SITE INVESTIGATION
ANALYTICAL RESULTS REPORT

East Side Springs
Salt Lake County, Utah
UTN000802825

Utah Department of Environmental Quality
Division of Environmental Response and Remediation
Prepared by: Craig Barnitz

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION VIII

EPA ID: UTN000802825 **Site Name:** EAST SIDE SPRINGS **State ID:**

Alias Site Names:

City: SALT LAKE CITY

Refer to Report Dated: 5/10/2012 **County or Parish:** SALT LAKE **State:** UT

Report Developed By: STATE **Report Type:** SITE INSPECTION 001

☐ **1. Further Remedial Site Assessment Under CERCLA (Superfund) is not required because:**

☒ **2. Further Assessment Needed Under CERCLA:**
Recommended for HRS Scoring

Discussion/Rationale:

Groundwater contamination associated with upgradient 700 South 1600 East PCE plume site is impacting shallow groundwater and springs in this densely populated residential area of Salt Lake City. PCE contamination has already resulted in one municipal well (SLC-18) being removed from service and additional downgradient municipal water sources are being threatened by the spread contamination. PCE and TCE were also detected in residential springs and in shallow groundwater. Shallow groundwater and springs are not used for drinking water but pose a potential risk via vapor intrusion and dermal contact.

Site Decision Made by: DUNHAM

Signature: _____ **Date:** 05/10/2012

EPA Form # 9100-3

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Prepared by: Craig Barnitz

Approved: _____ Date: 5/3/12
Craig Barnitz, UDEQ Project Manager

Approved: _____ Date: 5/4/12
Dale T Urban, UDEQ Site Assessment Section Manager

Approved: _____ Date: 5/10/12
Ryan Dunham, Site Assessment Manager, EPA Region 8

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1.0 INTRODUCTION

In July and August of 2010, the Salt Lake City Department of Public Utilities sampled several springs in residential yards located on the east bench of Salt Lake City, Salt Lake County, Utah. Elevated levels of tetrachloroethylene (PCE) were detected in the springs at concentrations ranging from 2.5 micrograms per liter (µg/L) to 40.4 µg/L. These springs are the result of the shallow groundwater aquifer surfacing along the Wasatch Fault. A likely source for the PCE contamination is the upgradient 700 South 1600 East PCE Plume site.

Under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, the Superfund Amendments and Reauthorization Act (SARA) of 1986, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and through a Cooperative Agreement with the U.S. Environmental Protection Agency, Region 8 (EPA), the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) collected ten groundwater, three surface (spring) water and two soil samples, and eight soil-gas samples from the East Side Springs site as part of the *Site Investigation* (SI) activities. The laboratory analytical data from the collected samples and other accumulated site information is summarized in this *SI Analytical Results Report* (ARR).

2.0 OBJECTIVES

The objectives for conducting this SI for the East Side Springs site, herein referred to as the "Site", are as follows:

- Provide a narrative summary of the accumulated Site information into a Site Investigation ARR.
- Assess the Site setting and evaluate potential contamination characteristics;
- Assess potential upgradient sources from the Site;
- Determine whether hazardous constituents from the Site are migrating or have the potential to migrate off-site via the groundwater, surface water, overland flow, or air exposure pathways;
- Evaluate impact and determine the exposure risks for human health and environmental targets associated with the groundwater, surface water, soil exposure, or air pathways; and,
- Determine if further work under CERCLA or other authority is warranted for the Site.

3.0 SITE LOCATION AND DESCRIPTION

The Site is located near the intersection of 900 South and 1300 East in Salt Lake City, Salt Lake County, Utah and within Section 8, Township 1 South, Range 1 East, of the Salt Lake Base Meridian (Figure 1). The geographic coordinates for the Site are 40°45'7" North Latitude and 111°51'14" West Longitude.

The Site is located in the residential neighborhoods of East Central and Yalecrest on the east bench of Salt Lake City. The Site is generally defined between 800 South and Michigan Avenue and between 1100 East and 1300 East. The Site is located downgradient (west) of the 700 South 1600 East PCE Plume site and the suspected source of the plume, the Veterans Affairs Medical Center. The general topography drops steeply to the west along the Wasatch Fault with an average elevation of 4,520 feet above mean sea level (USGS, 1975). The Wasatch Fault is called a normal fault, because the slip is mostly vertical - the mountain block (Wasatch Range) moves upward relative to the adjacent downward-moving valley block (UGS, 1996). A total of 25 springs were identified within the Site boundaries. Red Butte Creek is located to the south of the Site and flows to the west towards Liberty Park Pond.

4.0 SITE HISTORY AND FIELD ACTIVITIES

4.1 Site History

On October 12, 1990 the Ground Water Protection Section of the then Utah Bureau of Water Pollution Control (BWPC), was contacted by Florence Perez of the Salt Lake City Water Treatment office and informed that PCE was detected at a concentration of 32.0 µg/L from an irrigation well on the grounds of the Mount Olivet Cemetery (BWPC, 1991). The detection of PCE in the Mount Olivet Cemetery well led to the discovery of the Mt. Olivet Cemetery Plume site (currently known as the 700 South 1600 East PCE Plume site) on the CERCLIS list.

An SI was conducted at the 700 South 1600 East PCE Plume site in 1999. As part of the SI, the EPA Superfund Technical Assessment and Response Team (START) contractor installed six EPA monitoring wells (four individual wells and one nested shallow/deep well) at the 700 South 1600 East PCE Plume site. Groundwater samples were collected from the EPA monitoring wells, a Salt Lake City municipal well and the Mount Olivet Cemetery well. The analytical data from the SI sampling detected concentrations of PCE in four of the five shallow EPA monitoring wells and the Mount Olivet Cemetery well. Detected concentrations ranged from 11 µg/L to 320 µg/L. The sample collected from the Salt Lake City municipal well was non-detect. The PCE contamination was confirmed in the groundwater during a follow-up investigation conducted by the DERR and the EPA Federal Facilities Program at the 700 South 1600 East PCE Plume site in October 2004. During this sampling event PCE was detected in the Salt Lake City municipal

well at a concentration of 2.23 µg/L. An irrigation well within the Mt. Olivet Cemetery grounds located approximately 2,000 feet southwest of the Salt Lake City well had the highest detection for PCE (128 µg/L) (UDEQ/DERR, 2004). Salt Lake City removed municipal well SLC-18 from service shortly after the detection of PCE in 2004.

The DERR and EPA returned to the 700 South 1600 East PCE Plume site in the fall of 2005 along with an EPA contractor (URS) and the United States Geological Survey to collect groundwater samples and to prepare a Hazard Ranking System (HRS) package to score the 700 South 1600 East PCE Plume site for the National Priorities List (NPL) (UDEQ/DERR, 2011a). The collected samples again documented the PCE contamination in the shallow and deeper aquifers. Between, September 12 and September 29, samples were collected weekly from the Salt Lake City municipal well SLC-18. The detected concentrations for PCE in well SLC-18 ranged from 1.2 µg/L to 1.8 µg/L. The detected concentrations for PCE in monitoring wells EPA-MW-02 and EPA-MW-04 were 296 µg/L and 119 µg/L, respectively (Figure 5). The detections in these two monitoring wells were significant in that the wells were located downgradient of the sewer line from the historic dry-cleaner (Building 7) at the Veterans Affairs (VA) Medical Center.

The suspected source of the 700 South 1600 East PCE Plume is a sewer line that connected the historic dry-cleaner (Building 7) at the Veterans Affairs (VA) Medical Center to the main sewer line along Sunnyside Avenue (UDEQ/DERR, 2000). Information collected during the evaluation of the 700 South 1600 East PCE Plume included a sanitary sewer survey conducted in 2003 by Salt Lake City Public Utilities personnel, DERR, and EPA. The sewer survey was conducted by inserting a camera through a manhole and documenting multiple defects inside the sewer piping that may have been pathways for PCE wastewater to enter into the environment and to contaminate groundwater. In September of 2005, a response from the Department of Veterans Affairs to a 104 (e) letter stated that the VA did store PCE in 55-gallon drums, operated a closed-loop dry cleaning system in the laundry facilities, and that "[PCE] condensate from the [closed-loop system's] distillation process was emptied directly into a drain line connected to the sanitary sewer" (VA, 2005). In June of 2006, signed affadavits from Salt Lake City Public Utilities employees recalled observing discolored water and solvent odors emanating from the same sewer line during the 1980's were provided to the DERR and EPA. The DERR copies of the sewer survey video file and the signed affadavits are retained in the 700 South 1600 East PCE Plume site file (Bright, 2006; Tabish, 2006; Gilgen, 2012).

In the early morning of June 12, 2010, a release of crude oil from a Chevron pipeline was discovered at the base of Red Butte Canyon near Red Butte Gardens. The quantity of oil released was estimated at 800 barrels with much of the oil entering Red Butte Creek and the downgradient Liberty Park pond (SLC, 2011a). As part of the overall response effort, Salt Lake City Department of Public Utilities began identifying potential downgradient receptors for the crude oil contamination. Salt Lake City identified 25 springs along the Wasatch Fault line in the area between 800 South and Michigan Avenue and between 1100 East and 1300 East as potential receptors for the crude oil contamination. Sampling locations were selected to provide data that would delineate the extent of the potential crude oil contamination. Due to access and other factors, samples were collected from eleven springs, one storm drain

manhole, and two artesian wells. Sampling events were conducted on June 14 and 16, July 9 and 22, and August 5, 6, and 20, 2010. Samples were delivered to ChemTech Ford in Salt Lake City and analyzed for volatile organic compounds (VOC) along with other analyses to identify the possible crude oil contamination. No crude oil was detected in the samples collected. However, the analytical data did detect PCE in six of the 11 springs sampled and in a sample collected from the storm drain manhole located at 900 South 1071 East. PCE concentrations ranged between 2.5 µg/L and 40.4 µg/L. The two samples collected from the downgradient artesian wells available to the public for drinking water did not detect PCE (SLC, 2011b). The springs sampled in response to the crude oil release were located downgradient of the 700 South 1600 East PCE Plume. Concern that PCE from the upgradient plume may be the source of the PCE contamination detected in the springs led the DERR and EPA to pursue the Site under CERCLA authority.

The Site was Discovered and placed on the Comprehensive Environmental Response, Compensation, and Liabilities information System (CERCLIS) List in January 2011. A Preliminary Assessment was completed by the DERR and approved by the EPA in July 2011 (UDEQ/DERR, 2011b). The SI Work Plan for the Site was approved by the EPA on September 1, 2011 (UDEQ/DERR, 2011c).

4.2 Site Investigation Field Activities

Prior to conducting the Site sampling for the SI, a *Consent for Access to Property* form was signed by the respective property owners to allow the DERR to install direct-push borings on the property for groundwater, surface (spring) water, soil, and soil-gas sample collection (Appendix B).

Site sampling activities were conducted between November 14-17, 2011 and December 21, 2011. The DERR sampler on-site during the sampling activities was Craig Barnitz. URS Operating Services was contracted to provide direct-push service, deep-well development, and soil-gas sampling at the Site. Field sampling activities included the collection of ten groundwater, three surface (spring) water, two soil, and eight soil-gas samples from sample locations designated both in the Site SI Work Plan and adapted in the field according to Site conditions (Figure 2a and Figure 2b). In addition, three trip blank samples and one rinsate blank sample were collected as part of the sampling activity.

Groundwater samples were collected from five direct-push borings, three monitoring wells, and two public artesian drinking water wells. The direct-push borings were installed by pushing a steel rod down into the water table of the shallow aquifer. A temporary polyvinyl chloride (PVC) well was constructed and inserted into the well. A groundwater sample was then collected with the use of a peristaltic pump. Groundwater samples collected from monitoring wells were collected with the use of an inertia pump (**EPA-MW-01S**) and with disposable polyethylene bailers (E**PA-MW-05** and **EPA-MW-01D**). Groundwater samples collected from artesian drinking water wells were collected directly from the wells into two 40 mL glass volatile organic analysis (VOA) bottles preserved with hydrochloric acid (HCl).

The surface water samples were collected first by submerging a one liter polyethylene bottle into the spring and then transferring the collected water into two 40-mL VOA bottles preserved with HCl. The soil samples were collected with a stainless steel spoon and transferred directly into four ounce (oz.) soil jars.

Field notes and photographs were taken throughout the sampling event to document sample locations, sampling methods, and field observations. The field notes will remain in the DERR project file, or in the custody of the Project Manager. The field notes and photographs were later transcribed to the Field Activities Report (Appendix C). A description of the soil-gas sampling activities and sample results are included in the Trip Report for the Site included in Appendix D of this report. A summary of the sample locations, descriptions, and rationale is included as Table 1 of this report.

Chain-of-Custody forms and sample documentation were prepared using SCRIBE software on November 17, 2011 and December 21, 2011 (Appendix E). Samples were prepared and shipped via Federal Express to Spectrum Analytical in Warwick, Rhode Island on the afternoon of November 17, 2011 and on December 21, 2011 for trace volatile analysis

4.3 Deviations from the Work Plan

The following are deviations from the *SI Work Plan* for the Site (UDEQ/DERR, 2011c):

- Groundwater samples **ESS-GW-08** and **ESS-GW-09** were not collected. The borings at these sampling locations were drilled to 27 feet bgs and 24 feet bgs, respectively, but did not produce water.

- Soil sample **ESS-SS-19** was stated in the Work Plan to be collected from the property at 1205 East Gilmer Drive. The spring water at 1205 East Gilmer Drive was diverted underground to a concrete vault and the sample location was moved to the spring at 1115 East Sunnyside Avenue.

- The field duplicate sample was changed in the field from **ESS-SW-15** to **ESS-GW-14**. The primary goal of the sampling activity was conducted to collect information regarding the groundwater conditions at the Site, and specifically in the residential neighborhoods west of East High School. Therefore, the field duplicate was changed from a surface water sample to a groundwater sample and was a field duplicate of sample **ESS-GW-04**.

- The laboratory duplicate sample was changed from **ESS-GW-03** to **ESS-GW-11**.

- Trace volatile analysis for the submitted samples was requested in a Contract Laboratory Program (CLP) request form submitted by the DERR and in the Chain-of-Custody (COC). However, the received analytical data indicated the samples were analyzed by SOM01.2 low/medium level volatile analysis. The change resulted in higher quantitation limits for the measured analytes.

- Soil-gas samples ESS-SG-24, ESS-SG-25, and ESS-SG-26 samples were not collected. The samples were to be collected from the property at 1443 East Sunnyside Avenue, however due to fencing the property is only accessible from the north side via the Mount Olivet Cemetery. A misunderstanding with staff at the cemetery led to a denial of the URS contractors from driving through the cemetery to access the property at 1443 East Sunnyside Avenue.

- Soil-gas sample ESS-SG-28 was not collected. Soils in the area are predominately loose gravels/fill material brought in for construction of the East High School stadium. URS could not get a proper leak seal at this sample location.

4.4 Site Characteristics

4.4.1 Geology. The Site is located in the Salt Lake Valley. This north-south trending intermontane valley lies on the eastern edge of the Basin and Range Physiographic Province, and on the western edge of the Colorado Plateau Province. The general geology of the valley is characterized by fine grained sediments, silts, and clays which were deposited from prehistoric Lake Bonneville, and by extensive Quarternary and Tertiary deposits of conglomerates, sands, and silts deposited by erosion of and deposition from the surrounding mountain ranges (Hintze, 1988). The Wasatch Fault runs north-south through the Site at approximately 1300 East. The Wasatch Fault is known as a "normal" fault because the slip is mostly vertical, with the mountain block (Wasatch Range) moving upward relative to the downward moving valley block (UGS, 1996)

The soil cores collected during the sampling activity found tight clays and silts down to depths of 27 feet bgs. Sandy lenses and plastic clays were present at various depths in the water bearing borings (Appendix C).

4.4.2 Hydrogeology. In general, the Salt Lake Valley is composed of a four aquifer system: (1) a shallow, unconfined (water table) aquifer in the center of the valley, (2) a deep unconfined (water table) aquifer on the margins of the valley, (3) a deep, confined (artesian) aquifer in the valley center, and (4) locally perched aquifers (Waddell et. al., 1987).

Well logs from the 700 South 1600 East PCE Plume site show depth to groundwater at 100 feet bgs. Groundwater monitoring done for the 700 South 1600 East PCE Plume site indicated the groundwater flow direction for the shallow unconfined aquifer is to the northwest. This local hydraulic gradient appears to be strongly influenced by the adjacent Salt Lake City and University of Utah wells located along 500 South (URS, 1999). The pumping from these wells draws the local groundwater towards the northwest and away from the natural southwest hydraulic gradient observed when the wells are not in operation (SLC, 2011b).

4.4.3 Hydrology. The Site is located within the Jordan River Watershed. Within the Site boundaries are a number of springs formed by the Wasatch Fault. The nearest major surface water body is Red Butte Creek located approximately 0.5 miles to the south. Red Butte Creek is

a perennial stream with an average annual baseflow of 4.2 cubic feet per second (cfs). Peak flow occurs in late April through June as a consequence of snow-melt (USGS, 2010). Red Butte Creek is a receptacle for surface water run-off in the general area before it goes underground at 1100 East (USGS, 1975). Red Butte Creek flows towards Liberty Park Pond where it is joined by Parley's Creek before continuing to the Jordan River. This particular stretch of the Jordan River is protected for secondary contact recreational use (i.e. boating and wading), warm water species of game fish including organisms necessary for their food chain, and agricultural usage. Closer to the Great Salt Lake the Jordan River is additionally protected for waterfowl, shore birds, and other water-oriented wildlife (UDEQ/DWQ, 2011).

4.4.4 Climate. The Site is located in a semi-arid continental climate (Eubank and Brough, 1979). Within this climate type the winters are fairly cold with temperatures dropping to a low in December to an average of 40.6° F and peaking in July averaging about 91.4° F. Data from the nearby Salt Lake City weather station indicates the average annual precipitation in the area is 22.87 inches per year with a normal monthly high of 2.92 inches in April and a normal monthly low of 0.66 inches in August (WRCC, 2011). The 2-year 24-hour rainfall at the Site is 0.068 inches per year (NOAA, 2012). Average annual snowfall is 58.00 inches. The winds are predominantly from the southwest with a mean speed of four to five miles per hour. The next most common wind direction is from the north and northwest (Ashcroft et al., 1992; WRCC, 2011).

5.0 SOIL EXPOSURE PATHWAY

5.1 Soil Sampling Locations

A total of two soil samples were collected as part of the SI. The soil sample locations were selected to evaluate potential impacts to the soils surrounding the springs. Samples were collected from the soils near the springs at 1115 and 1127 East Sunnyside Avenue. The sample locations were both located within 200 feet of a residential structure. Soil samples were collected at each sampling location from a depth of 0-4 inches bgs. Soils were collected with a stainless steel sampling spoon and placed directly into a 4-oz. jar. A full description of the sampling activity is provided in the Field Activities Report (Appendix C).

5.2 Soil Analytical Results

The soil samples were analyzed for low/medium level volatiles organic compounds by SOM01.2 which is an EPA approved laboratory method Analytical results for the soil samples are presented in Table 3. The organic analytical data received from Spectrum Analytical are included in Appendix F of this report.

As specified by the HRS, analytical results from field samples were compared to analytical results from the background sample and to sample quantitation limits (SQL) for determining observed contamination. The observed contamination criteria is met if:

1. The background concentration is not detected, observed contamination is established when the sample concentration equals or exceeds the SQL; or

2. The background concentration equals or exceeds the detection limit, observed contamination is established when the sample concentration "significantly exceeds" the background concentration. Generally, "significantly exceeds" is defined to be situations where the sample concentration exceeds the background concentration by at least three times (EPA, 1990).

The benchmark data from the Superfund Chemical Data Matrix (SCDM) are the accepted benchmark values and are included in Table 3 (EPA, 2004). There are two benchmark values applicable to soils, and the lowest (i.e. most conservative) is the one used by the HRS. The two applicable benchmarks are: 1) Cancer Risk Screening Concentrations and 2) Reference Dose for Screening Concentrations.

5.2.1 Organics Analysis. There were no detections for VOCs in either of the two soil samples that were collected from the Site.

5.3 Attribution and Soil Exposure Targets.

The soils surrounding and adjacent to the springs were sampled to address the concern that contamination found in the springs may infiltrate into the nearby soils creating a potential exposure risk to residents with springs in their backyards. The laboratory data showed concentrations for VOCs below the SQLs indicating that the Soil Exposure Pathway is not a threat to human health or the environment.

6.0 GROUNDWATER MIGRATION PATHWAY

6.1 Groundwater Sampling Locations

A total of ten groundwater samples were collected from the Site. Five of the samples were collected from direct-push borings. The borings were pushed into the shallow aquifer to depths between 6.5 – 10 feet bgs. Three of the samples were collected from monitoring wells previously installed as part of the 700 South 1600 East Plume site and two samples were collected from municipal drinking water sources (Liberty Park drinking fountains and the Eighth South Well). The sample locations were selected to delineate the groundwater plume boundaries and assess the potential threat to downgradient municipal drinking water sources. Sample locations are described in Table 1 and shown in Figure 2a.

6.2 Groundwater Analytical Results

The collected groundwater samples were analyzed for low/medium level volatile organic compounds by SOM01.2 which is an EPA approved laboratory method. Analytical results for the groundwater samples are presented in Tables 2 and Table 4. The analytical data received

from Spectrum Analytical along with the respective Data Validation Reports completed by URS Operating Services are included in Appendix F of this report.

As specified by the HRS, analytical results from field samples were compared to analytical results from the background sample and to the SQL for determining observed contamination. Observed contamination criteria is met if:

1. The background concentration is not detected, observed contamination is established when the sample concentration equals or exceeds the SQL; or

2. The background concentration equals or exceeds the detection limit, observed contamination is established when the sample concentration "significantly exceeds" the background concentration. Generally, "significantly exceeds" is defined to be situations where the sample concentration exceeds the background concentration by at least three times (EPA, 1990).

The benchmark data from the SCDM are the accepted benchmark values and are included in Tables 2 and 4 (EPA, 2004). There are three benchmark values applicable to groundwater, and the lowest (i.e. most conservative) is the one used by the HRS. The three applicable benchmarks are: 1) Cancer Risk Screening Concentrations, 2) Reference Dose Screening Concentration, and 3) Maximum Contaminant Level (MCL).

6.2.1 Organic Analysis. The analytical data detected concentrations of PCE in both the shallow and deep EPA monitoring well samples (**EPA-MW-01S** and **EPA-MW-01D**). The detected concentrations for PCE in the monitoring wells (150 µg/L in **EPA-MW-01S** and 12 µg/L in **EPA-MW-01D**) were slightly lower in **EPA-MW-01S** and higher in **EPA-MW-01D** when compared to the historical sampling data collected from the wells (Figure 5). The detected concentrations in the monitoring wells exceeded SCDM Drinking Water benchmarks for PCE.

In the residential area west of East High School where the springs are located, observed contamination for PCE was detected in the shallow groundwater samples **ESS-GW-06** and **ESS-GW-07** at concentrations of 8 µg/L and 6.1 µg/L, respectively. While the shallow groundwater in this area is not a current source of drinking water, the concentrations for PCE detected in **ESS-GW-06** and **ESS-GW-07** did exceed SCDM Drinking Water benchmarks for the MCL (5 µg/L) and the Cancer Risk Screening Concentration (1.6 µg/L). TCE was detected in samples **ESS-GW-04** and **ESS-GW-07** at concentrations of 12 µg/L and 4.5 µg/L. The concentration for TCE detected in **ESS-GW-04** did exceed SCDM Drinking Water benchmarks for the MCL (5.5 µg/L) and the Cancer Risk Screening Concentration (7.7 µg/L).

Chloroform was detected in the background sample EPA-MW-05, the shallow monitoring well sample EPA-MW-01S, and in groundwater sample ESS-GW-10. The detections ranged from 2.6 µg/L to 4.1 µg/L and are well below SCDM benchmarks. Chloroform is a potential laboratory contaminant and may also be found naturally occurring in the environment. The detections for

chloroform at the Site do not appear to be significant with regards to human health and the environment.

6.3 Attribution and Groundwater Migration Targets.

Neither PCE nor TCE were detected in the background location (**EPA-MW-05**) above the respective SQLs. The reported southwestern hydraulic gradient at the Site indicates that the plume established in EPA monitoring wells **EPA-MW-01S** and **EPA-MW-01D** is the likely source of the contamination in the downgradient shallow groundwater samples **ESS-GW-04**, **ESS-GW-06**, and **ESS-GW-07**.

Samples collected from two downgradient artesian drinking water sources, the Liberty Park drinking fountains and the Eighth South Well, did not detect PCE or TCE above the SQLs. A Salt Lake City municipal well (SLC-18) is located to the northwest of the Site (UDEQ/DDW, 2010). The well SLC-18 is currently inactive and was removed from service shortly after the detection of PCE in the well in 2004. Historical sampling data collected as part of the 700 South 1600 East PCE Plume site detected PCE contamination in that municipal well (UDEQ/DERR, 2004). Guidance developed by the EPA for the vapor intrusion pathway indicates that groundwater concentrations for PCE and TCE in groundwater as low as 5 µg/L may present risk to nearby residences (EPA, 2002).

Further evaluation of the Groundwater Pathway was conducted at the site through the collection of eight soil-gas samples (Figure 2b). The analytical data from the soil-gas sampling showed only two detections for PCE. The concentrations of these detections were fairly low at 2.8 micrograms per cubic meter (µg/m^3) and 6.4 µg/m^3 at sample locations **ESS-SG-23** and **ESS-SG-31**, respectively. The soil-gas sampling activities and analytical data are summarized in Appendix D of this report.

There are 27 wells and one groundwater spring operated by eight water systems located within the 4 mile target distance area. These sources serve a total population of 108,525 persons in the Salt Lake Valley. The nearest well is the University of Utah well located 0.67 miles to the northeast (UDEQ/DDW, 2010). Based on the likely hydraulic gradient, the plume is migrating toward and threatening two downgradient artesian wells, the Eighth South Well and the Liberty Park drinking water fountain.

7.0 SURFACE WATER MIGRATION PATHWAY

7.1 Surface Water Sample Locations

A total of three surface water samples were collected from the Site. The three samples were collected from residential springs located in the neighborhood west of East High School (Figure 4). Two of the springs were selected using 2010 sampling data from Salt Lake City Public Utilities. A third location was added after a resident contacted the DERR requesting to have their property included in the sampling activity. The springs at location **ESS-SW-15** appeared to

be nothing more than damp spots on the ground surface. There was no spring at location **ESS-SW-17**, however spring water flowing from a neighboring property was diverted along the north property boundary. The spring water appeared to be used for irrigation purposes. The spring water at location ESS-SW-16 was collected into small concrete vaults on the western part of the property. These vaults appeared to have only an aesthetic value.

