples were collected at approximate 20-foot intervals.

Samples Collected:

MW32-GW062620-210
MW32-SB062620-223
MW32-SB062620-250
TB50-SB062620

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake County will have a mandatory mask mandate in effect beginning Saturday, June 27. Masks will be required in public.

Projected Work – Near Term:

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

6/27/2020 – Day off

6/28/2020 – Crew 2: Continue to advance MW-32 with next groundwater sample attempt at 270 feet bgs.

Other Activities/Remarks:

6/28/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	Date: 6/26/2020 **Location:** MW-32 **Description:** Holt prepares push-ahead sampler with fresh o-rings and Teflon tape for the 210 foot groundwater sample.
	Date: 6/26/2020 **Location:** MW-32 **Description:** Holt prepares to advance the push-ahead sampler.

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

	Date: 6/26/2020 **Location:** MW-32 **Description:** Soil core at MW-32 from 228 to 230 feet bgs is predominantly a hard, gravelly silt.
	Date: 6/26/2020 **Location:** MW-32 **Description:** Soil core at MW-32 from 238 to 240 feet bgs is predominantly clay and silt.

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

	Date: 6/26/2020 **Location:** MW-32 **Description:** Soil core at MW-32 from 248 to 250 feet bgs is predominantly clay and silt.
	Date: 6/26/2020 **Location:** MW-32 **Description:** Soil core at MW-32 from 258 to 260 feet bgs is predominantly gravelly clay.

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

	Date: 6/26/2020 **Location:** MW-34 **Description:** Marked MW-34 work area for Underground Utility Clearance at Rowland Hall. Flagging tape on the proposed borehole location is visible in the midground of the frame on the upper right side in the thistle.
	Date: 6/26/2020 **Location:** MW-34 **Description:** Holt considers drilling conditions while standing on the proposed drilling location for MW-34.

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

DATE: 6/28/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Kelby Depner Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	Two Residents Near MW-32

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Residents:

Two residents inquired today about the drilling and accepted fliers. One was a woman who drove by and was happy to see progress on the project being made. The other was a man who lives at 1331 600 South. He wanted to know how long the drill rig would be there (we told him likely Tuesday or Wednesday) and whether further work with the drill rig would occur at the well once it was installed (groundwater monitoring would not use a drill rig). He was also interested to know what has changed in the past 10 or so years on the project since the last public meeting he and his household attended (we referred him to Shannon Smith's contact information).

Drilling:

The MW-32 boring was advanced to a total depth of 270' bgs. A groundwater sample was collected at 270 feet bgs for laboratory and Color-Tec analyses. The Color-Tec analysis of the groundwater at 270 feet was non-detect for VOCs. Borehole drilling at MW-32 was terminated, having reached 150 feet beyond the water table and produced two non-detect Color-Tec water samples following the detection in the groundwater sample at 120 feet bgs. Discussion of screen intervals will occur with VA on 6/29.

Thunderstorms halted work for approximately 45 minutes beginning at 13:30.

No other soil or groundwater samples were collected.

Samples Collected:

MW32-GW062820-270
EB40-GW062820
EB41-SB062820
TB51-SB062820

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

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Daily Quality Control Report
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Salt Lake City, Utah

Salt Lake County has a mandatory mask mandate in effect beginning Saturday, June 27. Masks will be required in public.

Projected Work – Near Term:

6/29/2020 – Crew 2 will get supplies while CDM Smith and the VA discuss and agree on screen intervals for MW-32.

Other Activities/Remarks:

6/29/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	Date: 6/28/2020 **Location:** MW-32 **Description:** Holt prepares push-ahead sampler with a single o-ring and extra Teflon tape in a second attempt for the 270-foot groundwater sample after the sampler did not open in the previous attempt.
	Date: 6/28/2020 **Location:** MW-32 **Description:** CDM Smith confirms the sampler is dry before exposing the screen.

Daily Quality Control Report
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Salt Lake City, Utah

	Date: 6/28/2020 **Location:** MW-32 **Description:** Soil core at MW-32 from 268 to 270 feet bgs is predominantly gravelly clay and silt.
	Date: 6/28/2020 **Location:** MW-32 **Description:** Holt decontaminates the soil core barrel and push-ahead sampler.

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

DATE: 6/29/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Kelby Depner Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Residents:

The man at 1331 600 South is named Ken Smith. We briefly spoke and he was interested to know if the laboratory results get published for the public somewhere. I did not know the answer. He is curious but has not decided to contact Shannon Smith.

Two residents (same household) on a walk were interested in the investigation and I gave them a flier.

Drilling:

The screen zones were decided for MW-32 at 114 to 124 feet (2-inch casing), 170 to 180 feet (1-inch casing without a receiver), and 260 to 270 feet (1-inch casing without a receiver). The deepest well was installed today and materials are ready to install the other two.

The purge water, development water, and hydrovac water in the first two poly tanks was sampled and sent to the laboratory for analysis.

Samples Collected:

IDW06-062920
IDW07-062920

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

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Projected Work – Near Term:

6/30/2020 – Crew 2 will build the middle and shallow wells in MW-32. A rolloff bin will be delivered to MW-34 at Rowland Hall, the rolloff bin at MW-32 will be moved to the laydown area, and soil rolloff bin number 6061 will be removed from the site for disposal.

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

Other Activities/Remarks:

6/30/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	Date: 6/29/2020 **Location:** MW-32 **Description:** Holt installs the deep well at MW-32 using 1-inch, schedule 80 PVC with a screen zone from 260 to 270 and a 2-foot sump from 270 to 272.
	Date: 6/29/2020 **Location:** MW-32 **Description:** Holt adds casing to the deep well at MW-32.

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

	Date: 6/29/2020 **Location:** MW-32 **Description:** Holt adds sand filter pack to the screen zone of the deep well at MW-32.
	Date: 6/29/2020 **Location:** MW-32 **Description:** Holt removes the 6-inch casing from MW-32 after filling annular materials to within a foot of the 7-inch casing.

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

DATE: 6/30/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Kelby Depner Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper MP Environmental – Jeffrey Mooers VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Well Installation:

The middle (screen interval 170-180 feet bgs) and shallow (screen interval 114-124 feet bgs) wells were installed today with a two-foot sump on the middle well (1-inch casing) and no sump on the shallow well (2-inch casing). Sand filter pack was installed to three feet above and below the screen intervals (except sand only went to 125.5 feet on the shallow well – 1.5 feet below the screen). Additionally, a soil vapor probe was installed at 20 feet bgs and was zip-tied to the two-inch casing. Drillers added annular material up to the bottom of the 8-inch casing (100 feet bgs) and removed all of the 7-inch casing.

Roll-off bin # 5956 was delivered to MW-34 at Rowland Hall. Roll-off bin # 6122 was removed from MW-32 and taken to the laydown yard. Roll-off bin # 6061 was removed from the site for disposal. Marc signed the waste manifest along with the transporter from MP Environmental.

Samples Collected:
None

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

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Projected Work – Near Term:

7/1/2020 – Crew 2 will finish installing annular material and complete the surface of MW-32, decontaminate the drill casing, and mobilize equipment to MW-34. Underground utility surveyors are scheduled to clear the MW-34 area at 8am.

Other Activities/Remarks:

7/1/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 6/30/2020 **Location:** MW-34 **Description:** MP Environmental drops off a new soil bin near the proposed MW-34 location. The proposed MW-34 location is to the right of the frame. Photo taken viewing southwest.
	Date: 6/30/2020 **Location:** MW-32 **Description:** MP Environmental moves the soil bin near MW-32 to the laydown yard.

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

	Date: 6/30/2020 **Location:** Laydown Area **Description:** The soil bin from MW-32 replaces the previous soil soil bin (#6061).
	Date: 6/30/2020 **Location:** Laydown Area **Description:** MP Environmental hauls bin #6061 away for disposal.

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

Date: 6/30/2020

Location: MW-32

Description: Screen and casing for the middle well (screened from 170 to 180 feet bgs) at MW-32 is lined up for installation.

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

DATE: 7/1/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk CDM Smith – Kelby Depner Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper Badger Daylighting – Vernon Lipsey Badger Daylighting – Elizabeth Harris Wasatch Environmental – Anna Fiorini DPS – geophysical locate services VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Utility Clearance:

Wasatch and DPS were on site at MW-34 in the morning with GPR to survey for underground utilities. Some utilities were detected along the access road, so the proposed borehole location was adjusted to the north a few feet, leaving approximately 10 feet on either side of the proposed borehole between the fence and the utilities. Badger Daylighting then arrived at MW-34 to clear the hole of utilities to 8 feet bgs. Large boulders were encountered at the bottom. Gas and Public Utility inspectors stopped by to confirm the work area was clear of their utilities.

Well Installation:

The annular materials from 0 to 90 feet were installed today at MW-32 with sand from 18 to 22 feet bgs around the soil vapor probe. The top 10-foot section was sealed with bentonite grout. The surface completion will be installed on Monday when a concrete truck can be scheduled to pour the concrete around the well box.

Samples Collected:
None

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

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Projected Work – Near Term:

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

7/2/2020 – Crew 2 will decontaminate casing and mobilize to MW-34.

7/3/2020 to 7/5/2020 – No work is planned over the holiday weekend.

7/6/2020: Betsy will be on site with Crew #2 to begin drilling the borehole at MW-34.

Other Activities/Remarks:

7/2/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	Date: 7/1/2020 **Location:** MW-34 **Description:** Wasatch subcontractor DPS performs GPR underground utility survey. Utilities were identified along the access road. The MW-34 proposed borehole location was moved to the north (towards the fence) to give the utilities more clearance. Borehole stake is visible in mid-frame.
	Date: 7/1/2020 **Location:** MW-34 **Description:** Badger Daylighting clears MW-34 of utilities to 8 feet bgs.

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

	Date: 7/1/2020 **Location:** MW-34 **Description:** Many boulders were encountered at the bottom of the MW-34 borehole. View is downward, facing south (east is left of frame, west is right of frame).
	Date: 7/1/2020 **Location:** Laydown Area **Description:** Badger Daylighting disposes of the hydrovac soil and water into the soil containment area in the IDW yard.

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

Date: 7/1/2020

Location: MW-32

Description: Holt pumps bentonite grout into the annular space from 0 to 10 feet bgs to seal the well. Space is left at the top for surface completion (expected Monday).

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

DATE: 7/2/2020	**Prepared by:** Kimberly Yauk

Personnel on site, including Contractors:	CDM Smith – Kimberly Yauk Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper VA – Marc Yalom Rowland Hall – Bryan Bailey Rowland Hall – Allen (last name)?
Visitors/Others:	Jessica (Gardener) Brant (Gardener)

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Mobilization:

Holt decontaminated casing while they waited for the south side gate to be opened to Rowland Hall off of Sunnyside Avenue. The rig-hauler was ready to go with the rig, bobcat, and a load of casing. The support truck was loaded with fencing to block off the work area around MW-34. Once the gate was opened, the rig-hauler and support truck brought all the materials to MW-34 and the rig was set up over the hole. Fencing was set up around the drill rig, and the rig-hauler and soil roll-off bin were left in the gravel parking lot across from the borehole location, as approved by Bryan Bailey from Rowland Hall. Bryan introduced us to Allen, a groundskeeper, who we can seek out for help if we need anything and can't reach either Ann or Bryan.

The community gardeners were interested in the work going on, so I gave them several fliers to read and pass out to the other gardeners. Jessica suggested laminating one to leave on site for anyone to read. Due to the interest, Marc Yalom printed more fliers out to have on hand, and CDM Smith arranged two fliers into plastic protectors to leave with the community garden.

The site was secured, a lock was placed on the empty roll-off bin, and Holt and CDM Smith left for the holiday weekend.

Samples Collected:
None

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake County has a mandatory mask mandate in effect since Saturday, June 27. Masks are required in public.

Projected Work – Near Term:

7/3/2020 to 7/5/2020 – No work is planned over the holiday weekend.

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

7/6/2020: Betsy will be on site with Crew #2 to begin drilling the borehole at MW-34. Anna Fiorinni from Wasatch will be scheduled to support her as needed.

Other Activities/Remarks:

7/6/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

	Date: 7/2/2020 **Location:** Laydown Area **Description:** Holt decontaminates the drill casing in the laydown area.
	Date: 7/2/2020 **Location:** MW-34 **Description:** The drill rig is mobilized to MW-34 at Rowland Hall. The rig-hauler and soil roll-off bin will remain in the gravel parking lot. The mini excavator in the foreground is unrelated to the project and belongs to Rowland Hall.

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

	Date: 7/2/2020 **Location:** MW-34 **Description:** The drill rig is set up over the hole and fencing surrounds the work area. The ground around MW-34 is soft with wood chips and plant matter and occasional weeds.
	Date: 7/2/2020 **Location:** MW-34 **Description:** There is approximately 10 feet on either side of the borehole between the fencing and the marked utilities along the road.

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

	Date: 7/2/2020 **Location:** MW-34 **Description:** CDM Smith leaves Fact Sheet fliers at the community garden in plastic paper protectors for gardeners to read.
	Date: 7/2/2020 **Location:** MW-34 **Description:** Holt leaves the drill rig secured behind fencing at MW-34 over the holiday weekend.

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

DATE: 7/6/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard in the late afternoon.

MW-32:

Ready Made Concrete arrived at MW-32 with the city approved concrete mix and Holt installed the well vault. Barriers were placed around the surface completion and the rest of the fencing and boards were moved offsite.

MW-34:
150' of 8" piping and 200' of 7" piping was moved to the gravel area near MW-34. Tomorrow the hopper, portable toilet, and sample bags will be moved.

Issues/Problems Encountered/Deficiencies/Deviations from QAPP (and resolutions):
The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake County has a mandatory mask mandate in effect since Saturday, June 27. Masks are required in public.

Projected Work – Near Term:

7/7/2020 – Begin drilling MW-34.

Other Activities/Remarks:

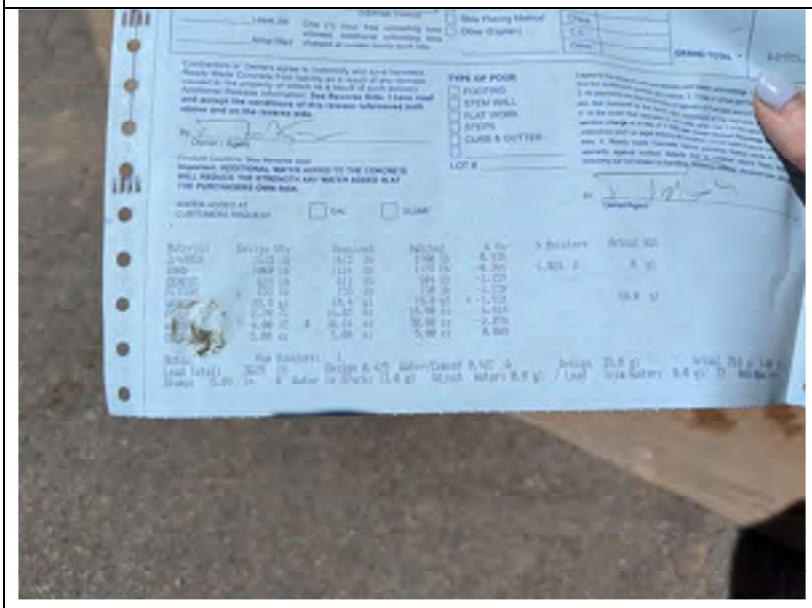
7/7/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 7/6/2020 **Location:** MW-32 **Description:** Ready Made Concrete truck delivered concrete to MW-32.
	Date: 7/6/2020 **Location:** MW-32 **Description:** View of concrete being poured for surface completion.

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

	Date: 7/6/2020 **Location:** MW-32 **Description:** View of installed surface completion at MW-32.
	**Date: 7/6/2020** **Location:** MW-32 **Description:** View of concrete batch mix ticket.

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

DATE: 7/7/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott Wasatch – Anna Fiorini Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	None

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Sonic coring operations began at MW-34 and ranged from surface to 130 ft-bgs. The 8" casing was advanced to 120'. No soil samples were collected. The highest PID reading was 52.3 ppm taken at the 40-42 ft-bgs interval.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake County has a mandatory mask mandate in effect since Saturday, June 27. Masks are required in public.

Projected Work – Near Term:

7/8/2020 – Continue drilling at MW-34.

Other Activities/Remarks:

7/8/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 7/7/2020 **Location:** MW-34 **Description:** View of drilling at MW-34.
	Date: 7/7/2020 **Location:** MW-34 **Description:** View of 40-42 ft-bgs soil core. This interval has the highest PID reading of the day, 52.3 ppm.

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

DATE: 7/8/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott Wasatch – Anna Fiorini Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	A1 Services – Serviced portable toilet

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Sonic coring operations continued at MW-34 and ranged from 130 to 210 ft-bgs. The 8" casing was advanced to 150'. 7" casing was advanced to 210 ft-bgs. Four soil samples and two groundwater samples were collected. The highest PID reading was 25.0 ppm taken at the 140-141 ft-bgs interval. The groundwater sampler will be deployed tomorrow morning and a groundwater sample will be attempted at 210 ft-bgs.

Soil Samples:

MW34-SB070820-141
MW34-SB070820-165
MW34-SB070820-189
MW34-SB070820-205

Groundwater Samples

MW34-GW070820-150
MW34-GW070820-180

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

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Projected Work – Near Term:

7/9/2020 – Continue drilling at MW-34.

Other Activities/Remarks:

7/9/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 7/8/2020 **Location:** MW-34 **Description:** View of drilling at MW-34.
	Date: 7/8/2020 **Location:** MW-34 **Description:** View of 140-142 ft-bgs soil core. This interval has the highest PID reading of the day, 25.0 ppm. Soil sample MW34-SB070820-141 was collected.

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

DATE: 7/9/2020	**Prepared by:** Betsy Bott

Personnel on site, including Contractors:	CDM Smith – Betsy Bott Wasatch – Anna Fiorini Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Sonic coring operations continued at MW-34 and ranged from 210 to 260 ft-bgs. 7" casing was advanced to 260 ft-bgs. Two soil samples and three groundwater samples were collected. Color-Tec results for groundwater samples were non-detect, including MW34-GW070820-150 and MW34-GW070820-180. Note: there was an extraction issue with MW34-GW070820-150, the vials were recapped and rerun later in the day. The highest PID reading was 2.3 ppm taken at the 234-235 ft-bgs interval.

Soil Samples:

MW34-SB070920-226
MW34-SB070920-247

Groundwater Samples

MW34-GW070920-210
MW34-GW070920-230
MW34-GW070920-260 (Taken at 17:00, will be shipped with 7/10 samples)

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

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Projected Work – Near Term:

7/10/2020 – Continue drilling at MW-34.

Other Activities/Remarks:

7/10/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

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

Photos:

	Date: 7/9/2020 **Location:** MW-34 **Description:** View of Holt offloading 6" casing.
	Date: 7/9/2020 **Location:** MW-34 **Description:** View of 234-235 ft-bgs soil core. This interval has the highest PID reading of the day, 2.3 ppm.

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

Date: 7/9/2020

Location: Connex

Description: View of Color-Tec on MW34-GW070920-260.

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

DATE: 7/12/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuper
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

MW-34 was advanced from 320 to 350 ft-bgs. Two soil samples and one groundwater samples were collected. The Color-Tec result for the groundwater sample was non-detect for MW34-GW071220-320. The highest PID reading was 15.3 ppm in the 334-336 ft-bgs interval.

Soil Samples:

MW34-SB071220-320 + Duplicate
MW34-SB071220-349

Groundwater Samples

MW34-GW071220-320

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

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Projected Work – Near Term:

7/13/2020 – MW-34 Well construction

Other Activities/Remarks:

7/13/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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

	Date: 7/12/2020 **Location:** MW-34 **Description:** Holt crew tripping in groundwater sampler for sample at 320'.
	Date: 7/12/2020 **Location:** MW-34 **Description:** Soil core from 348.5-350'. Soil core was hard clayey silt with trace gravel, moist.

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

DATE: 7/13/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuiper VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Well construction began at MW-34. The boring was backfilled to 330' with bentonite pellets. The deep 1" screen interval was installed with screen from 315-325' bgs and a sand pack from 312-330' bgs. The second 1" screen interval was installed with screen from 250-260' bgs. The sand pack around the second screen is from 247-262' bgs. The boring has been backfilled to 207' bgs and casing was pulled back to 200'.

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

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Projected Work – Near Term:

7/14/2020 – Resume MW-34 Well construction

Other Activities/Remarks:

7/14/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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

	Date: 7/13/2020 **Location:** MW-34 **Description:** Holt crew installing 1” PVC for deep zone at MW-34.
	Date: 7/13/2020 **Location:** MW-34 **Description:** Holt crew removing casing from borehole as they backfill.

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

DATE: 7/14/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuiper VA – Marc Yalom
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Well construction resumed at MW-34. The third 1" zone was installed with screen from 175-185' bgs. The sand pack is from 173-187' bgs. The shallow zone 1" screen was installed with screen from 140-150' bgs and a sand pack from 137-152'. The shallow zone well also had a soil vapor probe installed at 20' bgs and a surrounding sand pack from 18-22' bgs. The boring was backfilled with hydrated bentonite to 14' bgs and grouted to ~2.5' bgs.

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

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Projected Work – Near Term:

7/15/2020 – MW-34 Surface Completion, Decon Drill steel, load equipment

Other Activities/Remarks:

7/15/2020: A Safety Tailgate will be conducted at the laydown area at 7:15am.

Photos:

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

	Date: 7/14/2020 **Location:** Laydown Area **Description:** Holt crew organizing decontaminated 6” casing.
	Date: 7/14/2020 **Location:** MW-34 **Description:** Holt crew installing shallow zone 1” well casing.

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

Date: 7/14/2020

Location: MW-34

Description: Holt crew grouting surface seal at MW-34 from 14’ bgs.

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

DATE: 7/15/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller Holt Services – Jeff Jones Holt Services – Alex Langdon Holt Services – Aaron Kuiper Holt Services – Colby McCarthy VA – Marc Yalom
Visitors/Others:	Atlantic Pacific Trucking

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Terrasonic 150 mini-sonic drill rig • Skid Steer (Bobcat) • Rig Hauler • Tender/Water Truck • Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the laydown yard.

Drilling:

Holt installed the Augustyn vault at MW-34. They mobed the equipment from Rowland Hall back to the VA campus. Holt deconned the drill steel and loaded the majority of the drill steel on a semi to haul back to Washington.

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

Health and Safety Incident:

Alex Langdon was opening the roll off bin. The hard plastic lid did not open all of the way. As the he was attempting to open the bin, the lid swung open and the plastic caught his left hand. He was wearing gloves and did not immediately notice the laceration, but did know he was struck by the lid. He pulled the glove off noticed the blood and was taken to the University of Utah emergency room.

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

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Projected Work – Near Term:

7/16/2020 – Holt Demob from site

Other Activities/Remarks:

7/16/2020: A Safety Tailgate will be conducted at the laydown area at 6:30am.

Photos:

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

	Date: 7/15/2020 **Location:** Laydown Area **Description:** Semi loaded with casing and extra well materials.
	Date: 7/15/2020 **Location:** MW-34 **Description:** Augustyn vault well completion

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

	Date: 7/15/2020 **Location:** Laydown Area **Description:** Holt deconning drill steel.

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

DATE: 7/17/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller United Site Services
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at Connex box.

Site Activities:

Deploy PDBs in MW-24. Organize paperwork and Connex box. United services haul temporary fencing.

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

Health and Safety Incident:

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Projected Work – Near Term:

7/19/2020

Organize Connex box and IDW yard.

Other Activities/Remarks:

Photos:

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

Date: 7/17/2020

Location: MW-24

Description: Passive diffusive bag sampler attached to tether.

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

DATE: 7/19/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at Connex box.

Site Activities:

Organize connex boxes and inventory IDW.

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

Health and Safety Incident:

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Projected Work – Near Term:

7/20/2020

Measure DTW in recently installed ZIST wells for development information.

Other Activities/Remarks:

Photos:

No photos taken on 7/19.

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

DATE: 7/20/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at Connex box.

Site Activities:

Measure DTW in new ZIST wells. MW-32 not measured due to car parked on well. Depths to water measured in feet from top of casing.

MW29	DTW	MW30	DTW	MW31	DTW	MW34	DTW
A	116.36	A	225.73	A	130.42	A	131.04
B	154.31	B	231.82	B	134.93	B	132.88
C	157.38	C	232.69	C	147.99	C	130.33
						D	131.13

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

Health and Safety Incident:

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Projected Work – Near Term:

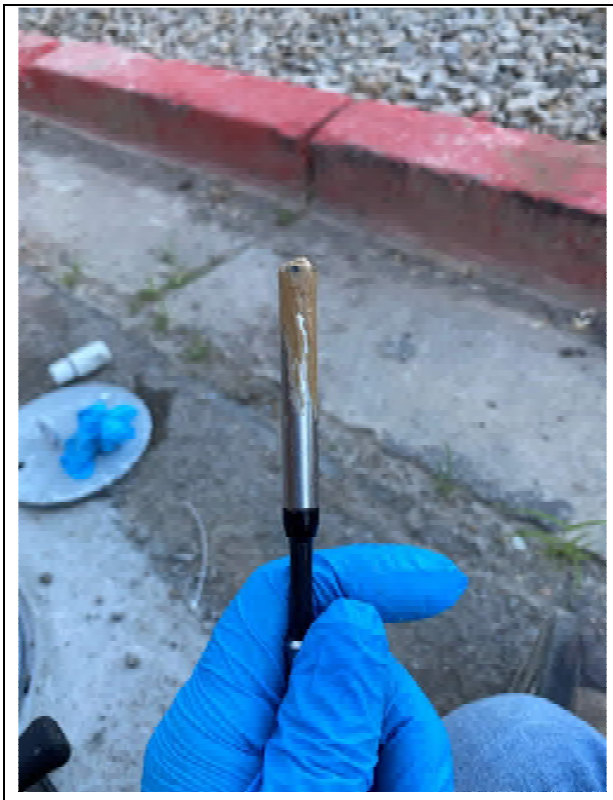
7/21/2020

Haul IDW roll off bin #5495 and move bin from Rowland Hall to VA campus

Other Activities/Remarks:

Photos:

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



Date: 7/20/2020

Location: MW-30A

Description: Sediment on the probe after measuring depth to bottom.

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

DATE: 7/21/2020	**Prepared by:** Joe Miller

Personnel on site, including Contractors:	CDM Smith – Joe Miller VA – Marc Yalom MP Environmental
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• Portable Toilet

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at Connex box.

Site Activities:

Move soil roll off bin from Rowland Haul to VA campus. Haul roll off Bin #5495 from VA campus.

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

Health and Safety Incident:

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Projected Work – Near Term:

7/27/2020

ZIST well development and pump refurbishment.

Other Activities/Remarks:

Photos:

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

	Date: 7/21/2020 **Location:** VA Campus laydown **Description:** MP moving roll off bins to south side of parking area.
	Date: 7/21/2020 **Location:** VA Campus laydown **Description:** MP Environmental Hauling soil bin from VA site.

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

DATE: 7/27/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Neil Smith Wasatch Environmental – Kevin Murphy BESST – Miles Koehler
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• ZIST pump repair materials • Well development materials

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Pump installation:
ZIST pumps that had been sent back to BESST for various repairs were installed in the following wells:

- MW-03RB – removed to assist in trouble shooting, serving as a functioning pump and tubing system; no repairs were completed on this pump.
- MW-26B – removed due to malfunctioning check valve. BESST replaced filter and check-valve spring.
- MW-26C – removed due to tubing issues. Re-installed with new tubing, filter and check-valve spring were also replaced.
- MW-23B – removed due to malfunctioning pump. BESST replaced filter and check-valve spring.

Pump repairs:
Pumps were pulled and repaired from the following wells. Repairs included changing the filter and replacing the check-valve spring.

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

Well development:
Well development was completed at MW-30. Air lifting to remove sediment was completed at MW-30C. Depth to water and total depth measurements were collected in all intervals at MW-30.

Projected Work – Near Term:

7/28/20 – Begin installation of ZIST pumps in MW-30 and others as time allows; continue developing wells.

Other Activities/Remarks:

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

Photos:

	Date: 7/27/2020 **Location:** MW-23 **Description:** Conducting pump repairs at MW-23A.
	Date: 7/27/2020 **Location:** MW-25A **Description:** ZIST pump following repairs at MW-25A.

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

DATE: 7/28/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott CDM Smith – Neil Smith Wasatch Environmental – Kevin Murphy BESST – Miles Koehler
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• ZIST pump repair materials • Well development materials

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Pump installation:
A ZIST pump was installed at MW-30C.

Projected Work – Near Term:

7/29/20 – Neil Smith to demobilize. Team to develop and install ZIST pumps at MW-31 and MW-29.

Issues encountered:

The team installed pumps in both MW-30A and MW-30B and attempted to begin a purge at these wells to ensure the pump were working correctly. At MW-30B, the team saw apparent drop off water production and shortly thereafter breakthrough. The team then pulled the pump and found the filter and pump to be covered in a dark clay-like material. The team did not re-deploy this pump for use.

At MW-30A, after initially pumping water, the team was not seeing any discharge at pressures that should have been moving water through the system. The team pulled the pump and found the filter to be covered in a light colored clay-like material. The team did not re-deploy this pump for use.

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

Photos:

Date: 7/28/2020

Location: MW-30A

Description: Light-colored clay like material covered the filter of MW-30A after attempting to purge the well.

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

DATE: 7/29/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott Wasatch Environmental – Kevin Murphy BESST – Miles Koehler
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• ZIST pump repair materials • Well development materials

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Pump installation:
ZIST pump were installed in the following wells:

- MW-31A
- MW-31B
- MW-31C
- MW-29A
- MW-29B
- MW-29C

Pump installation:
Well development was completed at MW-31C and MW-29C. Air lifting was used to remove sediment within both of these wells. Depth to water and total depth measurements were collected at all intervals at MW-31 and MW-29.

Projected Work – Near Term:

7/30/20 –Team to develop and install ZIST pumps at MW-34.

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

DATE: 7/30/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott Wasatch Environmental – Kevin Murphy BESST – Miles Koehler
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• ZIST pump repair materials • Well development materials

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Pump installation:
ZIST pump were installed in the following wells:

- MW-34A
- MW-34B
- MW-34C
- MW-34D

Pump installation:
Well development was completed at MW-34C and MW-34D. Air lifting was used to remove sediment within both of these wells. Depth to water and total depth measurements were collected at all intervals at MW-34.

Projected Work – Near Term:

7/31/20 –Team to develop and install ZIST pumps at MW-32.

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

Photos:

Date: 7/30/2020

Location: MW-34

Description: MW-34A cap prior to installation – the team needed to modify an enclosed cap for this interval to account for well vault height issues encountered.

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

DATE: 7/31/2020	**Prepared by:** Emilie Rott

Personnel Onsite, including Contractors:	CDM Smith – Emilie Rott Wasatch Environmental – Kevin Murphy BESST – Miles Koehler
Visitors/Others:	

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

Equipment in Use (field instruments, subcontractor equip, etc.)	• ZIST pump repair materials • Well development materials

Description of Field Activities – including borings completed/started (include footages), samples/data collected, etc.:

H&S tailgate was conducted at the IDW yard.

Pump installation:
ZIST pump were installed in the following wells:

- MW-32B
- MW-32C

Solinst bladder pump was installed at the following well:

- MW-32A

Well development
Well development was completed at MW-32A, MW-32B, MW-32C. A Hurricane pump was used to mechanically remove sediment within MW-32A. Air lifting was used to remove sediment within MW-32B and MW-32C. Depth to water and total depth measurements were collected at all intervals at MW-32.

Projected Work – Near Term:

8/1/2020 – E. Rott and M. Koehler to demobilize.

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

Photos:

Date: 7/31/2020

Location: MW-32

Description: Team lowering the pump at MW-32B.

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

DATE: 8/10/2020	**Prepared by:** Ben Carreon

Personnel on site, including Contractors:	CDM Smith – Ben Carreon Wasatch – Anna Fiorini VA- Marc Yalom
Visitors/Others:	None

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

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

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

H&S tailgate was conducted at the IDW area.

A down hole camera was used at MW-30A and B to inspect current conditions. MW-30A has a blockage at 241' bgs where logs indicate the start of the screen should be positioned. MW-30B was turbid at 254' bgs with some resistance at 274' bgs. After the camera sat on the material at 274', it slowly sank to 281' with more resistance on the camera (e.g. submerged in sediment).

A sample was attempted at MW-23B, however breakthrough was encountered when trying to maintain consistent discharge volume. The water column was then rebuilt at MW-23B.

No samples were collected.

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

The George E. Wahlen Department of Veterans Affairs Medical Center is operating under restricted access protocols due to COVID-19. No significant delays were encountered. On April 15th, the SLC VA began requiring "Universal Masking." Universal temperature checks are being conducted at the gate prior to entry.

Salt Lake County has a mandatory mask mandate in effect since Saturday, June 27. Masks are required in public.

Projected Work – Near Term:

Continue groundwater sampling.

Other Activities/Remarks:

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

Photos:

	Date: 8/10/2020 **Location:** MW-30 **Description:** Down hole camera setup.
	Date: 8/10/2020 **Location:** MW-30 **Description:** Camera after inspection at MW-30B.

Appendix B

Field Logbook Notes

CONTENTS

PAGE	REFERENCE	DATE
	MW-28	
	MW-27	
	MW-23	
	MW-26 Partial	
	MW-25 Partial	

Location _____ Date _____

Project / Client _____

Location SLC VHA Date 3/9/2020

Project / Client 700 S 1600 E PCE Plume Site

OU-1 Drilling

0900	CDM Smith Onsite at Cercla IDW area. J. Miller - Activities: Offload Equipment Site Orientation, H+S Meeting, Badging weather Overcast 45-55°F
1020	Begin pumping water from IDW Containment into Tank
1100	Pump ~200 gallon of SW into Containment tank.
1220	Holt Services Onsite 4 personnel
1235	Kiel Keller from Wasatch Onsite
1300	H+S Tailgate at Cercla Office Building 6
1345	Badge Office w/ Holt
1400	Stage Equipment / Walk borings w/ Pete
1500	Holt w/ Kiel to pickup Badges
1530	Holt offsite for Backfilling supplies
1545	Kiel Keller Offsite
1730	Come off MW-01S
1740	J Miller Offsite

JM 3/9/2020

Location SLC VA Date 3/10/2020

Project / Client 700 S 1600 E PCE Plume site

OU-1 Drilling

0630	Holt / CDM Onsite
~~0700~~ 0730	Activities: MW-01S Staking Hdr vac on Campus Boring, Decon Tooling weather: Overcast 45-50°F Personnel: J. Miller CDM Smith Pete Rosenberg Holt Scottie Layman Holt Michael Beal Holt Sean Sewell Holt Kiel Keller - Wasatch
0700	H+S tailgate Topics Communication, Stop work authority, Crash Points, Lifting
0730	Mob to IDW area to Offload Pallets of sand (Backfill)
0745	Ca/PID #13961
0820	Holt / Kiel Mob to MW-01S to scout access
0920	Walk Boring Locations w/ Marc Yalom

JM

Location SLC VA Date 3/10/2020

Project / Client 700 S 1600 E PCE Plume

1015	Notify Engineering Shop, Boiler Plant contractors ~~(RHI)~~ from RHI about Boring Locations
1130	Badger Onsite No Boring tools
1245	Kiel Onsite with Drill
1250	Begin Breaking concrete
1330	Badger Begin vacing
1350	Call from Neil about pre cleaning
1400	Mark Aguilar EPA Onsite
1415	Vac truck Driver Expects 3x dump per boring
1440	Carlos Aguilar visits MW-28 Location
1450	Carlos offsite
1500	Marc Yalem Offsite
1516	Mark Aguilar offsite to MW-01S
1530	MW-28 cleared to 11'10"
1600	Pallet of sand over Boring
1700	Cored / Flagged MW-33/27 Area
1720	Joe Miller Offsite

3/10/2020

Location SLC VA Date 3/11/2020

Project / Client 700 S 1600 E PCE Plume

0700	Onsite Activities: Pre clear borings. Decon tooling Setup Rig @ MW-28 weather: High 60°F partly cloudy
0730	H+S tailgate J. Miller @ DM Smith Marc Yalem VA Mark Aguilar - EPA Kiel Kelk - Wasatch Pete Rosenberg - Holt Michael Lenz - Holt Scottie Longman - Holt Topics: communication, cons & pinch spotters, Hone safe
0800	Badger Onsite - Dustin Savage H+S Tailgate w/ Joe M. IL
0815	Holt Moves pallet of sand
0820	Prep Vac truck for cleaning
0830	Login Jensen onsite Badger H/S Orient
0845	Resume pre cleaning

Location SLC VA Date 3/11/2020

Project / Client 700 E 1600 S Plume
235524

0930	- 10 x 16 Boulder cleared from MW-28
1040	Call to Mark about NOI for the Advancement, Mark checking w/ Carlos / Engineering
1125	Carlos gives blessing to End pre clearing @ MW-28
1130	Mob vac truck to MW-27
1140	Test air Bottom of Boring 9.6ppm highest ~ 7'
1141	Holt Backfill w/ sand
1145	Badger Begin clearing MW-27
1200	Encountered large Boulder halt helping to strap & Lift w/ Bobcat
1220	Cleared Rock Concrete slab
1250	Holt clearing asphalt @ MW-23
1310	Backfill MW-27
1320	MW-23 ~~at~~ asphalt Removed Mob vac truck
1330	Begin Vacing MW-23
1500	MW-23 to 14.8'
1530	Secure hole Mob Badger to containment area
1630	Badger at Driveway Ready to Pump

Location SLC VA Date 3/11/2020

Project / Client 700 E 1600 S PCE Plume

1700	Holt Onsite w/ Hayballes & trash pump
1720	Pump vac truck water into tank
1800	Dump soil / mud into containment
~~1900~~ 1830	- Clean out vac truck
1845	- Badger Offsite
1900	- Holt Secures equipment
1915	- Holt / CDM Smith Offsite

3/11/2020

Location SLC VA Date 3/12/20

Project / Client 700S 1600E PCE Plume Site

0630	J.Miller CDM Smith Onsite
0650	Calibrate PID
	check containment
0730	H+S tailgate in lower Lot
	JMiller
	Kiel Keller
	Pete Rosenberg
	Scottie Langman
	Mike Levi
	Marc Yalom
	Mark Aguilar
	Tasks: Backfill boring MW-23
	Decon tooling, setup drill Rig
	Temp 40°F - 55°F Clear
0800	Holt moves Sand from boring
0810	Carlos Aguilar onsite to inspect
0820	Carlos Approves Boring MW-23
	PID Screen 3.8ppm
0900	Backfilled MW-23 w/Sand/patch
0925	Pump off containment water
0950	Containment Skimmed call to Neil Smith about Progress
1030	Check on Decon area

Location SLC VA Date 3/12/2020

Project / Client 700S 1600E PCE Plume Site

1045	Call to United Rentals
1100	Call from Kathy Vincent Regarding ~~Delivery~~ Delivery of fencing and porta potty 208 906 0361
1120	Mob casing to MW-28 Location
1200	Call Carlos to Issue Permit
1210	Permit Issued to dig MW-28
1215	Call from United Services - Holt set Multube MW-28
1225	United Rentals Onsite
1330	United Rentals Offsite
1346	Begin casing Backfill Containment
1410	Mark aguilar onsite *
1424	collect MW28-SB031220-14
1437	collect MW28-SB031220-16
1515	Dump hopper
1550	collect MW28-SB031220-22
1640	Collect MW28-SB031220-35
1700	Dump hopper
1730	Secure site / Pack Samples for Shipping

* Not Submitted due to 16' sample having higher PID

1815 - Offsite

12

Location SLC VA MW-28 Date 3/13/2020

Project / Client 700 S 1600 E PCE Plume

0645	CDM Smith Onsite - J. Miller
	Activities: Advance MW-28 Boring
	weather: 35-58°F Clear
0710	Holt/Wasatch Onsite
0730	H+S Tailgate
	J. Miller
	Kial Keller
	Pete Rosenburg
	Scottie Lampman
	Michael Lee
	Marc Yalom
	Topics: Crush Points, Traffic - 20mph
	Brian Iverson VA Safety Rep.
	End week Safely
0745	Warm up drill Rig / Inspections
0815	Add Casing 10" 30-40'
0855	Collect MW28-SB031320-49
	+ Dup FD01-SB031320 (0700)
0920	Holt Main to get 9" casing
0930	Holt Back in / 9" casing
1000	Holt Trip in 9" casing

13

Location SLC VA Date 3/13/2020

Project / Client 700 S 1600 E PCE Plume

1030	- Boring not straight Back out 10" casing to get it vertical
1120	- Trip in 9" casing
1135	- advance 9" casing to 50'
1230	- Sample MW28-SB031320-59
1340	- Sample MW28-SB031320-67
1400	Adrian Bagard (city SLC) onsite to talk about Boring location
1505	MW28-SB031320-86
1550	MW28-SB031320-97
1600	Secure drill Rig
1615	Wasatch offsite
1630	Holt Offsite
	Prep coolers for shipping
1715	CDM Smith offsite

3/13/20

Rita in the Rain

14

Location SLC VA MW-28 Date 3/15/20

Project / Client 700 S 1600 E PCE Plume

0645 CDM Smith Onsite
Calibrate PID prep for drilling

0710 Holt Onsite warm up Equipment
0730 H+S Tailgate
J. Miller - CDM
Pete Rosenburg - Holt
Michael Lem - Holt
Scottie Lampman Holt
crush points, Fatigue, Lifting
Traffic
Weather: 45 - 60°F windy 10-20
Activities: advance Boring from
78 Bgs, manage cuttings

0805 No water in boring Muck from 95-8
0815 Resume Drilling
0930 Change out Jaws on Clamps
0940 collect MW28-SB031520-107
0950 Resume drilling
1055 collect MW28-SB031520-117
+MS/MSD
PID >100ppm segregate Core
in Drum

15

Location SLC VA MW-28 Date 3/15/20

Project / Client 700 S 1600 E PCE Plume

1115 Holt working on O-Ring (Rig Maintenance)
1140 Holt offsite for supplies
1230 Holt Back onsite
1400 Rig Repaired holt Binging 8" casing up
1420 Empty Hopper
1440 Trip in 8"
1550 Drillers can't get 8" down only to 104' plan to pull casing and go down w/ 8" only.
1600 Prep site for night
1630 Holt offsite
1645 CDM offsite

3/15/20

Rite in the Rain

Location SCC VA Date 3/16/20

Project / Client 700S 1600E PCE Plume

0645 CDM Onsite

0730 H+S tailgate
J. Miller CDM Smith
K. Keller Wasatch
P. Rosenberg Holt
M. Leni Holt
S. Lampman Holt

Weather: 45-60°F Windy clear
Task: Trip out Casing Resume advancing Boring MW-28

Topics: Fatigue, Focus, Contact w/ Equipt colocated Work

0750 Holt Moving Casing in prep to trip out 9" for 8"
0805 Starting to trip out 8"
0830 Trip out 9" casing
0915 9" casing pulled Boring open to 109'
1000 Clean out Boring
1005 Rig maintenance Hydraulic leak
1030 Refuel Offsite
1050 Holt to Offload 9" casing

Location SCC VA Date 3/16/20

Project / Client 700S 1600E PCE Plume

1120 Oring Replaced Resume Drilling
1135 add casing 110-120'
1155 Holt offsite to get Orings + Fittings
1215 CDM + Holt containerize cuttings
1240 Holt Returns ~~to get~~ Replaced
1310 Resume ~~cleaning~~ advancing Casing
1440 PID 60+ Moisture sending Max Reading tied to wasatch for another

1430 Sample MW28-SB03162O-121
1540 Sample ~~MW28-SB03162O-139~~
1600 wrapping site
1615 Holt Offsite
1700 CDM Wasatch Offsite

3/16/20

Location SLC VA MW-28 Date 3/17/20

Project / Client 700 S 1600 E PCE Plume

0645 CDM Onsite
Activities: Advance MW-28 boring
Weather 45-60°F
0730 H+S tailgate:
Topics: Focus, Lifting, Fatigue
wellbeing COVID-19
Joe Miller
Pete Rosenberg
Michael Lewis
~~Sallie~~ Longman
Kiel Kelly

0745 Warm up Equipment
0750 Calibrate Hasatch PPB Rae
0800 Dump hopper offload Drill Rod
0815 Drill Rig inspection
0825 Resume Advancement
0855 Collect MW28-SB031720-144
0930 150-160' ~~Rain~~ came Back ~~not~~
wait for 15min to tag H_2O
0950 DTW 144.5 casing to 140
~~1000~~ ~~Run Colle~~
0930 collect MW28-SB031720-156
1005 Run casing to 150'

Location SLC VA MW-28 Date 3/17/20

Project / Client 700 S 1600E PCE Plume

1100 collect MW28-SB031720-165
1103 DTW 139.4
1115 Call to Neilsbrunt WL + well
check WL again 162.2 / 2nd
Determine to advance Boring
167-170. No water in Rock
1315 Sample MW28-SB031720-171
1400 Sample ~~MW28-SB031720-185~~
1445 Sample MW28-SB031720-199
~~1600~~ 1515: DTW 123.7
Collect Dup ~~from 185~~ 206
FD02-SB031720 @ 0800
1620 DTW 63.7'
1630 Haul to laydown area CDM to
IDW area
1730 Pack Samples for shipping CDM offsite
1540 collect MW28-SB031720-206

3/18/20

Rite in the Rain

Location SLC VA Date 3/18/20

Project / Client 700S 1600E PCE Plume Stc

0650	CDM Onsite
0707	Earthquake!
0730	H+S tailgate:
	Fit For duty, COVID-19, Lifting
	Attendees:
	Joe Miller
	Kiel Keller
	Pete Rosenberg
	Michael Lein
	Scottie Lampman
	Tasks: Finish MW28 Boring
	Build well
	Weather Overcast cool 40-55°F
0745	Warm up equipment
0910	>TD 154.9'
0915	Advance casing to 200
0820	Trip in core barrel
0830	Kiel calibrate Wasatch PPB
	0ppm 100ppm
0940	Work on Jaws Rig Maintenance
1005	Resume adding Casing
1100	pushhead sampler fitting two big
	fs - drill Rods

Location SLC VA Date 3/18/20

Project / Client 700S 1600E PCE Plume

1220	Reassemble Pushhead Sampler
1300	Teflon tape sampler
	To make it hold
1310	Send it down the well
1323	DTW 147.6'
1340	collect Pushhead GWS ~~MW28-GW031820-211~~ JH 3/18/20
	MW28-GW031820-211
	+ color tech analysis
1405	Trip in with flapper bit
1440	Boring TD 210.5'
1530	Haul off load Portland
	Mob to B+B for Bentonite
1630	Offsite

3/18/20

Rite in the Rain

Location SLC VA Date 3/19/20

Project / Client 700 S 1600 E PCE Plume

MW-28 well install

0645 On site prep for day

0730 H+S tailgate

Topic: COVID-19, Earthquakes

Site orientation, PPE, weather

~~0715~~ Attendees:

Joe Miller FTL SSHO

Kiel Keller - Consultant

Connor Kelley - Sample CDM

Kimberly Yount - SSHO CDM

Pete Rosenburg - Drill

Scottie Langman - Helper

Michael Levi - Helper

Mark Yulon - VA

Tasks: Site Orientation

Well construction

Organization Badging

0810 DTW - 200.22' BTOC

0820 Drillers Onsite w/ well materials

~~0830~~ - well construction

20' screen

2 sand

3' Pellets

SVP 24 5th 24-26

~~23~~ 48 45-80

118 115-120

Location SLC VA Date 3/19/20

Project / Client 700 S 1600 E PCE Plume

Sch 40 PVC 0.010 slot screen

0920 - PVC Blanks 10' 1/4"

PVC Screen 10' 1/4" 0.02083

Bottom Cap 5" 0.4167

200	10+0.4167+0.02083	200.4375
200	10+0.02083	190.41667
190	10+0.02083	180.39584
180	10+0.02083	170.37501
170	10+0.02083	160.35418
160	10+0.02083	150.33335
150	10+0.02083	140.31252
140	10+0.02083	130.29169
130	10+0.02083	120.27086 (118)
120	10+0.02083	110.25003 2.27 2'5"
110		100.2292
100		90.20837
090		80.18754
80		70.16671
70		60.1456 48
60		50.12505 1' 2.125
50	17'	40.10422
40		30.08339 1.08339
30		20.06256

Location SLC VA Date 3/19/20

Project / Client 700 S 1600 E PCE Plume

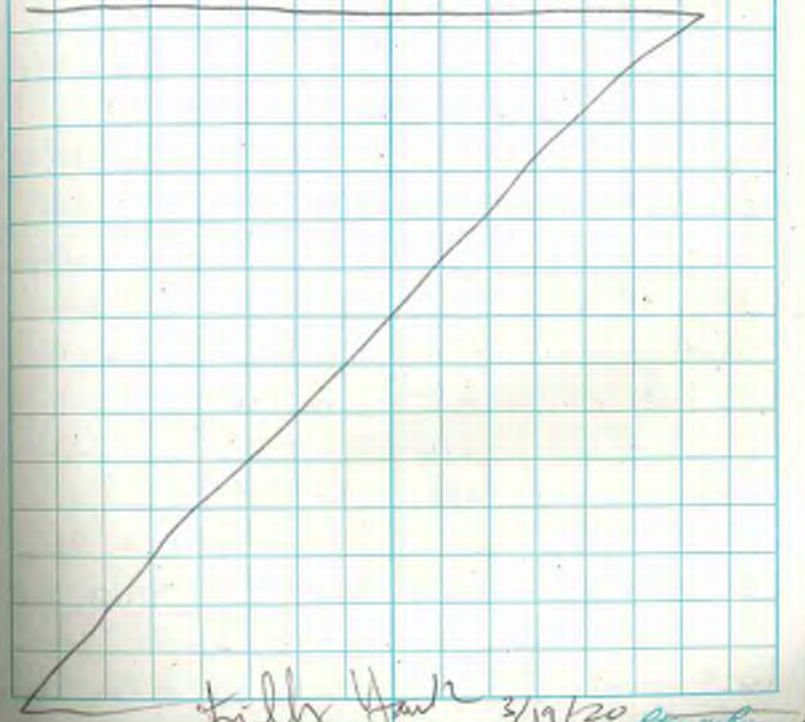
1010	SVP 118 ~~typed~~ to well
1100	well to depth w/ 3 SVP 118 48-24
1138	Begin adding Sand 12/20
1145	Trans to SSHO/ETL to K. Yost
1200	Begins to rain. Crew puts on rain gear.
1220:	Rain Stops. Overcast
1334	SAND TO 186.5'. BEGIN ADDING BENTONITE PELLETS. ADD 1 SEAL. BUCKET OF PELLETS ~~THEN~~ HYDRATED & CHECKED DEPTH.
1344	PELLETS ~~10~~ LWS 3-19-20 FROM 186.5'-153'.
1410:	Clouds begin clearing. Partly sunny.
1415	Kiel leaves the site for the day.
1420	Shannon Smith stops by the site to check progress. Discuss permit for Sunday - OK to get on Sunday. Call Carlos.
1425:	Bentonite continues. Joe organizes the conex boxes.
1530.	Place sand from 120 to 115 feet.
1541	Sand to 114.6' Resume adding chips
1610:	Rain begins. And hail! 1/4-pea size.

Kelly Yount 3/19/20

Location SLC VA Date 3/19/20

Project / Client 700 S 1600 E PCE Plume

1645:	Sand placed starting at ~~5'~~ 51 ~~ft~~ feet. Bentonite starting at 49 feet
1720:	Sand placed starting at 27 feet
1725:	Ran out of sand ~~Appx~~ Approximately 23 feet bgs. Drillers close down for the day. Connor and Kimberly get oriented to the connex and supplies.
1750:	CDM leaves site. Locks gate.



Kelly Yount 3/19/20 Rain on the Rain

Location SLC VA Plume Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Complete MW-28. Vacuum MW-27

Conditions: Wet but not raining - misty 39°F, cloudy

Plan: Vacuum MW-27, complete MW-28 (23'-0' and surface completion), Holt decon

0645: CDM on site, prep for day.

0850 H&S Tailgate

Attendees:

Kimberly Yauk	CDM	
Joe Miller	CDM	
Connor Kelley	CDM	
~~Pete~~ Logan Jensen	~~Holt~~ Badger	
Mike Lewi Jr.	Holt	
Scottie Landman	Holt	
Kiel Keller	Wasatch	
~~Mark~~ Marc Yauan (:)	VA	

and Pete (Holt) ~~3/20/20~~

0900: Hour and a half down time was for drillers to restock sand and get a jackhammer for the asphalt cutting.

0900 cont'd: Holt begins setting up to complete MW-28, Badger ~~3/20/20~~ gets started clearing hole.

Kimberly Yauk 3/20/20

Location SLC VA Plume Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Complete MW-28, Vacuum MW-27

0915: Complete daily inspections. Holt gets sand to complete the final soil vapor probe filter pack. Top 10 feet of annular space will be neat cement.

1050: Holt is mixing cement. Sand went from 27 to 21 feet. Bentonite went from 21 to 11 feet. Badger Vacuum is down 11 feet at MW-27.

1105: Drillers grab more cement for MW-28 - 6 gallons to 94 lbs.

1110: Badger is clearing MW-27 to ~~14~~ 11 feet ~~3/20/20~~

1125: Mark check on progress and leaves

1130: Republic Services empties adjacent dumpster - move field vehicle for them.

Some of the cement bags got some moisture - drillers have to sift out chunks before mixing.

1200: Drillers pick up more cement - all casing is removed and grout that was at surface has settled. Vacuum truck is encountering boulders.

~~3/20/20~~ Kimberly Yauk 3/20/20

Location SLC VA Plume Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Complete MW-28, Vacuum MW-27

1210: Partly Sunny.
Drillers take a lunch break

1230: Drillers back from lunch.
Vacuumed hole is wide and will require more cement - drillers continue to mix. Grout is 4 feet below grade.

1255: Joe returns to the site - He left around noon to find a mini screw driver to open the battery compartment of the Color-Tech instrument.
Badger vacuum truck is not progressing past 12.5 feet, it seems.

1315: MW-28 is grouted to 2 feet below grade. Pete secures soil vapor probe tubing and cuts the PVC down to just below ground for the well box to be placed. Mike and Scott load casing to be decon'ed

TS 3/20/20

Location SLC VA Plume Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Complete MW-28, Vacuum MW-27

1330: Pete cuts casing at MW-28 and Carlos A. ~~TS~~ TS 3/20/20 is on site to inspect the excavations and give us the permit to drill MW-27 on Sunday.
MW-27 vacuuming is done at 12.7 ~~feet~~ TS 3/20/20 feet deep.

1350: Logan (Badger) mobilizes off the ~~hole~~ site. TS 3/20/20 Mike & Scott (Holt) decon the casing.
Equipment Blanks will be collected off the sampler and casing and submitted with the samples Monday evening.

1355: Boulders and cobbles from MW-27 that were too big will go in a hopper and a pallet of sand will go over the hole. Connor is watching it until it gets covered. Badger will unload into the containment area. Sunny now.

1425: Pallet with bentonite is covering MW-27. The vacuum truck is beginning to unload into the containment.

TS 3/20/20

Location SLC VA Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Mobilize to MW-27, empty Vac

1425: (Continued) The drillers brought the steel casing and samplers to be decon'ed but will first set the well box and clear up the MW-28 area. Pete estimates about an hour. Kiel and Connor are helping Logan with the Vac.

1445: Vacuuming begins. Johnny Shellery on site to assist (from Badger). Connor and Kiel add water (tap) to pump to prime it. Fill the first containment tank and add some to the second. Label on second containment tank to match the first.

1455: Water pumped. Prepare to dump soil into the secondary containment area lined with visqueen.

1500: Drillers have moved the rig to MW-27 and continue to bring the rest of the materials using the forklift. Mostly Swagg.

3/20/20

Location SLC VA Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

Mobilize to MW-27, Empty Vac Truck.

1500 (continued): Pete sets the well box

LATE ENTRY: Joe Miller left for a call at 1400 and will leave site shortly after it is done to catch his flight home. Kiel gives Kimberly the PID with calibration gas.

to 3/20/20

1525: Logan stopped by MW-28 to get a signature and left site.

1525 Johnny (Badger) also left.

1530: Kiel checks in with the Holt/Kimberly crew at MW-28 and leaves site (Back Monday for repairs.)

1535: Connor back from the connex area - soil just fits in the containment area. Holt will need to pick up hoses and pump.

1600: Drillers complete the move to MW-27. MW-28 has cones around it.

1615: Drillers bring forklift to decon area while CDM grabs bottles and sampling equipment for EB samples

1630: Collect EB01-GW032020 @ →

3/20/20

Location SLC VA Date 3/20/20

Project / Client 700 S 1600 E PCE Plume

1630 Cont'd Push ahead sampler. Collected off the tip of probe while sheltered inside field vehicle, away from the generator.

1645: Collect EB02-GW032020 off decorned drill casing. Generator and forklift were turned off so we could sample.

1705: Drillers break for the day. Will decon the remaining casing first thing Sunday (3/22). Labels for trip blank will be TB06-SB032020 time marked at 1700

1730: Two EB samples and one TB sample on ice in cooler. Make copies of permits for each car (2 CDM/1 Holt). Leave site / lock fence / lock gate Keys to Connor. He will check containment of soil tomorrow.

3/20/20
Kimberly Yauk

Location SLC VA Date 3/22/20

Project / Client 700 S 1600 E PCE Plume

Conditions: Overcast.

Plan: Decon casing, set up at MW-27 and begin drilling

0645: CDM onsite, prep for sampling

0715: H&S Tailgate

Attendees:

Kimberly Yauk	CDM
Connor Kelley	CDM
Pete	Holt
Mike Lelli Jr.	Holt
Scottie Landman	Holt

0730: Mike and Scottie to decon and Pete will set up.

0750: Kimberly leaves site to get paperwork from hotel and buy DI water.

0900: Casing is decorned. Drillers bring it up to MW-27 and continue setting up.

1000: Fencing is set up. Bobcat is bringing ~~more~~ 3/22/20 ~~casing~~ the hopper. Kimberly calibrates the PID.

10:23: Begin advancing casing (7") 8" 3/22/20

Kimberly Yauk 3/22/20

Location SLC VA Date 3/22/20

Project / Client 700S 1600 E PCE Plume

1050 Begin collecting samples. Targeting higher hits on PID

MW27-SB032220-13

1055 MW27-SB032220-16

MW-27-SB032220-30 +

1115 MW27-SB032220-30

1140 MW27-SB032220-40

1205 MW27-SB032220-50

1210 FD03-SB032220 @ 50 feet

Drillers stopped around 1205 to dump the hopper.

Call with Joe to confirm Field duplicate number.

1220: Drillers will switch to ~~7"~~ 8" casing → checked with Pete: 0 to 60' will be 9" casing (w/ 8" core barrel) and 60' onward will be 8" casing with 7" core barrel (for sampling). Drillers take a break. 3/22/20

1230: Drillers start back up - starting at 50 feet.

1300: large chunk of Sandstone (10") at top of 50-51 feet

3/22/20

Location SLC VA Date 3/22/20

Project / Client 700S 1600 E PCE Plume

1300 (cont'd) - drillers only recover 50-56 feet (because of the Sandstone chunk.

1310: Sample MW27-SB032220-54.5 +MS/MSD

1315: Drillers recover 56-60

1345: Sample MW27-SB032220-70.

Text with Joe about the magnetic susceptibility meter. It wasn't reading properly when it wasn't FLAT against the soil core. Added readings from 13' to 60' using soil moisture jars. Will continue from 70 feet at 2-3 foot intervals

1520: Sample MW27-SB032220-75

1535: Sample MW27-SB032220-88

1600: Sample MW27-SB032220-96

Drillers just hit a void from 100 to 110 feet.

1610: Pete pulled up the rod. It was not a void. The drill rod broke.

1615 FD04-SB032220

Drillers begin fishing the rod out.

3/22/20

Location SLC VA Date 3/22/20

Project / Client 700S 1600E PCE Plume

1635: Pete can't get the rod tapped on, so he'll rent another tapping device (ID instead of outter diameter) and begin in the morning.
Drillers brought soil from the hopper to the soil rolloff.
Begin closing up for the day.
1705: Drillers pick up the trash pump to return tomorrow morning.
Holt leaves the site. Connor gets ice.
1715: Close up connexes and gates.
1725: COM leaves site

3/22/20

Location SLC VA Date 3/23/20

Project / Client 700S 1600E PCE PLUM
Drill/Sample MW-27 - 100' to 180'

CONDITIONS: SUNNY 46°F LIGHT WIND
PLAN: RETRIEVE BROKEN TOOLING, RESUME MW-27 DRILLING. SHIP SAMPLES
0900 HOLT, COMSMITH ON SITE
0930 H&S TAILGATE. ATTENDEES:
KIMBERLY VAUK (COMSMITH)
CONNOR KELLEY (COMSMITH)
MARC KAMAN (VA)
MIKE LEWIS JR (HOLT)
SCOTTIE LINDSMAN (HOLT)
PETE ROSENBERG (HOLT)
0940 HOLT TRIPS DOWN TO RETRIEVE ~~BROKEN~~ TOOLING. On 3-23-20
0953 RETRIEVE TOOLING.
BEGIN TRIPPING NOW TO DRILL FROM 100'-110'. SAMPLES TARGETING HIGHER HITS ON PIDS.
1030 SAMPLE MW-27-SB032320-102 On 3-23-20
1110 INTERSPACE NOW DRILLING: 0.0 ppm.
1115: Collect sample MW27-SB032320-114
PID WAS 103.1 ppm - will be drumming the soil core. Drillers go to get more casing (8-inch)
1130 Marc stops by to check progress.

3/22/20

Location SLC VA Date 3/23/20

Project / Client 700S 1600E PCE Plume

Drill/Sample MW-27 100'-180'

1200: Drilling starts back up again. 110-120-foot core was drummed.

1240: Collect Sample MW27-SB032320-122 at 122 feet bgs

PID was 98.4 ppm.

Dark clouds rolling in.

Marc stops by the site

1245: Connor goes to pick up a pop-up tent to cover sampling table when it starts to rain.

Marc stays to watch.

1320 MARC OFFSITE.

COLLECT SAMPLE MW27-SB032320-130 @ 130FT. PID: 17.9PPM

Cold wind picks up. Dark clouds.

Open pop-up tent to protect Sample table.

1400: Rain (light) has begun. Kiel stopped by to say he left the shipment of coolers in the Connex for us. - Gloves & PID filters (Kiel Keller / Wasatch)

1420: MW27-SB032320-140 Windy!

1425 MW27-SB032320-150

3/23/20

Location SLC VA Date 3/23/20

Project / Client 700S 1600E ~~PB~~ PCE Plume

MW-27 100'-180' 3/23/20

1430: Rain has let up

1450: Sun starting to come out.

1455: MW27-SB032320-158

Partly sunny, breezes now instead of wind. Connor grabs the EB samples from the other cooler and ~~the custody~~ seals. No custody seals. 3/23/20

1510: A lot of rig chatter - very slow drilling. Check driller's breathing zone and top of hole

breathing = 0 ppm

top of borehole = 0.1 ppm 164

1525: Drillers hit water at ~~170~~ feet. 3/23/20

Overcast again. Pete says it got softer to drill around 163 or 165 feet. Water at 164 ft.

1550: Connor bails a sample

1600: MW27-GW032320-168

Connor moves a field vehicle for VA worker.

log missing from 160-168 (confirm)

165 = 3.39 mag susc.

Rain picks up again.

3/23/20

Location SLC VA Date 3/23/20

Project / Client 700S 1600E PCE Plume

Drill/Sample MW-27 100'-180'

1605: Connor logs soil and photogr. Kimberly preps cooler to ship. We were not able to prevent headspace in the VOAs - only collected 2 VOAs instead of 3 recovery. Very mucky water. MW27-SB032320-166 @1605 +8 3/23/20

1610: Pouring rain. QC and seal the cooler.

1630 Sign COC and zip lock it. Tape it onto cooler lid.

1640 Brief Sun. 168 to 180 core is out. Connor packs up the cooler and drillers stop drilling. They're all wet and are done.

1645: Connor leaves the site with samples. Mike and Scott drop off the Soil. Gate was locked so they came back for the key. to the rolloff +8 3/23/20

1650 logging 168 to 180 core now. Mostly sunny now.

1710: Drillers are done and leave Site. Sample @ PID = 30.4 ppm MW27-SB032320-175 +8 3/23/20

Location SLC VA Date 3/23/20

Project / Client 700S 1600E PCE Plume

Drill/Sample MW-27 100'-180'

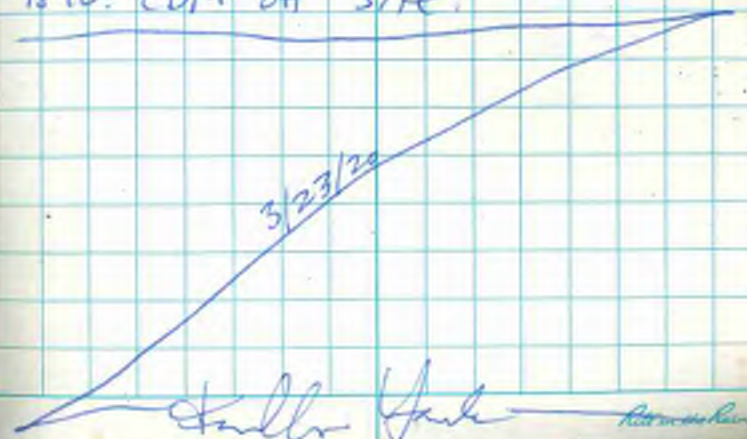
1735: Connor back on site. Finish magnetic susceptibility and soil logging / photos

1745: Done logging. Pack up for the day.

1800: MW-27 drilling area is wrapped up, fenced off, and caution-taped by the pedestrian walkway. Bring supplies back to the connex. Samples collected at 1600 and 1710 were not shipped today and are in a cooler on ice. Connor pumps water out of the soil containment area.

1835: Lock connex and gate

1840: CDM off site.



Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180-220')

Weather: 30's °F, Overcast

Plan: Drill MW-27 from 180 feet to TD and collect push-ahead samples. Drop cooler at FedEx in afternoon.

0645: Arrive on site. Make copies of COC

0700: Connor heads to MW-27 to do calibration of PID and start checklists. ← 3/24/20

0715: At MW-27. Drillers are ~~gassing~~ fueling up the rig. Pete checks for water. Water meter is dry (with casing open from 176 to 180 feet.

0730: H&S Tailgate

Attendees: *see H&S sheet for details *

Kimberly Yauk
Connor Kelley
Pete Rosenburg
Mike Lou Jr.
Scottie Lampman
Marc Yalom

0740: Drillers warm up rig & get ready.

3/24/20

Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180-220')

0800: Drilling begins SB ~~H&S~~ 3/24/20

0910: Collect Sample MW27-032420-185
Call to Joe to discuss magnetic susceptibility meter - it varies widely sometimes and we have low confidence that all the readings are accurate. We'll do our best to clean the sensor and re-collect data points that look unlikely.

0955: Drilled to 200 feet. No water yet. Collect sample MW27-SB032420-~~193~~ 192.5 ← ~~H&S~~ 3/24/20
PID = 32.5 ppm
Soil is wet though so we're close. Driller said soil got softer at 193 feet but it's not wet enough to be able to sample with the push-ahead sampler.

1020: Continuing to drill towards ~~210~~ Get ~~H&S~~ feet. Gusty breezes, 57°F, Casing to 200'. Sunny / blue sky south with dark clouds to the NNW wind is picking up.

1055: Formation is very tight. →

3/24/20

Location SLC VA Date 3/24/20

Project / Client 7003 1600E PCE Plume
MW-27 (180'-220')

1055 Continued: Driller is having trouble getting past 190 with outer casing. (:) Tooling getting stuck in formation.

LATE ENTRY: Marc checked on our progress briefly at ~1005

1120: Marc checks on our progress. Windy and overcast. He doesn't stay.

1200: Status: Core barrel has gone down to 210 but was stuck so the ~~sample~~ has vibrated out. ~~outer~~ 3/24/20 outer casing down to 190 feet. Static water measured at 184.5 feet.

1210 Plan is to clear the hole to 210 and do a push-ahead sample. Drillers are worried about getting stuck in the boulders.

1220: Soil dumped into rolloff.

1230 Connor goes to get a

~~TS~~ 3/24/20

Location SLC VA Date 3/24/20

Project / Client 7005 1600E PCE Plume
MW-27 (180'-220')

(1230 cont'd) water level from MW-28

1240: Drilling / clearing hole continues.

1245: 183.64' water at MW-28.

1300: Collect a sample from the slough that vibrated out of place and was re-cored. Calling the depth 205 feet but maybe we won't have the lab run this one.

3/24/20 TS MW27-SB032420-205

1340 1330: Drillers cleared borehole to 210 feet. Water is at 193.97' Drillers prepare for push-ahead sample. Partly Sunny again

1340: Decon both water meters.

1400: Collect MW27-SB032420-210 GW TS 3/24/20 First two attempts were dry. Vibrated the sampler more and got the sample - one of the 3 has zero headspace.

Time was 1430 TS 3/24/20

1430: Drilling continues to 220 and Connor leaves to get more string, paper towels, and ice.

TS Mark 3/24/20

Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180'-220')

1430: cont'd Rain begins again. Note that water was very effervescent with the HCl. (Preservative)

1440: Push-Ahead tooling is removed.

1450: Marc stops by for five minutes to check progress. He says the Sunnyside gate will be closed from 0900 to 1500 every day. He also gave us the well ID tag for MW-27. He does not have MW-28 yet. Marc leaves for the day.

1455: Joe reminded me that we need to get Color-tec samples - MUST get one at the next water sample. Deconned the water level meter.

1530: Logging the 210-220 SoI core. It is very water-logged and had low recovery - about 6" of 10 feet.

1535: Collect MW27-SB032420-218

3/24/20

Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180'-220')

1535 Cont'd: PID = 0.3 - 4.2 ppm across the core. Call to Neil & Joe
- Do we want screen at 230'?
  - Bentonite won't hold 200 feet of casing up
  - We're at 220 now and continuing to 230 will go into tomorrow.
- Decide that MW-27 is like MW-28 and GW @ 220 is alright.

3/24/20

1540: Drillers pull ~~ca~~ core barrel to install the push-ahead sampler. Connor leaves to collect the IDW wastewater sample (8x 1L ambers, 3x 40mL VOAs, 2x 250mL polys)

LATE ENTRY

~1500: Connor returns to the site with string and ice → No paper towels due to Coronavirus panic-buying. Marc has asked the drillers to move their rig for access to a generator.

3/24/20

Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180'-220')

1630: CHECK RIG BREAKING SPEED: 0.00 fpm.

1640: Collect [MW27-GW032420-220] and a corresponding color-tec sample. Color-Tec on ice and GW sample into already QC'd cooler.

1650: Add a [TB07-032420] trip blank to the soil and groundwater cooler. Update chain of custody.

LATE ENTRY: [IDWPL-GW032420] 3/24/20

1620: Connor has collected the IDW Sample - 8 x 1L ambers for PCBs, Pesticides, Herbicides, ~~Total~~ 3/24/20 SVOCs ~~RCRA Metals~~ 3/24/20, 3x 40mL VOAs for VOCs, and 2x 250mL pdys for total RCRA metals.

LATE ENTRY

1630 Label samples and make a separate chain of custody.

1700: Connor leaves to ship the coolers. Drillers are finished and help put things away for the evening. Move Semi truck.

LATE ENTRY

1635: Decontaminate the push-ahead tooling.

3/24/20

Location SLC VA Date 3/24/20

Project / Client 700S 1600E PCE Plume
MW-27 (180'-220')

1730: MW-27 area is secured with fence and caution tape. Close Connex boxes, close lid of water containment tank. Lock on IDW gate is bent and will not close. Call with Connor - FedEx changed its hours - He had to drive 10 more minutes towards the airport to find a shipping center with late last-dropoff.

1820: Talk with Joe about bent lock. Swap locks with Connex #3 (far left) and secure the gate.

1830: Close and lock the front gate.

1840: Leave site.

LATE ENTRY:

1715: Holt leaves the site. Will be a late start tomorrow because they need to pick up more bentonite (0815).

3/24/20

Location SLC VA Date 3/25/20

Project / Client 700S 1600E PCE Plume
MW-27 Construction

Weather: Snow and sleet, 37°F, overcast

Plan: get final water level and determine screen zone and soil vapor depths, install well at MW-27, decon equipmt and wrap things up tomorrow

0750: CDM Smith on site. Drillers are picking up more bentonite.

0810: Drillers arrive, begin fueling rig and donning rain gear

0815: Marc on site. He will be working from home from here on. There are 3 confirmed ~~Coron~~ Coronavirus cases on site. KJ 3/25/20

0830: H&S Tailgate

Attendees

Kimberly Yauck	CDM
Connor Kelley	CDM
Marc Yalom	VA
Pete Rosenburg	Holt
Mike Lewis Jr.	Holt
Scott Lampman	Holt

~~KJ~~ 3/25/20

Location SLC VA Date 3/25/20

Project / Client 700S 1600E PCE Plume
MW-27 Construction

0845: Drillers go to pick up well installation materials

0850: Grab a water level from MW-27 → 196.19 feet bTOC

0900: Daily checklists and decon the water level meter. Call to Denver to confirm soil vapor probe depths - ~~voice~~ voicemail, send txt KJ 3/25/20

LATE ENTRY:

0845: Check borehole opening with PID → 0.0 ppm

0930: Joe and Neil decide on SVP depths. Kimberly and Connor scrub the water level meter in alconox - deep clean

1010: Drillers back on site

1020: Drillers begin a cleanout run.

Soil Vapor Probe Depths

155 (152-157)
113 (110-115)
75 (73-78)
48 (45-50)
28 (25-30)

Kimberly Yauck 3/25/20

Location SLC VA Date 3/25/20

Project / Client 700 S 1600 E PCE Plume

MW-27 Construction

1 Cap is 4 7/8"

2 Casing is 10 3/16

3 4 7/8 = 4.875"

4 3/16 = 0.1875"

5 6 x 3/16 = 1.125"

6 60' + 0.09375' + 0.40625 = 60.5' ← 60.5'

7

8

9

10 ← 100.5625' 60' + 0.09375'

11 40' + 0.40625 + 0.0625 (3x (4x 3/16" = 0.0625'))

12

13 = 100.5625'

14 ← 140.625 220' - 100.5625' = 119.4375 - 113' =

15 6.4375' up the 11th run = 6' 5.25"

16

17 ← 170.671

18 140' + 0.40625 +

19 ← 170.703 0.21875 ← 14 x 0.015625' 3/16"

20 = 140.625'

21 220 - 140.625 = 79.375

22 79.375 - 75 = 4.375'

23 = 4' & 4.5"

170.671 = 170' + 0.265625' + 0.40625'

220 - 170.671875 = 49.328' - 48' = 1.328'

3/25/20

Location SLC VA Date 3/25/20

Project / Client 700 S 1600E PCE Plume

MW-27 Construction

1100: Drillers have cleared out the hole. Loading / prepping supplies for well installation.

1110: Connor drops off tubing and probe tips. He has cut the 2 top probes lengths (28 & 48)

1115: Call to Joel 3/24/20 to discuss number of probes fitting and to convey driller concerns about soil containment method with the vac truck.

1145: Probes attached to tubing. Drillers are at the 7th run. 6 runs = 60.5', so probe will go 4.5 feet up the 7th casing

1200: Next probe will be at 6' and 5.25" up on the 11th piece of casing

1220: Next probe (75') will be 4' and 4.5" up on the 15th piece of casing.

1230: On the 18th piece, the probe will go 1.328125 ft up or 1' & 3.9375"

1240: 28' probe will go on the 20th piece of casing. 190' + 0.296875 + .40625 = 190.703125

220 - 190.703125 = 29.2968 - 28 = 1.2968' → 1' 3.56"

Finally Done 3/25/20

Location SLC VA Date 3/25/20

Project / Client 700S 1600E PCE Plume
MW-27 Construction

1310: Final casing attached. CDM labels tubing and Holt breaks for lunch. Update Joe on Progess.

1330: Pete drills a hole into top of casing to tuck the ends of tubing away and protect them from steel casing as it gets removed.

1400: Text Marc an update. Neil too. Emailed lab to inform them that we will not collect samples today.

1430: Sand is at 216' with about 4 feet more inside the casing. Breathing Zone = 0.0 ppm

1510: Sand is from 220' to 197' (three feet above the screen)

1540 Bentonite from 197 to 157 (pellets above the sand pack followed by chips)

1550: Sand from 157 to 151 feet. Snow and fog is lightening up. 48°F with occasional breeze.

1608: Bentonite is at 140 feet (going towards 115')

1625 Connor leaves to pump water (from soil containment area)

3/26/20

Location SLC VA Date 3/25/20

Project / Client 700S 1600E PCE Plume
MW-Construction

1625 cont'd: Drillers are close to 120'. Once they reach 60 feet, they will pull all the 8" casing out and only the 9" will remain from 0' to 60'.

1640: Bentonite to 116 - begin sand

1650 Sand from 116 to 109 (it was at 110 but some must have been stuck in the casing and shook out when a nut was removed).

1700: Fog and overcast roll back in.

1707: Rain begins. does not last.

1713: Bentonite to 79 feet. Begin Sand at 79' to 73'.

1717: Begin bentonite at 73'

1730: Bentonite is just below 60 feet. Driller pulls all the 8" casing up.

1800: Bentonite to 51' bgs. Begin sand from 51 to 44 feet

1815: Bentonite to 30.7 feet. Sand from 30.7 to 25'1"

1825: Grouting with bentonite to 10 feet.

1835: Will grout the final 10 feet with cement tomorrow.

1845: Drillers leave site.

Neil Holt 5/25/20

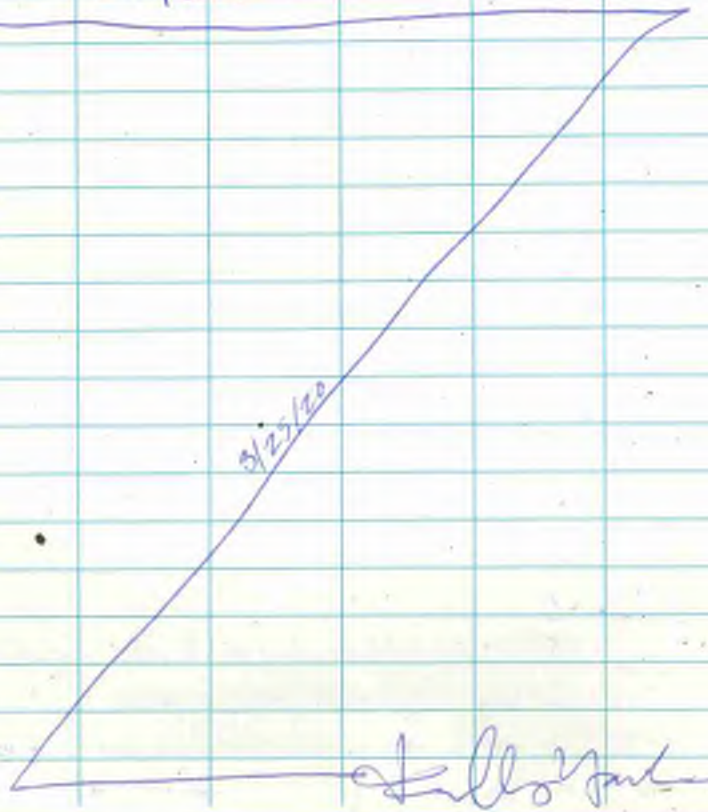
Location SLC VA Date 3/29/20

Project / Client 7005 1600E PCE Plume

1845 Cont'd: Drop gear at connex, check water level in soil containment, and lock connexes. Connor was able to bend lock back into place.

1900: Leave site:

Plan is to get in early tomorrow to set up the Color-Tec Samples.



Location SLC VA Date 3/30/20

Project / Client 7005 1600E PCE Plume

0645: CDM on site (Kimberly and Connor). open connexes, clear snow out of walkway and scoop some frozen soil/water/mud out of soil containment to make room for the pump later.

0700: Begin working on Color-Tec.

0730: Break to meet drillers.

0735: Drillers at Home Depot - running late. Text Marc

0745: Drillers on site

0755: H2S Meeting

Attendees

Kimberly Yauk	CDM
Connor Kelly	CDM
Pete Rosenburg	Holt
Mike Lewi Jr.	Holt
~~Pete~~ Scott Lampman	Holt
Marc Yalom	VA

Weather: Snow overcast, 31°F

Plan: surface completion and grout top 10 feet of MW-27, decon, Soil IDW management and sampling ~~EDs~~,

Kelly Yauk 5/26/20

Location SLC VA Date 3/26/20

Project / Client 700S 1600E PCE Plume

0815: Drill rig warmed up, drillers top up the bentonite a little

0830: Drillers pick up more water for cement mixing.

0850: Call to Neil to discuss surface completion.

0930: Drillers are getting started with cement mixing.

1000: Neil arranged for the Augustyn surface completion to be delivered today to the site.

1005: Call to the hotel to check on Bottle order delivery - no packages yet. They will call when it arrives. Connor drains water out of secondary containment into poly tank. Area is ready for soil transfer.

1010: Call United Rentals to let them know location of portable toilet and that it will be moved by tonight to laydown area (with spare fencing) - IDW area

1030: Conor sets up the Colortec.

3/26/20

Location SLC VA Date 3/26/20

Project / Client 700S 1600E PCE Plume

1050: Drillers filled cement to the surface then pulled casing and the cement settled down 2-3 feet. They are mixing more to fill it up again. They mixed some sand in with the cement to help fill the wide hole left by the vacuum truck (called Jc to confirm that was ok).

1105: Call from Mark Augustyn. He is on his way with the surface completions.

1130: Mark on site to drop off 3 completions. They are 58 lbs each and require a 3'x3' pad seal on hard concrete. Sign invoice. Discuss with drillers. TS 3/26/20

1140: Mark leaved the site.

1145: Begin Color-Tec sampling. Bath is warming up.

1215: Bath is at temperature. Warm samples in bath

1220: Set up color-tube and needles.

1224: Do the 5 cc purge on MW-28 gw at 21' collected 3/18/20 @1340

1230: No detection. Try the 100 cc purge

3/26/20

Location SLC VA Date 3/26/20

Project / Client 700S 1600E PCE Plume

1233: ND after a 3-minute purge at 100 cc.

1245: Put MW-27 @ 220' collected on 3/24 @ 16:40. in the bath.

1247: Purge @ 50 cc for 80 seconds then purge another 50 cc (for the 100 cc purge)

1300: No color change. Both samples were non-detect.

LATE ENTRY 12:15 Call from the hotel. The bottle order ~~is~~ has arrived and can be picked up.

1310: Connor leaves to pick up the soil IDW bottles

1330: Lab results are in. Deep zones for MW-27 and MW-28 were both non-detect. This is consistent with the Color-tec samples.

1340: Calibrate the PID - passed.

1350: Connor back on site.

1400: Collect Soil IDW sample IDW02-032620 time on COC says 13:30

1500: Drillers are still demobilizing from MW-27 and removing casing & decon.

— ~~to~~ 3/26/20

Location SLC VA Date 3/26/20

Project / Client 700S 1600E PCE Plume

1500 cont'd: Connor is doing sample bottle inventory and Kimberly is preparing Equipment Blank labels and the chain of custody.

1545: Drillers are grabbing the fencing and burning drums to the IDW area. Pete is getting the Augustyn surface completion set and level.

1630: Drillers pour concrete in around the surface completion - adding black dye to better match the asphalt.

1645: Text to Marc (VA) to let him know our progress.

1700: MW-27 is finish. Pete cleans off the well lid. Mike and Scott are moving the soil IDW to the rolloff bin.

1730: MW-27 is coned off. The lid is clean, and there is only a small pile of tools and buckets left to put away. The IDW is mostly done.

1745: Drillers go to start Decon.

— Kelly Yuhas 3/26/20

Location SLC VA Date 3/26/20

Project / Client 700S 1600E PCE Plume

1745 Continued: Kimberly and Connor put the metal brackets back on the secondary containment

1800: At decon area to collect the 15 EB samples.

1830: Collect EB03-GW032620

1830: Collect EB04-GW032620

LATE ENTRY:

Collected TB08-GW032620 @ 14:30

Drillers do not complete decon of all casing. Remaining casing will be decontaminated prior to the start of drilling in April when they're back from their week off.

1845: Drillers wrap push-ahead sampler in clean plastic. Connor and Kimberly QC the samples in the cooler and the COC.

1900: Drillers leave site. COM checks all drum labels and lock gate. Leave site.

3/26/20

Hillary Yauk

Location SLC VA Date 3/27/20

Project / Client 700S 1600E PCE Plume

P cloudy

1115: Kimberly Yauk on site to organize, leave supplies in connex, and close out the MW-27 excavation permit with Carlos Aguilar.

1125: Call to Carlos Aguilar → Voicemail. Call his cell phone and reach him. He will meet me at MW-27.

1215: Carlos meets me at the site and closes out the permit.

1220: Back at connex. Leave all paperwork and safety supplies in connex, sweep, remove trash, prep cooler for shipping.

1320: Photograph all IDW drums/tanks/labels, lock all connexes (will return to drop off field book and tape)

1345: Call to check in with Joe - don't worry about well tag IDs, now. Leave field book in connex

1350: Leave site

3/27/20

Hillary Yauk

Location SLC VA Date 4/6/20

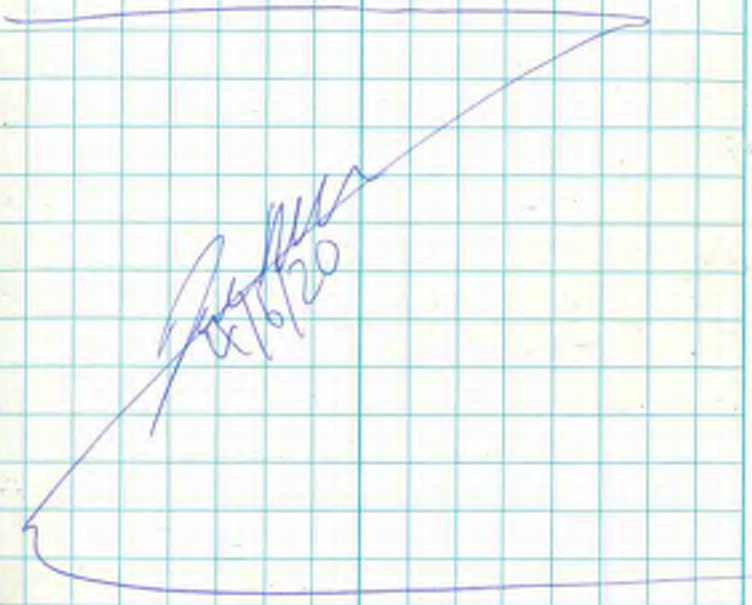
Project / Client 700 S 1600 E PCE Plume

0900	CDM. On site
0730	H+S tailgate at SW Parking lot
	Topics: COVID-19, Focus, Lifting
	1st Day Back, universal Masking
	Tasks: Decon, Rig Setup work Zone
	Setup @ MW-23
	Personnel
	J. Miller CDM Smith
	P. Rosenburg Holt
	M. Lewi Holt
	S. Langman Holt
	M. Vellan VA
	weather: 45-65 overcast
0800	Setup for Decon
0945	Begin to Mob Rig to MW-23 location
0950	Calibrate PID
1015	Holt Delivery of 6/7" casing
1030	Ask at Boiler Plant about moving carts
1120	Holt Drive Off site
1130	Carts Moved
1140	Carlos Aguilar Issues Permit
1150	Setup Fencing

Location SLC VA Date 4/6/20

Project / Client 700 S 1600 E PCE Plume

1245	Cut Concrete patch
1305	Setup Mud tub
1335	clear 10' Hydraulic Cuttings
	4" casing to 10' Bgs
1345	Mob to Decon New casing
	3 80" 6" Casing
	3 20" 7" casing
1535	Holt finished Decoming New
	Steel offsite for Rods/Augers
1615	CDM Offsite



Rite in the Rain

Location SLC VA MW-23 Date 4/7/20

Project / Client 700 S 1600 E PCE Plume

Site

0645	CDM Onsite
	Tasks: Begin MW-23 Boring
	~~Accept~~ Jon 4/7/20 Delivery of 21st Material
	weather 50-65°F Mostly Cloudy
0735	H&S Tailgate Topic
	universal Marking, Lifting
	Focus, communication,
0755	warm up drill Rig
0800	Calibrate PID
0735	Late Entry H&S Attendees
	J. Miller - CDM
	K. Keller - Wasatch
	P. Rosenberg Holt
	M. Lew Holt
	S. Langman Holt
	M. Yelom VA
0814	Resume Drilling from 10' Bgs
0845	Collect sample MW23-SB040720-16
	Collect Dup FD05-SB040720 (0800)
	Trip blank TB09-SB040720 (0800)
0955	collect MW23-SB040720-24
1030	Rolloff Delivery
1035	Sample MW23-SB040720-30

Location SLC VA MW-23 Date 4/7/20

Project / Client 700 S 1600 E PCE Plume

1115	Sample MW23-SB040720-44
1200	Holt Mob to Laydown area Move Rolloff
1235	Resume Drilling
1305	Collect MW23-SB040720-54 +MS/MSD
1330	Fedex Freight w/ 21st Material
1335	water off Roof Socks Sampling area talk to Boiler Plant
1345	Collect MW23-SB040720-63
1415	Collect MW23-SB040720-75
1445	Collect MW23-SB040720-85
1520	Move Offsite
1525	Collect MW23-SB040720-93
1600	Collect MW23-SB040720-97 FD06-SB040720 (1400)
1620	
~~1630~~	Kiel offsite to Fedex
1645	Kiel Back
1640	Sample MW23-SB040720-107
1700	8" Casing to 100' Boring to 110'
1730	Off Site

Location SLC VA MW-23 Date 4/8/2020

Project / Client 700 S 1600 E PCE Plume

0645	COM Smith Onsite
	Tasks: Advance MW-23 Boring
	from 110' bgs
	Weather 45-65°F Clear
0730	H+S Tailgate Topics
	COVID-19, Slips trips falls, Fatigue
	Lifting;
	Attendees:
	J. Miller - COM Smith
	Pete Rosenberg - Holt
	Michael Levi - Holt
	Scottie Langston - Holt
	Kiel Kelly - Wasatch
	Marc Yulan VA
0745	Warm up Equipment / Inspections
0755	Calibrate PID
0800	Resume drilling
0840	Collect Sample MW23-SB040820-110
0910	Holt mob to laydown for 7" casing
	Dump hopper
0940	Holt Returns to MW-23 offload
	7" casing
0955	Resume adding casing

Location SLC VA MW-23 Date 4/8/2020

Project / Client 700 S 1600 E PCE Plume

1020	Holt offloads 7" casing to head to Bountiful yard for 6" coreBarrel
1030	Kiel offsite Holt Runs for core Barrels
1115	Holt Back onsite No 6" coreBarrel Decon additional 8" casing to continue to advance
1145	Trip out 7" casing to setback w/ 8" casing
1214	Trip in 7" core Barrel
1220	Resume drilling @ 120'
1245	Collect MW23-SB040820-124
1355	Collect MW23-SB040820-133
1455	Collect MW23-SB040820-143
1525	6 Samples set from 147-152
1535	collect Grab sample of water MW23-GW040820-150
1610	collect MW23-SB040820-155
1630	Kiel offsite to FedEx Holt Fuel Rig
1700	Holt offsite
1730	Joe Miller completes Colortech 22°C ND
1745	offsite

4/8/20

Rite in the Rain

Location SLC VA Date 4/9/2020

Project / Client 700 S 1600 E PCE Plume Site

0645 CDM Smith Onsite (J. Miller)

0730 H+S tailgate Topics:
Focus (wind), Team work, universal masking, Communication, Pedestrians
Attendees
Joe Miller CDM Smith
Kiel Keller Wasatch
~~Matt Yates VA~~ JM 4/9/20
Pete Rosenberg Holt
Michael Lui Holt
Scott Lampman Holt
weather 50-62° windy w/ afternoon Showers
Tasks: Advance MW23 Boring
Prep for cuttings / IDW Removal

0750 warm up Rig / Inspections

0825 Resume drilling w/ 6" Core Barrel from 160→

0900 Collect Sample MW23-SB040920-164

1005 Collect Sample MW23-SB040920-175

1055 Collect Sample MW23-SB040920-184

1130 Collect Sample MW23-SB040920-199
FD07-SB040920 Duplicate (0800)

1145 advance casing / clear out for push ahead sampler

Location SLC VA Date 4/9/2020

Project / Client 700 S 1600 E PCE Plume

1315 Not sufficient water @ 200' for GWS

1320 Resume ~~drilling~~ JM 4/9/20 adding Rods ~~Casing~~ 4/9/20

1340 Resume Drilling

1445 Collect MW23-SB040920-208

1450 collect MW23-SB040920-218

1540 Trip in push ahead sample to 220

1555 Vibe at Depth

1615 sample collected MW23-GW040920-220
+ Collar tech dup

1630 Kiel to Fedex Holt to Fuel Rig

1645 Kiel Back Holt Move poly tank to Temp containment

1700 Holt and Wasatch offsite
CDM screen samples w/ colortech
MW13S 0.1 5-10
MW13D 0.3 15-30 25
MW23-GW040820-150 0.
MW23-GW040920-220 0.

1800 CDM off site

4/9/20

Rite in the Rain

Location SLC VA Date 4/10/20

Project / Client 700 S 1600 E PCE Plume

0645 4/9/20 CDM Onsite - J. Miller

Activities:

Advance MW-23

Hydrovac MW-26/24

weather: 42°F - 60F windy

0745 H&S Topics:

Friday Fatigue, COVID-19, Focus, Communication, why do ya work safe.

Attendees

Joe Miller - CDM Smith

Kiel Keller - Wasatch

Pete Rosenberger - Holt

Michael Lein

Scottie Lampman

Marc Yalan

Jesus Rojas

0800 Bradyn Onsite - No Extra Hose to access Location

0810 DTW MW-23 192'

0815 Calibrate PID

0835 Collect EB04-GW041020 from Pushahead Sample

Location SLC VA Date 4/10/20

Project / Client 700 S 1600 E PCE Plume

0910 Collect MW23-SB041020-226

1047 Trip in Sampler

1115 Collect MW23-GW041020-240

0950 Rate Entry Collect MW23-SB041020-230

1170 GW pH 7.40 cond 1.327 mS/cm DO 2.67 ORP -138.4 Temp 22.7 (left at in Sump)

1120 Checkout MW26 pre clearing w/driller - see other Book for Notes

1240 Collect MW23-SB041020-244

1340 Sump Jams on Rig

1400 Sample MW23-SB041020-357 *

* PID 470

1500 Clean out/casing for PA Sample

1530 collect EB05-GW041020 from Push ahead Sampler

1535 Trip in Sampler

1550 Vibed for Balance of sample

1600 Collect MW23-GW041020-260

GW Parameters Temp 17.21 Cond 1186 mS/cm pH 7.74 DO 3.50 mg/L ORP -17.3

1616 Kiel offsite to FedEX

1700 Holt/CDM Offsite

4/10/20

Rite in the Rain

Location SLC VA MW-23 Date 4/12/20

Project / Client 700 S 1600 E PCE Plume Site

0645 CDM Onsite - Joe Miller
0720 Holt Onsite
Activities: advance MW-23
Weather: 35-50 overcast
0730 H+S Tailgate topics:
Lifting, Spotters, Pedestrian Access, COVID-19
Attendees:
Joe Miller - CDM
Pete Rosenburg - Holt
Scottie Lampman - Holt
Michael Leni - Holt

0745 DTW MW-23: 212'
0755 Calibrate PID / Warm up Rig
Equipment inspection
0820 Decon PA Sampler
0830 Resume Drilling
0900 Collect MW23-SB041220-261 MS/MSD
0945 During trip out from 270-278' Rm core Barrel stuck ~218' Driller prep to wash over casing
1030 Use ~300gal Begin advancing casing
1039 core Barrel freed

Location SLC VA MW-23 Date 4/12/20

Project / Client 700 South 1600 East PCE Plume

1055 Sample MW23-DW041220 Drill water from tank/Hose
1150 No Push ahead sample @ 280' water in Rods came to ~30' from washover casing added water
1255 Collect ~~SB~~ MW23-SB041220-280
1425 Bore hole cleared and cased to 300' prep to Send down Sampler
1430 Holt to get orings for sampler
1455 Sampler Repaired
1500 Trip in Sampler
1515 No water in Rods
1520 Vibe up
1620 after 3 attempts w/ Rods and vibing up only mud Retrieved No Sample
1700 Resume advancing
1730 Collect MW23-SB041220-307
1800 Wrap up Site
1815 Off Site

4/12/20

Location SLCVA Date 4/13/20

Project / Client 7005 1600 E PCE Plume

0650 CDM Onsite - J. Miller
Activities: Advance MW-23
collect soil/gw Samples
weather 30-50°F Partly Cloudy
0740 HTS tailgate
Topics (COVID-19, Focus, Pedestrian walkway
Attendees
Joe Miller
CDM Smith
Pete Rosenbaugh-Holt
Sophie Lampman - Holt
Michael Lewis - Holt
0750 Holt Decon sampler set casing
0755 MW23 DTW 160'
0800 Calibrate PID
0815 Rig maintence (change filters / Grease Spindle
0900 Resume adding casing
0945 cleanout Boring
1000 Collect EB06-GW041320 from Sampler
1035 Trip in sampler
1055 No water in drill Rods
1105 Vibe up

Location SLCVA Date 4/13/20

Project / Client 7005 1600 E PCE Plume

1124 Collect MW23-GW041320-316
Dup FD05-GW041320 (0900)
Temp 13.50 cond 0.457
DO 5.90 pH 6.82 ORP -54.6
1158 Resume advancing Borehole ~~JM 4/13/20~~
1230 Collect MW23-SB041320-~~315~~ 314
+Dup FD09-SB041320 (0900)
1335 Collect MW23-SB041320-324
1400 decon sampler
1500 water in sampler Rods.
1525 Meet w/ Mark to look in Basement
1540 check on/ RHI on Pogo rig
1620 after tripping in again water ~~JM 4/13/20~~ in drill rods 230' Trip out sampler ~~JM 4/13/20~~ install new o-rings temporary
1710 Holt offsite
1800 Offsite

4/13/20

Rain in the Rain

78

Location MW-23 SLC VA Date 4/14/20

Project / Client 700 S 1600 E PCE Plm

0700 CDM Onsite J. Mills B. Bott
0715 Wasatch onsite
0735 Holt Onsite
0740 H+S Tailgate Topics
Covid-19, Lifting, Pedestrian access
Attendees:
Jim Mills - CDM
Betsy Bott - CDM
Kel Keller - Wasatch
Pete Rosebaug - Holt
Scottie Langston - Holt
Mike Lewis - Holt
Tasks - sample advance MW-23
~~ETC~~ cut concrete MW30
containment cone cutting
0750 Warm up Rig
0800 MW23-D TD 224'
0810 Holt to move Barrier to MW30 Get O-Rings
0815 CDM to Bridging
0825 Holt Back w/ O-Rings
0835 Tripin Sampler
1000 No water in Rods Vibe up
1005 Hole dry wait for water
1020 ~~Testing~~ Rods dry Vibe again

79

Location SLC VA MW-23 Date 4/14/20

Project / Client 700 S 1600 E PCE

1030 - Vibe up again Deploy Baile
1100 - No water from sampler
Tripout try again @ 340'
1120 Sampler not open on Retrival
1130 - Tripin Core barrel
1145 - Resume drilling
1225 Sample MW23-SB041420-334
1345 No water in Rods w/ water
1400 No water w/ Baile
1425 Vibe up try again w/ baile
1515 Sample MW23-SB041420-340
1600 Resume drilling
1614 Sample MW23-SB041420-340
1630 Holt mob to Layden
1830 OFF Site

DB 4/15/20

Rite in the Rain

78

Location MW-23 SLC VA Date 4/14/20

Project / Client 700 S 1600 E PCE Plm

0700 CDM Onsite J. Mills B. Bott
0715 Wasatch onsite
0735 Holt Onsite
0740 HTS Tailgate Topics
Covid-19, Lifting, Pedestrian access
0 Attendees:
Joe Mills - CDM
Betsy Bott - CDM
Kel Keller - Wasatch
Pete Roseberg - Holt
Scottie Langston - Holt
Mike Lewis - Holt
Tasks - sample advance MW-23
~~cut~~ cut concrete MW30
containment cone cutting
0750 Move up Rig
0800 MW23-D to 224'
0810 Holt to move Barrier to MW30 Get O-Rings
0815 CDM to Bridging
0825 Holt Back w/ O-Rings
0935 Trip in Sampler
1000 No water in Rods Vibe up
1005 Hole dry wait for water
1020 ~~Setting~~ Rods dry Vibe again

Location SLC VA MW-23 Date 4/14/20

79

Project / Client 700 S 1600 E PCE

1030 - Vibe up again Deploy Baile
1100 - No water from sampler
Tripout try again @ 340'
1120 Sampler not open on Retrieval
1130 - Trip in Core barrel
1145 - Resume drilling
1225 Sample MW23-SB04142O-334
1345 No water in Rods w/ bailer
1400 No water w/ Baile
1425 Vibe up try again w/ bailer
1515 Sample MW23-SB04142O-340
1600 Resume drilling
1614 Sample MW23-SB04142O-340
1630 Holt move to Layden
1830 OFF Site

BB 4/15/20

Rite in the Rain

Location SLV VA Date 4/15/20

Project / Client 700 S 1600 E PCE Plume

0700 CDM onsite JM, E, BB

Voicemail from Holt saying Pete is going to urgent care this morning.

9:50 Safety meeting w/ Holt
- new today, mask must be worn at all times

Holt grabbing pkg Sand to fill MW-23
- 10 bags + 8 bags

10:23 Warming up rig

10:27 Start putting casing back in

10:58 Holt going to decon water samples.

11:23 stop pulling casing Joe asked for pallet + hoses for trash pump.

Stopped w/ ~110' out of hole

11:32 resume pulling out casing.

11:50 pulling 350-360 samples.
~344-350 since H was not retrieved yesterday
Collect MW-23-5504120-346.

Location SLC VA Date 4/15/20

Project / Client 700 S 1600 E PCE Plume

11:55 pulling 350-360
per Reeves only off → 350-354

12:30 Call w/ Nathan, Joe, Shawn regarding Pete's health issue. Nathan will send email to corp + VA about incident.

13:00 Rig broke, bottom jaw hydraulic bolts popped off - has to order parts for next day arr.
- hydraulic fluid
350' pipe clean in hole.
2 drums of hydraulic fluid

14:23 Holt off site to drill mud get bolts + pea gravel
back to trailer to pack coolers, paperwork
pump water from containment

17:00 mob offsite

BB 4/15/20

Location SLC-VA Date 4/16/20

Project / Client 700S 1600E PCE Pump

645- Coms onsite - BBott, ERott
today need to fill in 25' concrete
MW-23 to restore to original
750 H+S Tailgate
Attendees
Com Joe, ~~Betsy~~, Emilie
Holt - Pete, Scottie, Mike
port should arrive onsite at
~ 10 am. Holt said it should
take 15 minutes to install.
8:10 Holt ~~working~~ getting
ope on. going to work on
putting on new boots.
8:51 Text from Mark. He is
teleworking today. Requested
I told him if we get
rig up & running / get GW Sample
11:49 Portapotty is scheduled to
be Serviced today at 1pm
Joe/Emilie cont to work on well
repairs.
11:58 Holt going to Hotel/HD to
get new port & get new
bits.

Location SLC Vit ~~Tele~~ Date 1/16/20

Project / Client 700S 1600E ~~Sloping~~ (GR) PCE Pump

12:54 Holt back onsite.

Planned well Screens for MW-23

21'	210 - 220'	Sand 222 - 268
7'	250 - 260'	Sand 262 - 345
6'	~~310 - 320~~	Sand 322 - 308
6'	348 - 358'	Sand 360 - 346

~2' Sand above & below Screens
- vapor point, if possible

13:27 A Company onsite to Service
port-a-potty.
13:37 port-a-potty serviced ✓
14:26 Holt has to go get additional
Parts. Dez will be only fixing
rig.
Betsy back to trailer to pump from
containment & organize.
1500 Betsy help Joe & Emilee w/
well repairs.
1700 Backed trailer, check on chillers
Holt hopes to be done w/ repairs tomorrow so
we can start tomorrow. Mob offsite -

BG 4/16/20

84

Location SLC VA Date 4/17/20

Project / Client 7005 1600 S PCS pump

6:45 CDMS onsite (Betsy) & Emilie

7:09 Holt onsite

7:10 HSE tailgate

Attendees:
Betsy Gott CDMS
Emilie Gott CDMS
Pete Rosenberg - Holt
Scottie Lumpkin - Holt
Mike Lenzi - Holt

Holt warming up pipe

7:15 Holt finishing rig repairs

8:10 Holt requested teflon tape one of the fittings is loose. Emilie back to trailer to get some.

8:25 Rig is operational, begin pulling out casing

9:00 retrieved lost part of 354-360

9:20 pulling started. Simpler back down well to attempt water sample at 360'

9:35 224.64' water level
water has leaked into pipes
called & texted Neil & asked how to proceed

SLC VA pw 7005 1600 S PCS pump 4/17/20

85

Called Joe Going to attempt Sample.

41"

9:48 going to pull out casing then go to trailer, to look at well building supplies.

10:16 done w/ pulling out casing, worried about 3 in 6" casing will be tight, worried about breaking off.
260-240 3 in together. could get tight. Don't want to pull the well
- get cheese out & see what it looks like

10:37 Holt going to pull more sand - ask how hard it would be to

11:49 Holt back onsite
- Talking about well screens & depths. Risky to try & tag sand in the 6" w/ 3 1" wells

12:04 ~~going~~ Pete is going to call Travis to discuss
Texting Neil about annular space in well, possibly eliminating one of the deeper wells. Neil is going to discuss w/ mgmt.

Rite in the Rain

Location SLC VA Date 4/17/20

Project / Client 7005 160E PCE Pump

12:17 Call w/ Mark Neil
risk of stuck, break casing

add- First 130-140' above perched
Eliminate 310

12:25 Neil said to go ahead
w/ Std building 360

12:30 measuring 10' pipes
to check average length.
7 bundles of 5, 10' pipe
average 9 15/16 to 10 1/16

13:21 VA approved ~~~~ Eliminating
~~360~~ 320' well.
3'4" - 15"

10/20 Sand, 0.010 5.5.
Install
1x 2' Sump
1x 10' Screen
1x 3" Pump reciever
33x 10' Riser
3x 2' riser
1x 6" riser
13:50 Begin adding sand to 345'

Location SLC VA Date 4/17/20

Project / Client 7005 160E PCE Pump
265

14:56 350' pipe in ground
measured
26" top block
15:36 Sand at 344'
will put chips to 263' ✓
Snd to 260
15:43 10' bentonite in (2 buckets)
to
17:25 Sand 263.5'
3 buckets / 10' added pump sand = 2.6"
348-350 = 9' 15/16
15:45 Con std stbe 358-360 = 2'

BB 4/17/20

Rite in the Rain

Location SLC VA Date 4/19/20

Project / Client Well 1 750 S 1600 E PCE Plume

360
350
340
330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120

Well 1 - 358'

Sand	360 - 345	
bent	345 - 263	
Sand	263 - 247	
bent	247 - 223	150-140
Sad	223 - 207	210-220
bent	207 - 143	250-260
Sand	143 - 127	348-358

approx well depths

Location SLC VA Date 4/19/20

Project / Client 750 S 1600 E PCE Plume

0645 On Smith onsite - getting paperwork ready.

0730 Holt onsite

H&S Tailgate Attendees:

Betty Bott - Coms

Smillie Rott - Coms

Pete - Holt

Scottie - Holt

Mike - Holt

Holt getting ready to hand auger

Warming up rig

830 Holt brought more Sand & bentonite to Mw23. Topped Sand adding Sand to 262'

845 Sand at 262', putting 2' Sump 10' Screen & Pump Inside & Casing to surface

900 Tactical Tool/Visit

Tool Shed Holt for 247-223 use pellets in water table

1 x 10' Screen

250 x 10' Risers

1 x pump Inside

1 x 2' Sump

Location SLC VA Date 4/19/20

Project / Client 700 S 1600 E PCE Plume

9:43 Tape got cut off w/ 100' left in hole.

1:49 Crews going to try to get something together to fish out

10:36 Done fishing out the tape at 257' w/ Sand

11:00 249 w/ Sand, 21' to go

11:13 247 done w/ Sand bentonite pellets 247 - 223

11:43 at 232, going to pull all 6" Casing

12:22 pellets at 231' done pulling out 6" Casing

1:16 Holt hooking on to 7" to pull up on casing

1:23 Typical Well about Surface Completion

Holt has 240' of 7" in ground

Neil Say grout to Surface after.

1:51 Bent at 227'

2:02 Bent at 224, stopping, adding Sand

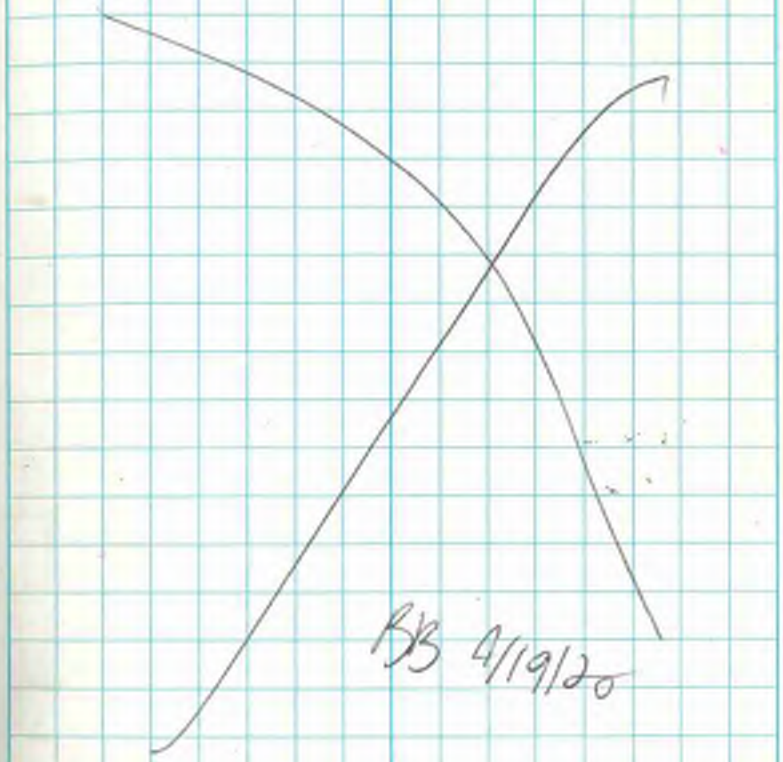
Location SLC VA 1x 10' Screen 1x 2' Sump 1x 3" pump blank Project / Client 700 S 1600 E PCE Plume 21 x 10' risers

2:35 Well 3 in adding a little Sand before setting well. Sand appeared to drop

3:55 Sand at 207

4:03 Done w/ well Construction for day.

4:20 Con off site



Location SLC VA Date 4/20/20

Project / Client 700 S 1600 E PCE Pump

0645 CDMs onsite, opening trailer getting paperwork ready.

0720 H&S Tailgate

Attendees:

Betsy Bott - CDMs

Emilie Rott - CDMs

Pete Rosenberg - Holt

Scottie Lampman - Holt

Mike Leni - Holt

7:40 Holt fueling rig, adding pellets & chips to 143'

821 at 20' w/ chips, still water.

855 bent at 170'

9:39 more onsite. Asked about if Holt has another jaw set somewhere in case other jaw fails.

Neil texted back & said chips were fine up until 20-30' bgs then grout to surface

10:03 all 7" casing out of hole.

10:10 bentonite at 143'

1024 pulling out 8" at 160' adding chips

Location SLC VA Date 4/20/20

Project / Client 700 S 1600 E PCE Pump

1044 Holt had concerns about using cement grout. Concerned about potential bore to not & melting PVC.

Neil would prefer a bentonite grout w/ high solids & fine sand 20-30' bgs & bentonite chips. Holt planning on getting to that point & then going to store.

10:58 close setting 130-140' well adding sand. ↳ 127', seam

11:34 Holt → 13 x 10' & 2' sump

10:40 Safety Stop Work Regarding masks. Discussion about the importance of mask wearing - ~~Neil~~ VA has received feedback complaints about personell not wearing masks. It is mandatory for everyone to comply. Attendees: Betsy, Emilie, Pete, Scottie & Mike.

Holt bought bandanas at lunch. that are less / holt than the wool ones they had.

Location SLC VA MW-23 Date 4/20/20

Project / Client 7005 1600 E PCE Prime

Holt bought 30% solids grout
will need to add fine Sand when
grouting 3' - Surface.
13:01 Chips at 100'
13:30 Chips at 100'
14:30 Bentonite at 31'
will need a little sand to
keep Chips from running down
Holt going to get grt container
to mix grout in
15:00 Holt mixing bent/grout/fine
Sand mixture
15:23 Marc came by and
asked that Holt move
their flatbed truck as
they are starting construction
in that area tomorrow
Done w/ 1 drum grout mixture
16:11 Grout at 10'
18:00 Grout at about 2' below GS
Emily going to take a look at
flatbed truck situation.
17:30 Called Marc. 2 concrete barriers
present. Will pick up
offsite

BB 4/20/20

Location SLC VA @ MW-23 Date 4/21/20

Project / Client 7005 1600E PCE Prime

0645 Cormsmith onsite, getting
paperwork ready.
715 Holt onsite.
725 H&S Tailgate
Special topics - loading up trailers
face masks
Attendees
Betsy Bott - CORMS
Emilie Bott - CORMS
Pete Rosenberg - Holt
Scottie Hampton - Holt
Mike Leni - Holt
Cleaning up area, checking
grout level.
Planning on moving rig out
of way.
815 Betsy back to trailer to
scan manifests & Joe
9:30 meeting w/ Joe & Neil
topics - mob offsite, roll off boxes
transition to Kimberly.
ok for Holt to leave Friday morning
hope for waste, electronic sign today
Carlos or Bryan Treasure

Location SLC VA Date 4/21/20

Project / Client 700S 1600S PCE Plume

Waste labels - Swap to non-haz
2 tanks, Single Containment, 1 roll off.
- hydraulic fluid drums (2) put them on drum pallets
- Vac cuttings, wait for new roll off
Visqueen + cover / pin it down over main soil pile
- Transition sampling equipment / paperwork, Emma help
- talk about relocating mw-24
✓ - Fill in mw25, ✓ mw23
10:12 end of call
11:15 Emma ✓ Pete back from home depot w/ concrete.
Holt Continue moving pipe + cleaning up area

MW23A 224.8
MW23B 263.75 197 65

12:10 HoH cleaning pipe

Location SLC VA Date 4/21/20

Project / Client 700S 1600S PCE Plume

12:24 Called Carlos to come sign out mw-23 excavation permit won't issue mw25 until tomorrow.

CARLOS.AGUILAR@VA.GOV

Carlos will be onsite at 7:30 tomorrow to issue permit.

HoH filling in mw23 w/ concrete
13:08 Done w/ Cement of mw23. HoH still cleaning pipe.
14:30 HoH done patching mw24. working on filling mw25.
14:50 Done filling in mw25
Betsy + Pete walked up to mw26 + look at spacing ✓ fencing options.
Emma offsite to pick up equipment from Grainger
15:25 Emma back from grainger organize more lab kits.
Holt still cleaning
17:00 Holt moving fencing + MW26
17:30 Mob offsite.

BB 4/21/20

Location SLC VA Date 4/22/20

Project / Client 7005 Hwy 6 PCE Plume

0645 CDMs onsite, prepared equipment for day. Emailed Carlos excavation checklists for mw23.

0730 H+S Tailgate

Topics: Face Covers, Red / vehicle traffic

Attendees:

Betsy Bott	CDMs
Emma Roth	CDMs
Marc Yalom	VA
Pete Rosenberg	Holt
Scottie Lanyon	Holt
Mike Lehi	Holt

7:45 Holt warming up rig & getting supplies ready

7:50 meet w/ Carlos & get excavation permit

800 Holt moving fencing around work area Had to go to yard to get more

9:20 Shannon asked us to not block path in between building 6 & job trailer. Holt moved fencing to create a path.

Location SLC VA Date 4/22/20

Project / Client 7005 Hwy 6 PCE Plume

1030 Holt laying out equipment for samples.

1049 Holt putting in 10' casing fell as pulling up

1105 Begin drilling 8" down

1120 Collected MW26-042220-20' w/ PID of 12.6 ppm

Holt getting 8" & 9" underream in w/ 10" not enough room for mud tub under.

1300 PID reading 1500 in fresh air recalibrate

Collected MW26-SB042220-29 @ 1300 pid = 131.6.

1330 PID malfunctioning reading 1500 Holt also down as rig jams not tightening, worried about losing pipe.

1340 Holt running to store to get bolt. Emma getting PID from Washington

350 Call from Joe about PID, CDM ordering 2 new for next week.

1427 Emma back w/ PID from Washington

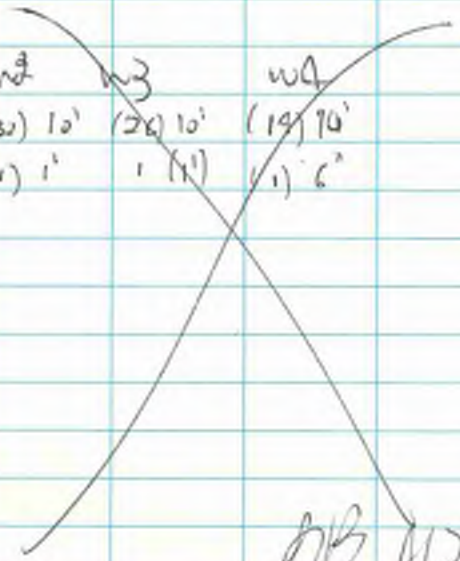
1445 Collected SB MW26-SB042220-39 at 1445 & MS/MSD PID = 166

Location SLC VA Date 4/22/20

Project / Client 700 S 1600 E PCE Plume

1515	Collect EB08-GW042223 from drill pipe
15:20	~~EB~~ prepare trip blank 16
1600	Holt back on Site.
1636	Holt has to go to HD again 2 new bolts broke immediately.
	CDMs head back to Corex put visqueen over Soil trk. Supposed to rain tonight.
1700	mob off Site

W1	W2	W3	W4
(36) 10'	(30) 10'	(26) 10'	(19) 10'
(3) 2'	(1) 1'	(1) 1'	(1) 6"
(2) 6"			



4/22/20

Location SLC-VA Date 4/23/20

Project / Client 700 S 1600 E PCE Plume

0615 CDMs onsite, make copies of paperwork, get sampling equipment ready for day

0730 Holt onsite.

H&S Tailgate Attendees

Betsy Bott	CDMs
Emma Rott	CDMs
Pete Rosebury	Holt
Scottie Longmire	Holt
Mike Lewis	Holt

Special Topics - Last day, don't rush!

7:40 Holt clamping soil in roll off warming up rig. Plan on drilling casing to 40', clean out, then drill & Stack Sampling

8:10 Rig issues again bolts not tightening enough

9:00 Talk to Mark about mobile mechanic. Need Carol escort

9:22 Emma leaving to return PPE w/ orders new one.

Holt got a fabrication mechanic who should be here in 45 mins to All welding mobil

Rite in the Rain

Location SLC VA Date 4/23/20

Project / Client 7005 1600 S PCE Pump

9:27 Called Carlos about getting a hot work permit. He said to call when welder get to site

10:27 welder onsite, escorted to site

10:40 Called Carlos to get hot work permit. Betsy will be fire watch.

11:24 Done welding begin firewatch

11:56 Done w/ firewatch, Welder offsite

11:59 Start drilling again

12:45 Take MW26-SB042320-44 PID 156

12:50 Take FB10-SB042320

1:30 Trouble shooting PID

1:40 Emma → Weshatch to get PID fixed PID

14:00 Called MW26-SB042320-56 PID = 30

17:15 Begin drilling again

Location SLC VA Date 4/23/20

Project / Client 7005 1600 S PCE Pump

Recalibrated PID, passed.

15:00 Collect MW26-SB042320-62 PID = 6.3

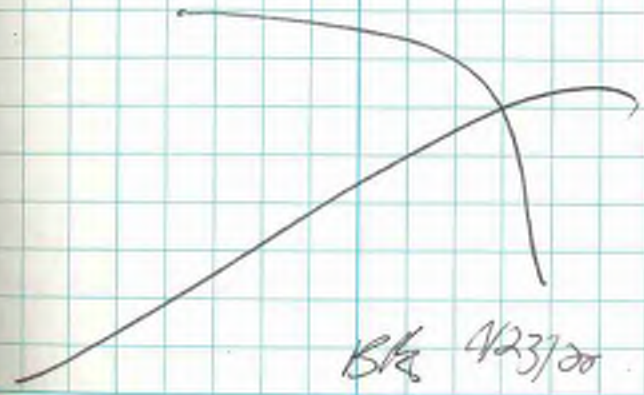
15:45 Collect MW26-SB042320-77 PID = 14.8

16:30 MW26-SB042320-84 PID 39.4

16:40 MW26-SB042320-97 PID 10.1

16:50 Holt clearing up site moving fencing & enclose whole area, tidying by loading area

17:30 MRO off site



BK 4/23/20

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

0700 Meet at Connex

Weather: 55°F. Wispy clouds, No wind, high of upper 70s

0715 Safety Tailgate.

Attendees

Kimberly Yauk	CDM
Tea Vrtlar	CDM
Emma Rott	CDM
Kiel Keller	Wasatch

Tea reads and signs the Site Safety Health Plan.

0720 Emma and Kiel leave to install new bladders and replace the pump at MW-1

0800: Kimberly and Tea collect an equipment blank off of the bladder pump that she already decontaminated. →Emma

0830: Tea and Kimberly go to the badging office. Her paperwork is good but the camera is not working. We'll have to return later.

0900: Call from Jeff (Holt) the driller.

— Tea 4/28/20

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

0900 Continued: Jeff is about 1.5 hours away. He wanted to confirm the address (700S 1600E or Valdez Dr.) I (Kimberly) instructed him to go to the Foothill drive gate to the VA hospital.

0930: I send Jeff a pin of the laydown area. He says one of their crew is 50 miles ahead of him.

1000: Emma and Kiel search for parts to the bladder pump at the connex (fittings that were corroded). They leave shortly to continue installing bladder pumps

1030: I go in search of the drillers. Tea leaves the site to buy ice and ear plugs.

1108: Call from Jeff. He and his crew pulled over one street before the foothill drive gate. They head to the gate

1115: Drillers are on site. They begin to unload the casing. I have told them about the masking policy.

— Kimberly Yauk 4/28/20

Rite in the Rain

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

1130: Tea calls. Not many ear plugs available at ACE. She buys one reusable set. We'll have to look elsewhere. Picks up ice on her way back.

1200: Tea is back on site with ice. She checks back in at the visitors center for badging.

Drillers have unloaded almost all the casing. The driver of the semi with the casing is not staying on site. He must not be part of the crew. (CRST on semi)

1210: Semi with casing delivery leaves.

1215: Safety tailgate with drillers

1220: Call to Joe ~~Hydro~~ to discuss well details, IDW, parking lot space and casing requirements

1230: Take drillers to the badging office.

1245: Help Tea pack EB sample and prep cooler for shipping.

1315: Tea has left site to ship cooler. Kiel and Emma

Kg 4/25/20

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

1315 Cont'd. Stopped by connex to re-supply and have continued back to the wells.

Check on driller's status. 79°F, Sunny, light breeze, mostly sunny. occ. wispy clouds.

1400: Drillers are setting up to decon casing. Jeff and I

Drillers are:
Jeff ~~Tom's~~ Jones
Alex Langdon
Aaron Kuper

discussed how the rig can be set up to minimize trip hazards over the curb and space requirements for staging casing and working.

1500: Driller helpers are neglecting masks. I give ~~Pete~~ Jeff the COVID-19 ammendment and reiterate that we all need to be masked at all times. He relays the message to ~~the~~ his helpers. 4/28/20

forklift moves pallet of gravel.

Kells Hunt 4/28/20

Rite in the Rain

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

1635: Rig was re-positioned so that there is room for fencing without going into the road. The rig now sits parallel to the sidewalk with the feet on one side up on the curb. Drillers put caution tape at either side of the sidewalk to prevent foot traffic alongside rig.

I also deconned a face ~~mask~~ shield 4/28/20 that was in the connex. The person spraying while deconning will wear the face shield instead of a mask that will get wet and become too clogged to breathe.

1645: Call from Tea. She was helping at MW-1 but is finished. She is coming to observe the decon procedure.

1700: Begin setting up fencing at MW-25 site. We could use 4-6 more pieces of fence.

4/28/20

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

1705: Emma and Kiel are finished. Emma joins us as we help the drillers secure the fencing. Summary of how work went at the wells. Emma will do the daily report and I will send her some photos of rig mobilization.

1740: Fencing is secure (but not locked) Some cones left out to block spaces. I take end-of-day photos and lock up connex boxes.

1750: Emma and Tea leave site.

1800: Leave site. Pick up "Authorized Personnel Only" signs per Joe's request.

4/28/20

Kelly Hunt Rain in the Rain

Location SLC VA Date 4/29/20

Project / Client 700S 1600E PCE Plume
Drill MW-25 0' to 100'

0645: Arrive on site, open connexes, prep paperwork for today.

0650: Tea Urtlar on site. We head to MW-25 for safety meeting.

0700: No drillers (?)

0715: Drillers were in laydown area. We have a H2S tailgate. Attendees:
Kimberly Yauk
Tea Urtlar
Jeff Jones
Alex Langdon
Aaron Kuper

Level D PPE + facial mask or shield

0730: Call Carlos Aguilar for permit to drill. He approves and asks that we put up caution tape to keep people out, while the fencing is open

0800: Drillers warmed up the rig, put out caution tape, and put plastic under the rig.

0900: Drilling begins.

0915: Drillers need some water.

4/29/20

Location SLC VA Date 4/29/20

Project / Client 700S 1600E PCE Plume
Drill MW-25 0' to 100'

0915 Cont'd: We find the same fire hydrant that the previous drill crew used and fill totes up.

MW25-SB042920-14

1005: Collect first sample at 14 feet (over 30 ppm) log and photograph core

1100: Collect MW25-SB042920-29

1130: Tea and I finish photographing and logging core. Drillers pulled back the casing and gravel sloughed into the hole - They take a break for lunch while we catch up.

1200: We break for lunch / note catchup Tea leaves to get labels, ice, and Ziplox bags.

1218: Drillers return from lunch

1220: Tea returns with ice. She labels and I catch up the field notes.

1250: Drillers are still working on 20-30 foot interval.

4/29/20

Rite in the Rain

Location SLC VA Date 4/29/20

Project / Client TODS 1600E PCE Plume

Drill MW-25 0' to 100'

LATE ENTRY:

~1030 Marc stops by to see progress. Masking policy on the VA campus has changed. Masks can be removed while outdoors if proper distance is maintained. Short doughnut break.

1330: Collect [MW25-SB042920-35]

1410: Begin collecting [MW25-SB042920-46] We had someone walk through the caution tape to try to bring us food. Kindly asked individual to leave.

1425: Drillers go empty the hopper. Drilling has advanced to 50 feet.

1430: Prep cooler for shipping samples. Full QC of sample jars

1450: Make [TB09-SB042920] labels

1515: Tea takes samples to FedEx. Drillers are at 60 feet.

1530: Collect [MW25-SB042920-54]

— tg 4/29/20

Location SLC VA Date 4/29/20

Project / Client TODS 1600E PCE Plume

Drill MW-25 0' to 100'

1600: Tea is back on site. Drillers are at 70 feet. Tea collects PID data while I log the 50 to 60 foot run.

1615: Tea collects [MW25-SB042920-70]

1645: Logging and photographing is complete. Drillers are bagging the 80 foot sample

1655: Collect [MW25-SB042920-73] @ 16.6 ppm Drillers are now at 90 feet They have not bagged samples yet.

1720: 83' to 85' fell on the ground. Photographed and PID'd.

1730: Collect [MW25-SB042920-82] with PID = 36.0 PPM

1745: Drillers are nearing 100 feet and this will be the last run.

1805: Collect [MW25-SB042920-94] with PID = 67.4 PPM Called Field Dup at 94 feet

1815: [FD11-SB042920] Will do MS/MSD tomorrow.

— tg 4/29/20

Location SLC VA Date 4/29/20

Project / Client 700S 1600E PCE Plume
Drill MW-25 0' to 100'

1830: Drillers leave site to get to Home Depot before they close. Tea and I complete the soil logging and photos. Dump soil cores in the hopper.

1858: Call drillers back to the site. The fence won't close with the hopper in the way. Return equipment to connexes and lock up.

1915: Drillers close ~~gate~~ fence 4/29/20 after moving the hopper. Drillers leave site again.

1930: locked Service Area front gate to IDW Area - checked with someone to be sure I wasn't locking anyone in. Leave site. Head to ACE to pick up items per Joe's request (ruler, painters multi-tool)

4/29/20

Kimberly Yauk

Location SLC VA Date 4/30/20

Project / Client 700S 1600E PCE Plume
Drill MW-25 100' to 150'

0645: Arrive on site. Tea is picking up ice. Gather meters, sample bottles, and supplies.

0700: Drive to MW-25. Drillers are on site opening fence and putting up/arranging caution tape. Rig is warming up.

0730: Safety Meeting

Attendees:
Kimberly Yauk
Tea Vrtlar
Jeff Jones via 5/3/20
Aaron Kuper
Alex Langdon

Weather:
Overcast, 70°F, high of 78°F, chance of thunderstorms, light breeze from the west

0740: Call to Joe to discuss if we will need more than 100 feet of 8-inch casing. And steel bailers

0800: Jeff talked to Pete and will use 40 more feet of 8-inch so that the 7-inch can go deeper

Kimberly Yauk 4/30/20

Rita in the Rain

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume

Drill MW-25 100' to 150'

0810: Jeff is looking for a steel bailer and Tea is getting supplies from the connex.

0845: Marc Yalom stops by to see how drilling is going. He asks for current depth and high PID readings from yesterday. Reminds us that some work is going on in building #6 and we might smell propane

0908: Drillers take break to change fuel filters - rig threw a code. No other issues drilling.

0910: Tea and Kimberly do a QC of the samples and write the COC

0940: Label TB19-SB043020

(0945 on label) Yesterdays trip blank was mis-numbered so we're skipping #18 (yesterday's) and going to #19. Tea also was trouble-shooting the PID screen and found that adjusting the Contrast helps. It is under Menu Settings if you hold ⏻ & N like you would for

4/30/20

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume

Drill MW-25 100' to 150'

0940 cont'd: calibration and then scroll to the right to get to the settings. Directions for getting there blindly are on the back cover of this field notebook.

0945: Drillers start the rig back up

0950: Check driller's breathing zone. Slight detection (0.4 ppm) is likely due to rig exhaust (number drops when rig is off) They also spilled (drops) of fuel while changing the filters, but they absorbed them up and the PID doesn't have elevated readings in the vicinity.

LATE ENTRY:

0900: Tea and I calibrated the PID and measured drillers' breathing zones. No detections. Background today has been 0.0 to 0.1 ppm.

1000: We got the first 10' bag of samples

4/30/20

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume
Drill MW-25 100' to 150'

1020: Collect MW25-SB043020-103
There was some non-recovery. Confusion at first, but drillers confirmed the 107 to 110 sample was lost. We originally thought it was 100-103 was lost. We re-photographed the soil core and adjusted depths in our notes/log.

1115: Drillers bring 110 to 120 foot soil core. Highest PID of 63.4 at 112 feet.

LATE ENTRY: 100 to 110 will be drummed separately.

1120: Collect MW25-SB043020-112
PID was 63.4 ppm

1220: Drillers are bagging 120-130'
Drillers break for lunch.

1300: Marc stops by to check in and leaves again. Drillers lunch is over but we wait to turn on the rig until the 388th Squadron flies over.

1312: Jets go by. Work resumes.

4/30/20

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume
Drill MW-25 100' to 150'

1320: Collect MW25-SB043020-120
Check drillers' breathing zone. 0.0 ppm. Marc is around the site watching at a distance.

1345: Marc stops to tell us that we have approval to move the semi-trucks over by MW-30 in the street adjacent to the parking garage. He will email Joe with details.

1400: Drilling is slow-going. It became sunny and hot around 12:45 today. Wind is 10-15 mph from the NW

1430 ~~1440~~ 4/30/20: Collect MW25-SB043020-139
Recovery was a little short (9 feet) so sample was really in the 138.5 to 139 range.

1430: Drillers are decanning casing. The 8-inch goes to 120' and the core barrel is at 140'. 7-inch will be used from 120' onward.

1515: No sign of the new rolloff bin that is supposed to be delivered today. Joe says tomorrow is fine too.

4/30/20

Rite in the Rain

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume
Drill MW-25 100' to ~~2~~ 150'

1515 Continued: Decon water drum is filled. Tea shows Alex where the IDW yard is and Alex brings the drum of water to empty it into the poly tank. Soil cores dumped in the hopper.

1545: Pumping water from the drum into the Tank. Tea overseeing it while drillers trip the 7-inch casing into the hole. Meanwhile Kimberly continues to prep the cooler.

1620: Tea is back. Gate locked and empty drum waiting outside for drillers to bring back to the laydown area.

1630: Cooler is ready and Tea takes it to FedEx. A small amount of water spilled from the drum. Water was absorbed and a light sediment 1ft x 1ft remains - will sweep up into roll off bin. Overcast again. Windy still. Tea leaves site.

4/30/20

Location SLC VA Date 4/30/20

Project / Client 700 S 1600 E PCE Plume
Drill MW-25 100' to 150'

1635: Clouds are darkening.

1700: Light sprinkle of rain. Collect MW25-SB~~3~~043020-150

1720: Finish logging. Drillers help clear soil and close fence

1740: Drillers leave site. Tea back on site. Tea keeps the one sample on ice and we drop equipment back at the corner. Open the PID Shipment Tea picked up from Wasatch and charged PIDs (in corner). Grab a drum label

1830: Label drum that has the high PID ppm soil and close ~~gate~~ fence again. Lock gate and

1835: Leave site

4/30/20

Kelly Mark

Rite in the Rain

Location SLC VA Date 5/1/20

Project / Client 700S 1600E PCE Plume

Drill MW-25 150' to 210'

Weather: 57°F, Overcast, 5 mph breeze occasionally, high of 77°F Humidity 64%

0645: Arrive on site at IDW yard. Pick up fully charged PID and equipment. Tea joins me and refills alconox & rinse water.

0700: Go to MW-25. Drillers are on site and opening the fence. Marc Yalom is also on site.

0720: H&S meeting. Marc left for a meeting

Attendees:
- Kimberly Yauk
- Tea Vrtlar
- Jeff Jones (Jonsey)
- Alex Langdon
- Aaron Kuper

0730: Calibrate PID, set up sampling table, drillers warm up rig.

0800: Tripping pipe out - the 150-160' sample is coming up next and will be an MS/MSD.

— ky 5/1/20

Location SLC VA Date 5/1/20

Project / Client 700S 1600E PCE Plume

Drill MW-25 150' to 210'

0810: 150-160 logged

0815: Collect MW25-SB050120-153 +MS/MSD

0820: Begins to Rain
Tea goes to get a pop-up tent.
Crew dons rain gear.

0905 Collect MW25-SB050120-164
Driller said it was easier drilling from 160-164 feet.

0915: Log core from 160-170 feet

1000: Drillers did clean-out run and got lots of slushy mud. We have found the perched zone. The soil core did not appear wet or saturated, but water likely came in between 160 to 164 when they felt it was easier drilling. Call to Joe. He says to collect a grab sample in a bailer - no need for the push-ahead sampler. Marc on site.

1005: We have gravel clogging the check valve, prevents water from staying. Clear gravel and try again.

— Kimberly Yauk 5/1/20

Rite in the Rain

Location SLC VA Date ~~4/5/20~~ 5/1/20 KF

Project / Client 700 S 1600 E PCE Plume

Drill MW-25 150' to 210'

1015: Collect 2 of 3 VOAs for water sample. Continue to bail more water. Marc observes the process.

