

The Hub of Alaska
UST Site Assessment and Initial Release Investigation Report
Glennallen, Alaska
ADEC Facility ID 2945

Prepared For:

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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
bgs	Below Ground Surface
BTEX	Aromatic Hydrocarbons (Benzene, Toluene, Ethylbenzene, Xylenes)
CY	Cubic Yard
DRO	Diesel range organics
EMI	Environmental Management, Inc.
GRO	Gasoline Range Organics
IDW	Investigative Derived waste
ug/kg	Micrograms per kilogram
PAH	Polycyclic aromatic hydrocarbons
PID	photoionization detector
PPE	Personal Protective Equipment
ppmv	Parts per million by volume
RRO	Residual range organics
SGS	SGS North America, Inc.
UST	Underground Storage Tank

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1.0 INTRODUCTION

This report documents the site assessment and initial release investigation conducted by Environmental Management, Inc., (EMI) during and following the removal of three regulated underground storage tanks (UST) from The Hub of Alaska located at the intersection of the Glenn and the Richardson highways, Glennallen, Alaska. Prism Design and Construction, LLC (Prism) contracted Environmental Management, Inc. (EMI) to perform the site assessment for closure. Randy Hunter, Prism, was the certified UST Worker (#612) on-site overseeing the removal. Jc Enterprises Inc. provided the equipment and operators to removal the soil and pull the tanks. While on site, EMI started an initial release investigation after encountering contaminated soils.

2.0 SITE DESCRIPTION AND BACKGROUND

The Hub of Alaska UST site is a gas station located at the intersection of the Richardson and Glenn Highways in Glennallen, Alaska. According to the Alaska Department of Environmental Conservation (ADEC) UST database, the site is also identified as ADEC Facility ID 2945. The site is located at the end of the Glenn Highway at milepost 189.5 (Lat. 62.108 N, Long. 145.478 W).

The site contained two 12,000-gallon gasoline USTs and a 12,000-gallon diesel UST with associated lines and fuel dispensers (See Figure 2). The three 12,000-gallon USTs were installed in 1994. These tanks and the piping connecting the tanks to the dispensers, and the dispensers were removed as part of the closure activities.

Field work was conducted from the October 9 to 11, 2017. Weather at the time of the site assessment was mainly cloudy with little wind, with snow flurries on the morning of the last day. The average ambient temperature over the course of the project was approximately 35° Fahrenheit (F) during the day but below freezing at night.

3.0 METHODOLOGY

Field activities were planned to be conducted in general accordance with UST Regulations (18 AAC 78, July 1, 2017), the August 2017 *Field Sampling Guidance*, and the March 22, 201, *UST Procedures Manual*. Due to the presence of releases found deviations were made from the standard procedures listed in 18 AAC 78.090 for a clean UST Closure. These were done in conjunction with conversations with ADEC staff on site, Victoria Huelskoetter, as well as with the owner, James Fields. The deviations are discussed in more detail in section 5.3. Further details on the field screening methods, soil and groundwater sampling methods, and laboratory analysis are provided below.

3.1 Field Screening Methods

EMI conducted field screening during the excavation activities including select screening of the excavation base, sidewalls, fuel line trenches and the suspect stockpiled soil. Headspace samples were collected by filling re-sealable quart size bags approximately 1/3 to 1/2 full with soil. The bags were then

agitated before being allowed to develop for at least 10 minutes, but not longer than an hour. During this time the soils were warmed to a minimum temperature of 40°F. After the samples had been warmed and allowed to develop, the probe of the MiniRae 3000 (alternate 2000) photoionization detector (PID) was inserted into the bag and the displayed reading was recorded in the field notes along with other pertinent information such as the time of collection and reading, and the location of the sample.

3.2 Soil Sampling Methods

Soil analytical samples were collected using clean stainless steel spoons or disposable materials and placed directly into clean laboratory-provided containers. Fresh soils, approximately 6 inches from the headspace sample location, were exposed immediately before sample collection. Volatile samples were collected first and immediately preserved with 25-mL of methanol, per Alaska Method (AK 101). At the tank excavation, a sloped ramp was constructed for the deep excavation, allowing entry so all soils could be collected directly from the selected sample location using hand tools.

3.3 Analytical Methods

The analytical samples were submitted to SGS North America, Inc. (SGS) of Anchorage, Alaska. Samples were analyzed for:

- gasoline range organics (GRO) by AK 101,
- diesel range organics (DRO) by AK102,
- aromatic hydrocarbons (BTEX) by Environmental Protection Agency (EPA) 8021B.

In addition, select samples were analyzed for

- polyaromatic hydrocarbon (PAH) by EPA 8270D SIMS,
- volatile organic compounds(VOC) -ADEC approved list of petroleum compounds by EPA 8260C
- lead by SW6020A (not a primary contaminant of concern since tanks were installed in 1994).

4.0 FIELD ACTIVITIES

Field activities were conducted from October 9 to 11, 2017. The Field activities included the removal of two 12,000 gallon gasoline USTs, one 12,000 gallon diesel UST and the vent piping for all tanks as well as all the fuel piping and dispensers. Vent piping, removed fuel piping and the USTs were sampled and screened in accordance with ADEC *Field Sampling Guidance*, the *UST Procedures Manual* and 18 AAC 78. Due to encountering contaminated soil site conditions, the entire dispenser area was not screened and sampled in accordance with 18 AAC 78.090 or with the ADEC *Field Sampling Guidance* as documented below. Due to a limited number of sample bottles on site, sample locations were limited to ones needed to identify the areas with the highest contamination and to help define the limits of contamination.

Larry Helgeson, an ADEC Qualified Environmental Professional, was on site for EMI to conduct the field sampling activities. He was assisted by Terrance Mount also of EMI. EMI subcontracted with SGS-North America to provide the analytical services. Field notes are provided in Appendix C.

4.1 Dispensers

On October 9, 2017 EMI started the assessment by field screening the seven dispensers on site per 18 AAC 78.090. Two headspace samples were collected from under each dispenser sump to check for evidence of a release. The headspace samples were collected the location where fuel lines ran into the dispenser sumps. A release was identified under the middle diesel dispenser on the first fuel island, the one closest to the building. After it became obvious that the release had contaminated more than a truckload of soil the excavation was stopped. An area west of the store by the solar panels was identified

for storing contaminated soils. Berms were constructed and the area was lined with 12-mil of reinforced polyethylene liner. As the excavation continued in the area, the soil was screened with the PID and segregated between probably clean and probably contaminated. The probably contaminated soils were placed in the contaminated soil stockpile. The probably clean soils were stockpiled next the excavation on the asphalt. After the first fuel island was removed the area was left open for further release investigation efforts.

The field screening samples under the middle fuel island indicated a release had occurred from the sump of the north dispenser. The middle dispenser also had slightly elevated field screening readings. Laboratory samples were collected under the middle (18) and the south dispensers (17) from the location with the highest headspace reading. After the middle fuel island was removed the area was also left open for further release investigation efforts.

The soil under the satellite diesel dispenser showed no evidence of any contamination. A laboratory sample (DS-03) was collected from the location with the highest headspace reading for confirmation. Figure 3 shows the sample locations in the dispenser area representing the soil left in place after this initial effort, including the initial release investigation.

Initial Release Investigation

The release investigations began by removing the obviously contaminated soils from the two areas identified above. Then limits of the excavation were field screened with headspace samples to check for any suspect soils remaining. Areas with elevated reading were then further excavated. A total of 82 headspace samples were taken during the release investigation.

First Fuel Island: At the first fuel island it appeared that the release may have been cleaned up after going down about a foot below the bottom of the sumps. The area of the final excavation was 150 s.f. with a perimeter of 57 feet. (See Figure 3) Samples were collected to confirm the cleanup was complete, following the frequency listed in the *Field Sampling Guidance* Table 2B. Six headspace samples were collected from the bottom and ten from the sidewalls at the elevations most likely to be contaminated. After testing all the headspace samples, six laboratory samples were collected from the locations with the highest headspace tests, two from the bottom (C26B, C22) and one from each sidewall (C27, C32, C33, C36).

Middle Fuel Island: At the middle island, initially headspace samples were collected per the frequency listed in the *Field Sampling Guidance* Table 2B to see if we could achieve a clean closure of this spot. However, the contamination appeared to get worse as the excavation moved towards the northeast. We continued the excavation to the northeast chasing the contamination to see if we could remove all the contaminated soil. When it became obvious that we would not be able to remove all the contamination during this event, the decision was made to stop chasing the contamination and dig a test pit to see if we could find the limits of the contamination. The test pit went 9.5 feet deep and extended about 20 feet northeast from the fuel island. (See Figure 3 and Photo 17) The test pit went below the gravel fill that had been brought in for construction of The Hub store and fuel station. At about 7 feet a silty sand was discovered lying on top of a layer of peat with vegetative material. Below the peat was grey sandy silt. Samples were collected at the bottom of a test pit and from the west sidewall to help define the extent of contamination in the area. Sample C-BSW was from the silt in the bottom southwest corner of the test pit, C-SN was from silty sand above the peat at the northern most location and C-S1 was from the gravel fill at the west sidewall corner. C-SN which had the highest PID results and appeared to be the most contaminated. Sample C-SN was analyzed for the full suite of contaminants including lead.

The limits of this initial excavation and the sample locations of all samples representing the soil left in place after this initial release investigation are shown in Figure 3.

A rush analysis was requested for the samples from the initial release investigation and the other samples from the dispenser area. These results were used to develop an interim removal action work plan to try to clean up the soil in the area before new dispensers were installed. These interim removal actions were completed on October 21 & 22 and will be described in a separate report.

4.2 Fuel Lines Vent Lines and Fill Ports

The fuel line excavation and removal started during the removal of the dispensers. The lines were flexible continuous lines with no joints or connections except inside of the sumps at the dispensers and tanks. The lines were disconnected at one end and then back drained into the sump at the other end in case there was any fuel left in low spots. The sumps were pumped out and cleaned before removal. Field screening samples were collected every 10 feet along the run of fuel lines. Thirty-six samples were collected under the lines within two feet of the line. The whole site was built on gravel fill so no native soils were sampled under the fuel lines. There was no evidence on any release along the fuel lines between the dispensers and tanks. Two laboratory samples were collected from under the fuel lines: one sample (FL-01) from the location with the highest PID result in the dispenser area and one (FL-46) from the location with highest result in the UST area.

Four headspace samples were collected from under the vent lines. No evidence of contamination was found so no laboratory samples were collected.

The soil was field screened with the PID during excavation around the fill ports. Any suspect soils were segregated and placed in the contaminated soils stockpile. Only small amounts of suspect soils were encountered. Head space samples were collected from under each fill port with the highest result being 14.1 ppmv at the diesel tank (#3), the headspace sample two feet lower was only 6.5 ppmv.

The locations of the sampling related to the fuel lines, vent lines, and fill ports are shown in Figures 3 & 4.

4.3 Tank 1, Tank 2 and Tank 3 Removal

The tanks had been purged by PRISM for more than a day before they were removed from the ground. The removal of the three 12,000 gallon USTs was completed on October 10. Areas with minor odors were encountered around the fill ports and sumps. This soil was segregated using the PID to ensure all suspect soils were placed in the contaminated soil stockpile. Once there was no evidence of any contamination the excavation continued to expose the top and sides of the tanks. Soil was excavated down to the midpoint on all the sides of the tank. On one end and one side the soil was removed below the midpoint until the tank could be moved. The tanks were then lifted and pulled from the excavation. Tank #1 was pulled first. After the tank was pulled ground water could be seen seeping into the bottom of the excavation. See Photo 9 in Appendix A. No sheen was observed on the water. Tank #2 and then Tank #3 were pulled in the same manner. No sheen was the water under those tanks either. After Tank #3 was removed, a sloped ramp on one side was constructed to allow entry into the excavation to collect the samples. The Tank samples were collected by hand at the end of the work day after the excavator operator had left the site. A nine foot extension was added to the sample spoon to be able to safely sample the sidewalls. The size of the excavation that was required to remove the tanks was 39 ft. x 44 ft. (1720 s.f.)

The tanks were inspected after removal and were in good shape with no evidence of any corrosion or leaks from any of the tanks. The tanks were taken to a laydown yard for Jc Enterprises, where they are planned to be recycled. They were labeled as being unsuitable for use to hold liquids for human or animal consumption.

Thirty headspace samples were collected from the soil-water interface near the bottom of the excavation. These samples were collected off-set to the side about a foot from the water, then digging down to the water level and collecting a sample just above the water level. With the water at 12.5 ft. bgs the samples were collected between 12 to 12.5 ft. bgs. Eleven analytical samples plus two duplicates were collected from the locations with the highest PID readings in the tank pit. These analytical samples were off set about 6 inches from the headspace sample locations to be able to collect the samples directly from freshly uncovered soils. In addition, 32 samples were collected from the sidewalls to check for contamination. Most of these samples were collected at the level of the tanks at 6 and 10 ft. bgs. Two samples, E1 and E2, were collected from 3 ft. bgs due to sloughing in the area. Even though there was no indication of any contamination in any of the sidewall samples, as additional verification an analytical sample was collected from the location on the sidewall with the highest PID reading.

4.4 Stockpiles

An estimated total of a little less than 800 cubic yards (CY) of soil was excavated to remove the UST and the associated piping and dispensers. All the suspect contaminated soils (a little less than 200 CY) were placed in the lined 40ft. x 50ft. contaminated soil stockpile. The soil that screened as being “probably clean” was stockpiled next to the excavations on the asphalt in various piles around the site ranging in size from 10 CY to 410 CY with a total estimated quantity of a little under 600 CY. A total of 72 headspace samples were collected from these stockpiles, a frequency of more than 1 per 10 CY. The six locations with the highest headspace results were selected for laboratory analysis to characterize the “probably clean” stockpiled soils. No samples were collected from the contaminated stockpile since the sample bottles brought for that purpose were used to collect samples for the release investigation.

Due to freezing conditions, the soils in the “probably clean” stockpiles were placed back in the location where they came from after they were sampled for characterization. The soil from the UST removal was placed back in the UST excavation and the soil from fuel line removal was placed back in the fuel line excavation, etc.

4.5 Investigative Derived Waste

Investigative derived waste (IDW) generated during the field activities included disposable sampling equipment, and personal protective equipment (PPE). No decon water was generated due to freezing conditions. Clean stainless steel spoons or disposable sampling equipment were used to collect all samples. Both PPE and sampling equipment were generated in small quantities, and were disposed of as municipal solid waste. This included nitrile gloves and Ziploc bags.

5.0 RESULTS

A total of 37 analytical soil samples (including four duplicates) were collected from the project site during this event. The analytical sample locations are shown on Figures 3, 4 and 5 and Tables 3, 4, and 5 have summaries of all the laboratory sample results. The tables include all detections and any analysis where the reportable limit was above the cleanup level. The three laboratory reports with all the results are provided in Appendix B.

5.1 Site Subsurface Conditions

Soil conditions during the excavations were as follows. The excavated soils were mainly a pit run brown gravel fill. The entire area around The Hub was built on fill brought in from off site.

The groundwater in the general area was shallow according to the owner. They have a shallow non-potable water well that is located next to the store building. (see Figure 4) The water is used only for the toilets and is such poor quality with iron and odor issues that the it is filtered and treated before use. According to the owner, the water from the well is not connected to any other water piping in the building. The morning after the UST removal the groundwater was observed at 12' bgs in the pit. The evening before when the samples were collected the water closer to 12.5' bgs.

5.2 Soil Sampling Results

Excluding the areas identified as needing a release investigation, the field headspace readings ranged from 0 parts per million by volume (ppmv) to 650 ppmv. The highest reading came from under the USTs

Thirty seven soil laboratory samples were analyzed from the project site. Eleven (11) samples were taken from the tank excavation; two (2) samples were taken from fuel and vent line locations; four (4) samples were taken from dispensers; six (6) samples were from the probably clean stockpiles; ten (10) samples were related to the release investigation, and four (4) field duplicate samples were collected. Of the twenty seven samples not related to the release investigation, three had analytes above ADEC Cleanup Levels. One sample (S-2 from the small stockpile south of the dispenser area) had DRO = 671 mg/kg. This stockpiled soil was added to the contaminated soil stockpile during the second visit to the site on October 21. Two samples from the soil water interface under Tank 2 had levels of VOCs that were above the cleanup level. Relative to their cleanup levels the highest were at location T2-4 in the following relative order 1,2,4-Trimethylbenzene = 4.45 mg/kg, Xylene = 8.23 mg/kg, Ethylbenzene = 0.371 mg/kg, and Naphthalene = 0.152 mg/kg.

The results of the six samples taken for the release investigation at the first fuel island revealed that low level contamination remained at this site at least in one location with DRO = 1450 mg/kg and Naphthalene = 0.0691 mg/kg in sample C32.

Of the four samples from the middle fuel island release investigation all samples detected contamination present: three had levels above the cleanup level with the two samples from the bottom of the test pits having significant contamination remaining. The worst was sample C-SN in the silty sand above the peat, with benzene = 52.7 mg/kg plus several other VOCs that were also well above the cleanup level.

The ADEC Laboratory Data Review Checklists were completed for the analytical results. The completed checklists are included in Appendix B with each laboratory report. No quality control failures that would impact data usability were noted.

5.3 Deviations

Deviations were made from the samples required by regulation to confirm a clean closure, when evidence of releases at the site was found. When contamination was discovered during the removal of the dispensers, the decision was made to not collect a sample from under each dispenser as required by 18 AAC 78.090. Instead the available sample containers were saved for the release investigation of the impacted areas.

When minor areas of contamination were noted around the fill ports and the UST sumps, the suspect soils were segregated out and placed in the contaminated soil stockpile. The material was cleaned up before reaching the limits of the UST excavation so a separate release investigation was not performed at each specific location of these minor releases.

The contaminated soil stockpile was not screened and sampled due to running out of sample bottles and the limited time on site. The sample bottles had been used to conduct the initial release investigation.

6.0 DISCUSSION

Soil samples collected on the site indicate that extensive contamination is still present in the dispenser area of the project site. The peat and silty soils under the fill brought in for the dispenser area had significant odor, high PID results and high analytical results. Due to the high levels left in place an Interim Soil Removal Plan was developed and approved by ADEC to remove the soils with the highest levels of contamination. This plan was implemented on October 21-21, 2017. The report covering that effort is being submitted separately.

While similar native soils (peat and silt) were not encountered at the location for the tanks, some suspect soils were also encountered under the tanks based on elevated headspace sample readings. Low levels of contaminants were detected in samples under all three of the tanks. Two analytical soil samples around Tank 2 contained concentrations of analytes greater ADEC migration to ground water cleanup levels (See Table 3 and Figure 4). With the contamination present at the soil-water interface, it is likely the ground water also has low levels of contamination present. A ground water monitoring well would need to be installed at this location to confirm the actual levels of contamination present, if any, in the ground water.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the data collected, contamination remains on site. Further investigation is necessary in order to delineate the extent of the contamination spread. It also appears groundwater has likely been impacted by the releases, although further sampling is necessary to confirm that is the case.

The tanks, piping, dispensers and other appurtenances associated with the USTs were all removed from the ground and disposed. The UST system should be considered closed except for addressing the contaminated soils remaining.

If you have any questions or wish to discuss this project further please do not hesitate to contact the undersigned at (907) 272-9336.

Environmental Management, Inc.

 Digitally signed by Larry A Helgeson
Date: 2018.01.17 07:47:55 -09'00'

Larry Helgeson, P.E.
Principal Investigator

Table 1 Headspace Readings for The Hub (Figure 3)

Sample ID	Date Taken	Depth (ft)	Headspace (ppmv)	Notes	Sample ID Chain of Custody
1	10/9/2017	3.5 BGS	120	(1) Removed	FL-01, FL-02
2	10/9/2017	4 BGS	101	(1) Removed	
3	10/9/2017	4 BGS	332	(1) Removed	
4	10/9/2017	4 BGS	245	(1) Removed	
5	10/9/2017	4 BGS	6	(1) Removed	
6	10/9/2017	4 BGS	1.2	Dispenser	
7	10/9/2017	4 BGS	1.5	Fuel Lines	
8	10/9/2017	4 BGS	32.2	Fuel Lines	
9	10/9/2017	4 BGS	-10	Fuel Lines	
10	10/9/2017	4 BGS	1.3	Fuel Lines	
11	10/9/2017	4 BGS	0.9	Fuel Lines	
12	10/9/2017	4 BGS	0.9	Fuel Lines	
13	10/9/2017	3.5 BGS	1	Fuel Lines	
14	10/9/2017	4 BGS	1.1	Dispenser	
15	10/9/2017	4 BGS	1.3	Dispenser	
16	10/9/2017	4 BGS	280	(1) Removed	
17	10/9/2017	4 BGS	5	Dispenser	17
18	10/9/2017	4 BGS	51.8	Dispenser	18
19	10/9/2017	4 BGS	343	(1) Removed	DS-03
DSE	10/9/2017	4 BGS	1.5	Dispenser	
DSW	10/9/2017	4 BGS	1.9	Dispenser	
20	10/9/2017	3 BGS	0.6	Fuel Lines	
21	10/9/2017	3 BGS	0.5	Fuel Lines	
22	10/9/2017	3 BGS	0.3	Fuel Lines	
23	10/9/2017	3 BGS	0.3	Fuel Lines	
24	10/9/2017	3 BGS	0.3	Fuel Lines	
25	10/9/2017	3 BGS	0.2	Fuel Lines	
C1	10/9/2017	5 BGS	64.1	(2)	
C2	10/9/2017	4.5 BGS	8.1	(2)	
C3	10/9/2017	4.5 BGS	0.7	(2)	
C4	10/9/2017	4.5 BGS	65.2	(1), (2) Removed	
C5	10/9/2017	4.5 BGS	53.3	(1), (2) Removed	
C6	10/9/2017	3.5 BGS	2.2	(2)	
C7	10/9/2017	3 BGS	0.6	(2)	
C8	10/9/2017	3 BGS	0.6	(2)	
C9	10/9/2017	2.5 BGS	0.3	(2)	
C10	10/9/2017	2 BGS	146.4	(2)	
C11	10/9/2017	2.5 BGS	225.3	(1), (2) Removed	
C11B	10/10/2017	6.5 BGS	911.1	(1), (2) Removed	
C11-Test 1	10/10/2017	7 BGS	701	Gravel/Sand	C1
C11-Test 2	10/10/2017	7.5 BGS	604	Sand/Tundra	
C11-Test 3	10/10/2017	8.5 BGS	704	Bottom	
C12	10/9/2017	2.5 BGS	5.9	(2)	
C13	10/9/2017	3 BGS	1.4	(2)	
C1B	10/9/2017	5.5 BGS	59.1	(2)	
C21	10/9/2017	4 BGS	0.8	(3)	
C22	10/9/2017	4 BGS	91.1	(3)	
C22B	10/9/2017	4.5 BGS	3.4	(3)	
C23	10/9/2017	4.5 BGS	1.2	(3)	
C24	10/9/2017	4.5 BGS	2	(3)	
C25	10/9/2017	4.5 BGS	0.4	(3)	
C26	10/9/2017	4 BGS	206.2	(3)	
C26B	10/9/2017	4.5 BGS	278	(3)	
C26C	10/10/2017	6 BGS	368.9	(4)	
C27	10/9/2017	3.5 BGS	9.4	(3)	
C28	10/9/2017	3.5 BGS	4.6	(3)	C27
C29	10/9/2017	3.5 BGS	0.8	(3)	
C30	10/9/2017	3 BGS	0.6	(3)	
C31	10/9/2017	2.5 BGS	0.7	(3)	

Notes on last page

Table 1 Headspace Readings for The Hub (Figure 3)

Sample ID	Date Taken	Depth (ft)	Headspace (ppmv)	Notes	Sample ID Chain of Custody
C32	10/9/2017	2.5 BGS	13.9	(3)	C32
C33	10/9/2017	2.5 BGS	0.7	(3)	C33
C34	10/9/2017	2.5 BGS	0.5	(3)	
C35	10/9/2017	2.5 BGS	0.4	(3)	
C36	10/9/2017	3 BGS	1.7	(3)	C36
C41	10/9/2017	5 BGS	13	(2)	
C42	10/9/2017	5 BGS	556.1	(1), (2) Removed	
C43	10/9/2017	2 BGS	1	(2)	
C44	10/9/2017	2.5 BGS	20.9	(1), (2) Removed	
C45	10/9/2017	3 BGS	4.1	(1), (2) Removed	
C46	10/9/2017	5 BGS	56	(2)	
C47	10/9/2017	5 BGS	0.6	(2)	
C48	10/9/2017	5 BGS	785	(2)	
C49	10/9/2017	5 BGS	1.5	(2)	
C4B	10/9/2017	5.5 BGS	27.8	(2)	
C50	10/9/2017	3.5 BGS	50.6	(1), (2) Removed	
C51	10/9/2017	3 BGS	116	(1), (2) Removed	
C52	10/9/2017	3 BGS	6.7	(1), (2) Removed	
C53	10/9/2017	3.5 BGS	1.8	(2)	
C54	10/9/2017	3.5 BGS	2.4	(2)	
C55	10/9/2017	4 BGS	2.9	(2)	
C56	10/9/2017	2.5 BGS	4.3	(2)	
C57	10/9/2017	4 BGS	4.7	(2)	
C58	10/9/2017	4 BGS	4.7	(2)	
C59	10/9/2017	4 BGS	14.1	(2)	
C5B	10/9/2017	5.5 BGS	19.8	(1), (2) Removed	
C60	10/10/2017	5.5 BGS	1054	(1), (2) Removed	
C61	10/10/2017	4 BGS	912	(1), (2) Removed	
C62	10/10/2017	2 BGS	135	(1), (2) Removed	
C63	10/10/2017	4 BGS	1249	(1), (2) Removed	
C64	10/10/2017	3 BGS	358.1	(1), (2) Removed	
C65	10/10/2017	4 BGS	260.2	(1), (2) Removed	
C66	10/10/2017	3 BGS	264.5	(1), (2) Removed	
C67	10/10/2017	4 BGS	150	(1), (2) Removed	
C68	10/10/2017	3 BGS	1305	(1), (2) Removed	
C69	10/10/2017	4.5 BGS	1309	(1), (2) Removed	
B-NW-Test	10/10/2017	5.5 BGS	925	(2) Lighter Slit	
S-Test 1	10/10/2017	4 BGS	81.3	(2) Sidewall	C-S1
S-Test 2	10/10/2017	4 BGS	353.3	(2) Sidewall	
Side3-Test	10/10/2017	4 BGS	335	(1), (2) Removed	
Side4-NE Test	10/10/2017	4 BGS	1061	(2) side	
Sidetest 5 NE	10/10/2017	4 BGS	91.9	(2) side	
S1R	10/11/2017	3 BGS	32.5	(2)	
S2R	10/11/2017	2.5 BGS	197.5	(2)	
SN	10/11/2017	10 BGS	1925	Test Pit - North bottom	C-SN
BC	10/11/2017	9.5 BGS	908	Gray Silt, test pit bottom	
BSE	10/11/2017	9.5 BGS	633	Gray Silt, test pit bottom	
BSW	10/11/2017	9.5 BGS	984	Gray Silt, test pit bottom	C-BSW

Notes:

(1) = Soil was removed during release investigation and placed in contaminated stock pile

(2) = Release investigation at Middle Fuel Island

(3) = Release investigation at First Fuel Island

BGS = Below Ground Surface

AGS = Above Ground Surface

ppmv = parts per million by volume

ft =feet

Table 2 Headspace Readings for The Hub (Figures 4 & 5)

Sample ID	Date Taken	Depth (ft)	Headspace (ppmv)	Notes	Sample ID Chain of Custody
Fuel lines					
26	10/9/2017	3 BGS	0.2	fuel lines	FL-46
27	10/9/2017	3 BGS	0.4	fuel lines	
28	10/9/2017	3 BGS	0.4	fuel lines	
29	10/9/2017	3 BGS	0.3	fuel lines	
30	10/9/2017	3 BGS	0.3	fuel lines	
31	10/9/2017	3 BGS	0.2	fuel lines	
32	10/9/2017	4 BGS	0.3	fuel lines	
33	10/9/2017	4 BGS	0.2	fuel lines	
34	10/9/2017	4 BGS	0.2	fuel lines	
35	10/9/2017	4 BGS	0.2	fuel lines	
F36	10/10/2017	4 BGS	0.2	fuel lines	
F37	10/10/2017	4 BGS	0.1	fuel lines	
F38E	10/10/2017	4 BGS	0.1	fuel lines	
F39W	10/10/2017	4 BGS	0	fuel lines	
F40E	10/10/2017	4 BGS	0	fuel lines	
F41	10/10/2017	4 BGS	0.3	fuel lines	
F42	10/10/2017	4 BGS	0.3	fuel lines	
F43	10/10/2017	5.5 BGS	0.8	fuel lines	
F44	10/10/2017	5.5 BGS	8.1	fuel lines	
F45	10/10/2017	5.5 BGS	2.5	fuel lines	
F46	10/10/2017	5.5 BGS	20.7	fuel lines	
F47	10/10/2017	5.5 BGS	0.7	fuel lines	
F48	10/10/2017	5.5 BGS	0.4	fuel lines	
F49	10/10/2017	5.5 BGS	0.7	fuel lines	
F50	10/10/2017	5.5 BGS	0.7	fuel lines	
Fill Ports and Vent Lines					
F1	10/10/2017	0.5 BGS	14.1	East tank diesel	
F2	10/10/2017	0.5 BGS	0.1	Mid reg gasoline fill	
F3	10/10/2017	3 BGS	0.5	Mid fill between 2" pipes	
F4	10/10/2017	2 BGS	0.3	West tank Fill	
F5	10/10/2017	3 BGS	6.5	East Tank Fill	
V1-SW	10/10/2017	3 BGS	1	Under vent lines	
V2	10/10/2017	3 BGS	0.8	Under vent lines	
V3-NW	10/10/2017	3 BGS	1	Under vent lines	
VENT	10/11/2017	2 BGS	0.7	Beneath vent tower	
UST					
T1B 1	10/10/2017	12 BGS	0.4	(3)	T1-3, T1-4
T1B 2	10/10/2017	12 BGS	1.5	(3)	
T1B 3	10/10/2017	12 BGS	385	(3)	
T1B 4	10/10/2017	12 BGS	0.6	(3)	T1-5
T1B 5	10/10/2017	12 BGS	2.1	(3)	
T1B 6	10/10/2017	12 BGS	0.8	(3)	
T1B 7	10/10/2017	12 BGS	0.6	(3)	T1-9
T1B 8	10/10/2017	12 BGS	0.5	(3)	
T1B 9	10/10/2017	12 BGS	3.7	(3)	
T1B 10	10/10/2017	12 BGS	0.3	(3)	T2-4
T2B 1	10/10/2017	12 BGS	0.9	(3)	
T2B 2	10/10/2017	12 BGS	1	(3)	
T2B 3	10/10/2017	12 BGS	2.6	(3)	T2-6
T2B 4	10/10/2017	12 BGS	82.2	(3)	
T2B 5	10/10/2017	12 BGS	17.1	(3)(5)	
T2B 6	10/10/2017	12 BGS	19.5	(3)	T2-8
T2B 7	10/10/2017	12 BGS	1.2	(3)	
T2B 8	10/10/2017	12 BGS	56.2	(3)	
T2B 9	10/10/2017	12 BGS	1.4	(3)	T2-10
T2B 10	10/10/2017	12 BGS	3	(3)	
T3B 1	10/10/2017	12 BGS	0.2	(3)	
T3B 2	10/10/2017	12 BGS	0.4	(3)	

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Table 2 Headspace Readings for The Hub (Figures 4 & 5)

Sample ID	Date Taken	Depth (ft)	Headspace (ppmv)	Notes	Sample ID Chain of Custody	
T3B 3	10/10/2017	12 BGS	0.5	(3)	T3-4, T3-3 T3-6 T3-7 T3-9	
T3B 4	10/10/2017	12 BGS	650	(3)		
T3B 5	10/10/2017	12 BGS	0.4	(3)		
T3B 6	10/10/2017	12 BGS	2.3	(3)		
T3B 7	10/10/2017	12 BGS	10.4	(3)		
T3B 8	10/10/2017	12 BGS	0.6	(3)		
T3B 9	10/10/2017	12 BGS	18.4	(3)		
T3B 10	10/10/2017	12 BGS	2.1	(3)		
E-01	10/10/2017	3 BGS	0.1	(4)	E-02	
E-02	10/10/2017	3 BGS	9.3	(4)		
E-03	10/10/2017	10 BGS	0.1	(4)		
E-04	10/10/2017	6 BGS	0.1	(4)		
E-05	10/10/2017	10 BGS	7.4	(4)		
E-06	10/10/2017	6 BGS	0.2	(4)		
E-07	10/10/2017	10 BGS	0.3	(4)		
E-08	10/10/2017	6 BGS	0.3	(4)		
N-01	10/10/2017	10 BGS	0.2	(4)		
N-02	10/10/2017	6 BGS	0.7	(4)		
N-03	10/10/2017	10 BGS	0	(4)		
N-04	10/10/2017	6 BGS	0.1	(4)		
N-05	10/10/2017	10 BGS	0	(4)		
N-06	10/10/2017	6 BGS	0	(4)		
N-07	10/10/2017	10 BGS	0.1	(4)		
N-08	10/10/2017	6 BGS	0	(4)		
S-01	10/10/2017	10 BGS	0.1	(4)		
S-02	10/10/2017	6 BGS	0.2	(4)		
S-03	10/10/2017	10 BGS	0.3	(4)		
S-04	10/10/2017	6 BGS	0.1	(4)		
S-05	10/10/2017	10 BGS	0	(4)		
S-06	10/10/2017	6 BGS	0.1	(4)		
S-07	10/10/2017	10 BGS	0.1	(4)		
S-08	10/10/2017	6 BGS	1.1	(4)		
W-01	10/10/2017	10 BGS	0	(4)		
W-02	10/10/2017	6 BGS	0	(4)		
W-03	10/10/2017	10 BGS	0.1	(4)		
W-04	10/10/2017	6 BGS	0	(4)		
W-05	10/10/2017	10 BGS	0.1	(4)		
W-06	10/10/2017	6 BGS	0	(4)		
W-07	10/10/2017	10 BGS	0	(4)		
W-08	10/10/2017	6 BGS	0.1	(4)		
"Probably Clean" Stockpiles						
N1	10/11/2017	4 BGS	0.9	(2)		
N2	10/11/2017	3 BGS	5.9	(2)		
N3	10/11/2017	1 BGS	0.6	(2)		
P01	10/11/2017	2 AGS	25.7	(1)(6)		
P02	10/11/2017	2 AGS	13.2	(1)(6)		
P03	10/11/2017	2.5 AGS	7.1	(1)		
P04	10/11/2017	1 AGS	12.9	(1)(6)		
P05	10/11/2017	2 AGS	1.4	(1)		
P06	10/11/2017	5 AGS	1.7	(1)		
P07	10/11/2017	4 AGS	2.3	(1)		
P08	10/11/2017	2 AGS	0.9	(1)		
P09	10/11/2017	5 AGS	2.7	(1)		
P10	10/11/2017	3.5 AGS	2.3	(1)		
P11	10/11/2017	2 AGS	3	(1)		
P12	10/11/2017	5.5 AGS	4.6	(1)		
P13	10/11/2017	4 AGS	2.1	(1)		
P14	10/11/2017	4 AGS	2.1	(1)		
P15	10/11/2017	7 AGS	2.3	(1)		

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Table 2 Headspace Readings for The Hub (Figures 4 & 5)

Sample ID	Date Taken	Depth (ft)	Headspace (ppmv)	Notes	Sample ID Chain of Custody
P16	10/11/2017	2 AGS	1.9	(1)	P25
P17	10/11/2017	2 AGS	1.2	(1)	
P18	10/11/2017	7 AGS	1.4	(1)	
P19	10/11/2017	4 AGS	1.7	(1)	
P20	10/11/2017	4 AGS	0.7	(1)	
P21	10/11/2017	7 AGS	2.9	(1)	
P22	10/11/2017	2 AGS	6.5	(1)	
P23	10/11/2017	2 AGS	1.3	(1)	
P24	10/11/2017	6 AGS	0.5	(1)	
P25	10/11/2017	4 AGS	36.9	(1)	
P26	10/11/2017	4 AGS	2.3	(1)	P33
P27	10/11/2017	6 AGS	11.5	(1)	
P28	10/11/2017	2 AGS	17.6	(1)(5)	
P29	10/11/2017	2 AGS	2.1	(1)	
P30	10/11/2017	7 AGS	1.6	(1)	
P31	10/11/2017	4 AGS	1.1	(1)	
P32	10/11/2017	4 AGS	2.6	(1)	
P33	10/11/2017	7 AGS	12.6	(1)	
P34	10/11/2017	2 AGS	12	(1)	
P35	10/11/2017	2 AGS	2	(1)	
P36	10/11/2017	7 AGS	0.8	(1)	P39
P37	10/11/2017	4 AGS	12	(1)	
P38	10/11/2017	4 AGS	3.7	(1)	
P39	10/11/2017	7 AGS	32.6	(1)	
P40	10/11/2017	2 AGS	3.2	(1)	
P41	10/11/2017	5 AGS	16.7	(1)	
P42	10/11/2017	8 AGS	11.2	(1)	
P43	10/11/2017	8 AGS	2.4	(1)	
P44	10/11/2017	8 AGS	2.1	(1)	
P45	10/11/2017	8 AGS	0.9	(1)	
P46	10/11/2017	8 AGS	62.7	(1)	P46
S1	10/11/2017	1 AGS	67.1	South of dispenser area	S1, S2
S1	10/10/2017	3 AGS	20.2	Trench stock pile (7)	
S2	10/10/2017	2 AGS	28.2	Trench stock pile (7)	
S3	10/10/2017	1 AGS	140.5	Trench stock pile (7)	
S4	10/10/2017	3 AGS	0.4	Trench stock pile	
S5	10/10/2017	2 AGS	0.4	Trench stock pile	
S6	10/10/2017	1 AGS	0.2	Trench stock pile	
S7	10/10/2017	2 AGS	0.2	Trench stock pile	
S8	10/10/2017	3 AGS	0.1	Trench stock pile	
S9	10/10/2017	1 AGS	0.2	Trench stock pile	
S10	10/10/2017	3 AGS	0.2	Trench stock pile	
S11	10/10/2017	1 AGS	3.6	Trench stock pile	
S12	10/10/2017	2 AGS	1.1	Trench stock pile	
S13	10/10/2017	3 AGS	0.1	Trench stock pile	
S14	10/10/2017	1 AGS	0.2	Trench stock pile	
S15	10/10/2017	2 AGS	0.1	Trench stock pile	
S16	10/10/2017	3 AGS	2.3	Trench stock pile	
S17	10/10/2017	1 AGS	0.2	Trench stock pile	
S18	10/10/2017	2 AGS	0.1	Trench stock pile	
S19	10/10/2017	3 AGS	0.1	Trench stock pile	
S20	10/10/2017	1 AGS	0	Trench stock pile	
W1	10/11/2017	2 BGS	0.8	(2)	
W2	10/11/2017	2 BGS	1	(2)	

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Table 2 Headspace Readings for The Hub (Figures 4 & 5)

Notes:

- (1) = Large stockpile from primary UST excavation
- (2) = Extra stockpiles created during UST excavation
- (3) = Figure 5; samples were dug down to just above waterline.
- (4) = Figure 5 for sample location
- (5) = Alternate analytical sample location selected due to the proximity of other analytical samples.
- (6) =Field screening result was missed when selection was made for analytical sample locations.
- (7) =Soil removed and placed in contaminated stockpile.
- BGS = below ground surface
- AGS = above ground surface
- ppmv = parts per million by volume
- ft = feet

Table 3 UST Closure Confirmation Tank Sample Results Summary (Tank)

Client Sample Id:			E-02	T1-3	~T1-4	T1-5	T1-9	T2-10	T2-4	T2-6	T2-8	T3-4	~T3-3	T3-6	T3-7	T3-9
Date Sampled:			10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17
Headspace (ppmv)			9.3	385	385	2.1	3.7	3	82.2	19.5	56.2	650	650	2.3	10.4	18.4
Depth (feet)			3 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs	12 bgs
Analyte	Unit	AL*														
Gasoline Range Organics	mg/Kg	300	1.21 U	1.98 U	2.22 U	1.79 U	1.62 U	1.61 U	28.7	4.85	1.63 U	1.57 U	1.50 U	1.88	1.73 U	1.41 U
Diesel Range Organics	mg/Kg	250	20.5 U	23.2 U	23.1 U	22.5 U	21.8 U	21.3 U	53.9	23.0 U	21.9 U	22.3 U	59.0	22.9 U	27.5	21.9 U
Benzene	ug/Kg	22	6.03 U	9.91 U	11.1 U	8.94 U	8.08 U	8.07 U	8.32 U	9.18 U	8.13 U	7.83 U	7.51 U	8.10 U	8.64 U	7.07 U
Ethylbenzene	ug/Kg	130	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	371	78.2	16.3 U	15.7 U	15.0 U	31.6	17.3 U	14.1 U
Toluene	ug/Kg	6700	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	595	207	23.1	15.7 U	15.0 U	61.9	17.3 U	14.1 U
Xylenes (total)	ug/Kg	1500	36.2 U	59.5 U	66.7 U	53.7 U	48.5 U	48.4 U	8,230	1,570	140	59.2	45.0 U	303	51.8 U	88.2
Other VOCs Detected																
1,2,4-Trimethylbenzene	ug/Kg	160	24.1 U	39.6 U	44.5 U	35.8 U	32.3 U	32.3 U	4,450	339	43.7	31.3 U	30.0 U	100	34.6 U	28.3 U
1,3,5-Trimethylbenzene	ug/Kg	1300	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	1,210	110	16.3 U	15.7 U	15.0 U	28.5	17.3 U	14.1 U
4-Isopropyltoluene	ug/Kg		12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	65.9	18.4 U	16.3 U	15.7 U	15.0 U	16.2 U	17.3 U	14.1 U
Isopropylbenzene (Cumene)	ug/Kg	5600	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	36.4	18.4 U	16.3 U	15.7 U	15.0 U	16.2 U	17.3 U	14.1 U
Naphthalene	ug/Kg	38	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	152	18.4 U	16.3 U	15.7 U	15.0 U	16.2 U	17.3 U	14.1 U
n-Propylbenzene	ug/Kg	9100	12.1 U	19.8 U	22.2 U	17.9 U	16.2 U	16.1 U	82.7	18.4 U	16.3 U	15.7 U	15.0 U	16.2 U	17.3 U	14.1 U
PAH Detected																
Benzo[a]pyrene	ug/Kg	270		75.0								27.6 U				
Benzo[b]Fluoranthene	ug/Kg	2700		85.6								27.6 U				
Benzo[g,h,i]perylene	ug/Kg	1.5E+07		81.0								27.6 U				
Chrysene	ug/Kg	82000		118								27.6 U				
Indeno[1,2,3-c,d] pyrene	ug/Kg	8800		81.3								27.6 U				

