

**The Hub of Alaska  
Site Characterization Report – Revision 2  
Mile 189 Glenn Highway, Glennallen, Alaska  
ADEC File No. 240.26.008  
ADEC Hazard ID 23554**



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## ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
DRO	Diesel range organics
EMI	Environmental Management, Inc.
GRO	Gasoline range organics
IDW	Investigative derived waste
MeOH	Methanol
MTG	Migration to Groundwater
ug/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
PAH	Polycyclic aromatic hydrocarbons
PID	photoionization detector
PPE	Personal protective equipment
ppmv	Parts per million by volume
SGS	SGS North America, Inc.
VOC	Volatile organic compound

**The Hub of Alaska**  
**Site Characterization Report – Revision 1**  
**Mile 189 Glenn Highway, Glennallen, Alaska**  
**ADEC File No. 240. 26.008**  
**ADEC Hazard ID 23554**

## **1.0 INTRODUCTION**

This report describes the release investigation activities conducted at The Hub of Alaska for the former USTs, which is located near Mile 189 Glenn Highway, Glennallen, Alaska. This report reflects the October 12, 2021 revisions requested by the Alaska Department of Environmental Conservation (ADEC) to Environmental Management, Inc. (EMI) September 27, 2021 report. This release investigation was conducted by Environmental Management, Inc. (EMI) for the Hub of Alaska, Inc.

The work was performed in accordance with EMI's August 25, 2020 *Site Characterization Work Plan Revision 1* (Work Plan) approved by the ADEC on September 16, 2020.

## **2.0 SITE DESCRIPTION AND BACKGROUND**

The Hub is a gas station located along the Glenn Highway in Glennallen, Alaska. The gas station has been in service since at least 1994, according to the ADEC Underground Storage Tanks (UST) Database. The facility is owned by The Hub of Alaska, Inc.

Between October 9 and 11, 2017 UST removal activities were conducted at the site and included the removal of two 12,000-gallon gasoline underground storage tanks (USTs), one 12,000-gallon diesel UST, vent piping, fuel piping, and dispensers associated with the USTs. High concentrations of diesel range organic (DRO), gasoline range organic (GRO), and petroleum volatile organic compounds (VOC) including benzene, naphthalene, ethylbenzene, toluene, and xylenes, among others, were encountered in the excavation. The highest levels were encountered nearest the middle fuel island, therefore an interim soil removal was conducted in that area on October 21 and 22, 2017. Between the two excavation efforts, approximately 500 cubic yards of soil was generated and placed in an on-site lined landfarm located west of the facility. Insitu contamination remains in place. A figure showing the historical sample locations and exceedances is provided as Figure 2.

## **3.0 PURPOSE AND OBJECTIVES**

The primary objective of the work is to delineate the vertical and lateral extent of contamination associated with the contamination associated with the former USTs found at The Hub. It is also the objective to determine if the contamination has impacted the groundwater at the site. The data obtained during these efforts will be used to evaluate future actions at the site, including possible remediation, site closure with controls, or long-term monitoring.

## **4.0 METHODOLOGY**

Field activities were conducted in accordance with the project's ADEC-approved Work Plan. Further details on the field screening methods, soil and groundwater sampling methods, and laboratory analysis are provided below.

### **4.1 Work Plan Variances**

The following are variances from EMI's August 25, 2020 ADEC-approved work plan:

- Soil type and frozen ground conditions prevented using the OIP/HPT/EC drilling attachment and the in-situ OIP/HPT/EC investigation was not completed. Traditional step-out borings were advanced from the source area to determine the extents of the contamination.
- The locations of borings and wells reflected in the work plan were revised based on field screening and systematic step-out distances.
- Landfarm sampling did not occur during the same mobilization as the boring and well installation. All field work related to landfarm sampling was conducted as stated in the Work Plan.
- Landfarm tilling did not occur in 2020 due to COVID and the lack of staffing availability.
- Due to scheduling and coordination with other projects, the monitoring well development and sampling occurred one week after installation instead of 24 hours. Wells were developed by alternating surging and purging as stated in the work plan. Sampling of the wells alternated from the submersible pump to bailers after pump complications.

### **4.2 Field Screening Methods**

EMI conducted headspace field screening at each borehole location. Soils were screened in two-foot increments from the boring sleeves. 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. All headspaces were placed in a warm spot to reach 40° Fahrenheit and develop. Once the sample had been allowed to develop the probe of the MiniRAE 3000 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.

### **4.3 Soil Sampling Methods**

Analytical soil samples were collected directly from the sampler sleeve using clean disposable spoons and placed directly into clean laboratory-provided containers. Volatile samples were collected first and preserved with methanol (MeOH) per Alaska Method AK101.

### **4.4 Water Sampling Methods**

Three monitoring wells were installed at this site. Well sampling methods included three well volumes were removed prior to sampling using bailers and the submersible pump. The water was containerized and left on-site pending analytical results. The on-site water well was purged and sampled using bailers.

## 4.5 Analytical Methods

The samples were submitted to SGS North America, Inc. (SGS) in Anchorage, Alaska for sample analysis. The soil samples were submitted on a standard turnaround time and analyzed for gasoline range organics (GRO), diesel range organics (DRO), volatile organic compounds – petroleum list (VOCs Petro List), and polyaromatic hydrocarbons (PAHs).

Water samples from the monitoring wells were analyzed for GRO, DRO, VOCs Petro List, and PAHs. The water sample from the on-site well was analyzed for VOCs and semi-volatile organic compounds (SVOCs) by EPA 524 and EPA 525, respectively. SVOCs were submitted through SGS to ref-lab Eurofins in South Bend, Indiana.

## 4.6 Cleanup Levels

For the purpose of characterizing the soil on the site, analytical results were compared to the migration to groundwater (MTG) Cleanup Levels for GRO, DRO, VOCs, and PAH as presented in Table 2 of 18 AAC 75. Water samples from the installed monitoring wells were compared to the groundwater Cleanup Levels for drinking water presented in Table C of 18 AAC 75. The sample from the on-site well was compared to the most stringent Cleanup Levels from Table C of 18 AAC 75 or the EPA’s National Primary Drinking Water Regulations.

## 5.0 FIELD ACTIVITIES

Field activities included advancing soil borings April 12 through 14, 2021, and conducting well sampling on April 20, 2021. Landfarm sampling occurred June 10, 2021. Discovery Drilling of Anchorage, Alaska provided the operator and Geoprobe 7822 drill rig to advance the soil borings. EMI’s ADEC Qualified Environmental Professional, Hannah Deeney, EIT, conducted the soil boring and water sampling and EMI’s QEP, Glenn Hasburgh, conducted the landfarm soil sampling. Analysis of the soil and water samples was performed by SGS of Anchorage, Alaska and Eurofins in South Bend, Indiana. Field notes documenting the field activities are included in Appendix A. Photographs are provided in Appendix B.

### 5.1 Soil Sampling

**Borings:** Ten boreholes were advanced. See Figure 4 for a map of boring locations.

- Boring B1 was advanced near the source area. (Photo 1)
- Boring B2 was advanced northeast of the source area (Photo 2)
- Borings B3, B4, B5, B6, and B7 were advanced southeast of B1 (Photo 2). Boring B1 contained contamination, therefore Boring B3 was advanced as a step-out to identify the southeast extent of contamination. Since Boring B3 indicated contamination, additional step-outs were performed until no contamination was apparent based on field screening and field indicators.
- Boring B8 was advanced southeast of the fuel islands
- Boring B9 was advanced south-southwest of the fuel islands/ source area
- Boring B10 was advanced north of the source area

Samples were selected from borings that had lower headspace results. Borings B3, B4, and B5 were advanced, however since obviously contaminated soil was encountered, no analytical samples were submitted from these borings.

**Landfarm:** The landfarm was sectioned into a 10-foot by 10-foot grid and field screened using a PID. The four highest field screening locations were the locations from which the analytical samples were collected. Field screening and analytical samples were collected from a depth of 12 inches. See Figure 5 for a map of landfarm grid and analytical samples.

## 5.2 Water Sampling

Three monitoring wells were installed onsite at the following locations

- MW1: in Boring B6, east-southeast of the source area, on the fringe boundary of contamination (Photo 6)
- MW2: east of Boring B2, outside of suspected contamination (Photo 8)
- MW3: northeast of fuel islands, within the source area. (Photo 7)

Three samples plus one duplicate were collected from the monitoring wells and submitted for laboratory analysis.

One sample was also collected from the on-site non-potable well, south of the Hub building, and was submitted for laboratory analysis. No duplicates were collected from the on-site well.

## 5.3 Investigative Derived Waste

Investigative derived waste (IDW) generated during field activities included soil cuttings, decon and purge water, and sampling supplies (i.e. Ziplocks, gloves, bailers, tubing). The soil cuttings from the ten boreholes were placed in the on-site landfarm. The water used to decon drilling equipment and the purge water from sampling the monitoring wells was placed in a 55-gallon drum and left southeast of the fuel islands, near the Hub sign, in the parking lot. The drum of water will be treated with a GAC filter during the next field activities. Ziploc bags, nitrile gloves, bailers, and tubing were disposed of as municipal waste.

## 6.0 RESULTS

A total of seven analytical soil samples, plus one duplicate, were collected from the soil borings; four analytical soil samples, plus one duplicate, were collected from the landfarm; three water samples, plus one duplicate, were collected from three monitoring wells; and one water sample was collected from the on-site non-potable well. The subsurface conditions, soil sampling results, and the well sample results are described below.

### 6.1 Subsurface Conditions

Soils at the site typically consisted of a varying mixture of sand, rocks, and silt. Soils were primarily silty sand with rocks, with intermittent layers of silt from 0 to 6 feet, transitioning to primarily silt at 6 to 15 feet bgs. Fuel odor was present in Borings B1, B4, and B5 at 4 to 10 feet. Groundwater was encountered during drilling between 8 and 16 feet bgs and between 12 and 14 feet during sampling.

No sheen was observed. The color of the soils was light to dark brown. Boring Logs are included in Appendix D.

EMI conducted a level loop survey of the site's monitoring wells. Groundwater depth and elevation are shown in the below table. The groundwater gradient is to the east.

**Monitoring Well Elevations**

<b>Monitoring Well</b>	<b>MW1</b>	<b>MW2</b>	<b>MW3</b>
Top of casing elevation	100.00	101.08	101.16
Depth to groundwater	12.3	13.3	13.3
<b>Groundwater elevation</b>	<b>87.70</b>	<b>87.78</b>	<b>87.86</b>

Notes:

All measurements in feet.

## 6.2 Soil Sampling Results

The headspace results varied between boreholes with headspaces ranging from 0.3 to 1791 ppmv. Headspace results from the landfarm ranged from 0.0 to 3.1 ppmv. The highest headspace readings from the soil borings were generally at depths ranging between 4 and 12 feet bgs. A summary of all the field headspace results are included in Table 1.

Samples were submitted from the highest headspaces or below the highest headspaces in order to determine limits of contamination. A summary of analytical results from the soil borings are included in Table 2. One sample was submitted from the highest headspace reading from Borings B6 and B9 (4 to 6 feet bgs and 15 to 17.5 feet bgs respectively). The remaining samples were submitted from below the highest headspace readings from the other borings: B2, B6, B7, B8, and B10 (between 4 to 12.5 feet bgs). Several analytes were detected above Cleanup Levels in both samples submitted from Boring B6 including DRO, Naphthalene, and Benzene. Borings B7 and B8 also had a couple of analytes detected above Cleanup Levels. Several PAH compounds were also detected in Boring B10 including Anthracene, Phenanthrene, and Pyrene. A summary of analytical results from the soil borings are included in Table 2.

Samples from the landfarm were submitted from the soil samples with the highest headspaces. Benzene was detected above the MTG Cleanup Level in two samples. DRO, GRO, and several VOCs were detected below the MTG Cleanup Level in the other samples. A summary of analytical results from the landfarm are included in Table 3.

## 6.3 Water Sampling Results

Three water samples, plus one duplicate, were collected from the monitoring wells and analyzed for GRO, DRO, VOCs Petro List, and PAHs. The well in the source area (MW3) had analytes detected above Cleanup Levels including GRO, DRO, Ethylbenzene, Naphthalene, and Toluene. The well northeast of source area (MW1) had analytes detected, but only one analyte was detected above Cleanup Levels (Naphthalene), and MW2 (southeast of source area) only had one analyte detected (DRO) and did not have any analytes detected above Cleanup Level. One water analytical sample was collected from the on-site non-potable well and analyzed for VOCs and SVOCs. A summary of analytical results for water are included in Table 4.

## 7.0 QUALITY ASSURANCE

The ADEC Laboratory Data Review Checklist was completed for SGS reports 1211896 (soil boring samples), 1211897 (water samples) and 1213208 (landfarm samples). The laboratory reports and checklists are included in Appendix C. There were no significant QC failures that would impact the data.

## 8.0 DISCUSSION

### 8.1 April 2021 Results Discussion

The majority of contamination was found in the source area, immediately northeast or east of the fuel islands in Borings B1, and B3 through B6. The depth of the highest headspaces in most borings was between 4 and 6 feet. For the analytical concentrations, Borings B1 and B2 highest concentrations were between 6 and 8 feet, B8 and B10 was between 8 and 10 feet, and B9 was between 15 and 18 feet. Borings B10, B9, and B2 denote the limits where concentrations are less than cleanup levels. The concentrations decreased as the borings were stepped out to the southeast from the boring closest to the former tanks (B1) outwards towards Boring B7.

The results from the monitoring wells indicate similar boundaries of contamination. Monitoring Well MW3 was the only well with concentrations greater than ADEC cleanup levels (GRO, DRO, Ethylbenzene, Toluene, and Naphthalene). No product or sheen was noted in the groundwater at the time of EMI's field activities.

The sample collected from the on-site well, west of the source area, contained Benzene concentration greater than cleanup levels and had three other analytes detected below Cleanup Levels (Chloromethane, Toluene, and Total Xylenes). No PAH compounds were detected in this well.

The landfarm was sampled to a depth of 12 inches, and all five samples had DRO detected below the Cleanup Level. During the 2019 landfarm sampling event, two samples had DRO detected above the Cleanup Level and the remaining four detected below the Cleanup Level. The tilling of the soils in the top 12 inches of the landfarm is effectively treating the soil resulting in lower DRO concentrations. Portions of the landfarm were not sampled in 2021 due to excessive water and saturated areas (Photos 9 and 10).

### 8.2 Conceptual Site Model Discussion

A conceptual site model was developed based on the analytical data generated to date on this site. The ADEC *Human Health Conceptual Site Model Graphic Form* and *Human Health Conceptual Site Model Scoping Form and Standardized Graphic* are included in Appendix E. A summary of the exposure pathways that apply to the site are summarized below.

#### 8.2.1 Site Summary

The site has been used for commercial purposes as a fueling station. The sources of the contamination are a result of the site use and include releases from fueling and leaking piping since the 1970s. While a large volume of contamination was removed during the 2017 interim removal action, contamination remains in the subsurface soils and is present in the site's non-potable well.

The site use will remain a fueling station, therefore the current and future receptors may include commercial or industrial workers, site visitors, and construction workers.

### 8.2.2 Exposure Pathways

The exposure pathways including direct contact, ingestion, and inhalation were evaluated and are summarized below.

### 8.2.3 Direct Contact

The direct contact with soil comprises of ingestion of soil and dermal absorption of contaminants. The maximum concentrations reported in the soil remaining on the site are summarized below:

Contaminant of Concern	Max concentration	Depth (feet bgs)	Sample Location
GRO	4,630 mg/kg	4	C-SN
DRO	4,060 mg/kg	5	SR11
Benzene	52,700 ug/kg	4	C-SN
Ethylbenzene	137,000 ug/kg	4	C-SN
Toluene	369,000 ug/kg	7	SR09
Total Xylenes	656,000 ug/kg	4	C-SN
1,2,4-Trimethylbenzene	243,000 ug/kg	4	C-SN
1,2-Dichloroethane	832 ug/kg	8	BR47
1,3,5-Trimethylbenzene	67,500 ug/kg	4	C-SN
Isopropylbenzene	23,700 ug/kg	7	SR09
Naphthalene	50,100 ug/kg	5	SR11
1-Methylnaphthalene	5,200 ug/kg	6-8	B6-5 6-8
2-Methylnaphthalene	9,760 ug/kg	6-8	B6-5 6-8

As noted above, each of these contaminants are present between 4 and 8 ft bgs, however indication of contamination and/or concentrations greater than cleanup levels were encountered in samples as deep as 16 feet bgs. Therefore, the incidental soil ingestion pathway is considered complete. Of these contaminants, 1,-methylnaphthalene, 2-methylnaphthalene, and naphthalene are able to permeate the skin per Appendix B of the ADEC's January 2017 *Guidance on Developing Conceptual Site Models*. As a result, the Dermal Absorption of Contaminants from soil pathway is Complete.

### 8.2.4 Ingestion

Ingestion of contaminants may also be through groundwater, surface water, or wild and farmed foods. Groundwater has not been fully assessed at the site. During the 2021 field activities, three monitoring wells were installed. Only the samples from Well MW3 exceeded cleanup levels for the following analytes: GRO, DRO, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, 1,2,4-trimethylbenzene, 1,2-dibromoethane, 1,2-dichloroethane, benzene, ethylbenzene, and xylenes.

The on-site non-potable well was sampled as part of this effort. Benzene and naphthalene were detected above water quality standards in the well sample, and benzene and naphthalene were detected above water quality standards in 2017. Although the water is not used nor will potentially be used in the future for drinking water, the ADEC has not determined that the water is not a currently or expected to be a future drinking water source per 18 AAC 75.350. The closest well to the intersection were wells on Sam Bishop's and Carl Bouers's Properties that are about a 1 mile away. The well log for Bishop's well show that it is 103 ft deep and the static water level in that well

was 55 ft below the top of the casing. The well log recorded blue clay from 6 to 85 ft bgs and shows the gravel aquifer starting at 95 ft.