7.2 Surface Water Analytical Results

The collected surface water samples were analyzed for low/medium level volatiles organic compounds by SOM01.2 which is an EPA approved laboratory method. Analytical results for the surface water samples are presented in Table 5. The analytical data received from Spectrum Analytical along with the respective Data Validation Reports completed by URS Operating Services are included in Appendix F of this report.

As specified by the HRS, analytical results from field samples were compared to analytical results from the background sample and to the SQL for determining observed contamination. Observed contamination criteria is met if:

1. The background concentration is not detected, observed contamination is established when the sample concentration equals or exceeds the SQL; or

2. The background concentration equals or exceeds the detection limit, observed contamination is established when the sample concentration "significantly exceeds" the background concentration. Generally, "significantly exceeds" is defined to be situations where the sample concentration exceeds the background concentration by at least three times (EPA, 1990).

The benchmark data from the SCDM are the accepted benchmark values and are included in Tables 2 and 5 (EPA, 2004). There are three benchmark values applicable to surface water, and the lowest (i.e. most conservative) is the one used by the HRS. The three applicable benchmarks are: 1) Cancer Risk Screening Concentrations, 2) Reference Dose Screening Concentration, and 3) Maximum Contaminant Level (MCL).

7.2.1 Organic Analysis. No suitable background sampling location was available for the surface water migration pathway, therefore observed contamination could not be established for the collected samples. PCE was detected in the spring water samples **ESS-SW-16** (20 µg/L) and **ESS-SW-17** (3.7 µg/L). TCE was detected in spring water sample **ESS-SW-15** at 4.6 µg/L. Only the detection for PCE in sample **ESS-SW-16** exceeded SCDM Drinking Water benchmarks; however, none of the sampled springs are believed to be drinking water sources based on observations made during the sampling activity.

7.3 Attribution and Surface Water Migration Targets

The reported southwestern hydraulic gradient at the Site indicates that the groundwater contamination found in EPA monitoring wells **EPA-MW-01S** and **EPA-MW-01D** is the likely

source of the contamination in the spring water. Concentrations for PCE in the spring water exceeded safe drinking water standards. The spring water is not believed to be used as a drinking water source and there is no visual evidence that the springs support any population of ecological receptors or sensitive environments. Children or adults may be at risk for exposure to PCE through absorption resulting from contact with the spring water. The spring water at location **ESS-SW-17** did appear to be used for irrigation purposes.

There are no surface drinking water sources within the 15-mile downstream target distance limit of the site (UDNR, 2011). The nearest surface water body to the site is the Red Butte Creek located 1500 feet southeast of the site. The Jordan River is located approximately 3.5 miles west of the site (USGS, 1975). Salt Lake City identified 25 springs along the Wasatch Fault line in the area between 800 South and Michigan Avenue and between 1100 East and 1300 East.

8.0 AIR MIGRATION PATHWAY

8.1 Air Sample Locations

No air samples were collected as part of this SI.

8.2 Air Migration Pathway Targets

Within a 4-mile radius of the Site there is a population of 212,159 people (Census, 2010). Much of the Site is capped with concrete and asphalt; therefore, the threat of exposure via the air exposure pathway is relatively small for this Site. The groundwater in the neighborhood below 1300 East is relatively shallow.

9.0 DATA QUALITY

9.1 Data Quality Assessment

During the sampling event, samples were kept in the possession of the DERR Project Manager and a strict chain-of-custody was maintained. All collected samples were kept on ice and cooled to 4°C. All sample information was logged into a field book and collected samples were photo documented on-site. EPA Chain-of-Custody forms were completed using the SCRIBE software and accompanied the sample shipments to the laboratories. Copies of these forms are included in Appendix E.

Four trip blank samples were collected for each day of sampling. Trip blank samples **ESS-GW-12, ESS-GW-32, ESS-GW-33** and **ESS-GW-34** were prepared prior to each days sampling activity from deionized water at the DERR offices to insure that field samples were not cross-contaminated during collection, transport, storage, and/or shipping. Analytical data for the trip blank samples detected concentrations of 2-butanone (MEK) at concentrations ranging from 13

µg/L to 45 µg/L and acetone at concentrations ranging from 160 µg/L to 170 µg/L. These contaminants are common laboratory chemicals but were not detected in any of the field samples. To insure that field decontamination was conducted properly a rinsate blank **ESS-GW-13** was also collected. The rinsate sample had no detections above the SQLs.

Sample **ESS-GW-11** was collected as a triple volume organic laboratory duplicate for laboratory QA/QC purposes. A field duplicate sample **ESS-GW-14** was collected as a DERR check of the precision of the laboratory data.

A validation package was prepared by URS Operating Services for the analytical data (Appendix F). Once the analytical data package was received and reviewed by the Project Manager, the data was transcribed by hand into Tables 2, 3, 4 and 5 of this report. The analytical data was then compared to the respective SCDM benchmark values for each analyte. In the tables, concentrations that met the definition for observed contamination are highlighted in yellow. The concentrations that exceeded a SCDM value are presented in bold text. The concentrations that met the definition for observed contamination and exceeded a SCDM value are highlighted in pink and presented in bold text.

9.2 Data Quality Objectives

The Data Quality Objectives (DQO) for the Site as presented in Table 6 of this report were met (EPA, 2000).

10.0 SUMMARY AND CONCLUSIONS

In July and August of 2010, the Salt Lake City Department of Public Utilities sampled several springs on the east bench of Salt Lake City, Utah. Elevated levels of tetrachloroethylene (PCE) were detected in the springs at concentrations ranging from 2.5 micrograms per liter (µg/L) to 40.4 µg/L. These springs are the result of the groundwater aquifer surfacing along the Wasatch Fault. The potential source for the PCE contamination is the upgradient 700 South 1600 East PCE Plume site. Previous evaluation of the 700 South 1600 East PCE Plume site by the DERR and EPA found the source of the groundwater contamination to be a historic dry-cleaner operation at the Veterans Affairs Medical Center that operated between the years of 1976 through 1984.

Salt Lake City Public Utilities expressed concern that these PCE concentrations may result in a potential exposure via the vapor intrusion pathway to residents living over the contaminated groundwater plume. Salt Lake City Public Utilities was also concerned regarding potential impacts from the plume to downgradient drinking water sources. Based on the collected analytical data and the concerns expressed by Salt Lake City Public Utilities, the UDEQ and EPA placed the Site on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List in January 2011, and agreed to pursue investigative activities under CERCLA.

In November and December of 2011, the DERR collected ten groundwater, three surface (spring) water, two soil, and eight soil-gas samples from the Site with assistance from URS Operating Services. The sample locations were selected to evaluate shallow groundwater contaminant concentrations in the area of the contaminated springs, to determine the western groundwater plume boundary, and to establish if there was any correlation to the PCE Plume identified in the 700 South 1600 East PCE Plume.

Based on the validated analytical data from the Site the groundwater PCE plume first identified as the 700 South 1600 East PCE Plume persists in the groundwater. The detected concentrations for PCE in the monitoring wells (150 µg/L in **EPA-MW-01S** and 12 µg/L in **EPA-MW-01D**) were slightly lower in **EPA-MW-01S** and higher in **EPA-MW-01D** when compared to the historical sampling data collected from those wells. Given the southwestern hydraulic gradient, the 700 South 1600 East PCE Plume is the likely source of the PCE contamination found in the springs at the Site. The three shallow groundwater samples collected from the residential properties downgradient from the 700 South 1600 East PCE Plume indicate that the contaminated groundwater plume has likely extended as far west as 1100 East. PCE was detected in two of the shallow groundwater samples at 6.1 µg/L and 8 µg/L. TCE was detected in one sample at 12 µg/L. Shallow groundwater in this area was measured between 6.5 and 10 feet bgs. In the residential springs/surface water, PCE was detected in two of the samples at 3.7 µg/L and 20 µg/L. TCE was detected in one sample at 4.6 µg/L. Guidance developed by the EPA for the vapor intrusion pathway indicates that concentrations for PCE and TCE in groundwater as low as 5 µg/L presents a risk to nearby residences.

Left untreated, the PCE contamination in the groundwater, identified as the 700 South 1600 East PCE Plume, has the potential to negatively impact the quality of the downgradient groundwater drinking water sources including the Liberty Park drinking fountains or the Eighth South Well. The presence of PCE and TCE in the shallow groundwater in close proximity to residences west of East High School does indicate a risk of exposure via the vapor intrusion pathway. While the Salt Lake City municipal well SLC-18 is not currently operational due to infiltration of PCE contamination from the 700 South 1600 East PCE Plume, and was not sampled as part of the East Side Springs site, the continued elevated concentrations of PCE in the local groundwater continues to threaten the municipal well's viability as a drinking water source.

11.0 REFERENCES

ATSDR, 2007; Agency for Toxic Substances and Disease Registry, ToxFAQ for Tetrachloroehtylene (PERC); http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=264&tid=48, September 2007.

Ashcroft et. al., 1992, Gaylen L. Ashcroft, Jensen, Donald T., and Brown, Jeffrey L.; *Utah Climate*; published by the Utah Climate Center, Utah State University.

Bright, 2006; Affidavit of Rick Bright, Salt Lake City Department of Public Utilities, Wastewater Maintenance Worker; dated June 2, 2006.

BWPC, 1991; Utah Bureau of Water Pollution Control; Memorandum to File from Dennis Frederick, February 28, 1991.

Census, 2010; U.S. Census, U.S. Census Data collected 2010; data accessed in ArcGIS.

EPA, 1990; U.S. Environmental Protection Agency; *Hazard Ranking System (HRS)*; 40 CFR Part 300; Federal Register/Vol. 55, No. 241/December 14, 1990/Rules and Regulations

EPA, 2000; U.S. Environmental Protection Agency; *Guidance for the Data Quality Objectives Process,* EPA/600/R-96/055, August 2000

EPA, 2002; U.S. Environmental Protection Agency; *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*; EPA/530/D-02/004.

EPA, 2004; U.S. Environmental Protection Agency; *Superfund Chemical Data Matrix*; January 2004.

Eubank and Brough, 1979; Mark E. Eubank, and Brough, R. Clayton, 1979, *Utah Weather,* WeatherBank Inc., Horizon Publishers.

Gilgen, 2012; Personal Communication with Chad Gilgen, Project Manager, Utah Department of Environmental Quality/Division of Environmental Response and Remediation, for the 700 South 1600 East PCE Plume.

Hintze, L.F., 1988, *Geologic History of Utah*, Brigham Young University Geology Studies, Special Publication 7.

NOAA, 2012; U.S. Department of Commerce, National Oceanographic and Atmospheric Administration; Hydrometeorological Design Studies Center, Precipitation Frequency Data Server (PFDS); website http://hdsc.nws.noaa.gov/hdsc/pfds/

Pankow and Cherry, 1996; Pankow, James F., and John A. Cherry; 1996; *Dense Chlorinated Solvents and other DNAPLs in Groundwater*; Waterloo Press; Portland, Oregon.

SLC, 2011a; Salt Lake City Red Butte Oil Spill webpage; Media Releases dated June 20, 2010 and June 12, 2010.

SLC, 2011b; Personal Communication with Florence Reynolds, Laura Briefer, Arlene Larsen and Nick Kruger with Salt Lake City Public Utilities; February 8, 2011.

Tabish, 2006; Affidavit of Tom Tabish, Salt Lake City Department of Public Utilities, Sewer Maintenance Worker; dated June 13, 2006.

UDEQ/DDW, 2010; Utah Department of Environmental Quality/Division of Drinking Water, Drinking Water Systems ArcGIS data, accessed December 2010.

UDEQ/DERR, 2000; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; Site Inspection Analytical Results Report – Mount Olivet Cemetery Plume; prepared by Neil Taylor.

UDEQ/DERR, 2004; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; *Groundwater Sampling Event Summary Report, Mount Olivet Cemetery Plume*; prepared by Chad Gilgen; document in 700 South 1600 East PCE Plume site file.

UDEQ/DERR, 2011a; Utah Department of Environmental Quality/Division of Environmental Response and Remediation; Personal Communication with Chad Gilgen, Project Manager, Mount Olivet Cemetery Plume/700 South 1600 East PCE Plume; and review of site file 2011.

UDEQ/DERR, 2011b; Utah Department of Environmental Quality/Division of Environmental Response and Remediation; *Preliminary Assessment – East Side Springs, Salt Lake County, Utah*; prepared by Craig Barnitz.

UDEQ/DERR, 2011c; Utah Department of Environmental Quality/Division of Environmental Response and Remediation; *Site Investigation Work Plan – East Side Springs, Salt Lake County, Utah*; prepared by Craig Barnitz.

UDEQ/DWQ, 2011; Utah Department of Environmental Quality/Division of Water Quality, Utah Administrative Code, Division of Water Quality Rules; Classifications of Waters of the State, Utah Lake-Jordan River Basin, Jordan River; reference R317-2-13.5a.

UDNR, 2011; Utah Department of Natural Resources, Division of Water Rights, Points of Diversion ArcGIS data accessed 2011.

UGS, 1996; Utah Department of Natural Resources, Utah Geologic Survey; *The Wasatch Fault*, Public Information Series 40; accessed via website http://geology.utah.gov/online/pdf/pi-40.pdf

URS, 1999; URS Operating Services; *Site Activity Report – Mount Olivet Cemetery, Salt Lake City, Utah*, TDD #9803-0014; prepared for the EPA Superfund Technical Assessment and Response Team (START).

USGS 1975; United States Geological Survey, *Fort Douglas, Salt Lake City – South, Sugarhouse*; Utah 7.5 Minute Topographic Quadrangles, photorevised 1975.

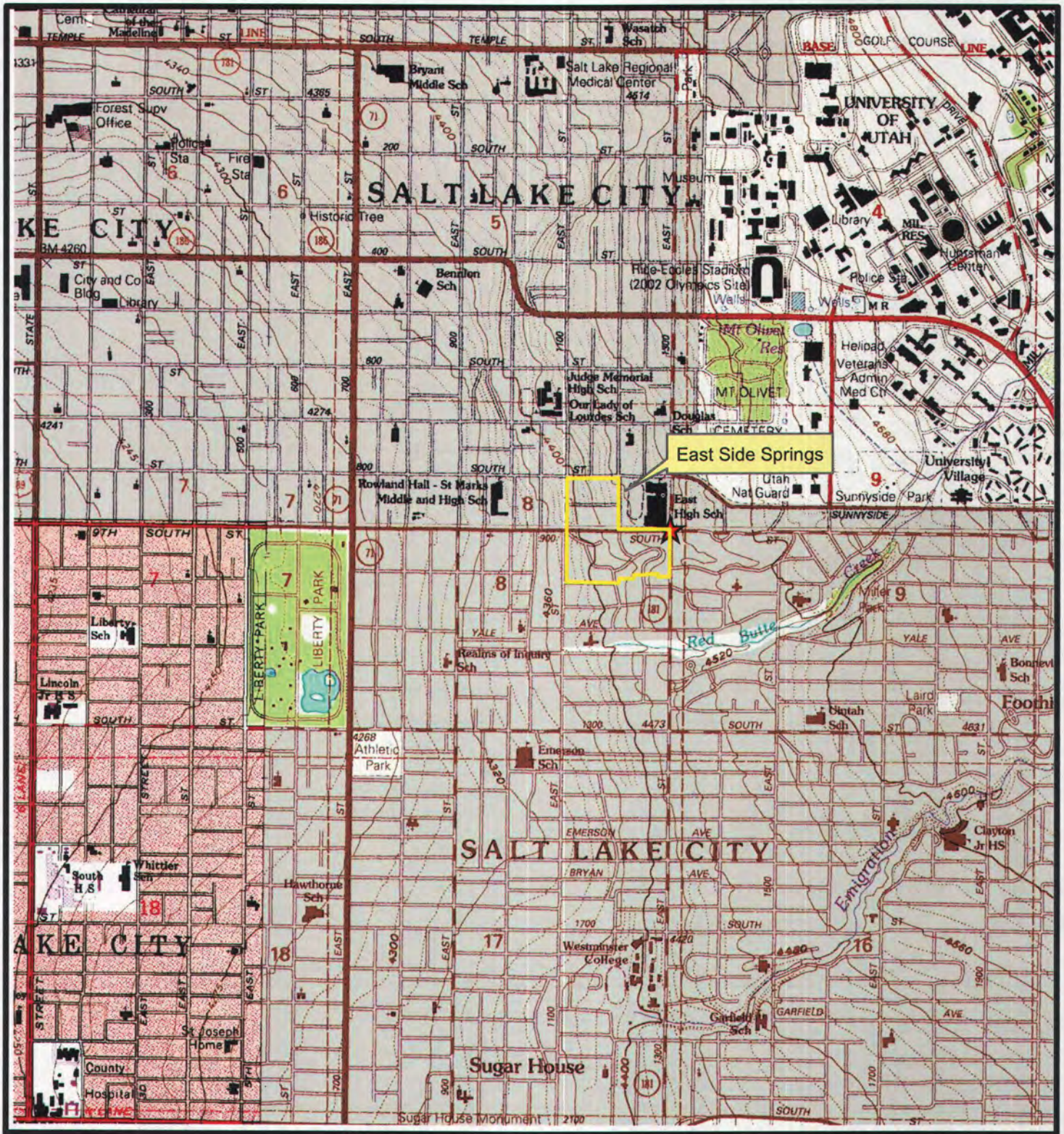
USGS, 2010; United States Geological Survey; Water Data Report 2010 Red Butte Creek, Fort Douglas Monitoring Station near Salt Lake City; data accessed on the website http://wdr.water.usgs.gov/wy2010/pdfs/10172200.2010.pdf

VA, 2005; United States Department of Veterans Affairs; Response Letter to EPA Request for Information Pursuant to Section 104 of CERCLA for the Mount Olivet Cemetery PCE Plume Site located in Salt Lake City, Utah; Signed by James R. Floyd, CHE, Director; dated September 9, 2005.

Waddell et al, 1987; Waddell, K.M., R. L. Deiler, Melissa Santini, and D.K. Soloman; *Ground-Water Conditions in Salt Lake Valley, Utah, 1969-83, and Predicted Effects of Increased Withdrawals from Wells*; State of Utah, Department of Natural Resources, Technical Publication No. 87.

WRCC, 2011; Western Regional Climate Ceneter, Western U.S. Climate Historical Summaries, Salt Lake City, Utah; webpage accessed 2010; http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut7655

FIGURES



Legend

- East Side Springs
- Site Boundaries

7.5 Topo Map: USGS, 1975

0 0.1 0.2 0.4 0.6 0.8

Miles

N W E S

Utah Department of Environmental Quality
Division of Environmental Response and Remediation

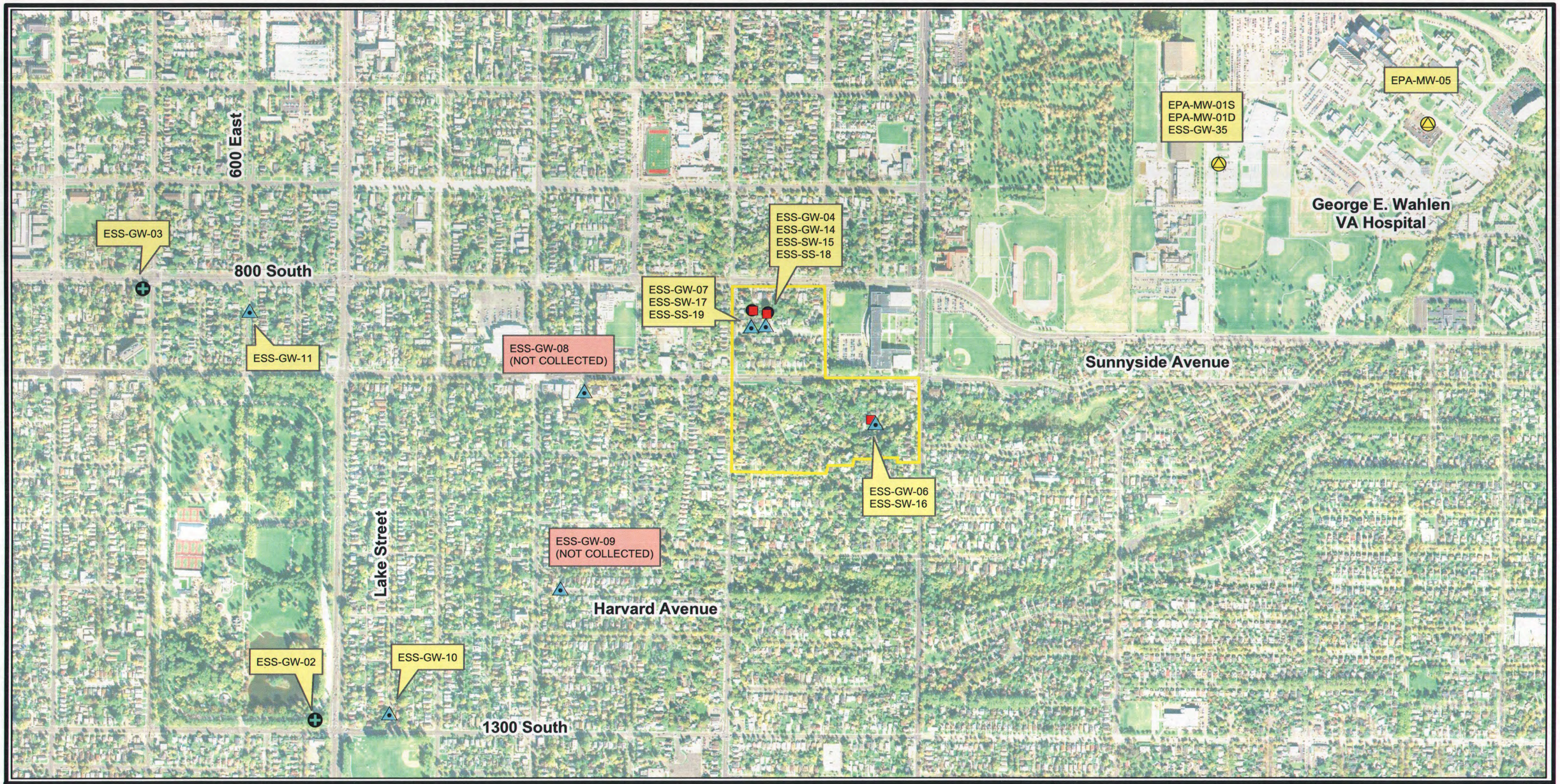
FIGURE 1

SITE LOCATION MAP

East Side Springs
Salt Lake County, Utah

by: crb

date: 12/23/2010

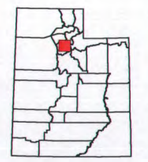


Legend

- Artesian Wells
- Direct-push Boring
- Monitoring Well
- Spring Water Sample
- Soil Sample

Aerial Photo: AGRC, High Resolution Orthography (HRO) Image, 2006

0 405 810 1,620
Feet



Utah Department of Environmental Quality

Division of Environmental Response and Remediiation

FIGURE 2a

GROUNDWATER, SURFACE WATER, AND SOIL SAMPLE LOCATIONS MAP

East Side Springs
Salt Lake County, Utah

by: crb

date: 2/9/12

ESS-SG-31

George E. Wahlen
VA Hospital

ESS-SG-30

Guardsman Way

ESS-SG-20

ESS-SG-23

ESS-SG-26
(NOT COLLECTED)

ESS-SG-25
(NOT COLLECTED)

ESS-SG-27

ESS-SG-22

ESS-SG-24
(NOT COLLECTED)

ESS-SG-21

ESS-SG-28
(NOT COLLECTED)

800 South (Sunnyside Avenue)

ESS-SG-29

Legend

Soil-Gas Sample

0 237.5 475 950
Feet

Utah Department of
Environmental Quality
Division of Environmental
Response and Remediiation

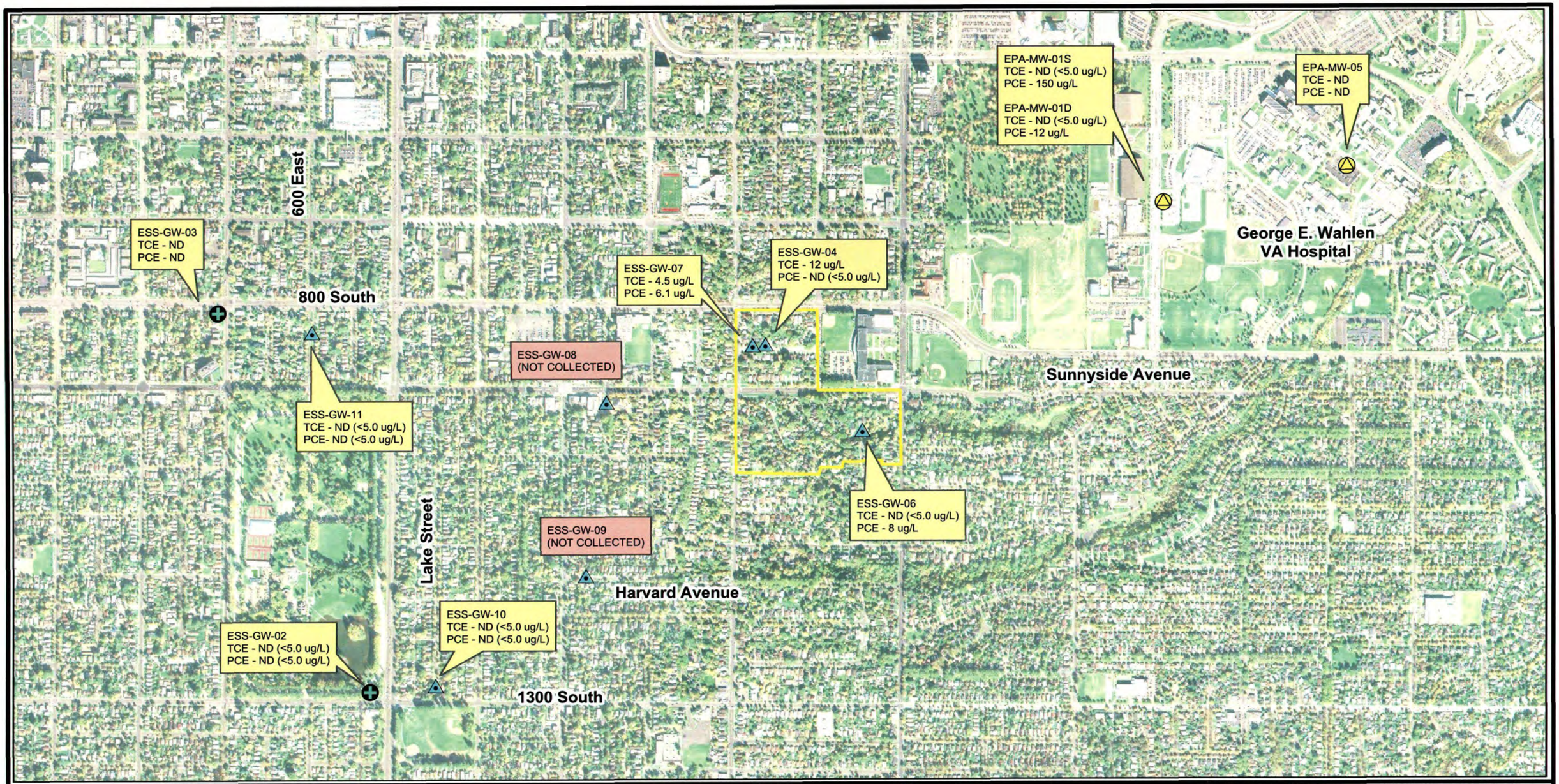
FIGURE 2b

SOIL-GAS SAMPLE
LOCATIONS MAP

East Side Springs
Salt Lake County, Utah

by: crb

date: 5/9/11



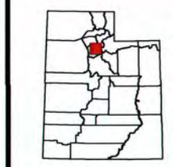
Legend

- Artesian Wells
- Monitoring Wells
- Direct-push Boring

ND: Non-detect (< 5.0 ug/L)