Notes: (See Table 5)

Table 4 UST Closure Confirmation Sample Results Summary (Non-Tank)

Client Sample Id:			17	18	DS-03	FL-01	~FL-02	FL-46	P25	P33	P39	P41	P46	S1	~S-2	TB2
Date Sampled:			10/9/17	10/9/17	10/9/17	10/9/17	10/9/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/10/17	10/11/17	10/11/17	10/6/17
Location:			Mid.Disp.	Mid. Disp.	E. Disp.	Fuel	Fuel	Fuel	Stk. P	Stk. P	Stk. P	Stk. P	Stk. P	Stk. P	Stk. P	
Headspace (ppmv)			5	51.8	1.9	32.2	32.2	20.7	36.9	12.6	32.6	16.7	62.7	67.1	67.1	
Depth (feet)			4 bgs	4 bgs	4 bgs	4 bgs	4 bgs	5.5 bgs	4 ags	7 ags	7 ags	5 ags	8 ags	1 ags	1 ags	
Analyte	Unit	AL*														
Gasoline Range Organics	mg/Kg	300	1.30 U	1.21 U	1.45 U	1.39 U	1.42 U	1.52 U	1.76 U	1.60 U	1.54 U	1.54 U	1.83 U	1.27 U	1.40 U	2.53 U
Diesel Range Organics	mg/Kg	250	20.3 U	20.5 U	20.5 U	20.3 U	20.2 U		20.6 U	20.7 U	20.6 U	20.8 U	20.8 U	20.5 U	671	
Benzene	ug/Kg	22	6.49 U	6.04 U	7.26 U	6.97 U	7.11 U	7.60 U	8.81 U	7.99 U	7.68 U	7.68 U	9.16 U	6.36 U	7.02 U	12.7 U
Ethylbenzene	ug/Kg	130	23.4	12.1 U	14.5 U	13.9 U	14.2 U	15.2 U	17.6 U	16.0 U	15.4 U	15.4 U	18.3 U	12.7 U	14.0 U	25.3 U
Toluene	ug/Kg	6700	40.6	12.1 U	14.5 U	13.9 U	14.2 U	35.0	27.8	16.0 U	15.4 U	15.4 U	18.3 U	12.7 U	14.0 U	25.3 U
Xylenes (total)	ug/Kg	1500	97.4	36.3 U	43.6 U	41.8 U	42.6 U	45.6 U	233	47.9 U	183	46.1 U	55.0 U	38.2 U	42.1 U	76.0 U
Other VOCs																
1,2,4-Trimethylbenzene	ug/Kg	160		24.2 U					84.4	31.9 U	66.4	30.7 U	56.2	25.5 U	28.1 U	50.6 U
1,3,5-Trimethylbenzene	ug/Kg	1300		12.1 U					30.5	16.0 U	19.2	15.4 U	18.5	12.7 U	14.0 U	25.3 U

Notes: (See Table 5)

Table 5 Initial Release Investigation Sample Results Summary

Client Sample Id:			C-S1	C-SN	CBSW	C1	C22	C26B	C27	C32	C33	C36	TB
Date Sampled:			10/11/17	10/11/17	10/11/17	10/11/17	10/9/17	10/9/17	10/9/17	10/9/17	10/9/17	10/9/17	10/11/17
Location:			Mid Disp	Mid. Disp.	Mid. Disp	Mid. Disp	W. Disp.	W. Disp	W. Disp.	W. Disp.	W. Disp.	W. Disp	
Headspace (ppmv)			5	51.8	984	59.1	91.1	278	9.4	13.9	0.7	1.7	
Depth (feet)			4 bgs	4 bgs	9.5 bgs	5.5 bgs	4 bgs	4.5 bgs	3.5 bgs	2.5 bgs	2.5 bgs	3 bgs	
Analyte	Unit	AL*											
Gasoline Range Organics	mg/Kg	300	3.21	4,630	14.7	1.38 U	1.54 U	1.63 U	1.55 U	2.30	1.32 U	1.49 U	2.54 U
Diesel Range Organics	mg/Kg	250	21.0 U	2,330	53.4	92.3	21.0 U	101	20.9 U	1,450	215	20.7 U	
Benzene	ug/Kg	22	118	52,700	8,820	6.92 U	7.70 U	12.2	7.75 U	6.54 U	6.62 U	7.45 U	12.7 U
Ethylbenzene	ug/Kg	130	71.9	137,000	211	13.8 U	15.4 U	16.3 U	15.5 U	13.1 U	13.2 U	14.9 U	25.4 U
Toluene	ug/Kg	6700	280	341,000	1,050	25.2	15.4 U	36.7	15.5 U	13.1 U	13.2 U	14.9 U	25.4 U
Xylenes (total)	ug/Kg	1500	441	656,000	677	100	46.2 U	137	46.5 U	39.3 U	39.7 U	44.7 U	76.2 U
Other VOCs													
1,2,4-Trimethylbenzene	ug/Kg	160	35.8	243,000	148	46.9	30.8 U	34.9	31.0 U	37.3	26.5 U	29.8 U	50.8 z
1,2-Dichloroethane	ug/Kg	5.5	6.17 U	53.0 U	25.2	5.53 U	6.16 U	6.53 U	6.20 U	5.23 U	5.30 U	5.96 U	10.2 U
1,3,5-Trimethylbenzene	ug/Kg	1300	24.7	67,500	37.0	16.9	15.4 U	35.6	15.5 U	36.0	13.2 U	14.9 U	25.4 U
Isopropylbenzene (Cumene)	ug/Kg	5600	15.4 U	17,500	27.1	13.8 U	15.4 U	16.3 U	15.5 U	13.1 U	13.2 U	14.9 U	25.4 U
Naphthalene	ug/Kg	38	15.4 U	27,300	52.8	13.8 U	15.4 U	32.5	15.5 U	69.1	13.2 U	14.9 U	25.4 U
sec-Butylbenzene	ug/Kg	42000	15.4 U	6,220	24.7 U	13.8 U	15.4 U	16.3 U	15.5 U	13.1 U	13.2 U	14.9 U	25.4 U
PAH Detected													
1-Methylnaphthalene	ug/Kg	410		9,650				131 U					
2-Methylnaphthalene	ug/Kg	1300		14,600				131 U					
Acenaphthene	ug/Kg	37000		204				131 U					
Fluorene	ug/Kg	36000		616				131 U					
Phenanthrene	ug/Kg	39000		778				131 U					
Metal Detected													
Lead	mg/Kg	400		9.81									

Notes:

3.21 = Detectable concentration reported in project sample**4,630** = Concentration above Action Level.U = Undected - Concentration is below listed LOQ, *Italics - (LOQ > AL) Concentration is below listed LOD*

AL* = Project Action Level is from 18 AAC 75, Table 1B "Migration to Ground Water".

mg/kg = milligrams per kilogram

ug/kg = micrograms per kilogram

bgs = below ground surface

ags = above ground surface

~ = Duplicate sample for the previous column. (~FL-02 is a duplicate of FL-01)

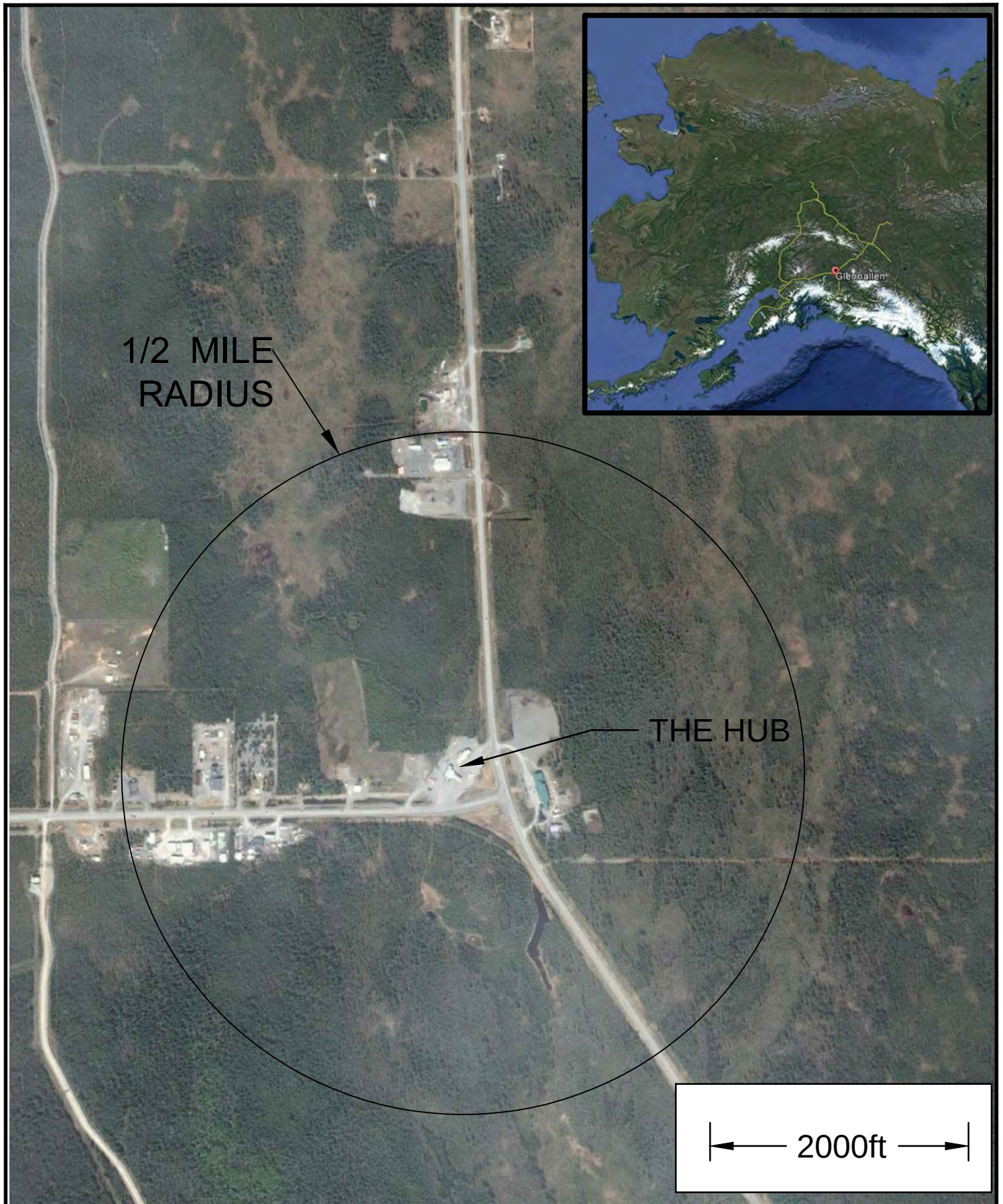
Mid. Disp. = Samples taken from middle Dispensors

W. Disp = Samples taken from the west dispensors (closest to the Hub building)

E. Disp = Samples taken from the east dispenser (diesel satalite)

Fuel = Samples taken from below fuel lines between dispensors and USTs

Stk. P = Samples taken from excavation stockpiles



SITE GENERAL
LOCATION

THE HUB
UST CLOSURE
GLENNALLEN, AK



PREPARED: TRM
DRAWN: TRM
REVIEWED: LAH
DATE:
11/22/17

FIGURE
1



SITE OVERVIEW
WITH WORK AREAS

THE HUB
UST CLOSURE
GLENNALLEN, AK



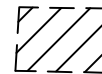
PREPARED: TRM
DRAWN: TRM
REVIEWED: LAH
DATE: 11/22/17

FIGURE

2

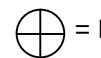
A FL-01, FL-02 = Analytical sample name, Duplicate name
PID: 32.2 = Headspace test (ppmv)

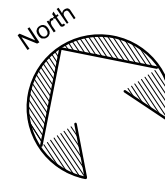
H C21 = Headspace sample name

 = Deeper trench

--- = Sidewall

=== = Fuel line

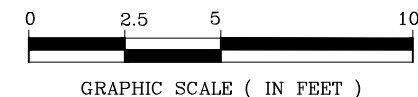
 = Pilings



THE HUB BUILDING

RIGHT OF WAY 150'

RIGHT OF WAY 100'



UST TANK CLOSURE
DISPENSER ANALYTICAL AND
HEADSPACE SAMPLE LOCATIONS

THE HUB
GLENNALLEN, ALASKA



PREPARED: TRM
DRAWN: TRM
REVIEWED: LAH
DATE: 11/27/2017

FIGURE
3

Ⓐ FL-46 = Analytical sample name
PID: 20.7 = Headspace test (ppmv)

Ⓗ 41 = Headspace sample name

▷ = FILL PORTS

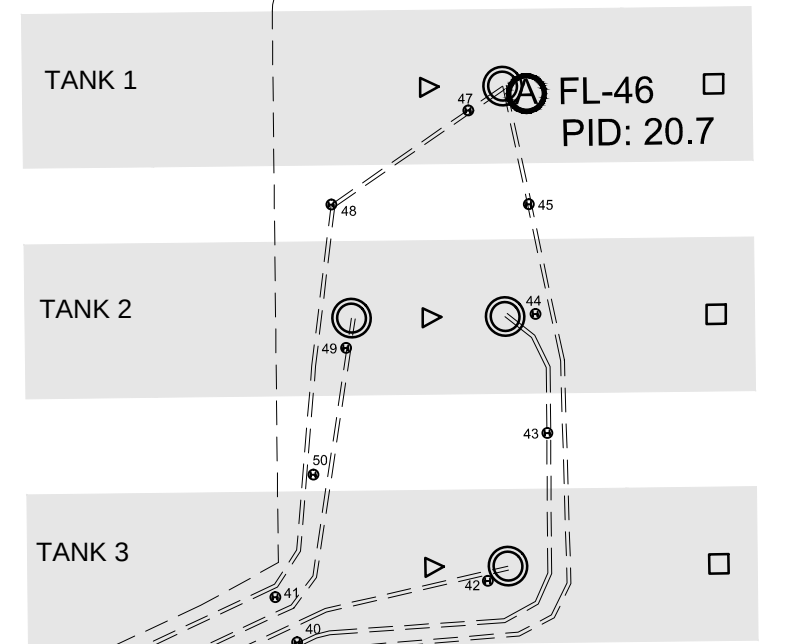
◯ = SUMPS

□ = LEAK DETECTION PORTS

----- = Top of initial UST and Trench excavations

===== = Fuel lines

INITIAL TANK EXCAVATION
(SEE FIGURE 5 FOR
FINAL EXCAVATION)



UST TANK CLOSURE
FUEL LINE EXCAVATION AND
SAMPLE AREA

THE HUB
GLENNALLEN, ALASKA



PREPARED: TRM
DRAWN: TRM
REVIEWED: LAH
DATE: 11/27/2017

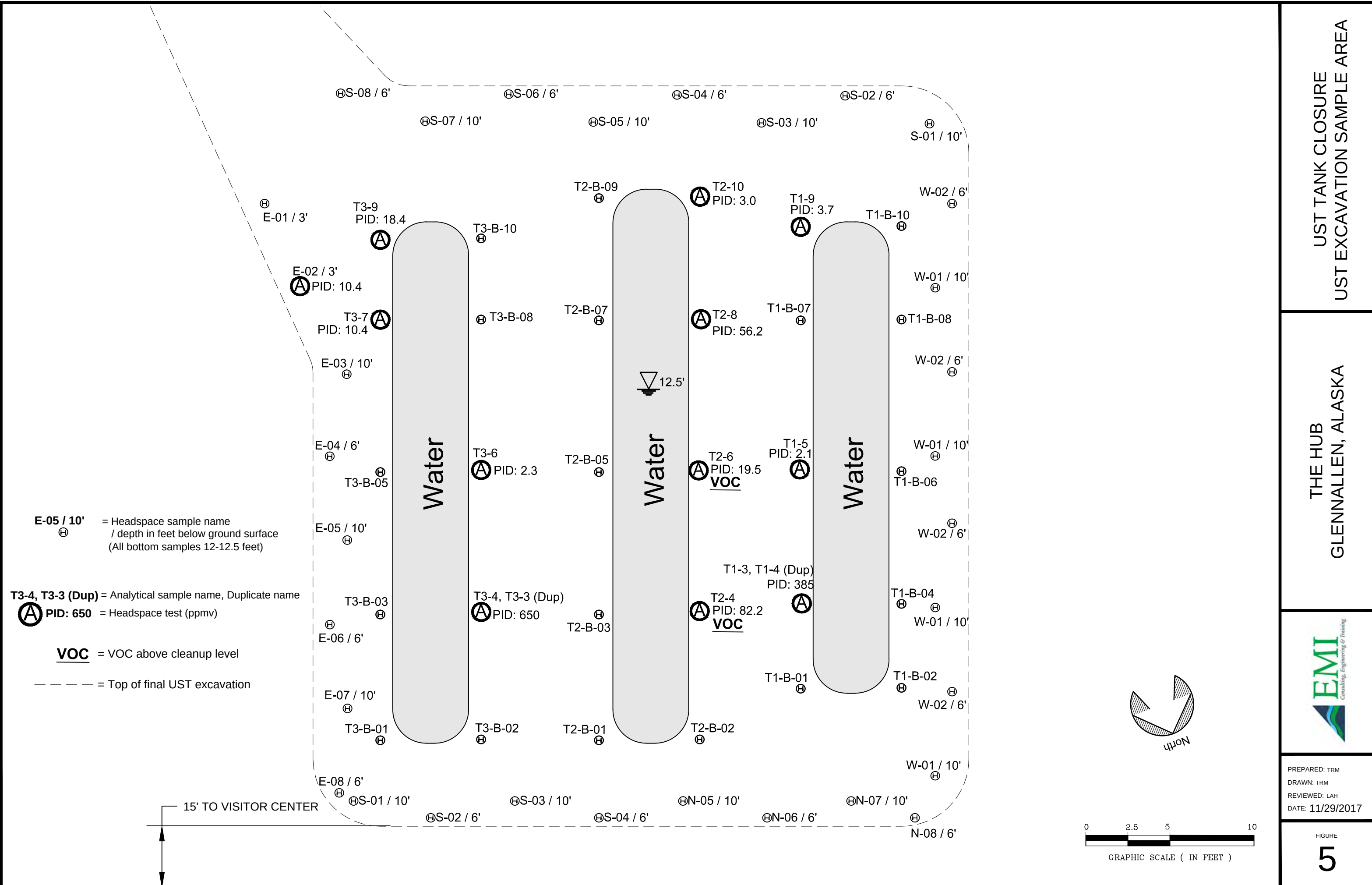
FIGURE
4

THE HUB GLENNALLEN, ALASKA



0 2.5 5 10

GRAPHIC SCALE (IN FEET)



Appendix A

Site Photolog

Photo Log



Photo 1: Dispenser area during slab removal; looking southwest. First Fuel Island next to the building and the middle fuel island. Satellite diesel dispenser to the left is not shown. (10/9/2017)



Photo 2: UST area after concrete slab removal; looking west. Shows sumps and fill ports of tanks #1, #2 and #3 going from top to bottom of the picture. (10/10/2017)

Photo Log



Photo 3 Start of excavation of first dispenser island. Fuel odor noticed at middle dispenser. (10/9/17)



Photo 4 Collecting samples under the dispenser sumps. Contamination was found under the middle dispenser. (10/9/17)



Photo 5 After removal of dispenser island 1 and fuel lines leading to the second dispenser. Looking South (10/9/17)



Photo 6 Fuel lines leading from dispenser island 1 leading to the UST location. Looking North (10/9/17)

Photo Log



Photo 7 UST #3 prepared for lifting out of the excavation. Looking southwest (10/10/17)



Photo 8 UST #3 being pulled out of the excavation pit. (10/10/17)



Photo 9 Groundwater seeping in under UST #3 as it is pulled out of the excavation pit. (10/10/17)

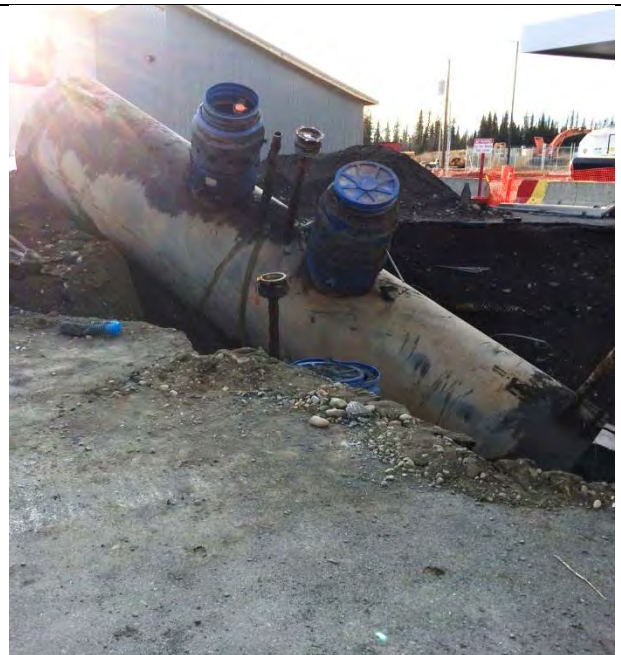


Photo 10 UST #2 being pulled out of the excavation pit. (10/10/17)

Photo Log



Photo 11 UST #3 being prepared to pull out of the excavation pit (10/10/17)



Photo 12 Note the higher water in the excavation bottom the next morning (10/11/17)



Photo 13 Initial excavation for release at first fuel island. Piles (arrow) were used to measure sample locations. (10/10/17)



Photo 14 Shows excavation for all three fuel islands. Piles were used to measure sample locations. (10/10/17)



Photo 15 Contaminated Soil Stockpile. Looking West (10/22/17)



Photo 16 Contaminated Soil Stockpile. Looking North (10/22/17)

Photo Log

	
Photo 17 Looking Northeast. Test pit dug northeast of middle fuel island. Note layer of peat on the sidewall. Arrows point to sample locations; top sample is at the bottom of the sidewall above the peat and sample C-BSW is below the peat. The red “X” is a previous sidewall field sample location with high PID results. (10/11/17)	

Appendix B

SGS Laboratory Reports of Analysis and ADEC Laboratory Data Review Checklists



Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)
206 E Fireweed Ln #201
Anchorage, AK 995032703
(907)272-9336

Report Number: **1177293**

Client Project: **Hub USTs 17873**

Dear Larry Helgeson,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Victoria Pennick
Project Manager
Victoria.Pennick@sgs.com

Date

Print Date: 10/19/2017 9:40:33AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**

SGS Project: **1177293**

Project Name/Site: **Hub USTs 17873**

Project Contact: **Larry Helgeson**

Refer to sample receipt form for information on sample condition.

C26B (1177293002) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution (5X). The sample was diluted due to the dark color of the extract.

C-SN (1177293009) PS

8260C - Surrogate recoveries for toluene-d8 (121%), and 4-bromofluorobenzene (157%) do not meet QC criteria due to matrix interference and 10X dilution.

AK101 - Surrogate recovery for 4-bromofluorobenzene (19000%) does not meet QC criteria due to matrix interference and 200X dilution.

1177367001MSD (1420907) MSD

8260C - MSD RPD for naphthalene (23.6%) does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/19/2017 9:40:34AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are **AK00971 DW Chemistry (Provisionally Certified as of 10/12/2017) & Microbiology (Provisionally Certified as of 9/21/2017) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103).** Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
C22	1177293001	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C26B	1177293002	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C27	1177293003	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C32	1177293004	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C33	1177293005	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C36	1177293006	10/09/2017	10/12/2017	Soil/Solid (dry weight)
18	1177293007	10/09/2017	10/12/2017	Soil/Solid (dry weight)
C1	1177293008	10/11/2017	10/12/2017	Soil/Solid (dry weight)
C-SN	1177293009	10/11/2017	10/12/2017	Soil/Solid (dry weight)
C-S1	1177293010	10/11/2017	10/12/2017	Soil/Solid (dry weight)
CBSW	1177293011	10/11/2017	10/12/2017	Soil/Solid (dry weight)
DS-03	1177293012	10/09/2017	10/12/2017	Soil/Solid (dry weight)
17	1177293013	10/09/2017	10/12/2017	Soil/Solid (dry weight)
FL-01	1177293014	10/09/2017	10/12/2017	Soil/Solid (dry weight)
S1	1177293015	10/11/2017	10/12/2017	Soil/Solid (dry weight)
TB	1177293016	10/11/2017	10/12/2017	Soil/Solid (dry weight)

Method

8270D SIM (PAH)

AK101

SW8021B

AK102

AK101

SM21 2540G

SW8260C

Method Description

8270 PAH SIM Semi-Volatiles GC/MS

AK101/8021 Combo. (S)

AK101/8021 Combo. (S)

Diesel Range Organics (S)

Gasoline Range Organics (S)

Percent Solids SM2540G

VOC 8260 (S) Field Extracted

Detectable Results Summary

Client Sample ID: **C26B**
 Lab Sample ID: 1177293002
Semivolatile Organic Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	101	mg/Kg
1,2,4-Trimethylbenzene	34.9	ug/Kg
1,3,5-Trimethylbenzene	35.6	ug/Kg
Benzene	12.2	ug/Kg
Naphthalene	32.5	ug/Kg
o-Xylene	71.0	ug/Kg
P & M -Xylene	66.3	ug/Kg
Toluene	36.7	ug/Kg

Client Sample ID: **C32**
 Lab Sample ID: 1177293004
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1450	mg/Kg
Gasoline Range Organics	2.30	mg/Kg
1,2,4-Trimethylbenzene	37.3	ug/Kg
1,3,5-Trimethylbenzene	36.0	ug/Kg
Naphthalene	69.1	ug/Kg

Client Sample ID: **C33**
 Lab Sample ID: 1177293005
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	215	mg/Kg

Client Sample ID: **C1**
 Lab Sample ID: 1177293008
Semivolatile Organic Fuels
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	92.3	mg/Kg
1,2,4-Trimethylbenzene	46.9	ug/Kg
1,3,5-Trimethylbenzene	16.9	ug/Kg
o-Xylene	37.6	ug/Kg
P & M -Xylene	62.4	ug/Kg
Toluene	25.2	ug/Kg

Detectable Results Summary

Client Sample ID: **C-SN**

Lab Sample ID: 1177293009

Polynuclear Aromatics GC/MS

Parameter	Result	Units
1-Methylnaphthalene	9650	ug/Kg
2-Methylnaphthalene	14600	ug/Kg
Acenaphthene	204	ug/Kg
Fluorene	616	ug/Kg
Naphthalene	27300	ug/Kg
Phenanthrene	778	ug/Kg
Diesel Range Organics	2330	mg/Kg
Gasoline Range Organics	4630	mg/Kg
1,2,4-Trimethylbenzene	243000	ug/Kg
1,3,5-Trimethylbenzene	67500	ug/Kg
Benzene	52700	ug/Kg
Ethylbenzene	137000	ug/Kg
Isopropylbenzene (Cumene)	17500	ug/Kg
Naphthalene	17900	ug/Kg
o-Xylene	203000	ug/Kg
P & M -Xylene	453000	ug/Kg
sec-Butylbenzene	6220	ug/Kg
Toluene	341000	ug/Kg

Client Sample ID: **C-S1**

Lab Sample ID: 1177293010

Volatile Fuels

Volatile GC/MS

Parameter	Result	Units
Gasoline Range Organics	3.21	mg/Kg
1,2,4-Trimethylbenzene	35.8	ug/Kg
1,3,5-Trimethylbenzene	24.7	ug/Kg
Benzene	118	ug/Kg
Ethylbenzene	71.9	ug/Kg
o-Xylene	166	ug/Kg
P & M -Xylene	275	ug/Kg
Toluene	280	ug/Kg

Client Sample ID: **CBSW**

Lab Sample ID: 1177293011

Semivolatile Organic Fuels

Volatile Fuels

Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	53.4	mg/Kg
Gasoline Range Organics	14.7	mg/Kg
1,2,4-Trimethylbenzene	148	ug/Kg
1,2-Dichloroethane	25.2	ug/Kg
1,3,5-Trimethylbenzene	37.0	ug/Kg
Benzene	8820	ug/Kg
Ethylbenzene	211	ug/Kg
Isopropylbenzene (Cumene)	27.1	ug/Kg
Naphthalene	52.8	ug/Kg
o-Xylene	192	ug/Kg
P & M -Xylene	485	ug/Kg
Toluene	1050	ug/Kg

Detectable Results Summary

Client Sample ID: **17**
 Lab Sample ID: 1177293013

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Ethylbenzene	23.4	ug/Kg
o-Xylene	29.1	ug/Kg
P & M -Xylene	68.3	ug/Kg
Toluene	40.6	ug/Kg

Print Date: 10/19/2017 9:40:39AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
 t 907.562.2343 f 907.561.5301 www.us.sgs.com

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Results of C22

Client Sample ID: **C22**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293001
Lab Project ID: 1177293

Collection Date: 10/09/17 10:18
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.0 U	21.0	6.50	mg/Kg	1		10/15/17 17:19
Surrogates							
5a Androstane (surr)	79.7	50-150		%	1		10/15/17 17:19

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 17:19
Container ID: 1177293001-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.026 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C22

Client Sample ID: **C22**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293001
Lab Project ID: 1177293

Collection Date: 10/09/17 10:18
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.54 U	1.54	0.462	mg/Kg	1		10/16/17 17:40
Surrogates							
4-Bromofluorobenzene (surr)	84.6	50-150		%	1		10/16/17 17:40

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 17:40
Container ID: 1177293001-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 10:18
Prep Initial Wt./Vol.: 101.223 g
Prep Extract Vol: 29.7297 mL

Print Date: 10/19/2017 9:40:40AM

Results of C22

Client Sample ID: **C22**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293001
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:18
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	30.8 U	30.8	9.24	ug/Kg	1		10/13/17 23:57
1,2-Dibromoethane	6.16 U	6.16	1.91	ug/Kg	1		10/13/17 23:57
1,2-Dichloroethane	6.16 U	6.16	1.91	ug/Kg	1		10/13/17 23:57
1,3,5-Trimethylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
Benzene	7.70 U	7.70	2.40	ug/Kg	1		10/13/17 23:57
Ethylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
Isopropylbenzene (Cumene)	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
Methyl-t-butyl ether	61.6 U	61.6	19.1	ug/Kg	1		10/13/17 23:57
Naphthalene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
n-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
o-Xylene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
P & M -Xylene	30.8 U	30.8	9.24	ug/Kg	1		10/13/17 23:57
sec-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
tert-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
Toluene	15.4 U	15.4	4.81	ug/Kg	1		10/13/17 23:57
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.2	71-136		%	1		10/13/17 23:57
4-Bromofluorobenzene (surr)	110	55-151		%	1		10/13/17 23:57
Toluene-d8 (surr)	100	85-116		%	1		10/13/17 23:57

Batch Information

Analytical Batch: VMS17322
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/13/17 23:57
 Container ID: 1177293001-B

Prep Batch: VXX31527
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 10:18
 Prep Initial Wt./Vol.: 101.223 g
 Prep Extract Vol: 29.7297 mL

Print Date: 10/19/2017 9:40:40AM

Results of C26B

Client Sample ID: **C26B**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293002
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:22
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.1
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1-Methylnaphthalene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
2-Methylnaphthalene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Acenaphthene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Acenaphthylene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Anthracene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Benzo(a)Anthracene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Benzo[a]pyrene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Benzo[b]Fluoranthene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Benzo[g,h,i]perylene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Benzo[k]fluoranthene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Chrysene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Dibenzo[a,h]anthracene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Fluoranthene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Fluorene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Indeno[1,2,3-c,d] pyrene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Naphthalene	105 U	105	31.4	ug/Kg	5		10/14/17 17:30
Phenanthrene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Pyrene	131 U	131	39.2	ug/Kg	5		10/14/17 17:30
Surrogates							
2-Methylnaphthalene-d10 (surr)	87.3	50-150		%	5		10/14/17 17:30
Fluoranthene-d10 (surr)	78.8	50-150		%	5		10/14/17 17:30

Batch Information

Analytical Batch: XMS10482
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 10/14/17 17:30
 Container ID: 1177293002-A

Prep Batch: XXX38653
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 10:12
 Prep Initial Wt./Vol.: 22.855 g
 Prep Extract Vol: 5 mL

Print Date: 10/19/2017 9:40:40AM



Results of C26B

Client Sample ID: **C26B**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293002
Lab Project ID: 1177293

Collection Date: 10/09/17 10:22
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.1
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	101	21.1	6.55	mg/Kg	1		10/15/17 17:29
Surrogates							
5a Androstane (surr)	69.1	50-150		%	1		10/15/17 17:29

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 17:29
Container ID: 1177293002-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.171 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of **C26B**

Client Sample ID: **C26B**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293002
Lab Project ID: 1177293

Collection Date: 10/09/17 10:22
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.1
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.63 U	1.63	0.490	mg/Kg	1		10/16/17 17:59
Surrogates							
4-Bromofluorobenzene (surr)	99.8	50-150		%	1		10/16/17 17:59

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 17:59
Container ID: 1177293002-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 10:22
Prep Initial Wt./Vol.: 100.878 g
Prep Extract Vol: 30.9834 mL

Print Date: 10/19/2017 9:40:40AM

**Results of C26B**

Client Sample ID: **C26B**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293002
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:22
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.1
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	34.9	32.7	9.80	ug/Kg	1		10/14/17 00:15
1,2-Dibromoethane	6.53 U	6.53	2.02	ug/Kg	1		10/14/17 00:15
1,2-Dichloroethane	6.53 U	6.53	2.02	ug/Kg	1		10/14/17 00:15
1,3,5-Trimethylbenzene	35.6	16.3	5.09	ug/Kg	1		10/14/17 00:15
Benzene	12.2	8.16	2.55	ug/Kg	1		10/14/17 00:15
Ethylbenzene	16.3 U	16.3	5.09	ug/Kg	1		10/14/17 00:15
Isopropylbenzene (Cumene)	16.3 U	16.3	5.09	ug/Kg	1		10/14/17 00:15
Methyl-t-butyl ether	65.3 U	65.3	20.2	ug/Kg	1		10/14/17 00:15
Naphthalene	32.5	16.3	5.09	ug/Kg	1		10/14/17 00:15
n-Butylbenzene	16.3 U	16.3	5.09	ug/Kg	1		10/14/17 00:15
o-Xylene	71.0	16.3	5.09	ug/Kg	1		10/14/17 00:15
P & M -Xylene	66.3	32.7	9.80	ug/Kg	1		10/14/17 00:15
sec-Butylbenzene	16.3 U	16.3	5.09	ug/Kg	1		10/14/17 00:15
tert-Butylbenzene	16.3 U	16.3	5.09	ug/Kg	1		10/14/17 00:15
Toluene	36.7	16.3	5.09	ug/Kg	1		10/14/17 00:15

Surrogates

1,2-Dichloroethane-D4 (surr)	95.7	71-136	%	1		10/14/17 00:15
4-Bromofluorobenzene (surr)	115	55-151	%	1		10/14/17 00:15
Toluene-d8 (surr)	99.9	85-116	%	1		10/14/17 00:15

Batch Information

Analytical Batch: VMS17322
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 00:15
 Container ID: 1177293002-B

Prep Batch: VXX31527
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 10:22
 Prep Initial Wt./Vol.: 100.878 g
 Prep Extract Vol: 30.9834 mL

Print Date: 10/19/2017 9:40:40AM

Results of C27

Client Sample ID: **C27**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293003
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:09
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.9 U	20.9	6.47	mg/Kg	1		10/15/17 17:40
Surrogates							
5a Androstane (surr)	81.6	50-150		%	1		10/15/17 17:40

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 17:40
 Container ID: 1177293003-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.483 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C27

Client Sample ID: **C27**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293003
Lab Project ID: 1177293

Collection Date: 10/09/17 10:09
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.3
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.55 U	1.55	0.465	mg/Kg	1		10/16/17 18:18
Surrogates							
4-Bromofluorobenzene (surr)	84.5	50-150		%	1		10/16/17 18:18

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 18:18
Container ID: 1177293003-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 10:09
Prep Initial Wt./Vol.: 106.44 g
Prep Extract Vol: 31.1105 mL

Print Date: 10/19/2017 9:40:40AM

Results of C27

Client Sample ID: **C27**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293003
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:09
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	31.0 U	31.0	9.30	ug/Kg	1		10/14/17 15:17
1,2-Dibromoethane	6.20 U	6.20	1.92	ug/Kg	1		10/14/17 15:17
1,2-Dichloroethane	6.20 U	6.20	1.92	ug/Kg	1		10/14/17 15:17
1,3,5-Trimethylbenzene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
Benzene	7.75 U	7.75	2.42	ug/Kg	1		10/14/17 15:17
Ethylbenzene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
Isopropylbenzene (Cumene)	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
Methyl-t-butyl ether	62.0 U	62.0	19.2	ug/Kg	1		10/14/17 15:17
Naphthalene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
n-Butylbenzene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
o-Xylene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
P & M -Xylene	31.0 U	31.0	9.30	ug/Kg	1		10/14/17 15:17
sec-Butylbenzene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
tert-Butylbenzene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17
Toluene	15.5 U	15.5	4.84	ug/Kg	1		10/14/17 15:17

Surrogates

1,2-Dichloroethane-D4 (surr)	94.7	71-136	%	1		10/14/17 15:17
4-Bromofluorobenzene (surr)	110	55-151	%	1		10/14/17 15:17
Toluene-d8 (surr)	100	85-116	%	1		10/14/17 15:17

Batch Information

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 15:17
 Container ID: 1177293003-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 10:09
 Prep Initial Wt./Vol.: 106.44 g
 Prep Extract Vol: 31.1105 mL

Results of C32

Client Sample ID: **C32**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293004
 Lab Project ID: 1177293

Collection Date: 10/09/17 09:50
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	1450	82.1	25.4	mg/Kg	4		10/15/17 20:35
Surrogates							
5a Androstane (surr)	99.2	50-150		%	4		10/15/17 20:35

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 20:35
 Container ID: 1177293004-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.124 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C32

Client Sample ID: **C32**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293004
Lab Project ID: 1177293

Collection Date: 10/09/17 09:50
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.30	1.31	0.392	mg/Kg	1		10/16/17 18:55
Surrogates							
4-Bromofluorobenzene (surr)	105	50-150		%	1		10/16/17 18:55

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 18:55
Container ID: 1177293004-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 09:50
Prep Initial Wt./Vol.: 111.168 g
Prep Extract Vol: 28.2327 mL

Print Date: 10/19/2017 9:40:40AM

Results of C32

Client Sample ID: **C32**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293004
 Lab Project ID: 1177293

Collection Date: 10/09/17 09:50
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	37.3	26.2	7.85	ug/Kg	1		10/14/17 20:34
1,2-Dibromoethane	5.23 U	5.23	1.62	ug/Kg	1		10/14/17 20:34
1,2-Dichloroethane	5.23 U	5.23	1.62	ug/Kg	1		10/14/17 20:34
1,3,5-Trimethylbenzene	36.0	13.1	4.08	ug/Kg	1		10/14/17 20:34
Benzene	6.54 U	6.54	2.04	ug/Kg	1		10/14/17 20:34
Ethylbenzene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
Isopropylbenzene (Cumene)	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
Methyl-t-butyl ether	52.3 U	52.3	16.2	ug/Kg	1		10/14/17 20:34
Naphthalene	69.1	13.1	4.08	ug/Kg	1		10/14/17 20:34
n-Butylbenzene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
o-Xylene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
P & M -Xylene	26.2 U	26.2	7.85	ug/Kg	1		10/14/17 20:34
sec-Butylbenzene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
tert-Butylbenzene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34
Toluene	13.1 U	13.1	4.08	ug/Kg	1		10/14/17 20:34

Surrogates

1,2-Dichloroethane-D4 (surr)	97.3	71-136	%	1		10/14/17 20:34
4-Bromofluorobenzene (surr)	104	55-151	%	1		10/14/17 20:34
Toluene-d8 (surr)	100	85-116	%	1		10/14/17 20:34

Batch Information

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 20:34
 Container ID: 1177293004-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 09:50
 Prep Initial Wt./Vol.: 111.168 g
 Prep Extract Vol: 28.2327 mL