Therefore, the Ingestion of Groundwater pathway is considered Complete.

The closest surface water bodies from the project area Tazlina and Copper Rivers, located more than 2 miles from the site. Due to the distance, the Ingestion of Surface Water is considered Incomplete.

The site is currently and not expected to be used for hunting, fishing, or harvesting of wild or farmed foods. In addition, the contaminants remaining on the site do not have the potential to bioaccumulate per Appendix C of the ADEC's January 2017 *Guidance on Developing Conceptual Site Models*. Therefore, the Ingestion of Wild and Farmed Foods is considered Incomplete.

### **8.2.5 Inhalation**

Inhalation of contaminants includes both outdoor and indoor air. Of the contaminants remaining on the site, benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, isopropylbenzene (cumene), 1,2-dichloroethane, 1-methylnaphthalene, and 2-methylnaphthalene are considered volatile per Appendix D of the ADEC's January 2017 *Guidance on Developing Conceptual Site Models*. Due to the presence of contamination in the soil between 0 and 15 ft bgs and the presence of volatiles, the Inhalation of Outdoor Air is considered Complete.

Inhalation of indoor air through vapor intrusion can be through the presence of contamination near occupied buildings and the presence of volatile compounds in the soil or groundwater. Volatile contamination remains within 30 feet from the nearest building, so Inhalation of Indoor Air is considered Complete.

### **8.2.6 Other Pathways**

Additional pathways evaluated for the site include Dermal Exposure to Contaminants in Groundwater and Surface Water, Inhalation of Volatile Compounds in Tap Water, Inhalation of Fugitive Dust, and Direct Contact with Sediment.

The water from the on-site well is not used beyond flushing of toilets, so further evaluation of the Dermal Exposure and Inhalation of Volatile Compounds pathways are needed at this time. Contamination that does remain on site is predominantly volatiles and is not likely within the top 2 inches of soil, so additional evaluation of Inhalation of Fugitive Dust and Direct Contact with Sediment is not warranted.

### **8.2.7 Exposure Pathway Summary**

Of the exposure pathways that were evaluated, including direct contact, ingestion, and inhalation evaluated, Direct Contact – Incidental Soil Ingestion, Direct Contact – Dermal Absorption of Contaminants from Soil, Ingestion of Groundwater, Inhalation of Indoor Air, and Inhalation of Outdoor Air are considered Complete Pathways.

## **9.0 CONCLUSIONS AND RECOMMENDATIONS**

Based on the data from this release investigation the extent of the contamination associated with the former USTs have been mostly identified, however additional characterization will be necessary to

determine the extent of contamination at the site. The concentrations in the far step out boring to the southeast of the tanks, Boring B7, remain above cleanup levels but levels are significantly less than the levels observed in the borings placed closer to the source.

Detectable concentrations were detected in the groundwater wells installed during the 2021 field activities. However, the well closest to the source area has multiple analytes above cleanup levels and the well furthest downgradient has one analyte remains above cleanup levels. At least two additional groundwater monitoring events are recommended to determine if the concentrations are trending downward or if the concentrations are consistently below Cleanup Levels, and/or non-detect. If concentrations remain greater than cleanup levels in well MW1, additional wells may need to be advanced to determine the downgradient extent of the contaminant plume at the site.


Benzene was detected above regulatory limits in the on-site drinking water well. An analytical sample from the well should also be collected during future events. In addition, the water discharged from the site into the community septic system may be spreading contamination. Future work to mitigate the benzene in the site's well will be described in future work plans.

Volatile contamination remains within 30 feet from the nearest building, so Inhalation of Indoor Air is considered Complete Pathway. Further assessment of vapor intrusion is recommended.

Soil samples collected from the landfarm indicate that concentrations of DRO have decreased in the top foot of soil in the landfarm. We recommend removing the top 12 inches of soil for on-site use and continuing tilling of the remaining soil in the landfarm. To minimize excess water in the landfarm, we also recommend covering the landfarm over the winter to minimize snow melt/water infiltration into the lined landfarm.

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.**



Hannah Deeney, E.I.T, QEP  
Environmental Engineer



Shayla Marshall, QEP  
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**Table 1 - Summary of Soil Field Headspace Results (April 12 and 13, 2021 and June 10, 2021)**

<b>Soil Boring Screening (April 12 and 13, 2021)</b>			
<b>Headspace ID</b>	<b>Sample Depth (ft)</b>	<b>PID (ppm)</b>	<b>Soil Description</b>
B1-1	0-2.5	22.7	Brown/Gray gravel; Frozen
B1-2	2.5-5	7.0	Brown/Gray gravel; Frozen
B1-3	5-6	29.5	Brown/Gray gravel and sand; Wet/moist
B1-4	6-7.5	1070	Brown/Gray sand; wet/moist
B1-5	7.5-9.5	236	Brown/Gray sand; moist
B1-6	9.5-10	27.1	Brown sand; moist
B1-7	10-12.5	16.6	Dark Gray silt with sand; wet
B1-8	12.5-15	308	Dark Gray silt with sand; wet
B2-1	0-2.5	-	Brown sand with rocks; moist
B2-2	2.5-5	1.6	Brown sand with rocks; moist
B2-3	5-8	2.1	Dark Brown sandy silt, possible staining; moist
B2-4	8-10	1.8	Brown silt with rocks; wet
B2-5*	10-12.5	1.5	Brown silt; wet
B2-6	12.5-15	0.8	Brown sand; moist
B3-1	0-2	41.3	Brown sand with rocks; moist
B3-2	2-4	40.0	Brown sand with rocks; moist
B3-3	4-6	1693	Brown silty sand with gravel; moist
B3-4	6-8	391	Brown silt with sand, staining between 7 and 8 ft; moist
B3-5	8-10	243	Brown silt with gravel; wet
B4-1	0-2	223	Gray sand with rocks; moist
B4-2	2-4	-	Gray sand with rocks; moist
B4-3	4-6	1791	Fuel Odor; Gray sand with gravel; moist
B4-4	6-8	264	Brown silt; moist
B4-5	8-10	368	Brown silt with some gravel; wet
B5'-1	0-2	20.3	Brown silty sand with rocks; moist
B5'-2	0-3	11.9	Brown silty sand with rocks; moist
Refusal, step out for B5			
B5-1	0-2	5.1	Brown silty sand with rocks; moist
B5-2	2-4	7.4	Reddish Brown gravel and rocks; moist
B5-3	4-6	1145	Fuel Odor; Brown silty sand with some rocks; moist
B5-4	6-8	447	Fuel Odor; Dark Brown silt; moist
B5-5	8-10	469	Fuel Odor; Brown silt; wet
B6-1	0-2	2.5	Brown sand with gravel and rocks; moist
B6-2	2-4	4.8	Brown sand with gravel and rocks; moist
B6-3*	4-6	113	Black and Brown silty sand with gravel; moist
B6-4	6-8	39.5	Dark Brown silt, with staining; moist
B6-5*	8-10	14.7	Brown silt; frozen/moist
B7-1	0-2	3.4	Brown silty sand with rocks; moist
B7-2	2-4	2.7	Brown silty sand with gravel and rocks; moist
B7-3	4-6	4.5	Black and Brown sand with rocks, slight staining; moist
B7-4*	6-8	3.7	Dark Brown silt, with slight staining; frozen, ice in core
B7-5	8-10	3.6	Dark Brown silt, with slight staining; frozen, ice in core
B8-1	0-2	0.4	Brown silty sand with rocks; moist
B8-2	2-4	1.7	Brown silty sand with rocks; moist
B8-3	4-6	1.9	Dark Brown silty sand with rocks and silt; moist
B8-4	6-8	8.6	Brown silt; frozen/moist
B8-5	8-10	18.4	Brown silt; frozen/moist

**Table 1 - Summary of Soil Field Headspace Results (April 12 and 13, 2021 and June 10, 2021)**

Headspace ID	Sample Depth (ft)	PID (ppm)	Soil Description
B8-6*	10-12.5	2.9	Brown silt and rocks; wet
B8-7	12.5-15	2.3	Brown sand; wet
B9-1	0-2	1.1	Brown sand with rocks; moist
B9-2	2-4	1.9	Brown sand with rocks; moist
B9-3	4-6	0.3	Brown sand with some rocks; moist
B9-4	6-8	3.7	Brown silt; moist
B9-5	8-10	2.0	Light Brown silt; moist
B9-6	10-12.5	3.3	Dark Brown silt; moist
B9-7	12.5-15	0.9	Dark Brown silt; moist
B9-8*	15-17.5	9.2	Brown sand with rocks; wet
B9-9	17.5-20	5.2	Brown sand with rocks; wet
B10-1	0-2	4.1	Brown sand; moist
B10-2*	2-4	4.0	Brown sand; moist
B10-3	4-6	2.4	Brown sand; wet
B10-4	6-8	2.2	Brown silt and sand; wet
B10-5	8-10	5.0	Brown sand with gravel; wet
<b>Landfarm Screening (June 10, 2021)</b>			
Headspace ID	Sample Depth (ft)	PID (ppm)	Notes
A-1	1	2.5	Analytical sample collected
A-2	1	0.0	
A-3	1	0.2	
A-4	1	0.0	
A-5	1	0.0	
A-6	1	0.1	
B-1	1	0.7	
B-2	1	0.0	
B-3	1	0.1	
B-4	1	0.1	
B-5	1	0.0	
B-6	1	0.0	
C-1	1	0.3	
C-2	1	0.0	
C-3	1	1.1	Analytical sample collected
C-4	1	0.1	
C-5	1	0.0	
C-6	1	0.0	
D-1	1	0.0	
D-2	1	0.4	
D-3	1	0.0	
D-4	1	0.1	
D-5	1	0.0	
D-6	1	0.0	
E-1	1	0.0	
E-2	1	1.9	Analytical sample and duplicate collected
E-3	1	0.1	
E-4	1	0.0	
E-5	1	0.0	
E-6	1	0.0	

**Table 1 - Summary of Soil Field Headspace Results (April 12 and 13, 2021 and June 10, 2021)**

<b>Headspace ID</b>	<b>Sample Depth (ft)</b>	<b>PID (ppm)</b>	<b>Notes</b>
F-1	1	0.0	
F-2	1	3.1	Analytical sample collected
F-3	1	0.0	
F-4	1	0.0	
F-5	1	0.0	
F-6	1	0.1	

Notes:

\* Analytical sample submitted

Table 2. April 2021 Summary of Analytical Soil Results

Analyte	Analysis	Action Level*	Unit	17875 B2-5 10-12.5	17875 B6-5 6-8	17875 B7-4 4-6	17875 B8-6 10-12.5	17875 B9-8 15-17.5	17875 B10-2 2-4	17875 B6-3 4-6	~17875 B6-3 14-16	17875 STB
Field Headspace	PID	-	ppm	1.5	39.5	3.7	2.9	9.2	4.0	133	-	-
Gasoline Range Organics	AK101	300	mg/kg	4.18 U	7.88 U	1.92 U	3.00 U	1.84 U	1.92 U	2.66	82.1	2.51 U
Diesel Range Organics	AK102	250	mg/kg	22.7 U	2,090	297	25.2 U	22.1 U	20.7 U	616	250	-
<b>Polyaromatic Hydrocarbons</b>												
1-Methylnaphthalene	8270D SIM (PAH)	410	ug/kg	28.1 U	5,200	133 U	31.6 U	27.6 U	25.6 U	333	132 U	-
2-Methylnaphthalene	8270D SIM (PAH)	1300	ug/kg	28.1 U	9,760	133 U	31.6 U	27.6 U	25.6 U	449	132 U	-
Acenaphthene	8270D SIM (PAH)	37000	ug/kg	28.1 U	336	133 U	31.6 U	27.6 U	25.6 U	133 U	132 U	-
Anthracene	8270D SIM (PAH)	390000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	33.9	133 U	132 U	-
Benzo(a)Anthracene	8270D SIM (PAH)	700	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	73.3	133 U	132 U	-
Benzo[a]pyrene	8270D SIM (PAH)	1900	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	66.7	133 U	132 U	-
Benzo[b]Fluoranthene	8270D SIM (PAH)	20000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	87.9	133 U	132 U	-
Benzo[g,h,i]perylene	8270D SIM (PAH)	15000000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	37.8	133 U	132 U	-
Benzo[k]fluoranthene	8270D SIM (PAH)	190000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	30.2	133 U	132 U	-
Chrysene	8270D SIM (PAH)	600000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	73.9	133 U	132 U	-
Fluoranthene	8270D SIM (PAH)	590000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	193	133 U	132 U	-
Fluorene	8270D SIM (PAH)	36000	ug/kg	28.1 U	234	133 U	31.6 U	27.6 U	25.6 U	133 U	132 U	-
Indeno[1,2,3-c,d] pyrene	8270D SIM (PAH)	65000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	36.2	133 U	132 U	-
Naphthalene	8270D SIM (PAH)	38	ug/kg	22.5 U	2,710	106 U	25.3 U	22.1 U	20.5 U	139	106 U	-
Phenanthrene	8270D SIM (PAH)	39000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	106	133 U	132 U	-
Pyrene	8270D SIM (PAH)	87000	ug/kg	28.1 U	201 U	133 U	31.6 U	27.6 U	136	133 U	132 U	-
Other PAH Compounds	8270D SIM (PAH)	Varies	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	-
<b>Volatile Organic Compounds</b>												
1,2,4-Trimethylbenzene	SW8260D	610	ug/kg	83.5 U	409	38.4 U	60.0 U	36.9 U	38.5 U	52.5 U	1,090	50.2 U
1,2-Dibromoethane	SW8260D	0.24	ug/kg	1.67 U	3.15 U	0.768 U	1.20 U	0.737 U	0.770 U	1.05 U	4.13 U	1.00 U
1,2-Dichloroethane	SW8260D	5.5	ug/kg	3.34 U	6.30 U	1.54 U	9.90	2.21	1.54 U	2.10 U	8.26 U	2.01 U
1,3,5-Trimethylbenzene	SW8260D	660	ug/kg	41.8 U	193	19.2 U	30.0 U	18.4 U	19.2 U	26.2 U	848	25.1 U
Benzene	SW8260D	22	ug/kg	20.9 U	200	100	192	16.0	9.62 U	125	198	12.6 U
Ethylbenzene	SW8260D	130	ug/kg	41.8 U	81.9	19.2 U	30.0 U	18.4 U	19.2 U	26.2 U	106	25.1 U
Isopropylbenzene (Cumene)	SW8260D	5600	ug/kg	41.8 U	241	19.2 U	30.0 U	18.4 U	19.2 U	26.2 U	103 U	25.1 U
Methyl-t-butyl ether	SW8260D	400	ug/kg	167 U	315 U	76.8 U	120 U	73.7 U	77.0 U	105 U	413 U	100 U
Naphthalene	SW8260D	38	ug/kg	41.8 U	2,520	19.2 U	30.0 U	18.4 U	19.2 U	26.2 U	531	25.1 U
Toluene	SW8260D	6700	ug/kg	41.8 U	78.8 U	27.5	30.0 U	18.4 U	19.2 U	33.9	103 U	25.1 U
Xylenes (total)	SW8260D	1500	ug/kg	125 U	236 U	57.6 U	90.0 U	55.3 U	57.7 U	78.7 U	624	75.4 U
sec-Butylbenzene	SW8260D	42000	ug/kg	41.8 U	503	19.2 U	30.0 U	18.4 U	19.2 U	26.2 U	112	25.1 U
Other VOCs	SW8260D	Varies	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

- \* ADEC's Migration to Groundwater (MTG) Cleanup Levels 18 AAC 75 Table B1 and Table B2
- ~ Duplicate of Preceding Sample
- mg/kg Milligrams per Kilogram
- 82.1 Analyte detected below Action Level
- 3.00 U Analyte not detected
- 297 Analyte detected above Action Level
- 0.737 U Analyte below detection level but, detection level is greater than or equal to Action Level
- Not applicable
- ND Non Detect

Table 3. June 2021 Summary of Analytical Landfarm Soil Results

Analyte	Analysis	Unit	Cleanup Level*	Hub-LF-A1	Hub-LF-C3	Hub-LF-E2	~Hub-LF-E22	Hub-LF-F2	Trip Blank
Field Headspace	PID	ppm	-	2.5	1.1	1.9	-	3.1	-
Diesel Range Organics	AK102	mg/kg	250	<b>99.0</b>	<b>117</b>	<b>98.4</b>	<b>90.2</b>	<b>93.2</b>	-
Gasoline Range Organics	AK101	mg/kg	300	<b>7.99</b>	3.06 U	<b>2.76</b>	<b>3.81</b>	<b>2.72</b>	2.52 U
<b>Volatile Organic Compounds</b>									
1,2,4-Trimethylbenzene	SW8260D	ug/kg	610	<b>149</b>	61.2 U	50.7 U	60.8 U	45.6 U	50.4 U
1,2-Dibromoethane	SW8260D	ug/kg	0.24	<i>0.908 U</i>	<i>1.22 U</i>	<i>1.01 U</i>	<i>1.22 U</i>	<i>0.912 U</i>	<i>1.01 U</i>
1,3,5-Trimethylbenzene	SW8260D	ug/kg	660	<b>58.4</b>	30.6 U	25.3 U	30.4 U	22.8 U	25.2 U
Benzene	SW8260D	ug/kg	22	<b>38.4</b>	15.3 U	<b>40.8</b>	<b>21.9</b>	<b>13.7</b>	12.6 U
Ethylbenzene	SW8260D	ug/kg	130	<b>40.4</b>	30.6 U	25.3 U	30.4 U	<b>38.8</b>	25.2 U
Toluene	SW8260D	ug/kg	6700	<b>47.0</b>	30.6 U	<b>35.2</b>	<b>37.1</b>	<b>64.5</b>	25.2 U
Xylenes (total)	SW8260D	ug/kg	1500	<b>143</b>	91.8 U	<b>84.9</b>	<b>94.0</b>	<b>102</b>	75.7 U
Other VOCs	SW8260D	ug/kg	Varies	ND	ND	ND	ND	ND	ND