1045: We get a lot of water on the 5th bail. Enough for a dup or MS/MSD. Called Joe and he preferred getting a dup and YSI readings. Collected MW25-GW050120-164

1050: FD12-GW050120 collected

1100: Take YSI reading on water sample. Marc leaves site.

1135: Collect MW25-SB050120-176. Check driller's breathing zone. 0.0 ppm. Tea calibrates YSI.

1205: Sent Tea to get the Non-Haz. Waste Manifests in the Connex. After drilling ends today, Tea will Ship Samples and I will drive to Suzanne _____'s house to get a signature.

1240: Collect MW25-SB050120-187. Drillers take lunch.

—KF 5/1/20

Location SLC VA Date 5/1/20

Project / Client 700 S 1600 E PCE Plume

Drill MW-25 150' to 210'

1250: Wind picks up. Sky lightens. Still overcast.

1300: Drillers start up again

1400: Soil core from 190-200 feet is bagged

1405: Drillers dump previous cores into hopper. Take hopper and dump into soil roll off (#2)

1410: PID readings on core. Marc stops by to check in and leaves again

1420: Collect MW25-SB050120-193 and field dup.

1430: FD13-SB050120 ~~193~~ KF 5/1/20

1520: Drillers bag the 200 to 210 foot sample. Water encountered in this run. No recovery from ~205 to 208 or 205.5 to 208 feet. Soil is saturated from 208-210.

1530: Collect MW25-SB050120-205

1525: Call Susanne Faidaugh to get her address and confirm we'll stop by to get her signature on the non-hazardous waste manifest form. Rain begins again.

—Kelly Your 5/1/20

Rain in the Rain

Location SLC VA Date 5/1/20

Project / Client 700S 1600E PCE Plume

GW Table @ MW-25

~1545: We will need to collect a water sample. Water is at 179.22 feet btoc Casing stickup is 0.6 feet above ground surface GW at 178.62 Drillers go ahead with the push-ahead sampler.

~1615: Push-ahead sampler is firmly in at 212 feet and drillers pulled the sleeve back one foot. Water is at 213.12 feet btoc Stickup is 3.8 feet above ground. GW at 209.29. We decide to stop for the day and get the cooler preped for shipping. The sampler will sit all day Saturday and we'll collect the sample on Sunday. Clean up the sampling station and close up the fence.

1630: Meanwhile Tea is prepping the cooler and double-checking the COC. I join her to double-bag ice.

1645: Cooler is ready. Tea leaves to ship it via FedEx on 2100 E.

— 5/1/20

Location SLC VA Date 5/1/20

Project / Client 700S 1600E PCE Plume

Color-Tec MW-25

1650: I call Susanne to let her know I'm on my way. Lock up.

1655: Leave site (Kimberly)

1710: Tea has dropped off samples and sends Joe the tracking number.

1725: I get Susanne's signatures on the soil and gw waste manifest forms. Head back to the site.

1730: Tea arrives back on site.

1745: Kimberly arrives back on site. We plug in the PID to charge and set up the Color-Tec Sampler.

1800: Warming the bath - organize the Connex. Review instructions.

1830: Bath is up to temperature. Samples go in for 3 minutes [MW25-GW050120-1644]

1845: Run MW25-GW050120-1644 No detection - did a 50 cc purge (bubbled - no color) did a second ½ pull to get to 100cc purge (no color change on the LL indicator tube.

— Kimberly Hook 5/1/20

Location SLC VA Date 5/1/20

Project / Client 7005 1600E PCE Plume

Color-Tec MW-25

1850: Switched to the second VOA and did another 100 cc purge (sample bubbled). Waited 2 minutes. No color change through that time. Checked again after 5 minutes. No detection.

1855: Dispose of old VOAs from previous Color-Tec runs - empty into decon bucket and pour bucket into poly tank. Discard glass bottles.

1920: Tea and I make sample sets for the coming week (we make around 50 sample sets for soil, 5 or so sets for water, 5 or so trip blanks w/ a temperature blank, and 3 or 4 MS/MSD soil sets. We still have more encore sample packs and another 24x box of 2-oz sample jars.

2000: Disassemble color tec and dispose of extraction needle in sharps jar. Keep and decon the carbon filter & purge needle.

2015: Lock up and leave site.

— Kimberly Vank 5/1/20

Location SLC VA Date 5/3/20

Project / Client 7005 1600E PCE Plume

MW-25 drilled 210 to 260'

0655: Arrive on site. Drillers are already at MW-25 and Tea arrives with ice shortly after me.

0715: H&S Tailgate Meeting

Attendees

Kimberly Vank	CDM
Tea Urtlar	CDM
Jeff Jones	Holt
Alex Langdon	Holt
Aaron Kuper	Holt

0730: Tea calibrates YSI and PID. Water in borehole is at 182.45 feet. above TOC (Stickup = 3.8 feet

0800: Drillers check the MW-30 location. There is not enough space to move the rigs out there without covering the hole or blocking access.

0815: Joe says we can move it Wednesday after the vac truck comes through. 03 ~~EC~~ 5/3/20

0845: Collect [MW25-GW05~~22~~20-212] label says 900 → [+MS/MSD 5 of 6 bottles]

Water is not too turbid for a reading

— Kimberly Vank 5/3/20

Rite in the Rain

Location SLC VA Date 5/3/20

Project / Client 700 S 1600 E PCE Plume

MW-25 drilled 210-260'

0900: YSI Readings (GW @ 212') MW-25

Temperature = 15.7°C
Conductivity = 1.207 mS/cm
Dissolved Oxy = 5.49 mg/L
pH = 7.14
ORP = -139.6
Hach Turbidity = 87.0 NTUs

MW25-GW050320-212

Drillers warm up the rig and begin

0920: Decon the YSI and water level meter.

0945: Check drillers' breathing zone reading is 0.1 ppm - probably rig exhaust.

1000: Drillers are at ~~26~~ 220. They will wait to pull the core. They will decon the sampler while they wait.

1025: Drillers deconned the sampler
Collect EB09-GW050320

1035: Drillers bag the 210-220 ft Soil Core.

1050 Collect MW25-SB050320-216
-to 5/3/20 (label says 10:35)

Location SLC VA Date 5/3/20

Project / Client 700S 1600 E PCE Plume

MW-25 drilled 210-260'

1055: Log soil and drillers are about to bag the next run.

1115: Collect MW25-SB050320-223

1120: Drillers advance the push-ahead sampler to 232 and pull the screen back a foot. Screen zone is 231 to 232.

1155: Done logging 220-230 foot core. Drillers are on lunch. We break for lunch too.

1228: Water is at 187.69 feet BTOC

1240: Collect MW25-GW050320-232

1250: YSI Readings (GW @ 232')
Temperature = 17.87°C
Conductivity = 1.429 mS/cm
Dissolved Oxygen = 7.33 mg/L
pH = 7.21
ORP = -56.1
Hach turbidity = 51.4 NTUs

1355: The ~~22~~ 230 to 240 soil core is bagged 5/3/20

-to 5/3/20 1410: Collect MW25-SB050320-235
time stamp is 13:55

1445: Drillers bag 240 to 247' sample core.

Kelly Pond 5/3/20

Rain in the Rain

Location SLC VA Date 5/3/20

Project / Client 700S 1600E PCE Plume
MW-25 drilled 210-260'

1500: Collect MW25-SB050320-246 @ 1445 (label)
1505: Check drillers' breathing zone → 0.0 PPM
1520: Log core to 247. Drill rig is struggling - Cobble and gravel has become very large in the last foot.
1525: Drillers bagged 247 to 250 core.
1535: Drillers advance the push-ahead sampler ~~wait 10 mins and → 248.44' bgs.~~
~~1645 We have ~2 feet of water.~~
~~1600 TJ~~ 5/3/20
1635: Sampler is at 252 feet with 1 foot of screen exposed.
1645: Water is at 248.44 feet bgs. We have ~2 feet of water.
1700: Begin bailing.
1715: Collect MW25-GW050320-252 We had enough volume for the lab VOCs, the color-tec, but not the YSI / turbidity.
1730: Break down the sampling table. Drillers pull the push-ahead sampler out.

~~TJ~~ 5/3/20

Location SLC VA Date 5/3/20

Project / Client 700S 1600E PCE Plume
MW-25 drilled 210-260'

1740: The end of the push-ahead sampler ~~that~~ has become detached from the drill string. The piece that threads it together appears to have vibrated loose (drillers had to vibrate a lot to get the sampler into the formation prior to collecting the sample). Drillers let us know. We decide to continue and try to retrieve it today. Retreival may damage the sampler.
1745: Call to Joe to update him. He is in ~~not~~ town now. Stopped by the site ~1630 or so and made a trip to Home Depot.
1755: Tea takes water samples to Connex to run Color Tec.
1830: Drillers get to feet of soil (250-260') and ~~drop~~ the ~~hydropunch~~ push-ahead sampler is there, but broken.

Tills Yaw 5/3/20

Location SLC VA Date 5/3/20

Project / Client 700S 1600E PCE Plume
MW-25 drilled 210'-260'

1830 Cont'd: I take readings and collect a sample. They call Boart Longyear to source a replacement part.

1900: Collected MW25-SB050320-252 at 18:30
Return to Connex to charge PID, update COC, and check on the Color-Tec. All GW samples today were ND

LATE ENTRY

#1 212' GW @ 1835 → ND 200 cc
#2 232 GW @ 1845 → ND 100 cc
#3 252 GW @ 1850 → ND 200 cc
Sample #2 had a broken VOA 50 cap only the 100cc was run.

1920: Label a TB and QC the cooler.
1945: Pack up and leave.

TB21-~~GW~~050320
TG 5/3/20

5/3/20

Location SLC VA Date 5/4/20

Project / Client 700 S 1600E PCE Plume
2 Drill Crews @ MW-25 & MW-26

0645: Kimberly arrives on site. Open/unlock Connexes and gate.
Weather: 46°F, clear skies, high of 67°F today.
0700: Meet drillers #2 at MW-25. Tea and Joe are on site. Set up equipment, caution tape. Find second camera and field book for Joe.
0715: Drill crew #1 on site
0730: Crew #2 is mostly set up Tea calibrates the PIDs
0735: Health & Safety Meeting

Attendees:

Joe Miller	CDM	Crew #1
Kimberly Yauk	CDM	Crew #2
Tea Urtlar	CDM	Crew #1 & #2
Pete Rosenburg	Holt	Crew #1
Mike Lewi Jr.	Holt	Crew #1
Scottie Lampman	Holt	Crew #1
Jeff Jones (Jonesy)	Holt	Crew #2
Alex Langdon	Holt	Crew #2
Aaron Kuper	Holt	Crew #2

TG 5/3/20

Rain in the Rain

Location SLC VA Date 5/4/20

Project / Client 700 S 1600 E PCE Plume
IDW GW Pickup

0750: Jeff, Pete, and Joe go to look at accessibility at upcoming holes. MP Environmental calls Kimberly. Semi truck is on site to pick up the water.

0800: Joe gets cars moved in service area so Semi can back in. Kimberly stays to observe water transfer. Joe gets started w/ Crew #1 at MW-26. Tea finishes calibrating YSI and photographs / logs the 250-260' core.

0900: Two full poly tanks are emptied. One (black) has ~3 inches of sediment on bottom - air flow was strong and sucked in the sides of the container. Water should push it back into shape. The other has 6 to 8 inches of sediment on bottom. Luciano (MP Environmental) signs the waste manifest and leaves. Crew #2 drillers went out to get the push-ahead sampler.

— JS 5/3/20

Location SLC VA Date 5/4/20

Project / Client 700 S 1600 E PCE Plume

Crew #2 gets push-ahead sampler/o-rings

0910: Sort some papers. Joe finds the MW-26 permit. Kimberly takes completed forms to connex and refills alconox / rinse bottles.

0930: Marc Yalom check in at the site.

0940: Drillers (Crew #2) return. They have the sampler but the o-rings are thinner and will not hold as well. They source some replacements. Kimberly helps Joe log soil at MW-26

1030: Tea will go pick up o-rings. Kimberly stays w/ Crew #2 who are just getting back to drilling. Joe stays w/ crew #1.

1045: Tea now heading to hydrapak for the o-rings. The first stop did not have what they were looking for.

1100: Sample 260-270' bagged. (core)

1130: Sample MW25-SB050420-260

Drillers ~~for 5/4/20~~ advance 7" outer casing to 270 feet ~~and do cleanout run~~. 260'

— JS 5/4/20 Pete in the Rain

— JS 5/4/20

Location SLC VA Date 5/4/20

Project / Client 700S 1600 E PCE Plume

11:50: Drillers take lunch.

12:35 Drillers start back up. They Do a ~~to~~ clean out run with 7" casing at 260'

1400: Hole is clean to 270 with 7-inch casing to 260'

1410 Checked and the water level is at 201.3 feet with 0.5' stickup. So we have 70 feet of water. ← Static water level

1430: Push-ahead sampler is advanced to 270.
Water level is 260.92 with 3.29 stickup = 257.63 feet
Joe says it's OK and we Pull the screen open.

1445 Get water level again 261.19 w/ 4.19 ft stickup = 257.00 feet

1530 Water sample MW25-GW050420-272 is collected.
YSI: Temp = 18.16°C (in sun)
Conduc = 1.166 ms/CM
DO = 1.41 mg/L
pH = 7.35 ORP = -357.3
Turbidity is >1000 NTU

5/4/20

Location SLC VA Date 5/4/20

Project / Client 700S 1600 E PCE Plume

1540: Samples labeled. Tea will go now to prep the cooler for shipping while Joe and I continue to oversee drilling.
Drillers continue on to 280 feet. They are switching to 6" outer casing.

1645: 6" casing is tripped in to 270'. Drillers will bring it to 280' and leave it for first thing in the morning. I have checked driller's breathing zone three times ~~since~~ 5/4/20 since 1400.

1720: MW-25 area was put away and secured. Drillers leave site.

1730: Tea and I run the MW25-GW 050420-272 Sample on color-tec No color change. Bubbled, but ND.

1830: Closed up and leave site.

5/4/20

Kelly Ufnal

Rita-Jo de Rivera

Location SLC VA Date ~~5~~ 5/5/20

Project / Client 700 S 1600 E PCE Plume

0655: Arrive on site. Joe is already here. Tea arrives soon after. Grab equipment and meters

0705: Head to MW-25. Drillers are opening the fence.

Weather: mid 40s, mostly clear sky, still wind, high of upper 60s ~~4~~ 5/5/20

0715: Safety Meeting

Attendees:

Joe Miller	CDM
Kimberly Yauk	CDM
Tea Vrtlar	CDM
Pete Rosenberg	Holt #1
Mike Lewi Jr.	Holt #1
Scottie Lampman	Holt #1
Jeff Jones	Holt #2
Alex Langdon	Holt #2
Aaron Kuper	Holt #2

0730: Drill crew #2 preps to drill from 280' and will decon the sampler so we can collect an EB sample prior to water sampling.

0810: Drilling begins @ MW-25. (Pull casing ~~to~~ first)

First thing will be to pull the soil core from 270-280'

~~to~~ 5/5/20

Location SLC VA Date 5/5/20

Project / Client 700 S 1600 E PCE Plume

0815: Tea has calibrated the PIDs and YSI.

0855: Drillers begin bagging the 270-280' Core.

~~to~~ 5/5/20 ~~0740~~ 0900: Collect MW25-SB050520-272 and finish logging / photographing core

0940: Drillers are bagging the 280-290' ~~to~~ ~~sample~~ 5/5/20 soil core.

0950: United Rentals drops Porta-Potty at MW-25 while Kimberly takes PID readings

1000: Collect MW25-SB050520-281

Drillers have deconned the push-ahead sampler. Collect EB10-050520. Need to check on name w/ Joe. We need to distinguish from tonight's EB sample. This was for yesterday. Collected off the push ahead rod (pour through the inside.) ~~It's~~

1030: Called Joe. It's ok the #10 will change to 11 on this evenings EB Sample. (Dwn)

Kimberly Yauk 5/5/20 Pete Rosenberg

1040: Sampler is advanced to 292 feet. No vibing to get it in, just push. Water is at 269.89' and stickup is 9.15'
265 ft
269.89
Open 3/4 water is at 269.79 with 5 feet of stickup.
1105. Send bailer down
1115 Collect [MW25-GW050520-292]
YSI Parameters:
Temperature=21.93°C
Conduct. mS/cm = 1.072 ms/cm
DO = 1.12 mg/L
pH = 7.48
ORP = ~~6~~ -617.9
Turbidity = >1,000
1140: Drillers take lunch.
Kimberly finishes photographing soil core from 280' to 290' and decon water meter and YSI
1210: Turbidity - standards -
0 ~~NTU~~ Standard → 0.46 NTUs
1 NTU Standard → 1.06 NTUs
Sample after ~~Settling~~ 45 mins = 1,224 NTUs ← settling
5/5/20

LATE ENTRY: Marc stopped by around 11:50 or so to check progress. Asked if we were making water
1215: Kimberly breaks for lunch. Tea does magnetic susceptibility on the soil core then takes lunch.
5/5/20
~~220~~ 1220: Drillers begin drilling to 300 feet.
1245: Kimberly back from lunch. Tea heads over to MW-26 to help Joe.
1255: Checked log - we will need a soil MS/MSD today - Joe says he just got one. We are all set for QC samples.
1330: Drillers bag the 290-300 foot ~~sample~~ soil core.
5/5/20
Collect [MW25-SB050520-299]
1420: Drillers bag core from 300 to 310 but middle was all watery gravel that fell out so no recovery on 302-308'
Collect [MW25-SB050520-301]
Totally different formation →
~~Tally~~ Final 5/5/20

Location SLC VA Date 5/5/20

Project / Client 700S 1600E PCE Plume

1420 Cont'd: than previous sample at 299'. Changed from a clay to a ~~wet~~ Dry gravel. ^moist to 5/5/20 ~~to 5/5/20~~

1430 Drillers → do a cleanout run and get casing down to 300 feet (reverse order clean out last)

1515: Logging soil core. Powdery material w/ gravel has all been effervescent but I didn't think to test the soil that is clay. All core from 270 to 310 is effervescent. GW samples have all been effervescent too.

1535: Caught up w/ log. Drillers meanwhile have done the clean out and deconned the push-ahead.

1555: Collect EB12-GW050520

Tea is packing cooler and Be is QC-ing it.

1610: Drillers attempt to use the push-ahead sampler with only one of the O-rings that are bigger. The sampler

~ 5/5/20 TS

Location SLC VA Date 5/5/20

Project / Client 700S 1600E PCE Plume

doesn't hold and that last O-ring is torn.

1620: Drillers head to Hydrapak to pick up more O-rings. Mike and Scottie come over to MW-25 to dump soil cores into the hopper and close the fence.

1730: Crew #2 buys 24 O-rings. PIDs are charging. Make copies of COC, heat Color-Tec water for MW-25 Sample

1800: MW25-GW050520-292 Was ND on the Color-Tec. Sample bubbled but no color change. We did 50cc, 100cc, the switched VOAs and did another 100cc (200cc total purge). Decon purge needle.

1810: Close and lock up IDW Yard.

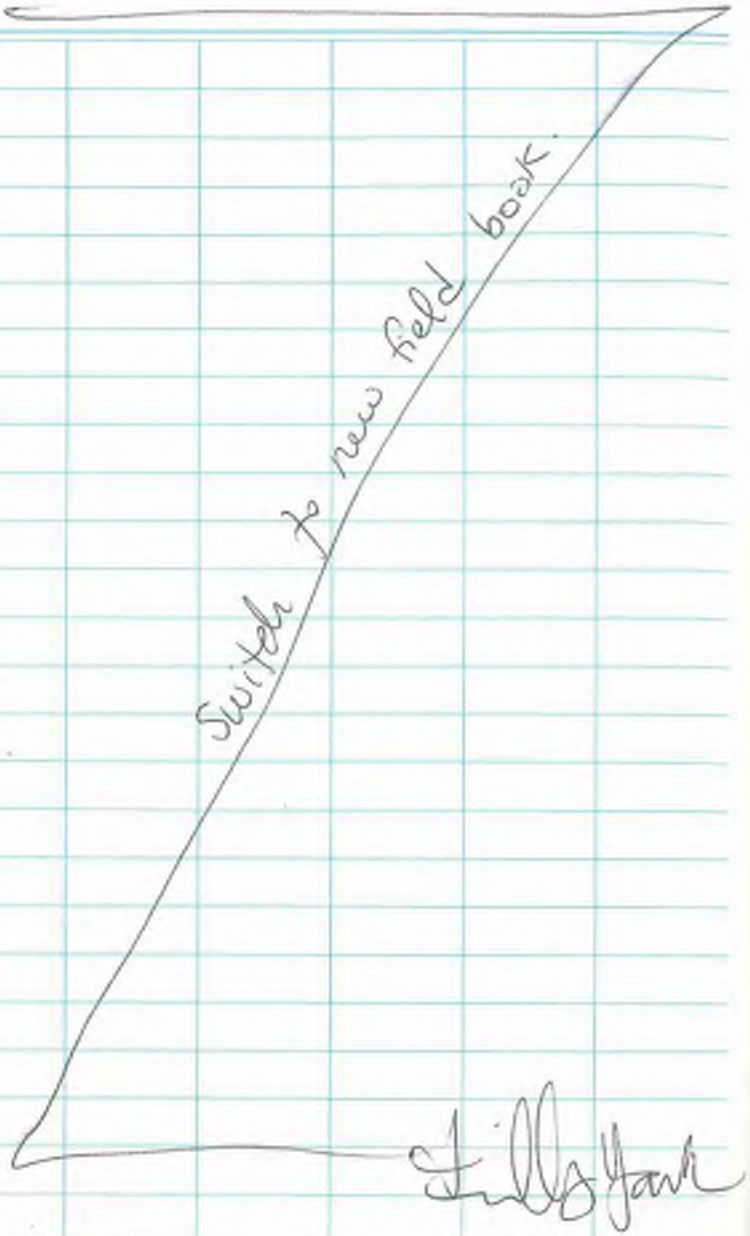
1815: Leave Site

5/5/20

Tillers Yard

Location _____ Date _____

Project / Client _____



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Common Field Data Error Codes

Error codes are used to explain common mistakes and are written above or close to the mistake.
Commonly used error codes include:

RE	Recording Error
CE	Calculation Error
TE	Transcription Error
SE	Spelling Error
CL	Changed for Clarity
DC	Original Sample Description Changed After Further Evaluation
WO	Write Over
NI	Not Initialed and Dated at Time of Entry
OB	Not Recorded at the Time of Initial Observation

Note: Error code should be circled, dated, and initialed when recorded.

Hazard Classifications

Class 1 Explosives
Class 2 Gas
Class 3 Flammable Liquid
Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
Class 5 Oxidizing Substances and Organic Peroxides
Class 6 Toxic (poisonous) and infectious substances
Class 7 Radioactive material
Class 8 Corrosives
Class 9 Miscellaneous dangerous goods

Container type abbreviations (for sampling guidelines)

BR - Boston Round • ABR - Amber Boston Round • AJ - Amber Jug • AWM - Amber Wide Mouth • Poly - Polyethylene Bottles • BOD - Bottle • CWM - Clear Wide Mouth

CONTENTS

PAGE	REFERENCE	DATE

Naming Examples:

EB48 - SB052720

FD ~~FB~~16 - GW052720

MW31 - SB052720 - 35

location | matrix | date | depth

Location MW-015 Date 3/10/2022

Project / Client Pump fishing MW-015

Kiel/Keller

- Come over to MW with drillers to assess area.
- Arrived back with drillers at 0850
- Fishing started ~1000
- Got down to 180' and feels like they are into something
- slowly pulling up and tubing starting to come out top of casing 1035
- pulled up tubing + string, no pump
- Driller measured down with tape to an obstruction at ~74'; will send barb/chain back down to see if can grab anything else
- ~~pump~~ pipe came unhooked and dropped ~85' of pipe
- top of pipe at ~135' 1120
- Drillers don't have enough drill rod to get back down so they have to source some

1140 I am going to office to get chop saw / hilti for

Rite in the Rain

Location SLCVA Date 3/10/2020

Project / Client MW015

chopping out Asphalt at potholes
- Returned 1245 with hilti
- Joe says lets get one MW area opened so one truck can start to clear - MW-28
- Removed Asphalt at MW-28 with hilti and pick done at 1330
- started to remove asphalt at MW-27 at 1340
- 1415 Finished Removing asphalt at MW-27. Put cones + tape around area.
- 1440 - checked in on Drillers at MW-015. They are fabing a drill rod to use to try and retrieve fallen pipe
- 1520 - drillers starting to try to retrieve drill pipe. Fabed some rod from sch 80 PVC pipe
- 1550 - all drill pipe + harpoon once removed.
- 1621 - Drillers leaving to get sledge hammer for tomorrow.

(2)

Location SLCVA Date 3/10-3/11/20

Project / Client 700S 1600E PCE Plume

Cont. - I put monument back on MW-015. 1623 Drillers will come back to move rig + soon back to UAMC tonight

UAMC - pre clearing day

3/11/2020

0730 - tailgate with Joe after that I stuck with the drillers while they moved the pipe/water truck from EDW laydown area over to their staging area.

0800 I unloaded the tubing from pine environmental into the northern conex.

0845 - Pete from Holt and I spoke with Blain, the head plumber from UU who gave Holt permission to get water from the hydrant between buildings 6 and 41

0900 - drillers built decon area South of Bldg. 20. unloading pipe for decon prior to drilling

(1)

Rust in the Rain

Location SLC VA Date 3/11/2020

Project / Client 700S 1600E PCE Plume

1045 - drillers have pipe unloaded in decon staging area. We will get water at hydrant next.

1400 - water truck + 2 tanks are filled, chipped pavement from 2 more MW's. drillers are now decon ing

1455 - I put a J-plug in MW-015

3/11/2020

Location SLC VAMC Date 3/12/2020

Project / Client 700 S 1100E PCE Plume

Kiel Keller (wisetech)

0730 - tailgate safety with Joe, Holt, EPA, and UA

0745 - unlocked gates to IDW area so drillers can access their equip.

0920 - pumped remaining water from slurry containment area into purge water AST

1000 - overseeing drillers getting tooling ready to move to first drill site

1110 - Drillers moving to first drill site. MW-28 We moved the dumpster at the loading dock by MW-28 as ~~the~~ the UA staff wanted

1150 - Did safety meeting with Joe + Pete. Carlos also was there and gave us the permit to drill

1220 - fencing + porta pot arrived.

3/12/20

Location SLC VA Date 3/20/20

Project / Client FUDS 1600E PCE Plum

0845	H&S Tailgate w/ Holt Bldg
0915	Tie/Cut Asphalt
0930	Begin Vacuum Excavating
1043	VAC TRUCK @ 11 FT BGS
1145	@ 12 FT. MORE COBBLES
1235	@ 12.5 FT. BGS
1313	@ 12.75 FT BGS. J. MILLER CALLS CARLOS AGUILAR TO DETERMINE IF DEPTH IS SUFFICIENT. GEOPROBES.
1325	C. AGUILAR ONSITE & OK'S TOTAL VAC DEPTH.
1340	Carlos approves MW-27 location
1351	BADGER TO STAGING AREA TO UNLOAD IDW
1415	HOLT COVERS OPEN HOLE W/ SAND PALLET
1450	PUMP WATER OFF TOP OF BADGER TANK INTO HOLDING TANKS. BADGER BEGINS EMPTYING TANK INTO CONTAINMENT
1525	BADGER FINISHES EMPTYING TRUCK INTO CONTAINMENT. POWER WASHES INSIDE OF TANK.
1530	HAS K. VAUX SIGN FORM. OFFSITE.

Location SLC VA Date 3-20-20

Project / Client FUDS 1600E PCE Plum

KMLE KELLER. OFFSITE

3-20-20

Rite in the Rain

Location SLC VA Date 03-21-20

Project / Client 7005 1600E PCE PLUM

1345 C. KELLEY ON-SITE. COVER ROLL-OFF DUMPSTER. CONTAINMENT W/ VAC TRUCK SEDIMENTS IN GOOD SHAPE.

1400 OFF SITE. LOCKCOMSMITH ETC.

03-21-20

Location SLC VAMC Date 04-10-2020

Project / Client 7005 1600E PCE Plume

Kiel Keller (Wasatch)

0800- Badger truck arrived and we showed him the area to be cleared. He did not have the extension with him that he was supposed to bring so he is calling his supervisor

0815 - Someone will bring the hose for Badger, will be 1-1.5 hrs

1000- Badger arrived with extra hose, area cordoned off, Ready to start

1045- made it to 8Ft bgs - encountered larger rocks that look partially cemented, will try to expand hole and work through them

1130 - at ~ 9 Ft 4 in Bgs. Carlos will let us know if far enough - He is getting an electrician to look at a small potential wire along side of hole

1138- Carlos + Justin (electrician) says we are to either ground or

Location SLC VAMC Date 4/10/2020

(2) Project / Client 700 S 1600 E PCE Plume

cont.

- Coaxial Cable. They gave the okay to go ahead with the current depth and don't care about the wire. Good to GO.

1150 - Sprinkle pot pallet of Sand over the hole

1305 - Badger dumped into the containment in the laydown area. Containment held fine. I pumped AS much water as possible into the IDW AST that we made the straw/tarp containment around.

I signed the the ticket for Badger

1415 - I placed 3 straw bales along upSlope side of whole that we dewater in case it rains - no place had waddles so I bought straw

Location SLC VA MW-24 Date 4/15/20 13

Project / Client 700 S 1600 E PCE Plume

0730 Badger Onsite

~~off~~ activities Precheck MW-24

0845 Carlos + Electrician Onsite Verify wire not live Okay to Backfill

0905 Move to MW 25 Location

1010 Halt Backfilling MW 24 location w/ Sand

1105 BMW-25 to 10' having Not advancing

1115 Carlos Aguilar Okay's package

1130 Pallet on the hole

1200 Pump waste @ IDW Spoils Yard

1300 Badger Offsite

4/15/20

Rite in the Rain

14

Location SLC VA Date 4/16/2

Project / Client Well Repairs

0820 Arrive MW-5R
1055 Pump and transducer Redeploye
1205 Arrive 13S w/ Foam
DTB ~~59.40~~ 59.40
1300 93.08 - DTB MW-12D
1330 MW-12D complete
1340 DTB = 54.64', Arrive at MW-15S
1440 MW15D complete diolint measure
DTB 398.24 MW-1D

4/16/2020

15

Location SLC VA Date 4/24/20

Project / Client 700S 1600E PCE Plume

Well repairs

0730 E. Rott onsite. To connex to collect supplies.
0830 To MW-13S/D. Replace pump strings and transducer string w/ 1/16" cable wire. Used 2 ferrules + a stopper on each end.
10:45 Completed, placed well tag on each well.
1100 E. Rott to Wasatch Environmental to return borrowed PID.
1130 E Rott to Home Depot to resupply on ferrules + stoppers.
1300 To MW-17S/D.
1315 Attempted to install tamper proof bolts on MW-17D. Wrong bit size. Installed well tag, will return with new bit.
1330 Replace string w/ cable at MW-17S.
1400 To MW-3R.
1415 Install well tags for MW-3R
1500 E Rott offsite

4/24/20

Rite in the Rain

16

Location SLC VA Date 4/26/20

Project / Client 700S 1600E PCE Plume

Well repairs

0900	E. ROTT ONSITE.
0930	E. ROTT DECONS ~~tot~~ SR pump in connex that was used for MW-17D. THIS will be used to deploy into MW-5.
1100	E. ROTT OFFSITE.

Emma.RH 4/26/20

Location SLC VA Date 4/27/20

17

Project / Client 700S 1600E PCE Plume

Well repairs

0700	E. ROTT, K. YAUK onsite. Gather supplies for well repairs.
0715	H+S talk
0730	TEAM TO MW-14S/D. Replace string for pump + transducer on MW-14S.
0800	Bolts for MW-14D not the same as MW-17D, need new size for tamper proof bit.
0830	TEAM to MW-16S/D
1000	TEAM replaced all for 16S/D. Emma TO ACE for ferrule + stopper resupply
1030	TEAM TO MW-08.
1145	Completed MW-08A, MW-08B.
1200	TEAM to MW-04. Pump and transducer already hung on cable. No changes made.
1215	TEAM to MW-06.
1345	Completed MW-06. TEAM to connex to take equipment blank.
1430	TEAM to MW-02.
1600	Completed MW-02. Replaced lock on well. Old one was rusted through.
1640	TEAM OFFSITE.

Rain in the Rain

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

Well Repairs

0700	E. Rott, T. Vrtlar, K. Yauk, Kiel Keller (Wasatch) onsite.
0715	H+S meeting at connex.
0730	E. Rott, K. Keller to MW-22 for Well repairs. K. Yauk, T. Vrtlar To Badging office.
0745	T. Vrtlar, K. Yauk to connex.
0815	Collect EB01-GW-042820
0830	E. Rott, K. Keller at MW-22. bottom fitting corroded and needs replaced, on the sample output side.
1000	Replaced bladder on MW-22.
1030	E. Rott, K. Keller back to connex to find replacement fitting.
1100	Team returns to MW-22 and replaces fitting. removed previous middle portion that was corroded + served no purpose.
1130	Team re-hangs pump + transducer on cable. Install well tag.
1145	Team pulls MW-21 pump. Bladder not properly on o-rings.

Location SLC VA Date 4/28/20

Project / Client 700S 1600E PCE Plume

Well repairs

1200	Fittings on top of pump finger loose. Replace top part of swage lock.
1230	cut tubing ~3" b/c hole identified on air line.
1245	Replace bladder.
1300	Re-install transducer + pump on cables. Install well tag.
1330	Team to MW-01S.
1400	Team measures out 204' tubing and cable. Place new bladder on pump.
1500	Connect tubing + cable to pump and top connection (previously MW-17D)
1530	Team places pump in well. Team checks and finds the air line disconnected from quick connect. Attempt to pull up but pump appears to be lodged.
1600	Team places cap on well + will return @ a later date to retrieve the pump. Still connected to water line + cable. Emma Rott 4/28/20
1700	Team offsite

Location SCCVA MW-26 Date 5/4/20

Project / Client 700S 1600E PCE Plume

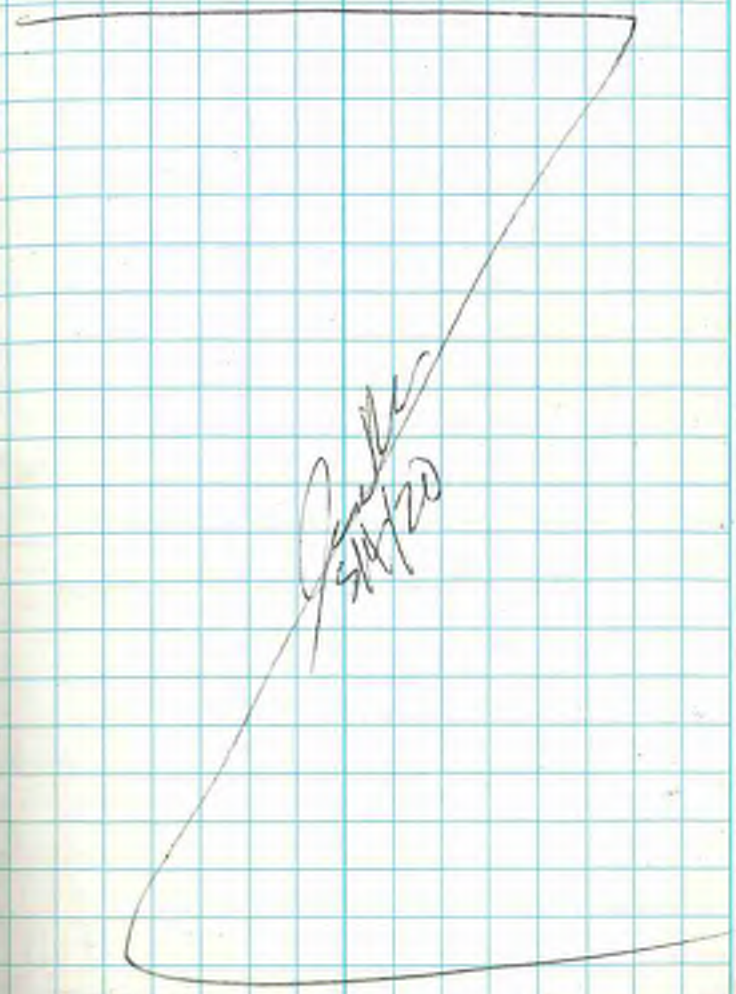
Weather 45-65°F windy

0730	H&S Tailgate w/ Kimberly Ta
	Jeff Jones Crew
0800	MP Environmental Onsite
	to pump wast
0830	Pete Rosenburg - Holt
	Scottie Lumpkin - Holt
	Mike Lee - Holt
	Joe Miller - CDM Smith
	Setup MW-26
0850	Add 6" casing to 90'
0910	Resume Drilling
0915	TB22-SB050420
0945	Sample MW26-SB050420-103
1035	Sample MW26-SB050420-116
1120	Sample MW26-SB050420-114
1150	Sample MW26-SB050420-129
1200	Holt Break for Lunch
1230	Resume Drilling
1320	Sample MW26-SB050420-133
1550	Sample MW26-SB050420-145
1600	Holt to Decon 7" and push down Sample
1639	Fedex # 392924372957
1715	Composite IDW Rolloff Sam

Location SCCVA Date 5/4/2020

Project / Client 700S 1600E PCE Plume

1715	Sample IDW03-SB050420
1800	J. Miller offsite



Rite in the Rain

Location SLCVA MW-26 Date 5/5/20

Project / Client 700 S 1600 E PCE Plume

0700 Onsite J. Miller
0730 Joint H+S Tailgate
Crew - J. Miller CDM
Holt - P. Rosenberg
Holt - Mike Lewi
Holt - Scott Lemoman
0750 Fuel Rig
Task: Drill MW-26 Boring
weather 45-75°F 10-15mph wind
0800 Warm up Equipment
0830 Resume drilling from 150' BGS
PID #04571
0900 Holt pin Jam Pin falls down 8" casing
0910 Resume tripping out
0915 ~~At~~ Sample MW26-SB050520-154 (+MS MSD)
1035 ~~At~~ Sample MW26-SB050520-168
1100 MP Environmental Onsite to haul Rolloff. Too Heavy for truck to haul. Moved to laydown area for access w/ bigger truck
1140 MP Environmental Offsite
1120 Sample MW26-SB050520-172

Location SLCVA MW-26 Date 5/5/20

Project / Client 700 S 1600 E PCE Plume

1210 Sample MW26-SB050520-188 + Dup FD14-SB050520 (1000)
1340 DTW ~186'
1345 Sample MW26-SB050520-158
1430 Collect EB11-GW050520 From decon'ed Sample
1450 MP Environmental Hauls off Rolloff
1515 Trip in Sample
1540 Vibe Back
1635 No water in Bailer Vibe Back
1655 Trip out sampler - No GW collected
1705 Sample ant. open/wet clogged
1730 Wrap up site

5/5/20

Location SLC VA MW-26 Date 5/6/20

Project / Client 700S 1600E PCE Plume

weather 50-75°F

0700 On site CDM Smith

0720 HTS tailgate

Topics Communication, co-located work

Slips trips falls

Attendees:

J. Milke - CDM

T. Vahle

K. Yount

B. Carreon

K. Keller Nasatka

P. Rosenbusch Holt

Sdrump man

Mike Kei

J. Jones

A. Cooper

A. Langdon

Marc Vallum VA

~~0745~~ Tasks pre-clean MW-24

Site Orientation - B. Carreon

Dangers IDW Sec

Resume drilling MW-26

0850 Setup MW-26

0900 DTW - 152.13 bgs MW-26

Warm up Rig / Inspect Equipment

Location SLC VA MW-26 Date 5/6/20

Project / Client 700S 1600E PCE Plume

0915 Resume ~~drilling~~ JM 5/6/20 drilling

1000 Carlos Otero's MW-24 locked

~~0950 Sample MW-24 5/6/20~~

0955 Sample MW-26 JM 5/6/20 MW26-SB050620-201

1005 Trip in sampler GW

1140 Sample MW26-SB050620-210 JM 5/6/20

1247 Sample MW-26-SB050620-215

1335 Collect EB from Sampler

EB13-6-050620

1345 Sample MW26-SB050620-221

1435 Trip in GW Sampler, No H_2O w/ Keller

1500 Vib Back

1530 No water Vibe Back

1600 - 3" Muck in bucket No water

Trip out Sample - close out w/ formation

1640 Sample MW26-SB050620-239

1730 wrap up site activity

1800 prep coolers MW25-320 ND

MW26-210 ND

1830 Off site

5/6/2020

Rain on the Rain

Location SLC VA MW-26 Date 5/7/20

Project / Client 700 S 1600 E RCE Plume

0700 Onsite com Smith

0730 H&S tailgate.

Topics: slips, trips, falls, communication, protecting daylighted holes

Attendees:

J Miller com Smith

B. Carreon

K. Keller Wasatch

P. Rowenhorst Holt

J. Jones

A. ~~Cooper~~ Kuper ~~5/7~~

A. Langdon

~~T~~ S. Lampman ~~5/7~~

M. Kedi Sr.

Marc Yalom VA

Tasks: Build mw25

Continue drilling MW26

Samples (C-T)

MW26-GW050720-240 Colortec ND @1730

MW26-GW050720-250 Colortec ND @1750

Location SLC VA MW-26 Date 5/7/20

Project / Client 700 S 1600 E RCE Plume

0915 Resume MW-26 drilling

0920 Finished cleaning. Advanced to 240', sounded push ahead sampler, both ~~are~~ open, 2" Opened push ahead, No water on 3rd vibe, sounded water at 193 ft below rod. Seems to be sounder error. Tripped back out to remove o-ring from sampler. Pulled 40' out, driller ~~went~~ to go back in 40' and ~~dry to~~ open/push-ated. Were able to collect sample. Driller ~~opted~~ opened push-ated before confirmation of no water entering push ahead pair to opening.

1145 Collected sample MW26-GW050720-240@1145

1200 Tripped out, tripped back in.

1225 Started drilling 240-250.

1315 Collected sample MW26-SB050720-247@1315

Collected FD15-SB050720 @ "0800"

1330 Tripped in GW Sampler. Dry before opening push ahead @ 250'. Collected groundwater sample at 1420. MW26-GW050720-250. Temp 19.06 °C, 1.020 ms/cm, 1.52 DO, 7.47 pH, -537.7 mV.

1430 Tripped out. GW Sampler.

1545 Collected soil sample MW26-SB050720-251 @ 1545

1630 Collected MW26-SB050720-209 @1630 Rain in the Rain

Location SLC VA MW-26 Date 5/8/20

Project / Client 700 S 1600 E ACE Plume

0700 Onsite Com Smith

0730 H+S Tailgate

Topics: slips, trips, and falls, washing hands,

Attendees

J Miller — Com Smith

B Carreon

K Keller — Watch

P Rosenbaum, Petel — Helper

J Jones Jeff 2

A Kuper Aaron 2

A Langdon, Alex 2

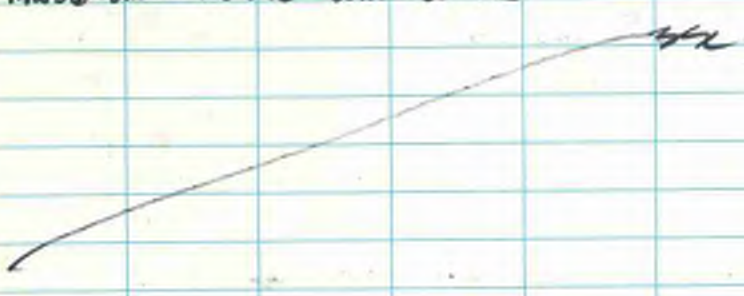
S Longman, Scottie 1

M Levi Jr, Michael 1

Tasks: MW-26 add 6" case, drill

MW-25 continue building

MW26-GW050820270 Color-tec NA



Location SLC VA MW-26 Date 5/8/20

Project / Client 700 S 1600 E ACE Plume

0800 Drill crew stopped 6" casing.

0805 Collected push-ahead ground water sample rinse blank. Collected rinse over A O-ring. decon'd

EB14-GW050820 @0805.

TB25-SB050820 @0800

0950 Finished casing 6" to 270'.

1030 Finished cleanout. Begin deploying push-ahead gw sampler.

1050 Sampler deployed, no water entered screen. Opened screen.

1140 Collected sample MW26-GW050820-270

1220 Drilled 270' to 280' bgs.

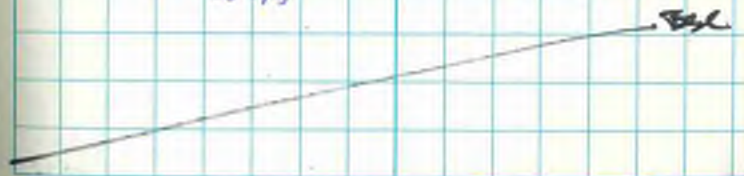
1300 Collected sample MW26-SB050820-274

1315 ~~Loaded to~~ Drilled to 290'. 5x5's

1355 Collected sample MW26-SB050820-285

1430 Collected EB15-GW050820@1430 over new O-ring.

1500 Cleaned out 6" casing and deployed sampler 3 times, no sample able to be collected. Some ~~silts~~ dry silts wet silt in bailer.



Rite in the Rain

Location SLC VA MW-26 Date 5/10/20

Project / Client 700 S 1600E PCE Plume

0700 On-site COM Smith

0730 H&S Tailgate

Topics: 801- 4444

Mask wearing, temperature, watch for bystanders

Attendees:

J Miller — COM Smith

B Carreon

B Bott — Holt

P Rosenbaum

S Longman

M Lee, Jr

J Jones

A Kuper

A Langdon

Tasks: Finish building MW25

Continue drilling MW26

Supplies: drilling log sheets, sample kits, COCs, string, daily forms, med gloves, sweater

Location SLC VA MW-26 Date ~~5/9~~ 5/10/20

Project / Client 700 S 1600E PCE Plume

0800 - Drill crew continued on MW-26.

- Collected TB26-20051020@0800

0935 - Collected MW26-20051020-299 @ 0935 still within clay unit, will core to 310 and attempt GW sample there.

1100 Collected MW26-20051020-308 @ 1100

1145 Collected rinse blank EB16-GW20051020 @ 1150

1200-1215 Attempted to collect pushahead groundwater ~~sample~~ sample. Used three times. Could not collect sample w/ the bailer. Attempted to push sampler past 310' borehole to ~311' and collect a sample, still could not collect & ~~to~~ retrieve water. Upon tripping out sampler, silty clay was found in connection to where drill rod meets pushahead sampler. Note that bailer does not go past rod/sampler connection. Will attempt GW sample @ ~~320'~~ & 310 320'.

1515 Collected soil sample at 1515. MW26-20051020-314

1700 Attempted water sample at 1700. V. bad, redeployed bailer. No sample collected. Will leave sampler open over night.

Rain in the Rain

Location SLC VA MW-26 Date 5/11/20

Project / Client 700 S 1600E PCE Plume

0700 COM onsite.

0730 H+S tailgate

Topics: traffic, chalking barrels/casing.

Attendees:

S Miller

B Carreon

B Bobb

P Rosenbaum

S Lampman

M Levi Jr

J Jones

A Kuper

A. Layton

Mare Yalom

COM Smith

Holt

VA

Supplies: water sample kits, formsorb

Location SLC VA MW-26 Date 5/11/20

Project / Client 700 S 1600E PCE Plume

0730-0830 Collected MW-26-GW051120-320 @0830

Drill crew left to get supplies 0800-0900

0900

0930-0930 Tripped out gw sampler.

0930 Tripped in core barrel.

1000-1010 Drilled from 320' to 330'

1030 Replaced teeth within 5 min.

1055 Collected MW26-SB051120-327 @1055

1130-1140 Drilled from 330'-340'

1200 Collected EB17-GW051120

1230 Collected MW26-SB051120-334

1330 Finished cleanout.

1425 Opened push ahead gw sampler. Used sounder to gauge the bottom before and after opening. Opened sampler 0.4'.

Before 342.0

After 342.4

No sample collected at 340'.

1615 Drilled from 340'-350'. Low recovery

1805 Collected MW26-SB051120-348 @1805

Low recovery on core (4' of 10')

bottom quarter had perceptible gravelly sand

Knee of odor and ~450 ppm detection.

1920 Tagged Bottom, no water

Holt 12 gpm, 15 NTU + leave overnight

Location SLC VA mw-26 Date 5/[illegible]/23

Project / Client 700 S 1600 E PCE Plume

0700 C&M Onsite

0750 H&S tailgate.
Topics: traffic, weather, housekeeping.

Attendees:
J Miller
B Correon
B Boss
P Rosenbaum
S Lampman
M Leci Jr.
J Jones
D Kuper
A Langdon
Mark Yalom

C&M South

Holt

VA

Supplies: gloves, charge camera

Location SLC VA mw-26 Date 5/[illegible]/23

Project / Client 700 S 1600 E PCE Plume

0745 Attempted water sample @ 350', unsuccessful. Vibed the sampler for a third time and the formation appeared to still not produce water.

0815 Began tripping out sampler and will drill to 360'.

1015 Collected mw26-5305[illegible]20-355 @ 1015

Collected FD17-5305[illegible]220 @0800

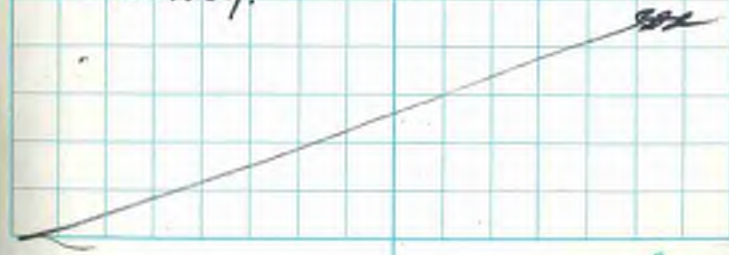
1100 Collected EB18 - 5305[illegible]220 @1100
Dup of FD

1215 Collected mw26-GW-053120-360 @1215

Collected FD18-GW-053120 @0800

Parameters	1316	1318	1320
Temp C:	24.14	25.13	23.28
sp Cond mS/cm	1.204	1.229	1.238
DO mg/L	4.19	1.36	1.05
pH	7.32	7.54	7.69
ORP (mV)	-128.8	-236	-302.6

1300 TD confirmed 360' no final cleanout necessary.



Rite in the Rain

Location SLC VA MW-26 Date 5/12/20

Project / Client 700 S1600 E PCE plume

Well Intervals

~~348-358~~

347.75 - 357.75

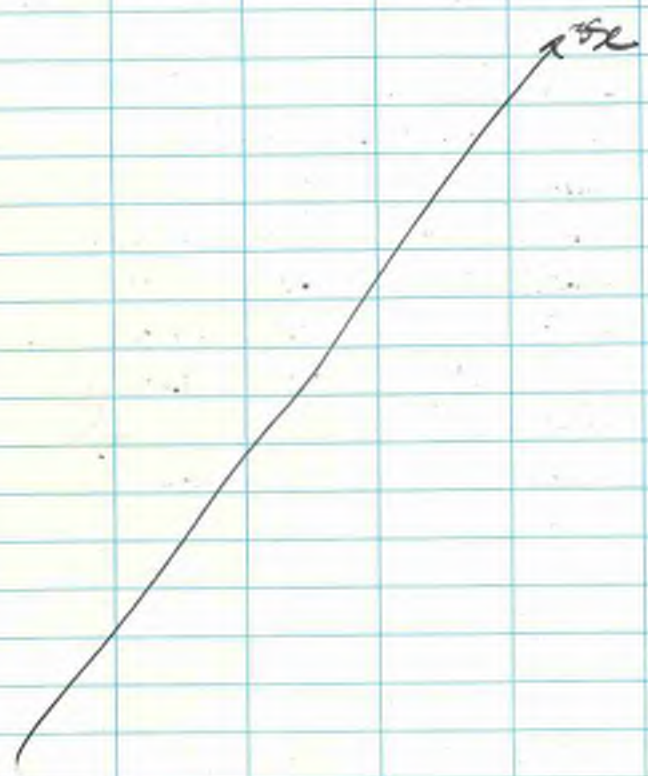
2' - 3

1' ~~0.5~~ 5/12 - 1

10' - 34

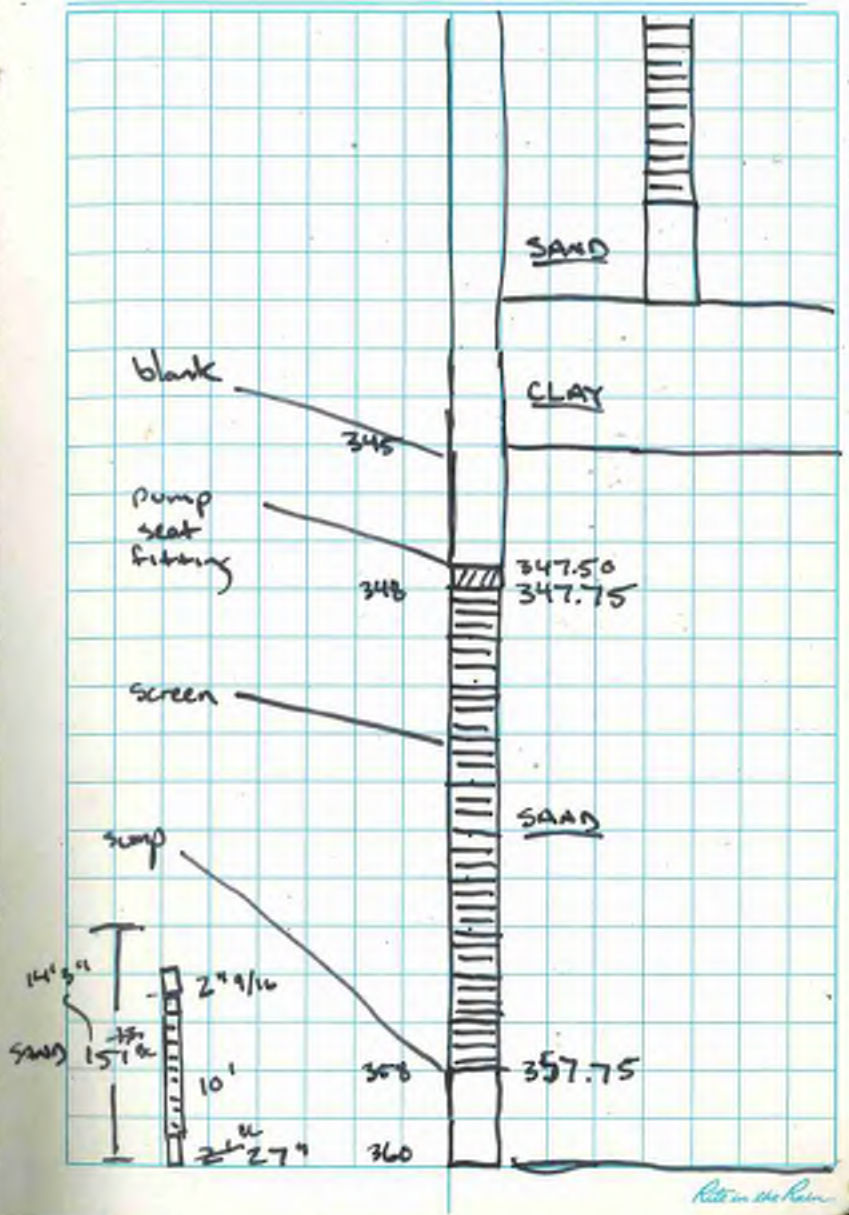
D: sand 344-360

Soil Vapor Points



Location SLC VA Date 5/12/20

Project / Client 700 S1600 E PCE plume



Location SLC VA MW-26 Date 5/13/20

Project / Client 700 S 1600 E PCE Plume

0700 COM Smith Onsite

0730 Mtg tailgate

Topics: traffic, weather, s+f

Attendees:

J Miller
B Bott
B Carreon
P Rosenbaum
S Lampman
M Levi Jr.
J Jones
A Kupel
A Langdon
M Yalon
J Perez
P Dasalvia
C.

COM Smith
↓
Holt
↓
NA
All welding
↓
VA

Location SLC VA MW-26 Date 5/13/20

Project / Client 700 S 1600 E PCE Plume

0745 Waiting for welder to arrive onsite.

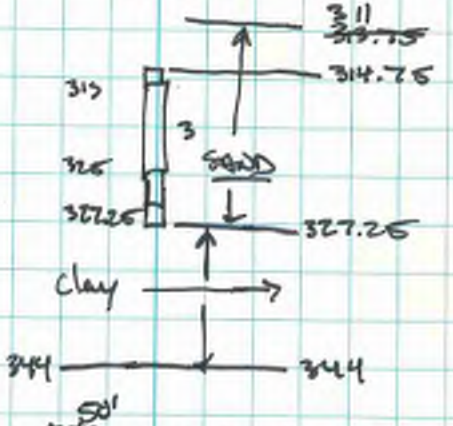
0930 All welding onsite.

1010 Welder finished work.

1200 Finished sand pack from 360-344

Screen 3 315-325 +2' sump

Sand Pack 327.25 -



1300 Crew dropped 40' of well well c down the casing. Attempting to top down casing and attatch to dropped casing.

Chips to 328

300 ft casing

~~328-42 = 286~~ 328-42 = 286 = 286

30 sections +3' 303-286 = 17'

303-292.5 10'

294 292.5

1800 Left site.

Location SLG VA MW-26 Date 5/14

Project / Client 700 S1600 E PCE Plume

0700 CDM Smith onsite.

0730 H&S Tailgate

Topics: traffic, fatigue

Attendees:

J Miller

D Batt

B Carreon

P Rosenbaum

S Langman

M Lewis Jr.

J Jones

A Kuper

A Langdon

M Yalom

~~E Perez~~ BC 5/14

~~E Basilwin~~ BC 5/14

S Smith

CDM Smith

↓

Holt

↓

Location SLC VA MW-26 Date 5/14

Project / Client 700 S1600 E PCE Plume

0745 Began attempting to retrieve dropped 42' of well #3.

Water approximately 332-118 = 214 ft bgs

1045 Stopped retrieval attempts. BC 5/14.

10' blank		37 – 250
10' screen		2
pump fittings		2
2' blank		2
1' blank		1
2' sump		2

Sand $(16')\left(\frac{6}{12}\right)^2\left(\frac{1}{4}\right)\pi = \sim 1/8\ yd^3$

Clay $(344-328)\left(\frac{6}{12}\right)^2\left(\frac{1}{4}\right)\pi = \sim 1/8\ yd^3$

1240 Finished overdrilling. Going to recase and do a cleanout.

1340 Cased to 360'.

1310-1600 Performed three cleanouts.

1600-1625 Discussed possibility of smearing bentonite (4') that was exposed to the formation. with Smith and Yalom. We looked at the final cleanout and it appeared to be nearly entirely sand pack. Smith and Yalom verbally confirmed BC 5/14 we were ok to proceed w/ building the well.

~~Attd~~ BC 5/14

Rite in the Rain

Location SLC VA MW26 Date 5/14

Project / Client 700 S1600 E PCE Plume

1615 - asked Joe Miller and Neil Smith how to dispose of ~~the~~ casing to be disposed of that is smeared w/ bentonite and sand, ~~#~~ Neil Smith instructed ~~them~~ me to wipe down the casing and to dispose of it in a municipal landfill dumpster.

Well D: sump 357.75-360
screen 347.75-357.75
pump fitting 347.50-347.75
blank casing 0-347.50
sand -360

1630 Finished building well D casing.

1730 After adding 4 bags of 10/20 silica sand, depth to sand was 340 ft bgs. Appears to be slightly bridged. Wiped casing. Will measure in AM.

Volunteer from MW24 NA.

Location SLC VA MW 26 Date 5/15

Project / Client 700 S1600 E PCE Plume

0700 CDM Smith onsite.

0730 H+S Tailgate
Topics: traffic, fatigue
Attendees:

J Miller	CDM Smith
B Boss	↓
B Cameron	
P Rosenbaum	Holt
S Langman	
M Lewis Jr	
J Jones	
A Kuper	
A Langdon	
M Yalon	VA

0745 Depth to sand still ~340 ft bgs, seems bridged, potentially some sand residual from over-drilling. Sand interval 342-360 ft bgs.

Well A: 205-215
B: 235-245
C: 315-325
D: 348-358

1000 started hanging well C again.

Rain in the Rain

Location SLC VA MW-26 Date 5/16

Project / Client 700 S 1600 E PCE Plume

1130 Finish sandpack for well C.
Screened 315-325
Sand 311.5-325
1420 Finished installing chips + tablets to 260' bgs.
Switched from tablets to chips ~290' bgs.
Tripped out 6" casing (started).
1500 Finished tripping out 6" casing.
1540 Finished well C seal, hydrating well B.
235-245 sand pack 231-246
chips to 250'
1700 Packed up site.

Location SLC VA MW-26 Date 5/17

Project / Client 700 S 1600 PCE Plume

0700 CDM Smith on site.
0715 Hold S Tailgate
Topics: traffic
Attendees:

B Bolt	CDM Smith
B Carreon	↓
P Rosenbaum	Holt
S Lampman	↓
M Lewis Jr.	

0750 added silica sand to filter pack. Ran winch through lead. Rolled some 7" casing sections.
0910 Finished well B sand pack from 231 - 250 Ft-BGS.
0925 Started adding bentonite tablets from 231 to 215.
Well B screened 205-215.
1025 Finished constructing casing using 20-10 blank, 1-10' slotted, 1-2', 3-1'.
1150 Finished filter pack from 201-218.
1350 Routed backfill to 140' and began tripping out 7" casing.
1400 Finished removing 7" casing.

Rite in the Rain

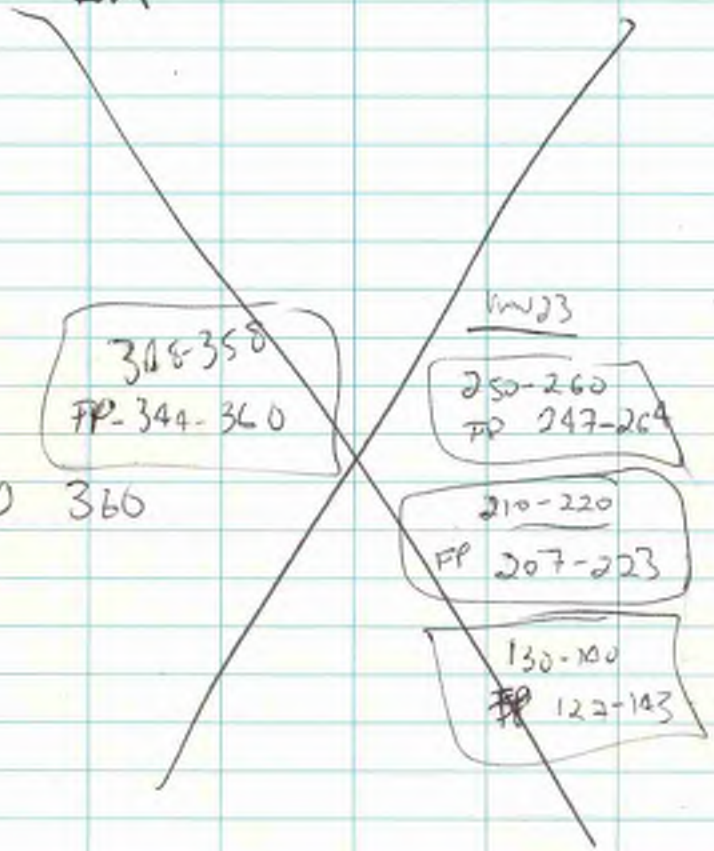
Location SLC VA MW-26 Date 5/17

Project / Client 700 $1600 FE PCE Plume

1500 Backfilled w/ casing removed to approximately 110 FT-BGS

1520 90 FT-BGS

1620 Stopped well at seal @ 34 FT-BGS. Grout w/ bentonite to be added tomorrow AM



Location SLC VA @ MW26 Date 5/18/20

Project / Client

700 CDMS onsite setting equipment, pipework ready.

735 H&S Tailgate.

Topics: Traffic, Dust, Wind

Attendees:

Beau Bott - CDMS

Joe Miller - CDMS

Ben Carreon - CDMS

Pete Rombia - HOH

Scottie Lampman - HOH

Mike Leeri Jr. - HOH

7:40 HOH warming up rig, getting ready to grout.

8:30 Begin pouring grout

8:54 grout at approx 40' bgs. Going to pull 8" casing.

9:10 grout at about 12' going to remove cables as pull 8"

9:58 Removed 10' from well.

10:30 done grouting.

10:45 HOH moving flatbed to MW26.

11:00 Discussion w/ Merc. - Drums, well intervals

Location ~~MW~~ SLC VA MW-2 Date 5/18/20

Project / Client 7005 1600 EPCE Plume

11:00	Holt moving pipe, equipt.	
Supplies		
12:00	Collect SB20-GW051820	
	off pipe after cleaning mw24	
	~~[illegible]~~ SB	
	pipe was decon'ed on 5/15/20	
12:16	Collect SB21-GW051820	
	from GW Sample used to	
	Collect @ mw24 ~~[illegible]~~	
12:30	Collect @ TB31-GW051820	
12:45	Collect IDW04-SB051821	
	from ~~[illegible]~~	
	RBR 250327	
13:15	Holt moved rig / equipment	
	to Laydown area	
1400	Holt back on mw2C	
	to continue moving equipt / fencing	
1445	Refs to Fedex w/ Samples	
1500	Mob pallets / Fence / Pipe Rack to laydown	
1517	MW27 185.15 TOC	
	13 3.3ppm	
	28 6.7	
	48 1.8	
	75 2.6	
	155 0.3	

Location SLC VA Date 5/18/20

Project / Client 7005 1600E PCEP/Plume

1537	MW23A	185.32	BTOC
	MW23B	196.62	BTOC
	MW23C	215.16	BTOC
1547	MW-28	184.37	
	118	1.2ppm	
	48	0.3ppm	
	24	0.0ppm	
1600	MW25A	176.82	FT BTOC
	MW25B	182.07	FT BTOC
	MW25C	205.72	FT BTOC
	28'	0.0ppm	
	100	0.2ppm	
1700	Offs, Ke		

5/18/20

Rite in the Rain

Location SLC, VA Date 5-26-20

Project / Client 700S. 1600E PCE Plume

1005 - I (Blake Darrow Woodard Env.) arrived @ Connexes & met w/ Kimberly York, read COVID-19 Earthquake addendum to HASP. & signed HASP.
1020 - Meet drillers in lay down yard for tailgate safety meet.
1038 - K.Y. left to get new driller badged, I provided oversight of remaining drillers prepping for surface completions installation & drilling.
1100 - Set up on MW-24 to begin surface completion install at Ferguson Vault.
*driller said hole completed mostly bentonite, & not a bentonite/portland cement mix, will have to dig some out prior to surface completion installation.
1152 - left MW-24 to drill loc's in pair w/ K.Y.
1205 - Badges on-site, began daylighting @ MW-29, 8.5' TD.
1330 - Moved to MW-31, ~~8~~ 10' TD, filled in both holes w/ gravel or bentonite & gravel
*locked Rolloff bin
1545 - left site (B.O.)

Location SLC VA Date 5/~~26~~27/20 to 5/27/20

Project / Client 700 S 1600 E PCE Plume MW-29

0645: Arrive on site. Open connexes and grab equipment, calibrate the PID. Water in secondary containment is holding.
0700: Meet drillers and Nolan Konen at laydown area. Jacob is filling water in a tote.
0715 H&S Meeting

Attendees

Kimberly York	CDM
Nolan Konen	CDM
Jeff Jones	Holt
Alex Langdon	Holt
~~Jake~~ Jacob Oaks	Holt

Weather: Mostly cloudy low 60s, Scattered raindrops

0730: Head with Nolan to check on PVC casing at MW-26. We will hold off on the completion and wait to hear from Ben and Betsy about the construction.
0800: Write up a summary of lithology at MW-25 for Jeff
0810: Nolan goes to the badging office.

Timberly York

Rite in the Rain

Location SLC VA Date 5/27/20

Project / Client 700S 1600E PCE Plume

0840: Nolan Returns. I (Kimberly) call dispatch to ask about using Sunnyside Gate after 9 am traffic is over.

0850: Dispatch returns my call ~~after~~ to 5/27/20 after talking to the police. They say we can use it until 9AM but it will close at that time and we'll have to call in again. I confirm it is OK to go out the gate when cars are coming in. They say yes. Some police cars have shown up so we go to talk to them and to the gate staff. Jeff brings the rig over.

0900: Gate staff have talked to the police and will move cones to allow us to leave. Officers Ferris and Dennis watch the gate while we move casing and bobcat; Support rig out. Nolan and I direct traffic away and let them know the gate is closed and to use the Foothill Drive.

— Kimberly Hawk 5/27/20

Location SLC VA Date 5/27/20

Project / Client 700S 1600E PCE Plume

0945: Getting rig over the hole. Figuring out signs/cones to deter traffic.

1030: Alex goes back in with the bobcat to move the tote by MW-26 over to the decon area (it drips and there is an inspection).

1100: Tote is moved. Meanwhile Jeff looks for items he needs to drill - including pipe dope.

1130: Nolan leaves to lock the gate to the IDW yard (we won't keep it dummy locked in case of the inspection) Drillers break for lunch.

1145: Nolan returns. We stop for lunch.

1215: Drillers back from lunch. Drill rig fires up!

1230: Plastic set up for sample cores. Fully sunny day now. High of 80s.

1340: Pull 20 to 10 foot core

1350: Collect [MW29-SB052720-16] Drillers pull the next 10 feet of core.

1410: Collect [MW29-SB052720-24]

1430: Drillers bag 30 to 40'

Kimberly Hawk 5/27/20

Rite in the Rain

Location SLC VA Date 5/27/20

Project / Client 700S 1600E PCE Plume

1440: Collect MW29-SB052720-32 → a little extra slough on top

1500: Drillers bag 40' to ~~50~~ 45, soil core

1515: Drillers bag 45' to 50' core a little extra slough on top. Nolan logs PID and Kimberly catches up photos. Drillers need to break early to buy or fix a part. They install/advance the next piece of casing and will leave it in the ground for first thing tomorrow.

1500 LATE ENTRY

Collected MW29-SB052720-42

1530: Collect FD21-SB052720 from 42 feet bgs.

Drillers reach 60 feet and stop for the day. Nolan and I finish logging and photographing soil cores. One last breathing zone check 0.0 ppm.

1615: Dump soil core

1645: Drillers leave site. Check that rolloff bin is locked (it is). Head in to connex area to pump water out of containment.

5/27/20

Location SLC VA Date 5/27/20

Project / Client 700S 1600E PCE Plume

1700: Return supplies, charge PID, get pump working, re-arrange trip blank bottles (3 per set), fill out COC and upload photos from camera.

1810: Went over soil logging with Nolan. Water level has dropped 3-4 inches. Fill out a Trip Blank.

1820: Water runs dry, move pump. Finish COC. Turn off pump. Most of the water is removed.

1830: Nolan leaves site. Kimberly locks front gate (connexes and IDW gate already locked)

Location SLC VA Date 5/28/20

Project / Client 700 S 1600 E PCE Plume

MW-29

0645: Arrive on site. Holt has just called VA dispatch to ask about leaving through Sunnyside gate with a bobcat and water tote. They head out to MW-29.

0700: Gathered supplies, Nolan meets drillers at MW-29. I (Kimberly Yauk) make my way around to them.

0715 H&S Meeting

Attendees

Kimberly Yauk	CDM
Nolan Konen	CDM
Jeff Jones	Holt
Alex Langdon	Holt
Jacob Oaks	Holt

Rig warms up.

0730: Set up sampling table. Drillers get prepared to drill.

0750: Drillers bag 50' to 60' soil core

0800: Collect [MW29-SB052820-56]

0830: Drilling has slowed - problem? Jeff says he broke a piece of casing but they've taken care of it.

Kimberly Yauk 5/28/20

Location SLC VA Date 5/28/20

Project / Client 700 S 1600 E PCE Plume

MW-29

0900: Sent Nolan the FedEx account information and details. Sunnyside gate has closed. Nolan sets some cones out to slow but not stop traffic moving past our work area.

0910: Drillers bag 60' to 70' soil core

Collect [MW29-SB052820-~~5~~67]

0945 Drillers bag 70 to 80' core

Collect [MW29-SB052820-72]

1010: Drillers bag 80 to 90' core → to 5/29/20

collect [MW29-SB052820-~~84~~82']

1045: Drillers bag 90 to 100' soil core

Collect [MW29-SB052820-97]

1115: Drillers have a broken rod. Break. Will take lunch before starting up again.

1145: Got parts drillers break for lunch. I make calls to dispatch, VA police chief and gate workers to discuss use of the gate

1245: just got 100 to 110 foot core

1255: Collect [MW29-SB052820-104]

1355: Drilling at 115' and drill casing broke.

Kimberly Yauk 5/28/20

Location SLC VA Date 5/28/20

Project / Client 7005 1600 E PCE Plume

MW-29

1540: Drillers have picked up tooling to fish out the broken casing. First attempt to "wash it out" did not work. Drillers go to pick up some 6 inch casing (to go over it?)

1550: Nolan heads out with the shipment to FedEx. Drillers are tripping in casing.

1610: Drillers pulled out steaming cone barrel. I checked with the PID - breathing zone is 0.0 ppm but vapors at the mouth of the casing are as high as 9.0 ppm.

1620: They got the broken casing out - no water was added

1630 (corrected from 1640): Nolan is back. We pack up as the drillers prepare to load up the 7-inch casing.

1645: Nolan goes to drop equipment at the Conrex and I call in to Dispatch to see if we can get the gate to stay open an extra 20 minutes.

Kelly Yard 5/28/20

Location SLC VA Date 5/28/20

Project / Client 7005 1600 E PCE Plume

MW-29

1645: Meanwhile Jeff ~~Pete~~ 5/28/20 was going to go buy a new gauge, but stores need to order it. He orded one to his hotel.

1700: An officer closes Sunnyside Gate. He doesn't know anything about keeping it open. Drillers are still loading the 7-inch.

1705: No one came to open the gate back up. Drillers drive the casing around.

1730: Casing ~~5/28/20~~ is unloaded. Drillers go back for more. Nolan checks in. The grout is soft enough to be able to dig out with a spoon. The threading appears to be about an inch below the grout.

1735 5/28/20: Nolan goes to see if he can clean out around the casing a bit. I make calls to search for a 1-inch wide bottle brush.

1755: Drillers return with another load of 7-inch casing (rack of 12) Ace Hardware sells a bottle brush set. The smallest is 1-inch.

Kelly Yard Rite in the Rain

Location SLC VA Date 5/28/20

Project / Client 700S 1600E PCE Plume

1800: Drillers have unloaded the casing and are closing up the fence.

1815: Jeff & I discuss MW-26 completion. He thinks even some electrical tape wrapped on a 4-foot section of tubing (w/ a string to prevent falling in) might work. He thinks the brush will have to be long (2-feet). Hole is closed. Fence is closed.

1815: Drillers leave site.

I go to MW-26 and look at Nolan's progress. It seems to twist at a lower thread if we try, so maybe a pair of pliers would help.

1835: Stop by Connex, drop cores from MW-24, pick up pliers and a length of 2in tubing to test the brush at ACE Hardware

1845: Lock up and leave site

5/28/20

Kimberly Yauk

Location SLC VA Date 5/29/20

Project / Client 700S 1600E PCE Plume

MW-29

0645: Arrive on site. Load up gear, calibrate PID, Nolan arrives on site soon after.

0700: Meet drillers at MW-29

0715: H&S Meeting

Attendees

Kimberly Yauk	CDM Smith
Nolan Koren	CDM Smith
Jeff Jones	Holt
Alex Langdon	Holt
Jacob Oaks	Holt

Weather: high in the 90's, 75°F currently, mostly sunny, no wind

0730 Drillers warm up the rig while Nolan and I (Kimberly Yauk) set up the sampling table. We set the plastic sheeting down slightly over to prevent too much browning of the grass.

0840: Drillers bag soil core (115' to 120')

Collect [MW29-SB052920-115]

0900: Drillers bring out 120 to 130' core

Collect [MW29-SB052920-122]

plus [MS/MSD]

Kimberly Yauk 5/29/20 Rain

Location SLC VA Date 5/29/20

Project / Client 700S 1600E PCE Plume MW-29

0900 Cont'd: Drillers hit water at 120 feet. Seemed to dry up again by 130'. The water in the hole is from 120'. Collect samples and wait for water to fill borehole

0940: Water is at 116.5 ft bgs grab bailer and sample bottles

1000: Collect MW29-GW052920-120 save some in water bottle for YSI which I forgot to bring.

1015: Finish logging and photographing core.

1030: Nolan goes to get YSI, bailers, string, an MS/MSD Soil Kit to fix the sets we messed up, and a couple extra Oslor Tec bottle sets.

1050: Drillers bag 130 to 140' soil core

1100: Call from Neil about utilities. Nolan is back so he continues to PID Screen the core.

1110: Collect MW29-SB052920-137 timestamped @ 1050

1120 Drillers bag 140 to 150' core.

Holly Hunt 5/29/20

Location SLC VA Date 5/29/20

Project / Client 700S 1600E PCE Plume MW-29

1200: Drillers break for lunch

1220: Collect MW29-SB052920-155 timestamped 11:55

1250: Drillers start back up. Nolan left for the University Clinic. The rash on his hands is on his arms now too. He said it was on his feet last night Send email to let Neil and Nathan know.

1330: Drillers bag 160 to 170' soil core Collect MW29-SB052920-167

1400: Nolan is back on site. log 160 to 170' soil core.

1410: Collect MW29-SB052920-178

1445: Check drillers' breathing zone 0.0 ppm everywhere. Finish logging 170 to 180' core.

1505: Drillers Struggling. Very wet drilling. They got to 182 but got mostly slough. They don't know where the water is coming from. They're going back to try to get 182 to 170' core.

Holly Hunt 5/29/20 Rain

Location SLC VA Date 5/29/20

Project / Client 700 S 1600 E PCE Plume
MW-29

1520: YSI Parameters for 120' GW Sample
Temp: 29.76°C ← it has been sitting out in the shade (88°F)
Conduct: 1.597 mS/cm
pH = 7.41
ORP = -27.2
DO = 5.36

1545: Collect [MW29-SB052920-187]

1610 Prep cooler for shipping. Nolan leaves to ship samples (1615 or so)

LATE ENTRY

1120: Collect [MW29-SB052920-144]

1730 ~~1730~~ 10 Drillers leave site

1715 Nolan and I return to Connex boxes to unload equipment and run the GW Sample at 120' on the Color-Tec. Sample gets warmed. 50 cc purge → No color change. Another 50 cc purge - No color change. Switch to second Vial and do a 100 cc purge - no color change. Sample is Non-detect.

1805: Leave site. Lock IDW gate/connexes.

[signature] 5/29/20

Sunday

Location SLC VA Date 5/31/20

Project / Client 700 S 1600 E PCE Plume
MW-29

0700: Arrive at MW-29. Crew #2 and Nolan are already on site.

0710: Health & Safety Tailgate

Attendees

Kimberly Yauk	CDM
Nolan Konen	CDM
Jeff Jones (Jonesy)	Holt
Alex Langdon	Holt
Jacob Oaks	Holt

Weather:
Mostly overcast, light wind, 75°F high of upper 80s.

0715: Nolan heads in to connex to pick up sampling equipment while drillers fuel up the drill rig.

0800: Took a water level reading. Water is at 138.95 ft bgs.

0815: Push-ahead sampler only goes to 185' because the hole collapsed in to 181'. Drillers pull it all out and do a cleanout run.

0925: Clean out done, Push-ahead advanced to 190' checked with →

[signature] 5/31/20

Location SLC VA Date 5/31/20

Project / Client 700 S 1600 E PCE Plume
MW-29

0925 Cont'd: the water meter. Casing is dry to 187.5 feet (likely caught on top of sampler.

0930: Begin collecting 190' sample. ~~1450~~ ~~TS~~ 5/31/20.
Bailer came back dry.
Jeff tries a few more times to vibe it open but it doesn't appear to work. He pulls it up. Water in casing is at 147.50' ~~bgs~~ 147 bgs TS 5/31/20

1000: Sampler is covered in silty mud. O-rings broken. They leave to go decon it.

1025: Drillers return. Call to Joe. He recommends bringing outer casing to 190' (from 180') and doing another clean-out run to get the muck off the bottom better. Then try the sampler again and let it sit to see if it will fill.

1110: Clean-out done. Water is at 131.15 ft bgs.
Talbo Yank 5/31/20

Location SLC VA Date 5/31/20

Project / Client 700 S 1600 E PCE Plume
MW-29

1120: Install sampler. Sampler is dry (<1 foot of water inside rods)

1130: Jonesy vibes it open and pushes it open with air. No water a few more attempts to vibe it. At 191' bgs.

1140: Break for lunch and wait.

1210: Check for water. None. Drillers pull it up. Sampler has not opened. Jeff vibes it above ground and it opens fine. O-rings are holding - won't change them unless they break but we could try skinnier ones with teflon tape.

1235: Trip the sampler back into the hole. Neil (called Jim) suggested we push ahead farther, so Jeff is going to 192.

1245: At 190' the casing is dry. Push sampler to 192'. Jeff will push farther, pull it back a foot, and air it/vibe it open. That should give room →

Talbo Yank 5/31/20 Rain on the Rain

Location SLC VA Date 5/31/20

Project / Client 700 S 1600 E PCE Plume

1245 cont'd: for it to open.

1315: Collected a bailer mostly full. Collect MW29-GW 053120-191

1330: YSI Parameters

Temp: 22.91 °C

Cond: 1.529 ms/cm * Calibrated out of range

DO: 2.05 ~~mg/L~~ ~~ms/cm~~ → mg/L 5/31/20

pH: 7.33

ORP: -257.9 mV

1340: Calibrate YSI

3 pt pH calibrate

7.0 was 7.08 → 7.00

4.0 was 3.99 → 4.0

10.0 was 9.81 → 10.1 pass.

(Standard) (before cal) → (after cal)

Conductivity 2.781 ms/cm

Out of range → fail

This has been a problem.

ORP: 240 mV solution was 244 mV → calibrate / pass.

1400: Nolan goes to get more DI and alconox. Drillers pulling out casing. Almost ready w/ soil. ~~Hello~~ Hello Yuri 5/31/20

Location SLC VA Date 5/31/20

Project / Client 700 S 1600 E

1408: Bag the 190 to 200 Soil Core.

1410: Collect MW29-SB053120-198 @ 62.8 ppm

1440: Drillers bag 200-210' soil core. Switches to clay reading 0.0 at the top (at 200 to 205') I checked the PID with a dry erase ~~to~~ marker to check that it was working. Spiked to 38 ppm just fine. Collect MW29-SB053120-207

1455: Random background air reading of 0.5 ppm. Check drillers' area and no detections. After a minute or 2 it went back down to 0.0. Strange. 207'

1500: Collect FD22-SB053120 @ ~~198~~ 191

1515 Finish logging and photographing 200 to 210' Trip Blank will be #35 It's 87°F and mostly sunny, moderate wind to strong gusts.

1520: Collect MW29-SB053120-217

1530: Logging Core

1550: No ~~Sonde~~ 5/31/20 water sample →

~~Hello~~ Yuri 5/31/20 Brian Rein

Location SLC VA Date 5/31/20

Project / Client 700S 1600E PCE Plume MW-29

1550 Cont'd: attempted at 210' because lithology appears dry and clay-rich. *

1620: Drillers bag MW-29 soil core from 220 to 230. No hits on PID since 200' mark. Collect MW29-SB053120-227

1630: Nolan leaves to collect supplies for tomorrow for Frank's team when they start up.

1730 ~~1730~~ 5/31/20: Nolan is back - need more dry erase markers. Finish logging 220 to 230' core.

* LATE ENTRY

1550: Called Joe to discuss the water samples - we still have to try so we'll attempt water at 230'. Drillers get 230' core and bring outer casing to 220' and do a cleanout run.

1710: Drillers empty hopper.

1730: Drillers install push-ahead sampler to 225 (bottom has sloughed gravel. It's dry.

Tim Mott 5/31/20

Location SLC VA Date 5/31/20

Project / Client 700S 1600E PCE Plume MW-29

1735: I ask if Jeff can get it past 230' (he says no) I ask him to see if he can vibe it farther. ~~He does~~ 5/31/20 ~~and pops it open at 230'.~~

1745 Jeff vibes it to 230' and pops it open. Water level measurement ~~227.4~~ 5/31/20 224.7 ft bgs.

1755: Drillers put → top back on casing and it will sit overnight to get sampled tomorrow morning. Drillers refuel rig and dump hopper in rolloff bin.

1800: Drillers leave site. Nolan and I go back to the connex to run the Color-Tec and return equipment. The groundwater sample at MW29 at 191' bgs was ND for VOCs. Purging the second VOA did not produce bubbles on the first attempt due to plugged needle.

1910: Lock up

1915: Leave site.

6/1/20 Label TB053120 SB053120 @ 1820 → 5 Left in the fridge

Tim Mott 5/31/20

Location SLC VA Date 6/1/20

Project / Client 700S 1600E PCE Plume

0645: Arrive on site.
0710: Meet drillers at Sunnyside park. Frank is here now, too.
0715 H&S Safety
Attendees
Kimberly Yauk
Nolan Konen
Frank Morris
Jeff Jones
Alex Langdon
Jacob Oaks
weather: 75°F, moderate wind, high of 90's (low 90s / upper 80s)
0800 Nolan goes w/ Frank to the badging office.
0820: Water level @ 230' is 157.02 ft bgs. Nolan brings a bailer for me to collect ground water.
0830: Collect [MW29-GW060120-230]
YSI parameters: 19.51°C
1.386 mS/cm conductivity
~~5.2~~ 4.33 mg/L D.O.
7.15 pH ORP = -137.6 mV

Location SLC VA Date 6/1/20

Project / Client 700S 1600E PCE Plume
MW-29

0910: Sampler is removed from borehole
0950: Collect [MW29-SB060120-240]
The whole core from 230 to 240 was 0.0 on the PID. Saturated with water from 235 to 240 ft bgs. 6/1/20
1045: Drillers bag 240 to 250 ~~sample~~ Soil core. PID reads 0.0 so I check w/ dry erase and it's not reading. Must be clogged even though the pump is working. Works w/o the filter on. Change filter and re-measure. Highest detection is 17.2 ppm @ 250'.
1100: Collect [MW29-SB060120-250] timestamped [1045]
1105: Drillers do a clean out run before we do an EB and water sample.
1110: Nolan and Frank head over to MW-29 because Holt Crew #1 is not here yet.
1120: Drillers finish clean out and go to laydown ~~yard~~ yard to → 6/1/20

Location SLC VA Date 6/1/20

Project / Client 700 S 1600 E PCE Plume MW-29

1120 cont'd: decon the push-ahead sampler.

~1140: Drillers stop for lunch in laydown area.

1200: finish photographs and sampling

1210: Break for lunch.

1230: Drillers back

1240: Collect EB23-GW060120 @ 6/1/20

1300: Drillers advance push-ahead sampler.

1312: Sampler dry 248.6 ft bgs
Water in casing @ 154.52 ft bgs
Sampler is pushed in to 250 feet (clay).

1340 ~~1330~~: Nolan heads to Wasatch Environmental to pick up coolers, COCs, and trip blanks.

1440: 250 water sample is not working. There was water from 235 to 240 followed by a tight clay. The screen of the sampler was clogged after a couple attempts at opening and getting water. Ask Joe and Neil if we should →

Location SLC VA Date 6/1/20

Project / Client 700 S 1600 E PCE Plume MW-29

1440: Drill another 10 feet and try again. Drillers (Crew #1) landed.

1515: Neil says to drill another 10 feet. Sampler was deconned

~~1530~~ 1430 late entry: Nolan went to Wasatch and coolers weren't in yet. They arrived after he left so he turned around and came back. (This was at ~~1530~~ 1430)

1530: Nolan is back and double-bagging ice. I'm prepping the COC

1620 ~~1630~~: Collect MW29-SB060120-~~2C~~ 256

Drillers will do a clean out run from 250 to 260 and install the push-ahead so that the hole doesn't close up overnight (if it does, the sampler will be at the correct depth.

~~1705: Collect~~ @ 6/1/20

1630: Finished taping cooler. Nolan brings samples to FedEx.

1705: Collect EB24-GW060120

Rain in the Rain

Location SLC VA Date 6/1/20

Project / Client 700S 1600 E

MW-29

1705: Samples at 16:20 (~~260'~~ 256') and 17:05 (EB Sample) are kept in cool cooler. Nolan will add ice on his way home or at his hotel. The Color-tec Sample from 230' remains also.

1710: Frank and Nolan head to connex to run color-tec while I finish logging soil core from MW-29 250-260' Pete and Mike were on site maybe at 1530 or so. They've left site - checked on equipment.

1745: Sampler is in and dry. Drillers will open in the morning. Finish photos / logging, dump soil core, close fence. Drillers leave site.

1800: Head to Connex. 230' sample was ND on the Color-Tec. Frank has left the site.

1830: Unload, charge meters. Close up. Leave site.

~~KS~~ Kelly Yauk 6/1/20

Location SLC VA Date 6/2/20

Project / Client 700S 1600 E PCE Plume

MW-29 :: Crew #2

0645: On site, I (Kimberly) grab equipment. Nolan helps load. Drillers and Frank head to laydown area for safety tailgate.

0715: H&S, Safety meeting

Attendees

Kimberly Yauk	CDM Smith
Nolan Konen	↓
Frank Morris	↓
Jeff Jones	Holt Services
Alex Langdon	↓
Jacob Oaks	↓
Pete Rosenburg	↓
Mike Leni Jr.	↓
Scottie Lampman	↓

0730: Head to MW-29

0800: Sampler opened but dry

0830: Re-try sampler. Pete Stops by to grab a part from Jeff. Sampler @ 255' dry Jeff re-vibes it.

~~09~~ 15 Marc Stops by to check on things. Drillers have left to get parts from Boart Longyear (Jeff & Alex)

~~KS~~

Location SLC VA Date 6/2/20

Project / Client 700 S 1600 E PCE Plume
MW-29 Crew #2

0920: PID (Honeywell) has a pump error. Nolan brings it over to trade

0940: PID seems to work fine. I'll keep an eye on it. They had high (>100 ppm) hits from 110 - 120 in 2 of the bags.

0950: Begin getting bailer ready to see if there is water in the column.

0955: Run water meter down. Still dry. Will wait for Jeff to return.

1000: Calibrate YSI
7.0 was 7.21 → 7.0
4.0 was 3.78 → 4.1
10.0 was 9.60 → 9.93
Conductivity was 0.904 (Standard is 1.413 mS/cm) → out of range.
ORP reads 245.2 mV (standard is 240 mV) calibrated to 240 mV.

1040: Drillers back. There seems to be 10" of water in the

Location SLC VA Date 6/2/20

Project / Client 700 S 1600 E PCE Plume
MW-29 Crew #2

borehole We bail and get enough for 2 VOAs.

1130: Bailer keeps coming up dry (three tries, have tried fresh bailers in case the check valve is clogged)

1200: Break for lunch. Check with Joe - ~~try on~~ 6/2/20 He says try once more after lunch.

1240: Bailer comes back dry again

1305: Call to Neil. He says to check with the lab and see if 2 VOAs is okay.

1315: Call to Raman Singh (310) 618-8889 x119 Voicemail. Leave her a message. Meanwhile drillers begin pulling up the sampler.

1330: Collected MW29-GW060220-360 @ 11:00 timestamp. Lab is OK with only 2 and Neil is OK with higher reporting limits if there is too much sediment. Drillers are decanning sampler.

Rite in the Rain

Location SLC VA Date 6/2/20

Project / Client 7005 1600E PCE Plume
MW-29 Crew #2

1347: Pine (Virginia office) returned my call about the YSI (1-804-353-9272) spoke to Nina. She'll have a new YSI sent to Wasatch office on Thursday. There will be a return label for the one we have.

1355: Drillers will take 7-inch casing to 260'. as discussed yesterday (Neil was fine with that)

1405: Called United Site Services because the Porta-Potty in Sunnyside was last serviced on May 18th. They put in a service notice in. I'm not the first to call.

1440 Label TB36-SB060220 @ 1430

1440 cont'd: Jeff gets the 260 to 270 foot sample up. There's water from the core barrel stuck above it. Drillers bag 260 to 270 foot core.

LATE ENTRY: Collected EB25-GW060220 @

Location SLC VA Date 6/3/20

Project / Client 7005 1600E PCE Plume
MW-29 Crew #2

0640: Arrive on site. Pick up supplies, calibrate PIDs (new sheets now)

0710: Head to laydown yard. Marc stopped in to drop off doughnuts.

0715: Safety Meeting

Attendees

Kimberly Yauk
Frank Morris
Nolan Koren
Jeff Jones
Alex Langdon
Jacob Oaks
Pete Rosenburg
Mike Lewi Jr.
Scottie Lanpman

COM Smith → Holt

We discuss masking. VA campus still requires universal masking, regardless of distance. Drillers voice concern about masks while working in the heat. Crew #1 will set the Augustyn at MW-26. Crew 2 will begin drilling. In afternoon, IDW management will be done.

Rite in the Rain

Location SLC VA Date 6/3/20

Project / Client 700S 1600 E PCE Plume

MW-29 Crew #2

0730: Frank needs a helper. We set him up with a pop-up tent. They get both tables so that there is less bending over. They are instructed to take breaks in the car w/ the AC on. They have more water. Drillers have plenty too- and ice.

0745: Call to Joe and Neil (order more soil sample sets and making sure Frank has a second person out there on Friday - no one is scheduled as of this time.

Drillers warm up rig.

0800: We will pull the soil core from 270-280' and check for water.

0910 ~~0830~~ Jeff got the casing stuck a bit and lost the majority of the 270-280' core while vibing the casing out.

0910 cont'd: Collect MW29-SB060320-273

Location SLC VA Date 6/3/20

Project / Client 700S 1600 E PCE Plume

MW-29 Crew #2 ~~SB~~ 6/3/20

0930: Collect FD23-060320 from MW-29 @ 273' bgs.

0945: Call/Text Neil to ask about collecting a gw sample. We drilled past the cemented unit from 270-271 and the silty sand & gravel below is dry to moist but no chance of water. Jeff brought the water from the casing down when he pulled the core out.

1000: Drillers pull out the 280 to 290' core. It is clay. Neil responds that drilling another 10 feet to see if theres a lithology change or water is OK.

Collect MW29-SB060320-282

1050: Drillers bag the 290-300' core. Still clay stiff to very stiff some sand. Collect MW29-SB060320-292

LATE ENTRY

1007 Call to Dispatch. Drillers need to use the gate to get the porta-potty from laydown yard.

Rite in the Rain

Location SLC VA Date 6/3/20

Project / Client 700 S 1600 E PCE Plume
MW-29 Crew #2

1100: Catch up photos and log.
1145: Pizza is delivered to the site. The drillers are just about to bag the 300-310' soil core.
1200: Collect MW29-SB060320-302
Drillers break for lunch.
1210: Pete's crew joins us for lunch.
1235: Pete's crew goes back to MW-30. Frank and Nolan like how the pop-up tent and tables for soil core are working. We get results back on some of the earlier gw samples at MW-29. Blake is scheduled for Friday
12:40: Confirm w/ Neil it is OK to continue drilling since we have not cleared this clay unit. Frank and Nolan return to MW-30.
1300: Drillers have enough rods to get a water sample to 320 feet and will then need to pick up more.
Kimberly catches up the field notes.

Location SLC VA Date 6/3/20

Project / Client 700 S 1600 E PCE Plume
MW-29 Crew #2

1330: Sunny w/ some clouds, still/ no wind, hot
1335: Drillers bring 310' to 315' soil core. It has changed to something harder and the auger bit can't get through it so Jeff will bring the outer casing down to 310' and do a cleanout before getting the 315 to 320' core.
1335 Cont'd: Collect MW29-SB060320-314 (it's more like 313.5'). I realized on the 300-310 foot core, I missed it in my notes where I saw a 10.2 ppm @ 310 feet so I targeted 10 feet from the previous sample by mistake. The 314 should be similar
1420: Call from Frank. Their PID started flashing the maximum - not sure the problem so we'll send Nolan over with magnetic susceptibility meter and trade him the spare PID.

Rite in the Rain

Location SLC VA Date 6/3/20

Project / Client 700S 1600 E PCE Plume
Crew #2 MW-29

1440: Nolan stops by to exchange meters. He was having trouble with the magnetic susceptibility meter - Kept creeping up. Seems to work fine for me now. I guess we'll note the issue.

1500: Drillers brought out the 315 to 320' core. Text/call with Neil to discuss. It has some gravelly clay that is hard and breaks into chunks in the bit. Slightly moist but quite dry. Neil says to drill another 10 feet and check for water.

1520: Marc Yelom asks for soil sample depths from today. I text him the depths and PID readings

1530: Drillers are working on the 320 to 330 foot core - discuss options with Neil for ~~how~~ 6/4/20 how we want to continue.

Location SLC VA Date 6/3/20

Project / Client 700S 1600 E PCE Plume
Crew #2 MW-29

1540: Begin double-bagging ice. Neil says to continue to 330 and try for water. Nolan arrives with MW-30 samples. We work on ice, COC, and cooler prep.

1600: Drillers bag 320-330' core. Water on top has infiltrated in from the casing but bottom of core is Dry to moist. Add [MW29-SB0060320-328] to the cooler and COC and tape it up.

1630: Nolan leaves with the samples. I finish the magnetic susceptibility. Drillers start bringing the bobcat into the IDW yard to work on transferring water to ~~Tank~~ Poly tank #1 from #3. In the morning they will remove the soil.

1645: Call to Neil - drillers say even getting the sampler into the formation will be difficult and will likely break the sampler. Neil says we'll continue drilling.

Location SLC VA Date ~~6/14/20~~ 6/13/20

Project / Client 700 S 1600 E PCE Plume
Crew #2 MW-29

~~1635 Drillers are done tf~~ 6/4/20

LATE ENTRY FOR 6/13/20:

1730: Drillers are done transferring water from tank #3 to tank #1. They ask if there's anything else. I'll just dump the cores when I'm finished and close the gate. Jeff & Crew #2 leave site.

1735: Pete & Crew #1 are done. They reached water at 240' bgs. Frank, Pete, and crew #1 leave site. Nolan gets PID and camera. Drops items at IDW area.

1750: I drop items at IDW area. Find waste manifests and get a "Pending Analysis" label for the Sunnyside rolloff.

1830: Nolan leaves the site

1845: ~~Sticker~~ Label is on rolloff. Lock up and leave site.

6/13/20

Kelly York

Location SLC VA Date 6/14/20

Project / Client 700 S 1600 E PCE Plume
Crew #2 = MW-29

0640: Arrive on site and calibrate the PIDs, pick up YSI and turbidity meter, pick up supplies.

0700: Head to Laydown yard for H & S Meeting

0710: H & Safety Attendees

Kimberly York — COM Smith
Frank Morris
Nolan Konen
Jeff Jones — Holt Services
Alex Langdon
Jacob Oaks
Pete Rosenburg
Mike Lenci Jr.
Scottie Lampman

0730: Text Marc to see if I can drop off the Non-Hazardous Waste Manifest hard copies. No answer. Crew #1 prepares to collect water @ 240'. Crew #2 works on soil removal from the secondary containment bin.

0850: Frank tells me there is an auger crew across from MW-30 in parking lot.

Rain in the Rain

Location SLC VA Date 6/4/20

Project / Client 700S 1600E PCE Plume
MW-29 Crew #2

0900: I am waiting for Marc to give him the manifests while crew #2 warms the rig up.

0915: Crew #1 needs teflon tape. I drop turbidity meter at MW-30 and pick up ice from Nolan.

0930: At MW-29. Drillers begin drilling to 340 feet bgs. Neil checks in to see where we are.

1020: Soil core from 330-340 gets bagged. Bottom is dry and looks the same as at 320 to 330.

1045: Call with Neil. He thinks we should end the borehole here. Jeff and Alex head to Boart Longyear to pick up more casing.

1100: Call from Zist casing shipper. He is loading and will be here in 45 minutes to an hour.

1130: Call with Neil and VA to discuss well depths

1138: Alex, the delivery guy is here with the Zist casing. Call VA dispatch.

Location SLC VA Date 6/4/20 & 6/4/20

Project / Client 700S 1600E PCE Plume
MW-29 Crew #2

1145: Nolan picks up the magnetic Susceptibility meter.

1150: VA Police come open the gate for the bobcat to come in and unload.

1220: VA police come back again to let the crew back out. In the future we need to not use a box truck to deliver these because they are impractical / unsafe to unload without room on the sides.

1230: Drillers brought bentonite pellets. They head back in to MW-30 to get fencing from the Crew #1.

1245 call Neil to confirm we can store the pallets in the parking lot. We discuss ~~Pett~~ pellets vs chips. Neil says it is up to the drillers to prevent bridging if we use chips.

1300: Catch up the notes. Photograph soil core.

1320: Drillers did a cleanout run and bring casing in to be decanned.

Location SLC VA Date 6/4/20

Project / Client 7005 1600 E PCE Plume

1320 Cont'd: Hotel called. Soil Sample sets are ready to be picked up.

1410: Call VA dispatch to open gate. Drillers need to bring the casing in for decon.

1415: Call to Nolan. They likely will not need more soil sets today so I decon my equipment and gather it all up.

1500 Call Jacob (driller assistant). Ask if they can move the concrete pallet over by MW-26 and clean it up. (Marc asked for this earlier this morning). They agree.

~~1510~~ 1500 cont'd: Begin double-bagging ice and prepping for shipping.

1530: Nolan heads over with his samples, we fill out COC and do Cooler QC.

1600: Cooler is done. Drillers finished getting supplies (Jonsey bought bentonite, and other pellets (See photos)

6/4/20

Location SLC VA Date 6/4/20

Project / Client 7005 1600 E PCE Plume

1610: Nolan leaves site. Drillers close up the fences. (fence was built over 3 parking spaces for the pallets)

1620: Drill crew #2 leaves site. (No point in starting bentonite backfill this late in the day.) I head to check on Frank's crew's progress. But first the Porta-potty service guy comes out to clean our toilet ("orange restroom" "A Company Portable restrooms") I help the guy open the fence and put cones around the front of his truck (sticks out into the road.) His truck broke a couple tree branches on the pine tree) I text Frank to check his status.

1640: Service guy leaves. I finish closing the gate (one foot-thing missing) Head in to check on Frank's crew.

6/4/20

Rain in the Rain

Location SLC VA Date 6/14/20

Project / Client 7005 1600 E PCE Plume

1645: Nolan is already back with Frank. Grab the Color-Tec sample to begin running it.

1700: Unload supplies at connex, charge PID, begin running (heating Color-Tec sample = [MW30-GW0620420-257]

1730: Sample above is ND. Frank and Nolan are at the connexes. Frank charges his PID, Nolan returns his equipment

1745: Frank leaves the site

1800: Nolan leaves the site. I scan my papers

1830: ~~Download~~ 6/14/20 Upload photos to my computer. I plan to meet Betsy tonight to give her soil sample sets, Keys, 45 and a waste manifest form

1840: Dump Samples ~~to 6/14/20~~ to 6/14/20 and leave site.

I, Kimberly Yanik, sign this fieldbook over to Betsy B. Kimberly Yanik 6/14/20

Location SLC VA Date 6/15/20

Project / Client 7005 1600 E

6:15 BB onsite printing profiles & analytical results.

6:30 Call USA (VA) to try & get manifest signed. She indicated she would not sign until truck arrives.

6:45 Frank onsite, getting equip ready, calibrating PID.

7:10 mob to laydown area for HWS meeting

7:15 HWS meeting Attendees

Betsy, Bott	CDMs	
Frank Morris	CDMs	
Jeff Jones	H&H	
Alex Landon		+ Blake
Jacob OAks		w/
Pete		Wastewater
Mekie		
Scottie L.		

Major topic: Heat Safety

7:45 BB & Holt 2 mob to park MW29

Im & Holt 1 mob to MW30

8:30 Holt chipping up from 340

8:45 Adrian (PDW) stopped by to talk

Rain in the Rain

Location SLC VA Date 6/5/20

Project / Client 7005 1600E PCE Plume

920 called Neil About well intervals, no answer.

9:45 Bk Walk to trailers to get well supplies.

10:30 Text from Neil - closed well is 230-240, approved by VA + ACE.

Discussed well w/ Neil
- 2' Sumps on all 3 wells
- pump recievers on B+C
- Bentonite Chips 247-340
- pellets 242-247

Well C 230-242 w/ pump reciever
- Sand 227-242
- bentonite 202-227

Well B 190-202 w/ pump reciever
- Sand 187-202
- bent 132-187

Well A 120-132 no pump reciever
- Sand 117-132
- bent 100-117
- SVP @ 98'
- Sand 96-100
- bent 68-96

Location SLC VA Date 6/5/20

Project / Client 7005 1600E PCE Plume

- SVP @ 66'
- Sand 64-68
- bentonite 44-64
- SVP @ 42'
- Sand 40-44
- bentonite chips 10-40

10:45 Holt pulling 6" casing from well.

11:16 Called VA to open SS gate.

11:25 Holt done w/ 6" pipe going to gate to drop off.

11:51 Call VA to open gate for Holt to come back

12:00 break for lunch

12:30 done w/ lunch
- Called from WP about pickup
- going to come before 3 today
- Called Cisco to let her know it is still happening today at 200 w/ bentonite

1330 Start building 'C'

1430 done putting in 'C'
Starting Sand 227-242

1445 Call from WP about pickup

Location SLC VA Date 6/5/20

Project / Client 700S 1600S PCE Plume

MNO to laydown + meet LISA w/ truck driver

1515 Done w/ manifest truck arrive off site, go back to mw29

HoH growing up to 202

1600 Blake stopped by to get COC + packing cooler

1630 Help Blake pack cooler

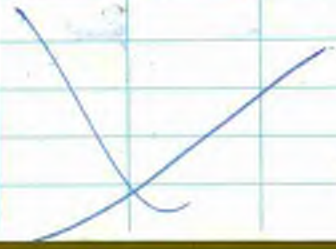
BL head to lab

1640 HoH adding Sand installed 190-200 well 8 adding sand 187-202

1650 adding bentonite to 132 got bentonite to 161' done for day, put fence back, cover bent/sand

1715 meet to trailer put away equipt, organize

1730 meet off site



BB 6/5/20

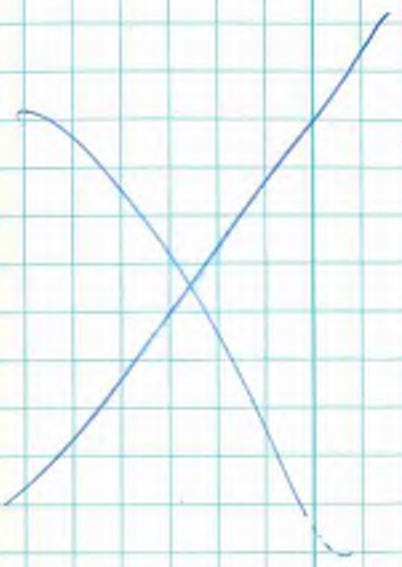
Location SLC VA Date 6/6

Project / Client 700S 1600S PCE plume

1000 Arrive onsite, meet to trailers to perform calibration
- organize equip, paper, supplies
- Color tee for 280 ND
- Color tee for ND

1200 Continue organizing

1230 off site



BB 6/6/20

Rite in the Rain

Location SLC VA @ mw29 Date 6/7/20

Project / Client 720S 1600 & PCE Plume

6:45 Onsite BB/KP
getting supplies/equip/paperwork ready

7:15 HASP meeting at laydown area Attendees

Betsy Bolt	COMS
Kelly Dreyer	
Frank Morris	
Pete Rosenberg	Hollo
Scottie Chapman	
Millie Lewis	
Jeff Jones	
Alexa.	
Jacob Oaks	

7:30 mob to Park, check dumpster can fit 1 more hole.

7:45 Washing up rig, dumping hopper.

8:00 Jeff talk hopper to Pete's Crew.

8:30 Pete back from switching hoppers.

845 Begin bent & pulling casing

Location SLC VA Date 6/7/20

Project / Client 720S 1600 & PCE plume

Prepare SVP tubing & SVPs
1010 Clear w/ Well A install
10:15 lightning - Stop work
10:45 Lightning, Stop work
1200 Lighting Shut down and begin adding Sand
1240 done w/ Sand. Begin putting in bentonite
1:30 mob to laydown area to pull pipe down
14:00 Back in park. continue installing bent. Chips
1430 Begin at 68, begin adding Sand 69-68
1480 Sand @ 63.8 begin putting bentonite chips talked to Jeff about grout - discussed Portland is bentonite portland Cancel mufft SVP tubing - may be a problem on other wells.
1452 Begin Sand @ 44'-40'
1500 Done w/ Sand, start w/ bent, hydrate bent @ 11'

Rest in the Rain

Location SLC VA Date 6/7/20

Project / Client 700 S 1600 E PCE Plume

~~1550~~ Holt back from laydown. Waiting for chips to hydrate

main pump, drum to mix grout in.

1620 Begin mixing but grout w/ Sand

1628 Done putting in 1 drum grout., hauling last casing

1645 Call police to get through Gate

1655 BB to rm 610 to rack

1730 Colorder on 320 ND on both

Color to on 340 ND on both -

1800 Mob off site -

BB 6/7/20

Location SLC VA Date 6/8/20

Project / Client 700 S 1600 E PCE Plume

650 onsite, getting equip ready, paperwork, etc

715 mob to laydown area for HrS meeting. Attendees

Beth, Bob	Cons
Frank Morris	
Kelly Dreyer	
~~Travis~~ Jeff	Holt
Alex	
Jacob	
Pete	
Mikie	
Scottie	

745 Holt Crew 1 → MW30

Holt Crew 2 → decon, MW-29 for clean up

907 leaving park, Mixed rig to park, lot, put wood over hole. Close fence, mob back to site.

915 Back at VA, Holt decon rig BB go to MW30 to help Frank w/ Sample, collect

MW30-5B060820-342, magnetic, ferrous

Location SLC VA Date 6/8/20

Project / Client 700 S 1600 E PCE plume

10:00 Dave, Holt Crew I waiting on construction decision. text Neil

10:15 Go to Conner to meet Neil, add sample to cooler

10:30 Head to park to check on Holt. Holt moved most of materials to parking lot. Jeff at Store buying Sand, bent., etc.

11:30 Jeff back, Holt moving fencing to MW31 Parking lot area

12:30 took pics of MW31 area Holt moving fencing to MW-31. Call from MP they will deliver new roll of and take ~~one~~ other to VA tommorow afternoon.

12:33 Holt refueling rig.

1350 Holt back at laydown. Putting back with Const Supplies, loading pipe for MW31. All pipe is accounted

Location SLC VA Date 6/8/20

Project / Client 700 S 1600 E PCE plume

1400 Called VA to get SSG open to drop pipe and park.

1420 Accident on Swing Side man pulling truck out of driveway & woman driving on SS. Truck flipped over into center of street. Jeff helped pull me from truck & Alex/Jacob also helped at Scene Holt put out cones & directed traffic around accident until fire department / ambulance / police arrived

1435 Return to MW31, ~~@~~ Scene fencing around MW31

1455 Go to laydown area to get last 7"

1600 Holt back w/ last of pipe. & unloaded it to parking lot.

1610 Holt finished moving pipe

mob offsite

1430 BS mob offsite

BS 6/8/20

Rite in the Rain

Location SLC VA Date 6/9/20

Project / Client 700S 1600E PCE Plume

0650 Arrive onsite, get 2 pump, pipe kit ready for day

715 HW S meeting

Betsy B COMs

Neil S.

Frankum

Kelly

Blake Wasatch

HoH Crew1

Holt Crew2

Discuss plans for day

HoH Crew1 waiting on intervals

HoH Crew 2 start MW31

800 mob to purge, setup sampling area

830 Collect SB29 of drill pipe

835 Begin drilling plan to collect soil samples every 20' approximately.

910 HoH looking for another drill piece.

BB 6/9/20

Location SLC VA Date 6/9/20

Project / Client 700S 1600E PCE Plume

930 Collect MW29-060920-15 PID 82.1

950 Collect MW29-060920-23 61.5 ppm

958 Insp Environmetal hose needed SIL

1100 Collect MW29-060920-45 10.9 ppm

1130 Run to 50'

1145 Break for lunch

1225 Back

1240 bottom rig Jaw not tightening HoH trying to fix

1258 Rig down drilling

1315 8" pipe to 50' Collect MW31-SB060920-62 21.5 ppm

1500 pulled up 80-? pipe very hot, Holt went & got bucket of water to pour on pipe to try & cool it down Collected MW31-SB060920-82

1700 Collect MW31-SB060920-112

1815 Run to MW30 to pull well Casing

1830 mob offsite

BB 6/9/20

Location SLC VA Date 6/10/20

Project / Client 700S 1600E PCE Pmw

630 Arrive onsite pull traffic paperwork get Equip read

710 mob to laydown yard & hold Safety meeting.

Attendees

Bets, B	CDMS
Kelly D.	|
Funk M.	|
Neil S.	|
Pete	Hott
Scottie	|
Mykie	|
Jeff	|
Alex	|
Jacob	|
Blake	Wasatch
Kiel	|
Marc	UA

Discuss plans for today

745 Mob to MW39 & make sure Signs were delivered & flare is van for rolloff

800 Mob back to pit & unload equipment

Location SLC VA Date 6/10/20

Project / Client 700S 1600E PCE Pmw

830 Hott moved pallet onto MW39 hole to prevent crayons from lifting plywood.

852 Start up Rig hitting in 7"

915 begin drilling 115 → 130 Super Heval drilling

1020 begin pulling 130 - 138 for mud hydrolic drip. Cleaned up w/ absorbent pad.

1045 Hott pulled up 130-138 for coring. Dries at 131 took bailer down & pulled up first bailer

1045 Collect MW31-GW061020-138

1100 Collect MW31-SB061020-133 & FD25-061020

1200 Collect MW31-SB061020-159

Saw about 1-1.5' of gravely layer w/ silt that was wet Called Joel Neil to ask if Sample 3.4' below if were dry & they said not to sample

1205 Break for lunch

Location: SLC VA Date: 6/10/20

Project / Client: 700S 1600E PCE pluma

1215 Betsy At trailer taking colortect ✓ WQ for MW31-138 GW

MW31-138	
temp	25.47
pH	7.7
Cond.	1.362
DO mg/L	33.8
DO mV	2.58
ORP	109.3

1312 Both colorta ND.

137 Holt tryin to fix charge on rig.

1352 H+H doing clean out run

1500 alot of noticeable water coming out of pipe

1600 Holt pulls 180' bottom is wet, going to put 7" in & do a clean out run. Kelley left for fedex.

1637 Started to log cores, PID was maxing out. Texted Kelley to bring a different one.

Location: SLC VA Date: 6/10/20

Project / Client: 700S 1600E PCE pluma

1710 Put in in water sampler at 290' gas to let sit over night.

1800 head back to site, close roll off, put away equip

1830 MOb off site

late entry

1400 Mac Stopper by ✓ Wellhead for 1/2 hour.

PJB 6/10/20

Location SLC LA Date 6/11/20

Project / Client 700S 1600E PCE Plume

6:45 onsite

7:20 H&S meeting
Major topic ± Heat!
Attendees:

Betsy B.	CDMS
Kelby D.	⊥
Neil S.	
Blake	Washatch
Kiel	⊥
Holt Crew 1	
Holt Crew 2	

Kiel will meet mp Enviro @ MW32 & escort w/ dumpster to MW30
Betsy & Kelby @ MW-31
Neil = development.
7:40 mob to park, setup equip, table, prepare for water sample.
8:19 No water in sampler. try to bike & wait a bit
8:35 well is dry
~ 50' water on pipes.

Location SLC VA Date 6/11/20

Project / Client 700S 1600E PCE Plume

going to pull out & look at samples.
8:45 Drillers left to decon.
MW Arrival to well.
9:00 H&H returns from decon putting water casing to 190'
Kiel texted that Vactor has been delivered to MW-30.
9:07 H&H doing Clean at MW
9:16 [redacted] pulling Cleanout pipe out of well.
9:24 1st core barrel, spraying water. Emptying 2nd core barrel
9:42 water level at 18'
10:00 Collect MW31. Grabs 110-190 Collected 3 bailers, 6 VOAs + 2 duplicate. Struggled to get rid of bubbles. Make 1 Dup at 10:30
10:20 Cyorto Center to Calibrate YSI & Collect readings

Location SLC UA Date 6/11/20

Project / Client 700 S 1600 E PCE plume

MW31-GW-06112020-190

Temp	16.27	°C
Cond	1.123	ms/cm
DO	1.22	%
pH	7.75	
ORP	-123.6	ORP

11:00 Collect MW31-SB06112020-190 @100
+DUP @11:30

1130 @ 210' logged 200-210

1200 Pulled 210-215

1215 Break for lunch

1245 Back from lunch

1330 Collect MW31-SB06112020-215
high PID readings on
215-217.5 bag - 430 ppm
took Sample as we are
close for 1 anyway.
we will re-test PID once
Samples have cooled down

1406 portapotty A-1 Serving
Portapotty

1412 Bottom 1' @ 229-230 well
going to clean out & try to
put casing to 230 & put

Location SLCUA Date 6/11/20

Project / Client 700 S 1600 E PCE plume

In Sample-

1430 After Samples cooled down
all below 100 ppm

1520 Measure DTW, fluid ready?
put bailer down 2x no water
tried whole again.
- again tried bailer.
well is dry.

1610 removed pipe from well
V Sander deployed fine.
going to try 1 more time
tripping pipe back in.

1630 Collect MW31-GW06112020-230
DTW @ 221.8'

1645 Kelby going to connect to
main collector

1720 Back at camper.
Collar ten on both MW
WQ Parameter

Temp	17.81
Cond	1.054
DO	1.25
pH	7.42
ORP	-88.2

Rite in the Rain

Location SLC VA Date 6/11/20

Project / Client 700 S 1600 E PCE plume

1624 6/11/20 LATE Entry.

Email from VA / ACE / CDMs / others regarding Sunnyside Gate.

- Call w/ Neil regarding situation. I (Betsy) was not present during the 'incident' but heard about it afterwards.
- Neil reiterated that it is unacceptable + we need to follow procedures

I (Betsy) had talk w/ drillers about it and told them we have to call prior to go out gate.

17:40 mob to MW30 to do a clean out check on Petes crew, no cdms/ WS; both persons there. Pete said they have drilled to 3:30

19:50 mob to MW32 to put out more cones

Location SLC VA Date 6/11/20

Project / Client 700 S 1600 E PCE plume

No cars parked on street so there is now room for a rolloff.

BB 6/11/20

Location SLCVA Date 6/12/20

Project / Client 700 S 1600 E PCE Plume

6:45 Onsite equipment, Pope work ready

7:15 H & S meeting

Topics Heat / Fatigue, gate issue

Attendees

Betsy B	Cdms
Kelby D	|
Neil S.	|
Blake D	Wasatch
Kiel M	|
Jeff	Holt
Alex	|
Jacob	|
Pete	|
Mike	|
Scottie	|

7:30 mob to mw31 w/ Holt move equip setup table.

Holt grabbed Sampler to clean

8:10 Holt back w/ Sampler

8:15 Collect EB31-GW061220 from Sampler after taking GW-230'

8:30 Holt pulls 230-240 core take mw31-SB061220-236

Location SLC VA Date 6/12/20

Project / Client 700 S 1600 E PCE Plume adj

9:15	Holt pulled 240-250 clay
9:55	Holt drilling 250→ very hard after 255'
9:59	Drill rig struck going to take water break
10:19	Holt back on rig.
10:22	pulling up casing
11:40	Break for lunch
	Collect mw31-SB061220-252 Casing to 250
12:00	Kelby to go help Neil
12:30	back from lunch going to push 5' to 260
	Alex left to refuel
13:00	Alex back refueled rig pulling out 270-280 core now.
13:55	No recovery 270-280 putting Casing back down
	no recovery again 262'
14:30	Going to push 5' on, & push down
15:10	Recovered 270-282 mostly clays. ≈ 2' gravel fill on top.

Rite in the Rain

Location SLC VA Date 6/12/20

Project / Client 700 S 1600 E PCE Plume

1530 Call Neil to discuss no answer. Text him pic of last 3' core, said to go to 290 & be last one.

1600 Kelby left for fedex.

1630 collect mw37-SB061220-289 hung & pack coolers

1650 Kelby left to ship

Betsy log 282-290

Clean up tarp soil, equip.

17:30 Remove well hanging equip. & mw39 & pad caps on well

1740 mob back to VA Compound & unload equip

17:55 mob off site

BJB 6/12/20

Location SLC VA Date 6/12/20

Project / Client 700 S 1600 E PCE plume

650 onsite, met Kelby & Whitney. Talk about site plans for day

7:20 H & S meeting

Attendees

Betsy Bolt

Whitney Treadway

Kelby Demmer

Pete Rosinsky

Mike Leeni

Scottie Carpenter

7:40 mob to mw30 warm up rig, set up ppe

7:50 Begin pouring Sand.

7:55 at 269 going to pull up casing & top augers 8" to 139'

8:46 7" Casing at 250 9" @ 40 Bent @ 256

850 Bent at 253.5

900 Begin well A install Sand 240-250, no pump reading

920 Call Neil, says we need SVP @ 30'

Rain in the Rain

Location SLC VA Date 6/19/20

Project / Client 7005 1600s PCE Pump

10:00 Install SVP left 11 on top of casing on all wells, Begin 20b/m Sand.

10:15 Kelly Left to Check pink well 31 & put Sticker on dumpster. Then he will go to Ace for Packing Supplies

11:10 Sand top @ 237 pulling 240' pipe

11:40 Sand at 237

12:45 Bentonite at ~160 used pellets with clean water then switched to chips.

14:00 Hydrating chips. pulling all 7" from well. Chipping to 33'

14:35 7" out of well so gel of water, chips at 150'

14:50 Hot → laydown for other pallet of bentonite.

Location SLC VA Date 6/19/20

Project / Client 7005 1600s PCE Pump

14:50 Holt back w/ pallet.

15:20 Bent at ~130'

15:30 Bent @ 110

15:54 Kelly running to pick to check on rig & look at supplies.

16:03 Kelly texted no bent on the

16:10 Holt at laydown looking for more bentonite.

16:15 Holt back; putting in pellets going to get to 40' & pull out all of 8" casing leaving 40' 4" in well. Holt going to store early to get more bentonite, will still be at safety meeting on time.

16:30 Taking out last 8' Chips/pellets at 40'

16:35 Shut down rig.

17:00 off site

BB 6/19/20

Rain in the Rain

Location SLCVA Date 6/15/20

Project / Client 700 S 1600 E PCE Plume Site

MW-30

0745 At MW-30. Warm up rig.

0755 Begin adding medium bentonite chips; currently at 40 ft bgs w/ 40 ft of 9-inch casing in borehole. Will bring bent. to 33 ft bgs for 30ft vapor probe.

0808 Bent at 33 ft bgs.
They pulled 10ft of 9 inch, 30 ft in hole.
Begin adding sand.

0813 They added some sand, but remembered to hydrate. ~ 50 gal.

0818 Continue adding sand.

0825 Sand at 27 ft bgs. Add bent. chips.

0830 Chips at 22 ft bgs, hydrate.

0835 Martin w/ vA stopped by. Asked about sand pack around vapor probe (27-33 ft bgs).

0837 Pull ~~last~~ of 9-inch casing.

0842 Holt crew to fill poly w/ water for grouting.

0950 Holt back onsite. They have water, and brough back-fill sand

WLwA 6/15/20

Location SLC vA Plume Date 6/15/2020

Project / Client 700 S 1600 E PCE Plume Site

MW-30

to Joe Miller + Air Vac crew.

1000 Preparing to mix + pump grout. Using Cetco Pure gold Grout + filter pack sand.

1020 Begin pumping grout through 20ft 1-inch PVC tremie pipe

1046 Pull 9-inch casing.

1100 Holt has added a couple lacpes of bent. chips in area of large void space between lifts of Bentonite grout.

1105 Joe M. onsite.

1115 Grout at 3.5 ft bgs.

1130 Holt offsite. They are going to get lunch, then demob from MW-30.

1245 Holt Returns Resume loading materials

1325 Mob Rig/Hoses to laydown

1400 Holt Back @ MW-30 to load up more materials

1645 Holt has been moving pipes and supplies to laydown.

1725 Holt/CDM offsite

6/15/20

Rain in the Rain

Location SLC VA Plume Date 6/16/20

Project / Client 700 S 1600 E PCE Plume

weather 60-75 windy

0700	CDM Onsite J. Milk / Whitney Treadway
0715	H+S Tailgate Attendees Joe Milk - CDM Smith Whitney Treadway - CDM Smith Pete Rosenburg - Holt Michael Lenz - Holt Scottie Longman - Holt Topics: Focus, well in Park, Interactions with Public, Traffic
0725	Begin loading all Materials
0755	Head to park now. Unload supplies at MW-31
0820	Borehole TD: 278 ft bgs.
0833	Crew returns to laydown yard to get filter for rotating head on rig. JM is currently looking for more screen, we only have 2 x 10 ft screens. WT stays at well site to keep rig secure.
0855	Holt back onsite. Replace filter.
0911	Begin adding Pureguld Medium bentonite chips (50 lb bags).
0923	Sprinklers turned on On our area

WMA 6/16/20

Location SLC VA Plume Date 6/16/2020

Project / Client 700 S 1600 E PCE Plume

MW-31 well installation

	for about 3 minutes.
0925	Adding chips again.
0943	Pete confirmed w/ Scott they had 2100' 7-inch and 100' of 8-inch. Holt already pulled 10ft, so 250' now
1003	Pull 10ft of 7inch, now @ 240'
1015	Crew to get piece to hang casing at laydown yard. Bentonite is at 241 ft bgs.
1045	Crew back onsite, Pete noticed wire in head needs to be fixed. They have to go back to yard to get tools.
1105	Crew back, begin to fix rig.
1145	Still working on rig.
1230	Crew to laydown yard to check other rig + get tools, then lunch.
1320	Crew back onsite. Continue working on rig.
1345	Crew to Home depot for piece to work on the Rig.
1430	Holt Returns Resume work on Rig
1446	Bolt Removal Head continuing Open

6/16/20

Location SLC VA Date 6/16/20

Project / Client 700 S 1600 PCE Plume site

1450	Begin Building deep well 2' sump + Pump Reciever 10' - 0.020 Slot screen
1515	All casing in. 2 ft Sump + 10 ft screen + 230 ft blank + 1 ft + 5 ft blank ~ 2 ft below grade Chips now at 240 ft bgs
1520	Pull 1 x 1 ft off top & and Switch w/ 2 x 4 inch pieces at ~ 3 inches below grade.
1538	Begin adding #12/20 sand.
1614	Pull 10 ft of 7 inch casing ~ 230 ft now.
1620	Continue adding sand.
1637	Sand at 225 ft bgs. Begin adding bentonite time-release pellets (3/8" coated) Cetco 50 lb buckets.
1640	Pull 10 ft of 7 inch casing - at 220 ft now. Add Pellets.
1655	Pull 10 ft of 7 inch. casing - at 210 ft now. Add pellets.
1711	200 ft of 7 inch on. Bent. at 204 ft bgs
1730	All offsite.

WMA 6/16/20

Location SLC VA Date 6/17/2020

Project / Client 700 S 1600 PCE Plume

MW-31 Installation

0715	H&S tailgate meeting Hart drill crew meets up with Hart development crew load equipment + supplies
0804	At park will check WL at MW-29B (mid-level).
0810	WL @ MW-29B = 153.94 ft BTC
0828	At MW-31, warm up rig.
0848	Begin adding bentonite pellets. Pete said bent was actually at 207 ft bgs at the end of yesterday.
0907	Bent at 202 ft bgs. Begin installing 1-inch PVC casing, SCH 80, 10 ft screen (20 Slot) + 2 ft Sump + end cap + 6 in. * pump receiver + 190 ft blank + 1 ft
0938	Begin adding sand, #12/10 in 50 lb bags.
~~0955 Pull~~	* confirmed w/ J. Miller, based on WL + nearby MW-29B, to include pump receiver in this well.
1014	Pull 10 ft of 7 inch, 190 ft in now.

WMA 6/17/20

Location SLC VA Date 6/17/2020

Project / Client 700S 1600E PCE Plume

MW-31 installation

1053 Sand at 186'11" (187 ft bgs). Begin adding bentonite pellets (TR 30 min, 3/8") (Letco 50lb buckets)

1057 Pull 10ft of 7inch, at 180 ft now.

1112 Pull 10 ft of 7inch, at 170 ft now. Pck is adding some medium bentonite chips in the middle of the seal layer - but pellets at the top and bottom of seal layer.

1125 Pull 10-ft, at 160 ft now

1140 Pull 10ft, at 150 ft now. Bent at 154 ft bgs, add more pellets.

1150 Bentonite at 151 ft bgs. Begin installing casing: 2 ft sump + 10ft 10-slot casing-screen (1" SCH 80 PVC) + 148 ft blank.

1204 Begin adding #12/10 sand

1230 Hoit offsite to get supplied.

1304 Hoit back onsite.

1315 Begin adding sand again.

1330 Pull 10ft of 7inch, @ 140ft bgs

1350 Sand at 135 ft bgs. Begin

WMA 6/17/20

Location SLC VA Date 6/17/2020

Project / Client 700S 1600E PCE Plume

MW-31 installation.

adding bentonite pellets.

1355 Pull 10ft of 7inch, @ 130 now.

1410 Pull 10ft of 7inch, @ 120 now. Per convo w/ J. Miller, ok to ~~hydrate~~ bent. up to 10-12 ft w/ hydration.

1420 Pull 10ft of 7inch, @ 110 now.

1430 Pull 10ft of 7inch, @ 100 now.

1442 Add water to hydrate, chips/pellets just below 100 ft. ~ 50 gal.

1450 Pull last 100ft of 7inch. 8inch casing is at 100 ft. Adriaan Boogaard w/ dept. Public Utilities ~~was~~ to stopped by to talk about utilities at MW-32, which was cleared out earlier this week.

1505 Begin adding bentonite again.

1520 Pull 10ft of 8inch, @ 90 ft now.

1530 Pull 10ft of 8inch, @ 80ft now

1540 Pull 10ft. of 8inch, @ 70 ft now.

1547 Pull 10ft. of 8inch, @ 60ft now.

1555 Pull 10ft. of 8inch, @ 50ft now.

1604 Pull 10ft of 8inch, @ 40ft now.

WMA 6/17/20

Location SLC VA Date 6/17/2020

Project / Client 700 S 1600 E PCE Plume
MW-31 well installation

1610	Pull 10ft of 8inch, @ 30 ft now.
1618	Pull 10ft of 8inch, @ 20 ft now.
1627	Pull 10ft of 8inch, @ 10ft now. Bentonite at 12 ft bgs. Hydrate
1633	Begin hauling pipe to truck.
1720	Site secure, head to laydown yard to unload pipes.
1740	HOU + WT offsite.

WMA 6/17/20

Location SLC VA Date 6/18/2020

Project / Client 700 S 1600 E PCE Plume
MW-31 well installation

0715	HSS tailgate meeting.
0730	Finish unloading pipe from truck and load up for grouting.
0750	Fill tok w/ water near bldg. 6
0805	Rig is warming up. Unload water and grout supplies.
0845	Hou is breaking apart hoses to prepare for grouting. Bentonite is at 14ft bgs. 10 ft of 8-inch casing in hole.
0900	Pumping and mixing grout - bentonite grout w/ sand through 1" PVC tremie (10 ft)
~~0930~~	~~Grout complete, at ~3 ft bgs.~~
	~~Begin demobing~~ WT
0945	Grout at ~3 ft bgs, added some sand at top. Pump what's left of grout in hopper. Begin ~~WT~~ to demobing.
1015	WT to motel.
1030	WT on site again
1120	Hou ready to set up and wait for gate opening.
1140	Through gate & at laydown.

WMA 6/18/20

Rite in the Rain

Location SLC VA Date 6/18/2020

Project / Client 700S 1600E PCE Plume
WT MW-2 Demob

1145	Flatbed Semi is here for Holt's pipes, but the requested it for tomorrow morning. Some confusion they are working out.
1220	Flatbed truck driver offsite. WT offsite for lunch.
1240	WT back onsite. Holt is decanning pipes now w/ fresh water & pressure washer.
1500	Still decanning.
1520	Collect EB34-SB061820 (3 40mL VOAs w/ HCl for VOCs) on 7inch casing shoe from 330ft bgs at MW-30. Samples labeled, bagged, on ice.
1745	Holt crew offsite. Pick up pallets at MW-31 on their way out.

6/18/20

Location SLC VA Date 6/19/20

Project / Client 700S 1600E PCE Plume

0715	Holt Tailgate Attendees: Jim Mills COM Pete Rosenberg Holt Scottie Langman Michael Cain weather 60-75°F Tasks: Loading Gear Decanning pipe waste Hauling Site cleanup Topics: Lifting, Fatigue, Focus Home Safe
0745	Semi driver onsite to haul Holt casing
0850	Call to United Services to take toilet off of Rental
0900	Call MP Environmental they Expect truck Between 11 and 12p
0905	Call to Lisa Huston VA Left Message about MP onsite
1130	MP Onsite Sunnyside Park Move Rolloff #5841 from Park to Campus

Rite in the Rain

Location SLC VA Date 6/19/20

Project / Client 700S 1600E PCE Plume

1200	Move Rolloff Bin 6122 from VA Campus to ~~MW-30~~ MW-32 location on E 600 S
1230	Onsite to Haul RBR250327 Carlos Aguilar Signs off Retrieves MW30 Permit
1300	Holt Resumes work continue loading
1330	Tire Service Onsite
1430	Tire Service Offsite
1650	Loaded up Back Blade Parking lot
1700	Holt Crew offsite Have your day Saturday

6/19/20

Location SLC VA Date 6/22/2020

Project / Client 700S 1600E PCE Plume

0715	Health and Safety tailgate meeting w/ drill crew. Attendees: Joe Miller, Whitney Treadway (COM Smith) Jeff Jones, Aaron Kueper, Alex Lungdon (Holt) Tasks: decon pipes (EB sample) load equipment + supplies, mobilize to MW-32 Issues: masks, dealing w/ public, heat, slips, trips, falls, moving machinery, pinch points, traffic.
0725	Joe M. + Jeff to MW-32 Site to check out logistics Of mobilization.
0730	Crew fills water tank for decon.
0745	Joe + Jeff back onsite
0755	Unload flat bed.
0800	Decanning pipe w/ pressure washer.
0945	Decon rig.
1045	Collect EB316 SB 062220 off drill rod from MW-31
*0700	TB416 SB 062220 (TB417)

6/22/20

Location SLC VA Date 6/22/2000

Project / Client 7005 1600E PCE Plume.

MW-32 mobilize + drill

1115 AM offsite to MW-32, w/ flatbed.
WT to pick up ice.

1200 Joe & Jeff w/ flatbed back to laydown.
Joe told crew to stick to South side of street, don't block driveways, and keep talk polite as we have spectators.

1215 Joe & Jeff back onsite.
100 ft of 8 inch unloaded.

1225 Calibrate PID # 045671 (DINE).

1230 Drillers break for lunch.

1300 J. Miller further offield Boat Drilling to & up
whitney to Canyon for Visqueen

1315 add 10'-8" casing

1320 whitney Returns w/ Visqueen

1335 Collect MW32-SB062220-14

1400 collect MW32-SB062220-27

1420 No sample collected during Run 3
Cores hot and Melted Plastic
Bags pid Read 93.5

Location SLC VA MW-32 Date 6/22/20

Project / Client 7005 1600E PCE Plume

MW-32 drill

1500 Mark Augustyn delivers 5 Vials to VA Canyons, Brings ice back to MW-32

1520 Collect MW32-SB062220-55

1540 More Yalon Onsite

1550 More Offsite

1640 Fuel Rig Boring to 80'
Cased to 70'

1700 Holt to VA canyons for fence

1730 Holt onsite w/ Fence

1740 Holt to VA for more Fence/Beam

1800 Holt Back w/ Fence Shed

1810 Offsite

6/22/20

Rite in the Rain

Location SLC VA Date 6/23/2020

Project / Client 700S 1600E PCE Plume well boxes

0715 Health + Safety Tailgate meeting. Attendees: Joe Miller, Whitney Treadway (CDM Smith) Jeff Jones, Aaron Kuper and Alex Lungdon (HOLT). TASKS: install 3 well boxes at MW-29, MW-30, MW-31, continue drilling at MW-32 Issues: masks, traffic, slips, trips, falls, moving machinery, pinch points, heat, using Sunnyside Gate, only with permission.