Print Date: 10/19/2017 9:40:40AM



Results of C33

Client Sample ID: **C33**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293005
Lab Project ID: 1177293

Collection Date: 10/09/17 09:58
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	215	82.2	25.5	mg/Kg	4		10/15/17 20:45
Surrogates							
5a Androstane (surr)	88.5	50-150		%	4		10/15/17 20:45

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 20:45
Container ID: 1177293005-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.08 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C33

Client Sample ID: **C33**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293005
Lab Project ID: 1177293

Collection Date: 10/09/17 09:58
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.32 U	1.32	0.397	mg/Kg	1		10/16/17 19:14
Surrogates							
4-Bromofluorobenzene (surr)	91.1	50-150		%	1		10/16/17 19:14

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 19:14
Container ID: 1177293005-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 09:58
Prep Initial Wt./Vol.: 109.812 g
Prep Extract Vol: 28.2202 mL

Print Date: 10/19/2017 9:40:40AM



Results of C33

Client Sample ID: **C33**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293005
Lab Project ID: 1177293

Collection Date: 10/09/17 09:58
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	26.5 U	26.5	7.94	ug/Kg	1		10/14/17 15:52
1,2-Dibromoethane	5.30 U	5.30	1.64	ug/Kg	1		10/14/17 15:52
1,2-Dichloroethane	5.30 U	5.30	1.64	ug/Kg	1		10/14/17 15:52
1,3,5-Trimethylbenzene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
Benzene	6.62 U	6.62	2.07	ug/Kg	1		10/14/17 15:52
Ethylbenzene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
Isopropylbenzene (Cumene)	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
Methyl-t-butyl ether	53.0 U	53.0	16.4	ug/Kg	1		10/14/17 15:52
Naphthalene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
n-Butylbenzene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
o-Xylene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
P & M -Xylene	26.5 U	26.5	7.94	ug/Kg	1		10/14/17 15:52
sec-Butylbenzene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
tert-Butylbenzene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
Toluene	13.2 U	13.2	4.13	ug/Kg	1		10/14/17 15:52
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.4	71-136		%	1		10/14/17 15:52
4-Bromofluorobenzene (surr)	115	55-151		%	1		10/14/17 15:52
Toluene-d8 (surr)	99	85-116		%	1		10/14/17 15:52

Batch Information

Analytical Batch: VMS17324
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/14/17 15:52
Container ID: 1177293005-B

Prep Batch: VXX31521
Prep Method: SW5035A
Prep Date/Time: 10/09/17 09:58
Prep Initial Wt./Vol.: 109.812 g
Prep Extract Vol: 28.2202 mL

Print Date: 10/19/2017 9:40:40AM



Results of C36

Client Sample ID: **C36**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293006
Lab Project ID: 1177293

Collection Date: 10/09/17 10:04
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.8
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.7 U	20.7	6.43	mg/Kg	1		10/15/17 17:50
Surrogates							
5a Androstane (surr)	80.5	50-150		%	1		10/15/17 17:50

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 17:50
Container ID: 1177293006-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.188 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C36

Client Sample ID: **C36**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293006
Lab Project ID: 1177293

Collection Date: 10/09/17 10:04
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.8
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.49 U	1.49	0.447	mg/Kg	1		10/16/17 19:33
Surrogates							
4-Bromofluorobenzene (surr)	84.1	50-150		%	1		10/16/17 19:33

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 19:33
Container ID: 1177293006-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 10:04
Prep Initial Wt./Vol.: 102.435 g
Prep Extract Vol: 29.2689 mL

Print Date: 10/19/2017 9:40:40AM

Results of C36

Client Sample ID: **C36**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293006
 Lab Project ID: 1177293

Collection Date: 10/09/17 10:04
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	29.8 U	29.8	8.94	ug/Kg	1		10/14/17 16:10
1,2-Dibromoethane	5.96 U	5.96	1.85	ug/Kg	1		10/14/17 16:10
1,2-Dichloroethane	5.96 U	5.96	1.85	ug/Kg	1		10/14/17 16:10
1,3,5-Trimethylbenzene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
Benzene	7.45 U	7.45	2.33	ug/Kg	1		10/14/17 16:10
Ethylbenzene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
Isopropylbenzene (Cumene)	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
Methyl-t-butyl ether	59.6 U	59.6	18.5	ug/Kg	1		10/14/17 16:10
Naphthalene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
n-Butylbenzene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
o-Xylene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
P & M -Xylene	29.8 U	29.8	8.94	ug/Kg	1		10/14/17 16:10
sec-Butylbenzene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
tert-Butylbenzene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
Toluene	14.9 U	14.9	4.65	ug/Kg	1		10/14/17 16:10
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.6	71-136		%	1		10/14/17 16:10
4-Bromofluorobenzene (surr)	110	55-151		%	1		10/14/17 16:10
Toluene-d8 (surr)	99.6	85-116		%	1		10/14/17 16:10

Batch Information

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 16:10
 Container ID: 1177293006-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 10:04
 Prep Initial Wt./Vol.: 102.435 g
 Prep Extract Vol: 29.2689 mL

Print Date: 10/19/2017 9:40:40AM



Results of 18

Client Sample ID: 18
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293007
Lab Project ID: 1177293

Collection Date: 10/09/17 09:43
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.5 U	20.5	6.34	mg/Kg	1		10/15/17 18:00
Surrogates							
5a Androstane (surr)	82.5	50-150		%	1		10/15/17 18:00

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 18:00
Container ID: 1177293007-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.012 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of 18

Client Sample ID: 18
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293007
Lab Project ID: 1177293

Collection Date: 10/09/17 09:43
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.21 U	1.21	0.362	mg/Kg	1		10/16/17 19:51
Surrogates							
4-Bromofluorobenzene (surr)	85.1	50-150		%	1		10/16/17 19:51

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 19:51
Container ID: 1177293007-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/09/17 09:43
Prep Initial Wt./Vol.: 117.341 g
Prep Extract Vol: 27.6909 mL

Print Date: 10/19/2017 9:40:40AM



Results of 18

Client Sample ID: 18
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293007
Lab Project ID: 1177293

Collection Date: 10/09/17 09:43
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	24.2 U	24.2	7.25	ug/Kg	1		10/14/17 16:27
1,2-Dibromoethane	4.83 U	4.83	1.50	ug/Kg	1		10/14/17 16:27
1,2-Dichloroethane	4.83 U	4.83	1.50	ug/Kg	1		10/14/17 16:27
1,3,5-Trimethylbenzene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
Benzene	6.04 U	6.04	1.88	ug/Kg	1		10/14/17 16:27
Ethylbenzene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
Isopropylbenzene (Cumene)	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
Methyl-t-butyl ether	48.3 U	48.3	15.0	ug/Kg	1		10/14/17 16:27
Naphthalene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
n-Butylbenzene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
o-Xylene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
P & M -Xylene	24.2 U	24.2	7.25	ug/Kg	1		10/14/17 16:27
sec-Butylbenzene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
tert-Butylbenzene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
Toluene	12.1 U	12.1	3.77	ug/Kg	1		10/14/17 16:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.4	71-136		%	1		10/14/17 16:27
4-Bromofluorobenzene (surr)	112	55-151		%	1		10/14/17 16:27
Toluene-d8 (surr)	101	85-116		%	1		10/14/17 16:27

Batch Information

Analytical Batch: VMS17324
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/14/17 16:27
Container ID: 1177293007-B

Prep Batch: VXX31521
Prep Method: SW5035A
Prep Date/Time: 10/09/17 09:43
Prep Initial Wt./Vol.: 117.341 g
Prep Extract Vol: 27.6909 mL

Print Date: 10/19/2017 9:40:40AM



Results of C1

Client Sample ID: **C1**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293008
Lab Project ID: 1177293

Collection Date: 10/11/17 13:30
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.9
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	92.3	20.7	6.42	mg/Kg	1		10/15/17 18:11
Surrogates							
5a Androstane (surr)	83.7	50-150		%	1		10/15/17 18:11

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 18:11
Container ID: 1177293008-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.211 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C1

Client Sample ID: **C1**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293008
Lab Project ID: 1177293

Collection Date: 10/11/17 13:30
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):95.9
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.38 U	1.38	0.415	mg/Kg	1		10/16/17 20:47
Surrogates							
4-Bromofluorobenzene (surr)	86.8	50-150		%	1		10/16/17 20:47

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 20:47
Container ID: 1177293008-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:30
Prep Initial Wt./Vol.: 111.198 g
Prep Extract Vol: 29.5102 mL

Print Date: 10/19/2017 9:40:40AM

Results of C1

Client Sample ID: **C1**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293008
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:30
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.9
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	46.9	27.7	8.30	ug/Kg	1		10/14/17 16:45
1,2-Dibromoethane	5.53 U	5.53	1.71	ug/Kg	1		10/14/17 16:45
1,2-Dichloroethane	5.53 U	5.53	1.71	ug/Kg	1		10/14/17 16:45
1,3,5-Trimethylbenzene	16.9	13.8	4.32	ug/Kg	1		10/14/17 16:45
Benzene	6.92 U	6.92	2.16	ug/Kg	1		10/14/17 16:45
Ethylbenzene	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
Isopropylbenzene (Cumene)	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
Methyl-t-butyl ether	55.3 U	55.3	17.1	ug/Kg	1		10/14/17 16:45
Naphthalene	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
n-Butylbenzene	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
o-Xylene	37.6	13.8	4.32	ug/Kg	1		10/14/17 16:45
P & M -Xylene	62.4	27.7	8.30	ug/Kg	1		10/14/17 16:45
sec-Butylbenzene	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
tert-Butylbenzene	13.8 U	13.8	4.32	ug/Kg	1		10/14/17 16:45
Toluene	25.2	13.8	4.32	ug/Kg	1		10/14/17 16:45
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.7	71-136		%	1		10/14/17 16:45
4-Bromofluorobenzene (surr)	115	55-151		%	1		10/14/17 16:45
Toluene-d8 (surr)	99	85-116		%	1		10/14/17 16:45

Batch Information

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 16:45
 Container ID: 1177293008-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/11/17 13:30
 Prep Initial Wt./Vol.: 111.198 g
 Prep Extract Vol: 29.5102 mL

Results of C-SN

Client Sample ID: **C-SN**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293009
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:44
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.2
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1-Methylnaphthalene	9650	2550	766	ug/Kg	100		10/16/17 22:28
2-Methylnaphthalene	14600	2550	766	ug/Kg	100		10/16/17 22:28
Acenaphthene	204	128	38.3	ug/Kg	5		10/14/17 17:09
Acenaphthylene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Anthracene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Benzo(a)Anthracene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Benzo[a]pyrene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Benzo[b]Fluoranthene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Benzo[g,h,i]perylene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Benzo[k]fluoranthene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Chrysene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Dibenzo[a,h]anthracene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Fluoranthene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Fluorene	616	128	38.3	ug/Kg	5		10/14/17 17:09
Indeno[1,2,3-c,d] pyrene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Naphthalene	27300	2040	613	ug/Kg	100		10/16/17 22:28
Phenanthrene	778	128	38.3	ug/Kg	5		10/14/17 17:09
Pyrene	128 U	128	38.3	ug/Kg	5		10/14/17 17:09
Surrogates							
2-Methylnaphthalene-d10 (surr)	111	50-150		%	5		10/14/17 17:09
Fluoranthene-d10 (surr)	74.9	50-150		%	5		10/14/17 17:09

Batch Information

Analytical Batch: XMS10482
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 10/14/17 17:09
 Container ID: 1177293009-A

Prep Batch: XXX38653
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 10:12
 Prep Initial Wt./Vol.: 22.651 g
 Prep Extract Vol: 5 mL

Analytical Batch: XMS10487
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 10/16/17 22:28
 Container ID: 1177293009-A

Prep Batch: XXX38653
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 10:12
 Prep Initial Wt./Vol.: 22.651 g
 Prep Extract Vol: 5 mL

Print Date: 10/19/2017 9:40:40AM

Results of C-SN

Client Sample ID: **C-SN**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293009
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:44
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	2330	81.4	25.2	mg/Kg	4		10/15/17 20:56
Surrogates							
5a Androstane (surr)	102	50-150		%	4		10/15/17 20:56

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 20:56
 Container ID: 1177293009-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.331 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C-SN

Client Sample ID: **C-SN**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293009
Lab Project ID: 1177293

Collection Date: 10/11/17 13:44
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.2
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	4630		265	79.5	mg/Kg	200		10/17/17 21:25
Surrogates								
4-Bromofluorobenzene (surr)	19000	*	50-150		%	200		10/17/17 21:25

Batch Information

Analytical Batch: VFC13950
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 21:25
Container ID: 1177293009-B

Prep Batch: VXX31536
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:44
Prep Initial Wt./Vol.: 108.816 g
Prep Extract Vol: 28.031 mL

Print Date: 10/19/2017 9:40:40AM



Results of C-SN

Client Sample ID: **C-SN**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293009
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:44
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.2
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	243000	13200	3970	ug/Kg	500		10/18/17 01:41
1,2-Dibromoethane	53.0 U	53.0	16.4	ug/Kg	10		10/14/17 17:03
1,2-Dichloroethane	53.0 U	53.0	16.4	ug/Kg	10		10/14/17 17:03
1,3,5-Trimethylbenzene	67500	6620	2070	ug/Kg	500		10/18/17 01:41
Benzene	52700	3310	1030	ug/Kg	500		10/18/17 01:41
Ethylbenzene	137000	6620	2070	ug/Kg	500		10/18/17 01:41
Isopropylbenzene (Cumene)	17500	132	41.3	ug/Kg	10		10/14/17 17:03
Methyl-t-butyl ether	530 U	530	164	ug/Kg	10		10/14/17 17:03
Naphthalene	17900	132	41.3	ug/Kg	10		10/14/17 17:03
n-Butylbenzene	132 U	132	41.3	ug/Kg	10		10/14/17 17:03
o-Xylene	203000	6620	2070	ug/Kg	500		10/18/17 01:41
P & M -Xylene	453000	13200	3970	ug/Kg	500		10/18/17 01:41
sec-Butylbenzene	6220	132	41.3	ug/Kg	10		10/14/17 17:03
tert-Butylbenzene	132 U	132	41.3	ug/Kg	10		10/14/17 17:03
Toluene	341000	6620	2070	ug/Kg	500		10/18/17 01:41

Surrogates

1,2-Dichloroethane-D4 (surr)	99.8		71-136	%	10		10/14/17 17:03
4-Bromofluorobenzene (surr)	157	*	55-151	%	10		10/14/17 17:03
Toluene-d8 (surr)	121	*	85-116	%	10		10/14/17 17:03

Batch Information

Analytical Batch: VMS17330
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/18/17 01:41
 Container ID: 1177293009-B

Prep Batch: VXX31537
 Prep Method: SW5035A
 Prep Date/Time: 10/11/17 13:44
 Prep Initial Wt./Vol.: 108.816 g
 Prep Extract Vol: 28.031 mL

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 17:03
 Container ID: 1177293009-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/11/17 13:44
 Prep Initial Wt./Vol.: 108.816 g
 Prep Extract Vol: 28.031 mL

Print Date: 10/19/2017 9:40:40AM

Results of C-S1

Client Sample ID: **C-S1**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293010
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:41
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.4
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.0 U	21.0	6.50	mg/Kg	1		10/15/17 18:21
Surrogates							
5a Androstane (surr)	81	50-150		%	1		10/15/17 18:21

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 18:21
 Container ID: 1177293010-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.314 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of C-S1

Client Sample ID: **C-S1**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293010
Lab Project ID: 1177293

Collection Date: 10/11/17 13:41
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	3.21	1.54	0.463	mg/Kg	1		10/17/17 21:44
Surrogates							
4-Bromofluorobenzene (surr)	112	50-150		%	1		10/17/17 21:44

Batch Information

Analytical Batch: VFC13950
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 21:44
Container ID: 1177293010-B

Prep Batch: VXX31536
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:41
Prep Initial Wt./Vol.: 105.955 g
Prep Extract Vol: 30.8849 mL

Print Date: 10/19/2017 9:40:40AM



Results of C-S1

Client Sample ID: **C-S1**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293010
Lab Project ID: 1177293

Collection Date: 10/11/17 13:41
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	35.8	30.9	9.26	ug/Kg	1		10/18/17 00:21
1,2-Dibromoethane	6.17 U	6.17	1.91	ug/Kg	1		10/14/17 17:20
1,2-Dichloroethane	6.17 U	6.17	1.91	ug/Kg	1		10/14/17 17:20
1,3,5-Trimethylbenzene	24.7	15.4	4.81	ug/Kg	1		10/18/17 00:21
Benzene	118	7.72	2.41	ug/Kg	1		10/18/17 00:21
Ethylbenzene	71.9	15.4	4.81	ug/Kg	1		10/18/17 00:21
Isopropylbenzene (Cumene)	15.4 U	15.4	4.81	ug/Kg	1		10/18/17 00:21
Methyl-t-butyl ether	61.7 U	61.7	19.1	ug/Kg	1		10/14/17 17:20
Naphthalene	15.4 U	15.4	4.81	ug/Kg	1		10/18/17 00:21
n-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/14/17 17:20
o-Xylene	166	15.4	4.81	ug/Kg	1		10/18/17 00:21
P & M -Xylene	275	30.9	9.26	ug/Kg	1		10/18/17 00:21
sec-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/14/17 17:20
tert-Butylbenzene	15.4 U	15.4	4.81	ug/Kg	1		10/14/17 17:20
Toluene	280	15.4	4.81	ug/Kg	1		10/18/17 00:21
Surrogates							
1,2-Dichloroethane-D4 (surr)	94.8	71-136		%	1		10/14/17 17:20
4-Bromofluorobenzene (surr)	111	55-151		%	1		10/14/17 17:20
Toluene-d8 (surr)	102	85-116		%	1		10/14/17 17:20

Batch Information

Analytical Batch: VMS17330
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/18/17 00:21
Container ID: 1177293010-B

Prep Batch: VXX31537
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:41
Prep Initial Wt./Vol.: 105.955 g
Prep Extract Vol: 30.8849 mL

Analytical Batch: VMS17324
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/14/17 17:20
Container ID: 1177293010-B

Prep Batch: VXX31521
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:41
Prep Initial Wt./Vol.: 105.955 g
Prep Extract Vol: 30.8849 mL

Print Date: 10/19/2017 9:40:40AM

Results of CBSW

Client Sample ID: **CBSW**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293011
 Lab Project ID: 1177293

Collection Date: 10/11/17 13:51
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):82.7
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	53.4	24.1	7.48	mg/Kg	1		10/15/17 18:32
Surrogates							
5a Androstane (surr)	87.1	50-150		%	1		10/15/17 18:32

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 18:32
 Container ID: 1177293011-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.05 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of CBSW

Client Sample ID: **CBSW**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293011
Lab Project ID: 1177293

Collection Date: 10/11/17 13:51
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):82.7
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	14.7	2.47	0.740	mg/Kg	1		10/16/17 21:43
Surrogates							
4-Bromofluorobenzene (surr)	127	50-150		%	1		10/16/17 21:43

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 21:43
Container ID: 1177293011-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:51
Prep Initial Wt./Vol.: 106.137 g
Prep Extract Vol: 43.3247 mL

Print Date: 10/19/2017 9:40:40AM



Results of CBSW

Client Sample ID: **CBSW**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293011
Lab Project ID: 1177293

Collection Date: 10/11/17 13:51
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):82.7
Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	148	49.3	14.8	ug/Kg	1		10/14/17 17:38
1,2-Dibromoethane	9.87 U	9.87	3.06	ug/Kg	1		10/14/17 17:38
1,2-Dichloroethane	25.2	9.87	3.06	ug/Kg	1		10/14/17 17:38
1,3,5-Trimethylbenzene	37.0	24.7	7.70	ug/Kg	1		10/14/17 17:38
Benzene	8820	61.7	19.2	ug/Kg	5		10/18/17 00:53
Ethylbenzene	211	24.7	7.70	ug/Kg	1		10/14/17 17:38
Isopropylbenzene (Cumene)	27.1	24.7	7.70	ug/Kg	1		10/14/17 17:38
Methyl-t-butyl ether	98.7 U	98.7	30.6	ug/Kg	1		10/14/17 17:38
Naphthalene	52.8	24.7	7.70	ug/Kg	1		10/14/17 17:38
n-Butylbenzene	24.7 U	24.7	7.70	ug/Kg	1		10/14/17 17:38
o-Xylene	192	24.7	7.70	ug/Kg	1		10/14/17 17:38
P & M -Xylene	485	49.3	14.8	ug/Kg	1		10/14/17 17:38
sec-Butylbenzene	24.7 U	24.7	7.70	ug/Kg	1		10/14/17 17:38
tert-Butylbenzene	24.7 U	24.7	7.70	ug/Kg	1		10/14/17 17:38
Toluene	1050	24.7	7.70	ug/Kg	1		10/14/17 17:38
Surrogates							
1,2-Dichloroethane-D4 (surr)	93.4	71-136		%	1		10/14/17 17:38
4-Bromofluorobenzene (surr)	150	55-151		%	1		10/14/17 17:38
Toluene-d8 (surr)	101	85-116		%	1		10/14/17 17:38

Batch Information

Analytical Batch: VMS17330
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/18/17 00:53
Container ID: 1177293011-B

Prep Batch: VXX31537
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:51
Prep Initial Wt./Vol.: 106.137 g
Prep Extract Vol: 43.3247 mL

Analytical Batch: VMS17324
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/14/17 17:38
Container ID: 1177293011-B

Prep Batch: VXX31521
Prep Method: SW5035A
Prep Date/Time: 10/11/17 13:51
Prep Initial Wt./Vol.: 106.137 g
Prep Extract Vol: 43.3247 mL

Print Date: 10/19/2017 9:40:40AM

Results of DS-03

Client Sample ID: **DS-03**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293012
 Lab Project ID: 1177293

Collection Date: 10/09/17 14:25
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.5 U	20.5	6.34	mg/Kg	1		10/15/17 18:42
Surrogates							
5a Androstane (surr)	84.4	50-150		%	1		10/15/17 18:42

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 18:42
 Container ID: 1177293012-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.193 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM

Results of DS-03

Client Sample ID: **DS-03**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293012
 Lab Project ID: 1177293

Collection Date: 10/09/17 14:25
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.45 U	1.45	0.436	mg/Kg	1		10/17/17 22:03

Surrogates

4-Bromofluorobenzene (surr)	102	50-150		%	1		10/17/17 22:03
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Batch Information

Analytical Batch: VFC13950
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 22:03
 Container ID: 1177293012-B

Prep Batch: VXX31536
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:25
 Prep Initial Wt./Vol.: 98.549 g
 Prep Extract Vol: 27.8186 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Benzene	7.26 U	7.26	2.32	ug/Kg	1		10/17/17 22:03
Ethylbenzene	14.5 U	14.5	4.53	ug/Kg	1		10/17/17 22:03
o-Xylene	14.5 U	14.5	4.53	ug/Kg	1		10/17/17 22:03
P & M -Xylene	29.1 U	29.1	8.72	ug/Kg	1		10/17/17 22:03
Toluene	14.5 U	14.5	4.53	ug/Kg	1		10/17/17 22:03

Surrogates

1,4-Difluorobenzene (surr)	90.3	72-119		%	1		10/17/17 22:03
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Batch Information

Analytical Batch: VFC13950
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/17/17 22:03
 Container ID: 1177293012-B

Prep Batch: VXX31536
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:25
 Prep Initial Wt./Vol.: 98.549 g
 Prep Extract Vol: 27.8186 mL

Print Date: 10/19/2017 9:40:40AM

Results of 17

Client Sample ID: 17
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293013
 Lab Project ID: 1177293

Collection Date: 10/09/17 09:19
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.6
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.3 U	20.3	6.28	mg/Kg	1		10/15/17 18:52
Surrogates							
5a Androstane (surr)	82.7	50-150		%	1		10/15/17 18:52

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 18:52
 Container ID: 1177293013-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.335 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM

Results of 17

Client Sample ID: 17
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293013
 Lab Project ID: 1177293

Collection Date: 10/09/17 09:19
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.6
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.30 U	1.30	0.389	mg/Kg	1		10/16/17 22:21

Surrogates

4-Bromofluorobenzene (surr)	86.6	50-150		%	1		10/16/17 22:21
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Batch Information

Analytical Batch: VFC13946
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/16/17 22:21
 Container ID: 1177293013-B

Prep Batch: VXX31531
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 09:19
 Prep Initial Wt./Vol.: 109.023 g
 Prep Extract Vol: 27.6206 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Benzene	6.49 U	6.49	2.08	ug/Kg	1		10/16/17 22:21
Ethylbenzene	23.4	13.0	4.05	ug/Kg	1		10/16/17 22:21
o-Xylene	29.1	13.0	4.05	ug/Kg	1		10/16/17 22:21
P & M -Xylene	68.3	26.0	7.79	ug/Kg	1		10/16/17 22:21
Toluene	40.6	13.0	4.05	ug/Kg	1		10/16/17 22:21

Surrogates

1,4-Difluorobenzene (surr)	91.2	72-119		%	1		10/16/17 22:21
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Batch Information

Analytical Batch: VFC13946
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/16/17 22:21
 Container ID: 1177293013-B

Prep Batch: VXX31531
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 09:19
 Prep Initial Wt./Vol.: 109.023 g
 Prep Extract Vol: 27.6206 mL

Print Date: 10/19/2017 9:40:40AM



Results of FL-01

Client Sample ID: **FL-01**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293014
Lab Project ID: 1177293

Collection Date: 10/09/17 14:10
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.7
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.3 U	20.3	6.29	mg/Kg	1		10/15/17 19:02
Surrogates							
5a Androstane (surr)	86.2	50-150		%	1		10/15/17 19:02

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 10/15/17 19:02
Container ID: 1177293014-A

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/17 14:48
Prep Initial Wt./Vol.: 30.295 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM

Results of FL-01

Client Sample ID: **FL-01**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293014
 Lab Project ID: 1177293

Collection Date: 10/09/17 14:10
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.7
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.39 U	1.39	0.418	mg/Kg	1		10/16/17 22:39

Surrogates

4-Bromofluorobenzene (surr)	82.2	50-150		%	1		10/16/17 22:39
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Batch Information

Analytical Batch: VFC13946
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/16/17 22:39
 Container ID: 1177293014-B

Prep Batch: VXX31531
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:10
 Prep Initial Wt./Vol.: 100.284 g
 Prep Extract Vol: 27.3278 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Benzene	6.97 U	6.97	2.23	ug/Kg	1		10/16/17 22:39
Ethylbenzene	13.9 U	13.9	4.35	ug/Kg	1		10/16/17 22:39
o-Xylene	13.9 U	13.9	4.35	ug/Kg	1		10/16/17 22:39
P & M -Xylene	27.9 U	27.9	8.37	ug/Kg	1		10/16/17 22:39
Toluene	13.9 U	13.9	4.35	ug/Kg	1		10/16/17 22:39

Surrogates

1,4-Difluorobenzene (surr)	91.3	72-119		%	1		10/16/17 22:39
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Batch Information

Analytical Batch: VFC13946
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/16/17 22:39
 Container ID: 1177293014-B

Prep Batch: VXX31531
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:10
 Prep Initial Wt./Vol.: 100.284 g
 Prep Extract Vol: 27.3278 mL

Print Date: 10/19/2017 9:40:40AM

Results of S1

Client Sample ID: **S1**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293015
 Lab Project ID: 1177293

Collection Date: 10/11/17 12:50
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.4
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.5 U	20.5	6.35	mg/Kg	1		10/15/17 19:33
Surrogates							
5a Androstane (surr)	84.3	50-150		%	1		10/15/17 19:33

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 19:33
 Container ID: 1177293015-A

Prep Batch: XXX38657
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 14:48
 Prep Initial Wt./Vol.: 30.079 g
 Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:40:40AM



Results of S1

Client Sample ID: **S1**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293015
Lab Project ID: 1177293

Collection Date: 10/11/17 12:50
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.4
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.27 U	1.27	0.382	mg/Kg	1		10/16/17 22:58
Surrogates							
4-Bromofluorobenzene (surr)	83.8	50-150		%	1		10/16/17 22:58

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 22:58
Container ID: 1177293015-B

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/11/17 12:50
Prep Initial Wt./Vol.: 112.827 g
Prep Extract Vol: 27.967 mL

Print Date: 10/19/2017 9:40:40AM

Results of S1

Client Sample ID: **S1**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177293015
 Lab Project ID: 1177293

Collection Date: 10/11/17 12:50
 Received Date: 10/12/17 12:00
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.4
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits (mg)	Date Analyzed
1,2,4-Trimethylbenzene	25.5 U	25.5	7.64	ug/Kg	1		10/14/17 17:56
1,2-Dibromoethane	5.09 U	5.09	1.58	ug/Kg	1		10/14/17 17:56
1,2-Dichloroethane	5.09 U	5.09	1.58	ug/Kg	1		10/14/17 17:56
1,3,5-Trimethylbenzene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
Benzene	6.36 U	6.36	1.99	ug/Kg	1		10/14/17 17:56
Ethylbenzene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
Isopropylbenzene (Cumene)	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
Methyl-t-butyl ether	50.9 U	50.9	15.8	ug/Kg	1		10/14/17 17:56
Naphthalene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
n-Butylbenzene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
o-Xylene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
P & M -Xylene	25.5 U	25.5	7.64	ug/Kg	1		10/14/17 17:56
sec-Butylbenzene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
tert-Butylbenzene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56
Toluene	12.7 U	12.7	3.97	ug/Kg	1		10/14/17 17:56

Surrogates

1,2-Dichloroethane-D4 (surr)	95.6	71-136	%	1		10/14/17 17:56
4-Bromofluorobenzene (surr)	104	55-151	%	1		10/14/17 17:56
Toluene-d8 (surr)	100	85-116	%	1		10/14/17 17:56

Batch Information

Analytical Batch: VMS17324
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/14/17 17:56
 Container ID: 1177293015-B

Prep Batch: VXX31521
 Prep Method: SW5035A
 Prep Date/Time: 10/11/17 12:50
 Prep Initial Wt./Vol.: 112.827 g
 Prep Extract Vol: 27.967 mL

Print Date: 10/19/2017 9:40:40AM



Results of TB

Client Sample ID: **TB**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293016
Lab Project ID: 1177293

Collection Date: 10/11/17 16:00
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.54 U	2.54	0.762	mg/Kg	1		10/16/17 16:07
Surrogates							
4-Bromofluorobenzene (surr)	76.5	50-150		%	1		10/16/17 16:07

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/16/17 16:07
Container ID: 1177293016-A

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/11/17 16:00
Prep Initial Wt./Vol.: 49.232 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:40:40AM



Results of TB

Client Sample ID: **TB**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177293016
Lab Project ID: 1177293

Collection Date: 10/11/17 16:00
Received Date: 10/12/17 12:00
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits (mg)</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	50.8 U	50.8	15.2	ug/Kg	1		10/13/17 18:57
1,2-Dibromoethane	10.2 U	10.2	3.15	ug/Kg	1		10/13/17 18:57
1,2-Dichloroethane	10.2 U	10.2	3.15	ug/Kg	1		10/13/17 18:57
1,3,5-Trimethylbenzene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
Benzene	12.7 U	12.7	3.96	ug/Kg	1		10/13/17 18:57
Ethylbenzene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
Isopropylbenzene (Cumene)	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
Methyl-t-butyl ether	102 U	102	31.5	ug/Kg	1		10/13/17 18:57
Naphthalene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
n-Butylbenzene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
o-Xylene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
P & M -Xylene	50.8 U	50.8	15.2	ug/Kg	1		10/13/17 18:57
sec-Butylbenzene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
tert-Butylbenzene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
Toluene	25.4 U	25.4	7.92	ug/Kg	1		10/13/17 18:57
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.5	71-136		%	1		10/13/17 18:57
4-Bromofluorobenzene (surr)	101	55-151		%	1		10/13/17 18:57
Toluene-d8 (surr)	100	85-116		%	1		10/13/17 18:57

Batch Information

Analytical Batch: VMS17322
Analytical Method: SW8260C
Analyst: NRO
Analytical Date/Time: 10/13/17 18:57
Container ID: 1177293016-A

Prep Batch: VXX31527
Prep Method: SW5035A
Prep Date/Time: 10/11/17 16:00
Prep Initial Wt./Vol.: 49.232 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:40:40AM



Method Blank

Blank ID: MB for HBN 1770195 [SPT/10343]
Blank Lab ID: 1420053

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009,
1177293010, 1177293011, 1177293012, 1177293013, 1177293014, 1177293015

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10343
Analytical Method: SM21 2540G
Instrument:
Analyst: MWJ
Analytical Date/Time: 10/13/2017 4:00:00PM

Print Date: 10/19/2017 9:40:44AM

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t 907.562.2343 f 907.561.5301 www.us.sgs.com

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Duplicate Sample Summary

Original Sample ID: 1177293001

Duplicate Sample ID: 1420054

QC for Samples:

1177293001, 1177293002, 1177293003

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	95.3	94.8	%	0.53	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 10/19/2017 9:40:45AM

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Duplicate Sample Summary

Original Sample ID: 1177293003

Duplicate Sample ID: 1420055

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293012, 1177293013, 1177293014, 1177293015

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	94.3	93.2	%	1.10	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 10/19/2017 9:40:45AM

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Duplicate Sample Summary

Original Sample ID: 1177304020

Duplicate Sample ID: 1420056

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293012, 1177293013, 1177293014, 1177293015

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.0	95.5	%	0.54	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 10/19/2017 9:40:45AM

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Method Blank

Blank ID: MB for HBN 1770373 [VXX/31521]
Blank Lab ID: 1420438

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293015

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	97.7	71-136	%
4-Bromofluorobenzene (surr)	94.1	55-151	%
Toluene-d8 (surr)	99.6	85-116	%

Batch Information

Analytical Batch: VMS17324
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/14/2017 12:36:00PM

Prep Batch: VXX31521
Prep Method: SW5035A
Prep Date/Time: 10/14/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31521]

Blank Spike Lab ID: 1420439

Date Analyzed: 10/14/2017 12:54

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293015

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	793	106	(75-123)
1,2-Dibromoethane	750	798	106	(78-122)
1,2-Dichloroethane	750	738	98	(73-128)
1,3,5-Trimethylbenzene	750	814	108	(73-124)
Benzene	750	762	102	(77-121)
Ethylbenzene	750	784	105	(76-122)
Isopropylbenzene (Cumene)	750	770	103	(68-134)
Methyl-t-butyl ether	1130	1290	114	(73-125)
Naphthalene	750	714	95	(62-129)
n-Butylbenzene	750	810	108	(70-128)
o-Xylene	750	785	105	(77-123)
P & M -Xylene	1500	1590	106	(77-124)
sec-Butylbenzene	750	798	106	(73-126)
tert-Butylbenzene	750	779	104	(73-125)
Toluene	750	761	101	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	96.2	96	(71-136)
4-Bromofluorobenzene (surr)	750	95.1	95	(55-151)
Toluene-d8 (surr)	750	102	102	(85-116)

Batch Information

Analytical Batch: VMS17324

Analytical Method: SW8260C

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: NRO

Prep Batch: VXX31521

Prep Method: SW5035A

Prep Date/Time: 10/14/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/19/2017 9:40:50AM

Matrix Spike Summary

Original Sample ID: 1420652
MS Sample ID: 1420440 MS
MSD Sample ID: 1420441 MSD

Analysis Date: 10/14/2017 15:17
Analysis Date: 10/14/2017 13:31
Analysis Date: 10/14/2017 13:48
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293015

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	14.6U	437	477	109	437	486	111	75-123	1.80	(< 20)
1,2-Dibromoethane	2.92U	437	453	104	437	471	108	78-122	3.80	(< 20)
1,2-Dichloroethane	2.92U	437	430	99	437	445	102	73-128	3.40	(< 20)
1,3,5-Trimethylbenzene	7.30U	437	486	111	437	491	112	73-124	1.10	(< 20)
Benzene	3.65U	437	469	107	437	473	108	77-121	0.93	(< 20)
Ethylbenzene	7.30U	437	464	106	437	473	108	76-122	2.00	(< 20)
Isopropylbenzene (Cumene)	7.30U	437	448	103	437	456	104	68-134	1.90	(< 20)
Methyl-t-butyl ether	29.3U	655	693	106	655	720	110	73-125	3.80	(< 20)
Naphthalene	7.30U	437	370	85	437	425	97	62-129	13.90	(< 20)
n-Butylbenzene	7.30U	437	461	106	437	478	109	70-128	3.70	(< 20)
o-Xylene	7.30U	437	461	106	437	466	107	77-123	1.00	(< 20)
P & M -Xylene	14.6U	874	932	107	874	939	107	77-124	0.80	(< 20)
sec-Butylbenzene	7.30U	437	482	110	437	489	112	73-126	1.50	(< 20)
tert-Butylbenzene	7.30U	437	472	108	437	478	109	73-125	1.20	(< 20)
Toluene	7.30U	437	464	106	437	467	107	77-121	0.66	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		437	404	93	437	420	96	71-136	3.80	
4-Bromofluorobenzene (surr)		587	598	102	587	601	102	55-151	0.51	
Toluene-d8 (surr)		437	439	101	437	443	101	85-116	0.73	

Batch Information

Analytical Batch: VMS17324
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/14/2017 1:31:00PM

Prep Batch: VXX31521
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/14/2017 6:00:00AM
Prep Initial Wt./Vol.: 106.44g
Prep Extract Vol: 31.11mL

Print Date: 10/19/2017 9:40:51AM

Method Blank

Blank ID: MB for HBN 1770416 [VXX/31527]
Blank Lab ID: 1420622

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177293001, 1177293002, 1177293016

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	96.3	71-136	%
4-Bromofluorobenzene (surr)	89.3	55-151	%
Toluene-d8 (surr)	100	85-116	%

Batch Information

Analytical Batch: VMS17322
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/13/2017 4:21:00PM

Prep Batch: VXX31527
Prep Method: SW5035A
Prep Date/Time: 10/13/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31527]

Blank Spike Lab ID: 1420623

Date Analyzed: 10/13/2017 16:39

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293016

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	831	111	(75-123)
1,2-Dibromoethane	750	792	106	(78-122)
1,2-Dichloroethane	750	757	101	(73-128)
1,3,5-Trimethylbenzene	750	835	111	(73-124)
Benzene	750	817	109	(77-121)
Ethylbenzene	750	802	107	(76-122)
Isopropylbenzene (Cumene)	750	777	104	(68-134)
Methyl-t-butyl ether	1130	1230	109	(73-125)
Naphthalene	750	726	97	(62-129)
n-Butylbenzene	750	819	109	(70-128)
o-Xylene	750	791	105	(77-123)
P & M -Xylene	1500	1580	106	(77-124)
sec-Butylbenzene	750	845	113	(73-126)
tert-Butylbenzene	750	809	108	(73-125)
Toluene	750	784	105	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	97.5	98	(71-136)
4-Bromofluorobenzene (surr)	750	92.7	93	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS17322

Analytical Method: SW8260C

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: NRO

Prep Batch: VXX31527

Prep Method: SW5035A

Prep Date/Time: 10/13/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/19/2017 9:40:54AM

Matrix Spike Summary

Original Sample ID: 1178472023
MS Sample ID: 1420624 MS
MSD Sample ID: 1420625 MSD

Analysis Date: 10/13/2017 19:32
Analysis Date: 10/13/2017 17:29
Analysis Date: 10/13/2017 17:46
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293016

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	56.0U	1688	1813	107	1688	1799	106	75-123	0.87	(< 20)
1,2-Dibromoethane	11.2U	1688	1702	101	1688	1771	105	78-122	4.00	(< 20)
1,2-Dichloroethane	11.2U	1688	1618	96	1688	1702	101	73-128	4.50	(< 20)
1,3,5-Trimethylbenzene	28.0U	1688	1827	108	1688	1785	106	73-124	2.10	(< 20)
Benzene	14.0U	1688	1743	104	1688	1771	105	77-121	1.60	(< 20)
Ethylbenzene	28.0U	1688	1743	104	1688	1757	104	76-122	0.64	(< 20)
Isopropylbenzene (Cumene)	28.0U	1688	1660	98	1688	1702	101	68-134	2.60	(< 20)
Methyl-t-butyl ether	112U	2524	2622	104	2524	2762	109	73-125	5.20	(< 20)
Naphthalene	28.0U	1688	1409	84	1688	1632	97	62-129	14.70	(< 20)
n-Butylbenzene	28.0U	1688	1660	98	1688	1674	99	70-128	1.10	(< 20)
o-Xylene	28.0U	1688	1688	100	1688	1729	103	77-123	2.90	(< 20)
P & M -Xylene	56.0U	3375	3445	102	3375	3459	102	77-124	0.37	(< 20)
sec-Butylbenzene	28.0U	1688	1743	104	1688	1743	103	73-126	0.29	(< 20)
tert-Butylbenzene	28.0U	1688	1743	103	1688	1715	102	73-125	1.50	(< 20)
Toluene	28.0U	1688	1715	102	1688	1715	102	77-121	0.33	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1688	1562	93	1688	1632	97	71-136	4.40	
4-Bromofluorobenzene (surr)		1813	1450	80	1813	1437	79	55-151	1.50	
Toluene-d8 (surr)		1688	1702	101	1688	1688	100	85-116	0.73	

Batch Information

Analytical Batch: VMS17322
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/13/2017 5:29:00PM

Prep Batch: VXX31527
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/13/2017 6:00:00AM
Prep Initial Wt./Vol.: 47.94g
Prep Extract Vol: 38.55mL