Notes:

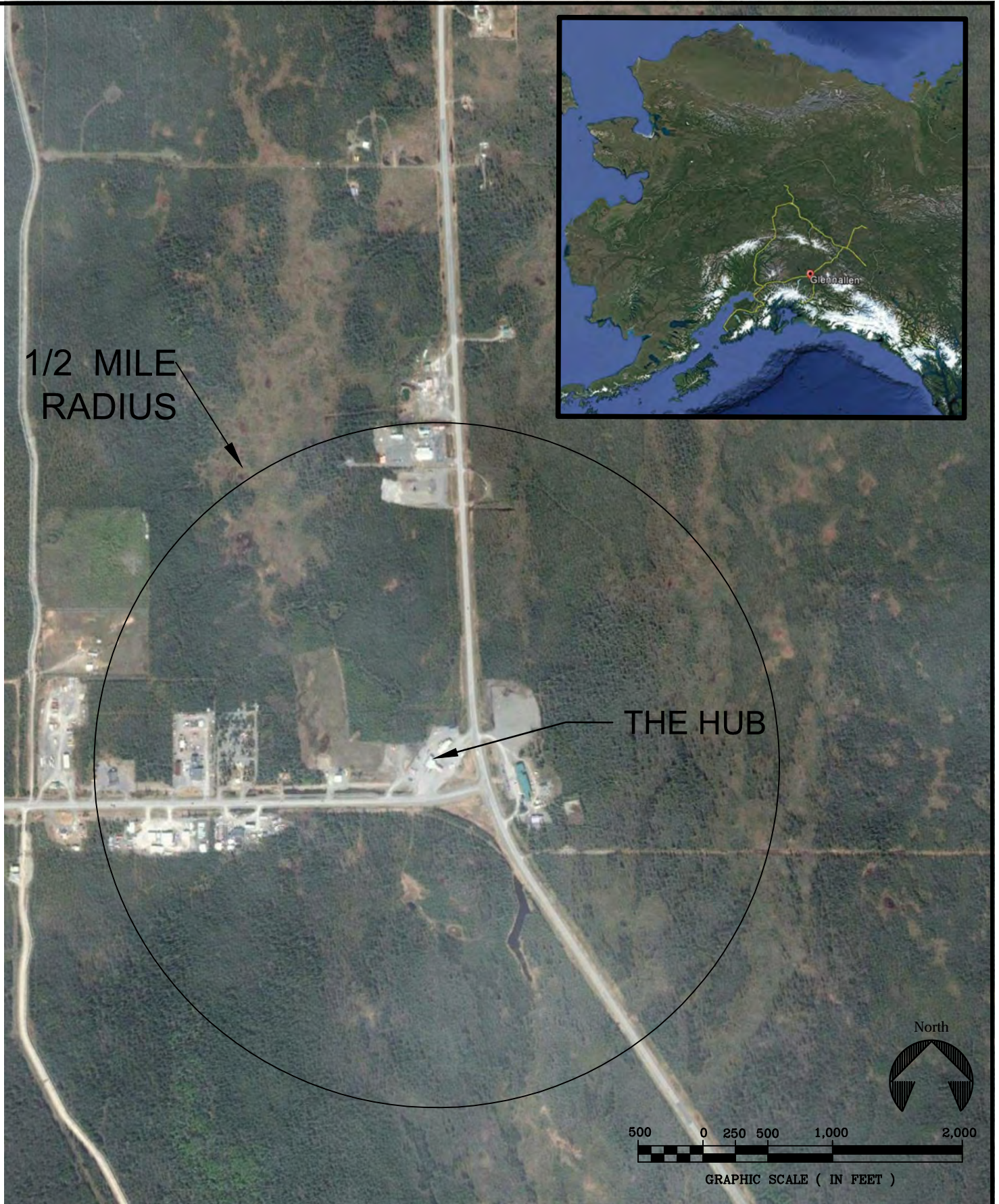
- \* ADEC's Migration to Groundwater (MTG) Cleanup Level, 18 AAC 75 Table B1 and Table B2
- ~ Duplicate of Preceding Sample
- mg/kg Milligrams per Kilogram
- 38.4** Analyte detected above MTG Cleanup Level
- 99.0** Analyte detected below the MTG Cleanup Level
- 0.908 U* Analyte below detection level but, detection level is greater than or equal to Action Level
- 61.2 U* Analyte not detected
- Not applicable
- ND Non Detect

Table 4. April 2021 Summary of Analytical Groundwater Results

Analyte	Analysis	Action Level*	Unit	17875 MW1	17875 MW2	17875 MW3	~17875 MW31	17875 WTB	17875 On-Site	17875 DWTB
Gasoline Range Organics	AK101	2.2	mg/L	0.100 U	0.100 U	8.64	6.83	0.100 U	-	-
Diesel Range Organics	AK102 LV	1.5	mg/L	0.652 U	1.05	5.19	6.55	-	-	-
<b>Polyaromatic Hydrocarbons</b>										
1-Methylnaphthalene	8270D SIM LV (PAH)	11	ug/L	1.11	0.0727 U	9.32	37.0	-	-	-
2-Methylnaphthalene	8270D SIM LV (PAH)	36	ug/L	1.26	0.0727 U	10.9	46.5	-	-	-
Acenaphthene	8270D SIM LV (PAH)	530	ug/L	0.0660	0.0727 U	0.162	0.514	-	-	-
Fluorene	8270D SIM LV (PAH)	290	ug/L	0.0595 U	0.0727 U	0.308	1.27	-	-	-
Naphthalene	8270D SIM LV (PAH)	1.7	ug/L	1.02	0.145 U	52.4	134	-	-	-
Phenanthrene	8270D SIM LV (PAH)	170	ug/L	0.0595 U	0.0727 U	0.220	0.810	-	-	-
Other PAH Compounds	8270D SIM LV (PAH)	Varies	ug/L	ND	ND	ND	ND	-	-	-
<b>Volatile Organic Compounds - Petroleum List</b>										
1,2,4-Trimethylbenzene	SW8260D	56	ug/L	3.35	1.00 U	122	105	1.00 U	-	-
1,2-Dibromoethane	SW8260D	0.075	ug/L	0.0750 U	0.0750 U	7.53	8.91	0.0750 U	-	-
1,2-Dichloroethane	SW8260D	1.7	ug/L	0.500 U	0.500 U	27.1	32.7	0.500 U	-	-
1,3,5-Trimethylbenzene	SW8260D	30	ug/L	1.47	1.00 U	16.9	16.5	1.00 U	-	-
Benzene	SW8260D	4.6	ug/L	0.400 U	0.400 U	1,470	1,570	0.400 U	-	-
<b>Volatile Organic Compounds</b>										
Ethylbenzene	SW8260D	15	ug/L	1.00 U	1.00 U	275	280	1.00 U	-	-
Isopropylbenzene (Cumene)	SW8260D	450	ug/L	1.00 U	1.00 U	21.5	22.0	1.00 U	-	-
Naphthalene	SW8260D	1.7	ug/L	2.30	1.00 U	54.7	32.9	1.00 U	-	-
Toluene	SW8260D	1100	ug/L	1.00 U	1.00 U	855	944	1.00 U	-	-
Xylenes (total)	SW8260D	190	ug/L	3.57	3.00 U	767	833	3.00 U	-	-
sec-Butylbenzene	SW8260D	2000	ug/L	1.00 U	1.00 U	2.89	2.91	1.00 U	-	-
Other VOCs - Petroleum List	SW8260D	Varies	ug/L	ND	ND	ND	ND	ND	-	-
<b>Volatile Organic Compounds - Drinking Water</b>										
1,1,2,2-Tetrachloroethane	EPA 524.2	0.76	ug/L	-	-	-	-	-	1.00 U	1.00 U
1,1,2-Trichloroethane	EPA 524.2	0.41	ug/L	-	-	-	-	-	0.500 U	0.500 U
1,2,3-Trichloropropane	EPA 524.2	0.0075	ug/L	-	-	-	-	-	1.00 U	1.00 U
1,2-Dibromoethane	EPA 524.2	0.075	ug/L	-	-	-	-	-	1.00 U	1.00 U
Benzene	EPA 524.2	4.6	ug/L	-	-	-	-	-	13.1	0.500 U
Chloromethane	EPA 524.2	190	ug/L	-	-	-	-	-	2.17	2.00 U
Toluene	EPA 524.2	1100	ug/L	-	-	-	-	-	2.08	0.500 U
Vinyl chloride	EPA 524.2	0.19	ug/L	-	-	-	-	-	0.400 U	0.400 U
Xylenes (total)	EPA 524.2	190	ug/L	-	-	-	-	-	2.64	0.500 U
Other VOCs - Drinking Water	EPA 524.3	Varies	ug/L	-	-	-	-	-	ND	ND
<b>Semi-Volatile Organic Compounds - Drinking Water</b>										
Bis(2-ethylhexyl)phthalate	EPA 525	56	ug/L	-	-	-	-	-	1.1 J	-
Other SVOCs - Drinking Water	EPA 525	Varies	ug/L	-	-	-	-	-	ND	-

Notes:

- \* ADEC's Groundwater Cleanup Levels 18 AAC 75 Table C
- ~ Duplicate of Preceding Sample
- mg/L Milligrams per Liter
- ug/L Micrograms per Liter
- 1.05 Analyte detected below Action Level
- 0.100 U Analyte not detected
- 5.19 Analyte detected above Action Level
- 0.500 U Analyte not detected, detection level greater than Action Level
- 1.1 J Analyte was positively identified below detection level; the quantitaion is an estimation
- Not applicable
- ND Non Detect