Aerial Photo: AGRC; High Resolution Orthography (HRO) image, 2006

0 462.5 925 1,850
Feet



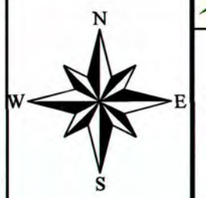


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FIGURE 3

GROUNDWATER ANALYTICAL DATA

East Side Springs
Salt Lake County, Utah

by: crb

date: 1/31/12

Legend

- Springs
- Site Boundaries

0 0.015 0.03 0.06 0.09 0.12

Miles

N

W E

S

Aerial Photo: (National Agricultural Imagery Program (NAIP), 2006

Utah Department of Environmental Quality
Division of Environmental Response and Remediation

FIGURE 4

SURFACE WATER ANALYTICAL DATA

East Side Springs
Salt Lake County, Utah

by: crb

date: 12/23/2010

500 South

SLC-18
11/98 ND (10 ug/L)
10/04 2.23 ug/L
9/12/05 1.2 ug/L
9/19/05 1.5 ug/L
9/26/05 1.7 ug/L
9/29/05 1.8 ug/L

EPA-MW-03 (Abandoned)
11/98 11 ug/L

EPA-MW-05
11/98 ND (<10 ug/L)
10/04 ND (<0.5 ug/L)
2/05 ND (<0.1 ug/L)
10/05 ND (<0.5 ug/L)
11/11 ND (<5.0 ug/L)

Building 7

Mount Olivet Well
10/90 25.7 ug/L
11/98 150 ug/L
10/04 128 ug/L
10/04 92 ug/L

EPA-MW-01S
11/98 320 ug/L
11/98 310 ug/L
2/05 278 ug/L
11/11 150 ug/L

EPA-MW-01D
11/98 1 ug/L
10/04 8.33 ug/L
2/05 0.2 ug/L
10/05 0.33 ug/L
12/11 12 ug/L

EPA-MW-02
11/98 290 ug/L
2/05 296 ug/L
10/05 160 ug/L

Veterans Affairs Hospital

EPA-MW-04
11/98 196 ug/L
2/05 119 ug/L
10/05 120 ug/L

EPA-MW-06
2/05 0.8 ug/L

ESS-GW-04
11/11 ND (<5.0 ug/L)

ESS-GW-07
11/11 6.1 ug/L

ESS-GW-06
11/11 8 ug/L

Sunnyside Avenue

Red Butte Creek

Legend

- Drinking Water Facilities
- Mount Olivet Well
- EPA Monitoring Wells
- Direct-push Boring
- PCE (>300 ug/L)
- PCE (150 - 300 ug/L)
- PCE (<150 ug/L)

10/90 SLC Sample collected from Mount Olivet Well
11/98 EPA/DERR Site Inspection Sampling
10/04 EPA/DERR Site Assessment Sampling
2/05 USGS Sampling
9/05 SLC-18 Well Sampling
10/05 EPA/DERR HRS Sampling
11/11 & 12/11 East Side Springs SI

Photo: AGRC; High Resolution Orthophotography (HRO) image; 2006

Note: This map represents an approximation of the PCE Plume based on historic and current sampling data. Plume boundaries are based on current estimation of groundwater direction.

0 300 600 1,200
Feet

N W E S

Utah Department of Environmental Quality
Division of Environmental Response and Remediiation

FIGURE 5

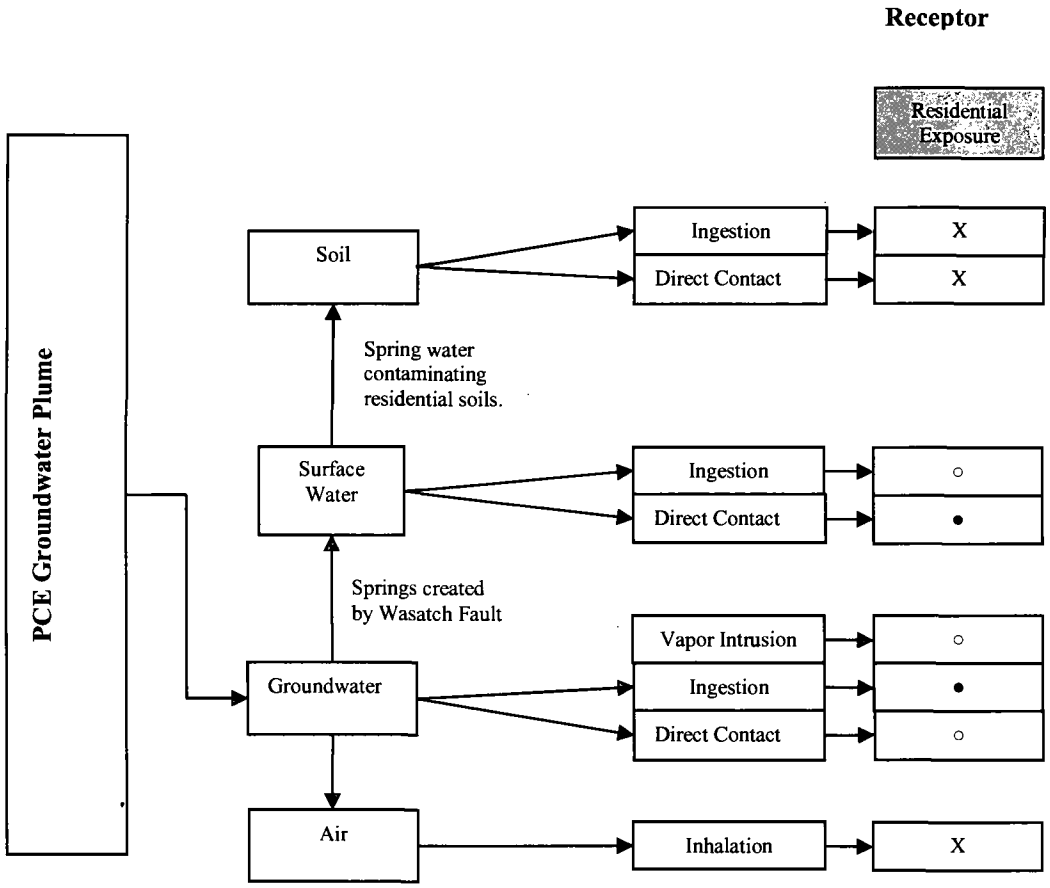
Historic PCE Concentrations at the 700 South 1600 East PCE Plume Site

East Side Springs
Salt Lake County, Utah

by: crb

date: 2/9/12

Figure 6
East Side Springs
Site Conceptual Model



X	Incomplete pathway
○	Possible complete pathway
●	Complete pathway

TABLES

Table 1. Sample Locations, Descriptions, and Rationale

East Side Springs SI

Media	Sample Number	Location	Rationale
Groundwater	EPA-MW-01	Collected from EPA-MW-01 well at the 700 South 1600 East Plume (Mt. Olivet) site.	Determine presence/absence of contaminants
	ESS-GW-02	Collected from the artesian drinking water fountains at Liberty Park.	Determine presence/absence of contaminants
	ESS-GW-03	Collected from the 8th South artesian well.	Determine presence/absence of contaminants
	ESS-GW-04	Collected from a direct-push boring at 1147 East Sunnyside Avenue.	Determine presence/absence of contaminants
	EPA-MW-05	Collected from EPA-MW-05 well at the 700 South 1600 East Plume (Mt. Olivet) site.	Background sample
	ESS-GW-06	Collected from a direct-push boring at 1205 East Gilmer Drive.	Determine presence/absence of contaminants
	ESS-GW-07	Collected from a direct-push boring at 1115 East Sunnyside Avenue.	Determine presence/absence of contaminants
	~~ESS-GW-08~~	~~Collected from a direct-push boring at 920 South Lincoln Street~~	NOT COLLECTED
	~~ESS-GW-09~~	~~Collected from a direct-push boring at 914 East Harvard Avenue~~	NOT COLLECTED
	ESS-GW-10	Collected from a direct-push boring at 1250 South Lake Street.	Determine presence/absence of contaminants
	ESS-GW-11	Collected from a direct-push boring at 818 South 600 East roadway between north and south lanes.	Determine presence/absence of contaminants
	ESS-GW-12	Trip Blank (11/14/11)	QA/QC
	ESS-GW-13	Rinsate Blank	QA/QC
	ESS-GW-14	Field Duplicate of ESS-GW-04	QA/QC
	ESS-GW-32	Trip Blank (11/15/11)	QA/QC
	ESS-GW-33	Trip Blank (11/16/11)	QA/QC
	ESS-GW-34	Trip Blank (12/21/11)	QA/QC
	ESS-GW-35	Field Duplicate of EPA-MW-01D	QA/QC

Table 2. Summary of Collected Analytical Data at the East Side Springs Site

Target Analyte Volatile Organic Compound Results for Groundwater (ug/L)

Sample Location	Location Description	PCE	TCE	cis-DCE	trans-DCE	1,1,1,- TCA	VC
EPA-MW-05	Collected from the background EPA monitoring well MW-05	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
EPA-MW-01S	Collected from EPA monitoring well MW-01S (shallow)	**150**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
EPA-MW-01D	Collected from EPA monitoring well MW-01D (deep)	**12**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
ESS-GW-04	Collected from a direct-push boring in the front yard at 1127 E. Sunnyside Ave.	< 5.0	**12**	< 5.0	< 5.0	< 5.0	< 5.0
ESS-GW-06	Collected from a direct-push boring in the front yard at 1205 E. Gilmer Drive	**8**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
ESS-GW-07	Collected from a direct-push boring in the front yard at 1115 E. Sunnyside Ave.	**6.1**	4.5 J	< 5.0	< 5.0	< 5.0	< 5.0
ESS-GW-14	Field Duplicate of ESS-GW-04	< 5.0	**13**	< 5.0	< 5.0	< 5.0	< 5.0
ESS-GW-35	Field Duplicate of EPA-MW-01D	**10**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
SCDM Benchmarks	MCL	5	5	70	100	200	2
	SCDM Refernce Dose	360	--	360	730	--	110
	SCDM Cancer Risk	1.6	7.7	--	--	--	0.057

Target Analyte Volatile Organic Compound Results for Surface Water (ug/L)

Sample Location	Location Description	PCE	TCE	cis-DCE	trans-DCE	1,1,1,- TCA	VC
ESS-SW-15	Collected from the springs at 1127 E. Sunnyside Ave.	< 5.0	4.6 J	< 5.0	< 5.0	< 5.0	< 5.0
ESS-SW-16	Collected from the springs at 1205 E. Gilmor Drive	**20**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
ESS-SW-17	Collected from the springs at 1115 E. Sunnyside Ave.	**3.7**	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
SCDM Benchmarks	MCL	5	5	70	100	200	2
	SCDM Refernce Dose	360	--	360	730	--	110
	SCDM Cancer Risk	1.6	7.7	--	--	--	0.057

BOLD = Values that exceed SCDM

Background Sample

Observed Contamination

Observed Contamination and exceeds SCDM Benchmark

Table 3. Volatile Organic Data Results for Soil

	Sample #	--	--	ESS-SS-18		ESS-SS-19	
	SCRIBE Sample #			UTN000802825-0018		UTN000802825-0019	
	CLP Lab #	--	--	H0AB7		H0AB8	
	Sample Location	SCDM Reference Dose Screening Conc.	SCDM Cancer Risk Screening Conc.	Collected from soils near the spring at 1127 E. Sunnyside Ave.		Collected from soils near the spring at 1115 E. Sunnyside Ave.	
	Sample Date	--	--	11/15/11		11/15/11	
	Sample Time	--	--	9:28		15:51	
	Sample Type	SCDM [1]	SCDM [2]	Soil		Soil	
Cas No.	analyte	mg/kg	mg/kg	mg/kg	Q	mg/kg	Q
75-71-8	Dichlorodifluoromethane	--	--	12	U	7.6	U
74-87-3	Chloromethane	--	--	12	U	7.6	U
75-01-4	Vinyl Chloride	230	0.43	12	U	7.6	U
74-83-9	Bromomethane	--	--	12	U	7.6	U
75-00-3	Chloroethane	--	--	12	U	7.6	U
75-69-4	Trichlorofluoromethane	23,000	--	12	U	7.6	U
75-35-4	1,1-Dichloroethene	3900	--	12	U	7.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	12	U	7.6	U
67-64-1	Acetone	70,000	--	24	U	15	U
75-15-0	Carbon Disulfide	7,800	--	12	U	7.6	U
79-20-9	Methyl Acetate	--	--	12	U	7.6	U
75-09-2	Methylene Chloride	4700	85	12	U	7.6	U
156-60-5	trans-1,2-Dichloroethene	1600	--	12	U	7.6	U
1634-04-4	Methyl-tert-Butyl Ether	1600	--	12	U	7.6	U
75-34-3	1,1-Dichloroethane	3900	--	12	U	7.6	U
156-59-2	cis-1,2-Dichloroethene	780	--	12	U	7.6	U
78-93-3	2-Butanone (MEK)	47,000	--	24	U	15	U
74-97-5	Bromochloromethane	--	--	12	U	7.5	U
67-66-3	Chloroform	780	--	12	U	7.5	U
71-55-6	1,1,1-Trichloroethane	--	--	12	U	7.5	U
110-82-7	Cyclohexane	--	--	12	U	7.5	U
56-23-5	Carbon Tetrachloride	55	4.9	12	U	7.5	U
71-43-2	Benzene	310	12	12	U	7.5	U
107-06-2	1,2-Dichloroethane	--	0.0075	12	U	7.5	U
123-91-1	1,4-Dioxane	--	--	240	R	150	R
79-01-6	Trichloroethene (TCE)	--	58	12	U	7.6	U
108-87-2	Methylcyclohexane	--	--	12	U	7.6	U
78-87-5	1,2-Dichloropropane	--	9.4	12	U	7.6	U
75-27-4	Bromodichloromethane	1600	10	12	U	7.6	U
0061-01-5	cis-1,3-Dichloropropene	--	--	12	U	7.6	U
108-10-1	4-Methyl-2-Pentanone	6300	--	24	U	15	U
108-88-3	Toluene	16,000	--	12	U	7.6	U
0061-02-6	trans-1,3-Dichloropropene	--	--	12	U	7.6	U
79-00-5	1,1,2-Trichloroethane	310	11	12	U	7.6	U
127-18-4	Tetrachloroethene	780	12	12	U	7.6	U
591-78-6	2-Hexanone	--	--	24	U	15	U
124-48-1	Dibromochloromethane	--	--	12	U	7.6	U
106-93-4	1,2-Dibromoethane	--	--	12	U	7.6	U
108-90-7	Chlorobenzene	1600	--	12	U	7.6	U
100-41-4	Ethylbenzene	7800	--	12	U	7.6	U
95-47-6	o-Xylene	--	--	12	U	7.6	U
9601-23-1	m,p-Xylene	--	--	12	U	7.6	U
100-42-5	Styrene	16,000	--	12	U	7.6	U
75-25-2	Bromoform	--	--	12	U	7.6	U
98-82-8	Isopropylbenzene (Cumene)	--	--	12	U	7.6	U
79-34-5	1,1,2,2-Tetrachloroethane	--	3.2	12	U	7.6	U
541-73-1	1,3-Dichlorobenzene	--	--	12	U	7.6	U
106-46-7	1,4-Dichlorobenzene	--	27	12	U	7.6	U
95-50-1	1,2-Dichlorobenzene	--	--	12	U	7.6	U
96-12-8	1,2-Dibromo-3-chloropropane	--	0.46	12	U	7.6	U
120-82-1	1,2,4-Trichlorobenzene	780	--	12	U	7.6	U
87-61-6	1,2,3-Trichlorobenzene	--	--	12	U	7.6	U

SCDM Non-Cancer Risk = Superfund Chemical Data Matrix, Screening Concentration for Non-Cancer Toxicological Responses, 1/04.
SCDM Cancer Risk = Screening Concentration for Cancer Risk, 1/04.
Q = Data Qualifier
U = Undetected. Reported value is the detection limit.
UJ = Reported quantitation limit is estimated because the QC criteria were not met.
J = Reported concentration is an estimate because quality control criteria were not met.
R = Result value is rejected. Not usable for Hazardous Ranking System (HRS).
BOLD = Values that exceed SCDM
Background Sample
Observed Contamination
Observed Contamination and exceeds SCDM Benchmark

Table 4. Volatile Organic Data Results for Groundwater

	Sample #	--	--	--	EPA-MW-05		EPA-MW-01S		EPA-MW-01D		ESS-GW-02		ESS-GW-03		ESS-GW-04		ESS-GW-06		ESS-GW-07		ESS-GW-10	
	SCRIBE Sample #	--	--	--	UTN000802825-0005		UTN000802825-0001		--		UTN000802825-0002		UTN000802825-0003		UTN000802825-0004		UTN000802825-0006		UTN000802825-0007		UTN000802825-0008	
	CLP Lab #	--	--	--	H0AA4		H0AA1		H0AB9		H0AA0		H0AA2		H0AA3		H0AA5		H0AA6		H0AA7	
	Sample Location	MCL	SCDM Reference Dose Screening Conc.	SCDM Cancer Risk Screening Conc.	Collected from the background EPA monitoring well MW-05		Collected from EPA monitoring well MW-01S (shallow)		Collected from EPA monitoring well MW-01D (deep)		Collected from water fountains at the southeast corner of Liberty Park.		Collected from the 8th South artesian well.		Collected from a direct-push boring in the front yard at 1127 E. Sunnyside Ave.		Collected from a direct-push boring in the front yard at 1205 E. Gilmer Drive		Collected from a direct-push boring in the front yard at 1115 E. Sunnyside Ave.		Collected from a direct-push boring at 1259 S. Lake Street	
	Sample Date	--	--	--	11/16/11		11/14/11		12/21/11		11/14/11		11/14/11		11/16/11		11/16/11		11/15/11		11/15/11	
	Sample Time	--	--	--	11:41		10:00		12:29		16:09		16:31		15:57		16:54		16:28		15:05	
	Sample Depth				205.7		220		167.2				130		10		9.5		6.5		6.5	
	Sample Type	SCDM [1]	SCDM [2]	SCDM [3]	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
Cas No.	analyte	µg/l	µg/l	µg/l	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q
71-55-6	1,1,1-Trichloroethane	200	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-34-5	1,1,2,2-Tetrachloroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-00-5	1,1,2-Trichloroethane	3	150	1.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-34-3	1,1-Dichloroethane	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	7	1800	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
87-61-6	1,2,3-Trichlorobenzene	70	360	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
120-82-1	1,2,4-Trichlorobenzene	70	360		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
96-12-8	1,2-Dibromo-3-chloropropane	0.2	--	0.061	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
106-93-4	1,2-Dibromoethane	--	--	0.001	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
95-50-1	1,2-Dichlorobenzene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
78-87-5	1,2-Dichloropropane	5	--	1.3	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
541-73-1	1,3-Dichlorobenzene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
106-46-7	1,4-Dichlorobenzene	75	--	3.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
123-91-1	1,4-Dioxane	--	--	--	100	U	100	R	100	R	100	R	100	R	100	R	100	R	100	R	100	R
78-93-3	2-Butanone (MEK)	--	22,000	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
591-78-6	2-Hexanone	--	--	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
108-10-1	4-Methyl-2-Pentanone	--	--	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
67-64-1	Acetone	--	33000	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
71-43-2	Benzene	5	150	1.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
74-97-5	Bromochloromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-27-4	Bromodichloromethane	--	730	1.4	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-25-2	Bromoform	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
74-83-9	Bromomethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-15-0	Carbon Disulfide	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	5	26	0.66	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-90-7	Chlorobenzene	100	730	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-00-3	Chloroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
67-66-3	Chloroform	--	360	--	2.6	J	2.9	J	5	U	5	U	5	U	5	U	5	U	5	U	4.1	J
74-87-3	Chloromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
156-59-2	cis-1,2-Dichloroethene	70	360	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
0061-01-5	cis-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
110-82-7	Cyclohexane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
124-48-1	Dibromochloromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-71-8	Dichlorofluoromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
100-41-4	Ethylbenzene	700	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
98-82-8	Isopropylbenzene (Cumene)	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
9601-23-1	m,p-Xylene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1634-04-4	Methyl-tert-Butyl Ether	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-09-2	Methylene Chloride	5	2200	11	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
95-47-6	o-Xylene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
100-42-5	Styrene	100	7300	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
127-18-4	Tetrachloroethene	5	360	1.6	5	U	**150**		**12**		5	U	5	U	5	U	**8**		**6.1**		5	U
108-88-3	Toluene	1000	7300	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
156-60-5	trans-1,2-Dichloroethene	100	730	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
0061-02-6	trans-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-01-6	Trichloroethene (TCE)	5	--	7.7	5	U	5	U	5	U	5	U	5	U	**12**		5	U	4.5	J	5	U
75-69-4	Trichlorofluoromethane	--	11,000	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-01-4	Vinyl Chloride	2	110	0.057	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U

SCDM [1] MCL = Maximum Contaminant Level for Drinking Water, 1/04.
SCDM [2] Reference Dose = Superfund Chemical Data Matrix, Screening Concentration for Non-Cancer Toxicological Responses, 1/04.
SCDM [3] Cancer Risk = Screening Concentration for Cancer Risk, 1/04.
Q = Data Qualifier
U = Undetected. Reported value is the detection limit.
UJ = Reported quantitation limit is estimated because the QC criteria were not met.
J = Reported concentration is an estimate because quality control criteria were not met.
R = Result value is rejected. Not usable for Hazardous Ranking System (HRS).
BOLD = Values that exceed SCDM
Background Sample
Observed Contamination
Observed Contamination and exceeds SCDM Benchmark

Table 4. Volatile Organic Data Results for Groundwater

	Sample #	--	--	--	EPA-MW-05		ESS-GW-11		ESS-GW-12		ESS-GW-13		ESS-GW-14		ESS-GW-32		ESS-GW-33		ESS-GW-34		ESS-GW-35	
	SCRIBE Sample #	--	--	--	UTN000802825-0005		UTN000802825-0009		UTN000802825-0010		UTN000802825-0011		UTN000802825-0012		UTN000802825-0013		UTN000802825-0014		--		--	
	CLP Lab #	--	--	--	H0AA4		H0AA8		H0AA9		H0AB0		H0AB1		H0AB2		H0AB3		H0AC0		H0AC1	
	Sample Location	MCL	SCDM Reference Dose Screening Conc.	SCDM Cancer Risk Screening Conc.	Collected from the background EPA monitoring well MW-05		Collected from a direct-push boring at 818 S. 600 E.from the median in roadway.		Trip Blank 11/14/11		Rinsate Blank		Field Duplicate of ESS-GW-04		Trip Blank 11/15/11		Trip Blank 11/16/11		Trip Blank 12/21/11		Field Duplicate of EPA-MW-01D	
	Sample Date	--	--	--	11/16/11		11/15/11		11/14/11		11/15/11		11/16/11		11/15/11		11/16/11		12/21/11		12/21/11	
	Sample Time	--	--	--	11:41		14:19		7:23		12:52		16:03		7:32		7:29		7:47		12:45	
	Sample Depth				205.7		9.5		N/A		N/A		10		N/A		N/A		N/A		167.2	
	Sample Type	SCDM [1]	SCDM [2]	SCDM [3]	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
Cas No.	analyte	µg/l	µg/l	µg/l	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q	µg/l	Q
71-55-6	1,1,1-Trichloroethane	200	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-34-5	1,1,2,2-Tetrachloroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-00-5	1,1,2-Trichloroethane	3	150	1.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-34-3	1,1-Dichloroethane	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	7	1800	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
87-61-6	1,2,3-Trichlorobenzene	70	360	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
120-82-1	1,2,4-Trichlorobenzene	70	360		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
96-12-8	1,2-Dibromo-3-chloropropane	0.2	--	0.061	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
106-93-4	1,2-Dibromoethane	--	--	0.001	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
95-50-1	1,2-Dichlorobenzene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
78-87-5	1,2-Dichloropropane	5	--	1.3	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
541-73-1	1,3-Dichlorobenzene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
106-46-7	1,4-Dichlorobenzene	75	--	3.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
123-91-1	1,4-Dioxane	--	--	--	100	U	100	R	100	R	100	R	100	R	100	R	100	R	100	R	100	R
78-93-3	2-Butanone (MEK)	--	22,000	--	10	U	10	U	22		10	U	10	U	13		30		45		10	U
591-78-6	2-Hexanone	--	--	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
108-10-1	4-Methyl-2-Pentanone	--	--	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
67-64-1	Acetone	--	33000	--	10	U	10	U	170		10	U	10	U	160		170		160		10	U
71-43-2	Benzene	5	150	1.5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
74-97-5	Bromochloromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-27-4	Bromodichloromethane	--	730	1.4	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-25-2	Bromoform	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
74-83-9	Bromomethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-15-0	Carbon Disulfide	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	5	26	0.66	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-90-7	Chlorobenzene	100	730	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-00-3	Chloroethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
67-66-3	Chloroform	--	360	--	2.6	J	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
74-87-3	Chloromethane	--	--	--	5	U	5	U	2.2	J	5	U	5	U	5	U	5	U	5	U	5	U
156-59-2	cis-1,2-Dichloroethene	70	360	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
0061-01-5	cis-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
110-82-7	Cyclohexane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
124-48-1	Dibromochloromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-71-8	Dichlorofluoromethane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
100-41-4	Ethylbenzene	700	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
98-82-8	Isopropylbenzene (Cumene)	--	3700	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
9601-23-1	m,p-Xylene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-20-9	Methyl Acetate	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1634-04-4	Methyl-tert-Butyl Ether	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-09-2	Methylene Chloride	5	2200	11	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
95-47-6	o-Xylene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
100-42-5	Styrene	100	7300	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
127-18-4	Tetrachloroethene	5	360	1.6	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	**10**	
108-88-3	Toluene	1000	7300	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
156-60-5	trans-1,2-Dichloroethene	100	730	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
0061-02-6	trans-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
79-01-6	Trichloroethene (TCE)	5	--	7.7	5	U	5	U	5	U	5	U	**13**		5	U	5	U	5	U	5	U
75-69-4	Trichlorofluoromethane	--	11,000	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
75-01-4	Vinyl Chloride	2	110	0.057	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	UJ	5	UJ