0745 At MW-30. Prepare to install well box. A lot of rain water in cavity around well casings. Holt bailed out water to about 3 ft bgs where seal is set. They will need more concrete and trowels. Also, PVC pieces to add.

0805 Back to laydown yard to pick up trowels.

0815 Holt offsite to Home Depot.

0850 Collect IDW06-SB062320 from WMA 6/23/20

Location SLC VA Date 6/23/2020

Project / Client 700S 1600E PCE Plume well boxes.

ralloff #5495. Labeled + on ice.

0920 Holt back onsite.

0927 Crew back at MW-30. Joe adjusted the risk heights on the casing and added top caps.

0940 Holt begins mixing and pouring concrete.

1145 MW-30 complete, site secured. Head to laydown yard + fill poly w/ water.

1210 WT called VA police to open Sunnyside Gate.

1218 Set up to install well box at MW-31.

~~Whit~~ Joe adjusts casing heights and adds labeled caps.

Quick break for lunch for Holt

1245 Holt crew digging out around borehole for concrete pad.

1350 MW-31 complete, move to MW-29. Adjusted casing heights.

1425 After adding concrete, adjusted casing heights once more before setting well box.

WMA 6/23/20

Location SLC VA Date 6/23/2020

Project / Client 700S 1600E PCE Plume
Well boxes / drilling MW-32

1505 MW-29 complete. Cleaning up now.

1510 Site secure. Crew through Sunnyside gate (open) to laydown yard.

1530 Crew to MW-32 to set up for drilling.

1551 Begin drilling. Stopped at 80 ft bgs yesterday.

1610 Collect MW32-SB062320-84 + FD02-SB062320 (1660)

1635 Driller Notes cleanout met after 90-100' Run attempt Grab Sample for VOC water

1705 Collect MW32-GW062320-100 grab sample for VOC + Colorlect

1720 Casing to 90' wrap up site for the day

1800 Offsite

Late Entry: Collect TB48-SB062320
16:00

6/24/20

6/23/20

Location SLC VA Date 6/24/2020

Project / Client 700S 1600E PCE Plume
MW-32 drilling

0715 Health + Safety Tailgate meeting.
Attendees: Whitney Treadway, Joe Miller, Kimberly Yauk (COMSmith), Jeff Jones, Aaron Kuper, Alex Langdon (Hart).
Tasks: Continue drilling at MW-32
Issues: masks, traffic, heavy machinery, slips, trips, falls, road, pinch points

0950 All on site at MW-32. Prepare for drilling.

0810 Begin drilling at 100' at MW-32

0840 Crew unloading 7inch with 5ft casing.

0850 Halt to pickup Fences around MW30, 29, 31, Collect MW32-SB062420-105 MS/MSD

0852 Boring to 110' hole caved to 100' open to 99' DTW 84.5 Bgs

0951 Drill crew back onsite.

1000 Begin drilling again.
Mare onsite.

1035 Halt crew offsite to get more casing.

1055 Halt crew back onsite.
Tripping in 7inch casing now.

6/24/20

144

Location SLC VA Date ~~6/23/2020~~

Project / Client 900S 1600E PCE Plume MW-32 drilling.

1151 WL in borehole: 87.6 ft bgs.
120 ft of 7inch casing.
100 ft of 8inch casing.

1155 Trip in push ahead sampler.

1216 WL in sampler: 115.7 ft bgs.
Joe M. back onsite (left at ~1000)
Wait for water to rise in sampler.

1240 Breanna Moak + Maria Day onsite for drilling training.

1245 Collect MW32-GW062420-120 Through bailer + push ahead sampler.

1253 Begin drilling again.

1255 Relinquish logbook to K. Yount/J. Miller

1325 Collect MW32-SB062420-127

1400 No GW Sample attempted @ 140' due to Fine Lithology

1430 Collect EB37-GW062420 off decanned sampler

1450 Collect MW32-SB062420-142

1630 Trip in Sampler to 150' No water in Rods. Kimberly, Maria, and Breanna go work on Color Tech @ 120 feet.

Location SLC VA MW-32 Date 6/24/20 145

Project / Client ~~900S~~ 1600 E PCE Plume Site

1710 The sampler did not open - likely due to the formation. Drillers pull sampling rod and gw sample will be attempted at 160 feet.

1725 MW-32 site is secure. Holt leaves site. Joe Miller joins Kimberly, Maria, and Breanna at the connexes.

1730 Small detection in MW-32 gw Sample @ 120 feet → 0.5 on the LL color Tech Tube with the 100 cc purge
This corresponds to ~35 µg/L (~25 to 45 µg/L expected range)

1800 Secure site, dump old color Tech samples into poly tank, charge PID.

1820 Leave site with Maria and Breanna. Joe Locks gate. Connexes locked IDW fence is secure.

6/24/20

Kimberly Yount

Location SLC VA Date 7/1/20

Project / Client 700 S 1600E PCE Plume
MW-34 Utility Locate / Badger Hydro-vac

0755	Arrived at MW-34. Met with Wasatch and GPRS.
0810	Discussed proposed well site and utility locate began.
0820	GPRS finds utility line running East and west along paved road. Proposed to move MW-34 North 3 ft toward the fence.
0830	GPRS will forward report to Wasatch. GPRS and Wasatch off site.
0845	Offsite to find Badger truck.
0905	Badger truck arrives at MW-34. Discuss about hydro-vac down to 8'.
0912	Hydro-vac begins.
1010	Badger reaches ~8' with hydro-vac. Boulder field at approximately 7'. Hole was cleared/angled to reach 8' good. No signs of utilities down to 8'.
1015	ELM Utility services arrives at MW-34. Confirms MW-34 is clear of gas lines.
1020	Kim Y. and Matt arrive on MW-34.
1035	Kim Y. and Badger offsite back to VA to dump hydro-vac truck. Matt begins backfilling MW-34.
1415	MW-34 covered with grate and cone. Offsite back to VA.

7/1/20

The manufacturers of *Rite in the Rain* all-weather writing products are grateful to the numerous environmental experts who have contributed to the development of this book. Should you have any additions, improvements or corrections for future publications of this field book or have suggestions for other environmental field book formats, we welcome your input.

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Common Field Data Error Codes

Error codes are used to explain common mistakes and are written above or close to the mistake.
Commonly used error codes include:

RE	Recording Error
CE	Calculation Error
TE	Transcription Error
SE	Spelling Error
CL	Changed for Clarity
DC	Original Sample Description Changed After Further Evaluation
WO	Write Over
NI	Not Initialed and Dated at Time of Entry
OB	Not Recorded at the Time of Initial Observation

Note: Error code should be circled, dated, and initialed when recorded.

Hazard Classifications

Class 1 Explosives
Class 2 Gas
Class 3 Flammable Liquid
Class 4 Flammable Solids (Potential spontaneous combustion, or emission of flammable gases when in contact with water)
Class 5 Oxidizing Substances and Organic Peroxides
Class 6 Toxic (poisonous) and infectious substances
Class 7 Radioactive material
Class 8 Corrosives
Class 9 Miscellaneous dangerous goods

Container type abbreviations (for sampling guidelines)

BR - Boston Round • ABR - Amber Boston Round • AJ - Amber Jug • AWM - Amber Wide Mouth • Poly - Polyethylene Bottles • BOD - Bottle • CWM - Clear Wide Mouth

Location SLC VA Date 5/6/20

Project / Client 7005 1600 E PCE Plume

0705: Arrive on site. Drillers and Tea / Joe / Ben (new to site) already on site.
Weather: 57°F, whispy clouds, occ. breezes, high of 79°F

0715: Marc Yalom arrives on site and Kiel Keller (Wasatch) We are expecting Badger on site to clear MW-24 & MW-30.

0720: H&S Safety meeting
Attendees Level D PPE

Kimberly Yauk	COM
Marc Yalom	VA
Joe Miller	COM
Tea Vrtlar	COM
Ben Carreon	COM
Kiel Keller	Wasatch
Pete Rosenburg	Holt
Scottie Lamp ~~DAY~~ man 5/6/20	
Michael Lewis Jr.	
Alex Langdon	
Aaron Kuper	
Jeff Jones	

Location SLC VA Date 5/6/20

Project / Client 7005 1600E PCE Plume

0730 Badger is on site to clear MW-30 and MW-24. They set up with Kiel @ MW-24 in parking lot adjacent to building 6

0800: Tea and Ben finish calibrating YSI and PIDs. Kimberly gets signatures on H&S form from the badger crew

0830: Tea and Ben go to the badging office to get Ben's badge.

0845: Daily checklists. The sampler is set up w/ new o-rings. We do a test run in the air and the sampler holds tight while vibrating. Drillers begin tripping it into the hole. Tea comes back.

0920: Ben is back w/ a badge. We start going over water sampling procedures and Color-Tec sampler

0930: Sampler is in place but the casing is 9 feet in the air. Joe says to do another clean-out run and drillers trip sampler back out.

Location SLC VA Date 5/6/20

Project / Client 700 S 1600 E

1000: Marc back at MW-25 to check on things he had left after the H&S or was elsewhere on site. The drillers got the sampler out and it was still together and dry so these O-rings are holding well.

1010: Drillers begin cleanout run.

1015: Marc leaves again. I fill out field procedures checklist, Soil Sampling protocol checklist and push-ahead sampler checklists for the time spent at MW-25

5/6/20 to 1130: Drillers have push-ahead advanced to 310.5 feet. Measured with water meter to 308.68 (meter gets stuck inside sampler and won't go down the whole way. It is dry. Drillers pneumatically blow the sampler open and pull back casing to expose screen.

10:40: water meter to check water level.

1115 Not getting a clear reading. Can't tell if I'm getting to water

Location SLC VA Date 5/6/20

Project / Client 700 S 1600 E PCE Plume

Cont'd: OR

1115 ~~to 5/6/20~~ if the meter is hitting drips on the casing. Drillers are on lunch.

5/6/20 1130 1205: Tea and Ben come over. Ben says we don't need a water level reading after it's open, we can just send a bailer down. Ben eats while Tea/Kimberly tie the bailer and start it down. ~~B~~

1220 ~~1140~~ 5/6/20: Ben joins us and we bail down, pull up nothing. We try again. We can hear the bailer hitting the bottom. The bailer feels dry when we remove it.

1300: We send the bailer down a third time. Jeff tries too, but it doesn't seem like there's water.

1330: We decide there's no water. We must have cased off the gravel unit we saw yesterday.

1345: Drillers pull the sampler. It comes up closed (although Jeff said he dropped it back down and that could have closed it. It's also clean - screen and O-rings

Location SLC VA Date 5/6/20

Project / Client 700 S 1600 E PCE Plume

1400: I check with Joe. He says we should stick to drilling another 10 feet and see what we get. Drillers switch over to drilling.

1415: Tea goes to the Connex to pick up an MS/MSD Soil sample Kit.

1430: Tea is back. The wind picked up a lot in the past hour or two. Caution tape is being pulled and ripped away. Water meter is deconned ~~over~~ and ready for next time. PID is reading 0.1 ppm background levels. Check drillers' breathing zone.

1450: Drillers bag the 310 - 320' sample Collect MW25-SB050620-312 Drillers vibed the sampler open.

1540: Water was @ 279 w/ 4 foot stickup = 275' bgs to water.

1645: We had 2 or 3 dry runs with the bailer. Water present but not holding. Switched bailers.

Location SLC VA Date 5/6/20

Project / Client 700 S 1600 E PCE Plume

1645 Cont'd: Collect MW25-GW050620-320 Drillers pull the sampler out, then wrap up for the day. Tea back on site from shipment

1700: Tea is doing magnetic susceptib. on the 310 - 320 foot core.

1730: Equipment picked up. ~~Post~~ Closing fence, drillers refuel the rig.

1740: Drillers leave site. Tea warms up the Color-Tec. Joe drops equipment at Connex and goes to close soil rolloff bin.

1815: CDM offsite

5/6/20

Rite in the Rain

10

Location SLC VA MW-25 Date 5/7/20

Project / Client 700S 1600E PCE Plume

Weather 40°F - 75°F Windy

0640	Onsite Prep paperwork / Equipment
	Task: MW-25 Build well
	MW-26 Resume drilling
0730	H+S tailgate. Joint w/ MW25/26
	Topics: Fatigue, crush points, Heat
	stress, Slips trips falls, COVID
	Attendees:
	J. Miller CDM
	B. Larsen CDM
	K. Keller ~~Holt~~ Jacobs/Tetra Tech
	P. Rose Holt
	S. Campana Holt
	M. Lee Holt
	J. Jones Holt
	A. Kuper Holt
	A. Lingden Holt
0805	warm up Equipment
0830	Advance casing to 320' / cleanout
0900	Call w/ group about Screen interval
0930	Clean out complete
1000	Mob ~~Drill~~ Rods to Laydown
1030	Mob PVC casing to wellsite
1130	Holt Break for lunch
1200	Holt Resumes Begin Building MW-25

Location SLC VA MW-25 Date 5/7/20

Project / Client 700S 1600E PCE Plume Site

Weather 45-65°F Windy

11

MW25	Screens		~~315~~ 345 JM	5/7/20
		C	318 - 308	Sand to 305
		B	240 → 230	Sand to 227
		A	200 → 210	Sand to 197
		SVP	100	Sand 102.9 ft
		SVP	25	Sand 30-25

1225 Tag Bottom 316' go down for Cleanout.

1230 Discussion w/ Marc about DSE Glv
- Document Justification for Remainder
- USE Technology to calculate Stabilization
- Reduce Btex detects in Drilling Sample
- Snap sample ~~for~~ at station
- Head Measurement for station

1345 Tagged hole @ 314.8'

1400 Toilet Cleaner Onsite

1455 - 3 - 2' 1-6" 1-1' Temp

1458 Begin adding Sand 10/20 Slug

1615 Sand to 305' Begin adding Bentonite Pellets 1/4" Non coated

1750 - Chips ~272 Close up site

1800 Offsite

5/7/2020

Location SCL VA MW25 Date 5/8/20

Project / Client 7005 1600E PCE Plume

0700	CDM Onsite J. Milk B. Carreon
	Trucks Buildwell @ MW-25
	Drill MW-26
	Weather: 45-65°F windy clear
0730	H+S Tailgate @ MW 25
	Topics: Focus, Communication, Dust + Traffic
	Attendees:
	J. Milk — CDM Smith
	B. Carreon — +
	K. Kelly — Wasatch
	P. Rosenberg — Holt
	J. Jones
	M. Lewis
	S. Langsman
	A. Kupar
	A. Langdon
0800	Warm up equipment / Inspections
0815	Resume adding bentonite chips
0825	Tripout Remaining 6" casing
1015	6" casing out of Boring
	Resume Backfilling and tripping out 7" casing

Location SCL VA MW25 Date 5/8/20

Project / Client 700 S 1600 E PCE Plume

1200	Holt Break for lunch
1230	Resume adding ~~chips~~ sand + chips from 246'
1250	Begin Building Zone 2 243 Sump
1320	~~Screen~~ MW-25B installed 231' of the Screen
	Sump + Bottom cap
	10' screen 241-231
	~~233~~ Pump Reciever
	~~231~~ 231' Blank PVC 2"
1345	Get MW-24 permit from Carlos
1432	Sand to 226' Begin adding pellets
1515	Build MW-25A Bentonite to 214
	Sump ~~215~~ 213
	Screen 211.5 - 201.5
	Reciever
	Blank PVC 201 - 0.5' BGS (6" stick up
	SVP 100, 28
1625	Resume Backing out casing
1640	Pump start Engineer's call
	10/20 silica Sand to 197'
1730	Casing Pulled to 150 chips to 157
1800	Offsite

5/8/20

Location SLC VA Date 5/10/20

Project / Client 700 S 1600 E PCE Plume

7:00 Onsite, paperwork / equipment
Task mtgs - Build well
Task mw20 - continue drilling
Weather - Sunny 60° F
7:30 H&S Tailgate w/ mw-25
See below
7:49 Sand 103 - 98
30 - 25'
- Clean chips out
- grout patched cement surface
7:50 7" pipe appears to be clean
need to go get pipe to fish it out.
H&S Tailgate topics: dust, traffic
Joe observed cows trying to pass bobcat in street. Hall along everything correctly close need to watch out for other people that do unsafe things.
Attendees
J. Miller, B Correan, S Bell - Clean
P. Rosenburg, Scottie Lampman, Mike Lewis - Crew 1
J. James, A Kuper, A. Langdon - Crew 2
(Hall)

Location SLC - VA Date 5/10/20

Project / Client 700 S 1600 E PCE Plume

8:15 Joe left site to pickup sunscreen + water
8:40 Hall done pulling out casing. Discuss chips should go to 103, Sand 103-98.
8:51 Hall begin pouring chips
9:30 Joe back onsite, dropped off sunscreen. Going to go Check on Ben, then go + try to fish out tubing + pull pump on GW mw.
9:53 Bentonite to 130'
10:22 8" at 120'
Bentonite almost to 103'
11:08 Begin adding Sand
11:17 Sand at 97'
Begin Bentonite to 30'
11:46 Chipped up to ~ 60'
Jeff says that they will run out of bentonite before they get to 30'. Bentonite bags are only getting 1-1.5' in 8" and only have ~20 bags left.
12:05 Bentonite at 45'
Casing @ 40

Location SLC VA Date 5/10/20

Project / Client 700S 1600S PCE Plume

12:10 Lunch.

13:24 Neil ok'd use of pellets instead of chips

Holt back putting in pellets.

13:37 Bentonite to 30'

13:45 Holt adding Sand to 26'

13:54 Holt adding Bentonite pellets on top of Sand.

14:05 Bentonite ~~chips~~ to 20'

Spoke w/ Jeff about grouting. he wanted to mix in drums & pour. Called Joe, Joe would like it to be pumped, Relayed that to Jeff. Jeff will have to go to home depot to get grout.

14:08 Alex & Rawson begin to clean pipes.

14:18 Holt running to ~~[redacted]~~ fire hydrant 16 to fill up water tank.

14:43 ~~[redacted]~~ Jeff running to home depot to get grout.

15:06 Holt done filling water, begin clean.

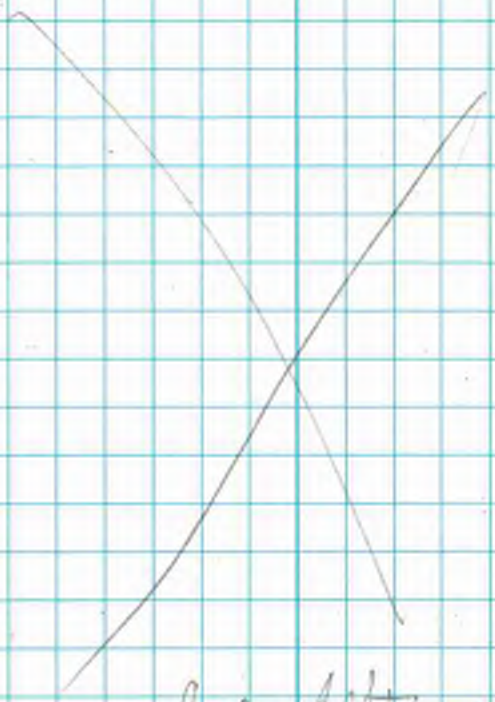
Location SLC VA Date 5/10/20

Project / Client 700S 1600S PCE Plume

16:00 Jeff back onsite w/ pallets of grout.

17:31 Holt start pumping grout 1st batch. grouted to appx 3' bgs

18:00 offsite



Bellingham 5/10/20

Rite in the Rain

Location SLC VA Date 5/11/20

Project / Client 7005 1600 & PCE Plume

7:00 CDMs onsite, calibrating, getting equipment ready, paperwork

7:20 H&S Tailgate

Topics: Traffic - vehicle & ped pinching/crush points, hot weather

Attendees

B. Bott - CDMs
J. Miller - CDMs
B. Lawson - CDMs
P. Rosenberg
Scottie Lapman
Mike Lewis JR
J. Jones
A. Kuper
A. Langdon

7:30 Holt checking grad level, moving fencing, getting ppe on

8:26 Holt brought down rig mast

Jeff had a Good Catch - instructed helpers to wait on moving pallets until site traffic dies down to prevent vehicles from trying to speed around / causing accident.

Location SLC - VA Date 5/11/20

Project / Client 7005 1600s PCE Plume.

8:37 Holt (Jeff) offsite to HD to get concrete for MW-25

9:51 Jeff back onsite w/ concrete

10:26 riser pipe @ MW-25 too tight, called it

10:56 called Neil to talk about MW25 Vault. Right now well A is high and tight allow for enough clearance for 7 ft instrument. We have 2 options, install vault higher than gs or use conventional vault Going to speak w/ mgr about it.

11:07 Carlos signed off of MW25 excavation permit

11:12 Spoke w/ mgr. They would like the vault installed ags. √ to slope concrete away from ~~ppe~~

Also talked about getting sand give to put on concrete cradles

11:20 Holt working on installing well vault.

12:36 Break for lunch.

Location SLC VA Date 5/11/20

Project / Client 7005 1600 & PCE Plume

13:30 HoH moving equipment to MW24.

14:30 Take SB 18-GW05 1120 on drill rod for MW24 site. Clean for MW25

14:50 Discussion w/ Marc. Shannon would like MW25 over to be cleaned up prior to starting drilling at MW24.

16:30 Collect MW24-SB05 1120-14 ~~VOCs~~ CO

17:00 Collect MW24-SB05 1120-22 (9.8)

17:35 collect MW24-SB05 1120-34 (138 ppm)

17:50 HoH doing a clean out.

18:30 Jde offsite, Betsy warm up Colortech bath

Colortech results MW-26-320 ND (liquid) DUP ND ↓

MW-26-348 ND (solid) DUP ↓

19:45 Betsy off Site (V

BB 5/11/20

Location SLC VA Date 5/12/20

Project / Client 7005 1600 & PCE Plume

7:00 CDMs onsite, getting equipment ready, Sample kits, Paperwork.

7:25 Hw 5 tailgate

Topics: Traffic / Fatigue

Attendees:

B Bott - CDMS

J Miller - CDMS

B. Corcoran - CDMS

J. Jones - HoH

A. Langdon - HoH.

A. Kuper - HoH

P. Rosenberg - HoH

S. Lampman - HoH

M. Lewis - HoH

7:35 HoH warming up GH rig getting cones & fencing set.

7:50 Begin putting in Pipe.

8:05 Collect MW24-SB05 1220-43

8:40 Collect MW24-SB05 1220-SC ~~VOCs~~ FD16-SB05 1220 (8:00 AM)

10:00 Collect MW24-SB05 1220-61

10:20 MW21-SB05 1220-71

10:48 Rod broke, going to put piece of casing in to fish out

Rain in the Rain

Location SLC VA Date 5/12/20

Project / Client 7005 1600 E PCE PLUME

1100	Wash over casing to try to free Core Barrel, Used approx. 200gal
11:40	Hoist freed core barrel
11:45	Collect MW24-SB051220-84
11:55	Break for lunch.
12:33	Back from lunch
1205	pull depth 85-90'
	No Sample PID below 80-85
1330	~~Collect MW24-SB051220-94~~
	Drill to 100' no Sample collected, low hits
1416	Trouble getting Core barrel out
1420	Collect MW24-SB051220-104
1440	Hoist pumping water from Rig Containment.
1515	Joe Call to M-- about welder escort to MW-[redacted] location/Rig
17.05	MW24-SB051220-119 58.8 ppm
17:45	Hoist at 105' bgs
18:15	Offsite

BB 5/12/20

Location SLC VA Date 5/13/20

Project / Client 7005 1600 E PCE Plume

7:00	Coms onsite, paperwork, getting equipment ready for day.
7:30	HV J Tailgate
	Topics - Traffic, Fatigue, Tools. Welder coming to the site at 8:00Am, need to get hotwork
	Attendees:
	B Bott
	J. Mikel
	B. Cervera
	M. Yalom
	P. Rosenberg
	S. Lampman
	M. Cecil Jr
	D. Jones
	A. Logan
	A Kuper
7:45	Holt warming up rig, putting on ppe
8:10	Start drilling
820	pulled 125-130, no high readings
9:05	pulled 130-135
	Collect MW24-SB051520-132 (24.7 ppm)

Location SLC VA Date 5/13/20

Project / Client 700s 1600s PCE Plume

930	Hollrit 135-140
10:15	mw24 - SBOS1320-149
1025	Stuck rod in casing, Holt putting on rock reamer
1530	Back to drilling
1100	@ 150-155
	Collect mw24-SBOS1320-152
1130	155-160, no sample going to try to collect perched water sample
11:40	HoH take lunch.
12:00	Collect mw24-GWOS1320-160 & MS/MSD
12:45	Holt back from lunch,
1330	Collect mw24-SBOS1320-166
1430	Collect Mw24-SBOS1320-170
1500	175-180
1555	collect MW24-SBOS1320-186 + FD19-SBOS1320
1600	Drill Rig Break ~~Begin~~ Back
17:20	Betsy working up Colortech
1800	Colortech results no for 160'
	MOB off site

BB 5/13/20

Location SLC VA Date 5/14/13

Project / Client 700s 1600s PCE Plume

700	ODM Smith onsite
7:25	H+S Tailgate
Topics:	Traffic, Fatigue, Don't rush.
Crew1 -	Fishing in mw24
Crew2 -	Continue drilling mw24
8:07	~146.20' tagged dtw
8:15	finishing rig.
910	190-195
	Collect mw24 OS1420-192 (23.5 ppm)
10:50	Collect mw24-OS1420-202 (33.4 ppm)
1145	Betsy to wash tech for sample supplies, Joe Miller Supervising
1200	Holt Break for lunch
1230 -	Explain Parmeter, write up on the d.d.z write Screen placement + pump placement what measurements @ being logged
1300	Betsy Back onsite
1310	Jaws Replaced, Holt extruding sample from Core barrel + Resumes drilling
13:43	Drill pipe is wet at ~185'

Rita in the Rain

Location SLCVA Date 5/14/20

Project / Client 7003 1600E PCE Plume

MW-24

1350	Collect MW24-SB051420-215 + MS/MSD
1420	A1 onsite to service port-a-potty.
1530	Clean and run
1542	Trip in Sampler
1435	Lake Entry MP Environmental delivers 10yd³ Rolloff #
1605	No water in Rods pre vibe
1609	Vibe Back w/ air
1630	Collect Blank w/ 3 VOC + 2 colorless Jars MW24-GW051420-220
1700	Trip out Sampler
1755	MW24-SB051420-227 + MW24-226 for ferrous Fe
1830	Offsite

BB 5/14/20

Location SLCVA Date 5/15/20

Project / Client 7005 1600 PCE Plume

MW24.

0700 Cons onsite setting paperwork, equipment

0725 H&S Tailgate

Topics: Traffic, Fatigue.

David Rusin, Friday

Attendees

Bobby Pruitt - Cbm

Joe Miles - Cbm

Ben Carreon - Cbm

Reed Rosenberg - Holt

Mikie Lewis - Holt

Scottie Lampman - Holt

Jeff Jones - Holt

A. Langdon - Holt

A. Kupar - Holt

Marc Valan - VA

0755 - MW-24 Dpth 184'

800 Holt cleaning w/ drill bit, moving drums to corner area, sweeping up, pumping out cellar drill bit.

820 Call w/ Neil to discuss TD, Going to go to 250', w/ Attempt another GW if good condition if clay or not try

Ritten de Rusin

Location SLC VA Date 5/15/20

Project / Client 7005 1600 E PCE Plume

0935 MW24-SB05152O - 239 (31.2 ppm)

1105 Collect MW24-SB05152O-248

1130 Joe Collins w/ VA need about MW24.

12:00 Joe done w/ Earl Holt almost done tripping back in for clean out rds

12:22 done w/ clean out.

12:30 Break for lunch.

1300 Holt Resume Clean out

13:56 Joe meeting w/ Badger

14:11 Josh mob offsite to cyl screen.

15:30 Geologist from work

15:40 Holt back from pipe shop

1539 Holt & CDMG discussion going to tidy up & get stuff together, etc. not going to install well. Holt start picking up & stowing MW24, etc.

17:15 all mob offsite

AB 5/15/20

Location SLC VA Date 5/18/20

Project / Client 7005 1600 E PCE Plume

700 CDMG onsite, locating equip, paperwork, etc.

735 HASP Tailgate

Topics: Past, Traffic, Future

Attendees:

Betsy Bost

Joe Miller

Ben Carlson

Pete Rosenberg

Scottie Lamphere

Mike Lewis Jr.

MW-28

1300 Holt Mob equipment to laydown and MW-30 location

Additional Information in Fieldbook #2 page 48/49

5/18/20

Location SLC VA MW-24 Date 5/19/20

Project / Client 700 S 1600 E PCE Plume

0700	CDM Onsite loadup Equipment
0730	H+S tailgate
	Topics: Lifting traffic Pedestrians
	Co-located work
	Attendees:
	J. Miller CDM Smith
	B Carreon
	M. Lee Holt
	S. Langman
	P. Rosenberg
	Weather: 65-80°F windy
	Tasks: Build MW-24, Move Equipment
0800	Setup @ MW-24
	Battery on Rig dead,
0815	Jumped Rig
	Measure DTB 239.8
	DTA 186.30'
0843	Begin Building well
0853	Holt offsite for 10' shelf 40
	slot Screen 0.010 slot
0955	Holt Return
1020	Resume adding Screen
1200	well set to depth ~/ 40 SVP
	Holt Break for lunch

Location SLC VA MW-24 Date 5/19/20

Project / Client 700 S 1600 E PCE Plume

1240	Begin adding Sand 10/20
1300	Vibe as pull Back well settled ~ 0.5'
	Continue to add Sand
1338	pull casing 10' Resume adding Sand
1415	pull casing 10' Resume adding Sand
1440	Tag tape stuck @ 40' tape free
1446	pull 10' casing add sand
1500	Bent Offsite to Homedepot
1524	~~Resume~~ Pull 10' casing sand to 201'
1540	Begin adding Bentonite Chips Med
1632	Pull 10' casing Resume adding Chips
1550	Pull 10' casing Resume adding Bentonite chips
1607	Pull 10' casing add chips
1620	Pull 40' casing hydrate chips Continue to add chips
1635	Pull casing chips to 150' 135.5'
1657	Pull casing to ~~140~~ 135' chips to ~~123~~ 135' Ea/Bent
1720	Last one.

Rite in the Rain

Location SLC VA MW-24 Date 5/20/20

Project / Client 700 S 1600 E PCE Plume

0700 CDM Smith Onsite

0730 H+S Tailgate

Topics: traffic, slips trips falls

Attendees.

Joe Miller	CDM Smith
Ben Carreon	↓
Pete Rosenbaum	Holt
Scott Lampman	↓
Mike Lewis Jr.	↓

0745 Opened up fencing at site, moved casing over to staging area.

SVP-39 filter pack 127.75 - 133.5

0935 SVP-104 filter pack 102.0 - 107.0

SVP-60 filter pack 62.9 - 57.0

SVP-32 filter pack 35.1 - 29.7

1015 Hydrated chips before SVP-60 filter pack backfill to 65'

1120 Holt Returns w/ Bentonite chips onboard

1150 Resume adding chips after lunch

1207 ~~Start~~ Bentonite to 62.9' Begin adding sand for SVP

1213 Sand to 57' add Bentonite

1228 Pull Remaining 8" casing

Location SLC VA MW-24 Date 5/20/20

Project / Client 700 S 1600 E PCE Plume

1301 - chips to 35.1' 5/8" Hydrated Bentonite Chips

1325 - Resume adding Sand

1341 - Sand to 29.7' add chips to 28'

1350 Prep for grouting

~~1503~~ ~~1455~~ Started grouting

5/20 1556 Grout to 3' casing pulled

7 Batches grout w/ 10/20 Sand

1130 Load Equipment/Mob to Laydown

1846 Mob from laydown.

Holt/CDM offsite

5/20/20

Rite in the Rain

Location SLCVA Laydown Area Date 5/21/20

Project / Client 700 S 1600 E PCE Plume

0700 Cam Smith onsite.

0730 Hess Tailgate

Safety topics: ~~Heat~~ avoid tracking mud, ~~Slips~~ slips trips and falls.

Attendees:

Joe Miller	CDM Smith
Ben Conover	↓
Pete Rasmussen	Holt
Scott Langman	↓
Mike Lewis Sr.	

SOW: Decon, mob equipment, drilling, restroom

0745 Holt Mob fencing to Laydown area

0800 Setup decon Pad decon 4" casing

1000 Mob Rig to MW-30 location

1020 Off load casing/Stage Rig e Site

1040 Prep for decon drill Rods/core Barrel

1130 C. Aguilar Issues Permit for MW-30 ~~receives permits~~ for MW26 and 24.

1135 Call to Mr-C about Augustyn Completions, Delayed @ Foundry expect deliver Tuesday or Wed. Could use standard completion if Approved

Location SLCVA Date 5/21/20

Project / Client 700 S 1600 E PCE Plume

1220 Holt Breaks for Lunch

1230 CDM Install BMP by storm drain @ MW-30

1250 Holt Return from Lunch continue decon

1325 Holt mob Rods/casing to MW-30

1345 toilet cleaner on site

1350 Resume decon 6" casing

1400 Holt offsite for gasoline for pressure washer

1430 Holt Returns to continue decon

1525 Mob 6" casing/Equipment to drill site

1535 Off load Equipment @ MW-30 Call from Bridge about schedule Sunny side parts clearing

1600 Tear up/Mud tub install Setup work site Fencing

1630 Fuel equipment clean up tailgate mtg

1700 offsite

Rite in the Rain

Location SLCVA MW-30 Date 5/22/20

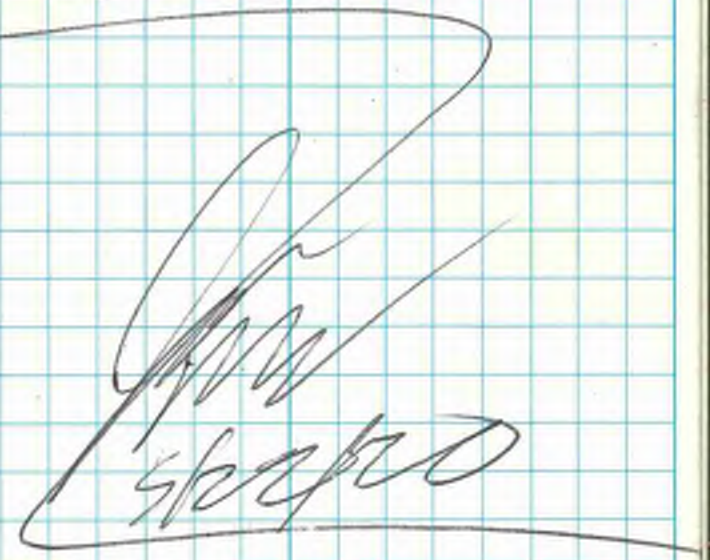
Project / Client 700S 1600E PCE Plume

0700	Onsite & Convoys load up Equipment
0730	H+S Tailgate @ MW-30
	Topics: Fatigue, Crush Hazards, work safe Homesafe
	Attendees:
	Ben Carreon - CDM Smith
	Joe Wolfe - CDM
	Scott Longman Holt
	Mike Lee
	Pete Rosenberg
	Tasks: Begin MW-30; wrap up site for days off
	52-75°F chance of afternoon Storms
0750	collect Blank Core Barrel Core Barrel [EB22-SB052220]
0800	TB32-SB052220 @0750
	Warm up Rig / Inspections
0812	Begin 4⅛" Core Barrel + 9" Casing
0845	MW30-SB052220-15
0930	MW30-SB052220-29 @0930
	FD20-SB052220 @0800 (29' Recent)
1015	MW30-SB052220-48 @1015
1125	MW30-SB052220-53 @1125

Location SLCVA MW-30 Date 5/22/20

Project / Client 700S 1600E PCE Plume SA

1200	Halt Breaks for lunch
1240	Halt Reamers
1315	MW30-SB052220-74 @1315
1430	MW30-SB052220-95 @1430
1530	MW30-SB052220-102 @1530
1555	Halt Mob to laydown area to dump Hopper
1600	Ben to Fedex Joe to Connex
1645	Halt off site
1700	CDM off site



Rite in the Rain

Location SLC VA Date 5/26/20

Project / Client 700 S 1600 E PCE Plume

Weather: 68°F, light breeze, mostly Sunny, some clouds

0850: Arrive on site (Kimberly Yauk) Will be meeting Mark Augustyn to pick up surface completions for MW-24 and MW-30 (?)

0900: Head to Sunnyside park to check on cone placement. Call en route saying MP Environmental is already there to drop off the soil rolloff bin. It gets placed in the most southwest corner. Landscaping crew is out mowing the lawn.

0920: Photograph bin and place cones then head back in to the site.

0930: Call from the delivery guy (Richard) with the 21st tubing. We're held up by a semi truck making a delivery. Joe says to leave the pallet by the laydown area.

0940: Mark Augustyn on site. He drops two completions at the

Location SLC VA Date 5/26/20

Project / Client 700 S 1600 E PCE Plume

0940 Cont'd: laydown area and leaves. He'll send the invoice to Neil.

0945: Pallet is dropped off. Richard leaves the site.

1000: Blake arrives on site from Wasatch. He reads 55HP and signs it. We check out the secondary containment and poly tanks. Trash pump has ~~5 gal~~ fuel.

1020: Holt is on site at the laydown area. Jeff comes over to find us.

1030: H&S tailgate

Attendees:

Kimberly Yauk	CDM
Blake	Wasatch
Jeff Jones	Holt
Alex	Holt
Jacob	Holt

1045: Blake oversees completions and I take Jacob to the badging office.

1115: 2 Drillers set up at MW-24

5/26/20

Rittenhouse

Location SLC VA Date 5/26/20

Project / Client 700S 1600E PCE Plume

1115 Cont'd: Hole is filled with bentonite, not concrete and it is not set yet. Drillers will have to dig some out.
I drive around to check out the other crew's site.

1145: Return to MW-24. Crew is mixing concrete. Blake and I go to Sunnyside Park to check out the sites and meet Badger (expected soon)

1200: Badger arrives - Rich Gonzalez and Daniel Arellano.
We show them the holes and call Jeff over to confirm locations are OK.

1230: Holt has issue with PVC heights at MW-26 - one is too low and 3 are too high. For now they should first clear soil from IDW yard to make more room for badger.

1345: Holt finishes removing soil. Badger finishes clearing MW-29.

Location SLC VA Date 5/26/20

Project / Client ~~V~~ 700 S 1600 E PCE Plume

1445: Holt gets pea gravel to fill open hole. Drop off some fencing.
Badger clears MW-31 to 10 feet (PID = 0.6 ppm) (MW-29 was 0.3 ppm) and 8.5 feet deep - very gravel/ ~~to 5/26/20~~ ~~cobble~~ cobbled.

1500: Badger goes to IDW yard but will wait for us before unloading. Holt fills boreholes with pea gravel (MW-29) and pea gravel and bentonite (MW-31)

1530: Meet Badger at IDW yard empty water into the secondary containment area. Blake Downey leaves the site. (Wasatch)

1540: Nolan Konan arrives on site.

1630: Tried pumping water off - not working. Dump soil. Badger is done.

Rite in the Rain

Location SLC VA Date 5/26/20

Project / Client 700 S 1600 E PCE Plume

1650

~~1640~~ 1640 5/26/20: Badger leaves site. Head to MW-26. Holt put fencing around both drilling locations. I bring Zist short connecting pieces and we lower 3 stickups and raise one. Last stickup is high. Jeff thinks the completion will just have to be above ground. Will buy 2x4 wood and plywood for the park.

1730: Close up for the day. Drillers leave site. Head to Connex with Nolan. Show him the PIDs and Color-Tec.

1820: Swing by laydown area and badging office so Nolan knows where they are.

1830: Leave site for the day.

5/26/20

Kelly York

Location SLC-VA Date 6/1/20

Project / Client 700 S 1600 E PCE Plume

0700 - E. Morris onsite at MW-29 for tailgate #45 meeting w/ CDM Smith crew and Holt drill crew #2.

0800 - Weather 76° F Partly cloudy-clearing with high low 90s F. PPE Level D

0815 - Followed Nolan to badging officer.

0910 - Photo taken waiting for badge, tour of site laydown and connex boxes. Move sampling equip to drill site.

0950 - Picked up VA badge and make to MW-30 location. Waiting on Holt drill crew.

1015 - Nolan to store for supplies

1120 - Nolan and Frank to MW-29. Observed magnetic susceptability readings

1210 - Break for lunch while drill crew decon.

1240 - Back onsite @ MW-29. Still WOD for MW-30 continuation

1312 - Push ahead sampler down @ MW-29 -250'. WL = dry in sampler @ 248.6 bgs WL = 154.52 bgs behind rods in csg.

Rite in the Rain

Location SLC - VA Date 6-1-20

Project / Client 700S 1600E PCE Plume

MW-29

1408 - Word from Drill crew #1 they have arrived at SLC airport and will take taxi to site.

1500 - Pete and Mike arrived onsite and Scotty will arrive tonight to complete drill crew #1. They will only check on equipment to make sure ready to drill @ 110' tomorrow AM

1525 - Drill crew #2 will continue w/ 10' core @ MW-29 after no water sample from 250' push. (3 attempts)

1620 - Core retrieved MW-29 250 to 260 and processed w/ PID readings and soil sampling @ 256' hot zone saturated.

1710 - Frank and Nolan to perform Color-Tec analyses on water samples collected this morning.

1805 - F. Morris offsite

Frank R. Morris

Location SLC - VA Date 6-2-20

Project / Client 700 S 1600E PCE Plume

MW-30

0650 - F. Morris arrived onsite at MW-29 for tailgate meeting. Drill crew #2 onsite.

Weather: High expected upper 80°F not as hot today, clear to partly cloudy

PPE: All activities Level D

0705 - Moved to laydown for safety briefing and loading supplies.

0745 - Mobe to MW-30 setup to drill @ 110'

0800 - Inspect and fuel drill rig

0805 - Warming up will install 8"Ø casing to 110 clean and then start drilling core.

0825 - Casing down to 100' bgs. Thread popped. Shut down temp. to check w/ Jeff to borrow coupling. [Mark onsite w/ VA 9915 and will]

0835 - Retrieved new coupling drill out w/ core barrel to 120'

0940 - PID no air flow error. Nolan to retrieve another PID from Kim

0945 - Start core run #13 120'-130'

1015 - Retrieved Run #13 [MW-30 SB01@120']

1025 - Started core run #14 130-140

Rite in the Rain

Location SLC - VA Date 6-2-20

Project / Client 7005 1600E PCE Plume

MW-30

1105 - Retrieved core run #14 to ~~140'~~ 136'

Note: BZ @ background 0.1 ppm

Drillers encountered hard zone and shortened run. Sample MW-30-SB060220135

1115 - Started Run #15 (136' - 140')

1130 - Retrieved core 136' - 140'

1140 - Started Run #16 (140' - 150')

1202 - Retrieved core 140' to 150'.

1215 - Break for lunch (Holt) continued logging and magnetic susceptibility readings

1245 - Drill crew started to advance 8" Φ csg to 130' and 7" Φ csg to 140'.

1305 - Switch to 6" Φ core barrel for Run #17 (150' - 160')

1315 - IDW disposal run after drilling to 160 feet will delay retrieval.

1345 - Retrieved core 150 to 160'

Sampled MW-30-SB060220-151

1420 - Retrived core 160 to 170' sampled MW-30-SB060220-169 higher PID 104.7 ppm and magnetic 4.22

FP

Location SLC - VA Date 6-2-20

Project / Client 7005 1600E PCE Plume

MW-30

1525 - Retrieved core 170' to ~~180~~ 179' for Grab

1630 - Retrieving core 179' to 190'

Note: Nolan to process samples and ship for quick Turn Around

1700 - Retooling drill rig and secure rig. Drilled to 190' bgs today

1705 - Nolan back onsite to help with photos of last 2 runs of core

*Note: Sample MW-30-SB060220-178 cored @ 1525. Will ship on 6/3/20

1745 - Driller clean and secure MW-30 site.

1800 - F. Morris and Nolan make to MW-26 to meet Kim and replace Zist riser that was to high for installing flush mount surface completion. Kim documented procedure with photos.

1845 - F. Morris offsite.

Frank R.

Rite in the Rain

Location SLC - VA Date 6-3-20

Project / Client 700 S 1600 E PCE Plume

MW-30 Weather: High expected mid 90's, Sunny

0635 - F. Morris arrived onsite. Reviewed daily report from yesterday

* [Highest PID reading on 6/2/20 cores was 168 ppm from 126' to 127'.]

0650 - Drill crew #1 arrived onsite at laydown area. Note: 7" Ø csg was installed to 180' late yesterday

0712 - Kim arrived for tailgate meeting and HES briefing.

0735 - Holt Drill Crew #1 will install surface manhole completion @ MW-26 before continuing drilling @ MW-30

0852 - Completed surface manhole @ MW-26 Moke to MW-30 and setup to drill.

0915 - Tagged borehole @ 181' (collapsed below to 190') - Dry to tag point

0925 - Trip in with core barrel. Slough cuttings dry / BZ = 0.0 ppm

1008 - Retrieved core 190' to 195'

1040 - Retrieved core 195' to 200' Note: large rock at bottom (pulverized)

1140 - Retrived core 200' to ~~205'~~ 206'

1205 - Break for lunch

MW30SB060320-204 *

Location SLC - VA Date 6-3-20

Project / Client 700 S 1600 E PCE Plume

MW-30

1300 - Back to MW-30 and retrieving the next core run (206' to 210')

1325 - Drill crew to dump IDW drill cuttings.

1405 - Retrieved core 210' - 218', Started PID and mag readings but both instruments crapped out. Will hold off logging this run. Nolan to get the extra PID from Kim.

1430 - Drill crew #1 proceeding w/ coring next run from 218' bgs.

1450 - Nolan back onsite w/ Mark VA representative. Nolan to process samples.

1455 - Retrieved @ 1515 core 218' to 230'

* Sampled MW-30-SB060320-222

1605 - Retrieved core 230' - 235' Water on core barrel. Pete says water was probably 240 to 241 based on drilling. Drill crew will advance 7" csg to 240' and then clean out before pushahead in the morning.

1635 - Retrieved core 135' to 145'

* Sample MW-30 SB060320-237

1735 - F. Morris offsite

Rite in the Rain

Location SLC - VA Date 6-4-20

Project / Client 700S 1600E PCE Plume

MW-30 Weather: High 90°F Mostly sunny

0645 - F. Morris arrived onsite at laydown area.

0700 - Kim arrived at laydown for daily tailgate.

0720 - Mobe to MW-30 and setup to check WL in casing.

0730 - Warmup drill rig. Tagged wet sediment in casing (up (233' bgs) averaging Pete will clear out hole and see what WL we can observe.

0746 - Trip rods in to clear out slough.

0805 - Calibrated YSI for pH 2-point # 17099 Pine Environmental

0820 - Tripped core barrel out but tagged bottom @ 235' w/ attempt to clean just below 7" csg 242'. (Wet)

0825 - Trip back in to attempt cleanout Measured BZ - 0.0 ppm

0850 - Note: Another company HSA rig is setting up to drill ~100' West at a trucking facility. Passed word on to Kim.

0905 - Tagged bottom @ 238' bgs

0910 - WL = 227.7' bgs inside csg.

Location SLC - VA Date 6-4-20

Project / Client 700S 1600E PCE Plume

MW-30

0915 - Drillers to get teflon tape O-ring on pushahead sampler.

0930 - Decon pushahead sampler and collected field blank EB26-GW060420

0950 - Probe down to depth 237-238' WL = 230.8' bgs. Will collect sample MW-30-GW060420-237 very turbid!

pH = 6.64, temp = 18.56, ORP = -118.8

cond = 1,430 mS/cm DO = 4.52

Note: sample was very turbid and unable to fill 40-ml VOA vials w/o air and fines entrapped.

1105 - Trip out rods for Run# 29

1115 - Retrieved core (245'-250') and (250'-260') upper core barrel / lower core barrel

1210 - ~~Retrieved core for~~ Csg @ 260' and cleaned out to depth

1215 - Break for lunch

1245 - Drillers to move IDW and decon pushahead tool.

1248 - Checked WL in casing @ 236.4'

1310 - Drillers back from decon pushahead tool. Start tripping in for push @ 260' bgs

Location SLC-VA Date 6-4-20

Project / Client 7005 1600E PCE Plume MW-30

Note: Drillers use teflon tape around O-rings to help seal screen from dropping during installations.

1335 - First attempt at opening screen did not produce water. Tried vibrate

1355 - Second attempt did not yield water @ 261'-262'. Will trip out and inspect sampler.

1420 - Screen caked w/ mud (no water) screen was fully open - Photo taken

1430 Will trip in core barrel for 10' run.

1505 - Retrieved core 260'-270' Sampled MW-30 SB060420-266

1520 - Drillers adding 6" casing to 270 bgs.

1600 - Tripping in 6" rominid core barrel.

1645 - Retrieved core 270'-280'

1705 - Drillers refueling rig and will decon pushahead tool.

1715 - Cleanup site @ MW-30

1730 - Check in w/ Kim at Connex

1755 - F. Morris offsite.

Frank K. Morris

Location SLC-VA Date 6-5-20

Project / Client 7005 1600E PCE Plume MW-30

0630 - F. Morris arrived onsite. Proceeded to connex to load equip.

0650 - Calibrated PID #045671

0715 - Arrived at laydown for tailgate & Health & Safety meeting.

0735 - Mobe to MW-30 to setup. Blake (Wasatch) arrived for tailgate @ 0730. Blake offsite to get ice and water.

0800 - Drill crew #1 warming up drill rig. Blake back onsite MW-30.

0805 - Tagged bottom at 278'

0810 - WL = 230.7' bgs. Prep. for pushahead tool @ 278'-280'

0825 - Start tripping in push tool.

0845 - Sampler down 239-280 WL = 234' bgs. in pipe/rods.

0850 - Sample MW30-GW060520-280

0915 - Trip in with core barrel.

1000 - Retrieved core 280'-290' bgs. PID 0.0

BZ = 0.1 to .4 ppm

Sampled MW30-SB060520-286 MS/MSD

Note: saturated zone 288.5 to 290' bgs.

1100 - Retrieved core 290' to 300' bgs.

1125 Drillers break for lunch

Location SLC - VA Date 6/5/20

Project / Client 7005 1600E PCE Plume MW-30

1130 - Equipment blank sampled off of pushahead probe EB27-GW060520

1200 - Install push sampler to ~300 feet. Boring tagged @ 297' due to some collapse.

1245 - Sampled MW30-GW060520-298 pH: 7.02

1310 - Drillers swap out push tool for core sampling. 5" bit

1415 - Retrieved core @ 300' - 310'

1515 - During retrieval of core 310'-320' (Rain plug) lots of water in rods - up inside

1520 - Retrieved core 310' - 320' top 3' missing (washed out?)

1520 - Took opportunity sample @ high PID reading > 400 ppm

1550 - Drillers will case off open hole and prepare to GW sample on Sunday @ 320'

1730 - Site secured F. Morris offsite

Frank R. M

Location SLC - VA Date 6/7/20

Project / Client 7005 1600E PCE PLUME MW-30

0630 - F. Morris arrived onsite. Note that Connex area gate locked at entrance.

0640 - Drillers are at laydown area.

0700 - Met Betsy at Connex for loading equipment. Met Kelby Diepner (intern from Helena).

0715 - Tailgate H+S briefing

0745 - Move to MW-30 for setup to sample GW @ 320'

0805 - Start tripping in w/ push tool

0900 - Sampled MW30-GW060720-320

0920 - Start core run # 3 @ 320' bgs

0958 - Tripping out rods

* 1010 - Lightning, stop work!

1135 - Pickup site after storm blew through ripping up plastic sheeting and tent. Mag Susceptibility meter got wet. Tried to let it dry out.

1145 - Continue to trip core barrel.

1156 - Retrieved core 320' to 330'

1245 - Retrieved core 330' to 340

~~Sampled~~ MW30-SB060720-336

1340 - 6" csg to 340 + cleaned out

Location SLC. VA Date 6/7/20

Project / Client 700 S 1600 E PCE Plume MW-30

1345 - Drillers to decon pushahead tool. Light to moderate rain

1410 - Sampled equip blank on push tool EB28-GW-0720

1420 - Trip push tool to 340' bgs

1515 - Sampled MW30-060720-340

1530 - Retrieved pushahead tool and set up for last core retrieval

1620 - Upon retrieval of last core run from 350' the core barrel jammed 1' off the bottom. Drillers attempt to break free but didn't want to reach a breaking point. Decide to leave overnight to see if it loosens up. Secure site and return equip.

1630 - Back to connex to scan logs. Betsy used her phone to scan.

1745 - F. Morris offsite.

Ground Rod

Location SLC - VA Date 6/8/20

Project / Client 700 S 1600 E PCE Plume MW-30 Weather: 41° F light rain

0645 - F. Morris arrived onsite. No one at connex (locked gate) Reviewed completion recommended intervals @ MW-30

0655 - Kelby arrived onsite @ connex. Drive to laydown area.

0705 - Drill crew #1 arrived onsite

0715 - Betsy arrived @ laydown area for tailgate and HTS meeting.

0740 - Mobe to MW-30 and warm up Terrasonic rig and attempt core retrieval

0810 - Core barrel loosened up and start tripping out. Work on Jaws

0925 - Retrieved core 340' to 350'

1005 - Betsy arrived and helped process last core run and sampled highest PID zone @ 343 for ferrous iron and filled soil bags for future mag. susep.

1011 - Neil out to MW-30 to discuss completion intervals. We both agree that the last 10' core was not likely to yield much water.

1050 - Mark Yalom (VA) onsite @ MW-30

Rotten on the Ranges

Location SLC - VA Date 6/8/20

Project / Client 700 S 1600 E PCE Plume MW-30

Note: Waiting on decision and VA/USACE concurrance for final completion interval.

1100 - Kelby to pickup picture badge F. Morris to connex to return supplies. Drillers will mobe completion materials to MW-30 and decon.

1400 - Drill crew back onsite after running errands. Mobe to laydown

1420 - Checked out Rowland School for access to potential drill location w/ Drill Crew #1. Only access w/o breaking down chain link fence is through cemetary. Note: Maintenance person said it is private "No Trespassing."

1515 - F. Morris offsite.

Frank R. Morris

Location SLC - VA Date 6/9/20

Project / Client 700 S 1600 E PCE Plume MW-30

0635 - F. Morris arrived onsite @ connex. Kelby onsite will work w/ Betsy

0650 - Betsy arrived to open connex. Retrieved table for Betsy and loaded ZIST parts for well const.

0710 - Laydown for tailgate and H&S meeting.

0745 - Mobe to MW-30 to setup for well construction. Call for approval of completion interval expected about 0830 hrs.

0930 - VA/USACE gave acceptance for completion interval @ MW-30 on call w/ Neil Smith.

0945 - Drill crew # warming up rig

Note: Lower screen designed to span 318' to 327' bgs. Middle screen to span 282' to 292' bgs. Upper screen interval 240' to 250' bgs.

Measured materials

Sump = 2.25'

Screen = 10'

ZIST reciever = 0.22'

1005 - Drillers adjusting tag line (added 100' to end)

FRM 6/9/20

Ritter in the Rain

Location SLC - VA Date 6/9/20

Project / Client 7005 1600E PCE Plume MW-30

1020 - Start well construction. Check wireline. Tag depth @ 350' openhole

1025 - Adding bentonite med. chips Pure Gold 50lb bags ~~(1)~~ (2) tag 334'

1040 - Pulled 6"ϕ csg. back to 330'

1048 - Add ½ bucket bentonite pellets ~~Pel-Plug~~ "CETCO 3/8" Coated Tablets" or ¼" Pel-Plug" (non coated) to 330' bgs.

1055 - Started adding sump/screen/riser E. Morris to scrounge up 5' riser so as not to mix up short ones and sump (2') ones. Zist C Deepest

1132 - Well + riser hung at 329.2' bgs. Start adding filter pack (Washed Silica Sand 10/20) 50 lb. bags ||| + ½

1215 - Drillers had to pull well string up 2' to release hanger coupling. Then dropped to proper level.

1250 - Pulled 6"ϕ Casing (10') Top of sand @ 314.4' bgs. Added ½ bag more. 313.8' top of filter pack. 313.8'

1305 - Add coated pellets up to 295' bgs No.# Buckets ||| ½

Kgr

Location SLC - VA Date 6/9/20

Project / Client 7005 1600E PCE Plume MW-30

1310 - Pulled another 10' 6"ϕ csg to 310' bgs

1330 - Lost spliced tagline 100' in bentonite @ ~~303~~ 304' bgs. Go fishing!

1350 - Drill rig crew was successful at retrieving lost tagline.

1357 - Pulled 6"ϕ csg to 300' bgs

1405 - Tagged bentonite @ 297 added ½ bucket of pellets and tagged bentonite @ 295.2'

1420 - Install middle well Zist B sump/screen/Zist reciever and riser ||| ||| ||| ||| ||| ||| [+2' to +3'] keep well hanging in working position

1445 - Add filter pack ~~#1~~ #2 Delay hooking csg.

1515 - Pulled 6"ϕ csg. to 290' bgs Trouble changing out schacles between casing inline + outline runs. Well dropped below completion interval. Will need to hook up and lift through some sand pack ~ 1.5' - successful

1535 - Continued to add filter pack Tagged sand @ 285' bgs. Pulled csg 3 to 5' and cont. adding sand ||| ½

1555 - Pulled 6"ϕ csg to 280' Kgr

Rite in the Rain

Location SLC - VA Date 6/9/20

Project / Client 700 S 1600E PCE Plume MW-30

1600 - Tagged sand @ 279.5'. Will add one more half bag.
1605 - Tagged @ 275' will vibe sand pack down and re-tag after compaction.
1610 - Top of sand @ 281' add one more bag.
1615 - Top of filter pack Zist B medium depth @ 278.9' bgs.
1625 - Pulled 6"Φ csg to 270' Adding bentonite pellets up to 253' bgs.
1630 - Drill crew will leave pellets to swell overnight with ~3' open hole and check in the morning. Tagged bentonite pellets @ 273' W.I.P install ZIST(A) tomorrow.
1645 - Checked in w/ Neil and Betsy with an update on MW-30.
1700 - F. Morris offsite

Location SLC - VA Date 6/10/20

Project / Client 700 S 1600E PCE Plume MW-30

0640 - F. Morris arrived onsite at lay down area.
0700 - Drill Crew #1 arrived onsite.
0705 - Mark Yalom arrived for tailgate meeting and plan for today.
0725 - HSS Briefing completed.
0740 - Mobe to MW-30 for ZIST(A) completion. Tagged bentonite @ 273'
0750 - Warming up Terrasonic 150 #1158
0810 - Continue adding bentonite pellets to 253' bgs. (Pel-Plug)
0815 - Pulled 6"Φ csg (260')
0830 - Tagged bentonite @ 264' bgs.
0850 - Tagged bentonite @ 257' bgs after pulling 6"Φ csg (250') Added one more bucket of pellets
0900 - Tagged bentonite seal @ 253.7' Drillers will begin hanging well string sump/screen/and riser (Note: no zist reciever for shallow completion)
0940 - Started adding filter pack @ 253.7' to at least 237'
1000 - Prep to pull remainder of 6"Φ csg. (7"Φ set @ 240')

Location SLC - VA Date 6/10/20

Project / Client 7005 1600E PCE Plume MW-30

1020 - Sand @ 240' bgs. Drillers to pull remainder of 6"Φ csg after adding one more bag sand.
1118 - All 6"Φ csg out and tagged filter pack @ 242.4'. Adding sand
1125 - Tagged sand @ 237.8' bgs. Will add sand to 236'. Drillers to move pipe rack and 6" csg to decon and laydown. Lunch break
1238 - Back to MW-30 Tagged top of filter pack for ZIST(A) @ 236.2' bgs.
1250 - Added bentonite pellets for seal
1300 - Pulled 7"Φ csg to 230'
1305 - Seal up to 230' bgs. / Will use rest of pellets to complete seal before chipping up in lieu of grout.
1315 - Pulled 7"Φ csg. (220')
1325 - Pulled 7"Φ csg (210')
1335 - Bentonite pellets to 210' bgs then chips up w/ intermittent hydration
1350 - Pulled 7"Φ csg. (200')
1420 - Note: While pulling 7"Φ csg. ~180' string of casing and for winch line pulled up all three well completions several feet and were exposed after disconnect csg joint. Exact amount is unknown until riser casing is cut and extruded from casing joint. Only way to break down.
1435 - Notified Neil Smith and Betsy Bath. Halt drill crew contacting their officials. If pulled, as it appears, the completions are completely destroyed.
1458 - Discussed options w/ Neil but don't see any good ones. Best might be to drill out w/ larger diameter tooling but would be risky @ depths greater than 300' in these colluvial sediments - tight conditions.
1530 - Took photos of cut and extruded risers; Sounded bottoms but either 4 to 5 feet off bottom for ZIST(A). ZIST(B) could not get to further than ~280' (possible break at depth).
1648 - Neil arrived to discuss MW-30 options. We think best option is to leave 8"Φ csg - at 130' and ream out w/ 7"Φ down to the 330' (or deeper if poss.) if they have enough 7" casing.

Location SLC - VA Date 6/10/20

Project / Client 7005 1600E PCE Plume MW-30

Rita in the Rain

Location SLC - VA Date 6-10-20

Project / Client 7005 1600E PCE P

MW-30

1610 – Hall crew #1 cont. to pull 7"ϕ csg. 120' joint. Well riser is still coming up w/ casing. Must be bridged.

1620 – Pulled 7"ϕ csg. 110' joint

1715 – All casing 7"ϕ pulled and retrieved most of the PVC well materials except one screen w/ unknown length of riser. Photos taken of bridged and twisted PVC riser materials. Bridging occurred rather high in casing 20'(+). Photo taken of retrieved casing 25 joints and 26th w/ core bit on the rig.

1725 – Drill crew #1 will check on quantity of 7" for reaming potential. Will back onsite on call w/ VA personnel. Operations end for the day @ MW-30.

1745 – F. Morris off site

Frank K. Morris

Location SLC VA Date 6-12-2020

Project / Client 7005 1600E PCE Plume

MW-30 Build (Kriel Keller/Weatherford)

1100 – Starting to build MW30 hole open to 331'

Lower Screen will open 317' to 327'

middle screen: 282' to 292'

Upper screen: 240' to 250'

- First well: 2' sump then 10' screen, then 2 ft Riser, then 31 +5' +2' pcs of Sch 80

to Bottom of Sump = 329' ~~(tagged)~~

to First 'C' (depth) → 2' of sand below sump

1130 – 'C' set. adding Silica Sand (washed Silica 10/20 Sieber)

~~HH HH HH HH HH~~

1220 – Tagged 328' (5 bags), pulling 7" casing up about 4', rigged

1239 – tagged 328' after 9 bags total

1246 – tagged 328' after 10 bags total. will pull casing up and tube more

1250 Neil Smith (Con Smith) new logbook author. Continue adding sand @ MW-30 E

1405: Sand bridge. Plan to vibe to loosen.

1410: Sand @ 313'. 25 bags total. Add Bentonite pellet seal - CETCO

1430: Bentonite at 256' 4 buckets

1455: Begin setting MW-30 B PVC

Location SCC VA Date 6/12/20

Project / Client 7005 1600E PCE

MW-30

MW-30B PVC - 2' sump

10' Screen (20-slot) - 1

10' Riser - 28 2IST Receiver - 1

1505: Sign logbook to Kiel Keller WDS

1505 - Kiel Keller Wasatch talking over

1530 - MW-30B pvc is set, will start Sand pack - washed silica 10/20, 50 lb bags

11

1600 - Starting Sand pack for MW30B bottom of Sump at 294' Bgs

1620 - Something seems to be stuck in the bottom of the casing. As the casing is being pulled out, their tag tape is hitting something at the same depth as bottom of casing. pvc wells are staying down at depth, but cant get tag tape through. Drillers will vibe some more to try and remove blockage.

1640: Neil Smith is logbook author. DS

Ik. Keller offsite.

Tagging sand at MW-30B.

DS 6/12/20

Location SCC VA Date 6/12/20

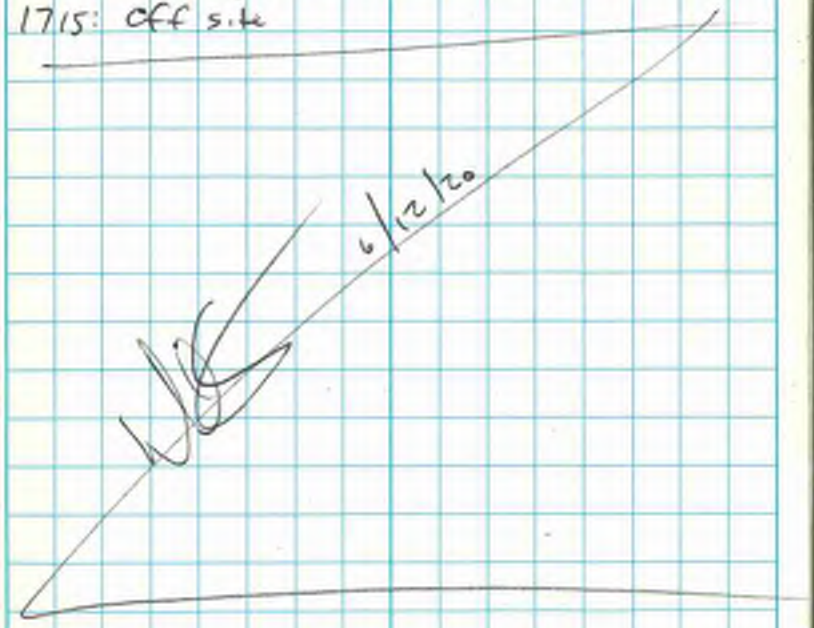
Project / Client 7005 1600E PCE

MW-30 Install

* St.11 tagging sand at bottom of casing ~280'. Plan to remove next section of casing + re-measure.

1650: Casing removed- 270' casing in ground, tag depth 273' Likely natural formation collapse and minimal filter pack around screen. Plan to leave for now, re-measure on Sunday Am. If open to a deeper depth, can add more filter pack if needed.

1715: Off site



Rain in the Rain

Location SLCVA Date 6/15/20

Project / Client 700S/600E PCE Plume: MW-32/30

0645 CDM Onsite

0715 H+S tailgate

Topics: Covid-19, Communication, Lifting

Heat stress

Attendees:

J. Milke — CDM Smith

Whitney treadway

Kelby Depew

Blake Dunn — Nasatch

Scottie Bengamen — Holt

Michael Lew

Pete Raening

0730 ~~MW/B~~ Holt — Tasks: ~~Bor~~ Finish MW-30 construction, Decon MW-32

Decon

0800 Head to MW-32 for Precleans

0815 Mike from ELM locating Services onsite clear of Marked gas Line

0905 Badger Onsite H/S Talk

Jaime Preciado

Dena Gonzales

0920 Setup for Vac clearing

0930 Holt delivers sand to MW-32 for Backfill

Location SLCVA Date 6/15/20

Project / Client 700S 160E PCE Plume

0940 Holt heads ~~off sit~~ JSA 6/15/20 Back to VA Compound

1030 Head to IDW Yard to dump cuttings

1100 Badger offsite

Join w/ Whitney in Bank 2

6/15/20

Rite in the Rain

Location SLC VA Date 6/17/20

Project / Client 700 S 1600 E PCE Plume

weather 50-65°F chance of Rain

0750	Holt Development Crew Onsite
	Kiel Kelle Escort to Badging office
0810	Calibrate YSI # 036520
0900	Setup MW-27 pressure wash
	Swab/Bailer
0935	DTW 186.82 Screen 200-220
	DTB ~~214~~ Bags Shifted 215 220'2"
	H/S Tailgate
	Topic Lift/Crush Hazards
	ATenders
	Joe Miller - CDM Smith
	Kiel Kelle - ~~Holt~~
	Ronnie Barrett - Holt
	Justin Ramirez - Holt Inspector
1005	Begin Bailing
1030	Begin Swabbing
~~1105~~ 1105	220.1" Tag TD
1110	Bail Silty Let settle
1140	Resume Bailing Joe miller
1200	lunch Break
1230	lunch over, bailed one more time, very little sediment
1240	Setting up to pump

Location SLC VA Date 6/17/20

Project / Client 700 S 1600 E PCE Plume

1330	- Holt tips over Hoppa w/ ~20gal water/silt
	Sorbent Pads were deployed and Sand Bags @ storm drain
	less than 10 gallons Reached drain
	Marc Valan/UA - Carlos Agnate
	Safety were Notified
1340	Holt scrapes up Remaining Silt/water
1345	Call to Neil Smith to Notify
	Request Analytical data for MW-27 sent to UA
1406	186.90 DTW B65
1407	Pump On
1454	Pump off 360gal total
	Final turb 7.57
1505	Begin to pull pmp
~~1515~~ 1530	Pump stopped out of MW-27
1535	Tag Bottom 220'2"
1630	Holt crew offsite
	Collect Blank off decon'd
	Swab EB32-6W061720
	TB42-6W061720
1745	CDM offsite

Rain in the Rain

Location SLC VA Date 6/18/20

Project / Client 700S 1600E PCE Plume

0645	Onsite
0715	H+S tailgate
	Topics crush points Spills
	Traffic
	Attendees
	J. Mills — CDM Smith
	Whitney Treadway
	Kiel Keller — Wasatch
	Pete Rosenburg — Holt
	Scottie Lampinen
	Mike Leni
	Ronnie Burnett
	Justin Rankin
0745	Ask Boilerplant guys to use steam little truck By well
0750	Kiel Keller (wasatch) taking notes
0750	Set up at MW 28 with developers Screen 209.5 - 239.5 (should be)
800	184.58 water tagged bottom tagged at 239' 11" bgs felt like mud in battery
0815	swabbing
0955	done swabbing, will let settle

Location SLC VA Date 6/18/20

Project / Client 700S 1600E PCE plume

0905	Nothing to settled out, will bail a few times
0910	Bailing
0920	Bailed 3 times, just a small amount of PVC shavings, no sed. will let settle up to pump now
1020	water depth: 184.55 starting to pump
1040	stopping to empty tote
1110	starting to pump again Holt says 10 gpm like last time but calculation from Time to 250 gal says ~8.3 gpm
1200	EB - GW0C1820 - from Swab - pumping done at 1151 - 640 gal total - going to empty tote now
1240	Developers are moved to MW 28. Tanks tokes empty and we are ready to start
1245	MW28 Screen: 140' - 210' bgs DTW: 185.73 TD: 209.3' bgs tagged 225 gals total pumping needed
1300	Swabbing

Rite in the Rain

Location SLC VA Date 6/18/2020

Project / Client 700 S 1600E PCE Plume

1341 - done with 1st swabbing. Surely came out quite dirty.

1343 - Bailing.

1350 - No large solids, will set up to pump. Bottom 5ft. still feels hard, no sediment apparent

1430 - Pump set, will start pumping soon
- DTW: 185.95

1436 - Started pumping w/ 10 gpm

1520 - Done pumping, ~373 gallons total

1525 - Holt breaking down pump. I will go empty tote

1620 - EB35 - GW061820 from Bailer

1620 - Totes empty

1700 Holt development crew offsite

6/18/20

Location SLC VA Date 6/25/20

Project / Client 700S 1600 E PCE Plume

(continued from Book 2) MW-32

76°F, overcast, no wind

0645: Arrive on site. Maria Day already at Connexes. Calibrate PID and pick up water level meter. Fill alconox containers

0650: Breanna and GW crew on site.

0715: H&S Safety Meeting

Attendees

Kimberly Yauk	CDM
Breanna Moak	CDM
Maria Day	CDM
Jeff Jones	Holt
Aaron Kuper	Holt
Alex Langdon	Holt

0730: Drillers pick up fencing from MW-30 and storm sewer sock.

0800: At MW-32 set up and warm up rig. Water is at 98 feet bgs and borehole is at 150 feet.

0850: Drillers bag 150 - 160' core. 160 feet is dry to moist. Silt with gravel. Very unlikely to get sampler into formation and unlikely to get water - Kimberly →

Kim Yauk 6/25/20

Rite in the Rain

Location SLC VA Date 6/25/20

Project / Client 700 S, 1600 E PCE Plume
MW-32

0850: decides to skip groundwater sample attempt. Drillers will continue to 170 feet.

0900: Drillers fuel rig

0905: Drilling continues.

0910: Marc stops by the site to check in. Stays 5-10 minutes.

1000 Drillers have the ~~top~~ 160 to 170' core bagged. The bottom bag looks like gravelly silt but last 6-inch section looks like it's wet. Appears to be sandy clay. Compared to MW-8, we might have a water-bearing unit coming soon (MW-8 is screened from 180-200 feet deep)

I ask Jonsey to only drill 5 feet so that we don't overshoot a water-bearing unit. Hopefully we get into a sand.

~~1045~~ 6/25/20 · Collect MW32-SB062520-1651 (10:00)

1045: Drillers have bagged 170 to 175' core. 175 lithology looks wet (not saturated) and sandy gravel.

6/25/20

Location SLC VA Date 6/25/20

Project / Client 700 S 1600 E PCE Plume
MW-32

Sunny, moderate breeze, hot

1045 Cont'd: Drillers leave to get porta-potty. I call Joe to let him know the status - I think we can get a sample

1105: Drillers are back with the porta-potty. I ask them to install the push ahead sampler at 175 feet

1130: Sampler advanced to 175 but casing has water. Crew pulled it back up and it appears closed, so we're not sure how water got in. Change ~~gaskets~~ O-rings 6/25/20 and re-try.

~~6/25/20~~ 1124 1200: Nathan asks about 2-inch casing. We are hearing from Marc about it.

1210: Sampler advanced. Drillers take lunch.

1215: check water level - it was dry when they advanced it and now that they attempted to open it, there is water to 164 feet (11 feet of water). CDM breaks for lunch. Emma stops to check in.

1230: Emma leaves for Ace Hardware.

6/25/20

Location SLC VA Date 6/25/20

Project / Client 700S 1600 E PCE Plume
MW-32

1240: CDM done with lunch. Prepare bailer (first bailer had a crack on the bottom)

1250: Collect MW32-GW062520-175

1300: Nathan says Rowland Hall well is a "go" and drillers should prepare to have 2-inch casing for 2 wells. CDM staff does chain of custody and finishes logging.

1330: Drillers continue - they do a 175-190' run.

1430: Collect MW32-SB062520-186
Bottom of 190 was very hard and dry so drillers continue to 200 feet.

1445: Call from Kelby about hotel.

1505: Label TB49-SB062520

1530: Drillers bag 190-200' soil core. Bottom is dry to moist gravelly silt. Drillers go another 10 feet

1610: Drillers bag 200-210 soil core
Collect MW32-SB062520-203

1620: Bottom is moist to wet sandy gravel / gravelly sand so I ask the drillers to advance the push-ahead sampler.

6/25/20

Location SLC VA Date 6/25/20

Project / Client 700S 1600E PCE Plume

1630: Drillers go to pick up more 7-inch casing.

1700: Drillers return. Bring outer casing down to 210 feet

1730: Drillers advance the push-ahead sampler to 210.

1750 ~~1800~~

Push-ahead sampler is in place. Check to see if it's dry - it's not. There are 8 feet of water in the casing. We will try again in the morning. Drillers close everything up. Breanna gets PID chargers from the connexes and locks everything up.

1810: Drillers leave site.

1820: CDM - Breanna, Maria, & Kimberly leave site.

6/25/20

LATE ENTRY:

1650: Collect
EB38 ~~-END~~ SB062520
6/25/20

Kelly Yale

Location SLC VA Date 6/26/20

Project / Client 7005 1600 E PCE Plume
MW-32

0645: Arrive on site. Kelby is already at the connexes. Calibrate both PIDs, get paperwork for the day. Kelby grabs EB, TB, temp blank, and more sample sets.

0705: Head to laydown yard. Holt is on site filling out paperwork

0715: H&S / Tailgate

Attendees

Kimberly Yauk	CDM Smith
Kelby Depner	CDM Smith
Jeff Jones	Holt
Alex Langdon	Holt
Aaron Kuper	Holt

0730: Drillers and I (Kimberly) head to MW-32. Kelby takes the GW Sample from yesterday to run on the Color-Tec.

0745: Drillers pull up the gw sampler. It is closed and requires full air pressure to open. Not sure how the water got in.

0800: Kelby picks up supplies for visit to Rowland Hall visit later today

Kmy 6/26/20

Location SLC VA Date 6/26/20

Project / Client 7005 1600E PCE Plume
MW-32

0800 Cont'd: 175' sample @ MW-32 is Non-Detect.

0830: Kelby arrives at MW-32. Push-ahead is 'advanced to 210' Casing is dry.

0840: Vibe sampler open and pull the casing up a foot.

0845 ~~0900~~: Casing is still dry. Vibe again

0855: Some water in casing. Try bailing. Bailer comes up with an inch or 2 of water.

0905: Jeff vibes it and pulls back some more.

0930: Attempting to sample again. These new bailers with the green tops seem leaky at the check valve

0940: Collect MW32-GW062620-210

0950: Above sample is bad. The drillers went to pull the sampler and realized the drill pipe snapped. Water sampled was from the top of the casing, not from the sampler screen.

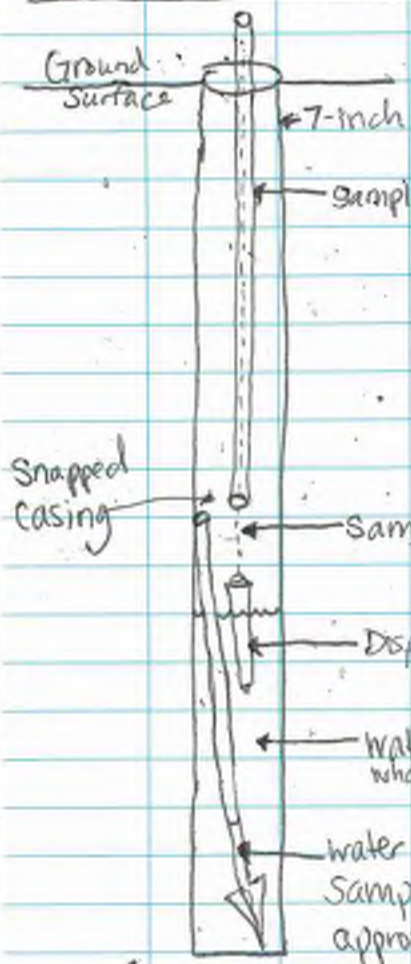
Kelly Yauk 6/26/20

Location SLC VA Date 6/26/20

Project / Client 700S 1600 E PCE Plume
MW-32

210 Foot Sample
Snapped Sampler Casing:

(not to scale)



Kelly Yard 6/26/20

Location SLC VA Date 6/26/20

Project / Client 700S 1600 E PCE Plume

Sunny, low to no wind, 70's °F

1000: Drillers remove the broken-off Sampler and the point is unbroken. The screen closed when it snapped off so the water we tried sampling at 8:55 is still inside (volume had not been enough.)

1015: Call with Joe. The water in the Sampler is a better water than the one collected at 09:40. We attempt to get the sample from what is left. Joe's concern is volatalizing the PCE by the attempts to fill the bailer (at ground surface in 4-5 feet of pipe)

1030: Collect MW32-GW062620-210 We got enough (with several tries) to fill 3 lab VOAs. No Colors - Tec Sample collected. Water is very sediment-rich.

1040: Drillers open the sampler and confirm that the low volume of water was due to clogged screen on the sampler. Another attempt would not likely be better.

Kelly Yard 6/26/20 Rain

Location SLC VA Date 6/26/20

Project / Client 700S 1600E PCE Plume MW-32

1045: Kelby goes to the corner to get more bailers and gw sample bottle sets

~1115: Drillers bag the 210 to 220 foot soil core. Photograph and log the samples.

1210: Drillers grab a drum and drumpump to capture the water coming up out of the hole with the core. There is so much that it would overflow the tub if they didn't capture it. ~~2/3 of~~ 6/26/20

1230: Marc stops by to check in. Drillers containerize the casing water. Fill 3/3 of a drum. Marc gives us the meeting spot for MW-34 (Rowland Hall) and will meet us at 1300.

1240: Drillers bag 220 to 230 foot soil core. Kelby & Kimberly log and photograph the core. Collect MW32-SB062620-223

1245: Drillers take a break while we finish logging. I ask them to cover the borehole while we do the site walk.

1255: Pack up PID, samples, camera and go. 6/26/20

Location SLC VA Date 6/26/20

Project / Client 700S 1600E PCE Plume MW-32

1300: Go to meet Marc and Ann Bennet (?) at Rowland Hall. 720 Guardsman Way, North Parking Lot

1330: We discuss the location and accessibility. We agree on a location in the targeted area on the north side of the access road, East of the retaining wall that has non-native fill on it. Weeds are not too bad.

1345: 30 x 70 foot area is marked with spray paint for utility clearance. Leave Rowland Hall and Head back to MW-32.

Note: Marc was interested in the drillers' schedule next week. Marc will be out of town July 3 to July 7th.

1400: Drillers continue drilling from 230 feet (dry to moist gravelly silt) No water encountered.

1430: Collect Ferrous Iron sample. Will need to do an EB and decon the sampler.

Kelby Hale 6/26/20 Rita in the Rain

Location SLC VA Date 6/26/20

Project / Client 700S 1600 E PCE Plume MW-32

1445: Call with Neil - we need to find a final one or two water-bearing zones or we will not be able to call TD on the well. Soil Cores since 210' have been very clayey with small sections of dry to moist gravelly silt (brittle and hard). Our goal will be to spend as much time as we can if it looks like there might be water and even push sampler in blind to see if there is a sand/gravel layer in the formation below the borehole.

1450: Meanwhile the drillers bag the 230-240' Soil core. Ice is double-bagged and CoC is filled out. We expect we will collect 1 more soil sample around 250', then drop off cooler. Neil does not think further soil samples are necessary.

1545: Drillers bag 240-250 foot core. Collect MW32-SB062620-250

1550: Sign CoC, add final sample, tape cooler, dump core up to 240'

6/26/20

Location SLC VA Date 6/26/20

Project / Client 700S 1600 E PCE Plume MW-32

1600: Kelby takes samples to FedEx

1620: Kelby back on site. Log and photos are caught up to 250.

~~1700~~ 1650 Drillers are down to 270. I ask if we can stop for the day and pull the core on Sunday. Jeff agrees. Slight issue with casing but he figured out a way to close the hole overnight.

1700: Drillers refuel rig. We discuss option to work on Saturday instead of Sunday. No one has a preference. We stick to original plan. We begin closing down for the day. EB sample will be first thing in the morning. Hopefully we can get gw @ 270 bc Jeff thought the formation was looser / less clay.

1745: Lock rolloff and leave site. Kelby and I drop items off at Omnex, charge PIDs, drillers drop off sampler to decon on Sunday and throw trash.

1800: Lock gate and all leave VA hosp.

Kelby Ufer 6/26/20

Location SLC VA Date Sunday 6/28/20

Project / Client TOOS 1600 E PCE Plume

MW-32 75°F, dry, no wind
fire advisory in effect

0650: Arrive on site. Drillers and Kelby already here. Calibrate PID, grab safety form & checklists, extra bottle SCTS and head to laydown yard.

0710: Smells like wildfire smoke. Check purple air. High concentration areas north of us near the Captitol building and further south. Some orange mid-range concentrations a little East / southeast of us. We are green in MW-32 area.

0715: H&S Tailgate - see safety sheet

Attendees

Kimberly Yank	CDM
Kelby Depner	CDM
Jeff Jones	Holt
Aaron Kuper	Holt
Alex Langdon	Holt

0730: Arrive at MW-32 and set up.

0745: Collect EB39-GW062820 off the decorined push-ahead sampler.

Location SLC VA Date 6/28/20

Project / Client TOOS 1600 E PCE Plume

MW-32

0745 Cont'd: Drillers do what small maintenance items they can without turning on rig - they will wait until 8 am for noise complaint reasons.

0800: Warm rig up

0830: Drillers bag 260-270' Soil Core.

0835: Drillers start a cleanout run and bring the 7" casing down to 260' (as far as they can go with the 7-inch). The battery for the camera did not charge even though it was plugged in all day Saturday. Use phone. Soil core is still clayey but seems to be getting wetter - will try the push-ahead.

0940: Push-ahead sampler is just touching slough on the bottom. Check water level and it is dry in the sampler.

0945: Jeff advances the sampler to 270 through the silty gravel

Rite in the Rain

Location SLC VA Date 6/28/20

Project / Client 700S 1600E PCE Plume

0945 Cont'd: Jeff opens (attempts to open) sampler at 270 but it's dry. He tries to vibe and pull it back more and it's still dry but it feels like it should be open (air pressure etc.)

0950: We wait a half hour to see if water will come in.

1017: Check water level again. Still Dry. Jeff tries to open it more.

1020: Resident at 1331 (across street from well) came out to ask how long we will be drilling. Commented on the weekend work and wanted ~~to~~ know what follow-up work would be occurring (will the drill rig be back for monitoring — no, it's a much smaller operation) I gave him a flyer and pointed him to Shannon Smith's contact info.

1030: Must be dry. Jeff vibes again.

1035: Still dry. Drillers trip it out to see if it opened or if it's clogged.

1130: Drillers advanced the push-ahead again (it never opened last time)

Location SLC VA Date 6/28/20

Project / Client 700S 1600E PCE Plume

1130 ~~20~~ Fo 6/28/20 Cont'd: This time they used only one O-ring with plenty of teflon tape. Additionally they wrapped teflon tape around the seam of the point to further prevent it from falling out.

The sampler would only go to 167 this time, Jeff couldn't get it to go more. Sampler is dry. Jeff opens the sampler.

1130: With sampler open, there is ~2 feet of water in the sampler. We wait 20 minutes for water to come in.

1150: Send bailer down

1200: Collect MW52-GW062820-270

1210: Kelby runs Color-Tec on the 270 foot gw sample. I group text Neil/Nathan/Joe for confirmation that we are done if it is ND.

1250: Kelby's results on Color-Tec are non-detect.

1300: Tentative OK from Nathan and Joe. Drillers start pulling →

Rite in the Rain

Location SLC VA Date 6/28/20

Project / Client 700S 1600E PCE Plume

1300: the core barrel out.
Cont'd:
1315: Load core barrel onto truck to bring back to laydown area for decon. I watch dark clouds to the southeast for lightning
1320: Clouds lighten slightly. Rain Spatter.
~~1325~~ 1330: Some thunder. Drillers are just closing up the fence. We drive over to the laydown yard. Close and lock the rolloff bin.
1400: At the laydown yard. There is still thunder and lightning in the rainclouds to the west. We shelter in our cars for a little while.
1425: WeatherBug app lists nearest strike in the past 30 minutes at 3.4 miles away. Distant thunder is still audible. Blue patches to the sky. Lightning is out by Morgan now, 15+ miles away.
1430: Lightning is along the Wasatch front.
1450: East lightning is >10 miles away. West lightning is coming but >30 miles.

Location SLC VA Date 6/28/20

Project / Client 700S 1600E PCE Plume

1455: Holt begins decon of sampler and core barrel.
1500: We grab the sampler after it is done.
1520: Collect EB40-GW062820 off the deconned push-ahead sampler (Deconned after MW-32 @ 270')
1525: Collect EB41-SB062820 off the deconned soil core barrel (looked like 6 inch diameter - Jeff confirmed it was what was used at MW-32)
1545: Site is picked up / secured.
1550: Kelby leaves site with Holt. Kimberly locks samples into Conex and looks for soil vapor probe size (at Jeff's request)
1620: Lock conex and gates.
1625: Leave site.

Kimberly Hall 6/28/20

Location SLC VA Date 6/29/20

Project / Client 700S 1600 E PCE Plume

0645: Arrive on Site. Kelby is already loading things. Pat Scanned papers into file, grab equipment and samples (from yesterday. Kelby brought fresh ice).

0705: Meet drillers in laydown area. Plan is to get final approval on Screen intervals at MW-32, drillers to buy annular materials.

0715: Safety Meeting - discuss lightning and rain

0730: Drillers fix sides of decon ~~containment~~ Containment - they were falling over then leave to start getting supplies. Jonsey has a 9:30 chiropractor appointment.

0800: Kelby and I make IDW gw sample sets and labels. We will sample poly tanks #1 & #2.

0830 Call to discuss zones. Neil wants 2-inch from 114-124 and 4-inch from 170-180 and 260-270 feet. (no 1st receivers)

6/29/20

Location SLC VA Date 6/29/20

Project / Client 700S 1600 E PCE Plume

0900: Let drillers know the plan. Jonsey needs written approval from the Utah Water Agency in order to install with those specifications because by law, the 2-inch can't go deeper than 100 feet if we have 2 other 4-inch wells to install (due to annular space).

1000: Sample Tank #2

Late Entry: Collected IDW06-GW 062920 @ 0845

1000 cont'd: Collect IDW07-GW062920 from poly tank #2 (Black)

1100: Bag ice and prep coolers.

1110: Kelby gets more ice

1130: Drillers back on site.

1200 loaded with some casing (should take 3 trips to bring it all).

1315: 6-inch casing installed. Drillers go to pick up core barrel and/or casing rod. Kelby arrives.

6/29/20

Rain in the Rain

Location SLC VA Date 6/29/20

Project / Client 700S 1600E PCE Plume

1315 Cont'd: Kelby reported 5 minutes of hail at the connexes. I thought there might have been some here but didn't see any (may have been slushy rain splatting.)

1335: Sky is brightening with blue patches. 51°F

1355: Kelby leaves to drop off samples at FedEx

1405: Drillers are back - they want to know if we need a 2-foot sump on the bottom of the screen zone. Asking Neil.

1415: Kelby is back.

~~1430~~ ~~1445~~: 1430: We don't need two people for oversight so since Kelby has other things to work on, I send him ~~back~~ back to his hotel for the day. He says he can come back out if we need him, but Joe has no other tasks for us.

1500: Drillers overdrilled 2 feet into what felt like a cemented unit. He said it had stones and was colorful

6/29/20

Location SLC VA Date 6/29/20

Project / Client 700S 1600E PCE Plume

65°F · Sunny, cumulus clouds

1500: I didn't see it before they emptied the hopper. I leave to go pick up 2-foot sections of Zist

1600: ~~1 foot~~ 4 inch Zist is prepped and I go find the threaded top caps to hang the casing.

1630: ~~We~~ Drillers begin setting the deepest well. Top cap is marked "B" but the label is coming off.

1705: Deep casing is at depth w/ 2 foot sump from 272 to 270 and screen from 270 to 260. Drillers bring annular materials over on a pallet.

1730: Sand filter pack is in place and drillers pull out all the 6-inch casing. The man at 1331 was outside watching. He had no further questions. He was interested in how deep we were and wants to know if the results are made public. His name is Ken Smith. He and his wife are from Sacramento originally.

6/29/20

Rain in the Rain

Location SLC VA Date 6/29/20

Project / Client 700S 1600 E PCE-Plume
Building well @ MW-32

1730 The man at 1330 (drives Mazda) cont'd: wanted to know how late we're working - no particular reason and did not seem mad.

1800 Drillers finish pulling out the 6-inch casing. Begin closing up. Drillers make 2 trips to return 6-inch casing to the laydown yard.

1830: Drillers return. Load the remaining 6 inch, close fence, lock rolloff, ~~leave MW-32 to drop casing in laydown yard.~~ TS 6/29/20 Acapulco walking took a flier.

1895: Leave MW-32 to drop casing in laydown yard. I leave to close up connexes and return whatever equipment is needed.

6/29/20

Kimberly Yauk

Location SLC VA Date 6/30/20

Project / Client 700S 1600 E PCE Plume
Build MW-32 recent rain, Overcast, no wind

0655: Arrive on site Kelby already here. Grab paperwork. Still have all the 2151 materials in my car.

0705: Meet drillers in the laydown area. Plan is to install MW-32 and drop off / pick up roll-off bins.

0715: H&S Tailgate

Attendees

Kimberly Yauk	COM
Kelby Depner	COM
Jeff Jones	Holt
Aaron Kuper	↓
Alex Langdon	↓

0730: Drillers make a garbage run and move the fencing leaning against Rolloff bin # 60161. They move the casing in the middle of the lot so that the roll-off driver can back up to the soil bin. Secure latches on the soil bin.

0800: Load up 1-inch and 2-inch casing.

TS 6/30/20

Rite in the Rain

Location SLC VA Date 6/30/20

Project / Client 700 S 1600 E PCE Plume

Build MW-32 53°F, overcast

0830: At MW-32. Begin unloading casing and starting up the rig. Kelby cleans off some 6-inch sections for the tops of the casing.

0900: I responded to Marc's email to Ann (per Marc's request). Ann was not expecting the bin and does not want it until this afternoon or tomorrow. I respond to clarify and send Kelby to look for the delivery guy to intercept in case delivery guy doesn't call first.

0910: Sand is up to 257 feet.

0930: No word on rolloff delivery. Neil wants a soil vapor probe around 20 feet with 2 feet of sand on either side. No response from Ann.

1000: A city utility guy stopped by to ask about the MW-34 location. His map isn't working right now, but he thinks it's just a storm →

Location SLC VA Date 6/30/20

Project / Client 700S 1600 E PCE Plume

Build MW-32 56°F, Rain

1000: ← a storm drain in our area. He will look at the manhole covers and a water line coming off the school. He does not want our utility locators to open his big manhole (for safety). He left his card Adriaan Boogaard. 801-243-2647

I email Gene Streiter to ask about the soil bin. Grout is at ~240 feet. Rain probably isn't helping the process.

1100: Call from MP Environmental (Chad). Driver is being located.

1105: Chad says MP driver will arrive in 1 to 1.5 hours (12-12:30). I text Marc and email Ann (Rowland Hall).

12:15: Drillers have casing out up to 200' and are still grouting. No call from MP yet.

1230: Kelby heads down to MW-34. Ann will open the gate for us. Drillers go to drop casing off in laydown area and take lunch.

Rain on the Rain

Location SLC VA Date 6/30/20

Project / Client 700S 1600E PCE Plume

Building MW-32

1235: Call from MP Environmental driver (Jeff?). He is in town. I just saw him drive by. He thought he was meeting us at the VA, so I told him to go to the soccar field off Sunnyside and look for the white Corrolla. I tried dropping him a pin but sent it to chad by mistake.

1250: MP drops bin number 5956 at Rowland hall across the access road from the well site, leaving space for the salt pile and excavator.

1305: MP picks up the bin at MW-32 (#6122) and brings it to the laydown yard where Marc will be waiting to sign the waste manifest.

1330: MP driver drops #6122 off and picks up bin #6061 (leaves #6122 in the space of the old one). Marc signs waste manifest and MP signs and leaves.

Location SLC VA Date 6/30/20

Project / Client 700S 1600E PCE Plume

Building MW-32 . Sunny. now 65°F

1335: Drillers start back up with grouting at MW-32 while I just finished a call with Betsy to catch her up.

LATE ENTRY:

1250: EMAX received the wrong bottles for IDW07 and IDW06 sulfide/cyanide. They need to be preserved with NaOH + ZnAC. Will need to sample again - might need to hurry on this.

1400: Emailing lab to confirm what bottles they will need. Asking Neil if we want to ve sample IDW06/07 now or next week. Drillers are approaching the next screen interval (183 is where sand will begin)

1500: We will need to order more reactive cyanide and reactive sulfide bottles from the lab. Cherie confirms we want the reactive tests for both. Kelby found a set of keys in the connex (far left one) and it was left open. Call to Neil.

Rite in the Rain

Location SLC VA Date 6/30/20

Project / Client 700 S 1600 E PCE Plume
Building MW-32

1510: Called Marc. It was someone from the VA looking for air monitoring equipment. Kelby waits to see if she will return, then Marc calls to confirm she will not. We keep the keys to give to Marc tomorrow morning. Drillers have installed middle well with screen from 170-180' and sand from 183 to 167'.

1530: Kelby returns to MW-32.

1550 Drillers are working on grouting up from 167 to 127 feet with bentonite

1620: Kelby goes back to the hotel - we don't have anything else we need from him. Plan is for him to oversee utility locator tomorrow at 8 am.

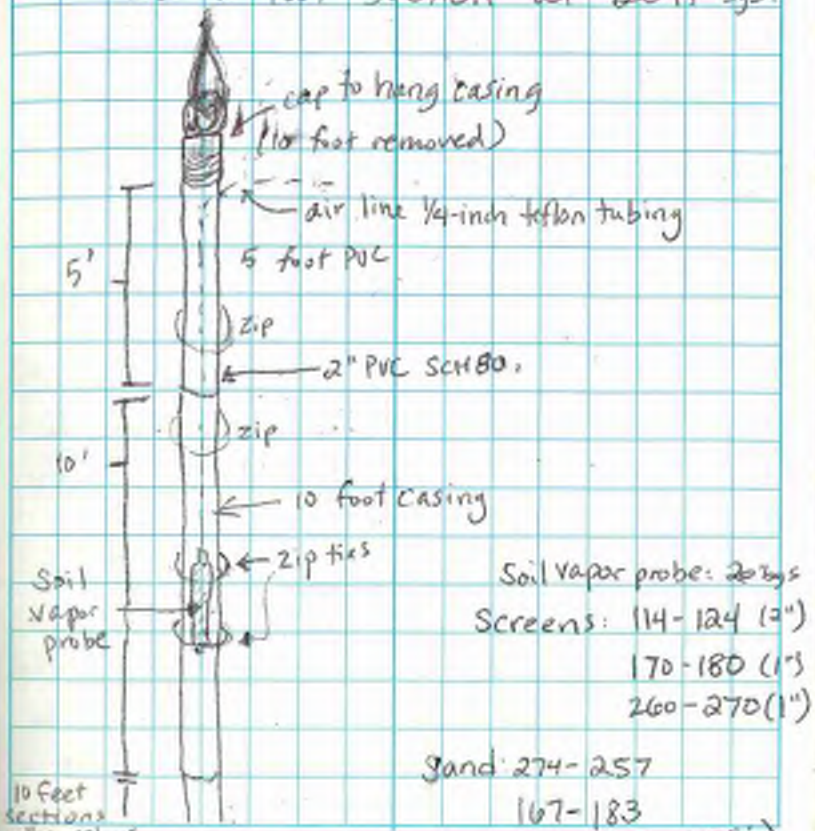
1730: Emailed list of supplies we will need to order more of. Emailed Ann to confirm survey tomorrow and staging planned tomorrow at MW-34.

1800: Setting the 2-inch casing.

Location SLC VA Date 6/30/20

Project / Client 700 S 1600 E PCE Plume
Building MW-32 Sunny, Some clouds

1815: Jeff remembered the probe while we were hanging the 2-inch. We pulled the top 10-foot section off, then raised the next 5 and 10 foot sections up and zip-tied the probe ½-way down the 10-foot section at 20 ft bgs.



Location SLC VA Date 6/30/20

Project / Client 700S 1600E PCE Plume
Build MW-32

1830: All three wells are installed and the soil vapor probe is attached. If the diagram isn't clear:

Well Screens Soil vapor - 20'
2" - 114' to 124' (no sump)
1" - 170' to 180' (plus 2-foot sump)
1" - 260' to 270' (plus 2-foot sump)

Each screen zone has 3 feet of sand on either side except the 2" well - Jeff took the bentonite up to 125.5, leaving only a foot and a half.

1840: Drillers take a load of casing back to... the laydown yard (?) hopefully. I told Ann we would mobilize tomorrow.

1900: Drillers return and pull the 7-inch casing because Jeff doesn't think they will be able to hang the casing overnight.

1950: Drillers have closed up the fence, put out No Parking signs, and bring another load of 7-inch casing to the laydown yard.

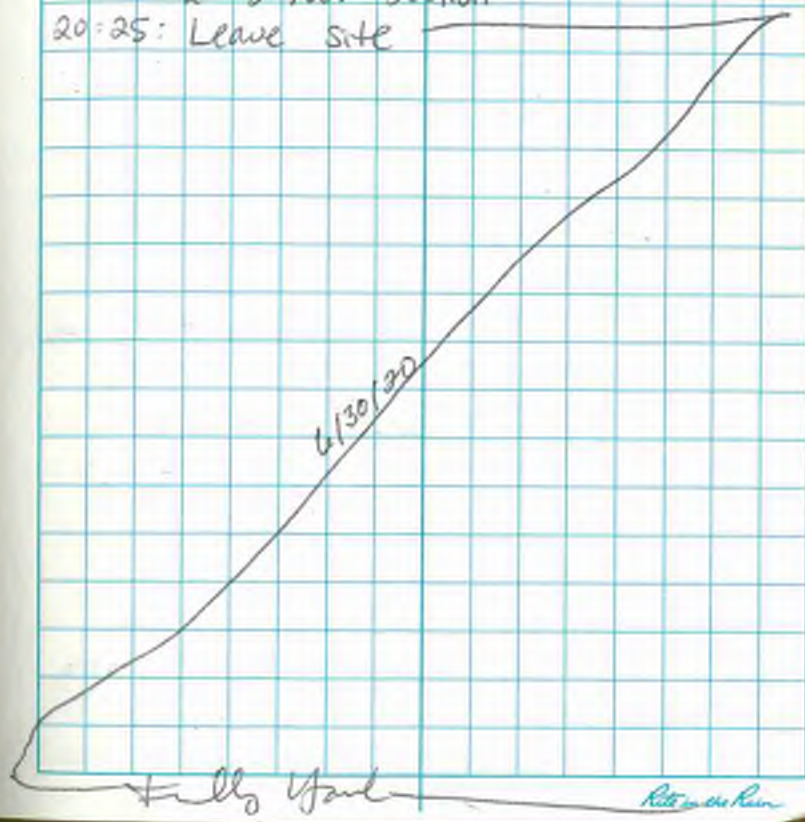
Location SLC VA Date 6/30/20

Project / Client 700S 1600E PCE Plume
Build MW-32

2015: Double-check bottle count, grab MW-32 log to scan the top 100 feet for Breanna, lock gate and go to laydown yard to count 1-inch casing.

2020: We have 310 feet of 2" casing left plus one screen and a 5-foot section

2025: Leave site



Location SLC VA Date 7/1/20

Project / Client 700S 1600 E PCE Plume

Clear MW-34 / Build MW-32

0655: Arrive on site. Kelby is dropping equipment at the connex. I pick up paperwork.

0700: Head to laydown area

0710: Marc shows up and we discuss schedule and access agreement. H&S Meeting

Attendees

Kimberly Yauk - CDM
Kelby Depner - CDM
Jeff Jones - Holt
Aaron Kuper - Holt
Alex Langdon - Holt
Marc Yalom - VA

0730: Jeff wants to know if we'll need grout in the top 10 feet or if bentonite is okay.

0740: Email Ann about hydrovac and Ann's ~~to 7/1/20~~ schedule request.

0800: Call from Verizon One-Dig (M.C.I.) Our area is clear for them.

0830: GPR surveyors located powerlines paralelling the access road. Kelby moves the location towards

Location SLC VA Date 7/1/20

Project / Client 700S 1600 E PCE Plume

Clear MW-34 / Build MW-32

0830: The fence. There is still 10 feet of space on either side.

0845: Badger is having some trouble finding Rowland Hall. Putting the address 720 Guardsman Way didn't work in google maps.

0850: Badger sits still while Kelby looks - badger is at the admissions office (?) → At Rowland Middle School. Kelby drives over to find him and bring him to the school.

0900: Jeff and crew are installing bentonite now at ~85 feet bgs, casing is up to 80 feet.

1000: Contact Adriaan from City Public Utilities to let him know our location. He says he will take a look.

1015: Alex brings sand to MW-34 and I accompany to get Badger in to the IDW area. Jeff and Aaron continue pouring bentonite at 80 to 75 feet.

1020: Elm Utility stops at MW-34 to check gas lines.

Location SLC VA Date 7/1/20

Project / Client 700S 1600E PCE Plume

Clear MW-34 / Build MW-32.

1020: Elm Utility says we are clear of gas lines.

1030: Call to Jeff. He says the boulders in MW-34 will just have to be dealt with. Either the rig can drill through it or it can't. Might as well fill it with sand and if we hit refusal, we'll call Badger back out to clear a new hole. Kelby and Alex fill the hole with play sand.

I drive in to the VA IDW area with Vernon and Elizabeth on the Badger crew.

1100: Air Gas truck shows up. I sign for Badger saying they cleared it and left on site. ~~B 7/1/20 to 7/1/20~~

1105: Badger leaves the site. Louis with air gas collects 12 partially empty gas canisters - I let Emma and Karla know. Louis gives me a receipt.

1120: Airgas leaves. I head back to ~~MW-34~~ MW-32. ~~7/1/20 to 7/1/20~~

Location SLC VA Date 7/1/20

Project / Client 700S 1600E PCE Plume

Build MW-32

1130: Jeff and crew are at 24 feet bgs with bentonite at MW-32. They bring it up to 22 feet and install sand from 18 to 22 feet.

1200: Drillers leave to laydown area to get more annular materials. Kelby is watching the hole. There's about 2 feet left but it's wider at the top. After finishing bentonite at MW-32, Jeff and crew will pick up more sand for MW-34.

I txt Bryan Bailey at Rowland Hall. He can open the 40-ft gate for us.

1215: Drillers are back. Break for lunch

1245 or 1250: Drillers unload bentonite grout (powder on a pallet - not chips) and prepare to grout the top of the well.

1315: Drillers mixed bentonite grout in a drum and pumped it into the top 10 feet. Pull final casing.

Rite in the Rain

Location SLC VA Date 7/1/20

Project / Client 700 S 1600 E PCE Plume

MW-32 (Build) 82°F, Sunny

1325: Drillers removed all casing now. grout sunk a couple feet. The last of what was in the drum gets poured in. Bentonite was mixed two bags to ~30-35 gallons of water. Drillers clean up hoses and mixing equipment. Travis confirmed what Neil told me this morning - we will need to hire a concrete truck to make the surface completion - scheduled for Monday.

1345: Rig tower down off MW-32.

1400: Drillers bring a load of materials to the laydown yard. Kelby has found a grate and cone from the school groundskeeper. Joe okays it and Kelby will leave it and pump water out of the containment area.

1520: No drillers returned yet. Porta potty is serviced.

1530: Orange Toilets leaves. Drillers arrive at MW-32.

Location SLC VA Date 7/1/20

Project / Client 700S 1600E PCE Plume

Demob MW-32

1535: Drillers dropped casing, found materials (Portland Cement) to fill the rest of the hole. Jeff says it will be no issue to drill through and I said it's ok as long as it prevents people from being able to fall in.

Drillers pick up the rig. They will bring the rig-hauler over to pick up the rig, ~~and~~ 7/1/20 bobcat, and tote, then will leave it overnight at the laydown area, fill it with casing, and bring it first thing in the morning to MW-34.

I text Bryan Bailey at the school to get the gate opened for us tomorrow.

1545: Drillers take a load of materials and casing to the laydown area and pick up the rig hauler.

1680: Drillers bring fence to laydown area.

Rain in the Rain

Location SLC VA Date 7/1/20

Project / Client 700S 1600E PCE Plume

Demob MW-32

1700: Fence off MW-32, cover with plywood and put tote over the plywood.

~~1730~~ Drillers go get the rig hauling semi to pick up rig, bobcat, and porta potty

1745: All equipment except fence/plywood / water tote and road signs are removed from MW-32.

1800: Label the tote as water per Neil's request. Kelby leaves the site. I head to laydown area where drillers are loading the rig hauler with casing.

1820: Drillers leave site.

1845: Dropped equipment (2ist boxes, pop-up tent) at Connex. Re-lock and leave.

7/1/20

Emily Yank

Location SLC VA Date 7/2/20

Project / Client 700S 1600 E PCE Plume

Mobilize MW-34

0700: Meet drillers at laydown area.

0710: H&S Meeting

Attendees

Kimberly Yank — CDM Smith

Jeff Jones — Holt

Aaron ~~C~~ Kueper

Alex Langdon 9/2/20

Plan is to mobilize to MW-34 and remove water from soil containment (maybe soil too?)

0730: More fencing casing loaded onto pickup truck 7/2/20 Ready to head to MW-34 (Bryan Bailey should be opening the gate.

0740: I drive over to the gate at Rowland Hall on Sunnyside to confirm it's open - it is not. Bryan had some delays this morning.

0825: Drillers deconned during →

Location SLC VA Date 7/2/20

Project / Client TCOS 1600 E PCE Plume
Mobilize MW-34

0825 Cont'd: during the wait. Bryan Bailey arrives to open the gate.

0830: Drill crew brings the rig and bobcat over to MW-34

0920: Rig is set up. The ground is very soft but it seems to work. Fence is unloaded and Alex & Aaron go to pick up a piece of broken casing with a bit stuck on it. Jeff wants to get the bit off.

0945: Overheard the Community Gardeners talking about the hole being back filled. I brought them fliers about the project and pointed them to Shannon Smith's contact info. They are Jessica and Brant. They took a few extras (3-4) for the other gardeners. I told them we expect to be here a couple weeks and that drilling won't start until Monday. I told them my name and that Betsy and Joe will be out here after me.

Location SLC VA Date 7/2/20

Project / Client TCOS 1600 E PCE Plume
Mobilize MW-34

1005: Drillers install fence around Rig. Ground is soft. Aaron tripped while carrying fence. Maybe purchasing some plywood is a good idea. Fence will need "Authorized Personnel only" signs. Somehow drillers got 8-plus pieces of fence w/o signs.

1015: Bryan stopped by to introduce Allen. Allen can help us get things if we need anything and have trouble reaching Ann or Bryan. Bryan and Allen keep up the grounds / keep it secure.

1045: Requested more fliers from Marc. Stop at MW-32 to move "No parking signs!"

1105: Fliers done Marc will meet me at laydown area

1110: Marc drops off fliers and I brief him on where we're at. I grab authorized personnel signs and the lock for the roll-off.

1125: Drillers are done. The secure the straps on the pickup and leave.

Location SLC VA Date 7/2/20

Project / Client 700s 1600 E PCE Plume

1145: I pick up zip ties, drop paperwork and ~~zip ties~~ clip board off at the connexes. I plan to lock the roll-off attach signs to fence, laminate a flier, drop green full Key set and fliers at Betsy's hotel, then drop Wasatch's Key set at their office. Then fly home. Leaving field book in connex, then leaving site. (noon or so)

Color-Tec inventory

8 extraction needles 14 jar sets
8 purge needles (reusable)
5 carbon filters (reusable)
2 LL tubes
2 M tubes
6 L tubes

12:20 7/2/20

LATE ENTRY:
Sean field notes and leave @ 12:45
7/6/20

Location SLC VA Date 7/6/20

Project / Client 700s 1600 E PCE Plume

12:30 Arrive at HQ to get keys

1300 Onsite, check connexes for supplies, kits, etc.

1330 Go to Rowland Hall & look at well

1415 Walk to laydown yard,

1430 Walk onsite

1453 Cement truck arrive onsite, begin filling MW32

15:05 Done w/ pour, walk offsite, Walk clearing around well, Smoothing out cement

Cement mix	
3/4 rock	1615 lb
Sand	1060 lb
Cement	611 lb
fly ash	155 lb
water	39.0 gl
Air	2.20/c
water	4.00/c
?	5.00 oz

15:50 walk to laydown to collect 8' pipe to move to Rowland Hall.

1605 walk to Rowland Hall to

Location SLC VA Date 7/6/20

Project / Client 7005 1600 & PCS Plume

clear pipe.

1612 at MW34 & unlocal.

1623 Call from Nell about Casing.
guess water by 150'
170 - 180 worst case
190'-150'
Ollett 100 ppm or more below water table Ollett every 20' or so
MW15 156' 50' higher
- prints at approval agreement

1634 Halt unloading 2nd run of pipe

1706 unlocalling 7th

715 Mob offsite

BB 7/6/20

Location SLC VA Date 7/7/20

Project / Client 7005 1600 & PCS Plume

645 onsite, Anna already onsite by 'conexes. Local Cars w/ equipment, print out access agreement

715 mob to laydown yard for H&S meeting

Attendees:
Beth Bott
Anna
Jeff Jones
Alex Langdon
Aaron Kuper

730 mob to MW34
set up pop up tent table, chairs

750 begin putting in 1st 8"

815 begin drilling

1200 Break for lunch, drilled to 80'.

1250 Back for lunch. Unloading hoppers, dumping cores into hopper. begin pulling pipe w/ 80' sample

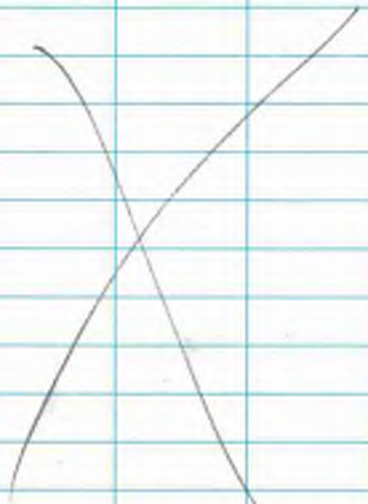
1394 while pulling 50-90 core barrel too hot to touch. Halt going to laydown yard to

Rite in the Rain

Location SLC VA Date 7/7/20

Project / Client 7005 1600 & PCE Plum

1319 ... get Jaws.
14:B3 returning Sample.
1B10 done drilling, fuel rig
clean up site. locks roll off
1B20 mob offsite. I go back
to Conners to drop equip.
lock up.
1B45 Done, mob offsite



BB 7/7/20

Location SLC VA Date 7/8/20

Project / Client 7005 1600 & PCE Plume

645 onsite getting equip, paperwork ready. Calibrate PID.
PID not working, spent 20 min trying to calibrate, bulb broken or loose, will PID. Calibrate other PID onsite.
720 HS meeting
Attendees
Betsy Bott
Anne Fiorini
Jeff Jones
Alex Langdon
Aaron Kuper
7:30 mob to Rowland Hall
Warm up Rig.
7:50 begin putting in pipe
9:15 Water coming out of clean out run when pulling 140-150, water level at 131.9
Collect MW34-GW070820-150
Going to put 8" casing to 150'
Joe & Neil okd

Location SLC VA Date 7/8/20

Project / Client 7005 1600E PCE Pmin

920 Collect mw34-SB070820-191 PID 25

1000 Putting in last 8" to 150'

1050 mw34-SB070820-165

1100 Holt left to get equip

11:20 Holt back begin tripping in 7"

late entry - @1010 ash of Joe about pm Sampling. Bottom of SS is dry, dont think it would produce any water. Pockets of saturated about. Bone dry @ bottom Joe said ok + look at next location.

1140 Anna left SLC to go get tested for CoVID19.

1249 lots of water came out stuff pipe on 170-180 drill

1230 ash w/ Joe about trying for a sample said to call Neil

Called Neil said to try Break for lunch

Location SLC VA Date 7/8/20

Project / Client 7005 1600E PCE Pmin

1300 putting in Sampler tried vibing it 4x. Thought I tagged water and put 2 types of bailers down several times. All had empty bottoms

1400 pulling Sampler. to inspect.

1900 Sampler didn't open going to try again - lots of gravel in bottom.

1430 clth at approx 170' put bailer down, retrieved very silty water. Struggled w/ VAS have 2 good 1 bad.

1440 Collect mw34-GW070820-180

1450 Begin drilling again

1500 to AI Services onsite Service port. potty

1530 Collect mw39-SB070820-189

1545 Anna left for fedex.

1615 Anna back

1630 Holt pulled 200-210' bottom looks wet

Rite in the Rain

Location SLCIA Date 7/8/20

Project / Client 7005 1600 PCE pmt

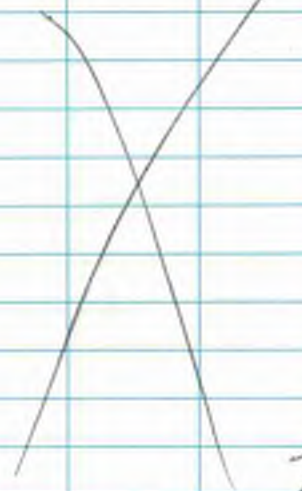
1650 Holt going to put casing to 210 & do a clean out run so we can sample tomorrow.

1710 done w/ clean out run

1748 Anna mob offsite Holt fueling up.

1800 Holt demob. I go to cover to clean up, put away equipt

1813 mob off site



7/8/20

BJ

Location SLCIA Date 7/9/20

Project / Client 7005 1600 & PCE pmt

630 Arrive onsite warm up Colo tech both. get equipt ready.

715 HS tailgate

Attendees:

Betsy Both

Anna Fiorini

Jeff Johns

Alex Langdon

Aaron Kuper

740 mob to Rowland Hall

800 called 2842 off Samples Holt put in Sampler

815 tripod dry, Holt tried to open Samples. tried to bail for 20 minutes. Carl Jag.

830 He suggests letting it sit for 1/2 hour & calling local to see if other bailers available. DTW 207

840 Called B&B. Anna going to go get other bailers

900 Attempt to bail w/ green bailers. Got about 1' filled 3 vials 1/2 sand, 1 bad) & 2 colortech

Rite in the Rain

Location SLC VA Date 7/9/20

Project / Client 200 1600 PCE plume

9:20 Anna back Holt begin to pull Samples.

11:00 Collect mw39-SB07920-226 ✓ FD 29

11:15 Holt back to laydam to clean Sampler.

11:30 Collect SB43-GW07920 only able to collect 2 VOAs ran out of DI water. Anna will get more when she picks up equipment

11:50 Collect mw39-GW07920-230 ✓ FD 30 WL @ 216

Holt takes lunch, Anna leaves for Wasatch

12:20 ~~Return~~ Holt back from lunch, pulling Sampler.

1306 Anna back from Wasatch

1900 Collect mw34-SB07920-247 + ms/msd

1434 pulled 250-260 Core has some gravel in bottom. Going to attempt GW Sample.

Location SLC VA Date 7/9/20

Project / Client 200 S 600 E PCE plume

1510 Collect EB#1 of Sampler Holt tripping in Sampler

1555 tried 4x to bail 10' water, got to let silt. 1/2 hr

1609 Holt going to get 6" pipe Anna left for fedex

1700 Collect mw39-GW07920-160 had lots of turbidity WL seemed to be at 252 then dry then at 242 finally got .75' of water

1710 Holt pulling Sampler. putting in @ 1' to drill tomorrow morning

1800 Cleaning up colorimetrics

Sample ID	Vial 1	Vial 2
210	ND	ND
230	ND	ND
260	ND	ND

1830 Holt off site

BB 7/9/20

Location SLC VA Date 7/10/20

Project / Client 700s 1600s PCE Pump

695 onsite, Calibrate PID, get tgether really. Check coolers that were delivered.
- looks like we got sent two covers texted Joe. Only have 2 encore kits left.

9:10 H+S meeting
Attendees.
Betsy Bott
Anna Fiorini
Jeff Jones
Alex Langdon
Aaron Kiser

720 mob to Railroad Hill

735 begin drilling.

800 pilot 280-270, putting in 6" Casing now

916 drilled to 280'

920 Rig issues.

944 back, pulling casing

1006 pulled 280' core, still dry going to wait to see next core + try water sample

Location SLC VA Date 7/10/20

Project / Client 700s 1600s PCE pump

1100 Collect mw39-SB071020-285 bottom still dry, going to look at next 10'

1130 Anna left for AWL to pick up Sample kits.

1150 Collect EB45 off sampler

1211 put in Sampler

1215 measure No water, No H Vibe + measure DTW = ~~285~~ 290 Anna back

1230 Collect mw39-GW071020-300 4oz taken back + MS/MSD

1300 Back putting water Sample

1330 putting in Casing to 316

1430 Collect mw34-SB071020-300 using reflective visor S.S pid

1515 Anna left for lab. felex

1545 Anna back pulled 310-320, bottom bag has the 1" well gravel we typically see. going to set well up for water Sample for Joe.

Rite in the Rain

Location SLCVA Date 7/10/20

Project / Client 7005 1600 S PCE Plume

15:53 Holt leave to clean Sampler

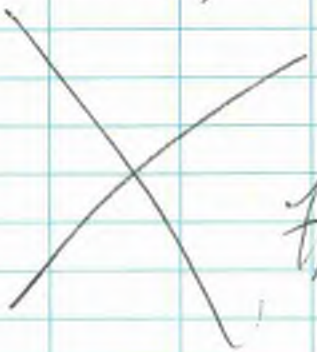
16 15 Holt back GW
~~1650 collect EB46 from 300' Sample~~

Need to STAT collect EB46

1630 AOA with office
Betty to Conyers to unload
& run Colortech

GW 07/020 - 30
Vial 1 Vial 2
ND

1730 Betty office



7/10/20

BD

Location SLC VA Date 7/12/2020

Project / Client 7005 1600E PCE Plume
MW-34

0630 COM Smith Onsite - J. Miller
0715 HTS tailgate at Laydown
Topics Heat, crush points Communication
Attendees:
J. Miller - COM
J. Jones - Holt
A Langdon
A Kasper
Weather 70 - 90°F Clear S - ISophisticated
0735 Arrive at MW-34
warm up Rig inspections
0745 DTW 137.33' BTOC ~6" above Grade
0755 Collect EB46 - GW 071220
0800 TB55 - SB071220
0805 Trip in Sampler to 320
0820 Sampler to depth Run out meter down, No water in Rods
0825 Vibe Back
0830 Call GLS about PVC Shipment 5495497897
No answer
0845 Bailer dry try to Vibe and open Sampler again

Return to Rain

Location SLC UT Date 7/12/20

Project / Client 700 S 1600 E PCE Plume

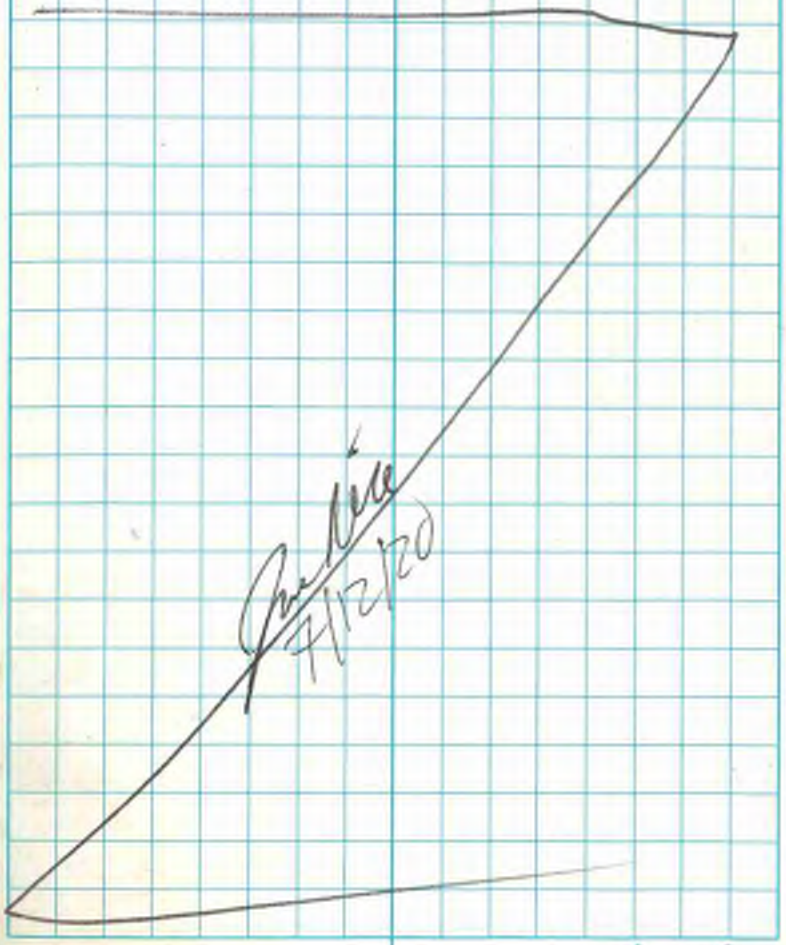
MW-34

0900	NO water try to vibe open again
1000	Sent down 2 bailers No water
	WL Meter Disolicated @ 311'
	Sent bailer down again No water
1015	Try to vibe open 1 more time
1040	DTW 307'
1055	Collect MW34-GW071220-320
1150	Collect MW34-SB071220-321
	+ Dup FD30-SB071220 (0800)
1200	Holt Break for lunch
1230	Resume drilling activities
1340	Communication w/ Neil Smith about attempting GW Sample @ 340' Due to lithology and lack of apparent water No GW Sample will be attempted
1430	Collect MW34-SB071220-349
1500	Discussion w/ Neil about dry cuttings no water sample attempted @ 350'
1525	Run Colortec @ 320' ND for Chlorited compounds
1540	Back at site wrap up activities for the day
1600	Holt to Logan to get well material

Location SLC UT Date 7/12/20

Project / Client 700 S 1600 E PCE Plume

1620	Holt Back w/ 10' screen 300' Risers
1700	Holt load up pallet of sand
	Back to MW-34
1715	Offsite



Rite in the Rain

Location SLC VA Date 7/13/20

Project / Client 700S 1600E PCE Plume

0645	CDM Onsite - J. Miller
0700	Call GLS about PVC Supply Representative said they would call me back w/ an update
0715	H+S tailgate weather 70-90°F clear Attendees: J. Miller - CDM Jeff Jones Holt A Kuiper Holt Alex Langdon Holt Topics: Hunt, Lifting Crush points Task: Build MW-34
0730	Move material to MW-34
0745	Holt to B+B drilling for well materials
0830	Call about Screen Intervals
0855	Holt Back w/ Bentonite
0900	Call to GLS about ~~Rec~~ shipment of PVC Spoke to Jason I expect call in 1-1.5 hrs
0935	Boring open to 343' BGS Begin adding Bentonite chips Marc Yalen Onsite

Location SLC VA Date 7/13/20

Project / Client 700S 1600E PCE Plume

1000	Begin adding PVC for deep Zone
1020	Aaron heads to GLS for 2nd Delivery
1044	Begin adding 10/20 Sand
1100	Marc Offsite Pull 10' of 6" casing
1134	Sand to 312' Begin adding Bentonite chips
1200	Off load Beast PVC Shipment Holt takes Lunch
1240	3 Screens Beast Order Holt Romeo 20 X 3 = 60 60 X 10 600' Riser Plus 160' Riser @ Canary
1350	Pull Remaining 6" casing
1500	Bentonite to 262' Begin adding PVC for Second Zone
1545	Add Sand 10/20 from 262'
1640	Sand to 247' Begin adding chips
1725	Chips to 207 Wrap up Cuttings
1745	Holt Mob 7" Casing Back to Langdon
1800	Offsite

7/13/20

Rite in the Rain

Location SLC VA Date 7/14/20

Project / Client 700S 1600E PCE Plume

0650	CDM Onsite - J. Miller
0715	H+S Tailgate at laydown
	Topics: Heat Stress, communication,
	Crush points, Lifting
	Weather 65-90°F Clear
	Attendees:
	Joe Miller - CDM
	Jeff Jones - Holt
	Aaron Keiper - Holt
	Alex Langdon Holt
	Task Complete MW-34 well install
0725	Holt decoming 7" casing
0800	Arrive @ MW-34 well design change
	to 4-1" wells
	Warm up/Inspect Rig
0820	Resume Batch filling from 207'
0900	~~Start~~ Bentonite to 185' Begin Building
	Zone Buell Sump 187-185 Screen 185-175
0910	Begin adding 10/20 sand to filter pack Run
	187'
0931	Sand to 173' Begin adding Bentonite
0945	Move Valom Onsite
1005	Pull Remaining 7" casing

Location SLC VA Date 7/14/20

Project / Client 700S 1600E PCE Plume

1030	- 7" casing Removed from Boring
1100	- Begin Building Zone A Sump 150-152
1115	Zone A Installed w/ screen
	150-140' SVP @ 20'
	Resume adding Sand 10/20
1145	Holt to drop off 7" casing then
	Go to B+B for more sand
1245	Holt Returns w/ Sand
1340	Top of Sand to 137' Add Bentonite
1500	~~Sand~~ Hydrated Bentonite to 27'
1510	10/20 Sand 18-22' around SVP
1515	Resume adding Bentonite ~~to 15' BGS~~ on 7/15 to 14' BGS
1545	Begin grouting
1605	Holt loading 8" casing
1615	Haul to laydown
1700	Holt haul extra well Materials
1730	J. Miller to Offload Equipment & casing
1800	Offsite

7/14/20

Rite in the Rain

Location SLC VA Date 7/15/20

Project / Client 700 S 1600 E PCE Plume

0645	Joe Miller Onsite at convey
0710	Alex Loydon cut hand while moving Equipment, Joe Miller notified and drove him to emergency room at University Hospital Utah Alex taken inside Joe Miller waiting outside
0725	Notification Made to Nathan Smith and Neil Smith Holt Driller - Jeff Jones
0740	Call w/ Nathan about Notification
0920	Call to Carlos VA Safety and Notify him of the incident
1100	Atlantic Pacific Freightways onsite to haul Casing / Extra well Materials
1215	Trucking leaving w/ 6" 7" 6" casing
1220	EB47-GW071520 from Push ahead Sampler from MW-34 GW
1230	Arrive MW34 to set well box Surface Completion
1320	Pickup Alex from Emergency Room 6 stitches 2 tendons 1 fracture Okay to work if able

Location SLC VA Date 7/15/20

Project / Client 700 S 1600 E PCE Plume

1350	Holt Mob Equipment to Laydown yard
1400	Return to VA Holt offload and decon additional Casing and drill rods
1500	Colby Meeting - Holt onsite
1520	Collect Blank ~~EB48~~ EB46 ~~SB050~~ SB071520 from decon'd drill Rods @ MW-34
1530	Holt move drum soil to Rolloff
1745	Mob from Site

Rite in the Rain

Location SLC VA Date 7/16/20

Project / Client 700S 1600E PCE Plume

0640 CDM/Holt Onsite H+S tailgate
H+S tailgate
Attendees:
Joe Milke CDM
Jeff Jones - Holt
Colby McCarthy - Holt
Alex Langdon - Holt
Aaron Kuiper - Holt
Topics: Communication, Focus, Crush points
Lifting
Weather 70-95°F Hazy to Clear

0700 Holt Continues to load Equipment

0800 Collect ~~IDW-SB~~ JM 7/16
[IDW08-SB071620] From Rolloff
6122 ~~IDW56~~ [IDW56 -SB071620]

0830 Collect [IDW09-SB071620]
from Rolloff #5841

0915 Call to United Services to pick up
forcing

0930 Holt Crew loading up/Inspect
Water Truck & Rig Anchor

0945 Holt OFF Site!!!

1000 Joe to Connex to organize and
Get more Sampling Kits

Location SLC VA Date 7/16/20

Project / Client 700S 1600E PCE Plume

1200 Sample IDW10-SB071620
from Rowland Hall Rolloff
Bin # 5956

1230 To smiths for Ice/Ziplocks

1330 Sample IDW11-GW071620
for Reactive Cyanide/Sulfide
from tank 1

1430 Offsite to fedex to
Ship 2 Coolers, 2 PID's ~~+~~
Magnetic

1500 Samples shipped to Enax
PIDs to PINE
Mag Meter to KD Jones

Joe 7/16/20

Rite in the Rain

ZIST Development 7005 1600E 6/8/20

Author Neil Smith - CDM Smith

Personnel Blake Downey - Wesatch

Activities ZIST well development / Pump Install

PPE D

Weather: Overcast. 50s. rain

1000 On site at IDW yard. load supplies

1200 At MW-25

B Zone

DTW: 182.80 BTOC

Pump Receiver 231 BTOC

Water column 48.2'

Center of water column 206.9'

1215: Need adapter parts for diverter.

1400 Mobilize back to MW-25-B

Lower Stinger to 207'

* No water discharge up to 110 psi
* Contacted BESST. recommended lowering Stinger closer to pump receiver.

Lower Stinger to 225'

1455 Begin purging / lifting @ MW-25-B

1510 Turbidity Sample over-range

1535: Switch nitrogen cylinders. water still turbid.

JDS 6/8/20

6/8/20

1615: Through 2nd nitro tank - Still v. turbid. Plan to discuss development approach with BESST (pumping or air-lift)

Transfer equipment + water to laydown yard

1730: Offsite.

Rite in the Rain

ZIST 700S 1600E PCE Plume 6/9/20

Author - Neil Smith - CDM Smith
Personnel - Blake Downey - Wasatch
Activities ZIST Development / Pump install
PPE D
Weather Clear 60s

7:15: On site Tailgate meeting
* Plan to install pumps + Purge. only airlift if turbid / lots of sediment

900 MW-25 C Setup
DTW - 206.45
Pump receiver ~ 307' - 2100' water
* Plan to install pump + purge

1100: Begin purging MW 25C - 30s / 30s, 160 PSI
* Air breakthru - quickly - decide to lower pressure + more slowly purge to prevent breakthru

1240: Purging at 40 Rech / 12 Disch flow good w/o breakthru
Purging stopped at MW-25-C

1430 Final settings: 30s vent / 20s discharge
170 PSI : Turb 1.41 NTU
Begin purge @ MW-25-A
Pump receiver ~ 200'
Start slowly with low pressure,

6/9/20

1530: Install pump at MW-25-B
Static WL: 182.60'
Pump receiver 231'

1640: Stop purging @ MW-25-A
Pump settings: 100 PSI
40s vent / 10s discharge
Turbidity 17.1 NTU ~75mL/min
* Note: Cable at MW-25C has a broken ferrule with sharp edges in the loop. Covered with tape for now.

1650: Start purging MW-25-B
1740: Stop purging
Settings: 110 PSI ~100 mL/min
30s recharge / 20s discharge
Turbidity 3.30 NTU
1815: All personnel offsite

6/9/20

Rite in the Rain

21ST 7005 1600E PCE Plume 6/10/20

Author: Neil Smith - CDM Smith

Activities: 21ST development / Pump install

PPE: D

Personnel: Blake Downey - Wasatch

Weather: Sunny. 70s / 80s

715: Setup at laydown. H+S Tailgate
Plan to develop / install at MW-23
Coordinate gate access w/ Mare Telem.

815: Setup at MW-23 B
DTW: 194.8'
TD: 263.5'
Receiver ~ 250 per const. diagram
* Note: Tubing will be spliced @ top of cap. Tubing roll ended with ~8" extra.

930 Begin setup to purge at MW-23B
Start @ low pressure.
Begin attaching new pump.

950: Deploy at MW-23-A
WL: ~185' (WL meter error, would not turn off)
TD: 223
Receiver ~ 210 per const. notes

6/10/20

6/10/20

1015: N. Smith offsite. B. Downey to continue 21ST purging. then measure / set pump in MW-23C interval.

1300 * Return to site. B-Downey setup at MW-23C. Receiver ~348'
DTW = NM TD = 353'. V. soft

1330: Unable to purge either MW-23A or MW-23B due to low recharge. Air blows thru line even at lower pressures.

1415: Install pump at MW-23C.

1535: Cannot purge any of the three intervals due to slow recharge. Locations may require add'l development (air lift) to clear sediment. Will plan to pull pumps + re-develop at a later date.

1630: Equipment back at Connex. Wasatch offsite. N. Smith to MW-30 location.

1745: Off site.

6/10/20

Rite in the Rain

Z15T 700s i600E PCEPlume 6/11/14

Author: Neil Smith - CDM Smith

Personel: Blake Downey - Wasatch

Activities: Z15T Development / Install

PPE: D

Weather: Sunny, 80s

715: Hts Tailgate

800 Setup at MW-26 for development
* Well casings not marked. Will need to use TD measurements
Pump receiver depths ~205, 235, 315, 348
1st well - MW-26A
DTW=188.9' TD= 218.7'
Receiver ~205' per construction notes
Begin purging MW-26A

910: Measure DTW / TD @ MW-26D
DTW=222.2', TD-351.5
silty / turbid, soft bottom
Receiver ~ 348 per const. notes
* Plan to try air lift first
set stinger ~285', Pressure ~140psi

940: Begin air lift. water becomes more turbid over time

1000: MW-26A tubing full. Turbidity 3.34NTU
Adjust pump settings
Final: 50 recharge / 10 Disc. 110 psi

6/11/20

1040: N2 cylinder empty @ MW-26D
air lift. Check DTW / TD
DTW not measured, TD=351.5 BTOC
Bottom of screen ~ 358' bgs -
removed ~ 6' sediment.
Install pump

1120: Setup at MW-26-B
DTW: 193.58 TD: 249.2
Pump receiver ~ 235 per const. notes

1130: Stop purging MW-26A
Final settings: 50 recharge / 10 Discharge
110 psi.