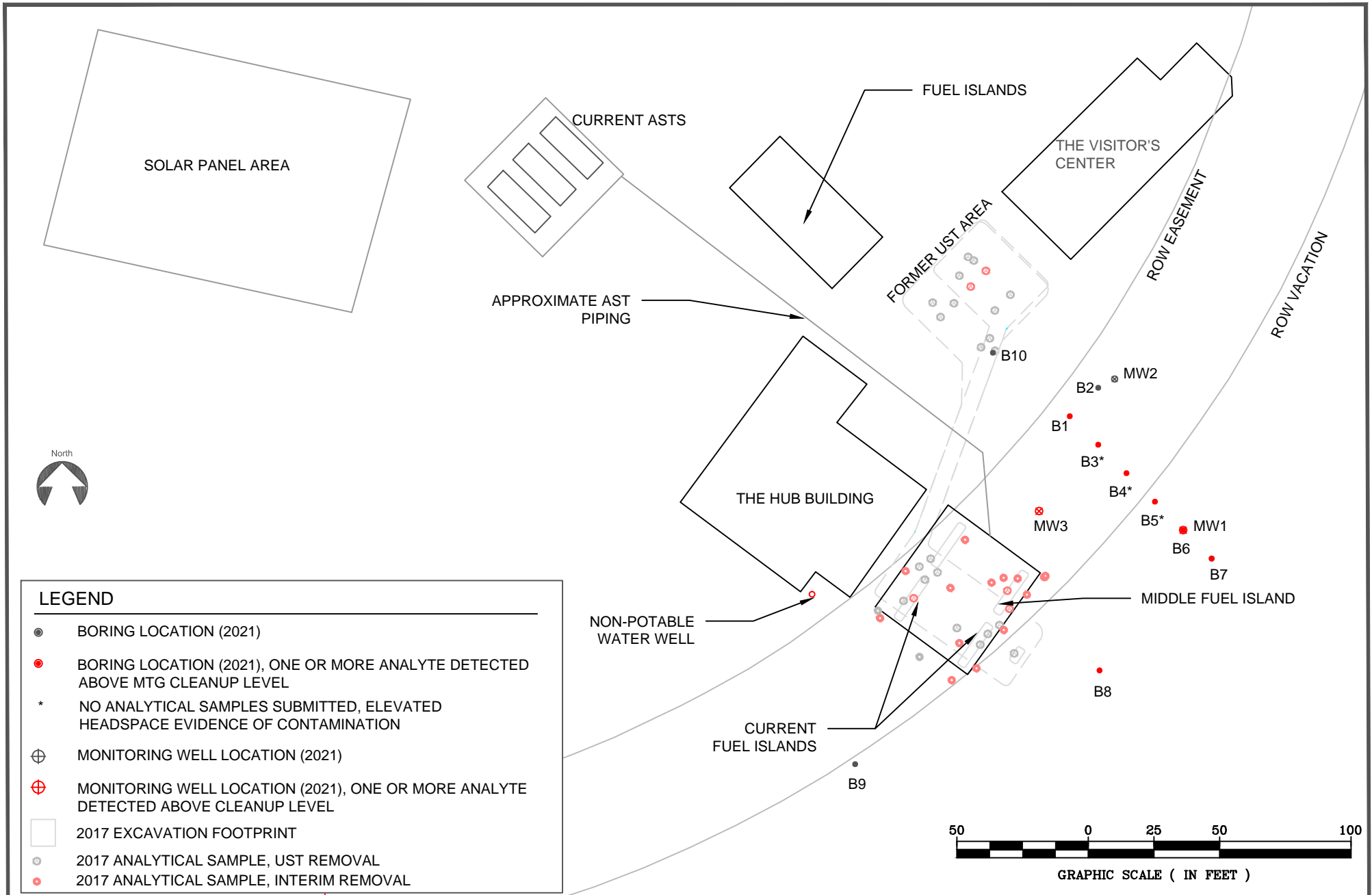
VICINITY MAP

THE HUB  
GLENNALLEN, AK



JOB: 17875  
DRAWN: HJD  
REVIEWED: SIM  
DATE:  
8/3/2020

FIGURE  
**1**



HISTORICAL SAMPLE LOCATIONS

THE HUB  
GLENNALLEN, AK



JOB: 17875  
DRAWN: HJD  
REVIEWED: SIM  
DATE: 1/26/22

FIGURE  
**2**



SITE PLAN

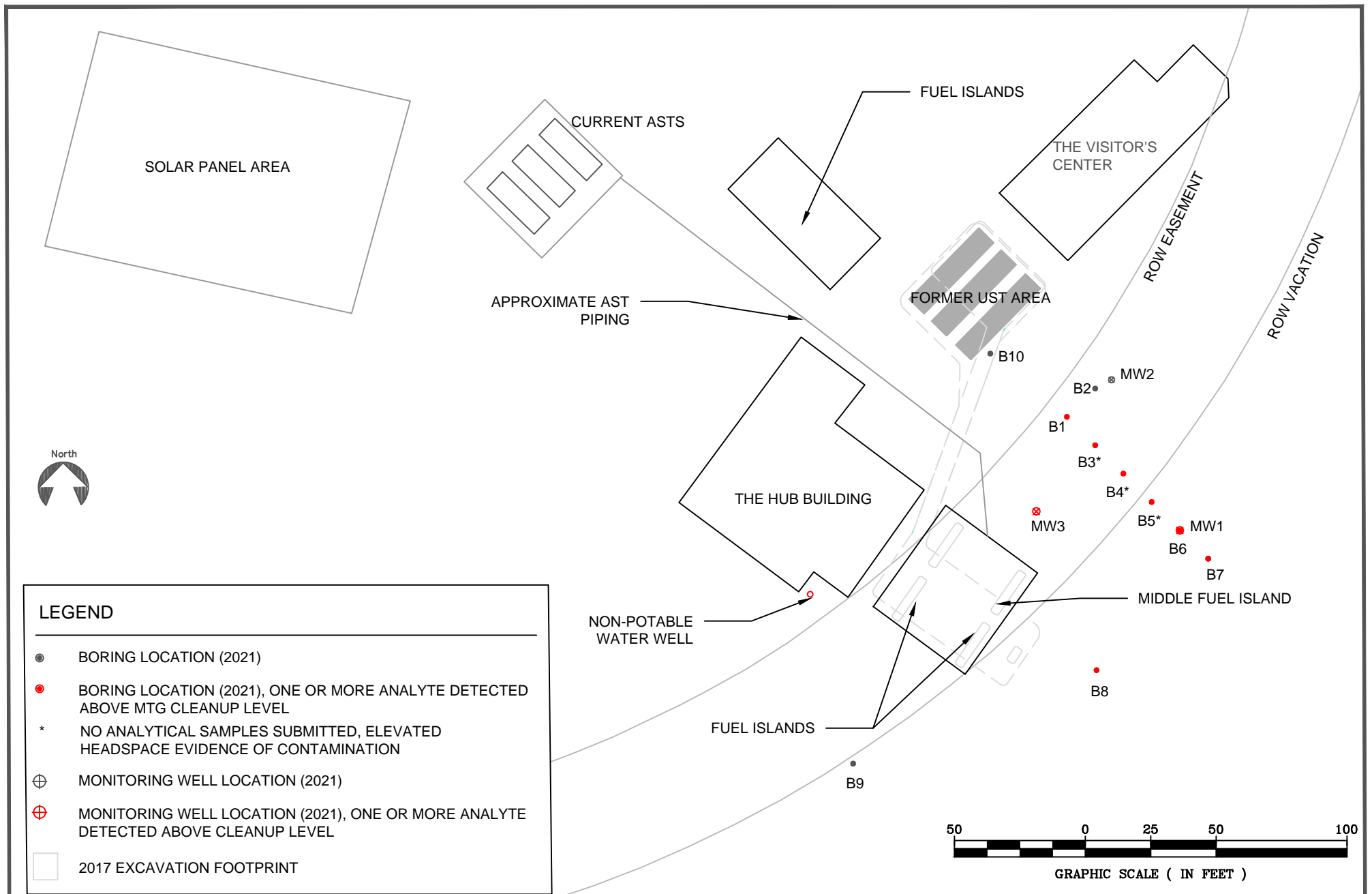
THE HUB  
GLENNALLEN, AK



JOB: 17875  
DRAWN: HJD  
REVIEWED: SIM  
DATE: 4/27/2021

FIGURE

3



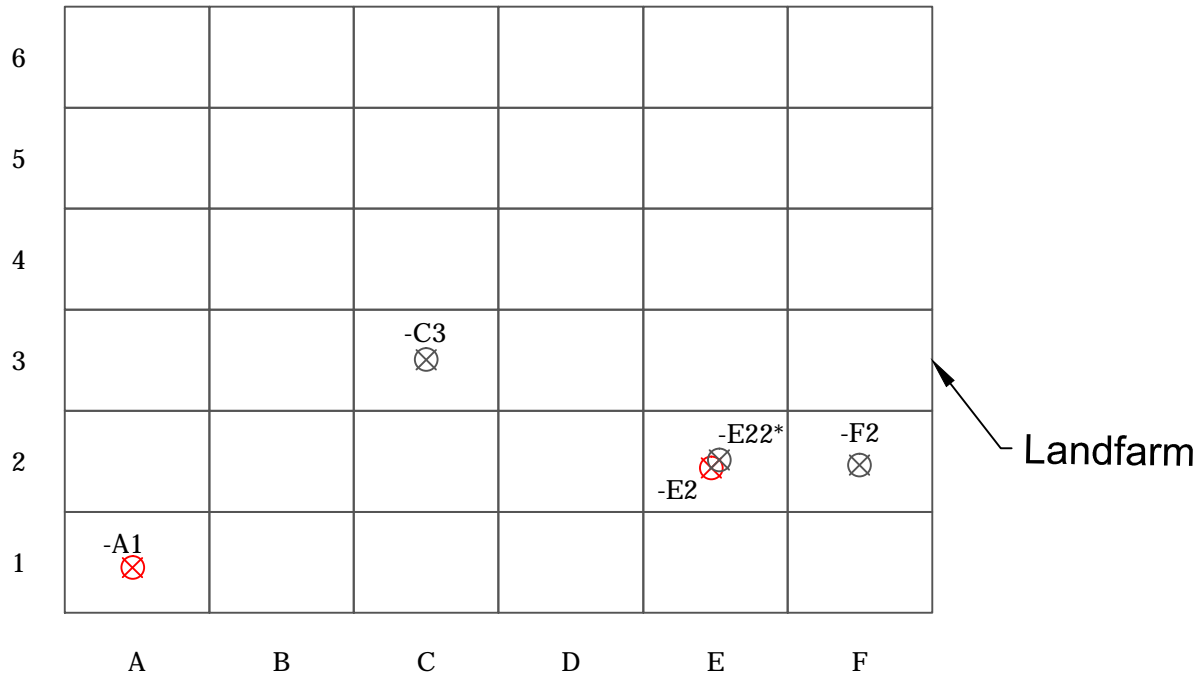
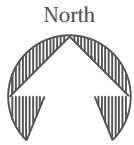
2021 BORING AND  
MONITORING WELL LOCATIONS

THE HUB  
GLENNALLEN, AK



JOB: 17875  
DRAWN: HJD  
REVIEWED: SIM  
DATE: 10/19/21

FIGURE  
**4**



**LEGEND**

- ⊗ ANALYTICALSAMPLE LOCATION (JUNE 2021)
  - ⊗ ANALYTICALSAMPLE LOCATION; BENZENE ABOVE CLEANUP LEVEL (JUNE 2021)
- ALL SAMPLE IDs BEGIN WITH "Hub-LF-"  
\* -E22 IS A DUPLICATE SAMPLE OF -E2

## **Appendix A**

### **Field Notes**

17875 4/12/2021 The HUB

17

Hannah Deeny - EMI onsite @ 8am  
Daniel Park > DD - setting up Rig +  
Mason OIP

James Fields - The Hub (checked in + left)  
OIP Investigation begin east of fuel islands

[Geoprobe 7822DT / OIP]

WX: Sunny, windy <sup>mid</sup> 30s - <sup>low</sup> 40s

11:30 Frozen ground - issue w/OIP. Trying to bore through w/ MCS surge

Frozen ground conditions - not worth OIP usage

12:15 break for lunch + switching out equipment from OIP to borings

13:30 begin B1

location, depth

DUE TO NO OIP BORINGS

WERE NOT ADVANCED TO GW

IF SCREENING NOTED <sup>NOT LIMIT</sup> OF CONST.

HSID	PID <sup>on/off</sup>	PID	depth	notes
B1-1	1342/1420	22.7	0-2.5	saturated/frozen
B1-2	1340/1428	7.0	2.5-5	saturated/frozen
↓ 3	1358/1420	29.5	5-6	saturated/frozen
↓ 4	1359/1420	1070	6-7.5	fuel odor
↓ 5	1409/1427	236	7.5-9.5	slight fuel odor
↓ 6	1412/1435	27.1	9.5-10	
↓ 7	1430/1443	10.6	10-12.5	2 12ft
B1-8	1432/1443	308	12.5-15	fuel odor
B2-1			0-2.5	no headspace <sup>insuff.</sup> volume
B2-2	1508/1523	1.6	2.5-5	

Scale: 1 square =

PID bump = 101 ppm

Ret in the Rain

19 17875 The Hub CONT. (H8D) 4/12/21

HSID	time on/off	PID	depth	notes
B2-3	1528/1538	2.1	5-8	no odors
B2-4	1556/1609	1.8	8-10	wet silt/gravel
B2-5	1608/1618	1.5	10 <sup>-12.5</sup> / <sub>100</sub> 15	wet gravel/sand
B2-5	1608/1616	0.8	12.5-15	sand
B3-1	1630/1642	41.3	0-2	dry
B3-2	1646/1652	40.0	2-4	damp
B3-3	1658/1709	1693	4-10	
B3-4	1709/1726	391	0-8	staining between 7-8
B3-5	1715/1726	243	8-10	*dup" B3 18-20"
B4-1	1740/1754	221	0-2	
B4-2			2-4	insufficient amount for HS + sample
B4-3	1813/1825	1791	4-6	fuel odor
B4-4	1818/1830	264	4-8	no sample
B4-5	1825/1835	368	8-10	no sample

if elevated headspaces present between 4-10 feet boring will be stepped out to determine edge of contamination. No analyticals. These borings will not be advanced to GW.

1845 Done for Day  
offsite @ 1900

Scale: 1 square =

17875 The Hub Cont. 4/13/21 (H8D) 19

onsite @ 7am EMI and DD.  
PID bump = 102 WX: 30s-40s, cloudy  
Begin B5

HSID	time on/off	PID	depth	notes
B5-1	0758/0808	20.3	0-2	dry
B5-2	0815/0839	11.9	2-4	dry - boulder/refusal
Stepping out due to refusal				
B5-1	0855/0910	5.1	0-2	dry
B5-2	0858/0910	7.4	2-4	dry
B5-3	0916/0941	1145	4-6	fuel odor
B5-4	0930/0942	447	6-10 <sup>8</sup>	fuel odor
B5-5	0932/0942	419	8-10	fuel odor
B6-1	1017/1036	2.5	0-2	dry, rocks
B6-2	1030/1036	4.8	2-4	dry, large rocks
B6-3	1043/1108	133	4-6	duplicate 14-16 <sup>B6</sup> *
B6-4	1055/1108	39.5	6-8	dark, moist
B6-5	1058/1108	14.7	8-10	
B7-1	1155/1206	2.4	0-2	dry
B7-2	1201/1211	2.7	2-4	dry
B7-3	1234/1245	4.5	4-6	moist, some staining
B7-4	1234/1249	3.7	6-8	frozen, dark, ice chunks
B7-5	1237/1250	3.6	8-10	frozen, ice chunks

MWI will be installed in boring B6. @ 1500.  
Augered B6 to 15' and measured GW level 12.0<sup>8ft</sup> <sub>WYS</sub>  
5ft screen (10-15ft) sand pack to 8ft bgs

Scale: 1 square =

Site in the Rain

20 17875 THE HUB CONT 4/13/2021 (HSID)  
 1555 GW level in "MW1" (2.1<sup>ft</sup> to TOP piping)  
 (12.9<sup>ft</sup> to flush mount) TOC

continue w/ borings

HSID	time on/off	PID	depth	notes
B8-1	1710/1722	0.4 <sup>HP</sup>	0-2	dry w/rocks
B8-2	1713/1723	2.1 <sup>HP</sup>	2-4	dry w/rocks
B8-3	1741/1810	1.9	4-6	moist
B8-4	1746/1810	8.6	6-8	moist
B8-5	1749/1810	18.4	8-10	moist
B8-6	1750/1811	2.9	10-12.5	wet
B8-7	1805/1828	2.3	12.5-15	dup 12.5-18.5
B9-1	1850/1905	1.1	0-2	dry
B9-2	1855/1905	1.9	2-4	dry
B9-3	1903/1918	0.3	4-6	moist/damp
B9-4	1910/1927	3.7	6-8	moist silt
B9-5	1916/1927	2.0	8-10	moist silt
B9-6	1931/1945	3.3	10-12.5	moist
B9-7	1933/1945	0.9	12.5-15	
B9-8	1940/2001	9.2	15-17.5	wet sand & left
B9-9	1942/2001	5.2	17.5-20	
B10-1	2025/2036	4.1	0-2	moist
B10-2	2026/2036	4.0	2-4	moist
B10-3	2035/2048	2.4	4-6	wet
B10-4	2040/2050	2.2	6-8	wet
B10-5	2042/2050	5.0	8-10	wet 7.5ft/8ft

Scale: 1 square = offsite @ 2/100

17875 THE HUB CONT 4/14/2021 (HSID) 21

onsite @ 7am - EMI and D.P.

WX: 30s-40s, partly sunny.

Advancing TWO monitoring wells, level loop survey of wells and landfarm sampling.

MW2 will be installed on "eastern boundary" of contamination. East of B2.

07:45 Begin Augering MW2-final depth 15'  
 0856 measure GW for screen interval - 13.8" bigs

5ft screen (10-15ft), sand pack to 8ft.

0953 GW level measured after well installed  
 (13.4" to flush mount TOC)

1026 lay out landfarm screening grid  
 90' x 70' → 63 screening samples

4 analyticals + 1 dup

1203 Begin augering MW3-final depth 15'

1318 measure GW for screen interval - 13.1'  
 5ft screen (10-15ft) sand pack to 8ft

1406 GW level in "MW3" 13.8' to top of flush  
 mount casing.

1445 Begin level loop survey of the 3  
 monitoring wells (on next page)

measure swingties for MW2 and MW3

Coordination w/future projects for landfarm  
 sampling!

offsite @ 1535

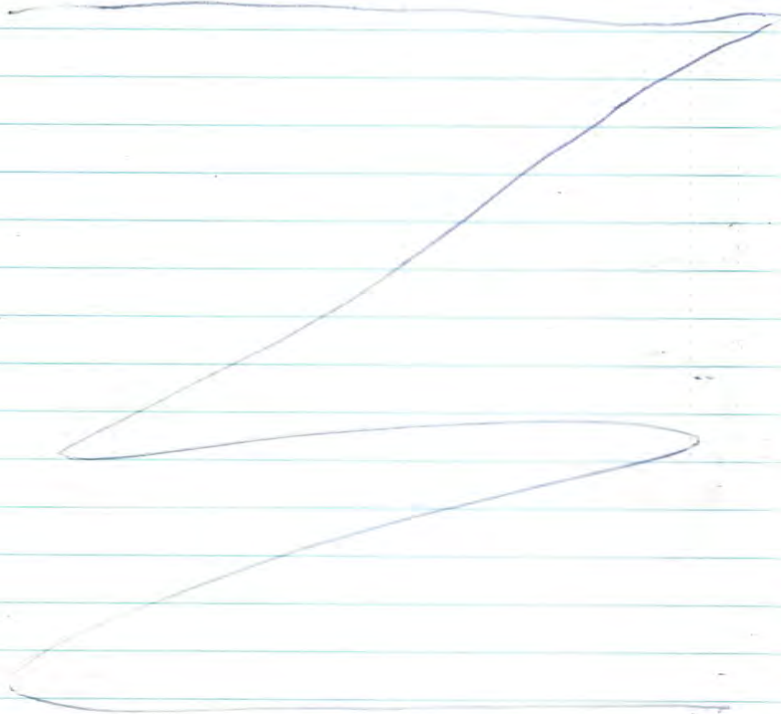
Scale: 1 square =

Ret in the Rain

22 17875 The Hub CONT 4/14/2021

(HJD)  
elevation

ID	BS (+)	$\pi$	FS (-)	elevation
MW1	5.26	105.26	—	100
MW2	4.29	105.37	4.18	101.08
MW3	4.11	105.27	4.21	101.16
MW1	—		5.28	99.99



HJD

17875 The Hub - well sampling 4/20/21

onsite @ 11am - Hannah Deeney (EMI)

sampling MW1, MW2, MW3, and  
onsite - non-potable well.

1150 - MW1 initial dtw = 12.3ft

MW1 - south boundary well

1320 - MW2 initial dtw = 13.3ft

MW2 - east boundary well

1530 - MW3 initial dtw = 13.9ft

MW3 - in contamination well

See water sampling logs for more  
details & information

4/21/21

non potable well initial dtw = 16.3ft

pH 5.35 temp 9.6°C

sample collected @

for VOCs & SVOCs (EPA 524/EPAS25)

.offsite @ 1000

# HUB BORING LOGS 17875

(prelims)

**B1**

0-5 brown/gray gravel frozen

5-7.5 brown gray gravel/sand saturated

7.5 brown/gray sand

7.5-9.5 brown/gray sand moist

9.5-10 brown silt

10-12.5 <sup>dark</sup> gray/silt w/ sand GW 12ft

12.5-15 <sup>dark</sup> gray/silt w/ gravel wet

\* if HS elevated boring (not) \* advanced to GW for purposes of \* VPSB

Saturated \* reaching limits of **B3** \* contain \*

0-2 brown sand w/ rocks dry

2-4 brown sand w/ rocks damp/moist

4-6 moist brown silty sand w/ gravel

6-8 moist silt w/ sand

**DUP** \*

Staining 7-8

8-10 silt w/ gravel wet

silt  
gravel

**B2**

0-2.5 brown sand w/ rocks

dry

2.5-5 brown sand w/ rocks

dry

5-8 dark brown/black moist/damp

sandy silt → looked sus see photos (3:24 pm on 4/12)