SCDM [1] MCL = Maximum Contaminant Level for Drinking Water, 1/04.
SCDM [2] Reference Dose = Superfund Chemical Data Matrix, Screening Concentration for Non-Cancer Toxicological R
SCDM [3] Cancer Risk = Screening Concentration for Cancer Risk, 1/04.
Q = Data Qualifier
U = Undetected. Reported value is the detection limit.
UJ = Reported quantitation limit is estimated because the QC criteria were not met.
J = Reported concentration is an estimate because quality control criteria were not met.
R = Result value is rejected. Not usable for Hazardous Ranking System (HRS).
BOLD = Values that exceed SCDM
Background Sample
Observed Contamination
Observed Contamination and exceeds SCDM Benchmark

Table 5. Volatile Organic Data Results for Surface Water

	Sample #	--	--	--	ESS-SW-15		ESS-SW-16		ESS-SW-17	
	SCRIBE Sample #	--	--	--	UTN000802825-0015		UTN000802825-0016		UTN000802825-0017	
	CLP Lab #	--	--	--	H0AB4		H0AB5		H0AB6	
	Sample Location	MCL	SCDM Reference Dose Screening Conc.	SCDM Cancer Risk Screening Conc.	Collected from the springs at 1127 E. Sunnyside Ave.		Collected from the springs at 1205 E. Gilmor Drive.		Collected from the springs at 1115 E. Sunnyside Ave.	
	Sample Date	--	--	--	11/15/11		11/16/12		11/15/11	
	Sample Time	--	--	--	9:20		16:21		15:46	
	Sample Type	SCDM [1]	SCDM [2]	SCDM [3]	Surface Water		Surface Water		Surface Water	
Cas No.	analyte	µg/l	µg/l	µg/l	µg/l	Q	µg/l	Q	µg/l	Q
71-55-6	1,1,1-Trichloroethane	200	--	--	5	U	5	U	5	U
79-34-5	1,1,2,2-Tetrachloroethane	--	--	--	5	U	5	U	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	--	5	U	5	U	5	U
79-00-5	1,1,2-Trichloroethane	3	150	1.5	5	U	5	U	5	U
75-34-3	1,1-Dichloroethane	--	3700	--	5	U	5	U	5	U
75-35-4	1,1-Dichloroethene	7	1800	--	5	U	5	U	5	U
87-61-6	1,2,3-Trichlorobenzene	70	360	--	5	U	5	U	5	U
120-82-1	1,2,4-Trichlorobenzene	70	360		5	U	5	U	5	U
96-12-8	1,2-Dibromo-3-chloropropane	0.2	--	0.061	5	U	5	U	5	U
106-93-4	1,2-Dibromoethane	--	--	0.001	5	U	5	U	5	U
95-50-1	1,2-Dichlorobenzene	--	--	--	5	U	5	U	5	U
78-87-5	1,2-Dichloropropane	5	--	1.3	5	U	5	U	5	U
541-73-1	1,3-Dichlorobenzene	--	--	--	5	U	5	U	5	U
106-46-7	1,4-Dichlorobenzene	75	--	3.5	5	U	5	U	5	U
123-91-1	1,4-Dioxane	--	--	--	100	R	100	R	100	R
78-93-3	2-Butanone (MEK)	--	22,000	--	10	U	10	U	10	U
591-78-6	2-Hexanone	--	--	--	10	U	10	U	10	U
108-10-1	4-Methyl-2-Pentanone	--	--	--	10	U	10	U	10	U
67-64-1	Acetone	--	33000	--	10	U	10	U	10	U
71-43-2	Benzene	5	150	1.5	5	U	5	U	5	U
74-97-5	Bromochloromethane	--	--	--	5	U	5	U	5	U
75-27-4	Bromodichloromethane	--	730	1.4	5	U	5	U	5	U
75-25-2	Bromoform	--	--	--	5	U	5	U	5	U
74-83-9	Bromomethane	--	--	--	5	U	5	U	5	U
75-15-0	Carbon Disulfide	--	3700	--	5	U	5	U	5	U
56-23-5	Carbon Tetrachloride	5	26	0.66	5	U	5	U	5	U
108-90-7	Chlorobenzene	100	730	--	5	U	5	U	5	U
75-00-3	Chloroethane	--	--	--	5	U	5	U	5	U
67-66-3	Chloroform	--	360	--	5	U	5	U	5	U
74-87-3	Chloromethane	--	--	--	5	U	5	U	5	U
156-59-2	cis-1,2-Dichloroethene	70	360	--	5	U	5	U	5	U
0061-01-5	cis-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U
110-82-7	Cyclohexane	--	--	--	5	U	5	U	5	U
124-48-1	Dibromochloromethane	--	--	--	5	U	5	U	5	U
75-71-8	Dichlorofluoromethane	--	--	--	5	U	5	U	5	U
100-41-4	Ethylbenzene	700	3700	--	5	U	5	U	5	U
98-82-8	Isopropylbenzene (Cumene)	--	3700	--	5	U	5	U	5	U
9601-23-1	m,p-Xylene	--	--	--	5	U	5	U	5	U
79-20-9	Methyl Acetate	--	--	--	5	U	5	U	5	U
1634-04-4	Methyl-tert-Butyl Ether	--	--	--	5	U	5	U	5	U
108-87-2	Methylcyclohexane	--	--	--	5	U	5	U	5	U
75-09-2	Methylene Chloride	5	2200	11	5	U	5	U	5	U
95-47-6	o-Xylene	--	--	--	5	U	5	U	5	U
100-42-5	Styrene	100	7300	--	5	U	5	U	5	U
127-18-4	Tetrachloroethene	5	360	1.6	5	U	**20**		**3.7**	**J**
108-88-3	Toluene	1000	7300	--	5	U	5	U	5	U
156-60-5	trans-1,2-Dichloroethene	100	730	--	5	U	5	U	5	U
0061-02-6	trans-1,3-Dichloropropene	--	--	--	5	U	5	U	5	U
79-01-6	Trichloroethene (TCE)	5	--	7.7	4.6	J	5	J	5	J
75-69-4	Trichlorofluoromethane	--	11,000	--	5	U	5	U	5	U
75-01-4	Vinyl Chloride	2	110	0.057	5	U	5	U	5	U

SCDM [1] MCL = Maximum Contaminant Level for Drinking Water, 1/04.
SCDM [2] Reference Dose = Superfund Chemical Data Matrix, Screening Concentration for Non-Cancer Toxicological Responses, 1/04.
SCDM [3] Cancer Risk = Screening Concentration for Cancer Risk, 1/04.
Q = Data Qualifier
U = Undetected. Reported value is the detection limit.
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J = Reported concentration is an estimate because quality control criteria were not met.
R = Result value is rejected. Not usable for Hazardous Ranking System (HRS).
BOLD = Values that exceed SCDM
Background Sample
Observed Contamination
Observed Contamination and exceeds SCDM Benchmark

Table 6: Data Quality Objectives

Step 1 Problem Statement	Step 2 Identifying the Decisions	Step 3 Decision Inputs	Step 4 Study Boundaries	Step 5 Decisions Rules	Step 6 Tolerance Limits on Errors	Step 7 Optimization of Sample Design
In this step: 1) Identify the team members including decision makers; 2) Describe the problem and develop a conceptual site model(s) of the environmental hazards to be investigated; and 3) Determine resources including budget, personnel, and schedule.	In this step identify the principal study question(s), define the alternative actions, develop a decision statement, and organize multiple decisions.	In this step identify the information needed; Determine sources for this information; identify the action level and/or benchmarks that analytical results will be evaluated against; and Identify sampling and analysis methods that can meet the data requirements, including adequate detection limits.	In this step define the target population of interest; specify the spatial boundaries that clarify what the data must represent; determine the time frame for collecting data and making the decision; determine the practical constraints on collecting data; and determine the smallest subpopulation, area, volume, or time for which separate decisions must be made.	In this step specify an appropriate population parameter (mean, median, and percentile); confirm that the action level exceeds measurable detection limits; and develop a decision rule in the format of an If ... then...statement.	In this step determine the range of the parameter of interest, choose a null hypothesis, examine the consequences of making an incorrect decision, specify a range of values where consequences are minor (the gray region), and assign probability values to points above and below the action level that reflect tolerable probability for potential decision errors.	In this step review the previous DQO step results; develop data collection design alternatives; select the sample size that satisfies the DQOs; decide on the most resource-effective design, or agreed alternative; and document details.
Several springs sampled by the SLC Department of Public Works detected elevated levels of tetrachloroethylene (PCE). With a limited amount of analytical data it was unclear if the elevated PCE presented a risk to residents living in the area or to downgradient drinking water sources.	The groundwater needs to be sampled to determine what connection, if any, the groundwater has to the contaminated springs. Additional sampling upgradient of the springs will assist with the identification of the source area(s). The vapor intrusion pathway will also need be evaluated if groundwater concentrations near residences are determined to be at risk.	The information that is required to arrive at a decision for this plume site includes: • Analytical data from groundwater samples to determine if solvent contaminants from sources have migrated off-site; • Identification of environmental and human health targets potentially impacted by migration of contaminants from source area(s) into groundwater and soil vapor ; and • Comparison of analytical results to SCDM benchmarks.	The target population is those landowners where solvents have been detected in their backyard spring waters. Sampling will be conducted in mid-late Summer 2011 to compare with the sampling conducted by SLC Department of Public Works. Results will be evaluated with EPA as well as SLC Department of Public Works to determine next steps needed, if any.	If the concentrations in groundwater exceed appropriate screening values, then those locations will be discussed with EPA to determine if the vapor intrusion pathway needs to be addressed. If levels of contaminants in surface spring water, sediment, and groundwater exceed EPA benchmark levels, then further evaluation or remediation may be required.	Analytical results will be compared to SCDMs and to EPA health-based benchmarks. If benchmarks are exceeded, additional investigation may be required.	Opportunity samples will also be collected if field conditions warrant the need for additional sample collection. Opportunity samples are likely to be collected as surface water samples from other accessible springs or surface water bodies.

APPENDIX A

Site Investigation Data Summary

SITE INVESTIGATION DATA SUMMARY

Site Name: East Side Springs EPA Region: VIII Date: 5/8/2012

State Office or Contractor Name and Address: Utah Division of Environmental Response and Remediation; 168 North 1950 West; Salt Lake City, Utah 84114-4840

GENERAL SITE INFORMATION

1. **CERCLIS ID Number:** UTN000802825

   Address: 900 South 1300 East City: Salt Lake City

   County: Salt Lake State: UT Zip Code: 84102 Cong. Dist.: UT03

2. **Owner Name:** N/A

   Owner Address: _____ City: _____ State: UT

   Operator Name: _____

   Operator Address: _____ City: _____ State: UT

3. **Type of Ownership** (check all that apply):

   ☐ Private ☐ Municipal ☐ County ☐ State

   ☐ Federal/Agency Name: _____ ☐ Other: _____

   References: _____

4. **Approximate size of Property:** ~40 acres.

   References: SLC, 2010; USGS, 1975

5. **Latitude:** 40° 45′ 7″
   Longitude: 111° 51′ 14″ References: USGS, 1975

6. **Status:** ☐ Active ☒ Inactive ☐ Unknown

   References: _____

7. **Years of Operation:** From: _____ To: _____

   References: _____

8. **Previous Investigations:**

TYPE	AGENCY/STATE/CONTRACTORS	DATE	REFERENCES
Spring Water Sampling	SLC Public Utilities	2010	SLC, 2010
PA	DERR	2011	DERR, 2011a
SI Work Plan	DERR	2011	DERR, 2011b
_____	_____	_____	_____

WASTE SOURCE INFORMATION

1. **Waste source types** (check all that apply):

☐ Constituent ☐ Wastestream (type): _____

☐ Landfill ☐ Tanks or non-drum containers (type):

☐ Drums ☐ Pile (type):

☐ Contaminated Soil ☐ Surface Impoundment (buried)

☐ Land Treatment ☐ Surface Impoundment (backfilled)

☒ Other: Historic discharge of PCE contaminated waste water to sewer.

References: SLC, 2010

2. **Types of wastes** (check all that apply):

☒ Organic Chemicals ☐ Inorganic Chemicals ☐ Municipal Wastes

☐ Pesticides/Herbicides ☐ Metals ☐ Solvents

☐ Radionuclides ☐ Other: _____

References: _____

3. **Summarize history of waste disposal operations:** The likely source of the PCE plume at the upgradient 700 South 1600 East PCE Plume site is a historic dry-cleaner at the George E. Wahlen Veteran's Affairs Medical Center.

References: _____

4. **Source characterization** (Attach pages to show quantity and calculations):

Source 1 name: PCE Plume Source Type: _____

Describe Source: A chlorinated solvent plume was previously identified upgradient from the East Side Springs site. The upgradient plume is referred to as the 700 South 1600 East PCE Plume site.

Ground water migration containment: None

Surface water migration containment: None

Air migration (gas and migration) containment: None

Physical State of Wastes:
☐ Solid ☒ Liquid ☐ Sludge/Slurry ☒ Gas ☐ Unknown

Constituent Quantity of Hazardous Substances: Unknown (specify units).

Wastestream Quantity Containing Hazardous Substances: Unknown (specify units).

Volume of Source (yd^3): _____ Area of Source (ft^2): _____

Hazardous substances associated with source 1: tetrachloroethylene (PCE)

References: DERR, 2011a

5. Description of removal or remedial activities:
If Removal has occurred, identify the removal authority and describe the activities. Specify the date(s) of the removal.

No remedial or removal activities have occurred at the site.

References: DERR, 2011a

GROUND WATER INFORMATION

1. Ground water drinking water use within 4 miles of site sources:

☐ Municipal ☐ Private ☒ Both ☐ No Drinking Water Use

References: DDW, 2012

2. Is ground water contaminated?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

☐ Additional sampling required

Is analytical evidence available? ☒ Yes ☐ No

References: _____

3. Is ground water contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling required

References: URS, 2012

4. Are drinking water wells contaminated?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

☐ Additional sampling required

Is analytical evidence available? ☒ Yes ☐ No

References: DERR, 2001

5. Net precipitation (HRS Section 3.1.2.2): 22.87 inches.

6. County average number of persons per residence: 4 people.

References: Census, 2010

7. Discuss general stratigraphy underlying the site. Attach sketch of stratigraphic column.

Quarternary lake sediments and alluvial floodplain deposits underlie the site. These deposits include the fine sandy loans and clays of sedimentary and igneous origins deposited as lake sediments which underlie the more coarse grained stream sediments of sands, silts, and gravel. The clays at thee site are not thick enough nor large enough in areal extent to act as true aquicludes in the local hydrogeologic system.

Reference: DERR, 2001

8. Using Table GW-1, summarize geology underlying the site (starting with formation #1 closest to ground surface). Indicate if formation is interconnected with overlying formation.

TABLE GW-1: SITE GEOLOGY

NAME OF FORMATION	INTERCONNECT (YES/NO)	TYPE OF MATERIAL	AVERAGE THICKNESS (FEET)	HYDRAULIC CONDUCTIVITY (cm/sec)	USED FOR DRINKING WATER?
Surface soil, fill materials			0-12		No
Gravel, sands with intermittent clays and silts			12-260		No
Gravels, well sorted			260-400		Yes

References: URS, 1999

9. Does a karst aquifer underlie any site source?

☐ Yes ☒ No References: _____

10. Depth to top of aquifer: 8.67 feet Elevation: 4431.33 feet

References: DERR, 2011c; USGS, 1975

11. In the table below, enter the number of people obtaining drinking water from wells located within 4 miles of the site. For each aquifer, attach population calculation sheets. Key aquifer to formations listed in Table GW-1.

POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORIES BY AQUIFER

DISTANCE OF WELL(S) FROM SITE SOURCES	AQUIFER A: INCLUDES FORMATIONS _____	AQUIFER B: INCLUDES FORMATIONS _____	AQUIFER C: INCLUDES FORMATIONS _____
1/4-mile or less	0		
>1/4 to 1/2 mile	0		
>1/2 to 1 mile	12135		
>1 to 2 miles	50		
>2 to 3 miles	51061		
>3 to 4 miles	25223		

References: DDW,2012

Summary of the Drinking Water Well Data for the East Side Springs site

I. Water Systems and Populations Served within 4-Miles

Water System	*Pop. Served by Wells in 4-Mile Area*
Salt Lake City	387,506
South Salt Lake City	18,000
Millstream Trailer Court	150
Eight Street South Well	50
Ruth's Diner	50
Santa Fe	50
Wimmer Systems	50

Water System	*Wells within 4-Miles*	*Total Wells in Water System*	*Total Population Served*
Salt Lake City	6	32	387,506
South Salt Lake City	6	7	18,000
Millstream Trailer Court	3	3	150
Eight Street South Well	1	1	50
Ruth's Diner	1	1	50
Santa Fe	1	1	50
Wimmer Systems	1	1	50

Calculation: *Pop. Served by Wells in 4-Mile Area = (Wells within 4-Miles/Total Wells in Water System) * Total Population Served*

Calculations for Populations Served

Water System	*Total Wells in Water System*	*Total Population Served*	*Pop. Served per Well*
Salt Lake City	32	387,506	12,110
South Salt Lake City	7	18,000	2,571
Millstream Trailer Court	3	150	50
Eight Street South Well	1	50	50
Ruth's Diner	1	50	50
Santa Fe	1	50	50
Wimmer Systems	1	50	50

Calculations to determine *Population Served per Well = Total Wells in Water System / Total Population Served*

Drinking Water Wells and Populations Served within a Target Distance Area

Distance (miles)	*Water System*	*# of Wells*	*Population Served per Well*	*Population Served per System*
0 - 1/4	*no wells*			0
			Total for this Distance Interval:	0
1/4 - 1/2	*no wells*			0
			Total for this Distance Interval:	0
1/2 - 1	Salt Lake City	1	12,110	12110
	University of Utah	2	12.5	25
			Total for this Distance Interval:	**12135**
1 - 2	Eighth South Well	1	50	50
			Total for this Distance Interval:	**50**
2 - 3	Salt Lake City	4	12,110	48440
	South Salt Lake	1	2571	2571
	Wimmer Systems	1	50	50
			Total for this Distance Interval:	**51061**
3 - 4	Santa Fe	1	48	48
	Ruth's Diner	1	60	60
	Salt Lake City	1	12,110	12110
	South Salt Lake	5	2571	12855
	Millstream Trailer Court	3	50	150
			Total for this Distance Interval:	**25223**

12. Is ground water from multiple wells blended prior to distribution?

☒ Yes ☐ No References: DDW, 2012

13. Is ground water blended with surface water?

☒ Yes ☐ No References: DDW, 2012

14. Distance from any incompletely contained source available to ground water to nearest drinking water well (HRS Section 3.3.1):

1,682 feet References: USGS, 1975

15. Briefly describe standby drinking water wells within 4 miles of sources at the site:

_____

References: _____

16. Ground water resources within 4 miles of site sources (HRS Section 3.3.3):

☒ Irrigation (5-acre minimum) of commercial food or commercial forage crops.

☒ Commercial livestock watering.

☒ Ingredient in commercial food preparation.

☐ Supply for commercial aquaculture.

☐ Supply for major or designated water recreation area, excluding drinking water use.

☐ Water usable for drinking water but no drinking water wells are within 4 miles.

☐ None of the above.

References: Water Rights, 2012

17. Wellhead protection area (WHPA) within 4 miles of site sources (HRS Section 3.3.4):

☐ Source with non-zero containment factor value lies within or above the WHPA.

☒ Observed ground water contamination attributable to site source(s) lies within the WHPA.

☐ WHPA lies within 4 miles of site sources.

☐ None

References: DDW, 2012

Additional ground water pathway description: The groundwater within the East Side Springs site boundaries as described in this report is not located in a WHPA. However the source of the PCE contamination at the East Side Springs site is believed to be the 700 South 1600 East PCE Plume which does lie within a WHPA.

References: DDW, 2012

SURFACE WATER INFORMATION

COMPLETE A COPY OF THIS SECTION OF THE DATA SUMMARY FOR EACH WATERSHED

1. **Describe the surface water migration path from site sources to at least 15 miles downstream.** Attach a sketch of the surface water migration route.

Surface water at the site is largely contained in municipal storm water systems. Nearby storm water intakes may discharge to Red Butte Creek located 1,500 feet southeast of the site. Red Butte Creek discharges into the Jordan River approximately 3.5 miles downstream. Groundwater daylights along the Wasatch Fault as a series of neighborhood springs.

References: USGS, 1975

2. **Is Surface Water Contaminated?**

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

☐ Additional sampling is required

Is analytical evidence available? ☒ Yes ☐ No

References: URS, 2012

3. **Is surface water contamination attributable to the site?**

☒ Yes ☐ No ☐ Additional sampling required

References: URS, 2012

4. **Floodplain category in which site sources are located** (check all that apply):

☐ 1-year ☐ 10-year ☐ 100-year ☐ 500-year ☒ None

References: FEMA, 1994

5. **Describe flood containment for each source** (HRS Section 4.1.2.1.2.2):

Source #1 Plume Flood Containment None

Source #2 _____ Flood Containment _____

References: _____

6. **Shortest overland distance to surface water from any source** (HRS Section 4.1.2.1.2.1.3):

1,500 feet References: USGS, 1975

7. **Size of drainage area** (HRS Section 4.4.3):

_____ acres References: _____

8. **Describe the predominant soil group within the drainage area** (HRS Section 4.1.2.1.2.1.2):

Much of the area was unsurveyed during the soil survey conducted by the Soil Conservation Service. Areas to the north east of the site include Bingham Loam series soils. These soils are characterized as well drained soils, rapid intake of water and

permeability is moderately rapid. Bore Logs from the EPA wells drilled in the area and direct-push borings at the site found the site lithology to be composed of clays, silts, sands, and gravels in relatively even concentration.

References: Soil Consevation Service, 1974; URS, 1999

9. **2-year 24-hour Rainfall** (HRS Section 4.1.2.1.2.1.2): 0.068 inches

Reference: NOAA, 2012

10. **Elevation of the bottom of nearest surface water body:** 4582.5 feet above sea level

References: SLCo, 2012

11. **Elevation of top of uppermost aquifer:** 4431 feet above sea level

References: DERR, 2011c; USGS, 1975

12. **Predominant type of water body between probable point of entry to surface water and nearest drinking water intake:**

☐ River ☐ Lake References: _____

13. **Identify all drinking water intakes, fisheries, and sensitive environments within 15 miles downstream.**

TARGET NAME/TYPE	WATER BODY TYPE	DISTANCE FROM PPE	FLOW (CFS)	TARGET CHARACTERISTICS	TARGET SAMPLED?
Red Butte Creek	creek		4.7	Utah Sensitive Species habitat	No
Liberty Park Pond	pond		N/A	Waterfowl habitat	No
Jordan River	river		17	Wetlands, Endangered Species Habitat	No

* If target is a drinking water intake, provide number of people served by intake. If target is a fishery, provide species and annual production of human food chain organisms (pounds per year). If target is a wetland, specify wetland frontage (in miles). Attach calculation pages.