1205: Pump set at MW-26B
Begin purging
* Trouble with check valve - try pushing N2 through. Shake pump

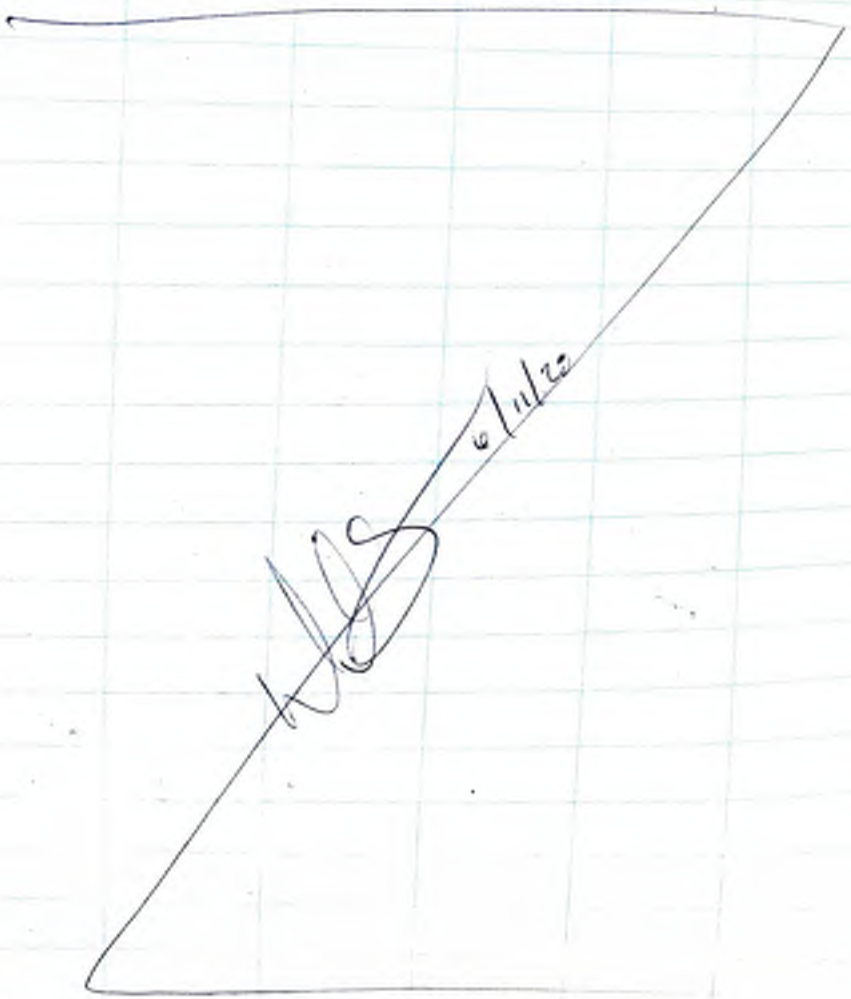
1340: Setup at MW-26C
DTW: 218.6' TD: 328.5' BTOC
Receiver ~315 per const notes
Deploy pump at MW-26C
* Tubing is welded / stuck to sheath at top of MW-26C pump
Cannot strip off to attach connections / cap.

6/11/20

Rite in the Rain

6/11/20

1600: Pursing complete at MW-26D
Settings: 60 Recir. / 12 Disch. @ 75 PSI
MW-26B check valve seems to be failing - pulled pump + Sump Pump body for a different one.
Plan to Pump again Friday.
1715: Offsite.



6/12/20.

2157 700S 1600E PCE Plume

Author: Neal Smith - CDM Smith
Personnel: Blake Downey Wasatch
Activities: 21ST Development / Install
PPE: D
Weather: Sunny. 80s / 90s

715: H+S Tailgate.
Plan to re-Purge @ MW-26B with new PUMP
750: Setup at MW-26B. Begin Purge
900: Still unable to purge MW-26B Acts like check valve doesn't seal when pressure ~ 50 PSI
940: Discuss w/ Noah + Miles (BESST). Likely problem is that spring on check valve too weak to seal for this location. Plan to send pump back for heavier (10-16) check springs. Also ship back tubing with Jacket sealed to tubing.
1040: Pulled MW-26C Pump. It has Jacket stuck to tubing and cannot be connected to run.

Rite in the Rain

21ST Deployment -

Author: Nal Smith - COM Smith 7/27/20

Personnel: Emma Roth (COM Smith), Miles Koehler (BESST), Kevin Murphy (Wasatch)

Activities 21ST well development / Pump install

PPE: D + Face masks

Weather: Sunny. 90s, calm

730: Meet @ IDW laydown Yard. Tailgate meeting

815: N. Smith to hardware store.

930: Airgas on site to deliver cylinders. Setup at MW-30 for development

MW-30C: DTW: 234.85 TD: 321.1' BTOC
Set Stinger ~285'

1030: Regulator not working, swap out

1050: minimal water generated. Lower Stinger to ~295, Pressure 150 psi

1210: Stopped air lift at MW-30C. visibly clearer water, ~20 gal purged.

*Measure MW-30B
DTW = 232.4' TD: 283.9' BTOC

Attempt air lift. Stinger ~ 265'

1250: Unable to air lift - likely insufficient water column.

*Pulled Stinger out, note some Sandy Sediment inside tube.

7/27/20

21ST Deployment

1300 Measure DTW / TD at MW-30A
DTW: 226.30' TD: 241.97 BTOC

* Note: Drilling notes indicate MW-30B screened 282-292', and MW-30A screened 240-250'. Measured TD, including 2' sump, indicates these wells may be installed 10' shallower than planned. Will verify pump receiver depth during pump installation, at MW-30B. No bentonite noted on the WL meter, so possible that wells will be OK to sample.

1330: Break.

1350: K. Murphy to assist E. Roth and M. Koehler to deploy / purge MW-23.
Access to Rowland Hall and Sunnyside Park likely on Tuesday 7/28

1745: All personnel offsite.

7/27/20

Location SLC

Project / Client VA / 7005 1600E PCE Plume

Date 7/27/20

Weather: Sunny, 90°F
PPE: Level D
Task: 21ST Well repairs
Personel: E. Rott (author) (CDM Smith)
K. Murphey (Wasatch)
M. Koehler (BESST)
N. Smith (CDM Smith)

0730 Team onsite. H+S meeting at tailgate.

0800 Team organizes equiptment and load vehicles.

0900 Team to MW-03R. Places pump back in MW-03RB. BESST had pump to troubleshoot issues with other wells.

0920 Team to MW-25. Pull pumps from MW-25A/B/C. Replace filter with new filters, and 1psi spring with 10psi spring.

0942 Replace aluminum ferrule + cable connected to top of pump on MW-25C with stainless due to corrosion.

0945 Air gas delivered nitrogen tanks.

1000 N. Smith, K. Murphey to begin well development at MW-30.

Location SLC

Project / Client VA / 7005 1600E PCE Plume

Date 7/27/20

1021 E. Rott, M. Koehler to MW-26: Pull MW-26A, replace filter and spring.

1040 Pull MW-26D, replace filter and spring.

1140 Place ~~new~~ OR pump + new tubing into MW-26C. Used pump that was sent back to BESST during first deployment

1200 Place new pump + old tubing into MW-26B

1240 Team to MW-30 to get magnet from development team.

1300 E. Rott offsite to get hard hat for M. Koehler for working in/near MW-23.

1400 E. Rott onsite. Team to MW-23. Replace filter + spring at MW-23A.

1415 Replace filter + spring at MW-23C.

1445 Put MW-23B back in from BESST.

1515 Begin Purge at MW-23B to test the new filters + springs.

1519 Start at 20 psi, 10 on 120 off. Run for 2 cycles. Increase to 35 psi

1526 Increase time on to 20 on 120 off, 35 psi. Still seeing long recharge

Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 7/27/20

1541 Up pressure to 45 psi, reduce to 10 on 120 off. ~30s recharge

1546 Up pressure to 55 psi

1553 Up pressure to 65 psi

1558 Up pressure to 75 psi

1647 Take notes on other page. Final settings at MW-23B 180s off ~~50~~ 48 on at 130 psi.

1700 Team to know WL and pump depth at 21ST wells, calculate volume of water that will be still standing (at MW-23B = 150 mL), assume max discharge / cycle.

1710 Tested discharge / recharge with bubble method

1740 Team cleanups, to connex to unload.

1800 Team offsite.

Location SLC

Project / Client VA / 700S 1600E PCE Plume

Date 7/28/20

Weather: Sunny, 90°F

PPE: Level D

Task: 21ST Pump deployment, well development

Personell: E. Rott (author), N. Smith
K. Murphey (Wasatch), M. Koehler (BESST)

0730 Team onsite. H&S meeting at tailgate. Heat, traffic, slips / trips / falls.

0800 Team to MW-30 for pump installation.

0830 E. Rott offsite to exchange rental vehicle.

0840 Install MW-30A. No pump receiver, hanging by wire on cap with washer. Hung at ~237'

0930 Hang MW-30B. Pump felt like it was dragging on something on its way down last couple feet.

0940 Tubing at MW-30B dropped further after cut, needed to splice tubing and wire. Team will need to be careful lifting pump system in future.

0945 E. Rott onsite.

0950 Splice on MW-30B will be ~10'

Location SLC Date 7/28/20

Project / Client VA / 700S 1600E PCE Plume

0950 Downwell, will need to pull up to that point when taking WL during synoptics.

1000 Still unable to clearly tell if pump is on the receiver. Hook up to controller / gas + see if that makes it drop anymore.

1010 No water, straight gas. Indication pump malfunction. Pull pump.

1015 Noteable silt, gunk on bottom pump filter. Team deploys larger WLM to test if receiver is present. Hit bottom at 283 7', therefore no receiver present.

1035 Team re-deploys pump at 272' btoc and will hang system b/c no receiver.

1040 265' bgs, evident stop in dropping pump.

1100 Attempt purge at MW-30B again. Not functioning. Pull pump, filter, pump + tubing covered in dark clay like material. Will not re-deploy pump.

1200 N. Smith spoke with M. Yalom (VA) about possibility of

Location SLC

Project / Client VA 700S 1600E PCE Plume

1200 deploying passive samplers.

1300 Team to begin deploying at MW-30A.

1430 Begin purge at MW-30A. Breakthrough / bubble surge.

1500 Evident pump is not functioning Team to pull pump.

1530 Pump filter at MW-30A. Filter covered in light-colored silt, clay material. This was also seen in some of the discharge water, suspended then settled.

1600 Team doesn't put pump back in well, need to discuss with VA about passive in this interval / potential well construction issues.

1610 Begin install and purge at MW-30C.

1730 Final settings at MW-30C:
160 psi, 70s on, 3-4 min off
expected 300ml/min per discharge
more may mean running it dry.
Can change settings on ZIST controller to indicate min rather than S

1800 Field team offsite.

SR 7/28/20

Location _____ Date _____

Project / Client _____

Location SLC Date 7/22/20

Project / Client VA 700S 1600E

Weather: Sunny, 90°F +
PPE: Level D
Task: 21ST Pump deployment & well development
Team: E. Rott (CDM Smith, author)
K. Murphey (Wasatch), M. Koehler (BESST

0730 Team onsite. H&S meeting at tailgate.
0800 Team to MW-3[illegible] for development and pump install
0810 MW-3[illegible]C WL = 148.15' btoc
TD = 238.74' btoc
set development tubing at ~193'
0830 MW-3[illegible]A WL = 130.80' btoc
TD = 149.22' btoc
0840 Begin purge at MW-3[illegible]C with airlift
0850 Install 21ST pump at MW-3[illegible]A.
No receiver so hanging pump from well cap
0920 Finish MW-3[illegible]A install.
0930 Begin MW-3[illegible]B install.
WL = 135.12' btoc
TD = 202.20' btoc
0940 End well development at MW-3[illegible]C, purged ~ 27 gallons, water became less turbid.

Rite in the Rain

Location SLC

Project / Client VA 7005 1600E PCE PLUME

Date 7/29/20

1000 Start purging at MW-31A.

1100 Start purging at MW-31B

1152 Final setting at MW-31B
100 psi, 42s on 120s off
200 ml / discharge

1200 Install MW-31C

1221 Increase pressure on MW-31A to see if any slug of water present after ~2 hours of build up with infrequent bubbles present. Saw ~ 300mL discharged, therefore not enough water to look at parameters & sample.

1230 Cleanup at MW-31, mob to MW-29.

1237 Water inside well vault at MW-29

1243 MW-29C
WL = 157.58' TD = 243.30'
MW-29A
WL = 116.43'

1307 Start development of MW-29C, set at 200' btoc

1310 MW-29B
DTW = 54.51 TD = 202.50

1330 E. Rott to MW-34 to get 21ST

Location SLC

Project / Client VA 7005 1600E PCE PLUME

Date 7/29/20

1330 well cap that was used as temporary cap. Replaced with closed cap.

1340 Installed MW-29B.

1354 End development at MW-29C. Purged ~ 20 gallons, water running clear from output.

1420 Start purge on MW-29B

1430 Begin setting MW-29A. Spoke with N. Smith, plan to set pump at 2' above bottom of screen. Set at 128' btoc.

1710 Final settings at MW-29B
105 psi, 35s on, 100 off
125 ml / discharge

1712 MW-29A, began purge cycle step-ups Seeing bubbles + water, not confident on water in tubing consistently. Will start again tomorrow to check settings. End at 15 on 120 off, 45 psi

1730 Cleanup at MW-29. Head to connex to unload.

1800 Field team offsite — QR 7/29/20

Location SLC Date 7/30/20

Project / Client VA 700S 1600E PCE Plume

Weather: Sunny, 90°F
Task: Well development + 2IST pump install
PPE: Level D
Personel: E. Rott (author, CDM Smith), K Murphey (Wasatch), M. Koehler (BESST)

0730 Team onsite. H+S meeting at tailgate.
0735 M. Yalom (VA) onsite. E. Rott gave him an update on work so far. Told him we will be at MW-34 today.
0745 M. Yalom offsite.
0800 Team to MW-34.
0813 MW-34A WL = 132.93' btoc
TD = 153.14' btoc
0818 MW-34B WL = 135.40' btoc
TD = 188.22' btoc
0822 MW-34C WL = 131.68' btoc
TD = 263.27' btoc
0828 MW-34D WL = 134.11' btoc
TD = 328.20' btoc
0840 Set development at MW-34D at 231 ft btoc. Set at 100psi for airlift
0845 Set pump at MW-34A at 148 ft btoc
0900 With new well cap + tubing, PVC riser at MW-34A will not

Location SLC Date 7/30/20

Project / Client VA 700S 1600E PCE Plume

0900 allow for well to be locked. Team considers options for modifications to cap to shorten the amount of PVC to fit. End MW-34D development pump ~40 gal
* 1000 E. Rott to connex for another drum for well development use.
1014 E. Rott back to MW-34. Spoke with Neil Smith about MW-34A cap. He suggests drilling angled holes into a cap for MW-34A that way tubing doesn't kink. Team to assess possibility
1020 Deploy pump at MW-34D at 315' btoc
1029 Start development of MW-34C. Set stinger at 200' btoc, begin airlift at 100psi
* 0905 Note: purged until water visibly clear. Well flowed very fast using minimal nitrogen.
1054 End development of MW-34C. Water running clear, purged ~20 gallons
1100 K. Murphy able to drill angled holes into well cap. Air + water line will come out at opposite sides of cap at ~45° angle and wire will come out of top of cap.
1145 Finish deployment of MW-34A.

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 7/30/20

1150 Start purge on MW-34A

1200 Deploy pump at MW-34B at 175' btoc.

1360 Deploy pump at MW-34C at 250' btoc

1320 Begin purge at MW-34B.

1455 Final settings at MW-34B:
95 psi, 35s on, 120 off
150 ml / discharge

1505 Begin purge at MW-34C.

1512 Water flowing backwards at MW-34C. Pull pump and work on check valve.

1520 Replace o-ring on check-valve spring on MW-34C. Send pump back down.

1540 Breakthrough at MW-34A after solid stream of water. Will attempt to build water column again

1550 MW-34C seeing surges of air/water, behaving as though filter is clogged.

1615 Team determines to pull MW-34C. Filter is evidently covered in silty/sand material. Most likely due to water being starved up during development Will not try and purge MW-34C or MW-34D until well has time to settle.

Location SLC

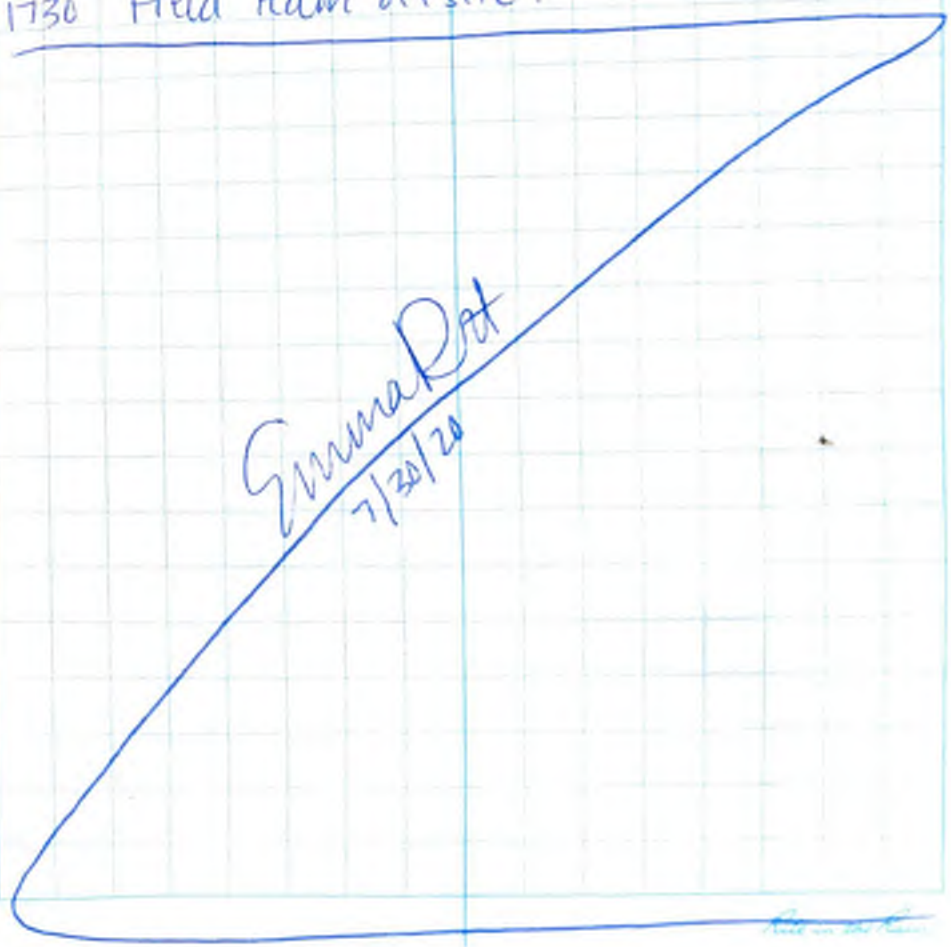
Project / Client VA 700S 1600E PCE Plume

Date 7/30/20

1630 E. Rott calls N. Smith. Discuss challenges with low submergence pumps (MW-34A). Discuss other sampling possibilities in the short term.

1700 Team packs up at MW-34. To connex to unload.

1730 Field team offsite.



Location SLC

Project / Client VA 7005 1600E PCE Plume

Date 7/31/20

Weather: Sunny 100°F

Task: Pump deployment, well development

PPE: Level D

Personnel: E. Rott (Author, CDMSmith)
K. Murphey (Wasatch), M. Koehler (BESST)

0730 Team onsite. H+S meeting at tailgate. Area next to laydown yard installing new crane. Crew to work around.

0800 Team to MW-32, car on top. To MW-29C to mark air

0830 Return to MW-32, car moved. Set traffic control

0853 MW-32A WL = 83.42' btoc
TD = 123.85' btoc
PVC shavings + sediment on WLM when pulled up. 2C 7/31/20

0859 MW-32B/C WL = 82.67' btoc
TD = 273.15' btoc

0902 MW-32B WL = 82.77' btoc
TD = 183.14' btoc

0942 Begin development of MW-32A using SS Hurricane pump.
Begin development of MW-32C using air lift. Set stinger at 178' btoc

1010 Finish development at MW-32C. Purged until clear discharge, ~ 30 gal

1020 Finish development of MW-32A.

Location SLC

Date

Project / Client VA 7005 1600E PCE Plume

1020 water running clear after purging ~ 47 gall. Steady flow throughout, swirled pump during development to get sediment stirred up.

1035 Begin development of MW-32B. Set stinger at 133' btoc. 100 psi air lift

1100 End development at MW-32B. Purged ~ 20 gal, water running clear at end.

1105 Install MW-32C at 260' btoc.

1115 M. Yalom (VA) onsite. Delivered well tags for newly installed wells.

1120 K. Murphey drilled holes in cap for MW-32B for air and water lines to allow for cap closure.

1150 Install Solinst pump at MW-32A at 119' btoc, switched fittings at top to 2 1/4" swagelock to work with 1/4" x 1/4" tubing

1230 M. Yalom offsite.

1240 Deploy pump at MW-32B, set at top of screen. Need to put lock on MW-32

1309 Team to MW-29 to continue building water column at MW-29A and C.

1310 E. Rott to fedex to ship back pump + controller to Field Environmental.

Location SLC

Project / Client VA 700S 1600E PCE Plume

Date 7/31/20

1340 E. Rott to MW-29.
1345 Begin purge at MW-29A and MW-29C
1426 Final settings on MW-29C
115 psi, 85 on 120 off
275 ml / discharge
1453 Continued purging at MW-29C for better discharge. New final settings:
MW-29C
120 psi, 60 on 120 off
300 ml / discharge
1613 Water at MW-29A. Able to reproduce volume + seems to have full column.
1615 Final settings at MW-29A
75 psi 22 on 60 off
40 ml / discharge
1630 Team cleans up at MW-29A. To connex to unload.
1730 Field team offsite.

Emma Rott
7/31/20

Location

Project / Client

Date

Appendix C

Utility Locate Reports

Utility Locate Report

SITE

VA Plume, Salt Lake City, Utah

2/21/2020

PREPARED FOR

CDM Smith

PREPARED BY

TWS ENVIRONMENTAL, LLC

Denver, CO

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CLIENT NAME:	CDM Smith
CLIENT ADDRESS:	555 17th Street Suite 500 Denver, CO 80202
PROJECT NAME & LOCATION ADDRESS:	VA Plume – Salt Lake City, Utah
TWS PROJECT MANAGER:	Jeff Baker
TWS TEAM REPRESENTATIVE:	Jeff Baker

Fig 1. MW-25

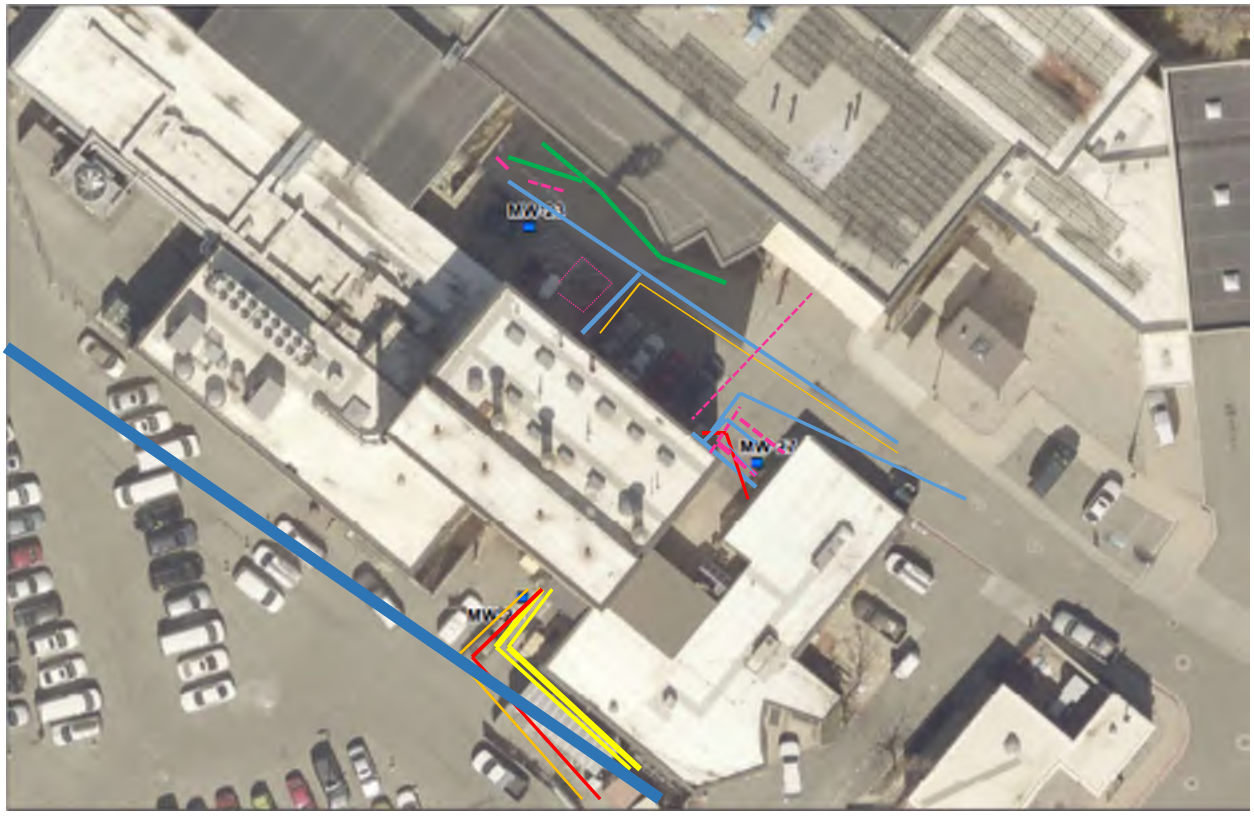


Fig 2. MW-23, MW-27, and MW-24

Fig 3. MW-26

Fig 4. MW-28

Fig 5. MW-30

Fig 6. MW-29 and MW-31

Fig 7. MW-32

2.1 Site Location

The sites are located at OU-1 Remedial Investigation 700 South 1600 East PCE Plume Salt Lake City, Utah.

2.2 Equipment on Site:

- **SeekTech SR-20 Line Tracer and Underground Utility Locator**
- **SeekTech ST-305 Line Transmitter**
- **Schonstedt GA-52-Cx Magnetometer**
- **Ground-penetrating radar: GSSI UtilityScan/ rough terrain cart**

2.3 Equipment Capabilities:

Electromagnetic Induction

Electromagnetic Inductions consists of two steps. First, a transmitter is used to transfer an alternating electrical current to the pipe or wire to be located. Next, a receiver is used to analyze the transmitted signal, and localize the position and depth of the facility. The transmitter can transfer the signal to the facility either by a direct connections, or by inducing a signal. The direct connect method introduces a signal into pipes or cables (or the fluids within pipes) that is radiated from the facility to aid its detection and location. The surface-induced method generates a signal a t the ground surface that will induce a response in the cable, pipe or tracer wire underground.

Typical applications:

- Conductive utilities: Steel or copper pipes (water service, gas service) Copper telecom cables.
- Tracer lines on non-conductive utilities

Limitations:

- EM/RF locating requires a conductive object (pipe, cable, conduit, or tracer) into which a radio signal can be introduced. The signal cannot travel through non-conductive (insulating) materials. The signal may be interrupted or lost on a conductive utility that is not continuous (damaged, broken, corroded, repaired with non-conductive materials, or constructed of segments with non-conductive gaskets, i.e. rubber)
- RF locating requires some level of access or prior knowledge to effectively introduce the radio signal. An exposed portion (or end) of a utility is needed for direct connections or to utilize an inductive clamp. A point of well-known location and direction is needed for an inductive drop.
- RF locating signals are susceptible to “bleeding” onto nearby conductive utilities. Due care will be taken to recognize and minimize bleed-off, and to confirm utility locations with alternate methods. All utility marks should be afforded and industry-standard tolerance zone of 24” to either side.

- A known (or visible) point of connection is generally needed to identify the function of a utility.
- A hand-dug or vacuum-excavated test hole should be used to precisely confirm horizontal or vertical locations of any utility.

Magnetometer

The GA-52Cx magnetic locator detects the magnetic field of ferromagnetic objects. It responds to the difference in the magnetic field between two sensors that are spaced approximately 20 inches apart. This difference is referred to as the "signal strength" and is represented in the instrument by an audio tone.

Typical applications:

- Locating ferrous pipes/utilities: Steel or other ferrous metal objects or pipes can be located with this tool.

Limitations:

- The instrument will not detect non-ferrous metals, such as gold, silver, copper, brass and aluminum.

Ground-Penetrating Radar (GPR)

350 MHz "HyperStacking" GPR Antenna – GPR works by sending a tiny pulse of energy into a material and recording the strength and the time required for the return of any reflected signal. Our GPR system uses state of the art HyperStacking Technology which provides excellent near-surface resolution and increased depth penetration in all soil types. We will be able to quickly search the location and depth of service utilities such as gas, communications, and sewer lines – as well as other metallic and nonmetallic targets including underground storage tanks and PVC pipes. For rough terrain conditions, we are able to place the unit into a rugged utility cart to complete the search.

Principle of operation:

- Ground- penetrating radar (GPR) uses a pair of radio antennas (transmitting and receiving), moved together across the ground surface. The transmitted radar wave penetrates into the ground until it reaches an "interface", or boundary, between materials of differing electrical properties. The wave is then reflected and detected by the receiving antenna.

Typical applications:

- Non- conductive utilities: Plastic pipes, gas and water main/services, etc. Bituminous fiber pipe ("Orangeburg", "Bermico"), asbestos-cement pipes ("Transite"). Cast iron pipe with rubber gaskets, or other insulating materials.

- Subsurface structures: Buried tanks, cisterns, septic tanks, cesspools, dry wells and oil-water separators. Buried vaults, manholes, and utility tunnels. Historical building foundations and other structures.

Limitations:

- For an object to produce a signal that is able to be interpreted by operations, the transmitted radar wave must penetrate to the depth of the object of interest, reflect, and return the receiving antenna.

- Depth of penetration is reduced by soils that are electrically conductive, due to water saturation or otherwise. Depth of penetrating is reduced by especially rocky, mixed, or inconsistent soil. A metallic ground surface (i.e. steel plate), or standing water, interferes with penetration of the transmitted signal into the soil.

- A reflection of the radar signal depends on the "interface", or boundary, of materials of differing electrical properties – such as the encountered at boundaries between soil layers of differing compaction, or at the surface of a hard object embedded in the soil. The reflection is weakened when the boundary has a lower contrast in electrical properties. An object of a give diameter will producte a reflection of decreasing strength with increasing depth to cover. Generally, one inch of diameter is required, per foot of cover, to produce a strong reflection.

- A known (or visible) point of connecting is generally needed to identify the function of a utility.

- Any utility, subsurface structure, or anomaly located with GPR and marked on site should be afforded an industry – standard tolerance zoned of 24'.

- A hand-dug or vacuum-excavated test hole should be used to precisely confirm horizontal or vertical location of any utility.

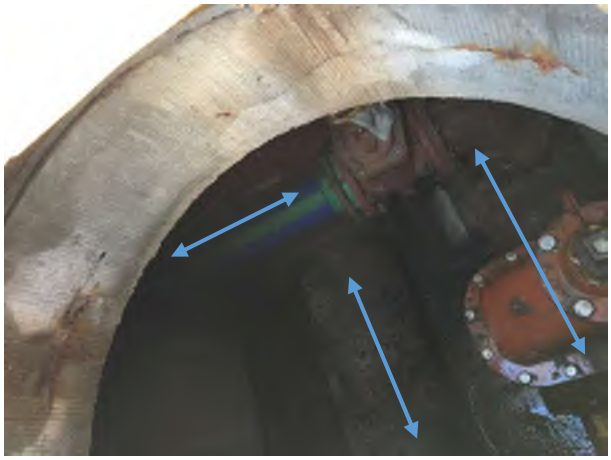
3.1 Physical Setting

The site is located in Salt Lake City, Utah. These sites are a combination of the VA hospital campus, an adjacent park and a residential neighborhood to the North of the campus. There are a total of ten (10) boring locations that were completed on this round of work. There were a total of 7 locations across the VA campus, a total of 2 locations in Sunnyside Park and 1 location in the neighborhood off of 600 South. The majority of the locations on campus were in parking lots, a loading dock area and an access road on the North side of a parking structure. The locations in Sunnyside Park were in grassy areas and the single location in the neighborhood is located in the roadway/street parking area of 600 South. Once all health and safety discussions, a tailgate meeting with the VA staff, and a site walk were completed, the crew proceeded to clear the area around each proposed boring location. This occurred over the course of three days starting on Tuesday, February 18th and wrapping up on Thursday, February 20, 2020. The temperature was in the low to mid 30's during this engagement. Skies were mostly clear and there was a light breeze in the afternoons.

3.2 Results

TWS personnel worked on site to locate and mark utilities, and to survey the areas of the proposed boring/well locations on the VA campus on February 18th and 19th and completed activates in the park and residential locations on February 20, 2020. Methods used include both radio-frequency (EM/RF) locating and ground-penetrating radar (GPR) as well as utilizing a magnetometer/pipe locator. As disclosed at the bidding stage, GPR penetration rates in the Salt Lake area were expected to be between 0-3 feet bgs. Depths beyond that may be impacted by soil conditions and data quality may be affected. Utilities located and marked in the vicinity of the work areas included anomalies/unknowns (possibly roots), electrical, gas, water and communication. There were also storm water drains and sewer networks across the properties. A combination of paint on the ground and paint and pin flags in the grassy areas were utilized to mark out utilities and anomalies in the general areas where there are proposed boring/well locations are planned.

3.3 Project Photos (VA Campus)



Salt Lake City Utility operated water infrastructure near MW-25.

Electrical lines in the parking lot near MW-25..

Originally proposed location for MW 25, note proximity of water line markings.

Anomalies noted in pink in the area of proposed location for MW 26 (to the East of location in the courtyard)

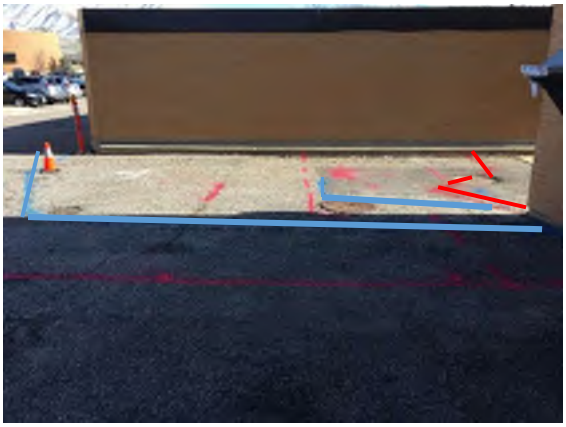
Utility corridor to the West of the proposed area for MW-26.

Natural Gas and Propane lines as well as power and communications near proposed location for MW-24.

Sewer line in vicinity of proposed work area for MW-28.

Anomaly and sewer near proposed area for MW-28.

Vault filled with salt (?) near proposed work area for MW-23.



Water, electric and anomaly (pink) near proposed work area for MW-27.

Water, sewer and anomaly (pink) near proposed work area for MW-23.

Water, sewer and communication between proposed work areas for MW-23 and MW-27.

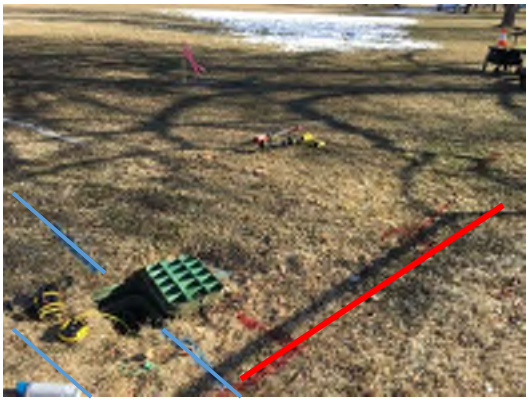
Oil water separator and drain lines near proposed work area for MW-30.

Electrical lines in planter and drain lines near proposed work area for MW-30.

3.4 Project Photos Continued (Sunnyside Park and 600 S. Neighborhood)

Electrical line and sewer to the East of proposed work area for MW-29.

Water line and sewer to the South of proposed work area for MW-29. Anomaly in pink.



Water lines to the West and Electric to the South of proposed work area for MW-31.

Water lines to the West of proposed work area for MW-31. Anomaly in pink to the North.

Gas, ~60" sewer line and water lines to the East of proposed work area for MW-32.

Water lines to the East of proposed work area for MW-32.

GPRS SUBSURFACE SCANNING SOLUTIONS

Job Summary

Job Date : 7/1/2020

Customer	Wasatch Environmental	**Phone Number**	203-512-2515

Billing Address	**City**	**State**	**Zip**
2410 W California Ave	Salt Lake City	UT	84104

Job Details

Jobsite Location	500 Foothill Blvd.
City	SLC
State	UT

WA Number	202403
Job Num	
PO Num	1637-005G

Lead Technician SWARTZ, RYAN **Phone** 612-704-0456 **Email** ryan.swartz@gprsinc.com

Thank you for using GPRS on your project. We appreciate the opportunity to work with you. If you have questions regarding the results of this scanning, please contact the lead GPRS technician on this project.

EQUIPMENT USED

The following equipment was used on this project:

- Underground Scanning GPR antenna. Typically capable of detecting objects up to 8' deep or more in ideal conditions but maximum effective depth can vary widely and depends on site and soil conditions. Depth penetration is most commonly limited by moisture and clay/conductive soils.
- Electromagnetic Pipe and Cable Locator. Detects electromagnetic fields. Used to actively trace conductive pipes and tracer wires, or passively detect power and radio signals traveling along conductive pipes and utilities.

Work Performed

Ground Penetrating Radar Systems performed the following work on this project:

Underground Utility

The scope of work included scanning the specified area to locate underground utilities. A tracer signal was sent along any accessible metallic utility or tracer wire, and the area was scanned with GPR to locate any additional targets. The locations of any detected utilities and anomalies were marked directly at the site with paint, flags, stakes, or other appropriate means, and results were reviewed with onsite personnel unless otherwise noted.

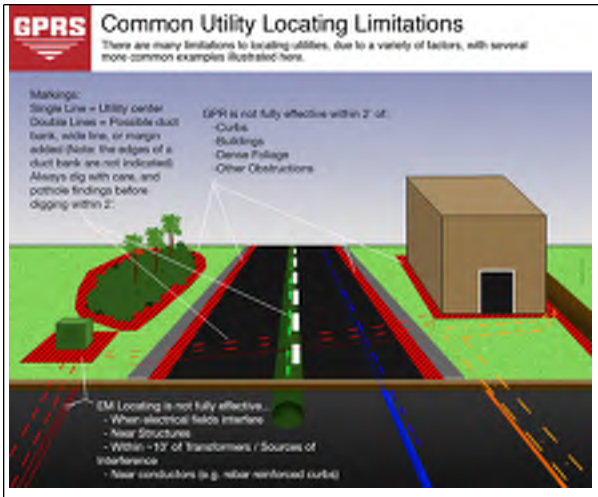
- Scan a 20x20ft area around a boring location.
- The effective depth of GPR will vary throughout a site depending on surface and soil conditions. In this area, the maximum effective GPR depth was approximately 4 feet.
- Scanned a 20x20ft area around a boring location(stake represents boring location). One utility line was detected (possible power or communications line). This utility was marked out with paint on the ground. White painted corners represent scan area.
  Scan area and markings were reviewed with the customer onsite.

Pictures

GPRS SUBSURFACE SCANNING SOLUTIONS

Job Summary

Job Date : 7/1/2020



Utility Limitations

TERMS & CONDITIONS

http://www.gprsinc.com/termsandconditions.html

SIGNATURE

Contact Name

Anna Fiorini 203-512-2515 mc@wasatch-environmental.com

Google Earth

UTAH
A S T
Google Earth

Appendix D

Traffic Control Plan

Date: 6/3/20 **Author:** ERNESTO

Comments:
CDM Smith
600 S 1300 E
SALT LAKE CITY, UTAH
EB-SHOULDER
UTAH BARRICADE - TRAFFIC CONTROL

Appendix E

Salt Lake City Traffic Control, Engineering, and Right-of-Way Permits

Traffic Control Permit

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

Permit # TRN2020-01443

Organization Name: CDM Federal Programs Corp
Address: 10560 Arrowhead Drive Suite 500 Fairfax, 22030
Contact Person: Joseph Miller Phone: 3033832328 Cell: 5136021619
Barricade Company: Barricade Phone:

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

Project Name / Description: Test boring including monitoring well for VA hospital.
Genreal Work Type: Staging Specific Work Type: Barricade
City Project # Public Way Permit #
Special Event Permit # Block Party Permit #

Closure Type	*On Street Name*	*From Number*	*To Number*	*Side of Street*
Street	**E 600 South**	**1328**	**1330**	**S**

Full Road Closure?	*Start Date*	*End Date*	*Barricade Manual Fig #*	*Description*
No	06/10/2020	07/10/2020	TA-6	SHALL USE TA-6 FOR SHOULDER WORK WITH MINOR ENCROACHMENT.

Approved By: Joseph Jacobsen Issue Date: 6/3/2020

Authorized Vehicle Parking Permit

Salt Lake City Community and Economic
Development
Division of Transportation
349 South 200 East #150
Salt Lake City, Utah 84111
Telephone (801) 535-6630
FAX (801) 535-6019

Permit # TRN2020-01469

Organization Name: CDM Federal Programs Corp
Address: 10560 Arrowhead Drive Suite 500, Fairfax, 22030
Applicant Person: Joseph Miller Phone: 3033832328 Cell: 5136021619

Requirements/Restrictions:

1.) Permit shall be displayed in Winshield (driver side)
2.) If space is occupied by another Vehicle or you have a problem with Meter bags call **801-535-6628**
3.) Do not block travel lanes, Sidewalks or driveways
4.) Permit may be revoked for violations of restrictions

From: **06/10/2020** **To:** **07/10/2020**

Approximate Meter Address: No Meters

Meters:

Restricted Parking Type:

Comments: Work area for drill rig. Staging area for temporary dumpster and drill equipment.

Approved By: Jacob Fenton Issued Date: 6/8/2020

SALT LAKE CITY CORPORATION
ENGINEERING DIVISION
349 SOUTH 200 EAST, SUITE 100
SALT LAKE CITY, UTAH 84111
PHONE (801) 535-6396
FAX (801) 535-6093
engpermit@slcgov.com

ENG2020-01164

Assigned Inspector: Jack Crockett
Office Phone:
Cell Phone:

Please contact inspector 24 hours before beginning work

PERMIT TO WORK IN THE PUBLIC WAY

Job Address:	**Contractor Phone**
1310 E 600 S	Phone1: Phone2: FAX:

Applicant Name:	Business Name: CDM Smith	Mailing Address: ,

Traffic Control Plan		**Starting and Ending Dates**		**Fee**	
Barricade Manual Figure	**TA6**	Begin Date:	**06/10/2020**	Total Fee:	**$242.00**
Traffic Permit Number:	**TRN2020-01443**	Expiration	**07/10/2020**		

Certificate of Insurance as Per City Ordinance – Chapter 14.32.065	Number:
Bonds As Per City Ordinance – Chapter 14.32.070	Number:
State Contractors License As Per City Ordinance – Chapter 14.32.025	Number:

Work Type: **Test Bore**
Drawing Included: **No**
APWA Standard:

Field Contact: Joseph **Phone:** 513.602.1619

Comments or Additional Requirements:
Installation of monitoring well. Joseph 513.602.1619

Notice: CALL 24 HOURS BEFORE COMMENCING WORK (535-6727) for Public Utility inspections or assigned inspector for all other inspections or 48 hours if work is scheduled on holidays and weekends. **Digging within ten feet (10') of any parkstrip street tree requires written authorization from Salt Lake City Urban Forestry. Contact Urban Forestry at (801) 535-7818, before any excavation with in ten feet of a street tree, for inspection and authorization.**
BEFORE EXCAVATION CONTACT BLUE STAKES – 811 or 1-800-662-4111

PERMIT APPLICATION: Application is hereby made for a permit to work in the public way as specified above. Applicant agrees to the terms on the reverse side and to any increase in fees should they be required by Engineering.
Print name of Applicant:

Signature of Applicant: Joseph Miller Date: 6/4/2020

Permit Issued By: Jack Crockett

**** WORK GUARANTEED - 3 YEARS FROM ACCEPTANCE DATE ****

GENERAL CONDITIONS

ACCEPTANCE OF CONDITIONS. It is understood and agreed by the Permittee that performing any work under this permit constitutes acceptance of Title 14 Chapter 32 of the Revised Ordinances of Salt Lake City and the City's Regulations for controlling construction, excavation and obstructions in the Public Right ¬of ¬Way, latest revision.
PROXIMATE WORK. Applicant agrees that no other work shall be done under this permit except that specifically set forth herein. It is the applicants responsibility to verify the exact location of city and private facilities prior to commencing excavation operations.
PERMIT AND DRAWINGS AT JOB SITE. The permittee shall have at the work site a copy of the permit, the traffic control plan, and the City approved drawings. NOTIFICATION. Notify the assigned inspector 24 hours before commencing work. Provide the following information: permit number, name and telephone number of permittee, date/time work is to commence, location of work and any other information which may be relevant to the work.
CONFORMANCE TO EXISTING LAWS AND CITY SPECIFICATIONS. Permittee agrees to be fully informed of all federal, state and local laws, ordinances, rules, regulations, and City Construction Specifications which, in any manner, affect the work, and at all times shall observe and comply with such laws, ordinances, rules, regulations and specifications. The City Engineer reserves the right to shut down and/or issue a citation for violation of these provisions.
ENVIRONMENTAL LIABILITY. Permittee agrees to indemnify, defend and hold harmless Salt Lake City, its officers, agents and employees against any claims, losses, damages, or expenses, including, without limitation, any fees or penalties imposed by the United States Environmental Protection Agency, the Utah State Department of Environmental Protection Agency, the Utah State Department of Environmental Quality or any other government or regulatory agency and any attorney's fees or costs sustained on account of, or related to, the presence, release, discovery or creation of hazardous wastes or similar materials as those materials are defined under applicable federal or state statutes or regulations, including, without limitation, the Resource Conservation and Recovery Act of 1976.
STANDARD SPECIFICATIONS AND STANDARD DRAWINGS. Comply with all Salt Lake City Standard Specifications and Standard Drawings for cutting surface, traffic control, backfill, compaction, selection of subgrade materials, asphalt and concrete surfacing requirements. Printed copies of the Regulations and Specifications can be obtained through the City Engineer's Office.
WARRANTY. Permittee shall guarantee the worksite restoration for a period of three years from completion and acceptance of the work, reasonable wear and tear excepted.

SPECIAL CONDITIONS

EXCAVATION OPERATIONS BLUE STAKES. Before commencing excavation operations, Permittee shall call "Blue Stakes" at 811
TRAFFIC CONTROL DEVICES. Traffic control devices must be in place before excavation begins.
ENVIRONMENTAL CONTROL DUST AND DEBRIS. Keep dust and debris controlled at the work site at all times. If necessary, wet down dusty areas with water and provide containers for debris.
WHEEL CLEANING ORDINANCE. Conform to Section 18.20.210 of the Revised Ordinances of Salt Lake City, 1987. The ordinance describes the City's requirements for keeping the public way clean.
NOISE. Permittee shall control noise in accordance with the Salt Lake County Health Department Noise Ordinance.
CLEANUP. Remove all equipment, material, barricades and similar items from the right of way. Areas used for storage of excavated material will be smoothed and returned to their original contour. Vacuum sweeping or hand sweeping is required when Engineer determines cleaning equipment is ineffective.
CONFORMANCE TO ENGINEERING REGULATIONS. All provisions of Salt Lake City Engineering Regulation 5¬R¬4, "Regulations for Controlling Construction in the City's Public Way", and other pertinent Engineering Regulations, will be adhered to. Engineering Regulations can be obtained in the office of the City Engineer, 349 South 200 East, Suite 100, Salt Lake City, Utah 84111.
TRAFFIC INTERRUPTION. Construction operations will be conducted in a manner to minimize the amount of interference or interruption of roadway traffic. Except during emergency conditions or unless authorized by the Engineer, construction operations such as excavation, backfill and pavement restoration on major/collector and CBD streets are prohibited during peak traffic hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.
TRAFFIC CONTROL MANUAL. All provisions of the current "Traffic Control Manual" shall be adhered to. This manual provides regulations concerning traffic control construction barricades, road closures, public and private access, traffic control signing, traffic control in Central Business Area and traffic control devices.
EMERGENCY INFORMATION. Permittee shall clearly post on barricades in letters not less than two inches (2 in.) high emergency information consisting of the name and emergency telephone number of the permittee, and the permittee shall cause at least one such barricade per block to be erected at every job site until the work is complete and formally accepted by the City.
STREET EXCAVATION IN WINTER. Excavation of City Streets during the winter months (herein defined as November 15 to April 1) will be allowed only if the work is a new service connection, required maintenance or emergency, or otherwise approved by the Engineer. Permanent patching of City streets excavated in the winter may be delayed until April 1, provided the permittee provides and maintains a temporary asphalt surface until such time as the permanent surfacing is accomplished.
PRECONSTRUCTION PICTURES OF EXISTING PUBLIC WAY IMPROVEMENTS. Prior to commencing the permit work, the permittee is encouraged to secure pictures of the conditions of the existing public way improvements such as curbing, sidewalk, landscaping, asphalt surfaces, etc.
TIME LIMIT. Unless authorized otherwise by the Engineer on the permit, all paving and replacement of street facilities shall be done within seven (7) calendar days from the time the excavation commences, or within three (3) calendar days on major or collector streets from the time excavation commences, except as provided for during excavation in winter or during weather conditions that do not allow paving according to applicable standards and specifications. If work is expected to exceed the above duration, the permittee shall submit a detailed construction schedule for approval. The schedule will address means and methods to minimize traffic disruption and complete the construction as soon as possible.
EXCAVATION WITHIN 10 FEET OF STREET TREES. Before commencing excavation activities, Permittee shall contact Salt Lake City Urban Forestry (801) 535-7818 for an inspection.

Willis Towers Watson

Telephone: 860-241-4438
Website: www.willistowerswatson.com
E-mail: danielle.m.bechard@willistowerswatson.com

April 23, 2020

CDM Smith
Attn: David Martin-CFO
10560 Arrowhead Drive, Suite 500
Fairfax, VA 22030

RE: ***Bond Number: 9340850***
Obligee: Salt Lake City Corporation, Engineering Division
Description: Work in the Public Way Permit Performance Bond

Attached is the completed document per your request. This was issued based upon the information you provided to our office and we urge you to check all of the information for accuracy (i.e. Power of Attorney, signatures, dates, amounts, description, etc.).

Please verify that the form attached is the form required and complete the execution with the proper signature(s) and seal.

If a premium is charged, our invoice will follow under a separate cover. Please note the premium payment for this bond is due upon receipt.

Thank you for the opportunity to service your surety needs. Should you have any questions, please do not hesitate to contact any member of your Willis Towers Watson Surety Team.

Sincerely,

Danielle M. Bechard

Willis Towers Watson Northeast, Inc.
10 State House Square, Floor 11
Hartford, CT 06103

WORK IN THE PUBLIC WAY PERMIT PERFORMANCE BOND

PERMITTEE
Name & Address: CDM Federal Programs Corporation
10560 Arrowhead Drive, Suite 500
Fairfax, VA 22030

Contact: Dave Martin
Telephone Number: (703) 691-6501
Facsimile Number: (703) 267-6083

SURETY
Name & Address: Fidelity and Deposit Company of Maryland
1299 Zurich Way, 5th Floor
Schaumburg, IL 60196-1056

Contact: Donna M Planeta
Telephone Number: 617-638-3700
Facsimile Number:

BOND AMOUNT:
$15,000
Bond Number: 9340850

CITY
Salt Lake City Corporation
Engineering Division
ATTN: Permits Department
349 South 200 East, Suite 100
P.O. Box 145506
Salt Lake City, Ut 84114-5506

1. Surety, as surety, and Permittee, as principal, hereby jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns to City, as obligee, for the performance of each of Permittee's obligations under each and every Permit to work in the public way (each a "Permit") issued to Permittee by the City Engineer and each obligation described in Sections 14.32.070 and 14.32.075 of the Salt Lake City Code (each obligation under a Permit or the Salt Lake City Code being referred to herein as a "Performance Obligation"). If Permittee performs each Performance Obligation, Surety and Permittee shall have no obligation under this Bond; otherwise this Bond shall remain in full force and effect.

2. Notice to Surety, City or Permittee shall be sent by registered or certified mail, postage prepaid, by facsimile, by hand delivery, or by overnight delivery service for which a delivery receipt is required, to the address shown on this Bond. Notices shall be effective on the date on which such notice was sent. Notice may be sent by facsimile. Facsimile notice shall be effective on the date of transmission provided that a confirmation establishing the successful transmission of the notice is sent by first-class mail, postage prepaid, along with a copy of the notice transmitted, no later than twenty-four (24) hours after the facsimile notice is transmitted. If any notice requires a period of less than seven (7) days for response, the notice shall be sent by facsimile. If the time for response to any notice expires on a Saturday, Sunday or a legal holiday in the State of Utah, the time shall be extended to the next business day.

3. If Permittee fails to perform a Performance Obligation, and such failure to perform has not been waived by City in writing, City may notify Permittee and Surety, at their respective addresses described above, that Permittee is in default and may formally terminate Permittee's right to perform the Performance Obligation.

4. Upon termination pursuant to Section 3, Surety shall promptly and at Surety's expense exercise one of the following options: (a) Surety may undertake to perform the Performance Obligation

itself, through its agents, or through independent contractors, or (b) Surety may determine the amount, not to exceed the total amount of this Bond specified above, for which Surety believes it may be liable to pay, and tender payment therefore to City. City has sole discretion to accept payment.

5. City may declare Surety to be in default pursuant to the following procedures: (a) after declaring Permittee to be in default as provided in Section 3, City shall issue an additional written notice to Surety, demanding that Surety perform its obligations under this Bond; and (b) Surety shall respond to City within 15 days after receipt of City's additional notice, either denying the claim or accepting liability and exercising its options under Section 4. If City declines to accept the payment tendered by Surety pursuant to Section 4(b), or if Surety fails to proceed pursuant to Section 4 with reasonable promptness, or if Surety denies the claim in whole or in part, City, without further notice, may pursue any remedies available to City.

6. After City has terminated Permittee's right to perform the Performance Obligation, and if Surety elects to perform the Performance Obligation as provided in Section 4, then the responsibilities of Surety to City shall not be greater than those of Permittee under the Permit, and the responsibilities of City to Surety shall not be greater than those of City under the Permit. To the limit of the amount of this Bond, Surety is obligated, without duplication, for: (a) the responsibilities of Permittee for performance of the Performance Obligation, and (b) any additional legal, design professional, and delay costs resulting from Permittee's default and resulting from the actions or failure to act of Surety under Section 4.

7. Surety shall not be liable to City for obligations of Permittee that are unrelated to the Performance Obligations. No right of action shall accrue on this Bond to any person or entity other than City or its heirs, executors, administrators, or successors.

8. Surety hereby waives notice of any change to the Permit.

9. This Bond is and shall be deemed "continuous" and shall apply to all Permits issued to Permittee by the City Engineer from time to time. Surety understands and agrees that one or more Permits may be outstanding for one or more active projects at the same time. This Bond shall be deemed to secure Permittee's obligations under each and every outstanding Permit, and with respect to all active projects, the same as if a new bond were executed for each and every separate Permit. However, Surety's liability under this bond shall not, despite the existence of multiple permits to Permittee, exceed the full amount stated above. The number of Permits covered by this Bond shall not be limited.

10. Surety shall have the right to withdraw as surety and terminate this Bond, and may do so upon giving thirty (30) days prior written notice of such withdrawal to Permittee and City, and this Bond and Surety's obligations hereunder shall terminate thirty (30) days after receipt of such written notice by City; provided, however, that Surety's obligations hereunder shall continue in full force and effect, notwithstanding such notice and termination, with respect to all projects that were commenced before such termination and the Permits issued in connection therewith, and for the three year period provided for in Section 14.32.075 of the Salt Lake City Code.

11. Any suit or action commenced by City under this Bond shall be in a court of competent jurisdiction in Salt Lake City, Utah. Any suit or action by City under this Bond must be instituted, if at all, within three (3) years after City's approval of the work referred to in the Permit.

DATED this 23rd day of April, 2020.

PERMITTEE:

CDM Federal Programs Corporation

By David A. Martin Digitally signed by David A. Martin Date: 2020.05.04 15:59:26 -04'00'

Its Dave Martin

SURETY:

Fidelity and Deposit Company of Maryland

By

Its Donna M Planeta, Attorney-in-fact

Exhibit A

(Here set forth any applicable limitation on number of Permits, or maximum aggregate liability, covered by this Bond.)

Bond Number 9340850

Obligee Salt Lake City Corporation, Engineering Division

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by **Robert D. Murray, Vice President,** in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint Donna M Planeta, its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND,** this 19th day of June, A.D. 2019.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Robert D. Murray
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 19th day of June, A.D. 2019, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Robert D. Murray, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Constance A. Dunn
Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2023

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 23rd day of April, 2020.

Brian M. Hodges, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
www.reportsfclaims@zurichna.com
800-626-4577

Disclosure Statement

ZURICH

NOTICE OF DISCLOSURE FOR AGENT & BROKER COMPENSATION

If you want to learn more about the compensation Zurich pays agents and brokers visit:

http://www.zurichnaproducercompensation.com

or call the following toll-free number: (866) 903-1192.

This Notice is provided on behalf of Zurich American Insurance Company

and its underwriting subsidiaries.

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
04/10/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Services Northeast, Inc.
Boston MA Office
53 State Street
Suite 2201
Boston MA 02109 USA

CONTACT NAME:
PHONE (A/C. No. Ext): 866-283-7122 **FAX (A/C. No.):** 800-363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	LM Insurance Corporation	33600
INSURER B:	Liberty Insurance Corporation	42404
INSURER C:	ACE Property & Casualty Insurance Co.	20699
INSURER D:		
INSURER E:		
INSURER F:		

INSURED
CDM Federal Programs Corporation
10560 Arrowhead Drive, Suite 500
Fairfax VA 22030 USA

COVERAGES **CERTIFICATE NUMBER:** 570081413581 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [X] LOC OTHER:			TB7611B8T8Z6040	01/01/2020	01/01/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$2,000,000 $1,000,000 $10,000 $2,000,000 $4,000,000 $4,000,000
	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	
C	X **UMBRELLA LIAB** [X] OCCUR **EXCESS LIAB** CLAIMS-MADE DED RETENTION			XEUG28194687004	01/01/2020	01/01/2021	EACH OCCURRENCE AGGREGATE	$1,000,000 $1,000,000
A A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? [N] **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WA561DB8T8Z6010 AOS WC5611B8T8Z6020 WI	01/01/2020 01/01/2020	01/01/2021 01/01/2021	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Contract Name and Number: USACE KC, W912DQ18D3008; Task Order Name and Number: 700S 1600E PCE Plume RI, W912DQ19F3048; Site Name: 700 South 1600 East PCE Plume Superfund Site.
Salt Lake City Corporation, Engineering Division, Attn: Permits, PO Box 145506, Salt Lake City, UT 84114-5506 is included as Additional Insured in accordance with the policy provisions of the General Liability policy.

CERTIFICATE HOLDER

U.S. Army Corps of Engineers
Kansas City District
Attn: Josephine Newton-Lund
601 E. 12th Street/CENWK-PME-S
Kansas City MO 64106 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Northeast Inc.

Holder Identifier : ADJW

Certificate No : 570081413581

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AGENCY CUSTOMER ID: 10518329
LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Aon Risk Services Northeast, Inc.	CDM Federal Programs Corporation
POLICY NUMBER See Certificate Number: 570081413581	
CARRIER See Certificate Number: 570081413581 / NAIC CODE	EFFECTIVE DATE:

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 **FORM TITLE:** Certificate of Liability Insurance

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER	
INSURER	
INSURER	
INSURER	

ADDITIONAL POLICIES If a policy below does not include limit information, refer to the corresponding policy on the ACORD certificate form for policy limits.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
	WORKERS COMPENSATION							
B		N/A		WA761DB8T8Z6030 MA & PR	01/01/2020	01/01/2021		

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or

2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
Any Person or Organization to whom you become obligated to include as an Additional Insured as a result of any contract or agreement you enter into.	**Per the contract or agreement**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

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Policy Number **TB7-611-B8T8Z6-040**
Issued by **LIBERTY INSURANCE CORPORATION**

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART
MOTOR CARRIER COVERAGE PART
GARAGE COVERAGE PART
TRUCKERS COVERAGE PART
EXCESS AUTOMOBILE LIABILITY INDEMNITY COVERAGE PART
SELF-INSURED TRUCKER EXCESS LIABILITY COVERAGE PART
COMMERCIAL GENERAL LIABILITY COVERAGE PART
EXCESS COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART
LIQUOR LIABILITY COVERAGE PART
COMMERCIAL LIABILITY – UMBRELLA COVERAGE FORM

Schedule

Name of Other Person(s) / Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
A Schedule of each person or Organization provided to us by the First Named Insured within 15 days of written cancellation notice received by the First Named Insured for any reason other than nonpayment of premium As Required by Written Contract		30

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule above. We will send notice to the email or mailing address listed above at least 10 days, or the number of days listed above, if any, before the cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

All other terms and conditions of this policy remain unchanged.

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CHUBB

NOTICE OF CANCELLATION TO OTHERS – SPECIFIED PARTIES

Named Insured			Endorsement Number
CDM Smith, Inc.			017
Policy Symbol	Policy Number	Policy Period	Effective Date of Endorsement
XEU	G28194687 004	01/01/2020 to 01/01/2021	01/01/2020
Issued By (Name of Insurance Company)			
ACE Property and Casualty Insurance Company			

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the following:

ENHANCED COMMERCIAL UMBRELLA LIABILITY POLICY

The policy is amended as follows:

Section **VI. CONDITIONS**, is amended to add the following:

- **Notice to Others**

1. If we cancel the Policy prior to its expiration date by notice to you or the first "Named Insured" for any reason other than nonpayment of premium, we will, as set out below, send written notice of cancellation, via such electronic or other form of notification as we determine, to the persons or organizations listed in the schedule set out below (the "Schedule"). You or your representative must provide us with both the physical and e-mail address of such persons or organizations, and we will utilize such e-mail address or physical address that you or your representative provided to us on such Schedule.
2. We will send or deliver such notice to the e-mail address or physical address corresponding to each person or organization indicated in the Schedule at least 30 days prior to the cancellation date applicable to the Policy.
3. The notice referenced in this endorsement is intended only to be a courtesy notification to the person(s) or organization(s) named in the Schedule in the event of a pending cancellation of coverage. We have no legal obligation of any kind to any such person(s) or organization(s). Our failure to provide advance notification of cancellation to the person(s) or organization(s) shown in the Schedule shall impose no obligation or liability of any kind upon us, our agents or representatives, will not extend any Policy cancellation date and will not negate any cancellation of the Policy.
4. We are not responsible for verifying any information provided to us in any Schedule, nor are we responsible for any incorrect information that you or your representative provide to us. If you or your representative does not provide us with the information necessary to complete the Schedule, we have no responsibility for taking any action under this endorsement. In addition, if neither you nor your representative provides us with e-mail and physical address information with respect to a particular person or organization, then we shall have no responsibility for taking action with regard to such person or entity under this endorsement.
5. We may arrange with your representative to send such notice in the event of any such cancellation.
6. You will cooperate with us in providing, or in causing your representative to provide, the e-mail address and physical address of the persons or organizations listed in the Schedule.
7. This endorsement does not apply in the event that you cancel the Policy.

SCHEDULE

Name of Person or Entity	E-Mail Address	Physical Address
Per schedule on file with the Producer noted on the Declarations, provided such schedule is provided to us by such Producer at the time the Producer is notified of cancellation as referenced above.		

All other terms and conditions of the policy remain unchanged.

Authorized Representative

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

NOTICE OF CANCELLATION TO THIRD PARTIES

A. If we cancel this policy for any reason other than nonpayment of premium, we will notify the persons or organizations shown in the Schedule below. We will send notice to the email or mailing address listed below at least 10 days, or the number of days listed below, if any, before cancellation becomes effective. In no event does the notice to the third party exceed the notice to the first named insured.

B. This advance notification of a pending cancellation of coverage is intended as a courtesy only. Our failure to provide such advance notification will not extend the policy cancellation date nor negate cancellation of the policy.

SCHEDULE

Name of Other Person(s) / Organization(s):	**Email Address or mailing address:**	**Number Days Notice:**
Per Schedule on file with Broker	Per Schedule on file with Broker	30

All other terms and conditions of this policy remain unchanged.

Issued by LM Insurance Corporation

For attachment to Policy No. WA5-61D-B8T8Z6-010 Effective Date: 1/1/2020 Premium $

Issued to CDM Smith Inc.

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Policy Number TB7-611-B8T8Z6-040
Issued by Liberty Insurance Corporation

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Change Endorsement

Named Insured
CDM Smith Inc

Endorsement number
005

The following changes are effective as of the effective dates shown below and will terminate with the policy. All other provisions of the policy remain unchanged.

Change Description

Effective Date: 05/15/2020

The following form(s) are added:

Additional Insured - State Or Governmental Agency Or Subdivision Or Political Subdivision - Permits Or Authorizations Relating To Premises, Form CG 20 13 04 13

Issued: 05/19/2020 CRF

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – STATE OR GOVERNMENTAL AGENCY OR SUBDIVISION OR POLITICAL SUBDIVISION – PERMITS OR AUTHORIZATIONS RELATING TO PREMISES

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

State Or Governmental Agency Or Subdivision Or Political Subdivision:
Salt Lake City Corporation Engineering Division Attn: Permits PO Box 145506 Salt Lake City, UT 84144
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. **Section II – Who Is An Insured** is amended to include as an additional insured any state or governmental agency or subdivision or political subdivision shown in the Schedule, subject to the following additional provision:

This insurance applies only with respect to the following hazards for which the state or governmental agency or subdivision or political subdivision has issued a permit or authorization in connection with premises you own, rent or control and to which this insurance applies:

1. The existence, maintenance, repair, construction, erection or removal of advertising signs, awnings, canopies, cellar entrances, coal holes, driveways, manholes, marquees, hoist away openings, sidewalk vaults, street banners or decorations and similar exposures; or
2. The construction, erection or removal of elevators; or
3. The ownership, maintenance or use of any elevators covered by this insurance.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

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This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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Appendix F

Salt Lake City VHA Daily Excavation Checklists

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-25 Pre clearing		
Date: 3/10/20 Time: 1245	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: ~~15~~ 10'	Excavation Width: 2'
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes NA JM
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA JM Yes NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

MW-28 3/10/2020

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/10/2020
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-28 Trenching		
Date: 3/11/20 Time: 0800	CP: Joe Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 10'	Excavation Width: 2
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes/NA
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes use truck
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	yes
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 3/11/2024

Joe Mills

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-23 Boring Location		
Date: 3/12/20 Time: 0800	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 14.5'	Excavation Width: 2'
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	Yes
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/12/2020
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-28 SLC VA		
Date: 3/13/20 Time: 0715	CP: J. Miller	
Soil Type: Gravel		
Soil Classification: NA	Excavation Depth: 40	Excavation Width: 12"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	yes
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 3/13/2020

Joe Miller

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-28 Building 7A		
Date: 3/15/21 Time: 0750	CP: J. Miller	
Soil Type: gravels, silts, sand		
Soil Classification:	Excavation Depth: 15'	Excavation Width: 2'
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/15/20
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW28 SCCVA		
Date: 3/16/20	Time: 0745	CP: J. Miller
Soil Type: Gravel - Silt		
Soil Classification:	Excavation Depth: 119	Excavation Width: 10"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	~~NA~~ yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/16/20
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-28		
Date: 3/17/20 Time: 0800	CP: J.M.	
Soil Type: Gravel/Silt/Sand		
Soil Classification:	Excavation Depth: 140	Excavation Width: 10"
Type Of Protective System Used:		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	✓ Yes
B. CP has the authority to remove employees from the excavation immediately.	✓ Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/17/20
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		
Date: 3/18/22 Time: 0745	CP: J. Miller	
Soil Type: Gravel Silt Sand		
Soil Classification:	Excavation Depth: 20'	Excavation Width: 10'
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	✓
B. CP has the authority to remove employees from the excavation immediately.	✓
C. Surface encumbrances removed or supported.	✓
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	✓
E. Hard hats worn by all employees	✓
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	JM ~~Yes~~ NA
J. Backfilling progresses with removal of support system.	JM ~~NA~~ Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

JM 3/30/20
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: VA Hospital SL: - MW-28		
Date: 3/17/20 Time:	CP: Kimberly Faust	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 210'	Excavation Width: 8"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	NA
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	NA
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	NA
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/19/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-27		
Date: 3/20/24 Time: 0930	CP: J. Miller K Yount	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 0-15	Excavation Width: 2'
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	YES
B. Water removal equipment monitored by a CP.	YES
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	YES
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	YES
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	YES
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	YES
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	YES
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	YES
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	YES
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

3/20/20
Date

Joe M. Orr
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC PCE Plume - MW-28		
Date: 3/20/20 Time: 0915	CP: Kimberly Yauk	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 210'	Excavation Width: 8"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y/NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Y
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions taken to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	NA
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	Y/NA
Corrective Action and Comments	

Signature of CP/COR

3/20/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SALT LAKE CITY VA			
Date: 3-22-20	Time: 0930	CP: CONNOR KELLEY	
Soil Type: N/A			
Soil Classification: N/A	Excavation Depth: 12.7	Excavation Width: 9"	
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	YES
B. CP has the authority to remove employees from the excavation immediately.	YES
C. Surface encumbrances removed or supported.	N/A
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	~~N/A~~ YES
E. Hard hats worn by all employees	YES
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	YES
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	YES
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	YES
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	N/A
K. Employees are required to stand away from any vehicle being loaded or unloaded.	YES
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	YES
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	YES
2. Utilities:	
A. Utility companies contacted and/or utilities located.	YES
B. Exact location of utilities marked.	YES
C. Underground installations protected, supported, or removed when excavation is open.	N/A
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

3/22/20

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	N/A
J. Backfilling progresses with removal of support system.	N/A
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	YES/
Corrective Action and Comments	N/A.

Signature of CP/COR — Date: 3-22-20

Connor Kelley

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-27		
Date: 3/23/22 Time: 0915	CP: Kimberly Yank	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 110	Excavation Width: 8 to 9"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y/NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Y
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y/NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA PID → Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	~~N~~ Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided to ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA → Casing Yes
J. Backfilling progresses with removal of support system. NA Today	Y → Annular material
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 3/23/20

Printed name of CP/COR: Kimberly Yauk

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SALT LAKE CITY VA			
Date: 3-24-20	Time:	CP: C. KELLEY	
Soil Type: N/A			
Soil Classification: N/A		Excavation Depth: 180'	Excavation Width: 9"
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	YES
B. CP has the authority to remove employees from the excavation immediately.	YES
C. Surface encumbrances removed or supported.	N/A
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	YES
E. Hard hats worn by all employees	YES
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	YES
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	YES
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	YES
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	N/A
K. Employees are required to stand away from any vehicle being loaded or unloaded.	YES
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	YES
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	YES
2. Utilities:	
A. Utility companies contacted and/or utilities located.	YES
B. Exact location of utilities marked.	YES
C. Underground installations protected, supported, or removed when excavation is open.	N/A
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N/A
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	N/A
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	N/A
F. Employees protected from cave-ins when entering or exiting the excavation.	N/A
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	YES
B. Water removal equipment monitored by a CP.	N/A
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	YES
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	YES
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	YES
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	N/A
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	YES
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	YES
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	N/A
B. Materials and equipment used for protective systems inspected and in good condition.	N/A
C. Materials and equipment not in good condition have been removed from service.	YES
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	N/A
J. Backfilling progresses with removal of support system.	N/A
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	YES N/A
Corrective Action and Comments	

Signature of CP/COR — Date: 3-24-20

Printed name of CP/COR: Connor Kelley

3/24/20

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SALT LAKE CITY VA		
Date: 3-25-20 Time: 0900	CP: C. KELLEY	
Soil Type: N/A		
Soil Classification: N/A	Excavation Depth: 220'	Excavation Width: 5'11
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	YES
B. CP has the authority to remove employees from the excavation immediately.	YES
C. Surface encumbrances removed or supported.	N/A
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	YES
E. Hard hats worn by all employees	YES
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	YES
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	YES
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	YES
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	N/A
K. Employees are required to stand away from any vehicle being loaded or unloaded.	YES
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	YES
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	YES
2. Utilities:	
A. Utility companies contacted and/or utilities located.	YES
B. Exact location of utilities marked.	YES
C. Underground installations protected, supported, or removed when excavation is open.	N/A
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N/A
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	N/A
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	N/A
F. Employees protected from cave-ins when entering or exiting the excavation.	N/A
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	YES
B. Water removal equipment monitored by a CP.	N/A
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	YES
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	YES
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	YES
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	N/A
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	YES
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	YES
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	N/A
B. Materials and equipment used for protective systems inspected and in good condition.	N/A
C. Materials and equipment not in good condition have been removed from service.	YES
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	N/A
J. Backfilling progresses with removal of support system.	N/A
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	YES / N/A
Corrective Action and Comments	

Signature of CP/COR — Date: 3-25-20

Connor Kelley — Printed name of CP/COR

3/25/20

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-27			
Date: 3/26/24	Time: 0900	CP: Kimberly Funk	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 10'	Excavation Width: 2 feet	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	✓Yes
B. CP has the authority to remove employees from the excavation immediately.	✓Yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Y
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard. PID →	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y/NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	~~NA~~ Yes 3/26/20
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Casing →

Signature of CP/COR

3/26/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		
Date: 4/6/20 Time: 1200	CP: J Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 4'	Excavation Width: 8"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 4/6/20

Printed name of CP/COR: Joe Miller

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-23		
Date: 4/7/20 Time: 0725	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 14'	Excavation Width: 9"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	✓ Yes
B. CP has the authority to remove employees from the excavation immediately.	✓ Yes
C. Surface encumbrances removed or supported.	✓ Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Yes
B. Materials and equipment used for protective systems inspected and in good condition.	~~Yes~~ NA
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 4/7/20

Joe Miller

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC-VA @ MW-23			
Date: 4/16/12	Time: 9:00	CP: Peter Boot	
Soil Type: NA			
Soil Classification: NA		Excavation Depth: 360	Excavation Width: 9"
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

Memorandum 00Q.44

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	yes

F. Members of support system securely fastened to prevent failure.	yes
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	yes
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NO
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 4/10/20

Printed name of CP/COR: Betsy Both

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		
Date: 4/17/20	Time: 900	CP: Betsy Bott
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 36	Excavation Width: 6ft
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

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feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	yes

F. Members of support system securely fastened to prevent failure.	yes
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	yes
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	as we go
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Betsy Booth — 4/17/20

Signature of CP/COR — Date

Betsy Booth

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC- VA		
Date: 4/19/20 Time: 9:00	CP: Beth, Both	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 36"	Excavation Width: 9"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	yes/NA
Corrective Action and Comments	

Signature of CP/COR

4/19/26
Date

BETSY BOTT
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC - VA			
Date: 4/2/20	Time: 9:30	CP: Betsy Booth	
Soil Type: NA			
Soil Classification: NA		Excavation Depth: 36"	Excavation Width: 9"
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	yes
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

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feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	yes
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	nA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	nA
H. Excavations below the level of the base or footing supported, approved by an RPE.	nA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	nA
J. Backfilling progresses with removal of support system.	nA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	nA
L. Shield system placed to prevent lateral movement.	nA
M. Employees are prohibited from remaining in shield system during vertical movement.	Y/N/nA
Corrective Action and Comments	

Betsy Bott

Signature of CP/COR

4/20/20

Date

BETSY BOTT

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SLC-VA @ MW-23		
Date: 7/21/20	Time: 9:30	CP: Betsy Bolt	
Soil Type:	NA		
Soil Classification: NA		Excavation Depth: 3&0	Excavation Width: 9'
Type Of Protective System Used:	NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes/NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	yes
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

Date 9/21/20

Printed name of CP/COR Betty Bott

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC-VA @ mw-26			
Date: 4/22/20	Time: 1000	CP: Betty Bot	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 9'	Excavation Width: 10"	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

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feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NP
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

1/22/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		CP: MW 26	
Date: 4/23	Time: 8:30	CP: Betty Bolt	
Soil Type: NA			
Soil Classification: NA		Excavation Depth: 4'	Excavation Width: 10" - 8'
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Betsy Bott
Signature of CP/COR

4/23/26
Date

Betsy Bott
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-25		
Date: 4/29/24 Time:	CP: Kimberly M Yauk	
Soil Type: B NA		
Soil Classification: NA	Excavation Depth: 10'	Excavation Width: 8''
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y/NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Y
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	Y/NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions taken to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y/NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure. Casing → Y	Y/NA
J. Backfilling progresses with removal of support system. Casing → Y	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

4/29/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25			
Date: 4/30/20	Time: 0815	CP: Kimberly Yount	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 100'		Excavation Width: 8"
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA/Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	Y/NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	NA
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure. casing	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

4/30/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25			
Date: 5/1/20	Time:	CP: Kimberly Yauk	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 150'	Excavation Width: 8" to 120', 7" to 150'	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA/Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/1/20
Date

Kimberly Yank
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25			
Date: 5/3/20	Time: 0955	CP: Kimberly Yauk	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 2\0'		Excavation Width: 7''
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y/NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	Y/NA

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25		
Date: 5/3/20 Time: 0955	CP: Kimberly Yauk	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 2\0'	Excavation Width: 7"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y/NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	Y/NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — 5/3/20 Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25		
Date: 5/4/20 Time: 0900	CP: Kimberly Yount	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 260'	Excavation Width: 7"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y/NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	Y/NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/4/20
Date

Kimberly Yank
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26		
Date: 5/4/20 Time: 0830	CP: J. Miller	
Soil Type: Gravel		
Soil Classification: NA	Excavation Depth: 100'	Excavation Width: 10"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	YES
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	YES
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 5/4/2020

Joe Miller

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC - VA - MW-25		
Date: 5/5/20 Time: 0815	CP: Kimberly Yauk	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: 28.0'	Excavation Width: 6"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	NA
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	~~NA~~ Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	Y

F. Members of support system securely fastened to prevent failure.	Y
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 5/5/20

Printed name of CP/COR: Kimberly Faulk

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-23		
Date: 4/5/22 Time: 0800	CP: J. Miller	
Soil Type: Gravel		
Soil Classification: NA	Excavation Depth: 150	Excavation Width: 9"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Yes
B. Materials and equipment used for protective systems inspected and in good condition.	Yes
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/5/20
Date

Joe Mills
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA - MW-25		
Date: 5/6/20 Time: 0845	CP: Kimberly Yauk	
Soil Type: NA		
Soil Classification: N/A	Excavation Depth: 310'	Excavation Width: 6"
Type Of Protective System Used: NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	NA
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	Y/NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y/NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	NA
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and ~~other rescue equipment~~.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	Y/NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure. casing	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/6/20
Date

Kimberly Yauk
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26		
Date: 5/6/20	Time: 0800	CP: J. Miller
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 20'	Excavation Width: 4"
Type Of Protective System Used:		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/6/20
Date

Joe Mills
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26		
Date: 5/7/20 Time: 0800	CP: B Carreon	
Soil Type: Gravel		
Soil Classification: G	Excavation Depth: 240	Excavation Width: 9"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N/A
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	N/A
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	N/A
F. Employees protected from cave-ins when entering or exiting the excavation.	N/A
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	Yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Yes
B. Materials and equipment used for protective systems inspected and in good condition.	Yes
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	N/A
Corrective Action and Comments	

Signature of CP/COR

5/7/20
Date

Ben Carreon
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SWMU VA MW-26		
Date: ~~Friday~~ 7/8/22	Time: 0900	CP: B Curran	
Soil Type:	Gravel		
Soil Classification:	B	Excavation Depth: 240	Excavation Width: 9"
Type Of Protective System Used:	N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N/A
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	N/A
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	N/A
F. Employees protected from cave-ins when entering or exiting the excavation.	N/A
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	N/A
Corrective Action and Comments	

Signature of CP/COR

5/8/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		
Date: 5/8/20 Time: 0845	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 270	Excavation Width: 9"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	Yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	yes
J. Backfilling progresses with removal of support system.	yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/8/20
Date

Dave Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA		
Date: 5/10/20 Time: 0730	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 150	Excavation Width: 9
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	yes

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/10/20
Date

Jack Mills
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26			
Date: 5/10/20	Time: 0730	CP: B Carreon	
Soil Type: 4			
Soil Classification: 4	Excavation Depth: 290	Excavation Width: 9'-6"	
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	~~N/A~~ S/C
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N/A
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	N/A
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	N/A
F. Employees protected from cave-ins when entering or exiting the excavation.	N/A
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Y
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	N/A
Corrective Action and Comments	

Signature of CP/COR

Date 5/10/20

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SVC VA MW-26			
Date: 5/1/20	Time: 0800	CP: B Carrera	
Soil Type: Gravel / Silt			
Soil Classification: A / MC		Excavation Depth: 3'-0"	Excavation Width: 1'-6"
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/11/20
Date

Ben Carrasco
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA mw-26		
Date: 5/12/20 Time:	CP:	
Soil Type: Gravel / silt		
Soil Classification: GM-L	Excavation Depth: 3.50'	Excavation Width: 6'-9"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	↓
F. Employees protected from cave-ins when entering or exiting the excavation.	↓
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	↓
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	↓
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	↓
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	↓

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

Date 5/12/20

Ben Carreon

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VOC MW-26			
Date: 5/13/20	Time: 0800	CP: B Corcoran	
Soil Type:	Gravel/silt		
Soil Classification:	Lean	Excavation Depth: 360'	Excavation Width: 6-9"
Type Of Protective System Used:	N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/15/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26		
Date: ~~5/4/5~~ 5/4/15 Time: 0800	CP: B Carson	
Soil Type: gravelly silt		
Soil Classification: G/M-C	Excavation Depth: 330	Excavation Width: 6-9"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	↓

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/14/20
Date

Ben Carreon
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SLC VA MW-26		
Date: 5/15/20	Time: 0800	CP: B Emerson	
Soil Type:	gravelly silt		
Soil Classification:	native	Excavation Depth: 3'-0"	Excavation Width: 6-9"
Type Of Protective System Used:		N/A	

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	↓
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	↓
E. Hard hats worn by all employees	↓
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	↓
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	↓
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	↓
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	↓
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	↓
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	↓
F. Employees protected from cave-ins when entering or exiting the excavation.	↓
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	↓
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	↓
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	↓

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

BS
Signature of CP/COR

5/15/20
Date

Ben Carlson
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-26			
Date: 5/16/20	Time: 0800	CP: B Carrera	
Soil Type: G/ML gravel/silt			
Soil Classification: G/ML	Excavation Depth: 7-9	Excavation Width: 7-9"	
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	^
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	Y
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	Y N/A
L. Shield system placed to prevent lateral movement.	↑
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/16/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW24 SLC-VA			
Date: 5/15/20	Time: 9:00	CP: Beth Batt	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 2'0		Excavation Width: 4'
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	
Corrective Action and Comments	

Signature of CP/COR

Date 5/15/20

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA MW-25		
Date: 5/7/20 Time: 0805	CP: J. Miller	
Soil Type: Gravel		
Soil Classification:	Excavation Depth: 320	Excavation Width: 9"
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	Yes
C. Surface encumbrances removed or supported.	Yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Yes
E. Hard hats worn by all employees	Yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	Yes
C. Underground installations protected, supported, or removed when excavation is open.	Yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	N/A
H. Excavations below the level of the base or footing supported, approved by an RPE.	N/A
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	YES
J. Backfilling progresses with removal of support system.	YES
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	N/A
M. Employees are prohibited from remaining in shield system during vertical movement.	N/A
Corrective Action and Comments	

Signature of CP/COR

5/7/20
Date

Joe Miller
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC - VA @ MW25			
Date: 5/11/20	Time: 8:00	CP: Beth Bott	
Soil Type: NA			
Soil Classification: NA		Excavation Depth: 32'	Excavation Width: 9"
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Betsy Bott 5/11/20

Signature of CP/COR Date

Betsy Bott

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SLC VA @ MW24		
Date: 5/12/24	Time: 9:00	CP:	
Soil Type:	NA		
Soil Classification: NA	Excavation Depth: 40'	Excavation Width:	9ft
Type Of Protective System Used:	NA		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	NA
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	NA
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Betty Bolt
Signature of CP/COR

5/12/26
Date

Betty Bolt
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA			
Date: 5/13/20	Time:	CP: Betsy Bott	
Soil Type: NA			
Soil Classification: NA		Excavation Depth: 12.5	Excavation Width: 9'
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	NA
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR

5/13/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	JLC VA @ MW24		
Date: 5/14/20	Time: 8:20	CP: Betsy Batt	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 10'	Excavation Width: 9"	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	yes
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NA
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	NA
J. Backfilling progresses with removal of support system.	NA
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR — Date: 5/14/20

Printed name of CP/COR: Betsy Bolt

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	See VA map		
Date: 5/20/25	Time: 0715	CP:	
Soil Type:	gravelly s.l.		
Soil Classification: Type C	Excavation Depth: 13.5'	Excavation Width: ~~8-9'~~ 5'	
Type Of Protective System Used:	N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	↓
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	↓
E. Hard hats worn by all employees	↓
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	↓
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	↓
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	↓
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	↓
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	↓
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	↓
J. Backfilling progresses with removal of support system.	↓
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

Date 5/20/22

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SLC VA MW-26	
Date: 5/19/26 Time: 0730	CP:	
Soil Type: Gravel, sand, silt		
Soil Classification: Gravel	Excavation Depth: 34'	Excavation Width: 6' 8"-9" ac 9/19
Type Of Protective System Used: N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	
C. Underground installations protected, supported, or removed when excavation is open.	↓
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	N
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y ↓
J. Backfilling progresses with removal of support system.	↓
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/19/20
5/27/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	DLC VA MW-24		
Date: 5/4/20	Time: 0800	CP:	
Soil Type:	gravelly silt		
Soil Classification:	Hand	Excavation Depth: 2.50'	Excavation Width: 8-9'
Type Of Protective System Used:	N/A		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	↓
C. Surface encumbrances removed or supported.	
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	
E. Hard hats worn by all employees	
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	↓
K. Employees are required to stand away from any vehicle being loaded or unloaded.	
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	↓
C. Underground installations protected, supported, or removed when excavation is open.	
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	↓
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	↓
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	↓
F. Employees protected from cave-ins when entering or exiting the excavation.	↓
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	↓
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	↓
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	↓
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	Y
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	↓
C. Materials and equipment not in good condition have been removed from service.	↓
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	N/A
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	↓
H. Excavations below the level of the base or footing supported, approved by an RPE.	↓
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Y
J. Backfilling progresses with removal of support system.	↓
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	N/A
L. Shield system placed to prevent lateral movement.	↓
M. Employees are prohibited from remaining in shield system during vertical movement.	↓
Corrective Action and Comments	

Signature of CP/COR

5/6/20
Date

Ben Carreon
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLC VA			
Date: 6/5/20	Time: 8:30	CP: Betts, Bott	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 36	Excavation Width: 8'	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	NA
C. Materials and equipment not in good condition have been removed from service.	NO
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Betsy Bott

Signature of CP/COR

6/5/20

Date

Betsy Bott

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: SLCVA @ MW29			
Date: 6/7/20	Time: 9:20	CP: B Leis, Bault	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: 6'	Excavation Width: 7'	
Type Of Protective System Used: NA			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	NA
B. Water removal equipment monitored by a CP.	NA
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	//
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	N
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	Y
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	NA
B. Materials and equipment used for protective systems inspected and in good condition.	
C. Materials and equipment not in good condition have been removed from service.	
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	
Corrective Action and Comments	

Betty Bott
Signature of CP/COR

4/1/20
Date

Betty Bott
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location:	SLC VA Q M.J 31				
Date: 6/9/20	Time: 9:20	CP: Bug Ball			
Soil Type:	N/A				
Soil Classification:	N/A	Excavation Depth:	96	Excavation Width:	8N
Type Of Protective System Used:	N/A				

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	Y
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	N/A
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	N/A
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Y
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	N/A
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	N/A

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	N/A
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	N/A
B. Water removal equipment monitored by a CP.	N/A
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	N/A
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Y
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	N/A
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	N/A
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	N/A
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	N/A
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	N/A
B. Materials and equipment used for protective systems inspected and in good condition.	N/A
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	N/A
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	N/A

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	I
H. Excavations below the level of the base or footing supported, approved by an RPE.	I
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	I
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	I
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	I
Corrective Action and Comments	

Signature of CP/COR

6/9/20
Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30 SLCVA			
Date: 5/27/20	Time: 0800	CP: J. Miller	
Soil Type: Gravel			
Soil Classification: C	Excavation Depth: 9.5'		Excavation Width: 2'
Type Of Protective System Used: N/A			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Yes
B. CP has the authority to remove employees from the excavation immediately.	yes
C. Surface encumbrances removed or supported.	yes
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	yes
E. Hard hats worn by all employees	yes
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Yes
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	NA
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Yes
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Yes
K. Employees are required to stand away from any vehicle being loaded or unloaded.	Yes
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Yes
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Yes
B. Exact location of utilities marked.	yes
C. Underground installations protected, supported, or removed when excavation is open.	yes
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	NA
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	NA
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	NA
F. Employees protected from cave-ins when entering or exiting the excavation.	NA
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	yes
B. Water removal equipment monitored by a CP.	yes
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	Yes
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	Yes
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	yes
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	yes
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	yes
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	yes
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	yes
B. Materials and equipment used for protective systems inspected and in good condition.	yes
C. Materials and equipment not in good condition have been removed from service.	yes
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	NA
H. Excavations below the level of the base or footing supported, approved by an RPE.	NA
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	Yes
J. Backfilling progresses with removal of support system.	Yes
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	NA
L. Shield system placed to prevent lateral movement.	NA
M. Employees are prohibited from remaining in shield system during vertical movement.	NA
Corrective Action and Comments	

Signature of CP/COR 5/22/20

Date

Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30			
Date: 6/2/20	Time: 0730	CP: F. MORALES	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: NA		Excavation Width: NA
Type Of Protective System Used: LEVEL D PPE			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank R. Morris
Signature of CP/COR

6/2/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30		
Date: 6/3/20 Time: 0715	CP: F. MORRIS	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA
Type Of Protective System Used: LEVEL D PPE		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank K. Morris
Signature of CP/COR

6/3/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30			
Date: 6/4/20	Time: 0900	CP: F. MORRIS	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA	
Type Of Protective System Used: LEVEL D PPE			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Signature of CP/COR

6/4/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30			
Date: 6/5/20	Time: 0745	CP: F. MOLLIS	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA	
Type Of Protective System Used: LEVEL D PPE			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank K. Morris
Signature of CP/COR

6/5/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30		
Date: 6/7/20 Time: 0715	CP: F. MORRIS	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA
Type Of Protective System Used: LEVEL D PPE		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank K. Morris
Signature of CP/COR

6/7/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30		
Date: 6/8/20 Time: 0725	CP: F. MORRIS	
Soil Type: NA		
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA
Type Of Protective System Used: LEVEL D PPE		

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Signature of CP/COR

6/8/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30			
Date: 6/9/20	Time: 0720	CP: F. MOLLIS	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: NA		Excavation Width: NA
Type Of Protective System Used: LEVEL D PPE			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank K. [illegible]
Signature of CP/COR

6/9/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

ATTACHMENT A

Daily Excavation Checklist
(To be completed by the CP)

Site Location: MW-30			
Date: 6/10/20	Time: 0705	CP: F. Mollis	
Soil Type: NA			
Soil Classification: NA	Excavation Depth: NA	Excavation Width: NA	
Type Of Protective System Used: LEVEL D PPE			

Indicate for each item: YES - NO - or N/A for not applicable.
Provide date item last inspected if not required daily

1. General Inspection of Jobsite:	
A. Excavations, adjacent areas, and protective systems inspected by a CP daily before the start of work.	Y
B. CP has the authority to remove employees from the excavation immediately.	Y
C. Surface encumbrances removed or supported.	Y
D. Employees protected from loose rock or soil that could pose a hazard by falling or rolling into the excavation.	NA
E. Hard hats worn by all employees	Y
F. Spoils, materials, and equipment set back at least two feet from the edge of the excavation.	Y
G. Barriers provided at all remotely located excavations, wells, pits, shafts, etc.	Y
H. Walkways and bridges over excavations six feet or more in depth are equipped with standard guardrails and toe boards (fall protection).	NA
I. Warning vests or other highly visible clothing provided and worn by all employees exposed to public vehicular traffic.	Y
J. Warning system established and utilized when mobile equipment is operating near the edge of the excavation.	Y
K. Employees are required to stand away from any vehicle being loaded or unloaded.	NA
L. Employees are not permitted underneath loads handled by lifting or digging equipment.	Y
M. Employees prohibited from working on the faces of slopes or benched excavations above other employees.	NA
2. Utilities:	
A. Utility companies contacted and/or utilities located.	Y
B. Exact location of utilities marked.	Y
C. Underground installations protected, supported, or removed when excavation is open.	Y
3. Means of Access and Egress:	
A. Lateral travel to means of egress no greater than 25 feet in excavations four	NA

feet or more in depth.	
B. Ladders used in excavations secured and extended three feet above the edge trench.	NA
C. Structural ramps used by employees designed by a CP.	
D. Structural ramps used for equipment designed by a registered professional Engineer (RPE).	
E. Ramps constructed of materials of uniform thickness, cleated together on the bottom, equipped with no-slip surface.	
F. Employees protected from cave-ins when entering or exiting the excavation.	Y
4. Wet Conditions:	
A. Precautions take to protect employees from the accumulation of water.	Y
B. Water removal equipment monitored by a CP.	Y
C. Surface water or runoff diverted or controlled to prevent accumulation in the excavation.	NA
D. Inspections made after every rainstorm or other hazard-increasing occurrence.	NA
5. Hazardous Atmosphere:	
A. Atmosphere within the excavation tested where there is a reasonable possibility of an oxygen deficiency, combustible or other harmful contaminant exposing employees to a hazard.	Y
B. Adequate precautions taken to protect employees from exposure to an atmosphere containing less than 19.5% oxygen and/or to other hazardous atmospheres.	NA
C. Ventilation provided to prevent employee exposure to an atmosphere containing flammable gas in excess of 10% of the lower explosive limit of the gas.	NA
D. Testing conducted often to ensure that the atmosphere remains safe.	Y
E. Emergency equipment, such as breathing apparatus, safety harness and lifeline, and/or basket stretcher readily available where hazardous atmospheres could or do exist.	NA
F. Employees trained to use personal protective and other rescue equipment.	Y
G. Safety harness and lifeline used and individually attended when entering bell bottom or other deep confined excavations.	NA
6. Support Systems:	
A. Materials and/or equipment for support systems selected based on soil analysis, trench depth, and expected loads.	Y
B. Materials and equipment used for protective systems inspected and in good condition.	Y
C. Materials and equipment not in good condition have been removed from service.	Y
D. Damaged materials and equipment used for protective systems inspected by a registered professional engineer (RPE) after repairs and before being placed back into service.	NA
E. Protective systems installed without exposing employees to the hazards of cave-ins, collapses, or threat of being struck by materials or equipment.	NA

F. Members of support system securely fastened to prevent failure.	NA
G. Support systems provided in ensure stability of adjacent structures, buildings, roadways, sidewalks, walls, etc.	
H. Excavations below the level of the base or footing supported, approved by an RPE.	
I. Removal of support systems progresses from the bottom and members are released slowly as to note any indication of possible failure.	
J. Backfilling progresses with removal of support system.	
K. Excavation of material to a level no greater than two feet below the bottom of the support system and only if the system is designed to support the loads calculated for the full depth.	
L. Shield system placed to prevent lateral movement.	
M. Employees are prohibited from remaining in shield system during vertical movement.	✓
Corrective Action and Comments	

Frank R.
Signature of CP/COR

6/10/20
Date

FRANK MORRIS
Printed name of CP/COR

One copy shall be provided for both the contractor conducting the work and COR (VASLCHCS)

Appendix G

Borehole Logs with Well Construction Diagrams

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-23
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	4/7/2020 - 4/15/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4712.47	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Milller, Betsy Bott	**GROUND WATER ELEVATION (FT MSL)**	

REMARKS A perched groundwater zone was encountered at approx. 150 ft bgs and groundwater was encountered at approx. 200 ft bgs.

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				0			No Recovery; Vacuum excavated to 14 feet bgs.	
				5				
				10				
9.8	0.099			15	SM		Silty SAND; 55% fine sand; 40% silt; 5% fine to coarse gravel dense; reddish brown (5YR 5/4); moist.	14.0
27.1	0.106	MW23-SB040720-16						17.0
11.3	0.147				SW		Gravelly SAND; 50% fine to medium sand; 30% fine to coarse gravel; 20% silt; weakly cemented in places; dark reddish brown (2.5YR 3/4); moist.	
8.0	0.080							
4.5								20.0
11.4	0.509			20	GW		Well graded GRAVEL; 70% fine to coarse gravel; 30% medium to coarse sand; compact; dark reddish brown (2.5YR 3/4); dry.	21.0
12.6	0.685				ML		Sandy SILT; 55% silt; 30% fine to coarse sand; 15% fine gravel; slightly cohesive; reddish brown (5YR 4/3); moist.	24.0
19.2	0.033	MW23-SB040720-24		25	GP		Poorly Graded GRAVEL; 100% Fine to coarse subrounded gravel; loose; brown (7.5YR 5/4); moist.	
8.3								
9.6	0.170							
4.0	0.133							
7.1	0.130							30.0
50.4	0.175	MW23-SB040720-30		30	ML		Gravelly SILT; 60% silt; 40% fine to coarse angular gravel; slightly cohesive; brown (7.5YR 4/3); moist	31.0
6.2					GW		Well graded GRAVEL; 70% coarse rounded gravel; 30% fine sand; loose; pink (7.5YR 7/3); dry to moist.	32.0
39.9	0.198				SP		Gravelly SAND; 60% fine sand; 40% fine to coarse subrounded to subangular poorly sorted gravel; loose, reddish brown (5YR 5/4); moist.	34.0
20.5	0.234			35				

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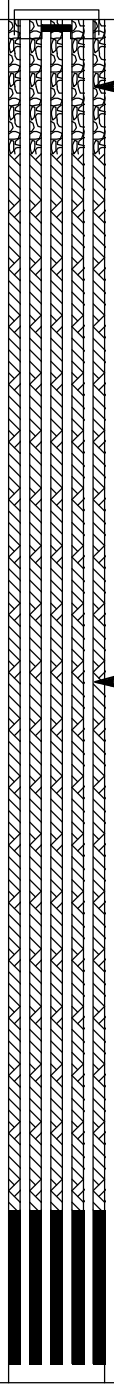
WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
19.0	0.147				ML		Gravelly SILT; 50% silt; 40% fine to coarse gravel; 10% fine to medium sand; stiff; reddish brown (2.5 YR 4/3); moist.	37.0	
9.6	0.030				GM		Silty GRAVEL; 60% fine to coarse rounded to subrounded gravel; 20% fine to medium sand; 20% silt; loose; reddish brown (5YR 4/4); moist.	39.0	
6.8					ML		Gravelly SILT; 60% silt; 40% fine to coarse gravel; stiff; cohesive; reddish brown (2.5 YR 4/3); moist.	40.0	
9.6	0.133			40					
9.1	0.195				GM		Silty GRAVEL; 60% fine to coarse rounded to subrounded gravel; 10% fine to medium sand; 30% silt; loose; reddish brown (5YR 4/4); moist.	45.0	
16.9	0.210			45	GP		Poorly Graded GRAVEL; 70% fine to coarse subrounded gravel; 30% fine sand; loose; yellowish brown (10YR 5/4); dry.	48.0	
32.3	0.168	MW23-SB040720-49			ML		Gravelly SILT; 50% silt; 35% fine gravel; 15% sand; brown (7.5YR 5/4); moist.	50.0	
16.8	0.386			50	ML		SILT; 70% silt; 20% fine sand; 10% fine gravel; slightly cohesive; stiff; brown (7.5YR 4/3); moist.		Hydrated bentonite pellets (31 to 127 ft bgs).
12.6	0.454							53.0	
	0.082						Silt GRAVEL; 50% fine to coarse Gravel; 30% Silt; 20% fine sand; loose; light brown (7.5YR 6/4); moist.		
19.8	0.273	MW23-SB040720-54		55					
8.4	0.106				GM				
13.4	0.133								
5.3	0.034							60.0	
14.5	0.106			60			Poorly graded GRAVEL; 50% fine to coarse subrounded to subangular gravel; 40% fine to coarse sand; 10% silt; loose; brown (7.5YR 4/4); moist.		
20.6	0.170	MW23-SB040720-63			GP				
2.2	0.147			65				66.0	
2.2	0.112				ML		Gravelly SILT; 60% silt; 35% fine to coarse gravel; 5% fine sand; slightly cohesive; reddish brown (2.5YR 4/4); moist.	68.0	
15.6	0.158				ML		Gravelly SILT; 60% silt; 35% fine to coarse gravel; 5% fine sand; slightly cohesive; brown (10YR 4/4); moist	70.0	
7.8	0.089			70			Sandy GRAVEL; 50% fine to coarse subrounded to subangular gravel; 40% fine sand; 10% silt; loose; reddish brown (5YR 4/4); moist.		
2.5	0.152				GW				
3.1	0.092							74.5	
				75					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
26.8		MW23-SB040720-75			GM		Silty GRAVEL; 70% fine to coarse gravel; 30% silt; cohesive in places; reddish brown (2.5 YR 5/4); moist.	76.0	
6.0	0.084						Sandy GRAVEL; 50% fine to coarse subangular to subrounded well graded gravel; 40% fine to coarse sand; 10% silt; dark reddish brown (2.5YR 3/4); moist.		
10.6									
8.5	0.149			80	GW				Hydrated bentonite pellets (31 to 127 ft bgs).
12.8	0.139								
22.4	0.128	MW23-SB040720-85		85				85.5	
12.3	0.018				GP		Poorly graded GRAVEL; 85% fine to coarse gravel; 15% silt; medium dense; light gray (5YR 7/1); moist.	87.0	
10.0					GM		Silty GRAVEL; 60% fine gravel; 35% silt; %5 fine to coarse sand; socketed matrix; dense; reddish brown (5YR 4/4); moist.	90.0	
12.2	0.871			90			Poorly graded GRAVEL; 60% fine to coarse gravel; 30% fine sand; 10% silt; reddish brown (5YR 4/3); moist.		
44.8	0.189	MW23-SB040720-93			GP				
19.3	0.220			95				95.0	
19.3							Silty GRAVEL; 60% fine to coarse gravel; 35% silt; %5 fine sand; weakly cemented; reddish brown (5YR 4/4); moist.		
237	0.144	MW23-SB040720-97			GM				
98.2	1.78							99.0	
43.1	0.208			100			SILT; 70% silt; 30% fine to coarse subangular to subrounded gravel; weakly cemented; hard; brown (7.5YR 5/2); dry to moist.		
33.2									
19.3					ML				
8.7	0.243								
16.8				105				106.0	
23.9	0.186						Sandy GRAVEL; 50% fine to coarse subangular gravel; 40% fine sand; 10% silt; loose; reddish brown (5YR 4/3); moist.		
23.4		MW23-SB040720-107							
15.4	0.172				GP				
51.2	0.183	MW23-SB040820-110		110				110.0	
14.9					GM		Silty GRAVEL; 60% fine to coarse poorly sorted gravel; 30% silt; 10% fine sand; medium dense; reddish brown (5YR 4/4); moist.	112.0	
45.9	0.103						Poorly graded GRAVEL; 70% fine to coarse gravel; 15% fine sand; 15% silt; weakly cemented in places; red (2.5YR 4/6); moist.		
16.8					GP				
18.5	0.007			115				115.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
11.2					GM		Silty GRAVEL; 60% fine to coarse angular to subangular gravel; 30% silt; 10% fine sand; loose; reddish brown (2.5YR 4/4); moist.	117.0
20.3	0.089						Poorly graded GRAVEL; 60% fine to coarse angular to subangular gravel; 25% fine sand; 15% silt; loose; reddish brown (2.5YR 4/4); moist.	
5.1					GP			
7.0								120.0
15.9	0.136			120			Silty GRAVEL; 60% fine to coarse poorly graded gravel; 25% silt; 15% fine sand; weakly cemented in places; dense; brown (7.5YR 5/3); moist.	
29.0	0.168							
32.6	0.045	MW23-SB040820-124			GM			
1.4	0.149			125				
2.5	0.175							128.0
6.4	0.141						Poorly graded GRAVEL; 60% fine to coarse gravel; 10% silt; 30% fine sand; loose; brown (7.5YR 5/3); moist.	
10.2				130				
19.5	0.141							
19.8	0.099	MW23-SB040820-133			GP			
18.0	0.000			135				
20.7	0.359							136.5
1.4	0.165				GP		Poorly graded GRAVEL; 60% fine to coarse gravel; 5% silt; 35% fine sand; loose; reddish brown (5YR 4/4); moist.	
3.9	0.070							139.0
8.5				140			Silty GRAVEL; 70% fine to coarse poorly graded gravel; 25% silt; 5% fine sand; medium dense; dark reddish brown (5YR 3/4); dry to moist.	
16.0	0.166				GM			142.0
14.8	0.230						Poorly Graded GRAVEL; 50% fine to coarse subrounded to subangular gravel; 40% fine to coarse sand; 10% silt, loose; reddish brown (5YR 5/4); moist.	
18.1		MW23-SB040820-143			GP			
7.0	0.163			145				145.0
14.9	0.026				GM		Silty GRAVEL; 60% fine to coarse poorly graded gravel; 35% silt; 5% fine sand; medium dense; dark reddish brown (2.5YR 5/3); dry to moist.	147.0
	0.187				GP		Poorly graded GRAVEL; 70% fine to coarse angular gravel; 20% fine sand; 10% silt; loose; reddish brown (2.5YR 4/4); wet.	
2.9	0.348							149.0
					MH		Clayey SILT; 80% medium to high plasticity clayey silt; 20% fine gravel; some lime cement; hard; reddish brown (5YR 3/4); wet.	150.0
0.8	0.087			150	GM			151.0
							Silty GRAVEL; 60% fine gravel; 40% silt; medium dense; reddish brown (5YR 3/4); wet.	
5.4								
10.0	0.013				GP		Sandy GRAVEL; 45% fine to coarse subangular to subrounded well graded gravel; 40% fine sand; 15% silt; reddish brown (5YR 5/4); moist.	
4.1								155.0
				155				

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#10/20 sand filter pack (127 to 143 ft bgs).

1-inch 0.020 slot screen for vapor monitoring (130 to 140 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
26.9	0.215	MW23-SB040820-155					Silty GRAVEL; 70% fine to coarse subrounded to angular gravel; 30% silt; dense; dark reddish brown (2.5YR 3/3); moist.		
16.7	0.149								
23.4									
9.4	0.030								
				160					
15.5	0.279				GM				
12.0									
8.5	0.000								
4.6	0.102			165					
								166.0	
10.7	0.082				GM		Silty GRAVEL; 60% fine to coarse subrounded to angular gravel; 40% silt; slightly cohesive; medium dense; dark reddish brown (2.5YR 3/3); moist.		
10.8								168.0	
22.6	0.053				GP		Poorly graded GRAVEL; 60% fine to coarse gravel; 30% fine sand; 10% silt; loose; light reddish brown (5YR 6/4); dry to moist.		
60.2		MW23-SB040920-169						170.0	
1.8	0.244			170			Gravelly SILT; 60% Silt; 40% fine to coarse gravel; cohesive; stiff; dark reddish brown (2.5YR 3/3); moist.		
3.2					ML				
9.0	0.446								
9.2								174.5	
95.1		MW23-SB040920-175		175	MH		Clayey SILT; 75% medium to high plasticity clayey silt; 25% fine gravel; stiff; cohesive; dark reddish brown (2.5YR 3/4); moist.	176.0	Hydrated bentonite pellet seal (143 to 207 ft bgs).
50.4	0.198						Gravelly SILT; 60% Silt; 40% fine gravel; slightly cohesive; stiff; strong brown (7.5YR 4/6); moist.		
1,8	0.099				ML				
4.8								180.0	
8.3	0.050			180			Gravelly SILT; 65% Silt; 35% fine rounded gravel; cohesive; stiff; dark reddish brown (2.5YR 2.5/4); moist.		
5.3					ML				
2.3	0.112								
19.3		MW23-SB040920-184						185.0	
2.7				185			SILT; 85% Silt; 15% fine rounded gravel; cohesive; stiff; weakly cemented red (2.5YR 4/6); moist.		
6.0	0.034				ML				
								188.0	
3.9	0.000				ML		SILT; 90% Silt; 10% fine rounded gravel; cohesive; stiff; reddish brown (2.5YR 4/4); moist to wet		
7.8								190.0	
1.9	0.152			190			Sandy GRAVEL; 60% fine poorly graded gravel; 10% silt; 30% fine sand; loose reddish brown (5YR 4/4); wet		
1.9									
0.5	0.110				GP				
1.0				195					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
1.1	0.120							
6.0								196.5
0.9	0.089				GM		Silty GRAVEL; 60% fine to coarse subrounded to rounded gravel; 25% silt; 15% fine sand; dark reddish brown (2.5YR 3/3); wet.	
13.4		MW23-SB040920-199		200				200.0
3.4	0.110				GM		Silty GRAVEL; 70% fine to coarse angular gravel; 20% silt; 10% fine to coarse sand; loose; reddish brown (5YR 4/4); wet.	
5.5	0.000							
1.7	0.000			205			- 205 to 210 feet bgs sample slid out of core barrel and was retrieved during the 210 to 220 feet bgs sonic run.	
12.9	0.759	MW23-SB040920-208						209.0
6.3					GM		Silty GRAVEL; 60% fine to coarse subrounded to rounded gravel; 30% silt; 10% fine sand; medium dense; socketed matrix; reddish brown (5YR 4/4); moist to wet.	
27.3	0.259			210				
34.2								213.0
17.6	0.886						Sandy GRAVEL; 50% fine subangular to angular gravel; 40% fine sand; 10% silt; weakly cemented in places; loose to medium dense; reddish brown (2.5YR 4/3); dry to moist.	
21.3	0.097				GP			
29.3				215				
26.6	0.128							217.0
37.7	0.128	MW23-SB040920-218			GM		Silty GRAVEL; 60% fine to coarse subrounded to rounded gravel; 30% silt; 10% fine sand; medium dense; socketed matrix; reddish brown (5YR 4/4); moist.	
0.3	0.158	MW23-GW040920-220		220				220.0
					ML		Sandy SILT; 70% low plasticity silt; 30% fine sand; firm; cohesive; dark reddish brown (5YR 3/4); wet.	221.5
0.5	0.160						Sandy SILT; 50% low plasticity silt; 40% fine sand; 10% fine gravel; stiff; cohesive; dark reddish brown (5YR 3/4); wet.	
3.4					ML			
0.8	0.073							
3.7				225				225.5
7.8	0.049	MW23-SB041020-226					Gravelly SILT; 60% low plasticity silt; 30% fine to coarse gravel; 10% sand; cohesive; stiff; dark reddish brown (5YR 3/4); moist.	
6.0								
3.9					ML			
5.5	0.095	MW23-SB041020-230		230				
1.4								
0.2	0.192							232.5
							Sandy SILT; 60% low plasticity silt; 35% fine sand; 5% gravel; cohesive; soft to firm; yellowish red (5YR 4/6); wet.	
2.9	0.245			235	ML			

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WELL DIAGRAM

#10/20 sand filter pack (207 to 224 ft bgs).

1-inch SCH 80 0.020-slot screen ZIST nested well (210 to 220 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

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Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.3									Hydrated bentonite pellet seal (224 to 247 ft bgs).
								237.0	
1.4	0.777						Silty SAND; 55% fine to coarse sand; 20% silt; 15% fine gravel; cohesive; yellowish red (5YR 4/6); wet.		
2.3	0.000				SM				
2.4								240.0	
0.4	0.642	MW23-GW041020-240		240			Clayey SILT; 90% medium to high plasticity clayey silt; 10% fine sand; stiff; cohesive; yellowish red (5YR 4/6); wet.		
0.9	0.417								
2.6	0.419	MW23-SB041020-244			MH				
1.7				245					
0.8	0.425				GM		Silty GRAVEL; 65% fine to coarse gravel; 35% silt; socketed matrix; brown (7.5YR 4/3); moist to wet.	247.0	
							Poorly Graded SAND; 80% fine sand; 10% fine to coarse gravel; 10% silt; loose; brown (10YR 4/3); dry.	248.0	
0.7	0.095				ML		Gravelly SILT; 60% low plasticity silt; 40% fine gravel; cohesive; yellowish red (5YR 4/6); wet.		#10/20 sand filter pack (247 to 264 ft bgs).
1.2								250.0	
21.9	0.178			250	SM		Silty SAND; 55% fine to coarse sand; 20% silt; 15% fine gravel; cohesive; yellowish red (5YR 4/6); moist.	251.0	
30.5	0.144						Poorly graded SAND; 80% fine to coarse sand; 10% fine gravel; 10% silt; loose; yellowish brown (10YR 6/4); dry to moist.		
12.5	0.111				SP				
96.3									
17.6	1.02							254.5	
24.1				255					1-inch SCH 80 0.020-slot screen ZIST nested well (250 to 260 ft bgs).
120	0.108								
470		MW23-SB041020-257							
73.6	0.136							258.5	
350					GP		Poorly graded GRAVEL; 60% fine to coarse gravel; 30% fine sand; 10% silt; weakly to moderately cemented; very dense; weak red (10R 4/2); dry to moist.		
9.9	0.595	MW23-GW041020-260		260				261.0	
52.8		MW23-SB041220-261					Gravelly SILT; 60% low plasticity silt; 30% fine to coarse gravel; 10% fine sand; cohesive; stiff; brown (7.5YR 5/3) with red mottling; wet.		
3.4	1.20								
27.2	0.160								
11.0				265	ML				
16.4	0.334								
37.3	0.390								
17.2								270.0	
1.4	0.000			270	SM		Silty SAND; 60% fine to coarse sand; 35% silt; 5% fine gravel; light yellowish brown (5YR 6/4); wet.	272.0	
5.5	0.345				MH		Clayey SILT; 95% medium to high plasticity clayey silt; 5% fine sand; very stiff; cohesive; yellowish red (5YR 6/4); moist.		
2.8	0.167			275				275.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.3							Sandy SILT; 60% low to medium plasticity silt; 30% fine sand; 10% fine gravel; stiff; cohesive; yellowish red (5YR 4/6); moist.		
2.6	0.148				ML				
2.7	0.030							279.0	
3.2					SM		Silty SAND; 50% fine to medium sand; 40% silt; 10% fine gravel; weakly cemented; yellowish red (5YR 4/6); moist.	280.0	
5.3	0.460	MW23-SB041220-280		280			Clayey SILT; 85% high plasticity clayey silt; 10% fine sand; 5% fine gravel; cohesive; stiff; red (2.5YR 4/ 6); moist to wet.		
4.8									
0.2	0.445				MH				
1.0	0.395								
1.5				285				286.0	
3.3	0.224						SILT; 80% low to medium plasticity silt; 20% fine to medium sand; cohesive; red (2.5YR 4/6); moist to wet.		
2.5									
0.5	0.400								
				290					
					ML				
				295					
								299.0	
1.3							SILT; 80% low to medium plasticity silt; 10% fine to medium sand; 10% fine rounded gravel; cohesive; very stiff; red (2.5YR 4/6); moist to wet.		
4.2	0.255			300					
2.4	0.308				ML				
8.4	0.327								Hydrated bentonite pellet seal (264 to 344 ft bgs).
0.7				305				306.0	
19.5	0.478				ML		Gravelly SILT; 70% low plasticity silt; 30% fine gravel; very stiff; brown (7.5YR 4/4); dry to moist.	307.0	
19.7		MW23-SB041220-307			GM		Silty GRAVEL; 70% fine gravel; 30% silt; cemented; dense; pinkish white (7.5YR 8/2); dry.	308.0	
11.3	0.404						Sandy SILT; 70% low plasticity silt; 30% fine to medium sand; cohesive; very stiff; light brown (7.5YR 6/4) dry.		
349	0.320	MW23-GW041220-310		310	ML				
624	0.683								
15000	0.312							313.0	
5006					GM		Silty GRAVEL; 70% fine to coarse gravel; 30% silt; dense; cemented; light brown (7.5YR 6/4); dry to moist.	314.0	
15000	0.278	MW23-		315			Silty GRAVEL; 60% fine gravel; 30% silt; 10% fine to coarse		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
110		SB041320-314					sand; dense; cohesive; brown (7.5YR 4/4); moist to wet.		
865	0.319								
713									
187	0.460				GM				
543									
39.7	0.161			320					
2.4	0.385							322.5	
12.8							Silty GRAVEL; 60% fine to coarse gravel; 25% silt; 15% fine to coarse sand; medium dense; cohesive; brown (7.5YR 4/4); moist to wet.		
198	0.275	MW23-SB041320-324							
19.8				325					
49.0	0.123				GM				
38.8							-becomes wet		
6.7	0.116								
2.0								330.0	
65.3	0.673			330			Gravelly SILT; 50% low plasticity silt; 40% fine to coarse gravel; 10% fine sand; cohesive; stiff; brown (7.5YR 5/3); moist to wet.		
83.5					ML				
39.8	0.733								
85.1		MW23-SB041420-334						335.0	
17.7				335	GM		Silty GRAVEL; 60% fine to coarse gravel; 40% silt; loose; strong brown (7.5YR 5/6); wet.	337.0	
2.2	0.872						Gravelly SILT; 60% low plasticity silt; 40% fine gravel; cohesive; strong brown(7.5YR 5/6); wet.		
44.7					ML				
60.1	0.502	MW23-GW041420-340						340.0	
29.0	0.435			340	GM		Silty GRAVEL; 60% fine to coarse gravel; 40% silt; medium dense; brown (7.5YR 5/3); wet.	341.0	
		MW23-SB041420-340					Sandy GRAVEL; 50% fine to coarse subrounded gravel; 40% fine sand; 10% silt; loose; brown (7.5YR 5/4); wet.		
5.5	0.143				GP			344.0	
9.2							Clayey SILT; 80% medium to high plasticity clayey silt; 20% gravel; cohesive; stiff; brown (7.5YR 5/3); dry to moist.		
706	0.770	MW23-SB041520-346		345	MH			346.0	#10/20 sand filter pack (344 to 360 ft bgs).
					GP		Poorly Graded GRAVEL; 80% fine gravel; 20% silt; loose; brown (7.5YR 5/3); dry.	347.0	
556							Gravelly SILT; 60% medium to high plasticity clayey silt; 40% fine to coarse rounded gravel; very stiff; brown (7.5YR 5/3); dry to moist.		
132	0.550								
433									
62	0.430			350	MH				1-inch SCH 80 0.020-slot screen ZIST nested well (348 to 358 ft bgs).
532	0.270								
525								354.0	
2.8	0.582			355			Gravelly SILT; 60% low plasticity silt; 40% fine gravel; soft;		

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-23

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/7/2020 - 4/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.8 1.0					ML		brown (7.5YR 5/4); wet.		
				360			End of boring at 360 ft bgs.	360.0	

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-24
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	5/11/2020 - 5/15/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	4-inch SCH 40 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	4-inch SCH 40 0.010-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4709.77	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Miller	**GROUND WATER ELEVATION (FT MSL)**	

REMARKS A perched groundwater zone was encountered at approx. 160 ft bgs and groundwater was encountered at approx. 200 ft bgs.

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				0			Hydrovac from 0 to 11 ft bgs.	
				5				
8.2	0.185			10				
0.8	0.179						Silty GRAVEL: fine to coarse; dense; reddish brown (5 YR 4/4); moist.	11.0
2.7					GM			
2.6								
4.6	2.01	MW-24-SB051120-14		15				
3.1								15.0
5.7	0.121				SP GP		SAND and GRAVELl with Silt: 45% sand, poorly graded; 45% fine to coarse gravel; 10% silt; light brown (7.5 YR 6/3); loose; dry.	
0.8								
4.8	0.118							17.0
2.5					ML		Gravelly SILT: brown (7.5 YR 4/2); stiff, cohesive; moist.	18.0
4.7	0.484							
1.6					GM		Silty GRAVEL with Sand: 50% fine to coarse gravel, 6 to 8 inch cobbles; 35% silt; 15% sand; reddish brown (5 YR 4/4).	
0.213	2.5			20				20.0
0.4	0.257						Sandy SILT: fine sand; lamination; reddish brown (5 YR 5/4); stiff; cohesive in places; trace iron oxide staining; moist.	
4.5								
0.3								
9.8	0.466	MW-24-SB051120-22			ML		Large (4 to 8 inch) cobble at 22.2 ft bgs.	
3.1	0.27							
5								
0.1	0.616			25				
							Cohesive layer at 25.7 ft bgs.	26.0
2.7	0.199						GRAVEL with Sand and Silt: 55% fine to coarse gravel, angular to subrounded; 35% sand; 10% silt; brown (7.5 YR 4/3); loose, trace iron oxide staining; dry to moist.	
2.1								
4.3	0.152				GW			
2	0.145			30				
6.7	0.218							
5.3	0.133							32.0
8.2	0.146				GW		GRAVEL with Sand and Silt: same as above with an 8 inch cohesive silt interval at 32 ft bgs; brown (7.5 YR 4/3); dry to moist.	
								34.0
13.8		MW-		35			GRAVEL with Sand and Silt: same as above with 6 inch	

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Vault with cement surface seal

#10/20 sand filter pack (30 to 35 ft bgs) with 6-inch stainless stell mesh vapor probe at 32 ft bgs.

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-24

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
13.3	0.074	24-SB051120-34			GW		cohesive silt interval at 34.4 to 35 ft bgs; brown (7.5 YR 4/3); dry to moist.	36.0
9.9	0.122				ML		Gravelly SILT: 60% silt; 40% fine to coarse gravel; cohesive; moist.	37.0
7.5	0.168				GW SW		SAND and GRAVEL: fine to coarse gravel, angular to subrounde; loose; moist.	
6.4	0.031			40				40.0
3.8	0.228				SM		Silty SAND: 70% fine sand; 30% silt; reddish brown (5 YR 5/4); loose; moist.	
3.9								42.0
					GC		Clayey GRAVEL: 60% fine to coarse gravel; 40% clay; reddish brown (5 YR 5/4); medium dense; moist.	43.0
6.6	0.053	MW-24-SB051220-43					GRAVEL and SAND: 50% fine to coarse gravel, 4 to 6 inch cobbles; 50% sand; reddish brown (7.5 YR 4/4); loose; moist.	
5.9				45	GW SW			
3.6	0.037							
5.1								47.0
5.1	0.345						CLAY with Gravel: 80% clay, low plasticity; 20% fine to coarse gravel; strong brown (7.5 YR 4/6); stiff; laminated in places; cohesive; dry to moist.	
6.1								
2.3	0.104			50				
3.5	0.279						Sample is moist.	
3.2	0.179				CL			
6.2	0.091							
6.7	0.141							
3.6	0.07							
7.2	0.065			55				
11.3	0.186	MW-24-SB051220-56						57.0
1.4								
1.1	0.17						Sandy GRAVEL with Silt: 60% fine to coarse gravel; 30% sand; 10% silt; reddish brown (5 YR 5/3); medium dense; moist.	
2.2					GW			
2.5				60				
2.5	0.75							
12		MW-24-SB051220-61						62.0
5.5	0.203				CL		Gravelly SILT: 60% silt, low plasticity; 40% fine to coarse gravel; reddish brown (5 YR 4/4); cohesive; moist to wet.	
								64.0
6.9	0.05			65			GRAVEL with Sand and Silt: 60% fine to coarse gravel, subangular to subrounded; 30% sand; 10% silt; brown (7.5 YR 4/4); moist.	
4.2					GW			
3								
	0.188							67.5
7.1							Gravelly SILT: fine gravel; brown (7.5 YR 4/4); cohesive; moist.	
4.8								
2.7	0.04				ML			
2.8	0.102			70				71.0
9.6		MW-24-SB051220-71					GRAVEL: fine to coarse gravel; large cobbles, 6 to 8 inches; yellowish brown (10 YR 5/4); loose; moist to dry.	
4.6					GW			73.0
	0.334						GRAVEL and SAND: fine to coarse gravel; brown (7.5 YR 4/4); loose; moist.	
2								
				75				

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WELL DIAGRAM

- Hydrated bentonite pellets (35 to 58 ft bgs).
- #10/20 sand filter pack (58 to 63 ft bgs) with 6-inch stainless stell mesh vapor probe at 60 ft bgs.

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-24
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.4 5.5 0.1 0.3 3.1	0.213 0.148 0.204				GW SW		Color is reddish brown (5 YR 4/4).	80.0	
2 7.5 5.6 24 4.3 3.1	0.265 0.146 0.175 0.24 0.05	MW-24-SB051220-84		80 85	GW		GRAVEL with Sand and Silt: 50% fine to coarse grave; 40% sand; 10% silt; reddish brown (5 YR 5/4); medium dense; moist. Cohesive layer near 82 ft bgs. GRAVEL with Sand and Silt: 50% fine to coarse gravel; 40% sand; 10% silt; loose.	87.0	Hydrated bentonite pellets (63 to 102 ft bgs).
4.6 7.2 20.7 3.5	0.247			90	GM GW		Silty GRAVEL: compact; dry to moist. GRAVEL with Sand and Silt: fine to coarse gravel; loose; dry.	88.0 91.5	
3.1 2.6 2.1	0.339			95	CL		Gravelly CLAY: 75% clay, medium plasticity; 25% fine to coarse gravel; yellowish red (5 YR 4/6); cohesive; stiff to very stiff; moist to wet. Gravelly CLAY: same as above except less gravel; yellowish red (5 YR 4/6); moist to wet.	96.0 97.5	
41 4.9 7 2.3	0.31 0.139 0.175			100	GM		Silty GRAVEL: 65% fine to coarse gravel; 35% silt, non-plastic; yellowish red (5 YR 4/6); medium dense; moist. Same as above except increase in sand, medium to coarse.	103.0	
6.3 35 10.8	0.12	MW-24-SB051220-104		105	GW SW GM		SAND and GRAVEL: 50% well graded, fine to coarse gravel; 50% medium to coarse sand; reddish brown (5 YR 5/4); loose; moist. Silty GRAVEL: fine to coarse gravel; reddish brown (5 YR 5/4); cohesive in places; medium dense; moist.	105.0 106.0	#10/20 sand filter pack (102 to 107 ft bgs) with 6-inch stainless stell mesh vapor probe at 104 ft bgs.
34.1 26.9 12.5	0.045 0.22				GW		GRAVEL with Sand and Silt: 70% fine to coarse gravel, subangular to subrounded; 15% sand; 15% silt; strong brown (7.5 YR 4/6); loose; dry to moist. Same as above except decrease in silt near 108 ft bgs.	110.0	
3.9	0.133			110 115	CL		No recovery from 110 to 112 ft bgs; clayey material, slid out of sampler. Gravelly CLAY: reddish brown (5 YR 5/3); fine to coarse gravel; stiff; moist. Silty GRAVEL: 70% fine to coarse gravel, angular to	112.0 114.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-24
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
3.4 1.5 3.1 23.1 12.9 58.8 4.2 29.5 7.4 11.4	0.19 0.223 0.147 0.142 0.132	MW-24-SB051220-119		120 125	GM		subrounded; 30% silt; light brown (7.5 YR 6/4); cemented; very dense; moist to dry. Large boulder at 121 ft bgs.	125.0	Hydrated bentonite pellets (107 to 128 ft bgs).
3.1 2.7 1.7 2.3 6.5 24.7 3.1 2.7 7 2.8 3.4 1.9	0.103 0.097 0.315 0.29 0.434 0.128	MW-24-SB051320-132		130 135 140	SP GW		SAND with Gravel: 60% fine sand; 40% well graded, fine to coarse gravel; reddish brown (5 YR 4/4); loose, moist. GRAVEL with Sand and Silt: 60% fine to coarse gravel, angular to subrounded; 30% fine sand; 10% silt; reddish brown (5 YR 5/3); cemented in places; dense; moist. GRAVEL and SAND: fine to coarse gravel, well graded; fine sand; reddish brown (5 YR 5/3); gray mottling; loose; moist. Large (6 inch) cobbles at 137.7 ft bgs. Large (6 inch) cobbles at 139.1 ft bgs.	130.0 140.0	#10/20 sand filter pack (128 to 133 ft bgs) with 6-inch stainless stell mesh vapor probe at 130 ft bgs.
11.5 19.2 12.7 20 8.1 19 17.1 23.4 4.6 51.1 10.4 29.3	0.333 0.208 0.478 0.127 0.129 0.084 0.073	MW-24-SB051320-149 MW-24-SB051320-152		145 150 155	GM GP GM ML GW GM GP		Silty GRAVEL: cemented in places; reddish brown (5 YR 5/3); cohesive. GRAVEL with Sand: 60% gravel, 40% sand; reddish brown (5 YR 5/3); moist. Silty GRAVEL: 60% gravel; 40% silt; reddish brown (5 YR 5/3); cohesive; moist. Gravelly SILT: 70% silt; 30% gravel; reddish brown (5 YR 5/3); cohesive. GRAVEL with SAND: fine to coarse gravel; reddish brown (5 YR 5/3); loose; wet. Silty GRAVEL: 70% fine to coarse gravel; 30% silt; sand layer; reddish brown (5 YR 5/4); cemented; cohesive in places; moist. GRAVEL with Sand: fine to coarse gravel; subangular to	142.0 145.0 147.0 149.5 150.5 154.0 155.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-24
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.5	0.383						subrounded; reddish brown (5 YR 5/4); cemented in places; medium dense.		
4.4							Gravelly CLAY: 60% clay, low plasticity; 40% fine gravel; cohesive; reddish brown (2.5 YR 5/4); moist to wet.		
7.4									
22.9	0.08			160	CL		Gravelly CLAY: 50% clay; 40% fine gravel; 10% sand; reddish brown (2.5 YR 5/4); cohesive; moist.		
17.2	0.073	MW24-GW051320-160							
10.5	0.074								
14.8	0.048								
12.1	0.032			165				165.0	
8.6							Silty GRAVEL with Sand: 50% fine to coarse gravel, subangular to subrounded; 30% silt; 20% sand; reddish brown (5 YR 4/4); moist.		
36.1		MW-24-SB051320-166			GM				Hydrated bentonite pellets (133 to 201 ft bgs).
2.4	0.08								
21.8							Less sand and cemented near 168 ft bgs.		
16.1	0.063							170.0	
22.3		MW-24-SB051320-170		170	GW		GRAVEL with SAND: 60% fine to coarse gravel; 40% well graded sand; light brown (7.5 YR 6/4); cemented in places; dry.		
38.7	0.081							172.0	
34					GM		Silty GRAVEL: 60% fine to coarse gravel; 40% silt; dark reddish brown (5 YR 3/4); cemented in places; moist.		
35.1								174.0	
36.6	0.099			175	GW		GRAVEL with Sand: 65% fine to coarse gravel; 35% well graded sand; dark reddish brown (5 YR 3/4); cemented in places; dry.		
2.9								176.0	
16.9	0.046				GM		GRAVEL with Silt: fine to coarse; large cobbles (6 to 8 inches); brown (7.5 YR 4/4); cemented in places; dense; moist.		
11.4								178.5	
19.6	0.127						SILT: 95% silt; 5% fine gravel; reddish brown (5 YR 4/3); very stiff; moist.		
3.5				180	ML				
10.8	0.186							182.0	
9.2							SILT with Gravel: 75% silt; 25% fine to coarse gravel; reddish brown (5 YR 4/3); cohesive; stiff; moist.		
8.6	0.204								
26									
30.4	0.25			185	ML				
10.5									
38.1		MW-24-SB051320-186							
26.2	0.338						Increased gravel content.	188.0	
20.1					GW		GRAVEL with Sand: 50% well graded gravel; 35% sand; reddish brown (5 YR 4/3); loose.	189.0	
9.7	0.314						Gravelly SILT: 60% silt; 40% fine to coarse gravel, subangular to subrounded; reddish brown (5 YR 5/3); slightly cohesive; moist.		
15.7				190			More cohesive and trace clay.		
23.5	0.159	MW-24-SB051420-192			ML				
16.1									
21.3	0.063						Less cohesive and trace sand.	195.0	
				195					

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-24

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
5.4					SM		Silty SAND: 70% sand; 30% silt; loose; wet. Possibly sluff.	
14	0.154							196.7
14.8	0.054						8 inch boulder.	
22.6							Silty GRAVEL: fine to coarse gravel, subangular to subrounded; cohesive; moist.	
	0.13						Some grayish green staining and weakly cemented.	
16.4				200	GM		Moist to wet.	
12.8	0.085						Cohesive, moist.	
33.4		MW-24-SB051420-202						
31.9	0.094							204.0
15.2					GW		GRAVEL: cemented; very dense; dry.	205.0
16.5				205			Silty GRAVEL with Sand: 50% fine to coarse gravel; 40% silt; 10% sand; reddish brown (5 YR 5/3); cohesive; socketed matrix; moist.	
	0.105							
17								
8.9	0.061							
157					GM			
				210			Loose, wet.	
4.9	0.208						Silty GRAVEL: reddish brown (5YR 4/4); some 3 inch gravel, round, elongated.	
5.3	0.156							
4.3	0.256							213.0
					ML		SILT: 90% silt; 10% gravel; reddish brown (5YR 4/4); soft; compact; moist.	214.0
6.5	0.177							
6.3							Boulder, dry.	215.0
12	0.033	MW-24-SB051420-215		215			Silty GRAVEL: 60% fine to coarse gravel; 40% silt; reddish brown (5YR 4/4); loose; wet.	
10.2								
1.8	0.043				GM			
8.7							Silt GRAVEL with Sand: fine to coarse; reddish brown (5 YR 4/4); loose; moist.	
11.2	0.095							
				220				220.0
9.3		MW-24-GW051420-220					Gravelly SILT: fine gravel, subangular to subrounded; reddish brown (2.5 YR 4/4); cohesive; stiff; moist to wet.	
	0.389							
15.1								
	0.131						Less Moisture.	
15.9					ML			
44.2	0.204			225				
23.8							Fine to coarse gravel, dry to moist.	
41.7								
47.9	0.177	MW-24-SB051420-227						228.0
35					GP		GRAVEL with Sand: loose, cemented, dry. Possibly boulder.	229.0
11.9	0.182				GW		Silty GRAVEL: fine to coarse gravel, subangular to subrounded; stiff; moist.	230.0
2.1	0.091			230				
					GW GM		GRAVEL with Sand and Silt: 60% fine to coarse gravel, subangular to subrounded; 30% fine to coarse sand; 10% silt; reddish brown (5 YR 4/4); loose; moist.	232.0
11.4	0.272							
					ML		SILT: 75% silt; 10% sand; 10% gravel; 5%, clay; brown (7.5 YR 4/4); cohesive; wet.	
7.1								
10				235				

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WELL DIAGRAM

#10/20 sand filter pack (201 to 240 ft bgs).

4-inch SCH 40 0.010-slot screen (209.5 to 239.3 ft bgs).