8-10 brown silt w/ rocks

wet

10-12.5 brown silt

wet

12.5

12.5-15 brown sand moist

**B4**

0-2 gray sand w/ rocks

2-4 gray sand w/ rocks

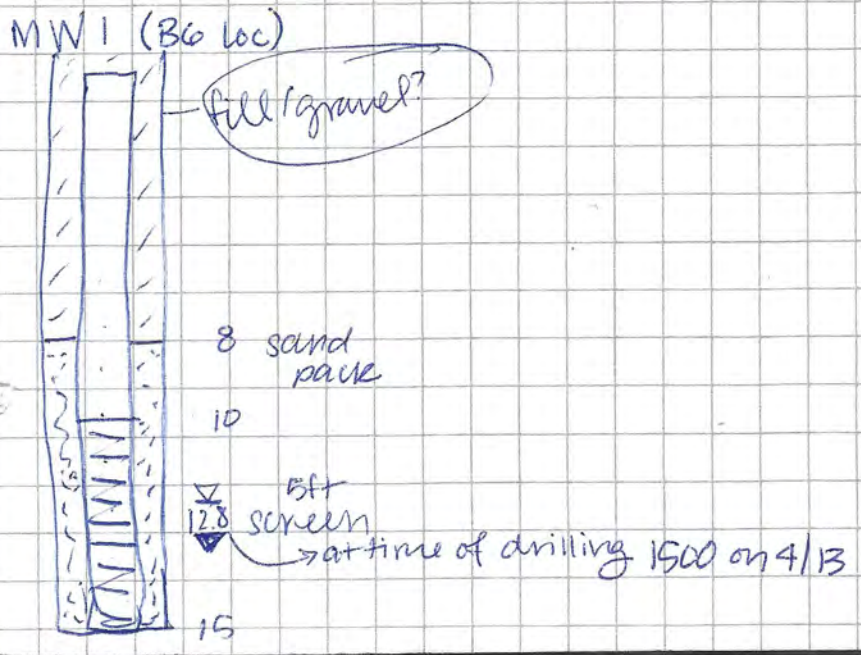
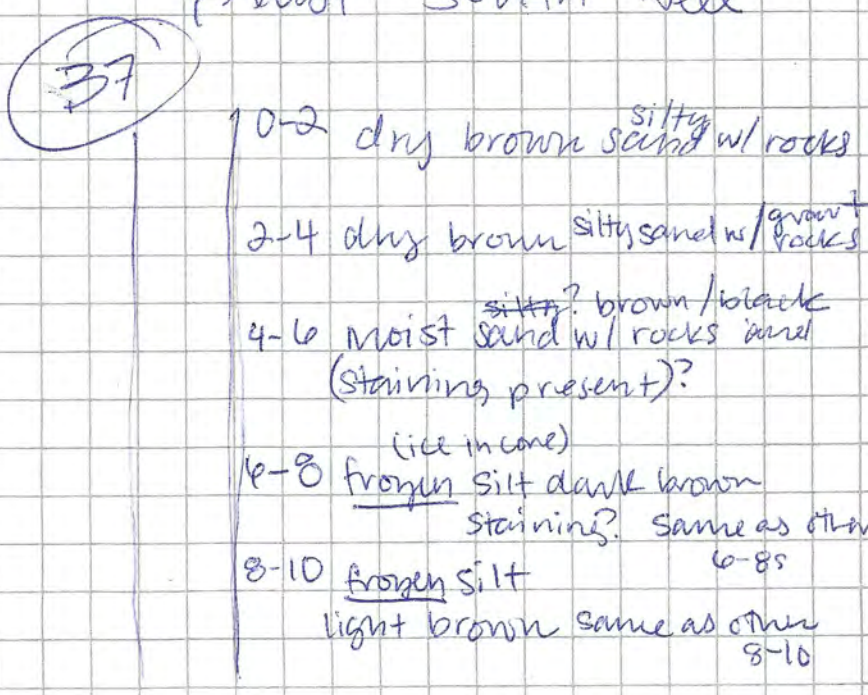
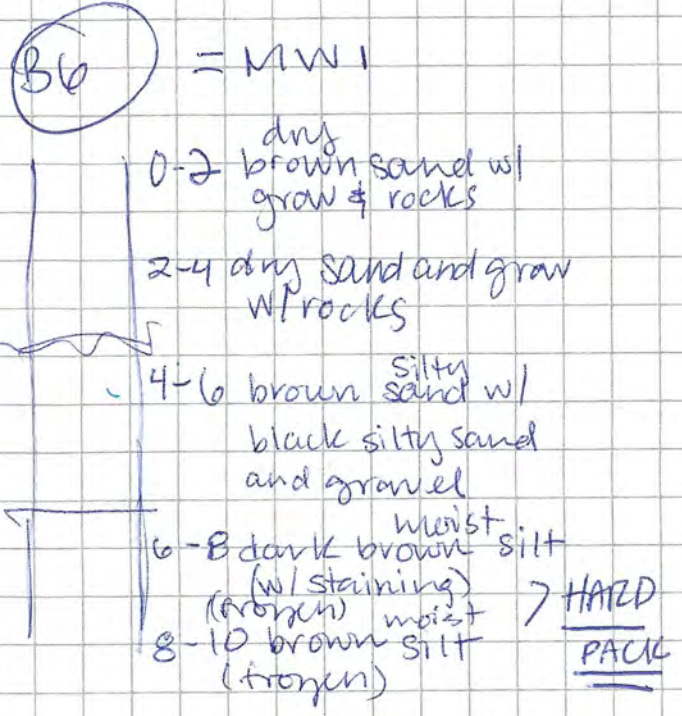
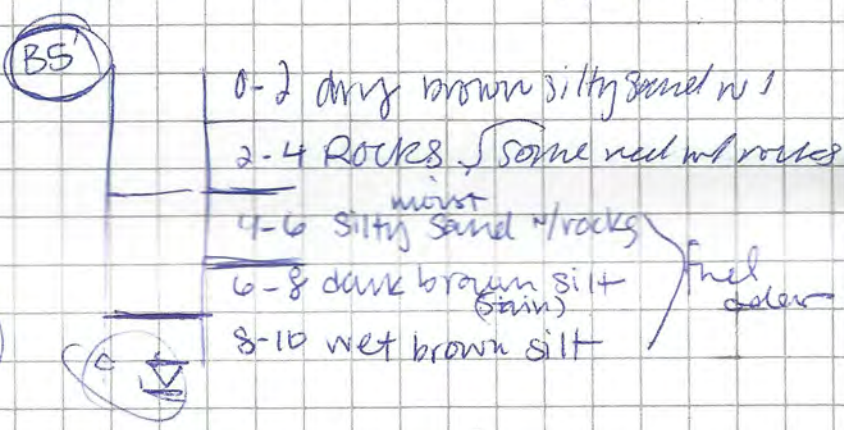
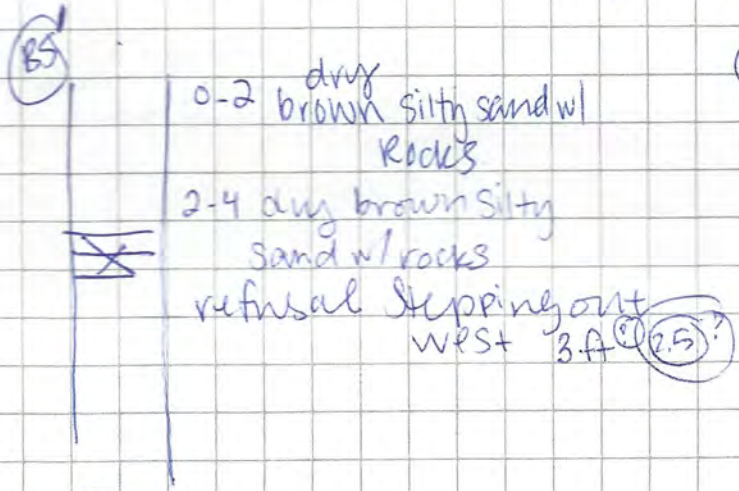
4-6 moist gray sand w/ gravel

6-8 moist brown silt

8-10 wet brown silt w/ some gravel

4/12/2021

# THE HUB BORING LOGS 4/13/21



B8 → directly south of pump 6  
 B9 → west of fuel islands  
 B10 → north of area - kinda between Hub & VC

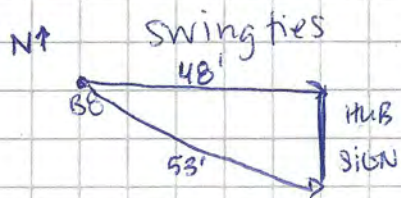
# THE HUB BORING LOGS

4/13/2021

CONT

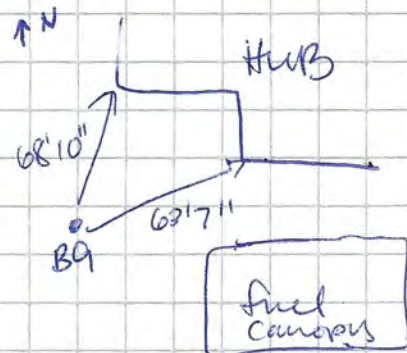
**B8** South of dispenser

- 0-2 brown <sup>silty</sup> sand w/ rocks
- 2-4 ↓
- 4-6 moist <sup>silty sand (dark brown)</sup> ~~dark brown silt~~ w/ rocks
- 6-8 moist brown silt
- 8-10 frozen
- 10-12.5 wet brown silt w/ rocks
- 12.5-15 wet brown sand



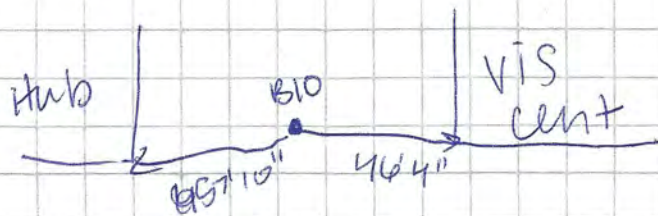
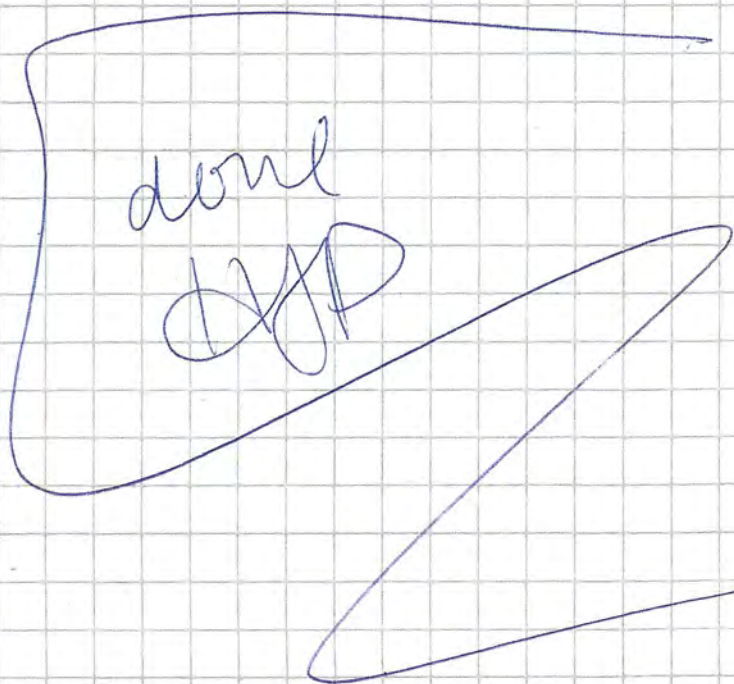
**B9** West of dispenser

- 0-2 dry <sup>brown</sup> sand w/ rocks
- 2-4 ↓ ↓
- 4-6 moist/damp brown sand w/ some rocks
- 6-8 moist <sup>of</sup> brn silt
- 8-10 moist L. brown silt
- 10-12.5 moist & brown silt
- 12.5-15 silt
- 15-17.5 wet brown sand w/ rocks
- 17.5-20



**B10**

- 0-2 moist brown sand
- 2-4 moist brown sand
- 4-6 wet brown sand
- 6-8 wet silt/sand
- 7.5/8 ft brown
- 8-10 wet sand w/ gravel

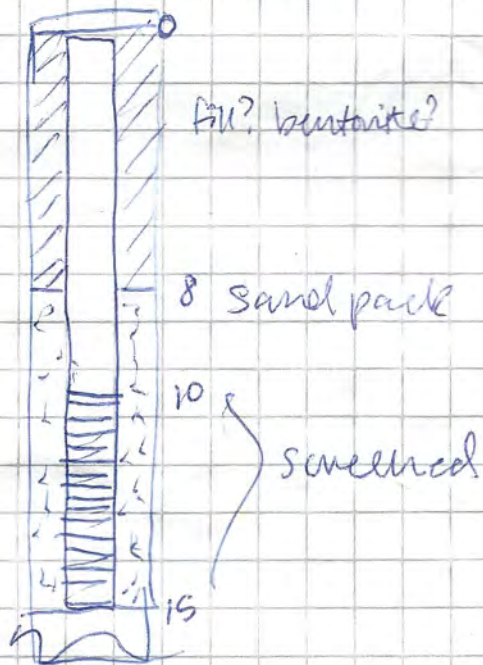


# MONITORING WELL LOGS (THE HUB) 4/14/21

MW2 - East Boundary  
GN 13-4



MW3 - <sup>(in)</sup>contamination



# Water Sampling Data Log

Well No.: MW1 Date: 4/20/2021  
 Project No: 17875 Weather: 40s cloudy  
 Instrument(s): water level meter Staff: Hannah Deeney  
water s. water quantity pen,

### Water Elevation Data

Well Elevation: \_\_\_\_\_ Initial Depth to Water (ft): 12.3 ft  
 Water Elevation (Well Elevation - Depth to Water): \_\_\_\_\_  
 Product Present: Y / (N) Depth to Product: NA

### Well Purging Parameters

Initial Depth to Water (ft): 12.3 ft Total Well Depth (ft): 15 ft  
 Water Column (Total Well Depth - Depth to Water): 2.7 ft  
 Well Volume (Water Column \* 0.16): 0.432  
 Total Volume to Purge (Well Volume \* 3): 1.296  
 Pump placement (ft BTOC): ~13.5 ft Total Vol. Purged: ~1.5

### Well Purge Details

Well Volume	Time	Depth (ft)	Flow Rate (gal/min)	pH (s.u.)	Temp (°C)	Cond ( )	DO ( )	Turbidity (NTU)	ORP ( )	Drawdown (ft)
1	12:27	12.5	0.2	5.5	6.2					0.1
2	12:32	12.5	0.2	5.9	5.0					0.1
3	12:36	12.4	0.2	5.69	4.9					0.2

### Analytical Sample Details

Sample Collection Date/Time: 4/20/21 1245 Duplicate Collected (Y/N): (N)

Analysis: GR20, DR20, VOC - petroliel, PAH

Notes:

# Water Sampling Data Log

Well No.: WW 2 Date: 4/20/2011  
 Project No: 17575 Weather: no clouds  
 Instrument(s): water level meter, water pump, water quality pen Staff: \_\_\_\_\_

### Water Elevation Data

Well Elevation: \_\_\_\_\_ Initial Depth to Water (ft): 13.3 ft  
 Water Elevation (Well Elevation - Depth to Water): \_\_\_\_\_  
 Product Present: Y / (N) Depth to Product: NA

### Well Purging Parameters

Initial Depth to Water (ft): 13.3 ft Total Well Depth (ft): 15 ft  
 Water Column (Total Well Depth - Depth to Water): 1.7  
 Well Volume (Water Column \* 0.16): 0.272  
 Total Volume to Purge (Well Volume \* 3): 0.816  
 Pump placement (ft BTOC): ~14 ft Total Vol. Purged: ~0.9

### Well Purge Details

Well Volume	Time	Depth (ft)	Flow Rate (gpm)	pH (s.u.)	Temp (°C)	Cond ( )	DO ( )	Turbidity (NTU)	ORP ( )	Drawdown (ft)
1	<del>1330</del>	13.3	0.2	5.66	7.1					0.2
2	1348	13.5	0.2	6.81	<del>7.6</del>					0.1
3	1358	13.3	0.2	7.0	0.8					0.1

### Analytical Sample Details

Sample Collection Date/Time: 4/20/11 1415 Duplicate Collected (Y/N): (N)

Analysis: GR0/VOLs, DICO/PAH

Notes: very slow recharge / pump draw slow?



# Water Sampling Data Log

Well No.: MW3  
 Project No: 17875  
 Instrument(s): water level

Date: 4/20/21  
 Weather: 60s cloudy  
 Staff: Hannah Deener

### Water Elevation Data

Well Elevation: \_\_\_\_\_ Initial Depth to Water (ft): 13.3 ft  
 Water Elevation (Well Elevation - Depth to Water): \_\_\_\_\_  
 Product Present: Y / (N) Depth to Product: NA

### Well Purging Parameters

Initial Depth to Water (ft): 13.3 ft Total Well Depth (ft): 15 ft  
 Water Column (Total Well Depth - Depth to Water): 1.7 ft  
 Well Volume (Water Column \* 0.16): 0.272  
 Total Volume to Purge (Well Volume \* 3): 0.816  
 Pump placement (ft BTOC): ~14 ft Total Vol. Purged: ~0.9

### Well Purge Details

Well Volume	Time	Depth (ft)	Flow Rate (gall/min)	pH (s.u.)	Temp (°C)	Cond ( )	DO ( )	Turbidity (NTU)	ORP ( )	Drawdown (ft)
1	1540	13.3	0.2	6.09	9.9					1.2
2	1630	13.4	0.2	6.89	10.2					1.1
3	1740	13.3	0.2	7.2	9.9					1.2

### Analytical Sample Details

Sample Collection Date/Time: 4/20/21 1630 Duplicate Collected (Y/N): (N)

Analysis: GRO, Vals, DRO, PAH

Notes: slow recovery

Hub Land farm 6/10/21

Weather - Sunny 66°

PIP Cal check 102

0730 EMT Arrives onsite to characterize land farm according to work plan.

- There is a significant amount of water in the depressions, mostly on the south end. Some paddles are up to 15" deep.
- The land farm is not level; but a series of mounds and shallow depressions
- A grid was layed out and coordinates were placed ~~on~~ on a 10x10 grid.
- Areas west of line had too much water and soils were saturated so not sampled

6/10/21 Hub landform

- Samples were collected from 12" below the surface at the coordinate locations. These locations fell in depressions with water in these situations so head space was adjusted to ~~not~~ <sup>get</sup> sample soils not saturated

- All soils were free of odor and signs of contamination.

- Five samples were collected as marked on head space logs on following pages.