References: DERR, 2011a; UDNR, 2003; SL Trib, 2011; USGS, 1975

14. **Is surface water drinking water blended prior to distribution?**

☒ Yes ☐ No References: DDW, 2012

15. **Describe any standby drinking water intakes within 15 miles downstream:**

None

References: DDW, 2012

SOIL EVALUATION

1. **Is surficial or soil contamination present at the site?**

   ☐ Yes ☒ No ☐ Uncertain but likely ☐ Uncertain but not likely

   ☐ Additional sampling is required

   Is analytical evidence available? ☐ Yes ☐ No

   References: _____

2. **Is surficial or soil contamination attributable to the site?**

   ☐ Yes ☒ No ☐ Additional Sampling Required

3. **Is surficial contamination on the property and within 200 feet of a residence, school, daycare center, or workplace?**

   ☐ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

   ☐ Additional sampling is required

   Is analytical evidence available? ☒ Yes ☐ No

   References: _____

4. **Total area of surficial contamination** (HRS Section 5.2.1.2):

   N/A square feet References: URS, 2012; USGS, 1975

5. **Attractiveness/accessibility of the areas of observed contamination** (HRS Section 5.2.1.1). Check all that apply:

   ☐ Designated recreational area

   ☐ Used regularly, or accessible and unique recreational area

   ☒ Moderately accessible with some use

   ☐ Slightly accessible with some use

   ☐ Accessible with no use

   ☐ Inaccessible with some use

   ☐ Inaccessible with no use References: _____

16. Surface water resources within 15 miles downstream (HRS Section 4.1.2.3.3):

- ☒ Irrigation (5 acres minimum) of commercial food or commercial forage crops
- ☒ Commercial livestock watering
- ☐ Ingredient in commercial food preparation
- ☐ Major or designated water recreation area, excluding drinking water use
- ☐ Water designated by the state for drinking water use but is not currently used
- ☐ Water usable for drinking water but no drinking water intakes within 15 miles downstream
- ☐ None of the above

References: Water Rights, 2012

6. Population within 1-mile travel distance from site.

DISTANCE FROM SITE SOURCES	POPULATION
¼ mile or less	1,639
¼ to ½ mile	6,149
½ to 1 mile	21,746

References: Census, 2010

AIR INFORMATION

1. **Is air contamination present at the site?**

☐ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

☒ Additional sampling is required

Is analytical evidence available? ☐ Yes ☒ No

References: _____

2. **Is air contamination attributable to the site?**

☐ Yes ☐ No ☒ Additional sampling required

3. **Are populations, sensitive environments, or wetlands exposed to airborne hazardous substances released from the site?**

☐ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely

☒ Additional sampling is required

Is analytical evidence available? ☐ Yes ☐ No

References: _____

4. **Evidence of biogas release from any of the following source types at the site:**

☐ Below-ground containers or tanks ☐ Landfill

☐ Buried surface impoundment

References: _____

5. **Particulate migration potential factor value:** _____ (HRS Figure 6-2)

6. **Particulate mobility factor value:** _____ (HRS Figure 6-3)

7. **Distance from any incompletely contained source to nearest residence or regularly occupied area:**

0 miles References: URS, 2012

8. Population within 4 miles of site sources.

DISTANCE FROM SITE SOURCES	POPULATION
0 (within sources)	0
1/4 mile or less	1,639
>1/4 to 1/2 mile	6,149
>1/2 to 1 mile	21,746
>1 to 2 miles	61,861
>2 to 3 miles	60,876
>3 to 4 miles	59,888

References: Census, 2010

9. Resources within 2 mile of site sources (HRS Section 6.3.3):

☐ Commercial agriculture

☐ Commercial silviculture

☐ Major or designated recreation area

☒ None of the above

References: _____

10. Sensitive environments and wetlands within 4 miles of the site:

NAME/DESCRIPTION/ LOCATION OF SENSITIVE ENVIRONMENT OR WETLAND	**DISTANCE FROM SITE (MILES)**	**TYPE OF SENSITIVE ENVIRONMENT**	**WETLAND SIZE (ACRES)**
Jordan River/Great Salt Lake	3.5 - 15	wetlands	160

References: USGS, 1975

LIST OF REFERENCES

Census, 2010; United States Census Bureau data from 2010; accessed via Automated Geographical Resource Center (AGRC).

DDW, 2012; Utah Department of Environmental Quality; Division of Drinking Water; Drinking Water Facilities layer file accessed in ArcGIS.

DERR, 2001; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; Site Inspection Analytical Results Reports - Mount Olivet Cemetery Plume, prepared by Neil B. Taylor.

DERR, 2011a; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; Preliminary Assessment - East Side Springs, prepared by Craig Barnitz.

DERR, 2011b; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; Site Investigation Work Plan - East Side Springs, prepared by Craig Barnitz.

DERR, 2011c; Utah Department of Environmental Quality, Division of Environmental Response and Remediation; Site Sampling Field Activities Report - East Side Springs, prepared by Craig Barnitz.

FEMA, 1994; United States Federal Emergency Management Agency; Flood Insurance Study, City of Salt Lake City, Utah, Salt Lake County; revised September 30, 1994.

NOAA, 2012; United States Department of Commerce, National Oceanographic and Atmospheric Administration; Hydrometeorological Design Studies Center, Precipitation Frequency Data Server (PFDS); website http://hdsc.nws.noaa.gov/hdsc/pfds/

SLC, 2010; Salt Lake City Public Utilities, Sampling data from Residential Spring Sampling conducted in response to the Red Butte Oil Spill.

SLCo, 2012; Salt Lake County, Public Works Engineering Flood Control; Realtime Streamflow Data for Red Butte Creek; accessed via website http://www.pweng.slco.org/flood/streamFlow/cfml/strm_display.cfm?gageno=740&sensor=739

SL Trib, 2011; Salt Lake Tribune article, Prettyman: Replacing Red Butte Cutthroat trout Right Thing to Do; published November 28, 2011 http://www.sltrib.com/sltrib/outdoors/52971176-117/creek-trout-cutthroat-fish.html.csp

Soil Conservation Service, 1974; Soil Survey of Salt Lake Area, Utah; U.S. Department of Agriculture Soil Conservation Service; Woodward, Lowell, John L. Harvey, Karl M. Donaldson, Jungi J. Shioaki, Garth W. Leishman, and J. Howard Broderick.

UDNR, 2003; Utah Department of Natural Resources, Division of Wildlife Resources; Jordan River Drainage Management Plan, Hydrologic Unit 16020204, Publication #03-30.

URS, 1999; URS Operating Services; Site Activity Report - Mount Olivet Cemetery, Salt Lake City, Utah, TDD #9803-0014; prepared for the EPA Superfund Technical Assessment and Response Team (START).

URS, 2012; Validated Analytical Data for the East Side Springs site.

USGS, 1975; 7.5 Topographical Maps; Fort Douglas, Salt Lake City - North, Sugarhouse.

Water Rights, 2012; Water Rights Point of Diversion shapefile, accessed in ArcGIS January 2012.

APPENDIX B

Consent for Access to Property

CONSENT FOR ACCESS TO PROPERTY

East Side Springs, CERCLIS #UTN000802825
Salt Lake City, Utah

Name of Owner: U.S. Department of Veterans Affairs

Address of Owner: 500 South Foothill Drive
Salt Lake City, UT 84148

Address of Property
Subject to Access: 500 South Foothill Drive, Salt Lake City, Utah.

A. I, the authorized representative of the owner of the property described above ("Owner"), consent to officers, employees, contractors, subcontractors, and other authorized representatives of the United States Environmental Protection Agency ("EPA") and the Utah Department of Environmental Quality ("UDEQ") entering and having access to the properties listed above ("Property") for the following purposes:

1. The collection of groundwater samples from an existing monitoring well and soil-gas samples using direct-push drilling technology;
2. The taking of photographs of the sample location(s);
3. Any other such actions related to, and necessary in connection with, the taking of the above samples; and,
4. Site reclamation and cleanup which may include the re-vegetation of affected sampling areas.

B. Owner understands that these actions by EPA and UDEQ are undertaken pursuant to their response and enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") 42 U.S.C. § 9601, et seq. Notwithstanding any provision of this Consent for Access, the UDEQ and EPA retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable federal or State statute or regulation. EPA, UDEQ, and Owner recognize that granting access does not constitute an admission of liability under CERCLA, RCRA, and any other applicable federal or State statute or regulation. EPA, UDEQ, and Owner retain all rights and defenses under CERCLA, RCRA, and any other applicable federal of State statute or regulation. Liability for damage caused by negligence is governed by applicable law. Nothing in this Consent for Access constitutes a waiver of sovereign immunity.

C. Owner makes no representation regarding any safety hazards that may be present at the Property.

D. Owner reserves all legal rights that it may have with respect to any recourse it may seek regarding impacts to the Property caused by the activities described herein.

E. The undersigned certifies that he/she is fully authorized to grant the access provided herein on behalf of Owner and to execute and legally bind Owner to this document.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

☒ I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

☒ When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: VASLC
ATTN: Kim Packard
Mail Code: 138$
500 Foothill Blvd
SLC, UT 84148

U.S. Department of Veterans Affairs

By: _____ Date: 9/9/11

STEVEN W. YOUNG, FACHE
Director

CONSENT FOR ACCESS TO PROPERTY

East Side Springs, CERCLIS #UTN000802825
Salt Lake City, Utah

Name of Owner: Salt Lake City Corporation, a Municipal Corporation of the State of Utah

Address of Owner: 451 South State Street
Salt Lake City, UT 84111

Address of Properties
Subject to Access: 900 South Lincoln Street; 1250 South Lake Street; 914 East Harvard Avenue; 600 East 800 South; 8th South Well; the Liberty Park drinking fountains; and the EPA-MW-01 located in Salt Lake City, Utah

A. I, the authorized representative of the owner of the property described above ("Owner"), consent to officers, employees, contractors, subcontractors, and other authorized representatives of the United States Environmental Protection Agency ("EPA") and the Utah Department of Environmental Quality ("UDEQ") entering and having access to the properties listed above ("Property") for the following purposes:

1. The collection of groundwater samples, drinking water well samples, and soil-gas samples using direct-push drilling technology;
2. The taking of photographs of the sample location(s);
3. Any other such actions related to, and necessary in connection with, the taking of the above samples; and,
4. Site reclamation and cleanup which may include the re-vegetation of affected sampling areas.

B. Owner understands that these actions by EPA and UDEQ are undertaken pursuant to their response and enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") 42 U.S.C. § 9601, et seq. Notwithstanding any provision of this Consent for Access, the UDEQ and EPA retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable federal or State statute or regulation. EPA, UDEQ, and Owner recognize that granting access does not constitute an admission of liability under CERCLA, RCRA, and any other applicable federal or State statute or regulation. EPA, UDEQ, and Owner retain all rights and defenses under CERCLA, RCRA, and any other applicable federal of State statute or regulation. Liability for damage caused by negligence is governed by applicable law. Nothing in this Consent for Access constitutes a waiver of sovereign immunity.

C. Owner makes no representation regarding any safety hazards that may be present at the Property.

D. Owner reserves all legal rights that it may have with respect to any recourse it may seek regarding impacts to the Property caused by the activities described herein.

E. The undersigned certifies that he/she is fully authorized to grant the access provided herein on behalf of Owner and to execute and legally bind Owner to this document.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[✓] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[ ] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: _____.

SALT LAKE CITY CORPORATION

By: _____ Date: 10/13/2011

John Naser, Director
Division of Engineering

CONSENT FOR ACCESS TO PROPERTY

Rowland Hall - St. Mark's ("Owner"), is the owner of record of certain real property Parcel Number: 16091260120000 and 16091030040000 Address: 720 South Guardsman Way and 1443 East Sunnyside Avenue, Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of soil-gas samples using direct-push unit;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during November 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[✓] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: _____.

Owner: ROWLAND HALL

By: Kevin D. Hanson

Print Name: KEVIN D. HANSON

Title: CFO

Dated this 17th day of October, 2011.

Site Name: East Side Springs

Project Manager: Craig Barnitz

CONSENT FOR ACCESS TO PROPERTY

Taylor Parkin and Holly Hashimoto ("Owner"), are the owners of record of certain real property Parcel Number: 16082090270000 Address: 1127 E. Sunnyside Avenue, Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of surface water, groundwater, and soil samples using direct-push technology;
2. The taking of photographs of the sample location; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[✓] When available to DERR, Owner wishes to obtain a copy of the laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: 4756 Deercreek Rd. SLC, UT 84124

Owner: Taylor Parkin

By: Taylor Parkin

Print Name: Taylor Parkin

Title: Owner

Dated this 8th day of August, 2011.

Site Name: East Side Springs

Project Manager: Craig Barnitz

CONSENT FOR ACCESS TO PROPERTY

Ronald J. & Kristi M. Nelson ("Owner"), are the owners of record of certain real property Parcel Number: 16082090240000 Address: 1115 E. Sunnyside Avenue, Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of surface water, groundwater, and soil samples using direct-push technology;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: 1115 Sunnyside Ave, SLC, Ut 84102-3725

Owner: Ronald J Nelson, Kristi L Markosen

By: _____

Print Name: Ronald J. Nelson, Kristi L. Markosen

Title: _____

Dated this 23 day of July, 2011.

Site Name: East Side Springs

Project Manager: Craig Barnitz

RECEIVED
JUL 26 2011
Environmental Response & Remediation

SCANNED

-2011-012660

SCANNED

RECEIVED
AUG 15 2011
Environmental Response & Remediation

DERR -2011-013026

CONSENT FOR ACCESS TO PROPERTY

Joe C. and Susan S. Culbertson ("Owner"), are the owners of record of certain real property Parcel Number: 16082790280000 Address: 1205 E. Gilmer Drive, Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of surface water, groundwater, and soil samples using direct-push technology;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: ~~Joe~~ JOE C. CULBERTSON MD
370 E. SOUTH TEMPLE
#550
SALT LAKE CITY, UT. 84111

Owner: Joe C Culbertson MD

By: _____

Print Name: JOE C. CULBERTSON MD

Title: OWNER

Dated this 23 day of JULY, 2011

Site Name: East Side Springs

Project Manager: Craig Barnitz

NOTE= WE CAN SHOW YOU THE SITE OF THE SPRING— WHERE THE COLLECTING PIPE RUNS IN THE BACK YARD AS WE RAN A CAMERA

CONSENT FOR ACCESS TO PROPERTY

Mount Olivet Cemetery Association ("Owner"), is the owner of record of certain real property Parcel Number 16091030030000, Address: 1443 East Sunnyside Avenue, Salt Lake City, Utah, and commonly known as and used as the East High School Football Field ("Property").

Salt Lake City School District is the Operator and Lessee of the Property.

This Consent for Access to Property from the Owner (this "Consent") is based solely upon the representation of the Utah Division of Environmental Response and Remediation (the "DERR") that Salt Lake City School District will allow the DERR access to the Property and that a representative of the Salt Lake City School District has signed a Consent for Access to Property similar to this Consent. Without the signed Consent for Access to Property from Salt Lake City School District, this Consent is invalid.

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the DERR solely for the following purposes:

1. The collection of soil-gas samples using a hand held slam bar;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et. seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to:

Rosemary J. Beless
Attorney for Mount Olivet Cemetery
215 South State Street #1200
Salt Lake City, Utah 84111-2323.

Owner: Mount ~~Olivet~~ Cemetery Association

By: Pamela Valdez

Print Name: Pamela Valdez

Title: Secretary of Board Dated this 18 day of Aug, 2011

Site Name: East Side Springs Project Manager: Craig Barnitz

4842-7751-8602, v. 1

CONSENT FOR ACCESS TO PROPERTY

Mount Olivet Cemetery Association ("Owner"), is the owner of record of certain real property Parcel Number 16091030030000, Address: 1443 East Sunnyside Avenue, Salt Lake City, Utah, and commonly known as and used as the East High School Football Field ("Property").

Salt Lake City School District is the Operator and Lessee of the Property.

This Consent for Access to Property from the Owner (this "Consent") is based solely upon the representation of the Utah Division of Environmental Response and Remediation (the "DERR") that Salt Lake City School District will allow the DERR access to the Property and that a representative of the Salt Lake City School District has signed a Consent for Access to Property similar to this Consent. Without the signed Consent for Access to Property from Salt Lake City School District, this Consent is invalid.

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the DERR solely for the following purposes:

1. The collection of soil-gas samples using a hand held slam bar;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et. seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to:

Rosemary J. Beless
Attorney for Mount Olivet Cemetery
215 South State Street #1200
Salt Lake City, Utah 84111-2323.

Owner: Mount ~~Olivet~~ Cemetery Association

By: Pamela Valdez

Print Name: Pamela Valdez

Title: Secretary of Board Dated this 18 day of Aug, 2011

Site Name: East Side Springs Project Manager: Craig Barnitz

4842-7751-8602, v. 1

CONSENT FOR ACCESS TO PROPERTY

Salt Lake City School District is the lessee of certain real property Parcel Number: 16091030030000 Address: 1443 East 500 South, Salt Lake City, Utah ("Property").

The Salt Lake City School District hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of soil-gas samples using a hand held slam bar;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Salt Lake City School District has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Salt Lake City School District makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Salt Lake City School District may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, the Salt Lake City School District wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: 1005 W. Beardsley Place, SLC, 84119

Lessee: Salt Lake City School District

By: Gregg Smith

Print Name: Gregg Smith

Title: Director, Facility Services Dated this 12 day of Aug, 2011.

Site Name: East Side Springs Project Manager: Craig Barnitz

DERR 2011-013086

CONSENT FOR ACCESS TO PROPERTY

Board of Education of Salt Lake City ("Owner"), is the owner of record of certain real property Parcel Number: 16091510020000 Address: 860 South 1400 East, Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of soil-gas samples using a hand held slam bar;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: 1005 W. Beardsley Place 8411[illegible]

Owner: Salt Lake City School District [redacted]

By: Gregg Smith

Print Name: Gregg Smith

Title: Director, Facility Services Dated this 12 day of Aug, 2011.

Site Name: East Side Springs Project Manager: Craig Barnitz

CONSENT FOR ACCESS TO PROPERTY

Valley Mental Health Services ("Owner"), is the owner of record of certain real property Parcel Number: 16091260110000 Address: 780 South Guardsman Way , Salt Lake City, Utah ("Property").

The Owner hereby consents to access of the Property by the officers, employees, authorized representatives, and consultants of the Utah Division of Environmental Response and Remediation (the "DERR") solely for the following purposes:

1. The collection of soil-gas samples using a hand held slam bar;
2. The taking of photographs of the sample locations; and
3. Any other such actions related to, and necessary in connection with, the taking of the above samples.

The Owner has been informed that these actions by the DERR are being performed under the authorities provided in the Utah Environmental Quality Code of Utah Code Ann. § 19-1-101 et seq. and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C.A. § 9601, et. seq. and that the DERR anticipates accessing the Property for the above purposes during Summer 2011.

By consenting to access, the Owner makes no admission of liability or responsibility for any contamination or environmental condition which may be found on the Property.

Section 19-6-304 of the Utah Code Ann. provides that, upon request as indicated below, the Owner may have a split sample if possible and may obtain an analysis of the sample available. To these ends, please mark your preference below:

[ ] I wish to obtain splits of all samples collected on the Property and a receipt describing each sample taken. I understand that I must provide the necessary sample containers to obtain these splits. The responsibility of choosing an analytical laboratory and the cost of analysis of the splits is solely mine.

[X] When available to DERR, Owner wishes to obtain a copy of the final analytical results report and laboratory data concerning the samples taken from the Property. Indicate address where results should be sent to: 3685 W. 6200 S. SLC, UT 84118.

Owner: Valley Mental Health

By: [signature]

Print Name: Lance Stuebaher

Title: Property Management

Dated this 15th day of August, 2011.

Site Name: East Side Springs

Project Manager: Craig Barnitz

DERR 2011-013087

APPENDIX C

Field Activities Report and Site Photographs

FIELD ACTIVITIES REPORT
East Side Plume SI

DATE: November 14, 2011

ON-SITE PERSONNEL: Craig Barnitz UDEQ/DERR
Henry Schmelzer URS
Bryan Parapolos URS
Cary Rubles MWH

07:23 **ESS-GW-12**. Collect trip blank sample ESS-GW-12 from deionized water at DERR offices.

08:29 Arrive on-site. URS has set up at EPA-MW-01S at the shallow nested well:

EPA-MW-01S
Total Depth (TD): 224 feet below ground surface (bgs)
Screen Interval: 184-224
Water Level: 153.04 feet bgs

Water measurements
pH: 7.05
Specific Conductivity: 12.20
Temperature: 12.2°C

09:48 Well purged 14 gallons with the use of an inertia pump and allowed to recharge. Sample was first collected into a 1-liter poly bottle before being deposited into 40mL VOA bottles. Collected from 220 feet bgs.

10:00 **EPA-MW-01S**. Collect sample EPA-MW-01S. Collected in 2 40-mL VOA bottles preserved with HCl. High sediments in sample.

10:49 URS sets up at ESS-GW-09 located at 914 E. Harvard Avenue.

11:52 Direct-push hits refusal at 27 feet bgs. Tight clays throughout the boring. No water produced. Location abandoned.

13:40 URS sets up at ESS-GW-09 located at 920 S. Lincoln Avenue.

14:21 Boring completed to 24 feet bgs. Tight clays throughout boring. High chatter from direct-push unit. Low plasticity but not enough to produce water. Location abandoned.

14:57 URS sets up at ESS-GW-09 located at 1259 S. Lake Street.

15:27 Direct-push unit breaks down while drilling at 1259 S. Lake Street.

16:09 ESS-GW-02. Collect sample ESS-GW-02 from Liberty Park Drinking fountain. Collected into 2 40-mL VOA bottles preserved with HCl.

16:31 ESS-GW-03. Collect sample ESS-GW-03 from the 8th South artesian well. Collected into 2 40-mL VOA bottles preserved with HCl.

16:30 Leave site for the day.

DATE: November 15, 2011

ON-SITE PERSONNEL: Craig Barnitz UDEQ/DERR
Henry Schmelzer URS
Bryan Parapolos URS
Cary Rubles MWH

07:32 ESS-GW-32. Collect Trip Blank sample ESS-GW-32 from deionized water at DERR offices.

08:12 Arrive on-site at the Salt Lake City Sports Complex. URS is configuring bladder pump for well purging at EPA-MW-01D (deep nested well).

09:00 URS determines that the nitrogen on hand will not be enough to purge three well casings of water from the well. URS leaves site to purchase bailing wire to attempt to bail the well. UDEQ leaves site to collect spring water and soil samples from 1127 East Sunnyside Avenue.

09:20 ESS-SW-15. Collect surface water sample ESS-SW-15 from the spring at 1127 Sunnyside Avenue. Spring is located in the rear of house about 30 feet to the north of the back porch. Spring had dark organic sediments and was filled with leaves. A slight but visible sheen at waters surface. Sample collected into a 1 liter poly bottle and transferred to 2 40-mL VOA bottles preserved with HCl.

09:28 ESS-SS-18. Collected soil sample ESS-SS-18 from the spring at 1127 Sunnyside Avenue. Sample collected from the dark organic sediments. Collected in a 4 oz. jar.

10:32 Determined that hand bailing the deep well at EPA-MW-01S with ~250+ feet inside the well casing was not feasible under the time frame for the site sampling. A test of the direct-push unit found that the unit was operational. Returned to ESS-GW-10 (1259 South Lake Street).

11:23 Pushed down to 12 feet with the direct-push unit at ESS-GW-10. Series of wet clay layers from between 6-10 feet that may produce water. A temporary PVC well is installed into the boring and left to recharge.

12:40 URS sets up at ESS-GW-11 located in turnaround at 818 South 600 East.

12:52 ESS-GW-13. Collect rinsate blank sample ESS-GW-13 by placing a recently deconned cutting shoe into a 1 liter poly bottle filled with deionized water. Transfer water into 2 40-mL VOA bottles preserved with HCl.

13:26 Completed boring ESS-GW-11 located in the turnaround at 818 South 600 East. A temporary PVC well was installed and well was allowed to recharge.

ESS-GW-11
Total Depth (TD): 24 feet bgs
Screen Interval: 4-24 feet bgs
Water Level: 9.5 feet bgs

Water measurements
pH: 6.9
Specific Conductivity: 17.80
Temperature: 14.5°C

14:19 ESS-GW-11. Collect sample ESS-GW-11. Laboratory duplicate. Collected in 6 40-mL VOA bottles preserved with HCl. Light sediments in sample.

14:51 Return to ESS-GW-10 at 1259 South Lake Street.

ESS-GW-10
Total Depth (TD): 12 feet bgs
Screen Interval: 3-12 feet bgs
Water Level: 6.5 feet bgs

Water measurements
pH: 7.1
Specific Conductivity: 13.15
Temperature: 13.5°C

15:05 ESS-GW-10. Collect sample ESS-GW-11. Collected in 2 40-mL VOA bottles preserved with HCl. Light sediments in sample.

15:46 ESS-SW-17. Collect surface water sample ESS-SW-17 from the spring water at 1115 East Sunnyside Avenue. Spring is located in the rear of house about 10 feet south of the back fence. Spring water runs from east neighbors yard and runs through a small channel east to west across the property. Water had dark organic

sediments and was filled with leaves. Sample collected into a 1 liter poly and transferred to 2 40-mL VOA bottles preserved with HCl.

15:51 ESS-SS-19. Collected soil sample ESS-SS-19 from the spring water at 1115 East Sunnyside Avenue. Sample collected from the dark organic sediments along bank of the channel.. Collected in a 4 oz. jar.

16:11 URS has completed the boring at 1115 East Sunnyside Avenue. Boring installed at east corner front of the driveway.

ESS-GW-07
Total Depth (TD): 12 feet bgs
Screen Interval: 2-12 feet bgs
Water Level: 6.5 feet bgs

16:28 ESS-GW-07. Collect sample ESS-GW-07. Collected in 2 40-mL VOA bottles preserved with HCl. High sediments in sample. Second VOA bottle had high reactivity.

16:49 Leave site for the day.

DATE: November 16, 2011

ON-SITE PERSONNEL: Craig Barnitz UDEQ/DERR
Henry Schmelzer URS
Bryan Parapolos URS
Cary Rubles MWH
Kim Packard VA Hospital
Chris Nolan IHI

07:29 ESS-GW-33. Collect Trip Blank sample ESS-GW-33 from deionized water at DERR offices.

08:20 Meet URS in parking lot at Sunnyside Park. Prepare to mobilize into VA property.

08:45 Meet Kim Packard and Chris Nolan to inspect EPA-MW-05. Well casing cover was changed during repaying of the parking area. Key is not available.

08:59 VA Maintenance crew attempts to remove cover but uses WD-40 in the process.

09:22 VA maintenance crew removes cover from the well. Top of casing is cracked and was likely damaged during repaving of the parking area. 2

EPA-MW-05
Total Depth: 225 feet bgs
Screen Interval: 186-221
Water Level: 205.7 feet bgs

09:30 URS begins bailing purge water from well.

11:37 URS purges three well casings from well – 10 gallons.

11:41 EPA-MW-05. Collect EPA-MW-05 by transferring water from bailer to 40-ml VOA bottles. Collected in 2 40-mL VOA bottles preserved with HCl. Clear sediments.

12:35 URS sets up at location for ESS-SG-30. Location is on the lawn south of Building 16 approximately 32 feet south of intersection and 1 foot from sidewalks edge.

13:12 URS conducts leak detection testing for soil-gas at ESS-SG-30. URS will collect soil-gas samples and keep all related content: including sampling notes and chain of custody reports.

13:58 URS mobilizes to soil-gas sample location ESS-SG-31 located near the fence along Foothill Drive just east of main entrance to the VA Hospital.

14:20 URS conducts leak detection testing for soil-gas at ESS-SG-31.

14:33 ESS-SG-31. Collect soil-gas sample ESS-SG-31. Field duplicate sample.

15:03 Leave VA Hospital property

15:24 URS sets up at ESS-GW-04 located at 1127 East Sunnyside Avenue. Sample location at west side of driveway. Purge 1 gallon.

ESS-GW-04
Total Depth: 12 feet bgs
Screen Interval: 2-12 feet
Water Level: 10 feet bgs

15:57 ESS-GW-04. Collect sample ESS-GW-04. Field duplicate sample ESS-GW-14. Collected into 2 40-mL VOA bottles preserved with HCl. Medium sediments.