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/11/2020 - 5/15/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
15.8	0.222							235.5	
18.7					GC		Clayey GRAVEL: 70% fine to coarse gravel, subrounded; 30% clay; brown (7.5 YR 4/4); cohesive; wet. Large cobble (greater than 6 inch).		
19.1	0.17							237.5	
28.4					GM		Silty GRAVEL with Sand: 60% fine to coarse gravel; 20% silt; 20% sand; brown (7.5 YR 4/4); loose; wet.		
19.1	0.183							239.0	
31.2		MW-24-SB051520-239			GW		GRAVEL with Sand and Silt: 60% fine to coarese gravel, subangular to subrounded; 25% sand; 15% silt; brown (7.5 YR 4/4); cemented in places; dry to moist.	240.0	
				240					
13.4	0.133				GM		Silty GRAVEL: 70% gravel; 30% silt; brown (7.5 YR 4/4); cohesive; wet to moist.	242.0	
6.2									
14.4	0.056						Silt with CLAY: 85% silt; 15% clay; brown (7.5 YR 4/4); moist.		
8.4					ML				
13.9				245					
9.8	0.314							246.0	
11.7					GM		Silty GRAVEL: 70% gravel; 30% silt; brown (7.5 YR 4/4); cohesive; wet to moist.		
20	0.278							248.0	
21		MW-24-SB051520-248			ML		Sandy SILT: 60% silt; 40% sand; brown (7.5 YR 4/4); cohesive; moist.		
7.8									
7.2	0.102			250				250.0	
							End of boring at 250 ft bgs.		

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Denver, CO 80202
(303) 383-2300

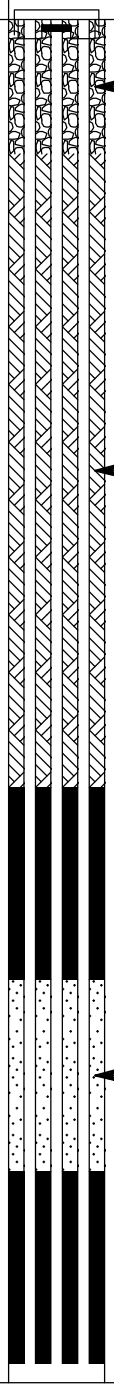
BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-25
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	4/29/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4703.04	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Kimberly Myers	**GROUND WATER ELEVATION (FT MSL)**	

REMARKS A perched groundwater zone was encountered at approx. 165 ft bgs and groundwater was encountered at approx. 200 ft bgs.

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				5			- No recovery; vacuum excavated to 10 ft bgs.	
1.3	0.248			10			Well graded GRAVEL; 70% fine to coarse angular to subrounded gravel; 20% fine to coarse sand; 10% silt; loose; reddish brown (5YR 4/4); moist.	10.0
17.6	0.267							
5.3	0.132							
33.6	0.64	MW25-SB042920-14			GW			
5.4	0.359			15				
18.9	0.225							16.0
19.8	0.233						Silty GRAVEL; 50% fine to coarse angular to subrounded gravel; 25% fine to coarse sand; 25% silt; loose; red (2.5YR 4/6); moist.	
10.7	0.231							
2.8	0.317				GM			
				20				20.0
2.4	3.95						Silty GRAVEL; 50% fine to coarse angular to subrounded gravel; 25% fine to coarse sand; 25% silt; loose; light reddish brown (5YR 6/4); moist.	
9.4	0.81				GM			22.0
2.4	0.249						Silty GRAVEL; 40% fine to coarse angular to subrounded gravel; 25% fine to coarse sand; 35% silt; loose; light reddish brown (5YR 6/4); dry to moist.	
4.5	0.405							
7.7	0.306							
10.2	0.278			25	GM			
22.7	0.25							
16.1	0.194							28.0
54	0.599	MW25-SB042920-29					Gravelly SILT; 60% low plasticity silt; 35% fine to coarse angular to subrounded gravel; 5% fine to medium sand; firm; dark reddish brown (5YR 3/4); dry to moist.	
34.3	0.864				ML			30.0
18.3	0.221			30			Gravelly SILT; 70% low plasticity silt; 25% fine gravel; 5% fine to coarse sand; firm; light reddish brown (5YR 3/4); dry to moist.	
27.1	3.1				ML			32.0
11.7	0.204						SILT; 80% low plasticity silt; 15% fine gravel; 5% fine to coarse sand; firm; light reddish brown (5YR 3/4); dry to moist.	
3.7	0.016							
4.5	0.026				ML			
				35			*Continued Next Page*	

WELL DIAGRAM



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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
10.1	0.088	MW25-SB042920-35						36.0	
9.3	0.011				GM		Silty GRAVEL; 40% fine to coarse angular to subrounded gravel; 25% fine to coarse sand; 35% silt; loose; light reddish brown (5YR 6/4); dry to moist.		
3	0.036								
1.9	1.09							39.0	
1.1	0.044			40			SILT; 85% low plasticity silt; 15% fine to coarse gravel; firm; light reddish brown (5YR 3/4); dry to moist.		
17.1	0.339				ML				
37.5	0.445								
19.1	0.435							44.0	
9.9	0.392			45			Gravelly SILT; 70% low plasticity silt; 25% fine gravel; 5% fine to coarse sand; firm; light reddish brown (5YR 3/4); dry to moist.		
9.4	0.244				ML				
60.1	0.479	MW25-SB042920-46							
5.6	0.317							48.0	
40.06	0.209				CL		CLAY; 70% low plasticity clay; 20% fine gravel; 10% fine to coarse sand; brown (7.5YR 4/4); dry to moist.		
13.5	1.59							50.0	
20.1	0.104			50	CL		CLAY; 85% low plasticity clay; 10% fine gravel; 5% fine to coarse sand; dark reddish brown (5YR 3/4); dry to moist.		
3.8	0.246							52.0	
4.8	0.399				SW		Well graded SAND; 70% fine to coarse sand; 20% silt; 10% fine subangular to subrounded gravel; brown (7.5YR 4/4); dry to moist.		
12.5	0.361								
6.7	0.191	MW25-SB042920-54		55					
5.4	0.634							56.0	
3.1	0.567				CL		CLAY; 70% low plasticity clay; 25% fine gravel; 5% fine to coarse sand; brown (7.5YR 4/4); dry to moist.		
1.8	0.101							58.0	
8.2	0.099				SW		Well graded SAND; 70% fine to coarse sand; 20% silt; 10% fine subangular to subrounded gravel; brown (7.5YR 4/4); dry to moist.		
13.8	0.11								
2.1	9.66			60					
5	2.7								
1.1	0.072								
6.4	0.056								
4.9	0.174								Hydrated bentonite pellet seal (30 to 98 ft bgs).
3.7	0.424			65					
8.5	0.085							67.0	
7.8	0.514				CL		CLAY; 80% low plasticity clay; 15% fine gravel; 5% fine to coarse sand; brown (7.5YR 4/4); dry to moist.		
6.1	0.202								
8.1	0.177	MW25-SB042920-70						70.0	
1	0.148			70	SW		Well graded SAND; 70% fine to coarse well graded sand; 20% fine to coarse gravel; 10% silt; brown (7.5YR 4/4); dry to moist.		
5.7	0.059								
16.6	0.005	MW25-SB042920-73							
12.8	0.318								
1.8	0.091			75					

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PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
4.6	0.024							
8.1	0.065							77.0
2.2	0.086						CLAY; 80% low plasticity clay; 15% fine gravel; 5% fine to coarse sand; brown (7.5YR 4/4); dry to moist.	
1.6	0.032				CL			79.0
3.1	0.005				CL		CLAY; 70% low plasticity clay; 15% fine gravel; 15% fine to coarse sand; brown (7.5YR 4/4); dry to moist.	80.0
3.1	0.718			80			Well graded GRAVEL; 70% fine subangular to subrounded gravel; 25% fine to medium sand; 5% silt; compact; reddish brown (5YR 4/3); dry to moist.	
36	0.015	MW25-SB042920-82						
25.6	0.015							
0.1	0.093							
3.1	0.195				GW			
4.2	0.131			85				
31	0.188							
7.8	0.014							
11.6	0.032							89.0
15.3	0.569						CLAY; 95% low plasticity clay; 5% fine to medium sand; brown (7.5YR 4/4); dry to moist.	
12.4	0.428			90	CL			
23.2	0.059							91.5
28.7	0.056				CL		CLAY; 85% low plasticity clay; 15% fine to medium sand; 5% fine to coarse gravel; brown (7.5YR 4/4); dry to moist.	92.5
67.4	0.187				GC		Clayey GRAVEL; 60% fine to coarse subangular to subrounded well graded gravel; 30% low plasticity clay; 10% fine sand; reddish brown (5YR 4/3); dry to moist.	94.0
24.4	0.554	MW25-SB042920-94			GW			
12.3	0.465			95			Sandy GRAVEL; 50% fine to coarse subangular to subrounded gravel; 35% fine to coarse sand; 15% silt; compact; pinkish gray (5YR 7/2); dry to moist.	95.0
43.1	0.331							
4.7	0.28				GW		Well graded GRAVEL; 70% fine subangular to subrounded gravel; 25% fine to medium sand; 5% silt; compact; reddish brown (5YR 4/3); moist.	
14.6	0.151							
30	0.228							
283.2	0.393			100			Sandy GRAVEL; 50% fine to coarse subangular to subrounded gravel; 35% fine to coarse sand; 15% silt; compact; pinkish gray (5YR 7/2); dry to moist.	100.0
249.1	0.025				GW			
321.4	0.362							103.5
102.5	0.071				CL		Gravelly CLAY; 55% low plasticity clay; 10% medium to coarse sand; 35% fine to coarse gravel; reddish brown (2.5YR 4/4); dry to moist.	104.5
262.7	0.91	MW25-SB043020-106		105	SW			105.5
57.1	0.453				CL		Well graded SAND; 55% fine to coarse sand; 10% silt; 35% fine subangular to subrounded gravel; red (2.5YR 4/6); dry to moist.	107.0
							Gravelly CLAY; 55% low plasticity clay; 10% medium to coarse sand; 35% fine to coarse gravel; reddish brown (2.5YR 4/4); dry to moist.	
							-no recovery	110.0
33.4	0.052			110	CL		Gravelly CLAY; 50% low plasticity clay; 45% fine to coarse gravel; 5% medium to coarse sand; firm; yellowish red (5YR 4/6); moist.	
63.4		MW25-SB043020-112						112.0
2.1	0.139				CL		CLAY; 70% low plasticity clay; 20% fine to coarse gravel; 10% medium to coarse sand; firm; reddish brown (5YR 4/3); moist.	
48	0.375			115				115.0

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WELL DIAGRAM

- Hydrated bentonite pellet seal (30 to 98 ft bgs).
- 6-inch stainless steel mesh vapor probe (100 ft bgs).

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
22.6	0.313				CL		Gravelly CLAY; 50% low plasticity clay; 45% fine to coarse gravel; 5% medium to coarse sand; firm; yellowish red (5YR 4/6); moist.	116.0
22.6	0.322				SW		Gravelly SAND; 50% fine to coarse well graded sand; 40% fine gravel; 10% silt; compact; yellowish red (5YR 4/6); moist.	
27.3	0.358							118.5
25.9	0.303				GW		Well graded GRAVEL; 70% fine subangular to subrounded gravel; 20% fine to medium sand; 10% silt; compact; yellowish red (5YR 4/3); moist.	120.0
27.2	0.479			120			CLAY; 70% low plasticity clay; 20% fine to coarse gravel; 10% medium to coarse sand; firm; reddish brown (5YR 4/3); moist.	
17.8	0.083	MW25-SB043020-120						
13.6	0.106							
5.3	0.108				CL			
5.8	0.248							
11.9	0.06							
12.4	0.017			125				126.0
3.7	0.166						Gravelly SAND; 55% fine to coarse well graded sand; 25% fine gravel; 20% silt; compact; yellowish red (5YR 4/6); moist.	
10.1	0.001							
5.5	0.126							
7.6	0.068							
14.1	0.12			130				
24	0.266				SW			
11.6	0.018							
48.4	0.186							
41.4	0.216							
18.8	0.04			135				
37	0.012							137.0
20.9	0.01				ML		Sandy SILT; 60% non-plastic silt; 30% fine to coarse well graded sand; 10% coarse; firm; reddish brown (5YR 5/4); moist.	
66.4	0.005	MW25-SB043020-139						139.0
							-no recovery	140.0
8.4	0.355			140			CLAY; 90% medium to high plasticity clay; 10% medium to coarse sand; firm; brown (7.5YR 4/3); dry to moist.	
9.1	1.37				CH			
6.5	0.808							143.0
5.2	0.334						CLAY; 70% low plasticity clay; 20% fine to coarse sand; 10% coarse sand; firm; reddish brown (5YR 4/3); moist.	
3.5	0.372							
5.3	0.368			145	CL			
1.6	0.16							
7.1	0.281						-cobbles	148.0
4	0.238						Sandy SILT; 50% non-plastic silt; 35% fine sand; 15% fine to coarse gravel; soft; light brown (7.5YR 6/3); dry.	
8.3	0.204	MW25-SB043020-150			ML			
12.2	0.033			150				
5.2	0.093							151.5
17.4	0.092	MW25-SB050120-153					Gravelly CLAY; 55% low plasticity clay; 45% fine to coarse angular to subrounded well graded gravel; brown (7.5YR 5/4); moist	
7.2	0.156							
15.5	0.156			155	CL			

WELL DIAGRAM: Hydrated bentonite pellet seal (103 to 197 ft bgs).

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
19.2	0.335								
9	0.251								
3	0.265							158.0	
6.3	0.189						Silty GRAVEL; 50% fine angular to subrounded poorly graded gravel; 25% silt; 25% fine to coarse sand; brown (7.5YR 5/4); moist		
4.6	0.159								
0.6	0.143			160					
4.2	0.174								
2.3	0.218				GM				
2.7	0.178								
11.4	0.26	MW25-GW050120-164							
3.3	0.221			165					
3.8	0.243	MW25-GW050120-164						167.0	
1.5	0.114						Well graded GRAVEL; 60% fine to coarse subangular to subrounded gravel; 30% fine to medium sand; 10% silt; compact; brown (7.5YR 4/3); moist.		
0.7	0.127	MW25-SB050120-166			GW				
10.4	0.167							170.0	Hydrated bentonite pellet seal (103 to 197 ft bgs).
12.2	0.184			170			CLAY; 80% low plasticity clay; 10% fine sand; 10% fine gravel; soft; reddish brown (5YR 5/3); moist		
14.6	0.102				CL		-increase sand	172.0	
7.1	0.278						Poorly graded SAND; 70% fine to coarse sand; 20% fine to coarse gravel; 10% silt; loose; reddish brown (2.5YR 4/4); dry to moist.		
5.5	0.236								
7.2	0.172				SP				
1.8	0.119			175					
32.4	0.119	MW25-SB050120-176						177.0	
22.3	0.878				CL		Sandy CLAY; 65% low plasticity clay; 35% fine sand; yellowish red (5YR 4/6); dry to moist.	178.0	
6.8	0.373				CL		Gravelly CLAY; 70% low plasticity clay; 30% fine to coarse well graded gravel; yellowish red (5YR 4/6); dry to moist.		
6.8	0.216							180.0	
2.3	0.274			180			Sandy CLAY; 60% low plasticity clay; 25% fine sand; 10% fine gravel; reddish brown (5YR 4/4); moist.		
15.5					CL				
5.9	0.2							182.5	
34.2	0.131						Clayey SAND; 50% fine to coarse well graded sand; 25% low plasticity clay; 25% fine to coarse gravel; brown (7.5YR 5/4); moist.		
24.2	0.168				SC				
49.3	0.109			185					
33.4	0.12	MW25-SB050120-187						186.0	
					CL		Gravelly CLAY; 50% low plasticity clay; 30% fine to coarse well graded gravel; 20% fine sand; reddish brown (5YR 4/4); moist.		
								188.0	
13.6	0.172						Clayey SAND; 50% fine to coarse well graded sand; 25% low plasticity clay; 25% fine to coarse gravel; brown (7.5YR 5/4); moist.		
30.5	0.126								
8.6	0.476			190	SC				
22.1	0.343								
								192.0	
2.6	0.216				CL		Gravelly CLAY; 50% low plasticity clay; 30% fine to coarse subangular to subrounded well graded gravel; 20% fine sand; brown (7.5YR 4/4); moist.		
79.2	0.369	MW25-SB050120-193						193.5	
64.4	0.333				GC		Clayey GRAVEL; 60% fine to coarse angular to subrounded	194.5	
				195					

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
18.4	0.347						gravel; 25% low plasticity clay; 15% fine sand; loose; light brown (7.5YR 4/4); dry to moist	
23.6	0.63				CL		Gravelly CLAY; 50% low plasticity clay; 30% fine to coarse subangular to subrounded well graded gravel; 20% fine sand; brown (7.5YR 4/4); moist.	
18.2	0.211							
18.6	0.426							198.5
29.8	0.276				CL		CLAY; 80% low plasticity clay; 15% coarse subangular to subrounded well graded gravel; 5% fine sand; brown (7.5YR 4/4); moist.	
1.3	0.275			200				200.5
8.8	0.072						Sandy CLAY; 60% low plasticity clay; 25% fine sand; 10% fine to coarse subangular to subrounded gravel; brown (7.5YR 4/4); moist.	
7.1	0.105				CL			
7.4	0.222							
13.9	0.035	MW25-SB050120-205		205				205.5
							-No recovery; wet	
								208.0
6.7	0.028				CL		Sandy CLAY; 60% low plasticity clay; 40% fine to coarse well graded sand; trace gravel; brown (7.5YR 4/4); wet.	
1.6	0.249							210.0
10.8	0.089			210			Gravelly CLAY; 70% non-plastic clay; 20% coarse gravel; 10% fine to coarse sand; reddish (5YR 4/4); moist.	
11.7	0.276							
3.5	0.111	MW25-GW050320-212			CL			
31.3	0.112							
31.6	0.035						-increase gravel	215.0
41.6	0.058			215			Clayey GRAVEL; 60% fine to coarse angular to subrounded gravel; 15% low plasticity clay; 25% fine sand; loose; reddish brown (5YR 5/4); moist to wet	
44.6	0.134	MW25-SB050320-216			GC			
8.4	0.019							
15.9	0.065							218.5
7.5	0.203				CL		CLAY; 95% low plasticity clay; 5% fine sand; cohesive; reddish brown (5YR 4/4); moist.	220.0
0.9	0.331			220	GW		Well graded GRAVEL; 65% fine to coarse angular to subrounded gravel; 15% low plasticity clay; 20% fine sand; compact; reddish brown (5YR 5/4); wet	221.0
1.5	0.265							
1.7	0.142				GC		Clayey GRAVEL; 40% fine to coarse angular to subrounded gravel; 35% low plasticity clay; 25% fine sand; compact; reddish brown (5YR 5/4); moist to wet.	
2.8	0.28	MW25-SB050320-223						
1.9	0.052							
0.6	0.094			225				225.5
0.6	0.16				CL		CLAY; 80% low plastcity clay; 10% fine sand; 10% coarse gravel; stiff; reddish brown (5YR 5/4); moist to wet.	
0.6	0.57							228.0
0.6	0.6				GW		Well graded GRAVEL; 65% fine to coarse angular to subrounded gravel; 15% low plasticity clay; 20% fine sand; compact; reddish brown (5YR 5/4); wet	
0.6	0.509							230.0
2.4	0.171			230	GW		Well graded GRAVEL; 60% fine to coarse angular to subrounded gravel; 20% low plasticity clay; 20% fine sand; cohesive; compact; reddish brown (5YR 5/4); moist.	231.0
5.6	0.071				SW		Gravelly SAND; 50% fine to coarse well graded sand; 40% fine to coarse gravel; 10% clay; compact; yellowish red (5YR 4/6); moist.	
4.9	0.285	MW25-GW050320-232						233.0
3.7	0.343							
2.3	0.067				GW		Well graded GRAVEL; 80% fine to coarse angular to	
				235				

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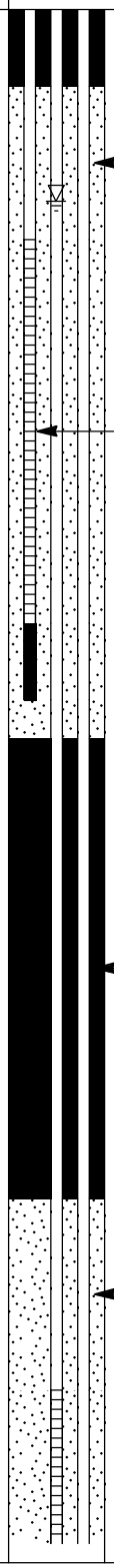
WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
7.3	0.129	MW25-SB050320-235					subangular gravel; 10% low plasticity clay; 10% fine sand; cohesive; compact; reddish brown (5YR 5/4); moist.	236.0
4.3	0.309				SW		Gravelly SAND; 50% fine to coarse well graded sand; 40% fine to coarse gravel; 10% clay; cemented; compact; reddish brown (5YR 4/4); moist.	236.5
2.3	0.101							
1.8	0.259				CL		CLAY; 75% low to medium plasticity clay; 20% fine gravel; 5% fine sand; firm to stiff; reddish brown (5YR 4/4); moist.	
6.7	0.391							240.0
0.2	0.277			240			CLAY; 80% low to medium plasticity clay; 15% fine gravel; 5% fine sand; firm to stiff; reddish brown (5YR 4/4); moist.	
2.3	0.436							
2.1	0.36				CL			
3	0.074							244.0
1.8	0.149						CLAY; 75% low to medium plasticity clay; 20% fine gravel; 5% fine sand; firm to stiff; reddish brown (5YR 4/4); moist.	
10.4	0.105			245	CL			246.0
7.6	0.198	MW25-SB050320-246					Well graded GRAVEL; 50% fine to coarse angular to subangular gravel; 20% low plasticity clay; 30% fine sand; cohesive; compact; reddish brown (5YR 5/4); moist.	
4.7	0.121							
4.7	0.112				GW		- increase gravel	
1	0.118							250.0
2.2	0.11			250			Well graded GRAVEL; 50% fine to coarse angular to subangular gravel; 20% low plasticity clay; 30% fine sand; cohesive; compact; reddish brown (5YR 5/4); moist.	
11.5	0.208	MW25-GW050320-252						
4.3	0.207				GW			
7.5	0.365	MW25-SB050320-252						
8.2	0.108							255.0
3.3	0.123			255			CLAY; 60% medium plasticity clay; 25% fine to coarse subangular to subround gravel; 15% fine to coarse sand; light brown (7.5YR 6/3); moist.	
2.1	0.567				CL			
3.9	0.503							258.0
1.6	0.2				CL		CLAY; 80% low to medium plasticity clay; 20% fine gravel; firm to stiff; reddish brown (5YR 4/4); moist.	259.0
4.7	0.133						CLAY; 80% low to medium plasticity clay; 15% fine gravel; 5% fine sand; firm to stiff; reddish brown (5YR 4/4); moist.	
11.8	0.125			260	CL			
20.2	0.074							262.0
20.9	0.115						CLAY; 90% low plasticity clay; 10% fine subrounded gravel; firm to stiff; reddish brown (5YR 4/4); moist.	
25.5	0.163							
25.5	0.289	MW25-SB050420-264						
8.5	0.005			265				
20.5	0.155				CL			
18.7	0.097							
2.6	0.27							
5.8	0.42							
7.5	0.037			270				271.0
17.2	0.648	MW25-GW050420-272					CLAY; 85% low plasticity clay; 10% fine subangular to subrounded gravel; 5% fine sand; firm to stiff; yellowish red (5YR 4/6); moist.	
7.9	0.02							
10.9	0.282	MW25-SB050520-272			CL			
16.9	0.253			275				

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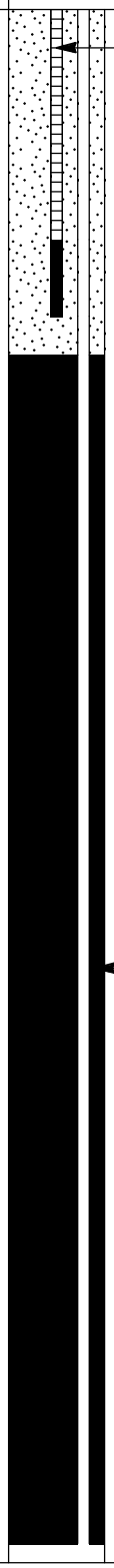
WELL DIAGRAM



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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
1.6	0.419							276.0
1.7	0						CLAY; 100% low plasticity clay; firm to stiff; yellowish red (5YR 4/6); moist.	
1.2	0							
2.3	0.419				CL			
2.5	0.413							
7.2	0.317			280				
7.1	0.196	MW25-SB050520-281						282.0
2.1	0.144						CLAY; 95% low plasticity clay; 15% fine subrounded to subangular gravel; firm to stiff; yellowish red (5YR 4/6); moist.	
3.2	0.458				CL			
2.6	0.374							
2.2	0.503			285				286.0
4.7	0.315						CLAY; 100% low plasticity clay; firm to stiff; yellowish red (5YR 4/6); moist.	
0.9	0.201							
3.8	0.007							
3.6	0.099							
0	0.057			290			-trace fine gravel	
0	0.253				CL			
0	0.419	MW25-GW050520-292						
1.5	0.347							
12.3	0.421							
6.2	0.392			295				
7.9	0.274							297.0
9.5	0.082				GW		Well graded SAND and GRAVEL; 50% fine sand; 50% fine gravel; cemented; dry	298.0
14.8	0.281				CL		CLAY; 100% low plasticity clay; firm to stiff; yellowish red (5YR 4/6); moist.	
16.1	0.125	MW25-SB050520-299						300.0
0.5	0.232			300				
0.3	0	MW25-SB050520-301			GM		Silty GRAVEL; 60% fine to coarse angular to subangular gravel; 30% silt; 10% fine to coarse sand; reddish brown (5YR 4/4); moist	302.0
							- no recovery; driller notes it was wet sand and gravel	
				305				
								308.0
0	0.124				SC		Clayey SAND; 70% fine to coarse well graded sand; 25% clay; 5% fine gravel; reddish brown (2.5YR 4/4); wet.	
0	0.377			310				310.0
5.1	0.746				GM		Silty GRAVEL; 70% fine to coarse gravel; 20% silt; 10% fine sand; reddish brown (5YR 5/3); dry	311.0
65.2	0.271	MW25-SB050620-312					Gravelly CLAY; 75% low to medium plasticity clay; 20% fine to coarse subangular to subrounded gravel; 5% fine sand; cohesive; stff; reddish brown (5YR 4/4); dry to moist.	
29.4	0.656							
8.6	0.486							
3.9	0.618				CL			
				315				

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WELL DIAGRAM

- Hydrated bentonite pellet seal (244 to 305 ft bgs).
- #10/20 sand filter pack (305 to 319.8 ft bgs).
- 1-inch SCH 80 0.020-slot screen ZIST nested well (307.5 to 317.5 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-25

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/29/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
14.1	0.662								
42.5	0.124								
17.1	0.36						-increase gravel	318.0	
53	0.193				GM		Silty GRAVEL; 70% fine to coarse gravel; 20% silt; 10% fine sand; pink (5YR 7/3); dry to moist.		
29.9	0.096	MW25-GW050620-320		320			End of boring at 320 ft bgs.	320.0	

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555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-26
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	4/22/2020-5/11/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4713.25	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Betsy Bott, Joe Miller, Ben Carreon	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 190 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				0			Hydrovac 0-10' bgs; no recovery.	
1.6	0.015			10	GP		Poorly graded GRAVEL; 80% coarse gravel; 20% silt; strong brown (7.5YR 4/6); dry.	10.0
9.1	0.0							
6.7								14.0
4.5	0.0			15	GM		Silty GRAVEL; 70% coarse angular gravel; 30% silt; strong brown (7.5YR 4/6); dry.	
2.5								
9.5	0.0							18.0
3.8					ML		Gravelly SILT; 60% low plasticity silt; 40% fine to coarse subangular gravel; pinkish gray (7.5YR 7/2); dry.	
12.6		MW26-SB042220-20		20				20.0
5.0	0.044						Gravelly SILT; 70% low plasticity silt; 30% fine to coarse subangular to rounded gravel; brown (7.5YR 6/4); dry.	
76.0					ML			
131.5		MW26-SB042220-24						
69.6	0.0							24.5
22.3				25			Gravelly SILT; 60% low plasticity silt; 40% fine subangular gravel; light brown (7.5YR 6/4); dry.	
27.7	0.0				ML			
31.1								
77.8	0.0							30.0
3.0	0.0			30			Poorly graded GRAVEL; 85% fine to coarse gravel; 15% silt; compact; light brown (7.5YR 4/4); dry.	
9.0								
2.0								
3.0								
7	0.0			35				

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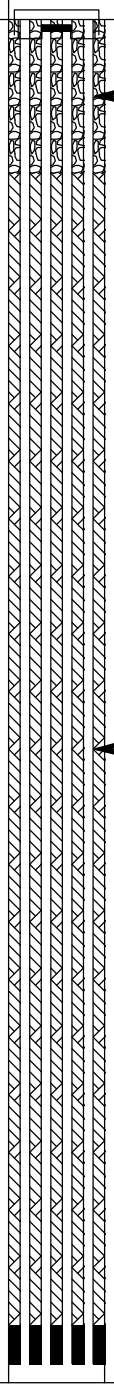
WELL DIAGRAM



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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
11					GP				
13.0	0.0								
16.0	0.01								
64.1		MW26-SB042220-39							
61.7	.45			40			Poorly graded GRAVEL; 90% fine to coarse subangular gravel; 10% silt; dense; light brown (7.5YR 6/3); dry.	40.0	
90.3					GP				
139.8	.29							44.0	
156		MW26-SB042320-44			GM		Silty GRAVEL; 60% fine to coarse angular poorly graded gravel; 40% silt; brown (7.5YR 4/4); dry.	45.0	
115	0.264			45					
25	0.483				ML		Gravelly SILT; 70% silt; 30% fine gravel; light brown (7.5YR 6/3); dry.		
43.6								48.0	
27.7	0.09						Silty GRAVEL; 60% fine to coarse angular poorly graded gravel; 40% silt; brown (7.5YR 4/4); dry.		
14.3	0.21								
5.6	0.08			50	GM				Hydrated bentonite pellet seal (34 to 201 ft bgs).
11.1								52.0	
12.5	0.156						Silty CLAY; 80% low to medium plasticity silty clay; 20% fine gravel; stiff; brown (7.5YR 4/4); dry to moist.		
18.5									
16.4	0.26				CL				
21.5				55					
30.0		MW26-SB042320-56						57.0	
15.2	0.07				ML		SILT; 90% low plasticity silt; 10% fine gravel; soft; Brown (7.5YR 4/4); dry to moist.		
16.3	0.18							58.5	
13.0					CL		Silty CLAY; 80% low to medium plasticity silty clay; 20% fine gravel; stiff; brown (7.5YR 4/4); dry to moist.	60.0	
1.3				60			Silty GRAVEL; 60% coarse subangular poorly graded gravel; 40% silt; loose; brown (7.5YR 4/4); dry.		
6.5	0.080	MW26-SB042320-62			GM				
3.2	0.105							64.0	
0.6	0.130			65			Gravelly CLAY; 60% clay; 40% fine subangular gravel; stiff; brown (7.5YR 4/4); dry to moist.		
0.130					CL				
3.2								68.0	
1.5	.260				CL		Gravelly CLAY; 75% clay; 25% fine subangular gravel; stiff; brown (7.5YR 4/4); dry to moist.		
1.2								70.0	
9.5				70			Silty GRAVEL; 60% coarse subangular poorly graded gravel; 40% silt; loose; brown (7.5YR 4/4); dry.		
6.0	0.000				GM			72.0	
9.8							Silty GRAVEL; 70% coarse angular poorly graded gravel; 30% clayey silt; compact; brown (7.5YR 4/4); dry.		
11.2	0.000			75					

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CDM Smith
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BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
11.9	0.140				GM				
14.8		MW26-SB042320-77						78.0	
5.3	0.222				GM		Silty GRAVEL; 70% fine to coarse angular poorly graded gravel; 30% silt; loose; brown (7.5YR 4/4); dry.		
7.0								80.0	
15.1	0.160			80			Poorly Graded GRAVEL; 80% fine to coarse subangular to angular gravel; 10% fine sand; 10% silt; loose; light brown (7.5YR 6/3); dry		
21.9									
27.3	0.100								
39.4		MW26-SB042320-84							
19.5				85	GP				
18.2	0.145								
6.5	0.170								
21.2								90.0	Hydrated bentonite pellet seal (34 to 201 ft bgs).
4.8	0.220			90	GC		Clayey GRAVEL: 60% coarse gravel; 40% med plasticity clay; compact; brown (7.5YR 4/4); dry to moist.	92.0	
7.1							Poorly Graded GRAVEL; 80% fine to coarse subangular to rounded gravel; 10% silt; 10%fine to medium sand; loose; brown (7.5YR 4/3); dry to moist.		
7.6									
9.1	0.180								
10.7	0.054			95	GP				
12.1		MW26-SB042320-97							
8.8	0.100								
7.9								100.0	
10.0	0.137			100	GP		Poorly Graded GRAVEL; 80% fine to coarse subangular to subrounded gravel; 10% clay; 10% fine to medium sand; loose; brown (7.5YR 4/4); dry to moist.	101.5	
6.8	1.43				GW		GRAVEL and SAND; 40% fine to coarse subangular to subrounded well graded gravel; 40% fine to coarse sand; 20% clay; brown (7.5YR 5/4); moist.	103.5	
16.2	0.928	MW26-SB050420-103							
3.7	0.516						Clayey GRAVEL; 50% fine to coarse subangular to subrounded well graded gravel; 25% clay; 25% fine to coarse sand; cohesive in places; reddish brown (5YR 4/4); moist.		
10.9				105	GC				
5.0	1.27								
1.1	0.387							107.5	
5.2	0.285				CL		CLAY; 85% low plasticity clay, 10% coarse gravel; 5% fine sand; brown (7.5YR 5/4); moist to wet.	109.0	
1.5	0.212				SW		Well graded SAND; 75% fine to coarse sand; 15% fine gravel; 10% clay; cemented in places, brown (7.5YR 5/4); moist to dry.	110.0	
6.5	0.230			110	GC		Clayey GRAVEL; 65% fine to coarse subrounded gravel; 30% low plasticity clay; 5% fine sand; yellowish red (5YR 4/4); moist.	111.5	
19.4	0.070				GM		Silty GRAVEL; 60% coarse subrounded to subangular poorly graded gravel; 40% silt; loose; light brown (7.5YR 6/4); dry.	114.0	
15.9	0.276			115			Well graded GRAVEL; 60% fine to coarse angular to		

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
36.4	0.170						subrounded gravel; 25% fine to coarse sand; 15% silt; compact; moderately cemented in places; brown (7.5YR 5/4); moist.		
53.6	0.071	MW26-SB050420-116			GW				
7.6									
7.1									
109.1	3.54	MW26-SB050420-119						120.0	
5.0	0.188			120			Well graded GRAVEL; 60% fine to coarse angular to subrounded gravel; 25% fine to coarse sand; 15% silt; compact; weak to moderately cemented in places; reddish brown (5YR 5/4); moist.		
54.3	0.214								
10.6	0.163				GW				
15.4	0.239								
10.2	0.204			125					
10.5	0.255							126.0	
4.2	0.157						Well graded SAND; %60 Fine to coarse sand; 40% fine to coarse gravel; loose; reddish brown (5YR 4/4); moist.		
1.9	0.094				SW				
6.3	0.118							128.5	
24.7	0.225	MW26-SB050420-129			GC		Clayey GRAVEL; 60% fine to coarse gravel; 40% clay; very dense; moderately cemented; reddish brown (5YR 4/4); moist.	130.0	
13.2	0.454			130	GM		Silty GRAVEL; 70% Fine to coarse gravel; 20% silt; 10% fine sand; loose; reddish brown (5YR 4/4); dry.	131.0	Hydrated bentonite pellet seal (34 to 201 ft bgs).
24.7	0.290						Well graded GRAVEL; 70% fine to coarse gravel; 15% silt; 15% fine sand; slighty cohesive; brown (7.5YR 5/4); moist.		
16.4	0.294				GW				
27.3		MW26-SB050420-133						134.0	
6.1	0.137						Silty GRAVEL; 60% fine to coarse subrounded to subangular gravel; 30% silt; 10% fine sand; weakly cemented in places; brown (7.5YR 5/3); moist.		
9.2	0.071			135	GM				
10.9	0.264							136.5	
2.4							Poorly graded GRAVEL; 60% coarse subrounded to subangular poorly graded gravel; 30% fine sand; 10% silt; loose; reddish brown (2.5YR 4/4); moist.		
4.4	0.233								
4.5	0.145			140					
12.8					GP				
8.7	0.097								
5.0									
8.7	0.152							145.0	
17.0		MW26-SB050420-145		145			Poorly graded SAND; 60% fine to coarse sand; 30% fine gravel; 10% silt; loose; reddish brown (5YR 4/4/); moist.		
4.2	0.120				SP				
5.2	0.101								
12.1								150.0	
6.7	0.163			150			Well graded SAND; 50% fine to coarse sandl; 40% fine to coarse subangular to subrounded gravel; 10% low plasticity clay; reddish brown (5YR 5/4); dry.		
7.0	0.205								
3.9	0.182				SW				
14.7	0.143	MW26-		155					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
		SB050520-154						156.0	
9.0	0.357						Poorly graded GRAVEL; 50% coarse subrounded to subangular poorly graded gravel; 30% fine sand; 20% low plasticity clay; loose; light reddish brown (5YR 6/3); dry.		
8.1	0.353				GP				
								159.0	
3.8	0.371				CL		CLAY; 50% low plasticity clay; 20% fine to coarse angular to subrounded gravel; 20% fine sand; reddish brown (5YR 4/4); dry to moist.	160.0	
9.2	0.125			160					
1.2	0.216				SW		Well graded SAND; 70% fine to coarse sand; 25% fine to coarse subangular to subrounded gravel; 5% low plasticity clay; loose; reddish brown (5YR 4/4); moist.	162.5	
5.6	0.105								
12.2	0.107				GC		Clayey GRAVEL; 60% fine angular to subrounded gravel; 25% low plasticity clay; 15% fine to coarse sand; reddish brown (5YR 4/4); dry to moist.		
4.6	0.111							165.0	
11.3	0.201			165			Well graded SAND; 50% fine to coarse sand; 40% fine to coarse angular to subrounded gravel; 10% low plasticity clay; loose; reddish brown (5YR 4/4); dry to moist.		
4.1	0.174								
5.1	0.120				SW				
33.1	0.152	MW26-SB050520-168							
12.8	0.839							170.0	Hydrated bentonite pellet seal (34 to 201 ft bgs).
13.1	0.162			170			Poorly graded GRAVEL; 50% fine to coarse gravel; 35% fine to medium sand; 15% silt; loose; reddish brown (5YR 4/4); dry to moist.		
74.0	0.318								
		MW26-SB050520-172			GP				
72.7	0.013								
36.1	0.344								
22.9	0.153			175				175.5	
6.6	0.104				SM		Silty SAND; 60% fine to coarse poorly graded sand; 30% silt; 10% fine to coarse gravel; reddish brown (5YR 4/4); moist.		
5.4	0.083							178.0	
2.0	0.200				SM		Silty SAND; 70% fine sand; 25% silt; 5% fine gravel; reddish brown (5YR 4/4); moist.	179.0	
3.5	0.114								
18.1	1.49			180	ML		Gravelly SILT; 70% silt; 30% fine to coarse gravel; cemented in places; cohesive; reddish brown (5YR 4/4); moist.	181.0	
5.3	0.137				CL		Gravelly CLAY; 60% low plasticty clay; 40% fine to coarse gravel; cohesive; stiff; reddish brown (5YR 4/4); moist.		
7.3	0.038							184.0	
11.8	0.185			185	GM		Silty GRAVEL; 65% fine to coarse subrounded to subangular gravel; 35% silt; loose; brown (7.5YR 5/3); moist.		
5.5	0.317								
5.9	0.020							187.5	
40.5	0.405	MW26-SB050520-188					Gravelly CLAY; 70% low plasticty clay; 30% fine to coarse gravel; cohesive; stiff; yellowish red (5YR 4/6); moist to wet.		
26.2	0.279								
18.0	0.135			190	CL		-becomes wet		
5.4	0.167								
7.5	0.104							193.5	
4.1	0.076			195	GP		Poorly graded GRAVEL; 50% fine to coarse gravel; 30% fine sand; 20% low plasticity clay; cohesive in places; reddish		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
28.1	0.016	MW26-SB050520-195					brown (5YR 4/4); wet.	196.0	
13.0	0.042						Clayey GRAVEL; 65% fine to coarse angular to subrounded gravel; 30% low to medium plasticity clay; cohesive; reddish brown (5YR 4/4); wet.		
8.3	0.003								
20.7	0.040								
				200					
5.4	0.199				GC		-moist to wet		
6.4	0.195	MW26-SB050620-201							
0.9	0.254								#10/20 sand filter pack (201 to 218 ft bgs).
3.5	0.200								
4.0	0.250						-wet	205.0	
				205					
1.3	0.407						CLAY; 80% medium to high plasticity clay; 10% silt; 10% coarse gravel; cohesive; reddish brown (5YR 4/4); dry to moist.		
1.8	0.444								
2.3	0.540								
0.8	0.373								
1.0	0.380								
				210					
5.0	0.065	MW26-GW050620-210			CH				1-inch SCH 80 0.020-slot screen ZIST nested well (205 to 215 ft bgs).
13.7	0.072								
13.7	0.020								
13,1	0.185								
16.4	0.083							215.0	
				215					
22.4	0.009	MW26-SB050620-215			GW		Well Graded GRAVEL; 70% fine to coarse subangular to rounded gravel; 20% fine to coarse sand; 10% silt; weakly cemented; dry.	217.0	
9.7	0.406				MH		Clayey SILT; 70% silt; 30% medium to high plasticity clay; cohesive; stiff; reddish brown (5YR 5/4); dry to moist.	219.0	
10.1	0.179				SW		SAND and GRAVEL; 50% fine to coarse sand; 50% fine to coarse gravel; well graded; medium dense; weakly cemented; reddish brown (5YR 4/4).	220.5	
				220					
140	0.117	MW26-SB050620-221					Silty GRAVEL; 70% Fine to coarse gravel; 20% silt; 10% fine to medium sand; brown (7.5YR 5/3); dry.		
6.7	0.107								
10.0	0.049				GM				Hydrated bentonite pellet seal (218 to 231 ft bgs).
				225					
4.8	0.190								
2.4	0.270						- 1.5-ft boulder		
0.3	0.267							228.0	
1.8	0.250				SM		Silty SAND; 50% fine to coarse sand; 30% silt; 20% fine to coarse gravel; reddish brown (5YR 4/3); wet.	230.0	
				230					
3.1	0.240						Silty CLAY; 50% Low plasticity clay; 30% silt; 20% fine to coarse gravel; stiff; cohesive; reddish brown (2.5YR 4/4); moist.		
1.6	0.091								
1.1	0.174				CL				#10/20 sand filter pack (231 to 250 ft bgs).
12.0	0.214	MW26-							
				235					

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
3.8	0.252	SB050620-234						236.5	
1.2	0.228						Silty SAND; 50% fine to medium well graded sand; 30% silt; 20% fine to coarse gravel; dense; reddish brown (2.5YR 4/4); wet.		
2.1	0.195								
5.7	0.192								
0.2	0.409	MW26-GW050720-240		240	SM				1-inch SCH 80 0.020-slot screen ZIST nested well (235 to 245 ft bgs).
0.3	0.072								
3.8	0.163								
0.9	0.052								
5.6	0.468			245	ML		Clayey SILT; 60% low plasticity silt; 30% clay; 10% fine to coarse gravel; stiff; reddish brown (5YR 5/4); dry to moist.	245.0	
27.6	0.150	MW26-SB050720-247			ML		SILT; 100% low plasticity silt; very dense; weakly cemented to cemented; light reddish brown (5YR 6/4); dry.	247.5	
0.8	0.082							249.0	
16.2	0.161				CL		Silty CLAY; 50% low plasticity clay; 30% silt; 20% fine to coarse gravel; soft to stiff; reddish brown (5YR 5/4); moist.	250.0	
4.4	0.308	MW26-GW050720-250		250	GW		Sandy GRAVEL; 50% fine to coarse gravel; 40% fine sand; 10% silt; loose; pink (5YR 7/4); dry.		
13.9	0.204							253.0	
6.0	0.197	MW26-SB050720-251			ML		Clayey SILT; 60% low plasticity silt; 20% clay; 20% coarse gravel; firm to stiffl reddish brown (5YR 4/4); dry.		
9.6	0.227								
2.8	0.263			255					
0.9	0.688						- becomes moist		
2.3	0.304							258.0	
12.3	0.407						Gravelly SAND; 50% fine to coarse well graded sand; 40% fine gravel; 10% silt; loose; reddish brown (5YR 5/4); moist.		
0.7	0.114			260	SW				
0.6	0.158								
0.8	0.145				CL		Silty CLAY; 60% low plasticity clay; 30% silt; 10% fine gravel; very stiff; reddish brown (5YR 5/4); dry to moist.	263.0	
1.2	0.101							264.5	
0.3	0.034			265	ML		Gravelly SILT; 70% low plasticty silt; 30% fine to coarse gravel; soft; reddish brown (5YR 4/4); moist.		
0.1	0.192							267.0	
4.9	0.158				ML		Gravelly SILT; 50% low plasticty silt; 30% fine to coarse gravel; 20% clay; firm to stiff; reddish brown (5YR 4/4); moist.		
4.9	0.347	MW26-SB050720-269		270					
9.1	0.771							271.0	
10.4	0.511	MW26-GW050820-270			CH		Silty CLAY; 70% medium plasticity clay; 20% silt; 10% coarse gravel; soft; reddish brown (5YR 5/4); dry.		
8.6	0.635								
11.0	0.429								
2.4	0.354	MW26-		275					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
4.5	0.369	SB050820-274						276.0	
5.4	0.304				ML		Clayey SILT; 70% low plasticity silt; 30% clay; firm; weakly cemented; reddish brown (5YR 5/4); dry.	277.0	
1.0	0.475						Clayey SILT; 70% low plasticity silt; 30% clay; stiff; reddish brown (5YR 5/4); dry.		
3.2	0.513				ML				
2.7	0.397							280.0	
4.3	0.503			280			Clayey SILT; 70% low plasticity silt; 20% clay; 10% fine to coarse gravel; non-cohesive; soft; reddish brown (5YR 5/4); dry to moist.		Hydrated bentonite pellet seal (250 to 312 ft bgs).
6.8	0.315								
5.1	0.336								
8.9	0.225								
5.7	0.306	MW26-SB050820-285		285	ML				
5.7	0.284								
6.5	0.401								
1.7	0.320							290.0	
2.2	0.260			290			Clayey SILT; 50% low plasticity silt; 40% clay; 10% fine to coarse gravel; non-cohesive; soft; reddish brown (5YR 5/4); dry to moist.		
4.4	0.233				ML			292.0	
6.1	0.356						Silty CLAY; 50% low to medium plasticity clay; 40% silt; 10% fine to coarse gravel; non-cohesive; firm to stiff; reddish brown (5YR 4/4); dry.		
4.1	0.514								
3.0	0.463			295	CL				
5.3	0.453								
4.5	0.365							299.0	
6.8	0.271	MW26-SB051020-299			CL		Silty CLAY; 50% low to medium plasticity clay; 40% silt; 10% fine to coarse gravel; non-cohesive; stiff to very stiff; reddish brown (5YR 4/4); dry.	299.5	
3.9	0.347			300	CL			300.0	
9.6	0.486				CH		Silty CLAY; 50% low to medium plasticity clay; 40% silt; 10% fine to coarse gravel; non-cohesive; firm to stiff; reddish brown (5YR 4/4); dry.	302.0	
17.4	0.519						Silty CLAY; 70% medium plasticity clay; 20% silt; 10% fine to coarse gravel; cohsive; stif; reddish brown (5YR 4/4); wet.		
3.3	0.353				CL		Silty CLAY; 70% low to medium plasticity clay; 20% silt; 10% fine to coarse gravel; cohsive; stif; reddish brown (5YR 4/4); moist.		
22.9	0.542			305					
19.1	0.571							307.0	
26.3	0.481	MW26-SB051020-308			CL		Gravelly CLAY; 40% low plasticity clay; 30% fine to coarse gravel; 20% coarse gravel; 10% silt; soft; non-cohesive; reddish brown (5YR 4/4) with pale brown mottling; dry to moist.		
18.0	0.238							310.0	
4.3	0.168			310			Silty CLAY; 60% low plasticity clay; 20% silt; 20% fine to coarse gravel; soft; cohesive; reddish brown (5YR 4/4); dry to moist; increase moisture with depth.		
10.5	0.404								
7.0	0.131				CL				#10/20 sand filter pack (312 to 328 ft bgs).
16.8	0.123	MW26-		315				315.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.8	0.201	SB051020-314			GW		Sandy GRAVEL; 50% fine to coarse well graded gravel; 30% fine sand; 20% clay; loose; reddish brown (5YR 4/4); wet.		
2.9	0.133							317.0	
					GM		Silty GRAVEL; 50% fine to coarse gravel; 30% silt; 20% fine sand; compact; non-cohesive		
6.8	0.044								
3.7	0.032							320.0	
3.2	0.245	MW26-GW051020-320		320	GW		Sandy GRAVEL; 50% fine to coarse well graded gravel; 40% fine sand; 10% clay; loose; reddish brown (5YR 4/4); wet.		1-inch SCH 80 0.020-slot screen ZIST nested well (315 to 325 ft bgs).
3.8	0.223							323.0	
5.5	0.224				CL		Gravelly CLAY; 50% low plasticity clay; 30% fine to coarse gravel; 20% coarse sand; soft; cohesive; reddish brown (5YR 4/4); moist.		
13.1	0.184								
11.0	0.220			325					
18.5	0.089								
11.0	0.106								
19.7	0.198	MW26-SB051120-329					-moist to wet	330.0	
14.9	0.249			330	CL		Silty CLAY; 50% low plasticity clay; 30% silt; 20% coarse gravel; stiff; non-cohesive; reddish brown (5YR 4/4); dry.		
18.8	0.145								
29.2	0.179								
36.5	0.316	MW26-SB051120-334						335.0	Hydrated bentonite pellet seal (328 to 342 ft bgs).
33.4	0.199			335	GW		Sandy GRAVEL; 50% fine to coarse well graded gravel; 30% coarse sand; 20% clay; non-cohesive; loose; reddish brown (5YR 5/4); dry.		
33.7	0.201								
17,8	0.089								
32.0	0.084							340.0	
31.6	3.40			340	GW		Sandy GRAVEL; 40% fine to coarse well graded gravel; 30% coarse sand; 30% clay; non-cohesive; loose; reddish brown (5YR 5/4); wet.		
								343.0	
82.2	0.301				GW		Sandy GRAVEL; 40% fine to coarse well graded gravel; 30% coarse sand; 30% clay; non-cohesive; loose; reddish brown (5YR 5/4); moist.		
129	3.15			345					#10/20 sand filter pack (342 to 360 ft bgs).
								347.5	
149.4	0.565	MW26-SB051120-348			SW		Gravelly SAND; 70% coarse sand; 30% fine well graded gravel; loose; moist; very dark gray (5YR 3/1); moist.		
				350				350.0	1-inch SCH 80 0.020-slot screen ZIST nested well (348 to 358 ft bgs).
10.6	0.308				CH		Gravelly CLAY; 60% medium plasticity clay; 30% fine to coarse gravel; 10% coarse sand; soft; cohesive; reddish brown (5YR 5/4); moist.		
2.1	0.309							352.0	
0.6	0.197						Gravelly CLAY; 60% medium plasticity clay; 30% fine to coarse gravel; 10% coarse sand; soft; cohesive; reddish brown (5YR 5/4); wet.		
1.3	0.188			355					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-26

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 4/22/2020-5/11/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
20.5 15.3	0.193 0.127	MW26-SB051220-355			CH				
								358.0	
10.0 9.6	0.248 0.257				CL		Gravelly CLAY; 60% low plasticity clay; 30% fine to coarse gravel; 10% coarse sand; soft; cohesive; reddish brown (5YR 5/4); dry to moist.	360.0	
				360			End of boring 360 ft bgs.		

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-27
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	3/20/2020 - 3/22/20
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	4-inch SCH 40 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	4-inch SCH 40 0.010-Slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4712.61	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Kimberly Myers	**GROUND WATER ELEVATION (FT MSL)**	

REMARKS A perched groundwater zone was encountered at approx. 150 ft bgs and groundwater was encountered at approx. 190 ft bgs.

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				0			Hydrovac excavation, no recovery	
				5				
				10				11.0
2.4	0.259	MW27-SB032220-13			SC		Clayey SAND; 50% well graded fine to coarse sand; 30% low plasticity clay; 20% fine to coarse subrounded to subangular gravel; reddish brown (5YR 4/4); dry.	
2.1				15				15.0
2.5							Clayey SAND; 50% well graded fine to coarse sand; 20% low plasticity clay; 30% fine to coarse subrounded to subangular gravel; reddish brown (5YR 4/4); moist.	
6.3	0.042	MW27-SB032220-16			SC			
4.2								
3.4								
2,4				20				20.0
5.6					CL		CLAY; 70% low plasticity clay; 15% fine subrounded to subangular gravel; 5% fine sand; reddish brown (5YR 4/4); moist.	21.5
9.2							CLAY; 70% high plasticity clay; 20% fine to coarse subrounded to subangular gravel; 10% coarse sand; reddish brown (5YR 4/4); moist.	
4.9								
7.2				25	CH			
10.6								
5.1								28.0
4.1					SP		SAND with Gravel; 85% poorly graded medium sand; 15% fine to coarse subrounded to subangular gravel; reddish brown (5YR 4/4); moist.	30.0
13.2	0.060	MW27-SB032220-30		30			Gravelly CLAY; 50% high plasticity clay; 40% fine to coarse subrounded to subangular gravel; 10% fine to coarse sand; brown (7.5 YR 4/3); dry.	
5.5								
3.0								
1.9								
0.8					CH			
				35			*Continued Next Page*	

WELL DIAGRAM

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-27
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/20/2020 - 3/22/20

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
1.7									Hydrated bentonite seal (31 to 44 ft bgs).
2.3								38.5	
3.0	0.020						Clayey GRAVEL; 50% coarse subrounded to subangular gravel; 30% fine to coarse sand; 20% low plasticity clay; brown (7.5 YR 4/3); dry.		
3.9		MW27-SB032220-40		40					
9.0									
8.1					GC				
5.6				45					
5.2									
11.1								48.0	6" soil vapor point at 48 ft bgs; #10/20 sand filter pack
22.1							Clayey GRAVEL; 40% coarse subrounded to subangular gravel; 40% low plasticity clay; 20% fine to coarse sand; brown (7.5 YR 4/3); dry.		
44.0	0.073				GC				
1.3		MW27-SB032220-50		50					
5.2							CLAY; 90% high plasticity clay; 10% fine gravel; brown (7.5 YR 5/3); moist.	51.0	
3.1					CH				
3.1								53.5	
11.4	0.061	MW27-SB032220-54.5		55	CL		CLAY; 70% low plasticity clay; 25% fine to coarse subrounded to subangular gravel; 5% coarse sand; brown (7.5YR 5/3); moist.		
6.5								56.0	
0.5							Well graded SAND; 80% fine to coarse sand; 15% fine to coarse subrounded to subangular gravel; 5% low plasticity clay; brown (7.5YR 5/3); moist.		
2.5									
3.7									
0.3							- 6" clay layer		
1.2	0.081			60					
0.7					SW				Hydrated bentonite seal (51 to 73 ft bgs).
1.4	0.00								
0.7	0.00			65					
2.8	0.00							67.0	
4.4	0.00				CL		CLAY; 75% low plasticity clay; 20% fine to coarse subrounded to subangular gravel; 5% fine to coarse sand; brown (7.5YR 5/3); moist.		
7.0	0.158			70				70.0	
1.5	1.59	MW27-SB032220-70			SW		SAND and GRAVEL; 50% well graded fine sand; 45% fine to coarse subrounded to subangular gravel; 5% low plasticity clay; brown (7.5YR 5/3); moist.	72.0	
3.0	0.658				CL		Gravelly CLAY; 50% low to medium plasticity clay; 40% fine to coarse subrounded to subangular gravel; 10% coarse sand; brown (7.5YR 5/3); moist.		
9.4								73.5	
20.9	0.119	MW27-		75			Gravelly CLAY; 60% high plasticity clay; 30% fine to coarse		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-27
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/20/2020 - 3/22/20

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
15.9	0.112	SB032220-75			CH		subrounded to subangular gravel; 10% coarse sand; reddish brown (5YR 4/4); moist.		6" soil vapor point at 75 ft bgs; #10/20 sand filter pack
4.9								77.5	
1.3	0.083				SW		SAND and GRAVEL; 40% fine sand; 40% fine to coarse subrounded to subangular gravel; 20% low plasticity clay; brown (7.5YR 5/3); moist.		
0.9	0.330			80				81.0	
					CL		CLAY; 80% medium plasticity clay; 15% fine to coarse subrounded to subangular gravel; 5% fine sand; brown (reddish brown (5YR 4/4); moist.	82.0	
1.0	0.130								
3.1	1.04						SAND and GRAVEL; 40% well graded fine sand; 40% fine to coarse subrounded to subangular gravel; 20% low plasticity clay; brown (7.5YR 5/3); moist.		
7.7									
6.7	0.325			85	SW				
8.3									
10.7	0.360	MW27-SB032220-88							
11.1	0.179							90.0	
3.5	0.620			90			CLAY; 85% high plasticity clay; 10% fine sand; 5% fine gravel; brown (7.5YR 5/3); moist.		
0.3	0.960								
2.9	1.08								
					CH				Hydrated bentonite seal (79 to 109 ft bgs).
2.9	1.12								
6.5	0.992			95					
6.2	0.572	MW27-SB032220-96							
								98.0	
1.5	0.224				CH		Gravelly CLAY; 50% high plasticity clay; 50% fine to coarse well graded gravel; brown (7.5YR 5/3); wet.		
55	0.218							100.0	
25.3	0.122			100			Gravelly CLAY; 40% low plasticity clay; 40% fine to coarse subrounded to subangular well graded gravel; 20% fine to medium sand; reddish brown (5YR 4/4); moist		
32.7	0.179								
21.9	0.255	MW27-SB032320-102			CL				
16.7	0.169							105.0	
16.6	0.121			105			SAND and GRAVEL; 50% well graded fine to coarse sand; 40% fine to coarse subrounded to subangular gravel; 10% low plasticity clay; strong brown (7.5YR 4/6); moist.		
10.2	0.186								
3.4	0.137				SW				
4.4	0.061							110.0	
41.3	5.96			110			Gravelly CLAY; 40% low plasticity clay; 40% fine to coarse subrounded to subangular gravel; 20% fine to medium sand; brown (7.5YR 4/4); moist.		
66.9	0.307				CL				
62.9	0.341							113.0	6" soil vapor point at 113 ft bgs; #10/20 sand filter pack
103.1	0.204						SAND and GRAVEL; 50% well graded fine to coarse sand; 40% fine to coarse subrounded to subangular gravel; 10% low plasticity clay; strong brown (7.5YR 4/6); moist.		
33.2	0.201	MW27-		115					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-27
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/20/2020 - 3/22/20

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
23.3	0.149	SB032320-114			SW				
61.7	0.071								
46.4	0.067							120.0	
36.0	7.04			120			Gravelly CLAY; 40% low plasticity clay; 40% fine to coarse subrounded to subangular gravel; 20% fine to medium sand; reddish brown (5YR 4/4); moist.		
98.4	0.290								
54.0	3.90	MW27-SB032320-122							
57.6	0.092								
56.6	0.156								
46.9	0.287			125					
18.3	0.124								
36.6	0.239								
17.9	4.53	MW27-SB032320-130		130					
8.8	0.641								
12.4	0.512								
11.0	1.28				CL				Hydrated bentonite seal (116 to 151 ft bgs).
4.3	0.075			135					
7.9	0.109								
5.0	0.061								
9.4	0.480						- No Recovery 139-140		
8.8	0.178	MW27-SB032320-140		140					
4.3	2.70								
5.6	1.75								
8.3	1.10								
3.4	1.19								
7.9	1.40			145					
3.9	0.215								
3.0	0.230							149.0	
15.7	0.215	MW27-SB032320-150		150			Gravelly CLAY; 70% medium to high plasticity clay; 25% fine to coarse well graded gravel; 5% medium sand; reddish brown (5YR 4/4); moist.		
8.4									
21.8									6" soil vapor point at 155 ft bgs; #10/20 sand filter pack
35.1	3.51				CH				
33.5	0.092			155					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/20/2020 - 3/22/20

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								156.0
42.4	0.237				GW		GRAVEL and SAND; 45% well graded fine to coarse sand; 45% fine to coarse subrounded to subangular gravel; 10% low plasticity clay; reddish brown (5YR 4/4); moist.	157.0
64.5	0.194	MW27-SB032320-158			CL		Gravelly CLAY; 40% low plasticity clay; 40% fine to coarse subrounded to subangular well graded gravel; 20% fine to medium sand; reddish brown (5YR 4/4); moist.	159.0
17.1	0.131				GW			160.0
1.1	0.776			160			GRAVEL and SAND; 45% well graded fine to coarse sand; 45% fine to coarse subrounded to subangular gravel; 10% low plasticity clay; reddish brown (5YR 4/4); moist.	
					CL		Gravelly CLAY; 40% low plasticity clay; 40% fine to coarse subrounded to subangular well graded gravel; 20% fine to medium sand; reddish brown (5YR 4/4); moist.	
18.1	0.529						GRAVEL and SAND; 40% well graded fine to coarse sand; 40% fine to coarse subrounded to subangular gravel; 20% low plasticity clay; reddish brown (5YR 4/4); wet.	163.5
				165	GW			
35.0	3.39	MW27-SB032320-166						
11.4	0.244							168.0
30.7	0.670	MW27-GW032320-168					Gravelly CLAY; 50% low to medium plasticity clay; 40% fine to coarse subrounded to subangular well graded gravel; 10% medium sand; reddish brown (5YR 4/4); moist.	
11.2	0.705			170				
8.6	1.23				CL			
7.3	1.66							
9.2	1.06							174.0
30.4	0.242						GRAVEL and SAND; 45% well graded fine to coarse sand; 45% fine to coarse subrounded to subangular gravel; 10% low plasticity clay; reddish brown (5YR 4/4); moist.	
29.1	0.204	MW27-SB032320-175		175				
27.3	0.199				GW			
20.4	0.179							
12.6	0.115							180.0
16.5	0.081			180			Clayey GRAVEL; 50% fine to coarse subrounded to subangular well graded gravel; 30% low plasticity clay; 20% medium to coarse sand; reddish brown (5YR 4/4); moist.	
51.4	4.05				GC			
60.6	0.061							
22.1	0.150							184.0
43.8	0.196						Gravelly CLAY; 60% high plasticity clay; 35% fine to coarse well graded gravel; 5% medium sand; reddish brown (5YR 4/4); moist.	
80.8	0.154	MW27-SB032420-185		185				
53.8	0.424				CH			
18.5	1.37							
28.6	0.231							189.5
19.7				190	GC		Clayey GRAVEL; 40% fine to coarse subrounded to subangular well graded gravel; 30% low plasticity clay; 30% medium to coarse sand; reddish brown (5YR 4/4); moist.	
								192.0
32.5	0.654	MW27-SB032420-192.5					Gravelly CLAY; 60% high plasticity clay; 35% fine to coarse well graded gravel; 5% medium sand; reddish brown (5YR 4/4); wet.	
17.6				195				

WELL DIAGRAM: Hydrated bentonite pellet seal (157 to 197 ft bgs).

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-27
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/20/2020 - 3/22/20

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
7.8	0.128				CH			
17.9	0.170							
12.0								
19.7	1.99			200			-Low recovery, sample slid out of core barrel; wet.	200.0
				205				
2.4	4.29	MW27-GW032420-210		210			Well graded GRAVEL; 80% fine to coarse subrounded to subangular gravel; 10% fine sand; 10% low plasticity clay; reddish brown (5YR 4/4); wet.	210.0
1.0	0.436				GW			
0.8	0.868							215.0
0.3				215			Gravelly CLAY; 40% low plasticity clay; 30% medium to coarse sand; 30% fine to coarse subrounded to subangular well graded gravel; reddish brown (5YR 4/4); wet.	
4.2		MW27-SB032420-218			CL			
1.2	0.178	MW27-GW032420-220		220			End of boring at 220 ft bgs.	220.0

WELL DIAGRAM: #10/20 sand filter pack (197 to 220 ft bgs).
4-inch SCH 40 0.010-slot screen well (200 to 220 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-28
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	3/11/2020 - 3/18/2020
LOCATION	Salt Lake City	**CASING TYPE/DIAMETER**	4-inch SCH 40 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	4-inch SCH 40 0.010-Slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4712.80	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Miller	**GROUND WATER ELEVATION (FT MSL)**	

REMARKS A perched groundwater zone was encountered at approx. 150 ft bgs and groundwater was encountered at approx. 185 ft bgs.

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							No recovery. Hydrovac clearing from 0-10' bgs.	
3.4				10	GM		Silty GRAVEL, 60% well graded fine to coarse gravel; 30% Silt; 5% fine sand; non-cohesive, light brownish gray (10YR 6/2), dry.	10.0
4.2								11.5
3.1					ML		Gravelly SILT; 55% silt; 35% fine to coarse gravel; 10% fine sand; non-cohesive; reddish brown (5YR 5/3); dry.	13.0
6.8							Silty GRAVEL; 50% well graded fine to coarse gravel; 25% Silt; 25% fine sand; non-cohesive, reddish brown (5YR 5/3), dry.	
14.1		MW28-SB031220-14		15	GM			
20.1								
6.6		MW28-SB031220-16						17.0
10.6							Well Graded GRAVEL; 50% fine to coarse gravel; 40% fine sand; 10% silt; rounded 6" cobble, light brown (7.5YR 6/3), dry.	
12.8					GW			
5.7				20				21.0
48.2		MW28-SB031220-22			GM		Silty GRAVEL; 50% well graded fine to coarse gravel; 30% Silt; 20% fine sand; weakly cemented; subrounded clasts; reddish brown (5YR 5/3), dry.	
41.6								24.5
33.1				25	SW		Well graded SAND; 55% fine to medium sand; 40% fine to coarse gravel; 5% silt; loose, light brown (7.5YR 6/3), moist.	
2.0								
2.2								28.0
4.6							Clayey GRAVEL; 70% fine to coarse gravel; 30% silty clay; low plasticity; light brown (7.5YR 6/3); moist	
5.0								
13.2				30	GC			
8.5								
13.7		MW28-		35				

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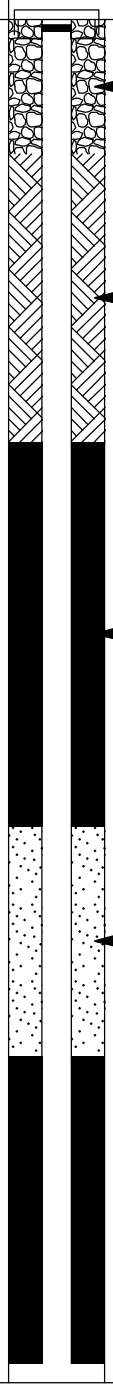
WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-28
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/11/2020 - 3/18/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
		SB031220-35						36.0	Hydrated bentonite pellet seal (27 to 45 ft bgs).
8.0					GM		Silty GRAVEL; 60% fine to coarse well graded gravel; 30% silt; 10% fine sand; medium dense; reddish brown (5YR 5/4); moist	38.0	
1.2					SW		Well graded SAND; 60% fine to coarse sand; 35% fine to coarse gravel; 5% silt; loose, light gray (7.5YR 7/1); moist.		
14.2				40				40.0	
11.8					GM		Silty GRAVEL; 70% well graded fine to coarse gravel; 30% Silt; 2non-cohesive, reddish brown (5YR 5/3); moist.	41.0	
16.8					ML		Gravelly SILT; 70% silt; 30% fine to coarse gravel; slightly cohesive; stiff; reddish brown (5YR 5/3); moist.	43.0	
							Well graded GRAVEL; 65% fine to coarse gravel; 30% fine to medium sand; 5% silt; reddish brown (5YR 5/4); moist.		
				45					
14.8					GW				
27.9		MW28-SB031320-49					-10-12" cobble	49.0	6" soil vapor point at 48 ft bgs; #10/20 sand filter pack
				50			Well graded GRAVEL 75% fine to coarse gravel; 20% medium to coarse sand; 5% silt; loose; light brownish gray (10YR 6/2); dry.		
3.5									
5.8									
7.4					GW				
3.8									
3.5				55					
								56.0	
4.1							Silty GRAVEL; 60% fine to coarse subangular gravel; 35% silt; 5% fine sand; socketed matrix; slightly cohesive; light brownish gray (10YR 6/2); moist.		
1.8					GM				
3.3		MW28-SB031320-59						58.5	
2.1				60	GM		Silty GRAVEL; 45% fine to coarse subangular gravel; 35% silt; 20% fine sand; slightly cohesive; reddish brown (5YR 5/4); FeO staining; moist.		
								62.0	
							Sandy GRAVEL; 45% fine to coarse well graded gravel; 30% fine sand; 15% silt; loose; light brown (7.5YR 6/3); moist.		
2.3					GW				
5.6				65				65.5	
7.4							Poorly graded SAND; 60% fine sand; 40% fine to coarse gravel; loose to weakly cemented in places; light brown (7.5YR 6/3); moist.		
9.6		MW28-SB031320-67			SP				
								69.0	
7.4							Clayey SILT; 60% clayey silt; 40% fine to coarse gravel; trace green staining; cohesive; brown (7.5YR 4/3); moist.		
3.1				70	ML				
								71.0	
2.1							Well Graded GRAVEL; 50% fine to coarse gravel; 45% fine sand; 5% silt; subrounded clasts; loose; light brownish gray (10YR 6/2); moist.		
0.8									
0.9					GW				
				75					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-28
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/11/2020 - 3/18/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
1.2									
								77.0	
1.2					ML		Clayey SILT; 90% clayey silt; 10% fine to coarse gravel; soft; cohesive; brown (7.5YR 4/3); moist.	78.0	
2.3					ML		SILT; 50% Silt; 40% fine to coarse sand; 10% fine to coarse gravel; cohesive; stiff; brown (7.5YR 4/3); moist.	80.0	
1.1				80			Silty GRAVEL; 60% fine to coarse, subrounded to subangular gravel; 20% silt; 20% fine sand; medium dense; light brown (7.5YR 6/3); dry.		
2.0					GM				Hydrated bentonite pellet seal (51 to 114.6 ft bgs).
3.9									
5.1		MW28-SB031320-86		85				85.5	
1.6					GM		Silty GRAVEL; 60% fine to coarse, subrounded to subangular gravel; 30% silt; 10% fine sand; slightly cohesive; light gray (7.5YR 7/1), some red straining; moist.		
3.1									
11.3								88.5	
2.8							Well Graded GRAVEL; 60% fine to coarse gravel; 40% fine to coarse sand; 10% silt; loose; light brownish gray (10YR 6/2); moist.		
3.9				90	GW				
6.1									
								92.0	
6.1							Silty GRAVEL; 50% fine to coarse, subrounded to angular gravel; 30% silt; 20% fine sand; slightly cohesive; stiff; brown (7.5YR 4/3); moist.		
8.1				95					
10.0		MW28-SB031320-97			GM				
1.6	0.019								
4.0									
10.4	0.015			100					
								101.0	
10.7	0.023						Gravelly SAND with Silt; 55% fine to coarse sand; 30% coarse gravel; 15% silt; light brown (7.5YR 6/3); moist.		
5.8	0.000				SW SM				
10.1									
9.2	0.017							105.0	
19.4	0.058			105			Sandy GRAVEL; 60% well graded fines to coarse gravel; 40% fine to coarse sand; moderately cemented; very dense; light gray (7.5YR 7/1); dry.		
39.0	0.073				GW			107.0	
1.9	0.041	MW28-SB031520-107					Gravelly SAND with Silt; 55% fine sand; 30% fine to coarse gravel; 15% silt; loose; light brownish gray (10YR 6/2); moist.		
2.9	0.025				SM				
1.8	0.054			110					
3.2	0.035							111.0	
81.5	0.011						SILT; 60% silt; 40% fine to coarse gravel; stiff; cohesive; brown (7.5YR 4/3); moist.		
42.5	0.027								
46.2	0.031				ML				
113.2	0.018			115					
								115.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-28
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/11/2020 - 3/18/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
116.2	0.024						Well graded GRAVEL; 70% fine to coarse, subrounded to subangular gravel; 30% fine to coarse sand; light gray (7.5YR 7/1); moist.		6" soil vapor point at 118 ft bgs; #10/20 sand filter pack
130.3	0.028	MW28-SB031520-117			GW				
117	0.054								
175	0.195							120.0	
55.1	0.043	MW28-SB031620-121		120			SILT; 45% silt; 35% gine to coarse gravel; 20% fine sand; slighty cohesive; weakly cemented in places; reddish brown (5YR 5/4); moist.		
33.8	0.078								
31.8	0.278				ML				
				125					
12.2	0.185							128.0	
10.1	0.167						Silty GRAVEL; 50% fine to coarse gravel; 40% silt; 10% fine sand; dense; weakly cemented; grayish brown (10YR 5/2); moist.		
10.25	0.116			130	GM				
7.8									
10.7	1.80							133.0	
3.2	1.20						SILT; 70% silt; 20% gravel; 10% fine sand; stiff; cohesive; reddish brown (5YR 4/4); moist.		Hydrated bentonite pellet seal (120 to 186.5 ft bgs).
3.88	0.111			135					
5.30	0.250				ML				
5.60	0.750								
17.8	0.496	MW28-SB031620-139						140.0	
2.36	7.76			140	SM		Silty SAND; 45% fine sand; 35% silt; 20% fine gravel; reddish brown (5YR 4/4); moist.		
								142.0	
6.33	0.610						SILT; 60% silt; 30% fine to coarse subrounded to subangular gravel; 10% fine sand; slightly cohesive; weakly cemented in places; reddish brown (5YR 5/4); moist.		
9.26	1.90								
6.91				145					
23.1	1.22				ML				
15.1	6.33								
35.2		MW28-SB031720-149						150.0	
10.8	2.54			150			SILT; 50% silt; 35% fine sand; 15% fine gravel; cohesive; stiff; reddish brown (5YR 5/4); moist.		
7.4	0.101				ML				
20.6	0.089			155					

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-28
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/11/2020 - 3/18/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								156.0	
23.2	0.100	MW28-SB031720-156			GW		Sandy GRAVEL; 55% fine to coarse subrounded to subangular well graded gravel; 35% fine sand; 10% silt; reddish brown (5YR 5/4) with gray mottling; moist.		
6.37	0.075							159.0	
					GM		Silty GRAVEL; 55% fine to coarse gravel; 40% silt; 5% fine sand; cohesive; reddish brown (5YR 5/4); moist.	160.0	
1.45	0.453			160	ML		Gravelly SILT; 75% silt; 25% fine to coarse gravel; soft; reddish brown (5YR 5/4); wet.	161.0	
3.01	0.145						Silty GRAVEL; 70% fine to coars rounded gravel; 30% silt; slightly cohesive; medium dense; reddish brown (5YR 5/4); moist.		
2.51					GM				
3.10	0.107								
7.95		MW28-SB031720-165		165					Hydrated bentonite pellet seal (120 to 186.5 ft bgs).
4.98	0.082						Sandy SILT; 55% silt; 25% fine sand; 20% fine gravel; weakly cemented in places; reddish brown (5YR 5/4); moist.	166.0	
2.42									
2.90	0.000				ML				
3.4	0.000			170					
								171.0	
11.0	0.731	MW28-SB031720-171					Gravelly SILT; 55% silt; 35% fine gravel; 10% fine sand; stiff; reddish brown (5YR 5/4); moist.		
7.2	0.026				ML				
10.8	0.058								
								175.0	
9.3				175			Silty SAND; 60% fine to coarse sand; 30% silt; 10% fine gravel; loose; reddish brown (5YR 4/4); moist.		
3.6	0.003				SM				
								178.0	
7.5	0.010						Silty GRAVEL; 55% fine to coarse gravel; 35% silt; 10% fine sand; loose; reddish brown (5YR 5/4); moist.		
1.1	0.071			180	GM				
2.8	0.190								
1.8									
								184.0	
3.2							Well Graded SAND; 60% fine to coarse sand; 30% fine gravel; 10% silt; loose; reddish brown (5YR 5/4); moist to wet.		
14		MW28-SB031720-185		185	SW				
8.97								186.5	
							Sandy SILT; 60% silt; 30% fine sand; 10% fine gravel; cohesive; medium plasticity; stiff; reddish brown (5YR 5/3); moist.		
8.4	0.000				ML				
								190.0	
0.9	0.010			190			Sandy SILT; 50% silt; 40% fine sand; 10% fine gravel; cohesive; medium plasticity; soft; reddish brown (5YR 5/3); moist.		
0.7	0.018				ML				
1.3									
				195				195.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-28
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 3/11/2020 - 3/18/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
1.0 2.3	0.024 0.000				SM		Silty SAND; 55% fine sand; 40% silt; 5% clay; medium dense; cohesive; reddish brown (5YR 5/4); wet.		#10/20 sand filter pack (186.5 to 210 ft bgs).
								198.0	
2.9	0.030	MW28-SB031720-199			GW		Sandy GRAVEL; 50% well graded fine to coarse gravel; 35% fine sand; 15% silt; loose; reddish brown (5YR 5/4); wet.		4-inch SCH 40 0.010-slot screen well (190 to 210 ft bgs).
0.8				200					
1.1								203.0	
3.8					SM		Silty SAND; 50% fine sand; 45% silt; 5% fine gravel; cohesive; reddish brown (5YR 5/4); wet.		
2.9				205				205.5	
8.1 4.6 10.2		MW28-SB031720-206			SW		Gravelly SAND; 55% medium to coarse sand; 35% fine to coarse gravel; 10% silt; loose; reddish brown (5YR 5/4); wet.		
				210				210.5	
		MW28-GW031820-211					End of boring at 210.5 ft bgs.		

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-29
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	5/27/2020 - 6/4/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4679.35	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Kimberly Myers	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 115 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							Hydrovac from 0 to 8.5 ft bgs.	
				5				
							No recovery.	8.5
				10				10.0
9.5	0.211				SW		Gravelly SAND with Silt: brown (7.5 YR 5/4); 60% sand, well graded, fine to coarse, subangular to subrounded; 25% gravel, poorly graded, fine to medium, subangular to subrounded; 15% silt, non-plastic, moist.	
11.4	0.185							
15.3	0.217							12.5
10.5	0.249						Sandy SILT with Gravel: reddish brown (5 YR 5/4); 50% silt, non-plastic; 35% sand, poorly graded, fine; 15% gravel, well graded, fine to coarse; moist.	
21.6	0.294				ML			
13.8	0.346			15				16.0
24.1	0.298						CLAY with Gravel: reddish brown (2.5 YR 4/4); 80% clay, low plasticity; 15% gravel, well graded, fine to coarse, angular to subrounded, up to 6 inches; 5% sand, poorly graded, very fine to fine, moist.	
14	0.233				CL			18.0
16.5	0.102				ML		Sandy SILT with Gravel: reddish rown (2.5 YR 4/4); 65% silt, well graded; 20% sand; 15% gravel, fine to medium, angular.	19.0
9.3	0.097				ML		Gravelly SILT and CLAY: reddish brown (2.5 YR 4/4); gravel up to 4 inches, angular to subrounded.	20.0
11.4	1.09			20	ML		Sandy Silt: 60% silt, non-plastic; 40% sand, well graded, fine to coarse.	
45.6	0.61				GC		Color is duskly red (2.5 YR 3/2); black discoloration; no odor (4-inch lens).	21.2 / 21.5
	0.787				ML		Clayey GRAVEL: 3 inches of clayey gravel.	22.5
63.9	0.286				GM		Sandy SILT with Gravel: gravel, is well graded, subangular to subrounded, up to 3 inches in diameter.	
75.3	1.1	MW29-SB052720-		25			Silty GRAVEL with SAND: 45% gravel, angular to subrounded, up to 5 inches; 40% sand, well graded; 15% silt, non-plastic.	24.0

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WELL DIAGRAM

- Vault with cement surface seal
- Bentonite Grout (3 to 11 ft bgs).
- Hydrated bentonite pellets (11 to 117 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
39.6	0.337	24			SM		Silty SAND: 60% sand, 40% silt. 4-inch layer of coarse gravel, angular to subrounded.	26.0	
30.4	0.296						Gravelly CLAY: 60% clay, 40% gravel.		
68.8	0.288				CL GP		5 inch layer of coarse gravel, angular to subrounded.	27.5	
								28.0	
62.3	0.321						Gravelly SILT with Sand: brown (7.5 YR 4/4); 55% silt, non-plastic; 25% gravel, well graded, subangular to subrounded, up to 4 inches; 20% sand, well graded, fine to coarse.		
30.5	0.171								
33.4	0.248			30	ML		White and powdery.		
62.9	0.418								
								32.0	
80.4	1.04						Gravelly CLAY: reddish brown (2.5 YR 4/4); 75% clay; 20% gravel, well graded, fine to medium, up to 2 inches; 5% sand, well graded.		
68.2	1.18				CL				
								34.0	
41	0.199						Sandy SILT with Gravel: reddish brown (5 YR 5/4); 50% silt; 30% sand, well graded; 20% gravel, well graded, subangular to subrounded, up to 6 inches.		
75.9	0.169			35					
66.3	0.504								
61.9	0.472								
23.7	0.699				ML				
34.3	0.159						Color changes to reddish brown (2.5 YR 4/4).		
16.7	0.32			40			Same as above except silt increases to 65%.		Hydrated bentonite pellets (11 to 117 ft bgs).
54.2	0.311								
92.5	0.668							42.5	
9.3	0.579						CLAY with Sand: 95%clay, low plasticity; 5%sand; trace gravel; moist.		
14.5	0.783				CL				
14.8	0.813			45					
								46.0	
11.5	0.855						Silty CLAY: reddish brown (2.5 YR 4/4); 80% clay; 15% silt; 5% sand; moist.		
12.6	0.691				CL				
1.9	0.82								
								49.0	
6.9	0.654				ML		Gravelly SILT with Sand: reddish brown (5 YR 4/4); 50% silt, non-plastic; 20% sand, well graded, fine to coarse; 30% gravel, well graded, angular to subrounded.	50.0	
9.6	0.106			50			CLAY with Sand: brown (7.5 YR 4/4); 80% clay, low plasticity; 10% sand, poorly graded, very fine to fine; 5% gravel, fine to coarse, subangular to subrounded, up to 2 inches; 5% silt.		
7.6	0.556				CL				
11.7	0.439								
								53.0	
10.3	0.552						Sandy CLAY: higher sand/gravel content, well graded, 50% of		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
					CL		total.	54.0
14.5	0.283				CL		CLAY with Sand: brown (7.5 YR 4/4); 80% clay, low plasticity; 10% sand, poorly graded, very fine to fine; 5% gravel, fine to coarse, subangular to subrounded, up to 2 inches; 5% silt.	
17.3	0.463			55				55.5
24.8	0.239	MW29-SB052820-56			SM		Silty SAND with Gravel: brown (7.5 YR 4/4); 50% sand, well graded, fine to coarse; 35% silt, non-plastic; 15% gravel, poorly graded, fine, subangular to subrounded; moist. Gravel becomes well graded, up to 3 inches in diameter.	
11	0.278				CL		Silty CLAY: 6 inches of silty clay.	57.5
9.8	0.383				CL		CLAY: 70% clay, low to no plasticity; 25% silt; 5% sand very fine.	58.0
10.6	0.464							60.0
11.6	0.328			60	CL		CLAY with Gravel: brown (7.5 YR 5/4); 75% clay, low plasticity; 15% gravel, subangular to subrounded; 5% sand; 5% silt; moist.	61.0
13.6	0.611						CLAY: brown (7.5 5/4); 90% clay, low plasticity; 5% sand; 5% silt; moist.	
22.7	0.333							
12.1	0.925				CL			
16.9	1.02							
13.5	0.772			65			Clayey SAND with Gravel: yellowish red (5 YR 4/6); 40% sand, well graded; 30% clay; 30% gravel, fine to medium, angular to subrounded.	65.0
26.9	0.369				SC SC		6-inch layer of CLAY.	66.0
27.9	0.178	MW29-SB052820-67			GP		Clayey SAND with Gravel: yellowish red (5 YR 4/6); 40% sand, well graded; 30% clay; 30% gravel, fine to medium, angular to subrounded.	67.0 67.5
16.5	0.164				ML		GRAVEL: 70% coarse gravel lens.	
17.7	0.152				ML		Gravelly SILT with Sand: yellowish red (5 YR 4/6); 40% silt, non-plastic; 35% gravel, well graded, subangular to subrounded; 25% sand, well graded.	69.5 69.8
7.8	0.123			70	ML		SILT: pinkish gray (5 YR 7/2); 3 inches of pinkish gray silt; calcite powder.	
10.3	0.279						Gravelly SILT with Sand: brown (7.5 YR 4/4); 40% silt, non-plastic; 35% gravel, well graded, subangular to subrounded; 25% sand, well graded.	71.5
21.7	0.189	MW29-SB052820-72			ML		SILT with Gravel: strong brown (7.5 YR 4/6); 75% silt, non-plastic; 10% sand; moist.	73.0
13.3	0.308						CLAY: reddish brown (2.5 YR 4/4); 90% clay, low plasticity; 5% sand, poorly graded, fine; 5% silt; moist.	
12.8	0.488							
17.4	0.457			75	CL			
16.4	0.406							
10	0.523							77.5
5.3	0.243				ML		SILT with Gravel: strong brown (7.5 YR 4/6); 75% silt, non-plastic; 15% gravel, poorly graded, fine, subangular to subrounded; 10% sand; moist.	79.0
3.9	0.349				ML		SILT: 80% silt, non-plastic; 10% gravel, poorly graded, fine; 5% sand, fine, poorly graded; 5% clay, low plasticity.	80.0
3.4	0.378			80			CLAY: reddish brown (2.5 YR 4/4); 95% clay, medium to high plasticity; 5% sand, fine to coarse; trace gravel; moist.	
13.9	0.601				CH			

WELL DIAGRAM: Hydrated bentonite pellets (11 to 117 ft bgs).

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
20.1	0.52	MW29-SB052820-82							
16.8	0.651							83.5	
					SC		Clayey SAND with Gravel: moist.	84.0	
19.2	0.713						Sandy CLAY: 85% clay, medium to high plasticity; 15% sand, very fine; moist.		
13	0.83			85	CH				
5.1	0.863							87.0	
5.5	0.705				CL		Sandy CLAY: 70% clay; 30% sand, well graded; moist.	87.5	
4.1	0.718				CH		Sandy CLAY: 85% clay, medium to high plasticity; 15% sand, very fine; trace gravel, up to 1.5 inches, subangular to subrounded; moist.	89.0	
5.4	0.479				ML		Gravelly SILT with Sand: 60 to 65% silt, low to non-plastic; 15 to 20% sand; 20% gravel, up to 2 inches; moist.	90.0	
6.8	0.22			90			CLAY with Sand: reddish brown (2.5 YR 4/4); 85 to 90% clay; 10 to 15% sand, mostly very fine to fine, trace coarse; trace gravel; moist.		Hydrated bentonite pellets (11 to 117 ft bgs).
24.6	0.46								
17.7	0.581				CL				
13.8	0.686								
10.7	0.712						Color changes to reddish brown (2.5 YR 5/3).	95.0	
10	0.64			95			6 inch boulder.	95.5	
18.6	0.493						Silty SAND with Gravel: reddish brown (5 YR 5/4); 40% sand, well graded; 30% silt, non-plastic; 30% gravel, well graded, fine to coarse, up to 3 inches; dry to moist.		
29.4	0.225				SW				
16	0.142							99.0	
23.7	0.108				ML		White to pinkish gray (5 YR 7/2) layer of powdery calcite silt.	100.0	
6.5	0.103			100			No recovery from 100 to101 ft bgs.	101.0	
25.4	2.1						SAND with Silt and Gravel.		
20.2	0.763				SP SM				
8.3	0.19							104.0	
24.6	0.717	MW29-SB052820-104					Silty Clayey SAND and GRAVEL: reddish brown (2.5 YR 4/4); 70% sand and gravel; 30% silt with some clay. Gravel is up to 5 inches in diameter.		
13.2	0.117			105					
18.1	0.116								
14.2	0.154				SM				
5.2	0.105								
15.3	0.112							110.0	
23.7	0.105			110			No recovery from 110 to 115 ft bgs due to broken casing.		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				115				115.0
11.4		MW29-SB052920-115			GM		Silty GRAVEL with Sand: reddish brown (2.5 YR 4/4); 40% gravel, well graded, subangular to subrounded, up to 4 inches; 30% sand, well graded; 25% silt, non-plastic; 5% clay, some nodules; moist.	
11.6	0.308							117.0
2.8	0.259						Clayey SAND with Gravel: 70% sand, well graded; 20% clay, low plasticity; 10% gravel, poorly graded, fine; wet.	
4.2	0.147							
2.7	0.134				SC			
0.5	0.17	MW29-GW052920-120		120			Same as above except gravel content increases to 30% and becomes well graded and moist. Sand content decreases to 50%.	
6.9	0.198							122.0
43.4	0.219	MW29-SB052920-122			GM		Silty GRAVEL with Sand: brown (7.5 YR 5/3); 40% gravel, well graded, angular to subrounded; 30% sand, well graded, subangular to subrounded; 30% silt; moist.	
7.1	0.217							124.0
21.7	0.234						CLAY: 90% clay; 10% sand, poorly graded, coarse; moist to wet.	
4.6	0.392			125				
5.2	0.513							
2.2	0.684				CL			
2.8	0.61						Same as above except sand is very fine to fine.	
2.9	0.415							
4.2	0.333			130			CLAY with Gravel: reddish brown (2.5 YR 4/4); moist.	130.0
10.9	0.343				CL			
9.6	0.385						Silty SAND with Gravel: reddish brown (5 YR 5/4); moist.	132.0
12.6	0.457				SM			
37.7	0.239							
22.2	0.298			135			Clayey GRAVEL with Sand: reddish brown (2.5 YR 4/4); 40% gravel , well graded, fine to coarse, angular to subrounded, up to 3 inches; 35% sand, well graded; 25% clay, low plasticity; moist.	135.0
5.4	0.465							
98.1	0.489				GC			
47.5	0.236							

WELL DIAGRAM

#10/20 sand filter pack (117 to 132 ft bgs).

1-inch SCH 80 0.020-slot screen ZIST nested well (120 to 130 ft bgs).

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
28.1	0.32							140.0	
21.2	0.212			140	CL		CLAY with Gravel.	141.0	
1.2	0.277				SM		Silty SAND with Gravel.		
10.3	0.324							143.0	
17.1	0.121						CLAY with Sand: reddish brown (2.5 YR 4/4); 70% clay; 25% sand, poorly graded, very fine, subangular to subrounded; 5% gravel, fine, subrounded, up to 0.5 inch; moist.		
25.6	0.152	MW29-SB052920-144							
16.3	0.227			145					
3.5	0.257								
4.4	0.42						Color changes to brown (7.5 YR 5/4).		
2.6	0.554				CL				
1.4	0.558								
3.1	0.226			150			Color changes to brown (5 YR 5/4); slough.		
0.8	0.379								
1.1	0.361								
6	0.428							154.0	
5.4	0.402						Silty SAND with Gravel: 60% sand, well graded, subangular to subrouned; 20% silt, non-plastic; 20% gravel, subangular to subrounded, up to 4 inches; moist.		
12	0.21	MW29-SB052920-155		155	SM			156.0	
8.9	0.276						CLAY with Sand: reddish brown (5 YR 5/4); 70% clay; 25% sand, poorly graded, very fine, subangular to subrounded; 5% gravel, fine, subrounded, up to 0.5 inch; moist.		
11.2	0.237				CL				
9.1	0.345							159.0	
4.8	0.329						Gravelly CLAY with Sand: light reddish brown (5 YR 6/4); 70% clay; 20% gravel, poorly graded, fine to medium, angular to subrounded; 10% sand, poorly graded, very fine, subangular to subrounded; moist.		← Hydrated bentonite pellet seal (132 to 187 ft bgs).
4.9	0.239			160					
19	0.462								
21.2	0.359								
7.9	0.262				CL				
38	0.209						Gravel size increases to coarse, up to 4 inches.		
30.1	0.14			165					
33	0.266								
								167.0	
42.2	0.278	MW29-SB052920-					Transition from clay to silt.	167.5	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
25.5	1.02	167			GC		Clayey GRAVEL with Silt: 40% gravel; 30% clay; 15% silt; 15% sand.	169.0	
38.3	0.269				GM		Silty GRAVEL: pinkish gray (5 YR 7/2); 50% gravel, angular to subrounded; 25% silt; 25% sand, poorly graded, very fine to medium; dry.	170.0	
2.5	0.226			170					
11.9							Clayey GRAVEL: reddish brown (2.5 YR 4/4); 40% gravel, well graded, up to 4 inches; 40% clay, low plasticity; 20% sand, well graded.		
31.8	0.396				GC				
46	0.243							173.0	
6.2	0.231						Gravelly Lean CLAY: 60% clay, low plasticity; 30% gravel; 10% sand.		
14.6	0.911				CL				
22.4	0.646			175				176.0	Hydrated bentonite pellet seal (132 to 187 ft bgs).
26.4	0.64						4 inch long by 6 or 7 inch wide boulder.	176.3	
34.5	0.674						Gravelly CLAY with Sand: 55% clay; 25% gravel, well graded, subangular to subrounded, up to 3 inches; 20% sand, well graded.		
51.2	1.04	MW29-SB052920-178			CL				
37.6	0.36							180.0	
33.9	0.173			180			Low Recovery.		
								182.0	
5.7	0.153				CL		Gravelly CLAY: 70% clay; 20% gravel, fine to medium, subangular to subrounded; 10% sand.	182.6	
13	0.317						8 inch boulder.	183.3	
4.2	0.202				CL		Gravelly CLAY: 70% clay; 20% gravel, fine to medium, subangular to subrounded; 10% sand.	184.5	
2.2	0.192				SC		Clayey SAND with Gravel: gravel is well graded, subangular to subrounded, 15 to 25%.	185.5	
33.9	0.238			185					
45.6	0.108				CL		Gravelly CLAY: 70% clay; 20% gravel, fine to medium, subangular to subrounded, up to 3 inches; 10% sand.	186.7	
45.8	0.284	MW29-SB052920-187			ML		Silty GRAVEL with Sand: 45% silt; 30% gravel; 25% sand; dry to moist.	187.0	
3.7	0.515				CL		CLAY: 90% clay; 10% sand; moist. Water Encountered. Clay is low plasticity with silt mixed in.		#10/20 sand filter pack (187 to 202 ft bgs).
4.1	0.582						Trace coarse gravel, up to 5 inches in diameter.	190.0	
2.3	0.58			190			CLAY: 90% clay; 10% sand, poorly graded, very fine; trace gravel, fine, subangular, trace coarse cobbles/boulders up to 5 inches; moist.		
4.2	0.201	MW29-GW053120-191							
0.1	0.455								1-inch SCH 80 0.020-slot screen ZIST nested well (190 to 200 ft bgs).
1	0.411				CL				
1.1	0.343								
4	0.375			195					
								196.0	
5	0.306						CLAY with Gravel and Sand: reddish brown (2.5 YR 4/4);		

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
7.2	0.367				CL		75% clay; 15% sand, poorly graded, very fine; 10% gravel, well graded, subangular to subrounded, up to 4 inches.	
							Increase in well graded gravel.	198.0
11.2	0.305	MW29-SB053120-198			CL		Gravelly CLAY with Sand: 40% clay; 35% gravel, well graded, angular to subrounded; 25% sand, well graded, fine to coarse; moist, dries quickly.	
62.8	0.176							199.6
34.9	0.283			200	CL		Sandy CLAY: 70% clay; 30% sand, well graded. Sand is poorly graded, very fine to fine; moist to wet.	
								201.0
0	0.479				SW		3 inches of sandstone.	201.3
					CL		Gravelly CLAY with Sand.	201.8
0	0.542				CL		Sandy CLAY: trace fine gravel.	202.0
0	0.436						CLAY with Sand: reddish brown (2.5 YR 4/4); 80% clay, low plasticity; 20% sand, poorly graded, very fine; trace coarse gravel.	
0	0.347				CL		From 204 to 204.5 ft bgs, 40% coarse gravel, subrounded, up to 6 inches.	
0	0.508			205				
0.2	0.542							
								207.0
0.7	0.102	MW29-SB053120-207			GC		Clayey GRAVEL with Sand: 40% gravel, well graded, subangular to subrounded, up to 3 inches; 25% clay; 35% sand, well graded; moist.	
0.3	0.133							
0.4	0.116							
								210.0
1.2	0.175			210	CL		CLAY: brown (7.5 YR 5/4); 90% clay, low plasticity; 5% sand, fine; 5% silt; moist to dry .	211.0
0	0.671						Gravelly CLAY: gray (5 YR 6/1); 60% clay, medium plasticity; 30% gravel, subangular to subrounded, up to 3 inches; 10% sand, poorly graded, fine; moist to dry.	
0	0.577							
0	0.24							
0	0.172							
0	0.39			215	CL			
0	0.624							
0	0.37	MW29-SB053120-217						
0	0.311						Color changes to brown (7.5 YR 5/3).	
0	0.022							
								220.0
0	0.178			220			Gravelly CLAY: light brown (7.5 YR 6/3); 60% clay, medium plasticity; 30% gravel, mostly well graded, subrounded, up to 5 inches in diameter; very large boulders; 10% sand, fine.	
0	0.162							
0	0.234							
0	0.21							
0	0.182							
				225				

WELL DIAGRAM: Hydrated bentonite pellet seal (202 to 227 ft bgs).

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0	0.149				CL		Color changes to light brown (7.5 YR 6/4); gravel increases to 40% and is medium to large grained.		
0	0.254								
0	0.241	MW29-SB053120-227							
0	0.389								#10/20 sand filter pack (227 to 242 ft bgs).
0	0.266								
0	0.186			230			CLAY with Gravel: brown (7.5 YR 5/4); 75% clay; 15% gravel, well graded, up to 3 inches in diameter; 10% sand, fine; moist.	230.0	
0	0.45	MW29-GW060120-230							
0	0.442				CL				
0	0.465								
0	0.446								
0	0.165			235			Silty SAND with Gravel: 50% sand, well graded, subangular to subrounded; 30% gravel, up to 3 inches in diameter; 20% silt; wet.	235.0	1-inch SCH 80 0.020-slot screen ZIST nested well (230 to 240 ft bgs).
0	0.307								
0	0.206				SM				
0	0.101								
0	0.879								
0	0.206	MW29-SB060120-240		240			CLAY: reddish brown (5 YR 4/4); 95% clay, medium to high plasticity; 5% sand, very fine; trace gravel, well graded.	240.0	
0.02	0.391								
13.4	0.337								
5.7	0.448								
	0.663								
9.8	0.502								
0.2	0.217								
6.5	0.317			245	CH				
6.3	0.457								
11.3	0.188								
16.2	0.207								
1.8	0.21								
17.9	0.541	MW29-SB060120-250		250	CL		CLAY with Gravel: reddish brown (2.5 YR 4/4); 85% clay; 15% gravel, subangulr to subrounded, up to 2 inches.	250.0	Hydrated bentonite pellet backfill (242 to 340 ft bgs).
1.5	0.168						CLAY with Gravel: light brown (7.5 YR 6/4); gravel is fine to medium, subangular to subrounded, up to 2 inches.	251.0	
10.4	0.216								
38.9	0.202				CL				

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
51	0.203							255.0	
	0.347			255			CLAY with Sand and Gravel: light brown (7.5 YR 6/4); 55% clay; 25% sand; 20% gravel; wet - saturated.		
123.4	0.215	MW29-SB060120-256			CL				
	0.271								
18.1	0.193							259.0	
9.6							Low Recovery.	260.0	
6.8	0.215	MW29-GW060220-260		260			CLAY with Sand and Gravel: brown (7.5 YR 5/3); 55% clay, low to medium plasticity; 25% sand, well graded; 20% gravel, well graded, fine to medium, trace coarse; moist to wet.		Hydrated bentonite pellet backfill (242 to 340 ft bgs).
20					CL				
8.2	308							263.0	
18.4	0.257				CL		CLAY: 95% clay, very stiff; 5% fine sand and gravel; moist.	263.5	
6.9	0.187				CL		CLAY with Sand and Gravel: brown (7.5 YR 5/3); 55% clay, low to medium plasticity; 25% sand, well graded; 20% gravel, well graded, fine to medium, trace coarse; moist.		
1.6									
4.7	0.165			265				265.5	
33.1	0.262				CL		CLAY with Gravel: 70% clay, very stiff; 10% sand, well graded, fine to coarse; 20% gravel, well graded, up to 2 inches; moist.	266.5	
32.4	0.204	MW29-SB060220-267			GM		Silty GRAVEL: pink (7.5 YR 7/3); 50% gravel, angular to subrounded; 35% silt, non-plastic; 15% sand, poorly graded, very fine to fine, dry.	267.5	
2.5	0.48				CL		Sandy CLAY: 65% clay, low plasticity; 30% sand, poorly graded, very fine to fine, subangular to subrounded; 5% gravel, fine, subangular.		
4.1	0.359							269.5	
					CL		Gravelly CLAY with Sand: 60% clay; 15% sand; 25% gravel.	270.0	
8.1	0.302			270	GW		GRAVEL: cemented gravel; hard.	271.0	
							No Recovery.		
								273.0	
24.3	0.186	MW29-SB060320-273					Silty SAND with Gravel: pale brown (10 YR 6/3).		
2	0.122				SM				
8	0.112			275				275.5	
							No Recovery. Casing became stuck in formation and sample was lost while vibing it out. It is possible that sample came from 273 to 275.5 ft bgs.		
								280.0	
1.6	0.321			280			CLAY with Sand and Gravel: reddish brown (2.5 YR 4/3); 85% clay, low plasticity, stiff; 15% sand, poorly graded, very fine to fine, subangular to subrounded; trace gravel, fine.		
3.2	0.461								

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
3.2		MW29-SB060320-282							
1.1	0.509								
1.5	0.554			285					
	0.556								
1.8	0.462						Clay is firm.		
2.4	0.479								
3	0.365								
2.5	0.324			290	CL		Clay is very stiff.		
1.9	0.267								Hydrated bentonite pellet backfill (242 to 340 ft bgs).
2.5	0.343	MW29-SB060320-292							
3.2	0.321								
2.6	0.295						Clay is stiff.		
1.6	0.285			295					
2	0.197								
1.4	0.254								
2.2	0.278								
2.6	0.867							300.0	
1.1	0.574			300	CL		CLAY: 90% clay, medium plasticity; 10% sand, very fine; stiff; moist.	301.0	
4.1	0.361				GW		3-inch GRAVEL layer.	301.3	
					CL		CLAY: 90% clay, medium plasticity; 10% sand, very fine; stiff; moist.	302.0	
3.7	0.584	MW29-SB060320-302					CLAY: 90% clay, medium plasticity; 10% sand, very fine; trace gravel, fine, 0.25 inch diameter.		
3.5					CL				
2.5	0.312							305.0	
1.5	0.301			305			CLAY: 85% clay; 10% sand, very fine; 5% gravel, subrounded, up to 0.5 inch.		
1.3	0.31				CL				
2.7	0.353							307.5	
2.8	0.296						CLAY: 90% clay, medium plasticity; 5% sand, very fine; 5% silt.		
7.8	0.191				CL				
								310.0	
10.2	0.294			310			CLAY with Sand and Gravel: reddish brown (2.5 YR 4/4);		

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
5.1	0.192				CL		80% clay; 10% sand, poorly graded, very fine; 10% gravel, well graded, fine, subangular to subrounded, up to 0.75 inch.		
10.6	0.183								
16.2	0.501							313.5	
							GRAVEL and SAND: cemented gravel and sand.	314.0	
22.8	0.604	MW29-SB060320-314			ML		Gravelly SILT: 65% silt, non-plastic; 30% gravel, well graded, subangular to subrounded, up to 1 inch; 5% sand, poorly graded, very fine.		
10.4	0.453			315			Clay is present.	316.0	
	0.134				ML		4-inch layer of powdery silt.	316.3	
							Clayey SILT: 40% silt (40%); 35% clay; 20% gravel; 5% sand.		
14.2	0.483				ML			318.0	
28.8	0.243				CL		CLAY with Gravel.	319.0	
5.7	0.24				ML		Gravelly SILT: 65% silt, non-plastic; 30% gravel, well graded, subangular to subrounded, up to 1 inch; 5% sand, poorly graded, very fine.	320.0	
25.5	0.221			320			Clayey SAND with Gravel: 40% sand, well graded; 40% clay; 20% gravel, well graded, up to 2 inches; dense; moist to wet.		Hydrated bentonite pellet backfill (242 to 340 ft bgs).
2.2	0.219								
1.2	0.313								
6.6	0.353								
5.7	0.2				SC				
5.6	0.174			325					
16	0.192								
8.6	0.149								
23.7	0.141	MW29-SB060320-328					Same as above except sand increases to 40%; clay decreases to 30%, low plasticity; and gravel increases to 30%; dry to moist.	329.0	
14.3	0.386				CL		Gravelly Clay: brown (7.5 YR 5/3).		
7.7	0.231			330				330.5	
					GC		Clayey GRAVEL.	331.0	
14.7	0.243				CL		Gravelly CLAY: 70% clay; 20% gravel, well graded, fine to coarse, up to 1 inch; 10% sand, well graded.		
6.7	0.126							332.5	
16.3	0.801				GC		Clayey GRAVEL with Sand: 40% gravel, well graded; 30% sand, well graded; 30% clay; moist.		
12.2	0.21						Coarse gravel up to 3 inches in diameter from 334.5 to 335 ft bgs.		
14.5	0.925								
17.5	0.66							337.0	
11.9	0.571	MW29-SB060420-337			CL		Gravelly CLAY: brown (7.5 YR 5/3); 70% clay; 20% gravel, up to 3 inches; 10% sand, well graded.		
13	0.359								

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-29

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/27/2020 - 6/4/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
11.6							Becomes hard; cemented; may have some silt and clay.	340.0	
							End of boring at 330 ft bgs.		

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-30
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	5/22/2020 - 6/8/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4723.07	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Milller, Frank Morris	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 240 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				0			No recovery. Hydrovac clearing from 0-10' bgs.	
				5				
8.2	0.185			10	GP		GRAVEL with Silt and Sand: dark brown (7.5 YR 3/4); 70% fine gravel with a few cobbles/coarse gravel; 15% sand; 15% silt; moist.	10.0
8.2	0.185				GM			12.0
11.9	0.331				GW		GRAVEL: 90% well graded gravel and cobbles, subangular; 10% sand; loose; dry.	14.0
12.4	0.078	MW30-SB052220-15		15	GM		Silty GRAVEL with Sand: brown (7.5 YR 5/4); 65% gravel, well graded, rounded; 15% silt; 15% sand; 5% clay; loose; moist; some FeO staining. 3 to 4 inch cobbles around 18 ft bgs. Cohesive, angular, large cobbles around 20 ft bgs.	
4.8	0.14							
7.1	0.157							20.0
	6.78			20	GW		GRAVEL with Sand: 60% fine to coarse gravel, 6 to 8 inch cobbles; 40% sand; loose; dry.	22.0
18.4	0.445						Silty GRAVEL 70% gravel, subangular to subrounded, 6 to 8 inch cobbles; 30% silt; cohesive in places; moist.	
41.3								
10.1	0.206			25	GM			
26								
27								27.5
20.6					GW		GRAVEL with Sand and Silt: brown (7.5 YR 4/4); 70% fine to coarse gravel; 30% sand; 10% silt; loose; weakly cemented in places; moist.	
100.5		MW30-SB052220-29		30	GM			30.0
1.5	0.385				CL		CLAY with Gravel: reddish brown (5 YR 4/3); 80% clay; 20% fine gravel; cohesive; stiff; moist.	
2								32.0
2.1	0.152				SW		SAND with Gravel: 70% fine to coarse sand; 30% fine gravel; moist.	
0.7				35				34.5

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WELL DIAGRAM

- Vault with cement surface seal
- Bentonite Grout (3.5 to 20 ft bgs).
- Hydrated bentonite pellets (20 to 27 ft bgs).
- 6" soil vapor point at 30 ft bgs; #10/20 sand filter pack (27 to 33 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.4	0.174						SILT: light gray (10 YR 7/2); 50% silt; 40% clay; 10% sand; firm to stiff; cohesive; moist to wet.		
0.6					ML				
0.3	0.161							39.0	
1.9	0.085			40			Silty SAND with Gravel: brown (7.5 YR 5/4); 50% sand; 25% silt; 25% gravel; loose; moist. Becomes cohesive near 40.8 ft bgs.		
5.1	0.159				SM				
6.2	0.105							43.0	
4	0.115				SW		SAND with Gravel: reddish brown (5 YR 4/4); 80% fine to coarse sand, 20% fine to coarse gravel; loose; moist.		
1.6				45				45.0	
6.1	0.172						Silty GRAVEL: reddish brown (5 YR 4/4); 70% gravel, angular to subrounded, 30% silt; dense; moist. Becomes cohesive and has less gravel around 48 ft bgs.		
11.3	0.135				GM				
		MW30-SB052220-48							
15.9	0.137			50			Silty GRAVEL: light brown (7.5 YR 6/3); 85% gravel; 15% silt; cemented; dense; dry to moist.	50.0	Hydrated bentonite pellets (33 to 237 ft bgs).
12.8	0.151						GRAVEL with Sand and Silt: 60% fine to coarse gravel; 30% fine sand; 10% silt; loose; dry to moist. Becomes moist and increase in silt around 57.5 ft bgs. Becomes weakly cemented around 59 ft bgs.		
33.2									
68.5		MW30-SB052220-53							
18.5	0.157			55	GW GM				
17.8									
12.5	0.251								
27	0.12								
37				60				60.0	
17.5	0.202						SAND with Gravel and Silt: reddish brown (5 YR 4/4); 50% sand, subangular to subrounded; 40% gravel; 10% silt; loose; moist. Few large cobbles near 65 ft bgs. 8 inch cobbles near 66 ft bgs.		
6.7					SW SM				
42.2	0.084								
22.9				65				66.0	
14.2	0.125						Silty GRAVEL: reddish brown (5 YR 4/4); 60% fine to coarse gravel, angular; 40% silt; cohesive in places; moist. Cohesive near 70 ft bgs.		
12.5	0.169			70	GM				
9.6	0.242								
24.1	0.14								
20.2									
55		MW30-		75				75.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
32.3	0.161	SB052220-74					GRAVEL with Sand and Silt: dark reddish brown (5 YR 3/4); 60% fine to coarse gravel; 30% fine to medium sand; 10% silt; loose; moist. Silty lense at 86 ft bgs. Large cobbles (4 to 6 inches) at 89.5 ft bgs.		
20									
14.7	0.042								
15.4				80					
15.1	0.154								
17.8					GW				
45	0.138				GM				
17.7				85					
16.1									
17.1	0.19								
13.5									
20.2	0.126							90.0	
				90			GRAVEL with Sand: brown (7.5 YR 5/4); 65% fine to coarse gravel; 35% sand, angular to subrounded; loose; moist; weakly cemented in places. 4 inch cobble at 92.7 ft bgs.		Hydrated bentonite pellets (33 to 237 ft bgs).
77.6	0.186								
52.4					GW				
67.8	0.317								
				95				95.0	
48.2		MW30-SB052220-95			GM		Silty GRAVEL: brown (7.5 YR 5/4); 60% fine to coarse gravel; 40% silt; cohesive; moist.	96.0	
83.4	0.509				GW		GRAVEL: fine to coarse, very dense, cemented. Less cemented near 98 ft bgs.	98.0	
28.4	0.828						GRAVEL with Sand: pale brown (10 YR 6/3); 70% fine to coarse gravel, sunangular to subrounded, 6 to 8 inch cobbles; 30% sand; dense; dry. Cemented in places near 100 ft bgs. Cemented near 104 ft bgs.		
				100					
113.2	0.35				GW				
154.4		MW30-SB052220-102							
131.9									
				105				105.0	
32	0.403						Silty GRAVEL: 70% fine to coarse gravel, angular to subangular; 30% silt; moist. Cohesive near 106.5 ft bgs. Weakly cemented near 108.5 ft bgs.		
16.3	0.165				GM				
31.1	0.216								
				110				110.0	
161	0.288	MW30-SB060220-111					GRAVEL with Sand and Silt: reddish brown (5 YR 5/3 to 4/3); medium to coarse gravel; dry to moist.		
90.3					GW GM				
58.3	0.703								
				115				115.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
36.2	0.299				GW GM		GRAVEL with Sand and Silt: reddish brown (5 YR 5/3 to 4/3); medium to coarse gravel; dry to moist.		
138.2	0.367								
116.7								118.0	
58.9	0.23						Silty GRAVEL with Sand: brown (5 YR 5/3); subangular clasts, up to 4 inch cobbles; trace clay; dry.		
63.1				120	GM				
8.6	0.295								
85.2								122.5	
64.7	0.121				CL		Clay Matrix.	123.5	
66.3	0.369				GM		Silty GRAVEL with Sand: brown (5 YR 5/3); subangular clasts, up to 4' inch cobbles; trace clay; dry.	125.0	
18.1				125			SAND and GRAVEL: pinkish gray (5 YR 7/2); subangular to subrounded cobbles; some silt; dry. Brown (5 YR 4/3) from 125.5 to 126.5 ft bgs. Clay increases at 127.5 ft bgs.		
168.2	0.162								
144.4					SW				
74.6									
43.2	0.312							130.0	Hydrated bentonite pellets (33 to 237 ft bgs).
				130			Silty GRAVEL with Sand: reddish brown (2.5 YR 4/4); slightly more oxidized, red/brown clay approximatley 30% in upper zone; clay decreases with depth, . Hard zone at 135 to 135.5 ft bgs. Large, 3 to 4 inch, cobbles from 135 to 136 ft bgs.		
51.2									
51	0.608								
62.4									
32.5	0.143								
80.3		MW30-SB060220-135		135	GM				
							Silty GRAVEL: pinkish gray (5 YR 7/2); dry. Clay presented from 136 to 138 ft bgs.		
32									
38.2	0.151								
18.4								140.0	
				140	GC		Clayey GRAVEL with Silt: light red (2.5 YR 6/6); minor iron staining.	141.0	
42.5	0.339						Silty GRAVEL: reddish brown (5 YR 4/4); grading to more silty gravel, very loose, dry. Clay rich clayey gravel zone from 143 to 143.5 ft bgs. More abundant iron staining, light red (2.5 YR 6/6] from 148 to 149 ft bgs.		
41	0.19								
26.2									
28.2	0.135			145					
25.4									
15	0.164								
14.6					GM				
15.6	0.104								
				150			Silty GRAVEL with Sand: reddish brown (5 YR 5/3); dry; sand-rich zone from 153-154 ft bgs.		
12.7	1.21	MW30-SB060220-151							
3.7									
2.5	0.601								
10.3									
				155					

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								156.0	
7.2	0.13				SW		SAND with Gravel: fine to medium, very loose.	157.0	
3.2	0.178						SAND and GRAVEL with Silt: light reddish brown (5 YR 6/4); very loose; dry.		
2.4									
1.6	0.166								
1.9				160			Oxidized zone from 160 to 161 ft bgs.		
13.3									
28.8							Slight color change at 162 ft bgs to pinkish gray (7.5 YR 6/2).		
10	0.157				SW SM				
9.9	0.177								
13.7				165					
13.9									
67.1	0.215						Color change at 166.5 ft bgs to gray (7.5 YR 6/1); 3 inch layer.		
44.6	0.452							169.0	
58.4	4.22	MW30-SB060220-169		170	CL		Gravelly CLAY with Silt: dark reddish brown (2.5 YR 3/4); non-plastic, trace of limonite, possible magnetite, black grains; dry to moist.	171.5	Hydrated bentonite pellets (33 to 237 ft bgs).
13.2	0.216						Silty GRAVEL with Sand: pinkish gray (5 YR 6/2); large, subangular, 5 inch clasts, similar gray (7.5 YR 6/1) zone intermittent, increase in clay content 178.5 to 179 ft bgs.		
18.4									
32.4	0.084								
26.5				175					
27.3	0.369								
12.7									
29.2	0.49	MW30-SB060220-178							
9				180	GM				
10									
18.2									
19.6	0.148								
18.4									
30.2	0.234			185					
15.2									
25.8	0.3								
20.7								189.0	
13.8	0.187			190			GRAVEL with Sand and Silt: light gray (7.5 YR 7/1); fine to coarse sand; very loose.		
30.4					GW GM		Light gray (7.5 YR 7/1) from 191 to 191.6 ft bgs; dry; 8 inch layer.		
12.7							Color change to brown (7.5 YR 4/4) at 191.6 ft bgs. Slightly more fines.	193.0	
3.7	0.359								
6.3	0.166				GW		GRAVEL with Sand: medium to coarse sand; 3 inch cobbles; trace silt; very loose; dry.	195.0	
				195					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
							Color change to light gray.		
8.2	0.252				GW		GRAVEL with Sand: reddish brown (5 YR 5/4); medium to coarse sand; 3 inch cobbles; trace silt; very loose; dry. Clay increases from 195.5 to 196.5 ft bgs; dry to moist.	197.0	
8.4									
5.7	0.138				GM		Silty GRAVEL; medium to coarse sand; loose; dry.	199.0	
4.5							Pulverized rock, white to light gray.	200.0	
				200			SAND with Gravel and Silt: trace clay; moist to dry.		
20.8	0.364								
83.6							Increase in gravel, well graded, at 201.5 ft bgs.		
49.8	1.51				SW SM				
129.9	0.849	MW30-SB060320-204					Increase in clay/silt matrix from 202 to 203.5 t bgs.		
11.2				205				206.0	
12.8	0.898				CL		Gravelly CLAY: reddish brown (5 YR 5/4); low plastisity; 1 inch clasts; medium stiff; dry to moist.	208.0	
7.9									
5.8	0.236				SW SM		SAND and GRAVEL with Silt : reddish gray (5 YR 5/2); medium to coarse sand; greater than or equal to 1 inch gravel; very loose; dry. Rock Pulverized at 210 ft bgs.	210.0	
3.7				210			SAND and GRAVEL with Silt: reddish brown (5 YR 5/4); medium to coarse sand, angular to subangular; dry.		Hydrated bentonite pellets (33 to 237 ft bgs).
10.5									
2.7					SW SM				
5.2									
9.2									
15.7								214.0	
13.1				215			Clayey GRAVEL with Sand: reddish brown (5 YR 5/4); greather than 15% clay; loose.		
20	0.882				GC				
40.7									
52.7	1.04							217.0	
130.2	0.155						GRAVEL and Crushed Rock at 217 ft bgs.	218.0	
							Clayey GRAVEL with Silt: silt percentage increases with depth; dry to moist.		
4.9				220					
14.7					GC				
3.9									
21.8		MW30-SB060320-222					Large 4 inch cobble at 223 ft bgs.		
4.6								224.0	
12.3							GRAVEL with Sand and Silt: very loose; dry.		
13.3				225					
12					GW GM				
3.9									
10.7								229.5	
				230	CL		CLAY: olive gray (5 Y 5/2; greenish gray; slightly plastic; mottled; dry.	230.0	
4.2	0.336				GC		Gravelly CLAY with Sand: reddish brown (5 YR 5/3 to 5/4); low plasticity; dry to moist.	233.0	
17.3							GRAVEL with Sand and Silt: gray (5 YR 6/1); 2 to 3 inch cobbles; very loose; dry.		
25.2	0.357				GW GM				
98.4				235				235.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							GRAVEL with Sand and Clay.	
3.9		MW30-GW060420-237						
2.4	0.669				GW GC		Clay-rich zone at 237 ft bgs; wet. Saturated below 237 ft bgs.	
0.3	0.51	MW30-SB060320-237						
1.2				240				
0.5	0.159							241.0
0.9					CL		Gravelly CLAY: large rock clast in clay matrix; dry to moist.	
1.3	0.225							243.0
4.2					GC		Clayey GRAVEL with Sand: moist.	
3.1	0.141							245.0
				245	GW		GRAVEL with Sand and Silt: saturated.	246.0
1.8					GM CL		Gravelly CLAY: medium stiff; moist.	247.0
0.9	0.27						Sandy CLAY with Gravel: brown (7.5 YR 5/4); slightly plastic; medium stiff; moist to wet.	
3.8					CL			
5.1	0.255							249.5
6.8				250	SM		Silty SAND with Gravel: medium to coarse sand; well rounded gravel; saturated at 250 ft bgs.	251.0
2.1	0.2				GW		Grading to gravel with sand.	252.0
2.2							Gravelly CLAY with Silt: reddish brown to weak red (2.5 YR 5/4 to 5/2); slightly stiff to stiff; dry to moist.	
1.9	0.195							
2.5								
2.4	0.308			255	CL			
1.7								
2.3	0.151							
3.1	0.138							
								259.0
1.2					GP		Coarse gravel zone with heavy clay matrix; dry to moist.	260.0
				260	CL		Gravelly CLAY with Silt: reddish brown to weak red (2.5 YR 5/4 to 5/2); slightly stiff to stiff; dry to moist.	
2.6								262.0
2.6	0.037						Gravelly CLAY with Silt: reddish brown to red (2.5 YR 5/4 to 5/6); slightly plastic; dry to moist.	
3.6	0.057							
3.5								
9	0.638			265			Coarser gravel with heavy clay matrix at 265 ft bgs; dry to moist.	
18.6		MW30-SB060420-266						
18.7	0.043				CL			
0.7								
3	0.047			270				
12.5	0.195							
15.5								
								274.0
19.6	0.226						Clayey GRAVEL: fairly loose; dry to moist. Grades to coarse	
				275				

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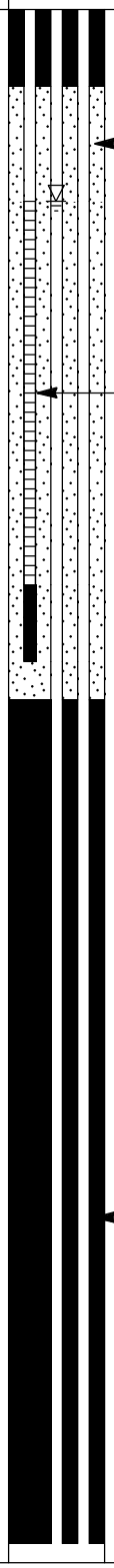
WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
49.2					GC		sand and gravel below.	276.0
46.5	0.286				SW		SAND and GRAVEL: pink (5 YR 7/3); coarse sand and gravel; dry to moist.	277.0
58.6					CL		CLAY with Gravel: dry.	278.0
49	0.426				GC		Clayey GRAVEL; dry to moist.	279.0
5.1								
30.4	0.211			280	GW GM		GRAVEL with Sand and Silt: reddish brown (2.5 YR 4/4); dry to slightly moist; more silt from 280 to 281 ft bgs.	281.0
27.3		MW30-GW060520-280					Gravelly CLAY with Silt: reddish brown (2.5 YR 4/3); non-plastic; stiff; dry to moist.	
24.2	0.036				CL			
28.8								283.5
23.1							GRAVEL with Sand, Clay and Silt: reddish brown (2.5 YR 5/3); 3 to 4 inch clasts; moist to wet.	
27.4	0.061			285	GW			
16.6	0.038				GC			
28.1		MW30-SB060520-286						287.0
20.8	0.315				SW		SAND and GRAVEL: pale red (2.5 YR 7/2); mostly gravel; medium to coarse sand; some silt; dry.	288.5
20.3					SP		SAND with GRAVEL: coarse sand; some silt; very loose; saturated.	
16.4	0.009			290				290.0
							Top 1.5 ft bgs of core missing.	
28.6								291.5
					CL		Gravelly CLAY with Silt: reddish brown (2.5 YR 4/3); stiff; dry to moist.	293.0
21.8	0.114						GRAVEL with Sand and Silt: pale red (2.5 YR 7/2); dry to moist. Hard drilling. Large boulder of sandstone or quartzite cored 294 to 295.2 ft bgs.	
33.3	0.118							
78.7				295				
62.4					GW			
51.6	0.131				GM		Becomes moist to wet from 297 to 298 ft bgs.	
5		MW30-GW060520-298					Angular clasts of broken shale; rounded to subrounded clasts of metamorphic rock and quartz; dry; reddish brown (2.5 YR 4/3).	
29.1	0.032							300.0
				300			Missing to 1'- hard drilling.	301.0
					GC		Clayey GRAVEL: reddish brown (5 YR 5/3); mottling; moist to wet. Iron staining at 301.5 ft bgs.	
21.6								303.0
26.1	0.003						Sandy SILT; matrix predominant. Slightly moist from 304 to 308 ft bgs.	
23					ML			
15.4	0.035			305				306.0
30.6	0.089	MW30-SB060520-306			CL		CLAY Lens.	306.3
31.5					GC		Clayey GRAVEL.	
51.1	0.003							308.5
53					GW GM		GRAVEL with Sand and Silt: pinkish gray (5 YR 6/2); coarse; very loose.	310.0
				310			Missing Core; washed out.	
								313.0
294.2	0.012			315	CL		Gravelly CLAY with Silt: 2 inch clasts; moderately stiff to stiff; moist.	

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WELL DIAGRAM

- #10/20 sand filter pack (280 to 294 ft bgs).
- 1-inch SCH 80 0.020-slot screen ZIST nested well (282 to 292 ft bgs).
- Hydrated bentonite pellet seal (294 to 314 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-30
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 5/22/2020 - 6/8/2020

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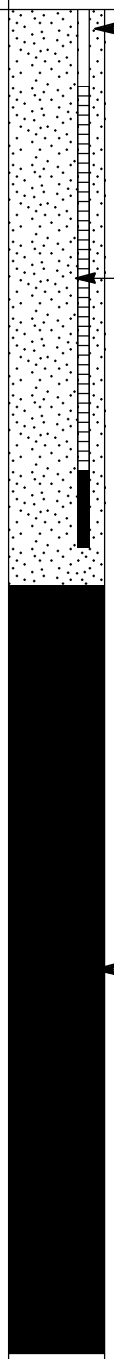
PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
219.3								
420.1		MW30-SB060720-316.5						316.5
448.5	0.024						Silty GRAVEL: 15% clay; very loose; saturated.	
3.8	0.05				GM			
17.2								320.0
		MW30-GW060720-320		320			Missing; too wet for description.	321.0
89.4							Gravelly CLAY and Sand with Gravel: alternating 1 foot beds.	
221.7								
715.2					CL			
617								325.0
479				325			SAND with Gravel and Silt: fine to medium sand.	
90.6					SP SM		Color change to alternating reddish brown and pinkish gray (5 YR 4/3 and 7/2) from 325.5 to 326.5 ft bgs.	
14.1							Moist to wet at 326.5 ft bgs.	327.5
55.5							Silty GRAVEL: broken shale clasts.	
112.3					GM			
				330			Light red (2.5 YR 6/8); oxidized iron staining from 329 to 330 ft bgs.	330.0
11.8							Gravelly CLAY with Silt : reddish brown (2.5 YR 5/3); low plasticity; stiff; moist to dry.	
4.6								
12.3					CL			
13.7								
5.7				335				335.5
5.5		MW30-SB060720-336			GM		Silty GRAVEL with Clay: moist to wet.	
2.2								337.5
5					CL		Gravelly CLAY with Silt: iron stained clasts; stiff to very stiff; dry.	339.0
6.3					GM		Silty GRAVEL with Clay.	340.0
		MW30-GW060720-340		340				
					CL		Gravelly CLAY: reddish brown (2.5 YR 5/3); moist.	341.5
2.8					GM		Silty GRAVEL: some sand; dry to moist.	342.5
36.3							Gravelly CLAY with Silt: moist.	
18.1		Ferrous Iron soil sample			CL			
								345.0
23.2				345	SP SM		SAND and GRAVEL with Silt: moist.	346.0
4.4							Gravelly CLAY with Silt: moist to wet.	
1.1					CL			
2.3								349.0
8.9					GC		Clayey GRAVEL: some silt; moist.	350.0
				350			End of boring at 350 ft bgs.	

WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-31
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	6/9/2020 - 6/12/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4655.22	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Miller	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 130 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							Hydrovac to 10 ft bgs.	
8.6	0			10	GM		Silty GRAVEL with Sand: reddish brown (5 YR 5/4); 50% gravel; 25% sand; 25% silt; elongated; dry.	10.0
3.9							Gravelly SILT: brown (7.5 YR 4/4); moist.	12.0
19.2								
7	0							
82.1		MW31-SB060920-15		15	ML			
12								
14.9							Silty CLAY with Gravel: brown (7.5 YR 4/4); moist.	18.0
7.6				20	CL		Silty CLAY with Gravel: brown (7.5 YR 4/4); loose; coarse gravel; moist.	20.0
21.6								
14.4					ML		Gravelly SILT with Sand: 50% silt; 30% gravel; 20% sand; moist.	22.0
61.5		MW31-SB060920-23						
30.4				25	ML		Gravelly SILT with Sand: same as above, becomes dry.	24.0
13.3					ML		Gravelly SILT with Sand: 50% silt; 30% gravel, up to 4 inches in diameter; 20% sand; moist.	26.0
13.3							Silty GRAVEL with Sand: brown (7.5 YR 4/4); 40% gravel, some large up to 4 inches, poorly graded; 10% sand; 40% silt; moist to dry.	27.0
8.9					GM			
4.2				30			Color changes to white (7.5 YR 8/1); hard rock layer; powdery; dry.	31.0
					CL		Silty CLAY: reddish brown (5 YR 4/4); stiff; moist.	
12.9								32.5
20.3							Silty GRAVEL: reddish brown (5 YR 4/4); 50% Gravel (50%)-PG, Sand (10%)- F-C, Silt (40%). Loose; Moist .	
27.9				35	GM			

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WELL DIAGRAM

- Vault with cement surface seal
- Bentonite Grout (3 to 14 ft bgs).
- Hydrated bentonite pellets (14 to 135 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-31
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
9.4								36.0	
147							Silty CLAY: reddish brown (5 YR 5/4); soft, loose; moist.		
18.9					CL				
20								40.0	
42				40	CL		CLAY with Sand: brown (7.5 YR 5/4); 95% clay, 5% sand; soft, moist.	41.5	
5.6					GC		Clayey GRAVEL: 75% gravel, poorly graded; 25% clay; moist.	42.5	
6.8									
5.7					GM		GRAVEL with Silt and Sand: dark gray (7.5 YR 4/1); 60% gravel, poorly graded, elongated; 20% sand; 20% silt; moist to dry.		
9								45.0	
16.4		MW31-SB060920-45		45	CL		CLAY with Sand: brown (7.5 YR 4/4); 95% clay, 5% sand; soft.	46.5	
4									
6.2					GP		GRAVEL with Silt and Sand: brown (7.5 YR 5/3); 70% gravel; 20% sand, poorly graded; 10% silt; moist to dry.		
								50.0	Hydrated bentonite pellets (14 to 135 ft bgs).
2				50	GP		GRAVEL with Silt and Sand: brown (7.5 YR 4/4); 90% gravel; 5% sand, poorly graded, 5% silt; loose; moist to dry .		
25.2								52.0	
11.7					CL		Silty CLAY with Gravel: brown (7.5 YR 4/4); loose, crumbles easily.		
2.7								53.5	
2.7					GP		GRAVEL with Silt and Sand: white (5 YR 8/1) and reddish brown (5 YR 5/3); 90% gravel, 5% sand, 5% silt; loose, poorly graded; moist to dry.	55.0	
2.2				55	ML		Gravelly SILT: 60% silt, 40% gravel, poorly graded; 3 inches as silt, moist.		
5.5								58.2	
6					CL		Silty CLAY with Sand: reddish brown (5 YR 4/4); doesn't roll, but sticks together, some gravel less than 0.25 inch in diameter; moist.	60.0	
4.5				60					
14.3							Silty CLAY with Sand: reddish brown (5 YR 4/4); 98% clay, low plasticity; 2% sand, fine; soft to moderate; moist.		
19.5									
21.5		MW31-SB060920-62			CL				
15.4									
13.6				65					
14.2								68.0	
5					GM		Silty GRAVEL with Sand: reddish brown (5 YR 4/4); 50% gravel,poorly graded, elongated, up to 3 inches in diameter; 40% silt, 10% sand; loose; dry to moist.	70.0	
2.9				70	ML		Clayey SILT with Sand: brown (7.5 YR 5/3); 95% silt and clay, 5% sand, trace gravel, compact, soft to moderately hard; moist.		
2.1								72.5	
1.5					SM		Silty SAND with Gravel: brown (7.5 YR 5/4); 60% sand, 40% gravel; loose; moist.	74.0	
11.6				75			GRAVEL with Silt and Sand: white/pinkish; 60% gravel, poorly		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
4.1					GP GM		graded, trace 4 inch round pieces; 20% sand; 20% silt; loose.	76.0	
2.5							GRAVEL with Silt and Sand: reddish brown (5 YR 4/4); 70% gravel, poorly graded, some 2 to 3 inches in diameter; 15% sand; 15% silt; dry to moist.		
4.2					GP GM				
3								80.0	
4.4				80	CL		Silty CLAY: 6 inches of silty clay with gravel.	80.5	
5.3					GP		GRAVEL with Silt and Sand: reddish brown (5 YR 4/4); 90% gravel, coarse, poorly graded, 5% sand, 5% silt; loose; dry to moist.	82.5	
48		MW31-SB060920-82							
26.3					CL		Silty CLAY with Gravel and Sand: reddish brown (2.5 YR 4/4); 80% silty clay, 20% sand and gravel; compact; moist.	84.0	
13.3				85	GP		GRAVEL with Silt and Sand: reddish brown (5 YR 4/4); 90% gravel,coarse, poorly graded, some 2 inch gravel, elongated; 5% sand, 5% silt, loose; dry to moist.		Hydrated bentonite pellets (14 to 135 ft bgs).
19.2									
16.6									
12.1								90.0	
14.3				90	GP		GRAVEL with Silt and Sand: reddish brown (5 YR 4/4); 90% gravel, poorly graded, 5% sand, 5% silt and clay; loose.	91.0	
19.4					GP		GRAVEL: light gray (5 YR 7/1); powdery gravel; loose; dry.	92.2	
46.1							GRAVEL with Sand: reddish brown (5 YR 5/4); 90% gravel, 10% sand, poorly graded, loose; dry to moist.		
12.4									
66.2		MW31-SB060920-94		95	GP				
								96.0	
37.2					CL		Silty CLAY with Gravel: reddish brown (5 YR 5/4); 90% silty clay; 10% sand and gravel; stiff.	97.0	
15.2							GRAVEL with Sand and Silt: white (2.5 YR 8/1); 90% gravel, poorly graded, up to 2 inches in diameter; 5% sand; 5% silt; loose; dry.		
5.4					GP				
								100.0	
17.4				100	ML		Silty GRAVEL with Sand: white (5 YR 8/1); 70% silt; 30% gravel, poorly graded, up to 4 inches in diameter; trace sand; loose, powdery; dry.		
30.9								102.5	
43.1					SM		GRAVEL with Sand and Silt: white (5 YR 8/1); 60% gravel, poorly graded; 20% silt; 10% sand; loose; dry.		
30								104.0	
9.9				105	ML		Clayey SILT with Sand: 5 YR 5/5; Clayey Silt (99%), Sand (<1%); Moist .		
5.8									
17.3								107.5	
4.4					GP		GRAVEL with Sand and Silt: 80% gravel, poorly graded; 10% sand; 10% silt; loose; moist to dry.	109.0	
13.8					GP		GRAVEL with Silt: 80% gravel; 20% silt; loose.	110.0	
47.6				110	CL		Silty CLAY with Sand: dark reddish brown (2.5 YR 3/4); 99% clayey silt; 1% sand; moist.		
44.4		MW31-SB060920-112						112.8	
58.3					GM		Silty GRAVEL: dark reddish brown (2.5 YR 3/4); poorly graded; loose to compact; moist.		
39				115				115.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.5					CH		Soft CLAY: brown (7.5 YR 5/4); High Plasticity, Cohesive; Moist.	116.0	
					SM			116.5	
10.3							Silty SAND: reddish brown (5 YR 4/4); 50% Sand, 50% Silt - 6" layer.		
3.3					CL		Silty CLAY: reddish brown (5 YR 4/4); 95% Silty Clay, low plasticity; 5% Gravel; trace sand; can't roll or form; non-cohesive; soft and loose; moist.		
				120				120.0	
7.7					GP		GRAVEL with Sand and Silt: pinkish gray (7.5 YR 6/2); 80% Gravel, coarse, poorly graded; 10% Sand; 10% Silt; Dry.		Hydrated bentonite pellets (14 to 135 ft bgs).
12.3								122.0	
18.9					CL		Silty CLAY with Gravel: reddish brown (5 YR 5/4); 6 inch of very stiff.	122.5	
15.1					GP		GRAVEL: white (7.5 YR 8/1); 50% Gravel; powdery gravel, loose; dry.		
				125				125.0	
5.2					GP		GRAVEL with Silt and Sand: brown (7.5 YR 5/3); 80% Gravel, coarse, poorly graded; 10% Sand; 10% Silt; Dry.		
11.9								126.5	
11.8					GP GM		Silty GRAVEL: brown (7.5 YR 5/3); 60% Gravel, coarse, poorly graded; 30% Silt; 10% Sand; Medium Dense; Dry.	127.5	
4.4					GP		GRAVEL: white (7.5 YR 8/1); powdery gravel, poorly graded, coarse; very hard drilling.		
								129.5	
16.6				130	CL		Silty CLAY with Gravel: poorly graded, coarse, very hard drilling; moist.	130.0	
4					GM		Silty GRAVEL: light brown (7.5 YR 6/3); 70% Gravel; 30% Silt; loose, may have been wet but dried due to heat; moist to wet.		
17.4								132.0	
14.2					GP		GRAVEL with Silty Clay: 80% Gravel, 20% Silty Clay, same sand, poorly graded, may have been wet.		
31.8		MW31-SB061020-133						134.0	
9.4				135			GRAVEL with some Silt: pinkish white (7.5 YR 8/2); coarse, poorly graded; very loose; dry.		
16					GP				#10/20 sand filter pack (135 to 151 ft bgs).
								137.5	
					GM		Silty GRAVEL: reddish brown (2.5 YR 5/4); 6 inches of hard silty gravel, coarse, loose.	138.0	
0.4		MW31-GW061020-138							
6					CL		Silty CLAY: yellowish red (5 YR 4/6); 98% silt clay, 2% gravel; stiff, low plasticity; moist to dry.		
15.5				140				140.5	
8.9					CL		Silty CLAY with Gravel: yellowish red (5 YR 4/6); 60% silty clay; 40% gravel; loose, easy to break up; moist to dry.		
20.3									
22.4									1-inch SCH 80 0.020-slot screen ZIST nested well (138 to 148 ft bgs).
14.2				145					
								145.5	
6.9					GM		GRAVEL with Silt: brown (7.5 YR 4/4); 60% gravel; 40% silt; loose, about 1 inch wet, then back to very stiff; wet.	147.0	
2.7							Silty CLAY: strong brown (7.5 YR 4/6); Very Stiff, Low Plasticity, less than 1% gravel.		
2.5					CL				
2.3								150.0	
				150					
1.8					CL		CLAY with Silt and Sand: yellowish red (5 YR 4/6); 95% clay, 5% sand/silt (<5%); soft, medium plasticity; moist.	151.0	
19					CL		Silty CLAY with Gravel: 90% silty clay; 10% gravel; compact.	152.0	
13					GM		Silty Clayey GRAVEL: reddish brown (5 YR 5/4).		
								154.0	
5.1					GP		GRAVEL with Sand and Silt: yellowish red (5 YR 4/6);90%	155.0	
				155					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
6							gravel; 5% sand; 5% silt; loose; coarse; wet.		
6.8							Silty Clay with GRAVEL: soft, loose to medium compact; dry.		
15.5					CL				
								159.0	
31.4		MW31-SB061020-159			CL		Silty CLAY with Gravel: yellowish red (5 YR 4/6); hard; dry.	160.0	
				160			Silty Sandy GRAVEL: brown (7.5 YR 4/4); loose, some 1 inch gravel, trace 4 inch gravel; wet then moist then dry.		
1.5					GM				
1.6									
2.3									
								165.0	
1.4				165			Clay with GRAVEL: 99% stiff clay; 1% gravel; can be rolled; moist.		
1.3									
1					CL				
0.8									
0.4								170.0	Hydrated bentonite pellet seal (151 to 187 ft bgs).
8.7				170			GRAVEL with Silt and Sand: yellowish red (5 YR 5/6); 60% gravel; 20% sand; 20% silt; loose, wet.		
2.2					GM			172.0	
16.3							CLAY: yellowish red (5 YR 4/6); stiff clay; can be rolled; medium plasticity; moist.		
8.6									
7.1					CL				
				175				176.0	
32.1		MW31-SB061020-176			CL		CLAY: yellowish red (5 YR 5/6); stiff clay, low plasticity.	177.0	
							Silty CLAY with Gravel; brown (7.5 YR 5/4); 50% silty clay; 50% gravel; moist.		
49.9					CL				
								180.0	
				180			Silty CLAY with Gravel: brown (7.5 YR 5/3); 70% silty clay; 30% gravel; trace sand; soft, loose; moist.		
					CL				
								182.5	
29.8							Silty Clayey SAND with Gravel: strong brown (7.5 YR 4/6); coarse, low plasticity, loose; hard rock - 2 inch thick layer; moist.		
					SM				
				185				186.0	
7							GRAVEL with Sand and Silt: storng brown (7.5 YR 4/6); coarse, poorly graded, loose, wet.		
					GP				#10/20 sand filter pack (187 to 202 ft bgs).
14		MW31-GW061120-190						190.0	
17.8		MW31-SB061120-190		190			Gravelly CLAY with Sand: light brown (7.5 YR 6/3); 60% clay; 40% gravel; trace sand; soft, broken up easily, wet.		
17.3									
17.1					CL				
				195					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-31
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
8.4									1-inch SCH 80 0.020-slot screen ZIST nested well (190 to 200 ft bgs).
13.1								197.0	
3.1					CL		Gravelly CLAY with Sand: light brown (7.5 YR 6/4); same as above except larger gravel - 2 to 4 inches in diameter; wet.		
19.2								199.0	
					CL		Silty CLAY: yellowish red (5 YR 4/6); very stiff, low plasticity, can't roll/form.	200.0	
8.1				200			Silty CLAY: brown (7.5 YR 4/4); stiff, medium plasticity; moist.		
10.9					CL				
15.2									
15.1								204.0	
5.4							Silty CLAY with Gravel and Sand: 60% Gravel and Sand; 40% Silty Clay; Loose; Wet.		
10.1				205	GC			206.0	
							Silty CLAY: brown (7.5 YR 4/4); Stiff; Moist.		
1.6									
0.8					CL				
								210.0	
1.1				210			Silty CLAY: brown (7.5 YR 4/4); Medium Plasticity; Moist.		
1.6									
1.5					CL				
1.2									Hydrated bentonite pellet seal (202 to 225 ft bgs).
								215.0	
1.4		MW31-SB061120-215		215			Silty CLAY: strong brown (7.5 YR 5/6); Trace Sand, Cohesive, Medium to Stiff, High Plasticity; Moist to Dry.		
1.6									
31									
10.6					CH				
12				220					
56								222.0	
7.6									
67.6									
				225					#10/20 sand filter pack (225 to 240 ft bgs).
							Gravelly SILT: brown (7.5 YR 5/3); same as above, becomes wet.		
3.1					ML				
								230.0	
1.3		MW31-GW061120-230		230			Silty GRAVEL: brown (7.5 YR 5/3); gravel up to 2 inches in diameter; some sand; loose; wet.		1-inch SCH 80 0.020-slot screen ZIST nested well (228 to 238 ft bgs).
					GM				
1.4								233.0	
2					CL		Silty CLAY: brown (7.5 YR 5/3); silty clay, medium plasticity.	234.0	
1.8							Silty Clayey GRAVEL: light brown (7.5 YR 6/3); 60% gravel,		
				235					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
1.4					GM		40% silty clayey; moist to wet.	236.0	
4.4		MW31-SB061220-236					Silty CLAY with Gravel: brown (7.5 YR 5/3); moderately stiff, medium plasticity; moist.		
1					CL				
1.5				240			Silty CLAY with Sand: strong brown (7.5 YR 5/6); stiff to medium stiff, low plasticity; moist to dry.	240.0	
2.5									
3.5									
3.2					CL				
5.1				245					
2.2									
2.7								248.0	
2.2					CL		Silty CLAY with Sand: strong brown (7.5 YR 5/6); same as above, except dry.	250.0	
7.3				250			Silty CLAY with Gravel: brown (7.5 YR 4/4); compact, low plasticity, 2 inch thick rock; moist to dry.		
90.4									
19.2		MW31-SB061220-252			CL				
15.2								254.0	
					CL		Silty CLAY with Gravel: brown (7.5 YR 4/4); same as above except more loose and dry. Core is very hot, hard drilling; dry.	255.0	
9.6				255			Silty CLAY: brown (7.5 YR 5/3); appears wet on outside; sample fell down the casing, inside of core dry, low plasticity; dry.		
3									
0.2									
0.3					CL				Hydrated bentonite pellet backfill (240 to 278 ft bgs).
0.1				260				261.0	
10.6							CLAY with Gravel: 70% clay; 30% gravel; medium stiff; moist to dry.		
16.4					CL			263.0	
18.6					CL		Silty CLAY with Gravel: light brown (7.5 YR 6/3); 50% silty clay; 50% gravel; moist.	264.0	
25.2							Silty CLAY with Gravel: brown (7.5 YR 4/4); 70% silty clay, low plasticity; 30% gravel; medium stiff; moist.		
1.7				265					
12.3					CL				
4.1								269.0	
19.7					GC		Clayey GRAVEL: brown (7.5 YR 4/4); 60% gravel; 40% clay; moist to dry.	270.0	
		MW31-SB061220-270		270					
9.6					GC		Clayey GRAVEL: brown (7.5 YR 4/4); 60% gravel, coarse; 40% clayl loose; moist to wet.	272.0	
9.1					CL		Silty CLAY with Gravel: 95% silty clay, medium plasticity; 5% gravel; moist.	274.0	
4.7				275			Silty CLAY with Gravel: 98% silt clay, medium plasticity; 2%		

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/9/2020 - 6/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
					CL		gravel; medium stiff.	276.0	
5.7							Silty CLAY with Gravel: yellowish red (5 YR 4/6); same as above except lower plasticity; moist to dry.		
6.3									
4.4				280	CL				
4.4								282.0	
15.6					GC		Clayey GRAVEL: brown (7.5 YR 4/4); soft; moist to wet.	283.0	
9							Silty CLAY with Sand: brown (7.5 YR 4/4); Less than 1% sand, stiff to moderately stiff, low plasticity; moist.		Native soil.
10.2				285	CL				
7.3								286.5	
12.4							GRAVEL: pinkish gray (7.5 YR 7/2); very hard, cemented; dry.		
9.3					GW				
22.8		MW31-SB061220-289					Gravel is loose.	289.0	
				290	CL		Silty CLAY with Sand: brown (7.5 YR 5/3); 90% silty clay, low plasticity; 10% sand; dry.	290.0	

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WTJM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-32
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	6/22/2020 - 6/28/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4566.22	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Whitney Treadway, Kimberly Myers	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 95 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
				5	GM		Hydrovac to 10 ft bgs. Silty GRAVEL.	
0.3	0.082			10	GP		GRAVEL with Sand and Clay: reddish brown (5 YR 4/4); 50% gravel and cobbles, poorly graded, mostly coarse, angular to subrounded; 40% sand, poorly graded, mostly fine to medium, subangular to subrounded; 10% clay, medium plasticity; moist. Gravel and cobbles within clay. Same as above except 30% sand, 20% clay.	10.0
7.1	0.67	MW32-SB062220-14		15				15.0
3.1	0.37				SP		SAND with Gravel and Clay: reddish brown (5 YR 4/4); 60% sand, poorly graded, mostly fine to medium subangular to subrounded; 30% gravel, well graded, fine to coarse, cobbles; 10% clay matrix. Less lithified than above. Same as above except less lithified.	
1.3	0.094			20				20.0
6.2	0.223				SP		SAND with Gravel and Clay: reddish brown (5 YR 4/4); 50% sand, poorly graded, mostly fine to medium, subangular to subrounded; 40% gravel and cobbles, poorly graded, coarse, subangular to subrounded, up to 6 inches in diameter; 10% clay; moist.	22.0
15.3	0.12				SC		Clayey SAND and Gravel: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to medium, subangular to subrounded; 20% gravel and cobbles, well graded, fine to coarse, subangular to subrounded, up to 3 inches in diameter; 20% clay - matrix, medium plasticity; slightly lithified; moist.	
7.8	0.134			25			Same as above but sand is well graded, fine to coarse, moist.	25.0

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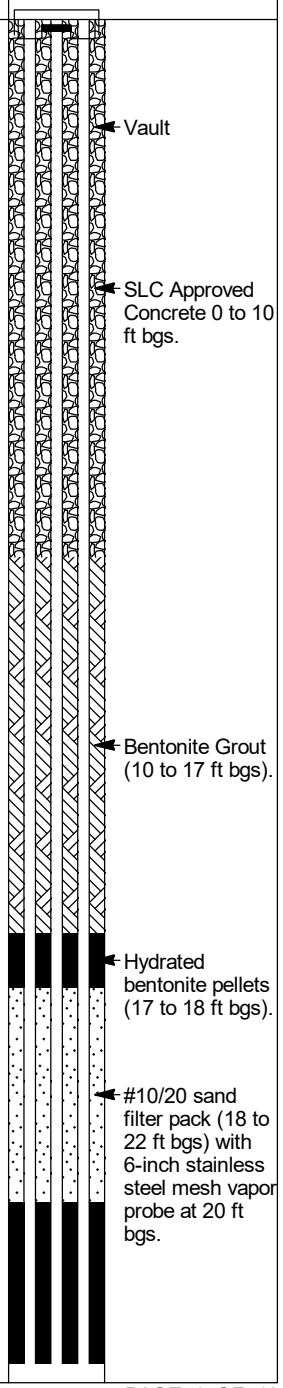

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
6.7	0.098				SC		Clayey SAND and GRAVEL: reddish brown (5 YR 4/4); 50% sand, poorly graded, fine to coarse, mostly fine to medium, subangular to subrounded; 30% gravel and cobbles, well graded, fine to coarse, angular to subrounded, up to 5 inches; 20% clay, medium plasticity; slightly lithified, gravel content is light gray material; moist.		
37.3	0.133	MW32-SB062220-27					Same as above except 40% sand, 40% gravel, and 20% clay.	28.0	
11.2	0.014				GC		Large Cobbles, 7 inches in diameter. Less lithified than 25 to 27 ft bgs.	30.0	Hydrated bentonite pellets (22 to 111 ft bgs).
56.1	0.432			30	SC		Clayey SAND with Gravel: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to medium, subangular to subrounded; 20% gravel, well graded, fine to coarse, angular to subrounded, lithified fragments of gravel; 20% clay, medium plasticity; moist. Gravel includes light gray fragments.		
32.1	0.47								
93.5	0.492			35				35.5	
12	0.323				CL		CLAY with Gravel: reddish brown (5 YR 4/4); 70% clay, medium to high plasticity; 30% gravel, well graded, fine to coarse, subangular to subrounded, up to 5 inches; lithified.	37.0	
4.9	0.119				SC		Clayey SAND with gravel: reddish brown (5 YR 4/4); 50% sand, poorly graded, mostly fine to medium; 30% gravel and cobbles, well graded, fine to coarse, subangular to subrounded, up to 4 inches; 20% clay, medium plasticity; moist. Same as above except 40% sand, 40% gravel, 20% clay.		
0.5	0.107			40				40.0	
16	0.199				CH		CLAY: reddish brown (5 YR 4/4); 80% clay, high plasticity; 20% gravel, poorly graded, fine to coarse, mostly coarse, subrounded, up to 4 inches; gravel in clay matrix; moist.	42.0	
7.6	0.1				SP		SAND with Gravel and Clay: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to medium, subangular to subrounded; 30% gravel, well graded, fine to coarse, up to 4 inches; 10% clay; moist.	44.5	
4.6	0.36			45	CH		CLAY with Sand: reddish brown (5 YR 4/4).	46.0	
6.3	0.344				CH		CLAY with Sand: reddish brown (5 YR 4/4); 70% clay, 20% sand, 10% gravel. Near 48 ft bgs, gravel is fine to coarse, mostly coarse, subangular to subrounded, up to 4 inches, in clay matrix. Clay is slightly mottled with strings of light tan material like above.	48.0	
2.8	0.326				CH		Sandy CLAY: reddish brown (5 YR 4/4); 60% clay, high plasticity, matrix; 30% sand, poorly graded, fine, subangular to subrounded; 10% gravel, well graded, fine to coarse; slightly lithified. Cool, moist, trace pockets of wetness near 48 ft bgs.	50.0	
8.4	0.174			50	SC		Clayey SAND with Gravel: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to medium, subangular to subrounded; 20% gravel, well graded, fine coarse, subangular to subrounded, up to 4 inches; 20% clay, medium plasticity, clay matrix; slightly lithified.	51.0	
7.2	0.327				CH		CLAY with Sand and Gravel: pink (7.5 YR 7/3); 60% clay, high plasticity; 20% gravel and cobbles, well graded, fine to	53.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
					CL		coarse, up to 7 inches; 20% sand, well graded, fine to coarse, subangular to subrounded; moist. Clay is mottled with red and less gravel at 52.5 ft bgs.	54.0	
17.5	0.142	MW32-SB062220-55		55	CL		Sandy CLAY: reddish brown (5 YR 4/4); 55% clay, medium plasticity; 45% sand, poorly graded, fine to medium, subangular to subrounded; trace gravel.	56.0	
6.8	0.191				CH		Sandy CLAY with Gravel: reddish brown (5 YR 4/4); 40% clay, medium plasticity, matrix; 20% sand, poorly graded, fine to medium, subangular to subrounded; 20% gravel, well graded, fine to coarse, subangular to subrounded; slightly lithified; moist.	58.0	
5.5	1.12				SP		CLAY with Sand and Gravel: reddish brown (5 YR 4/4); 70% clay, high plasticity; 20% sand, poorly graded, fine to medium, subangular to subrounded; 10% gravel, well graded, fine to coarse, subangular to subrounded; moist.	60.0	← Hydrated bentonite pellets (22 to 111 ft bgs).
0.3	0.704			60	CH		SAND with Gravel and Clay: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to coarse, mostly fine to medium, subangular to subrounded; 30% gravel, well graded, fine to coarse, subrounded, up to 3 inches; 10% clay; trace silt; moist.	62.5	
11.9	0.444				CH		Sandy CLAY: brown (7.5 YR 4/3); 70% clay, medium to high plasticity; 30% sand, poorly graded, fine, subangular to subrounded; trace coarse sand and fine gravel; moist.	64.0	
8.8	0.173			65	CH		Sandy CLAY: reddish brown (5 YR 5/4) and pink (5 YR 7/4); clay is hard, less sand (15%); mottled. CLAY with Sand and Gravel: reddish brown (5 YR 5/4); 60% clay, high plasticity; 25% sand, poorly graded, mostly fine to medium, subangular to subrounded; 15% gravel, poorly graded, mostly coarse, subangular to subrounded, up to 2 inches; hard. More lithified at 64 and 66.5 ft bgs.	66.5	← Hydrated bentonite pellets (22 to 111 ft bgs).
1.4	0.107				CH		CLAY with Sand and Gravel: 60% clay, medium to high plasticity; 25% sand, poorly graded, fine to coarse, mostly fine to medium, subangular to subrounded; 15% gravel, poorly graded, fine to coarse, mostly fine; subangular to subrounded, up to 2 inches. Lithified clay matrix around sand and gravel.	68.0	
0.6	0.35				SC		Clayey SAND with Gravel: reddish brown (5 YR 4/4); 60% sand, poorly graded, fine to medium, subangular to subrounded; 20% clay; 20% gravel, well graded, fine to coarse, subangular to subrounded, up to 4 inches; moist.	69.0	
6.9	0.36			70	CL		Sandy CLAY: reddish brown (5 YR 4/4); 60% clay; 35% sand; 5% gravel (5%); soft.	70.0	
4.9	0.41				CH		Sandy CLAY: reddish brown (5 YR 5/4); 70% clay, medium to high plasticity; 30% sand, poorly graded, mostly fine, trace medium and coarse; trace fine gravel; soft; moist.	74.0	
6	0.361			75	CH		Sandy CLAY: reddish brown (5 YR 5/4); 60% clay, medium to high plasticity; 30% sand, poorly graded, fine, trace medium and coarse, subangular to subrounded; 10% gravel, poorly graded, fine to coarse, mostly fine, subangular to subrounded, up to 5 inches; trace large cobbles; soft to stiff; moist with wet pockets. Lenses of green and grayish blue crushed rock segments.	77.0	
9.6	0.632				CH		Sandy CLAY: ; 70% clay; 30% sand, fine, trace medium and coarse; sticky and soft; moist.		
1.1	0.761							80.0	
1.8	0.761			80	CH		CLAY with Sand: reddish brown (5 YR 4/4); 80% clay, high plasticity; 20% sand, poorly graded, fine, subangular to subrounded; trace gravel, coarse; soft; moist.	82.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
4.9	0.466				CH		CLAY with Sand: 70% clay; 30% sand. Sandy wet lens with 5 inch cobble.	83.5	
							Large Cobble, diameter of core barrel and approximately 7 inches long.	84.1	
17	0.406	MW32-SB0622320-84		85			GRAVEL with Sand: reddish brown (5 YR 4/4); 50% gravel and cobbles, well graded, fine to coarse, subangular to subrounded, up to 4 inches; 30% sand, poorly graded, mostly fine to medium, subangular to subrounded; 20% clay matrix; moist.		
4.1	0.122				GW		Same as above except 40% gravel, up to 6 inches; 20% sand; 20% clay.		
2.2	0.191						Same as above - wet lens 88 to 88.5 ft bgs (gravel, cobbles, sand with clay matrix).	89.0	
8.8	0.04				CL		Sandy CLAY with Gravel: reddish brown (5 YR 4/4); 60% clay, medium plasticity; 30% sand, poorly graded, mostly fine to coarse, some coarse, subangular to subrounded; 10% gravel, poorly graded, fine to coarse, mostly fine, angular to subrounded; hard; moist.	90.0	Hydrated bentonite pellets (22 to 111 ft bgs).
1.6	0.015			90	GW		Sandy GRAVEL with Silt: reddish brown (5 YR 4/4); 50% gravel, fine to coarse, subangular to subrounded; 35% sand, fine to coarse; 35% silt; loose; medium dense; wet.	91.7	
1.4	0.264				ML		Clayey SILT: trace gravel, cohesive, stiff, wet.	94.6	
3.9	0.18			95	GM		Silty GRAVEL: reddish brown (5 YR 4/4); fine to coarse gravel, 6 inch cobble, cohesive, dense, wet.	96.0	
1.1	0.111				GP		Sandy GRAVEL with Silt: reddish brown (5 YR 4/4); 60% gravel, 4 to 6 inch cobbles, subangular to subrounded; 30% sand; 10% silt; wet. Core was cool.		
2.6	0.184	MW32-SB062320-99		100	GC		Clayey SAND and GRAVEL: reddish brown (5 YR 4/4).	100.0 100.5	
9.7	0.13	MW32-GW062320-100			CH		CLAY with Sand and Gravel: brown (7.5 YR 4/4); 70% clay, medium to high plasticity; 25% sand, poorly graded, fine, subangular to subrounded; 5% gravel, poorly graded, coarse, subangular to subrounded; stiff; wet.	102.0	
10	0.161				CH		CLAY: brown (7.5 YR 4/4); 90% clay, high plasticity; 10% sand, poorly graded, very fine to fine, subangular to subrounded; soft; moist.	104.0	
11.2	1.27	MW32-SB062420-105		105	CH		CLAY: brown (7.5 YR 4/4); 100% clay, high plasticity; trace fine sand; stiff; moist.	106.0	
12.1	1.18				CH		CLAY: brown (7.5 YR 4/4); 80% clay, high plasticity; trace fine sand; 20% silt; stiff; moist.	108.0	
10	1.32				CH		CLAY: brown (7.5 YR 4/4); 70% clay, high plasticity; 20% silt; 10% sand, fine; stiff; wet.	110.0	
				110	SC		Clayey SAND and GRAVEL: wet.	110.5	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
8.8	0.886				CH		Sandy CLAY: brown (7.5 YR 4/4); 70% clay, high plasticity; 30% sand, poorly graded, fine to coarse, mostly fine, subangular to subrounded; stiff; moist with wet lenses. Large Cobble at 112.5 ft bgs with black staining (looks like charcoal) and reddish iron oxide staining. Same as above, including lenses of wet sand and gravel with in clay matrix; 80% clay, 10% sand, and 10% gravel.	
11				115				115.0
6.4	0.313				GC		Clayey GRAVEL with Sand: brown (7.5 YR 4/4); 50% gravel, well graded, fine to coarse, subangular to subrounded, up to 5 inches; 30% sand, well graded, fine to coarse, subangular to subrounded; 20% clay; wet.	
8.5	0.162							119.0
	1.58				CH		Sandy CLAY: brown (7.5 YR 4/4); 60% clay, high plasticity; 30% sand, poorly graded, very fine to fine, subangular to subrounded; 10% silt; stiff; moist.	120.0
3.8	0.134	MW32-GW062420-120		120	GW		Sandy GRAVEL with Clay: brown (7.5 YR 4/4); 50% gravel, well graded, subangular to subrounded, up to 3 inches; 40% sand, well graded, fine to coarse, subangular to subrounded; 10% clay, low plasticity; wet.	
4.6	0.387							124.5
1.2	1.22			125	CL		CLAY: 95% clay, medium plasticity; 5% sand, very fine; trace gravel; stiff; moist.	
6.3	0.333	MW32-SB062420-127			ML		SILT: 95% silt; 5% sand, very fine; very stiff; dry to moist.	126.5
1.2	0.473				CH		Sandy CLAY: 80% clay, medium to high plasticity; 20% sand, poorly graded, very fine to fine, subangular to subrounded.	127.5
				130			Same as above except 70% clay, 20% sand, 10% gravel, coarse, up to 3' inches, subangular to subrounded.	131.0
3.7	0.361				SW		Clayey SAND with Gravel: 70% sand, well graded, fine to coarse, subangular to subrounded; 15% clay; 15% gravel, well graded, up to 3 inches; moist to wet.	
2.9	0.234						Same as above except 50% sand, 35% clay, low plasticity, and 15% gravel, up to 3 inches; medium dense; moist to wet.	
4.1	0.276			135				135.5
3.2	0.228				CL		Sandy CLAY: yellowish red (5 YR 4/6); 60% clay; 40% sand, trace gravel; soft; moist.	138.4
							Sandy CLAY with Gravel: yellowish red 5 YR 4/6); 50% clay; 35% sand; 15% gravel, coarse, angular to subrounded, up to	

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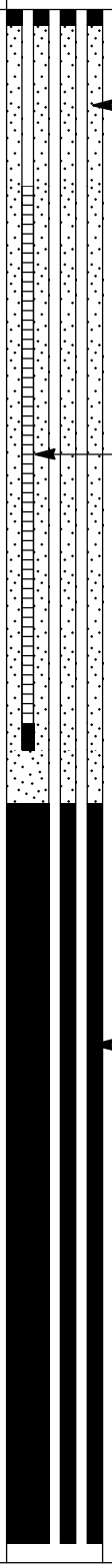
WELL DIAGRAM



WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
3.4	0.285				CL		4 inches; medium dense to stiff; moist.	140.0	
2	0.24	MW32-SB062420-142		140	SW		Gravelly SAND with Clay: reddish brown (5 YR 4/3); 55% sand, well graded, fine to coarse, subangular to subrounded; 25% clay, low plasticity; 20% gravel, well graded, fine to coarse, up to 2 inches; loose; wet.	143.0	
7.5	0.369				CL		Sandy CLAY: brown (7.5 YR 4/4); 55% clay, low plasticity; 45% sand, poorly graded, very fine to fine; trace fine gravel, subangular to subrounded; soft becomes medium dense around 144.6 ft bgs; moist to wet.		
2.9	0.408			145	SW		Gravelly SAND with Clay: 75% sand, well graded, fine to coarse; 15% gravel, fine to medium, subangular to subrounded; 10% clay, low plasticity; wet.	145.3 146.4	Hydrated bentonite pellet seal (125.5 to 167 ft bgs).
5.6	0.396				CL		Sandy CLAY with Gravel: brown (7.5 YR 4/4); 65% clay, medium plasticity; 25% sand, poorly graded,trace coarse, very fine to fine; 10% gravel, fine to medium, subangular to subrounded, up to 0.5 inch; medium dense; moist. Become stiff, 85% clay, 15% sand, trace gravel.	149.0	
5.5	0.623				ML		SILT with Sand: 80% silt; 15% sand, poorly graded, very fine to fine; 5% gravel; moist to wet. Softer near 150 ft bgs, with more sand (up to 40%).	150.0	
3.8	0.165			150	CH		CLAY with Sand: yellowish red (5 YR 4/6);90% clay; 5% gravel, fine, 5% sand, very fine; soft to medium soft.		
3.6	0.145				CH		Silty CLAY: stiff.	153.5 154.0	
7.1	0.356			155	CL		Sandy CLAY with Gravel: 50% clay, low to medium plasticity; 30% sand, well graded, fine to coarse, subangular to subrounded; 20% gravel, well graded, up to 2 inches, subangular to subrounded.	155.5	
8.1	0.139				CL		Gravelly CLAY: 50% clay; 35% gravel, subangular to subrounded, up to 4 inches; 15% sand, well graded; medium dense; wet. Becomes moist and stiff.	159.0	
6.1	0.21				ML		Gravelly SILT: dry to moist.	160.0	
6.8	2.02			160	SM		Silty SAND with Gravel: 50% sand, 25% silt, 25% gravel; wet.	162.0	
5.8	0.111				CL		Gravelly CLAY 60% clay, 25% gravel, 15% sand, well graded; clay increases for 1 ft.	163.0	
9.2	0.309	MW32-SB062520-165		165	CL		Gravelly Lean CLAY: ; 60% clay, 30% gravel, 10% sand, well graded.		
7.8	0.004								

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								169.0
9.1	0.064				ML		Gravelly SILT: 60 to 65% silt, 30% gravel, 5 to 10% sand.	169.5
					CL		Sandy CLAY: 80% clay, 20% sand, very fine.	170.0
				170			Silty SAND with Gravel: 50% sand, 25% silt, 25% gravel.	
1.5	0.113				SM			
3.8	0.144							
								175.0
	0.598	MW32-GW062520-175		175			GRAVEL with Sand and Silt: 40% gravel, well graded, fine to coarse, subangular to subrounded, up to 3 inches; 30% sand, well graded, 30% silt; wet.	
0.1	0.195				GM			
2.8	0.37							
				180			Same as above with gravel up to 4 inches.	
6.7	0.054							182.0
							Sandy CLAY: 70% clay, low plasticity; 25% sand, poorly graded, very fine to fine; 5% gravel, fine to medium; wet.	
3.5	0.341				CL			
								185.0
35.5	0.85			185			3 inch solid rock.	185.3
					CL		Gravelly CLAY: ; 65% clay, medium plasticity; 30% gravel; 5% sand, very fine to fine.	186.0
		MW32-SB062520-186						
49					ML		Gravelly SILT: 70% silt; 25% gravel, angular to subrounded, up to 3 inches; 5% sand, very fine to fine; dry to moist. 1 inch thick hard layers of siltstone.	
								188.0
							No Recovery.	
								190.0
				190			Lean CLAY with Gravel: 85% clay; 10% gravel, mostly fine, trace cobbles up to 5 inches; 5% sand, very fine to fine; very stiff.	
6	0.042							
					CL			
5.2	0.04							
				195				
9.7	0.036							

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WELL DIAGRAM

- #10/20 sand filter pack (167 to 183 ft bgs).
- 1-inch SCH 80 0.020-slot screen ZIST nested well (170 to 180 ft bgs).
- Hydrated bentonite pellet seal (183 to 257 ft bgs).

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PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
								197.5
					ML		Gravelly SILT: 55% silt; 30% gravel, angular to subrounded, up to 2 inches; 15% sand, well graded, fine to coarse, subangular to subrounded; brittle; stiff to hard.	
8.8	0.05							200.0
				200	CL		Sandy CLAY: 6 inches of sand clay.	200.5
3.4	0.182				SW		SAND with Clay and Gravel: 50% sand, well graded, fine to coarse, subangular to subrounded; 30% gravel, well graded, up to 4 inches; 20% clay, low plasticity; wet.	202.0
					CL		CLAY: 60% clay; 35% silt; 5% sand, very fine; trace gravel, fine; moist.	
9.1	0.34	MW32-SB062520-203						203.5
					CL		Gravelly CLAY: 40% clay; 30% gravel, poorly graded, coarse, 0.75 to 2 inches; 20% silt; 10% sand, fine; moist.	
				205				205.0
4.3	1.4				CL		Sandy CLAY with Gravel: 50% clay; 30% gravel, well graded, angular to subrounded; 20% sand, well graded; moist.	206.5
					CL		CLAY: 60% clay; 30% silt; 10% gravel, fine, subangular to subrounded, up to 0.5 inch.	
6.5	1.2							209.0
4.5	0.795				ML		Gravelly SILT: 55% silt, 30% gravel, 15% sand; brittle and soft.	209.5
					SC			210.0
		MW32-GW062620-210		210			Clayey SAND with Gravel: 50% sand, 30% gravel, 20% clay.	
					CL		Lean CLAY: 90% clay, low plasticity; 5% gravel, fine; 5% sand, poorly graded, medium to coarse; stiff.	211.5
7.3	0.851				SC		Clayey SAND and GRAVEL: 4 inch clayey sand and gravel layer.	211.8
12.4	0.301				CL		Lean CLAY: ; 90% clay, low plasticity; 5% gravel, fine; 5% sand, poorly graded, medium to coarse; stiff. Trace coarse gravel. Clay becomes stiffer, seems to have some silt, plasticity content becomes lower. Becomes non-plastic gradually.	
8.1	0.231			215				217.0
8.8	0.151				ML		Sandy SILT: 70% silt, 30% sand, poorly graded, very fine.	219.0
7.9	0.14				CL		Sandy CLAY with Gravel.	220.0
				220			CLAY with Sand: 65% clay; 30% sand, poorly graded, very fine to fine; 5% gravel, fine, subangular to subrounded, up to 0.5 inches, trace coarse up to 2 inches.	
1.2	0.26							
1.1	0.116	MW32-SB062620-223			CL			
				225				

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WELL DIAGRAM: Hydrated bentonite pellet seal (183 to 257 ft bgs).

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.5	0.175						Same as above except gravel increases to 15%, fine to coarse, mostly fine, up to 2 inches.	226.0	
0.7	0.106				ML		Gravelly SILT: 55% silt; 35% gravel, well graded, fine to coarse, up to 3 inches; 10% sand.		
2.9	0.073							230.0	
3.1	0.375			230	CL		Sandy CLAY: 70% clay, low plasticity; 25% sand, poorly graded, very fine to fine, subangular to subrounded; 5% gravel, fine, trace coarse, up to 1 inch, subangular to subrounded; stiff; moist. Low to no plasticity at 233 ft bgs. Cobbles at 233.5 ft bgs.		
4.8	0.553							235.0	Hydrated bentonite pellet seal (183 to 257 ft bgs).
7.8	0.329			235	ML		Gravelly SILT: 55% silt; 30% gravel, well graded, up to 4 inch cobbles; 15% sand, well graded, fine to coarse; very stiff to hard; brittle; dry to moist.		
2.9	0.356				ML		Sandy SILT: yellowish red (5 YR 4/6); 70% silt, non-plastic; 30% sand, poorly graded, very fine to fine; stiff; moist.	237.0	
0.5	0.31				ML		Gravelly SILT: 55% silt; 30% gravel, well graded, up to 4 inch cobbles; 15% sand, well graded, fine to coarse; very stiff to hard; brittle; dry to moist.	239.5	
1.3	0.401			240	CL		Sandy CLAY: 70% clay, low plasticity; 30% sand, very fine to fine; soft; moist. Becomes medium dense/medium stiff. 10% gravel at 241 to 241.5 ft bgs.	240.0	
0.5	0.18				ML		SILT: 95% silt, low to non-plastic; 5% sand, fine, trace coarse.	244.0	
0.4	0.316			245	ML		SILT: 90% silt, low to non-plastic; 5% gravel, fine, subangular to subrounded; 5% sand, fine trace coarse; stiff; moist.	245.0	
0.5	0.344				CL		Gravelly CLAY: 60% clay, low plasticity; 35% gravel, well graded, up to 2 inches; 5% sand, very fine to fine, trace coarse; medium stiff; moist.	247.0	
0.9	0.241				ML		Sandy SILT: 80% silt; 20% sand, very fine to fine; trace gravel, fine, subangular to subrounded, up to 0.25 inch; stiff; moist.	248.5	
1.4	0.448	MW32-SB062620-250		250	CL		CLAY with Sand: 90% clay; 10% sand, very fine to fine; medium stiff; moist.	250.0	
1.7	0.265								

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-32

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 6/22/2020 - 6/28/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
								254.0	
2.5	0.318			255	CL		CLAY with Gravel and Sand: 50% clay; 35% gravel, well graded, subangular to subrounded; 15% sand, well graded. Dry to moist at 256 ft bgs; moist.		
2.2	0.315							258.0	
2.7	0.248				CL		Gravelly CLAY: 60% clay, low plasticity; 25% gravel, well graded, subangular to subrounded, up to 2 inches, trace 4 inch cobbles;15% sand, well graded; dry to moist.	260.0	#10/20 sand filter pack (257 to 272 ft bgs).
11.7	0.155			260			Gravelly CLAY: 60% clay, low plasticity; 30% gravel, medium to coarse, subangular to subrounded, with cobbles up to 4 inches; 10% sand, well graded, fine to coarse; stiff; moist.		
29.4	0.103				CL				
9.5	0.269			265					1-inch SCH 80 0.020-slot screen ZIST nested well (260 to 270 ft bgs).
17	0.147				ML		Gravelly SILT with Sand: dry to moist.	267.0 267.5	
					CL		Gravelly CLAY: 60% clay, low plasticity; 25% grave, well graded, fine to coarse, cobbles up to 3 inches; 15% sand, well graded. Silt from 268.5 to 264 ft bgs. Medium stiff; moist to wet.	269.0	
25.3	0.425	MW32-GW062820-270		270	ML		Gravelly SILT and CLAY: Gravelly Clay is 45% soft clay, 40% gravel, up to 4 inches, 15% sand. Gravelly Silt is 60% silt, non-plastic, 25% gravel, and 15% s, well graded. Brittle, hard, wet.		
								272.0	
							End of boring at 272 ft bgs.		

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER	238824.6495-F3048-005.DRILL	**BORING/WELL NUMBER**	MW-34
PROJECT NAME	700 S 1600 E PCE Plume	**DATE DRILLED**	7/9/2020 - 7/12/2020
LOCATION	Salt Lake City, UT	**CASING TYPE/DIAMETER**	1-inch SCH 80 PVC
DRILLING METHOD	Sonic	**SCREEN TYPE/SLOT**	1-inch SCH 80 0.020-slot
SAMPLING METHOD	Sonic Grab	**GRAVEL PACK TYPE**	#10/20 sand
GROUND ELEVATION (FT MSL)	4623.61	**GROUT TYPE/QUANTITY**	Bentonite Grout
TOP OF CASING (FT MSL)	See Table 5	**DEPTH TO WATER (FT BGS)**	
LOGGED BY	Joe Miller	**GROUND WATER ELEVATION (FT MSL)**	
REMARKS	Groundwater was encountered at approximately 130 feet bgs.		

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
							Hydrovac to 8'	
				5				8.0
							Rock/Boulder	9.0
29.8	0.086				ML		Gravelly SILT	10.0
				10			Gravelly SILT; 60% silt; 30% fine to coarse elongated 3-4" gravel; 10% sand; yellowish red (5 YR 4/6); Loose.; Dry .	
6.9	0.034							
32								
27.1	0.035				ML			
				15				
23	0.034							
16								
	0.033							17.5
11					GP		GRAVEL; 100% fine to coarse gravel; loose; pink (5YR 7/3); dry.	
7.1	0.226							20.0
4.7				20			Gravelly SILT: 50% silt; 50% fine gravel; Loose; reddish brown (5YR 5/4); dry to moist.	
18.3	0.075							
6.9					ML			
22.7	0.045							
16.6								25.0
11.4	0.043			25	GP		GRAVEL; 100% fine to coarse gravel; loose; pinkish gray (5YR 7/2); dry.	26.0
13.1	0.07						Silty GRAVEL; 80% fine to coarse gravel; 20% silt; reddish brown (5YR 5/4) dry to moist.	
14.4					GM			
	0.1							30.0
8.4				30	GM		Silty GRAVEL; 60% fine to coarse gravel; 30% silt; 10% fine sand; looselight reddish brown (5YR 6/4); dry.	31.0
39.8	0.101							
2.7					ML		Gravelly SILT; 60% silt40% fine to coarse gravel; loose; reddish brown (5 YR 4/4); Dry.	
10.5	0.118							33.0
0.7							Silty GRAVEL; 80% fine to coarse gravel; 20% silt; loose; reddish yellow (5 YR 6/5); dry	
	0.11			35				

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WELL DIAGRAM

- Vault with cement surface seal
- Bentonite Grout (2 to 14 ft bgs).
- Hydrated bentonite pellets (14 to 18 ft bgs).
- #10/20 sand filter pack (18 to 22 ft bgs) with 6-inch stainless steel mesh vapor probe at 20 ft bgs.

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
2.5									
2.8					GM				
	0.107								
7.9									
0.4	0.85							40.0	
3.2				40					
82.3					GM		Silty GRAVEL; 80% fine to coarse gravel; 20% silt; loose; light reddish brown (5YR 6/3); dry.		
	0.891							42.0	
33.1					GP		GRAVEL with Silt; 85% poorly graded gravel; 15% silt; loose. light reddish brown (5YR 6/3); dry.		
18.4	0.109							43.6	
					GC		Clayey GRAVEL; cohesive; dry to moist.	44.0	
16.1					CL		Silty CLAY; low plasticity; reddish brown (5 YR 4/4);soft; dry to moist.	45.0	
12.5	0.034			45					
					GM		Silty GRAVEL; 60% fine to coarse gravel; 40% silt; loose; reddish brown (5YR 5/4); dry to moist.		
16.6									
9.6	0.177							47.5	
15.4					CL		Silty CLAY; low plasticity clay; soft; light reddish brown (5YR 4/6); dry to moist.		
2.7	0.36							50.0	
1.8				50					
7.6					CL		CLAY; 90% low plastcicity clay; 10% fine gravel; soft, easily breaks up; light reddish brown (5YR 4/6); moist.		
	0.255								
13.5								52.5	
15.4	0.07						Silty CLAY; low plasticity; soft; light reddish brown (5YR 4/6); moist.		
	19.9				CL				
7.7	0.145			55					
								56.0	
16.2					GP		Silty GRAVEL; 50% fine to coarse poorly graded gravel; 30% low plasticity silt; 20% fine to coarse sand; loose; light reddish brown (5YR 4/6); moist.	57.0	
9.6	0.4								
5.3					ML		Clayey SILT; 95% low plasticity clayey silt; 5% fine gravel: light reddish brown (5YR 4/6); soft; moist.		
4.1	0.18							60.0	
9.1				60					
25.6	0.05				GM		Silty GRAVEL; 50% poorly graded gravel; 40% silt; 10% fine to coarse sand; loose; light reddish brown (5YR 4/6); dry.		
16	0.12							64.0	
2					CL		Silty CLAY; low plasticity; stiff; reddish brown (5 YR 4/4); dry.		
	0.22			65					
3								66.0	
20.4							GRAVEL; cemented; white (5YR 8/1); very hard drilling; dry.		
17.2	0.134								
16.6								68.3	
4.8					GM		Silty GRAVEL; 60% fine to coarse rounded poorly graded gravel; 40% low plasticity silt; loose; yellowish red (5 YR 4/6); dry.		
6.4	0.205			70				70.0	
11.1							Silty GRAVEL; 50% fine to coarse rounded poorly graded gravel; 50% low plasticity silt; loose; yellowish red (5 YR 4/6); dry.		
	0.028								
10.3					GM				
21.1									
	0.034								
9.4									
6.2								74.5	
				75					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
6.5	0.116				GP		Silty GRAVEL; 50% fine to coarse rounded poorly graded gravel; 30% low plasticity silt; 10% fine gravel; loose; yellowish red (5 YR 4/6); dry.	76.0	
8.1									
4.2	0.14				ML		Silty GRAVEL; 50% fine to coarse rounded poorly graded gravel; 50% low plasticity silt; loose; yellowish red (5YR 4/6); dry.		
14									
13.6	0.199			80			- 2 feet no recovery	80.0	Hydrated bentonite pellets (22 to 138 ft bgs).
5.4	0.099							82.0	
9.7					ML		Gravelly SILT; 60% low plasticity silt, 40% gravel; firm; yellowish red (5YR 4/6); dry.	84.0	
13.3	0.114						Silty GRAVEL; 50% fine to coarse poorly graded gravel; 50% silt; loose; yellowish red (5YR 4/6); dry.		
3.7				85					
	0.13				GM				
3.5									
4.9									
	0.049							90.0	Hydrated bentonite pellets (22 to 138 ft bgs).
3.9				90			Silty CLAY; medium plasticity; soft; yellowish red (5YR 4/6); moist.		
11.2	0.192				CL				
17.5									
11.6	0.242							94.0	
15							Sandy GRAVEL; 60% fine to coarse poorly graded gravel; 40% sand; loose; reddish brown (5 YR 4/4); dry.		
10.5	0.141			95	GP				
9.3								97.0	
	0.043				ML		Gravelly SILT; 60% low plasticity SILT; 40% fine to coarse gravel; dry to moist.		
19.1								98.7	
10.4					CL		Silty CLAY; yellowish red (5YR 4/6); moist.	99.0	
	0.026				ML		Gravelly SILT; 60% low plasticity SILT; 40% fine to coarse gravel; dry to moist.	100.0	
6.2				100					
7.6					ML		Gravelly SILT; 70% low plasticity SILT; 30% fine to coarse gravel; soft; dry to moist.		
	0.042							102.0	
5.6							Silty CLAY; medium to high plasticity, trace fine gravel; soft; yellowish red (5YR 4/6); moist.		
14.1	0.62								
5.8									
9.7				105					
10.8	0.172								
16	0.166								
3.6					CH				
5.5	0.172								
20.2	0.179			110					
19.7									
5.1	0.293								
3.3	0.12								
12									
				115				115.0	

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
1.7	0.076				CH		Silty CLAY; 95% medium to high plasticity silty clay, 5% fine gravel; soft; yellowish red (5YR 4/6); moist.	116.0	
6.3					GM		Silty GRAVEL; 50% fine to coarse gravel, 50% low plasticity silt; loose; reddish brown (5YR 5/3); dry.	117.0	
	0.14				CL		Silty CLAY; low plasticity, trace fine gravel; soft; yellowish red (5YR 4/6); moist.	118.0	
9.9					GM		Silty GRAVEL; 50% fine to coarse gravel, 50% low plasticity silt; loose; reddish brown (5YR 5/3); dry.	120.0	Hydrated bentonite pellets (22 to 138 ft bgs).
7.9	0.11			120			Silty CLAY; low plasticity; stiff; reddish brown (5YR 4/4); dry to moist.	123.0	
3.4					CL		Silty GRAVEL; 70% fine gravel, 30% low plasticity silt; loose; reddish brown (5YR 5/3); dry.	124.5	
35.7	0.124				GM		Silty GRAVEL; 50% fine to coarse poorly graded gravel; 45% silt; 5% sand; loose; yellowish red (5YR 4/6); moist; soil core hot from drilling.		
12.2									
24.8	0.139				GM				
26.7				125					
3.9	0.04								
4.9									
2.2	0.1				GM				
2.5									
1.4	0.191								
6.3				130			Clayey SILT; 95% low plasticity clayey sitl; 5% fine gravel; soft.; moist.	130.0	
	0.24								
20.4					ML				
26.5	0.21								
57.3									
43.8	0.199			135			Clayey SILT; 80% low plasticity clayey silt; 20% gravel; firm to stiff; moist.	135.0	
72.1					ML			137.0	
78	0.04						Silty GRAVEL; 70% fine to coarse gravel; 30% silt; loose; reddish brown (5YR 4/4); dry to moist.		
43.7	0.11				GM				
2.5	0.12								#10/20 sand filter pack (138 to 152 ft bgs).
2.8	0.05			140			Silty GRAVEL; 50% fine to coarse gravel; 30% silt; 20% fine to coarse sand; loose; yellowish red (5YR 4/6); wet.	140.0	
25		MW34-SB070820-141							
12.4									
11.5	0.04				GM				
3.5									
8.6	0.081			145					1-inch SCH 80 0.020-slot screen ZIST nested well (140 to 150 ft bgs).
5.4									
8.5	0.26						Clayey SILT; 95% low plasticity clayey silts; 5% fine gravel; stiff; yellowish red (5YR 4/6); moist.	147.0	
1.1					ML				
3.1	0.78							150.0	
3.1	0.111	MW34-GW070820-150		150	GM		Silty GRAVEL; 50% fine to coarse gravel; 30% silt; 20% fine to coarse sand; loose; yellowish red (5YR 4/6); wet.	151.0	
2.9							Clayey SILT; low plasticity clayey silts; stiff; yellowish red (5YR 4/6); moist.		
4.9	0.13				ML			153.0	
2.5	0.112						Silty GRAVEL; 60% fine to coarse gravel; 40% silt; loose; yellowish red (5YR 4/6); wet.		
2.7					GM				
				155				155.0	

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WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

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PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
2.7	0.33					Silty CLAY; low plasticity; soft; reddish brown (5YR 4/4); moist to wet.	
3.1							
2.5					CL		
	0.395						
5.1				160			160.0
6.1					ML	SILT; low plasticity silt; firm to stiff; yellowish red (5YR 4/6); saturated; wet.	
6.7	0.272						161.5
3.2					GM	Silty GRAVEL; 70% fine to coarse gravel; 30% silt; loose; yellowish red (5YR 5/6); saturated wet.	163.0
7.8	0.13					Silty CLAY; 85% silty clay; 15% fine gravel; firm to stiff; reddish brown (5YR 4/3); moist.	
					CL		
13.9	0.16	MW34-SB070820-165		165			166.0
					ML	Gravelly SILT; 70% silt; 30% fine gravel; soft; reddish brown (5YR 4/4); wet.	
0.9	0.113						168.0
						- 6" boulder; hard.	168.5
1.2	0.08				ML	Gravelly SILT; 70% silt; 30% fine gravel; cemented in places; firm to stiff; reddish brown (5YR 4/4); Dry. Very Hot Sample- Hard Drilling.	170.0
				170			
					ML	Gravelly SILT; 60% silt; 30% fine gravel; 10% fine to coarse sand; soft; yellowish red (5YR 4/6); wet.	171.3
0	0.135				ML		172.0
					ML	SILT; low plasticity clay; firm to stiff; yellowish red (5YR 4/6); moist.	173.0
0.4	0.96					Gravelly SILT; 60% silt; 30% fine gravel; 10% fine sand; soft; yellowish red (5YR 4/6); wet.	
					ML		
0	0.27			175		SILT; 95% low plasticity cohesive silt; 5% fine gravel; very stiff; yellowish red (5YR 4/6); moist.	176.0
						Gravelly SILT; 60% silt; 30% fine gravel; 10% fine sand; firm; yellowish red (5YR 4/6); wet.	
2.4	0.18				ML		
0	0.074				CL		179.5
0.3		MW34-GW070820-180		180		CLAY; low plasticity clay; hard, reddish brown (5YR 5/4); dry to moist.	180.0
0.1						SILT; 95% low plasticity silt; 5% fine gravel; soft to stiff; reddish brown (5YR 4/3); moist to wet.	
0.2							
0.5					ML		
0.9							
0.8				185			186.0
0.4					ML	Gravelly SILT; 50% low plasticity silt; 30% fine to coarse gravel; 20% fine sand; firm; wet.	187.0
0.8	0.215					SILT; 95% low to medium plasticity silt; 5% fine gravel; cohesive; reddish brown (5YR 4/4); wet.	
0.8	0.06				ML		
1.7		MW34-SB070820-189		190			190.0
					GM	Silty GRAVEL; 60% fine to coarse gravel; 40% Silt; loose; (5YR 4/5); wet.	191.0
1.5	0.126				ML	SILT; 85% low plasticity silt; 15% fine gravel; soft; yellowish red (5YR 4/6); moist to wet.	193.0
1.6	0.088					CLAY; 90% low to medium plasticity clay; 10% fine gravel; stiff; yellowish red (5YR 4/6); dry.	
				195			

WELL DIAGRAM:
- Hydrated bentonite pellet seal (152 to 173 ft bgs).
- #10/20 sand filter pack (173 to 187 ft bgs).
- 1-inch SCH 80 0.020-slot screen ZIST nested well (175 to 185 ft bgs).

Continued Next Page

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.9	0.1				CL				
0.2	0.038								
								199.0	
0.5	0.263				CL		CLAY; 95% low to medium plasticity clay; 5% fine gravel; stiff; yellowish red (5YR 4/6); dry.	200.0	
0.2				200					
0.7	0.32				CL		CLAY; 90% low plasticity clay; 10% fine gravel; stiff; yellowish red (5YR 4/6); moist.		
0.3								203.0	
0.1	0.24						Silty GRAVEL; 70% fine to coarse gravel; 40% silt; loose; yellowish red (5YR 4/6); wet.		
0.7	0.042								
1		MW34-SB070820-205		205					
0.6	0.065				GM				
0.7									
0.1	0.05							210.0	
		MW34-GW070920-210		210			Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); dry to moist.		
0.5	0.462								
0.5					CL				
1.2	0.325								
1.8									
1.5	0.142			215					
								216.0	
0.7							Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); moist.		
0.9	0.309				CL			218.0	Hydrated bentonite pellet seal (187 to 247 ft bgs).
0.8							Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); dry to moist.		
0.9	0.142				CL			220.0	
0.2				220			No Recovery- Wet, lots of water in the hole.	221.0	
							Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; stiff; yellowish red (5YR 4/6); moist.		
1.1					CL				
0.7								224.0	
							Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; stiff; yellowish red (5YR 4/6); moist to wet.		
				225	CL			226.0	
0.2		MW34-SB070920-226					Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; firm to stiff; yellowish red (5YR 4/6); moist.		
1.1					CL				
0.5								230.0	
0.8		MW34-GW070920-230		230			Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; stiff; yellowish red (5YR 4/6); dry.		
0.4	0.26				CL				
1.6	0.278							234.0	
1.7							Silty CLAY; 80% low plasticity silty clay; 20% fine to medium		
				235					

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CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH
2.3	0.1						sand; stiff; reddish brown (5YR 5/3); dry.	
0.6								
0.5	0.06				CL			
0.3								
0.5	0.36							240.0
0.2	0.21			240			Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; stiff; reddish brown (5YR 5/3); dry to moist	
0.2								
0.2	0.34							
0.1					CL			
0.3								
0.1	0.26			245				
0.2	0.25							247.0
0.3		MW34-SB070920-247					Silty CLAY; 80% low plasticity silty clay; 20% fine to medium sand; hard; yellowish red (5YR 4/6); dry.	
					CL			
0.2								250.0
0.1				250			Silty CLAY; low plasticity silty clay; firm to stiff; yellowish red (5YR 4/6); wet.	
0	0.269				CL			
0.2								253.0
0.3	0.244				GM		Silty GRAVEL; 60% fine gravel; 30% low plasticity silt; 10% fine sand; loose; yellowish red (5YR 4/6) wet.	
0.1								254.5
0.2	0.15			255	CL		Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); moist.	
1.3								256.3
					GM		Silty GRAVEL; 60% fine gravel; 30% low plasticity silt; 10% fine sand; loose; yellowish red (5YR 4/6) wet.	257.0
0.8	0.275				CL		Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); moist.	258.3
					GM			259.0
0.1	0.132				CL		Silty GRAVEL; 60% fine gravel; 30% low plasticity silt; 10% fine sand; loose; yellowish red (5YR 4/6) wet.	260.0
		MW34-GW070920-260		260			Silty CLAY; low to medium plasticity silty clay; trace fine gravel; firm to stiff; yellowish red (5YR 4/6); moist.	
0.6	0.329							
0.9	0.355						Silty CLAY; low to medium plasticity silty clay; stiff; yellowish red (5YR 4/6); dry to moist.	
1.5								
6.2		MW34-SB071020-264						
0.9	0.313			265	CL			
0.3								
0.4	0.43							
0.3	0.4							270.0
3.5				270			Silty CLAY; 90% medium plasticity silty clay; 10% fine gravel; very stiff to hard; yellowish red (5YR 4/6); dry to moist.	
6.8	0.183							
3.5								
15.4	0.35				CL			
1.1				275				

Continued Next Page

WELL DIAGRAM

#10/20 sand filter pack (247 to 262 ft bgs).

1-inch SCH 80 0.020-slot screen ZIST nested well (260 to 260 ft bgs).

CDM Smith
555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34
PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
3.6	0.107								
5.4								277.0	
12.3	0.05						Clayey Gravel; 70% fine to coarse gravel; 20% silty clay; 10% fine sand; cemented in places; dry to moist; hard drilling.		
1	0.046			280	GC			281.0	
3.6	0.225						Silty CLAY; 95% medium plasticity silty clay; 5% fine gravel; very stiff to hard; yellowish red (5YR 4/6); dry.		
1.6									
6.5	0.236								
120									
5		MW34-SB071020-285		285	CL				
22.5	0.04								
11	0.2								
4.2								289.0	
1.9	0.5				CL		Silty CLAY; 80% low to medium plasticity silty clay; 20% fine gravel; very stiff to hard; yellowish red (5YR 4/6); dry.	290.0	
0.9				290	ML		Gravelly SILT; 60% low plasticity silt; 40% fine to coarse gravel; firm; wet.	291.5	
0.2	0.101						Silty CLAY; 70% low plasticity clay; 20% fine gravel; stiff to hard; reddish brown (5YR 4/4); moist.		
	0.21				CL				
0.1								294.0	
							Bottom 5 to 6 feet no recovery.		
				295					
								300.0	
15.5	0.16	MW34-SB071020-300		300			Silty GRAVEL; 60% Poorly Graded fine to coarse gravel; 40% silt; loose; reddish brown (5YR 4/4); moist to wet.		
14.4									
6.3	0.32	MW34-GW071020-300			GM				
8.3									
9.9									
10.6	0.225			305				306.0	
5					ML		Clayey SILT; 90% low plasticity clayey silt; 10% fine gravel; cohesive; firm; reddish brown (5YR 5/3); moist.		
7.6	0.08							307.8	
2.4					ML		Clayey SILT; 90% low plasticity clayey silt; 10% fine gravel; cohesive; firm; reddish brown (5YR 5/3); moist.	309.0	
8	0.021						Lost 1 foot out of bottom.	310.0	
2				310			Clayey SILT; 90% low plasticity clayey silt; 10% fine gravel; cohesive; firm; brown (7.5YR 5/3); moist.		
4.2	0.36				ML				
17.7									
51.3	0.29							314.0	
4.5					GP		GRAVEL; fine to coarse well graded gravel; cemented; white	315.0	
				315			*Continued Next Page*		

Hydrated bentonite pellet seal (262 to 312 ft bgs).

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

CDM Smith

555 17th Street, Suite 500
Denver, CO 80202
(303) 383-2300

BORING/WELL CONSTRUCTION LOG

PROJECT NUMBER 238824.6495-F3048-005.DRILL **BORING/WELL NUMBER** MW-34

PROJECT NAME 700 S 1600 E PCE Plume **DATE DRILLED** 7/9/2020 - 7/12/2020

Continued from Previous Page

PID (ppm)	Magnetic Susceptibility	SAMPLE ID.	EXTENT	DEPTH (ft. BGL)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH	WELL DIAGRAM
0.5	0.34						(5YR 8/1); dense; dry. Hard Drilling.		
0.6					GM		Silty GRAVEL; 70% Poorly Graded fine to coarse gravel; 30% silt; loose; reddish brown (5YR 4/4); moist.		#10/20 sand filter pack (312 to 330 ft bgs).
0.8	0.132							317.5	
					GM		Silty GRAVEL; 60% Poorly Graded fine to coarse gravel; 40% silt; loose; reddish brown (5YR 4/4); wet.		
0.7	0.09							320.0	
				320			Silty CLAY; low plasticity silty clay; very stiff; cohesive; reddish brown (5YR 4/4); moist.		1-inch SCH 80 0.020-slot screen ZIST nested well (315 to 325 ft bgs).
7.8	0.301	MW34-GW071220-320							
		MW34-GW071220-321			CL				
4	0.164								
								325.0	
2.9	0.13			325	CL		Silty CLAY; low plasticity silty clay; very stiff; cohesive; reddish brown (5YR 4/4); moist to wet.	326.0	
					CL		Silty CLAY; 90% low plasticity silty clay; 10% fine sand; stiff; cohesive; reddish brown (5YR 4/4); moist.		
3.8	0.285							328.0	
					ML		Gravelly SILT; 70% low plasticity silt; 30% fine gravel; stiff; cohesive; reddish brown (5YR 4/4); dry to moist.		
1.9	0.087							330.0	
				330			Gravelly CLAY; 60% low plasticity clay; 40% fine to coarse gravel; cohesive; stiff; light brownish gray (10YR 6/2); dry to moist.		
23.2	0.095				CL			332.5	
14.4	0.153						Clayey SILT; 60% low plasticity silt; 40% clay; cohesive; reddish brown (5YR 4/4); dry to moist.		
				335	ML				
15.3	0.047								
6.7	0.033							338.0	
					GM		Silty GRAVEL; 70% fine gravel; 30% low plasticity silt; cemented in places; dense; light brownish gray (10YR 6/2); dry to moist.		
1.2	0.051							340.0	Hydrated bentonite pellet backfill (330 to 350 ft bgs).
				340			Clayey SILT; 60% low plasticity silt; 40% clay; cohesive; very stiff; reddish brown (5YR 4/4); dry to moist.		
7.8	0.219				ML				
0.3	0.264							344.0	
							Clayey SILT; 60% low plasticity silt; 40% clay; trace fine gravel; cohesive; hard; reddish brown (5YR 4/4); dry to moist.		
4.2	0.333			345	ML				
2.6	0.122							348.0	
					ML		Clayey SILT; 55% low plasticity silt; 45% clay; cohesive; hard; reddish brown (5YR 4/4); dry.		
12.2	0.161	MW34-SB071220-349						350.0	
				350			Boring ended at 350'		

WHITNEY'S BORING LOG SLC VA PLUME DRAFT DEC2020_WT.JM.GPJ LAEWNN01.GDT 12/17/20

Appendix H

Soil Core Photo Log

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 4/6/20
Location: MW-23	
Description: 0-10’ No recovery No photolog available for 10-14.5 feet	

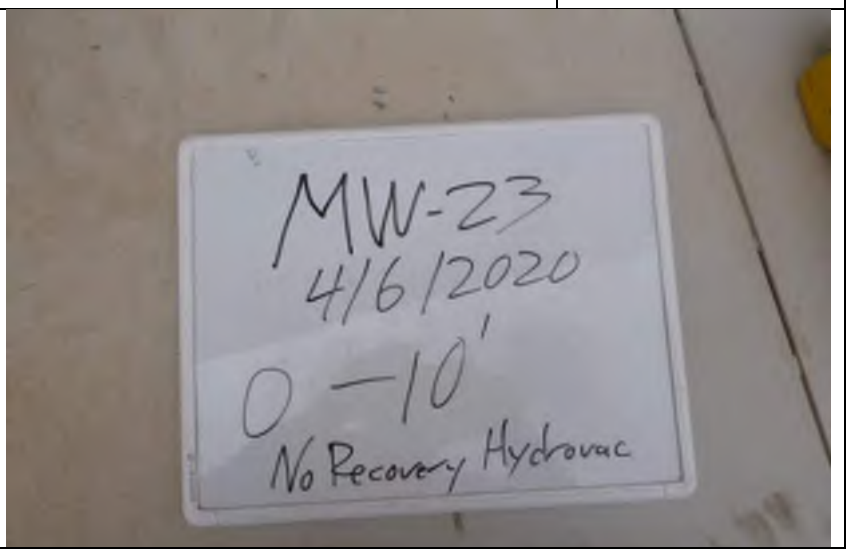


Photo No. **2**	**Date:** 4/7/20
Location: MW-23	
Description: 14.5-16’	

Photo No. **3**	**Date:** 4/7/20
Location: MW-23	
Description: 16-17’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 4/7/20
Location: MW-23	
Description: 17-18’	

Photo No. **5**	**Date:** 4/7/20
Location: MW-23	
Description: 18-19’	

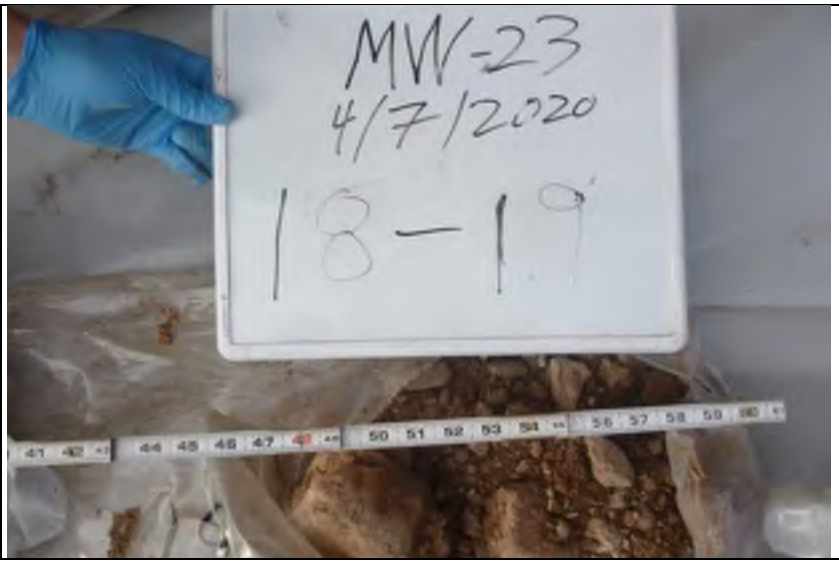


Photo No. **6**	**Date:** 4/7/20
Location: MW-23	
Description: 19-20’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 4/7/20
Location: MW-23	
Description: 20-21’	

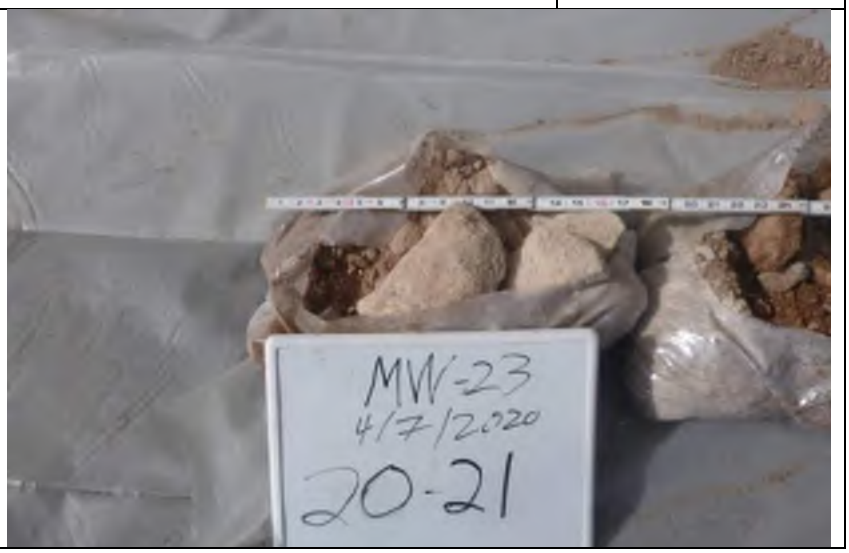


Photo No. **8**	**Date:** 4/7/20
Location: MW-23	
Description: 21-23’	

Photo No. **9**	**Date:** 4/7/20
Location: MW-28	
Description: 23-26’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 4/7/20
Location: MW-23	
Description: 26-27’	

Photo No. **11**	**Date:** 4/7/20
Location: MW-23	
Description: 27-28.5’	

Photo No. **12**	**Date:** 4/7/20
Location: MW-23	
Description: 28.5-30’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 4/7/20
Location: MW-23	
Description: 30-31’	

Photo No. **14**	**Date:** 4/7/20
Location: MW-23	
Description: 31-32’	

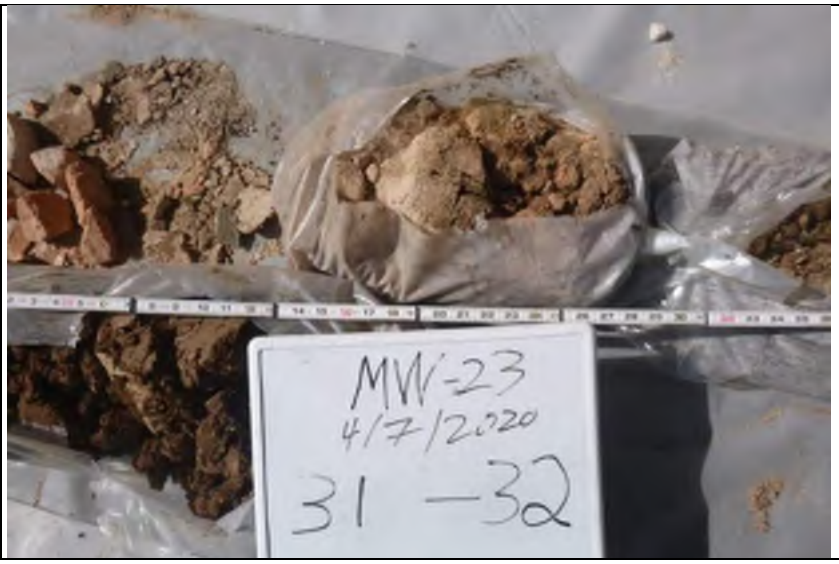


Photo No. **15**	**Date:** 4/7/20
Location: MW-23	
Description: 32-35’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 16	Date: 4/7/20
Location: MW-23	
Description: 35-37	

Photo No. 17	Date: 4/7/20
Location: MW-23	
Description: 37-40’	

Photo No. 18	Date: 4/7/20
Location: MW-23	
Description: 40-42’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 19	Date: 4/7/20
Location: MW-23	
Description: 42-45’	

Photo No. 20	Date: 4/7/20
Location: MW-23	
Description: 45-48’	

Photo No. 21	Date: 4/7/20
Location: MW-23	
Description: 48-50’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 4/7/20
Location: MW-23	
Description: 50-52’	

Photo No. **23**	**Date:** 4/7/20
Location: MW-23	
Description: 52-54’	

Photo No. **24**	**Date:** 4/7/20
Location: MW-23	
Description: 54-55.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 25	Date: 4/7/20
Location: MW-23	
Description: 55.5-58.5’	

Photo No. 26	Date: 4/7/20
Location: MW-23	
Description: 58.5-60’	

Photo No. 27	Date: 4/7/20
Location: MW-23	
Description: 60-61.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 28	Date: 4/7/20
Location: MW-23	
Description: 61.5-64’	

Photo No. 29	Date: 4/7/20
Location: MW-23	
Description: 64-66’	

Photo No. 30	Date: 4/7/20
Location: MW-23	
Description: 66-68’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 4/7/20
Location: MW-23	
Description: 68-70’	

Photo No. **32**	**Date:** 4/7/20
Location: MW-23	
Description: 70-73’	

Photo No. **33**	**Date:** 4/7/20
Location: MW-23	
Description: 73-75’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 34	**Date:** 4/7/20
Location: MW-23	
Description: 75-77’	

Photo No. 35	**Date:** 4/7/20
Location: MW-23	
Description: 77-80’	

Photo No. 36	**Date:** 4/7/20
Location: MW-23	
Description: 80-82’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 4/7/20
Location: MW-23	
Description: 82-85.5’	

Photo No. **38**	**Date:** 4/7/20
Location: MW-23	
Description: 85.5-88’	

Photo No. **39**	**Date:** 4/7/20
Location: MW-23	
Description: 88-90’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 4/7/20
Location: MW-23	
Description: 90-92’	

Photo No. **41**	**Date:** 4/7/20
Location: MW-23	
Description: 92-95’	

Photo No. **42**	**Date:** 4/7/20
Location: MW-23	
Description: 95-97’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 4/7/20
Location: MW-23	
Description: 97-98.5’	

Photo No. **44**	**Date:** 4/7/20
Location: MW-23	
Description: 98.5-100’	

Photo No. **45**	**Date:** 4/7/20
Location: MW-23	
Description: 100-102.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 4/7/20
Location: MW-23	
Description: 102.5-105’	

Photo No. **47**	**Date:** 4/7/20
Location: MW-23	
Description: 105-107’	

Photo No. **48**	**Date:** 4/7/20
Location: MW-23	
Description: 107-110’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 49	Date: 4/8/20
Location: MW-23	
Description: 110-112.5’	

Photo No. 50	Date: 4/8/20
Location: MW-23	
Description: 112.5-115’	

Photo No. 51	Date: 4/8/20
Location: MW-23	
Description: 115-117’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 4/8/20
Location: MW-23	
Description: 117-119’	

Photo No. **50**	**Date:** 4/8/20
Location: MW-23	
Description: 119-120’	

Photo No. **51**	**Date:** 4/8/20
Location: MW-23	
Description: 120-122’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 4/8/20
Location: MW-23	
Description: 122-125’	

Photo No. **53**	**Date:** 4/8/20
Location: MW-23	
Description: 125-126.5’	

Photo No. **54**	**Date:** 4/8/20
Location: MW-23	
Description: 126.5-128’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 4/8/20
Location: MW-23	
Description: 128-130’	

Photo No. **56**	**Date:** 4/8/20
Location: MW-23	
Description: 130-131.5’	

Photo No. **57**	**Date:** 4/8/20
Location: MW-23	
Description: 131.5-134’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 58	Date: 4/8/20
Location: MW-23	
Description: 134-136’	

Photo No. 59	Date: 4/8/20
Location: MW-23	
Description: 136-136.5’	

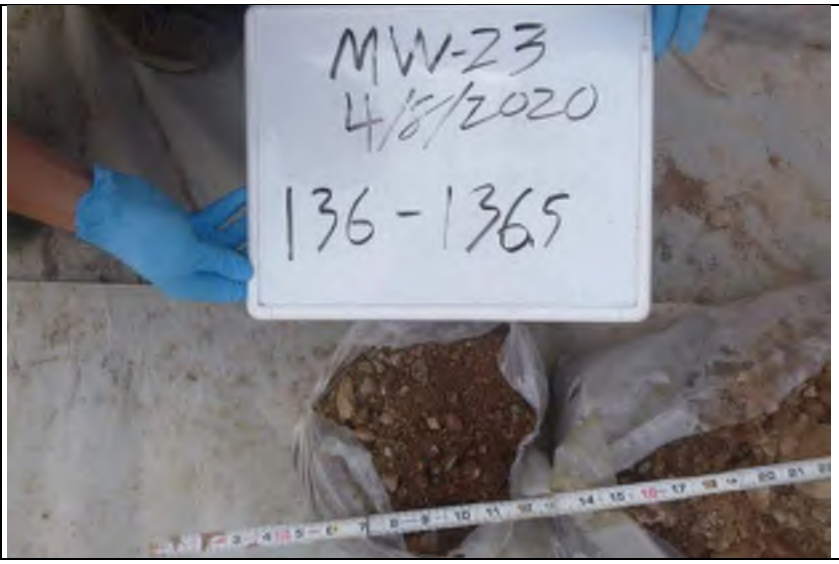


Photo No. 60	Date: 4/8/20
Location: MW-23	
Description: 136.5-138’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 4/8/20
Location: MW-23	
Description: 138-140’	

Photo No. **62**	**Date:** 4/8/20
Location: MW-23	
Description: 140-142’	

Photo No. **63**	**Date:** 4/8/20
Location: MW-23	
Description: 142-144’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 4/8/20
Location: MW-23	
Description: 144-145.5’	

Photo No. **65**	**Date:** 4/8/20
Location: MW-23	
Description: 145.5-146.5’	

Photo No. **66**	**Date:** 4/8/20
Location: MW-23	
Description: 146.5-149.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **67**	**Date:** 4/8/20
Location: MW-23	
Description: 149.5-152’	

Photo No. **68**	**Date:** 4/8/20
Location: MW-23	
Description: 152-155’	

Photo No. **69**	**Date:** 4/8/20
Location: MW-23	
Description: 155-156.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 4/8/20
Location: MW-23	
Description: 156.5-158.5’	

Photo No. **71**	**Date:** 4/8/20
Location: MW-23	
Description: 158.5-160’	

Photo No. **72**	**Date:** 4/9/20
Location: MW-23	
Description: 160-163’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 4/9/20
Location: MW-23	
Description: 163-165’	

Photo No. **74**	**Date:** 4/9/20
Location: MW-23	
Description: 165-168’	

Photo No. **75**	**Date:** 4/9/20
Location: MW-23	
Description: 168-170’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 4/9/20
Location: MW-23	
Description: 170-172.5’	

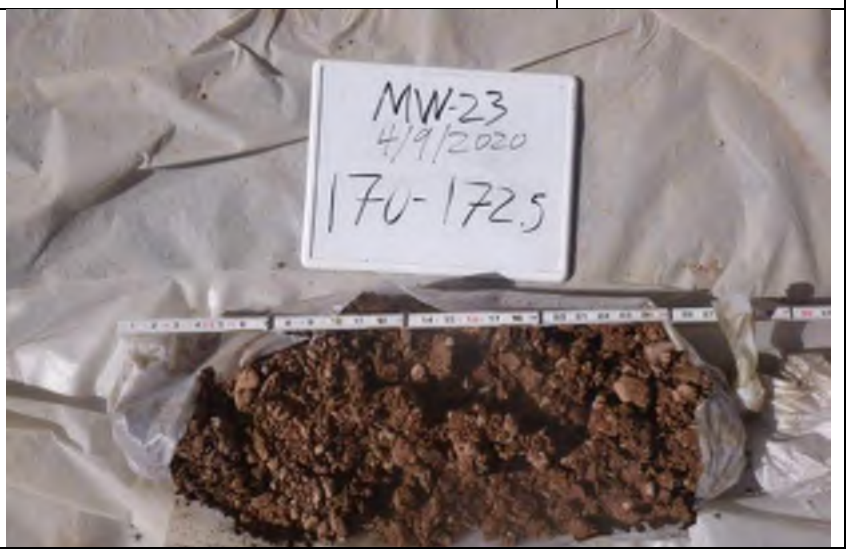


Photo No. **77**	**Date:** 4/9/20
Location: MW-23	
Description: 172.5-175’	

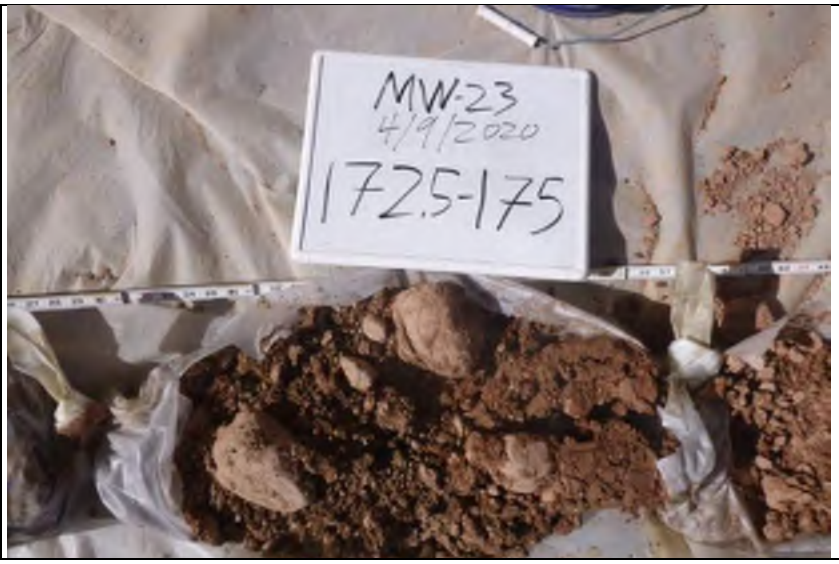


Photo No. **78**	**Date:** 4/9/20
Location: MW-23	
Description: 175-177’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 4/9/20
Location: MW-23	
Description: 177-180’	

Photo No. **80**	**Date:** 4/9/20
Location: MW-23	
Description: 180-182.5’	

Photo No. **81**	**Date:** 4/9/20
Location: MW-23	
Description: 182.5-185’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 4/9/20
Location: MW-23	
Description: 185-187.5’	

Photo No. **83**	**Date:** 4/9/20
Location: MW-23	
Description: 187.5-190’	

Photo No. **84**	**Date:** 4/9/20
Location: MW-23	
Description: 190-192’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 4/9/20
Location: MW-23	
Description: 192-195’	

Photo No. **86**	**Date:** 4/9/20
Location: MW-23	
Description: 195-197.5’	

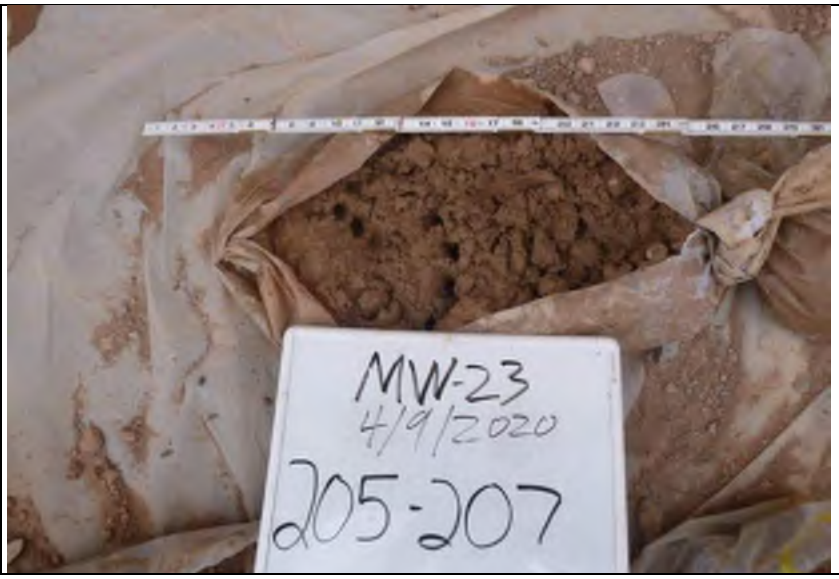
Photo No. **87**	**Date:** 4/9/20
Location: MW-23	
Description: 197.5-200’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 4/9/20
Location: MW-23	
Description: 200-202.5’	

Photo No. **89**	**Date:** 4/9/20
Location: MW-23	
Description: 202.5-205’	

Photo No. **90**	**Date:** 4/9/20
Location: MW-23	
Description: 205-207’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **91**	**Date:** 4/9/20
Location: MW-23	
Description: 207-210’	

Photo No. **92**	**Date:** 4/9/20
Location: MW-23	
Description: 210-212.5’	

Photo No. **93**	**Date:** 4/9/20
Location: MW-23	
Description: 212.5-215’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **94**	**Date:** 4/9/20
Location: MW-23	
Description: 215-217.5’	

Photo No. **95**	**Date:** 4/9/20
Location: MW-23	
Description: 217.5-220’	

Photo No. **96**	**Date:** 4/10/20
Location: MW-23	
Description: 220-221.5	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **97**	**Date:** 4/10/20
Location: MW-23	
Description: 221.5-225’	

Photo No. **98**	**Date:** 4/10/20
Location: MW-23	
Description: 225-227.5’	

Photo No. **99**	**Date:** 4/10/20
Location: MW-23	
Description: 227.5-230’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 4/10/20
Location: MW-23	
Description: 230-232.5’	

Photo No. **101**	**Date:** 4/10/20
Location: MW-23	
Description: 232.5-235’	

Photo No. **102**	**Date:** 4/10/20
Location: MW-23	
Description: 235-237.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **103**	**Date:** 4/10/20
Location: MW-23	
Description: 237.5-240’	

Photo No. **104**	**Date:** 4/10/20
Location: MW-23	
Description: 240-242.5’	

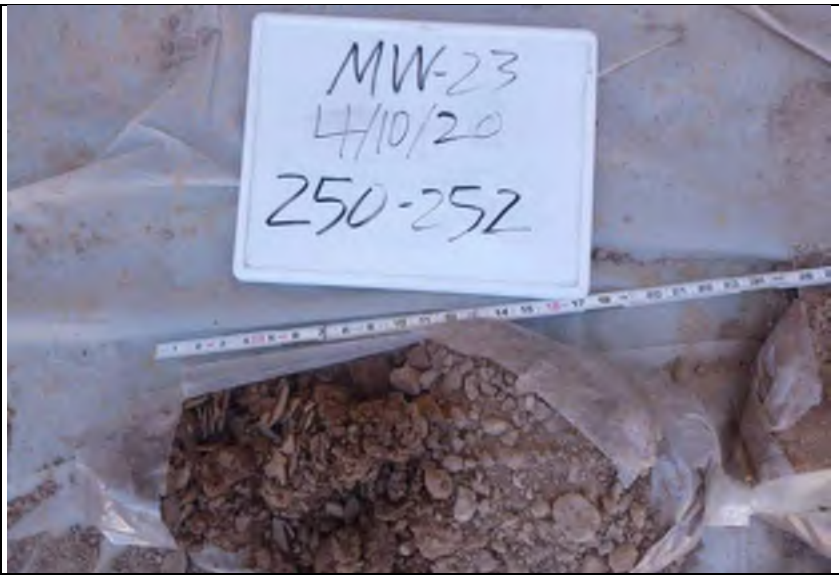
Photo No. **105**	**Date:** 4/10/20
Location: MW-23	
Description: 242.5-245’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **106**	**Date:** 4/10/20
Location: MW-23	
Description: 245-247.5’	

Photo No. **107**	**Date:** 4/10/20
Location: MW-23	
Description: 247.5-250’	

Photo No. **108**	**Date:** 4/10/20
Location: MW-23	
Description: 250-252’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **109**	**Date:** 4/10/20
Location: MW-23	
Description: 252-255’	

Photo No. **110**	**Date:** 4/10/20
Location: MW-23	
Description: 255-257.5’	

Photo No. **110**	**Date:** 4/10/20
Location: MW-23	
Description: 257.5-260’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 111	Date: 4/12/20
Location: MW-23	
Description: 260-262.5’	

Photo No. 112	Date: 4/12/20
Location: MW-23	
Description: 262.5-265’	

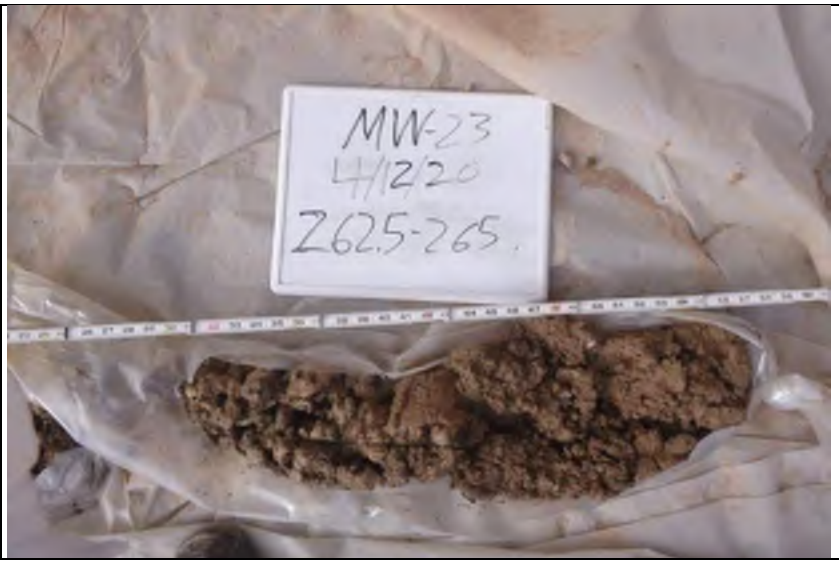
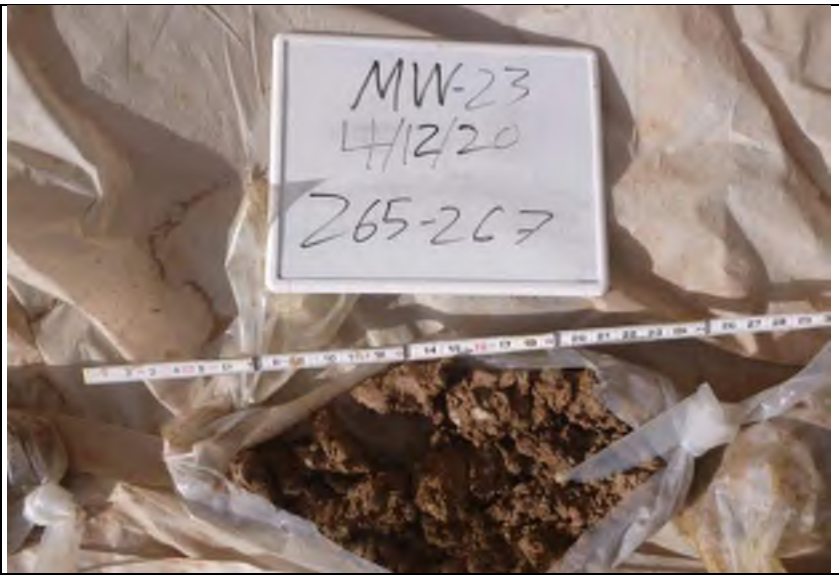


Photo No. 113	Date: 4/12/20
Location: MW-23	
Description: 265-267’	



CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 114	**Date:** 4/12/20
Location: MW-23	
Description: 267-270’	

Photo No. 115	**Date:** 4/12/20
Location: MW-23	
Description: 270-272’	

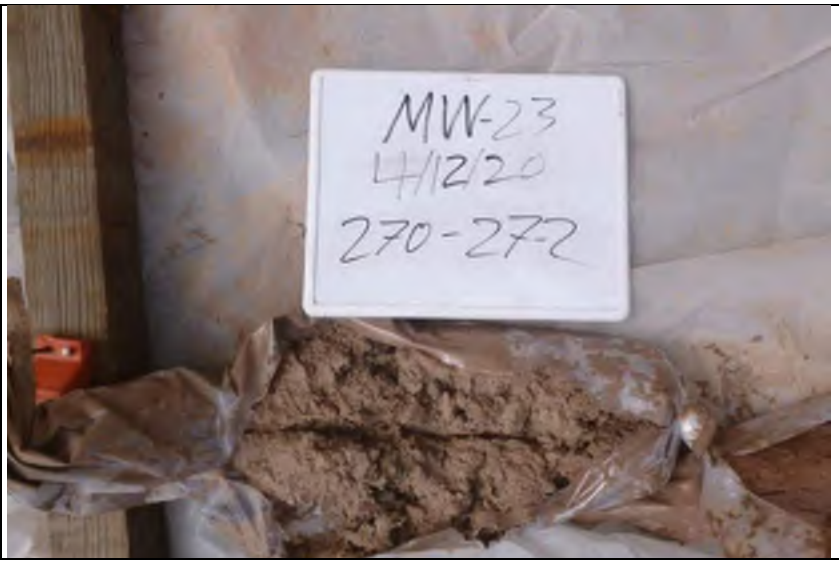


Photo No. 116	**Date:** 4/12/20
Location: MW-23	
Description: 272-275’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 117	Date: 4/12/20
Location: MW-23	
Description: 275-277.5’	

Photo No. 118	Date: 4/12/20
Location: MW-23	
Description: 277.5-280’	

Photo No. 119	Date: 4/12/20
Location: MW-23	
Description: 280-282.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **120**	**Date:** 4/12/20
Location: MW-23	
Description: 282.5-285’	

Photo No. **121**	**Date:** 4/12/20
Location: MW-23	
Description: 285-287.5’	

Photo No. **122**	**Date:** 4/12/20
Location: MW-23	
Description: 287.5-290’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **123**	**Date:** 4/12/20
Location: MW-23	
Description: 290-292.5’	

Photo No. **124**	**Date:** 4/12/20
Location: MW-23	
Description: 292.5-295’	

Photo No. **125**	**Date:** 4/12/20
Location: MW-23	
Description: 295-297.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **126**	**Date:** 4/12/20
Location: MW-23	
Description: 297.5-300’	

Photo No. **127**	**Date:** 4/12/20
Location: MW-23	
Description: 300-302’	

Photo No. **128**	**Date:** 4/12/20
Location: MW-23	
Description: 302-305’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 126	**Date:** 4/12/20
Location: MW-23	
Description: 305-307.5’	

Photo No. 127	**Date:** 4/12/20
Location: MW-23	
Description: 307.5-310’	

Photo No. 128	**Date:** 4/13/20
Location: MW-23	
Description: 310-312.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **129**	**Date:** 4/13/20
Location: MW-23	
Description: 312.5-315’	

Photo No. **130**	**Date:** 4/13/20
Location: MW-23	
Description: 315-317.5’	

Photo No. **131**	**Date:** 4/13/20
Location: MW-23	
Description: 317.5-320’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **132**	**Date:** 4/13/20
Location: MW-23	
Description: 320-321’	

Photo No. **133**	**Date:** 4/13/20
Location: MW-23	
Description: 321-324.5’	

Photo No. **134**	**Date:** 4/13/20
Location: MW-23	
Description: 324.5-327’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **135**	**Date:** 4/13/20
Location: MW-23	
Description: 327-330’	

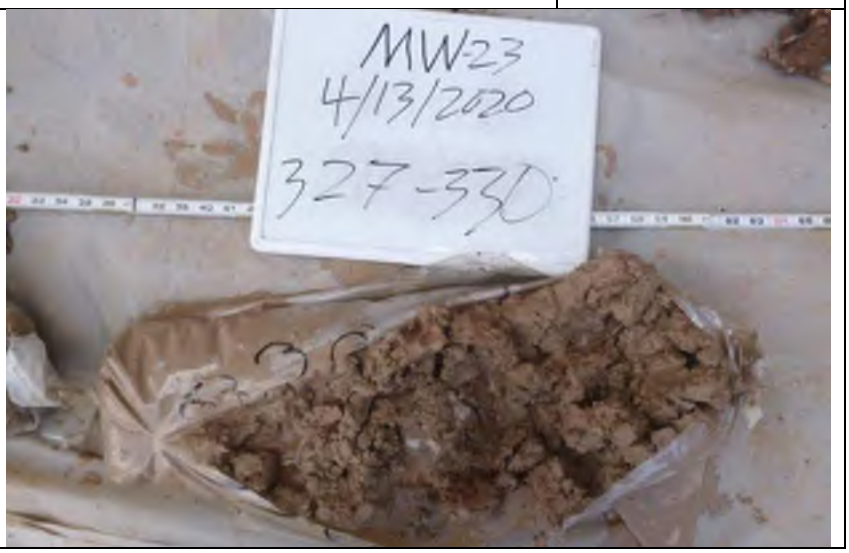


Photo No. **136**	**Date:** 4/14/20
Location: MW-23	
Description: 330-333’	

Photo No. **137**	**Date:** 4/14/20
Location: MW-23	
Description: 333-335’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **138**	**Date:** 4/14/20
Location: MW-23	
Description: 335-337’	

Photo No. **139**	**Date:** 4/14/20
Location: MW-23	
Description: 337-340’	

Photo No. **140**	**Date:** 4/14/20
Location: MW-23	
Description: 340-345’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 141	Date: 4/15/20
Location: MW-23	
Description: 344-347’	

Photo No. 142	Date: 4/15/20
Location: MW-23	
Description: 347-350’	

Photo No. 143	Date: 4/15/20
Location: MW-23	
Description: 350-354’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **144**	**Date:** 4/17/20
Location: MW-23	
Description: 354-360’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 5/11/20
Location: MW-24	
Description: 11-12’	

Photo No. **2**	**Date:** 5/11/20
Location: MW-24	
Description: 12-13’	

Photo No. **3**	**Date:** 5/11/20
Location: MW-24	
Description: 13-15’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 4	Date: 5/11/20
Location: MW-24	
Description: 15-17’	

Photo No. 5	Date: 5/11/20
Location: MW-24	
Description: 17-18’	

Photo No. 6	Date: 5/11/20
Location: MW-24	
Description: 18-20’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 5/11/20
Location: MW-24	
Description: 20-21’	

Photo No. **8**	**Date:** 5/11/20
Location: MW-24	
Description: 21-23’	

Photo No. **9**	**Date:** 5/11/20
Location: MW-24	
Description: 23-24’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 10	Date: 5/11/20
Location: MW-24	
Description: 24-26’	

Photo No. 11	Date: 5/11/20
Location: MW-24	
Description: 26-27.5’	

Photo No. 12	Date: 5/11/20
Location: MW-24	
Description: 27.5-29’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 5/11/20
Location: MW-24	
Description: 29-30’	

Photo No. **14**	**Date:** 5/11/20
Location: MW-24	
Description: 30-31’	

Photo No. **15**	**Date:** 5/11/20
Location: MW-24	
Description: 31-32’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 16	Date: 5/11/20
Location: MW-24	
Description: 32-33.5’	

Photo No. 17	Date: 5/11/20
Location: MW-24	
Description: 33.5-35’	

Photo No. 18	Date: 5/11/20
Location: MW-24	
Description: 35-36’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 5/11/20
Location: MW-24	
Description: 36-37’	

Photo No. **20**	**Date:** 5/11/20
Location: MW-24	
Description: 37-38.5’	

Photo No. **21**	**Date:** 5/11/20
Location: MW-24	
Description: 38.5-40’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 22	Date: 5/12/20
Location: MW-24	
Description: 40-41’	

Photo No. 23	Date: 5/12/20
Location: MW-24	
Description:	

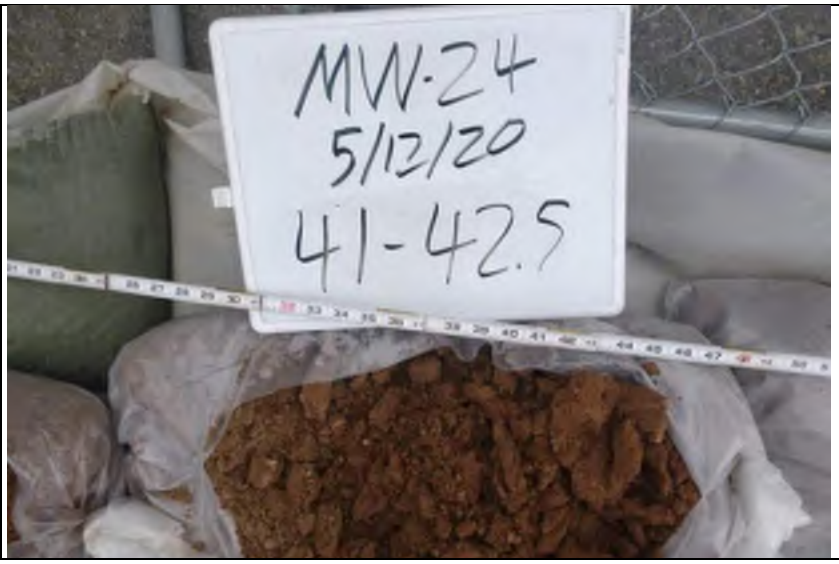


Photo No. 24	Date: 5/12/20
Location: MW-24	
Description: 42.5-43’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 5/12/20
Location: MW-24	
Description: 43.5-45’	

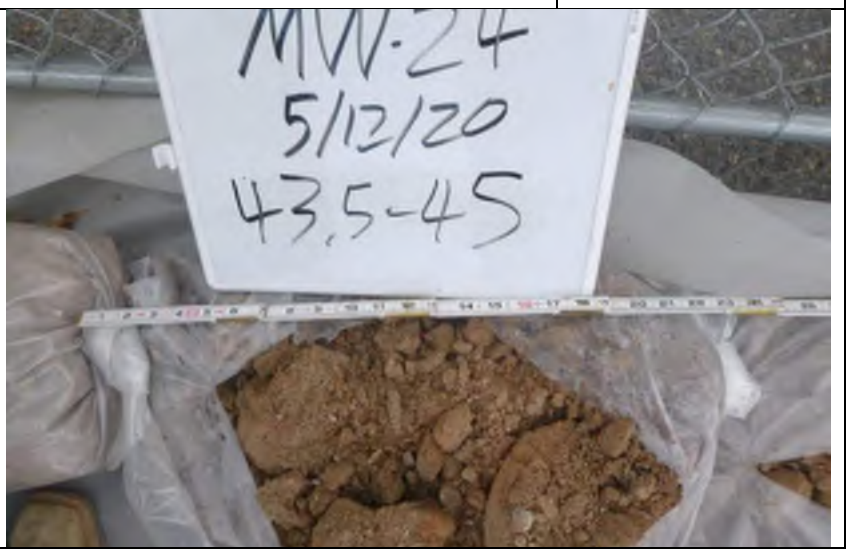


Photo No. **26**	**Date:** 5/12/20
Location: MW-24	
Description: 45-47’	

Photo No. **27**	**Date:** 5/12/20
Location: MW-24	
Description: 47-48.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 5/12/20
Location: MW-24	
Description: 48.5-50’	

Photo No. **29**	**Date:** 5/12/20
Location: MW-24	
Description: 50-51’	

Photo No. **30**	**Date:** 5/12/20
Location: MW-24	
Description: 51-53’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 31	Date: 5/12/20
Location: MW-24	
Description: 53-54.5’	

Photo No. 32	Date: 5/12/20
Location: MW-24	
Description: 54.5-56’	

Photo No. 33	Date: 5/12/20
Location: MW-24	
Description: 56-57’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 5/12/20
Location: MW-24	
Description: 57-58.5’	

Photo No. **32**	**Date:** 5/12/20
Location: MW-24	
Description: 58.5-60’	

Photo No. **33**	**Date:** 5/12/20
Location: MW-24	
Description: 60-61’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 34	Date: 5/12/20
Location: MW-24	
Description: 61-63’	

Photo No. 35	Date: 5/12/20
Location: MW-24	
Description: 63-65.5’	

Photo No. 36	Date: 5/12/20
Location: MW-24	
Description: 65.5-68’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 37	Date: 5/12/20
Location: MW-24	
Description: 68-70’	

Photo No. 38	Date: 5/12/20
Location: MW-24	
Description: 70-72’	

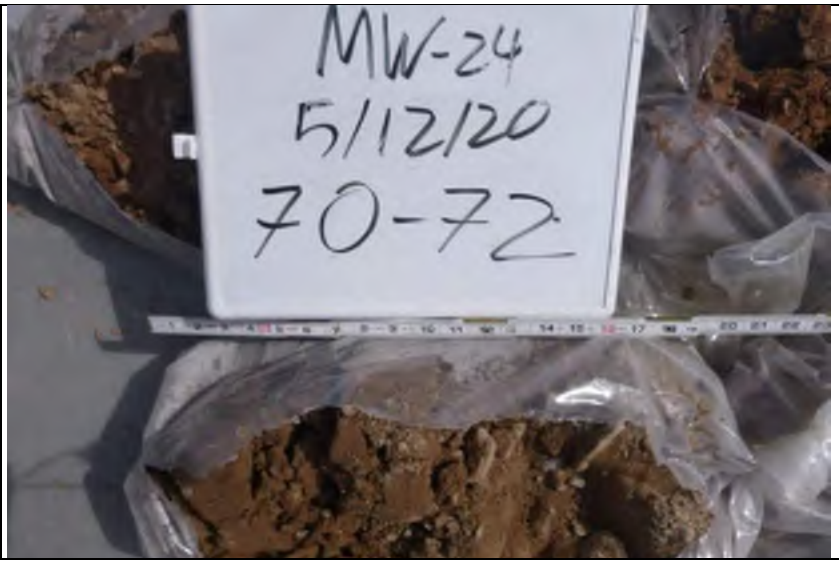


Photo No. 39	Date: 5/12/20
Location: MW-24	
Description: 72-74’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 5/12/20
Location: MW-24	
Description: 74-76’	

Photo No. **41**	**Date:** 5/12/20
Location: MW-24	
Description: 76-80’	

Photo No. **42**	**Date:** 5/12/20
Location: MW-24	
Description: 80-81’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 5/12/20
Location: MW-24	
Description: 81-83’	

Photo No. **44**	**Date:** 5/12/20
Location: MW-24	
Description: 83-85’	

Photo No. **45**	**Date:** 5/12/20
Location: MW-24	
Description: 85-86’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 46	Date: 5/12/20
Location: MW-24	
Description: 86-88’	

Photo No. 47	Date: 5/12/20
Location: MW-24	
Description: 88-90’	

Photo No. 48	Date: 5/12/20
Location: MW-24	
Description: 90-91.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 5/12/20
Location: MW-24	
Description: 91.5-93’	

Photo No. **50**	**Date:** 5/12/20
Location: MW-24	
Description: 93-95’	

Photo No. **51**	**Date:** 5/12/20
Location: MW-24	
Description: 95-97.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 5/12/20
Location: MW-24	
Description: 97.5-100’	

Photo No. **53**	**Date:** 5/12/20
Location: MW-24	
Description: 100-102.5’	

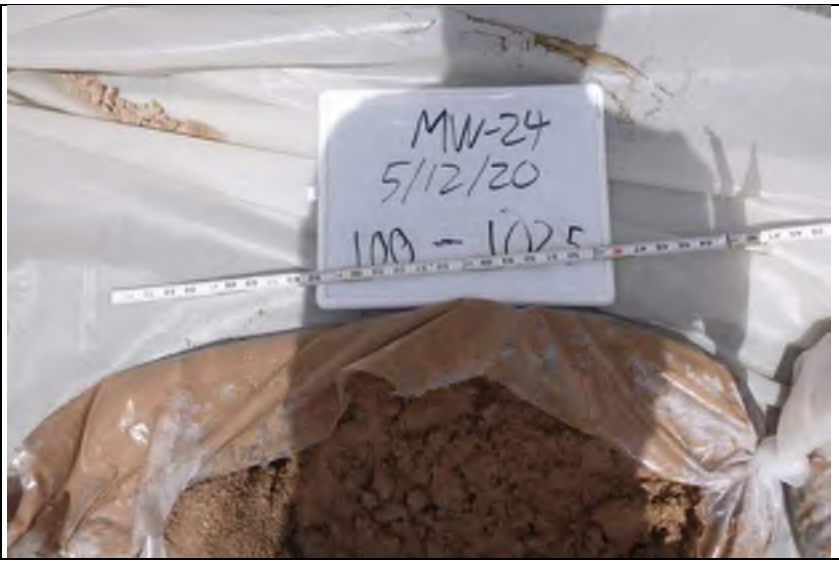


Photo No. **54**	**Date:** 5/12/20
Location: MW-24	
Description: 102.5-105’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 55	Date: 5/12/20
Location: MW-24	
Description: 105-107.5’	

Photo No. 56	Date: 5/12/20
Location: MW-24	
Description: 107.5-110’	

Photo No. 57	Date: 5/12/20
Location: MW-24	
Description: 112-114’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 58	Date: 5/12/20
Location: MW-24	
Description: 114-116’	

Photo No. 59	Date: 5/12/20
Location: MW-24	
Description: 116-118’	

Photo No. 60	Date: 5/12/20
Location: MW-24	
Description: 118-120’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 5/12/20
Location: MW-24	
Description: 120-122.5’	

Photo No. **62**	**Date:** 5/12/20
Location: MW-24	
Description: 122.5-125’	

Photo No. **63**	**Date:** 5/13/20
Location: MW-24	
Description: 125-127.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. 64	**Date:** 5/13/20
Location: MW-24	
Description: 127.5-130’	

Photo No. 65	**Date:** 5/13/20
Location: MW-24	
Description: 130-132.5’	

Photo No. 66	**Date:** 5/13/20
Location: MW-24	
Description: 132.5-135’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 67	**Date:** 5/13/20
Location: MW-24	
Description: 135-137.5	

Photo No. 68	**Date:** 5/13/20
Location: MW-24	
Description: 137.5-140’	

Photo No. 69	**Date:** 5/13/20
Location: MW-24	
Description: 140-141’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 5/13/20
Location: MW-24	
Description: 141-143’	

Photo No. **71**	**Date:** 5/13/20
Location: MW-24	
Description: 143-146’	

Photo No. **72**	**Date:** 5/13/20
Location: MW-24	
Description: 146-148’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 5/13/20
Location: MW-24	
Description: 148-150’	

Photo No. **74**	**Date:** 5/13/20
Location: MW-24	
Description: 150-152.5’	

Photo No. **75**	**Date:** 5/13/20
Location: MW-24	
Description: 152.5-155’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 5/13/20
Location: MW-24	
Description: 155-157.5’	

Photo No. **77**	**Date:** 5/13/20
Location: MW-24	
Description: 157.5-160’	

Photo No. **78**	**Date:** 5/13/20
Location: MW-24	
Description: 160-162’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 79	Date: 5/13/20
Location: MW-24	
Description: 162-164’	

Photo No. 80	Date: 5/13/20
Location: MW-24	
Description: 164-165’	

Photo No. 81	Date: 5/13/20
Location: MW-24	
Description: 165-167’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
82	5/13/20

Location:

MW-24

Description:

167-168.5’

Photo No.	Date:
83	5/13/20

Location:

MW-24

Description:

168.5-170’

Photo No.	Date:
84	5/13/20

Location:

MW-24

Description:

170-172.5’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 5/13/20
Location: MW-24	
Description: 172.5-175’	

Photo No. **86**	**Date:** 5/13/20
Location: MW-24	
Description: 175-177.5’	

Photo No. **87**	**Date:** 5/13/20
Location: MW-24	
Description: 177.5-180’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 5/13/20
Location: MW-24	
Description: 180-182.5’	

Photo No. **89**	**Date:** 5/13/20
Location: MW-24	
Description: 182.5-185’	

Photo No. **90**	**Date:** 5/13/20
Location: MW-24	
Description: 185-187’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 91	Date: 5/13/20
Location: MW-28	
Description: 187-189’	

Photo No. 92	Date: 5/13/20
Location: MW-24	
Description: 189-190’	

Photo No. 93	Date: 5/14/20
Location: MW-24	
Description: 190-193’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **94**	**Date:** 5/14/20
Location: MW-28	
Description: 193-195’	

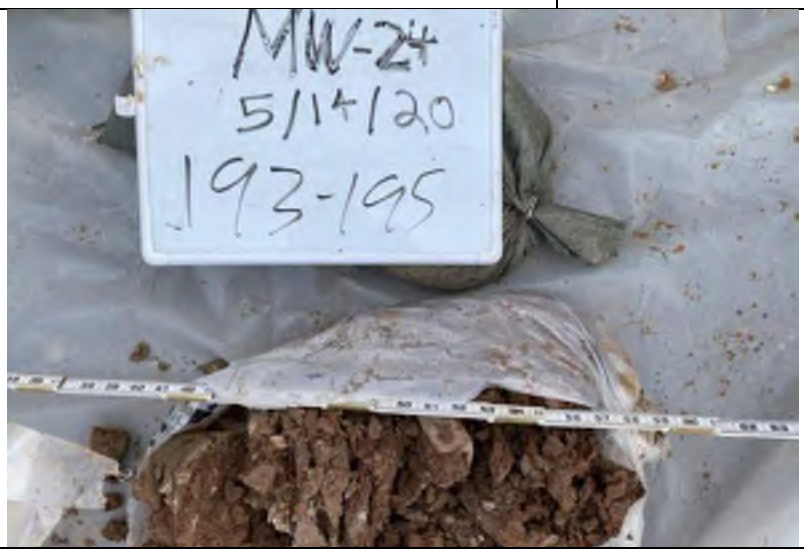


Photo No. **95**	**Date:** 5/14/20
Location: MW-24	
Description: 195-196.5’	

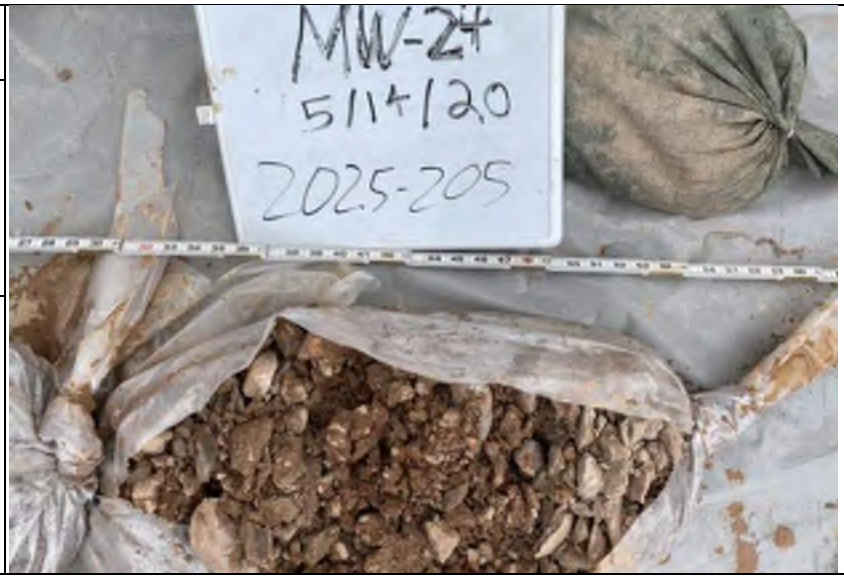
Photo No. **96**	**Date:** 5/14/20
Location: MW-24	
Description: 196.5-198’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 97	Date: 5/14/20
Location: MW-28	
Description: 198-200’	

Photo No. 98	Date: 5/14/20
Location: MW-24	
Description: 200-202.5’	

Photo No. 99	Date: 5/14/20
Location: MW-24	
Description: 202.5-205’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 5/14/20
Location: MW-28	
Description: 205-207.5’	

Photo No. **101**	**Date:** 5/14/20
Location: MW-24	
Description: 207.5-210’	

Photo No. **102**	**Date:** 5/14/20
Location: MW-24	
Description: 210-211’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 103	Date: 5/14/20
Location: MW-28	
Description: 211-213’	

Photo No. 104	Date: 5/14/20
Location: MW-24	
Description: 213-215’	

Photo No. 105	Date: 5/14/20
Location: MW-24	
Description: 215-216.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 106	Date: 5/14/20
Location: MW-28	
Description: 216.5-218’	

Photo No. 107	Date: 5/14/20
Location: MW-24	
Description: 218-220’	

Photo No. 108	Date: 5/14/20
Location: MW-24	
Description: 220-223’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **109**	**Date:** 5/14/20
Location: MW-28	
Description: 223-225’	

Photo No. **110**	**Date:** 5/14/20
Location: MW-24	
Description: 225-227’	

Photo No. **111**	**Date:** 5/14/20
Location: MW-24	
Description: 227-228’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 112	Date: 5/15/20
Location: MW-28	
Description: 230-232’	

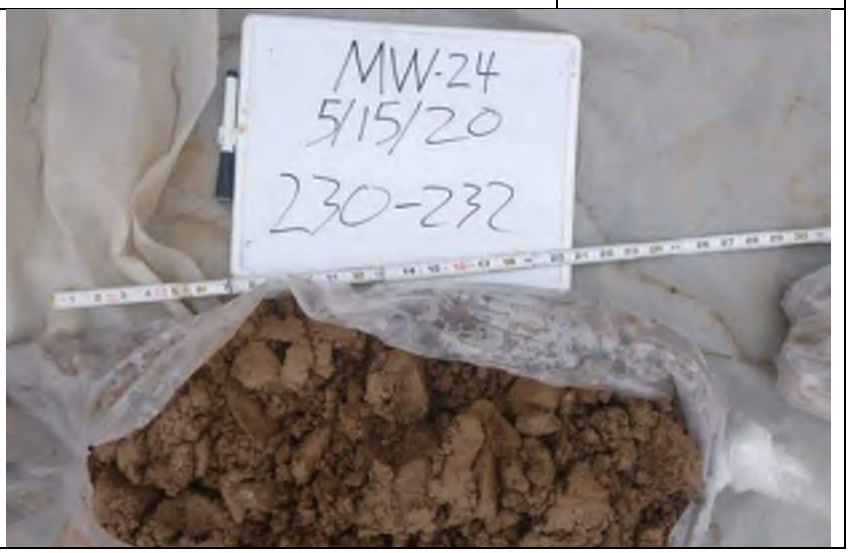


Photo No. 113	Date: 5/15/20
Location: MW-24	
Description: 232-234’	

Photo No. 114	Date: 5/15/20
Location: MW-24	
Description: 234-236’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **115**	**Date:** 5/15/20
Location: MW-28	
Description: 236-238’	

Photo No. **116**	**Date:** 5/15/20
Location: MW-24	
Description: 238-240’	

Photo No. **117**	**Date:** 5/15/20
Location: MW-24	
Description: 240-241’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **118**	**Date:** 5/15/20
Location: MW-28	
Description: 241-243’	

Photo No. **119**	**Date:** 5/15/20
Location: MW-24	
Description: 243-245’	

Photo No. **120**	**Date:** 5/15/20
Location: MW-24	
Description: 245-246.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 121	Date: 5/15/20
Location: MW-28	
Description: 246.5-248.5’	

Photo No. 122	Date: 5/15/20
Location: MW-24	
Description: 248.5-250’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 4/29/20
Location: MW-25	
Description: 10-12’	

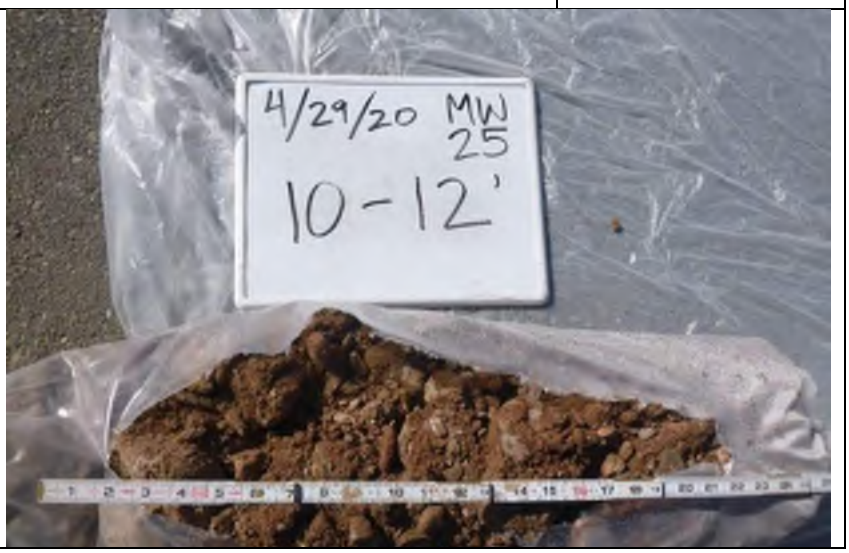


Photo No. **2**	**Date:** 4/29/20
Location: MW-25	
Description: 12-14’	

Photo No. **3**	**Date:** 4/29/20
Location: MW-25	
Description: 14-16’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 4/29/20
Location: MW-25	
Description: 16-19’	

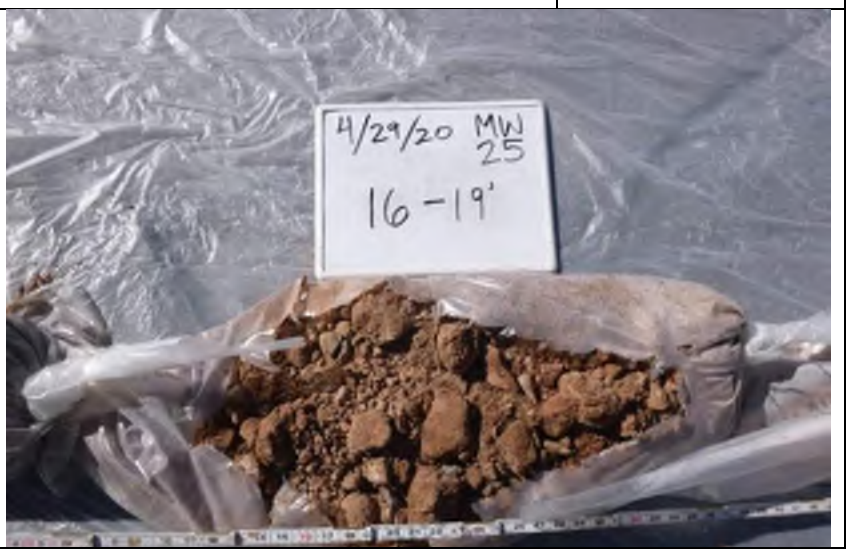


Photo No. **5**	**Date:** 4/29/20
Location: MW-25	
Description: 19-20’	

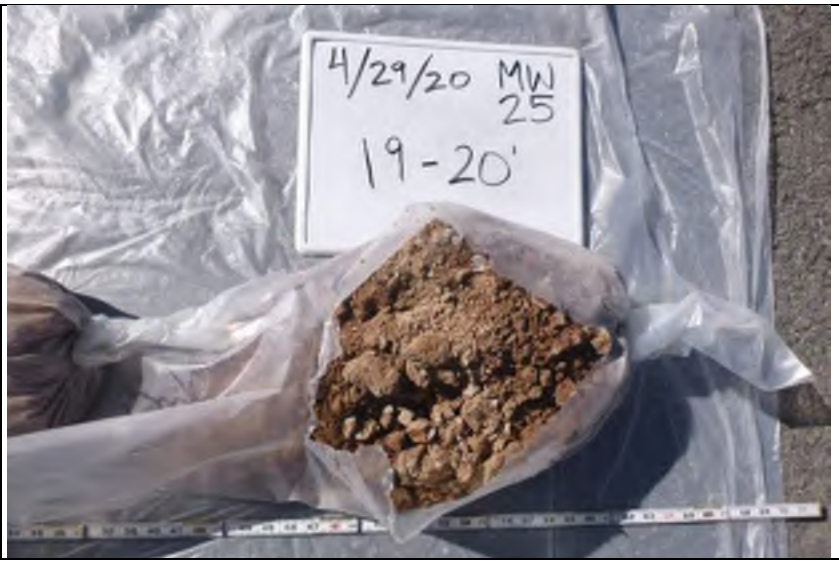
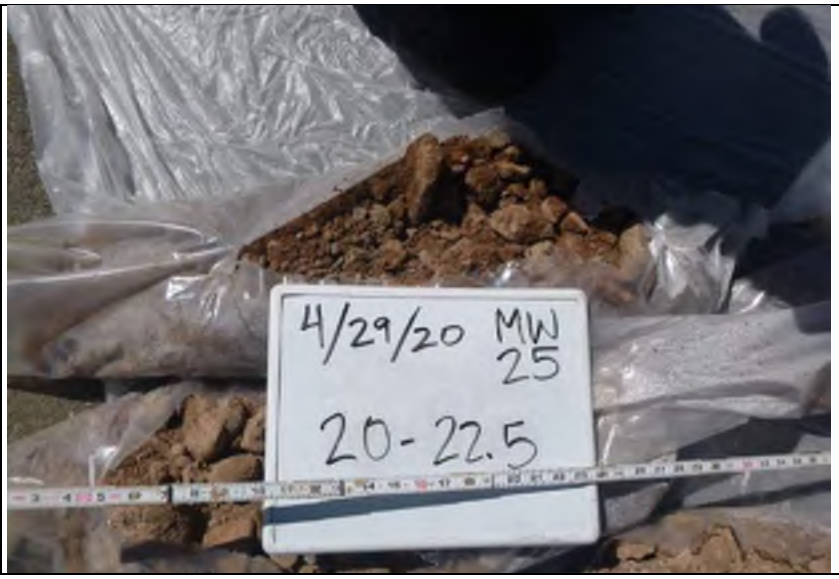


Photo No. **6**	**Date:** 4/29/20
Location: MW-25	
Description: 20-22.5’	



PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
7	4/29/20

Location:

MW-25

Description:

22.5-25’

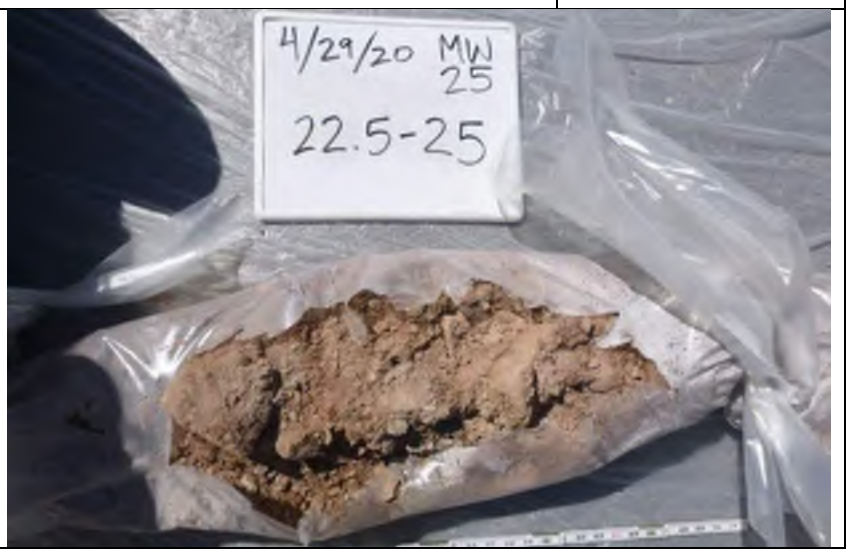


Photo No.	Date:
8	4/29/20

Location:

MW-25

Description:

25-27.5’

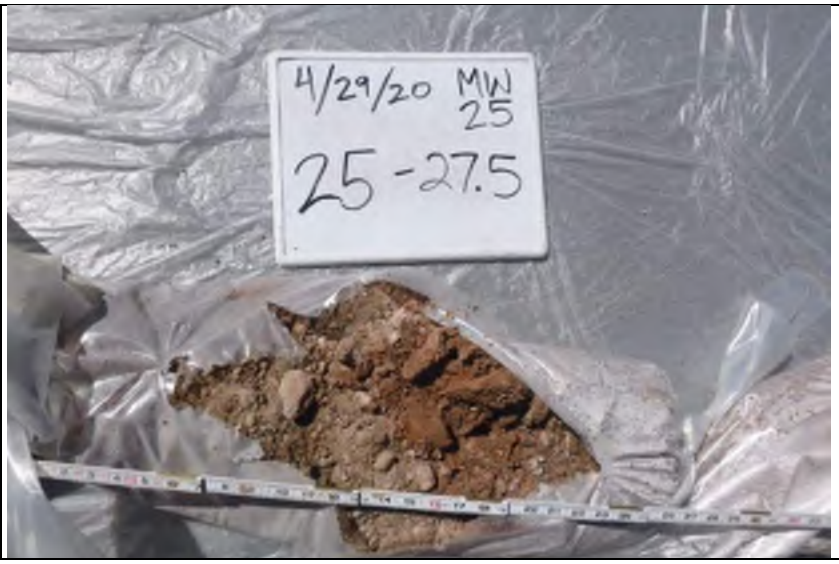


Photo No.	Date:
9	4/29/20

Location:

MW-25

Description:

27.5-30’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 4/29/20
Location: MW-25	
Description: 30-32’	

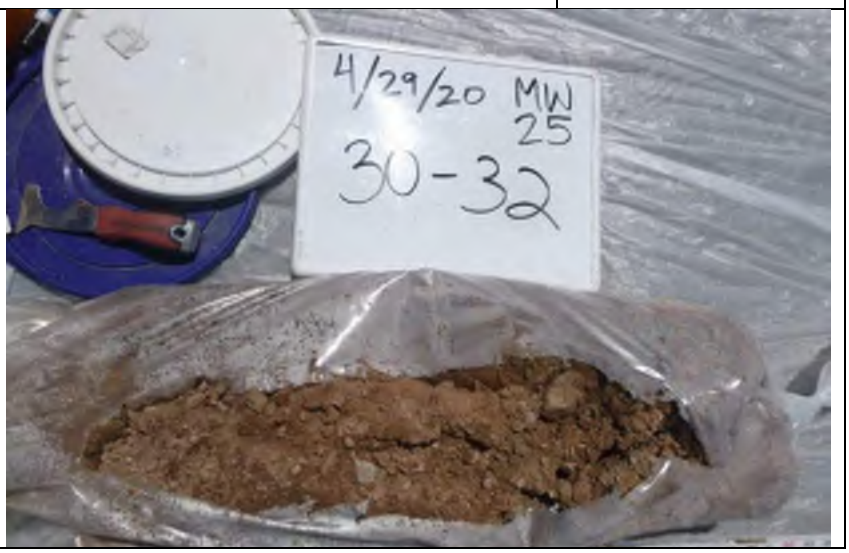


Photo No. **11**	**Date:** 4/29/20
Location: MW-25	
Description: 32-34’	

Photo No. **12**	**Date:** 4/29/20
Location: MW-25	
Description: 34-36’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 4/29/20
Location: MW-25	
Description: 36-37’	

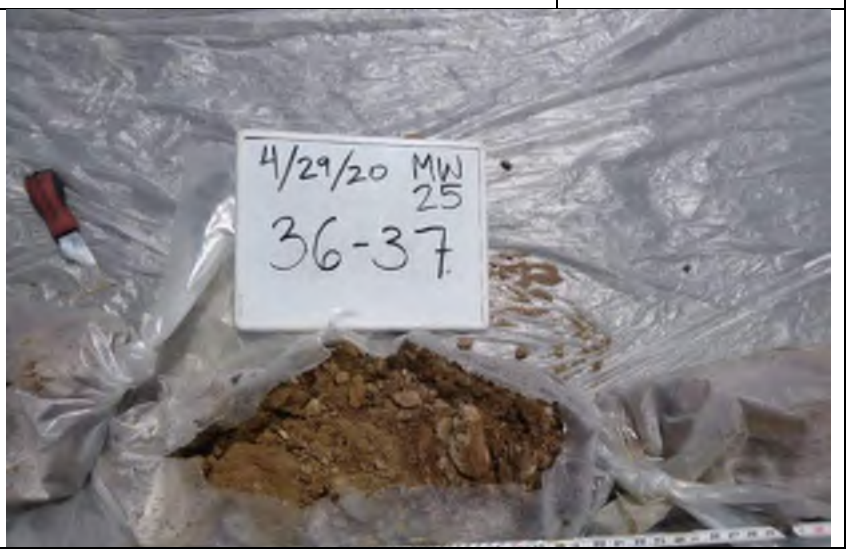


Photo No. **14**	**Date:** 4/29/20
Location: MW-25	
Description: 37-40’	

Photo No. **15**	**Date:** 4/29/20
Location: MW-25	
Description: 40-43’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 4/29/20
Location: MW-25	
Description: 43-44’	

Photo No. **17**	**Date:** 4/29/20
Location: MW-25	
Description: 44-47’	

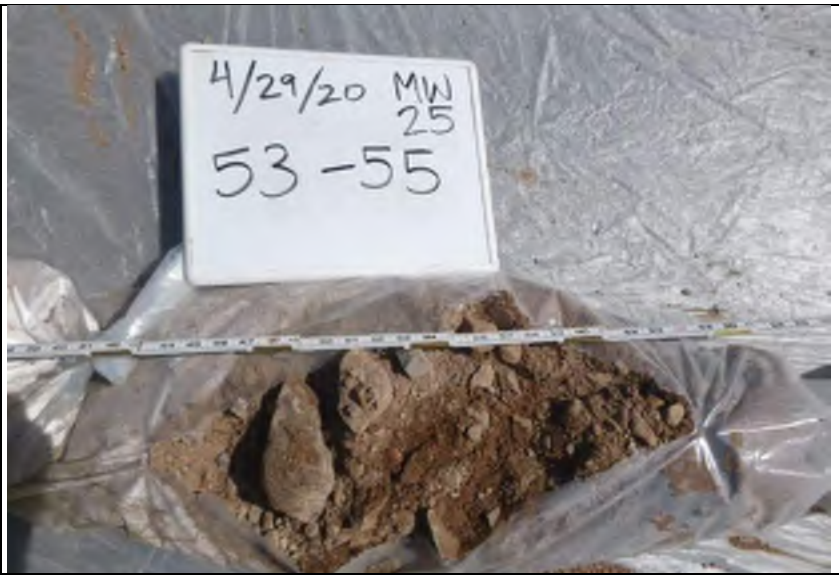
Photo No. **18**	**Date:** 4/29/20
Location: MW-25	
Description: 47- 48.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 4/29/20
Location: MW-25	
Description: 48.5-50’	

Photo No. **20**	**Date:** 4/29/20
Location: MW-25	
Description: 50-53’	

Photo No. **21**	**Date:** 4/29/20
Location: MW-25	
Description: 53-55’	



CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 22	Date: 4/29/20
Location: MW-25	
Description: 55-60’	

Photo No. 23	Date: 4/29/20
Location: MW-25	
Description: 60-62’	

Photo No. 24	Date: 4/29/20
Location: MW-25	
Description: 62-65’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 4/29/20
Location: MW-25	
Description: 65-67.5’	

Photo No. **26**	**Date:** 4/29/20
Location: MW-25	
Description: 67.5-70’	

Photo No. **27**	**Date:** 4/29/20
Location: MW-25	
Description: 70-71.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 4/29/20
Location: MW-25	
Description: 71.5-74’	

Photo No. **29**	**Date:** 4/29/20
Location: MW-25	
Description: 74-77’	

Photo No. **30**	**Date:** 4/29/20
Location: MW-25	
Description: 77-80’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 31	Date: 4/29/20
Location: MW-25	
Description: 80-83’	

Photo No. 32	Date: 4/29/20
Location: MW-25	
Description: 83-85’	

Photo No. 33	Date: 4/29/20
Location: MW-25	
Description: 85-87’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 34	Date: 4/29/20
Location: MW-25	
Description: 87-90’	

Photo No. 35	Date: 4/29/20
Location: MW-25	
Description: 90-92’	

Photo No. 36	Date: 4/29/20
Location: MW-25	
Description: 92-94’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 37	Date: 4/29/20
Location: MW-25	
Description: 94-97’	

Photo No. 38	Date: 4/29/20
Location: MW-25	
Description: 97-100’	

Photo No. 39	Date: 4/30/20
Location: MW-25	
Description: 100-102’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 40	Date: 4/30/20
Location: MW-25	
Description: 102-105’	

Photo No. 41	Date: 4/30/20
Location: MW-25	
Description: 105-110’	

Photo No. 42	Date: 4/30/20
Location: MW-25	
Description: 110-113.25’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 4/30/20
Location: MW-25	
Description: 113.25-114.5’	

Photo No. **44**	**Date:** 4/30/20
Location: MW-25	
Description: 114.5-116’	

Photo No. **45**	**Date:** 4/30/20
Location: MW-25	
Description: 116-118’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 4/30/20
Location: MW-25	
Description: 118-120’	

Photo No. **47**	**Date:** 4/30/20
Location: MW-25	
Description: 120-122.5’	

Photo No. **48**	**Date:** 4/30/20
Location: MW-25	
Description: 122.5-125.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 4/30/20
Location: MW-25	
Description: 125.5-128’	

Photo No. **50**	**Date:** 4/30/20
Location: MW-25	
Description: 128-130’	

Photo No. **51**	**Date:** 4/30/20
Location: MW-25	
Description: 130-132’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 4/30/20
Location: MW-25	
Description: 132-134.5’	

Photo No. **53**	**Date:** 4/30/20
Location: MW-25	
Description: 134.5-137’	

Photo No. **54**	**Date:** 4/30/20
Location: MW-25	
Description: 137-139’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 4/30/20
Location: MW-25	
Description: 140-142’	