- EMT left the site

Coord. note	Time Col	Time Read	Read. z	6/10/24
A 1	0810	0856	2.5	@ 1015
2	0811	0857	0.0	
3	0813	0858	0.2	
4	0815	0859	0.0	
5	0817	<del>0859</del> 0900	0.0	
6	0819	<del>0859</del> 0902	0.1	
B 1	0820	0903	0.7	
2	0822	0904	0.0	
3	0823	0905	0.1	
4	0825	0906	0.1	
5	0827	0906	0.0	
6	0829	0907	0.0	
C 1	0831	0907	0.3	
2	0833	0908	0.0	
3	0834	0909	1.1	@ 1022
4	0836	0910	0.1	
5	0838	0911	0.0	
6	0839	0912	0.0	
D 1	0840	0913	0.0	
2	0842	0913	0.4	
3	0844	0914	0.0	
4	0844	0915	0.1	
5	0848	0915	0.0	
6	0850	0915	0.0	

6/10/21 Hub Level Form

Coordinate	time col	time head	Reedm	
E 1	0921	0958	0.0	• @ 1033
# 2	0923	0951	1.9	• dup E22
3	0925	0952	0.1	@ 1137
4	0927	0953	0.0	
5	0929	0954	0.0	
6	0931	0955	0.0	
F 1	0933	0956	0.0	
2	0935	0957	3.1	• @ 1027
3	0937	0958	0.0	
4	0939	0959	0.0	
5	0941	1000	0.0	
6	0943	1001	0.1	

## **Appendix B**

### **Site Photographs**

# Photo Log



**Photo 1:** Drilling Boring B1 near the source area, facing west.  
(April 12, 2021)



**Photo 2:** End of drilling on April 12, 2021. Borings B1, B2, B3, and B4 completed, facing northwest.  
(April 12, 2021)



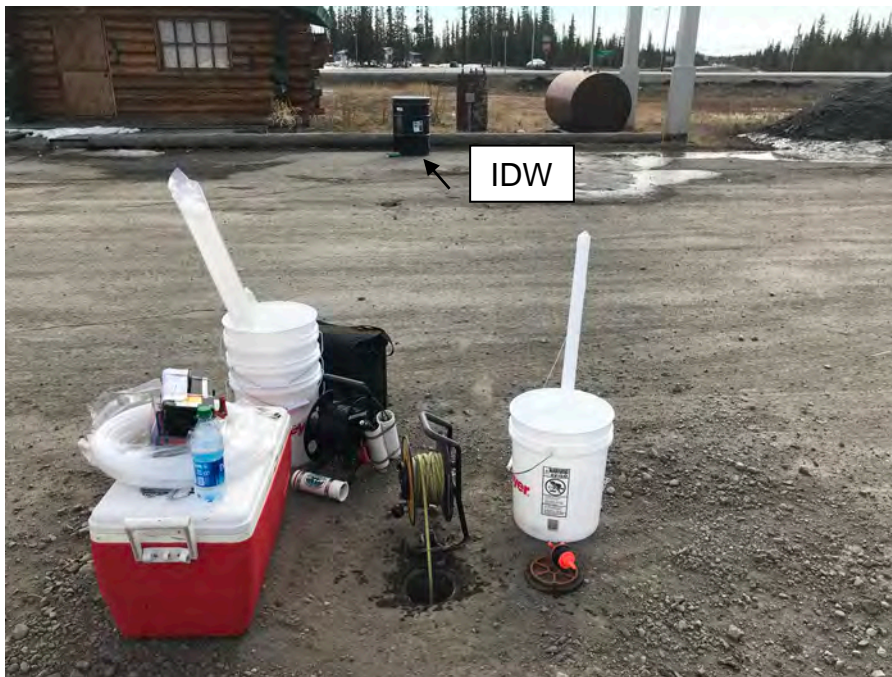
**Photo 3:** Drilling Boring B7 east of source area, facing east.  
(April 13, 2021)



**Photo 4:** MW1 installed in Boring B6 (under cone) and Boring B7, facing east.  
(April 13, 2021)



**Photo 5:** Installing MW2, northeast of source area and Boring B2, facing south. (April 14, 2021)



**Photo 6:** Sampling MW1, southeast of source area, facing east. 55-gallon drum of containerized IDW left at edge of parking area. (April 20, 2021)



**Photo 7:** Sampling MW2, northeast of source area, facing southwest.  
(April 20, 2021)



**Photo 8:** Sampling MW3, in the source area, facing west.  
(April 20, 2021)



**Photo 9:** The Hub soils landfarm, facing west.  
(June 10, 2021)



**Photo 10:** Saturated southeast corner of the landfarm, facing east.  
(June 10, 2021)

## **Appendix C**

### **SGS and Eurofins *Laboratory Report of Analysis and ADEC Laboratory Data Review Checklist***

## Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)  
206 East Fireweed Lane Suite 201  
Anchorage, AK 99503  
(907)272-9336

Report Number: **1211896**

Client Project: **Hub**

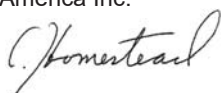
Dear Hannah Deeney,

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 Chuck 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.



SGS North America  
Environmental Services - Alaska Division  
General Manager

Charles Homestead  
2021.04.30 15:49:45 -08'00'

Chuck Homestead  
Project Manager  
Charles.Homestead@sgs.com

Date

## Case Narrative

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

SGS Project: **1211896**

Project Name/Site: **Hub**

Project Contact: **Hannah Deeney**

Refer to sample receipt form for information on sample condition.

**17875 B7-4 4-6 (1211896003) PS**

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to matrix interference with internal standards.

**17875 B6-3 14-16 (1211896008) PS**

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to matrix interference with internal standards.

8260D - Surrogate recovery for 4-Bromofluorobenzene does not meet QC criteria, due to matrix interference.

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria, due to matrix interference.

\*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: 04/30/2021 3:28:01PM

### Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
<b>8270D SIM (PAH)</b>				
1211896006	17875 B10-2 2-4	XMS12573	Benzo[k]fluoranthene	RP
1211896006	17875 B10-2 2-4	XMS12573	Chrysene	BLC

#### 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.

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. 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 & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. 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	Analytical 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
TNTC	Too Numerous To Count
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>
17875 B2-5 10-12.5	1211896001	04/12/2021	04/23/2021	Soil/Solid (dry weight)
17875 B6-5 6-8	1211896002	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B7-4 4-6	1211896003	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B8-6 10-12.5	1211896004	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B9-8 15-17.5	1211896005	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B10-2 2-4	1211896006	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B6-3 4-6	1211896007	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 B6-3 14-16	1211896008	04/13/2021	04/23/2021	Soil/Solid (dry weight)
17875 STB	1211896009	04/12/2021	04/23/2021	Soil/Solid (dry weight)

#### Method

8270D SIM (PAH)

AK102

AK101

SM21 2540G

SW8260D

#### Method Description

8270 PAH SIM Semi-Volatiles GC/MS

Diesel Range Organics (S)

Gasoline Range Organics (S)

Percent Solids SM2540G

VOC 8260 (S) Field Extracted

Print Date: 04/30/2021 3:28:06PM



### Detectable Results Summary

Client Sample ID: **17875 B6-5 6-8**

Lab Sample ID: 1211896002

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	5200	ug/kg
2-Methylnaphthalene	9760	ug/kg
Acenaphthene	336	ug/kg
Fluorene	234	ug/kg
Naphthalene	2710	ug/kg
<b>Semivolatile Organic Fuels</b>		
Diesel Range Organics	2090	mg/kg
<b>Volatile GC/MS- Petroleum VOC Group</b>		
1,2,4-Trimethylbenzene	409	ug/kg
1,3,5-Trimethylbenzene	193	ug/kg
Benzene	200	ug/kg
Ethylbenzene	81.9	ug/kg
Isopropylbenzene (Cumene)	241	ug/kg
Naphthalene	2520	ug/kg
sec-Butylbenzene	503	ug/kg

Client Sample ID: **17875 B7-4 4-6**

Lab Sample ID: 1211896003

**Semivolatile Organic Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	297	mg/kg
Benzene	100	ug/kg
o-Xylene	20.5	ug/kg
Toluene	27.5	ug/kg

Client Sample ID: **17875 B8-6 10-12.5**

Lab Sample ID: 1211896004

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2-Dichloroethane	9.90	ug/kg
Benzene	192	ug/kg

Client Sample ID: **17875 B9-8 15-17.5**

Lab Sample ID: 1211896005

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2-Dichloroethane	2.21	ug/kg
Benzene	16.0	ug/kg

Client Sample ID: **17875 B10-2 2-4**

Lab Sample ID: 1211896006

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Anthracene	33.9	ug/kg
Benzo(a)Anthracene	73.3	ug/kg
Benzo[a]pyrene	66.7	ug/kg
Benzo[b]Fluoranthene	87.9	ug/kg
Benzo[g,h,i]perylene	37.8	ug/kg
Benzo[k]fluoranthene	30.2	ug/kg
Chrysene	73.9	ug/kg
Fluoranthene	193	ug/kg
Indeno[1,2,3-c,d] pyrene	36.2	ug/kg
Phenanthrene	106	ug/kg
Pyrene	136	ug/kg

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### Detectable Results Summary

Client Sample ID: **17875 B6-3 4-6**

Lab Sample ID: 1211896007

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	333	ug/kg
2-Methylnaphthalene	449	ug/kg
Naphthalene	139	ug/kg

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

Diesel Range Organics	616	mg/kg
Gasoline Range Organics	2.66	mg/kg
Benzene	125	ug/kg
Toluene	33.9	ug/kg

Client Sample ID: **17875 B6-3 14-16**

Lab Sample ID: 1211896008

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	250	mg/kg
Gasoline Range Organics	82.1	mg/kg
1,2,4-Trimethylbenzene	1090	ug/kg
1,3,5-Trimethylbenzene	848	ug/kg
Benzene	198	ug/kg
Ethylbenzene	106	ug/kg
Naphthalene	531	ug/kg
o-Xylene	268	ug/kg
P & M -Xylene	355	ug/kg
sec-Butylbenzene	112	ug/kg
Xylenes (total)	624	ug/kg

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Results of 17875 B2-5 10-12.5

Client Sample ID: 17875 B2-5 10-12.5
Client Project ID: Hub
Lab Sample ID: 1211896001
Lab Project ID: 1211896

Collection Date: 04/12/21 16:08
Received Date: 04/23/21 16:43
Matrix: Soil/Solid (dry weight)
Solids (%):87.8
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards with associated values and analysis dates.

Batch Information

Analytical Batch: XMS12573
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 04/26/21 17:37
Container ID: 1211896001-A

Prep Batch: XXX44676
Prep Method: SW3550C
Prep Date/Time: 04/26/21 12:52
Prep Initial Wt./Vol.: 22.781 g
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B2-5 10-12.5**

Client Sample ID: **17875 B2-5 10-12.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896001  
Lab Project ID: 1211896

Collection Date: 04/12/21 16:08  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.8  
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	22.7 U	22.7	7.02	mg/kg	1		04/26/21 18:18
<b>Surrogates</b>							
5a Androstane (surr)	87.6	50-150		%	1		04/26/21 18:18

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 18:18  
Container ID: 1211896001-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.153 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B2-5 10-12.5**

Client Sample ID: **17875 B2-5 10-12.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896001  
Lab Project ID: 1211896

Collection Date: 04/12/21 16:08  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.8  
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	4.18 U	4.18	1.25	mg/kg	1		04/26/21 21:48
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	85.3	50-150		%	1		04/26/21 21:48

**Batch Information**

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 21:48  
Container ID: 1211896001-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/12/21 16:08  
Prep Initial Wt./Vol.: 81.698 g  
Prep Extract Vol: 59.9362 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B2-5 10-12.5

Client Sample ID: 17875 B2-5 10-12.5
Client Project ID: Hub
Lab Sample ID: 1211896001
Lab Project ID: 1211896

Collection Date: 04/12/21 16:08
Received Date: 04/23/21 16:43
Matrix: Soil/Solid (dry weight)
Solids (%):87.8
Location:

Results by Volatile GC/MS- Petroleum VOC Group

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include various VOCs like 1,2,4-Trimethylbenzene, Benzene, Toluene, and Surrogates.

Batch Information

Analytical Batch: VMS20670
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 04/26/21 14:53
Container ID: 1211896001-B

Prep Batch: VXX36976
Prep Method: SW5035A
Prep Date/Time: 04/12/21 16:08
Prep Initial Wt./Vol.: 81.698 g
Prep Extract Vol: 59.9362 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-5 6-8

Client Sample ID: 17875 B6-5 6-8
Client Project ID: Hub
Lab Sample ID: 1211896002
Lab Project ID: 1211896

Collection Date: 04/13/21 10:55
Received Date: 04/23/21 16:43
Matrix: Soil/Solid (dry weight)
Solids (%):61.5
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards.

Batch Information

Analytical Batch: XMS12577
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 04/27/21 20:48
Container ID: 1211896002-A

Prep Batch: XXX44676
Prep Method: SW3550C
Prep Date/Time: 04/26/21 12:52
Prep Initial Wt./Vol.: 22.733 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS12573
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 04/26/21 23:26
Container ID: 1211896002-A

Prep Batch: XXX44676
Prep Method: SW3550C
Prep Date/Time: 04/26/21 12:52
Prep Initial Wt./Vol.: 22.733 g
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-5 6-8**

Client Sample ID: **17875 B6-5 6-8**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896002  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:55  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):61.5  
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	2090	32.1	9.96	mg/kg	1		04/26/21 18:38
<b>Surrogates</b>							
5a Androstane (surr)	87.6	50-150		%	1		04/26/21 18:38

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 18:38  
Container ID: 1211896002-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.388 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-5 6-8**

Client Sample ID: **17875 B6-5 6-8**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896002  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:55  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):61.5  
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	7.88 U	7.88	2.36	mg/kg	1		04/27/21 16:29
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	75.4	50-150		%	1		04/27/21 16:29

**Batch Information**

Analytical Batch: VFC15558  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/27/21 16:29  
Container ID: 1211896002-B

Prep Batch: VXX36980  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:55  
Prep Initial Wt./Vol.: 42.871 g  
Prep Extract Vol: 41.5141 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-5 6-8

Client Sample ID: 17875 B6-5 6-8  
Client Project ID: Hub  
Lab Sample ID: 1211896002  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:55  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):61.5  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	409	158	47.3	ug/kg	1		04/26/21 19:17
1,2-Dibromoethane	3.15 U	3.15	1.26	ug/kg	1		04/26/21 19:17
1,2-Dichloroethane	6.30 U	6.30	2.21	ug/kg	1		04/26/21 19:17
1,3,5-Trimethylbenzene	193	78.8	24.6	ug/kg	1		04/26/21 19:17
Benzene	200	39.4	12.3	ug/kg	1		04/26/21 19:17
Ethylbenzene	81.9	78.8	24.6	ug/kg	1		04/26/21 19:17
Isopropylbenzene (Cumene)	241	78.8	24.6	ug/kg	1		04/26/21 19:17
Methyl-t-butyl ether	315 U	315	97.7	ug/kg	1		04/26/21 19:17
Naphthalene	2520	78.8	24.6	ug/kg	1		04/26/21 19:17
n-Butylbenzene	78.8 U	78.8	24.6	ug/kg	1		04/26/21 19:17
o-Xylene	78.8 U	78.8	24.6	ug/kg	1		04/26/21 19:17
P & M -Xylene	158 U	158	47.3	ug/kg	1		04/26/21 19:17
sec-Butylbenzene	503	78.8	24.6	ug/kg	1		04/26/21 19:17
tert-Butylbenzene	78.8 U	78.8	24.6	ug/kg	1		04/26/21 19:17
Toluene	78.8 U	78.8	24.6	ug/kg	1		04/26/21 19:17
Xylenes (total)	236 U	236	71.8	ug/kg	1		04/26/21 19:17
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	98.3	71-136		%	1		04/26/21 19:17
4-Bromofluorobenzene (surr)	62.4	55-151		%	1		04/26/21 19:17
Toluene-d8 (surr)	101	85-116		%	1		04/26/21 19:17

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 19:17  
Container ID: 1211896002-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:55  
Prep Initial Wt./Vol.: 42.871 g  
Prep Extract Vol: 41.5141 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B7-4 4-6

Client Sample ID: 17875 B7-4 4-6  
Client Project ID: Hub  
Lab Sample ID: 1211896003  
Lab Project ID: 1211896

Collection Date: 04/13/21 12:24  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.1  
Location:

Results by Polynuclear Aromatics 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-Methylnaphthalene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
2-Methylnaphthalene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Acenaphthene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Acenaphthylene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Anthracene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Benzo(a)Anthracene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Benzo[a]pyrene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Benzo[b]Fluoranthene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Benzo[g,h,i]perylene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Benzo[k]fluoranthene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Chrysene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Dibenzo[a,h]anthracene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Fluoranthene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Fluorene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Indeno[1,2,3-c,d] pyrene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Naphthalene	106 U	106	26.6	ug/kg	5		04/26/21 23:46
Phenanthrene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
Pyrene	133 U	133	33.3	ug/kg	5		04/26/21 23:46
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	78.9	58-103		%	5		04/26/21 23:46
Fluoranthene-d10 (surr)	79.1	54-113		%	5		04/26/21 23:46

Batch Information

Analytical Batch: XMS12573  
Analytical Method: 8270D SIM (PAH)  
Analyst: DSD  
Analytical Date/Time: 04/26/21 23:46  
Container ID: 1211896003-A

Prep Batch: XXX44676  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 12:52  
Prep Initial Wt./Vol.: 22.711 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B7-4 4-6**

Client Sample ID: **17875 B7-4 4-6**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896003  
Lab Project ID: 1211896

Collection Date: 04/13/21 12:24  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.1  
Location:

Results by **Semivolatile Organic 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</u>	<u>Date Analyzed</u>
Diesel Range Organics	297		21.2	6.58	mg/kg	1		04/28/21 19:08
<b>Surrogates</b>								
5a Androstane (surr)	92.5		50-150		%	1		04/28/21 19:08

**Batch Information**

Analytical Batch: XFC15902  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 04/28/21 19:08  
Container ID: 1211896003-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.361 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B7-4 4-6**

Client Sample ID: **17875 B7-4 4-6**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896003  
Lab Project ID: 1211896

Collection Date: 04/13/21 12:24  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.1  
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	1.92 U	1.92	0.576	mg/kg	1		04/26/21 22:07
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	83.4	50-150		%	1		04/26/21 22:07

**Batch Information**

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 22:07  
Container ID: 1211896003-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 12:24  
Prep Initial Wt./Vol.: 86.662 g  
Prep Extract Vol: 30.9829 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B7-4 4-6

Client Sample ID: 17875 B7-4 4-6  
Client Project ID: Hub  
Lab Sample ID: 1211896003  
Lab Project ID: 1211896