16:03 Time listed for field duplicate sample ESS-GW-14.

16:21 ESS-SW-16. Collect spring water sample ESS-SW-16 from 1205 East Gilmer Drive. Sample collected from the lower spring located approximately 35 feet north of roadway. Spring is actually a concrete vault that collects spring water

from the property. Sample collected in a 1-liter poly 4-6 inches below surface. Sample was then transferred to 6 40-mL VOA bottles preserved with HCl. Laboratory duplicate.

16:32 URS completes direct-push boring for ESS-GW-06. Boring located east side of driveway entrance just off pavers. Wet silts and clays between 13.5–15 feet bgs. Install temporary PVC well into boring. Purge 2 gallons.

ESS-GW-04
Total Depth: 16 feet bgs
Screen Interval: 6-16 feet
Water Level: 9.5 feet bgs

16:54 ESS-GW-06. Collect sample ESS-GW-06. Collected into 2 40-mL VOA bottles preserved with HCl. Dark cloudy water with high sediments. No odor.

DEEP WELL SAMPLING

DATE: 12/21/11

ON-SITE PERSONNEL: Deep Well Sampling

07:47 ESS-GW-34. Collect trip blank sample ESS-GW-34 from deioniozed water in the DERR offices. Collected into 2 40-mL VOA bottles preserved with HCl.

08:12 Arrive on-site. Meet w/ URS personnel at EPA-MW-01 located in the parking lot for the Salt Lake City Sports Complex (645 Guardsman Way).

ON-SITE PERSONNEL: Craig Barnitz UDEQ/DERR
Henry Schmelzer URS
Bry+an Parapolos URS
Jesse Stewart MWH
Cary Rubles MWH

WEATHER CONDITIONS: Overcast, Cold
~25 °F

08:30 Set-up inertia pump at EPA-MW-01D.

10:19 At the request of MWH, the purge water will need to be containerized. URS shuts down inertia pump and leaves the site to acquire additional 5-gallon buckets. Purge rate is estimated at 1 gallon per minute (GPM). Tubing from pump is drawing water at 215 feet inside the well. Well is screened at 364-404

feet bgs. Drawing water from screened interval would likely exceed the capacity of the pump.

11:50 Purged 150 gallons from well. Purge water containerized into 15 5-gallon buckets, 2 15-gallon decontamination water tanks on direct-push unit, and 2 55-gallon drum liners.

WATER PARAMETERS:

Gallons Purged	pH	Temp.	Conductivity
60	7.18	10.5	1100
70	7.22	10.5	1098
90	7.27	10.6	1073
110	7.26	10.5	1076
140	7.27	10.5	1056

12:29 EPA-MW-01D. Collect sample EPA-MW-01D. Sample collected from bailer polyethylene bailer collecting from the top of water table 167.2 feet bgs. Laboratory duplicate Collected into 6 40-mL VOA bottles preserved with HCl.

12:45 ESS-GW-35. Collect ESS-GW-35 from well EPA-MW-01D.

Cary Rubles (MWH) collects split samples on behalf of Salt Lake City. Split sample was collected from a second bailer-load of water.

Site Photographs

East Side Springs **View: Southwest** **11/14/11**
URS setting up the inertia pump at EPA-MW-01S. The well is located in southwest corner of SLC Sports Complex parking area. (*Photo: MWH*)

East Side Springs **View: East** **11/14/11**
URS setting up the direct-push unit at 910 E. Harvard Avenue. DERR abandoned the location after meeting refusal at 27 feet bgs. *(Photo: MWH)*

East Side Springs **View: East** **11/14/11**
URS setting up the direct-push unit at 920 South Lincoln. DERR abandoned the location after meeting refusal at 24 feet bgs.

East Side Springs **View: South** **11/14/11**
URS setting up the direct-push unit at sample location ESS-GW-10 (1259 South Lake Street). Direct-push unit would breakdown at this location.

East Side Springs **View: North** **11/14/11**

ESS-GW-02. Collected groundwater sample ESS-GW-02. Sample was collected from the drinking water fountains at the southeast corner of Liberty Park.

East Side Springs **View: South** **11/15/11**

ESS-SW-15/ESS-SS-18. Collected surface water sample ESS-SW-15 and sediment/soil sample ESS-SS-18. Sample was collected from the spring at 1127 E. Sunnyside Avenue.

East Side Springs **View: North** **11/14/11**

ESS-GW-03. Collected groundwater sample ESS-GW-03. Sample collected from the 8th South Artesian Well.

East Side Springs **View: North** **11/15/11**

URS returns to the location ESS-ESS-GW-10 (1259 South Lake Street) to complete boring.

East Side Springs **View: East** **11/15/11**
URS setting up the direct-push unit at ESS-GW-11 (818 South 600 East).

East Side Springs **View: North** **11/15/11**
ESS-GW-11. Collected groundwater sample ESS-GW-11 (laboratory duplicate).

East Side Springs **View: N/A** **11/15/11**
ESS-GW-13. Collected rinsate blank sample ESS-GW-13. Photo of sample with the decontaminated direct-push shoe.

East Side Springs **View: East** **11/15/11**
ESS-GW-10. Collected groundwater sample ESS-GW-10. Returned to the location to find 5.5 feet of water in the temporary PVC well.

East Side Springs **View: East** **11/15/11**
ESS-SW-17/ESS-SS-19. Collected surface water sample ESS-GW-17 and sediment/soil sample ESS-SS-19 from the spring at 1115 E. Sunnyside Ave.

East Side Springs **View: Northeast** **11/15/11**
ESS-GW-07. Collected groundwater sample ESS-GW-07. Sample collected from a direct-push boring at 1115 E. Sunnyside Ave.

East Side Springs **View: South** **11/16/11**
EPA-MW-05. Bailing EPA monitoring well EPA-MW-05 located in the Veteran's Affairs Hospital parking area north of Building 16.

East Side Springs **View: Southeast** **11/16/11**
URS leak testing at soil-gas location ESS-SG-30. Sample located in the southeast corner of grassy area south of Building 16.

East Side Springs **View: North** **11/16/11**
URS setting up the direct-push unit at soil-gas location ESS-SG-31. Sample located just east of the main Hospital entrance along 500 South.

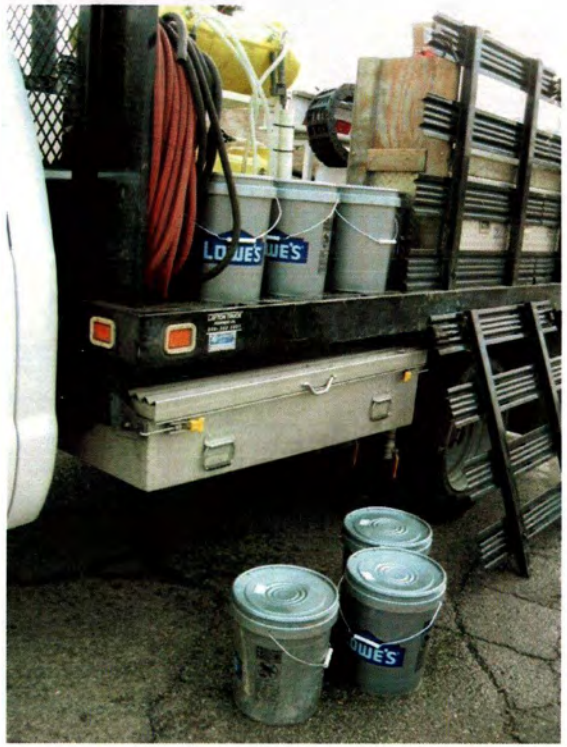
East Side Springs **View: East** **11/16/11**
ESS-GW-04. Collected groundwater sample ESS-GW-04. Sample collected from the property at 1127 E. Sunnyside Avenue.

East Side Springs **View: North** **11/16/11**
ESS-SW-16. Collected surface water sample ESS-SW-16. Sample collected from the spring at 1205 E. Gilmer Drive.

East Side Springs **View: West** **11/16/11**
ESS-GW-06. Collected groundwater sample ESS-GW-06. Sample collected from the property at 1205 East Gilmer Drive.

East Side Springs **View: South** **12/21/11**
URS setting up the inertia pump at monitoring well EPA-MW-01D. Well is located in the southwest corner of the SLC Sports Complex parking area.

East Side Springs **View: N/A** **12/21/11**
Purge water collected from EPA-MW-01D.



East Side Springs **View: N/A** **12/21/11**
Purge water collected from EPA-MW-01D.

APPENDIX D

URS Operating Services Trip Report
November and December 2011

URS OPERATING SERVICES

999 18TH STREET
SUITE 900
DENVER, COLORADO 80202-2409
TEL: (303) 291-8200
FAX: (303) 291-8296

January 23, 2012

Ryan Dunham
Site Assessment Manager
U.S. Environmental Protection Agency, Region 8
Mail Code: 8EPR-SA
1595 Wynkoop Street
Denver, Colorado 80202-1129

SUBJECT: START 3, EPA Region 8, Contract No. EP-W-05-050, TDD No. 1109-01
Trip Report, East Site Springs (aka East Side Springs), Salt Lake City, Utah

Dear Mr. Dunham:

Attached is one copy of the draft trip report of the groundwater well installations and soil gas characterization conducted at the East Side Springs site in Salt Lake City, Utah. Field activities were conducted on November 14-18, and December 21, 2011. This document is submitted for your review and comments.

If you have any questions, please call me at 303-291-8241.

Sincerely,

URS OPERATING SERVICES, INC.

for H. S.

Henry Schmelzer
Project Manager

cc: Charles W. Baker/UOS (w/o attachment)
File/UOS

EPA ACTION BLOCK

- ⊗ Approved
- ○ Approved, TDD to follow
- ○ Approved as corrected
- ○ Disapproved
- ○ Review with _____
- ○ Original to _____
- ○ Copy to _____
- ○ Reply envelope enclosed

1/25/12 _____
Date By

TRIP REPORT

EAST SIDE SPRINGS
Salt Lake City, Salt Lake, Utah

1.0 INTRODUCTION

URS Operating Services, Inc. (UOS) was tasked by the Environmental Protection Agency (EPA) under Superfund Technical Assessment and Response Team 3 (START) contract # EP-W-05-050, Technical Direction Document (TDD) No. 1109-01, to provide technical support to the Utah Department of Environmental Quality (UDEQ) as part of their tetrachloroethene (PCE) investigation for this site. Specifically, START was tasked to determine the presence of contaminants at 12 soil-gas sampling points (Figure 1), perform direct-push borings for the collection of seven groundwater samples by UDEQ (Figure 2), assist in the collection of subsurface soil samples by UDEQ at two of the nine borehole locations, and assist in sampling groundwater from two existing deep groundwater wells. Field activities followed the applicable UOS Technical Standard Operating Procedures (TSOPs) and the Emergency Response Program generic Quality Assurance Project Plan.

The sample locations are near the intersection of 800 South (Sunnyside Avenue) and Guardsman Way in the eastern part of Salt Lake City, Salt Lake County, Utah (Figure 1).

Site activities related to this TDD were conducted on November 14-18, and December 21, 2011, and included seven direct-push borings for the collection of groundwater samples. These borings were drilled from 8 to 28 feet below ground surface (bgs) depending on depth to groundwater. Nine soil-gas samples were taken including a duplicate, and matrix spike/matrix spike duplicate (MS/MSD). Groundwater was also sampled from two deep wells measuring 225 feet and 224 feet total depth.

2.0 BACKGROUND

The purpose of this TDD was for START to assist the UDEQ in the collection of new data related to the site to determine current conditions for their Site Investigation.

3.0 SITE ACTIVITIES

START members Henry Schmelzer and Bryan Paraspolo mobilized to Salt Lake City, Utah with the truck-mounted direct-push Geoprobe® and a support vehicle on Monday November 13, 2011. On Tuesday November 14, 2011they met with Craig Barnitz of UDEQ and Cary Ruble from MWH at EPA-MW-01, one of the existing deep monitoring well locations, to begin field sampling activities. Cary Ruble

was on site representing the interests of Salt Lake City since the well was located on city property. Craig Barnitz briefed START on the status of the site and sampling requirements. At this location there were actually two wells, one 404 feet deep and one 224 feet deep. The wells were located in a man-way located on the southern end of the parking lot for the city-owned ice skating arena. The wells were constructed with PVC piping. The 404-foot deep well was 4 inches in diameter, and the 224-foot deep well was 2 inches in diameter.

START began by sampling groundwater from the 2-inch well. Depth to groundwater was measured at 153.05 feet from the top of the well casing. Based on the depth to groundwater, total well depth, and the 2 inch diameter piping, the well contained 11.57 gallons of water. Purging three casing volumes would require removing 34.7 gallons of water from the well. START used an inertia pump equipped with a check valve located on the end of 1-inch diameter thick walled tubing. The tubing was inserted into the well down to the 224 foot depth and then retracted approximately 4 feet. The tubing was then attached to the inertia pump and the pump started. The pump used a mechanical action to move the tubing up and down 6 inches. This movement was transferred to the tubing and caused the check valve at the bottom of the tubing also to move up and down. This motion opened and closed the check valve, forcing approximately 6 inches of water into the tubing with each downward motion. By this action the water was collected in the tubing and moved through the tubing to the opening at the upper end. The purge water was collected into 5-gallon buckets to verify the volume of water removed from the well. START removed 14 gallons of water from the well before the well ran dry. The well was allowed to recharge and water was then collected for groundwater parameter measurement and sample collection.

Craig Barnitz from UDEQ collected a groundwater sample for volatile organic compounds. START measured the groundwater parameters for pH at 7.2, temperature at 12.2° C, and conductivity at 1,220 microsiemens.

In order to keep in coordination with the UDEQ site access agreements, START next moved to the 914 East Harvard Avenue sampling location to begin the installation of a groundwater well ESS-GW-09. The team used the Geoprobe® to push to 27 feet bgs before refusal was encountered. The borehole produced red sandy clay to 14 feet bgs, with tighter clay trending with more moist tan-colored clay until refusal. However, no water was indicated in the soil cores and no water was produced by the temporary well that was installed. The borehole was abandoned by filling it with the unused portions of the soil cores and capping the borehole with 2 feet of bentonite. All of the boreholes constructed for this project were abandoned in the same manner.

The next sample location was ESS-GW-08 at 920 South Lincoln. Using the Geoprobe®, START pushed to 24 feet bgs, but the borehole produced no water. The borehole produced asphalt and concrete in the first foot of material and then plastic red/brown clay to 12 feet bgs. There were two small sand lenses and then tight brown clay to 24 feet bgs.

The next sample location was for ESS-GW-10 at 1250 South Lake Street. After pushing down 4 feet, the actuator for the probe mechanism malfunctioned. There was no up or down movement of the probe mechanism. START made some repairs during the remainder of the day, and the Geoprobe® was in working condition for the next day's activities.

On the morning of November 15, 2011, START returned to the parking lot for the city-owned ice skating arena to sample the deep well, EPA-MW-01B. This 4-inch diameter well was 404 feet deep with a static water level at 168 feet bgs. Because of the depth of the well, START had made arrangements to use a bladder pump charged with nitrogen. After calculations were performed, it was determined that a single casing volume would contain 153 gallons of water. Due to the 235 feet of hydraulic head in the well and amount of pressure that could be developed with the full cylinder of nitrogen gas, it was determined that the number of pump cycles that could be performed was well below the amount needed to draw a large enough amount of water out of the well for sampling. START began to hand bail the well as an alternative, since this method had been successful in sampling the well before. This sampling method was then evaluated, and Craig Barnitz of UDEQ determined to reschedule the sampling in coordination with another site to be sampled in the area in the near future.

As the Geoprobe® had been repaired, START returned to the 1250 South Lake Street location from the previous day to create another borehole and put in a temporary well. The borehole was pushed to 12 feet bgs, and soil cores revealed very plastic red/brown clay with sand lenses. Water was likely slowly entering the well, so it was left to be sampled at a later time that day.

The next sample location was for ESS-GW-11 at 818 South 600 East, located in the grass median between the two lanes of traffic for 600 East. The borehole produced dark brown clay with some sand to 4 feet bgs. The 4 to 8 foot bgs soil core turned to more light brown clay. It was moister with depth and had a wet interval at approximately 7 feet bgs. The soil core from 8 to 12 feet bgs returned to a drier medium brown clay with sand. The core from 12 to 16 feet bgs was still medium brown clay with sand. It was plastic but not enough to indicate a water-bearing zone. The core from 16 to 20 feet bgs was still medium brown clay with sand. This core was more plastic than the previous one and had a wet interval indicated

at approximately 17 feet bgs. The 20 to 24 foot core changed to plastic grey clay. A temporary well was installed to 24 feet bgs and produced water up to 9.5 feet bgs.

START returned to the 1250 South Lake Street location to find water in the temporary well at 6.5 feet bgs. START set up a peristaltic pump, and 1.5 gallons were purged from the well before it was sampled.

Groundwater samples were split by UDEQ and MWH Consultants on the two previous sample locations and at the ice arena since these sampling locations were on city-owned property.

The next location was for ESS-GW-04 located at 1147 East Sunnyside. START used the Geoprobe® to push to 12 feet bgs. Black sandy topsoil was revealed in the first 3 feet of soil core. Grey clay was found from 3 to 12 feet bgs with water indicated all the way. A temporary well was installed to 12 feet bgs and peristaltic pump set up to purge 1.5 gallons of water from the well before the groundwater sample was collected.

At each groundwater location a peristaltic pump was set up to purge approximately 1.5 gallons of water from the well and allow UDEQ to collect the groundwater sample. After samples were collected, the PVC well construction materials were removed and the boreholes were first backfilled with native soils from the unused portion of the soil cores, then bentonite was added to the ground surface. If available, the grass plug from the top soil core was re-installed at the ground surface. All locations where asphalt was penetrated as part of the borehole were patched using at least 4 inches of cold asphalt patch that was compressed using a hammer.

Site activities on November 16, 2011 began at well EPA-MW-05 located on the Veterans Administration (VA) Hospital property at 700 South 1600 East. This is considered the background groundwater sample location for the site. The 2-inch diameter well is 225 feet bgs deep with the depth to water measured at 205 feet bgs. START calculated that the standard three casing volumes would require the removal of 10 gallons of water from the well. This was done by repeatedly lowering a disposable bailer into the well to fill two 5-gallon buckets with water. Once the calculated amount of water was removed from the well, Craig Barnitz from UDEQ collected the sample.

START and UDEQ then moved to ESS-SG-30 to begin collection of the soil gas samples on the VA property. This was done at this time in order to comply with the site access agreement with the VA. This first location was on the opposite side of the building from EPA-GW-05 that had just been sampled for groundwater. The Geoprobe® pushed two sections of drive rod equipped with an expendable tip down to 8 feet bgs and then retracted the drive rod 1 foot to allow the expendable tip to be released and to create

an open space in the soil for soil gas sampling. A12-foot length of polyethylene tubing equipped with a connection fitting on one end was placed inside the drive rod and threaded into the back of the expendable tip holder on the bottom drive rod. This was done to insure that the soil gas collected would be from the tip of the drive rod at an appropriate depth. A collar made from modeling clay was placed around the drive rod at the top of the annular space to prevent ambient air from getting into the sample along the outside of the drive rods. A personal sampling pump was used to purge the ambient air from the polyethylene tubing before sampling such that only soil gas would be collected from the tubing.

START also set up to perform a new leak test procedure at this location using helium. Prior to sampling, a plastic bag was placed on the ground around the drive rods and a stainless steel dome placed over these. The rim of the dome was fitted with a ring of modeling clay to form a seal with the plastic bag. The polyethylene tubing was threaded through a gas-tight fitting in the dome. The dome was then pressurized with helium and a helium detector was fitted to the end of the polyethylene tubing. If the setup was tight, no helium would be detected at the end of the tubing; however, helium was detected. START made several attempts to re-adjust the setup to provide tighter seals, but helium was detected each time. To facilitate the time used to collect the samples, the tops of the drive rods were plugged with clay and the sample was taken. START also used low flow regulators set up to take 15 minutes to draw the one liter soil gas sample for this project. This low flow setup would not create a high enough vacuum to pull ambient air down the drive rods and into the sample.

START next moved to the second soil-gas location at the VA. Sample point ESS-SG-31 was located on the north side of the property near the emergency room entrance to the hospital. START also attempted to use the helium leak test method at this location as well and obtained similar results. START abandoned use of this leak test method on the subsequent soil gas sample locations. The duplicate sample, ESS-SG-32, was taken at this location as well. A special MS/MSD low flow regulator was used at this location as well as a stainless steel T-joint to collect both samples simultaneously.

START and UDEQ then moved off of the VA Hospital property to the next sampling location at 1127 Sunnyside Avenue to collect a sample of the shallow groundwater. Using the Geoprobe® START pushed to 12 feet bgs. The first 4 feet were mostly organic topsoil; the next 8 feet were light tan-colored clay that trended to grey clay. All of this clay was very plastic and wet. A temporary well was installed and groundwater was sampled by UDEQ.

START then relocated to 1205 East Gihner to install a temporary groundwater well for sample ESS-GW-06. Using the Geoprobe® START pushed to 16 feet bgs. This soil cores for the borehole were very wet.

The top 4 feet of soil was black organic topsoil. The 4- to 8-foot soil core started out with black organic soil trending to grey clay. The 8- to 12-foot soil core had grey clay trending to brown clay. The 12- to 16-foot soil core had brown clay trending back to the grey clay. The groundwater level was at 9.5 feet bgs at the time of sampling in the temporary monitoring well that was installed.

Site activities for the morning of November 17, 2011 began with soil-gas sample ESS-SG-20 located at the Salt Lake City Sports Complex on 645 South Guardsman Way by the two nested deep wells. The boring was pushed down to 7 feet bgs, but drilling was difficult after 4 feet bgs. This likely indicated that the local bedrock had been encountered after 4feet bgs. The drive rods were pulled back to the 4 feet bgs level, and the soil gas sample was collected at that depth. The treads of the expendable tip holder contained a dry powdery solid that would indicate it had been drilled through rock materials.

The same procedure for soil gas sampling was performed at the next location, ESS-SG-23, located in the North parking lot of the Rowland School at 720 South Guardsman Way. Here START pushed the drive rods to 6 feet and pulled back up to 4 feet bgs after encountering the suspected bedrock conditions.

Next START moved to the west end of the South parking lot of the Rowland School to collect soil gas sample ESS-SG-22. The Geoprobe® pushed down to 4 feet bgs before encountering rock. It was then pulled up to 3 feet bgs, and sampling equipment for soil gas collection was set up.

The next location was south of the Rowland School in a vacant lot. ESS-SG-21 was pushed to 8 feet bgs before encountering rock resistance. It was then pulled up 1 foot where the line was purged and soil gas sample was collected.

The next locations, ESS-SG-24, -25, and -26, were in a vacant lot south of Mt. Olivet Cemetery. This lot is fenced on all sides with no access for a vehicle except for a small dirt roadway from the Mt. Olivet Cemetery. When START attempted to use this access point to the vacant lot they were stopped by the cemetery owner and told they could not use that road to access that property. They would need to contact their lawyer about gaining access. START left the cemetery and called Craig Barnitz at UDEQ about the access issue. START continued on to the next soil gas sampling locations while that issue was addressed.

The next soil gas sampling location was for sample ESS-SG-29 located at 860 South 1400 East. Here START pushed the borehole to 4 feet bgs before encountering resistance. The drive rod was pulled back 1 foot, and sampling equipment was set up to collect this soil gas sample at this location.

START then moved to collect soil gas sample ESS-SG-28 located at the south end of East High Football Stadium. The borehole was attempted at three separate locations with refusal at 2 feet bgs every time. This location was abandoned since a soil gas sample from 2 feet bgs was not going to be comparable with the soil gas sample collected at the deeper depths.

START then moved to ESS-SG-27 located at the southeast corner of the parking lot on 700 South 1600 East. The borehole was pushed to 4 feet bgs before refusal. The rod was pulled up 1 foot and sampling equipment was set up.

START returned to sample the 404-foot deep well at EPA-GW-01 on December 21, 2011. Activities were coordinated with site work that was performed for the Murray Laundry site in the area. START used the same technique with the inertia pump that was used to sample the 224-foot deep well at the same location. A check value was placed on the end of a 300-foot long, 1-inch diameter polyethylene tubing and lowered approximately 50 feet into groundwater in the 4-inch diameter well. Depth to groundwater was measured at 167.2 feet below the edge of the casing. Based on this information a casing volume was calculated to be 153 gallons. START began the sampling with the intent of purging 50 gallons of water and then to begin to collect pH, temperature and conductivity measurements. When these measurements stabilized to within 10 percent for three consecutive measurements, it would indicate that groundwater formation water was entering the well and the sample could be taken. START intended to collect these parameters as every 10 to 20 gallons of water was purged from the well. The inertia pump provided water at approximately 1.5 gallons per minute.

As START began to collect the purge water in 5-gallon buckets, the consultant for the city, MKH, requested that the purge water be contained for future disposal since the contaminant concentration was unknown. START purchased ten additional 5-gallon buckets and also utilized the two 15-gallon water supply tanks on the Power Probe that had been brought to do the work at the Murray Laundry site, as well as two 55-gallon drum liners set up in the support bin to collect the purge water. A total of 178 gallons of water were collected before the sample was obtained from the well.

The initial parameters that were collected after 60 gallons had been purged were pH at 7.18, temperature at 10.5 °C, and conductivity at 1,100 microsiemens. Parameters collected after 90, 110, and 149 gallons had been purged stabilized with the pH at 7.26, temperature at 10.5 °C, and conductivity at 1,076 microsiemens. At that point the tubing was pulled from the well and a disposable bailer was lowered into the well to obtain the groundwater sample. Before the tubing was pulled from the well it was marked to

note how much tubing had been put in the well. This was later measured to be 215 feet below the top of the casing to indicate at what level the groundwater sample was obtained.

Once this groundwater sample was obtained START prepared to de-mobilize from the site and return to Denver.

Site photos are provided in Appendix A.