Print Date: 10/19/2017 9:40:55AM

Method Blank

Blank ID: MB for HBN 1770432 [VXX/31531]
Blank Lab ID: 1420676

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
Gasoline Range Organics	1.09J	2.50	0.750	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg

Surrogates

1,4-Difluorobenzene (surr)	93	72-119	%
4-Bromofluorobenzene (surr)	83.5	50-150	%

Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/16/2017 3:30:00PM

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:40:56AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31531]
 Blank Spike Lab ID: 1420677
 Date Analyzed: 10/16/2017 14:15

Spike Duplicate ID: LCSD for HBN 1177293 [VXX31531]
 Spike Duplicate Lab ID: 1420678
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1.25	1.38	110	1.25	1.34	107	(75-125)	3.10	(< 20)
Ethylbenzene	1.25	1.38	110	1.25	1.34	107	(75-125)	3.00	(< 20)
o-Xylene	1.25	1.35	108	1.25	1.31	105	(75-125)	3.20	(< 20)
P & M -Xylene	2.50	2.76	110	2.50	2.67	107	(80-125)	3.30	(< 20)
Toluene	1.25	1.38	110	1.25	1.34	107	(70-125)	2.70	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	96.5	97	1.25	98.1	98	(72-119)	1.60	

Batch Information

Analytical Batch: **VFC13946**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31531**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/16/2017 08:00**
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Print Date: 10/19/2017 9:40:58AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31531]
 Blank Spike Lab ID: 1420679
 Date Analyzed: 10/16/2017 14:52

Spike Duplicate ID: LCSD for HBN 1177293 [VXX31531]
 Spike Duplicate Lab ID: 1420680
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	10.9	87	12.5	10.8	87	(60-120)	0.50	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	87	87	1.25	87.2	87	(50-150)	0.28	

Batch Information

Analytical Batch: **VFC13946**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31531**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/16/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 10/19/2017 9:40:58AM

Matrix Spike Summary

Original Sample ID: 1177290002
MS Sample ID: 1420681 MS
MSD Sample ID: 1420682 MSD

Analysis Date: 10/16/2017 16:44
Analysis Date: 10/16/2017 17:03
Analysis Date: 10/16/2017 17:21
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by AK101

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	0.00719U	0.603	0.637	106	0.603	0.647	107	75-125	1.60	(< 20)
Ethylbenzene	0.0144U	0.603	0.632	105	0.603	0.640	106	75-125	1.10	(< 20)
o-Xylene	0.0236	0.603	0.618	99	0.603	0.616	98	75-125	0.39	(< 20)
P & M -Xylene	0.0288U	1.20	1.24	103	1.20	1.25	103	80-125	0.48	(< 20)
Toluene	0.0144U	0.603	0.640	106	0.603	0.652	108	70-125	2.00	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	0.603	0.564	94	0.603	0.561	93	72-119	0.51
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Batch Information

Analytical Batch: VFC13946
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/16/2017 5:03:00PM

Prep Batch: VXX31531
Prep Method: AK101 Extraction (S)
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 108.60g
Prep Extract Vol: 25.00mL

Print Date: 10/19/2017 9:40:59AM

Method Blank

Blank ID: MB for HBN 1770432 [VXX/31531]
Blank Lab ID: 1420676

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	93	72-119		%

Batch Information

Analytical Batch: VFC13946
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/16/2017 3:30:00PM

Prep Batch: VXX31531
Prep Method: SW5035A
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:41:00AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31531]
 Blank Spike Lab ID: 1420677
 Date Analyzed: 10/16/2017 14:15

Spike Duplicate ID: LCSD for HBN 1177293 [VXX31531]
 Spike Duplicate Lab ID: 1420678
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1380	110	1250	1340	107	(75-125)	3.10	(< 20)
Ethylbenzene	1250	1380	110	1250	1340	107	(75-125)	3.00	(< 20)
o-Xylene	1250	1350	108	1250	1310	105	(75-125)	3.20	(< 20)
P & M -Xylene	2500	2760	110	2500	2670	107	(80-125)	3.30	(< 20)
Toluene	1250	1380	110	1250	1340	107	(70-125)	2.70	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	96.5	97	1250	98.1	98	(72-119)	1.60	

Batch Information

Analytical Batch: VFC13946
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: ST

Prep Batch: VXX31531
 Prep Method: SW5035A
 Prep Date/Time: 10/16/2017 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Print Date: 10/19/2017 9:41:01AM

Matrix Spike Summary

Original Sample ID: 1177290002
MS Sample ID: 1420681 MS
MSD Sample ID: 1420682 MSD

Analysis Date: 10/16/2017 16:44
Analysis Date: 10/16/2017 17:03
Analysis Date: 10/16/2017 17:21
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293011, 1177293013, 1177293014, 1177293015, 1177293016

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	7.19U	603	637	106	603	647	107	75-125	1.60	(< 20)
Ethylbenzene	14.4U	603	632	105	603	640	106	75-125	1.10	(< 20)
o-Xylene	23.6	603	618	99	603	616	98	75-125	0.39	(< 20)
P & M -Xylene	28.8U	1204	1236	103	1204	1246	103	80-125	0.48	(< 20)
Toluene	14.4U	603	640	106	603	652	108	70-125	2.00	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	603	564	94	603	561	93	72-119	0.51
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Batch Information

Analytical Batch: VFC13946
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/16/2017 5:03:00PM

Prep Batch: VXX31531
Prep Method: AK101 Extraction (S)
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 108.60g
Prep Extract Vol: 25.00mL

Print Date: 10/19/2017 9:41:02AM

Method Blank

Blank ID: MB for HBN 1770472 [VXX/31536]
Blank Lab ID: 1420875

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177293009, 1177293010, 1177293012

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg
Surrogates				
1,4-Difluorobenzene (surr)	90.8	72-119		%
4-Bromofluorobenzene (surr)	89.5	50-150		%

Batch Information

Analytical Batch: VFC13950
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 4:38:00PM

Prep Batch: VXX31536
Prep Method: SW5035A
Prep Date/Time: 10/17/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:41:03AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31536]
 Blank Spike Lab ID: 1420876
 Date Analyzed: 10/17/2017 16:00

Spike Duplicate ID: LCSD for HBN 1177293
 [VXX31536]
 Spike Duplicate Lab ID: 1420877
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293009, 1177293010, 1177293012

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	14.4	115	12.5	14.6	117	(60-120)	1.20	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	95.8	96	1.25	93.2	93	(50-150)	2.80	

Batch Information

Analytical Batch: **VFC13950**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31536**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/17/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 10/19/2017 9:41:05AM

Method Blank

Blank ID: MB for HBN 1770472 [VXX/31536]
Blank Lab ID: 1420875

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177293009, 1177293010, 1177293012

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	90.8	72-119		%

Batch Information

Analytical Batch: VFC13950
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 4:38:00PM

Prep Batch: VXX31536
Prep Method: SW5035A
Prep Date/Time: 10/17/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 10/19/2017 9:41:06AM

Method Blank

Blank ID: MB for HBN 1770476 [VXX/31537]

Blank Lab ID: 1420904

QC for Samples:

1177293009, 1177293010, 1177293011

Matrix: Soil/Solid (dry weight)

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136	%
4-Bromofluorobenzene (surr)	86.3	55-151	%
Toluene-d8 (surr)	97.2	85-116	%

Batch Information

Analytical Batch: VMS17330
 Analytical Method: SW8260C
 Instrument: VQA 7890/5975 GC/MS
 Analyst: NRO
 Analytical Date/Time: 10/17/2017 5:52:00PM

Prep Batch: VXX31537
 Prep Method: SW5035A
 Prep Date/Time: 10/17/2017 6:00:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [VXX31537]

Blank Spike Lab ID: 1420905

Date Analyzed: 10/17/2017 18:08

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293009, 1177293010, 1177293011

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	769	103	(75-123)
1,3,5-Trimethylbenzene	750	773	103	(73-124)
Benzene	750	768	102	(77-121)
Ethylbenzene	750	765	102	(76-122)
Isopropylbenzene (Cumene)	750	808	108	(68-134)
Naphthalene	750	787	105	(62-129)
o-Xylene	750	789	105	(77-123)
P & M -Xylene	1500	1570	105	(77-124)
Toluene	750	783	104	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	99.2	99	(71-136)
4-Bromofluorobenzene (surr)	750	90	90	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS17330

Analytical Method: SW8260C

Instrument: VQA 7890/5975 GC/MS

Analyst: NRO

Prep Batch: VXX31537

Prep Method: SW5035A

Prep Date/Time: 10/17/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1177367001
MS Sample ID: 1420906 MS
MSD Sample ID: 1420907 MSD

Analysis Date: 10/17/2017 21:07
Analysis Date: 10/17/2017 19:15
Analysis Date: 10/17/2017 19:31
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293009, 1177293010, 1177293011

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	30.5U	917	942	103	917	943	103	75-123	0.16	(< 20)
1,3,5-Trimethylbenzene	15.3U	917	943	103	917	946	103	73-124	0.32	(< 20)
Benzene	7.60U	917	920	100	917	930	101	77-121	1.10	(< 20)
Ethylbenzene	15.3U	917	908	99	917	941	102	76-122	3.50	(< 20)
Isopropylbenzene (Cumene)	15.3U	917	955	104	917	1004	110	68-134	5.10	(< 20)
Naphthalene	15.3U	917	765	83	917	971	106	62-129	23.60	* (< 20)
o-Xylene	15.3U	917	924	101	917	982	107	77-123	6.00	(< 20)
P & M -Xylene	30.5U	1832	1866	102	1832	1966	107	77-124	5.10	(< 20)
Toluene	15.3U	917	924	101	917	944	103	77-121	2.20	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		917	923	101	917	922	101	71-136	0.13	
4-Bromofluorobenzene (surr)		1229	1531	124	1229	1508	122	55-151	1.50	
Toluene-d8 (surr)		917	914	100	917	917	100	85-116	0.37	

Batch Information

Analytical Batch: VMS17330
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/17/2017 7:15:00PM

Prep Batch: VXX31537
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/17/2017 6:00:00AM
Prep Initial Wt./Vol.: 56.63g
Prep Extract Vol: 30.92mL

Print Date: 10/19/2017 9:41:13AM

Method Blank

Blank ID: MB for HBN 1770114 [XXX/38653]

Blank Lab ID: 1419773

QC for Samples:

1177293002, 1177293009

Matrix: Soil/Solid (dry weight)

Results by 8270D SIM (PAH)

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	7.50	ug/Kg
2-Methylnaphthalene	12.5U	25.0	7.50	ug/Kg
Acenaphthene	12.5U	25.0	7.50	ug/Kg
Acenaphthylene	12.5U	25.0	7.50	ug/Kg
Anthracene	12.5U	25.0	7.50	ug/Kg
Benzo(a)Anthracene	12.5U	25.0	7.50	ug/Kg
Benzo[a]pyrene	12.5U	25.0	7.50	ug/Kg
Benzo[b]Fluoranthene	12.5U	25.0	7.50	ug/Kg
Benzo[g,h,i]perylene	12.5U	25.0	7.50	ug/Kg
Benzo[k]fluoranthene	12.5U	25.0	7.50	ug/Kg
Chrysene	12.5U	25.0	7.50	ug/Kg
Dibenzo[a,h]anthracene	12.5U	25.0	7.50	ug/Kg
Fluoranthene	12.5U	25.0	7.50	ug/Kg
Fluorene	12.5U	25.0	7.50	ug/Kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	7.50	ug/Kg
Naphthalene	10.0U	20.0	6.00	ug/Kg
Phenanthrene	12.5U	25.0	7.50	ug/Kg
Pyrene	12.5U	25.0	7.50	ug/Kg

Surrogates

2-Methylnaphthalene-d10 (surr)	79.1	50-150	%
Fluoranthene-d10 (surr)	76.7	50-150	%

Batch Information

Analytical Batch: XMS10482
 Analytical Method: 8270D SIM (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: DSD
 Analytical Date/Time: 10/14/2017 1:24:00PM

Prep Batch: XXX38653
 Prep Method: SW3550C
 Prep Date/Time: 10/13/2017 10:12:06AM
 Prep Initial Wt./Vol.: 22.5 g
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [XXX38653]

Blank Spike Lab ID: 1419774

Date Analyzed: 10/14/2017 13:44

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293002, 1177293009

Results by 8270D SIM (PAH)

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	99.1	89	(43-111)
2-Methylnaphthalene	111	90.4	81	(39-114)
Acenaphthene	111	96.9	87	(44-111)
Acenaphthylene	111	95.0	86	(39-116)
Anthracene	111	90.7	82	(50-114)
Benzo(a)Anthracene	111	98.2	88	(54-122)
Benzo[a]pyrene	111	88.4	80	(50-125)
Benzo[b]Fluoranthene	111	99.9	90	(53-128)
Benzo[g,h,i]perylene	111	105	95	(49-127)
Benzo[k]fluoranthene	111	98.5	89	(56-123)
Chrysene	111	103	93	(57-118)
Dibenzo[a,h]anthracene	111	104	94	(50-129)
Fluoranthene	111	102	91	(55-119)
Fluorene	111	95.8	86	(47-114)
Indeno[1,2,3-c,d] pyrene	111	105	95	(49-130)
Naphthalene	111	92.2	83	(38-111)
Phenanthrene	111	96.9	87	(49-113)
Pyrene	111	104	94	(55-117)

Surrogates

2-Methylnaphthalene-d10 (surr)	111	78.6	79	(50-150)
Fluoranthene-d10 (surr)	111	77.3	77	(50-150)

Batch Information

Analytical Batch: XMS10482

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: DSD

Prep Batch: XXX38653

Prep Method: SW3550C

Prep Date/Time: 10/13/2017 10:12

Spike Init Wt./Vol.: 111 ug/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/19/2017 9:41:15AM

Matrix Spike Summary

Original Sample ID: 1177294004
MS Sample ID: 1419775 MS
MSD Sample ID: 1419776 MSD

Analysis Date: 10/14/2017 15:27
Analysis Date: 10/14/2017 15:47
Analysis Date: 10/14/2017 16:08
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293002, 1177293009

Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	28.8U	129	113	88	128	114	90	43-111	1.00	(< 20)
2-Methylnaphthalene	28.8U	129	103	81	128	104	81	39-114	0.21	(< 20)
Acenaphthene	28.8U	129	110	86	128	111	87	44-111	1.10	(< 20)
Acenaphthylene	28.8U	129	110	86	128	112	88	39-116	1.60	(< 20)
Anthracene	28.8U	129	105	82	128	105	82	50-114	0.42	(< 20)
Benzo(a)Anthracene	28.8U	129	106	83	128	107	84	54-122	0.88	(< 20)
Benzo(a)pyrene	28.8U	129	95.3	74	128	96.6	76	50-125	1.40	(< 20)
Benzo(b)Fluoranthene	28.8U	129	106	82	128	106	83	53-128	0.16	(< 20)
Benzo(g,h,i)perylene	28.8U	129	102	79	128	104	81	49-127	1.90	(< 20)
Benzo(k)fluoranthene	28.8U	129	104	81	128	107	84	56-123	2.40	(< 20)
Chrysene	28.8U	129	109	85	128	110	86	57-118	1.40	(< 20)
Dibenzo(a,h)anthracene	28.8U	129	103	81	128	106	83	50-129	2.30	(< 20)
Fluoranthene	28.8U	129	112	88	128	112	88	55-119	0.09	(< 20)
Fluorene	28.8U	129	109	85	128	110	87	47-114	1.20	(< 20)
Indeno[1,2,3-c,d] pyrene	28.8U	129	102	79	128	104	81	49-130	2.00	(< 20)
Naphthalene	23.1U	129	105	82	128	106	83	38-111	1.00	(< 20)
Phenanthrene	28.8U	129	109	85	128	110	86	49-113	1.30	(< 20)
Pyrene	28.8U	129	117	91	128	118	92	55-117	0.46	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		129	98.2	77	128	99.2	78	50-150	0.98	
Fluoranthene-d10 (surr)		129	97.7	76	128	98.0	77	50-150	0.30	

Batch Information

Analytical Batch: XMS10482
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 10/14/2017 3:47:00PM

Prep Batch: XXX38653
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 10/13/2017 10:12:06AM
Prep Initial Wt./Vol.: 22.80g
Prep Extract Vol: 5.00mL

Print Date: 10/19/2017 9:41:16AM

Method Blank

Blank ID: MB for HBN 1770133 [XXX/38657]
Blank Lab ID: 1419875

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007, 1177293008, 1177293009, 1177293010, 1177293011, 1177293012, 1177293013, 1177293014, 1177293015

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	75.9	60-120		%

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/15/2017 4:49:00PM

Prep Batch: XXX38657
Prep Method: SW3550C
Prep Date/Time: 10/13/2017 2:48:47PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 10/19/2017 9:41:17AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177293 [XXX38657]
 Blank Spike Lab ID: 1419876
 Date Analyzed: 10/15/2017 17:00

Spike Duplicate ID: LCSD for HBN 1177293
 [XXX38657]
 Spike Duplicate Lab ID: 1419877
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177293001, 1177293002, 1177293003, 1177293004, 1177293005, 1177293006, 1177293007,
 1177293008, 1177293009, 1177293010, 1177293011, 1177293012, 1177293013, 1177293014,
 1177293015

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	149	89	167	152	91	(75-125)	2.50	(< 20)
Surrogates									
5a Androstane (surr)	3.33	83.7	84	3.33	86.5	87	(60-120)	3.30	

Batch Information

Analytical Batch: **XFC13889**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38657**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/13/2017 14:48**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 10/19/2017 9:41:20AM

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e-Sample Receipt Form

SGS Workorder #:

1177293



1 1 7 7 2 9 3

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below					
Chain of Custody / Temperature Requirements			☒ Yes	Exemption permitted if sampler hand carries/delivers.				
Were Custody Seals intact? Note # & location		☐ N/A	Absent					
COC accompanied samples?		☒ Yes						
☐ N/A		**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required						
Temperature blank compliant* (i.e., 0-6 °C after CF)?	☒ Yes	Cooler ID:	1	@	☒ 2.2 °C	Therm. ID:	D42	
	☐ N/A	Cooler ID:		@		°C	Therm. ID:	
	☐ N/A	Cooler ID:		@		°C	Therm. ID:	
	☐ N/A	Cooler ID:		@		°C	Therm. ID:	
	☐ N/A	Cooler ID:		@		°C	Therm. ID:	
*If >6°C, were samples collected <8 hours ago?		☐ N/A						
If <0°C, were sample containers ice free?		☐ N/A						
If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".								
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.								
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.						
Were samples received within holding time?		☒ Yes						
Do samples match COC** (i.e., sample IDs, dates/times collected)?		☐ No	Sample 7A lid matched COC ID: "18" @09:43; label said "C36" @10:04. Log in according to COC&lid per client.					
**Note: If times differ <1hr, record details & login per COC.								
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)		☒ Yes						
		☐ N/A	***Exemption permitted for metals (e.g. 200.8/6020A).					
Were proper containers (type/mass/volume/preservative***) used?		☒ Yes						
Volatile / LL-Hg Requirements								
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		☒ Yes						
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		☐ N/A						
Were all soil VOAs field extracted with MeOH+BFB?		☒ Yes						
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.								
Additional notes (if applicable):								

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1177293001-A	No Preservative Required	OK			
1177293001-B	Methanol field pres. 4 C	OK			
1177293002-A	No Preservative Required	OK			
1177293002-B	Methanol field pres. 4 C	OK			
1177293003-A	No Preservative Required	OK			
1177293003-B	Methanol field pres. 4 C	OK			
1177293004-A	No Preservative Required	OK			
1177293004-B	Methanol field pres. 4 C	OK			
1177293005-A	No Preservative Required	OK			
1177293005-B	Methanol field pres. 4 C	OK			
1177293006-A	No Preservative Required	OK			
1177293006-B	Methanol field pres. 4 C	OK			
1177293007-A	No Preservative Required	OK			
1177293007-B	Methanol field pres. 4 C	OK			
1177293008-A	No Preservative Required	OK			
1177293008-B	Methanol field pres. 4 C	OK			
1177293009-A	No Preservative Required	OK			
1177293009-B	Methanol field pres. 4 C	OK			
1177293010-A	No Preservative Required	OK			
1177293010-B	Methanol field pres. 4 C	OK			
1177293011-A	No Preservative Required	OK			
1177293011-B	Methanol field pres. 4 C	OK			
1177293012-A	No Preservative Required	OK			
1177293012-B	Methanol field pres. 4 C	OK			
1177293013-A	No Preservative Required	OK			
1177293013-B	Methanol field pres. 4 C	OK			
1177293014-A	No Preservative Required	OK			
1177293014-B	Methanol field pres. 4 C	OK			
1177293015-A	No Preservative Required	OK			
1177293015-B	Methanol field pres. 4 C	OK			
1177293016-A	Methanol field pres. 4 C	OK			

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed by:

Larry Helgeson

Title:

Environmental Engineer

Date:

January 15, 2018

CS Report Name:

Report Date:

October 19, 2017

Consultant Firm:

Environmental Management, Inc.

Laboratory Name:

SGS -North America

Laboratory Report Number:

1177293

ADEC File Number:

Hazard Identification Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

☒ Yes ☐ No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

☐ Yes ☐ No

Comments:

Samples were not transferred.

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

☒ Yes ☐ No

Comments:

- b. Correct analyses requested?

☒ Yes ☐ No

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

☒ Yes ☐ No

Comments:

Cooler temperature was 2.2°C

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒ Yes ☐ No

Comments:

None were broken or leaking.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒ Yes ☐ No

Comments:

Discrepancy between sample lable and COC was noted. Incorrect paper label was placed on sample jar. Sample was correctly identified using the # on the sample lid and COC.

e. Data quality or usability affected?

Comments:

No, there is not anything to indicate data quality or usability has been affected.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No

Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None, most sample QC failures were due to dilution. MSD RPD failures are discussed later.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No

Comments:

b. All applicable holding times met?

☒ Yes ☐ No

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No

Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No

Comments:

LOQs for 1,2-Dibromoethane and 1,2-Dichloroethane were above the action level in all of the samples. In one case, MTBE LOQ was above the action level but there was other contamination present requiring dilution.

e. Data quality or usability affected?

Comments:

No 1,2-Dibromoethane and 1,2-Dichloroethane should not be considered a primary contaminant of concern unless it has been detected independently at the site above the action level. The one sample with 1,2-Dichloroethane detection had benzene levels 400 times the action level.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☒ Yes ☐ No

Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No

Comments:

v. Data quality or usability affected?

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No

Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

MSD RPDs for naphthalene was 23.6%

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

1177293009, 1177293010, and 1177293011

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

- vii. Data quality or usability affected?

Comments:

There are not any samples where naphthalene was the only compound above the or near the action level. In all cases where naphthalene was detected the area was considered contaminated due to other compounds. Therefore there is no significant impact on the site characterization.

c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No

Comments:

There were multiple failed recoveries due to dilution or matrix interference

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

Failed surrogates are marked with an "*" but the data itself does not have a separate data flag.

iv. Data quality or usability affected?

Comments:

No, in all cases the sample was contaminated with other compounds requiring dilution.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☒ Yes ☐ No

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

☐ Yes ☐ No

Comments:

Only one cooler was used

iii. All results less than LOQ?

☒ Yes ☐ No

Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No

Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No

Comments:

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

☐ Yes ☒ No Comments:

RPD could not be calculated since all the compounds were not detected in the duplicate samples.

- iv. Data quality or usability affected?

Comments:

- f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☒ Not Applicable

- i. All results less than LOQ?

☐ Yes ☒ No Comments:

Only previously cleaned sample spoons or disposable tools were used to collect the samples. No decontamination was done in the field.

- ii. If above LOQ, what samples are affected?

Comments:

- iii. Data quality or usability affected?

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

- a. Defined and appropriate?

☐ Yes ☒ No Comments:

Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)
206 E Fireweed Ln #201
Anchorage, AK 995032703
(907)272-9336

Report Number: **1177304**

Client Project: **Hub USTs 17873**

This report has been revised to report only petroleum related VOCs and to correct client sample ID.

Dear Larry Helgeson,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jillian at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Jillian Vlahovich
Project Manager
Jillian.Vlahovich@sgs.com

Date

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**SGS Project: **1177304**Project Name/Site: **Hub USTs 17873**Project Contact: **Larry Helgeson**

Refer to sample receipt form for information on sample condition.

T1-3 (1177304005) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (162%) does not meet QC criteria due to matrix interference.

T1-5 (1177304007) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (155%) does not meet QC criteria due to matrix interference.

T2-6 (1177304010) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (169%) does not meet QC criteria due to matrix interference.

T3-6 (1177304015) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (175%) does not meet QC criteria due to matrix interference.

T3-7 (1177304016) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (165%) does not meet QC criteria due to matrix interference.

T3-9 (1177304017) PS

8260C - Surrogate recovery for 4-bromofluorobenzene (157%) does not meet QC criteria due to matrix interference.

1177418001MS (1421134) MS

8260C - MS recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy.

8260C - Surrogate recovery for 4-bromofluorobenzene (173%) does not meet QC criteria due to matrix interference.

1177367001MSD (1420907) MSD

8260C - MSD RPD for naphthalene (23.6%) did not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

1177418001MSD (1421135) MSD

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**

SGS Project: **1177304**

Project Name/Site: **Hub USTs 17873**

Project Contact: **Larry Helgeson**

8260C - MSD recoveries for several analytes do not meet QC criteria. Refer to LCS for accuracy.

8260C - MSD RPD for naphthalene (24.2%) did not meet QC criteria. This analyte was not detected above the LOQ in the parent sample.

8260C - Surrogate recovery for 4-bromofluorobenzene (171%) does not meet QC criteria due to matrix interference.

1177302002MSD (1421522) MSD

8260C - MSD RPD for naphthalene (28.2%) did not meet QC criteria. Results for this analyte are estimated in the parent sample.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 12/18/2017 3:54:13PM

Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
SW8260C				
1177418001	LABREFQC	VMS17334	Naphthalene	SP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 12/18/2017 3:54:14PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are **AK00971 DW Chemistry (Provisionally Certified as of 10/12/2017) & Microbiology (Provisionally Certified as of 9/21/2017) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103).** Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
FL-02	1177304001	10/09/2017	10/12/2017	Soil/Solid (dry weight)
S-2	1177304002	10/11/2017	10/12/2017	Soil/Solid (dry weight)
FL-46	1177304003	10/10/2017	10/12/2017	Soil/Solid (dry weight)
E-02	1177304004	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T1-3	1177304005	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T1-4	1177304006	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T1-5	1177304007	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T1-9	1177304008	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T2-4	1177304009	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T2-6	1177304010	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T2-8	1177304011	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T2-10	1177304012	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T3-3	1177304013	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T3-4	1177304014	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T3-6	1177304015	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T3-7	1177304016	10/10/2017	10/12/2017	Soil/Solid (dry weight)
T3-9	1177304017	10/10/2017	10/12/2017	Soil/Solid (dry weight)
P25	1177304018	10/10/2017	10/12/2017	Soil/Solid (dry weight)
P33	1177304019	10/10/2017	10/12/2017	Soil/Solid (dry weight)
P39	1177304020	10/10/2017	10/12/2017	Soil/Solid (dry weight)
P41	1177304021	10/10/2017	10/12/2017	Soil/Solid (dry weight)
P46	1177304022	10/10/2017	10/12/2017	Soil/Solid (dry weight)
TB2	1177304023	10/06/2017	10/12/2017	Soil/Solid (dry weight)

Method

8270D SIM (PAH)

AK101

SW8021B

AK102

AK101

SM21 2540G

SW8260C

Method Description

8270 PAH SIM Semi-Volatiles GC/MS

AK101/8021 Combo. (S)

AK101/8021 Combo. (S)

Diesel Range Organics (S)

Gasoline Range Organics (S)

Percent Solids SM2540G

VOC 8260 (S) Field Extracted

Detectable Results Summary

Client Sample ID: **S-2**

Lab Sample ID: 1177304002

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	671	mg/Kg

Client Sample ID: **FL-46**

Lab Sample ID: 1177304003

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Toluene	35.0	ug/Kg

Client Sample ID: **T1-3**

Lab Sample ID: 1177304005

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzo[a]pyrene	75.0	ug/Kg
Benzo[b]Fluoranthene	85.6	ug/Kg
Benzo[g,h,i]perylene	82.0	ug/Kg
Chrysene	118	ug/Kg
Indeno[1,2,3-c,d] pyrene	81.3	ug/Kg

Client Sample ID: **T2-4**

Lab Sample ID: 1177304009

Semivolatile Organic Fuels

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	53.9	mg/Kg
Gasoline Range Organics	28.7	mg/Kg
1,2,4-Trimethylbenzene	4450	ug/Kg
1,3,5-Trimethylbenzene	1210	ug/Kg
Ethylbenzene	371	ug/Kg
Isopropylbenzene (Cumene)	36.4	ug/Kg
Naphthalene	152	ug/Kg
o-Xylene	2760	ug/Kg
P & M -Xylene	5470	ug/Kg
Toluene	595	ug/Kg

Client Sample ID: **T2-6**

Lab Sample ID: 1177304010

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	4.85	mg/Kg
1,2,4-Trimethylbenzene	339	ug/Kg
1,3,5-Trimethylbenzene	110	ug/Kg
Ethylbenzene	78.2	ug/Kg
o-Xylene	537	ug/Kg
P & M -Xylene	1030	ug/Kg
Toluene	207	ug/Kg

Client Sample ID: **T2-8**

Lab Sample ID: 1177304011

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2,4-Trimethylbenzene	43.7	ug/Kg
o-Xylene	50.1	ug/Kg
P & M -Xylene	90.4	ug/Kg
Toluene	23.1	ug/Kg

Client Sample ID: **T3-3**

Lab Sample ID: 1177304013

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	59.0	mg/Kg

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Detectable Results Summary

Client Sample ID: **T3-4**

Lab Sample ID: 1177304014

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	18.0	ug/Kg
P & M -Xylene	41.2	ug/Kg

Client Sample ID: **T3-6**

Lab Sample ID: 1177304015

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	1.88	mg/Kg
1,2,4-Trimethylbenzene	100	ug/Kg
1,3,5-Trimethylbenzene	28.5	ug/Kg
Ethylbenzene	31.6	ug/Kg
o-Xylene	93.5	ug/Kg
P & M -Xylene	209	ug/Kg
Toluene	61.9	ug/Kg

Client Sample ID: **T3-7**

Lab Sample ID: 1177304016

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	27.5	mg/Kg

Client Sample ID: **T3-9**

Lab Sample ID: 1177304017

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
o-Xylene	31.1	ug/Kg
P & M -Xylene	57.1	ug/Kg

Client Sample ID: **P25**

Lab Sample ID: 1177304018

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2,4-Trimethylbenzene	84.4	ug/Kg
1,3,5-Trimethylbenzene	30.5	ug/Kg
o-Xylene	73.1	ug/Kg
P & M -Xylene	160	ug/Kg
Toluene	27.8	ug/Kg

Client Sample ID: **P39**

Lab Sample ID: 1177304020

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2,4-Trimethylbenzene	66.4	ug/Kg
1,3,5-Trimethylbenzene	19.2	ug/Kg
o-Xylene	66.2	ug/Kg
P & M -Xylene	117	ug/Kg

Client Sample ID: **P46**

Lab Sample ID: 1177304022

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2,4-Trimethylbenzene	56.2	ug/Kg
1,3,5-Trimethylbenzene	18.5	ug/Kg
o-Xylene	20.7	ug/Kg

Results of FL-02

Client Sample ID: **FL-02**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304001
 Lab Project ID: 1177304

Collection Date: 10/09/17 14:20
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.5
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.2 U	20.2	6.25	mg/Kg	1		10/15/17 21:57
Surrogates							
5a Androstane (surr)	82.4	50-150		%	1		10/15/17 21:57

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 21:57
 Container ID: 1177304001-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.492 g
 Prep Extract Vol: 1 mL

Results of FL-02

Client Sample ID: **FL-02**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304001
 Lab Project ID: 1177304

Collection Date: 10/09/17 14:20
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.5
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.42 U	1.42	0.427	mg/Kg	1		10/17/17 01:55

Surrogates

4-Bromofluorobenzene (surr)	97.8	50-150		%	1		10/17/17 01:55
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Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 01:55
 Container ID: 1177304001-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:20
 Prep Initial Wt./Vol.: 98.86 g
 Prep Extract Vol: 27.4237 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	7.11 U	7.11	2.27	ug/Kg	1		10/17/17 01:55
Ethylbenzene	14.2 U	14.2	4.44	ug/Kg	1		10/17/17 01:55
o-Xylene	14.2 U	14.2	4.44	ug/Kg	1		10/17/17 01:55
P & M -Xylene	28.4 U	28.4	8.53	ug/Kg	1		10/17/17 01:55
Toluene	14.2 U	14.2	4.44	ug/Kg	1		10/17/17 01:55

Surrogates

1,4-Difluorobenzene (surr)	88.9	72-119		%	1		10/17/17 01:55
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Batch Information

Analytical Batch: VFC13945
 Analytical Method: SW8021B
 Analyst: ST
 Analytical Date/Time: 10/17/17 01:55
 Container ID: 1177304001-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/09/17 14:20
 Prep Initial Wt./Vol.: 98.86 g
 Prep Extract Vol: 27.4237 mL

Print Date: 12/18/2017 3:54:20PM

Results of S-2

Client Sample ID: **S-2**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304002
 Lab Project ID: 1177304

Collection Date: 10/11/17 12:55
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	671	83.1	25.8	mg/Kg	4		10/18/17 21:10
Surrogates							
5a Androstane (surr)	96.7	50-150		%	4		10/18/17 21:10

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 21:10
 Container ID: 1177304002-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.15 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM

Results of **S-2**

Client Sample ID: **S-2**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304002
Lab Project ID: 1177304

Collection Date: 10/11/17 12:55
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):95.8
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.40 U	1.40	0.421	mg/Kg	1		10/17/17 03:30
Surrogates							
4-Bromofluorobenzene (surr)	106	50-150		%	1		10/17/17 03:30

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 03:30
Container ID: 1177304002-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/11/17 12:55
Prep Initial Wt./Vol.: 110.375 g
Prep Extract Vol: 29.6779 mL

Print Date: 12/18/2017 3:54:20PM

Results of S-2

Client Sample ID: **S-2**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304002
 Lab Project ID: 1177304

Collection Date: 10/11/17 12:55
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	28.1 U	28.1	8.42	ug/Kg	1		10/18/17 23:31
1,2-Dibromoethane	5.62 U	5.62	1.74	ug/Kg	1		10/18/17 23:31
1,2-Dichloroethane	5.62 U	5.62	1.74	ug/Kg	1		10/18/17 23:31
1,3,5-Trimethylbenzene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
Benzene	7.02 U	7.02	2.19	ug/Kg	1		10/18/17 23:31
Ethylbenzene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
Isopropylbenzene (Cumene)	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
Methyl-t-butyl ether	56.2 U	56.2	17.4	ug/Kg	1		10/18/17 23:31
Naphthalene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
n-Butylbenzene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
o-Xylene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
P & M -Xylene	28.1 U	28.1	8.42	ug/Kg	1		10/18/17 23:31
sec-Butylbenzene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
tert-Butylbenzene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31
Toluene	14.0 U	14.0	4.38	ug/Kg	1		10/18/17 23:31

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136	%	1		10/18/17 23:31
4-Bromofluorobenzene (surr)	142	55-151	%	1		10/18/17 23:31
Toluene-d8 (surr)	98	85-116	%	1		10/18/17 23:31

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/18/17 23:31
 Container ID: 1177304002-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/11/17 12:55
 Prep Initial Wt./Vol.: 110.375 g
 Prep Extract Vol: 29.6779 mL

Results of **FL-46**

Client Sample ID: **FL-46**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304003
Lab Project ID: 1177304

Collection Date: 10/10/17 12:55
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):96.8
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.52 U	1.52	0.456	mg/Kg	1		10/17/17 03:49

Surrogates

4-Bromofluorobenzene (surr)	95.9	50-150		%	1		10/17/17 03:49
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Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 03:49
Container ID: 1177304003-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 12:55
Prep Initial Wt./Vol.: 95.115 g
Prep Extract Vol: 28.0157 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	7.60 U	7.60	2.43	ug/Kg	1		10/17/17 03:49
Ethylbenzene	15.2 U	15.2	4.75	ug/Kg	1		10/17/17 03:49
o-Xylene	15.2 U	15.2	4.75	ug/Kg	1		10/17/17 03:49
P & M -Xylene	30.4 U	30.4	9.13	ug/Kg	1		10/17/17 03:49
Toluene	35.0	15.2	4.75	ug/Kg	1		10/17/17 03:49

Surrogates

1,4-Difluorobenzene (surr)	90.5	72-119		%	1		10/17/17 03:49
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Batch Information

Analytical Batch: VFC13945
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/17/17 03:49
Container ID: 1177304003-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 12:55
Prep Initial Wt./Vol.: 95.115 g
Prep Extract Vol: 28.0157 mL

Results of E-02

Client Sample ID: **E-02**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304004
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:30
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.5 U	20.5	6.35	mg/Kg	1		10/15/17 22:08
Surrogates							
5a Androstane (surr)	81.6	50-150		%	1		10/15/17 22:08

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:08
 Container ID: 1177304004-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.154 g
 Prep Extract Vol: 1 mL

Results of **E-02**

Client Sample ID: **E-02**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304004
Lab Project ID: 1177304

Collection Date: 10/10/17 21:30
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):97.1
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.21 U	1.21	0.362	mg/Kg	1		10/17/17 04:08
Surrogates							
4-Bromofluorobenzene (surr)	99.6	50-150		%	1		10/17/17 04:08

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 04:08
Container ID: 1177304004-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 21:30
Prep Initial Wt./Vol.: 122.03 g
Prep Extract Vol: 28.5687 mL

Print Date: 12/18/2017 3:54:20PM

Results of E-02

Client Sample ID: **E-02**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304004
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:30
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):97.1
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	24.1 U	24.1	7.23	ug/Kg	1		10/18/17 23:47
1,2-Dibromoethane	4.82 U	4.82	1.50	ug/Kg	1		10/18/17 23:47
1,2-Dichloroethane	4.82 U	4.82	1.50	ug/Kg	1		10/18/17 23:47
1,3,5-Trimethylbenzene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
Benzene	6.03 U	6.03	1.88	ug/Kg	1		10/18/17 23:47
Ethylbenzene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
Isopropylbenzene (Cumene)	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
Methyl-t-butyl ether	48.2 U	48.2	15.0	ug/Kg	1		10/18/17 23:47
Naphthalene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
n-Butylbenzene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
o-Xylene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
P & M -Xylene	24.1 U	24.1	7.23	ug/Kg	1		10/18/17 23:47
sec-Butylbenzene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
tert-Butylbenzene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47
Toluene	12.1 U	12.1	3.76	ug/Kg	1		10/18/17 23:47

Surrogates

1,2-Dichloroethane-D4 (surr)	110	71-136	%	1		10/18/17 23:47
4-Bromofluorobenzene (surr)	135	55-151	%	1		10/18/17 23:47
Toluene-d8 (surr)	96.3	85-116	%	1		10/18/17 23:47

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/18/17 23:47
 Container ID: 1177304004-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:30
 Prep Initial Wt./Vol.: 122.03 g
 Prep Extract Vol: 28.5687 mL

Results of T1-3

Client Sample ID: **T1-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304005
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:41
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
2-Methylnaphthalene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Acenaphthene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Acenaphthylene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Anthracene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Benzo(a)Anthracene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Benzo[a]pyrene	75.0	28.6	8.59	ug/Kg	1		10/27/17 19:47
Benzo[b]Fluoranthene	85.6	28.6	8.59	ug/Kg	1		10/27/17 19:47
Benzo[g,h,i]perylene	82.0	28.6	8.59	ug/Kg	1		10/27/17 19:47
Benzo[k]fluoranthene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Chrysene	118	28.6	8.59	ug/Kg	1		10/27/17 19:47
Dibenzo[a,h]anthracene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Fluoranthene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Fluorene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Indeno[1,2,3-c,d] pyrene	81.3	28.6	8.59	ug/Kg	1		10/27/17 19:47
Naphthalene	22.9 U	22.9	6.87	ug/Kg	1		10/27/17 19:47
Phenanthrene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Pyrene	28.6 U	28.6	8.59	ug/Kg	1		10/27/17 19:47
Surrogates							
2-Methylnaphthalene-d10 (surr)	74.7	50-150		%	1		10/27/17 19:47
Fluoranthene-d10 (surr)	73.6	50-150		%	1		10/27/17 19:47

Batch Information

Analytical Batch: XMS10510
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 10/27/17 19:47
 Container ID: 1177304005-A

Prep Batch: XXX38661
 Prep Method: SW3550C
 Prep Date/Time: 10/14/17 08:26
 Prep Initial Wt./Vol.: 22.89 g
 Prep Extract Vol: 5 mL

Results of T1-3

Client Sample ID: **T1-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304005
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:41
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	23.2 U	23.2	7.18	mg/Kg	1		10/15/17 22:18
Surrogates							
5a Androstane (surr)	83.9	50-150		%	1		10/15/17 22:18

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:18
 Container ID: 1177304005-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.195 g
 Prep Extract Vol: 1 mL

Results of T1-3

Client Sample ID: **T1-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304005
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:41
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.98 U	1.98	0.595	mg/Kg	1		10/17/17 04:27
Surrogates							
4-Bromofluorobenzene (surr)	125	50-150		%	1		10/17/17 04:27

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 04:27
 Container ID: 1177304005-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:41
 Prep Initial Wt./Vol.: 125.869 g
 Prep Extract Vol: 42.8303 mL