Collection Date: 04/13/21 12:24  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.1  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	38.4 U	38.4	11.5	ug/kg	1		04/26/21 15:09
1,2-Dibromoethane	0.768 U	0.768	0.307	ug/kg	1		04/26/21 15:09
1,2-Dichloroethane	1.54 U	1.54	0.538	ug/kg	1		04/26/21 15:09
1,3,5-Trimethylbenzene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
Benzene	100	9.60	3.00	ug/kg	1		04/26/21 15:09
Ethylbenzene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
Isopropylbenzene (Cumene)	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
Methyl-t-butyl ether	76.8 U	76.8	23.8	ug/kg	1		04/26/21 15:09
Naphthalene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
n-Butylbenzene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
o-Xylene	20.5	19.2	5.99	ug/kg	1		04/26/21 15:09
P & M -Xylene	38.4 U	38.4	11.5	ug/kg	1		04/26/21 15:09
sec-Butylbenzene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
tert-Butylbenzene	19.2 U	19.2	5.99	ug/kg	1		04/26/21 15:09
Toluene	27.5	19.2	5.99	ug/kg	1		04/26/21 15:09
Xylenes (total)	57.6 U	57.6	17.5	ug/kg	1		04/26/21 15:09
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		04/26/21 15:09
4-Bromofluorobenzene (surr)	97.9	55-151		%	1		04/26/21 15:09
Toluene-d8 (surr)	100	85-116		%	1		04/26/21 15:09

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 15:09  
Container ID: 1211896003-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 12:24  
Prep Initial Wt./Vol.: 86.662 g  
Prep Extract Vol: 30.9829 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B8-6 10-12.5

Client Sample ID: 17875 B8-6 10-12.5  
Client Project ID: Hub  
Lab Sample ID: 1211896004  
Lab Project ID: 1211896

Collection Date: 04/13/21 17:56  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):78.5  
Location:

Results by Polynuclear Aromatics 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-Methylnaphthalene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
2-Methylnaphthalene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Acenaphthene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Acenaphthylene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Anthracene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Benzo(a)Anthracene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Benzo[a]pyrene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Benzo[b]Fluoranthene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Benzo[g,h,i]perylene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Benzo[k]fluoranthene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Chrysene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Dibenzo[a,h]anthracene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Fluoranthene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Fluorene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Indeno[1,2,3-c,d] pyrene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Naphthalene	25.3 U	25.3	6.33	ug/kg	1		04/26/21 17:58
Phenanthrene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
Pyrene	31.6 U	31.6	7.91	ug/kg	1		04/26/21 17:58
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	71.9	58-103		%	1		04/26/21 17:58
Fluoranthene-d10 (surr)	79.1	54-113		%	1		04/26/21 17:58

Batch Information

Analytical Batch: XMS12573  
Analytical Method: 8270D SIM (PAH)  
Analyst: DSD  
Analytical Date/Time: 04/26/21 17:58  
Container ID: 1211896004-A

Prep Batch: XXX44676  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 12:52  
Prep Initial Wt./Vol.: 22.639 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B8-6 10-12.5**

Client Sample ID: **17875 B8-6 10-12.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896004  
Lab Project ID: 1211896

Collection Date: 04/13/21 17:56  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):78.5  
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	25.2 U	25.2	7.81	mg/kg	1		04/26/21 17:58
<b>Surrogates</b>							
5a Androstane (surr)	97.4	50-150		%	1		04/26/21 17:58

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 17:58  
Container ID: 1211896004-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.334 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B8-6 10-12.5**

Client Sample ID: **17875 B8-6 10-12.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896004  
Lab Project ID: 1211896

Collection Date: 04/13/21 17:56  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):78.5  
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	3.00 U	3.00	0.900	mg/kg	1		04/26/21 22:25
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	66.4	50-150		%	1		04/26/21 22:25

Batch Information

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 22:25  
Container ID: 1211896004-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 17:56  
Prep Initial Wt./Vol.: 97.694 g  
Prep Extract Vol: 45.9993 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B8-6 10-12.5

Client Sample ID: 17875 B8-6 10-12.5  
Client Project ID: Hub  
Lab Sample ID: 1211896004  
Lab Project ID: 1211896

Collection Date: 04/13/21 17:56  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):78.5  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	60.0 U	60.0	18.0	ug/kg	1		04/26/21 15:24
1,2-Dibromoethane	1.20 U	1.20	0.480	ug/kg	1		04/26/21 15:24
1,2-Dichloroethane	9.90	2.40	0.840	ug/kg	1		04/26/21 15:24
1,3,5-Trimethylbenzene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
Benzene	192	15.0	4.68	ug/kg	1		04/26/21 15:24
Ethylbenzene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
Isopropylbenzene (Cumene)	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
Methyl-t-butyl ether	120 U	120	37.2	ug/kg	1		04/26/21 15:24
Naphthalene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
n-Butylbenzene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
o-Xylene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
P & M -Xylene	60.0 U	60.0	18.0	ug/kg	1		04/26/21 15:24
sec-Butylbenzene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
tert-Butylbenzene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
Toluene	30.0 U	30.0	9.36	ug/kg	1		04/26/21 15:24
Xylenes (total)	90.0 U	90.0	27.3	ug/kg	1		04/26/21 15:24
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	99	71-136		%	1		04/26/21 15:24
4-Bromofluorobenzene (surr)	77.9	55-151		%	1		04/26/21 15:24
Toluene-d8 (surr)	103	85-116		%	1		04/26/21 15:24

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 15:24  
Container ID: 1211896004-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 17:56  
Prep Initial Wt./Vol.: 97.694 g  
Prep Extract Vol: 45.9993 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B9-8 15-17.5

Client Sample ID: 17875 B9-8 15-17.5
Client Project ID: Hub
Lab Sample ID: 1211896005
Lab Project ID: 1211896

Collection Date: 04/13/21 19:40
Received Date: 04/23/21 16:43
Matrix: Soil/Solid (dry weight)
Solids (%):89.6
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons (PAHs) and their surrogate standards with associated quality and detection data.

Batch Information

Analytical Batch: XMS12573
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 04/26/21 18:18
Container ID: 1211896005-A

Prep Batch: XXX44676
Prep Method: SW3550C
Prep Date/Time: 04/26/21 12:52
Prep Initial Wt./Vol.: 22.717 g
Prep Extract Vol: 5 mL



Results of **17875 B9-8 15-17.5**

Client Sample ID: **17875 B9-8 15-17.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896005  
Lab Project ID: 1211896

Collection Date: 04/13/21 19:40  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.6  
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	22.1 U	22.1	6.87	mg/kg	1		04/26/21 15:59
<b>Surrogates</b>							
5a Androstane (surr)	93.7	50-150		%	1		04/26/21 15:59

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 15:59  
Container ID: 1211896005-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.228 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B9-8 15-17.5**

Client Sample ID: **17875 B9-8 15-17.5**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896005  
Lab Project ID: 1211896

Collection Date: 04/13/21 19:40  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.6  
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	1.84 U	1.84	0.553	mg/kg	1		04/26/21 22:43
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	72.1	50-150		%	1		04/26/21 22:43

**Batch Information**

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 22:43  
Container ID: 1211896005-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 19:40  
Prep Initial Wt./Vol.: 110.318 g  
Prep Extract Vol: 36.4543 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B9-8 15-17.5

Client Sample ID: 17875 B9-8 15-17.5  
Client Project ID: Hub  
Lab Sample ID: 1211896005  
Lab Project ID: 1211896

Collection Date: 04/13/21 19:40  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):89.6  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	36.9 U	36.9	11.1	ug/kg	1		04/26/21 15:40
1,2-Dibromoethane	0.737 U	0.737	0.295	ug/kg	1		04/26/21 15:40
1,2-Dichloroethane	2.21	1.47	0.516	ug/kg	1		04/26/21 15:40
1,3,5-Trimethylbenzene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
Benzene	16.0	9.22	2.88	ug/kg	1		04/26/21 15:40
Ethylbenzene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
Isopropylbenzene (Cumene)	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
Methyl-t-butyl ether	73.7 U	73.7	22.9	ug/kg	1		04/26/21 15:40
Naphthalene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
n-Butylbenzene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
o-Xylene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
P & M -Xylene	36.9 U	36.9	11.1	ug/kg	1		04/26/21 15:40
sec-Butylbenzene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
tert-Butylbenzene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
Toluene	18.4 U	18.4	5.75	ug/kg	1		04/26/21 15:40
Xylenes (total)	55.3 U	55.3	16.8	ug/kg	1		04/26/21 15:40
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		04/26/21 15:40
4-Bromofluorobenzene (surr)	82.9	55-151		%	1		04/26/21 15:40
Toluene-d8 (surr)	101	85-116		%	1		04/26/21 15:40

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 15:40  
Container ID: 1211896005-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 19:40  
Prep Initial Wt./Vol.: 110.318 g  
Prep Extract Vol: 36.4543 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B10-2 2-4

Client Sample ID: 17875 B10-2 2-4  
Client Project ID: Hub  
Lab Sample ID: 1211896006  
Lab Project ID: 1211896

Collection Date: 04/13/21 20:26  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
2-Methylnaphthalene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
Acenaphthene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
Acenaphthylene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
Anthracene	33.9	25.6	6.40	ug/kg	1		04/26/21 19:20
Benzo(a)Anthracene	73.3	25.6	6.40	ug/kg	1		04/26/21 19:20
Benzo[a]pyrene	66.7	25.6	6.40	ug/kg	1		04/26/21 19:20
Benzo[b]Fluoranthene	87.9	25.6	6.40	ug/kg	1		04/26/21 19:20
Benzo[g,h,i]perylene	37.8	25.6	6.40	ug/kg	1		04/26/21 19:20
Benzo[k]fluoranthene	30.2	25.6	6.40	ug/kg	1		04/26/21 19:20
Chrysene	73.9	25.6	6.40	ug/kg	1		04/26/21 19:20
Dibenzo[a,h]anthracene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
Fluoranthene	193	25.6	6.40	ug/kg	1		04/26/21 19:20
Fluorene	25.6 U	25.6	6.40	ug/kg	1		04/26/21 19:20
Indeno[1,2,3-c,d] pyrene	36.2	25.6	6.40	ug/kg	1		04/26/21 19:20
Naphthalene	20.5 U	20.5	5.12	ug/kg	1		04/26/21 19:20
Phenanthrene	106	25.6	6.40	ug/kg	1		04/26/21 19:20
Pyrene	136	25.6	6.40	ug/kg	1		04/26/21 19:20
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	76.2	58-103		%	1		04/26/21 19:20
Fluoranthene-d10 (surr)	83.8	54-113		%	1		04/26/21 19:20

Batch Information

Analytical Batch: XMS12573  
Analytical Method: 8270D SIM (PAH)  
Analyst: DSD  
Analytical Date/Time: 04/26/21 19:20  
Container ID: 1211896006-A

Prep Batch: XXX44676  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 12:52  
Prep Initial Wt./Vol.: 22.849 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B10-2 2-4**

Client Sample ID: **17875 B10-2 2-4**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896006  
Lab Project ID: 1211896

Collection Date: 04/13/21 20:26  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
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	20.7 U	20.7	6.41	mg/kg	1		04/26/21 18:08
<b>Surrogates</b>							
5a Androstane (surr)	105	50-150		%	1		04/26/21 18:08

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 18:08  
Container ID: 1211896006-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.176 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B10-2 2-4**

Client Sample ID: **17875 B10-2 2-4**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896006  
Lab Project ID: 1211896

Collection Date: 04/13/21 20:26  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
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	1.92 U	1.92	0.577	mg/kg	1		04/27/21 16:47
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	90.5	50-150		%	1		04/27/21 16:47

**Batch Information**

Analytical Batch: VFC15558  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/27/21 16:47  
Container ID: 1211896006-B

Prep Batch: VXX36980  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 20:26  
Prep Initial Wt./Vol.: 75.12 g  
Prep Extract Vol: 27.8291 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B10-2 2-4

Client Sample ID: 17875 B10-2 2-4  
Client Project ID: Hub  
Lab Sample ID: 1211896006  
Lab Project ID: 1211896

Collection Date: 04/13/21 20:26  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):96.2  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	38.5 U	38.5	11.5	ug/kg	1		04/26/21 15:55
1,2-Dibromoethane	0.770 U	0.770	0.308	ug/kg	1		04/26/21 15:55
1,2-Dichloroethane	1.54 U	1.54	0.539	ug/kg	1		04/26/21 15:55
1,3,5-Trimethylbenzene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
Benzene	9.62 U	9.62	3.00	ug/kg	1		04/26/21 15:55
Ethylbenzene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
Isopropylbenzene (Cumene)	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
Methyl-t-butyl ether	77.0 U	77.0	23.9	ug/kg	1		04/26/21 15:55
Naphthalene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
n-Butylbenzene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
o-Xylene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
P & M -Xylene	38.5 U	38.5	11.5	ug/kg	1		04/26/21 15:55
sec-Butylbenzene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
tert-Butylbenzene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
Toluene	19.2 U	19.2	6.01	ug/kg	1		04/26/21 15:55
Xylenes (total)	57.7 U	57.7	17.6	ug/kg	1		04/26/21 15:55
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	101	71-136		%	1		04/26/21 15:55
4-Bromofluorobenzene (surr)	90.6	55-151		%	1		04/26/21 15:55
Toluene-d8 (surr)	103	85-116		%	1		04/26/21 15:55

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 15:55  
Container ID: 1211896006-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 20:26  
Prep Initial Wt./Vol.: 75.12 g  
Prep Extract Vol: 27.8291 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-3 4-6

Client Sample ID: 17875 B6-3 4-6  
Client Project ID: Hub  
Lab Sample ID: 1211896007  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:43  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by Polynuclear Aromatics 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-Methylnaphthalene	333	133	33.1	ug/kg	5		04/27/21 00:07
2-Methylnaphthalene	449	133	33.1	ug/kg	5		04/27/21 00:07
Acenaphthene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Acenaphthylene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Anthracene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Benzo(a)Anthracene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Benzo[a]pyrene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Benzo[b]Fluoranthene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Benzo[g,h,i]perylene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Benzo[k]fluoranthene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Chrysene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Dibenzo[a,h]anthracene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Fluoranthene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Fluorene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Indeno[1,2,3-c,d] pyrene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Naphthalene	139	106	26.5	ug/kg	5		04/27/21 00:07
Phenanthrene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
Pyrene	133 U	133	33.1	ug/kg	5		04/27/21 00:07
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	89.4	58-103		%	5		04/27/21 00:07
Fluoranthene-d10 (surr)	74.4	54-113		%	5		04/27/21 00:07

Batch Information

Analytical Batch: XMS12573  
Analytical Method: 8270D SIM (PAH)  
Analyst: DSD  
Analytical Date/Time: 04/27/21 00:07  
Container ID: 1211896007-A

Prep Batch: XXX44676  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 12:52  
Prep Initial Wt./Vol.: 22.563 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-3 4-6**

Client Sample ID: **17875 B6-3 4-6**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896007  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:43  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
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	616	84.5	26.2	mg/kg	4		04/26/21 19:27
<b>Surrogates</b>							
5a Androstane (surr)	88.6	50-150		%	4		04/26/21 19:27

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 19:27  
Container ID: 1211896007-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.19 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-3 4-6**

Client Sample ID: **17875 B6-3 4-6**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896007  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:43  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
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	2.66	2.62	0.787	mg/kg	1		04/26/21 21:12
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	87.9	50-150		%	1		04/26/21 21:12

Batch Information

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 21:12  
Container ID: 1211896007-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:43  
Prep Initial Wt./Vol.: 57.608 g  
Prep Extract Vol: 28.4358 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-3 4-6

Client Sample ID: 17875 B6-3 4-6  
Client Project ID: Hub  
Lab Sample ID: 1211896007  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:43  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.0  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	52.5 U	52.5	15.7	ug/kg	1		04/26/21 16:11
1,2-Dibromoethane	1.05 U	1.05	0.420	ug/kg	1		04/26/21 16:11
1,2-Dichloroethane	2.10 U	2.10	0.735	ug/kg	1		04/26/21 16:11
1,3,5-Trimethylbenzene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
Benzene	125	13.1	4.09	ug/kg	1		04/26/21 16:11
Ethylbenzene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
Isopropylbenzene (Cumene)	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
Methyl-t-butyl ether	105 U	105	32.5	ug/kg	1		04/26/21 16:11
Naphthalene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
n-Butylbenzene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
o-Xylene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
P & M -Xylene	52.5 U	52.5	15.7	ug/kg	1		04/26/21 16:11
sec-Butylbenzene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
tert-Butylbenzene	26.2 U	26.2	8.19	ug/kg	1		04/26/21 16:11
Toluene	33.9	26.2	8.19	ug/kg	1		04/26/21 16:11
Xylenes (total)	78.7 U	78.7	23.9	ug/kg	1		04/26/21 16:11
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	71-136		%	1		04/26/21 16:11
4-Bromofluorobenzene (surr)	95.5	55-151		%	1		04/26/21 16:11
Toluene-d8 (surr)	102	85-116		%	1		04/26/21 16:11

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 16:11  
Container ID: 1211896007-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:43  
Prep Initial Wt./Vol.: 57.608 g  
Prep Extract Vol: 28.4358 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-3 14-16

Client Sample ID: 17875 B6-3 14-16
Client Project ID: Hub
Lab Sample ID: 1211896008
Lab Project ID: 1211896

Collection Date: 04/13/21 10:46
Received Date: 04/23/21 16:43
Matrix: Soil/Solid (dry weight)
Solids (%):94.4
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards with associated quality and detection data.