4.0 SAMPLING AND ANALYSIS

Sample locations are described in Figure 1 and 2. The soil-gas samples were collected in 1-liter Summa canisters and were submitted to:

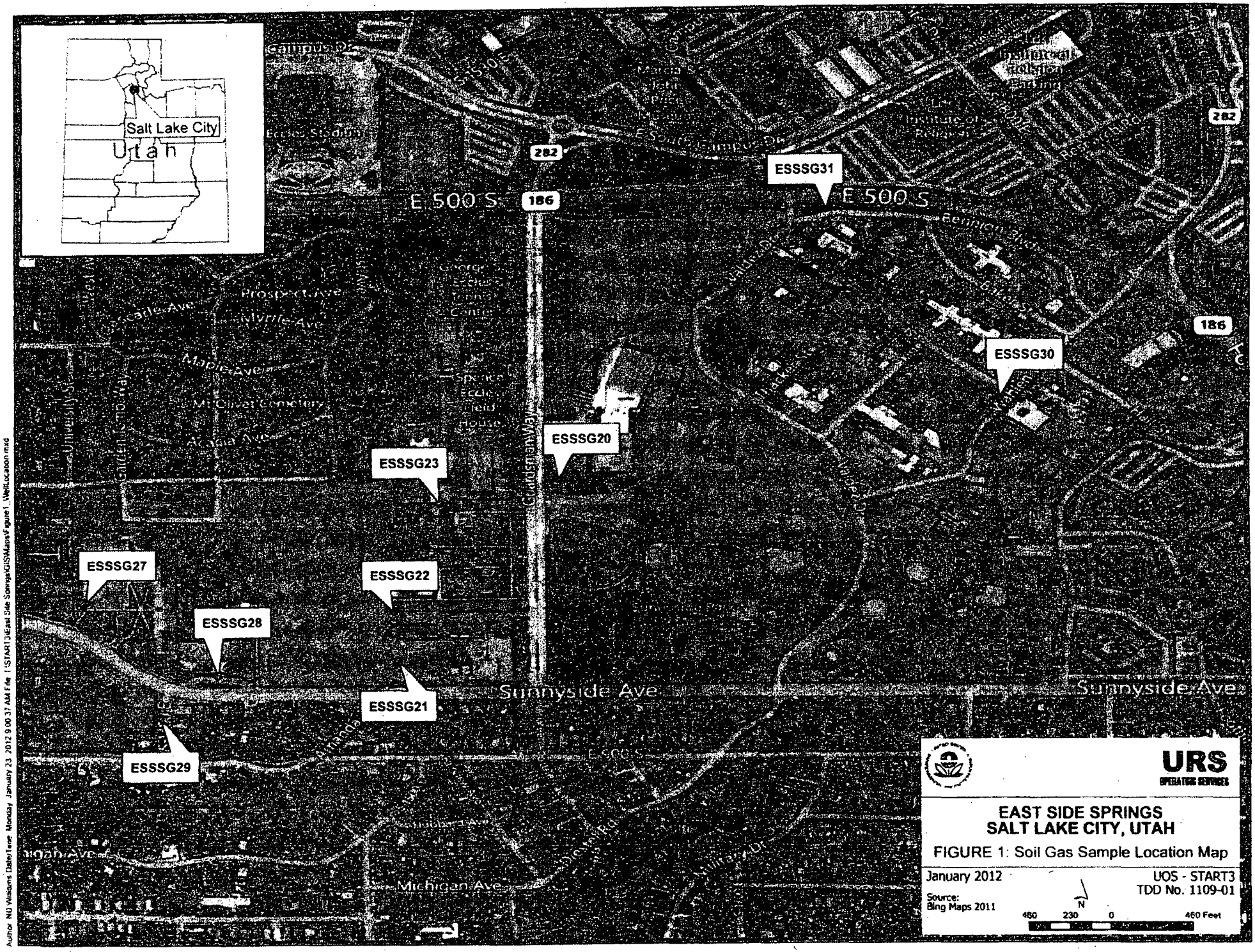
Centek Laboratories, LLC.
143 Midler Park Drive
Syracuse, New York 13206

on December 21, 2011 for analysis for volatile organic compounds using EPA Method TO-15.

Table 1 shows all of the analytes that were detected in the sample analysis. Data validation indicated that the analytical data is acceptable for use. There were no analytes detected in the trip blank that was submitted for laboratory analysis. The duplicate analysis shows good correlation between the samples. Detected values reported in Table 1are very similar and within the same order of magnitude. Of the 29 analytes detected there were only five discrepancies between the two replicate samples, and the values reported are very close to the reporting limits.

Tetrachloroethene (PCE) was reported at only two soil gas sample locations; Location 31on the VA Hospital grounds, and Location 23 at the west end of the north parking lot for the Rowlands School building. The PCE concentrations were fairly low, with the concentration at Location 31 at 2.8 micrograms per cubic meter ($\mu g/m^3$), and 6.4 $\mu g/m^3$ at Location 23. The reporting limit for PCE was 1.0 $\mu g/m^3$.

The data validation report is attached in Appendix B.



URS
OPERATING SERVICES

EAST SIDE SPRINGS
SALT LAKE CITY, UTAH

FIGURE 1: Soil Gas Sample Location Map

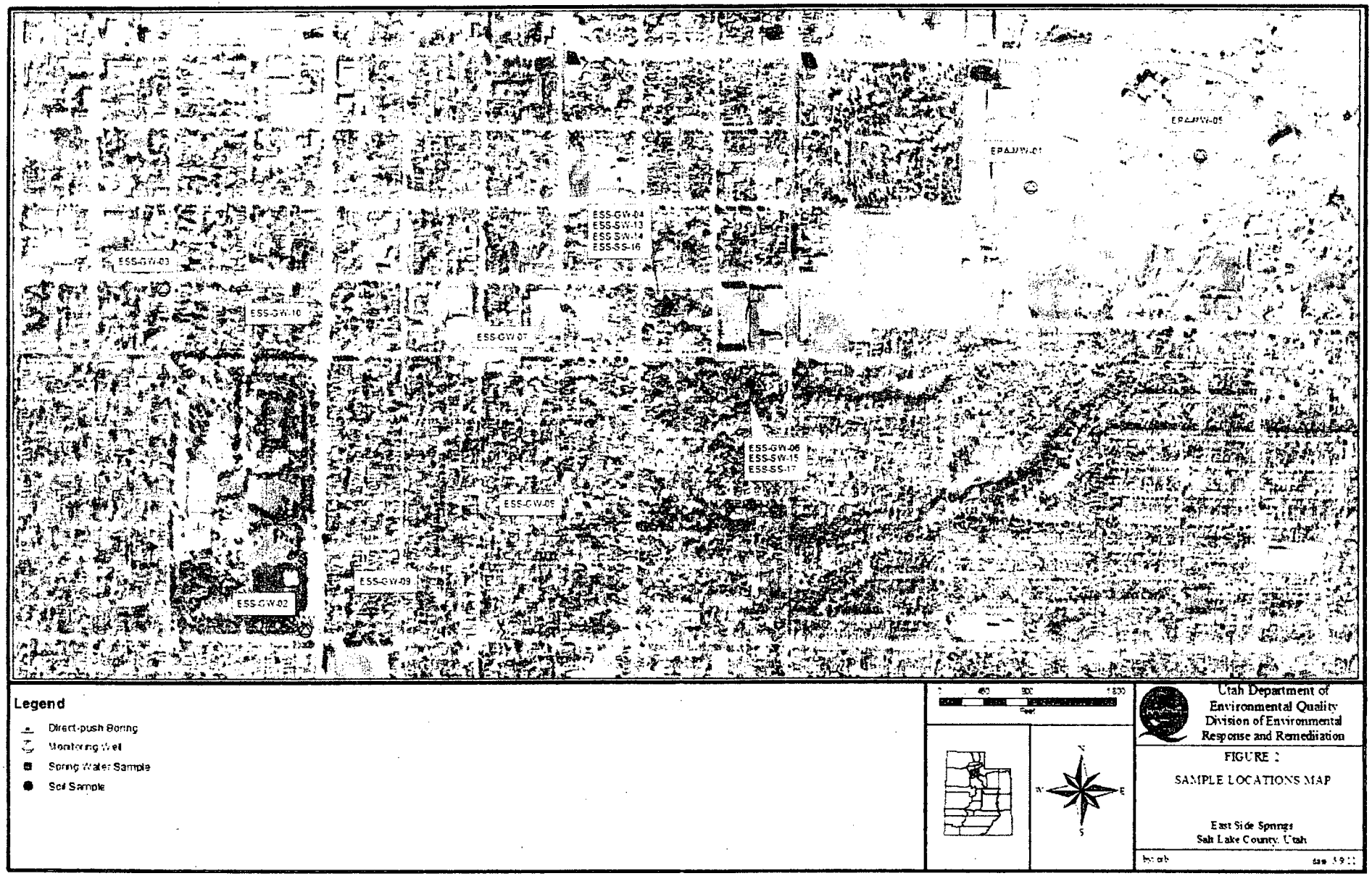
January 2012
UOS - START3
TDD No. 1109-01

Source:
Bing Maps 2011

N

480 230 0 480 Feet

Author: NU Williams Date/Time: Monday, January 23, 2012 9:00:37 AM File: I:\START3\East Side Springs\GIS\Maps\Figure1_WellLocation.mxd


ESS-GW-04
ESS-SW-13
ESS-SW-14
ESS-SS-16
ESS-GW-03
ESS-GW-10
ESS-GW-07
ESS-GW-06
ESS-SW-15
ESS-SS-17
ESS-GW-05
ESS-GW-09
ESS-GW-02
EPA/UW-01
EPA/UW-05
Legend
Direct-push Boring
Monitoring Well
Spring Water Sample
Soil Sample
Utah Department of Environmental Quality
Division of Environmental Response and Remediation
FIGURE 2
SAMPLE LOCATIONS MAP
East Side Springs
Salt Lake County, Utah

APPENDIX E

Chain-of-Custody Reports

FedEx. US Airbill Express

FedEx Tracking Number: 8585 3854 0138

0215 **Sender's Copy**

1 From *Please print and press hard.*

Date 12/21/11 Sender's FedEx Account Number 1828-8775-7

Sender's Name CRAIG BARNES Phone (801) 536-4100

Company DEPT OF ENVIRONMENTAL QUALITY

Address ~~195~~ N 1950 W

Dept./Floor/Suite/Room

City SALT LAKE CITY State UT ZIP 84116-3085

2 Your Internal Billing Reference First 24 characters will appear on invoice. 1000/4691/NRC/KA108/M213PSIM

3 To

Recipient's Name DAWNE SMART Phone (401) 732-3400

Company SPECTRUM ANALYTICAL, INC. (MITKEM)

Recipient's Address 175 METRO CENTER BOULEVARD

We cannot deliver to P.O. boxes or P.D. ZIP codes. Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City WARWICK State RI ZIP 02886

0345930620

Schedule a pickup at fedex.com
Simplify your shipping. Manage your account. Access all the tools you need.

4a Express Package Service *Packages up to 150 lbs.*

- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate. * To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: ** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery NOT Available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location NOT Available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? *One box must be checked.*

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†
	4	$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability. FedEx Use Only

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

Rev. Date 11/05•Part #158279•©1994–2005 FedEx•PRINTED IN U.S.A.•SRF

PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE. NO POUCH NEEDED.

USEPA CLP Organics COC (LAB COPY)

DateShipped: 12/21/2011

CarrierName: FedEx

AirbillNo: 8585 3954 0138

CHAIN OF CUSTODY RECORD

Case #: 42101

Cooler #:

No: 8-121911-092309-0006

Lab: Spectrum Analytical

Lab Contact: Agnes Huntley

Lab Phone: 401-732-3400

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
H0AB9	Ground Water/ Craig Barnitz UDEQ/DERR	Discrete Interval	CLP TVOA	1019 (HCl) (6)	EPA-MW-01D	12/21/2011 12:29		
H0AC0	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1020 (HCl) (2)	ESS-GW-34	12/21/2011 07:47		
H0AC1	Ground Water/ Craig Barnitz UDEQ/DERR	Discrete Interval	CLP TVOA	1021 (HCl) (2)	ESS-GW-35	12/21/2011 12:45		

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: CLP TVOA=CLP TCL Trace Volatiles

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Craig Barnitz	12/21/11									

Samples: 17 - EventID: Sampling [Filtered]					
Sample #	EventID	Location	Sample Date	Matrix	Source
UTN000802825-0001	Sampling	EPA-MW-01S	11/14/2011	Ground Water	Monitoring Well
UTN000802825-0002	Sampling	ESS-GW-02	11/14/2011	Potable Water	Potable w ater
UTN000802825-0003	Sampling	ESS-GW-03	11/14/2011	Potable Water	Potable w ater
UTN000802825-0004	Sampling	ESS-GW-04	11/16/2011	Ground Water	Groundw ater
UTN000802825-0005	Sampling	EPA-MW-05	11/16/2011	Ground Water	Monitoring Well
UTN000802825-0006	Sampling	ESS-GW-06	11/16/2011	Ground Water	Groundw ater
UTN000802825-0007	Sampling	ESS-GW-07	11/15/2011	Ground Water	Groundw ater
UTN000802825-0008	Sampling	ESS-GW-10	11/15/2011	Ground Water	Groundw ater
UTN000802825-0009	Sampling	ESS-GW-11	11/15/2011	Ground Water	Groundw ater
UTN000802825-0010	Sampling	ESS-GW-12	11/14/2011	Ground Water	Blank
UTN000802825-0011	Sampling	ESS-GW-13	11/15/2011	Ground Water	Blank
UTN000802825-0012	Sampling	ESS-GW-14	11/16/2011	Ground Water	Groundw ater
UTN000802825-0013	Sampling	ESS-GW-32	11/15/2011	Ground Water	Blank
UTN000802825-0014	Sampling	ESS-GW-33	11/16/2011	Ground Water	Blank
UTN000802825-0015	Sampling	ESS-SW-15	11/15/2011	Surface Water	Surface Water
UTN000802825-0016	Sampling	ESS-SW-16	11/16/2011	Surface Water	Surface Water
UTN000802825-0017	Sampling	ESS-SW-17	11/15/2011	Surface Water	Surface Water

FedEx Express **US Airbill**

FedEx Tracking Number: 8585 3854 0208

0215

Sender's Copy

1 From *Please print and press hard.*

Date 11/17/11 Sender's FedEx Account Number 1828-8775-7

Sender's Name CRAIG BARNITZ Phone (801) 536-4100

Company DEPT. OF ENVIRONMENTAL QUALITY

Address 195 ~~168~~ N 1950 W

Dept./Floor/Suite/Room

City SALT LAKE CITY State UT ZIP 84116-3085

2 Your Internal Billing Reference First 24 characters will appear on invoice. 1000 / 4691 / NAC / KA108 / M213PS1M

3 To

Recipient's Name DAWNE SMART Phone ( )

Company SPECTRUM ANALYTICAL, INC

Recipient's Address 175 METRO CENTER BOULEVARD

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City WARWICK State RI ZIP 02886

0345930620

Find drop-off locations at fedex.com
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4a Express Package Service *Packages up to 150 lbs.*

- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate. * To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: ** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- [ ] **SATURDAY Delivery** NOT Available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] **HOLD Weekday** at FedEx Location NOT Available for FedEx First Overnight.
- [ ] **HOLD Saturday** at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp Date

Total Packages	Total Weight	Total Declared Value†
1	30	$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability. FedEx Use Only

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE. NO POUCH NEEDED.

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 8-111711-105528-0002

DateShipped: 11/17/2011
CarrierName: FedEx
AirbillNo: 8585 3854 0208

Case #: 41860
Cooler #:

Lab: Spectrum Analytical
Lab Contact:
Lab Phone: 401-732-3400

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
H0AA0	Potable Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1000 (HCl) (2)	UTN000802825-0002	11/14/2011 16:09		
H0AA1	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1001 (HCl) (2)	UTN000802825-0001	11/14/2011 10:00		
H0AA2	Potable Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1002 (HCl) (2)	UTN000802825-0003	11/14/2011 16:31		
H0AA3	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1003 (HCl) (2)	UTN000802825-0004	11/16/2011 15:57		
H0AA4	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1004 (HCl) (2)	UTN000802825-0005	11/16/2011 11:41		
H0AA5	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1005 (HCl) (2)	UTN000802825-0006	11/16/2011 16:54		
H0AA6	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1006 (HCl) (2)	UTN000802825-0007	11/15/2011 16:28		

Special Instructions:	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: CLP TVOA=CLP TCL Trace Volatiles	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Craig Barnitz	11/17/11									

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 8-111711-105528-0002

DateShipped: 11/17/2011
CarrierName: FedEx
AirbillNo: 8585 3854 0208

Case #: 41860
Cooler #:

Lab: Spectrum Analytical
Lab Contact:
Lab Phone: 401-732-3400

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
H0AA7	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1007 (HCl) (2)	UTN000802825-0008	11/15/2011 15:05		
H0AA8	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1008 (HCl) (6)	UTN000802825-0009	11/15/2011 14:19		
H0AA9	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1009 (HCl) (2)	UTN000802825-0010	11/14/2011 07:23		
H0AB0	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1010 (HCl) (2)	UTN000802825-0011	11/15/2011 12:52		
H0AB1	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1011 (HCl) (2)	UTN000802825-0012	11/16/2011 16:03		
H0AB2	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1012 (HCl) (2)	UTN000802825-0013	11/15/2011 07:32		
H0AB3	Ground Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1013 (HCl) (2)	UTN000802825-0014	11/16/2011 07:45		

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: CLP TVOA=CLP TCL Trace Volatiles

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Craig Barnitz	11/17/11									

USEPA CLP Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 8-111711-105528-0002

DateShipped: 11/17/2011

CarrierName: FedEx

AirbillNo: 8585 3854 0208

Case #: 41860

Cooler #:

Lab: Spectrum Analytical

Lab Contact:

Lab Phone: 401-732-3400

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
H0AB4	Surface Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1014 (HCl) (2)	UTN000802825-0015	11/15/2011 09:20		
H0AB5	Surface Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1015 (HCl) (6)	UTN000802825-0016	11/16/2011 16:21		
H0AB6	Surface Water/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1016 (HCl) (2)	UTN000802825-0017	11/15/2011 15:46		
H0AB7	Soil/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1017 (4 C) (1)	UTN000802825-0018	11/15/2011 09:28		
H0AB8	Soil/ Craig Barnitz UDEQ/DERR	Grab	CLP TVOA	1018 (4 C) (1)	UTN000802825-0019	11/15/2011 15:51		

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: CLP TVOA=CLP TCL Trace Volatiles

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Craig Barnitz	11/17/11									

APPENDIX F

CLP Laboratory Data & Validation Reports

REGION VIII
DATA VALIDATION REPORT
ORGANICS

Case/TDD No.	Site Name		Operable Unit
41860/1112-09	East Side Springs		
RPM/OSC Name			
Ryan Dunham			
Contractor Laboratory	**Contract No.**	**SDG No.**	**Laboratory DPO/Region**
Mitkem Laboratories	EP-W-11-037	H0AA0	8

Review Assigned Date January 2, 2012 Data Validator Amy Gray
Review Completion Date January 16, 2012 Report Reviewer Kent Alexander

Sample ID	Matrix	Analysis
H0AA0	Water	CLP – Low/medium level volatiles analyses by SOM01.2
H0AA1		
H0AA2		
H0AA3		
H0AA4		
H0AA5		
H0AA6		
H0AA7		
H0AA8		
H0AA9		
H0AB0		
H0AB1		
H0AB2		
H0AB3		
H0AB4		
H0AB5		
H0AB6		

DATA QUALITY STATEMENT

( ) Data are ACCEPTABLE according to EPA Functional Guidelines with no qualifiers (flags) added by the reviewer.
( ) Data are UNACCEPTABLE according to EPA Functional Guidelines.
(X) Data are acceptable with QUALIFICATIONS noted in review.

PO Attention Required? Yes _____ No ___X__ If yes, list the items that require attention:

ORGANIC DATA VALIDATION REPORT

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," June 2008.

Raw data were reviewed for completeness and transcription accuracy onto the summary forms. Approximately 10-20% of the results reported in each of the samples, calibrations, and QC analyses were recalculated and verified. If problems were identified during the recalculation of results, a more thorough calculation check was performed.

The data package, SDG No. H0AA0, consisted of 17 water samples for CLP low/medium level volatile analysis by SOM01.2.

The following tables list data qualifiers added to the data. (Please see Data Qualifier Definitions, attached to the end of this report.)

Sample Number	Volatile Compound	Qualifier	Reason For Qualification	Review Section
H0AA0, H0AA1, H0AA2, H0AA3, H0AA4, H0AA5, H0AA6, H0AA7, H0AA8, H0AA9, H0AB0, H0AB1, H0AB2, H0AB3, H0AB4, H0AB5, H0AB6	1,4-Dioxane	R	Initial and continuing RRFs less than 0.005	4

1. DELIVERABLES

All deliverables were present as specified in the subcontract.

VOA: Yes_X_ No____

Comments: None.

2. HOLDING TIMES AND PRESERVATION CRITERIA

All holding times and preservation criteria were met.

VOA: Yes_X_ No____

Comments: The preserved water samples were analyzed within 14 days from sample collection.

According to the Chain-of-Custody record and case narrative, all sample coolers were received within the recommended temperature range of 4 ± 2°C. The water samples were properly preserved to a pH of less than 2. Of the six VOA vials received for sample H0AA8 (MS/MSD) one was broken. No other shipping or receiving problems were noted. Chain-of-custody, summary forms, and raw data were evaluated.

3. BFB PERFORMANCE RESULTS

The bromofluorobenzene (BFB) performance results were within the specified control limits. All appropriate BFB results were included.

VOA: Yes_X_ No____

Comments: BFB instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data.

4. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to method requirements and met the project specified control limits.

VOA: Yes____ No_X_

Comments: Initial calibration standards containing both target compounds and the deuterated monitoring compounds (DMCs) were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) The RRFs for all other target compounds were greater than or equal to 0.05 with the following exception. For this SDG the RRF for

1,4-Dioxane was below the advised RRF. None of the samples had detections for 1,4-Dioxane and the results should therefore be rejected. The Functional Guidelines require percent relative standard deviations (%RSDs) of the RRFs less than or equal to 50% for 1,4-dioxane, 40% for the poor responders and less than or equal to 20% for all other analytes. The Functional Guideline requirements were met for %RSD. Summary forms and raw data were evaluated.

The following table lists the RRF that was less than 0.005 for 1,4-dioxane and qualifiers added to the data:

Compound	RRFs	Associated Samples	Qualifiers
1,4-Dioxane	0.004	All soil samples	R

Continuing instrument calibrations were performed according to method requirements and met project specified control limits.

VOA: Yes ___ No_X_

Comments: Continuing calibration standards containing both target compounds and the DMCs were analyzed at the beginning and end of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) with the exceptions listed below. The RRFs for all other target compounds were greater than or equal to 0.05. The opening standard percent differences (%Ds) of the RRFs were less than or equal to 50% for 1,4-dioxane, 40% for the poor responders and less than or equal to 25% for all other analytes. Summary forms and raw data were evaluated.

The following table lists the RRFs that were less than 0.005 for 1,4-dioxaneand qualifiers added to the data:

Compound	RRFs	%D	Associated Samples	Qualifiers
1,4-Dioxane	0.0004 0.0004	16.3 14.0	All soil samples	R

5. DEUTERATED MONITORING COMPOUNDS

Deuterated monitoring compound (DMC) recovery analysis was performed according to method requirements and results met specified control limits.

VOA: Yes _X_ No____

Comments: DMCs were added to all samples and blanks. Summary forms and raw data were evaluated.

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were performed according to method requirements and results met recommended recovery and precision limits.

VOA: Yes_X_ No____

Comments: A matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on the water samples at the required frequency. The percent recoveries and relative percent differences (RPDs) were within Functional Guidelines advisory limits. Summary forms and raw data were evaluated.

7. INTERNAL STANDARD AREA

Internal standard area analysis was performed according to method requirements and results met specified control limits.

VOA: Yes _X_ No____

Comments: The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Summary forms and raw data were evaluated.

8. LABORATORY BLANK ANALYSIS RESULTS

The laboratory blank analysis was performed according to method requirements and results met specified limits.

VOA: Yes_X_ No____

Comments: Method blank analyses were performed after the calibration standards and once for every 12-hour time period. One storage blank (VHBLK5S) was also analyzed. Summary forms and raw data were evaluated.

9. SAMPLE RESULTS

The sample results were reviewed and all compound identifications were acceptable and met contract requirements.

VOA: Yes_X_ No____

Comments: Sample relative retention times (RRTs) were within ± 0.06 RRT units of the standard RRT. Ions present in the standard mass spectrum at a relative intensity

greater than 10% were present in the sample spectrum. Relative intensities of ions agreed within ±20% between standard and sample spectra. All sample results and CRQLs were correctly calculated.

Tentatively identified compounds (TICs) were qualitatively assessed by a mass spectral library search. No qualifications were applied to the TICs.

10. Additional Comments or Problems/Resolutions Not Addressed Above

VOA: Yes___ No_X_

Comments: None.

ORGANIC DATA QUALITY ASSURANCE REVIEW

Region VIII

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

GENERAL QUALIFIERS for use with both INORGANIC and ORGANIC DATA

R - Reported value is "rejected." Resampling or reanalysis may be necessary to verify the presence or absence of the compound.

J - The associated numerical value is an estimated quantity because the Quality Control criteria were not met.

U J - The reported quantitation limit is estimated because Quality Control criteria were not met. Element or compound was not detected.

N J - Estimated value of a tentatively identified compound. (Identified with a CAS number.) ORGANICS analysis only.