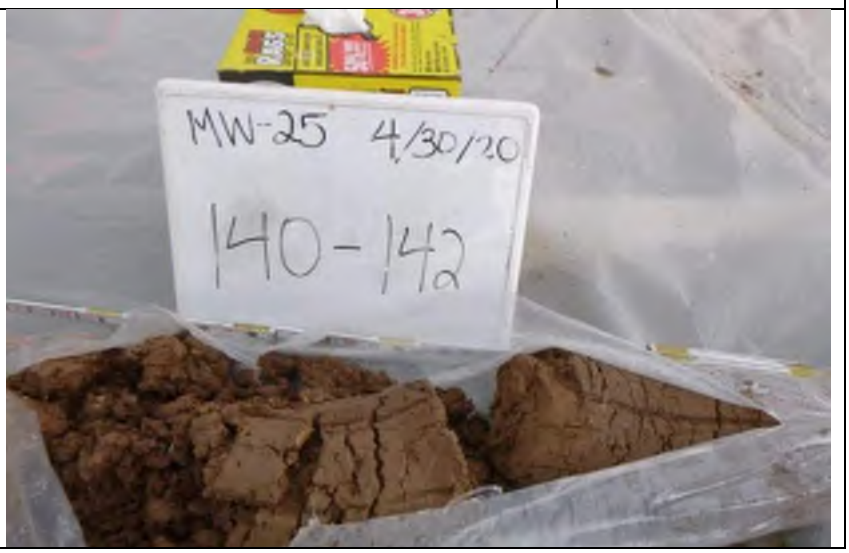


Photo No. **56**	**Date:** 4/30/20
Location: MW-25	
Description: 142-144’	

Photo No. **57**	**Date:** 4/30/20
Location: MW-25	
Description: 144-146’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **58**	**Date:** 4/30/20
Location: MW-25	
Description: 146-148’	

Photo No. **59**	**Date:** 4/30/20
Location: MW-25	
Description: 148-150’	

Photo No. **60**	**Date:** 5/1/20
Location: MW-25	
Description: 150-152’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 5/1/20
Location: MW-25	
Description: 152-154’	

Photo No. **62**	**Date:** 5/1/20
Location: MW-25	
Description: 154-157’	

Photo No. **63**	**Date:** 5/1/20
Location: MW-25	
Description: 157-160’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 64	**Date:** 5/1/20
Location: MW-25	
Description: 160-163’	

Photo No. 65	**Date:** 5/1/20
Location: MW-25	
Description: 163-166.5’	

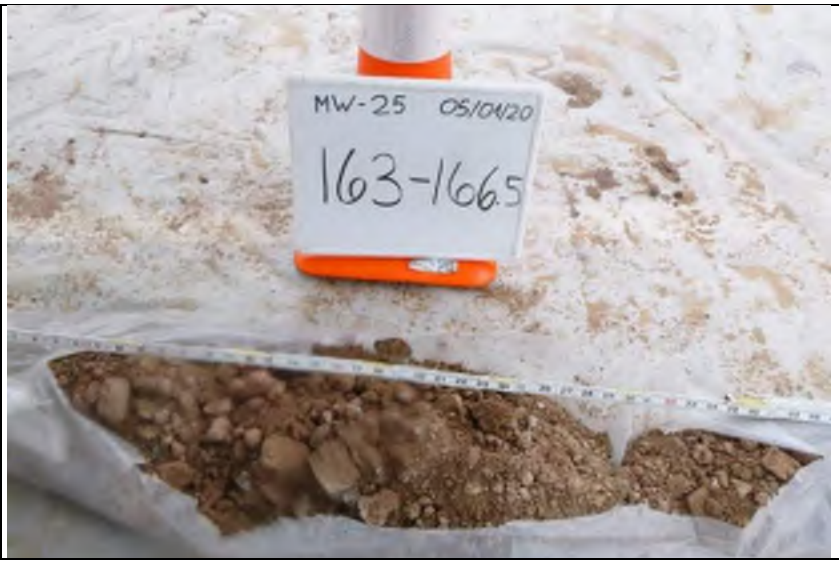


Photo No. 66	**Date:** 5/1/20
Location: MW-25	
Description: 166.5-168.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **67**	**Date:** 5/1/20
Location: MW-25	
Description: 168.5-170’	

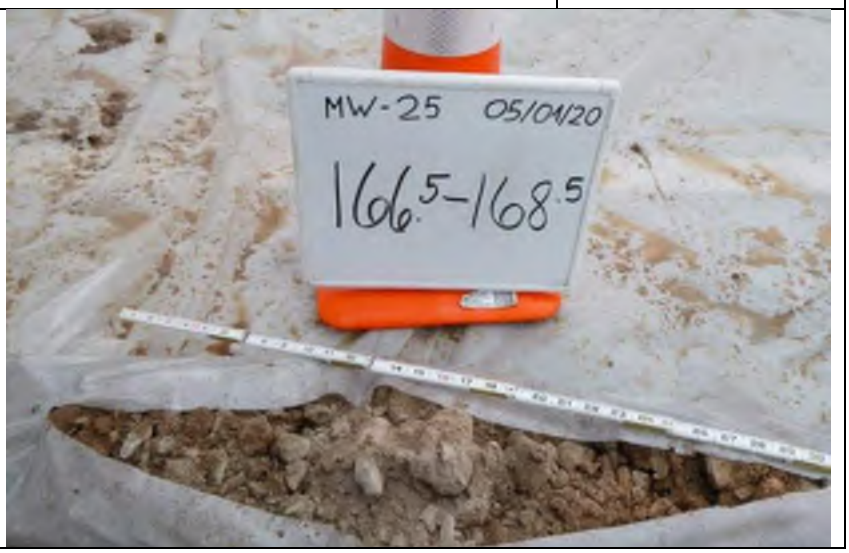


Photo No. **68**	**Date:** 5/1/20
Location: MW-25	
Description: 170-173’	

Photo No. **69**	**Date:** 5/1/20
Location: MW-25	
Description: 173-175.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 5/1/20
Location: MW-25	
Description: 175.5-178’	

Photo No. **71**	**Date:** 5/1/20
Location: MW-25	
Description: 178-180’	

Photo No. **72**	**Date:** 5/1/20
Location: MW-25	
Description: 180-183’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 5/1/20
Location: MW-25	
Description: 183-185’	

Photo No. **74**	**Date:** 5/1/20
Location: MW-25	
Description: 185-188’	

Photo No. **75**	**Date:** 5/1/20
Location: MW-25	
Description: 188-190’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 5/1/20
Location: MW-25	
Description: 190-192.5’	

Photo No. **77**	**Date:** 5/1/20
Location: MW-25	
Description: 192.5-195.5’	

Photo No. **78**	**Date:** 5/1/20
Location: MW-25	
Description: 195.5-198’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 5/1/20
Location: MW-25	
Description: 198-200’	

Photo No. **80**	**Date:** 5/1/20
Location: MW-25	
Description: 200-202.5’	

Photo No. **81**	**Date:** 5/1/20
Location: MW-25	
Description: 202.5-205’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 5/1/20
Location: MW-25	
Description: 205-208’ No Recovery	

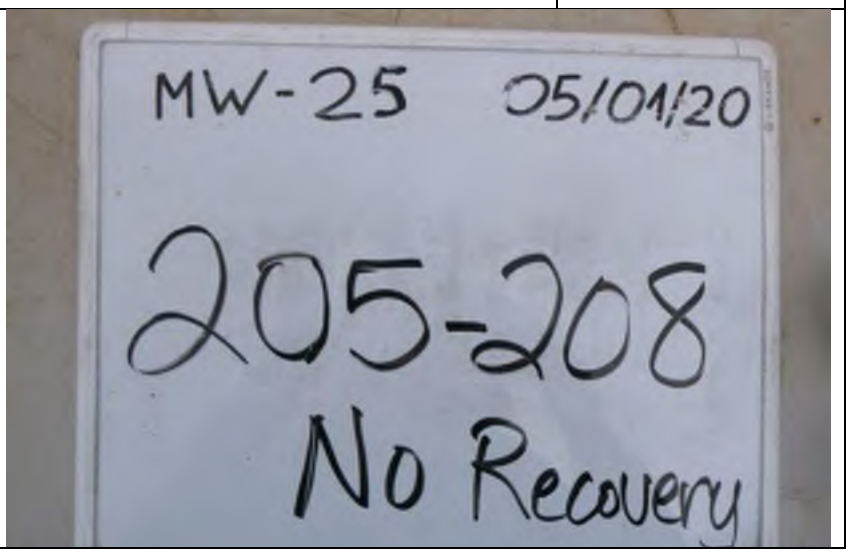


Photo No. **80**	**Date:** 5/1/20
Location: MW-25	
Description: 208-210’	

Photo No. **81**	**Date:** 5/3/20
Location: MW-25	
Description: 210-211.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 5/3/20
Location: MW-25	
Description: 211.5-214’	

Photo No. **83**	**Date:** 5/3/20
Location: MW-25	
Description: 214-217’	

Photo No. **84**	**Date:** 5/3/20
Location: MW-25	
Description: 217-220’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 5/3/20
Location: MW-25	
Description: 220-222’	

Photo No. **86**	**Date:** 5/3/20
Location: MW-25	
Description: 222-225’	

Photo No. **87**	**Date:** 5/3/20
Location: MW-25	
Description: 225.227.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 5/3/20
Location: MW-25	
Description: 227.5-230’	

Photo No. **89**	**Date:** 5/3/20
Location: MW-25	
Description: 230-233’	

Photo No. **90**	**Date:** 5/3/20
Location: MW-25	
Description: 233-235’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 91	Date: 5/3/20
Location: MW-25	
Description: 235-238’	

Photo No. 92	Date: 5/3/20
Location: MW-25	
Description: 238-240’	

Photo No. 93	Date: 5/3/20
Location: MW-25	
Description: 240-242’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **94**	**Date:** 5/3/20
Location: MW-25	
Description: 242-245’	

Photo No. **95**	**Date:** 5/3/20
Location: MW-25	
Description: 245-247’	

Photo No. **96**	**Date:** 5/3/20
Location: MW-25	
Description: 247-250’ Photos unavailable for 250-310 feet	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **97**	**Date:** 5/6/20
Location: MW-25	
Description: 310-312’	

Photo No. **98**	**Date:** 5/6/20
Location: MW-25	
Description: 312-315’	

Photo No. **99**	**Date:** 5/6/20
Location: MW-25	
Description: 315-318’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 5/6/20

Location:

MW-25

Description:

318-320’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 4/22/20
Location: MW-26	
Description: 9-12’	

Photo No. **2**	**Date:** 4/22/20
Location: MW-26	
Description: 12-14’	

Photo No. **3**	**Date:** 4/22/20
Location: MW-26	
Description: 14-17’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 4	Date: 4/22/20
Location: MW-26	
Description: 17-22’	

Photo No. 5	Date: 4/22/20
Location: MW-26	
Description: 20-22’	

Photo No. 6	Date: 4/22/20
Location: MW-26	
Description: 22-24’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 4/22/20
Location: MW-26	
Description: 24-27’	

Photo No. **8**	**Date:** 4/22/20
Location: MW-26	
Description: 27-30’	

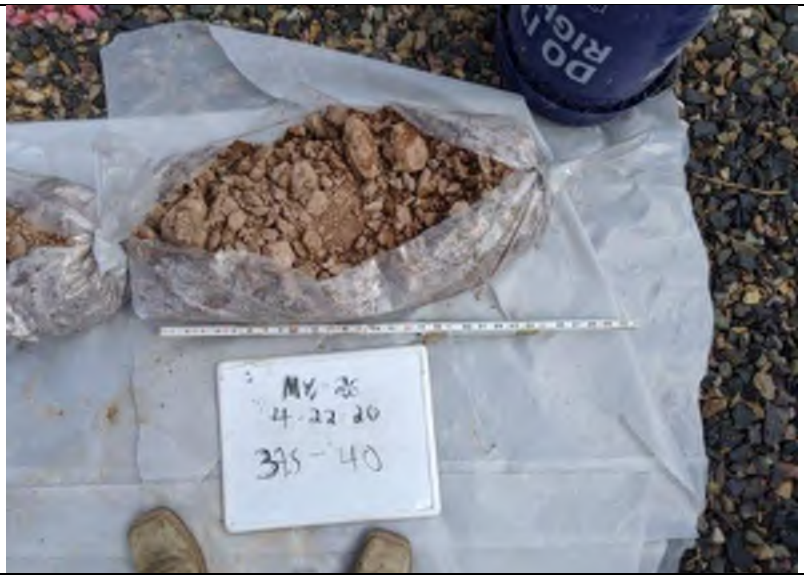
Photo No. **9**	**Date:** 4/22/20
Location: MW-26	
Description: 30-32.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 4/22/20
Location: MW-26	
Description: 32.5-35’	

Photo No. **11**	**Date:** 4/22/20
Location: MW-26	
Description: 35-37.5’	

Photo No. **12**	**Date:** 4/22/20
Location: MW-26	
Description: 37.5-40’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 4/23/20
Location: MW-26	
Description: 40-42’	

Photo No. **14**	**Date:** 4/23/20
Location: MW-26	
Description: 42-43.5’	

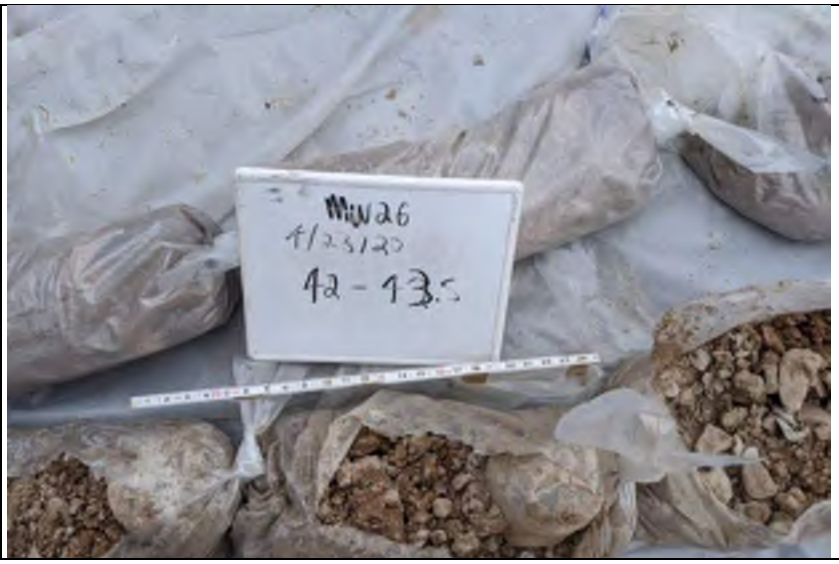


Photo No. **15**	**Date:** 4/23/20
Location: MW-26	
Description: 43.5-45’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 4/23/20
Location: MW-26	
Description: 45-46.5’	

Photo No. **17**	**Date:** 4/23/20
Location: MW-26	
Description: 46.5-48’	

Photo No. **18**	**Date:** 4/23/20
Location: MW-26	
Description: 48-50’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 4/23/20
Location: MW-26	
Description: 50-52’	

Photo No. **20**	**Date:** 4/23/20
Location: MW-26	
Description: 53-54’	

Photo No. **21**	**Date:** 4/23/20
Location: MW-26	
Description: 54-56’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 4/23/20
Location: MW-26	
Description: 56-57.5’	

Photo No. **23**	**Date:** 4/23/20
Location: MW-26	
Description: 57.5-59’	

Photo No. **24**	**Date:** 4/23/20
Location: MW-26	
Description: 59-60’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 4/23/20
Location: MW-26	
Description: 60-63’	

Photo No. **26**	**Date:** 4/23/20
Location: MW-26	
Description: 63-66’	

Photo No. **27**	**Date:** 4/23/20
Location: MW-26	
Description: 66-68’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 4/23/20
Location: MW-26	
Description: 68-70’	

Photo No. **29**	**Date:** 4/23/20
Location: MW-26	
Description: 70-73’	

Photo No. **30**	**Date:** 4/23/20
Location: MW-26	
Description: 73-75’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 4/23/20
Location: MW-26	
Description: 75-77’	

Photo No. **32**	**Date:** 4/23/20
Location: MW-26	
Description: 77-80’	

Photo No. **33**	**Date:** 4/23/20
Location: MW-26	
Description: 80-82.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 4/23/20
Location: MW-26	
Description: 82.5-85’	

Photo No. **35**	**Date:** 4/23/20
Location: MW-26	
Description: 85-87.5’	

Photo No. **36**	**Date:** 4/23/20
Location: MW-26	
Description: 87.5-90’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 37	Date: 4/23/20
Location: MW-26	
Description: 90-92.5’	

Photo No. 38	Date: 4/23/20
Location: MW-26	
Description: 92.5-95’	

Photo No. 39	Date: 4/23/20
Location: MW-26	
Description: 95-97.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 4/23/20
Location: MW-26	
Description: 97.5-100’ No photolog available for 100-150 feet	

Photo No. **41**	**Date:** 5/5/20
Location: MW-26	
Description: 150-153.5’	

Photo No. **42**	**Date:** 5/5/20
Location: MW-26	
Description: 153.5-157’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 5/5/20
Location: MW-26	
Description: 157-160’	

Photo No. **44**	**Date:** 5/5/20
Location: MW-26	
Description:	

Photo No. **45**	**Date:** 5/5/20
Location: MW-26	
Description: 162.5-165’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 5/5/20
Location: MW-26	
Description: 165-167.5’	

Photo No. **47**	**Date:** 5/5/20
Location: MW-26	
Description: 167.5-170’	

Photo No. **48**	**Date:** 5/5/20
Location: MW-26	
Description: 170-172.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 5/5/20
Location: MW-26	
Description: 172.5-175’	

Photo No. **50**	**Date:** 5/5/20
Location: MW-26	
Description: 175-177.5’	

Photo No. **51**	**Date:** 5/5/20
Location: MW-26	
Description: 177.5-180’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 5/5/20
Location: MW-26	
Description: 180-183’	

Photo No. **53**	**Date:** 5/5/20
Location: MW-26	
Description: 183-186’	

Photo No. **54**	**Date:** 5/5/20
Location: MW-26	
Description: 186-188’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 5/5/20
Location: MW-26	
Description: 188-190’	

Photo No. **56**	**Date:** 5/5/20
Location: MW-26	
Description: 190-192.5’	

Photo No. **57**	**Date:** 5/5/20
Location: MW-26	
Description: 192.5-195’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **58**	**Date:** 5/5/20
Location: MW-26	
Description: 195-197.5’	

Photo No. **59**	**Date:** 5/5/20
Location: MW-26	
Description: 197.5-200’	

Photo No. **60**	**Date:** 5/6/20
Location: MW-26	
Description: 200-202.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 5/6/20
Location: MW-26	
Description: 202.5-205’	

Photo No. **62**	**Date:** 5/6/20
Location: MW-26	
Description: 205-207.5’	

Photo No. **63**	**Date:** 5/6/20
Location: MW-26	
Description: 207.5-210’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 5/6/20
Location: MW-26	
Description: 210-212.5’	

Photo No. **65**	**Date:** 5/6/20
Location: MW-26	
Description: 212.5-215’	

Photo No. **66**	**Date:** 5/6/20
Location: MW-26	
Description: 215-217.5’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 67	**Date:** 5/6/20

Location:

MW-26

Description:

217.5-220’

Photo No. 68	**Date:** 5/6/20

Location:

MW-26

Description:

220-222.5’

Photo No. 69	**Date:** 5/6/20

Location:

MW-26

Description:

222.5-225’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 5/6/20
Location: MW-26	
Description: 225-227.5’	

Photo No. **71**	**Date:** 5/6/20
Location: MW-26	
Description: 227.5-230’	

Photo No. **72**	**Date:** 5/6/20
Location: MW-26	
Description: 230-232.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 5/6/20
Location: MW-26	
Description: 232.5-235’	

Photo No. **74**	**Date:** 5/6/20
Location: MW-26	
Description: 235-237.5’	

Photo No. **75**	**Date:** 5/6/20
Location: MW-26	
Description: 237.5-240’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 5/7/20
Location: MW-26	
Description: 240-242.5’	

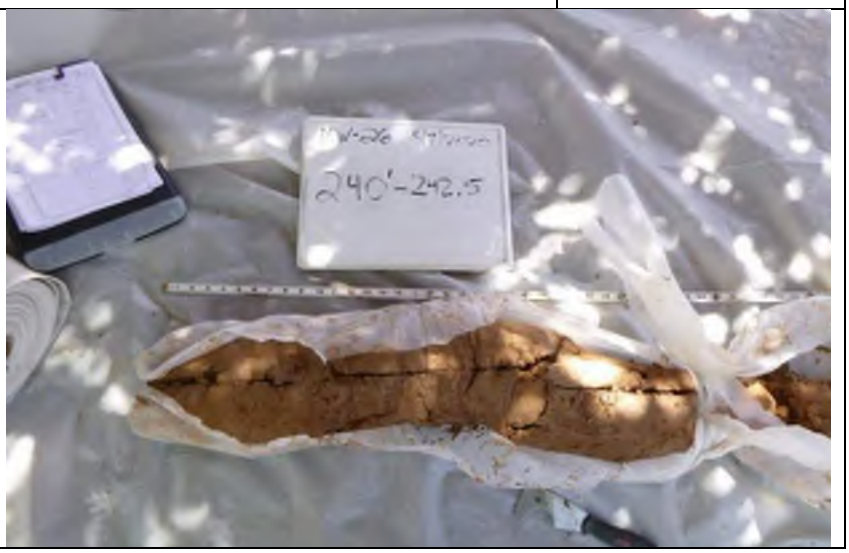


Photo No. **77**	**Date:** 5/7/20
Location: MW-26	
Description: 242.5-245’	

Photo No. **78**	**Date:** 5/7/20
Location: MW-26	
Description: 245-247.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 5/7/20
Location: MW-26	
Description: 247.5-250’	

Photo No. **80**	**Date:** 5/7/20
Location: MW-26	
Description: 250-252.5’	

Photo No. **78**	**Date:** 5/7/20
Location: MW-26	
Description: 252.5-255’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 5/7/20
Location: MW-26	
Description: 255-257.5’	

Photo No. **80**	**Date:** 5/7/20
Location: MW-26	
Description: 257.5-260’	

Photo No. **81**	**Date:** 5/7/20
Location: MW-26	
Description: 260-262.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 5/7/20
Location: MW-26	
Description: 262.5-265’	

Photo No. **83**	**Date:** 5/7/20
Location: MW-26	
Description: 265-267.5’	

Photo No. **84**	**Date:** 5/7/20
Location: MW-26	
Description: 267.5-270’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 5/8/20
Location: MW-26	
Description: 270-272’	

Photo No. **86**	**Date:** 5/8/20
Location: MW-26	
Description: 272-274’	

Photo No. **87**	**Date:** 5/8/20
Location: MW-26	
Description: 274-276’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 5/8/20
Location: MW-26	
Description: 276-278’	

Photo No. **89**	**Date:** 5/8/20
Location: MW-26	
Description: 278-280’	

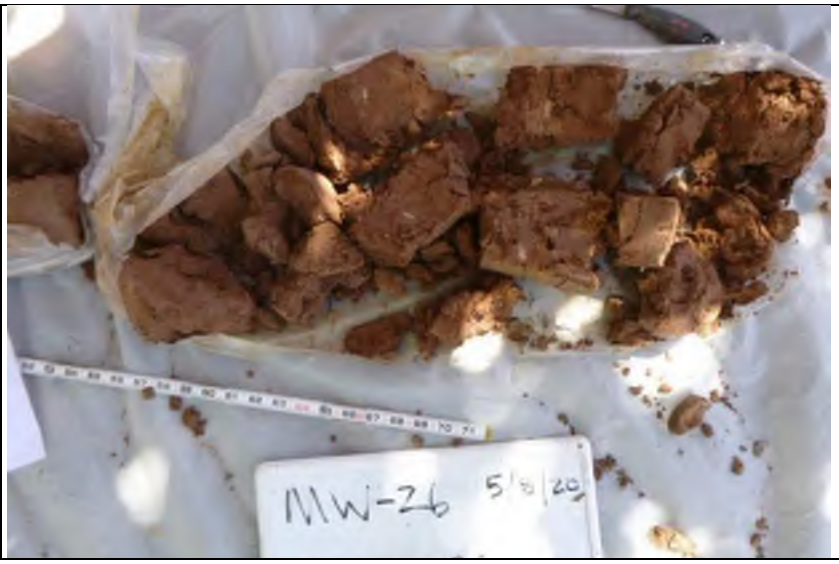


Photo No. **90**	**Date:** 5/8/20
Location: MW-26	
Description: 280-282.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **91**	**Date:** 5/8/20
Location: MW-26	
Description: 282.5-285’	

Photo No. **92**	**Date:** 5/8/20
Location: MW-26	
Description: 285-287.5’	

Photo No. **93**	**Date:** 5/8/20
Location: MW-26	
Description: 287.5-289’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **94**	**Date:** 5/10/20
Location: MW-26	
Description: 290-292.5’	

Photo No. **95**	**Date:** 5/10/20
Location: MW-26	
Description: 292.5-295’	

Photo No. **96**	**Date:** 5/10/20
Location: MW-26	
Description: 295-297.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **97**	**Date:** 5/10/20
Location: MW-26	
Description: 297.5-300’	

Photo No. **98**	**Date:** 5/10/20
Location: MW-26	
Description: 300-305’	

Photo No. **99**	**Date:** 5/10/20
Location: MW-26	
Description: 305-310’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 100	Date: 5/10/20
Location: MW-26	
Description: 310-312.5’	

Photo No. 101	Date: 5/10/20
Location: MW-26	
Description: 312.5-315’	

Photo No. 102	Date: 5/10/20
Location: MW-26	
Description: 315-317.5’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
100	5/10/20

Location:

MW-26

Description:

317.5-320’

Photo No.	Date:
101	5/11/20

Location:

MW-26

Description:

320-322.5’

Photo No.	Date:
102	5/11/20

Location:

MW-26

Description:

322.5-325’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **103**	**Date:** 5/11/20
Location: MW-26	
Description: 325-327.5’	

Photo No. **104**	**Date:** 5/11/20
Location: MW-26	
Description: 327.5-330’	

Photo No. **105**	**Date:** 5/11/20
Location: MW-26	
Description: 330-332.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **106**	**Date:** 5/11/20
Location: MW-26	
Description: 332.5-335’	

Photo No. **107**	**Date:** 5/11/20
Location: MW-26	
Description: 335-337.5’	

Photo No. **108**	**Date:** 5/11/20
Location: MW-26	
Description: 337.5-340’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **109**	**Date:** 5/11/20
Location: MW-26	
Description: 340-350’	

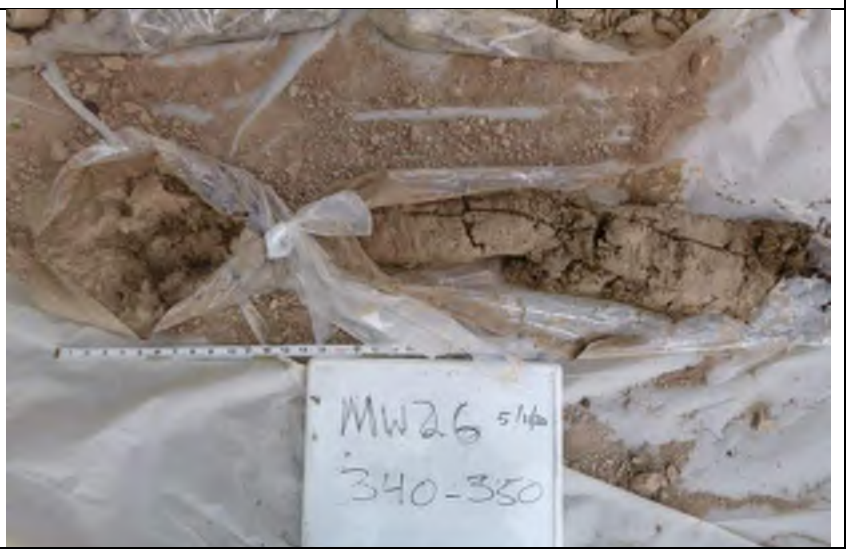


Photo No. **110**	**Date:** 5/12/20
Location: MW-26	
Description: 350-355’	

Photo No. **111**	**Date:** 5/12/20
Location: MW-26	
Description: 355-357.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **112**	**Date:** 5/12/20
Location: MW-26	
Description: 357.5-360’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 3/22/20
Location: MW-27	
Description: 13-15’	

Photo No. **2**	**Date:** 3/22/20
Location: MW-27	
Description: 15-17’	

Photo No. **3**	**Date:** 3/22/20
Location: MW-27	
Description: 17-19’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 3/22/20
Location: MW-27	
Description: 19-20’	

Photo No. **5**	**Date:** 3/22/20
Location: MW-27	
Description: 20-30’	

Photo No. **6**	**Date:** 3/22/20
Location: MW-27	
Description: 30-35’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 3/22/20
Location: MW-27	
Description: 30-35’	

Photo No. **8**	**Date:** 3/22/20
Location: MW-27	
Description: 35-40’	

Photo No. **9**	**Date:** 3/22/20
Location: MW-27	
Description: 40-42’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 3/22/20
Location: MW-27	
Description: 42-44’	

Photo No. **11**	**Date:** 3/22/20
Location: MW-27	
Description: 44-46’	

Photo No. **12**	**Date:** 3/22/20
Location: MW-27	
Description: 45-50’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 3/22/20
Location: MW-27	
Description: 50-53’	

Photo No. **14**	**Date:** 3/22/20
Location: MW-27	
Description: 53-56’	

Photo No. **15**	**Date:** 3/22/20
Location: MW-27	
Description: 56-60’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 3/22/20
Location: MW-27	
Description: 60-70’	

Photo No. **17**	**Date:** 3/22/20
Location: MW-27	
Description: 70-80’	

Photo No. **18**	**Date:** 3/22/20
Location: MW-27	
Description: 80-85’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 19	Date: 3/22/20
Location: MW-27	
Description: 85-90’	

Photo No. 20	Date: 3/22/20
Location: MW-27	
Description: 90-95’	

Photo No. 21	Date: 3/22/20
Location: MW-27	
Description: 95-100’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 3/23/20
Location: MW-27	
Description: 100-105’	

Photo No. **23**	**Date:** 3/23/20
Location: MW-27	
Description: 105-110’	

Photo No. **24**	**Date:** 3/23/20
Location: MW-27	
Description: 110-112’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 3/23/20
Location: MW-27	
Description: 112-114'	

Photo No. **26**	**Date:** 3/23/20
Location: MW-27	
Description: 114-117'	

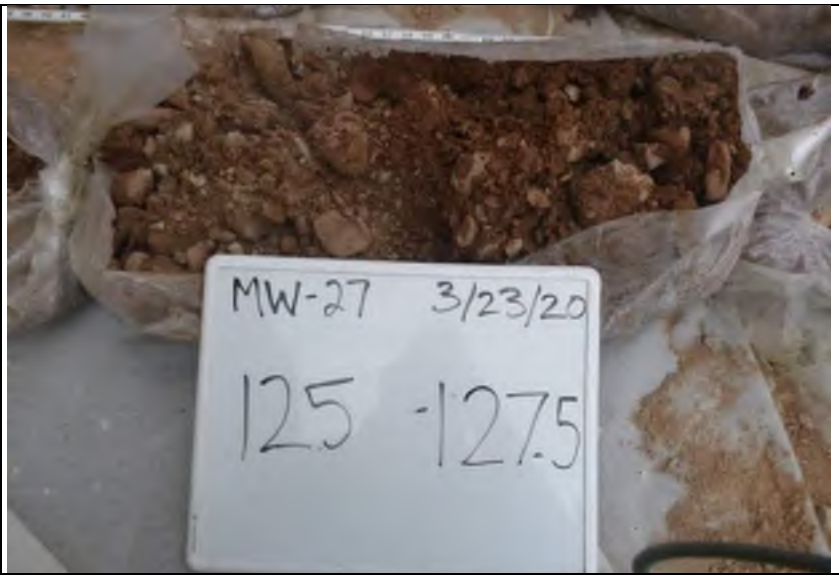
Photo No. **27**	**Date:** 3/23/20
Location: MW-27	
Description: 117-120'	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 3/23/20
Location: MW-27	
Description: 120-122.5’	

Photo No. **29**	**Date:** 3/23/20
Location: MW-27	
Description: 122.5-125’	

Photo No. **30**	**Date:** 3/23/20
Location: MW-27	
Description: 125-127.5’	



PHOTOGRAPHIC LOG

Site:	Project No.
700 South 1600 East PCE Plume	238824

Photo No.	Date:
31	3/23/20

Location:

MW-27

Description:

127.5-130’

Photo No.	Date:
32	3/23/20

Location:

MW-27

Description:

130-132’

Photo No.	Date:
33	3/23/20

Location:

MW-27

Description:

132.5-135’

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 34	Date: 3/23/20
Location: MW-27	
Description: 135-137’	

Photo No. 35	Date: 3/23/20
Location: MW-27	
Description: 137-139’	

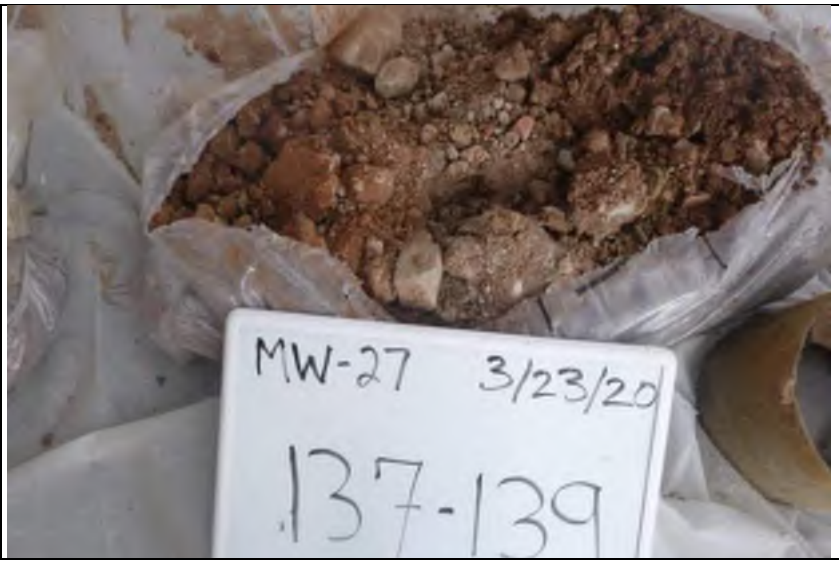
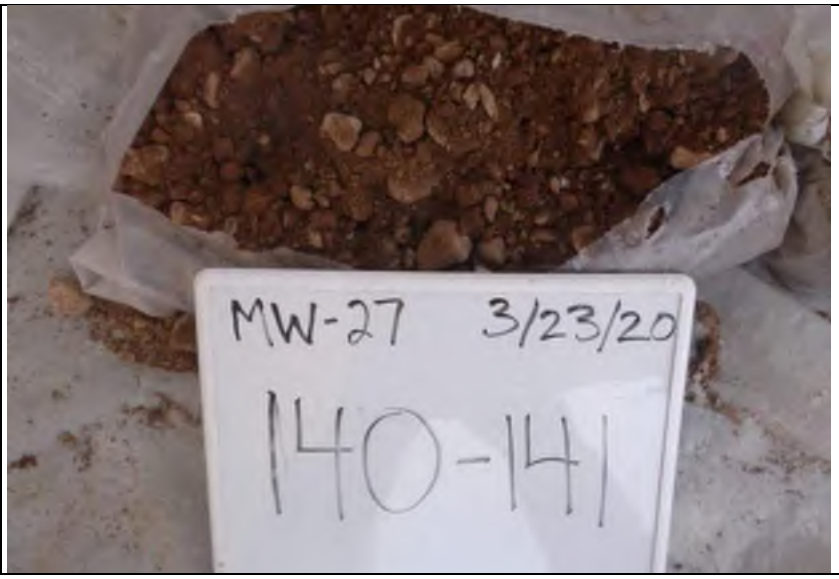


Photo No. 36	Date: 3/23/20
Location: MW-27	
Description: 140-141’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 3/23/20
Location: MW-27	
Description: 141-142.5’	

Photo No. **38**	**Date:** 3/23/20
Location: MW-27	
Description: 142.5-145’	

Photo No. **39**	**Date:** 3/23/20
Location: MW-27	
Description: 145-147’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. 40	**Date:** 3/23/20
Location: MW-27	
Description: 147-150’	

Photo No. 41	**Date:** 3/23/20
Location: MW-27	
Description: 150-154’	

Photo No. 42	**Date:** 3/23/20
Location: MW-27	
Description: 154-156’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
43	3/23/20

Location:

MW-27

Description:

156-158’

Photo No.	Date:
44	3/23/20

Location:

MW-27

Description:

158-160’
No photolog available for 160-168 feet

Photo No.	Date:
45	3/23/20

Location:

MW-27

Description:

168-170’

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 46	Date: 3/23/20
Location: MW-27	
Description: 170-175’	

Photo No. 47	Date: 3/23/20
Location: MW-27	
Description: 174-176’	

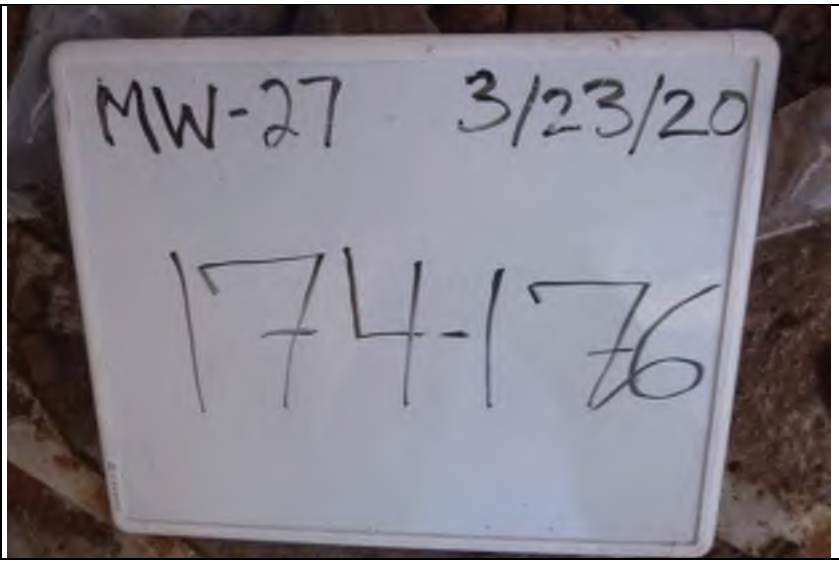


Photo No. 48	Date: 3/23/20
Location: MW-27	
Description: 178-180’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 3/24/20
Location: MW-27	
Description: 180-181.5’	

Photo No. **50**	**Date:** 3/24/20
Location: MW-27	
Description: 181.5-183’	

Photo No. **51**	**Date:** 3/24/20
Location: MW-27	
Description: 183-185’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 3/24/20
Location: MW-27	
Description: 185-187’	

Photo No. **53**	**Date:** 3/24/20
Location: MW-27	
Description: 187-190’	

Photo No. **54**	**Date:** 3/24/20
Location: MW-27	
Description: 190-192.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 55	Date: 3/24/20
Location: MW-27	
Description: 192.5-195’	

Photo No. 56	Date: 3/24/20
Location: MW-27	
Description: 195-197.5’	

Photo No. 57	Date: 3/24/20
Location: MW-27	
Description: 197.5-200’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **58**	**Date:** 3/24/20
Location: MW-27	
Description: 200-210’	

Photo No. **59**	**Date:** 3/24/20
Location: MW-27	
Description: 210-220’ Low recovery	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 3/12/20
Location: MW-28	
Description: 0-10' – no sample	

Photo No. **2**	**Date:** 3/12/20
Location: MW-28	
Description: 10-11'	

Photo No. **3**	**Date:** 3/12/20
Location: MW-28	
Description: 11-13'	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 3/12/20
Location: MW-28	
Description: 13-14’	

Photo No. **5**	**Date:** 3/12/20
Location: MW-28	
Description: 14-15’	

Photo No. **6**	**Date:** 3/12/20
Location: MW-28	
Description: 15-16’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 3/12/20
Location: MW-28	
Description: 16-17’	

Photo No. **8**	**Date:** 3/12/20
Location: MW-28	
Description: 17-18’	

Photo No. **9**	**Date:** 3/12/20
Location: MW-28	
Description: 18-20’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 3/12/20
Location: MW-28	
Description: 20-22’	

Photo No. **11**	**Date:** 3/12/20
Location: MW-28	
Description: 22-24’	

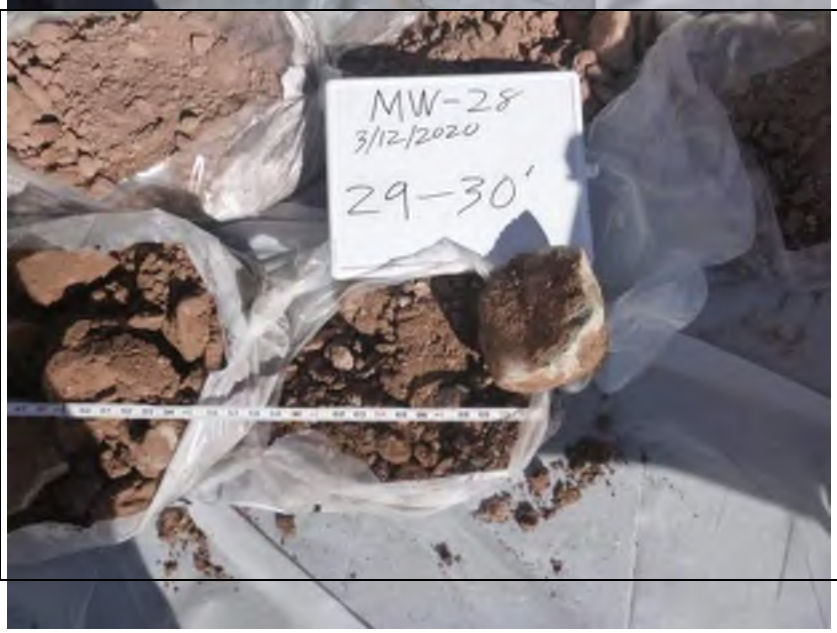
Photo No. **12**	**Date:** 3/12/20
Location: MW-28	
Description: 24-26’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 3/12/20
Location: MW-28	
Description: 26-27’	

Photo No. **14**	**Date:** 3/12/20
Location: MW-28	
Description: 27-29’	

Photo No. **15**	**Date:** 3/12/20
Location: MW-28	
Description: 29-30’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 3/12/20
Location: MW-28	
Description: 30-32’	

Photo No. **17**	**Date:** 3/12/20
Location: MW-28	
Description: 32-34’	

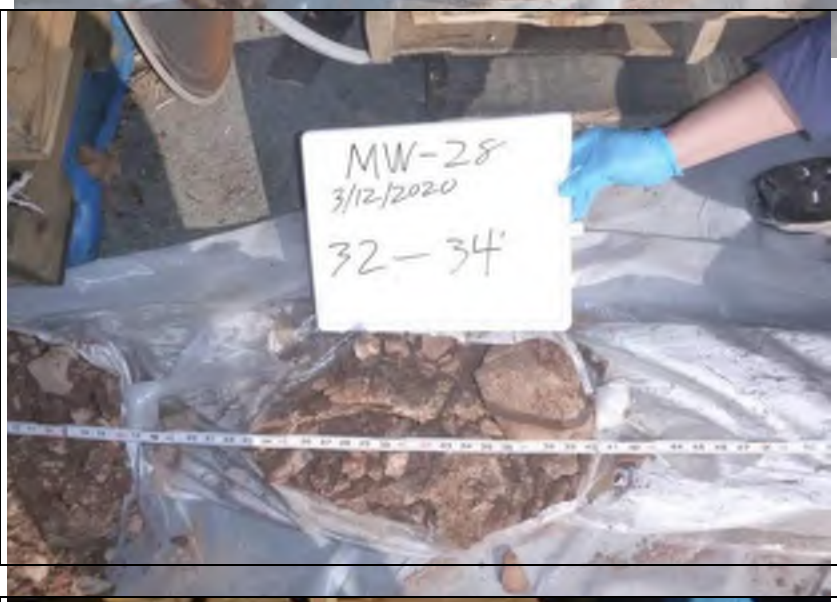


Photo No. **18**	**Date:** 3/12/20
Location: MW-28	
Description: 34-36’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 19	Date: 3/12/20
Location: MW-28	
Description: 36-38’	

Photo No. 20	Date: 3/12/20
Location: MW-28	
Description: 38-39’	

Photo No. 21	Date: 3/12/20
Location: MW-28	
Description: 39-40’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 3/13/20
Location: MW-28	
Description: 40-42’	

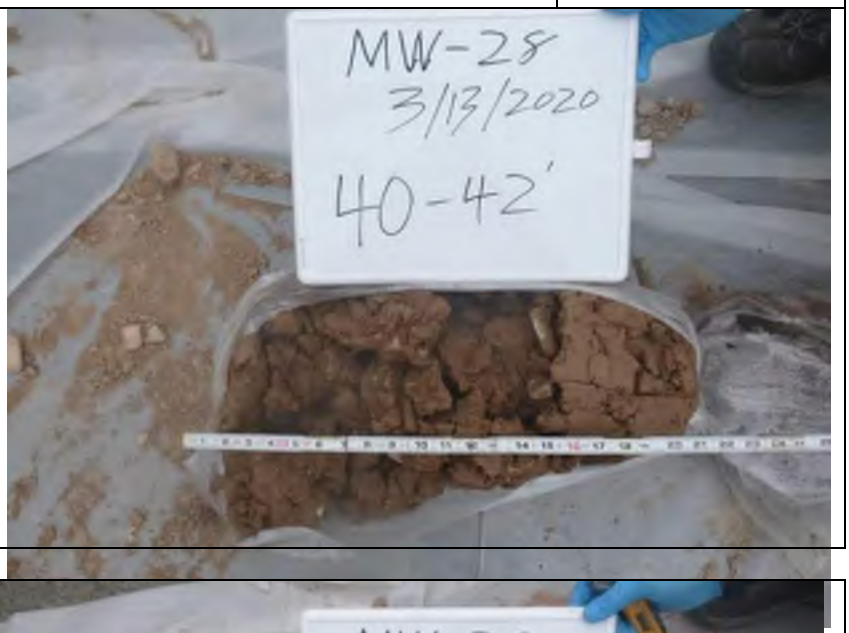


Photo No. **23**	**Date:** 3/13/20
Location: MW-28	
Description: 42-44’	

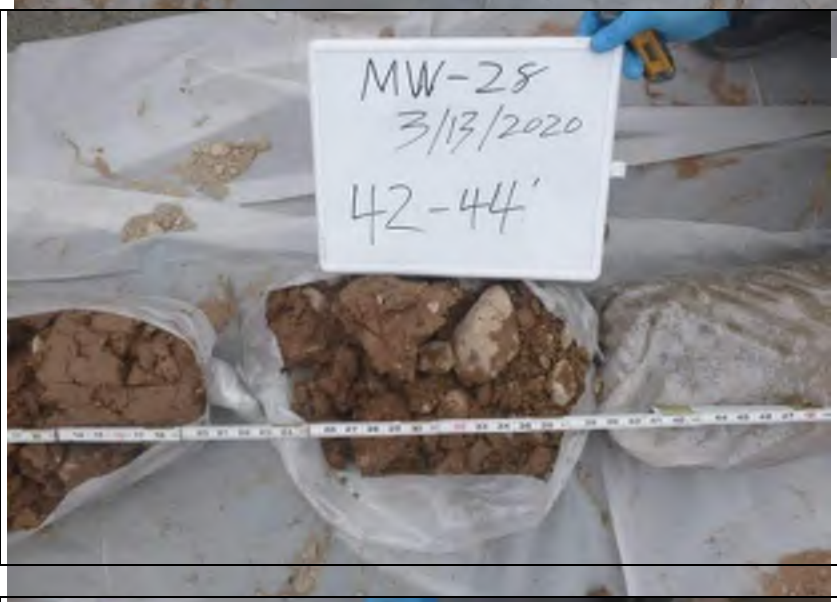
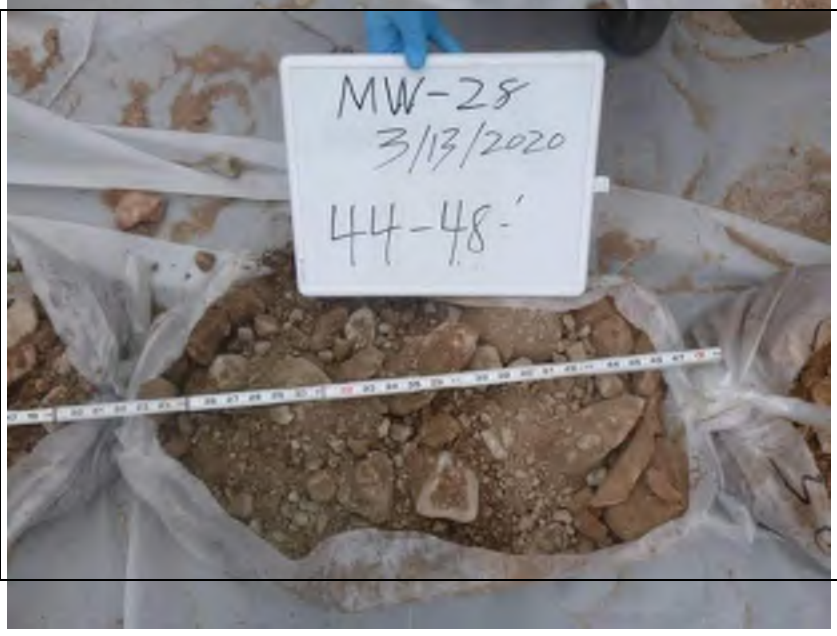


Photo No. **24**	**Date:** 3/13/20
Location: MW-28	
Description: 44-48’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 3/13/20
Location: MW-28	
Description: 48-50’	

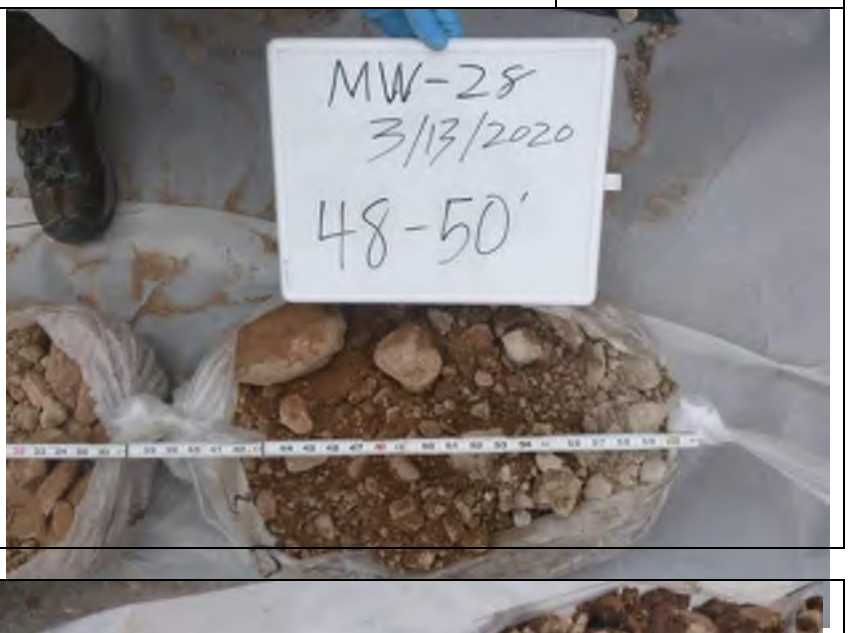


Photo No. **26**	**Date:** 3/13/20
Location: MW-28	
Description: 50-52.5’	

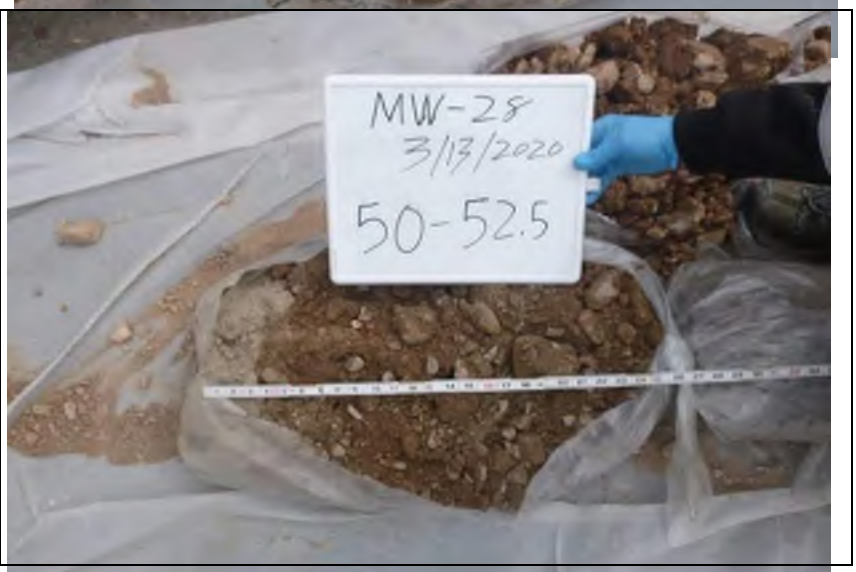


Photo No. **27**	**Date:** 3/13/20
Location: MW-28	
Description: 52.5-55’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 3/13/20
Location: MW-28	
Description: 55-57’	

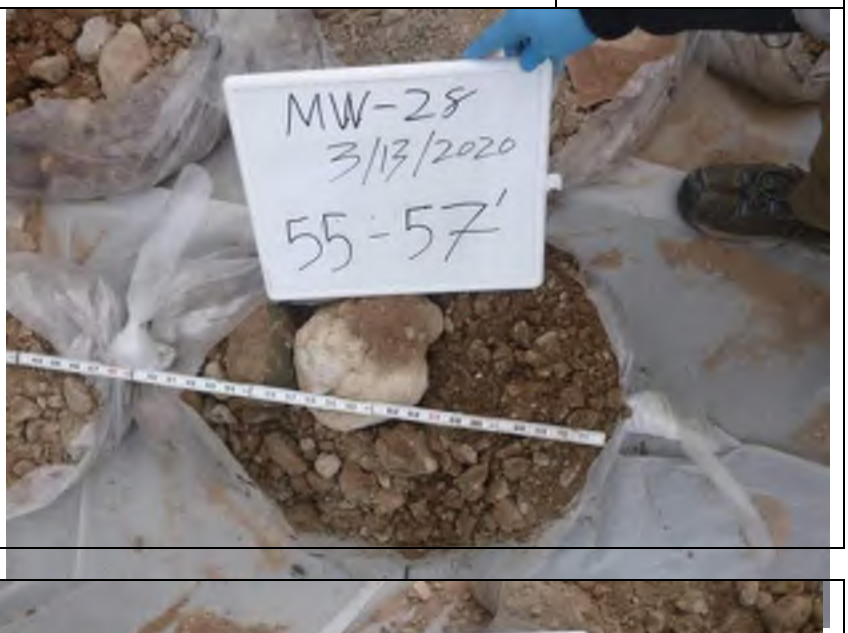


Photo No. **29**	**Date:** 3/13/20
Location: MW-28	
Description: 57-58	

Photo No. **30**	**Date:** 3/13/20
Location: MW-28	
Description: 58-60’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 3/13/20
Location: MW-28	
Description: 60-63’	

Photo No. **32**	**Date:** 3/13/20
Location: MW-28	
Description: 63-65’	

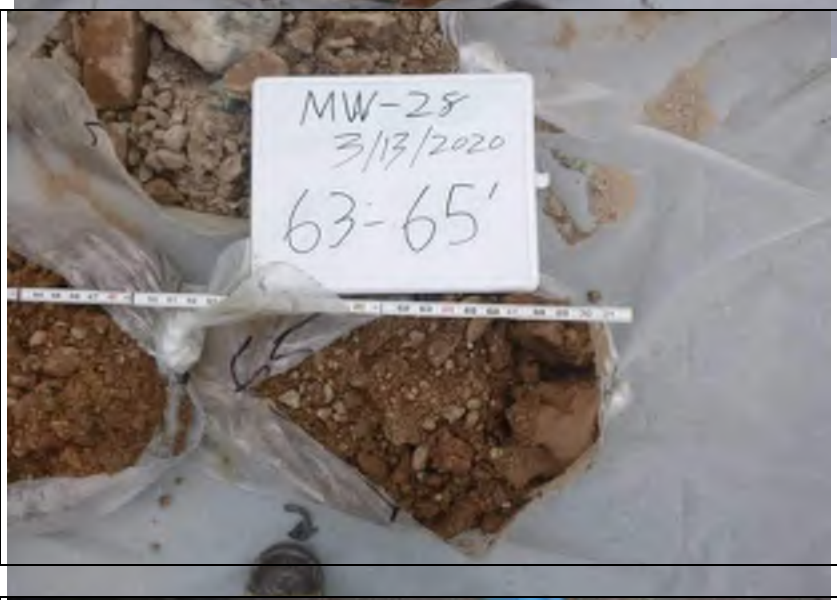


Photo No. **33**	**Date:** 3/13/20
Location: MW-28	
Description: 65-66’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 34	**Date:** 3/13/20
Location: MW-28	
Description: 66-69'	

Photo No. 35	**Date:** 3/13/20
Location: MW-28	
Description: 69-70’	

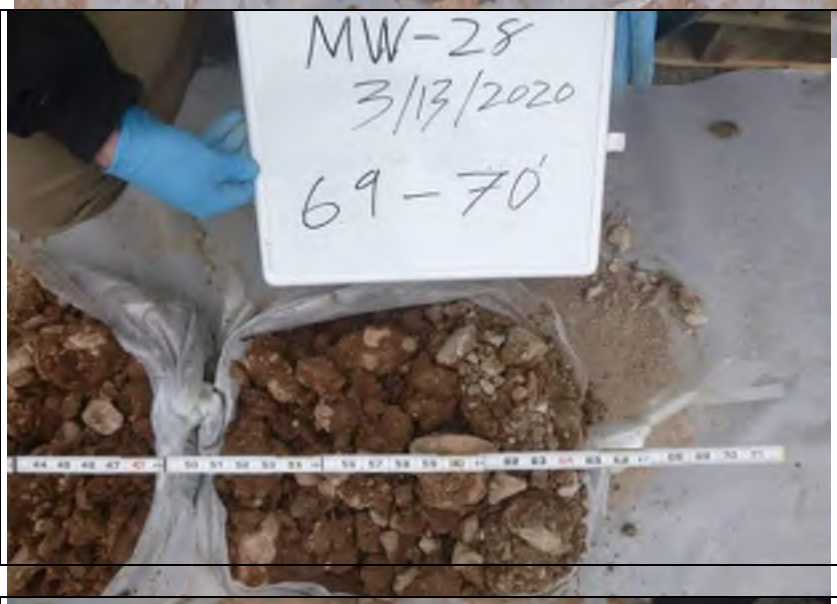
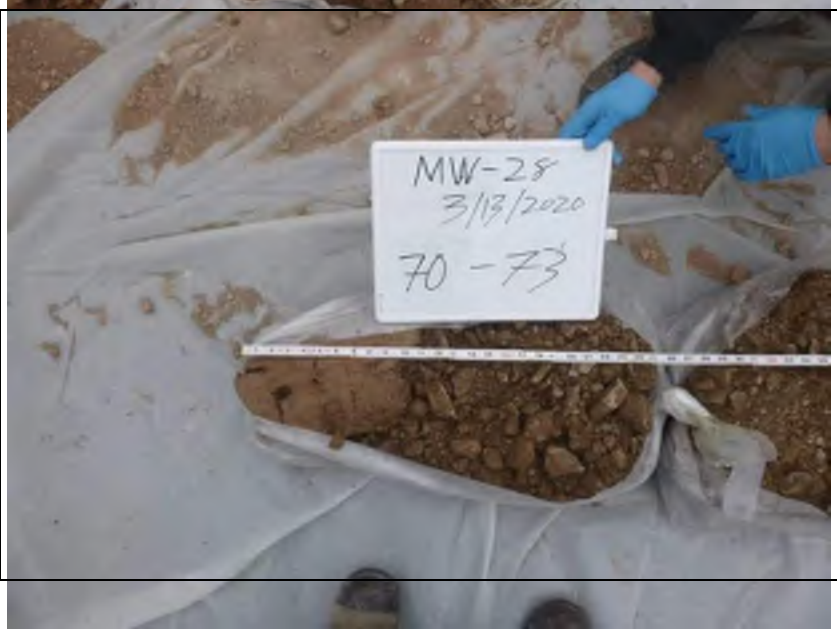


Photo No. 36	**Date:** 3/13/20
Location: MW-28	
Description: 70-73’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 3/13/20
Location: MW-28	
Description: 73-75’	

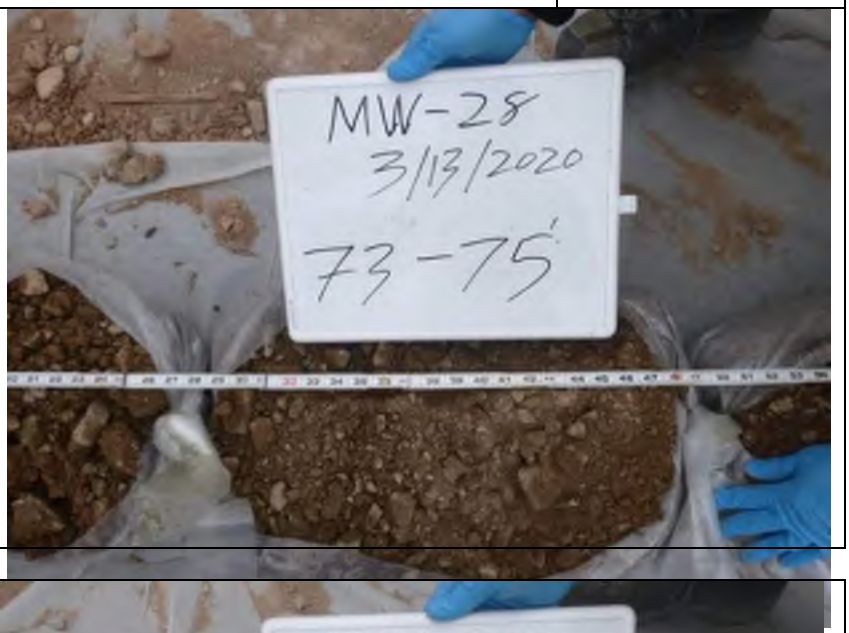


Photo No. **38**	**Date:** 3/13/20
Location: MW-28	
Description: 75-77’	

Photo No. **39**	**Date:** 3/13/20
Location: MW-28	
Description: 77-80’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 3/13/20
Location: MW-28	
Description: 80-81.5’	

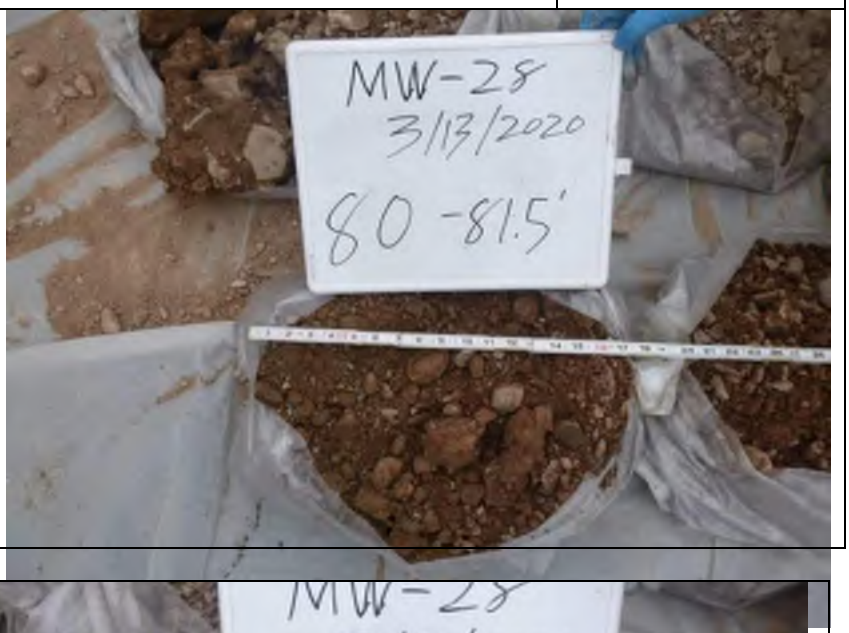
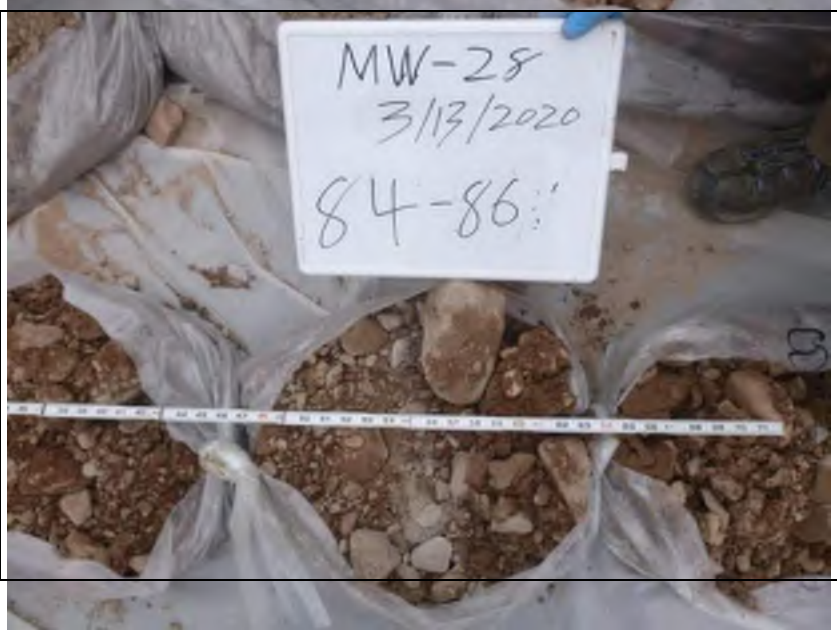


Photo No. **41**	**Date:** 3/13/20
Location: MW-28	
Description: 81.5-84’	

Photo No. **42**	**Date:** 3/13/20
Location: MW-28	
Description: 84-86’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 3/13/20
Location: MW-28	
Description: 86-88’	

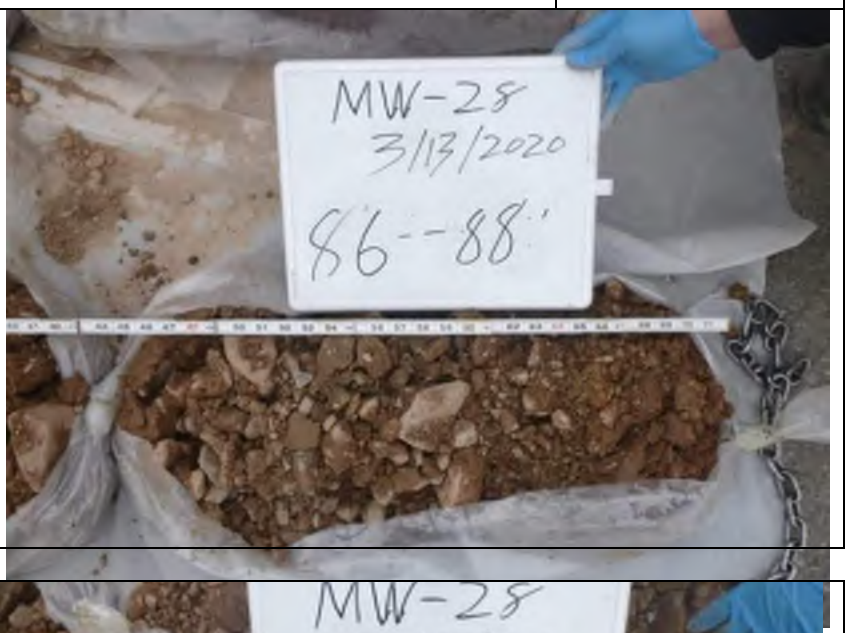


Photo No. **44**	**Date:** 3/13/20
Location: MW-28	
Description: 88-89’	

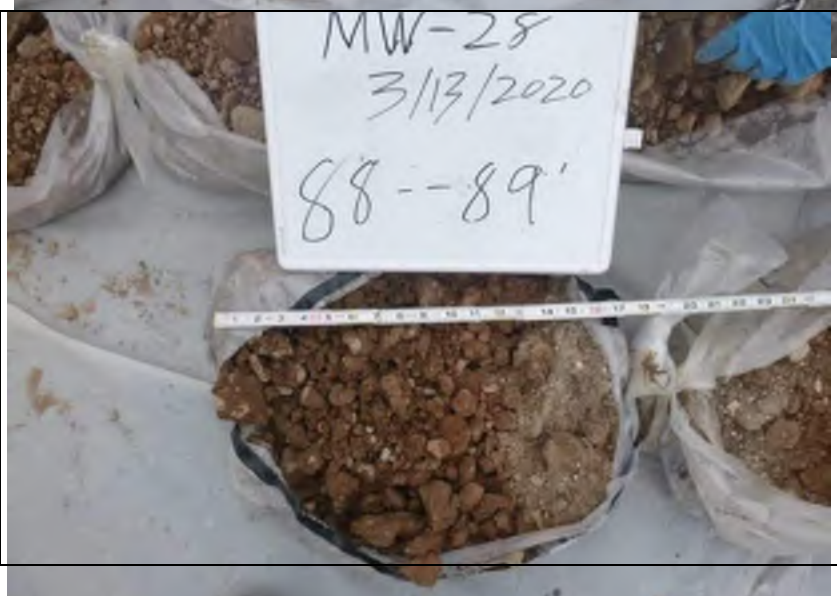


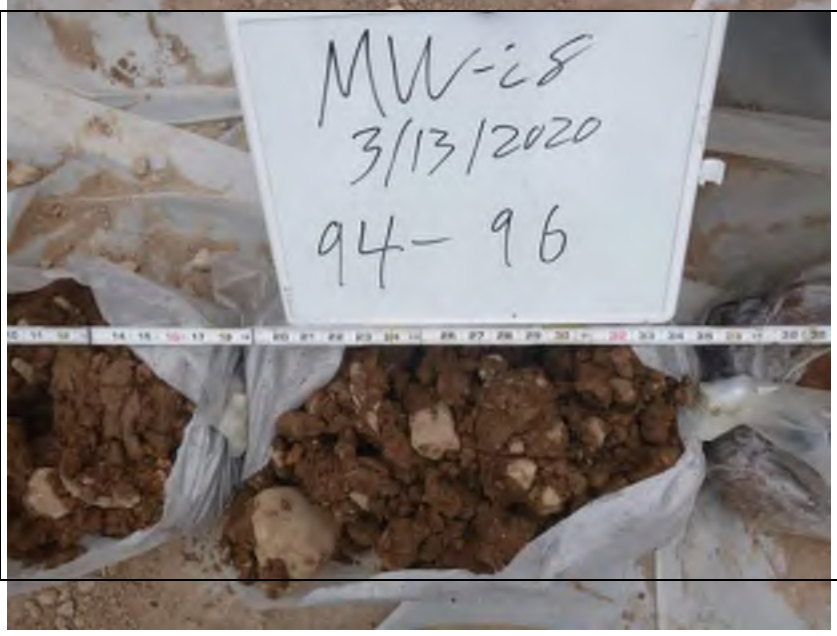
Photo No. **45**	**Date:** 3/13/20
Location: MW-28	
Description: 89-90’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 3/13/20
Location: MW-28	
Description: 90-92’	

Photo No. **47**	**Date:** 3/13/20
Location: MW-28	
Description: 92-94’	

Photo No. **48**	**Date:** 3/13/20
Location: MW-28	
Description: 94-96’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 3/13/20
Location: MW-28	
Description: 96-98’	

Photo No. **50**	**Date:** 3/15/20
Location: MW-28	
Description: 98-100’	

Photo No. **51**	**Date:** 3/15/20
Location: MW-28	
Description: 100-103’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 3/15/20
Location: MW-28	
Description: 103-105.5’	

Photo No. **53**	**Date:** 3/15/20
Location: MW-28	
Description: 105.5-107’	

Photo No. **54**	**Date:** 3/15/20
Location: MW-28	
Description: 107-108’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 3/15/20
Location: MW-28	
Description: 108-109’	

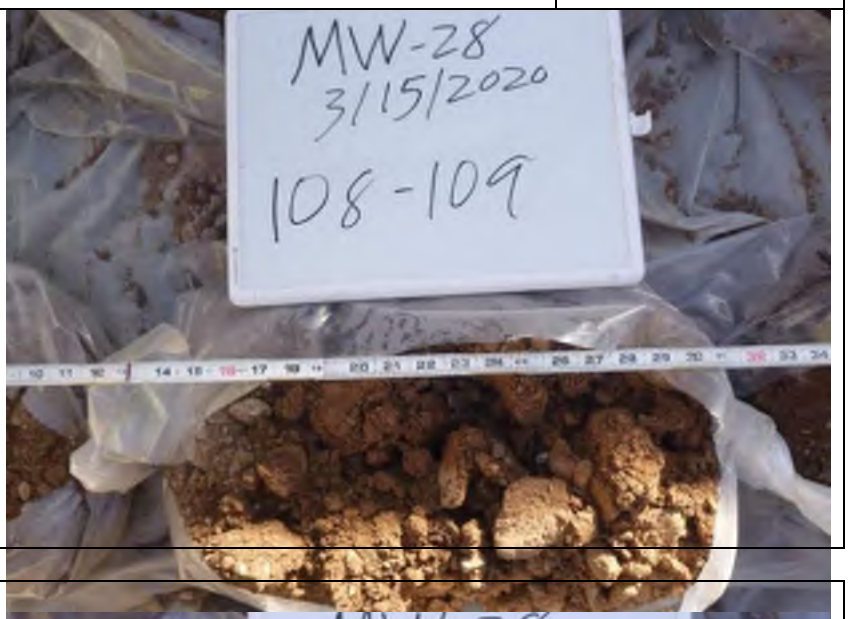


Photo No. **56**	**Date:** 3/15/20
Location: MW-28	
Description: 109-110’	

Photo No. **57**	**Date:** 3/15/20
Location: MW-28	
Description: 110-112.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 58	Date: 3/15/20
Location: MW-28	
Description: 112.5-115’	

Photo No. 59	Date: 3/15/20
Location: MW-28	
Description: 115-117’	

Photo No. 60	Date: 3/15/20
Location: MW-28	
Description: 117-119’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 3/16/20
Location: MW-28	
Description: 119-120’	

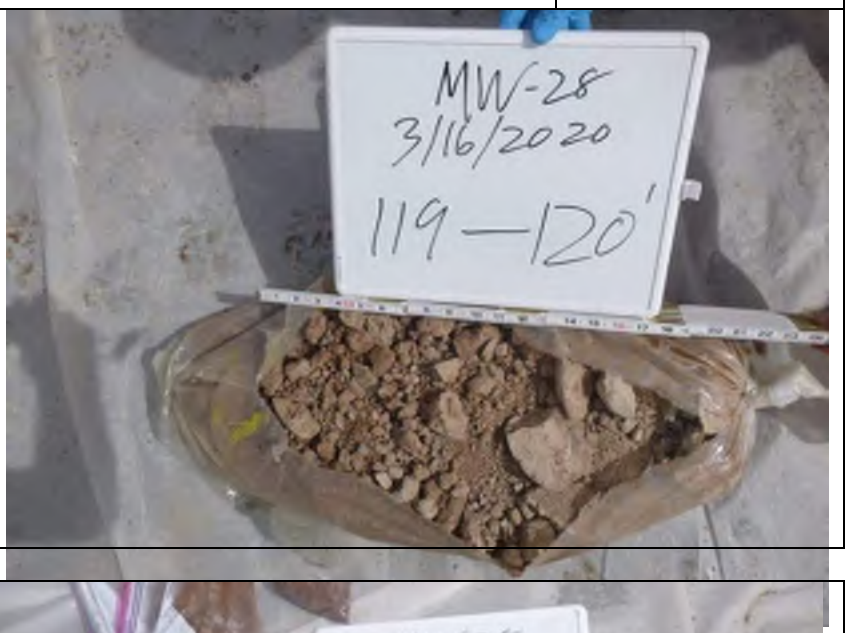


Photo No. **62**	**Date:** 3/16/20
Location: MW-28	
Description: 120-122’	

Photo No. **63**	**Date:** 3/16/20
Location: MW-28	
Description: 122-123.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 3/16/20
Location: MW-28	
Description: 123.5-127’	

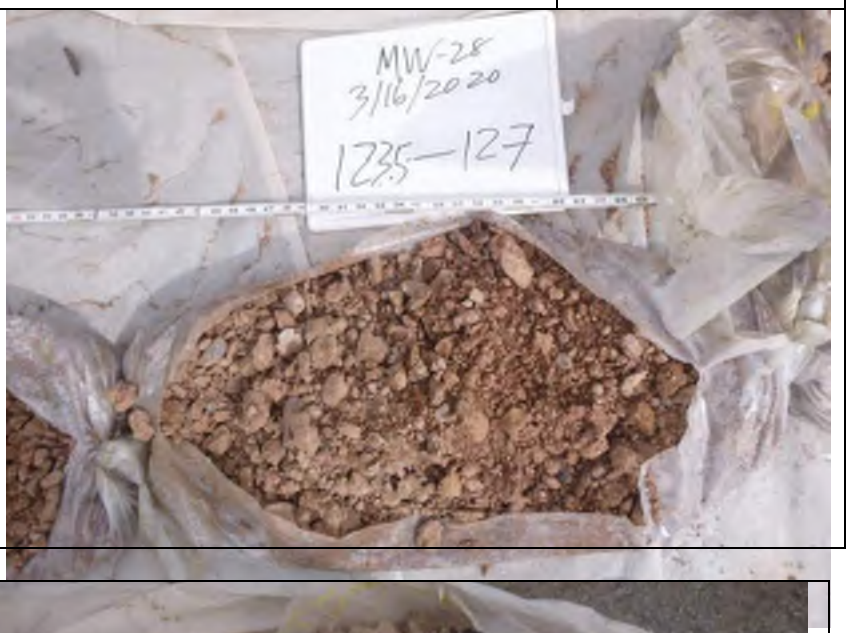


Photo No. **65**	**Date:** 3/16/20
Location: MW-28	
Description: 127-130’	

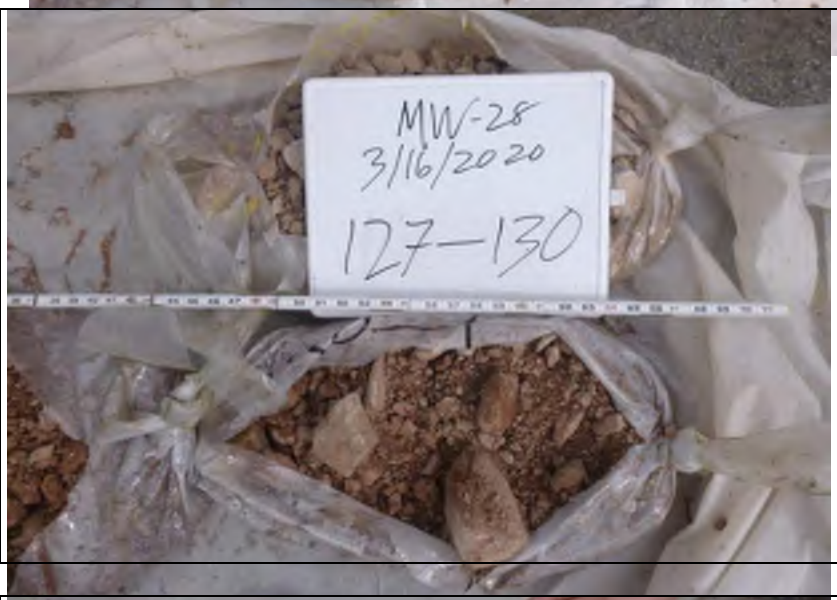


Photo No. **66**	**Date:** 3/16/20
Location: MW-28	
Description: 130-132’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **67**	**Date:** 3/16/20
Location: MW-28	
Description: 132-134’	

Photo No. **68**	**Date:** 3/16/20
Location: MW-28	
Description: 134-135’	

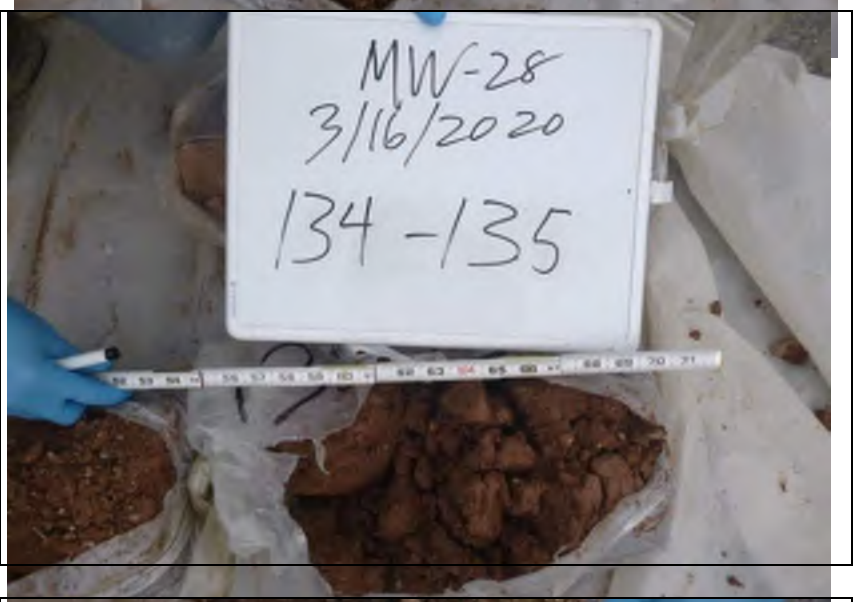
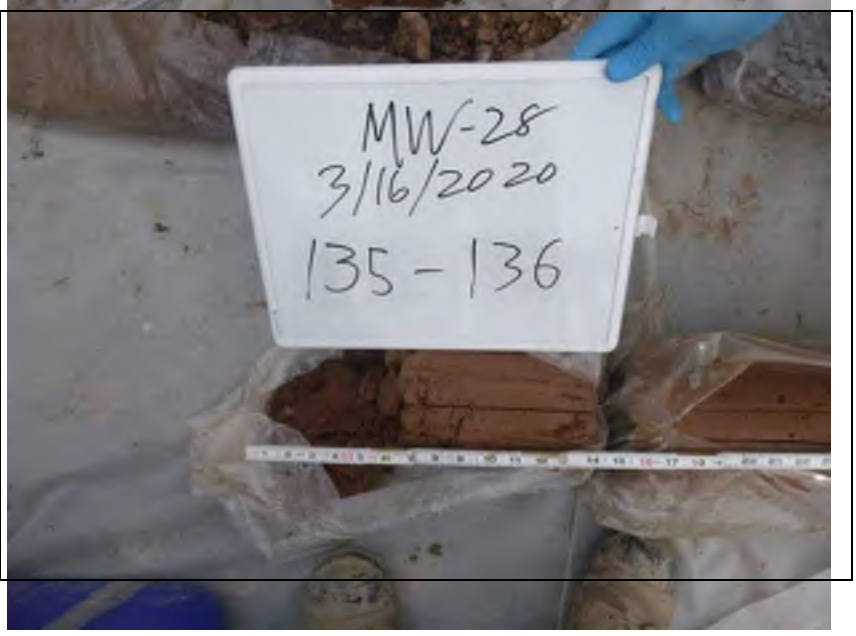


Photo No. **69**	**Date:** 3/16/20
Location: MW-28	
Description: 135-136’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 3/16/20
Location: MW-28	
Description: 136-138’	

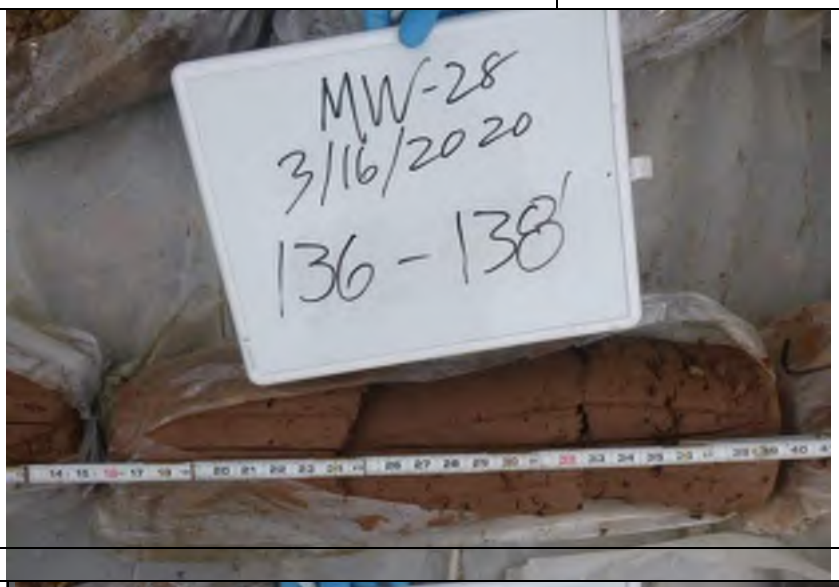


Photo No. **71**	**Date:** 3/16/20
Location: MW-28	
Description: 138-140’	

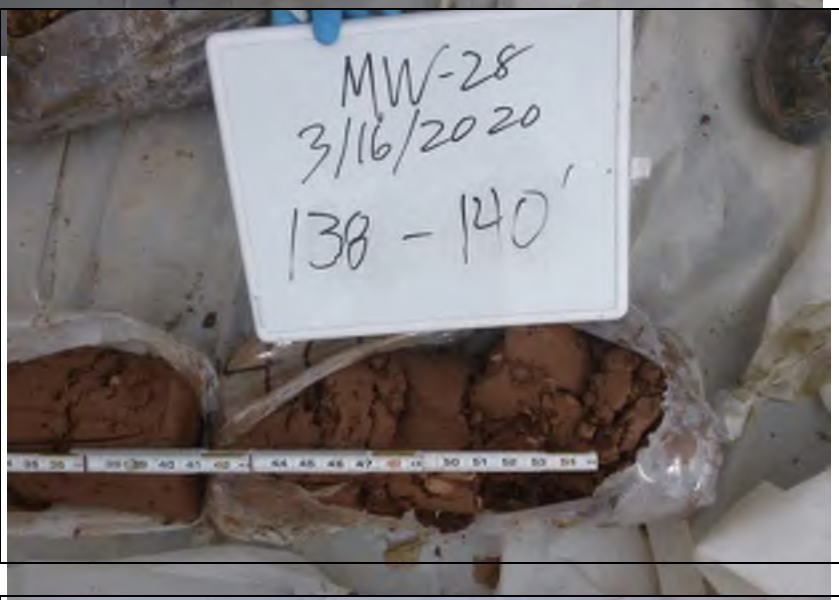


Photo No. **72**	**Date:** 3/17/20
Location: MW-28	
Description: 140-143’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 73	**Date:** 3/17/20
Location: MW-28	
Description: 143-145’	

Photo No. 74	**Date:** 3/17/20
Location: MW-28	
Description: 145-147’	

Photo No. 75	**Date:** 3/17/20
Location: MW-28	
Description: 147-150’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 3/17/20
Location: MW-28	
Description: 150-153’	

Photo No. **77**	**Date:** 3/17/20
Location: MW-28	
Description: 153-155’	

Photo No. **78**	**Date:** 3/17/20
Location: MW-28	
Description: 155-158’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
79	3/17/20

Location:

MW-28

Description:

158-160’

Photo No.	Date:
80	3/17/20

Location:

MW-28

Description:

160-162’

Photo No.	Date:
81	3/17/20

Location:

MW-28

Description:

162-164’

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 82	Date: 3/17/20
Location: MW-28	
Description: 164-166’	

Photo No. 83	Date: 3/17/20
Location: MW-28	
Description: 166-167’	

Photo No. 84	Date: 3/17/20
Location: MW-28	
Description: 167-169’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 3/17/20
Location: MW-28	
Description: 169-170’	

Photo No. **86**	**Date:** 3/17/20
Location: MW-28	
Description: 170-172.5’	

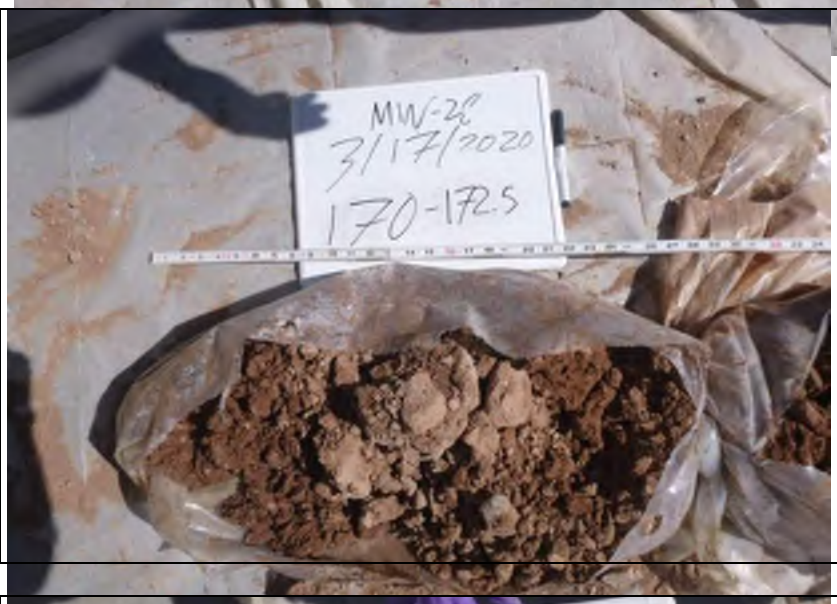


Photo No. **87**	**Date:** 3/17/20
Location: MW-28	
Description: 172.5-175’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 3/17/20
Location: MW-28	
Description: 175-177.5’	

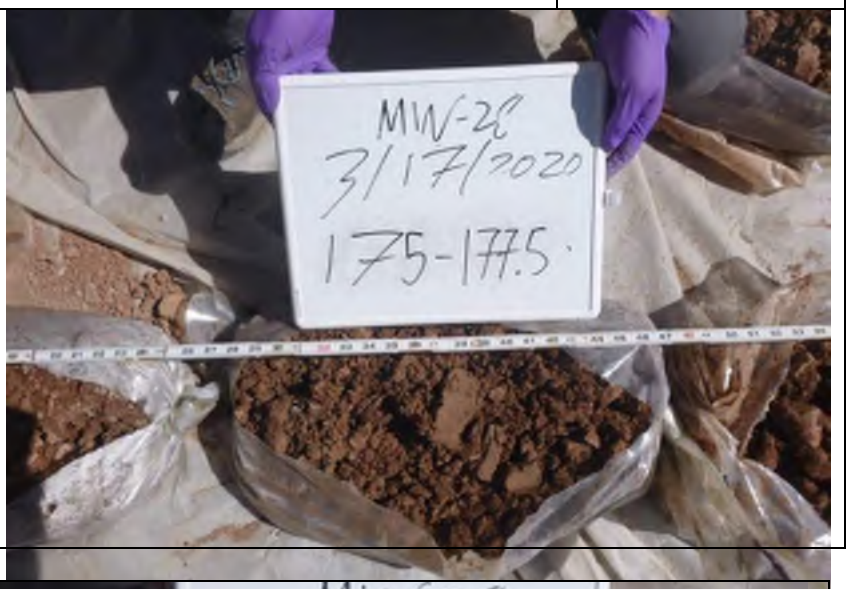


Photo No. **89**	**Date:** 3/17/20
Location: MW-28	
Description: 177.5-180’	

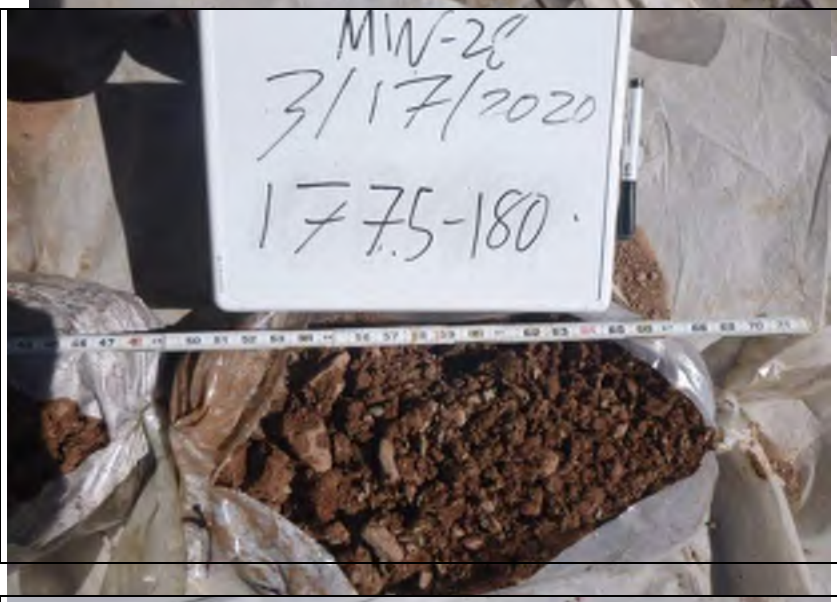


Photo No. **90**	**Date:** 3/17/20
Location: MW-28	
Description: 180-182.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 91	Date: 3/17/20
Location: MW-28	
Description: 182.5-185’	

Photo No. 92	Date: 3/17/20
Location: MW-28	
Description: 185-187.5’	

Photo No. 93	Date: 3/17/20
Location: MW-28	
Description: 187.5-190’	

CDM Smith **PHOTOGRAPHIC LOG**

Site:	Project No.
700 South 1600 East PCE Plume	238824

Photo No.	Date:
94	3/17/20

Location:

MW-28

Description:

190-193’

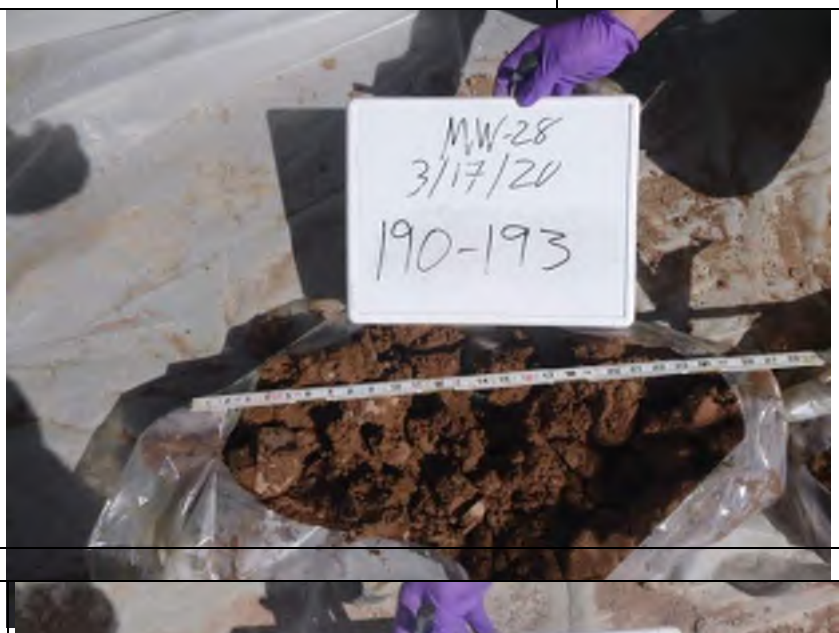


Photo No.	Date:
95	3/17/20

Location:

MW-28

Description:

193-195’

Photo No.	Date:
96	3/17/20

Location:

MW-28

Description:

195-198’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **97**	**Date:** 3/17/20
Location: MW-28	
Description: 198-200’	

Photo No. **98**	**Date:** 3/17/20
Location: MW-28	
Description: 200-202’	

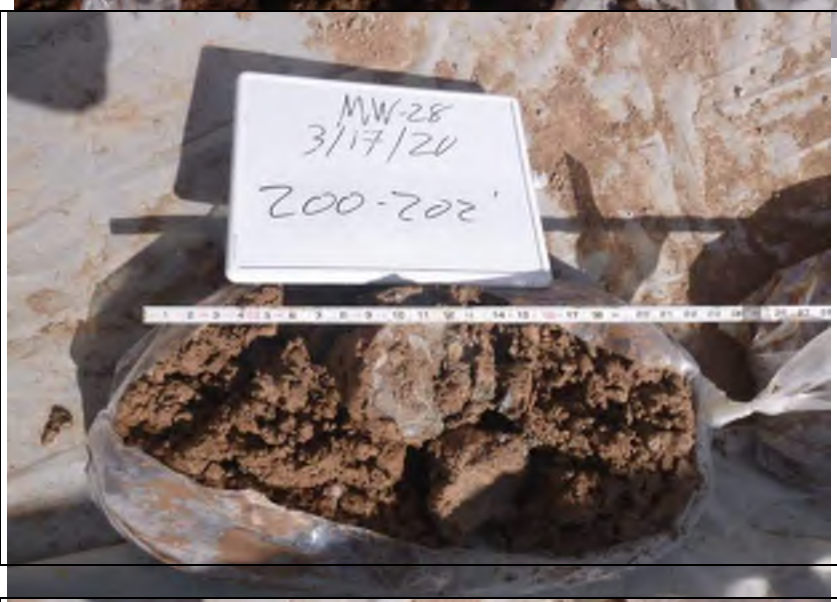


Photo No. **99**	**Date:** 3/17/20
Location: MW-28	
Description: 202-204’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 3/17/20
Location: MW-28	
Description: 204-206’	

Photo No. **101**	**Date:** 3/17/20
Location: MW-28	
Description: 206-207’	

Photo No. **102**	**Date:** 3/18/20
Location: MW-28	
Description: 207-208.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **103**	**Date:** 3/18/20

Location:

MW-28

Description:

208.5-210’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 5/27/20
Location: MW-29	
Description: 10-11’	

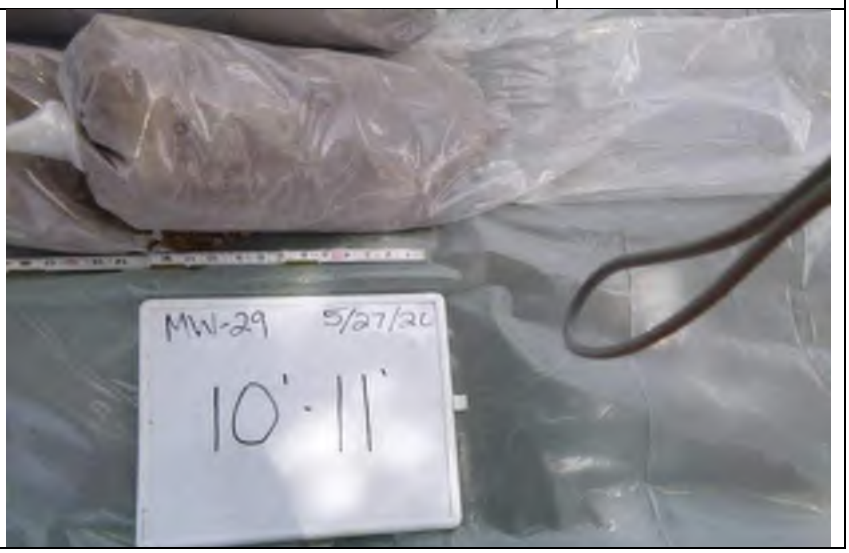


Photo No. **2**	**Date:** 5/27/20
Location: MW-29	
Description: 11-13’	

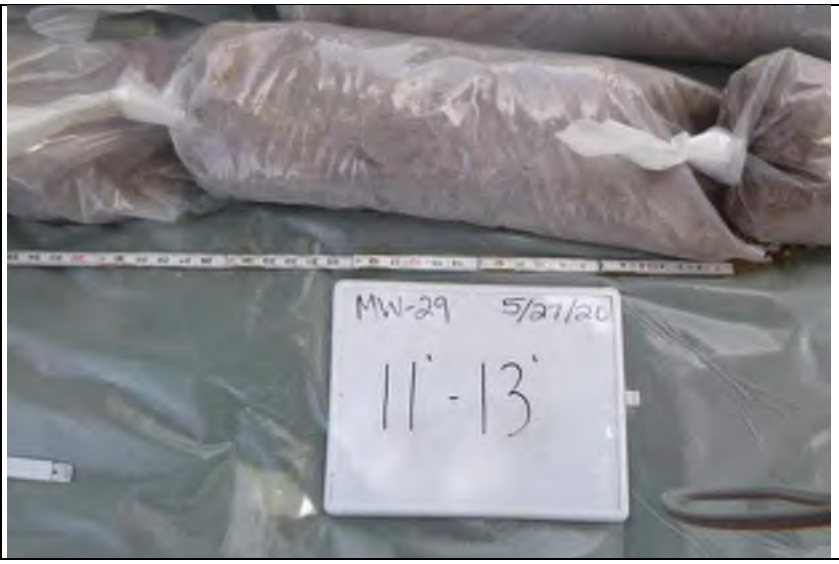
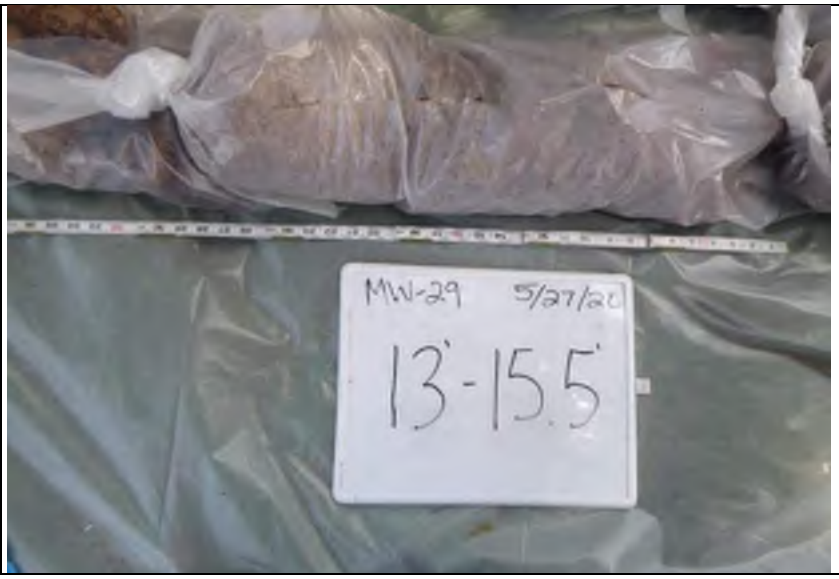


Photo No. **3**	**Date:** 5/27/20
Location: MW-29	
Description: 13-15.5’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 5/27/20
Location: MW-29	
Description: 15.5-17.5’	

Photo No. **5**	**Date:** 5/27/20
Location: MW-29	
Description: 16-18’	

Photo No. **6**	**Date:** 5/27/20
Location: MW-29	
Description: 18-29’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
7	5/27/20

Location:

MW-29

Description:

20-22’

Photo No.	Date:
8	5/27/20

Location:

MW-29

Description:

22-24’

Photo No.	Date:
9	5/27/20

Location:

MW-29

Description:

24-26’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 5/27/20
Location: MW-29	
Description: 26-28’	

Photo No. **11**	**Date:** 5/27/20
Location: MW-29	
Description: 28-30’	

Photo No. **12**	**Date:** 5/27/20
Location: MW-29	
Description: 30-31’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 5/27/20
Location: MW-29	
Description: 31-32’	

Photo No. **14**	**Date:** 5/27/20
Location: MW-29	
Description: 32-34’	

Photo No. **15**	**Date:** 5/27/20
Location: MW-29	
Description: 34-36’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 5/27/20
Location: MW-29	
Description: 36-38’	

Photo No. **17**	**Date:** 5/27/20
Location: MW-29	
Description: 38-40’	

Photo No. **18**	**Date:** 5/27/20
Location: MW-29	
Description: 40-42.5’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 19	**Date:** 5/27/20
Location: MW-29	
Description: 42.5-45’	

Photo No. 20	**Date:** 5/27/20
Location: MW-29	
Description: 45-46’	

Photo No. 21	**Date:** 5/27/20
Location: MW-29	
Description: 46-48’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 5/27/20
Location: MW-29	
Description: 48-50’	

Photo No. **23**	**Date:** 5/28/20
Location: MW-29	
Description: 50-52’	

Photo No. **24**	**Date:** 5/28/20
Location: MW-29	
Description: 52-54’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
25	5/28/20

Location:

MW-29

Description:

54-56’

Photo No.	Date:
26	5/28/20

Location:

MW-29

Description:

56-58’

Photo No.	Date:
27	5/28/20

Location:

MW-29

Description:

58-60’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 5/28/20
Location: MW-29	
Description: 60-62’	

Photo No. **29**	**Date:** 5/28/20
Location: MW-29	
Description: 62-64’	

Photo No. **30**	**Date:** 5/28/20
Location: MW-29	
Description: 64-66’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 31	Date: 5/28/20
Location: MW-29	
Description: 66-68’	

Photo No. 32	Date: 5/28/20
Location: MW-29	
Description: 68-70’	

Photo No. 33	Date: 5/28/20
Location: MW-29	
Description: 70-72’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 5/28/20
Location: MW-29	
Description: 72-74’	

Photo No. **35**	**Date:** 5/28/20
Location: MW-29	
Description: 74-76’	

Photo No. **36**	**Date:** 5/28/20
Location: MW-29	
Description: 76-78’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 5/28/20
Location: MW-29	
Description: 78-80’	

Photo No. **38**	**Date:** 5/28/20
Location: MW-29	
Description: 80-82’	

Photo No. **39**	**Date:** 5/28/20
Location: MW-29	
Description: 82-84’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 5/28/20
Location: MW-29	
Description: 84-85’	

Photo No. **41**	**Date:** 5/28/20
Location: MW-29	
Description: 85-88’	

Photo No. **42**	**Date:** 5/28/20
Location: MW-29	
Description: 88-90’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 43	Date: 5/28/20
Location: MW-29	
Description: 90-91’	

Photo No. 44	Date: 5/28/20
Location: MW-29	
Description: 91-94’	

Photo No. 45	Date: 5/28/20
Location: MW-29	
Description: 94-97’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 5/28/20
Location: MW-29	
Description: 97-100’	

Photo No. **47**	**Date:** 5/28/20
Location: MW-29	
Description: 101-104’	

Photo No. **48**	**Date:** 5/28/20
Location: MW-29	
Description: 104-107’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 5/28/20
Location: MW-29	
Description: 107-110’ Photolog unavailable for 110-115 feet	

Photo No. **47**	**Date:** 5/29/20
Location: MW-29	
Description: 115-117’	

Photo No. **48**	**Date:** 5/29/20
Location: MW-29	
Description: 117-119’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 5/29/20
Location: MW-29	
Description: 119-120’	

Photo No. **47**	**Date:** 5/29/20
Location: MW-29	
Description: 120-122’	

Photo No. **48**	**Date:** 5/29/20
Location: MW-29	
Description: 122-124’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 5/29/20
Location: MW-29	
Description: 124-126’	

Photo No. **50**	**Date:** 5/29/20
Location: MW-29	
Description: 126-128’	

Photo No. **51**	**Date:** 5/29/20
Location: MW-29	
Description: 128-130’	

CDM Smith **PHOTOGRAPHIC LOG**

Site:	**Project No.**
700 South 1600 East PCE Plume	238824

Photo No.	**Date:**
52	5/29/20

Location:

MW-29

Description:

130-133’

Photo No.	**Date:**
53	5/29/20

Location:

MW-29

Description:

133-135’

Photo No.	**Date:**
54	5/29/20

Location:

MW-29

Description:

135-138’

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 55	**Date:** 5/29/20
Location: MW-29	
Description: 138-140’	

Photo No. 56	**Date:** 5/29/20
Location: MW-29	
Description: 140-143’	

Photo No. 57	**Date:** 5/29/20
Location: MW-29	
Description: 143-145’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **58**	**Date:** 5/29/20
Location: MW-29	
Description: 145-148’	

Photo No. **59**	**Date:** 5/29/20
Location: MW-29	
Description: 148-150’	

Photo No. **60**	**Date:** 5/29/20
Location: MW-29	
Description: 150-153’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 5/29/20
Location: MW-29	
Description: 153-155’	

Photo No. **62**	**Date:** 5/29/20
Location: MW-29	
Description: 155-158’	

Photo No. **63**	**Date:** 5/29/20
Location: MW-29	
Description: 158-160’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 5/29/20
Location: MW-29	
Description: 160-162’	

Photo No. **65**	**Date:** 5/29/20
Location: MW-29	
Description: 162-165’	

Photo No. **66**	**Date:** 5/29/20
Location: MW-29	
Description: 165-168’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 67	Date: 5/29/20
Location: MW-29	
Description: 168-170’	

Photo No. 68	Date: 5/29/20
Location: MW-29	
Description: 170-172.5’	

Photo No. 69	Date: 5/29/20
Location: MW-29	
Description: 172.5-175’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 5/29/20
Location: MW-29	
Description: 175-178’	

Photo No. **71**	**Date:** 5/29/20
Location: MW-29	
Description: 178-180’	

Photo No. **72**	**Date:** 5/29/20
Location: MW-29	
Description: 182’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
73	5/29/20

Location:

MW-29

Description:

182-184’

Photo No.	Date:
74	5/29/20

Location:

MW-29

Description:

184-186’

Photo No.	Date:
75	5/29/20

Location:

MW-29

Description:

186-188’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 5/29/20
Location: MW-29	
Description: 188-190’ Photolog unavailable for 190-230 feet	

Photo No. **71**	**Date:** 6/1/20
Location: MW-29	
Description: 230-234’	

Photo No. **72**	**Date:** 6/1/20
Location: MW-29	
Description: 234-237’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 6/1/20
Location: MW-29	
Description: 237-240’	

Photo No. **74**	**Date:** 6/1/20
Location: MW-29	
Description: 240-242.5’	

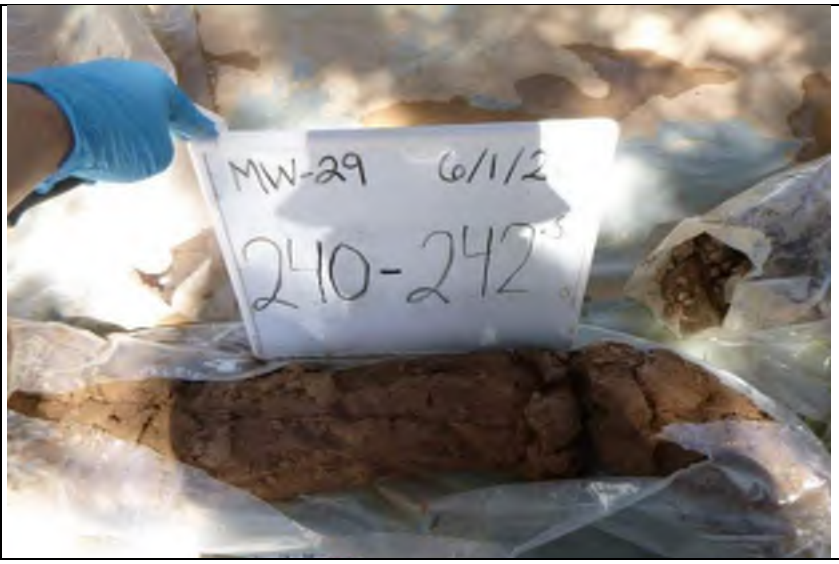


Photo No. **75**	**Date:** 6/1/20
Location: MW-29	
Description: 242.5-245’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 6/1/20
Location: MW-29	
Description: 245-247.5’	

Photo No. **77**	**Date:** 6/1/20
Location: MW-29	
Description: 247.5-250’	

Photo No. **78**	**Date:** 6/1/20
Location: MW-29	
Description: 250-253’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 79	**Date:** 6/1/20
Location: MW-29	
Description: 253-256’	

Photo No. 80	**Date:** 6/1/20
Location: MW-29	
Description: 256-260’	

Photo No. 81	**Date:** 6/2/20
Location: MW-29	
Description: 260-262’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 6/2/20
Location: MW-29	
Description: 262-265’	

Photo No. **83**	**Date:** 6/2/20
Location: MW-29	
Description: 265-267.5’	

Photo No. **84**	**Date:** 6/2/20
Location: MW-29	
Description: 267.5-270’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 85	**Date:** 6/3/20
Location: MW-29	
Description: 271-273’ No recovery	

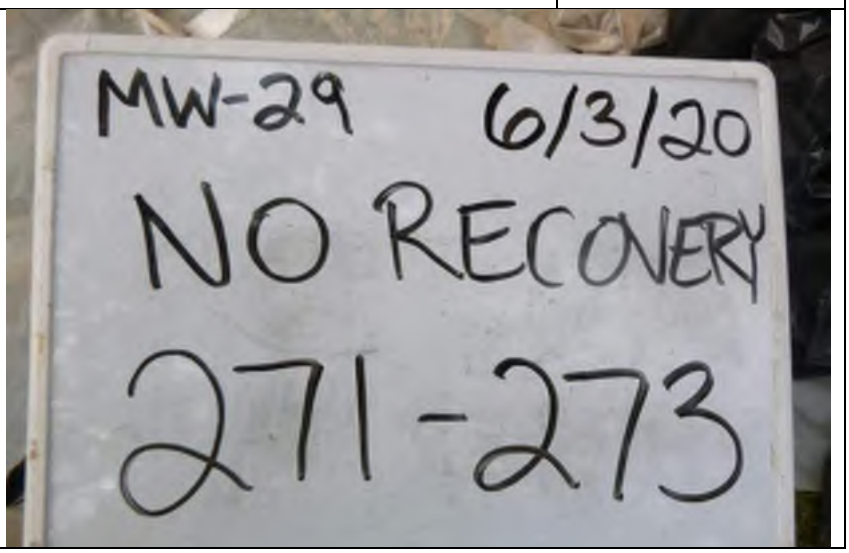


Photo No. 86	**Date:** 6/3/20
Location: MW-29	
Description: 273-274’	

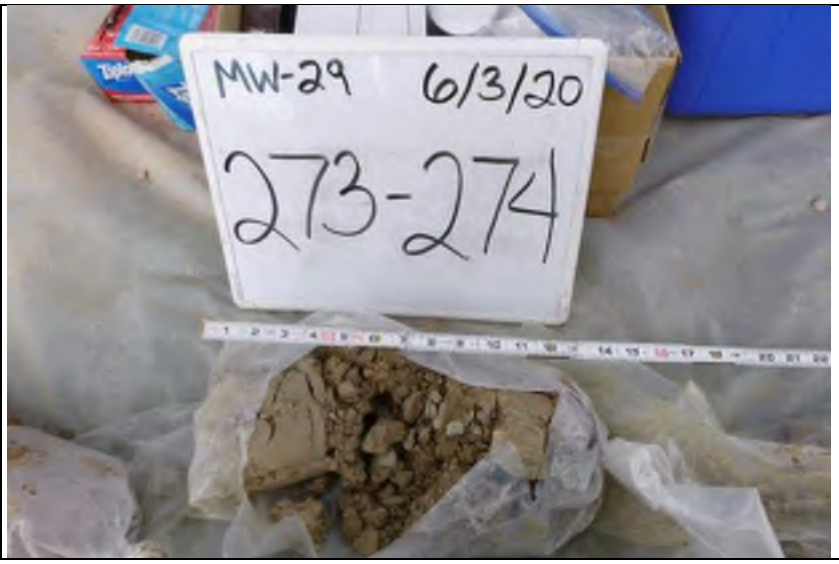
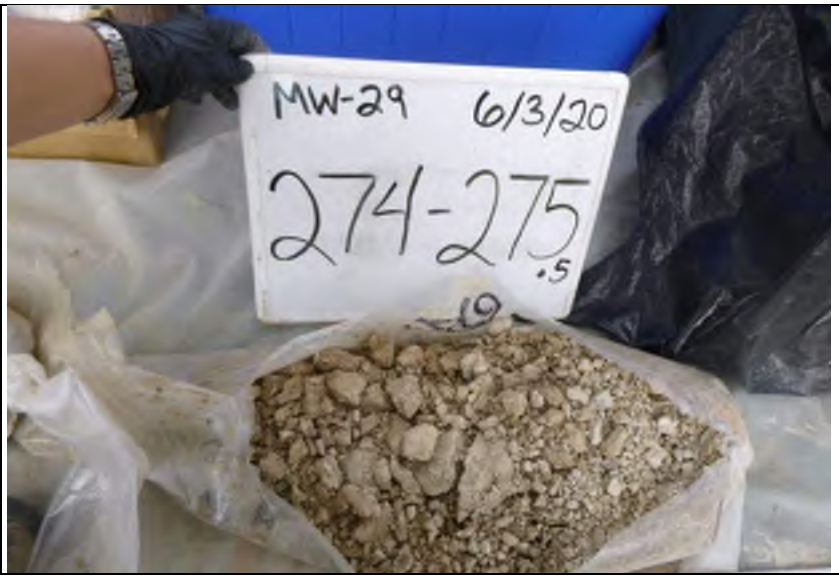


Photo No. 87	**Date:** 6/3/20
Location: MW-29	
Description: 274-275.5’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 6/3/20
Location: MW-29	
Description: 275.5-280' No recovery	

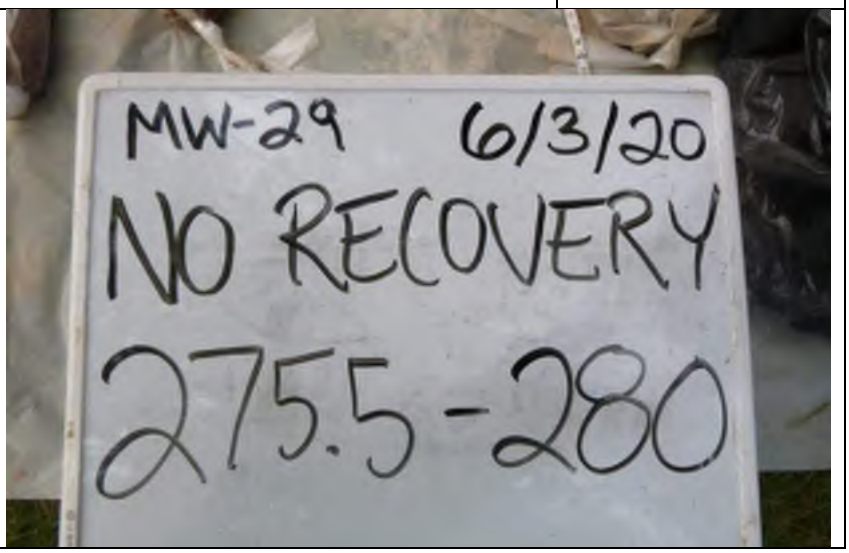


Photo No. **89**	**Date:** 6/3/20
Location: MW-29	
Description: 280-282.5'	

Photo No. **90**	**Date:** 6/3/20
Location: MW-29	
Description: 282.5-285'	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **91**	**Date:** 6/3/20
Location: MW-29	
Description: 285-287.5’	

Photo No. **92**	**Date:** 6/3/20
Location: MW-29	
Description: 287.5-290’	

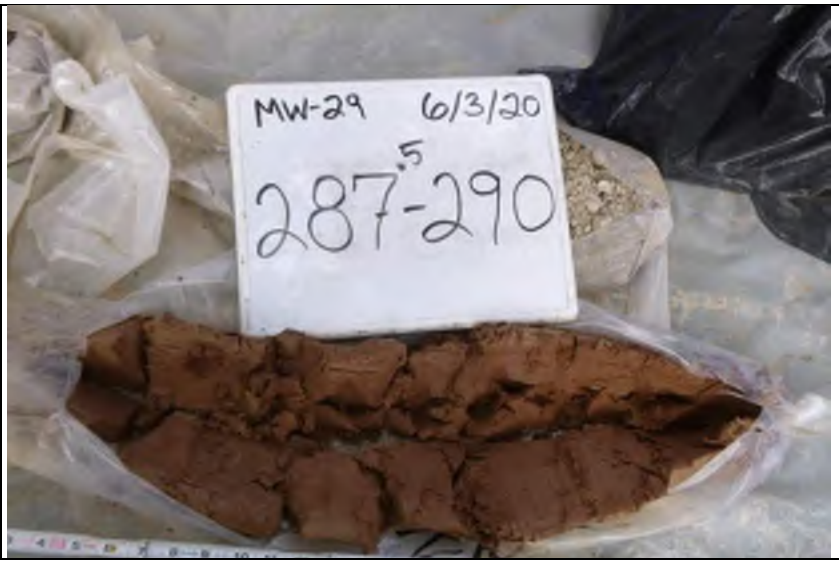


Photo No. **93**	**Date:** 6/3/20
Location: MW-29	
Description: 290-292.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 94	Date: 6/3/20
Location: MW-29	
Description: 292.5-295’	

Photo No. 95	Date: 6/3/20
Location: MW-29	
Description: 295-297.5’	

Photo No. 96	Date: 6/3/20
Location: MW-29	
Description: 297.5-300’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 97	Date: 6/3/20
Location: MW-29	
Description: 300-303’	

Photo No. 98	Date: 6/3/20
Location: MW-29	
Description: 303-306’	

Photo No. 99	Date: 6/3/20
Location: MW-29	
Description: 306-308’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 6/3/20
Location: MW-29	
Description: 308-310’	

Photo No. **101**	**Date:** 6/3/20
Location: MW-29	
Description: 310-313’	

Photo No. **102**	**Date:** 6/3/20
Location: MW-29	
Description: 313-315’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
103	6/3/20

Location:

MW-29

Description:

315-317.5’

Photo No.	Date:
104	6/3/20

Location:

MW-29

Description:

317.5-320’

Photo No.	Date:
105	6/3/20

Location:

MW-29

Description:

320-322.5’
Water infiltrated down from the casing

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **106**	**Date:** 6/3/20
Location: MW-29	
Description: 322.5-325' Water is infiltrated down from the casing	

Photo No. **107**	**Date:** 6/3/20
Location: MW-29	
Description: 325-328' Water is infiltrated down from the casing	

Photo No. **108**	**Date:** 6/3/20
Location: MW-29	
Description: 328-330'	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **109**	**Date:** 6/4/20
Location: MW-29	
Description: 330-332’	

Photo No. **110**	**Date:** 6/4/20
Location: MW-29	
Description: 332-334.5’	

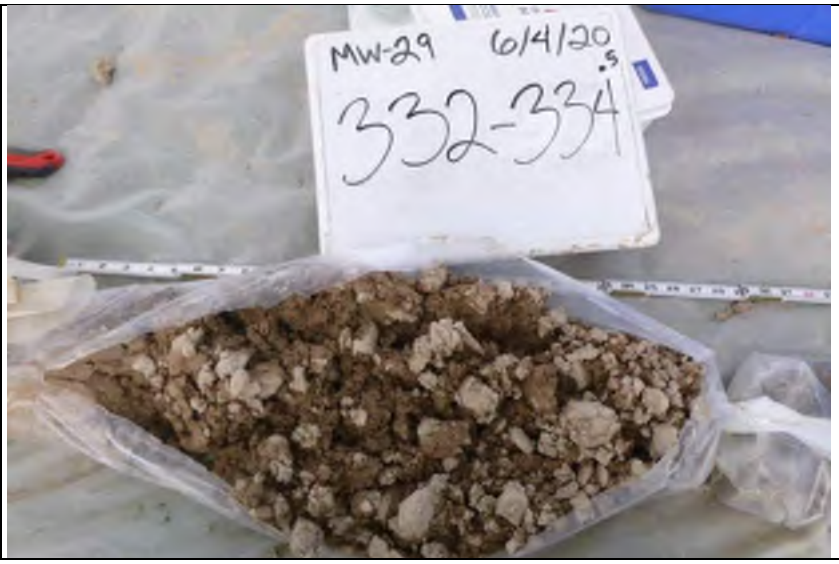
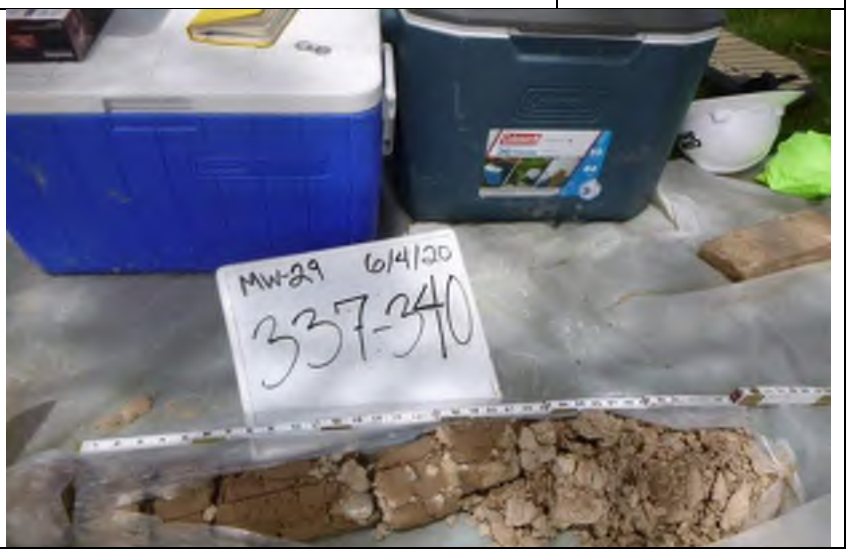


Photo No. **111**	**Date:** 6/4/20
Location: MW-29	
Description: 334.5-337’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **112**	**Date:** 6/4/20
Location: MW-29	
Description: 337-340’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 5/22/20
Location: MW-30	
Description: 9-10’	

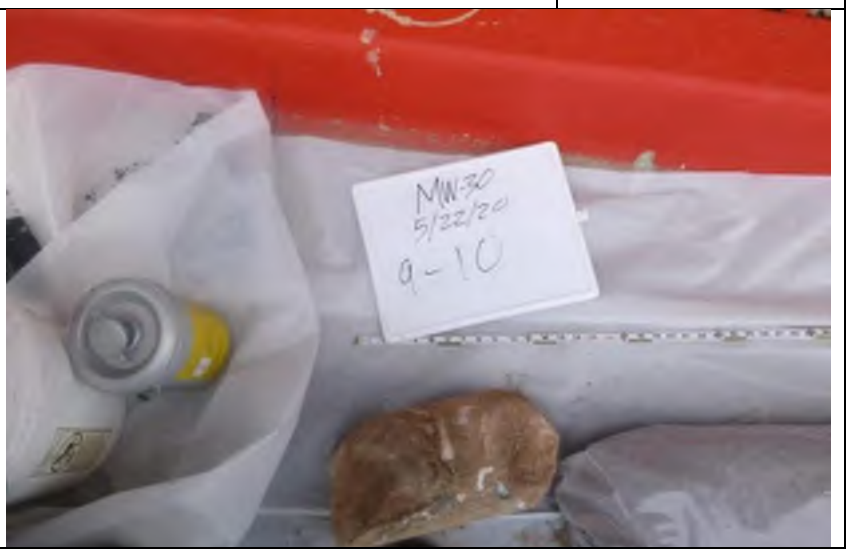


Photo No. **2**	**Date:** 5/22/20
Location: MW-30	
Description: 10-12’	

Photo No. **3**	**Date:** 5/22/20
Location: MW-30	
Description: 12-14’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 5/22/20
Location: MW-30	
Description: 14-16’	

Photo No. **5**	**Date:** 5/22/20
Location: MW-30	
Description: 16-18’	

Photo No. **6**	**Date:** 5/22/20
Location: MW-30	
Description: 18-20’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 5/22/20
Location: MW-30	
Description: 20-23’	

Photo No. **8**	**Date:** 5/22/20
Location: MW-30	
Description: 23-25’	

Photo No. **9**	**Date:** 5/22/20
Location: MW-30	
Description: 25-27.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 5/22/20
Location: MW-30	
Description: 27.5-30’	

Photo No. **11**	**Date:** 5/22/20
Location: MW-30	
Description: 30-32’	

Photo No. **12**	**Date:** 5/22/20
Location: MW-30	
Description: 32-35’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 5/22/20
Location: MW-30	
Description: 35-37’	

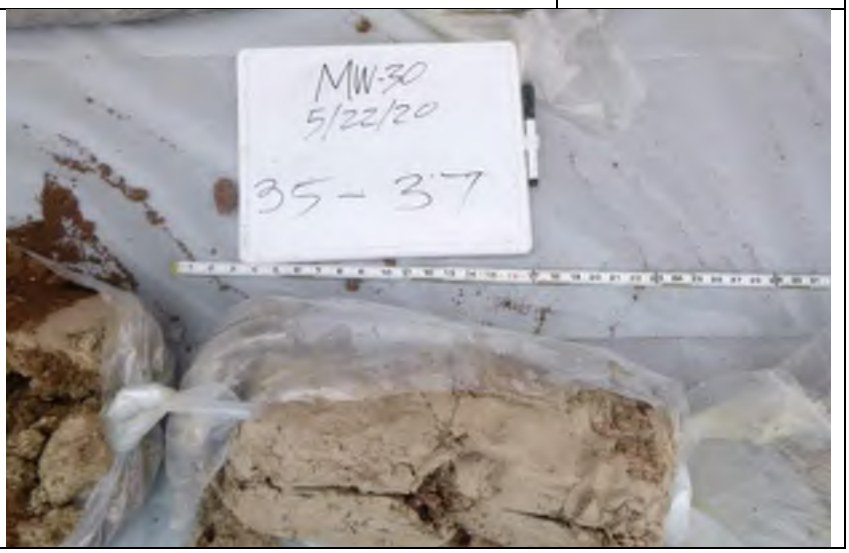


Photo No. **14**	**Date:** 5/22/20
Location: MW-30	
Description: 37-40’	

Photo No. **15**	**Date:** 5/22/20
Location: MW-30	
Description: 40-41.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 16	Date: 5/22/20
Location: MW-30	
Description: 41.5-43’	

Photo No. 17	Date: 5/22/20
Location: MW-30	
Description: 43-45’	

Photo No. 18	Date: 5/22/20
Location: MW-30	
Description: 45-46.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 5/22/20
Location: MW-30	
Description: 46.5-48’	

Photo No. **20**	**Date:** 5/22/20
Location: MW-30	
Description: 48-50’	

Photo No. **21**	**Date:** 5/22/20
Location: MW-30	
Description: 50-53’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 5/22/20
Location: MW-30	
Description: 53-56’	

Photo No. **23**	**Date:** 5/22/20
Location: MW-30	
Description: 56-58’	

Photo No. **24**	**Date:** 5/22/20
Location: MW-30	
Description: 58-60’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 5/22/20
Location: MW-30	
Description: 60-63’	

Photo No. **26**	**Date:** 5/22/20
Location: MW-30	
Description: 63-66’	

Photo No. **27**	**Date:** 5/22/20
Location: MW-30	
Description: 66-68’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 5/22/20
Location: MW-30	
Description: 68-70’	

Photo No. **29**	**Date:** 5/22/20
Location: MW-30	
Description: 70-72.5’	

Photo No. **30**	**Date:** 5/22/20
Location: MW-30	
Description: 72.5-75’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 5/22/20
Location: MW-30	
Description: 75-77’	

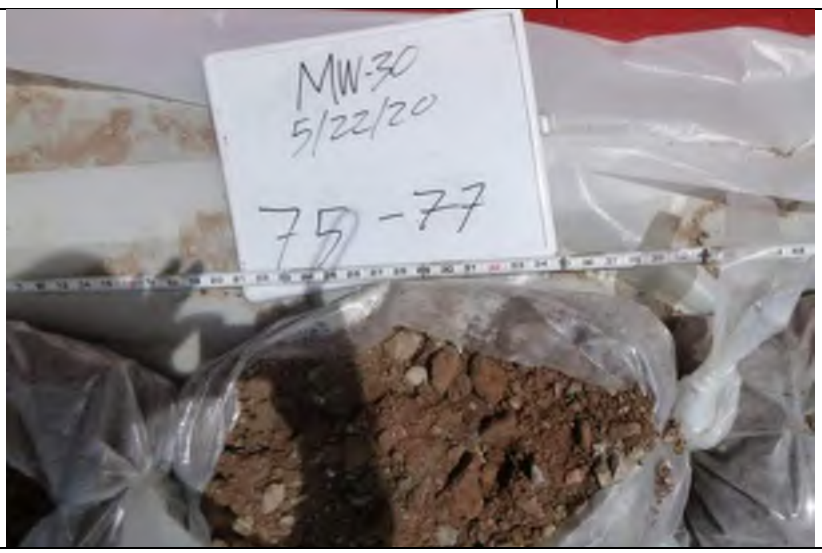


Photo No. **32**	**Date:** 5/22/20
Location: MW-30	
Description: 77-80’	

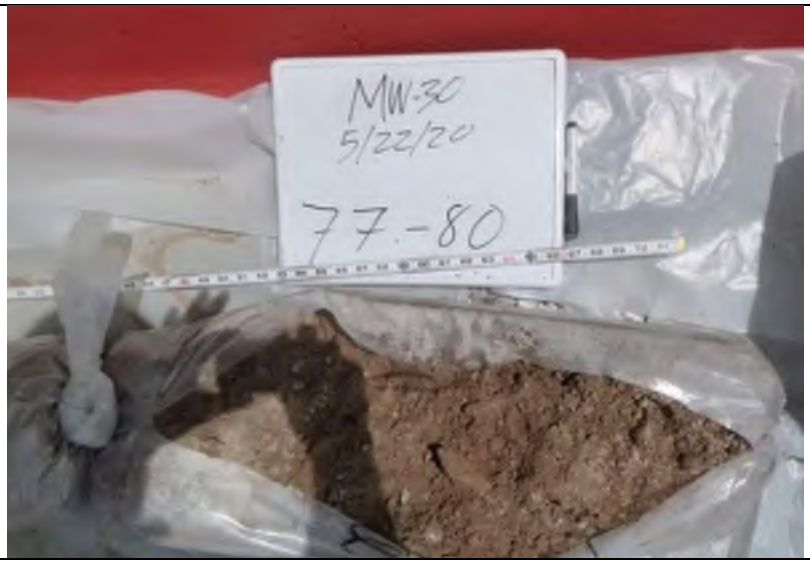


Photo No. **33**	**Date:** 5/22/20
Location: MW-30	
Description: 80-82.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 5/22/20
Location: MW-30	
Description: 82.5-85’	

Photo No. **35**	**Date:** 5/22/20
Location: MW-30	
Description: 85-87.5’	

Photo No. **36**	**Date:** 5/22/20
Location: MW-30	
Description: 87.5-90’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 5/22/20
Location: MW-30	
Description: 90-93’	

Photo No. **38**	**Date:** 5/22/20
Location: MW-30	
Description: 93-96’	

Photo No. **39**	**Date:** 5/22/20
Location: MW-30	
Description: 96-98’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 5/22/20
Location: MW-30	
Description:	

Photo No. **41**	**Date:** 5/22/20
Location: MW-30	
Description: 100-103’	

Photo No. **42**	**Date:** 5/22/20
Location: MW-30	
Description: 103-106’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 5/22/20
Location: MW-30	
Description: 106-108’	

Photo No. **44**	**Date:** 5/22/20
Location: MW-30	
Description: 108-110’	

Photo No. **45**	**Date:** 6/2/20
Location: MW-30	
Description: 110-113’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 6/2/20
Location: MW-30	
Description: 113-115’	

Photo No. **47**	**Date:** 6/2/20
Location: MW-30	
Description: 115-118’	

Photo No. **48**	**Date:** 6/2/20
Location: MW-30	
Description: 118-120’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 6/2/20
Location: MW-30	
Description: 120-123’	

Photo No. **50**	**Date:** 6/2/20
Location: MW-30	
Description: 123-125’	

Photo No. **51**	**Date:** 6/2/20
Location: MW-30	
Description: 125-128’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 6/2/20
Location: MW-30	
Description: 128-130’	

Photo No. **53**	**Date:** 6/2/20
Location: MW-30	
Description: 130-132’	

Photo No. **54**	**Date:** 6/2/20
Location: MW-30	
Description: 132-134’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 6/2/20
Location: MW-30	
Description: 134-136’	

Photo No. **56**	**Date:** 6/2/20
Location: MW-30	
Description: 136-138’	

Photo No. **57**	**Date:** 6/2/20
Location: MW-30	
Description: 138-140’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **58**	**Date:** 6/2/20
Location: MW-30	
Description: 140-142’	

Photo No. **59**	**Date:** 6/2/20
Location: MW-30	
Description: 142-144’	

Photo No. **60**	**Date:** 6/2/20
Location: MW-30	
Description: 144-147’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 61	**Date:** 6/2/20
Location: MW-30	
Description: 147-150’	

Photo No. 62	**Date:** 6/2/20
Location: MW-30	
Description: 150-152’	

Photo No. 63	**Date:** 6/2/20
Location: MW-30	
Description: 152-154’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 6/2/20
Location: MW-30	
Description: 154-157’	