Print Date: 12/18/2017 3:54:20PM

Results of T1-3

Client Sample ID: **T1-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304005
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:41
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	39.6 U	39.6	11.9	ug/Kg	1		10/19/17 00:04
1,2-Dibromoethane	7.93 U	7.93	2.46	ug/Kg	1		10/19/17 00:04
1,2-Dichloroethane	7.93 U	7.93	2.46	ug/Kg	1		10/19/17 00:04
1,3,5-Trimethylbenzene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
Benzene	9.91 U	9.91	3.09	ug/Kg	1		10/19/17 00:04
Ethylbenzene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
Isopropylbenzene (Cumene)	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
Methyl-t-butyl ether	79.3 U	79.3	24.6	ug/Kg	1		10/19/17 00:04
Naphthalene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
n-Butylbenzene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
o-Xylene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
P & M -Xylene	39.6 U	39.6	11.9	ug/Kg	1		10/19/17 00:04
sec-Butylbenzene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
tert-Butylbenzene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04
Toluene	19.8 U	19.8	6.18	ug/Kg	1		10/19/17 00:04

Surrogates

1,2-Dichloroethane-D4 (surr)	108		71-136	%	1		10/19/17 00:04
4-Bromofluorobenzene (surr)	162	*	55-151	%	1		10/19/17 00:04
Toluene-d8 (surr)	99.1		85-116	%	1		10/19/17 00:04

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 00:04
 Container ID: 1177304005-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:41
 Prep Initial Wt./Vol.: 125.869 g
 Prep Extract Vol: 42.8303 mL

Results of T1-4

Client Sample ID: **T1-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304006
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:45
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	23.1 U	23.1	7.17	mg/Kg	1		10/15/17 22:28
Surrogates							
5a Androstane (surr)	84.9	50-150		%	1		10/15/17 22:28

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:28
 Container ID: 1177304006-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.204 g
 Prep Extract Vol: 1 mL

Results of T1-4

Client Sample ID: **T1-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304006
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:45
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.22 U	2.22	0.667	mg/Kg	1		10/17/17 04:45
Surrogates							
4-Bromofluorobenzene (surr)	108	50-150		%	1		10/17/17 04:45

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 04:45
 Container ID: 1177304006-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:45
 Prep Initial Wt./Vol.: 104.09 g
 Prep Extract Vol: 39.7412 mL

Print Date: 12/18/2017 3:54:20PM

Results of T1-4

Client Sample ID: **T1-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304006
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:45
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):85.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	44.5 U	44.5	13.3	ug/Kg	1		10/19/17 00:20
1,2-Dibromoethane	8.90 U	8.90	2.76	ug/Kg	1		10/19/17 00:20
1,2-Dichloroethane	8.90 U	8.90	2.76	ug/Kg	1		10/19/17 00:20
1,3,5-Trimethylbenzene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
Benzene	11.1 U	11.1	3.47	ug/Kg	1		10/19/17 00:20
Ethylbenzene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
Isopropylbenzene (Cumene)	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
Methyl-t-butyl ether	89.0 U	89.0	27.6	ug/Kg	1		10/19/17 00:20
Naphthalene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
n-Butylbenzene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
o-Xylene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
P & M -Xylene	44.5 U	44.5	13.3	ug/Kg	1		10/19/17 00:20
sec-Butylbenzene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
tert-Butylbenzene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20
Toluene	22.2 U	22.2	6.94	ug/Kg	1		10/19/17 00:20

Surrogates

1,2-Dichloroethane-D4 (surr)	110	71-136	%	1		10/19/17 00:20
4-Bromofluorobenzene (surr)	149	55-151	%	1		10/19/17 00:20
Toluene-d8 (surr)	96.7	85-116	%	1		10/19/17 00:20

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 00:20
 Container ID: 1177304006-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:45
 Prep Initial Wt./Vol.: 104.09 g
 Prep Extract Vol: 39.7412 mL

Results of T1-5

Client Sample ID: **T1-5**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304007
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:38
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	22.5 U	22.5	6.97	mg/Kg	1		10/15/17 22:39
Surrogates							
5a Androstane (surr)	81.5	50-150		%	1		10/15/17 22:39

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:39
 Container ID: 1177304007-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.354 g
 Prep Extract Vol: 1 mL



Results of T1-5

Client Sample ID: T1-5
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304007
Lab Project ID: 1177304

Collection Date: 10/10/17 20:38
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):87.9
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.79 U	1.79	0.537	mg/Kg	1		10/17/17 05:04
Surrogates							
4-Bromofluorobenzene (surr)	118	50-150		%	1		10/17/17 05:04

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 05:04
Container ID: 1177304007-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 20:38
Prep Initial Wt./Vol.: 129.053 g
Prep Extract Vol: 40.5917 mL

Print Date: 12/18/2017 3:54:20PM

Results of T1-5

Client Sample ID: **T1-5**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304007
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:38
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.9
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	35.8 U	35.8	10.7	ug/Kg	1		10/19/17 00:36
1,2-Dibromoethane	7.16 U	7.16	2.22	ug/Kg	1		10/19/17 00:36
1,2-Dichloroethane	7.16 U	7.16	2.22	ug/Kg	1		10/19/17 00:36
1,3,5-Trimethylbenzene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
Benzene	8.94 U	8.94	2.79	ug/Kg	1		10/19/17 00:36
Ethylbenzene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
Isopropylbenzene (Cumene)	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
Methyl-t-butyl ether	71.6 U	71.6	22.2	ug/Kg	1		10/19/17 00:36
Naphthalene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
n-Butylbenzene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
o-Xylene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
P & M -Xylene	35.8 U	35.8	10.7	ug/Kg	1		10/19/17 00:36
sec-Butylbenzene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
tert-Butylbenzene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36
Toluene	17.9 U	17.9	5.58	ug/Kg	1		10/19/17 00:36

Surrogates

1,2-Dichloroethane-D4 (surr)	108		71-136	%	1		10/19/17 00:36
4-Bromofluorobenzene (surr)	155	*	55-151	%	1		10/19/17 00:36
Toluene-d8 (surr)	98.4		85-116	%	1		10/19/17 00:36

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 00:36
 Container ID: 1177304007-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:38
 Prep Initial Wt./Vol.: 129.053 g
 Prep Extract Vol: 40.5917 mL

Results of T1-9

Client Sample ID: **T1-9**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304008
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:34
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.8 U	21.8	6.77	mg/Kg	1		10/15/17 22:49
Surrogates							
5a Androstane (surr)	85.9	50-150		%	1		10/15/17 22:49

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:49
 Container ID: 1177304008-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.228 g
 Prep Extract Vol: 1 mL



Results of T1-9

Client Sample ID: T1-9
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304008
Lab Project ID: 1177304

Collection Date: 10/10/17 20:34
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):90.9
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.62 U	1.62	0.485	mg/Kg	1		10/17/17 05:23
Surrogates							
4-Bromofluorobenzene (surr)	117	50-150		%	1		10/17/17 05:23

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 05:23
Container ID: 1177304008-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 20:34
Prep Initial Wt./Vol.: 123.605 g
Prep Extract Vol: 36.3098 mL

Print Date: 12/18/2017 3:54:20PM

Results of T1-9

Client Sample ID: **T1-9**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304008
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:34
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.9
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	32.3 U	32.3	9.70	ug/Kg	1		10/19/17 00:52
1,2-Dibromoethane	6.47 U	6.47	2.00	ug/Kg	1		10/19/17 00:52
1,2-Dichloroethane	6.47 U	6.47	2.00	ug/Kg	1		10/19/17 00:52
1,3,5-Trimethylbenzene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
Benzene	8.08 U	8.08	2.52	ug/Kg	1		10/19/17 00:52
Ethylbenzene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
Isopropylbenzene (Cumene)	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
Methyl-t-butyl ether	64.7 U	64.7	20.0	ug/Kg	1		10/19/17 00:52
Naphthalene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
n-Butylbenzene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
o-Xylene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
P & M -Xylene	32.3 U	32.3	9.70	ug/Kg	1		10/19/17 00:52
sec-Butylbenzene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
tert-Butylbenzene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52
Toluene	16.2 U	16.2	5.04	ug/Kg	1		10/19/17 00:52

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136	%	1		10/19/17 00:52
4-Bromofluorobenzene (surr)	151	55-151	%	1		10/19/17 00:52
Toluene-d8 (surr)	97.3	85-116	%	1		10/19/17 00:52

Batch Information

Analytical Batch: VMS17334
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 00:52
 Container ID: 1177304008-B

Prep Batch: VXX31547
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:34
 Prep Initial Wt./Vol.: 123.605 g
 Prep Extract Vol: 36.3098 mL

Results of T2-4

Client Sample ID: **T2-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304009
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:56
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.7
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	53.9	20.9	6.47	mg/Kg	1		10/15/17 22:59
Surrogates							
5a Androstane (surr)	87	50-150		%	1		10/15/17 22:59

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 22:59
 Container ID: 1177304009-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.335 g
 Prep Extract Vol: 1 mL

Results of T2-4

Client Sample ID: **T2-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304009
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:56
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.7
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	28.7	1.66	0.499	mg/Kg	1		10/17/17 05:42
Surrogates							
4-Bromofluorobenzene (surr)	139	50-150		%	1		10/17/17 05:42

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 05:42
 Container ID: 1177304009-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:56
 Prep Initial Wt./Vol.: 95.291 g
 Prep Extract Vol: 30.0321 mL

Results of T2-4

Client Sample ID: **T2-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304009
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:56
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.7
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	4450	166	49.9	ug/Kg	5		10/21/17 20:07
1,2-Dibromoethane	6.65 U	6.65	2.06	ug/Kg	1		10/19/17 14:19
1,2-Dichloroethane	6.65 U	6.65	2.06	ug/Kg	1		10/19/17 14:19
1,3,5-Trimethylbenzene	1210	16.6	5.19	ug/Kg	1		10/19/17 14:19
Benzene	8.32 U	8.32	2.60	ug/Kg	1		10/19/17 14:19
Ethylbenzene	371	16.6	5.19	ug/Kg	1		10/19/17 14:19
Isopropylbenzene (Cumene)	36.4	16.6	5.19	ug/Kg	1		10/19/17 14:19
Methyl-t-butyl ether	66.5 U	66.5	20.6	ug/Kg	1		10/19/17 14:19
Naphthalene	152	16.6	5.19	ug/Kg	1		10/19/17 14:19
n-Butylbenzene	16.6 U	16.6	5.19	ug/Kg	1		10/19/17 14:19
o-Xylene	2760	16.6	5.19	ug/Kg	1		10/19/17 14:19
P & M -Xylene	5470	33.3	9.98	ug/Kg	1		10/19/17 14:19
sec-Butylbenzene	16.6 U	16.6	5.19	ug/Kg	1		10/19/17 14:19
tert-Butylbenzene	16.6 U	16.6	5.19	ug/Kg	1		10/19/17 14:19
Toluene	595	16.6	5.19	ug/Kg	1		10/19/17 14:19

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 14:19
4-Bromofluorobenzene (surr)	137	55-151	%	1		10/19/17 14:19
Toluene-d8 (surr)	101	85-116	%	1		10/19/17 14:19

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 14:19
 Container ID: 1177304009-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:56
 Prep Initial Wt./Vol.: 95.291 g
 Prep Extract Vol: 30.0321 mL

Analytical Batch: VMS17348
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/21/17 20:07
 Container ID: 1177304009-B

Prep Batch: VXX31575
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:56
 Prep Initial Wt./Vol.: 95.291 g
 Prep Extract Vol: 30.0321 mL

Results of T2-6

Client Sample ID: **T2-6**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304010
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:52
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):86.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	23.0 U	23.0	7.14	mg/Kg	1		10/15/17 23:10
Surrogates							
5a Androstane (surr)	94.4	50-150		%	1		10/15/17 23:10

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 23:10
 Container ID: 1177304010-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.156 g
 Prep Extract Vol: 1 mL



Results of T2-6

Client Sample ID: T2-6
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304010
Lab Project ID: 1177304

Collection Date: 10/10/17 20:52
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):86.3
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	4.85	1.84	0.551	mg/Kg	1		10/17/17 06:01
Surrogates							
4-Bromofluorobenzene (surr)	131	50-150		%	1		10/17/17 06:01

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 06:01
Container ID: 1177304010-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 20:52
Prep Initial Wt./Vol.: 138.473 g
Prep Extract Vol: 43.9091 mL

Results of T2-6

Client Sample ID: **T2-6**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304010
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:52
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):86.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	339	36.7	11.0	ug/Kg	1		10/19/17 14:36
1,2-Dibromoethane	7.34 U	7.34	2.28	ug/Kg	1		10/19/17 14:36
1,2-Dichloroethane	7.34 U	7.34	2.28	ug/Kg	1		10/19/17 14:36
1,3,5-Trimethylbenzene	110	18.4	5.73	ug/Kg	1		10/19/17 14:36
Benzene	9.18 U	9.18	2.86	ug/Kg	1		10/19/17 14:36
Ethylbenzene	78.2	18.4	5.73	ug/Kg	1		10/19/17 14:36
Isopropylbenzene (Cumene)	18.4 U	18.4	5.73	ug/Kg	1		10/19/17 14:36
Methyl-t-butyl ether	73.4 U	73.4	22.8	ug/Kg	1		10/19/17 14:36
Naphthalene	18.4 U	18.4	5.73	ug/Kg	1		10/19/17 14:36
n-Butylbenzene	18.4 U	18.4	5.73	ug/Kg	1		10/19/17 14:36
o-Xylene	537	18.4	5.73	ug/Kg	1		10/19/17 14:36
P & M -Xylene	1030	36.7	11.0	ug/Kg	1		10/19/17 14:36
sec-Butylbenzene	18.4 U	18.4	5.73	ug/Kg	1		10/19/17 14:36
tert-Butylbenzene	18.4 U	18.4	5.73	ug/Kg	1		10/19/17 14:36
Toluene	207	18.4	5.73	ug/Kg	1		10/19/17 14:36

Surrogates

1,2-Dichloroethane-D4 (surr)	108		71-136	%	1		10/19/17 14:36
4-Bromofluorobenzene (surr)	169	*	55-151	%	1		10/19/17 14:36
Toluene-d8 (surr)	98.1		85-116	%	1		10/19/17 14:36

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 14:36
 Container ID: 1177304010-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:52
 Prep Initial Wt./Vol.: 138.473 g
 Prep Extract Vol: 43.9091 mL

Results of T2-8

Client Sample ID: **T2-8**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304011
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:50
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.0
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.9 U	21.9	6.80	mg/Kg	1		10/15/17 23:20
Surrogates							
5a Androstane (surr)	86.2	50-150		%	1		10/15/17 23:20

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 23:20
 Container ID: 1177304011-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.068 g
 Prep Extract Vol: 1 mL



Results of T2-8

Client Sample ID: T2-8
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304011
Lab Project ID: 1177304

Collection Date: 10/10/17 20:50
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):91.0
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.63 U	1.63	0.488	mg/Kg	1		10/17/17 06:20
Surrogates							
4-Bromofluorobenzene (surr)	108	50-150		%	1		10/17/17 06:20

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 06:20
Container ID: 1177304011-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 20:50
Prep Initial Wt./Vol.: 121.489 g
Prep Extract Vol: 35.9478 mL

Results of T2-8

Client Sample ID: **T2-8**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304011
 Lab Project ID: 1177304

Collection Date: 10/10/17 20:50
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):91.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	43.7	32.5	9.76	ug/Kg	1		10/19/17 14:52
1,2-Dibromoethane	6.50 U	6.50	2.02	ug/Kg	1		10/19/17 14:52
1,2-Dichloroethane	6.50 U	6.50	2.02	ug/Kg	1		10/19/17 14:52
1,3,5-Trimethylbenzene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
Benzene	8.13 U	8.13	2.54	ug/Kg	1		10/19/17 14:52
Ethylbenzene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
Isopropylbenzene (Cumene)	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
Methyl-t-butyl ether	65.0 U	65.0	20.2	ug/Kg	1		10/19/17 14:52
Naphthalene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
n-Butylbenzene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
o-Xylene	50.1	16.3	5.07	ug/Kg	1		10/19/17 14:52
P & M -Xylene	90.4	32.5	9.76	ug/Kg	1		10/19/17 14:52
sec-Butylbenzene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
tert-Butylbenzene	16.3 U	16.3	5.07	ug/Kg	1		10/19/17 14:52
Toluene	23.1	16.3	5.07	ug/Kg	1		10/19/17 14:52

Surrogates

1,2-Dichloroethane-D4 (surr)	112	71-136	%	1		10/19/17 14:52
4-Bromofluorobenzene (surr)	149	55-151	%	1		10/19/17 14:52
Toluene-d8 (surr)	97.2	85-116	%	1		10/19/17 14:52

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 14:52
 Container ID: 1177304011-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 20:50
 Prep Initial Wt./Vol.: 121.489 g
 Prep Extract Vol: 35.9478 mL

Results of T2-10

Client Sample ID: **T2-10**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304012
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:07
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.6
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.3 U	21.3	6.61	mg/Kg	1		10/15/17 23:31
Surrogates							
5a Androstane (surr)	85.6	50-150		%	1		10/15/17 23:31

Batch Information

Analytical Batch: XFC13889
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/15/17 23:31
 Container ID: 1177304012-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.055 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM

Results of T2-10

Client Sample ID: **T2-10**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304012
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:07
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.6
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.61 U	1.61	0.484	mg/Kg	1		10/17/17 06:39
Surrogates							
4-Bromofluorobenzene (surr)	104	50-150		%	1		10/17/17 06:39

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 06:39
 Container ID: 1177304012-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:07
 Prep Initial Wt./Vol.: 104.986 g
 Prep Extract Vol: 31.7205 mL

Print Date: 12/18/2017 3:54:20PM

Results of T2-10

Client Sample ID: **T2-10**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304012
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:07
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.6
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	32.3 U	32.3	9.68	ug/Kg	1		10/19/17 15:08
1,2-Dibromoethane	6.46 U	6.46	2.00	ug/Kg	1		10/19/17 15:08
1,2-Dichloroethane	6.46 U	6.46	2.00	ug/Kg	1		10/19/17 15:08
1,3,5-Trimethylbenzene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
Benzene	8.07 U	8.07	2.52	ug/Kg	1		10/19/17 15:08
Ethylbenzene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
Isopropylbenzene (Cumene)	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
Methyl-t-butyl ether	64.6 U	64.6	20.0	ug/Kg	1		10/19/17 15:08
Naphthalene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
n-Butylbenzene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
o-Xylene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
P & M -Xylene	32.3 U	32.3	9.68	ug/Kg	1		10/19/17 15:08
sec-Butylbenzene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
tert-Butylbenzene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08
Toluene	16.1 U	16.1	5.04	ug/Kg	1		10/19/17 15:08

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 15:08
4-Bromofluorobenzene (surr)	137	55-151	%	1		10/19/17 15:08
Toluene-d8 (surr)	96.5	85-116	%	1		10/19/17 15:08

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 15:08
 Container ID: 1177304012-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:07
 Prep Initial Wt./Vol.: 104.986 g
 Prep Extract Vol: 31.7205 mL

Results of T3-3

Client Sample ID: **T3-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304013
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:26
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.7
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	59.0	21.3	6.60	mg/Kg	1		10/18/17 19:37
Surrogates							
5a Androstane (surr)	89.8	50-150		%	1		10/18/17 19:37

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 19:37
 Container ID: 1177304013-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.055 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM



Results of T3-3

Client Sample ID: T3-3
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304013
Lab Project ID: 1177304

Collection Date: 10/10/17 21:26
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.50 U	1.50	0.450	mg/Kg	1		10/17/17 06:57
Surrogates							
4-Bromofluorobenzene (surr)	108	50-150		%	1		10/17/17 06:57

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 06:57
Container ID: 1177304013-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 21:26
Prep Initial Wt./Vol.: 114.216 g
Prep Extract Vol: 32.1461 mL

Results of T3-3

Client Sample ID: **T3-3**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304013
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:26
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.7
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	30.0 U	30.0	9.01	ug/Kg	1		10/19/17 15:24
1,2-Dibromoethane	6.00 U	6.00	1.86	ug/Kg	1		10/19/17 15:24
1,2-Dichloroethane	6.00 U	6.00	1.86	ug/Kg	1		10/19/17 15:24
1,3,5-Trimethylbenzene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
Benzene	7.51 U	7.51	2.34	ug/Kg	1		10/19/17 15:24
Ethylbenzene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
Isopropylbenzene (Cumene)	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
Methyl-t-butyl ether	60.0 U	60.0	18.6	ug/Kg	1		10/19/17 15:24
Naphthalene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
n-Butylbenzene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
o-Xylene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
P & M -Xylene	30.0 U	30.0	9.01	ug/Kg	1		10/19/17 15:24
sec-Butylbenzene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
tert-Butylbenzene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24
Toluene	15.0 U	15.0	4.68	ug/Kg	1		10/19/17 15:24

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 15:24
4-Bromofluorobenzene (surr)	134	55-151	%	1		10/19/17 15:24
Toluene-d8 (surr)	99.6	85-116	%	1		10/19/17 15:24

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 15:24
 Container ID: 1177304013-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:26
 Prep Initial Wt./Vol.: 114.216 g
 Prep Extract Vol: 32.1461 mL

Results of T3-4

Client Sample ID: **T3-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304014
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:43
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.8
 Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
2-Methylnaphthalene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Acenaphthene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Acenaphthylene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Anthracene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Benzo(a)Anthracene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Benzo[a]pyrene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Benzo[b]Fluoranthene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Benzo[g,h,i]perylene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Benzo[k]fluoranthene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Chrysene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Dibenzo[a,h]anthracene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Fluoranthene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Fluorene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Indeno[1,2,3-c,d] pyrene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Naphthalene	22.1 U	22.1	6.63	ug/Kg	1		10/27/17 20:07
Phenanthrene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Pyrene	27.6 U	27.6	8.29	ug/Kg	1		10/27/17 20:07
Surrogates							
2-Methylnaphthalene-d10 (surr)	72.1	50-150		%	1		10/27/17 20:07
Fluoranthene-d10 (surr)	74	50-150		%	1		10/27/17 20:07

Batch Information

Analytical Batch: XMS10510
 Analytical Method: 8270D SIM (PAH)
 Analyst: DSD
 Analytical Date/Time: 10/27/17 20:07
 Container ID: 1177304014-A

Prep Batch: XXX38661
 Prep Method: SW3550C
 Prep Date/Time: 10/14/17 08:26
 Prep Initial Wt./Vol.: 22.947 g
 Prep Extract Vol: 5 mL

Results of T3-4

Client Sample ID: **T3-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304014
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:43
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	22.3 U	22.3	6.92	mg/Kg	1		10/18/17 19:47
Surrogates							
5a Androstane (surr)	86.4	50-150		%	1		10/18/17 19:47

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 19:47
 Container ID: 1177304014-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.291 g
 Prep Extract Vol: 1 mL

Results of T3-4

Client Sample ID: **T3-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304014
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:43
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.8
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.57 U	1.57	0.470	mg/Kg	1		10/17/17 07:16
Surrogates							
4-Bromofluorobenzene (surr)	117	50-150		%	1		10/17/17 07:16

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 07:16
 Container ID: 1177304014-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:43
 Prep Initial Wt./Vol.: 150.987 g
 Prep Extract Vol: 41.9689 mL

Print Date: 12/18/2017 3:54:20PM

Results of T3-4

Client Sample ID: **T3-4**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304014
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:43
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	31.3 U	31.3	9.39	ug/Kg	1		10/19/17 15:41
1,2-Dibromoethane	6.26 U	6.26	1.94	ug/Kg	1		10/19/17 15:41
1,2-Dichloroethane	6.26 U	6.26	1.94	ug/Kg	1		10/19/17 15:41
1,3,5-Trimethylbenzene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
Benzene	7.83 U	7.83	2.44	ug/Kg	1		10/19/17 15:41
Ethylbenzene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
Isopropylbenzene (Cumene)	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
Methyl-t-butyl ether	62.6 U	62.6	19.4	ug/Kg	1		10/19/17 15:41
Naphthalene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
n-Butylbenzene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
o-Xylene	18.0	15.7	4.89	ug/Kg	1		10/19/17 15:41
P & M -Xylene	41.2	31.3	9.39	ug/Kg	1		10/19/17 15:41
sec-Butylbenzene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
tert-Butylbenzene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41
Toluene	15.7 U	15.7	4.89	ug/Kg	1		10/19/17 15:41

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 15:41
4-Bromofluorobenzene (surr)	151	55-151	%	1		10/19/17 15:41
Toluene-d8 (surr)	97.8	85-116	%	1		10/19/17 15:41

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 15:41
 Container ID: 1177304014-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:43
 Prep Initial Wt./Vol.: 150.987 g
 Prep Extract Vol: 41.9689 mL

Results of T3-6

Client Sample ID: **T3-6**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304015
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:15
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	22.9 U	22.9	7.09	mg/Kg	1		10/18/17 19:57
Surrogates							
5a Androstane (surr)	89.5	50-150		%	1		10/18/17 19:57

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 19:57
 Container ID: 1177304015-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.082 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM

Results of T3-6

Client Sample ID: **T3-6**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304015
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:15
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.2
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.88	1.62	0.486	mg/Kg	1		10/17/17 07:35
Surrogates							
4-Bromofluorobenzene (surr)	145	50-150		%	1		10/17/17 07:35

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 07:35
 Container ID: 1177304015-B

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:15
 Prep Initial Wt./Vol.: 161.383 g
 Prep Extract Vol: 45.6274 mL

Print Date: 12/18/2017 3:54:20PM

Results of T3-6

Client Sample ID: **T3-6**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304015
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:15
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):87.2
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	100	32.4	9.72	ug/Kg	1		10/19/17 15:57
1,2-Dibromoethane	6.48 U	6.48	2.01	ug/Kg	1		10/19/17 15:57
1,2-Dichloroethane	6.48 U	6.48	2.01	ug/Kg	1		10/19/17 15:57
1,3,5-Trimethylbenzene	28.5	16.2	5.06	ug/Kg	1		10/19/17 15:57
Benzene	8.10 U	8.10	2.53	ug/Kg	1		10/19/17 15:57
Ethylbenzene	31.6	16.2	5.06	ug/Kg	1		10/19/17 15:57
Isopropylbenzene (Cumene)	16.2 U	16.2	5.06	ug/Kg	1		10/19/17 15:57
Methyl-t-butyl ether	64.8 U	64.8	20.1	ug/Kg	1		10/19/17 15:57
Naphthalene	16.2 U	16.2	5.06	ug/Kg	1		10/19/17 15:57
n-Butylbenzene	16.2 U	16.2	5.06	ug/Kg	1		10/19/17 15:57
o-Xylene	93.5	16.2	5.06	ug/Kg	1		10/19/17 15:57
P & M -Xylene	209	32.4	9.72	ug/Kg	1		10/19/17 15:57
sec-Butylbenzene	16.2 U	16.2	5.06	ug/Kg	1		10/19/17 15:57
tert-Butylbenzene	16.2 U	16.2	5.06	ug/Kg	1		10/19/17 15:57
Toluene	61.9	16.2	5.06	ug/Kg	1		10/19/17 15:57

Surrogates

1,2-Dichloroethane-D4 (surr)	114		71-136	%	1		10/19/17 15:57
4-Bromofluorobenzene (surr)	175	*	55-151	%	1		10/19/17 15:57
Toluene-d8 (surr)	94.9		85-116	%	1		10/19/17 15:57

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 15:57
 Container ID: 1177304015-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:15
 Prep Initial Wt./Vol.: 161.383 g
 Prep Extract Vol: 45.6274 mL

Results of T3-7

Client Sample ID: **T3-7**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304016
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:22
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	27.5	22.4	6.93	mg/Kg	1		10/18/17 20:07
Surrogates							
5a Androstane (surr)	85.1	50-150		%	1		10/18/17 20:07

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:07
 Container ID: 1177304016-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.398 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM



Results of T3-7

Client Sample ID: T3-7
Client Project ID: Hub USTs 17873
Lab Sample ID: 1177304016
Lab Project ID: 1177304

Collection Date: 10/10/17 21:22
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):88.3
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.73 U	1.73	0.518	mg/Kg	1		10/17/17 07:54
Surrogates							
4-Bromofluorobenzene (surr)	139	50-150		%	1		10/17/17 07:54

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 07:54
Container ID: 1177304016-B

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/10/17 21:22
Prep Initial Wt./Vol.: 133.116 g
Prep Extract Vol: 40.6096 mL

Print Date: 12/18/2017 3:54:20PM

Results of T3-7

Client Sample ID: **T3-7**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304016
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:22
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):88.3
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	34.6 U	34.6	10.4	ug/Kg	1		10/19/17 16:13
1,2-Dibromoethane	6.91 U	6.91	2.14	ug/Kg	1		10/19/17 16:13
1,2-Dichloroethane	6.91 U	6.91	2.14	ug/Kg	1		10/19/17 16:13
1,3,5-Trimethylbenzene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
Benzene	8.64 U	8.64	2.70	ug/Kg	1		10/19/17 16:13
Ethylbenzene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
Isopropylbenzene (Cumene)	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
Methyl-t-butyl ether	69.1 U	69.1	21.4	ug/Kg	1		10/19/17 16:13
Naphthalene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
n-Butylbenzene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
o-Xylene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
P & M -Xylene	34.6 U	34.6	10.4	ug/Kg	1		10/19/17 16:13
sec-Butylbenzene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
tert-Butylbenzene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13
Toluene	17.3 U	17.3	5.39	ug/Kg	1		10/19/17 16:13

Surrogates

1,2-Dichloroethane-D4 (surr)	110		71-136	%	1		10/19/17 16:13
4-Bromofluorobenzene (surr)	165	*	55-151	%	1		10/19/17 16:13
Toluene-d8 (surr)	95.3		85-116	%	1		10/19/17 16:13

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 16:13
 Container ID: 1177304016-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:22
 Prep Initial Wt./Vol.: 133.116 g
 Prep Extract Vol: 40.6096 mL

Results of T3-9

Client Sample ID: **T3-9**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304017
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:19
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.7
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	21.9 U	21.9	6.77	mg/Kg	1		10/18/17 20:18
Surrogates							
5a Androstane (surr)	91.6	50-150		%	1		10/18/17 20:18

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:18
 Container ID: 1177304017-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.256 g
 Prep Extract Vol: 1 mL

Results of T3-9

Client Sample ID: **T3-9**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304017
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:19
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.7
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.41 U	1.41	0.424	mg/Kg	1		10/17/17 17:28
Surrogates							
4-Bromofluorobenzene (surr)	98.1	50-150		%	1		10/17/17 17:28

Batch Information

Analytical Batch: VFC13949
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 17:28
 Container ID: 1177304017-B

Prep Batch: VXX31535
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:19
 Prep Initial Wt./Vol.: 152.435 g
 Prep Extract Vol: 39.1057 mL

Print Date: 12/18/2017 3:54:20PM

Results of T3-9

Client Sample ID: **T3-9**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304017
 Lab Project ID: 1177304

Collection Date: 10/10/17 21:19
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):90.7
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	28.3 U	28.3	8.48	ug/Kg	1		10/19/17 16:29
1,2-Dibromoethane	5.65 U	5.65	1.75	ug/Kg	1		10/19/17 16:29
1,2-Dichloroethane	5.65 U	5.65	1.75	ug/Kg	1		10/19/17 16:29
1,3,5-Trimethylbenzene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
Benzene	7.07 U	7.07	2.21	ug/Kg	1		10/19/17 16:29
Ethylbenzene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
Isopropylbenzene (Cumene)	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
Methyl-t-butyl ether	56.5 U	56.5	17.5	ug/Kg	1		10/19/17 16:29
Naphthalene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
n-Butylbenzene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
o-Xylene	31.1	14.1	4.41	ug/Kg	1		10/19/17 16:29
P & M -Xylene	57.1	28.3	8.48	ug/Kg	1		10/19/17 16:29
sec-Butylbenzene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
tert-Butylbenzene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29
Toluene	14.1 U	14.1	4.41	ug/Kg	1		10/19/17 16:29

Surrogates

1,2-Dichloroethane-D4 (surr)	110		71-136	%	1		10/19/17 16:29
4-Bromofluorobenzene (surr)	157	*	55-151	%	1		10/19/17 16:29
Toluene-d8 (surr)	95.2		85-116	%	1		10/19/17 16:29

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 16:29
 Container ID: 1177304017-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 21:19
 Prep Initial Wt./Vol.: 152.435 g
 Prep Extract Vol: 39.1057 mL

Results of P25

Client Sample ID: **P25**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304018
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:26
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.6 U	20.6	6.39	mg/Kg	1		10/18/17 20:28
Surrogates							
5a Androstane (surr)	90.2	50-150		%	1		10/18/17 20:28

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:28
 Container ID: 1177304018-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.406 g
 Prep Extract Vol: 1 mL

Results of **P25**

Client Sample ID: **P25**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304018
Lab Project ID: 1177304

Collection Date: 10/10/17 13:26
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):95.8
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.76 U	1.76	0.528	mg/Kg	1		10/17/17 17:47
Surrogates							
4-Bromofluorobenzene (surr)	80.9	50-150		%	1		10/17/17 17:47

Batch Information

Analytical Batch: VFC13949
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 17:47
Container ID: 1177304018-B

Prep Batch: VXX31535
Prep Method: SW5035A
Prep Date/Time: 10/10/17 13:26
Prep Initial Wt./Vol.: 84.637 g
Prep Extract Vol: 28.562 mL

Print Date: 12/18/2017 3:54:20PM

Results of P25

Client Sample ID: **P25**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304018
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:26
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.8
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	84.4	35.2	10.6	ug/Kg	1		10/19/17 16:45
1,2-Dibromoethane	7.05 U	7.05	2.18	ug/Kg	1		10/19/17 16:45
1,2-Dichloroethane	7.05 U	7.05	2.18	ug/Kg	1		10/19/17 16:45
1,3,5-Trimethylbenzene	30.5	17.6	5.50	ug/Kg	1		10/19/17 16:45
Benzene	8.81 U	8.81	2.75	ug/Kg	1		10/19/17 16:45
Ethylbenzene	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
Isopropylbenzene (Cumene)	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
Methyl-t-butyl ether	70.5 U	70.5	21.8	ug/Kg	1		10/19/17 16:45
Naphthalene	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
n-Butylbenzene	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
o-Xylene	73.1	17.6	5.50	ug/Kg	1		10/19/17 16:45
P & M -Xylene	160	35.2	10.6	ug/Kg	1		10/19/17 16:45
sec-Butylbenzene	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
tert-Butylbenzene	17.6 U	17.6	5.50	ug/Kg	1		10/19/17 16:45
Toluene	27.8	17.6	5.50	ug/Kg	1		10/19/17 16:45

Surrogates

1,2-Dichloroethane-D4 (surr)	113	71-136	%	1		10/19/17 16:45
4-Bromofluorobenzene (surr)	129	55-151	%	1		10/19/17 16:45
Toluene-d8 (surr)	95.2	85-116	%	1		10/19/17 16:45

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 16:45
 Container ID: 1177304018-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:26
 Prep Initial Wt./Vol.: 84.637 g
 Prep Extract Vol: 28.562 mL

Results of P33

Client Sample ID: **P33**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304019
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:20
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.7 U	20.7	6.42	mg/Kg	1		10/18/17 20:39
Surrogates							
5a Androstane (surr)	90.5	50-150		%	1		10/18/17 20:39

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:39
 Container ID: 1177304019-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.211 g
 Prep Extract Vol: 1 mL

Results of **P33**

Client Sample ID: **P33**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304019
Lab Project ID: 1177304

Collection Date: 10/10/17 13:20
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):95.9
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.60 U	1.60	0.479	mg/Kg	1		10/17/17 18:06
Surrogates							
4-Bromofluorobenzene (surr)	83.7	50-150		%	1		10/17/17 18:06

Batch Information

Analytical Batch: VFC13949
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 18:06
Container ID: 1177304019-B

Prep Batch: VXX31535
Prep Method: SW5035A
Prep Date/Time: 10/10/17 13:20
Prep Initial Wt./Vol.: 94.357 g
Prep Extract Vol: 28.9007 mL

Print Date: 12/18/2017 3:54:20PM

Results of P33

Client Sample ID: **P33**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304019
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:20
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.9
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	31.9 U	31.9	9.58	ug/Kg	1		10/19/17 17:02
1,2-Dibromoethane	6.39 U	6.39	1.98	ug/Kg	1		10/19/17 17:02
1,2-Dichloroethane	6.39 U	6.39	1.98	ug/Kg	1		10/19/17 17:02
1,3,5-Trimethylbenzene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
Benzene	7.99 U	7.99	2.49	ug/Kg	1		10/19/17 17:02
Ethylbenzene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
Isopropylbenzene (Cumene)	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
Methyl-t-butyl ether	63.9 U	63.9	19.8	ug/Kg	1		10/19/17 17:02
Naphthalene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
n-Butylbenzene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
o-Xylene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
P & M -Xylene	31.9 U	31.9	9.58	ug/Kg	1		10/19/17 17:02
sec-Butylbenzene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
tert-Butylbenzene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02
Toluene	16.0 U	16.0	4.98	ug/Kg	1		10/19/17 17:02

Surrogates

1,2-Dichloroethane-D4 (surr)	106	71-136	%	1		10/19/17 17:02
4-Bromofluorobenzene (surr)	127	55-151	%	1		10/19/17 17:02
Toluene-d8 (surr)	95.3	85-116	%	1		10/19/17 17:02

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 17:02
 Container ID: 1177304019-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:20
 Prep Initial Wt./Vol.: 94.357 g
 Prep Extract Vol: 28.9007 mL

Results of P39

Client Sample ID: **P39**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304020
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:00
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):96.0
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.6 U	20.6	6.40	mg/Kg	1		10/18/17 20:49
Surrogates							
5a Androstane (surr)	91.3	50-150		%	1		10/18/17 20:49

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:49
 Container ID: 1177304020-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.263 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM

Results of P39

Client Sample ID: **P39**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304020
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:00
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):96.0
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.54 U	1.54	0.461	mg/Kg	1		10/17/17 18:24
Surrogates							
4-Bromofluorobenzene (surr)	82.3	50-150		%	1		10/17/17 18:24

Batch Information

Analytical Batch: VFC13949
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 18:24
 Container ID: 1177304020-B

Prep Batch: VXX31535
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:00
 Prep Initial Wt./Vol.: 97.763 g
 Prep Extract Vol: 28.862 mL

Print Date: 12/18/2017 3:54:20PM

Results of P39

Client Sample ID: **P39**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304020
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:00
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):96.0
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	66.4	30.7	9.22	ug/Kg	1		10/19/17 17:18
1,2-Dibromoethane	6.15 U	6.15	1.91	ug/Kg	1		10/19/17 17:18
1,2-Dichloroethane	6.15 U	6.15	1.91	ug/Kg	1		10/19/17 17:18
1,3,5-Trimethylbenzene	19.2	15.4	4.79	ug/Kg	1		10/19/17 17:18
Benzene	7.68 U	7.68	2.40	ug/Kg	1		10/19/17 17:18
Ethylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
Isopropylbenzene (Cumene)	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
Methyl-t-butyl ether	61.5 U	61.5	19.1	ug/Kg	1		10/19/17 17:18
Naphthalene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
n-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
o-Xylene	66.2	15.4	4.79	ug/Kg	1		10/19/17 17:18
P & M -Xylene	117	30.7	9.22	ug/Kg	1		10/19/17 17:18
sec-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
tert-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18
Toluene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:18

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 17:18
4-Bromofluorobenzene (surr)	132	55-151	%	1		10/19/17 17:18
Toluene-d8 (surr)	95.9	85-116	%	1		10/19/17 17:18

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 17:18
 Container ID: 1177304020-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:00
 Prep Initial Wt./Vol.: 97.763 g
 Prep Extract Vol: 28.862 mL

Results of P41

Client Sample ID: **P41**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304021
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:30
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.0
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.8 U	20.8	6.45	mg/Kg	1		10/18/17 20:59
Surrogates							
5a Androstane (surr)	92.7	50-150		%	1		10/18/17 20:59

Batch Information

Analytical Batch: XFC13897
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/18/17 20:59
 Container ID: 1177304021-A

Prep Batch: XXX38655
 Prep Method: SW3550C
 Prep Date/Time: 10/13/17 12:17
 Prep Initial Wt./Vol.: 30.363 g
 Prep Extract Vol: 1 mL

Results of **P41**

Client Sample ID: **P41**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304021
Lab Project ID: 1177304

Collection Date: 10/10/17 13:30
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.54 U	1.54	0.461	mg/Kg	1		10/17/17 18:43
Surrogates							
4-Bromofluorobenzene (surr)	83.3	50-150		%	1		10/17/17 18:43

Batch Information

Analytical Batch: VFC13949
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 18:43
Container ID: 1177304021-B

Prep Batch: VXX31535
Prep Method: SW5035A
Prep Date/Time: 10/10/17 13:30
Prep Initial Wt./Vol.: 103.647 g
Prep Extract Vol: 30.2202 mL