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA1 (UTN000802825-0001)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-02A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	2.9	J

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA1 (UTN000802825-0001)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-02A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	150	
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA0 (UTN000802825-0002)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-01A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA0 (UTN000802825-0002)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-01A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA2 (UTN000802825-0003)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-03A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA2 (UTN000802825-0003)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-03A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA3 (UTN000802825-0004)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-04A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AA3 (UTN000802825-0004)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-04A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	12	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA4 (UTN000802825-0005)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-05A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	2.6	J

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA4 (UTN000802825-0005)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-05A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA5 (UTN000802825-0006)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-06A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA5 (UTN000802825-0006)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-06A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	8	
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA6 (UTN000802825-0007)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-07A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA6 (UTN000802825-0007)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-07A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	6.1	
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	4.5	J
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA7 (UTN000802825-0008)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-08A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	4.1	J

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA7 (UTN000802825-0008)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-08A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA8 (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AA8 (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA9 (UTN000802825-0010)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-10A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	22	
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	170	
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA9 (UTN000802825-0010)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-10A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	2.2	J
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB0 (UTN000802825-0011)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-11A

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	2	J

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AB0 (UTN000802825-0011)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-11A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB1 (UTN000802825-0012)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-12A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB1 (UTN000802825-0012)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-12A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	13	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB2 (UTN000802825-0013)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-13A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	13	
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	160	
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB2 (UTN000802825-0013)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-13A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB3 (UTN000802825-0014)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-14A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	30	
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	170	
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AB3 (UTN000802825-0014)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-14A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB4 (UTN000802825-0015)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-15A

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AB4 (UTN000802825-0015)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-15A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	4.6	J
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB5 (UTN000802825-0016)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-16A

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	2.1	J

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB5 (UTN000802825-0016)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-16A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	20	
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB6 (UTN000802825-0017)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-17A

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB6 (UTN000802825-0017)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-17A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	3.7	J
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA8MS (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09AMS

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	48	
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	53	
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	53	
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AA8MS (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09AMS

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	51	
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	48	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AA8MSD (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09AMSI

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	47	
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	53	
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	53	
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AA8MSD (UTN000802825-0009)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: K2465-09AMSI

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	52	
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	48	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5S
()

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: MB-63282

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK5S
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: MB-63282

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 11/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

REGION VIII
DATA VALIDATION REPORT
ORGANICS

Case/TDD No.	Site Name		Operable Unit
41860/1112-09	East Side Springs		
RPM/OSC Name			
Ryan Dunham			
Contractor Laboratory	**Contract No.**	**SDG No.**	**Laboratory DPO/Region**
Mitkem Laboratories	EP-W-11-037	H0AB7	8

Review Assigned Date January 2, 2012 Data Validator Amy Gray
Review Completion Date January 19, 2012 Report Reviewer Kent Alexander

Sample ID	Matrix	Analysis
H0AB7	Soil	CLP – Low/medium level volatiles analyses by SOM01.2
H0AB8		

DATA QUALITY STATEMENT

( ) Data are ACCEPTABLE according to EPA Functional Guidelines with no qualifiers (flags) added by the reviewer.
( ) Data are UNACCEPTABLE according to EPA Functional Guidelines.
(X) Data are acceptable with QUALIFICATIONS noted in review.

PO Attention Required? Yes _____ No ___X__ If yes, list the items that require attention:

ORGANIC DATA VALIDATION REPORT

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," June 2008.

Raw data were reviewed for completeness and transcription accuracy onto the summary forms. Approximately 10-20% of the results reported in each of the samples, calibrations, and QC analyses were recalculated and verified. If problems were identified during the recalculation of results, a more thorough calculation check was performed.

The data package, SDG No. H0AB7, consisted of 2 soil samples for CLP low/medium level volatile analysis by SOM01.2.

The following tables list data qualifiers added to the data. (Please see Data Qualifier Definitions, attached to the end of this report.)

Sample Number	Volatile Compound	Qualifier	Reason For Qualification	Review Section
H0AB7, H0AB8	1,4-Dioxane	R	Initial and continuing RRFs less than 0.005	4

1. DELIVERABLES

All deliverables were present as specified in the subcontract.

VOA: Yes_X_ No____

Comments: None.

2. HOLDING TIMES AND PRESERVATION CRITERIA

All holding times and preservation criteria were met.

VOA: Yes_X_ No____

Comments: The soil samples were analyzed within 14 days from sample collection.

According to the Chain-of-Custody record and case narrative, all sample coolers were received within the recommended temperature range of 4 ± 2°C. Soil samples for volatiles analysis were received in 4-oz jars and not in EnCore™ equivalents. No other shipping or receiving problems were noted. Chain-of-custody, summary forms, and raw data were evaluated.

3. BFB PERFORMANCE RESULTS

The bromofluorobenzene (BFB) performance results were within the specified control limits. All appropriate BFB results were included.

VOA: Yes_X_ No____

Comments: BFB instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data.

4. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to method requirements and met the project specified control limits.

VOA: Yes____ No_X_

Comments: Initial calibration standards containing both target compounds and the deuterated monitoring compounds (DMCs) were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) The RRFs for all other target compounds were greater than or equal to 0.05 with the following exception. For this SDG, the RRF for 1,4-Dioxane was below the advised RRF. None of the samples had detections for 1,4-Dioxane and the results should therefore be rejected.

The following table lists the RRF that was less than 0.005 for 1,4-dioxane and qualifiers added to the data:

Compound	RRFs	Associated Samples	Qualifiers
1,4-Dioxane	0.003	All soil samples	R

Continuing instrument calibrations were performed according to method requirements and met project specified control limits.

VOA: Yes ___ No_X_

Comments: Continuing calibration standards containing both target compounds and the DMCs were analyzed at the beginning and end of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) with the exceptions listed below. The RRFs for all other target compounds were greater than or equal to 0.05. The opening standard percent differences (%Ds) of the RRFs were less than or equal to 50% for 1,4-dioxane, 40% for the poor responders and less than or equal to 25% for all other analytes. Summary forms and raw data were evaluated.

The following table lists the RRFs that were less than 0.005 for 1,4-dioxane and qualifiers added to the data:

Compound	RRFs	Associated Samples	Qualifiers
1,4-Dioxane	0.003 0.003	All soil samples	R

5. DEUTERATED MONITORING COMPOUNDS

Deuterated monitoring compound (DMC) recovery analysis was performed according to method requirements and results met specified control limits.

VOA: Yes ___ No_X_

Comments: DMCs were added to all samples and blanks. All DMC recoveries were within QC limits except for benzene-d6 in sample H0AB8 which was above the upper QC limit. Benzene, the only associated compound, was not detected in the sample. Therefore no action was taken. Summary forms and raw data were evaluated.

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were performed according to method requirements and results met recommended recovery and precision limits.

VOA: Yes_X__ No____

Comments: A matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on the water samples at the required frequency. The percent recoveries and relative percent differences (RPDs) were within Functional Guidelines advisory limits. Summary forms and raw data were evaluated.

7. INTERNAL STANDARD AREA

Internal standard area analysis was performed according to method requirements and results met specified control limits.

VOA: Yes _X__ No____

Comments: The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Summary forms and raw data were evaluated.

8. LABORATORY BLANK ANALYSIS RESULTS

The laboratory blank analysis was performed according to method requirements and results met specified limits.

VOA: Yes_X__ No____

Comments: Method blank analyses were performed after the calibration standards and once for every 12-hour time period. One storage blank (VHBLK5S) was also analyzed. Summary forms and raw data were evaluated.

9. SAMPLE RESULTS

The sample results were reviewed and all compound identifications were acceptable and met contract requirements.

VOA: Yes_X__ No____

Comments: Sample relative retention times (RRTs) were within ± 0.06 RRT units of the standard RRT. Ions present in the standard mass spectrum at a relative intensity greater than 10% were present in the sample spectrum. Relative intensities of ions agreed within ±20% between standard and sample spectra. All sample results and CRQLs were correctly calculated.

Tentatively identified compounds (TICs) were qualitatively assessed by a mass spectral library search. No qualifications were applied to the TICs.

10. Additional Comments or Problems/Resolutions Not Addressed Above

VOA: Yes___ No_X_

Comments: None.

ORGANIC DATA QUALITY ASSURANCE REVIEW

Region VIII

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

GENERAL QUALIFIERS for use with both INORGANIC and ORGANIC DATA

R - Reported value is "rejected." Resampling or reanalysis may be necessary to verify the presence or absence of the compound.

J - The associated numerical value is an estimated quantity because the Quality Control criteria were not met.

U J - The reported quantitation limit is estimated because Quality Control criteria were not met. Element or compound was not detected.

N J - Estimated value of a tentatively identified compound. (Identified with a CAS number.) ORGANICS analysis only.

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB7 (UTN000802825-0018)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-01A

Sample wt/vol: 5.1 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 59.6 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	12	U
67-64-1	Acetone	24	U
75-15-0	Carbon disulfide	12	U
79-20-9	Methyl acetate	12	U
75-09-2	Methylene chloride	12	U
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
78-93-3	2-Butanone	24	U
74-97-5	Bromochloromethane	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
110-82-7	Cyclohexane	12	U
56-23-5	Carbon tetrachloride	12	U
71-43-2	Benzene	12	U
107-06-2	1,2-Dichloroethane	12	U
123-91-1	1,4-Dioxane	240	R
79-01-6	Trichloroethene	12	U
108-87-2	Methylcyclohexane	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB7 (UTN000802825-0018)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-01A

Sample wt/vol: 5.1 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 59.6 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-10-1	4-Methyl-2-pentanone	24	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	24	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
95-47-6	o-Xylene	12	U
179601-23-1	m,p-Xylene	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
87-61-6	1,2,3-Trichlorobenzene	12	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB8MS (UTN000802825-0019)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-02AMS

Sample wt/vol: 5.1 (g/mL) g Lab File ID: _____

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 34.3 Date Analyzed: 11/27/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
75-71-8	Dichlorodifluoromethane	7.5	U
74-87-3	Chloromethane	7.5	U
75-01-4	Vinyl chloride	7.5	U
74-83-9	Bromomethane	7.5	U
75-00-3	Chloroethane	7.5	U
75-69-4	Trichlorofluoromethane	7.5	U
75-35-4	1,1-Dichloroethene	62	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.5	U
67-64-1	Acetone	15	U
75-15-0	Carbon disulfide	7.5	U
79-20-9	Methyl acetate	7.5	U
75-09-2	Methylene chloride	7.5	U
156-60-5	trans-1,2-Dichloroethene	7.5	U
1634-04-4	Methyl tert-butyl ether	7.5	U
75-34-3	1,1-Dichloroethane	7.5	U
156-59-2	cis-1,2-Dichloroethene	7.5	U
78-93-3	2-Butanone	15	U
74-97-5	Bromochloromethane	7.5	U
67-66-3	Chloroform	7.5	U
71-55-6	1,1,1-Trichloroethane	7.5	U
110-82-7	Cyclohexane	7.5	U
56-23-5	Carbon tetrachloride	7.5	U
71-43-2	Benzene	89	
107-06-2	1,2-Dichloroethane	7.5	U
123-91-1	1,4-Dioxane	150	R
79-01-6	Trichloroethene	80	
108-87-2	Methylcyclohexane	7.5	U
78-87-5	1,2-Dichloropropane	7.5	U
75-27-4	Bromodichloromethane	7.5	U
10061-01-5	cis-1,3-Dichloropropene	7.5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB8MS (UTN000802825-0019)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-02AMS

Sample wt/vol: 5.1 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 34.3 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	88	
10061-02-6	trans-1,3-Dichloropropene	7.5	U
79-00-5	1,1,2-Trichloroethane	7.5	U
127-18-4	Tetrachloroethene	7.5	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	7.5	U
106-93-4	1,2-Dibromoethane	7.5	U
108-90-7	Chlorobenzene	84	
100-41-4	Ethylbenzene	7.5	U
95-47-6	o-Xylene	7.5	U
179601-23-1	m,p-Xylene	7.5	U
100-42-5	Styrene	7.5	U
75-25-2	Bromoform	7.5	U
98-82-8	Isopropylbenzene	7.5	U
79-34-5	1,1,2,2-Tetrachloroethane	7.5	U
541-73-1	1,3-Dichlorobenzene	7.5	U
106-46-7	1,4-Dichlorobenzene	7.5	U
95-50-1	1,2-Dichlorobenzene	7.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.5	U
120-82-1	1,2,4-Trichlorobenzene	7.5	U
87-61-6	1,2,3-Trichlorobenzene	7.5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB8MSD (UTN000802825-0019)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-02AMSI

Sample wt/vol: 5.1 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 34.3 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
75-71-8	Dichlorodifluoromethane	7.5	U
74-87-3	Chloromethane	7.5	U
75-01-4	Vinyl chloride	7.5	U
74-83-9	Bromomethane	7.5	U
75-00-3	Chloroethane	7.5	U
75-69-4	Trichlorofluoromethane	7.5	U
75-35-4	1,1-Dichloroethene	60	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.5	U
67-64-1	Acetone	15	U
75-15-0	Carbon disulfide	7.5	U
79-20-9	Methyl acetate	7.5	U
75-09-2	Methylene chloride	7.5	U
156-60-5	trans-1,2-Dichloroethene	7.5	U
1634-04-4	Methyl tert-butyl ether	7.5	U
75-34-3	1,1-Dichloroethane	7.5	U
156-59-2	cis-1,2-Dichloroethene	7.5	U
78-93-3	2-Butanone	15	U
74-97-5	Bromochloromethane	7.5	U
67-66-3	Chloroform	7.5	U
71-55-6	1,1,1-Trichloroethane	7.5	U
110-82-7	Cyclohexane	7.5	U
56-23-5	Carbon tetrachloride	7.5	U
71-43-2	Benzene	87	
107-06-2	1,2-Dichloroethane	7.5	U
123-91-1	1,4-Dioxane	150	R
79-01-6	Trichloroethene	75	
108-87-2	Methylcyclohexane	7.5	U
78-87-5	1,2-Dichloropropane	7.5	U
75-27-4	Bromodichloromethane	7.5	U
10061-01-5	cis-1,3-Dichloropropene	7.5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB8MSD (UTN000802825-0019)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: K2466-02AMSI

Sample wt/vol: 5.1 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received: 11/19/2011

% Moisture: not dec. 34.3 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	85	
10061-02-6	trans-1,3-Dichloropropene	7.5	U
79-00-5	1,1,2-Trichloroethane	7.5	U
127-18-4	Tetrachloroethene	7.5	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	7.5	U
106-93-4	1,2-Dibromoethane	7.5	U
108-90-7	Chlorobenzene	84	
100-41-4	Ethylbenzene	7.5	U
95-47-6	o-Xylene	7.5	U
179601-23-1	m,p-Xylene	7.5	U
100-42-5	Styrene	7.5	U
75-25-2	Bromoform	7.5	U
98-82-8	Isopropylbenzene	7.5	U
79-34-5	1,1,2,2-Tetrachloroethane	7.5	U
541-73-1	1,3-Dichlorobenzene	7.5	U
106-46-7	1,4-Dichlorobenzene	7.5	U
95-50-1	1,2-Dichlorobenzene	7.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.5	U
120-82-1	1,2,4-Trichlorobenzene	7.5	U
87-61-6	1,2,3-Trichlorobenzene	7.5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK5Y
()

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 41860 SAS No.: _____ SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: VHBLK5Y

Sample wt/vol: 5 (g/mL) g Lab File ID: _____

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 11/27/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
79-20-9	Methyl acetate	5	U
75-09-2	Methylene chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
110-82-7	Cyclohexane	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
123-91-1	1,4-Dioxane	100	R
79-01-6	Trichloroethene	5	U
108-87-2	Methylcyclohexane	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK5Y
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: VHBLK5Y

Sample wt/vol: 5 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. 0 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
95-47-6	o-Xylene	5	U
179601-23-1	m,p-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropylbenzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO: VBLK5Y ()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: MB-63162

Sample wt/vol: 5 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. 0 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
75-71-8	Dichlorodifluoromethane	5	U
74-87-3	Chloromethane	5	U
75-01-4	Vinyl chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5	U
79-20-9	Methyl acetate	5	U
75-09-2	Methylene chloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
1634-04-4	Methyl tert-butyl ether	5	U
75-34-3	1,1-Dichloroethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
110-82-7	Cyclohexane	5	U
56-23-5	Carbon tetrachloride	5	U
71-43-2	Benzene	5	U
107-06-2	1,2-Dichloroethane	5	U
123-91-1	1,4-Dioxane	100	R
79-01-6	Trichloroethene	5	U
108-87-2	Methylcyclohexane	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK5Y
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AB7

Matrix: (soil/water) SOIL Lab Sample ID: MB-63162

Sample wt/vol: 5 (g/mL) g Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. 0 Date Analyzed: 11/27/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
127-18-4	Tetrachloroethene	5	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
95-47-6	o-Xylene	5	U
179601-23-1	m,p-Xylene	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
98-82-8	Isopropylbenzene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U

REGION VIII
DATA VALIDATION REPORT
ORGANICS

Case/TDD No.	Site Name		Operable Unit
41860/1112-09	East Side Springs		
RPM/OSC Name			
Ryan Dunham			
Contractor Laboratory	**Contract No.**	**SDG No.**	**Laboratory DPO/Region**
Mitkem Laboratories	EP-W-11-037	H0AB9	8

Review Assigned Date January 2, 2012 Data Validator Amy Gray
Review Completion Date January 26, 2012 Report Reviewer Kent Alexander

Sample ID	Matrix	Analysis
H0AB9	Water	CLP – Low/medium level volatiles analyses by SOM01.2
H0AC0		
H0AC1		

DATA QUALITY STATEMENT

( ) Data are ACCEPTABLE according to EPA Functional Guidelines with no qualifiers (flags) added by the reviewer.
( ) Data are UNACCEPTABLE according to EPA Functional Guidelines.
(X) Data are acceptable with QUALIFICATIONS noted in review.

PO Attention Required? Yes _____ No ___X__ If yes, list the items that require attention:

9. SAMPLE RESULTS

The sample results were reviewed and all compound identifications were acceptable and met contract requirements.

VOA: Yes_X_ No____

Comments: Sample relative retention times (RRTs) were within ± 0.06 RRT units of the standard RRT. Ions present in the standard mass spectrum at a relative intensity greater than 10% were present in the sample spectrum. Relative intensities of ions agreed within ±20% between standard and sample spectra. All sample results and CRQLs were correctly calculated.

Tentatively identified compounds (TICs) were qualitatively assessed by a mass spectral library search. No qualifications were applied to the TICs.

10. Additional Comments or Problems/Resolutions Not Addressed Above

VOA: Yes___ No_X_

Comments: None.

ORGANIC DATA QUALITY ASSURANCE REVIEW

Region VIII

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

GENERAL QUALIFIERS for use with both INORGANIC and ORGANIC DATA

R - Reported value is "rejected." Resampling or reanalysis may be necessary to verify the presence or absence of the compound.

J - The associated numerical value is an estimated quantity because the Quality Control criteria were not met.

U J - The reported quantitation limit is estimated because Quality Control criteria were not met. Element or compound was not detected.

N J - Estimated value of a tentatively identified compound. (Identified with a CAS number.) ORGANICS analysis only.

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Sample Number	DMC	%R	QC Limits	Compounds	Qualifiers
H0AC0 H0AC1	Vinyl Chloride-d3	63 58	68-122	Vinyl Chloride	UJ

6. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were performed according to method requirements and results met recommended recovery and precision limits.

VOA: Yes_X_ No___

Comments: Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on the water samples at the required frequency. The percent recoveries and relative percent differences (RPDs) were within Functional Guidelines advisory limits. Summary forms and raw data were evaluated.

7. INTERNAL STANDARD AREA

Internal standard area analysis was performed according to method requirements and results met specified control limits.

VOA: Yes_X_ No___

Comments: The internal standard retention times did not vary more than ± 30 seconds from the retention time of the associated 12-hour calibration standards. Summary forms and raw data were evaluated.

8. LABORATORY BLANK ANALYSIS RESULTS

The laboratory blank analysis was performed according to method requirements and results met specified limits.

VOA: Yes_X_ No___

Comments: Method blank analyses were performed after the calibration standards and once for every 12-hour time period. One storage blank was also analyzed. Summary forms and raw data were evaluated.

The following table lists the RRF that was less than 0.005 for 1,4-dioxane and qualifiers added to the data:

Compound	RRFs	Associated Samples	Qualifiers
1,4-Dioxane	0.003	All soil samples	R

Continuing instrument calibrations were performed according to method requirements and met project specified control limits.

VOA: Yes ___ No_X_

Comments: Continuing calibration standards containing both target compounds and the DMCs were analyzed at the beginning and end of each 12-hour analysis period. The RRFs for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) with the exceptions listed below. The RRFs for all other target compounds were greater than or equal to 0.05. The opening standard percent differences (%Ds) of the RRFs were less than or equal to 50% for 1,4-dioxane, 40% for the poor responders and less than or equal to 25% for all other analytes. Summary forms and raw data were evaluated.

The following table lists the RRFs that were less than 0.005 for 1,4-dioxane and qualifiers added to the data:

Compound	RRFs	Associated Samples	Qualifiers
1,4-Dioxane	0.003 0.003	All soil samples	R

5. DEUTERATED MONITORING COMPOUNDS

Deuterated monitoring compound (DMC) recovery analysis was performed according to method requirements and results met specified control limits.

VOA: Yes ___ No_X_

Comments: DMCs were added to all samples and blanks. Summary forms and raw data were evaluated. The following table lists the samples with DMC percent recoveries (%Rs) outside control limits and the qualifiers added to the data:

1. DELIVERABLES

All deliverables were present as specified in the subcontract.

VOA: Yes_X_ No____

Comments: None.

2. HOLDING TIMES AND PRESERVATION CRITERIA

All holding times and preservation criteria were met.

VOA: Yes_X_ No____

Comments: The water samples were analyzed within 14 days from sample collection.

According to the Chain-of-Custody record and case narrative, the sample cooler was received at 7 °C, above the recommended temperature range of 4 ± 2°C. All samples were preserved with HCl and were received at a pH<2. Based on professional judgment, no qualification was taken for the elevated receipt temperatures for these water samples.

3. BFB PERFORMANCE RESULTS

The bromofluorobenzene (BFB) performance results were within the specified control limits. All appropriate BFB results were included.

VOA: Yes_X_ No____

Comments: BFB instrument performance checks were run for each 12 hours of analysis. Ion abundance criteria were met and were verified from raw data.

4. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to method requirements and met the project specified control limits.

VOA: Yes____ No_X_

Comments: Initial calibration standards containing both target compounds and the deuterated monitoring compounds (DMCs) were analyzed at the correct frequency. The average relative response factors (RRFs) for the compounds identified by the Functional Guidelines as poor responders were greater than or equal to 0.01 (0.005 for 1,4-dioxane) The RRFs for all other target compounds were greater than or equal to 0.05 with the following exception. For this SDG, the RRF for 1,4-Dioxane was below the advised RRF. None of the samples had detections for 1,4-Dioxane and the results should therefore be rejected.

ORGANIC DATA VALIDATION REPORT

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," June 2008.

Raw data were reviewed for completeness and transcription accuracy onto the summary forms. Approximately 10-20% of the results reported in each of the samples, calibrations, and QC analyses were recalculated and verified. If problems were identified during the recalculation of results, a more thorough calculation check was performed.

The data package, SDG No. H0AB9 consisted of 3 water samples for CLP low/medium level volatile analysis by SOM01.2.

The following tables list data qualifiers added to the data. (Please see Data Qualifier Definitions, attached to the end of this report.)

Sample Number	Volatile Compound	Qualifier	Reason For Qualification	Review Section
H0AB9, H0AC0, H0AC1	1,4-Dioxane	R	Initial and continuing RRFs less than 0.005	4
H0AC0, H0AC1	Vinyl chloride	UJ	Low surrogate recovery	5

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB9MSD (EPA-MW-01D)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-01AMSI

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	11	
108-88-3	Toluene	51	
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	49	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	UJ

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AB9MSD (EPA-MW-01D)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-01AMSI

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	45	
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	5.4	J
71-43-2	Benzene	51	
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	51	
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AB9MS
(EPA-MW-01D)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-01AMS

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	11	
108-88-3	Toluene	51	
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	49	
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	UJ

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AB9MS (EPA-MW-01D)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-01AMS

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	45	
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	5.3	J
71-43-2	Benzene	50	
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	50	
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0AC1
(ESS-GW-35)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-03A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	10	
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	UJ

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AC1
(ESS-GW-35)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-03A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AC0
(ESS-GW-34)

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 42101 SAS No.: _____ SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-02A

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	UJ

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

H0AC0
(ESS-GW-34)

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: K2696-02A

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received: 12/22/2011

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	45	
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	160	
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK5S
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: VHBLK5S

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VHBLK5S
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 41860 SAS No.: SDG No.: H0AA0

Matrix: (soil/water) WATER Lab Sample ID: VHBLK5S

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 11/24/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK5M
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: VHBLK5M

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLK5M
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: VHBLK5M

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U

1A (e-form)

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5M
()

Lab Name: Mitkem Laboratories Contract: _____

Lab Code: MITKEM Case No.: 42101 SAS No.: _____ SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: MB-63912

Sample wt/vol: 5 (g/mL) mL Lab File ID: _____

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: _____ ID: _____ (mm) Dilution Factor: 1

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	5	U
156-59-2	cis-1,2-Dichloroethene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
110-82-7	Cyclohexane	5	U
124-48-1	Dibromochloromethane	5	U
75-71-8	Dichlorodifluoromethane	5	U
100-41-4	Ethylbenzene	5	U
98-82-8	Isopropylbenzene	5	U
179601-23-1	m,p-Xylene	5	U
79-20-9	Methyl acetate	5	U
1634-04-4	Methyl tert-butyl ether	5	U
108-87-2	Methylcyclohexane	5	U
75-09-2	Methylene chloride	5	U
95-47-6	o-Xylene	5	U
100-42-5	Styrene	5	U
127-18-4	Tetrachloroethene	5	U
108-88-3	Toluene	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
75-69-4	Trichlorofluoromethane	5	U
75-01-4	Vinyl chloride	5	U

1A (e-form) EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK5M
()

Lab Name: Mitkem Laboratories Contract:

Lab Code: MITKEM Case No.: 42101 SAS No.: SDG No.: H0AB9

Matrix: (soil/water) WATER Lab Sample ID: MB-63912

Sample wt/vol: 5 (g/mL) mL Lab File ID:

Level: (low/med) LOW Date Received:

% Moisture: not dec. NA Date Analyzed: 12/23/2011

GC Column: ID: (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
75-34-3	1,1-Dichloroethane	5	U
75-35-4	1,1-Dichloroethene	5	U
87-61-6	1,2,3-Trichlorobenzene	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
96-12-8	1,2-Dibromo-3-chloropropane	5	U
106-93-4	1,2-Dibromoethane	5	U
95-50-1	1,2-Dichlorobenzene	5	U
107-06-2	1,2-Dichloroethane	5	U
78-87-5	1,2-Dichloropropane	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
123-91-1	1,4-Dioxane	100	R
78-93-3	2-Butanone	10	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-pentanone	10	U
67-64-1	Acetone	10	U
71-43-2	Benzene	5	U
74-97-5	Bromochloromethane	5	U
75-27-4	Bromodichloromethane	5	U
75-25-2	Bromoform	5	U
74-83-9	Bromomethane	5	U
75-15-0	Carbon disulfide	5	U
56-23-5	Carbon tetrachloride	5	U
108-90-7	Chlorobenzene	5	U
75-00-3	Chloroethane	5	U
67-66-3	Chloroform	5	U