Photo No. **65**	**Date:** 6/2/20
Location: MW-30	
Description: 157-160’	

Photo No. **66**	**Date:** 6/2/20
Location: MW-30	
Description: 160-162.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **67**	**Date:** 6/2/20
Location: MW-30	
Description: 162.5-164’	

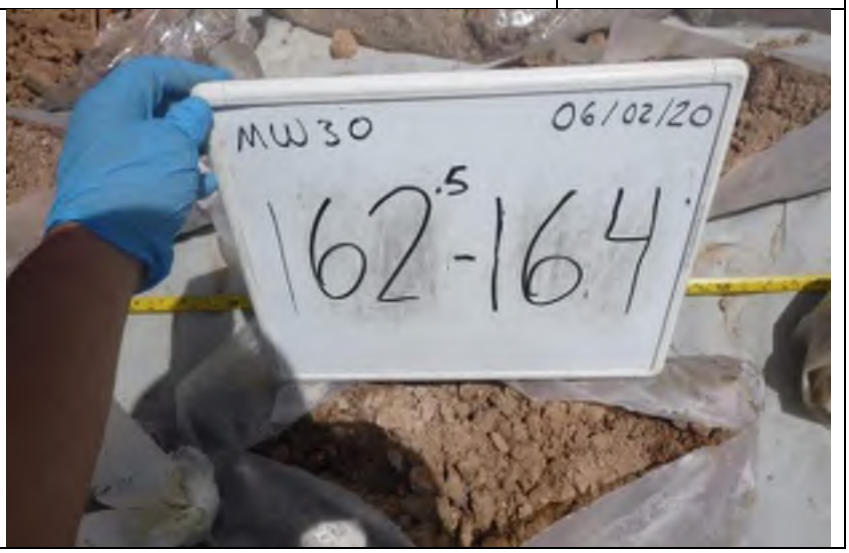


Photo No. **68**	**Date:** 6/2/20
Location: MW-30	
Description: 164-167’	

Photo No. **69**	**Date:** 6/2/20
Location: MW-30	
Description: 167-170’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 6/2/20
Location: MW-30	
Description: 170-173’	

Photo No. **71**	**Date:** 6/2/20
Location: MW-30	
Description: 173-175’	

Photo No. **72**	**Date:** 6/2/20
Location: MW-30	
Description: 175-177’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 6/2/20
Location: MW-30	
Description: 177-179’	

Photo No. **74**	**Date:** 6/2/20
Location: MW-30	
Description: 179-182’	

Photo No. **75**	**Date:** 6/2/20
Location: MW-30	
Description: 182-184’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 6/2/20
Location: MW-30	
Description: 184-187’	

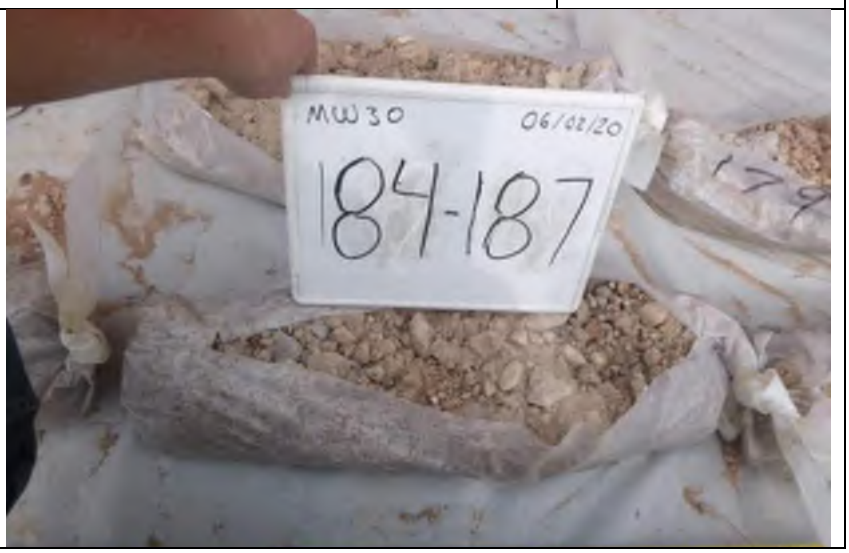


Photo No. **77**	**Date:** 6/2/20
Location: MW-30	
Description: 187-190’	

Photo No. **78**	**Date:** 6/3/20
Location: MW-30	
Description: 190-192.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 6/3/20
Location: MW-30	
Description: 192.5-195’	

Photo No. **80**	**Date:** 6/3/20
Location: MW-30	
Description: 195-198’	

Photo No. **81**	**Date:** 6/3/20
Location: MW-30	
Description: 198-200’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 6/3/20
Location: MW-30	
Description: 200-201’	

Photo No. **83**	**Date:** 6/3/20
Location: MW-30	
Description: 201-203’	

Photo No. **84**	**Date:** 6/3/20
Location: MW-30	
Description: 203-206’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 6/3/20
Location: MW-30	
Description: 206-208’	

Photo No. **86**	**Date:** 6/3/20
Location: MW-30	
Description: 208-210’	

Photo No. **87**	**Date:** 6/3/20
Location: MW-30	
Description: 210-211’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 6/3/20
Location: MW-30	
Description: 211-214’	

Photo No. **88**	**Date:** 6/3/20
Location: MW-30	
Description: 214-216’	

Photo No. **89**	**Date:** 6/3/20
Location: MW-30	
Description: 216-218’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **90**	**Date:** 6/3/20
Location: MW-30	
Description: 218-221’	

Photo No. **91**	**Date:** 6/3/20
Location: MW-30	
Description: 221-224’	

Photo No. **92**	**Date:** 6/3/20
Location: MW-30	
Description: 224-227’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **93**	**Date:** 6/3/20
Location: MW-30	
Description: 227-230’	

Photo No. **94**	**Date:** 6/3/20
Location: MW-30	
Description: 230-233’	

Photo No. **95**	**Date:** 6/3/20
Location: MW-30	
Description: 233-235’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **96**	**Date:** 6/3/20
Location: MW-30	
Description: 235-237’	

Photo No. **97**	**Date:** 6/3/20
Location: MW-30	
Description: 237-240’	

Photo No. **98**	**Date:** 6/3/20
Location: MW-30	
Description: 240-243’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 99	Date: 6/3/20
Location: MW-30	
Description: 243-245’	

Photo No. 100	Date: 6/4/20
Location: MW-30	
Description: 245-247.5’	

Photo No. 101	Date: 6/4/20
Location: MW-30	
Description: 247.5-250’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
102	6/4/20

Location:

MW-30

Description:

250-252.5’

Photo No.	Date:
103	6/4/20

Location:

MW-30

Description:

252.5-255’

Photo No.	Date:
104	6/4/20

Location:

MW-30

Description:

255-257.5’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **105**	**Date:** 6/4/20
Location: MW-30	
Description: 257.5-260’	

Photo No. **106**	**Date:** 6/4/20
Location: MW-30	
Description: 260-263’	

Photo No. **107**	**Date:** 6/4/20
Location: MW-30	
Description: 262-265’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **108**	**Date:** 6/4/20
Location: MW-30	
Description: 265-267.5’	

Photo No. **109**	**Date:** 6/4/20
Location: MW-30	
Description: 267.5-270’	

Photo No. **110**	**Date:** 6/4/20
Location: MW-30	
Description: 270-272’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **111**	**Date:** 6/4/20
Location: MW-30	
Description: 272-275’	

Photo No. **112**	**Date:** 6/4/20
Location: MW-30	
Description: 275-277.5’	

Photo No. **113**	**Date:** 6/4/20
Location: MW-30	
Description: 277.5-280’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **114**	**Date:** 6/5/20
Location: MW-30	
Description: 280-282.5’	

Photo No. **115**	**Date:** 6/5/20
Location: MW-30	
Description: 282.5-285’	

Photo No. **116**	**Date:** 6/5/20
Location: MW-30	
Description: 285-287’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 117	Date: 6/5/20
Location: MW-30	
Description: 287-290’ No photolog available for 290-291.5 feet	

Photo No. 118	Date: 6/5/20
Location: MW-30	
Description: 291.5-293’	

Photo No. 119	Date: 6/5/20
Location: MW-30	
Description: 293-295.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **120**	**Date:** 6/5/20
Location: MW-30	
Description: 295.5-298’	

Photo No. **121**	**Date:** 6/5/20
Location: MW-30	
Description: 298-300’ No photolog available for 300-301 feet	

Photo No. **122**	**Date:** 6/5/20
Location: MW-30	
Description: 301-302.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **123**	**Date:** 6/5/20
Location: MW-30	
Description: 302.5-305’	

Photo No. **124**	**Date:** 6/5/20
Location: MW-30	
Description: 305-307.5’	

Photo No. **125**	**Date:** 6/5/20
Location: MW-30	
Description: 307.5-310’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **126**	**Date:** 6/5/20
Location: MW-30 No photolog available for 310-315.5 feet	
Description: 313.5-315.5’	

Photo No. **127**	**Date:** 6/5/20
Location: MW-30	
Description: 315.5-318’	

Photo No. **128**	**Date:** 6/5/20
Location: MW-30	
Description: 318-320’ No photolog available for 320-321 feet	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **129**	**Date:** 6/7/20
Location: MW-30	
Description: 321-322’	

Photo No. **130**	**Date:** 6/7/20
Location: MW-30	
Description: 322-325’	

Photo No. **131**	**Date:** 6/7/20
Location: MW-30	
Description: 325-327.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **132**	**Date:** 6/7/20
Location: MW-30	
Description: 327.5-330’	

Photo No. **133**	**Date:** 6/7/20
Location: MW-30	
Description: 330-333’	

Photo No. **134**	**Date:** 6/7/20
Location: MW-30	
Description: 333-335.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **135**	**Date:** 6/7/20
Location: MW-30	
Description: 335.5-337.5’	

Photo No. **136**	**Date:** 6/7/20
Location: MW-30	
Description: 337.5-340’	

Photo No. **137**	**Date:** 6/8/20
Location: MW-30	
Description: 340-342.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **138**	**Date:** 6/8/20
Location: MW-30	
Description: 342.5-345’	

Photo No. **139**	**Date:** 6/8/20
Location: MW-30	
Description: 345-347.5’	

Photo No. **140**	**Date:** 6/8/20
Location: MW-30	
Description: 347.5-350’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 6/9/20
Location: MW-31	
Description:	

Photo No. **2**	**Date:** 6/9/20
Location: MW-31	
Description: 12.5-15'	

Photo No. **3**	**Date:** 6/9/20
Location: MW-31	
Description: 15-17.5'	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 6/9/20
Location: MW-31	
Description: 17.5-20’	

Photo No. **5**	**Date:** 6/9/20
Location: MW-31	
Description: 20-21’	

Photo No. **6**	**Date:** 6/9/20
Location: MW-31	
Description: 21-24’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 7	**Date:** 6/9/20
Location: MW-31	
Description: 24-27’	

Photo No. 8	**Date:** 6/9/20
Location: MW-31	
Description: 27-30’	

Photo No. 9	**Date:** 6/9/20
Location: MW-31	
Description: 30-32.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 6/9/20
Location: MW-31	
Description: 32.5-35’	

Photo No. **11**	**Date:** 6/9/20
Location: MW-31	
Description: 35-37.5’	

Photo No. **12**	**Date:** 6/9/20
Location: MW-31	
Description: 37.5-40’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **13**	**Date:** 6/9/20
Location: MW-31	
Description: 40-42.5’	

Photo No. **14**	**Date:** 6/9/20
Location: MW-31	
Description: 42.5-45’	

Photo No. **15**	**Date:** 6/9/20
Location: MW-31	
Description: 45-47.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 6/9/20
Location: MW-31	
Description: 47.5-50’	

Photo No. **17**	**Date:** 6/9/20
Location: MW-31	
Description: 50-52’	

Photo No. **18**	**Date:** 6/9/20
Location: MW-31	
Description: 52-55’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 6/9/20
Location: MW-31	
Description: 55-58’	

Photo No. **20**	**Date:** 6/9/20
Location: MW-31	
Description: 58-60’	

Photo No. **21**	**Date:** 6/9/20
Location: MW-31	
Description: 60-62’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **22**	**Date:** 6/9/20
Location: MW-31	
Description: 62-65’	

Photo No. **23**	**Date:** 6/9/20
Location: MW-31	
Description: 65-68’	

Photo No. **24**	**Date:** 6/9/20
Location: MW-31	
Description: 68-70’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 25	**Date:** 6/9/20

Location:

MW-31

Description:

70-72.5’

Photo No. 26	**Date:** 6/9/20

Location:

MW-31

Description:

72.5-75’

Photo No. 27	**Date:** 6/9/20

Location:

MW-31

Description:

75-77.5’

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 28	Date: 6/9/20
Location: MW-31	
Description: 77.5-80;	

Photo No. 29	Date: 6/9/20
Location: MW-31	
Description: 80-82.5'	

Photo No. 30	Date: 6/9/20
Location: MW-31	
Description: 82.5-85'	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 31	**Date:** 6/9/20
Location: MW-31	
Description: 85-87.5’	

Photo No. 32	**Date:** 6/9/20
Location: MW-31	
Description: 87.5-90’	

Photo No. 33	**Date:** 6/9/20
Location: MW-31	
Description: 90-92.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 6/9/20
Location: MW-31	
Description: 92.5-95’	

Photo No. **35**	**Date:** 6/9/20
Location: MW-31	
Description: 95-975’	

Photo No. **36**	**Date:** 6/9/20
Location: MW-31	
Description: 97.5-100’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 6/9/20
Location: MW-31	
Description: 100-102.5’	

Photo No. **38**	**Date:** 6/9/20
Location: MW-31	
Description: 102.5-105’	

Photo No. **39**	**Date:** 6/9/20
Location: MW-31	
Description: 105-107.5’	

CDM Smith **PHOTOGRAPHIC LOG**

Site:	**Project No.**
700 South 1600 East PCE Plume	238824

Photo No.	**Date:**
40	6/9/20

Location:

MW-31

Description:

107.5-110’

Photo No.	**Date:**
41	6/9/20

Location:

MW-31

Description:

110-113’

Photo No.	**Date:**
42	6/9/20

Location:

MW-31

Description:

113-115’

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 43	Date: 6/10/20
Location: MW-31	
Description: 115-117’	

Photo No. 44	Date: 6/10/20
Location: MW-31	
Description:	

Photo No. 45	Date: 6/10/20
Location: MW-31	
Description: 120-122.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 46	Date: 6/10/20
Location: MW-31	
Description: 122.5-125’	

Photo No. 47	Date: 6/10/20
Location: MW-31	
Description: 125-127.5’	

Photo No. 48	Date: 6/10/20
Location: MW-31	
Description: 127.5-130’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 49	Date: 6/10/20
Location: MW-31	
Description:	

Photo No. 50	Date: 6/10/20
Location: MW-31	
Description: 132-135’	

Photo No. 51	Date: 6/10/20
Location: MW-31	
Description: 134-136’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 6/10/20
Location: MW-31	
Description: 136-138’	

Photo No. **53**	**Date:** 6/10/20
Location: MW-31	
Description: 138-140’	

Photo No. **54**	**Date:** 6/10/20
Location: MW-31	
Description: 140-142.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 6/10/20
Location: MW-31	
Description: 142.5-145’	

Photo No. **56**	**Date:** 6/10/20
Location: MW-31	
Description: 145-147.5’	

Photo No. **57**	**Date:** 6/10/20
Location: MW-31	
Description: 147.5-150’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 58	Date: 6/10/20
Location: MW-31	
Description: 150-151’	

Photo No. 59	Date: 6/10/20
Location: MW-31	
Description: 151-154’	

Photo No. 60	Date: 6/10/20
Location: MW-31	
Description: 154-157’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 61	Date: 6/10/20
Location: MW-31	
Description: 157-160’	

Photo No. 62	Date: 6/10/20
Location: MW-31	
Description: 160-163’	

Photo No. 63	Date: 6/10/20
Location: MW-31	
Description: 162-165’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. 64	**Date:** 6/10/20
Location: MW-31	
Description: 165-167’	

Photo No. 65	**Date:** 6/10/20
Location: MW-31	
Description: 167-170’	

Photo No. 66	**Date:** 6/10/20
Location: MW-31	
Description: 170-172’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 67	**Date:** 6/10/20
Location: MW-31	
Description: 172-175’	

Photo No. 68	**Date:** 6/10/20
Location: MW-31	
Description: 175-177’	

Photo No. 69	**Date:** 6/10/20
Location: MW-31	
Description: 177-180’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 6/10/20
Location: MW-31	
Description: 180-182.5’	

Photo No. **71**	**Date:** 6/10/20
Location: MW-31	
Description: 182.5-185’	

Photo No. **72**	**Date:** 6/10/20
Location: MW-31	
Description: 185-187.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 73	Date: 6/10/20
Location: MW-31	
Description: 187.5-190’	

Photo No. 74	Date: 6/10/20
Location: MW-31	
Description: 190-192’	

Photo No. 75	Date: 6/10/20
Location: MW-31	
Description: 192-195’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 6/10/20
Location: MW-31	
Description: 195-198’	

Photo No. **77**	**Date:** 6/10/20
Location: MW-31	
Description: 198-200’	

Photo No. **78**	**Date:** 6/10/20
Location: MW-31	
Description: 200-202’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 79	Date: 6/10/20
Location: MW-31	
Description: 202-204’	

Photo No. 80	Date: 6/10/20
Location: MW-31	
Description: 204-207’	

Photo No. 81	Date: 6/10/20
Location: MW-31	
Description: 210-212.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **82**	**Date:** 6/10/20
Location: MW-31	
Description: 212.5-215’	

Photo No. **83**	**Date:** 6/10/20
Location: MW-31	
Description: 215-217.5’	

Photo No. **84**	**Date:** 6/10/20
Location: MW-31	
Description: 217.5-220’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 6/10/20
Location: MW-31	
Description: 220-222.5’	

Photo No. **86**	**Date:** 6/10/20
Location: MW-31	
Description: 222.5-225’	

Photo No. **87**	**Date:** 6/10/20
Location: MW-31	
Description: 225-227.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 6/10/20
Location: MW-31	
Description: 227.5-230’	

Photo No. **89**	**Date:** 6/12/20
Location: MW-31	
Description: 230-232.5’	

Photo No. **90**	**Date:** 6/12/20
Location: MW-31	
Description: 232.5-234’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 91	Date: 6/12/20
Location: MW-31	
Description: 234-237’	

Photo No. 92	Date: 6/12/20
Location: MW-31	
Description: 237-240’	

Photo No. 93	Date: 6/12/20
Location: MW-31	
Description: 240-242.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 94	Date: 6/12/20
Location: MW-31	
Description: 242.5-245’	

Photo No. 95	Date: 6/12/20
Location: MW-31	
Description: 245-247.5’	

Photo No. 96	Date: 6/12/20
Location: MW-31	
Description: 257.5-250’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 97	**Date:** 6/12/20
Location: MW-31	
Description: 250-252.5’	

Photo No. 98	**Date:** 6/12/20
Location: MW-31	
Description: 252.5-255’	

Photo No. 99	**Date:** 6/12/20
Location: MW-31	
Description: 255-257.5’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 100	**Date:** 6/12/20
Location: MW-31	
Description: 257.5-260’	

Photo No. 101	**Date:** 6/12/20
Location: MW-31	
Description: 260-262’	

Photo No. 102	**Date:** 6/12/20
Location: MW-31	
Description: 262-265’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **103**	**Date:** 6/12/20
Location: MW-31	
Description: 265-267.5’	

Photo No. **104**	**Date:** 6/12/20
Location: MW-31	
Description: 267.5-270’	

Photo No. **105**	**Date:** 6/12/20
Location: MW-31	
Description: 270-274’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 106	**Date:** 6/12/20
Location: MW-31	
Description: 274-277’	

Photo No. 107	**Date:** 6/12/20
Location: MW-31	
Description: 277-280’	

Photo No. 108	**Date:** 6/12/20
Location: MW-31	
Description: 280-282’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 109	Date: 6/12/20
Location: MW-31	
Description: 292-283’	

Photo No. 110	Date: 6/12/20
Location: MW-31	
Description: 283-285’	

Photo No. 111	Date: 6/12/20
Location: MW-31	
Description: 285-287’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **112**	**Date:** 6/12/20
Location: MW-31	
Description: 287-290’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 6/22/20
Location: MW-32	
Description: 10-12.5’	

Photo No. **2**	**Date:** 6/22/20
Location: MW-32	
Description: 12.5-15’	

Photo No. **3**	**Date:** 6/22/20
Location: MW-32	
Description: 15-17.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 6/22/20
Location: MW-32	
Description: 17.5-20’	

Photo No. **5**	**Date:** 6/22/20
Location: MW-32	
Description: 20-22’	

Photo No. **6**	**Date:** 6/22/20
Location: MW-32	
Description: 22-24’	

CDM Smith **PHOTOGRAPHIC LOG**

Site:	**Project No.**
700 South 1600 East PCE Plume	238824

Photo No.	**Date:**
7	6/22/20

Location:

MW-32

Description:

24-25’

Photo No.	**Date:**
8	6/22/20

Location:

MW-32

Description:

25-27’

Photo No.	**Date:**
9	6/22/20

Location:

MW-32

Description:

27-28’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 6/22/20
Location: MW-32	
Description: 28-30’	

Photo No. **11**	**Date:** 6/22/20
Location: MW-32	
Description: 30-32’	

Photo No. **12**	**Date:** 6/22/20
Location: MW-32	
Description: 32-34’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 13	Date: 6/22/20
Location: MW-32	
Description: 34-35’	

Photo No. 14	Date: 6/22/20
Location: MW-32	
Description: 35-36’	

Photo No. 15	Date: 6/22/20
Location: MW-32	
Description: 36-38’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 16	Date: 6/22/20
Location: MW-32	
Description: 38-40’	

Photo No. 17	Date: 6/22/20
Location: MW-32	
Description: 40-42’	

Photo No. 18	Date: 6/22/20
Location: MW-32	
Description: 42-44’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 6/22/20
Location: MW-32	
Description: 44-46’	

Photo No. **20**	**Date:** 6/22/20
Location: MW-32	
Description: 46-48’	

Photo No. **21**	**Date:** 6/22/20
Location: MW-32	
Description: 48-50’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 22	Date: 6/22/20
Location: MW-32	
Description: 50-52’	

Photo No. 23	Date: 6/22/20
Location: MW-32	
Description: 52-54’	

Photo No. 24	Date: 6/22/20
Location: MW-32	
Description: 54-56’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 25	**Date:** 6/22/20
Location: MW-32	
Description: 56-58’	

Photo No. 26	**Date:** 6/22/20
Location: MW-32	
Description: 58-60’	

Photo No. 27	**Date:** 6/22/20
Location: MW-32	
Description: 60-61.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 6/22/20
Location: MW-32	
Description: 61.5-64’	

Photo No. **29**	**Date:** 6/22/20
Location: MW-32	
Description: 64-66.5’	

Photo No. **30**	**Date:** 6/22/20
Location: MW-32	
Description: 66.5-68’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **31**	**Date:** 6/22/20
Location: MW-32	
Description: 68-70’	

Photo No. **32**	**Date:** 6/22/20
Location: MW-32	
Description: 70-72’	

Photo No. **33**	**Date:** 6/22/20
Location: MW-32	
Description: 72-74’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 6/22/20
Location: MW-32	
Description: 72-76’	

Photo No. **35**	**Date:** 6/22/20
Location: MW-32	
Description: 76-78’	

Photo No. **36**	**Date:** 6/22/20
Location: MW-32	
Description: 78-80’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 6/23/20
Location: MW-32	
Description: 80-81.5’	

Photo No. **38**	**Date:** 6/23/20
Location: MW-32	
Description: 81.5-83.5’	

Photo No. **39**	**Date:** 6/23/20
Location: MW-32	
Description: 83.5-85’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 6/23/20
Location: MW-32	
Description: 85-87’	

Photo No. **41**	**Date:** 6/23/20
Location: MW-32	
Description: 87-88.5’	

Photo No. **42**	**Date:** 6/23/20
Location: MW-32	
Description: 88.5-90’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 43	Date: 6/23/20
Location: MW-32	
Description: 90-92’	

Photo No. 44	Date: 6/23/20
Location: MW-32	
Description: 92-94’	

Photo No. 45	Date: 6/23/20
Location: MW-32	
Description: 94-96’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 6/23/20
Location: MW-32	
Description: 96-98’	

Photo No. **47**	**Date:** 6/23/20
Location: MW-32	
Description: 98-100’	

Photo No. **48**	**Date:** 6/24/20
Location: MW-32	
Description: 100-102’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 49	Date: 6/24/20
Location: MW-32	
Description: 102-104’	

Photo No. 50	Date: 6/24/20
Location: MW-32	
Description: 104-106’	

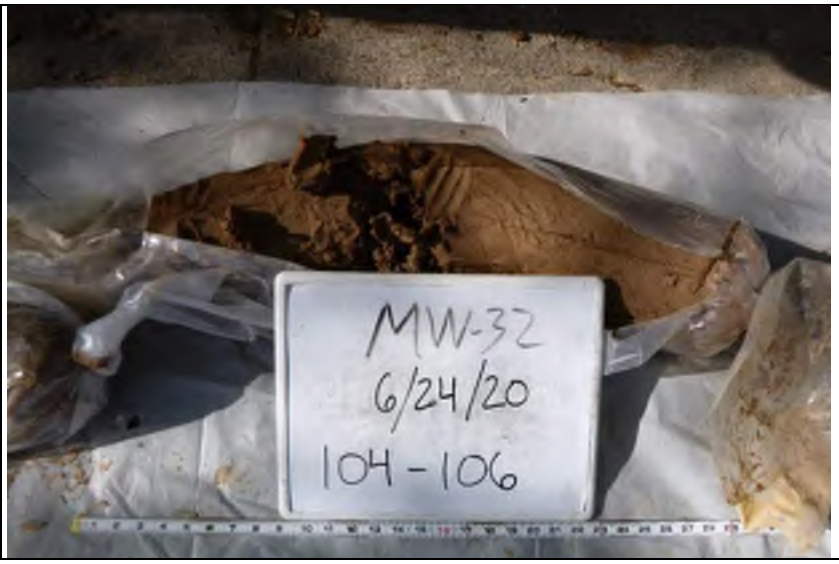


Photo No. 51	Date: 6/24/20
Location: MW-32	
Description: 106-108	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **52**	**Date:** 6/24/20
Location: MW-32	
Description: 108-110’	

Photo No. **53**	**Date:** 6/24/20
Location: MW-32	
Description: 110-110.5’	

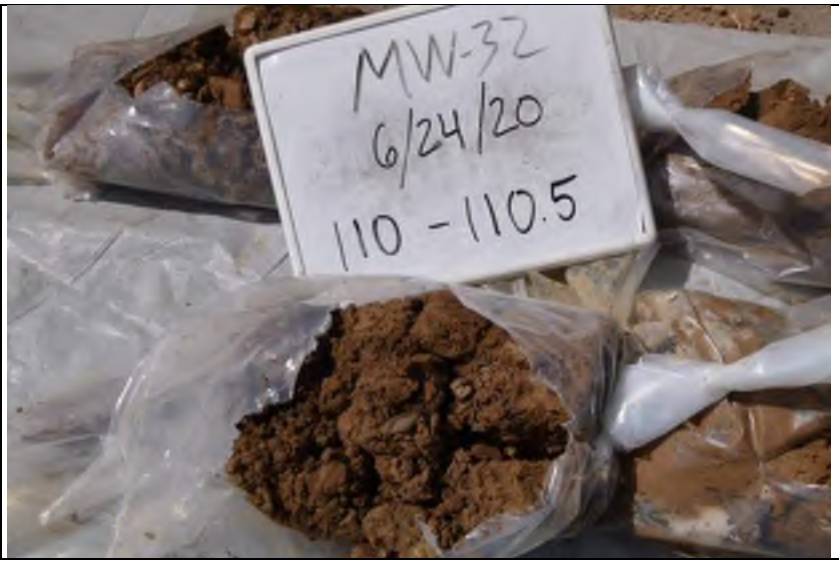


Photo No. **54**	**Date:** 6/24/20
Location: MW-32	
Description: 110.5-112.5’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 55	Date: 6/24/20
Location: MW-32	
Description: 112.5-115’	

Photo No. 56	Date: 6/24/20
Location: MW-32	
Description: 115-117.5’	

Photo No. 57	Date: 6/24/20
Location: MW-32	
Description: 117.5-120’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No.	Date:
58	6/24/20

Location:

MW-32

Description:

120-122’

Photo No.	Date:
59	6/24/20

Location:

MW-32

Description:

122-124’

Photo No.	Date:
60	6/24/20

Location:

MW-32

Description:

124-126’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 6/24/20
Location: MW-32	
Description: 126-128’	

Photo No. **62**	**Date:** 6/24/20
Location: MW-32	
Description: 128-130’	

Photo No. **63**	**Date:** 6/24/20
Location: MW-32	
Description: 130-132’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 64	Date: 6/24/20
Location: MW-32	
Description: 132-134’	

Photo No. 65	Date: 6/24/20
Location: MW-32	
Description: 134-136’	

Photo No. 66	Date: 6/24/20
Location: MW-32	
Description: 136-138’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 67	Date: 6/24/20
Location: MW-32	
Description: 138-140’	

Photo No. 68	Date: 6/24/20
Location: MW-32	
Description: 140-140.5’	

Photo No. 69	Date: 6/24/20
Location: MW-32	
Description: 140.5-142.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 6/24/20
Location: MW-32	
Description: 142.5-145’	

Photo No. **71**	**Date:** 6/24/20
Location: MW-32	
Description: 145-147.5’	

Photo No. **72**	**Date:** 6/24/20
Location: MW-32	
Description: 147.5-150’ No photolog available for 150-260 feet	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 6/28/20
Location: MW-32	
Description: 260-262’	

Photo No. **74**	**Date:** 6/28/20
Location: MW-32	
Description: 262-264’	

Photo No. **75**	**Date:** 6/28/20
Location: MW-32	
Description: 264-266’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 6/28/20
Location: MW-32	
Description: 266-268’	

Photo No. **77**	**Date:** 6/28/20
Location: MW-32	
Description: 268-270’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **1**	**Date:** 7/7/20
Location: MW-34	
Description: 8-10’	

Photo No. **2**	**Date:** 7/7/20
Location: MW-34	
Description: 10-12.5’	

Photo No. **3**	**Date:** 7/7/20
Location: MW-34	
Description: 12.5-15’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **4**	**Date:** 7/7/20
Location: MW-34	
Description: 15-17.5’	

Photo No. **5**	**Date:** 7/7/20
Location: MW-34	
Description: 17.5-20’	

Photo No. **6**	**Date:** 7/7/20
Location: MW-34	
Description: 20-22’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **7**	**Date:** 7/7/20
Location: MW-34	
Description: 22-24’	

Photo No. **8**	**Date:** 7/7/20
Location: MW-34	
Description: 24-26’	

Photo No. **9**	**Date:** 7/7/20
Location: MW-34	
Description: 26-27’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **10**	**Date:** 7/7/20
Location: MW-34	
Description: 27-30’	

Photo No. **11**	**Date:** 7/7/20
Location: MW-34	
Description: 30-31’	

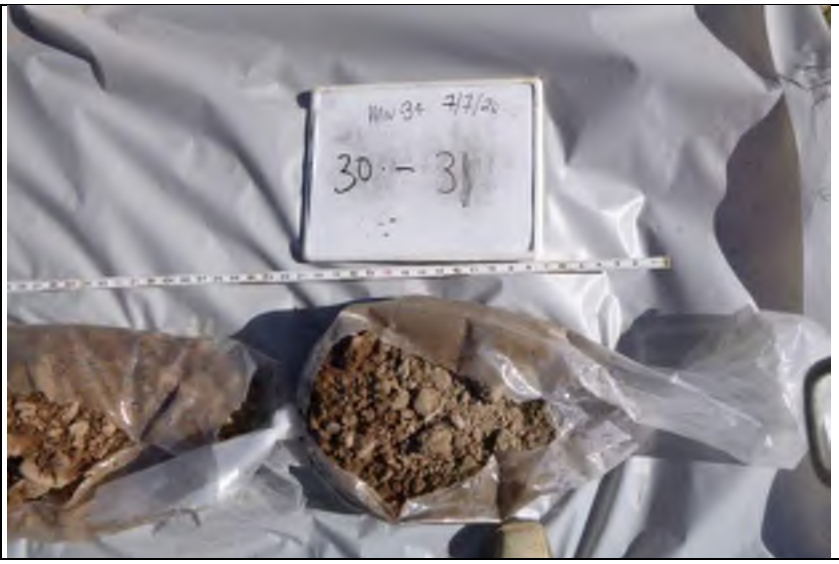


Photo No. **12**	**Date:** 7/7/20
Location: MW-34	
Description: 31-33’	

PHOTOGRAPHIC LOG

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 13	**Date:** 7/7/20
Location: MW-34	
Description: 33-36’	

Photo No. 14	**Date:** 7/7/20
Location: MW-34	
Description: 36-38’	

Photo No. 15	**Date:** 7/7/20
Location: MW-34	
Description: 38-40’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **16**	**Date:** 7/7/20
Location: MW-34	
Description: 40-42’	

Photo No. **17**	**Date:** 7/7/20
Location: MW-34	
Description: 42-44’	

Photo No. **18**	**Date:** 7/7/20
Location: MW-34	
Description: 44-46’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **19**	**Date:** 7/7/20
Location: MW-34	
Description: 46-48’	

Photo No. **20**	**Date:** 7/7/20
Location: MW-34	
Description: 48-50’	

Photo No. **21**	**Date:** 7/7/20
Location: MW-34	
Description: 50-52’	

PHOTOGRAPHIC LOG

Site:	Project No.
700 South 1600 East PCE Plume	238824

Photo No.	Date:
22	7/7/20

Location:

MW-34

Description:

52-54’

Photo No.	Date:
23	7/7/20

Location:

MW-34

Description:

54-56’

Photo No.	Date:
24	7/7/20

Location:

MW-34

Description:

56-58’

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **25**	**Date:** 7/7/20
Location: MW-34	
Description: 58-60’	

Photo No. **26**	**Date:** 7/7/20
Location: MW-34	
Description: 60-62.5’	

Photo No. **27**	**Date:** 7/7/20
Location: MW-34	
Description: 62.5-65’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **28**	**Date:** 7/7/20
Location: MW-34	
Description: 65-66’	

Photo No. **29**	**Date:** 7/7/20
Location: MW-34	
Description: 66-68’	

Photo No. **30**	**Date:** 7/7/20
Location: MW-34	
Description: 68-70’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 31	Date: 7/7/20
Location: MW-34	
Description: 70-72’	

Photo No. 32	Date: 7/7/20
Location: MW-34	
Description: 72-74’	

Photo No. 33	Date: 7/7/20
Location: MW-34	
Description: 74-76’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **34**	**Date:** 7/7/20
Location: MW-34	
Description: 76-78’	

Photo No. **35**	**Date:** 7/7/20
Location: MW-34	
Description: 78-80’	

Photo No. **36**	**Date:** 7/7/20
Location: MW-34	
Description: 80-82’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **37**	**Date:** 7/7/20
Location: MW-34	
Description: 82.5-85’	

Photo No. **38**	**Date:** 7/7/20
Location: MW-34	
Description: 85-87.5’	

Photo No. **39**	**Date:** 7/7/20
Location: MW-34	
Description: 87.5-90’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **40**	**Date:** 7/7/20
Location: MW-34	
Description: 90-92’	

Photo No. **41**	**Date:** 7/7/20
Location: MW-34	
Description: 92-94’	

Photo No. **42**	**Date:** 7/7/20
Location: MW-34	
Description: 92-94’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **43**	**Date:** 7/7/20
Location: MW-34	
Description: 96-98’	

Photo No. **44**	**Date:** 7/7/20
Location: MW-34	
Description: 98-100’	

Photo No. **45**	**Date:** 7/7/20
Location: MW-34	
Description: 100-101’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **46**	**Date:** 7/7/20
Location: MW-34	
Description: 101-103’	

Photo No. **47**	**Date:** 7/7/20
Location: MW-34	
Description: 103-105.5	

Photo No. **48**	**Date:** 7/7/20
Location: MW-34	
Description: 105.5-107.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **49**	**Date:** 7/7/20
Location: MW-34	
Description: 107.5-110’	

Photo No. **50**	**Date:** 7/7/20
Location: MW-34	
Description: 110-111’	

Photo No. **51**	**Date:** 7/7/20
Location: MW-34	
Description: 111-113’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 52	Date: 7/7/20
Location: MW-34	
Description: 113-115’	

Photo No. 53	Date: 7/7/20
Location: MW-34	
Description: 115-116’	

Photo No. 54	Date: 7/7/20
Location: MW-34	
Description: 116-118’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **55**	**Date:** 7/7/20
Location: MW-34	
Description: 118-120’	

Photo No. **56**	**Date:** 7/7/20
Location: MW-34	
Description: 120-122.5’	

Photo No. **57**	**Date:** 7/7/20
Location: MW-34	
Description: 122.5-125’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 58	Date: 7/7/20
Location: MW-34	
Description: 125-127’	

Photo No. 59	Date: 7/7/20
Location: MW-34	
Description: 127-128’	

Photo No. 60	Date: 7/7/20
Location: MW-34	
Description: 128-130’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **61**	**Date:** 7/8/20
Location: MW-34	
Description: 130-133’	

Photo No. **62**	**Date:** 7/8/20
Location: MW-34	
Description: 133-135’	

Photo No. **63**	**Date:** 7/8/20
Location: MW-34	
Description: 135-136’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **64**	**Date:** 7/8/20
Location: MW-34	
Description: 136-138’	

Photo No. **65**	**Date:** 7/8/20
Location: MW-34	
Description: 138-140’	

Photo No. **66**	**Date:** 7/8/20
Location: MW-34	
Description: 140-142’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **67**	**Date:** 7/8/20
Location: MW-34	
Description: 142-144’	

Photo No. **68**	**Date:** 7/8/20
Location: MW-34	
Description: 144-146’	

Photo No. **69**	**Date:** 7/8/20
Location: MW-34	
Description: 146-148’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **70**	**Date:** 7/8/20
Location: MW-34	
Description: 148-150’	

Photo No. **71**	**Date:** 7/8/20
Location: MW-34	
Description: 150-151’	

Photo No. **72**	**Date:** 7/8/20
Location: MW-34	
Description: 151-153’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **73**	**Date:** 7/8/20
Location: MW-34	
Description: 153-155’	

Photo No. **74**	**Date:** 7/8/20
Location: MW-34	
Description: 155-157’	

Photo No. **75**	**Date:** 7/8/20
Location: MW-34	
Description: 157-160’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **76**	**Date:** 7/8/20
Location: MW-34	
Description: 160-161’	

Photo No. **77**	**Date:** 7/8/20
Location: MW-34	
Description: 161-163’	

Photo No. **78**	**Date:** 7/8/20
Location: MW-34	
Description: 163-166’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **79**	**Date:** 7/8/20
Location: MW-34	
Description: 166-168’	

Photo No. **80**	**Date:** 7/8/20
Location: MW-34	
Description: 168-170’	

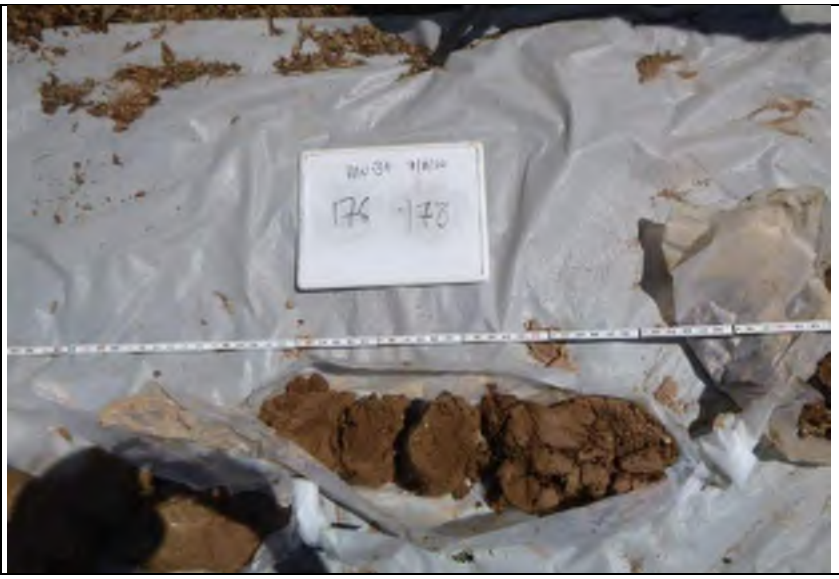
Photo No. **81**	**Date:** 7/8/20
Location: MW-34	
Description: 170-172’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 82	Date: 7/8/20
Location: MW-34	
Description: 172-174’	

Photo No. 83	Date: 7/8/20
Location: MW-34	
Description: 174-176’	

Photo No. 84	Date: 7/8/20
Location: MW-34	
Description: 176-178’	



CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **85**	**Date:** 7/8/20
Location: MW-34	
Description: 178-180’	

Photo No. **86**	**Date:** 7/8/20
Location: MW-34	
Description: 180-182’	

Photo No. **87**	**Date:** 7/8/20
Location: MW-34	
Description: 182-184’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **88**	**Date:** 7/8/20
Location: MW-34	
Description: 184-186’	

Photo No. **89**	**Date:** 7/8/20
Location: MW-34	
Description: 186-188’	

Photo No. **90**	**Date:** 7/8/20
Location: MW-34	
Description: 188-190’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **91**	**Date:** 7/8/20
Location: MW-34	
Description: 190-192’	

Photo No. **92**	**Date:** 7/8/20
Location: MW-34	
Description: 192-194’	

Photo No. **93**	**Date:** 7/8/20
Location: MW-34	
Description: 194-196’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 94	Date: 7/8/20
Location: MW-34	
Description: 196-199’	

Photo No. 95	Date: 7/8/20
Location: MW-34	
Description: 199-200’	

Photo No. 96	Date: 7/8/20
Location: MW-34	
Description: 200-202’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **97**	**Date:** 7/8/20
Location: MW-34	
Description: 202-204’	

Photo No. **98**	**Date:** 7/8/20
Location: MW-34	
Description: 204-206’	

Photo No. **99**	**Date:** 7/8/20
Location: MW-34	
Description: 206-208’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **100**	**Date:** 7/8/20
Location: MW-34	
Description: 208-210’	

Photo No. **101**	**Date:** 7/9/20
Location: MW-34	
Description: 210-212’	

Photo No. **102**	**Date:** 7/9/20
Location: MW-34	
Description: 212-214’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **103**	**Date:** 7/9/20
Location: MW-34	
Description: 214-216’	

Photo No. **104**	**Date:** 7/9/20
Location: MW-34	
Description: 216-218’	

Photo No. **105**	**Date:** 7/9/20
Location: MW-34	
Description: 218-220’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **106**	**Date:** 7/9/20
Location: MW-34	
Description: 220-224’	

Photo No. **107**	**Date:** 7/9/20
Location: MW-34	
Description: 224-227’	

Photo No. **108**	**Date:** 7/9/20
Location: MW-34	
Description: 227-230’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 109	Date: 7/9/20
Location: MW-34	
Description: 230-232’	

Photo No. 110	Date: 7/9/20
Location: MW-34	
Description: 232-234’	

Photo No. 111	Date: 7/9/20
Location: MW-34	
Description: 234-236’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **112**	**Date:** 7/9/20
Location: MW-34	
Description: 236-238’	

Photo No. **113**	**Date:** 7/9/20
Location: MW-34	
Description: 238-240’	

Photo No. **114**	**Date:** 7/9/20
Location: MW-34	
Description: 240-242’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **115**	**Date:** 7/9/20
Location: MW-34	
Description: 242-244’	

Photo No. **116**	**Date:** 7/9/20
Location: MW-34	
Description: 244-246’	

Photo No. **117**	**Date:** 7/9/20
Location: MW-34	
Description: 246-248’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **118**	**Date:** 7/9/20
Location: MW-34	
Description: 248-250’	

Photo No. **119**	**Date:** 7/9/20
Location: MW-34	
Description: 250-252’	

Photo No. **120**	**Date:** 7/9/20
Location: MW-34	
Description: 252-254’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 121	Date: 7/9/20
Location: MW-34	
Description: 254-256’	

Photo No. 122	Date: 7/9/20
Location: MW-34	
Description: 256-258’	

Photo No. 123	Date: 7/9/20
Location: MW-34	
Description: 258-260’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **124**	**Date:** 7/10/20
Location: MW-34	
Description: 260-261.5’	

Photo No. **125**	**Date:** 7/10/20
Location: MW-34	
Description: 261.5-263’	

Photo No. **126**	**Date:** 7/10/20
Location: MW-34	
Description: 263-265’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 127	**Date:** 7/10/20
Location: MW-34	
Description: 265-267.5’	

Photo No. 128	**Date:** 7/10/20
Location: MW-34	
Description: 267.5-270’	

Photo No. 129	**Date:** 7/10/20
Location: MW-34	
Description: 270-272’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **130**	**Date:** 7/10/20
Location: MW-34	
Description: 272-274’	

Photo No. **131**	**Date:** 7/10/20
Location: MW-34	
Description: 274-276’	

Photo No. **132**	**Date:** 7/10/20
Location: MW-34	
Description: 276-278’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **133**	**Date:** 7/10/20
Location: MW-34	
Description: 278-280’	

Photo No. **134**	**Date:** 7/10/20
Location: MW-34	
Description: 280-282’	

Photo No. **135**	**Date:** 7/10/20
Location: MW-34	
Description: 282-284’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **136**	**Date:** 7/10/20
Location: MW-34	
Description: 284-286’	

Photo No. **137**	**Date:** 7/10/20
Location: MW-34	
Description: 286-288’	

Photo No. **138**	**Date:** 7/10/20
Location: MW-34	
Description: 288-290’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 139	Date: 7/10/20
Location: MW-34	
Description: 290-295’	

Photo No. 140	Date: 7/10/20
Location: MW-34	
Description: 300-302’	

Photo No. 141	Date: 7/10/20
Location: MW-34	
Description: 302-304’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 142	**Date:** 7/10/20
Location: MW-34	
Description: 304-306’	

Photo No. 143	**Date:** 7/10/20
Location: MW-34	
Description: 306-308’	

Photo No. 144	**Date:** 7/10/20
Location: MW-34	
Description: 308-310’	

CDM Smith **PHOTOGRAPHIC LOG**

Site: 700 South 1600 East PCE Plume

Project No. 238824

Photo No. 145	**Date:** 7/10/20
Location: MW-34	
Description: 310-312’	

Photo No. 146	**Date:** 7/10/20
Location: MW-34	
Description: 312-314’	

Photo No. 147	**Date:** 7/10/20
Location: MW-34	
Description: 314-316’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **148**	**Date:** 7/10/20
Location: MW-34	
Description: 316-318’	

Photo No. **149**	**Date:** 7/10/20
Location: MW-34	
Description: 318-320’	

Photo No. **150**	**Date:** 7/12/20
Location: MW-34	
Description: 320-322’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **151**	**Date:** 7/12/20
Location: MW-34	
Description: 322-324’	

Photo No. **152**	**Date:** 7/12/20
Location: MW-34	
Description: 324-325’	

Photo No. **153**	**Date:** 7/12/20
Location: MW-34	
Description: 325-327.5’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **154**	**Date:** 7/12/20
Location: MW-34	
Description: 327.5-330’	

Photo No. **155**	**Date:** 7/12/20
Location: MW-34	
Description: 330-332’	

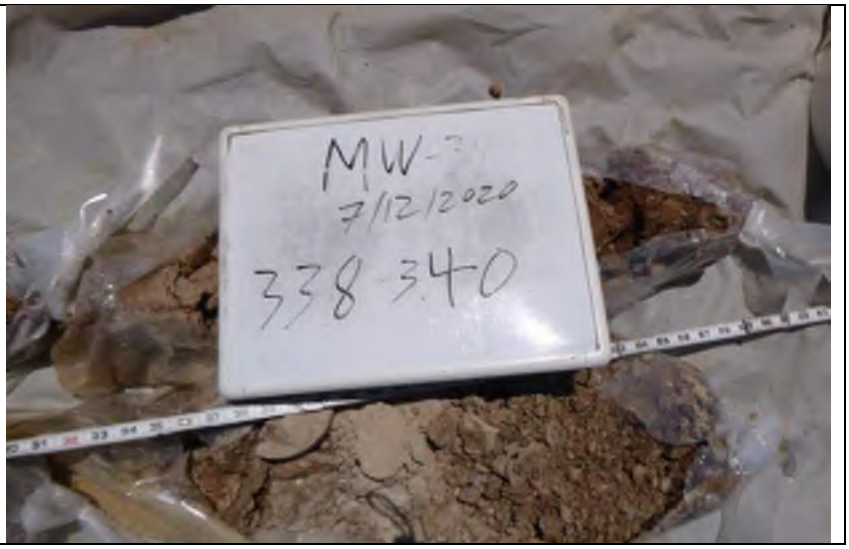
Photo No. **156**	**Date:** 7/12/20
Location: MW-34	
Description: 332-334’	

CDM Smith **PHOTOGRAPHIC LOG**	**Site:** 700 South 1600 East PCE Plume	**Project No.** 238824

Photo No. **157**	**Date:** 7/12/20
Location: MW-34	
Description: 334-336’	

Photo No. **158**	**Date:** 7/12/20
Location: MW-34	
Description: 336-338’	

Photo No. **159**	**Date:** 7/12/20
Location: MW-34	
Description: 338-340’	



CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 160	Date: 7/12/20
Location: MW-34	
Description: 340-342’	

Photo No. 161	Date: 7/12/20
Location: MW-34	
Description: 342-344’	

Photo No. 162	Date: 7/12/20
Location: MW-34	
Description: 344-346’	

CDM Smith PHOTOGRAPHIC LOG	Site: 700 South 1600 East PCE Plume	Project No. 238824

Photo No. 163	Date: 7/12/20
Location: MW-34	
Description: 346-348.5’	

Photo No. 158	Date: 7/12/20
Location: MW-34	
Description: 348.5-350’	

Appendix I

MW-30 Installation Summary

Memorandum

To: *Josephine Newton-Lund, PMP – Senior Project Manager, Environmental Branch, U.S. Army Corps of Engineers*

From: *Nathan Smith, PMP – Project Manager*
Neil Smith – Project Technical Leader

Date: *September 8, 2020*

Subject: *Monitoring Well MW-30 Summary of Installation and Planned Path Forward, 700 South 1600 East PCE Plume Operable Unit 1, Contract W912DQ-18-D-3008, Task Order W912DQ19F3048*

This memorandum summarizes the Holt Services (Holt) installation of Well MW-30 at the 700 South 1600 East PCE Plume Superfund Site in Salt Lake City, Utah. Following installation of this well, CDM Federal Programs Corporation (CDM Smith) identified installation problems that prevented collection of representative groundwater samples from two of the three well completion intervals, which indicated that the well needs to be replaced. The Holt crew installed 7 of the 11 new wells on-site, including MW-30 and four ZIST system installations. No construction or installation issues were identified in the other wells.

Well Installation Summary

On May 6, 2020, Badger Daylighting precleared the MW-30 location with a hydrovac truck to 9.5 feet below ground surface (ft bgs). Badger Daylighting had refusal at that depth, and no utilities were identified. Carlos Aguilar (VA) approved the location for drilling. The boring was backfilled with pea gravel.

Holt (Pete Rosenburg – driller) began sonic drilling at MW-30 on May 22, 2020 and advanced the boring to 110 ft bgs. Holt resumed drilling (after scheduled days off) on 6/2/2020. The boring reached a total depth of 350 ft bgs on 6/8/2020.

Holt began installation of the ZIST wells, which were constructed using 1-inch-diameter Schedule 80 PVC, on June 9, 2020; three screen intervals were installed at 240–250 ft bgs (Zone A), 282–292 ft bgs (Zone B), and 317–327 ft bgs (Zone C). The Zone A well was installed on 6/10/2020; afterwards, while pulling the 7-inch casing out from 180 ft bgs, all three well casings pulled up. Work was stopped and Neil Smith was notified. The field team determined that the well casings were bridged with bentonite against the 7-inch sonic casing and the wells were pulled up when a section of the sonic casing was removed. The remainder of the 7-inch casing was removed from the

boring. On June 11, 2020, Holt advanced the 7-inch casing to 320 ft bgs to remove the well materials. They also advanced the 6-inch core barrel to 330 ft bgs to clean out the boring.

Reinstallation of Well MW-30 resumed on June 12, 2020. The Zone C (target screen interval 317–327 ft bgs) and Zone B (target screen interval 282–292 ft bgs) PVC were installed. While backfilling with sand around the Zone B PVC, the driller tagged depth in the annulus at 280 ft bgs, though a depth closer to 290 ft bgs was expected. The cause of the blockage was not determined, but was suspected to be either formation collapse into the borehole or sand bridging at the bottom of the sonic casing. The driller tried to vibrate the sonic casing to remove the blockage, but still tagged at 280 ft bgs. The driller pulled the next 10-foot section of 7-inch casing (270–280 ft bgs) and tagged at 273 ft bgs. The driller noted that it was likely a formation collapse, as there was minimal filter pack around Zone B. The blockage at 280 ft bgs likely caused the driller to conduct extra vibrating of the sonic casing, which could have broken the PVC well casing or exacerbated the formation collapse. On June 14, 2020, Holt resumed backfilling and pulling 7-inch casing. The Zone A well was installed with screen at 240–250 ft bgs with sand pack at 237–253.5 ft bgs. The Zone A well casing also had a soil vapor probe installed at 30 ft bgs. Holt incrementally pulled the 7-inch casing and backfilled with bentonite chips to a depth 150 ft bgs, then incrementally pulled the 8-inch casing and backfilled with bentonite chips to 40 ft bgs, leaving the 9-inch casing in the boring.

On June 15, 2020, Holt resumed bentonite backfilling from 40 ft bgs. The soil vapor probe sand pack was installed at 27–33 ft bgs. Bentonite was installed at 20–27 ft bgs, and a grout seal was installed (using tremie pipe) at 3.5–20 ft bgs. A flush-mounted Augustyn vault was used as the surface completion.

Unlike most conventional well installations, the ZIST well systems require hanging the well casings during installation. The 1-inch Schedule 80 PVC is not robust enough to support the weight of the entire well. With larger diameter wells (e.g., 4-inch), it is possible to verify depth to bottom prior to installing the filter pack and backfilling the annulus. ZIST well systems provide more information for gradient and vertical delineation than a conventional well, which is important for site characterization, but their construction precludes measurement of total depth inside the well casing at the time of sand filter pack and bentonite seal installation.

Pump Installation and Development

On July 27–28, 2020, CDM Smith attempted to install sampling pumps at MW-30. The total depth measured at MW-30A prior to pump installation was approximately 242 ft bgs, which was near the top of the planned screen interval. The sampling pump was lowered to a depth of approximately 237 ft bgs, several feet above the measured total depth. While water was initially purged using this pump, the recharge rate and performance slowed over time. After pulling the pump, gray silty clay (bentonite) was noted on the pump.

When deploying the MW-30B pump, there was difficulty lowering it approximately the last 8 feet through the well, potentially due to the presence of sediment in the water column above the depth of the pump receiver (anticipated depth of 282 ft bgs). The field team deployed a larger diameter water level meter to tag the bottom of the well; they reached 283.7 ft bgs. The pump was redeployed and pumping was attempted. Dark clay-like material quickly clogged the pump filter.

The sampling pump at MW-30C was installed and purged with no issues noted.

On August 10, 2020, a downhole camera inspection was conducted at MW-30A and MW-30B. At MW-30A, video inspection of the well casing indicated a blockage at approximately 241 ft bgs and the well screen was not visible above that blockage. Slots in the screen should be visible in the video, as even underwater casing joints are apparent in the video as the camera passes. It is likely this well casing is broken and filled with either sand, bentonite, or some combination thereof (the blockage appears to be light in color similar to bentonite).

At MW-30B, the video is difficult to see underwater because of the turbidity, which matches observations made during the pump installation. The camera lowered easily to approximately 274 ft bgs, and the camera slowly sank to approximately 281 ft bgs. This matches observations made while lowering the sampling pump into the well during deployment—when the pump was difficult to lower for the last approximately 8 feet.

Site Geology and Impacts on Drilling

The site is located on alluvial fan deposits that originated in the Wasatch Mountains. During normal conditions, the streams that drain the mountain range develop channels and preferred flow paths. During flooding events, these channels are abandoned, which allows for erosion, transport, and deposition of coarser materials that range from coarse sand and gravel to cobbles and boulders. Once the drainage gradient drops from the mountain stream to the alluvial fan, the transport energy is dissipated and the finer grained materials (silt and sand) are deposited.

These alluvial fan deposits have heterogeneous soil conditions that can make drilling difficult. Drilling through the boulders and cobbles can dislodge materials, create voids, and loosen surrounding materials that were originally supported by finer-grained matrix or against other clasts.

Lithologically, Zone B at MW-30 was installed in gravel and gravel/sand between majority clay units. Potential formation-related drilling issues include potential for wet sand to heave into the boring, or once the surrounding clay gets wet it may slough into the hole. Zone A was installed in a similar lithology with silty sand and sandy gravel between sandy and gravelly clay. It is possible that, during drilling, these zones were effectively cased off; subsequently, these materials might have sloughed into the borehole during backfilling after the casing removal.

Path Forward

Because representative groundwater samples could not be collected from Well MW-30 at Zones A and B, reinstallation is required as summarized:

- Holt Services will abandon-in-place Zones A and B at MW-30 and redrill at an offset location to reinstall Zones A and B at the planned target screen intervals (240–250 ft bgs for Zone A and 282–292 ft bgs for Zone B). The abandonment is pending approval from the State of Utah to pressure grout Zones A and B.
- If the State of Utah does not permit Zones A and B at MW-30 to be pressure grouted, the well will be overdrilled and Zones A, B, and C will all be reinstalled.
- Care will be taken during the reinstallation to avoid formation-related issues that may have been encountered during the initial well installation. The drillers will ensure the sonic casing is free in the hole to minimize the amount of vibration needed to remove casing. The drillers will also clean out the casing of any bridged drilling materials during installation. Well depths will be verified as soon as practical, following installation, to check for damaged well casing.
- Subcontractor costs associated with abandonment, redrilling and well installation, and investigation-derived waste disposal will be borne by Holt Services.

cc: Mr. Greg Hattan – U.S. Army Corps of Engineers

Appendix J

Quality Control Summary Report

This appendix is being provided under separate cover.

Appendix K

Survey Data

Point	Northing	Easting	Elevation	ID
820671	7443663.78	1544832.82	4665.50	CL MW-1
820672	7443664.30	1544832.78	4665.50	NO MW-1
820673	7443664.01	1544833.01	4664.80	MW-1S
820674	7443663.80	1544832.74	4664.80	MW-1D
820675	7443618.23	1545346.65	4685.76	CL MW-2
820676	7443618.76	1545346.62	4685.76	NO MW-2
820677	7443618.28	1545346.71	4685.24	MW-2
820694	7444184.94	1545418.19	4698.74	CL MW-3
820695	7444185.28	1545417.86	4698.74	NO MW-3
820696	7444184.95	1545418.14	4698.12	MW-3A
820697	7444185.07	1545418.33	4697.90	MW-3B
820698	7444185.19	1545418.23	4697.92	MW-3C
820699	7444184.80	1545418.35	4697.93	MW-3D
820678	7442902.88	1545176.20	4657.20	CL MW-4
820679	7442903.31	1545176.26	4657.20	NO MW-4
820680	7442903.12	1545176.19	4656.85	MW-4
820719	7444293.27	1546450.38	4738.25	CL MW-5
820720	7444293.52	1546449.93	4738.25	NO MW-5
820721	7444293.35	1546450.34	4737.99	MW-5
820686	7442705.05	1546174.37	4679.13	CL MW-6
820687	7442705.36	1546174.55	4679.13	NO MW-6
820688	7442705.14	1546174.50	4678.66	MW-6
820606	7443625.54	1542467.21	4540.36	CL MW-08
820607	7443626.04	1542467.18	4540.36	NO MW-08
820608	7443625.56	1542467.38	4539.81	MW-08A
820609	7443625.49	1542467.11	4539.77	MW-08B
820610	7443625.72	1542467.20	4539.68	MW-08C
820626	7442139.20	1540464.27	4360.40	CL MW-12D
820627	7442139.62	1540464.30	4360.40	NO MW-12D
820628	7442139.30	1540464.08	4360.07	MW-12D
820623	7442144.27	1540464.18	4360.35	CL MW-12S
820624	7442144.62	1540464.20	4360.35	NO MW-12S
820625	7442144.49	1540464.22	4360.03	MW-12S
820617	7442104.65	1541840.18	4482.93	CL MW-13D
820618	7442105.06	1541840.19	4482.93	NO MW-13D
820619	7442104.79	1541840.30	4482.62	MW-13D
820620	7442104.90	1541844.99	4483.26	CL MW-13S
820621	7442105.23	1541844.99	4483.26	NO MW-13S
820622	7442105.03	1541845.01	4482.93	MW-13S
820638	7441874.22	1541345.22	4416.45	CL MW-14D
820639	7441874.69	1541344.95	4416.45	NO MW-14D
820640	7441874.21	1541345.30	4415.93	MW-14D
820635	7441871.55	1541340.04	4415.96	CL MW-14S
820636	7441871.91	1541339.80	4415.96	NO MW-14S
820637	7441871.60	1541340.10	4415.69	MW-14S

820629	7441412.63	1540283.39	4347.99	CL MW-15D
820630	7441413.07	1540283.38	4347.99	NO MW-15D
820631	7441412.68	1540283.41	4347.72	MW-15D
820632	7441412.92	1540276.55	4347.65	CL MW-15S
820633	7441413.29	1540276.54	4347.65	NO MW-15S
820634	7441412.97	1540276.53	4347.35	MW-15S
820614	7443052.83	1541188.80	4455.32	CL MW-16D
820615	7443053.29	1541188.75	4455.32	NO MW-16D
820616	7443053.06	1541188.67	4454.84	MW-16D
820611	7443049.27	1541188.74	4455.19	CL MW-16S
820612	7443049.67	1541188.75	4455.19	NO MW-16S
820613	7443049.27	1541188.64	4454.83	MW-16S
820641	7441762.17	1542159.83	4465.86	CL MW-17D
820642	7441762.54	1542159.69	4465.86	NO MW-17D
820643	7441762.18	1542159.89	4465.69	MW-17D
820644	7441761.45	1542156.28	4465.51	CL MW-17S
820645	7441761.85	1542156.15	4465.51	NO MW-17S
820646	7441761.31	1542156.28	4465.18	MW-17S
820647	7443344.52	1542789.74	4559.06	CL MW-18
820648	7443344.91	1542789.69	4559.06	NO MW-18
820649	7443344.60	1542789.79	4558.76	MW-18
820650	7443109.99	1542791.56	4557.51	CL MW-19
820651	7443110.37	1542791.55	4557.51	NO MW-19
820652	7443109.94	1542791.53	4557.16	MW-19
820656	7442813.21	1542905.39	4558.46	CL MW-20D
820657	7442813.58	1542905.41	4558.46	NO MW-20D
820658	7442813.27	1542905.41	4558.19	MW-20D
820653	7442822.74	1542905.98	4558.92	CL MW-20S
820654	7442823.12	1542905.92	4558.92	NO MW-20S
820655	7442822.83	1542905.94	4558.61	MW-20S
820659	7442343.24	1543130.25	4563.57	CL MW-21
820660	7442343.59	1543130.25	4563.57	NO MW-21
820661	7442343.33	1543130.28	4563.32	MW-21
820662	7441969.31	1543122.59	4563.06	CL MW-22
820663	7441969.66	1543122.56	4563.06	NO MW-22
820664	7441969.26	1543122.55	4562.72	MW-22
820722	7443809.38	1546280.59	4712.47	CL MW-23
820723	7443809.73	1546280.20	4712.47	NO MW-23
820724	7443809.23	1546280.52	4711.80	MW-23A
820725	7443809.39	1546280.45	4711.77	MW-23B
820726	7443809.44	1546280.57	4711.69	MW-23C
820710	7443698.74	1546266.48	4709.77	CL MW-24
820711	7443698.86	1546266.01	4709.77	NO MW-24
820712	7443698.80	1546266.33	4709.19	MW-24
820705	7443676.94	1546071.97	4703.04	CL MW-25
820706	7443677.09	1546071.47	4703.04	NO MW-25

820707	7443676.93	1546072.04	4702.02	MW-25A
820708	7443676.99	1546071.93	4702.09	MW-25B
820709	7443676.79	1546071.96	4702.07	MW-25C
820713	7443907.17	1546132.96	4713.25	CL MW-26
820714	7443907.45	1546132.53	4713.25	NO MW-26
820715	7443907.29	1546132.89	4712.29	MW-26A
820716	7443907.24	1546132.98	4712.55	MW-26B
820717	7443907.12	1546133.02	4712.51	MW-26C
820718	7443907.17	1546132.88	4712.50	MW-26D
820727	7443766.76	1546337.14	4712.61	CL MW-27
820728	7443767.09	1546336.72	4712.61	NO MW-27
820729	7443766.85	1546337.20	4712.34	MW-27
820730	7443764.76	1546532.92	4712.80	CL MW-28
820731	7443764.95	1546532.47	4712.80	NO MW-28
820732	7443764.81	1546532.89	4712.54	MW-28
820689	7442845.95	1545935.59	4679.35	CL MW-29
820690	7442846.46	1545935.58	4679.35	NO MW-29
820691	7442846.05	1545935.56	4678.46	MW-29 A
820692	7442845.99	1545935.56	4678.45	MW-29 B
820693	7442845.97	1545935.69	4678.68	MW-29 C
820700	7445073.45	1545424.98	4723.07	CL MW-30
820701	7445073.87	1545424.67	4723.07	NO MW-30
820702	7445073.57	1545424.83	4722.00	MW-30A
820703	7445073.49	1545424.96	4721.79	MW-30B
820704	7445073.42	1545425.05	4721.92	MW-30C
820681	7442512.47	1545351.52	4655.22	CL MW-31
820682	7442512.99	1545351.45	4655.22	NO MW-31
820683	7442512.66	1545351.42	4654.27	MW-31A
820684	7442512.69	1545351.52	4654.39	MW-31B
820685	7442512.61	1545351.65	4654.35	MW-31C
820601	7444416.40	1542692.62	4566.22	CL MW-32
820602	7444416.90	1542692.59	4566.22	NO MW-32
820603	7444416.50	1542692.74	4565.67	MW-32A
820604	7444416.64	1542692.56	4565.63	MW-32B
820605	7444416.36	1542692.54	4565.59	MW-32C
820665	7443498.84	1543745.66	4623.61	CL MW-34
820666	7443499.37	1543745.69	4623.61	NO MW-34
820667	7443498.97	1543745.67	4623.09	MW-34A
820668	7443499.00	1543745.52	4622.71	MW-34B
820669	7443498.86	1543745.46	4622.63	MW-34C
820670	7443498.76	1543745.65	4622.58	MW-34D

Appendix L

Well Development Purge Logs

Appendix L Table 1
Monitoring Well Development Summary

Location	Sample Interval	Development Approach	Date Developed	Volume of Water Added During Drilling (gallons)	Volume of Water Removed During Development (gallons)	Pump Type
MW-23	A	Not developed	NA	300	NA	ZIST w/ reciever
	B	Not developed	NA		NA	ZIST w/ reciever
	C	Air lift	6/12/2020		NR	ZIST w/ reciever
MW-24	-	Bail and pump (submersible) by Holt	6/18/2020	200	640	Solinst bladder pump
MW-25	A	Pump (Panacea) by CDM Smith	6/9/2020	0	4	ZIST w/ reciever
	B	Air lift	6/8/2020		NR	ZIST w/ reciever
	C	Pump (Panacea) by CDM Smith	6/9/2020		4	ZIST w/ reciever
MW-26	A	Not developed	NA	0	NA	ZIST w/ reciever
	B	Not developed	NA		NA	ZIST w/ reciever
	C	Not developed	NA		NA	ZIST w/ reciever
	D	Air lift	6/11/2020		NR	ZIST w/ reciever
MW-27	-	Bail and pump by Holt	6/17/2020	0	360	Solinst bladder pump
MW-28	-	Bail and pump by Holt	6/18/2020	0	370	Solinst bladder pump
MW-29	A	Pump (Panacea) by CDM Smith	7/31/2020	0	NR	ZIST w/o reciever
	B	Pump (Panacea) by CDM Smith	7/31/2020		NR	ZIST - w/ reciever
	C	Air lift	7/29/2020		20	ZIST - w/ reciever
MW-30	A	Not developed	NA	0	NA	NA
	B	Not developed	NA		NA	NA
	C	Air lift	7/27/2020		20	ZIST w/ reciever
MW-31	A	Pump (Panacea) by CDM Smith	7/29/2020	0	NR	ZIST w/o reciever
	B	Pump (Panacea) by CDM Smith	7/29/2020		NR	ZIST w/ reciever
	C	Air lift	7/29/2020		27	ZIST w/ reciever
MW-32	A	Bail and pump by CDM Smith	7/31/2020	0	47	Solinst bladder pump
	B	Air lift	7/31/2020		20	ZIST w/o reciever
	C	Air lift	7/31/2020		30	ZIST w/o reciever
MW-34	A	Not developed	NA	0	NA	ZIST w/o reciever
	B	Pump (Panacea) by CDM Smith	7/30/2020		NR	ZIST w/o reciever
	C	Air lift	7/30/2020		20	ZIST w/o reciever
	D	Air lift	7/30/2020		40	ZIST w/o reciever

Acronyms:
amsl = above mean sea level
bgs = below ground surface
ft = feet
NA = not applicable
NR = not recorded
ZIST = Zone Isolation Sampling Technology

Appendix A.3. Well Development Log

Monitoring Point: MW-24 Date: 6/18/2020 Sampler: K. Keller

Weather: Visitors:

Boring Dia. 8 Casing Dia. ~~2~~ 4" DTW: 183.9 TOC TD: 240' Pump Intake Depth: 210 Pump Top Depth:

Purge/Sampling Method: Sub/Bailer pump Vial pH: Depth to Water @Sampling:

Calculated Purge Volume[1] (Method 1): 200 (Water added during construction (gal)) x 2 = 400 (Purge Volume (gal) (0.0))

[1] = Calculate the purge volume using both methods. Purge the well to whichever volume is greater.

Calculated Purge Volume[1] (Method 2): [(230 (TD (ft)) - 183.9 (DTW (ft)) x 0.66 (CF) + 0.98 (BF))] + (16.1 (Casing Leng. (ft)) x 0.66 (CF)) = 5.23 x 5 + 200 (Water added during construction (gal)) = 631.15 (Purge Volume (gal) (0.0)) ÷ 635

46.1 (Casing and Annular Volume) 1.64 10.626 (Vol. Above Filter Pack) 43.15

Casing Volume Factors (gal/ft): 2"= 0.17; 4"=0.66; 5"=0.95 Borehole Factor Vols. (Cas.Dia/Bor.Dia.)(in): 2/8"= 0.71 gal/ft; 4/10"= 0.98 gal/ft; 4/12"= 1.18 gal/ft; 5"/12"= 1.38 gal/ft

Site Safety: PPE Disposal: Disposition of Purge Water: 90% Recharge Level: ft

635 / 8.3 = 76.5 min 635 / 10 gpm = 64/min

Time	Purge Vol specify ml or gal	Temp (C) (0.0)	pH (0.0)	Specific Cond. (mS/cm) (0.000)	Turbidity (NTU) (0.0)	GW Level (ft below MP)	Comments (Color/Odor)
1000	—	—	—	—	—	184.55	pre pump
1010	10 gpm KK	12.75	6.77	1.23	43.5	185.14	
1010	8.3 gpm KK	12.68	6.90	1.251	18.2	185.14	
1015	8.3 gpm KK	12.60	6.95	1.246	20.0	185.12	
1020	8.3 gpm KK	12.61	6.99	1.248	19.6	185.13	
1025	8.3 gpm KK	12.62	7.00	1.251	15.2	185.12	
1030	8.3 gpm KK	12.64	7.00	1.250	20.5	185.13	250 gallons = (8.3 gpm)
1035	8.3	12.63	7.01	1.258	17.2	185.13	
1040	8.3	12.63	7.01	1.258	13.1	185.12	stopping to empty tote 320 total to this point
1110	(10 gpm)	—	—	—	—	185.09	restarting to pump (Holt says 10 gpm)
1115	8 gpm KK	13.12	7.27	1.268	8.69	185.10	
1120	8 gpm KK	12.83	7.12	1.282	5.66	185.11	
1125	8 gpm KK	12.76	7.11	1.274	4.16	185.12	
1130	8 gpm KK	12.74	7.09	1.274	3.60	185.12	
1135	8 gpm KK	12.76	7.04	1.272	4.10	185.11	
1140	8 gpm KK	12.74	7.04	1.277	2.40	185.11	250 gal at 4L 31 min = 8 KK gpm
~~1145~~ KK	8 gpm KK	12.74	7.04	1.275	3.05	185.12	
1150	8 gpm KK	12.72	7.02	1.273	2.62	185.12	640 gallons total at 1151
~~1155~~ KK							

Appendix A.3. Well Development Log

Monitoring Point: MW-27 Date: 6/17/20 Sampler: J. Miller K. Keller

Weather: Visitors:

Boring Dia. 8 Casing Dia. 6" 4" DTW: 186.82 TD: 220.2 Pump Intake Depth: ~~190~~ 200 Pump Top Depth: 146

Purge/Sampling Method: Sub/Bailer Pump Vial pH: Depth to Water @Sampling:

Calculated Purge Volume[1] (Method 1) ____ (Water added during construction (gal)) x 2 = ____ (Purge Volume (gal) (0.0))

[1] = Calculate the purge volume using both methods. Purge the well to whichever volume is greater.

Calculated Purge Volume[1] (Method 2) [(220.2 (TD (ft)) - 186.82 (DTW (ft)) 0.66 (CF) + 0.98 (BF))] + (17 (Casing Leng. (ft)) x .66 (CF)) = 33.4 + 1.64 (Casing and Annular Volume) = 35.04 x 5 + 0 (Water added during construction (gal)) = 330 (Purge Volume (gal) (0.0))

1.22 (Vol. Above Filter Pack) 66

Casing Volume Factors (gal/ft): 2"= 0.17; 4"=0.66; 5"=0.95 Borehole Factor Vols. (Cas.Dia/Bor.Dia.)(in): 2/8"= 0.71 gal/ft; 4/10"= 0.98 gal/ft; 4/12"= 1.18 gal/ft; 5"/12"= 1.38 gal/ft 4/8" 0.41

Site Safety: PPE Disposal: Disposition of Purge Water: 90% Recharge Level: ft

Time	Purge Vol specify ml or gal	Temp (C) (0.0)	pH (0.0)	Specific Cond. (mS/cm) (0.000)	Turbidity (NTU) (0.0)	GW Level (ft below MP)	Comments (Color/Odor)
1410	—	—	—	—	—	186.40	Pre pump
1400	7.5gpm	14.28	6.61	1.385	1068 NTU	187.30	
1415	7.5gpm	13.27	6.90	~~13~~ 1709	104 NTU	187.18	
1425	7.5gpm	12.99	7.00	1713	23.9	187.26	
1430	7.5gpm	12.85	7.02	1712	13.2	187.03	180gal
1435	7.5gpm	12.80	7.07	1717	14.6	187.29	
1440	7.5gpm	12.98	7.06	1717	7.53	187.28	
1445	7.5	13.18	7.08	1721	7.77	187.29	
1450	7.5	12.87	7.09	1725	7.60	187.29	330gal
1454	7.5	12.92	7.11	1719	7.57	187.25	360gal (total)

330gal / 7.5gpm = 44min

Appendix A.3. Well Development Log

Monitoring Point: MW-28 Date: 6/18/20 Sampler: K. Keller

Weather: Visitors:

Boring Dia. 8 Casing Dia. 4 DTW: 185.21 TD: Pump Intake Depth: Pump Top Depth:

Purge/Sampling Method: Vial pH: Depth to Water @Sampling:

Calculated Purge Volume[1] (Method 1) _____ (Water added during construction (gal)) x 2 = _____ (Purge Volume (gal) (0.0))

[1] = Calculate the purge volume using both methods. Purge the well to whichever volume is greater.

Calculated Purge Volume[1] (Method 2) [(210 (TD (ft)) - 185.21 (DTW (ft)) x 1.64 (CF) + .98 (BF) = 40.656 (Casing and Annular Volume)] + [(4.79 (Casing Leng. (ft)) x 0.66 (CF) = 3.1614 (Vol. Above Filter Pack)] = 43.8174 x 5 + ~~219.087~~ 5140 (Water added during construction (gal)) = 219.057 (Purge Volume (gal) (0.0))

Casing Volume Factors (gal/ft): 2"= 0.17; 4"=0.66; 5"=0.95 Borehole Factor Vols. (Cas.Dia/Bor.Dia.)(in): 2/8"= 0.71 gal/ft; 4/10"= 0.98 gal/ft; 4/12"= 1.18 gal/ft; 5"/12"= 1.38 gal/ft Min 225 gal

Site Safety: PPE Disposal: Disposition of Purge Water: 90% Recharge Level: ft

Time	Purge Vol specify ml or gal	Temp (C) (0.0)	pH (0.0)	Specific Cond. (mS/cm) (0.000)	Turbidity (NTU) (0.0)	GW Level (ft below MP)	Comments (Color/Odor)
1435	—	—	—	—	—	185.95	Hilt says ~10 gpm
1440	8.3	15.42	6.84	1.441	orange	187.75	very turbid
1445	8.3	13.15	6.96	1.367	2275	187.78	clearing slightly
1450	8.3	13.43	7.04	1.362	95	187.85	
1455	8.3	13.07	6.97	1.377	43.1	187.84	
1500	8.3	13.09	6.96	1.396	22.1	187.86	
1505	8.3	13.00	6.99	1.385	11.2	187.84	250 gallons
1510	8.3	12.88	7.03	1.393	8.52	187.84	
1515	8.3	12.92	7.06	1.395	5.87	187.86	
1520	8.3	13.01	7.01	1.409	4.98	187.86	~ 373 gallons total

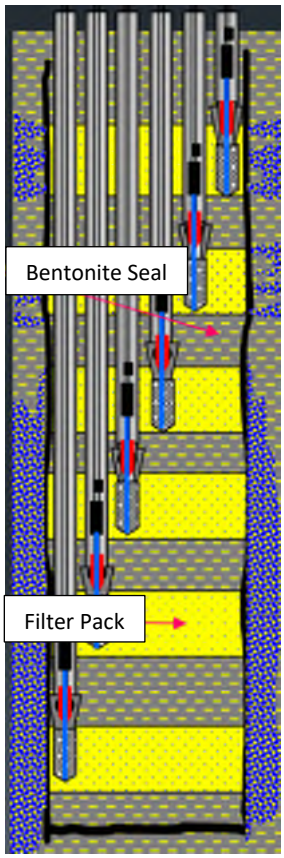
BESST INC.
GLOBAL SUBSURFACE TECHNOLOGIES

Zone Isolation Sampling Technologies (ZIST)

2018 ZIST Well Installation Standard Operating Procedures – Nested Multi-Level Completions

Introduction:

Throughout the entire length of this document it is important to emphasize that the ZIST system is a scalable technology that can be made with essentially any combination of well products and materials. ZIST riser pipe can be made from PVC, fiber glass, steel, stainless steel, etc. ZIST tubing can be any grade of Teflon, polyethylene, Nylon etc. ZIST pumps can be made from a variety of materials such as PVC, Delrin, stainless steel etc. The key factors that determine the product materials combinations are water quality issues, and depth of application. The mention of various materials within the body of this document are one of many possible examples. Ultimately, the end user should consult with BESST, Inc. as to what the most suitable materials should be for their specific application. ZIST wells can be installed at very shallow depths to many thousands of feet. Various depths and diameters are all feasible as long as the appropriate materials are selected.



1. ZIST Monitoring Well Installation – Step#1: Preparation

The first step in any well installation operation is always to inspect the product in order to identify potentially defective equipment. This is particularly important for the ZIST riser pipe. When the pipe arrives at the job site, all of the boxes should be opened as part of the inspection process to makes sure that the pipe threads are not damaged.
Occasionally, the female thread side of the riser pipe might be slightly chipped due to the thinness of the PVC around the outside of the thread. If this is observed, then the pipe section should be removed from the supply and set to the side and marked with a sharpie as damaged so that it is not used.

Before the installation begins, all of the pipe used for the installation should be laid out on a plastic or visqueen tarp. Before the placement of any riser pipe section into the well bore, the field staff shall inspect the pipe to make sure that the threads are not damaged and that a 020 o-ring is located around the base of the male flush thread on the pipe. If the o-ring appears to be worn or damaged in any way, it should be replaced with a new o-ring from the ZIST o-ring kit.

Another key point before the start of installation is for the field staff to discuss the method of installation and to agree on each person's responsibilities during the well installation process. A schematic of the well completion should be available during the group discussion to facilitate a visual image in each person's mind as to how the well will be installed. One of the most important discussion items to emphasize is that the process should not be rushed. Filter pack sand, bentonite pellets, bentonite chips and other types of annular materials should not be haphazardly dispensed into the well bore. Rather, a metered approach should be taken during emplacement of annular materials.

Before the process starts, the field team needs to make sure that there is a borehole tagger of appropriate length. The borehole tagger can be supplied by either BESST or the driller. As a matter of convenience, there should be two borehole taggers in the event that one gets stuck in the bore hole during the annular backfilling process.

The list below defines the most essential field equipment to have on hand for smooth installation of the ZIST multi-port system:

- Borehole Tagger with Weighted End (preferably 2 units): Supplied By Driller or BESST
- Curved Pipe Vice Grips for each nested well: Supplied By BESST
- Lifting Bails with Nylon rope: Supplied By BESST for each nested well
- 1 or 2 Pipe Dogs: Supplied By Driller or BESST
- ZIST O20 O-Ring Kit: Supplied By BESST
- Funnel for Filter Pack Material: Supplied By BESST or Driller
- Filter Pack Sand for ZIST Well Screens: Supplied By Driller
- PDS Co TR 30 Bentonite Pellets: Supplied by Driller
- All other annular materials: Supplied By Driller
- Brushes to clean pipe threads
- ZIST White Colored PVC Riser Pipe (Schedule 40 - 1" x 10' Long +/- ¼" to ¾") including short sections (Riser Pipe Adapters with same specification as 10' pipe) such as 3", 6", 1', 2', 3', 4' 5')
- ZIST Well Screens (10' sections) and 3-ft long Sumps with bottom cap
- ZIST Receivers
- ZIST Pumps
- ZIST Tubing and Fittings
- ZIST Well Caps
- Optional: ZIST Well Development Kit: Supplied By BESST

2. ZIST Monitoring Well Installation – Step #2: Installation Sequence

In a typical multi-level ZIST installation, the deepest ZIST zone is always installed first, followed by the second deepest and then the shallowest. As mentioned earlier, each ZIST monitoring zone is separated by an impermeable bentonite seal (or other type of required seal). For each installation, it is highly recommended that TR 30 coated bentonite pellets be used at the very least for a vertical lift distance of approximately 5 feet above the filter pack sand for the lowermost zone and approximately 5 feet above and below the filter pack sand for all shallower zones within the same borehole.

For each installation, a filter pack material will be used around the ZIST well screen. The sand should rise approximately 3-feet above the top of each well screen – as well as descend 3-feet below the well screen sump. The TR 30 is then emplaced onto the top of the sand. The borehole tagger should be constantly used throughout the backfill process to monitor the ascension depth of the annular materials. The TR 30 or other type of annular sealing material should rise only to within 3 feet of the next higher well screen / sump assembly. The 3-foot zone between the TR 30 bentonite and the bottom of the well screen sump should be filled with the appropriate filter pack sand. The purpose of constructing the ZIST monitoring point with an excess of 3-feet of filter pack sand below the well screen sump is to compensate for potential sinking of the riser pipe string during the installation process. The excess sand will ensure that the screened section of the well does not sink into the bentonite below – the well screen sump providing some extra distance.

When installing ZIST wells it is preferable to install the well with the male pipe threads facing up. The purpose of this approach is to avoid as much as possible getting grit into the female pipe threads during installation. Male threads are more easily cleaned during installation than female threads.

The first well component lowered into the well bore is the well screen sump and well screen. Field staff need to make sure that the bottom end cap resides at the bottom end of the sump. Field personnel also need to make sure that there are no broken screen ribs along the length of the well screen. The o-rfing at the top of the well screen, and surrounding the base of the male thread should be inspected to make sure it is not dessicated and/or cracked. If it is, then it should be immediately replaced in the field with a fresh, new o-ring (size = 020, buna, with a hardness durometer of 70).

Field staff should make sure that the ZIST receiver is attached to the top of the well screen (female side down) and can be easily identified by its black color. The male threads of the ZIST receiver should be facing up. Prior to threading on the ZIST receiver to the top of the well screen, field staff should inserted their index finger through the male thread end of the ZIST receiver and search for the tapered circumferential wall inside. If the tapered wall is not present, then the ZIST receiver should be discarded and one with a taper used in its place. The ZIST receiver should not be installed if field staff identify any of the following problems listed below:

- There is no circumferential internal taper inside the receiver.
- The bottom rim of the female thread is cracked or chipped.
- The female thread of the receiver does not completely screw onto the male thread of the well screen below it.
- The installer does not feel an o-ring crush when the female thread of the ZIST receiver is cinched onto the male thread of the well screen.
- The female thread of the first riser pipe stick does not screw onto the male thread of the ZIST receiver.
- The male thread of the ZIST receiver is cracked or chipped.
- Either the male or female thread of the ZIST receiver is out of round, appears ovalated, or crushed.
- NOTE: If there is no 020, Buna o-ring at the base of the make thread of the ZIST receiver, then one should be immediately installed onto the base of the make thread. The 020 o-ring can be located in the riser pipe o-ring kit.

Before installing the first riser pipe section to the top of the ZIST male thread, make sure that the female thread of the riser pipe section is not chipped or cracked. When the riser pipe is completely screwed onto the male thread of the ZIST receiver, the installer should make sure that a crush is felt when the riser pipe is rotationally cinched onto the thread. The riser pipe is attached to the top end of the ZIST receiver. The entire section is lowered into the well bore by using the lifting bail sub supplied by BESST. The lifting bail sub consists of a PVC flush threaded well cap and steel I-Bolt (with a 1-inch pass through) extending from its top end. The driller then uses the winch hook with retractable clasp to secure the top of the lifting bail and then lowers the pipe section into the

borehole

Before the driller disconnects the winch from the lifting bail / I-Bolt assembly each time, the field staff must make sure that the pipe is firmly secured with the vice grips and pipe dog so that the pipe does not fall down the hole when the winch is disconnected. This process is repeated over and over until the riser pipe string touches the bottom of the borehole. At this point, the driller needs to lift the riser pipe string about 6-inches off the bottom of the borehole, such that the riser pipe string is completely suspended in the borehole. The purpose for doing this is twofold. First, weight should not be placed on the well screen and second, suspension of the riser pipe section helps to keep the well straight.

At this point, the first step in the back filling process begins. First, filter pack sand is tremmied into borehole or can be emplaced into the well through the well bore – allowing the sand to free-fall into position. This procedure will likely work very well where artesian conditions are absent. However, a tremmie pipe might be necessary where artesian conditions are encountered. The tagger is used to monitor the ascension of the filter pack sand and it is recommended that the sand ascends to a depth of 3-feet above the top of the ZIST well screen. Care should be taken to make sure that all of the sand has settled before moving on to emplacement of the TR 30 coated bentonite pellets.

It is recommended that the TR 30 be placed into the borehole without a tremmie and allowed to free-fall to the bottom. The TR 30 pellets should be scooped into the borehole at a measured pace. THE TR 30 PELLETS SHOULD NOT BE POURED INTO THE BOREHOLE TO AVOID BRIDGING AND TO AVOID BURIAL OF THE WLLBORE TAGGER. As mentioned above, the bentonite seal should only come within 3-feet of the bottom of the well screen sump of the next overlying monitoring zone. This process is repeated over and over for as many zones installed into the well bore.

As each riser pipe string becomes initially buried with the annular materials (specifically filter pack sand), the Nylon rope (supplied by BESST) should be attached between the lifting bail assembly and the winch. A moderate winch line tension should be used to make sure that the riser pipe remains straight in the borehole during delivery of the annular materials into the well bore. This straightening process will ensure that there is little to no deviation due to curving of the riser pipe during the backfilling process and that there is an adequate seal between each riser pipe.

The topmost TR 30 bentonite seal emplaced above the topmost filter pack sand section should be no less than 5-feet thick. Above this point, the driller has a choice of annular Back-fill materials to use. It is recommended that a bentonite volclay seal be used to within 5-feet of the ground surface – and allowed to cure before a Portland cement surface seal is emplaced. A tremmie pipe can be used to emplace the volclay seal – or it can be pumped from the surface into the borehole – being that the top most zone is only 50 feet deep and that the 3 feet of # 2/12 sand above the well screen plus the 5 feet of TR 30 shallows the effective depth of the well bore to about 43 feet.

3. ZIST Monitoring Well Installation – Step #3: Surface Completion

The surface completion is the last step in the ZIST well completion process. It is recommended that the surface completion box or vault provide ample working space for the nested well head configuration. In particular, extra space will allow for configuration of the well head assembly for artesian conditions as well as for storage of other items such as extra line and transducer cable. NOTE: DO NOT CUT OFF THE TOP OF THE ZIST RISER PIPE. IT MUST REMAIN THREADED. A THREADED END CAP IS PROVIDED. SHORT PIECE RISER PIPE ADAPTERS ARE PROVIDED TO ENSURE THAT THE RISER PIPE ASCENDS TO THE PROPER HEIGHT INSIDE THE SURFACE COMPLETION.

4. ZIST Monitoring Well Installation – Step #4

ZIST monitoring wells can be developed to achieve the goals of removing fines accumulated in the bottom of the wells, allowing the wells to be responsive to potentiometric head changes in the aquifer, and producing groundwater samples representative of the conditions in the adjacent formation.

4.1 Description of Development Equipment For ZIST Monitoring Wells

The ZIST wells shall be developed by a process known as air-lifting. The air-lifting process conceptually consists of injecting a compressed gas into the body of

vertical water column within a well. The compressed gas introduced into the well forms bubbles within the vertical water column thereby lowering it's specific gravity and causing the upward rise for the gas-water mixture to the ground surface. A diverter (Figure 5 - supplied by BESST, Inc.) is attached to the top of the ZIST well before the process begins. The operational nature of the diverter is that it allows for compressed gas to be injected through a top end tube-compression port and developed water from the ZIST well to be ejected out through a side tube-compression port. The first step in setting up the diverter for the 1-inch ZIST wells is to attach a tube of appropriate length for each well. As an example, 50-ft deep ZIST wells should use a gas-injection tube length of approximately 70 feet, 100-ft deep ZIST wells should use a gas-injection tube length of approximately 120 feet, and 150-ft ZIST wells should use a gas-injection tube length of approximately 170 feet. As indicated in these examples, the appropriate tubing length for each well depth is always about 20 feet longer than the well depth itself. This construct allows for ample working distance from the well-head for well development staff. For deeper ZIST wells the same logic is applied accordingly.

The gas-injection tube should consist of a fairly dense polymer with minimal coiling memory – allowing the tube to remain relatively straight within the well during well development. For this purpose and well depth, the most suitable choice as recommended by BESST is Teflon FEP and the dimension of FEP tubing that should be used with 1-inch Schedule 80- PVC ZIST pipe is ¼" OD x 3/16" ID. However, as a matter of budget, other type of tubing can be used provided there is sufficient weight at the bottom of the tubing. At the bottom end of the gas-injection tubing is attached a stainless steel injection stinger supplied by BESST. The injection stinger (IS) is connected to the bottom of the gas- injection tubing by means of a ¼" Swage-lok tube compression fitting. The injection stinger is perforated along its length and allows the release of the compressed gas into the vertical water column. The IS also is heavy enough to provide suitable straightening tension to the gas-injection tube.

When setting up the diverter, the first component that enters the top of the well is the IS, followed by the attached gas-injection tubing, and then by the diverter assembly itself. The diverter should rise about 3 feet from the ground surface by means of a 3-foot long, flush threaded, 1-inch Schedule 80 riser supplied by BESST. The bottom end of the riser is flush threaded and should easily screw onto the male flush thread ZIST pipe sticking out of the ground surface. The male end of the riser pipe should always be checked to see if there is any debris on the threads and that there is always a Buna or Viton 020 O-ring at the base of the 1-inch male flush thread. If the o-ring appears to be worn or damaged in any way, the o-ring should be removed and replaced with a new o- ring before well development begins. BESST shall provide an ample supply of 020 replacement o-rings as part of the diverter kit – as well as a small bristle brush for cleaning the male ZIST thread that the diverter is attached to.

At the ground surface, there should be about 20 to 30 feet of gas-injection tubing. As indicated in Figure 5, the gas injection tubing extends from a ¼" tube compression fitting located at the top of the diverter and is connected directly to a compressed gas regulator. A ¾" x 25-foot long garden hose is connected to the side of the diverter, with the end of the hose inserted into a containment vessel for the well development water.

The compressed gas regulator should be equipped with a manually controlled bleed off valve to allow the compressed gas inside the riser pipe to dissipate after each slug of water is removed during the air-lifting process. Dissipation of the compressed gas will allow the ZIST well to recharge before the next gas injection.

4.2 Operation Of Well Development Equipment For ZIST Monitoring Wells

When setting up the diverter assembly, the injection stinger (IS) should never be lowered into or just above the well screen section of the ZIST well. Instead, the IS should be lowered to a point that is no lower than 10-feet above the well screen for the shallow wells (50 to 75 feet bgs), and no lower than 20 feet above the deeper wells (100 to 150 feet deep). The reason for this is that it is important to minimize or prevent the injection of compressed gas into the surrounding formation. If compressed gas were to enter the surrounding formation an air-lock or air-bubble could form in the surrounding earth materials that would cause disruption of groundwater flow to the well during the development process and potentially during well sampling events.

The formula used for determining the appropriate lift pressure for air-lifting of any well is the following:

{[Depth To Injection Stinger / (2.31 Ft. / PSI)] x 1.1}

As indicated in the formula there is a factor of (1.1). This factor adds 10% more pressure to the calculation in order to compensate for head loss due to friction inside the riser pipe.

Before compressed gas is released to the diverter assembly, all of the surface fittings should be checked to see that they are tight. All lose connections should be tightened before air-lifting operations begin. The 3-foot long riser pipe extension should also be checked to see that is securely screwed onto the ZIST riser pipe sticking up from the ground surface. It is important to note here that it is not necessary to use Teflon tape around the male flush thread of the ZIST riser pipe – and that use of the 020 o-ring is all that is necessary. NOTE: THE USE OF TEFLON TAPE AROUND THE MALE FLUSH THREAD SHOULD NOT BE USED AT ALL. THE TEFLON TAPE MAY CAUSE THE THREADS TO LEAK DURING AIR-LIFTING AND POSSIBLY CAUSE THE 3-FOOT RISER ENXTENSION TO LAUNCH OFF OF THE MALE THREAD. ALWAYS MAKE SURE THAT THE 020 O-RING IS IN PLACE AN IN GOOD CONDITION. IF THE 020 O-RING APPEARS TO BE WORN OR DAMAGED THEN IT SHOULD BE CHANGED IMMEDIATELY BEFORE AIR-LIFTING OPERATIONS BEGIN.

As a practical matter, if the 3-foot long extender were to separate from the male thread during air-lifting operations, it would only lift about 1 to 2 feet above the male thread connection since the diverter is tethered to the inside of the well by the Teflon FEP tubing and injection stinger. The Teflon FEP tubing is considerably heavier than Nylon or polyethylene (about 3x) and therefore serving as a much more suitable tether.
However, this point emphasizes another reason for having extra tubing at the ground surface in order to insure a safe working distance from the well head.

Compressed Gas Source and Use

As far as a source of compressed gas there are two readily available options. The first option would consist of using nitrogen gas tanks and the second option would be an small air compressor that is powered by either electricity or gasoline. Either choice is acceptable. The advantage of using nitrogen gas is that nitrogen gas tank regulators supply more gas volume over unit of time than small portable air compressors – and therefore provide for faster development. The down-side is that the tanks are heavy and the tank volume limited. Small air compressors have an unlimited supply of air to be used from the surrounding atmosphere. However, depending on the make of air compressor they can sometimes overheat and should be checked periodically with one's hand. If the air compressor motor seems to be consistently hot to the touch, then the compressor should be turned off and allowed to cool in order to prevent the motor from burning out or ceasing.

If one decides to use nitrogen gas, then the formula for determining how much gas should be used is the following:

$$\frac{[\{[\text{Depth To Injection Stinger (IS)} / (2.31 \text{ Ft.} / \text{PSI})] \times 1.1\}] \times \text{Riser Pipe Volume To IS}}{\text{Atmospheric Pressure At Job Site}}$$

The calculated result from this equation will determine the approximate amount of gas that is used for each air-lift purge cycle.

The first order of compressed gas operation when using nitrogen gas is to make sure that the regulator is screwed on tightly to the nitrogen gas tank, and that the brass handle of the nitrogen gas regulator is not screwed tightly into the main body of the regulator – but can swivel freely back and forth. This indicates that the regulator is in the closed position. When looking at the regulator its important to remember that the dial gauge to your left is the line gauge and the dial gauge to the right is the tank gauge. The line gauge indicates the gas pressure that is being released to the Teflon tube. The tank gauge indicates how much pressure is left in the tank. The typical starting pressure for a newly refilled tank ranges from about 2,200 PSI to 2,500 PSI.

Also, make sure that the gray or silver colored round handle at the top of the tank is securely tightened before start of air-lifting operation. Another important point is that the nitrogen gas tank should be secured with a tank dolly or chained to some solid structure in order to prevent the tank(s) from tipping over at any time. When the nitrogen gas tanks are not in use, the tank cover that covers the tank handle should be screwed on tight to protect the handle from breaking in the event that the tank falls over onto its side or bangs into something. Department of Transportation (DOT) rules allow for the transfer of up to 1,000 cubic feet of nitrogen gas in van and pickup trucks without use of an inert gas placard on the outside of the vehicle. However, the Salt Lake City area has plenty of nitrogen gas suppliers (such as Prax Air) who can easily deliver the gas to the job site.

When releasing nitrogen gas, the first step is open the gas tank by rotating the gray handle at the top of the tank in a counter clockwise direction. Rotation of the handle one complete turn will allow for a sufficient supply of gas to be delivered to the gas injection line. The second step is to open the regulator by turning the brass T-handle in a clockwise direction (not counter clockwise). The internal pin at the end of the T-handle pushes down on a spring loaded ball valve on the inside the regulator. It's important to turn the handle slowly to ramp up to the desired pressure so that the spring on the inside of the regulator is not damaged. The regulator will last longer if this operational procedure is adhered to.

As the brass handle is turned, the needle on the line pressure gauge will begin to rotate, indicating increasing pressures. As the line pressure begins to approach the desired pressure for lifting the water to the surface it is common to hear a gurgling noise from the well. This is perfectly normal and indicates the action of the water inside the well rising to the ground surface. When the water reaches the ground surface it will travel through the garden hose and transfer accordingly to the containment vessel. It's perfectly normal to hear a sputtering sound as the water discharges into the containment vessel. When the discharge into the containment vessel consists mostly of air, it is then time to bleed-off the nitrogen gas from the riser pipe. All one is required t do at this point is to turn the black handle on the bleed-off valve 180 degrees from its line position and the gas from the well will bleed off through the valve and the water discharge hose. The brass T-handle and the gray tank handle do not need to be turned at this point. Both handles are left in their set position during the entire air-lift operation. The action of turning the black handle 180 degrees on the bleed off valve automatically shuts off the nitrogen gas tank supply to the well.

As the nitrogen gas bleeds off from the well, groundwater from the formation will begin to recover to the inside of the well – carrying fines from the drilling process. There are typically two indicators that are used to monitor the recovery. The first indicator is the use of the bleed-off hissing sound of the nitrogen gas. When the bleed-off sound cannot be heard any longer the pressure inside the well has returned to almost ambient atmospheric condition for the location of the job site. The second indicator helps to monitor the level to which groundwater has risen inside the riser pipe. This is accomplished by disconnecting the gas-injection line from the bottom of the three-way bleed-off valve – using a 9/16 box wrench supplied in the diverter kit. It's easy to do and disconnection of the gas-in line will not allow the release of nitrogen gas from the tank.

The end of the gas-injection line can then be inserted into a bottle of water. As groundwater recharges the ZIST well, the groundwater will displace air inside the gas- injection line and force the air to exit the line inside the bottle of water where it will manifest itself as air bubbles. When the air bubbles are flowing or streaming into the water bottle, this indicates that the well is in the early stages of recharge where there is the greatest hydraulic head difference between the inside of the well (where there is less hydraulic head) and the hydraulic formation pressure on the outside of the well. As these two pressures reach a point of hydrostatic equilibrium, the bubbling rate slows down. During the last 10% of the well recharge, the bubbling rate from the gas-injection line is extremely slow inside the water bottle and is typically an indication that the next air-lift slug should be applied to the well. It's important to time the rate of recovery during the bubbling process so that time efficiency can utilized during the procedure. The recovery time versus volume should also be observed as another means of measuring the recovery of the well. The point here is that as one increases the volume of recovery to the well, the greater the hydraulic head differential that is achieved during each air- lifting step and therefore the more efficient the surge and cleaning effect around the well screen.

BESST INC.
GLOBAL SUBSURFACE TECHNOLOGIES

Airlifting procedure:

***A: Assembling the diverter*:**

1. Measure out length of airlift line (nylon tubing) that will be inside the well. It should be set 3-5 feet above the well screen. BE SURE THE AIRLIFT WEIGHT DOES NOT HANG WITHIN THE WELL SCREEN. MAKE SURE IT IS IN THE BLANK CASING, AS PRESSURIZING INSIDE THE WELL SCREEN CAN DAMAGE THE SCREEN AND COMPROMISE THE INTEGRITY OF THE CASING ALLOWING SEDIMENT OR SAND INVASION AND RUINING THE WELL.
2. Thread the uphole or surface end of the nylon tube through the bored through fitting at the top of the plastic diverter and tighten it down.
3. Attach the airlift weight (stainless steel weight with fitting on top) to the nylon tube with the Swagelok connection.
4. Tighten down the airlift weight connection and diverter gas-line connection (on top of the diverter).
5. Feed airlift weight and nylon tube into well, thread diverter piece onto threads at the top of the well casing.
6. Attach a garden hose to the fitting on the diverter piece. Put the other end of the hose into discharge vessel.
7. Attach the loose nylon tube to nitrogen tank regulator.

***B: Development*:**

1. Calculate needed lift pressure with the following equation:
   depth of the airlift weight/2.31x1.1=airlift pressure (in psi)
   NEVER EXCEED 150 PSI WHICH IS THE WORKING PRESSURE OF 1" SCHED 80 THREADED PVC PIPE OR THE WELL THREADS AND WELL SCREEN COULD BE DAMAGED.
2. In order for this procedure to work about 25% of the casing above the airlift weight needs to be full of water. If static conditions aren't such that there is enough head above the screen and the airlift device then water needs to be added for each slug. 1" Schedule 80 pvc holds about **.35gal/10ft** so you can plan accordingly with the volume that will need to be added.
3. When all connections are tight and discharge tube is securely in discharge vessel, dial in the nitrogen to the pressure calculated above.
4. Let the nitrogen gas flow in until a slug of water comes into the diverter, turn off the pressure, let the water flow out of the diverter.
5. Repeat this process, giving enough time for recharge between cycles, until water either (A)is clear or (B)is no longer changing in its sediment load with each volume purged.
6. For example, at the beginning it may look like mud, ten cycles later it may look like chocolate milk, and five cycles after that it may look like murky water, but ten cycles later it still looks like murky water, then murky water is what the well is going to produce and the well is developed.

Appendix M

Investigation-Derived Waste Manifests

Special Waste Profile

Profile Facility: [redacted] Waste Profile #: [redacted]

Tracking #: [redacted]

I. Generator Information

Generator Name: VETERANS HEALTH ADMINISTRATION CERCLA Program

Generator Site Address: 500 FOOTHILL DRIVE Mail Code 136 Building 4 CERCLA Program

City: SALT LAKE CITY County: SALT LAKE State: Utah Zip: 84148

State EPA ID #: Storm Authorized Waiver Code: NAICS #:

Generator Mailing Address: ☐ (If Different) SAME

City: County: State: Select State Zip:

Generator Contact Name: SUSANNE FAIRCLOUGH Email: Susanne.fairclough@va.gov

Phone Number: 385-272-4672 Ext: Fax Number:

II. Billing Information

Name: SEACOAST ENVIRONMENTAL SVCS Contact Name: EUGENE R. STREITER

Billing Address: 37 LONGCHASE WAY DRIVE Email: [redacted]

City: HOLMDEL State: Select State Zip: 07733 Phone: [redacted]

III. Waste Stream Information

Name of Waste: [redacted]

Process Generating Waste: Waste soil generated from installation of boring and monitoring wells at area contaminated with chlorinated solvents. Waste is not a listed waste. Source is undetermined.

Type of Waste: Select Waste Type Physical State: Select Physical State Method of Shipment: Select Shipment

Estimated Volume: Volume Type: Select Unit ☐

Frequency: Ongoing Waste Stream Disposal Consideration: Landfill

IV. Representative Sample Information

☐ Are Samples Taken

☑ Samples Taken *Type of Sample: Grab

Is the laboratory analysis of sample representative of the entire waste stream? ☑ Yes ☐ No

Sample Date: 2/26/26 Sample ID Number(s): IDW20 SB030620

Representative grab soil samples collected during installation of boring and monitoring wells at area contaminated with chlorinated solvents. Waste is not a listed waste. Source is undetermined.

Special Waste Profile

V. Physical Characteristics of Waste

Characteristics (components must equal 100%)

		% By Weight (must equal 100% — weights, not volumes)
1.		
2.		
3.		
4.		
5.		

Color | Odor (describe) | Does Waste Contain Free Liquids? | % Solids | pH | Flash Point

Attach Laboratory Analytical Report (and/or **Material Safety Data Sheet**) **including** Chain **of Custody and** required parameters **needed for this profile.**

RCRA Regulatory Questions

1. Does this waste or processing process contain regulated concentrations of the following hydrocarbons at or above listed levels: Benzene, Carbon Tetrachloride, Chlordane, Hexachlorobenzene, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33? — ☐ Yes ☐ No
2. Does this waste contain a halogenated organic compound (HOC) in concentrations greater than or equal to 1000 mg/kg? — ☐ Yes ☐ No
3. Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761? — ☐ Yes ☐ No
4. Does this waste contain a commercial chemical product or manufacturing chemical intermediate having the generic name listed in 40 CFR 261.33? — ☐ Yes ☐ No
5. Has this waste been treated using 40 CFR 268.42 and 40 CFR 268.43 or has it been treated to remove the hazardous characteristic? If so, please describe the waste as generated in the Profile Narrative. — ☐ Yes ☐ No
6. Does this waste contain a Hazardous Characteristic as defined by Federal and/or State regulations? If Yes, list the applicable waste code(s) (D001 to D043) in the space provided below. — ☐ Yes ☐ No
7. Does this waste contain regulated concentrations of 1,1,1-Trichloroethane, Carbon Tetrachloride, or any chlorinated fluorocarbons as defined in 40 CFR 261.31? — ☐ Yes ☐ No
8. Is this waste subject to Federal Universal Waste regulations? — ☐ Yes ☐ No
9. Is this waste subject to Federal and/or State regulations? — ☐ Yes ☐ No
10. Is this a solid waste that is not hazardous waste or is it a waste that is conditionally exempt from regulation? If yes, please provide the corresponding regulatory citation. — ☐ Yes ☐ No

Recyclable Beneficial Waste Handling Questions

1. Does this waste generate heat or require temperature control? — ☐ Yes ☐ No
2. Does this waste contain sulfur or sulfur compounds? — ☐ Yes ☐ No
3. Is this waste generated at a Texas or Federal Superfund cleanup site? — ☐ Yes ☐ No
4. Is this waste from a CERCLA, RCRA Corrective Action, or state equivalent remediation project? — ☐ Yes ☐ No

10. If yes to the above questions, please provide comments:

Special Waste Profile

4. Certification

I hereby certify that to the best of my knowledge and belief, this information accurately factors in a true, complete and representative description of the waste material being offered for shipment and contains no unreported hazards. Adequate knowledge of the waste has been disclosed, with documented analytical data, to determine its complete and accurate classification and appropriate handling requirements.

I further certify that by utilizing this profile, neither myself nor any other employee of this company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or radioactive waste, or any other waste material unacceptable to the facility, or prohibited from acceptance by law. I shall immediately give written notice of any change in conditions pertaining to the waste and associated hazards. I am knowingly familiar with and fully understand the shipment identified herein and any information including those other considerations deemed necessary or advised.

I understand that executing an electronic signature, and signing this document, constitutes my complete and unconditional acceptance of all related communications electronically, and agree this document will be binding as though it were physically signed in. A printout of this document may be completed and any person authorized to do so signed.

If electronic signatures is preferred, please submit completed document to your Special Waste Coordinator or Technical Waste Sales Executive to activate signature process.

I further certify that the shipping description on this profile sheet as provided by Republic Services.

[illegible]	[illegible]	[illegible]
Authorized Representative Name (Print)	Title (Print)	Company Name
[illegible]	[illegible]	
Authorized Representative Signature	Date	

Special Waste Profile

REPUBLIC SERVICES

Disposal Facility: 4186 Wasatch Regional Landfill, Inc. UT

Waste Profile #:

Sales Rep #:

I. Generator Information

Generator Name: VETERANS HEALTH ADMINISTRATION CERCLA Program

Generator Site Address: 500 FOOTHILL DRIVE Mail Code 138 Buidling 6 CERCLA Program

City: SALT LAKE CITY County: SALT LAKE State: --Select State-- Zip: 84148

State ID/Reg No: State Approval/Waste Code: NAICS #:

Generator Mailing Address ☐ (if different) SAME

City: County: State: --Select State-- Zip:

Generator Contact Name: SUSANNE FAIRCLOUGH Email: Susanne.fairclough@va.gov

Phone Number: 385-272-4672 Ext: Fax Number:

II. Billing Information

Bill To: SEACOAST ENVIRONMENTAL SVCS, Contact Name: EUGENE R. STREITER

Billing Address: 37 LONDONBERRY DRIVE Email: streiterseacoast@gmail.com

City: HOLMDEL State: New Jersey Zip: 07733 Phone: 732-275-1616

III. Waste Stream Information

Name of Waste: GROUNDWATER from drilling Monitoring Well

Process Generating Waste: Waste water generated from installation of boring and monitoring wells at area contaminated with chlorinated solvents. Waste is not a listed waste. Source is undetermined.

Type of Waste: --Select Waste Type-- Physical State: --Select Physical Method of Shipment: --Select Shipment M

Estimated Volume: 15000-20000 Volume Type: Gallons

Frequency: On-going Waste Stream Disposal Consideration: Landfill

IV. Representative Sample Certification

☐ **No Sample Taken**

☑ **Sample Taken** **Type of Sample** Grab Sample

Is the representative sample collected to prepare this profile and laboratory analysis collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent? ☑ **Yes** ☐ **No**

Sample Date: 3/24/2020

Sample ID Numbers or SDS: IDW01-GW032420

Remember to attach Laboratory Analytical Report (and/or Material Safety Data Sheet) including Chain of Custody and required parameters provided for this profile.

Special Waste Profile

REPUBLIC SERVICES

V. Physical Characteristics of Waste

Characteristic Components (must equal 100%.)	% By Weight (out of 100% - ranges acceptable):
1. water	95% - 100%
2. sediment (silt)	0% - 5%
3.	
4.	
5.	

Color:	Odor (describe):	Does Waste Contain Free Liquids?	% Solids:	pH:	Flash Point:
Clear/Brown	none	☑ Yes ☐ No	<5%	~7	>200 °F

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) including Chain of Custody and required parameters provided for this profile.

RCRA Regulatory Questions

1. Does this waste or generating process contain regulated concentrations of the following Pesticides and/ or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33? ☐ Yes ☑ No
2. Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm) [reference 40 CFR 261.23(a)(5)]? ☐ Yes ☑ No
3. Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761? ☐ Yes ☑ No
4. Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents? ☐ Yes ☑ No
5. Has this waste been delisted under 40 CFR 260.20 and 260.22? If yes, attach the final decision to delist the waste as published in the Federal Register. ☐ Yes ☑ No
6. Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations? If Yes, identify the applicable waste code and specify if the waste is hazardous as defined by Federal, State or both? ☐ Yes ☑ No
7. Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCDD), or any other dioxin as defined in 40 CFR 261.31? ☐ Yes ☑ No
8. Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations? ☐ Yes ☑ No
9. Is this a regulated Radioactive Waste as defined by Federal and/or State regulations? ☐ Yes ☑ No
10. Is this a solid waste that is not a hazardous waste in accordance with 40 CFR 261.4(b)? If yes, please provide the corresponding regulatory citation ☐ Yes ☑ No

Republic Services Waste Handling Questions

1. Does this waste generate heat or react when contacted with water/moisture? ☐ Yes ☑ No
2. Does the waste contain sulfur or sulfur by products? ☐ Yes ☑ No
3. Is this waste generated at a State or Federal Superfund cleanup site subject to regulation under CERCLA? ☑ Yes ☐ No
4a. Is this waste from a TSD facility, TSD like facility or consolidator (i.e. mixtable wastes/multiple generators)? ☐ Yes ☑ No
4b. If yes to the above question, please provide clarification.

Special Waste Profile

REPUBLIC SERVICES

VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I understand that attaching an electronic signature, I am signing this document, consent to complete this transaction and receive all related communication electronically, and agree this document will be binding as though I had physically signed it. A printout of this document may be accepted with the same authority as the original.

If electronic signature is preferred, please submit completed (unsigned) form to your Special Waste Coordinator or Special Waste Sales Executive to initiate signature process.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services.

Susanne M Fairclough	VA CERCLA Contracts Manager	Veterans Administration CERCLA Program
Authorized Representative Name (Printed)	Title (Printed)	Company Name
Susanne M Fairclough	04/08/2020	
Representative Signature	Date	

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. UTD 981 548 985

Manifest Document No. 20041

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address VETERANS HEALTH ADMINISTRATION
CORROM PROGRAM, 500 FOOTHILL DRIVE, MAIL CODE 138
BUILDING 4, CERCLA PROGRAM, ATTN: S. PATROUCHOV

4. Generator's Phone (801) 777 4472

5. Transporter 1 Company Name: WP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

7. Transporter 2 Company Name:

8. US EPA ID Number:

9. Designated Facility Name and Site Address: VASATCH REGIONAL LANDFILL
8815 NORTH SOULE RD
SOUTH SALT, UT 84070

10. US EPA ID Number:

A. State Transporter's ID:

B. Transporter 1 Phone: 435-884-0808

C. State Transporter's ID:

D. Transporter 2 Phone:

E. State Facility's ID:

F. Facility's Phone: 801-974-9540

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NOT REGULATED (GROUNDWATER FROM DRILLING MONITORING WELLS)	1	TT	55000	G
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: APPROVAL NUMBER: 4158.05536

H. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: [illegible] | Signature: [illegible] | Date: Month 5 Day 04 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LUCIANO [illegible] | Signature: [illegible] | Date: Month 05 Day 04 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: | Signature: | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: | Signature: | Date: Month Day Year

NON-HAZARDOUS WASTE

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE

GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20044

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR., MAIL CODE 138
BUILDING 6, CERCLA PROGRAM: ATTN: S. FAIRCLOUGH

4. Generator's Phone (385) 272-4677

5. Transporter 1 Company Name — 6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name — 8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: WASATCH REGIONAL LANDFILL
8833 NORTH ROWLEY RD
SKULL VALLEY, UT 84029 — 10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone: 801-974-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM		T
b.				
c.				
d.				

G. Additonal Descriptions for Materials Listed Above: APPROVAL NUMBER: [illegible]

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information: Bill # RBR 25525

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Schriber | Signature | Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date: Month Day Year

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20041

2. Page 1 of 1

3. Generator's Name and Mailing Address:
VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DRIVE, MAIL CODE 138
BUILDING 6 CERCLA PROGRAM, ATTN: S. FAIRCLOUGH

4. Generator's Phone: (385) 272 4672

5. Transporter 1 Company Name: MP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

A. State Transporter's ID:

B. Transporter 1 Phone: 435-884-0808

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
WASATCH REGIONAL LANDFILL
8833 NORTH ROWLEY RD
SKULL VALLY, UT 84029

10. US EPA ID Number:

E. State Facility's ID:

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (GROUNDWATER FROM DRILLING MONITORING WELLS)	1	TT	3000	G
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above:
APPROVAL NUMBER: 4186205536

H. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information:

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Susanne M. Faircleugh
Signature: S M Faircleugh
Date: Month 05 Day 04 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space:

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name:
Signature:
Date: Month Day Year

NON-HAZARDOUS WASTE

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NON-HAZARDOUS WASTE

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6. US EPA ID Number: CAT 000 624 247

A. State Transporter's ID

B. Transporter 1 Phone: 435-884-0808

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: VASATCH REGIONAL LANDFILL
8833 NORTH ROWLEY RD
SKULL VALLY, UT 84029

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (GROUNDWATER FROM DRILLING MONITORING WELLS)	1	TT	[illegible]	G
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: APPROVAL NUMBER: 418(5536

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: [illegible] | Signature | Date: Month 5 Day 4 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LUCIANO [illegible] | Signature | Date: Month 05 Day 04 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name | Signature | Date: Month Day Year

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NON-HAZARDOUS WASTE MANIFEST

Please print or type. (Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20045

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR., MAIL CODE 138
BUILDING 6, CERCLA PROGRAM: ATTN: S. FAIRCLOUGH

4. Generator's Phone: (385) 272-4672

5. Transporter 1 Company Name: MP Environmental Svcs | 6. US EPA ID Number: CAT080624247

A. State Transporter's ID:

B. Transporter 1 Phone: 1-894-0809

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
WASATCH REGIONAL LANDFILL
8833 NORTH ROWLEY RD
SKULL VALLEY, UT 84029

10. US EPA ID Number: NONE

E. State Facility's ID: Permit # 0501R2

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM	13	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: 4186205538

APPROVAL NUMBER: ~~4186205563~~ 4186205538

Bin # RBR 250707

H. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information:

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Lisa Huston | Signature: Lisa Huston | Date: Month 06 Day 05 Year 20

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Richard Orr | Signature: Richard Orr | Date: Month 06 Day 05 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: | Signature: | Date: Month Day Year

19. Discrepancy Indication Space:

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19

Printed/Typed Name: | Signature: | Date: Month Day Year

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY

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NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20046

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH

4. Generator's Phone: (385) 272-4672

5. Transporter 1 Company Name: MP Enviromental Services

6. US EPA ID Number: CAT000624247

A. State Transporter's ID: 435-

B. Transporter 1 Phone: 1-884-0808

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
WASATCH REGIONAL LANDFILL
8833 NORTH ROWLEY RD
SKULL VALLEY, UT 84029

10. US EPA ID Number:

E. State Facility's ID: Permit # 0501RS

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM	14	T
b.				
c.				
d.				

G. Additonal Descriptions for Materials Listed Above

APPROVAL NUMBER 418620 5538

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

RBR 250327

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: CARLOS L. AGUILAR

Signature:

Date: Month 06 Day 19 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Scott/MP

Signature:

Date: Month 6 Day 19 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name:

Signature:

Date: Month Day Year

NON-HAZARDOUS WASTE

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NON-HAZARDOUS WASTE MANIFEST

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NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20602

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH
SALT LAKE CITY, UT 84148

4. Generator's Phone: (385) 272-4672

5. Transporter 1 Company Name: MP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

A. State Transporter's ID:

B. Transporter 1 Phone: 435-884-0808

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address: WASATCH REGIONAL LANDFILL
8833 NORTH RAWLEY RD
SKULL VALLEY, UT 84029

10. US EPA ID Number:

E. State Facility's ID:

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS	1	CM		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

APPROVAL NUMBER: 4186205538

CONTAINER NUMBER: 1

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: MARC YALOM

Signature:

Date: Month 06 Day 30 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Jeffrey Moers

Signature:

Date: Month 6 Day 30 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name:

Signature:

Date: Month Day Year

NON-HAZARDOUS WASTE

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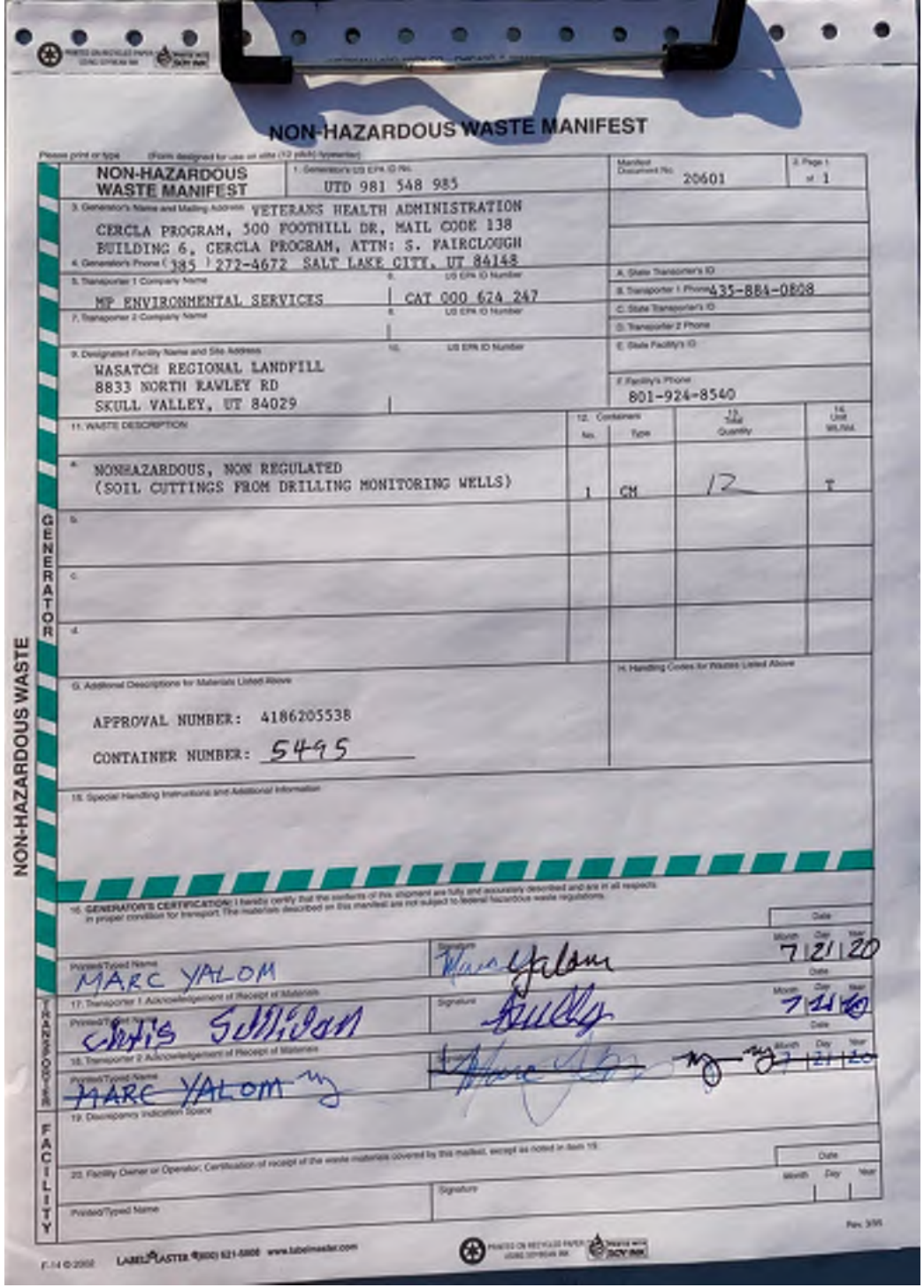

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20601

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH

4. Generator's Phone: (385) 272-4672 SALT LAKE CITY, UT 84148

5. Transporter 1 Company Name: MP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

A. State Transporter's ID

B. Transporter 1 Phone: 435-884-0808

C. State Transporter's ID

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: WASATCH REGIONAL LANDFILL
8833 NORTH RAWLEY RD
SKULL VALLEY, UT 84029

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM	12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

APPROVAL NUMBER: 4186205538

CONTAINER NUMBER: 5495

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: MARC YALOM — Signature: Marc Yalom — Date: Month 7 Day 21 Year 20

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Curtis Sullivan — Signature: Curtis Sullivan — Date: Month 7 Day 21 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: ~~MARC YALOM~~ — Signature: ~~Marc Yalom~~ — Date: ~~Month 7 Day 21 Year 20~~

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

NON-HAZARDOUS WASTE — GENERATOR — TRANSPORTER — FACILITY

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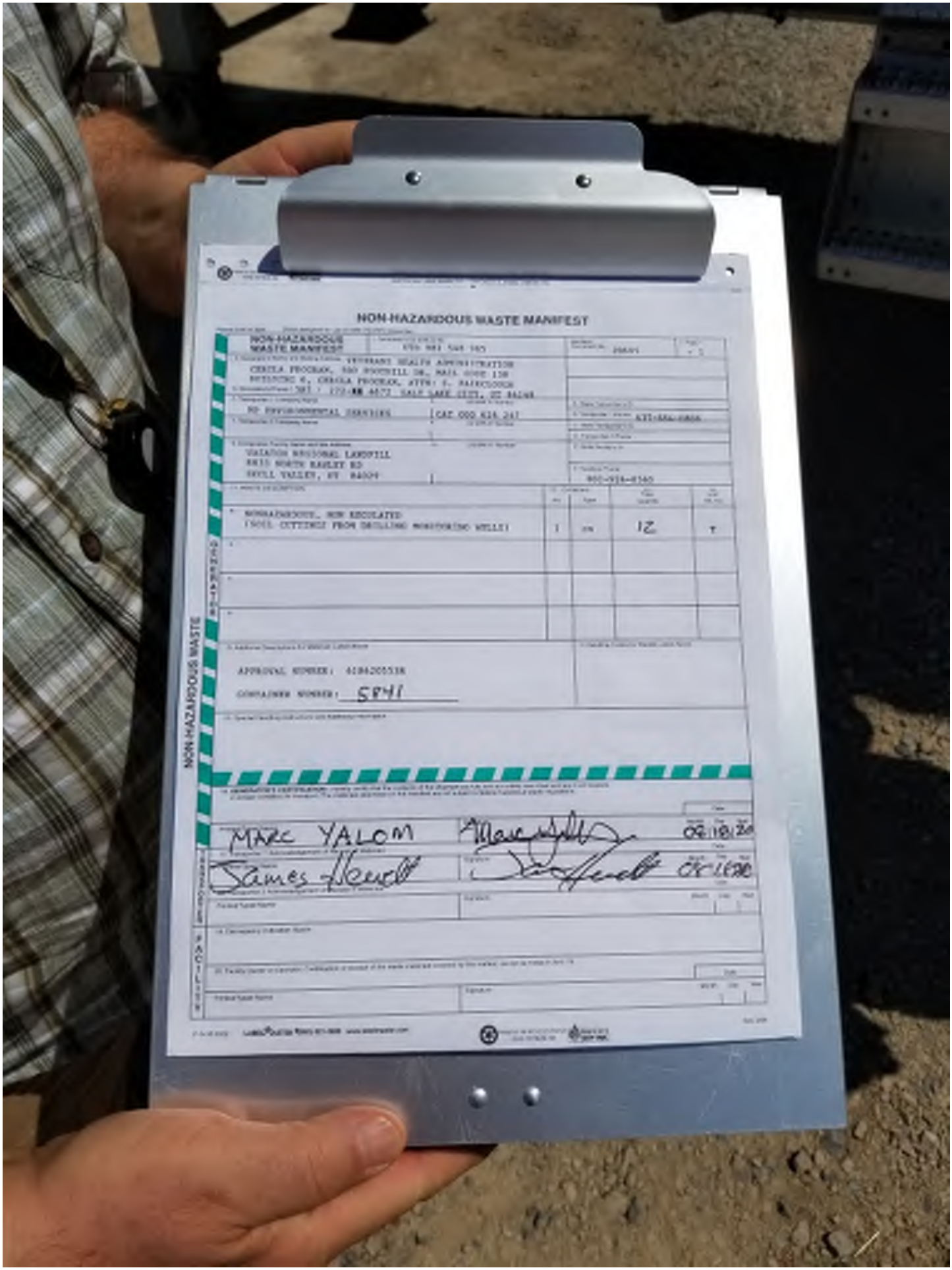
NON-HAZARDOUS WASTE MANIFEST
NON-HAZARDOUS WASTE MANIFEST
NON-HAZARDOUS WASTE
NON-HAZARDOUS, NON REGULATED
APPROVAL NUMBER: 4184205538
CONTAINER NUMBER: 5841
MARC YALOM
09/18/20
09/18/20

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: UTD 981 548 985

Manifest Document No.: 20603

2. Page 1 of 1

3. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH
SALT LAKE CITY, UT 84148

4. Generator's Phone: (385) 272-4672

5. Transporter 1 Company Name: MP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

7. Transporter 2 Company Name:

8. US EPA ID Number:

9. Designated Facility Name and Site Address:
WASATCH REGIONAL LANDFILL
8833 SOUTH RAWLEY RD
SOUTH VALLEY, UT 84029

10. US EPA ID Number:

A. State Transporter's ID:

B. Transporter 1 Phone: 435-884-0838

C. State Transporter's ID:

D. Transporter 2 Phone:

E. State Facility's ID:

F. Facility's Phone: 801-924-8540

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NOT REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM	12	T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above:

APPROVAL NUMBER: 4186205538

CONTAINER NUMBER: 6122

H. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information:

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on the manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: MARC YALOM — Signature: Marc Yalom — Date: Month 08 Day 18 Year 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: James Hewett — Signature: James Hewett — Date: Month 08 Day 18 Year 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space:

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19.

Printed/Typed Name: — Signature: — Date: Month Day Year

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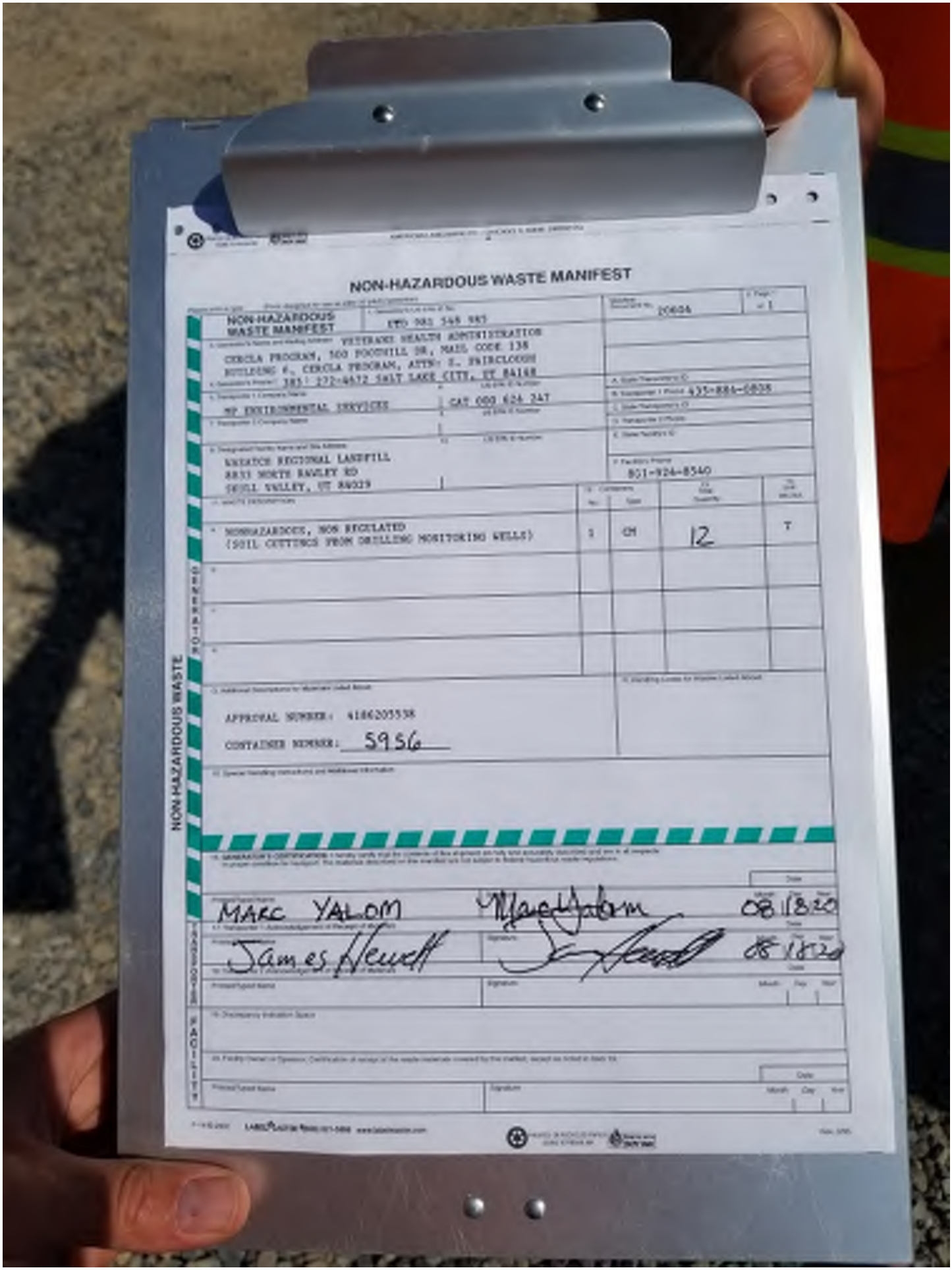

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

EPD 981 548 987

VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH
385-272-4672 SALT LAKE CITY, UT 84148

MP ENVIRONMENTAL SERVICES

CAT 000 624 247

435-884-0838

KNEATCH REGIONAL LANDFILL
8841 NORTH RAWLEY RD
DELL VALLEY, UT 84029

801-924-8540

20604

Page 1 of 1

	No.	Type	Quantity	Unit Wt./Vol.
NONHAZARDOUS, NOS REGULATED (SOIL CUTTINGS FROM DRILLING MONITORING WELLS)	1	CM	12	T

APPROVAL NUMBER: 4186205538

CONTAINER NUMBER: 5956

MARC YALOM — 08/18/20

James Hewett — 08/18/20

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

NON-HAZARDOUS WASTE MANIFEST

UTD 981 548 585

20607

Page 1 of 1

4. Generator's Name and Mailing Address: VETERANS HEALTH ADMINISTRATION
CERCLA PROGRAM, 500 FOOTHILL DR, MAIL CODE 138
BUILDING 6, CERCLA PROGRAM, ATTN: S. FAIRCLOUGH

4. Generator's Phone: 385-272-4672 SALT LAKE CITY, UT 84148

5. Transporter 1 Company Name: NP ENVIRONMENTAL SERVICES

6. US EPA ID Number: CAT 000 624 247

A. State Transporter ID:

B. Transporter 1 Phone: 435-884-0808

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
WASATCH REGIONAL LANDFILL
8833 NORTH RAMLEY RD
SOUTH VALLEY, UT 84029

10. US EPA ID Number:

E. State Facility's ID:

F. Facility's Phone: 801-924-8560

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NONHAZARDOUS, NON REGULATED (GROUNDWATER FROM DRILLING MONITORING WELLS)	1	TT	4,000	G
b.				
c.				
d.				

15. Additional Descriptions for Materials Listed Above

APPROVAL NUMBER: 4186205536

H. Handling Codes for Wastes Listed Above

17. Special Handling Instructions and Additional Information

18. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Shannon Smith

Signature: [signature]

Month: 08 Day: 18 Year: 20

GENERATOR

19. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LUCIANO SALAZAR

Signature: [signature]

Month: 08 Day: 18 Year: 20

TRANSPORTER

20. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Month: Day: Year:

FACILITY

21. Discrepancy Indication Space

22. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 21.

Printed/Typed Name:

Signature:

Month: Day: Year:

NON-HAZARDOUS WASTE

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