Print Date: 12/18/2017 3:54:20PM

Results of P41

Client Sample ID: **P41**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304021
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:30
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.0
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,2,4-Trimethylbenzene	30.7 U	30.7	9.21	ug/Kg	1		10/19/17 17:34
1,2-Dibromoethane	6.14 U	6.14	1.90	ug/Kg	1		10/19/17 17:34
1,2-Dichloroethane	6.14 U	6.14	1.90	ug/Kg	1		10/19/17 17:34
1,3,5-Trimethylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
Benzene	7.68 U	7.68	2.39	ug/Kg	1		10/19/17 17:34
Ethylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
Isopropylbenzene (Cumene)	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
Methyl-t-butyl ether	61.4 U	61.4	19.0	ug/Kg	1		10/19/17 17:34
Naphthalene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
n-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
o-Xylene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
P & M -Xylene	30.7 U	30.7	9.21	ug/Kg	1		10/19/17 17:34
sec-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
tert-Butylbenzene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34
Toluene	15.4 U	15.4	4.79	ug/Kg	1		10/19/17 17:34

Surrogates

1,2-Dichloroethane-D4 (surr)	108	71-136	%	1		10/19/17 17:34
4-Bromofluorobenzene (surr)	129	55-151	%	1		10/19/17 17:34
Toluene-d8 (surr)	96.1	85-116	%	1		10/19/17 17:34

Batch Information

Analytical Batch: VMS17344
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/19/17 17:34
 Container ID: 1177304021-B

Prep Batch: VXX31562
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:30
 Prep Initial Wt./Vol.: 103.647 g
 Prep Extract Vol: 30.2202 mL

Results of P46

Client Sample ID: **P46**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304022
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:07
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.9
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	20.8 U	20.8	6.44	mg/Kg	1		10/14/17 20:19
Surrogates							
5a Androstane (surr)	94.4	50-150		%	1		10/14/17 20:19

Batch Information

Analytical Batch: XFC13900
 Analytical Method: AK102
 Analyst: JMG
 Analytical Date/Time: 10/14/17 20:19
 Container ID: 1177304022-A

Prep Batch: XXX38660
 Prep Method: SW3550C
 Prep Date/Time: 10/14/17 07:32
 Prep Initial Wt./Vol.: 30.105 g
 Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:54:20PM

Results of **P46**

Client Sample ID: **P46**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1177304022
Lab Project ID: 1177304

Collection Date: 10/10/17 13:07
Received Date: 10/12/17 14:11
Matrix: Soil/Solid (dry weight)
Solids (%):95.9
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.83 U	1.83	0.550	mg/Kg	1		10/17/17 19:01
Surrogates							
4-Bromofluorobenzene (surr)	83.5	50-150		%	1		10/17/17 19:01

Batch Information

Analytical Batch: VFC13949
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/17/17 19:01
Container ID: 1177304022-B

Prep Batch: VXX31535
Prep Method: SW5035A
Prep Date/Time: 10/10/17 13:07
Prep Initial Wt./Vol.: 80.573 g
Prep Extract Vol: 28.3062 mL

Print Date: 12/18/2017 3:54:20PM

Results of P46

Client Sample ID: **P46**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304022
 Lab Project ID: 1177304

Collection Date: 10/10/17 13:07
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):95.9
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	56.2	36.6	11.0	ug/Kg	1		10/15/17 14:48
1,2-Dibromoethane	7.33 U	7.33	2.27	ug/Kg	1		10/15/17 14:48
1,2-Dichloroethane	7.33 U	7.33	2.27	ug/Kg	1		10/15/17 14:48
1,3,5-Trimethylbenzene	18.5	18.3	5.71	ug/Kg	1		10/15/17 14:48
Benzene	9.16 U	9.16	2.86	ug/Kg	1		10/15/17 14:48
Ethylbenzene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
Isopropylbenzene (Cumene)	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
Methyl-t-butyl ether	73.3 U	73.3	22.7	ug/Kg	1		10/15/17 14:48
Naphthalene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
n-Butylbenzene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
o-Xylene	20.7	18.3	5.71	ug/Kg	1		10/15/17 14:48
P & M -Xylene	36.6 U	36.6	11.0	ug/Kg	1		10/15/17 14:48
sec-Butylbenzene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
tert-Butylbenzene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48
Toluene	18.3 U	18.3	5.71	ug/Kg	1		10/15/17 14:48

Surrogates

1,2-Dichloroethane-D4 (surr)	94.5	71-136	%	1		10/15/17 14:48
4-Bromofluorobenzene (surr)	105	55-151	%	1		10/15/17 14:48
Toluene-d8 (surr)	101	85-116	%	1		10/15/17 14:48

Batch Information

Analytical Batch: VMS17325
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/15/17 14:48
 Container ID: 1177304022-B

Prep Batch: VXX31520
 Prep Method: SW5035A
 Prep Date/Time: 10/10/17 13:07
 Prep Initial Wt./Vol.: 80.573 g
 Prep Extract Vol: 28.3062 mL

Results of TB2

Client Sample ID: **TB2**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304023
 Lab Project ID: 1177304

Collection Date: 10/06/17 16:00
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	2.53 U	2.53	0.760	mg/Kg	1		10/17/17 00:58
Surrogates							
4-Bromofluorobenzene (surr)	96.8	50-150		%	1		10/17/17 00:58

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Analyst: ST
 Analytical Date/Time: 10/17/17 00:58
 Container ID: 1177304023-A

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/06/17 16:00
 Prep Initial Wt./Vol.: 49.372 g
 Prep Extract Vol: 25 mL

Print Date: 12/18/2017 3:54:20PM

Results of TB2

Client Sample ID: **TB2**
 Client Project ID: **Hub USTs 17873**
 Lab Sample ID: 1177304023
 Lab Project ID: 1177304

Collection Date: 10/06/17 16:00
 Received Date: 10/12/17 14:11
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	50.6 U	50.6	15.2	ug/Kg	1		10/17/17 20:19
1,2-Dibromoethane	10.1 U	10.1	3.14	ug/Kg	1		10/17/17 20:19
1,2-Dichloroethane	10.1 U	10.1	3.14	ug/Kg	1		10/17/17 20:19
1,3,5-Trimethylbenzene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
Benzene	12.7 U	12.7	3.95	ug/Kg	1		10/17/17 20:19
Ethylbenzene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
Isopropylbenzene (Cumene)	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
Methyl-t-butyl ether	101 U	101	31.4	ug/Kg	1		10/17/17 20:19
Naphthalene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
n-Butylbenzene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
o-Xylene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
P & M -Xylene	50.6 U	50.6	15.2	ug/Kg	1		10/17/17 20:19
sec-Butylbenzene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
tert-Butylbenzene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19
Toluene	25.3 U	25.3	7.90	ug/Kg	1		10/17/17 20:19

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136	%	1		10/17/17 20:19
4-Bromofluorobenzene (surr)	123	55-151	%	1		10/17/17 20:19
Toluene-d8 (surr)	95.9	85-116	%	1		10/17/17 20:19

Batch Information

Analytical Batch: VMS17330
 Analytical Method: SW8260C
 Analyst: NRO
 Analytical Date/Time: 10/17/17 20:19
 Container ID: 1177304023-A

Prep Batch: VXX31537
 Prep Method: SW5035A
 Prep Date/Time: 10/06/17 16:00
 Prep Initial Wt./Vol.: 49.372 g
 Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1770195 [SPT/10343]
Blank Lab ID: 1420053

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009,
1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304017, 1177304018,
1177304019, 1177304020, 1177304021, 1177304022

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10343
Analytical Method: SM21 2540G
Instrument:
Analyst: MWJ
Analytical Date/Time: 10/13/2017 4:00:00PM

Print Date: 12/18/2017 3:54:26PM

Duplicate Sample Summary

Original Sample ID: 1177293001

Duplicate Sample ID: 1420054

QC for Samples:

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	95.3	94.8	%	0.53	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 12/18/2017 3:54:28PM

Duplicate Sample Summary

Original Sample ID: 1177293003

Duplicate Sample ID: 1420055

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	94.3	93.2	%	1.10	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 12/18/2017 3:54:28PM

Duplicate Sample Summary

Original Sample ID: 1177304020

Duplicate Sample ID: 1420056

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016,

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.0	95.5	%	0.54	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 12/18/2017 3:54:28PM

Duplicate Sample Summary

Original Sample ID: 1178483001

Duplicate Sample ID: 1420057

QC for Samples:

1177304021, 1177304022

Analysis Date: 10/13/2017 16:00

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	89.9	89.0	%	0.95	(< 15)

Batch Information

Analytical Batch: SPT10343

Analytical Method: SM21 2540G

Instrument:

Analyst: MWJ

Print Date: 12/18/2017 3:54:28PM

Method Blank

Blank ID: MB for HBN 1770372 [VXX/31520]
Blank Lab ID: 1420434

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177304022

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	97.1	71-136	%
4-Bromofluorobenzene (surr)	96.1	55-151	%
Toluene-d8 (surr)	100	85-116	%

Batch Information

Analytical Batch: VMS17325
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/15/2017 10:41:00AM

Prep Batch: VXX31520
Prep Method: SW5035A
Prep Date/Time: 10/15/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31520]

Blank Spike Lab ID: 1420435

Date Analyzed: 10/15/2017 10:59

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304022

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	749	100	(75-123)
1,2-Dibromoethane	750	762	102	(78-122)
1,2-Dichloroethane	750	707	94	(73-128)
1,3,5-Trimethylbenzene	750	754	100	(73-124)
Benzene	750	730	97	(77-121)
Ethylbenzene	750	735	98	(76-122)
Isopropylbenzene (Cumene)	750	723	96	(68-134)
Methyl-t-butyl ether	1130	1250	111	(73-125)
Naphthalene	750	658	88	(62-129)
n-Butylbenzene	750	737	98	(70-128)
o-Xylene	750	734	98	(77-123)
P & M -Xylene	1500	1470	98	(77-124)
sec-Butylbenzene	750	724	97	(73-126)
tert-Butylbenzene	750	715	95	(73-125)
Toluene	750	717	96	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	96	96	(71-136)
4-Bromofluorobenzene (surr)	750	92.4	92	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS17325

Analytical Method: SW8260C

Instrument: VRA Agilent GC/MS 7890B/5977A

Analyst: NRO

Prep Batch: VXX31520

Prep Method: SW5035A

Prep Date/Time: 10/15/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1178485007
MS Sample ID: 1420436 MS
MSD Sample ID: 1420437 MSD

Analysis Date: 10/15/2017 12:27
Analysis Date: 10/15/2017 11:16
Analysis Date: 10/15/2017 11:34
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304022

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	52.8U	796	674	85	796	681	86	75-123	1.10	(< 20)
1,2-Dibromoethane	10.6U	796	761	96	796	789	99	78-122	3.70	(< 20)
1,2-Dichloroethane	10.6U	796	761	96	796	778	98	73-128	2.10	(< 20)
1,3,5-Trimethylbenzene	26.4U	796	704	87	796	704	87	73-124	0.08	(< 20)
Benzene	13.2U	796	801	101	796	823	103	77-121	2.60	(< 20)
Ethylbenzene	26.4U	796	719	90	796	745	93	76-122	3.50	(< 20)
Isopropylbenzene (Cumene)	26.4U	796	682	86	796	694	87	68-134	1.90	(< 20)
Methyl-t-butyl ether	106U	1195	1329	111	1195	1349	113	73-125	1.10	(< 20)
Naphthalene	26.4U	796	661	83	796	666	84	62-129	0.72	(< 20)
n-Butylbenzene	26.4U	796	822	103	796	786	99	70-128	4.40	(< 20)
o-Xylene	26.4U	796	717	90	796	737	93	77-123	2.80	(< 20)
P & M -Xylene	52.8U	1596	1452	91	1596	1504	95	77-124	3.80	(< 20)
sec-Butylbenzene	26.4U	796	683	84	796	666	82	73-126	2.40	(< 20)
tert-Butylbenzene	26.4U	796	666	84	796	654	82	73-125	1.90	(< 20)
Toluene	26.4U	796	735	92	796	773	97	77-121	5.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		796	761	96	796	755	95	71-136	0.77	
4-Bromofluorobenzene (surr)		1246	1586	128	1246	1627	131	55-151	2.20	
Toluene-d8 (surr)		796	838	105	796	857	108	85-116	2.10	

Batch Information

Analytical Batch: VMS17325
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: NRO
Analytical Date/Time: 10/15/2017 11:16:00AM

Prep Batch: VXX31520
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/15/2017 6:00:00AM
Prep Initial Wt./Vol.: 51.73g
Prep Extract Vol: 26.52mL

Method Blank

Blank ID: MB for HBN 1770429 [VXX/31530]
Blank Lab ID: 1420658

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.00625U	0.0125	0.00400	mg/Kg
Ethylbenzene	0.0125U	0.0250	0.00780	mg/Kg
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
o-Xylene	0.0125U	0.0250	0.00780	mg/Kg
P & M -Xylene	0.0250U	0.0500	0.0150	mg/Kg
Toluene	0.0125U	0.0250	0.00780	mg/Kg
Surrogates				
1,4-Difluorobenzene (surr)	92.2	72-119		%
4-Bromofluorobenzene (surr)	95.4	50-150		%

Batch Information

Analytical Batch: VFC13945
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 12:20:00AM

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31530]
 Blank Spike Lab ID: 1420659
 Date Analyzed: 10/16/2017 23:04

Spike Duplicate ID: LCSD for HBN 1177304 [VXX31530]
 Spike Duplicate Lab ID: 1420660
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1.25	1.17	93	1.25	1.20	96	(75-125)	2.90	(< 20)
Ethylbenzene	1.25	1.20	96	1.25	1.22	98	(75-125)	1.90	(< 20)
o-Xylene	1.25	1.20	96	1.25	1.20	96	(75-125)	0.15	(< 20)
P & M -Xylene	2.50	2.43	97	2.50	2.47	99	(80-125)	1.70	(< 20)
Toluene	1.25	1.18	94	1.25	1.20	96	(70-125)	2.10	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1.25	96.8	97	1.25	95.6	96	(72-119)	1.20	

Batch Information

Analytical Batch: VFC13945
 Analytical Method: AK101
 Instrument: Agilent 7890 PID/FID
 Analyst: ST

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/16/2017 08:00
 Spike Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1.25 mg/Kg Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31530]
 Blank Spike Lab ID: 1420661
 Date Analyzed: 10/16/2017 23:42

Spike Duplicate ID: LCSD for HBN 1177304 [VXX31530]
 Spike Duplicate Lab ID: 1420662
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	13.9	111	12.5	14.2	113	(60-120)	2.30	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	94.1	94	1.25	93.9	94	(50-150)	0.19	

Batch Information

Analytical Batch: **VFC13945**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31530**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/16/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 12/18/2017 3:54:37PM

Method Blank

Blank ID: MB for HBN 1770429 [VXX/31530]
Blank Lab ID: 1420658

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	92.2	72-119		%

Batch Information

Analytical Batch: VFC13945
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 12:20:00AM

Prep Batch: VXX31530
Prep Method: SW5035A
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31530]
 Blank Spike Lab ID: 1420659
 Date Analyzed: 10/16/2017 23:04

Spike Duplicate ID: LCSD for HBN 1177304 [VXX31530]
 Spike Duplicate Lab ID: 1420660
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1170	93	1250	1200	96	(75-125)	2.90	(< 20)
Ethylbenzene	1250	1200	96	1250	1220	98	(75-125)	1.90	(< 20)
o-Xylene	1250	1200	96	1250	1200	96	(75-125)	0.15	(< 20)
P & M -Xylene	2500	2430	97	2500	2470	99	(80-125)	1.70	(< 20)
Toluene	1250	1180	94	1250	1200	96	(70-125)	2.10	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	1250	96.8	97	1250	95.6	96	(72-119)	1.20	

Batch Information

Analytical Batch: VFC13945
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: ST

Prep Batch: VXX31530
 Prep Method: SW5035A
 Prep Date/Time: 10/16/2017 08:00
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Matrix Spike Summary

Original Sample ID: 1177304001
MS Sample ID: 1420663 MS
MSD Sample ID: 1420664 MSD

Analysis Date: 10/17/2017 1:55
Analysis Date: 10/17/2017 2:14
Analysis Date: 10/17/2017 2:33
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304001, 1177304002, 1177304003, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304023

Results by SW8021B

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	7.11U	648	602	93	648	574	89	75-125	4.70	(< 20)
Ethylbenzene	14.2U	648	613	95	648	593	92	75-125	3.40	(< 20)
o-Xylene	14.2U	648	596	92	648	589	91	75-125	1.20	(< 20)
P & M -Xylene	28.4U	1292	1221	94	1292	1200	93	80-125	2.00	(< 20)
Toluene	14.2U	648	613	95	648	589	91	70-125	4.10	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	648	618	95	648	622	96	72-119	0.42
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Batch Information

Analytical Batch: VFC13945
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 2:14:00AM

Prep Batch: VXX31530
Prep Method: AK101 Extraction (S)
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 98.86g
Prep Extract Vol: 25.00mL

Method Blank

Blank ID: MB for HBN 1770468 [VXX/31535]
Blank Lab ID: 1420866

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304017, 1177304018, 1177304019, 1177304020, 1177304021, 1177304022

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
1,4-Difluorobenzene (surr)	93.5	72-119		%
4-Bromofluorobenzene (surr)	87.8	50-150		%

Batch Information

Analytical Batch: VFC13949
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 4:32:00PM

Prep Batch: VXX31535
Prep Method: SW5035A
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 12/18/2017 3:54:47PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31535]
 Blank Spike Lab ID: 1420867
 Date Analyzed: 10/17/2017 15:55

Spike Duplicate ID: LCSD for HBN 1177304
 [VXX31535]
 Spike Duplicate Lab ID: 1420868
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304017, 1177304018, 1177304019, 1177304020, 1177304021, 1177304022

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	10.9	87	12.5	10.8	87	(60-120)	0.37	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	86.7	87	1.25	89	89	(50-150)	2.50	

Batch Information

Analytical Batch: **VFC13949**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **ST**

Prep Batch: **VXX31535**
 Prep Method: **SW5035A**
 Prep Date/Time: **10/16/2017 08:00**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 12/18/2017 3:54:48PM

Method Blank

Blank ID: MB for HBN 1770476 [VXX/31537]
Blank Lab ID: 1420904

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177304023

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	109	71-136	%
4-Bromofluorobenzene (surr)	86.3	55-151	%
Toluene-d8 (surr)	97.2	85-116	%

Batch Information

Analytical Batch: VMS17330
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/17/2017 5:52:00PM

Prep Batch: VXX31537
Prep Method: SW5035A
Prep Date/Time: 10/17/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31537]

Blank Spike Lab ID: 1420905

Date Analyzed: 10/17/2017 18:08

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304023

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	769	103	(75-123)
1,2-Dibromoethane	750	816	109	(78-122)
1,2-Dichloroethane	750	753	100	(73-128)
1,3,5-Trimethylbenzene	750	773	103	(73-124)
Benzene	750	768	102	(77-121)
Ethylbenzene	750	765	102	(76-122)
Isopropylbenzene (Cumene)	750	808	108	(68-134)
Methyl-t-butyl ether	1130	1210	108	(73-125)
Naphthalene	750	787	105	(62-129)
n-Butylbenzene	750	764	102	(70-128)
o-Xylene	750	789	105	(77-123)
P & M -Xylene	1500	1570	105	(77-124)
sec-Butylbenzene	750	780	104	(73-126)
tert-Butylbenzene	750	786	105	(73-125)
Toluene	750	783	104	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	99.2	99	(71-136)
4-Bromofluorobenzene (surr)	750	90	90	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS17330

Analytical Method: SW8260C

Instrument: VQA 7890/5975 GC/MS

Analyst: NRO

Prep Batch: VXX31537

Prep Method: SW5035A

Prep Date/Time: 10/17/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1177367001
MS Sample ID: 1420906 MS
MSD Sample ID: 1420907 MSD

Analysis Date: 10/17/2017 21:07
Analysis Date: 10/17/2017 19:15
Analysis Date: 10/17/2017 19:31
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304023

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	30.5U	917	942	103	917	943	103	75-123	0.16	(< 20)
1,2-Dibromoethane	6.10U	917	993	108	917	1009	110	78-122	1.60	(< 20)
1,2-Dichloroethane	6.10U	917	914	100	917	913	100	73-128	0.10	(< 20)
1,3,5-Trimethylbenzene	15.3U	917	943	103	917	946	103	73-124	0.32	(< 20)
Benzene	7.60U	917	920	100	917	930	101	77-121	1.10	(< 20)
Ethylbenzene	15.3U	917	908	99	917	941	102	76-122	3.50	(< 20)
Isopropylbenzene (Cumene)	15.3U	917	955	104	917	1004	110	68-134	5.10	(< 20)
Methyl-t-butyl ether	61.0U	1374	1453	106	1374	1464	106	73-125	0.13	(< 20)
Naphthalene	15.3U	917	765	83	917	971	106	62-129	23.60	* (< 20)
n-Butylbenzene	15.3U	917	984	107	917	968	105	70-128	1.70	(< 20)
o-Xylene	15.3U	917	924	101	917	982	107	77-123	6.00	(< 20)
P & M -Xylene	30.5U	1832	1866	102	1832	1966	107	77-124	5.10	(< 20)
sec-Butylbenzene	15.3U	917	966	105	917	963	105	73-126	0.38	(< 20)
tert-Butylbenzene	15.3U	917	955	104	917	959	104	73-125	0.32	(< 20)
Toluene	15.3U	917	924	101	917	944	103	77-121	2.20	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		917	923	101	917	922	101	71-136	0.13	
4-Bromofluorobenzene (surr)		1229	1531	124	1229	1508	122	55-151	1.50	
Toluene-d8 (surr)		917	914	100	917	917	100	85-116	0.37	

Batch Information

Analytical Batch: VMS17330
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/17/2017 7:15:00PM

Prep Batch: VXX31537
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/17/2017 6:00:00AM
Prep Initial Wt./Vol.: 56.63g
Prep Extract Vol: 30.92mL

Method Blank

Blank ID: MB for HBN 1770535 [VXX/31547]
Blank Lab ID: 1421132

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304002, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	117	71-136	%
4-Bromofluorobenzene (surr)	87.2	55-151	%
Toluene-d8 (surr)	97.6	85-116	%

Batch Information

Analytical Batch: VMS17334
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/18/2017 5:17:00PM

Prep Batch: VXX31547
Prep Method: SW5035A
Prep Date/Time: 10/18/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31547]

Blank Spike Lab ID: 1421133

Date Analyzed: 10/18/2017 17:33

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304002, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	744	99	(75-123)
1,2-Dibromoethane	750	791	105	(78-122)
1,2-Dichloroethane	750	694	93	(73-128)
1,3,5-Trimethylbenzene	750	756	101	(73-124)
Benzene	750	719	96	(77-121)
Ethylbenzene	750	750	100	(76-122)
Isopropylbenzene (Cumene)	750	820	109	(68-134)
Methyl-t-butyl ether	1130	1200	107	(73-125)
Naphthalene	750	718	96	(62-129)
n-Butylbenzene	750	759	101	(70-128)
o-Xylene	750	790	105	(77-123)
P & M -Xylene	1500	1580	105	(77-124)
sec-Butylbenzene	750	768	102	(73-126)
tert-Butylbenzene	750	784	105	(73-125)
Toluene	750	722	96	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	99.1	99	(71-136)
4-Bromofluorobenzene (surr)	750	92.7	93	(55-151)
Toluene-d8 (surr)	750	99.6	100	(85-116)

Batch Information

Analytical Batch: VMS17334

Analytical Method: SW8260C

Instrument: VQA 7890/5975 GC/MS

Analyst: NRO

Prep Batch: VXX31547

Prep Method: SW5035A

Prep Date/Time: 10/18/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1177418001
MS Sample ID: 1421134 MS
MSD Sample ID: 1421135 MSD

Analysis Date: 10/18/2017 19:44
Analysis Date: 10/18/2017 18:07
Analysis Date: 10/18/2017 18:23
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304002, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	1200	4609	4551	73 *	4609	4586	73 *	75-123	0.54	(< 20)
1,2-Dibromoethane	6.15U	922	930	101	922	942	102	78-122	1.10	(< 20)
1,2-Dichloroethane	6.15U	922	940	102	922	923	100	73-128	1.90	(< 20)
1,3,5-Trimethylbenzene	1230	4609	4656	74	4609	4679	75	73-124	0.53	(< 20)
Benzene	7.65U	922	919	100	922	917	100	77-121	0.17	(< 20)
Ethylbenzene	31.9	922	919	96	922	932	98	76-122	1.40	(< 20)
Isopropylbenzene (Cumene)	79.2	922	1081	109	922	1072	108	68-134	0.68	(< 20)
Methyl-t-butyl ether	307U	1377	1470	106	1377	1470	106	73-125	0.15	(< 20)
Naphthalene	871	4609	3442	56 *	4609	4399	77	62-129	24.20 *	(< 20)
n-Butylbenzene	76.5U	4609	5601	121	4609	5624	122	70-128	0.49	(< 20)
o-Xylene	260	922	1167	99	922	1179	100	77-123	0.58	(< 20)
P & M -Xylene	308	1844	2147	100	1844	2147	100	77-124	0.04	(< 20)
sec-Butylbenzene	295	4609	3886	78	4609	3862	78	73-126	0.55	(< 20)
tert-Butylbenzene	76.5U	4609	3361	73	4609	3326	72 *	73-125	1.20	(< 20)
Toluene	24.9J	922	911	96	922	928	98	77-121	1.80	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		922	978	106	922	954	104	71-136	2.50	
4-Bromofluorobenzene (surr)		1118	1937	173 *	1118	1902	171 *	55-151	1.40	
Toluene-d8 (surr)		922	917	100	922	921	100	85-116	0.40	

Batch Information

Analytical Batch: VMS17334
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/18/2017 6:07:00PM

Prep Batch: VXX31547
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/18/2017 6:00:00AM
Prep Initial Wt./Vol.: 65.22g
Prep Extract Vol: 34.31mL

Method Blank

Blank ID: MB for HBN 1770641 [VXX/31562]
Blank Lab ID: 1421519

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304017, 1177304018, 1177304019, 1177304020, 1177304021

Results by SW8260C

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromoethane	5.00U	10.0	3.10	ug/Kg
1,2-Dichloroethane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg

Surrogates

1,2-Dichloroethane-D4 (surr)	112	71-136	%
4-Bromofluorobenzene (surr)	88.3	55-151	%
Toluene-d8 (surr)	96.1	85-116	%

Batch Information

Analytical Batch: VMS17344
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/19/2017 10:16:00AM

Prep Batch: VXX31562
Prep Method: SW5035A
Prep Date/Time: 10/19/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31562]

Blank Spike Lab ID: 1421520

Date Analyzed: 10/19/2017 10:32

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304017, 1177304018, 1177304019, 1177304020, 1177304021

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	721	96	(75-123)
1,2-Dibromoethane	750	790	105	(78-122)
1,2-Dichloroethane	750	711	95	(73-128)
1,3,5-Trimethylbenzene	750	742	99	(73-124)
Benzene	750	718	96	(77-121)
Ethylbenzene	750	739	99	(76-122)
Isopropylbenzene (Cumene)	750	802	107	(68-134)
Methyl-t-butyl ether	1130	1210	108	(73-125)
Naphthalene	750	737	98	(62-129)
n-Butylbenzene	750	751	100	(70-128)
o-Xylene	750	776	104	(77-123)
P & M -Xylene	1500	1560	104	(77-124)
sec-Butylbenzene	750	749	100	(73-126)
tert-Butylbenzene	750	773	103	(73-125)
Toluene	750	736	98	(77-121)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	101	101	(71-136)
4-Bromofluorobenzene (surr)	750	93.1	93	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: VMS17344

Analytical Method: SW8260C

Instrument: VQA 7890/5975 GC/MS

Analyst: NRO

Prep Batch: VXX31562

Prep Method: SW5035A

Prep Date/Time: 10/19/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1177302002
MS Sample ID: 1421521 MS
MSD Sample ID: 1421522 MSD

Analysis Date: 10/19/2017 12:59
Analysis Date: 10/19/2017 11:30
Analysis Date: 10/19/2017 11:46
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304017, 1177304018, 1177304019, 1177304020, 1177304021

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	33.1U	992	967	98	992	925	93	75-123	4.40	(< 20)
1,2-Dibromoethane	6.65U	992	1034	104	992	1054	106	78-122	1.90	(< 20)
1,2-Dichloroethane	6.65U	992	936	94	992	933	94	73-128	0.35	(< 20)
1,3,5-Trimethylbenzene	16.6U	992	982	99	992	953	96	73-124	3.00	(< 20)
Benzene	8.30U	992	942	95	992	944	95	77-121	0.18	(< 20)
Ethylbenzene	16.6U	992	949	96	992	928	94	76-122	2.20	(< 20)
Isopropylbenzene (Cumene)	16.6U	992	1021	103	992	983	99	68-134	3.80	(< 20)
Methyl-t-butyl ether	66.5U	1494	1586	106	1494	1599	107	73-125	0.92	(< 20)
Naphthalene	16.6U	992	806	81	992	1071	108	62-129	28.20	* (< 20)
n-Butylbenzene	16.6U	992	1097	111	992	1022	103	70-128	7.00	(< 20)
o-Xylene	16.6U	992	987	99	992	983	99	77-123	0.37	(< 20)
P & M -Xylene	33.1U	1979	1992	100	1979	1966	99	77-124	1.00	(< 20)
sec-Butylbenzene	16.6U	992	1039	105	992	984	99	73-126	5.50	(< 20)
tert-Butylbenzene	16.6U	992	1025	103	992	987	100	73-125	3.70	(< 20)
Toluene	16.6U	992	945	95	992	969	98	77-121	2.50	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		992	1009	102	992	1004	101	71-136	0.46	
4-Bromofluorobenzene (surr)		879	912	104	879	860	98	55-151	5.80	
Toluene-d8 (surr)		992	990	100	992	1007	101	85-116	1.70	

Batch Information

Analytical Batch: VMS17344
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/19/2017 11:30:00AM

Prep Batch: VXX31562
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/19/2017 6:00:00AM
Prep Initial Wt./Vol.: 93.12g
Prep Extract Vol: 47.08mL

Method Blank

Blank ID: MB for HBN 1770701 [VXX/31575]
Blank Lab ID: 1421756

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177304009

Results by SW8260C

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	108	71-136		%
4-Bromofluorobenzene (surr)	86.2	55-151		%
Toluene-d8 (surr)	99.7	85-116		%

Batch Information

Analytical Batch: VMS17348
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/21/2017 1:14:00PM

Prep Batch: VXX31575
Prep Method: SW5035A
Prep Date/Time: 10/21/2017 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [VXX31575]

Blank Spike Lab ID: 1421757

Date Analyzed: 10/21/2017 17:13

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304009

Results by SW8260C

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	738	98	(75-123)

Surrogates

1,2-Dichloroethane-D4 (surr)	750	99	99	(71-136)
4-Bromofluorobenzene (surr)	750	89.5	90	(55-151)
Toluene-d8 (surr)	750	100	100	(85-116)

Batch Information

Analytical Batch: VMS17348

Analytical Method: SW8260C

Instrument: VQA 7890/5975 GC/MS

Analyst: NRO

Prep Batch: VXX31575

Prep Method: SW5035A

Prep Date/Time: 10/21/2017 06:00

Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1178496002
MS Sample ID: 1421758 MS
MSD Sample ID: 1421759 MSD

Analysis Date: 10/21/2017 19:35
Analysis Date: 10/21/2017 17:59
Analysis Date: 10/21/2017 18:15
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304009

Results by SW8260C

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	38.3U	1146	1164	102	1146	1128	98	75-123	3.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1146	1137	99	1146	1154	101	71-136	1.50	
4-Bromofluorobenzene (surr)		1341	1353	101	1341	1304	98	55-151	3.40	
Toluene-d8 (surr)		1146	1159	101	1146	1150	100	85-116	0.70	

Batch Information

Analytical Batch: VMS17348
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: NRO
Analytical Date/Time: 10/21/2017 5:59:00PM

Prep Batch: VXX31575
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/21/2017 6:00:00AM
Prep Initial Wt./Vol.: 57.42g
Prep Extract Vol: 35.71mL

Print Date: 12/18/2017 3:55:09PM

Method Blank

Blank ID: MB for HBN 1770120 [XXX/38655]
Blank Lab ID: 1419797

Matrix: Soil/Solid (dry weight)

QC for Samples:

1177304001, 1177304002, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008, 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015, 1177304016, 1177304017, 1177304018, 1177304019, 1177304020, 1177304021

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	83.7	60-120		%

Batch Information

Analytical Batch: XFC13889
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 10/15/2017 9:27:00PM

Prep Batch: XXX38655
Prep Method: SW3550C
Prep Date/Time: 10/13/2017 12:17:40PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:55:11PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [XXX38655]
 Blank Spike Lab ID: 1419798
 Date Analyzed: 10/15/2017 21:37

Spike Duplicate ID: LCSD for HBN 1177304
 [XXX38655]
 Spike Duplicate Lab ID: 1419799
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304001, 1177304002, 1177304004, 1177304005, 1177304006, 1177304007, 1177304008,
 1177304009, 1177304010, 1177304011, 1177304012, 1177304013, 1177304014, 1177304015,
 1177304016, 1177304017, 1177304018, 1177304019, 1177304020, 1177304021

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	154	93	167	158	95	(75-125)	2.00	(< 20)
Surrogates									
5a Androstane (surr)	3.33	87	87	3.33	89.4	89	(60-120)	2.70	

Batch Information

Analytical Batch: **XFC13889**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **JMG**

Prep Batch: **XXX38655**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/13/2017 12:17**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1770194 [XXX/38660]
Blank Lab ID: 1420050

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177304022

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	89	60-120		%

Batch Information

Analytical Batch: XFC13900
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: JMG
Analytical Date/Time: 10/14/2017 7:48:00PM

Prep Batch: XXX38660
Prep Method: SW3550C
Prep Date/Time: 10/14/2017 7:32:15AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 1 mL

Print Date: 12/18/2017 3:55:15PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [XXX38660]
 Blank Spike Lab ID: 1420051
 Date Analyzed: 10/14/2017 19:58

Spike Duplicate ID: LCSD for HBN 1177304
 [XXX38660]
 Spike Duplicate Lab ID: 1420052
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304022

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	167	143	86	167	172	103	(75-125)	18.90	(< 20)
Surrogates									
5a Androstane (surr)	3.33	94	94	3.33	118	118	(60-120)	22.60	

Batch Information

Analytical Batch: **XFC13900**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **JMG**

Prep Batch: **XXX38660**
 Prep Method: **SW3550C**
 Prep Date/Time: **10/14/2017 07:32**
 Spike Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 167 mg/Kg Extract Vol: 1 mL

Print Date: 12/18/2017 3:55:17PM

Method Blank

Blank ID: MB for HBN 1770196 [XXX/38661]
Blank Lab ID: 1420059

Matrix: Soil/Solid (dry weight)

QC for Samples:
1177304005, 1177304014

Results by 8270D SIM (PAH)

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	7.50	ug/Kg
2-Methylnaphthalene	12.5U	25.0	7.50	ug/Kg
Acenaphthene	12.5U	25.0	7.50	ug/Kg
Acenaphthylene	12.5U	25.0	7.50	ug/Kg
Anthracene	12.5U	25.0	7.50	ug/Kg
Benzo(a)Anthracene	12.5U	25.0	7.50	ug/Kg
Benzo[a]pyrene	12.5U	25.0	7.50	ug/Kg
Benzo[b]Fluoranthene	12.5U	25.0	7.50	ug/Kg
Benzo[g,h,i]perylene	12.5U	25.0	7.50	ug/Kg
Benzo[k]fluoranthene	12.5U	25.0	7.50	ug/Kg
Chrysene	12.5U	25.0	7.50	ug/Kg
Dibenzo[a,h]anthracene	12.5U	25.0	7.50	ug/Kg
Fluoranthene	12.5U	25.0	7.50	ug/Kg
Fluorene	12.5U	25.0	7.50	ug/Kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	7.50	ug/Kg
Naphthalene	10.0U	20.0	6.00	ug/Kg
Phenanthrene	12.5U	25.0	7.50	ug/Kg
Pyrene	12.5U	25.0	7.50	ug/Kg

Surrogates

2-Methylnaphthalene-d10 (surr)	79.3	50-150	%
Fluoranthene-d10 (surr)	77.8	50-150	%

Batch Information

Analytical Batch: XMS10510
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 10/27/2017 4:02:00PM

Prep Batch: XXX38661
Prep Method: SW3550C
Prep Date/Time: 10/14/2017 8:26:44AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177304 [XXX38661]

Blank Spike Lab ID: 1420060

Date Analyzed: 10/27/2017 16:22

Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304005, 1177304014

Results by 8270D SIM (PAH)

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	97.5	88	(43-111)
2-Methylnaphthalene	111	89.7	81	(39-114)
Acenaphthene	111	98.0	88	(44-111)
Acenaphthylene	111	94.4	85	(39-116)
Anthracene	111	90.9	82	(50-114)
Benzo(a)Anthracene	111	98.7	89	(54-122)
Benzo[a]pyrene	111	84.9	76	(50-125)
Benzo[b]Fluoranthene	111	103	93	(53-128)
Benzo[g,h,i]perylene	111	108	97	(49-127)
Benzo[k]fluoranthene	111	100	90	(56-123)
Chrysene	111	105	94	(57-118)
Dibenzo[a,h]anthracene	111	105	95	(50-129)
Fluoranthene	111	102	92	(55-119)
Fluorene	111	98.4	89	(47-114)
Indeno[1,2,3-c,d] pyrene	111	108	97	(49-130)
Naphthalene	111	91.0	82	(38-111)
Phenanthrene	111	98.9	89	(49-113)
Pyrene	111	104	94	(55-117)

Surrogates

2-Methylnaphthalene-d10 (surr)	111	78.1	78	(50-150)
Fluoranthene-d10 (surr)	111	76.8	77	(50-150)

Batch Information

Analytical Batch: XMS10510

Analytical Method: 8270D SIM (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: DSD

Prep Batch: XXX38661

Prep Method: SW3550C

Prep Date/Time: 10/14/2017 08:26

Spike Init Wt./Vol.: 111 ug/Kg Extract Vol: 5 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1178497001
MS Sample ID: 1420061 MS
MSD Sample ID: 1420062 MSD

Analysis Date: 10/27/2017 21:09
Analysis Date: 10/27/2017 21:29
Analysis Date: 10/27/2017 21:50
Matrix: Soil/Solid (dry weight)

QC for Samples: 1177304005, 1177304014

Results by 8270D SIM (PAH)

Parameter	Sample	Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	26.1U	115	95.8	84	115	102	89	43-111	6.10	(< 20)
2-Methylnaphthalene	26.1U	115	83.8	73	115	89.4	78	39-114	6.50	(< 20)
Acenaphthene	26.1U	115	103	90	115	106	93	44-111	3.50	(< 20)
Acenaphthylene	26.1U	115	99.3	87	115	102	89	39-116	2.50	(< 20)
Anthracene	26.1U	115	95.2	83	115	101	89	50-114	6.10	(< 20)
Benzo(a)Anthracene	26.1U	115	92.6	81	115	97.9	86	54-122	5.50	(< 20)
Benzo(a)pyrene	26.1U	115	88.0	77	115	91.7	80	50-125	4.20	(< 20)
Benzo(b)Fluoranthene	26.1U	115	94.4	82	115	102	89	53-128	7.30	(< 20)
Benzo(g,h,i)perylene	26.1U	115	96.7	84	115	102	89	49-127	5.20	(< 20)
Benzo(k)fluoranthene	26.1U	115	94.8	83	115	101	88	56-123	6.40	(< 20)
Chrysene	26.1U	115	95.7	83	115	100	88	57-118	4.80	(< 20)
Dibenzo(a,h)anthracene	26.1U	115	98.1	85	115	102	89	50-129	4.00	(< 20)
Fluoranthene	26.1U	115	91.8	80	115	97.5	85	55-119	5.90	(< 20)
Fluorene	26.1U	115	113	98	115	114	99	47-114	0.99	(< 20)
Indeno[1,2,3-c,d] pyrene	26.1U	115	97.1	85	115	102	89	49-130	5.30	(< 20)
Naphthalene	20.9U	115	91.6	80	115	97.4	85	38-111	6.00	(< 20)
Phenanthrene	26.1U	115	94.2	82	115	101	88	49-113	6.80	(< 20)
Pyrene	26.1U	115	96.6	84	115	102	89	55-117	5.20	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		115	94.7	83	115	97.1	85	50-150	2.40	
Fluoranthene-d10 (surr)		115	77.9	68	115	81.4	71	50-150	4.40	

Batch Information

Analytical Batch: XMS10510
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 10/27/2017 9:29:00PM

Prep Batch: XXX38661
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 10/14/2017 8:26:44AM
Prep Initial Wt./Vol.: 22.90g
Prep Extract Vol: 5.00mL

Print Date: 12/18/2017 3:55:21PM

[illegible]



e-Sample Receipt Form

SGS Workorder #:

1177304



1 1 7 7 3 0 4

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			☒ Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location		☐ N/A	Absent	
COC accompanied samples?		☒ Yes		
☐ N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	☒ Yes	Cooler ID:	1	@ ☒ 5.7 °C Therm. ID: D20
	☐ N/A	Cooler ID:		@ °C Therm. ID:
	☐ N/A	Cooler ID:		@ °C Therm. ID:
	☐ N/A	Cooler ID:		@ °C Therm. ID:
	☐ N/A	Cooler ID:		@ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?		☐ N/A		
If <0°C, were sample containers ice free?		☐ N/A		
If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".				
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?		☒ Yes		
Do samples match COC** (i.e., sample IDs, dates/times collected)?		☒ Yes		
**Note: If times differ <1hr, record details & login per COC.				
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)		☒ Yes		
		☐ N/A	***Exemption permitted for metals (e.g. 200.8/6020A).	
Were proper containers (type/mass/volume/preservative***) used?		☒ Yes		
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		☒ Yes		
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		☐ N/A		
Were all soil VOAs field extracted with MeOH+BFB?		☒ Yes		
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1177304001-A	No Preservative Required	OK	1177304022-A	No Preservative Required	OK
1177304001-B	Methanol field pres. 4 C	OK	1177304022-B	Methanol field pres. 4 C	OK
1177304002-A	No Preservative Required	OK	1177304023-A	Methanol field pres. 4 C	OK
1177304002-B	Methanol field pres. 4 C	OK			
1177304003-A	No Preservative Required	OK			
1177304003-B	Methanol field pres. 4 C	OK			
1177304004-A	No Preservative Required	OK			
1177304004-B	Methanol field pres. 4 C	OK			
1177304005-A	No Preservative Required	OK			
1177304005-B	Methanol field pres. 4 C	OK			
1177304006-A	No Preservative Required	OK			
1177304006-B	Methanol field pres. 4 C	OK			
1177304007-A	No Preservative Required	OK			
1177304007-B	Methanol field pres. 4 C	OK			
1177304008-A	No Preservative Required	OK			
1177304008-B	Methanol field pres. 4 C	OK			
1177304009-A	No Preservative Required	OK			
1177304009-B	Methanol field pres. 4 C	OK			
1177304010-A	No Preservative Required	OK			
1177304010-B	Methanol field pres. 4 C	OK			
1177304011-A	No Preservative Required	OK			
1177304011-B	Methanol field pres. 4 C	OK			
1177304012-A	No Preservative Required	OK			
1177304012-B	Methanol field pres. 4 C	OK			
1177304013-A	No Preservative Required	OK			
1177304013-B	Methanol field pres. 4 C	OK			
1177304014-A	No Preservative Required	OK			
1177304014-B	Methanol field pres. 4 C	OK			
1177304015-A	No Preservative Required	OK			
1177304015-B	Methanol field pres. 4 C	OK			
1177304016-A	No Preservative Required	OK			
1177304016-B	Methanol field pres. 4 C	OK			
1177304017-A	No Preservative Required	OK			
1177304017-B	Methanol field pres. 4 C	OK			
1177304018-A	No Preservative Required	OK			
1177304018-B	Methanol field pres. 4 C	OK			
1177304019-A	No Preservative Required	OK			
1177304019-B	Methanol field pres. 4 C	OK			
1177304020-A	No Preservative Required	OK			
1177304020-B	Methanol field pres. 4 C	OK			
1177304021-A	No Preservative Required	OK			
1177304021-B	Methanol field pres. 4 C	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed by:

Larry Helgeson

Title:

Environmental Engineer

Date:

January 12, 2018

CS Report Name:

Report Date:

December 18, 2017

Consultant Firm:

Environmental Management, Inc.

Laboratory Name:

SGS -North America

Laboratory Report Number:

1177304 revised

ADEC File Number:

Hazard Identification Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

☒ Yes ☐ No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

☐ Yes ☐ No

Comments:

Samples were not transferred.

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

☒ Yes ☐ No

Comments:

- b. Correct analyses requested?

☒ Yes ☐ No

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

☒ Yes ☐ No

Comments:

Cooler temperature was 5.7°C

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒ Yes ☐ No

Comments:

None were broken or leaking.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒ Yes ☐ No

Comments:

e. Data quality or usability affected?

Comments:

No, there is not anything to indicate data quality or usability has been affected.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No

Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None, all listed sample QC failures were due to dilution. MS/MSD failures were due to matrix interference.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No

Comments:

b. All applicable holding times met?

☒ Yes ☐ No

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No

Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No

Comments:

LOQ for 1,2-Dibromoethane was above the action level in all of the samples. In some cases, where there was other contamination present requiring dilution, and other compounds in that sample had LOD's above the cleanup level.

e. Data quality or usability affected?

Comments:

No 1,2-Dibromoethane should not be considered a primary contaminant of concern unless it has been detected at the site above the action level.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☒ Yes ☐ No

Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No

Comments:

v. Data quality or usability affected?

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No

Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

MSD RPDs for naphthalene was 23.6% to 28.2%

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

all of VOC analysis

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

- vii. Data quality or usability affected?

Comments:

There are not any samples where naphthalene was the only compound above the or near near the action level. In all cases where naphthalene was detected the area was considered contaminated due to other compounds. Therefore there is no significant impact on the site characterization.

c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No

Comments:

There were multiple failed recoveries due to dilution or matrix interference

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

Failed surrogates are marked with an "*" but the data itself does not have a separate data flag.

iv. Data quality or usability affected?

Comments:

No, in all cases the sample was contaminated with other compounds requiring dilution.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☒ Yes ☐ No

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

☐ Yes ☐ No

Comments:

Only one cooler was used

iii. All results less than LOQ?

☒ Yes ☐ No

Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No

Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No

Comments:

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

☐ Yes ☒ No

Comments:

RPD could not be calculated since all the compounds were not detected in at least one the duplicate samples. However, in S1 and S2 (the duplicate) the RPD between the DRO LOQ and the result in the duplicate sample was 188% indicating that the stockpiled material was likely very heterogenous.

- iv. Data quality or usability affected?

Comments:

- f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☒ Not Applicable

- i. All results less than LOQ?

☐ Yes ☒ No

Comments:

Only previously cleaned sample spoons or disposable tools were used to collect the samples. No decontamination was done in the field.

- ii. If above LOQ, what samples are affected?

Comments:

- iii. Data quality or usability affected?

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☐ Yes ☒ No

Comments:

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Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)
206 E Fireweed Ln #201
Anchorage, AK 995032703
(907)272-9336

Report Number: **1179310**

Client Project: **Hub USTs 17873**

Dear Larry Helgeson,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Victoria Pennick
Project Manager
Victoria.Pennick@sgs.com

Date

Print Date: 10/26/2017 4:28:45PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group



Case Narrative

SGS Client: Environmental Mgmt Inc (EMI)

SGS Project: 1179310

Project Name/Site: Hub USTs 17873

Refer to sample receipt form for information on sample condition.

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to the associated field samples.

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are **AK00971 DW Chemistry (Provisionally Certified as of 10/12/2017) & Microbiology (Provisionally Certified as of 9/21/2017) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103).** Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
C-SN	1179310001	10/11/2017	10/23/2017	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
SW6020A	Metals by ICP-MS (S)
SM21 2540G	Percent Solids SM2540G

Print Date: 10/26/2017 4:28:51PM

Detectable Results Summary

Client Sample ID: **C-SN**
 Lab Sample ID: 1179310001
Metals by ICP/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	9.81	mg/Kg



Results of C-SN

Client Sample ID: **C-SN**
Client Project ID: **Hub USTs 17873**
Lab Sample ID: 1179310001
Lab Project ID: 1179310

Collection Date: 10/11/17 13:44
Received Date: 10/23/17 09:00
Matrix: Soil/Solid (dry weight)
Solids (%):97.2
Location:

Results by Metals by ICP/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	9.81	0.198	0.0615	mg/Kg	10		10/25/17 15:11

Batch Information

Analytical Batch: MMS9987
Analytical Method: SW6020A
Analyst: ACF
Analytical Date/Time: 10/25/17 15:11
Container ID: 1179310001-A

Prep Batch: MXX31173
Prep Method: SW3050B
Prep Date/Time: 10/24/17 09:32
Prep Initial Wt./Vol.: 1.037 g
Prep Extract Vol: 50 mL

Print Date: 10/26/2017 4:28:53PM

Method Blank

Blank ID: MB for HBN 1770778 [MXX/31173]
Blank Lab ID: 1421845

Matrix: Soil/Solid (dry weight)

QC for Samples:
1179310001

Results by SW6020A

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Lead	0.100U	0.200	0.0620	mg/Kg

Batch Information

Analytical Batch: MMS9987
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: ACF
Analytical Date/Time: 10/25/2017 3:02:58PM

Prep Batch: MXX31173
Prep Method: SW3050B
Prep Date/Time: 10/24/2017 9:32:45AM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

Print Date: 10/26/2017 4:28:54PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1179310 [MXX31173]

Blank Spike Lab ID: 1421846

Date Analyzed: 10/25/2017 15:07

Matrix: Soil/Solid (dry weight)

QC for Samples: 1179310001

Results by SW6020A

Blank Spike (mg/Kg)				
Parameter	Spike	Result	Rec (%)	CL
Lead	50	50.2	100	(84-118)

Batch Information

Analytical Batch: MMS9987

Analytical Method: SW6020A

Instrument: Perkin Elmer Nexlon P5

Analyst: ACF

Prep Batch: MXX31173

Prep Method: SW3050B

Prep Date/Time: 10/24/2017 09:32

Spike Init Wt./Vol.: 50 mg/Kg Extract Vol: 50 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1421847
MS Sample ID: 1421850 MS
MSD Sample ID: 1421851 MSD

QC for Samples: 1179310001

Analysis Date: 10/25/2017 15:11
Analysis Date: 10/25/2017 15:16
Analysis Date: 10/25/2017 15:20
Matrix: Solid/Soil (Wet Weight)

Results by SW6020A

Parameter	Sample	Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Lead	9.54	45.5	56	102	46.7	55.2	98	84-118	1.55	(< 20)

Batch Information

Analytical Batch: MMS9987
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: ACF
Analytical Date/Time: 10/25/2017 3:16:33PM

Prep Batch: MXX31173
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/24/2017 9:32:45AM
Prep Initial Wt./Vol.: 1.10g
Prep Extract Vol: 50.00mL

Print Date: 10/26/2017 4:28:56PM

Method Blank

Blank ID: MB for HBN 1770774 [SPT/10353]
Blank Lab ID: 1421827

Matrix: Soil/Solid (dry weight)

QC for Samples:
1179310001

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10353
Analytical Method: SM21 2540G
Instrument:
Analyst: NIC
Analytical Date/Time: 10/23/2017 4:26:00PM

Print Date: 10/26/2017 4:28:57PM

Duplicate Sample Summary

Original Sample ID: 1178535012

Duplicate Sample ID: 1421831

QC for Samples:

Analysis Date: 10/23/2017 16:26

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.8	97.1	%	0.32	(< 15)

Batch Information

Analytical Batch: SPT10353

Analytical Method: SM21 2540G

Instrument:

Analyst: NIC

Print Date: 10/26/2017 4:28:58PM



Duplicate Sample Summary

Original Sample ID: 1179303002

Duplicate Sample ID: 1421832

QC for Samples:

1179310001

Analysis Date: 10/23/2017 16:26

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	96.1	95.7	%	0.37	(< 15)

Batch Information

Analytical Batch: SPT10353

Analytical Method: SM21 2540G

Instrument:

Analyst: NIC

Print Date: 10/26/2017 4:28:58PM

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1177293
1179310



name, of

CLIENT: EMI										Section 1									
CONTACT: Larry Helgeson										Section 3									
PROJECT NAME: Hub USTs										Preservative									
REPORTS TO: Larry Helgeson										None									
INVOICE TO: EMI										None									
RESERVED for lab use										None									
P.O. #: 17873										None									
DATE										None									
TIME										None									
MATRIX CODE										None									
SAMPLE IDENTIFICATION										None									
DATE										None									
TIME										None									
MATRIX CODE										None									
1A-B										DRO (AK102)									
2A-B										PAH (8270D-SIM)									
3A-B										GRO/BTEX (AK101/8021B)									
4A-B										VOC-Petro (8260)									
5A-B										GRO									
6A-B										GRO									
7A-B										GRO									
8A-B										GRO									
9A-B										GRO									
10A-B										GRO									
11A-B										GRO									
12A-B										GRO									
13A-B										GRO									
14A-B										GRO									
15A-B										GRO									
16A-B										GRO									
17A-B										GRO									
18A-B										GRO									
19A-B										GRO									
20A-B										GRO									
21A-B										GRO									
22A-B										GRO									
23A-B										GRO									
24A-B										GRO									
25A-B										GRO									
26A-B										GRO									
27A-B										GRO									
28A-B										GRO									
29A-B										GRO									
30A-B										GRO									
31A-B										GRO									
32A-B										GRO									
33A-B										GRO									
34A-B										GRO									
35A-B										GRO									
36A-B										GRO									
37A-B										GRO									
38A-B										GRO									
39A-B										GRO									
40A-B										GRO									
41A-B										GRO									
42A-B										GRO									
43A-B										GRO									
44A-B										GRO									
45A-B										GRO									
46A-B										GRO									
47A-B										GRO									
48A-B										GRO									
49A-B										GRO									
50A-B										GRO									
51A-B										GRO									
52A-B										GRO									
53A-B										GRO									
54A-B										GRO									
55A-B										GRO									
56A-B										GRO									
57A-B										GRO									
58A-B										GRO									
59A-B										GRO									
60A-B										GRO									
61A-B										GRO									
62A-B										GRO									
63A-B										GRO									
64A-B										GRO									
65A-B										GRO									
66A-B										GRO									
67A-B										GRO									
68A-B										GRO									
69A-B										GRO									
70A-B										GRO									
71A-B										GRO									
72A-B										GRO									
73A-B										GRO									
74A-B										GRO									
75A-B										GRO									
76A-B										GRO									
77A-B										GRO									
78A-B										GRO									
79A-B										GRO									
80A-B										GRO									
81A-B										GRO									
82A-B										GRO									
83A-B										GRO									
84A-B										GRO									
85A-B										GRO									
86A-B										GRO									
87A-B										GRO									
88A-B										GRO									
89A-B										GRO									
90A-B										GRO									
91A-B										GRO									
92A-B										GRO									
93A-B										GRO									
94A-B										GRO									
95A-B										GRO									
96A-B										GRO									
97A-B										GRO									
98A-B										GRO									
99A-B										GRO									
100A-B										GRO									
101A-B										GRO									
102A-B										GRO									
103A-B										GRO									
104A-B										GRO									
105A-B										GRO									
106A-B										GRO									
107A-B										GRO									
108A-B										GRO									
109A-B										GRO									
110A-B										GRO									
111A-B										GRO									
112A-B										GRO									
113A-B										GRO									
114A-B										GRO									
115A-B										GRO									
116A-B										GRO									
117A-B										GRO									
118A-B										GRO									
119A-B										GRO									
120A-B										GRO									
121A-B										GRO									
122A-B										GRO									
123A-B										GRO									
124A-B										GRO									
125A-B										GRO									
126A-B										GRO									
127A-B										GRO									
128A-B										GRO									
129A-B										GRO									
130A-B										GRO									
131A																			

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

<http://www.sgs.com/terms-and-conditions>

F083-Blank COC Templates 2015-03-19



1177293
1179310

[illegible]

<http://www.sgs.com/terms-and-conditions>

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

F083-Blank_COC_Templates_2015-03-19

Wells, Nicholas (Anchorage)

From: Helgeson, Larry [lhelgeson@emi-alaska.com]
Sent: Monday, October 23, 2017 8:59 AM
To: Nelson, Justin (Anchorage)
Subject: Capacity for rush on soil samples

1179310



Justin,
Looking forward to working with you.

We have client, The Hub, who wants to look at the possibility of a rush.

6 soil samples

- GRO
- BTEXN or VOC (petroleum)
- DRO
- PAH (1)

Somewhat related, ADEC requested analysis of sample C-SN on work order 1177293 (same job site) for Lead. Please check to see if you have enough sample left to do the analysis.

Larry Helgeson, PE
Environmental Management, Inc.
206 E Fireweed lane, Suite 201
Anchorage, AK 99503
907-272-9336



e-Sample Receipt Form

SGS Workorder #:

1177293

1179310



Review Criteria	Condition (Yes, No, N/A)	Exce,
Chain of Custody / Temperature Requirements		☒ Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	☐ N/A	Absent
COC accompanied samples?	☒ Yes	
☐ N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	☒ Yes	Cooler ID: 1 @ 2.2 °C Therm. ID: D42
	☐ N/A	Cooler ID: @ °C Therm. ID:
	☐ N/A	Cooler ID: @ °C Therm. ID:
	☐ N/A	Cooler ID: @ °C Therm. ID:
	☐ N/A	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago? ☐ N/A		
If <0°C, were sample containers ice free? ☐ N/A		
If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?		☒ Yes
Do samples match COC ** (i.e., sample IDs, dates/times collected)?		☐ No Sample 7A lid matched COC ID: "18" @09:43; label said "C36" @10:04. Log in according to COC&lid per client.
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)		☒ Yes
Were proper containers (type/mass/volume/preservative***) used?		☐ N/A ***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		☒ Yes
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		☐ N/A
Were all soil VOAs field extracted with MeOH+BFB?		☒ Yes
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1177293001-A	No Preservative Required	OK			
1177293001-B	Methanol field pres. 4 C	OK			
1177293002-A	No Preservative Required	OK			
1177293002-B	Methanol field pres. 4 C	OK			
1177293003-A	No Preservative Required	OK			
1177293003-B	Methanol field pres. 4 C	OK			
1177293004-A	No Preservative Required	OK			
1177293004-B	Methanol field pres. 4 C	OK			
1177293005-A	No Preservative Required	OK			
1177293005-B	Methanol field pres. 4 C	OK			
1177293006-A	No Preservative Required	OK			
1177293006-B	Methanol field pres. 4 C	OK			
1177293007-A	No Preservative Required	OK			
1177293007-B	Methanol field pres. 4 C	OK			
1177293008-A	No Preservative Required	OK			
1177293008-B	Methanol field pres. 4 C	OK			
1177293009-A	No Preservative Required	OK			
1177293009-B	Methanol field pres. 4 C	OK			
1177293010-A	No Preservative Required	OK			
1177293010-B	Methanol field pres. 4 C	OK			
1177293011-A	No Preservative Required	OK			
1177293011-B	Methanol field pres. 4 C	OK			
1177293012-A	No Preservative Required	OK			
1177293012-B	Methanol field pres. 4 C	OK			
1177293013-A	No Preservative Required	OK			
1177293013-B	Methanol field pres. 4 C	OK			
1177293014-A	No Preservative Required	OK			
1177293014-B	Methanol field pres. 4 C	OK			
1177293015-A	No Preservative Required	OK			
1177293015-B	Methanol field pres. 4 C	OK			
1177293016-A	Methanol field pres. 4 C	OK			

Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1179310001-A	No Preservative Required	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed by:

Larry Helgeson

Title:

Environmental Engineer

Date:

January 15, 2018

CS Report Name:

Report Date:

October 27, 2017

Consultant Firm:

Environmental Management, Inc.

Laboratory Name:

SGS -North America

Laboratory Report Number:

1179310

ADEC File Number:

Hazard Identification Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

☒ Yes ☐ No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

☐ Yes ☐ No

Comments:

Samples were not transferred.

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?

☒ Yes ☐ No

Comments:

- b. Correct analyses requested?

☐ Yes ☒ No

Comments:

Lead analysis for one sample was added later after discussion with Robert Weimer, ADEC

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

☒ Yes ☐ No

Comments:

Cooler temperature was 2.2°C

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒ Yes ☐ No

Comments:

None were broken or leaking.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒ Yes ☐ No

Comments:

e. Data quality or usability affected?

Comments:

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No

Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No

Comments:

b. All applicable holding times met?

☒ Yes ☐ No

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No

Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No

Comments:

e. Data quality or usability affected?

Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☒ Yes ☐ No

Comments:

iii. If above LOQ, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No

Comments:

v. Data quality or usability affected?

Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No

Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☒ Yes ☐ No

Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No

Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

vii. Data quality or usability affected?

Comments:

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No

Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No

Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No

Comments:

iv. Data quality or usability affected?

Comments:

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☒ Yes ☐ No

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

☐ Yes ☐ No

Comments:

iii. All results less than LOQ?

☒ Yes ☐ No

Comments:

iv. If above LOQ, what samples are affected?

Comments:

v. Data quality or usability affected?

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☐ Yes ☒ No

Comments:

ii. Submitted blind to lab?

☒ Yes ☒ No

Comments:

- iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

☐ Yes ☒ No

Comments:

- iv. Data quality or usability affected?

Comments:

- f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☒ Not Applicable

- i. All results less than LOQ?

☐ Yes ☒ No

Comments:

Only previously cleaned sample spoons or disposable tools were used to collect the samples. No decontamination was done in the field.

- ii. If above LOQ, what samples are affected?

Comments:

- iii. Data quality or usability affected?

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

- a. Defined and appropriate?

☐ Yes ☒ No

Comments:

Appendix C

ADEC UST Forms, Field Notes, and Disposal Receipts



APPENDIX B



ADEC Storage Tank Program Site Assessment & Release Investigation Summary Form

This document summarizes information from site assessments and release investigation reports that are required by Alaska's Underground Storage Tanks Regulations (18 AAC 78). It is intended to ensure minimum requirements are met when submitting full reports to ADEC. It cannot be substituted for comprehensive site assessment or release investigation reports. Site assessments (as defined in AS 46.03.450) are conducted to check for the presence or absence of petroleum contamination. If contamination of soil or groundwater is identified then a release investigation is required. Site assessments and release investigations must be conducted by a qualified impartial third party (as defined in 18 AAC 78) and in accordance with chapter two of the Underground Storage Tanks Procedures Manual (UST Manual).

How to fill out this form

Type or print in ink the requested information and sign in ink the "signature" blocks on page 7. Please attach this form to the comprehensive site assessment or release investigation report (or include it in the report introduction) and submit it to the nearest ADEC field operations office (Juneau, Anchorage, Fairbanks or Soldotna).

1. GENERAL INFORMATION

Purpose of

Site assessment/

TANK AND DISPENSER UPGRADE/REPLACEMENT

Release investigation:

(Closure, Change-in-service, Suspected or confirmed release, Compliance check, Other)

Owner of site:

The Hub of Alaska, Inc.

907-822-3555

Name of company/legal entity that owns the site

Phone number

PO Box 14

Glennallen AK 99588

Mailing address

City, State, Zip code

Operator of site:

The Hub of Alaska, Inc.

907-822-3555

Name of company/legal entity that operates the site

Phone number

PO Box 397

Glennallen AK 99588

Mailing address of operator

City, State, Zip code

Location of site:

The Hub of Alaska

907-822-3555

Name of site (e.g. John Doe's Service Station)

Phone number

Mile 189 Glenn Hwy.

Glennallen AK 99588

Physical address of site (be as specific as possible)

City, State, Zip code

Legal description of site

Section/township/range

Fuel Station Convenience Store

2945

Type of business at site

Facility ID # / Tank ID number(s)

Financial Assistance
Applications filed
(this site only)

☐
Site assessment/
tightness test

☐
Tank cleanup

☐
Tank upgrade

☐
Tank closure

**Reports on file
with ADEC:**

☐
Tightness test

☒
Closure notice

☐
Other _____

2. SYSTEM AND TANK STATUS

Describe the status, size, and contents of the tanks that have been at the site:

Tank ID Number: Tank No. 1 Tank No. 2 Tank No. 3 Tank No. ____ Tank No. ____

Tank status (check one)
Currently in use

Temporarily closure

Closed/left in place

Closed/removed

X X X _____

Total capacity (gallons)

Contents (diesel, etc)

3. FIRM CONDUCTING SITE ASSESSMENT AND RELEASE INVESTIGATION

ENVIRONMENTAL MANAGEMENT, INC

907-272-9336

Name of firm

Phone number

206 E Fireweed Lane #201

Anchorage, AK 99503

Mailing address

City, State, Zip code

Larry Helgeson

Larry Helgeson & Terrance Mount

Site assessment supervisor(s)

Person(s) collecting samples

4. SITE HISTORY

Based on the best available knowledge, please check the appropriate box below:

	Y	N
1	0.0000	0.0000
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
11	0.0000	0.0000
12	0.0000	0.0000
13	0.0000	0.0000
14	0.0000	0.0000
15	0.0000	0.0000
16	0.0000	0.0000
17	0.0000	0.0000
18	0.0000	0.0000
19	0.0000	0.0000
20	0.0000	0.0000
21	0.0000	0.0000
22	0.0000	0.0000
23	0.0000	0.0000
24	0.0000	0.0000
25	0.0000	0.0000
26	0.0000	0.0000
27	0.0000	0.0000
28	0.0000	0.0000
29	0.0000	0.0000
30	0.0000	0.0000
31	0.0000	0.0000
32	0.0000	0.0000
33	0.0000	0.0000
34	0.0000	0.0000
35	0.0000	0.0000
36	0.0000	0.0000
37	0.0000	0.0000
38	0.0000	0.0000
39	0.0000	0.0000
40	0.0000	0.0000
41	0.0000	0.0000
42	0.0000	0.0000
43	0.0000	0.0000
44	0.0000	0.0000
45	0.0000	0.0000
46	0.0000	0.0000
47	0.0000	0.0000
48	0.0000	0.0000
49	0.0000	0.0000
50	0.0000	0.0000
51	0.0000	0.0000
52	0.0000	0.0000
53	0.0000	0.0000
54	0.0000	0.0000
55	0.0000	0.0000
56	0.0000	0.0000
57	0.0000	0.0000
58	0.0000	0.0000
59	0.0000	0.0000
60	0.0000	0.0000
61	0.0000	0.0000
62	0.0000	0.0000
63	0.0000	0.0000
64	0.0000	0.0000
65	0.0000	0.0000
66	0.0000	0.0000
67	0.0000	0.0000
68	0.0000	0.0000
69	0.0000	0.0000
70	0.0000	0.0000
71	0.0000	0.0000
72	0.0000	0.0000
73	0.0000	0.0000
74	0.0000	0.0000
75	0.0000	0.0000
76	0.0000	0.0000
77	0.0000	0.0000
78	0.0000	0.0000
79	0.0000	0.0000
80	0.0000	0.0000
81	0.0000	0.0000
82	0.0000	0.0000
83	0.0000	0.0000
84	0.0000	0.0000
85	0.0000	0.0000
86	0.0000	0.0000
87	0.0000	0.0000
88	0.0000	0.0000
89	0.0000	0.0000
90	0.0000	0.0000
91	0.0000	0.0000
92	0.0000	0.0000
93	0.0000	0.0000
94	0.0000	0.0000
95	0.0000	0.0000
96	0.0000	0.0000
97	0.0000	0.0000
98	0.0000	0.0000
99	0.0000	0.0000
100	0.0000	0.0000

X	Was soil contamination observed or identified?
---	--

X Was groundwater contamination observed or identified?

X Did inventory control or prior tank repairs indicate a possible release?

x Has a tank tightness test been performed on any USTs on the site?

x Have any of the facility's USTs or piping ever failed a tightness test?

x Have there been any previous site assessments performed at this site?

x Do previous site assessments indicate any contamination has occurred?

If the answer to any of these questions is yes, please describe (or attach copy of report discussion). Give dates and circumstances, use continuation sheet if necessary:

5. FIELD SCREENING ANALYSIS

Date(s) of field screening: 10/9/17 to 10/11/17

Temperature(s) during screening: 9 to 35 degrees F

Estimated wind speeds: Calm

Weather (clear, raining, etc): mainly clear with some snow flurries

Type of field detection instrument used: PIDs

Brand: Rae

Model: MiniRae 2000 & MiniRae 3000

Date calibrated: varies (calibration checked daily)

Number of tests: _____

Range of results:

If an instrument wasn't used, what field detection method was used?

Number of tests: _____

Range of results: _____

6. COLLECTION OF SOIL SAMPLES

For site assessments done for USTs remaining in place

Check the appropriate boxes below (if not applicable, leave blank):

- | Y | N | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Were samples taken from borings (or test pits) within 5 feet of the UST? |
| ☐ | ☐ | Were samples collected from within 2 feet below the bottom of the UST? |
| ☐ | ☐ | Were dispensers connected to the UST system? |
| ☐ | ☐ | Were samples taken from borings (or test pits) adjacent to dispensers? |
| ☐ | ☐ | Were samples taken from borings (or test pits) adjacent to piping? |

How many borings/pits were made? _____ How many samples were analyzed? _____

For site assessments done at excavation and removal of USTs:

Check the appropriate boxes below (if not applicable, leave blank):

- | Y | N | |
|-------------------------------------|-------------------------------------|---|
| ☒ | ☐ | Were any areas of obvious contamination identified or observed? |
| ☒ | ☐ | Were samples taken from areas of obvious contamination? |
| ☒ | ☐ | Were at least two discrete analytical samples taken from excavated pit area? |
| ☒ | ☐ | Was at least one sample taken from below each dispensing island's piping? |
| ☒ | ☐ | Was at least one sample taken from the piping trench? |
| ☐ | ☒ | Were the samples referenced above collected taken from native soil within two feet below the bottom of the tank pit or dispenser/piping trench? <u>Site was all fill material</u> |
| ☒ | ☐ | If multiple tanks were removed, were at least three samples collected? |
| ☒ | ☐ | Were additional samples collected for each 250 square feet of excavated pit over 250 square feet? |

Number of distinct points sampled: 12 Estimated excavation's surface area: 1720 S.F.

For all site assessments

Check the appropriate boxes below:

- | Y | N | |
|-------------------------------------|--------------------------|---|
| ☒ | ☐ | Were field duplicate samples collected and analyzed? |
| ☒ | ☐ | Were all samples kept at the appropriate temperature until analysis? |
| ☒ | ☐ | Were all samples extracted & analyzed within recommended holding times? |
| ☒ | ☐ | Did chain-of-custody/transfer logs accompany samples to laboratory? |

7. LABORATORY ANALYSIS OF SOIL SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants (gasoline, BTEX, diesel, etc.): _____

Please list the analytical methods used to detect these contaminants in the soil samples, the number of samples analyzed by each method, and the range of results for each method:

Listed numbers do not include release investigation

Possible product	Analytical method	Number of samples	Range of results	Location(s) of sample point(s) w/ highest level of contamination
Gasoline	AK101	26	ND-28.7	Tank 2 (T2-4)
BTEX	8021/8260	27	ND-8.23 (Xylene)	Tank 2 (T2-4)
Diesel	AK102	26	ND-59	Tank 3 (T3-3)
VOC	8260	22	ND-4.4 (1,2,4 TMB*)	Tank 2 (T2-4)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

8. GROUNDWATER INVESTIGATION

Check the appropriate boxes below:

Y N

X ___ Was groundwater encountered during the excavation or drilling work?

___ N/A Were borings drilled/pits dug at least five feet below the USTs bottom?

X ___ Is groundwater or seasonal high water table known or suspected to exist within five feet of the bottom of the USTs?

X ___ Were samples taken from borings drilled/test pits dug to this water level?

X ___ Were all these samples analyzed within recommended holding times?

How many groundwater/saturated-soil samples were collected & analyzed? 11

How many of these samples were taken from the top 6" of water table? 11

How many field QC samples were analyzed? 2 2 0
 Trip blanks Duplicates Decon blanks

9. LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants at the site: _____

Identify the analytical methods used to detect these contaminants in the water samples, the number of samples analyzed by each method, and the range of results for each method:

Analytical method	Number of samples 0	Range of results (ppm)	Location(s) of sample point with highest level of contamination
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

10. DISPOSAL OF MATERIALS

Check the appropriate boxes below (if not applicable, leave blank):

Y N
— — Were tanks cleaned in accordance with API 2015 (Cleaning Petroleum Storage Tanks)?
X — Were the tanks and piping removed and disposed in accordance with API 1604 (Removal and disposal of used petroleum Storage tanks)?

Where were the tanks and piping disposed? Alaska Scrap & Recycling

Where was the tank sludge and rinsewater disposed? NRC Alaska

11. STOCKPILES

Check the appropriate boxes below:

Y N
X — Is any soil stockpiled at the site?
X — Are soils stockpiled in accordance with 18 AAC 78.311?

12. RELEASE INVESTIGATION

Check the appropriate box below:

Y N

X Was any petroleum contamination identified during site assessment?

(Answer "yes" if any evidence a release occurred; if no, proceed to item 13)

If contamination was found, what was matrix score for site?

(Attach completed matrix score sheet to this form)

When did release occur? unkown When was release confirmed? 10/10/17
(Date & time) (Date & time)

When was ADEC notified? 10/10/17 List ADEC staff notified: Tori Huelskoetter
(Date & time) (Name) was onsite

What is status of UST that prompted the investigation? X
In use Out-of-use, product still in system Out-of-use; system empty Permanently closed

Briefly describe (or attach copy of report discussion) the steps taken to prevent further migration of the release and steps taken to monitor and mitigate fire and safety hazards: Interim Soil Removal completed Oct 21-22, 2017. A separate report will be submitted.

13. SITE SKETCH

Sketch the site in the space below. Alternatively, attach a site map to the back of the form. The sketch (or accompanying narrative) should include the following information:

- locations of all USTs, piping, and dispensers
- distances from tanks to nearby structures
- property line locations
- location and dimensions of excavation(s)
- type of backfill used to surround system
- locations of any known historical releases
- locations of any observed contamination
- location of any boreholes and test pits
- soil types
- field screening locations and readings
- sampling locations, depths, & sample ID numbers
- water wells and monitoring wells (if present)
- depth to groundwater/seasonal high groundwater
- locations of any stockpiled soils
- north arrow
- bar scale (specify feet or meters)

For release investigations, in addition to the above information, show the groundwater gradient; surface drainages (including potential hydraulic connections with groundwater) and utility trenches.

14. QUALITY ASSURANCE

Check the appropriate boxes below:

- Y N
X Were there deviations from Chapter 2 of the UST Procedures Manual? (Note that any deviations must be documented in a section of the comprehensive report)
- X Is a field quality control summary included in the reports?
- X Is a laboratory QC summary included in the report for all samples used to verify cleanup levels have been met?

15. CERTIFICATION

The following certification is to be signed by the assessment firm's principal investigator or Quality Assurance Officer:

I certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with the provisions of Chapter 2 of the UST Procedures Manual.

Larry Helgeson

(Print name)



(Signature)

EMI, Principal Investigator

Digitally signed by Larry A Helgeson
Date: 2018.01.17 07:49:54 -09'00'

(Date)

The following certification is to be signed by the UST owner/operator (or designated representative):

I certify that I have personally examined and am familiar with the information in this and all attached documents and based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

JAMES FIELDS

(Print name)



(Signature)

MILE 186.7 GLENN HWY

(Street Address)

OWNER

(Specify if owner, operator, representative)

10/31/2017

(Date)

GLENNALLEN AK 99588

(City, State, Zip)

16. ATTACHMENTS

Please check the boxes showing any comprehensive reports attached to this summary:

- X Site Assessment Report (include if no release investigation is needed)
- X Release Investigation Report (include if release investigation is needed)

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

UNDERGROUND STORAGE TANKS - NOTICE OF POST CLOSURE

- ⇒ An owner or operator of an underground storage tank (UST) system to be permanently closed is required to notify the department in accordance with Title 18 Alaska Administrative Code (AAC) *Underground Storage Tanks*.
- ⇒ "Permanently Closed" means to remove petroleum and sludges from the UST system and either remove, dismantle and recycle/dispose of the tank, piping and ancillary equipment, or fill it with inert solid material.
- ⇒ A UST system located at a contaminated site, or that has had a confirmed release, must be permanently removed from the ground; an in-place closure is not allowed (18 AAC 78.085).
- ⇒ A licensed UST worker, certified in closure, is required to be onsite and physically supervise closure or a change-in-service of a UST system (18 AAC 78.400 and 78.455(a)(2)).
- ⇒ A qualified environmental professional must meet the conditions of 18 AAC 78.088, including conducting or supervising the collection of field data, and the interpretation and reporting of the site characterization and site assessment (18 AAC 78.090(e)) as well as the collection and reporting of release investigation data (18 AAC 78.235(b)).

I. UST OWNER		II. UST FACILITY	
NAME: THE HUB OF ALASKA, INC.		FACILITY NAME: THE HUB OF ALASKA	ADEC FAC # 2945
ADDRESS: PO BOX 14		PHYSICAL LOCATION: MILE 189 GLENN HWY.	
CITY: GLENNALLEN	STATE/ZIP: AK 99588	CITY: GLENNALLEN	FACILITY PHONE: 907-822-3555
UST CLASS A/B OPERATOR: JAMES FIELDS		UST CLASS A/B OPERATOR PHONE /EMAIL 907-822-3555 james@avak.biz	
III. UST CLOSURE WORKER		IV. QUALIFIED ENVIRONMENTAL PROFESSIONAL	
NAME: Randy Hunter		NAME: Larry Helgeson	
COMPANY: Prism design & Const		COMPANY: Environmental Management, Inc	
ADDRESS:		ADDRESS: 206 E Fireweed Lane, #201, Anchorage, AK	
CONTACT PHONE: 907 357 1430		CONTACT PHONE: 907-272-9336	
EMAIL ADDRESS: Randy.H@Prismalaska.com		EMAIL ADDRESS: lhelgeson@emi-alaska.com	

V. TANK AND CLOSURE DETAILS					
USE THE ADEC TANK NUMBER:	TANK # 1	TANK # 3	TANK # 2A/2B	TANK #	TANK #
DATE OF CLOSURE:	10/16/17	10/16/17	10/16/17		
PRODUCT (gasoline, diesel, used oil, etc.):	gasoline	DSC	gasoline		
CAPACITY of tank in Gallons:	12,000	12,000	12,000		
DATE PRODUCT was last stored:	10/11/17	10/11/17	10/11/17		
METHOD OF CLOSURE:	REMOVAL AND DISPOSAL	REMOVAL AND DISPOSAL	REMOVAL AND DISPOSAL	REMOVAL AND DISPOSAL	REMOVAL AND DISPOSAL
	Landfill ☐ Recycle ☒	Landfill ☐ Recycle ☒	Landfill ☐ Recycle ☒	Landfill ☐ Recycle ☐	Landfill ☐ Recycle ☐
INERT-IN-PLACE	☒	☒	☒	☐	☐
CHANGE-IN-SERVICE	☐	☐	☐	☐	☐
CONTAMINATION observed?	☒	☒	☒	☐	☐
DATE OF SITE CHARACTERIZATION:	10/17/17	10/17/17	10/17/17		
DATE OF SITE ASSESSMENT:	10/17/17	10/17/17	10/17/17		
DATE OF RELEASE INVESTIGATION:	10/17/17	10/17/17	10/17/17		

V. OWNER CERTIFICATION TANK IS CLOSED IN ACCORDANCE WITH 18 AAC 78	
⇒ The Owner/Operator is required to complete and submit the <i>Notice of Post Closure</i> within 30 days of the tank being pulled, made inert-in-place, or changed-in-service (18 AAC 78.085(f) and 78.100(d)). ⇒ The Owner/Operator must ensure the <i>Site Assessment and Release Investigation Report</i> is complete and submitted within 60 days of closure (18 AAC 78.090(d)(5) and 78.100(e)).	

CERTIFIED BY: OWNER ☒ OPERATOR ☐ DATE: 10/31/2017 PHONE: 907-822-3555

PRINT NAME: James Fields

SIGNATURE: 

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
555 CORDOVA STREET ANCHORAGE, ALASKA 99501-2617

UNDERGROUND STORAGE TANKS OFFICE
PHONE 907-269-7679 FAX 269-7600 www.dec.alaska.gov

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION UNDERGROUND STORAGE TANKS - CLOSURE CHECKLIST

- ⇒ A licensed UST worker who performs or supervises a UST system closure must initial and sign this checklist.
- ⇒ Handwritten initials are required next to the work items which were completed.
- ⇒ The UST worker is required to submit this certification to the department within 30 days of the UST system being removed, made inert or changed-in-service (18 AAC 78.085(f) and 78.100(d)).

VI. UST WORKER CHECKLIST - TANKS ARE CLOSED IN ACCORDANCE WITH 18 AAC 78

I CERTIFY:	I understand that a certified UST worker who fails to submit this portion of the documentation may be subject to license suspension or revocation (18 AAC 78.455(a)(9) and 78.470(a)(3)).
I CERTIFY:	UST SYSTEM REMOVAL
<i>RA</i>	I was on the job site for all work requiring certification of permanent closure (78.455(a)(2))
<i>RA</i>	Contents of tank and piping were emptied
<i>RD</i>	Tank was purged of flammable vapors or the atmosphere was made inert
<i>RA</i>	UST cleaning and closure procedures were used in accordance with the published Recommended Practices (RP) adopted by reference in 18 AAC 78.085(g) as applicable, e.g., the American Petroleum Institute (API) RP-1604, <i>Closure of Underground Storage Tanks</i>
<i>RA</i>	Tanks, piping and vent lines were removed, labeled, and properly disposed
<i>RA</i>	All accessible holes were filled, plugged or capped
I CERTIFY:	UST SYSTEM CLOSURE IN THE GROUND (INERT-IN-PLACE)
	I was on the job site for all work requiring certification of permanent closure (78.455(a)(2))
	Contents of tank and piping were emptied
	Tank was purged of flammable vapors or the atmosphere was made inert
	UST cleaning and closure procedures were used in accordance with the published Recommended Practices (RP) adopted by reference in 18 AAC 78.085(g) as applicable, e.g., the American Petroleum Institute (API) RP-1604, <i>Closure of Underground Storage Tanks</i>
	Tank(s) were filled with solid inert material [type of material: _____]
	Piping and vents were removed, and all accessible holes were filled, plugged or capped
I CERTIFY:	UST SYSTEM CHANGE IN SERVICE (FROM REGULATED TO NON-REGULATED USE)
	I was on the job site for all work requiring certification of permanent closure (78.455(a)(2))
	Contents of tank and piping were emptied
	Tank was purged of flammable vapors or the atmosphere was made inert
	UST cleaning and closure procedures were used in accordance with the published Recommended Practices (RP) adopted by reference in 18 AAC 78.085(g) as applicable, e.g., the American Petroleum Institute (API) RP-1604, <i>Closure of Underground Storage Tanks</i>
	UST system(s) were disconnected from regulated use
	Piping connection with regulated use was removed and fitting hole capped or plugged

VII. UST WORKER CERTIFICATION - TANK(S) ARE CLOSED IN ACCORDANCE WITH 18 AAC 78

ALASKA UST CLOSURE WORKER LICENSE # *612* DATE: *10/16/17* PHONE: *907 552 1430*

PRINT NAME:

Randy Hentco

SIGNATURE:

[Signature]

Owner/Operator is required to complete and sign page 1 of this *Notice of Post-Closure*. The UST Closure Worker who supervised permanent closure of the UST system(s) must complete and sign page 2 (78.455(a)(9)). Submit the document within 30 days of tank removal, inert-in-place or change-in-service, to the department's UST Office.

17873 The Hub UST

10/9/17 11:00 am

WX: Cool Sunny Calm

PID M. Lae ²⁰⁰⁰~~3000~~ Calibrated with
100 ppm IsobutyleneSmall leak/spill found middle of
West Island. Soil will be
removed confirmed by FSG,

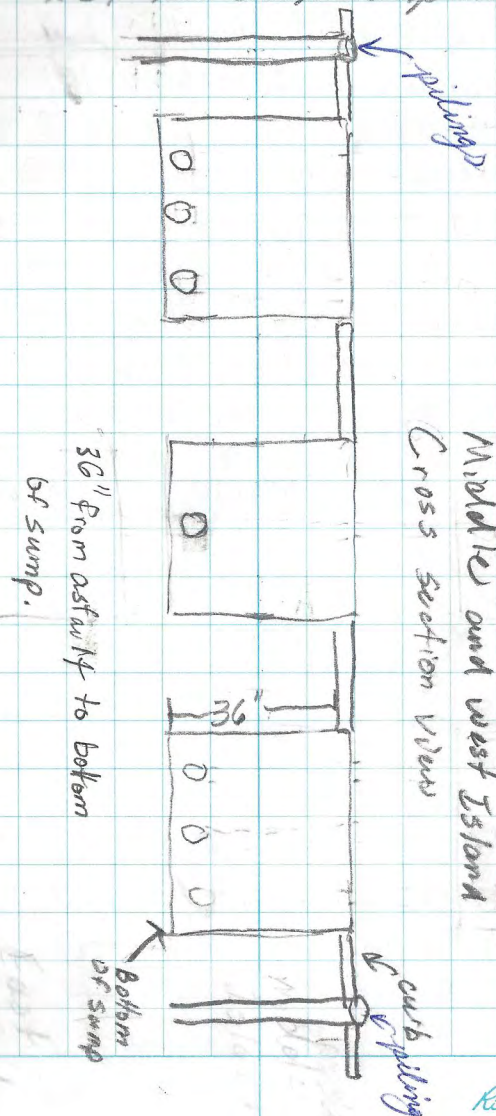
ID	Time/Time	Depth	PID	Notes
①	11:53/12:40	2"bs	0.0/20	Island
②	11:55/12:42	12"bs	0.0/101	
③	12:31/13:12	12"bs	332	
④	12:32/13:15	12"bs	245	
DSW	12:30	13:18 12"b.s.	1.9	
DS E	12:33	13:20 12"b.s.	1.5	
⑤ ILSW	12:36	13:26 12"b.s.	6.0	
⑥	12:37	13:27 12"b.s.	1.2	
⑦	12:41	13:29 12"b.L.	1.5	1/3 S. Line
⑧	12:42	13:29 12"b.L.	32.2	2/3 S. Line
⑨	12:45	13:30 12"BL	1.2	1/3. middle
⑩	12:47	13:31 12"BL	1.3	2/3. M. Line

201" post to post

10/9/17

45" x 24" x 38" deep Sump Large

35" x 24" x 38" deep Sump Small



DS-03

3-14:25
on 9-oct-17FL-001
FL-0212:41:10
14:20
on 9-oct-17

ID	Sample Time	Reced Time	Depth	P&O	Notes
11	12:49	13:32	12" BL	0.9	Line N 1/3
12	12:51	13:33	12" BL	0.9	Line N 2/3
13	12:56	13:34	6" BL	1.0	Line E
14	13:57	14:37	12" BS	1.1	MJSump
15	13:59	14:38	12" BS	1.3	"
16	14:00	14:40	12" BS	2.80	"
17	14:03	14:42	12" BS	5.0	* " 09:19 - on 9-00T-17
18	14:04	14:43	12" BS	51.8	* " 09:43 - on 9-00T-17
19	14:06	14:44	12" BS	343	"
20	14:55	15:52	36" BGS	.6	Trench 0'
21	14:56	15:55	36" BGS	.5	" 30'
22	15:01	15:56	36" BGS	.3	" 26'
23	15:02	15:57	36" BGS	.3	" 26'
24	15:03	15:59	36" BGS	.3	" 20'
25	15:04	16:00	36" BGS	.2	" 20'
26	15:16	16:04	36" BGS	.2	" 30'
27	15:17	16:06	36" BGS	.4	" 30'
28	15:23	16:07	36" BGS	.4	" 40'
29	15:24	16:08	36" BGS	.3	" 40'
30	15:27	16:13	36" BGS	.3	" 50'
31	15:28	16:14	36" BGS	.2	" 50'
32	15:32	16:15	48" BGS	.3	" 60'
33	15:33	16:17	48" BGS	.2	" 60'
34	15:37	16:18	48" BGS	.2	" 70'
35	15:38	16:19	48" BGS	.2	" 70'

Sketches - see 8"X10" sheets

Lab samples 10/9/17

Headspace Name	Sample name Chain of Custody	Time taken	Duplicate
DSW	DS-03	14:25	At
8	FL-01	14:10, 14:20	FL-02
17	17	09:19	
18	18	09:43	
C22	C22	10:18	
C27	C27	10:09	
C32	C32	09:50	
C33	C33	09:58	
C36	C36	10:04	
C1B	C1	13:30	
C26B	C26B	10:52	

Lab samples 10/10/17

Headspace Name	Chain of Custody Name	Time Taken	Duplicate
T1B9	T1-9	20:34	
T1B5	T1-5	20:38	
T1B3	T1-3	20:41/20:45	T1-4
T2B10	T2-10	21:07	
T2B8	T2-B	20:50	

34 10/9/17

ID	Time	Time	Depth	PEO	
C1	15:34	16:33	5'	64.1	BSE-002
C2	15:36	16:34	4.75'	8.1	B5W
C3	15:38	16:36	4.5'	0.7	BNW
C4	15:41	16:39	4.75'	65.2	BNE
C5	15:42	16:41	4.75'	53.3	BC
C6	15:49	16:50	3.5'	2.2	WSE
C7	15:49	16:51	3.0'	0.6	WSW
C8	16:03	16:52	2.75'	0.6	~~WS~~ WWS
C9	16:05	16:53	2.5'	0.3	WWN
C10	16:06	16:55	2'	146.4	WNW
C11	16:08	16:57	2.5'	225.3	WNE
C12	16:10	16:57	2.5'	35.9	~~WEN~~ ~~WES~~
C13	16:11	17:00	3.0'	1.4	WES
C21	16:50	17:41	4'	0.8	BNW
C22	16:51	17:42	4'	91.1	BNE * 10:18 ON 9-OCT-17
C23	16:53	17:43	4.75'	1.2	BEC
C24	16:54	17:45	4.75'	2.0	BWC
C25	16:57	17:46	4.75'	0.4	BWS
C26	17:00	17:48	48" BG5	206.2	
C27	17:01	17:49	3.5'	9.4	WNW * 10:09 ON 9-OCT-17
C28	17:12	17:57	3.5'	4.6	
C29	17:15	17:58	3.5'	0.8	
C30	17:16	17:59	3.0'	0.6	
C31	17:16	18:00	2.5'	0.7	

not from this headspace

Lab Samples 10/10/17 Continued

Headspace Name	Chain of Custody Name	Time Taken	Duplicate
T2B6	T2-6	20:52	
T2B4	T2-4	20:56	
E-02	E-02	21:30	

10/9/17 36	Sample	Record			
ID	Time	Time	Depth	PID	Notes
C32	17:19	18:06	2.5'	13.9*	EW on 9-oct-17
C33	17:20	18:07	2.5'	0.7*	SW on 9-oct-17
C34	17:21	18:08	2.5'	0.5	
C35	17:22	18:09	2.5'	0.4	
C36	17:23	18:10	3.0'	1.7	*WNWS on 9-oct-17

C41	17:45	18:42	5'	13.0	
C42	18:08	18:44	5'	556.1	
C43	18:05	19:04	2'	1.0	
C44	18:06	19:05	2.5'	20.9	
C47	18:30	19:06	5'	0.6	
C48	18:41	19:21	5'	785	
C46	18:45	19:20	5'	56	
C45	18:19	19:19	3'	4.1	
C49	18:31	19:21	5'	1.5	
C50	18:32	19:21	3.5'	50.6	
C51	18:33	19:22	3.0	116.0	
C52	18:35	19:22	3.0	6.7	
C53	18:36	19:23	3.5'	1.8	
C54	18:40	19:24	42"	2.4	
C55	18:41	19:24	48"	2.9	
C56	18:45	19:25	30"	4.3	
C57	18:48	19:26	45"	4.7	
C58	18:49	19:26	50"	4.7	

10/9/17 - 10/10/17					
1	Time/Time	Depth	PID	Note	
C59	18:50/19:27	4.5'	14.1		
C18	18:52/19:29	5.75'	59.1	*C1 13:30	
C4B	18:53/19:30	"	27.8		
C5B	18:53/19:30	"	19.8		
C22B	18:56/19:31	4.75	3.4		
C26B	18:59/19:31	4.75	3.4	278*	C26B 10:52 9-oct-17

10/10/17 PID Calibration @ 09:00

MinRAE 3000 calibrated with 100ppm Isobutylene
- fresh air and span calibration

ID	Time/Time	Depth	PID	Note	
C48	08:35/09:33	6.5' BGS	911.1		
C60	08:37/09:35	5.5' BGS	1054		
C26C	109:40	6' BGS	368.9		
F3	09:15/9:42	5' BGS	0.5	Mid Fill Between	2" Pump
F1	~~4:30/9:51~~	6" BGS	14.0	E Tank Diesel	
F2	~~4:19:31/9:50~~	6" BGS	0.1		
F1	07:40/09:30	6" BGS	14.1	E Tank Diesel	
F2	07:41/09:31	6" BGS	0.1	Mid Bay Gasoline	
F4	09:35/10:31	2' BGS	0.3	West Tank Fill	
F5	09:37/10:32	3' BGS	6.5	E Tank Fill	
C61	09:44/10:23	4' BGS	912.0		
C62	09:42/10:24	2' 11" BGS	135.0		
C63	09:40/10:24	4' BGS	1249		

Rite in the Rain

10/10/17 PID Sampling

ID	Time/Time	Depth	PID	Notes
C64	09:47 / 10:25 / ~~10:25~~ ^{09:55}	3' 2" BGS	358.1	
C65	09:37 / 10:25 / ~~10:25~~ ^{09:55}	4' BGS	266.2	
C66	9:35 / 10:26 / ~~10:26~~ ^{09:55}	2' 11" BGS	264.5	
C67	9:34 / 10:27 / ~~10:27~~ ^{09:55}	4' BGS	150.0	
C68	9:33 / 10:28	3' 2" BGS	1305	3' 2" BGS
C69	09:30 / 10:28	4' 5" BGS	1309	

Stoic pile

S1	10:41	10:40	3' AGS	20.2	Above ^{Surface} ground
S2	10:48	11:42	2' AGS	0.4 28.2	East side
S3	10:49	11:45	1' "	140.5	
S4	10:50	11:47	3' "	0.4	
S5	10:50	11:43	2' AGS	0.4	
S6	10:51	~~11:49~~ 11:49	1' AGS	0.2	
S7	10:52	11:50	2' AGS	0.2	
S8	10:53	11:51	3' AGS	0.1	
S9	10:53	11:52	1' AGS	0.2	
S10	11:30	12:09	3' AGS	0.2	
S11	11:05	12:11	1' AGS	3.6	Other side
S12	11:09	12:12	2' AGS	1.1	West side
S13	11:10	12:13	3' AGS	0.1	
S14	11:14	12:14	1' AGS	0.2	
S15	11:15	12:14	2' AGS	0.1	
S16	11:16	12:15	3' AGS	2.3	
S17	11:17	12:15	1' AGS	0.2	

10/10/17

Staple Continued

ID	Time/Time	Depth	PID	Notes
S18	11:22 / ~~11:47~~ ^{11:47}	2' AGS	0.1	West side
S19	11:23 / 12:17	3' AGS	0.1	
S20	11:24 / 12:13	1' AGS	0.0	
F30 + HDE	10:58 / 11:55	4' BGS	0.2	-F36
F31 + HDE	10:40 / 11:56		0.1	-F37
F30 E	11:25 / 12:20		0.1	
F39 W	11:26 / 12:21		0.0	
F40 E	11:26 / 12:22		0.0	
F41	11:30 / 12:22		0.3	
F42	11:59 / 12:23	4' BGS	0.3	Diesel Sump
F43	12:00 / 12:40	5.5' BGS	0.8	
F44	12:01 / 12:41		8.1	
F45	12:01 / 12:42		2.5	
F46	12:02 / 12:43		20.7	* #4 12:55
F47	12:20 / 12:48		0.7	
F48	12:22 / 12:50		0.4	
F49	12:25 / 12:51		0.7	
F50	12:27 / 12:52	5.5' BGS	0.7	
C11-Test1	11:39 / 12:53	7' BGS	70.1	Grand / Scord
C11-Test2	11:39 / 12:53	7.5' BGS	60.9	Scord / Grand
C11-Test3	11:40 / 12:54	8.5' BGS	70.4	Bottom
S-Test1	12:10 / 12:59	4' BGS	81.3	* Sidewall
S-Test2	12:14 / 13:00	4' BGS	353.3	"

Rite in the Rain

10/10/17 PID Testing cont.

ID	Time	Time	Depth	PID	Notes
B-NW-Test	12:15	13:03	5.5 BGS	9.25	Side on Sidetest
Side 3-Test	12:20	13:04	4' BGS	335	Sidetest
Side 4-Test	12:22	13:05	4' BGS	106.1	Side
Sidetest 5 NE	12:25	13:06	4' BGS	91.9	Side

V1-SW	14:05	15:04	3' BGS	1.0	Vent
V2	14:07	15:05	3' BGS	0.8	Vent
V3-NW	14:08	15:06	3' BGS	1.0	Vent

W-08	18:32	19:25	6' BGS	0.1	
W-07	18:33		10'	0.0	
W-06	18:34	19:26	6'	0.0	
W-05	18:36		10'	0.1	
W-04	18:38		6'	0.0	
W-03	18:40	19:28	10'	0.1	
W-02	18:42		6'	0.0	
W-01	18:45	19:29	10'	0.0	
T1B10	18:36	19:36	12' BGS	0.3	20:34/10-10-17
T1B9	18:37		12'	3.7	* SE
T1B8	18:39	19:37		0.5	
T1B7	18:40			0.6	
T1B6	18:43			0.8	
T1B5	18:44		↓ BGS	2.1	* ME 20:36/10-10-17

10/10/17

T1B4	18:46/19:40	12' BGS	0.6	+20:41/10-10-17
T1B3	18:46		385	* NEM
T1B2	18:48		1.5	
T1B1	18:48/19:41		0.4	21:07/10-10-17
T2B10	18:49/19:48		3.0	* 20:50/10-10-17
T2B9	18:50		1.4	
T2B8	19:00		56.2	* 20:52/10-10-17
T2B7	18:57		1.2	
T2B6	18:58		19.5	* 20:52/10-10-17
T2B5	18:52	19:51	17.1	
T2B4	18:56		82.2	* 20:56/10-10-17
T2B3	18:53		2.6	
T2B2	18:54		1.0	
T2B1	18:53	12' BGS	0.9	
N8	18:49	19:57	6' BGS	0.0
N7	18:52	10'	0.1	
N6	18:55	6'	0.0	
N5	18:58	10'	0.0	
N4	18:59	6'	0.1	
N3	19:00	10'	0.0	
N2	19:04	6'	0.7	
N1	19:05	20:00	10'	0.2
S-01	19:15	20:05	10'	0.1
S-02	19:17		6'	0.2

5/10/17 cont.

10/10/17

ID	Time	Time	Depth	Pid
~~S-03~~ S-03	19:19	20:08	10' BG	0.3
S-04	19:22	20:09	6'	0.1
S-05	19:23	20:10	10'	0.0
S-06	19:25	20:10	6'	0.1
S-07	19:30	20:11	10'	0.1
S-08	19:31	20:12	6'	1.1
E-01	19:35	20:13	10' 31	0.1
E-02	19:37	20:14	10' 31	9.3 * 21:30/10-10-17
E-03	19:38	20:15	10'	0.1
E-04	19:39	20:16	6'	0.1
E-05	19:40	20:17	10'	7.4
E-06	19:42	20:18	6'	0.2
E-07	19:43	20:19	10'	0.3
E-08	19:45	20:20	6'	0.3
T3-B-01	20:22		12'	0.2
T3-B-02				0.4
T3-B-03				0.5
T3-B-04				650.0 * 21:43/10-10-17
T3-B-05				0.4
T3-B-06				2.3 * 21:15/10-10-17
T3-B-07				10.4 * 21:22/10-10-17
T3-B-08				0.6
T3-B-09				18.4 * 21:19/10-10-17
T3-B-10	20:50		12' BG	2.1

10/11/17 08:00

WX: Snowing/Chilly

PID: Mini RAE 3000 calibrated w/
100ppm Isobutylene

ID	Time/Time	Depth	Pid	Notes
SIR	08:59/10:20	3' BGs	32.5	
S2R	08:58/	2.5' BGs	197.5	
BC	8:47/	9.5' BGs	908.	
BSE	8:45/	9.5' BGs	984.632	Lighter S.H
CB5W	8:46/	9.5' BGs	984.632	Grey S.H

* 13:51 on 11-OCT-17

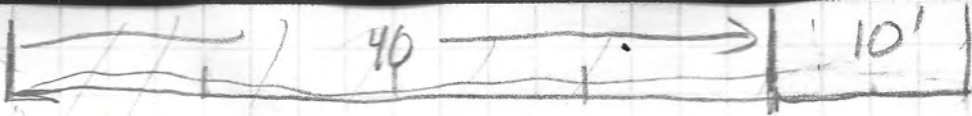
Stack pile from UST p.t.	(Depth)	(PID)	Depth
P01 09:28/10:28	2' AGS	25.7	Row 1
P02 09:29/10:29	2'	13.2 25.7	R2
P03 09:30/10:29	2.5'	7.1 + 3.2	"
P04 09:31/10:30	1'	12.9 7.7	"
P05 09:32/10:31	2'	1.4 12.9	Row 3
P06 09:34/10:32	5'	1.7 + 4	"
P07 09:35/10:32	4'	2.3 + 7	"
P08 09:44/11:20	2'	0.9	Row 4
P09	1	2.7	"
P10	1	3.5'	2.3
P11 9:58/11:23	2'	3.0	Row 5
P12	1	5.5'	4.6
P13	1	4'	2.1

Rite in the Rain

ID	Time	Redd	Depth	PID	
P14	10:04	11:27	4' AGS	2.1	R6
P15			7'	2.3	R6
P16		11:29	2'	1.9	R6
P17	10:41		2'	1.2	R7
P18			7'	1.4	"
P19			4'	1.7	R7
P20	10:47		4'	0.7	R8
P21	12:48	13:07	7'	2.9	"
P22	12:49	13:08	2'	6.5	R8
P23	11:02		2'	1.3	R9
P24		11:36	6'	0.5	R9
P25	12:17	12:31	4'	36.9	
P26			4'	2.3	R10
P27	12:15	12:30	6'	11.5	R10
P28			2' AGS	17.6	R10
W1	10:52	10:42	2' BGS	0.8	
W2	10:54		2'	1.0	
Vent	10:58	10:43	2'	0.7	Vent
N1	11:04		4'	0.9	
W2	11:02	10:44	3'	5.9	
N3	11:00		3'	0.6	
S1	11:15	11:46	1' BGS	67.1	*12:50/11-007-17
P29	11:28	12:00	2' AGS	2.1	
P30			7' AGS	1.6	

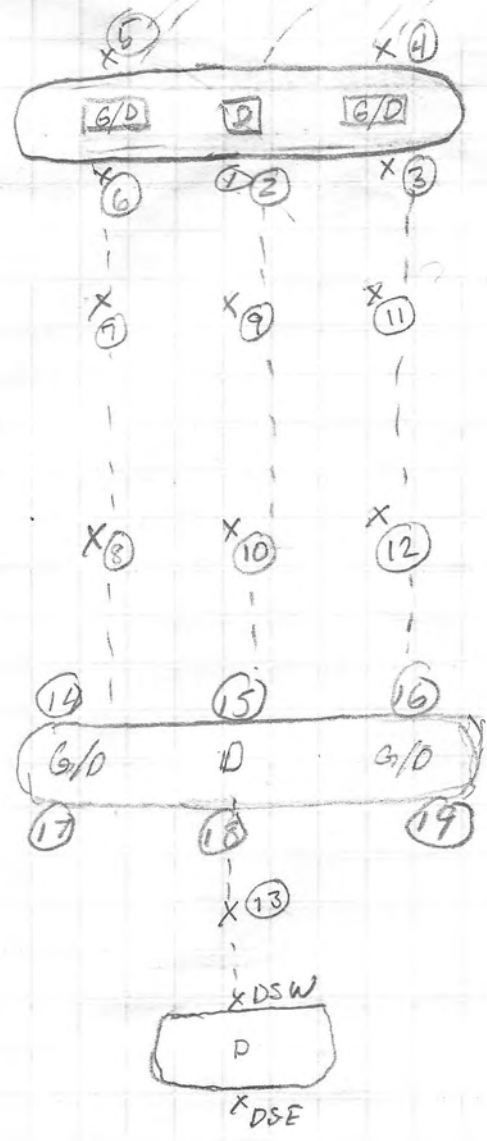
			AGS		
P31		12:02	4'	1.1	
P32	11:33		4'	2.6	
P33			7'	12.6	*18:20
P34		12:04	2'	12.0	
P35	11:43	12:08	2'	2.0	R13
P36		12:20	7'	0.8	R13
P37		12:21	4'	3.7	R14
P38	11:47	12:21	4'	3.7	R14
P39		12:22	7'	32.6	R14 *13:00
P40		12:23	2'	3.2	R14
P41	11:50	12:24	5'	16.7	R15 *13:30
P42	12:00		5'	11.2	Top
P43			5'	2.4	"
P44			8'	2.1	"
P45			8'	0.9	"
P46			6'	62.7	*13:07
CSN	1400	1435	10' BGS	192.5	*13:44

10/9/17

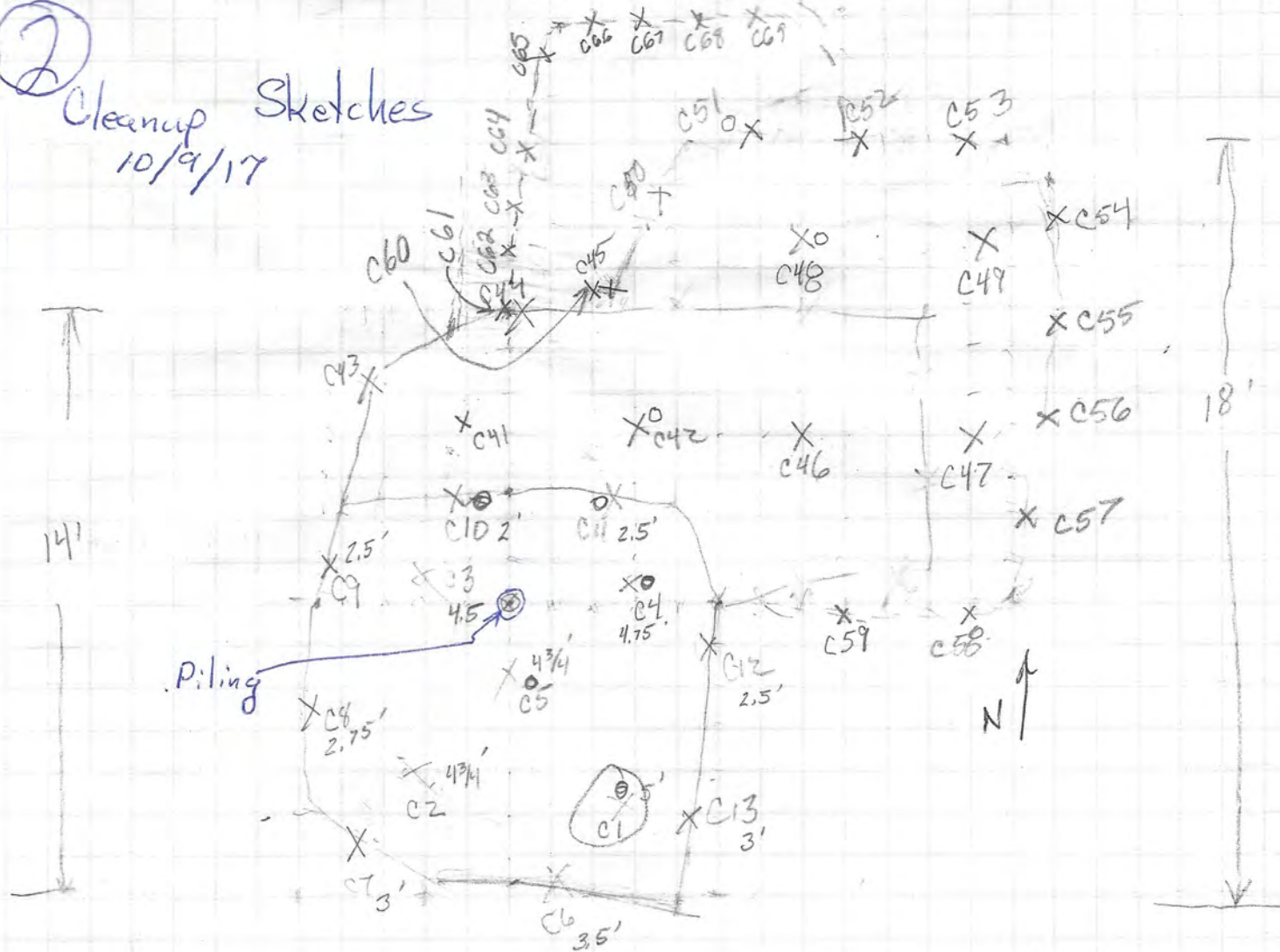


①

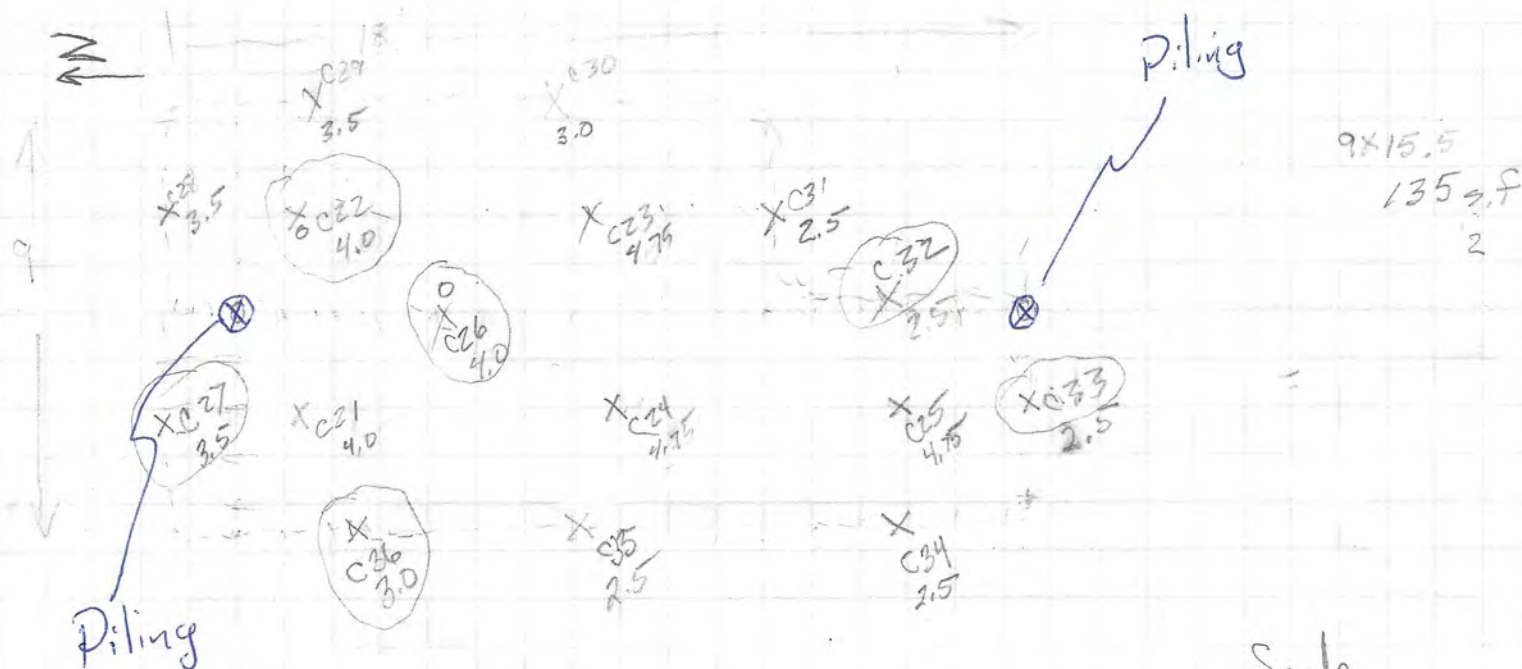
Dispenser Diagram



② Cleanup Sketches 10/9/17

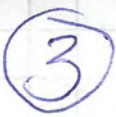


Middle Island Cleanup



West Island Cleanup

Scale
→ 1' ←

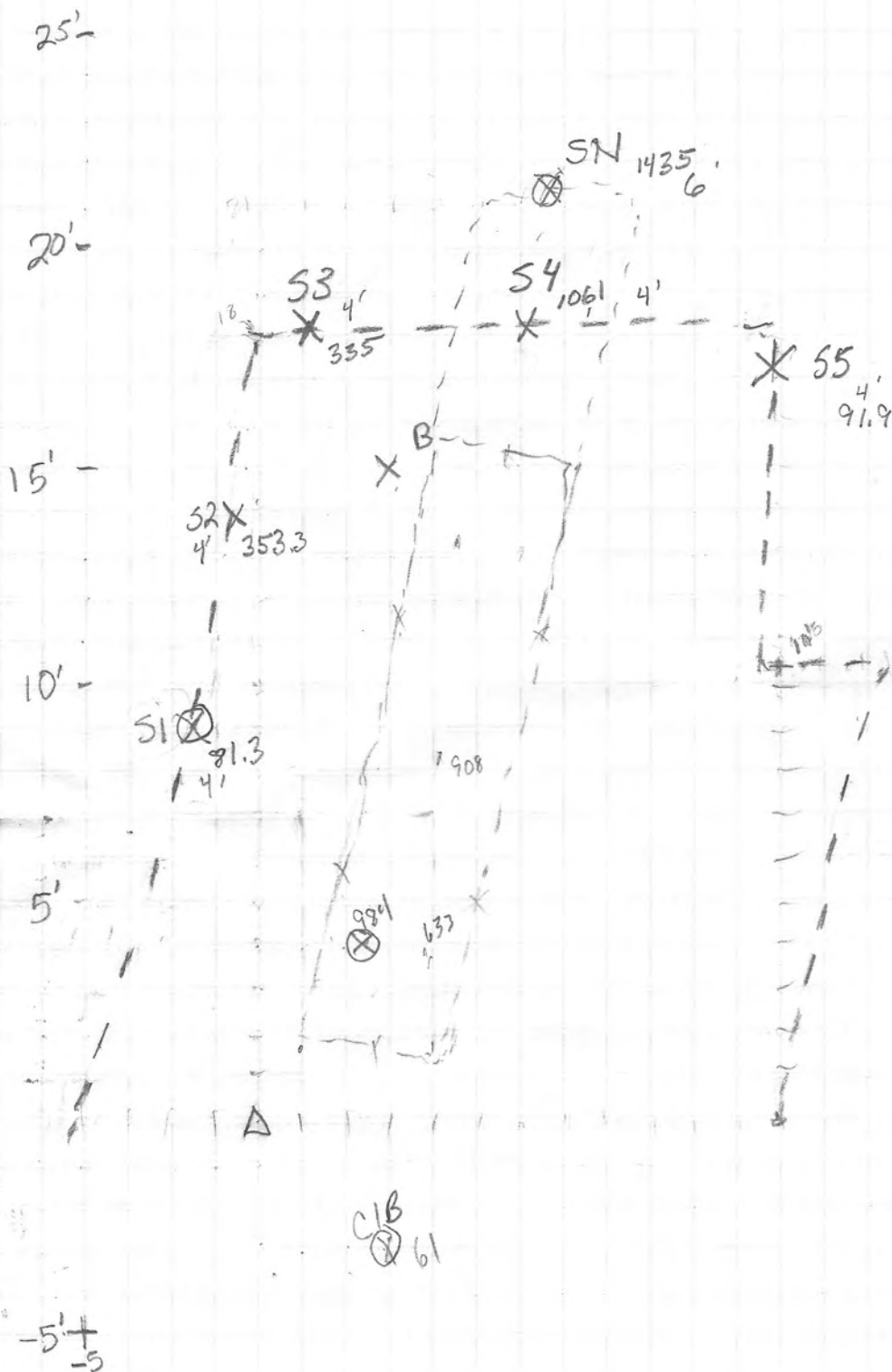


Notes
North Mid piling - 4
30'-

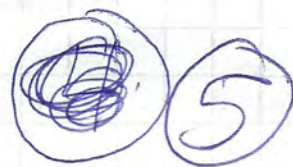
4

Side wall ---
sample location X

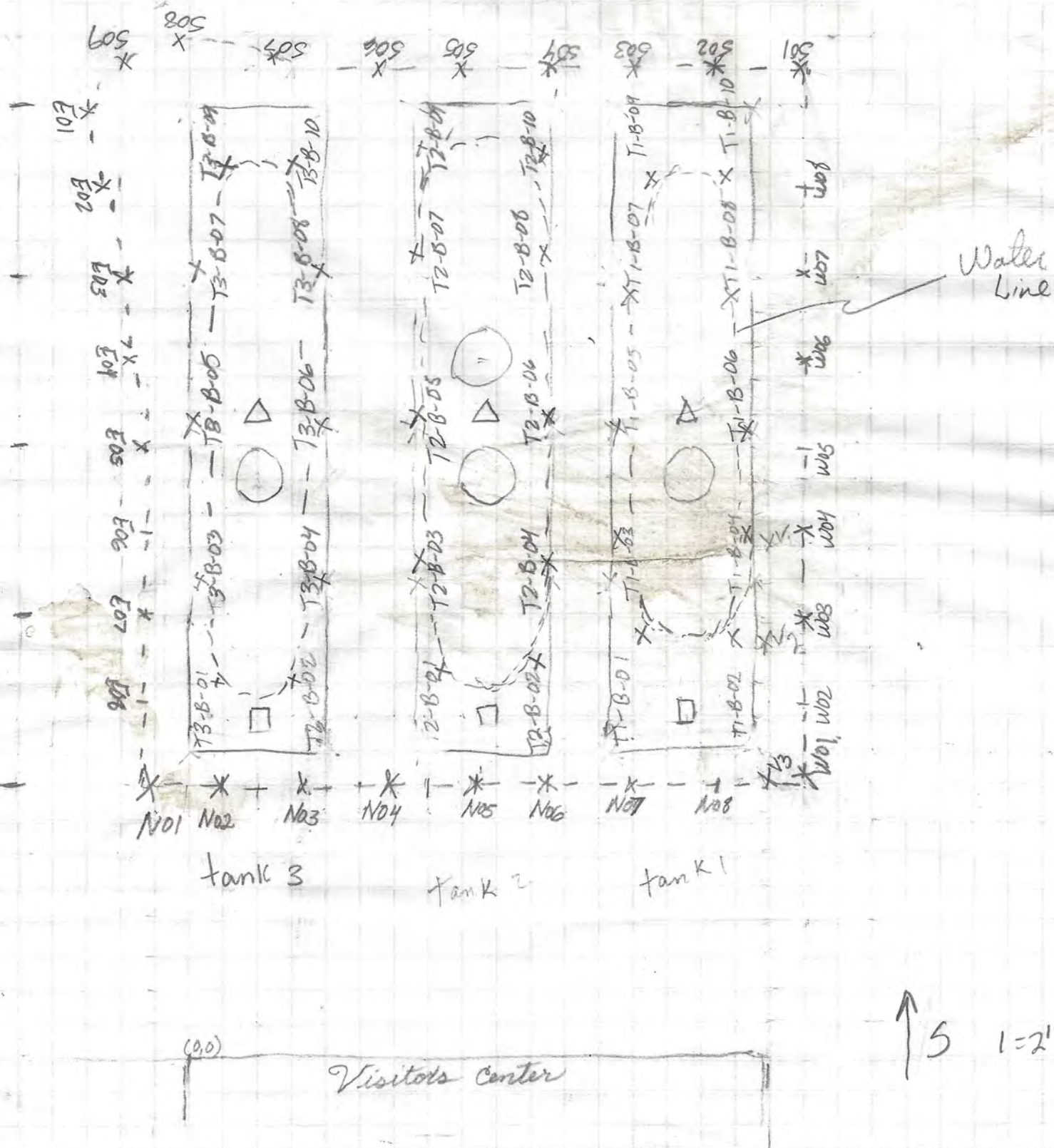
10/10/17



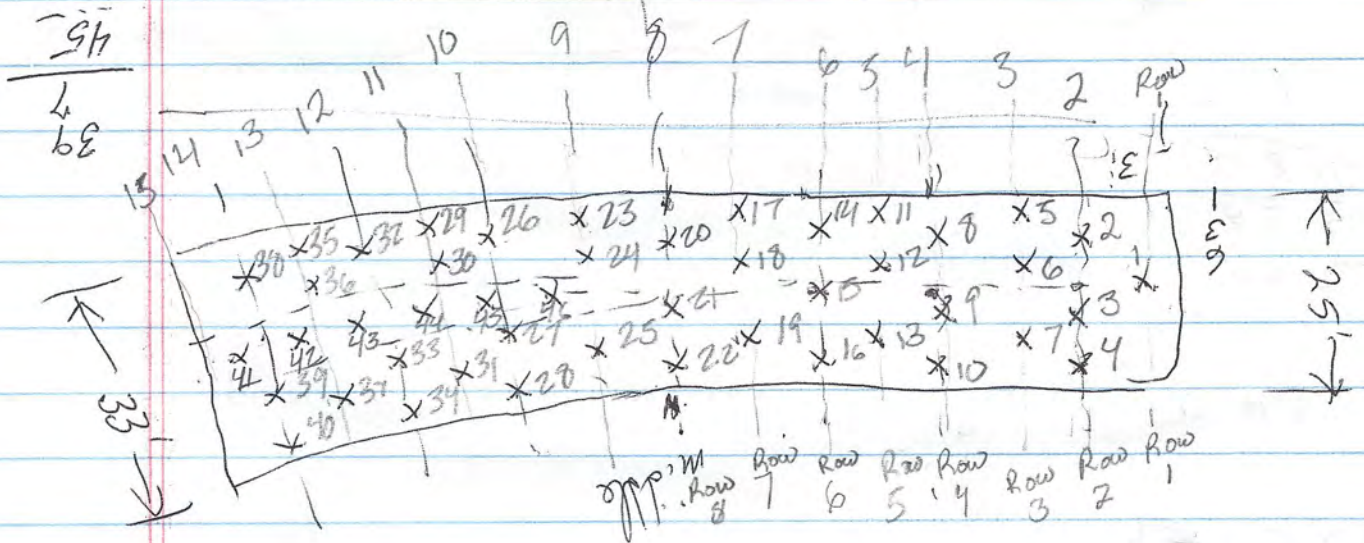
Monitoring pipe - $\square$ - 17' from building
 Sump enclosure - $\bigcirc$ - 30' and 31' from building
 Vents pipe - Δ - 34' from



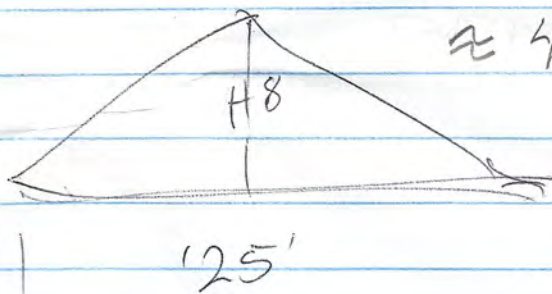
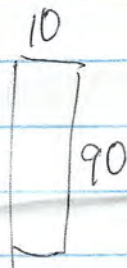
Water 12.5' below surface at time of sampling
 Water 12' below surface on next morning
 • No shear on any of water at time of sampling



6



oooo



≈ 410 CY

7



P. 410
 West - 20
 North - 26
 S - 10
 Trench 120
 $\frac{120}{686} = \text{Total Stockpile}$



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HUB OF ALASKA
CERTIFICATE OF TANK DESTRUCTION
12/27/17

The three 12,000 gallon tanks from Hub of Alaska were cleaned and taken to Alaska Scrap & Recycling.

The tank bottoms and rinsate were disposed of by NRC, Alaska.

All EPA, ADEC and local regulations were adhered to in the removal and disposal of the tanks.