Batch Information

Analytical Batch: XMS12573
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 04/27/21 00:27
Container ID: 1211896008-A

Prep Batch: XXX44676
Prep Method: SW3550C
Prep Date/Time: 04/26/21 12:52
Prep Initial Wt./Vol.: 22.524 g
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-3 14-16**

Client Sample ID: **17875 B6-3 14-16**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896008  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:46  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by **Semivolatile Organic 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</u> <u>Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	250		21.1	6.53	mg/kg	1		04/26/21 19:17
<b>Surrogates</b>								
5a Androstane (surr)	83.3		50-150		%	1		04/26/21 19:17

**Batch Information**

Analytical Batch: XFC15900  
Analytical Method: AK102  
Analyst: A.A  
Analytical Date/Time: 04/26/21 19:17  
Container ID: 1211896008-A

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 04/26/21 10:39  
Prep Initial Wt./Vol.: 30.156 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:09PM



Results of **17875 B6-3 14-16**

Client Sample ID: **17875 B6-3 14-16**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896008  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:46  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
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</u>	<u>Date Analyzed</u>
Gasoline Range Organics	82.1		10.3	3.10	mg/kg	5		04/26/21 20:18
<b>Surrogates</b>								
4-Bromofluorobenzene (surr)	351	*	50-150		%	5		04/26/21 20:18

**Batch Information**

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 20:18  
Container ID: 1211896008-B

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:46  
Prep Initial Wt./Vol.: 74.8 g  
Prep Extract Vol: 29.1703 mL

Print Date: 04/30/2021 3:28:09PM



Results of 17875 B6-3 14-16

Client Sample ID: 17875 B6-3 14-16  
Client Project ID: Hub  
Lab Sample ID: 1211896008  
Lab Project ID: 1211896

Collection Date: 04/13/21 10:46  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.4  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

<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	1090	207	62.0	ug/kg	5		04/26/21 16:42
1,2-Dibromoethane	4.13 U	4.13	1.65	ug/kg	5		04/26/21 16:42
1,2-Dichloroethane	8.26 U	8.26	2.89	ug/kg	5		04/26/21 16:42
1,3,5-Trimethylbenzene	848	103	32.2	ug/kg	5		04/26/21 16:42
Benzene	198	51.6	16.1	ug/kg	5		04/26/21 16:42
Ethylbenzene	106	103	32.2	ug/kg	5		04/26/21 16:42
Isopropylbenzene (Cumene)	103 U	103	32.2	ug/kg	5		04/26/21 16:42
Methyl-t-butyl ether	413 U	413	128	ug/kg	5		04/26/21 16:42
Naphthalene	531	103	32.2	ug/kg	5		04/26/21 16:42
n-Butylbenzene	103 U	103	32.2	ug/kg	5		04/26/21 16:42
o-Xylene	268	103	32.2	ug/kg	5		04/26/21 16:42
P & M -Xylene	355	207	62.0	ug/kg	5		04/26/21 16:42
sec-Butylbenzene	112	103	32.2	ug/kg	5		04/26/21 16:42
tert-Butylbenzene	103 U	103	32.2	ug/kg	5		04/26/21 16:42
Toluene	103 U	103	32.2	ug/kg	5		04/26/21 16:42
Xylenes (total)	624	310	94.2	ug/kg	5		04/26/21 16:42
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	5		04/26/21 16:42
4-Bromofluorobenzene (surr)	165 *	55-151		%	5		04/26/21 16:42
Toluene-d8 (surr)	107	85-116		%	5		04/26/21 16:42

Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 16:42  
Container ID: 1211896008-B

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/13/21 10:46  
Prep Initial Wt./Vol.: 74.8 g  
Prep Extract Vol: 29.1703 mL

Print Date: 04/30/2021 3:28:09PM



**Results of 17875 STB**

Client Sample ID: **17875 STB**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896009  
Lab Project ID: 1211896

Collection Date: 04/12/21 16:00  
Received Date: 04/23/21 16:43  
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	2.51 U	2.51	0.754	mg/kg	1		04/26/21 17:17
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	83.5	50-150		%	1		04/26/21 17:17

**Batch Information**

Analytical Batch: VFC15554  
Analytical Method: AK101  
Analyst: MDT  
Analytical Date/Time: 04/26/21 17:17  
Container ID: 1211896009-A

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 04/12/21 16:00  
Prep Initial Wt./Vol.: 49.76 g  
Prep Extract Vol: 25 mL

Print Date: 04/30/2021 3:28:09PM



**Results of 17875 STB**

Client Sample ID: **17875 STB**  
Client Project ID: **Hub**  
Lab Sample ID: 1211896009  
Lab Project ID: 1211896

Collection Date: 04/12/21 16:00  
Received Date: 04/23/21 16:43  
Matrix: Soil/Solid (dry weight)  
Solids (%):  
Location:

**Results by Volatile GC/MS- Petroleum VOC Group**

<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	50.2 U	50.2	15.1	ug/kg	1		04/26/21 14:22
1,2-Dibromoethane	1.00 U	1.00	0.402	ug/kg	1		04/26/21 14:22
1,2-Dichloroethane	2.01 U	2.01	0.703	ug/kg	1		04/26/21 14:22
1,3,5-Trimethylbenzene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
Benzene	12.6 U	12.6	3.92	ug/kg	1		04/26/21 14:22
Ethylbenzene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
Isopropylbenzene (Cumene)	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
Methyl-t-butyl ether	100 U	100	31.1	ug/kg	1		04/26/21 14:22
Naphthalene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
n-Butylbenzene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
o-Xylene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
P & M -Xylene	50.2 U	50.2	15.1	ug/kg	1		04/26/21 14:22
sec-Butylbenzene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
tert-Butylbenzene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
Toluene	25.1 U	25.1	7.84	ug/kg	1		04/26/21 14:22
Xylenes (total)	75.4 U	75.4	22.9	ug/kg	1		04/26/21 14:22
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	99.5	71-136		%	1		04/26/21 14:22
4-Bromofluorobenzene (surr)	91.2	55-151		%	1		04/26/21 14:22
Toluene-d8 (surr)	102	85-116		%	1		04/26/21 14:22

**Batch Information**

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 04/26/21 14:22  
Container ID: 1211896009-A

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/12/21 16:00  
Prep Initial Wt./Vol.: 49.76 g  
Prep Extract Vol: 25 mL

Print Date: 04/30/2021 3:28:09PM



### Method Blank

Blank ID: MB for HBN 1818367 [SPT/11254]  
Blank Lab ID: 1607389

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### 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: SPT11254  
Analytical Method: SM21 2540G  
Instrument:  
Analyst: TMM  
Analytical Date/Time: 4/26/2021 5:20:00PM

Print Date: 04/30/2021 3:28:13PM



### Duplicate Sample Summary

Original Sample ID: 1211896008

Duplicate Sample ID: 1607390

QC for Samples:

1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

Analysis Date: 04/26/2021 17:20

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	94.4	94.3	%	0.09	(< 15 )

### Batch Information

Analytical Batch: SPT11254

Analytical Method: SM21 2540G

Instrument:

Analyst: TMM

Print Date: 04/30/2021 3:28:14PM



### Method Blank

Blank ID: MB for HBN 1818369 [VXX/36972]  
Blank Lab ID: 1607399

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211896001, 1211896003, 1211896004, 1211896005, 1211896007, 1211896008, 1211896009

### 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
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	93	50-150		%

### Batch Information

Analytical Batch: VFC15554  
Analytical Method: AK101  
Instrument: Agilent 7890 PID/FID  
Analyst: MDT  
Analytical Date/Time: 4/26/2021 4:04:00PM

Prep Batch: VXX36972  
Prep Method: SW5035A  
Prep Date/Time: 4/26/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/30/2021 3:28:18PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211896 [VXX36972]  
Blank Spike Lab ID: 1607400  
Date Analyzed: 04/26/2021 15:28

Spike Duplicate ID: LCSD for HBN 1211896 [VXX36972]  
Spike Duplicate Lab ID: 1607401  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896001, 1211896003, 1211896004, 1211896005, 1211896007, 1211896008, 1211896009

### 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	13.2	106	( 60-120 )	4.80	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		99	1.25		97	( 50-150 )	2.80	
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### Batch Information

Analytical Batch: **VFC15554**  
Analytical Method: **AK101**  
Instrument: **Agilent 7890 PID/FID**  
Analyst: **MDT**

Prep Batch: **VXX36972**  
Prep Method: **SW5035A**  
Prep Date/Time: **04/26/2021 06:00**  
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: 04/30/2021 3:28:20PM



### Method Blank

Blank ID: MB for HBN 1818462 [VXX/36976]  
Blank Lab ID: 1607541

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008, 1211896009

### Results by SW8260D

<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
1,2-Dibromoethane	0.500U	1.00	0.400	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	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
Xylenes (total)	37.5U	75.0	22.8	ug/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	97.3	71-136		%
4-Bromofluorobenzene (surr)	97.2	55-151		%
Toluene-d8 (surr)	101	85-116		%

### Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: S.S  
Analytical Date/Time: 4/26/2021 10:16:00AM

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 4/26/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 04/30/2021 3:28:23PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211896 [VXX36976]

Blank Spike Lab ID: 1607542

Date Analyzed: 04/26/2021 10:32

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008, 1211896009

### Results by SW8260D

#### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	793	106	( 75-123 )
1,2-Dibromoethane	750	788	105	( 78-122 )
1,2-Dichloroethane	750	747	100	( 73-128 )
1,3,5-Trimethylbenzene	750	797	106	( 73-124 )
Benzene	750	770	103	( 77-121 )
Ethylbenzene	750	779	104	( 76-122 )
Isopropylbenzene (Cumene)	750	783	104	( 68-134 )
Methyl-t-butyl ether	1130	1150	102	( 73-125 )
Naphthalene	750	820	109	( 62-129 )
n-Butylbenzene	750	800	107	( 70-128 )
o-Xylene	750	784	105	( 77-123 )
P & M -Xylene	1500	1550	103	( 77-124 )
sec-Butylbenzene	750	809	108	( 73-126 )
tert-Butylbenzene	750	800	107	( 73-125 )
Toluene	750	756	101	( 77-121 )
Xylenes (total)	2250	2330	104	( 78-124 )

#### Surrogates

1,2-Dichloroethane-D4 (surr)	750		100	( 71-136 )
4-Bromofluorobenzene (surr)	750		95	( 55-151 )
Toluene-d8 (surr)	750		100	( 85-116 )

### Batch Information

Analytical Batch: VMS20670  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: S.S

Prep Batch: VXX36976  
Prep Method: SW5035A  
Prep Date/Time: 04/26/2021 06:00  
Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL  
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 04/30/2021 3:28:25PM



### Matrix Spike Summary

Original Sample ID: 1607543  
 MS Sample ID: 1607544 MS  
 MSD Sample ID: 1607545 MSD

Analysis Date: 04/26/2021 14:53  
 Analysis Date: 04/26/2021 13:05  
 Analysis Date: 04/26/2021 13:20  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008, 1211896009

### Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	12.3U	370	397	107	370	383	104	75-123	3.50	(< 20)
1,2-Dibromoethane	0.247U	370	393	106	370	389	105	78-122	0.88	(< 20)
1,2-Dichloroethane	0.492U	370	367	99	370	368	100	73-128	0.10	(< 20)
1,3,5-Trimethylbenzene	6.15U	370	398	108	370	385	104	73-124	3.20	(< 20)
Benzene	3.08U	370	387	105	370	377	102	77-121	2.50	(< 20)
Ethylbenzene	5.30J	370	397	106	370	387	103	76-122	2.60	(< 20)
Isopropylbenzene (Cumene)	6.15U	370	398	108	370	381	103	68-134	4.40	(< 20)
Methyl-t-butyl ether	24.6U	554	562	101	554	572	103	73-125	1.80	(< 20)
Naphthalene	6.15U	370	410	111	370	417	113	62-129	1.70	(< 20)
n-Butylbenzene	6.15U	370	413	112	370	388	105	70-128	6.20	(< 20)
o-Xylene	6.15U	370	395	107	370	386	104	77-123	2.30	(< 20)
P & M -Xylene	11.5J	739	781	104	739	760	101	77-124	2.70	(< 20)
sec-Butylbenzene	6.15U	370	401	109	370	384	104	73-126	4.30	(< 20)
tert-Butylbenzene	6.15U	370	399	108	370	377	102	73-125	5.80	(< 20)
Toluene	7.27J	370	389	103	370	376	100	77-121	3.30	(< 20)
Xylenes (total)	11.5J	1110	1180	105	1110	1150	102	78-124	2.50	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		370	367	99	370	368	100	71-136	0.23	
4-Bromofluorobenzene (surr)		616	532	86	616	511	83	55-151	4.00	
Toluene-d8 (surr)		370	375	101	370	369	100	85-116	1.60	

### Batch Information

Analytical Batch: VMS20670  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: S.S  
 Analytical Date/Time: 4/26/2021 1:05:00PM

Prep Batch: VXX36976  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 4/26/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 101.48g  
 Prep Extract Vol: 25.00mL

Print Date: 04/30/2021 3:28:27PM



### Method Blank

Blank ID: MB for HBN 1818486 [VXX/36980]

Blank Lab ID: 1607618

QC for Samples:

1211896002, 1211896006

Matrix: Soil/Solid (dry weight)

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.21J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	89.6	50-150		%

### Batch Information

Analytical Batch: VFC15558

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: IJV

Analytical Date/Time: 4/27/2021 1:11:00PM

Prep Batch: VXX36980

Prep Method: SW5035A

Prep Date/Time: 4/27/2021 6:00:00AM

Prep Initial Wt./Vol.: 50 g

Prep Extract Vol: 25 mL

Print Date: 04/30/2021 3:28:29PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211896 [VXX36980]  
Blank Spike Lab ID: 1607619  
Date Analyzed: 04/27/2021 12:35

Spike Duplicate ID: LCSD for HBN 1211896 [VXX36980]  
Spike Duplicate Lab ID: 1607620  
Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896002, 1211896006

### 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	14.6	117	12.5	13.4	107	( 60-120 )	8.70	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		82	1.25		95	( 50-150 )	14.90	
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### Batch Information

Analytical Batch: **VFC15558**  
Analytical Method: **AK101**  
Instrument: **Agilent 7890A PID/FID**  
Analyst: **IJV**

Prep Batch: **VXX36980**  
Prep Method: **SW5035A**  
Prep Date/Time: **04/27/2021 06:00**  
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: 04/30/2021 3:28:32PM



### Method Blank

Blank ID: MB for HBN 1818346 [XXX/44675]  
Blank Lab ID: 1607304

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### 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
<b>Surrogates</b>				
5a Androstane (surr)	91	60-120		%

### Batch Information

Analytical Batch: XFC15900  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: A.A  
Analytical Date/Time: 4/26/2021 3:29:00PM

Prep Batch: XXX44675  
Prep Method: SW3550C  
Prep Date/Time: 4/26/2021 10:39:58AM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:34PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211896 [XXX44675]  
 Blank Spike Lab ID: 1607305  
 Date Analyzed: 04/26/2021 15:39

Spike Duplicate ID: LCSD for HBN 1211896 [XXX44675]  
 Spike Duplicate Lab ID: 1607306  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### 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	667	727	109	667	717	108	( 75-125 )	1.30	(< 20 )	
<b>Surrogates</b>										
5a Androstane (surr)	16.7		105	16.7		103	( 60-120 )	1.70		

### Batch Information

Analytical Batch: **XFC15900**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **A.A**

Prep Batch: **XXX44675**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **04/26/2021 10:39**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:37PM



### Method Blank

Blank ID: MB for HBN 1818352 [XXX/44676]  
Blank Lab ID: 1607319

Matrix: Soil/Solid (dry weight)

QC for Samples:

1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### Results by 8270D SIM (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/kg
Acenaphthene	12.5U	25.0	6.25	ug/kg
Acenaphthylene	12.5U	25.0	6.25	ug/kg
Anthracene	12.5U	25.0	6.25	ug/kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/kg
Chrysene	12.5U	25.0	6.25	ug/kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/kg
Fluoranthene	12.5U	25.0	6.25	ug/kg
Fluorene	12.5U	25.0	6.25	ug/kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/kg
Naphthalene	10.0U	20.0	5.00	ug/kg
Phenanthrene	12.5U	25.0	6.25	ug/kg
Pyrene	12.5U	25.0	6.25	ug/kg
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	74.2	58-103		%
Fluoranthene-d10 (surr)	82.7	54-113		%

### Batch Information

Analytical Batch: XMS12573  
Analytical Method: 8270D SIM (PAH)  
Instrument: Agilent GC 7890B/5977A SWA  
Analyst: DSD  
Analytical Date/Time: 4/26/2021 4:56:00PM

Prep Batch: XXX44676  
Prep Method: SW3550C  
Prep Date/Time: 4/26/2021 12:52:10PM  
Prep Initial Wt./Vol.: 22.5 g  
Prep Extract Vol: 5 mL

Print Date: 04/30/2021 3:28:39PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211896 [XXX44676]

Blank Spike Lab ID: 1607320

Date Analyzed: 04/26/2021 17:17

Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### Results by 8270D SIM (PAH)

#### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	89.0	80	( 43-111 )
2-Methylnaphthalene	111	88.5	80	( 39-114 )
Acenaphthene	111	87.6	79	( 44-111 )
Acenaphthylene	111	94.3	85	( 39-116 )
Anthracene	111	91.6	83	( 50-114 )
Benzo(a)Anthracene	111	78.3	71	( 54-122 )
Benzo[a]pyrene	111	91.9	83	( 50-125 )
Benzo[b]Fluoranthene	111	93.8	84	( 53-128 )
Benzo[g,h,i]perylene	111	88.3	80	( 49-127 )
Benzo[k]fluoranthene	111	93.2	84	( 56-123 )
Chrysene	111	91.9	83	( 57-118 )
Dibenzo[a,h]anthracene	111	90.7	82	( 50-129 )
Fluoranthene	111	95.2	86	( 55-119 )
Fluorene	111	90.5	82	( 47-114 )
Indeno[1,2,3-c,d] pyrene	111	94.1	85	( 49-130 )
Naphthalene	111	87.4	79	( 38-111 )
Phenanthrene	111	87.9	79	( 49-113 )
Pyrene	111	92.5	83	( 55-117 )
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	111		80	( 58-103 )
Fluoranthene-d10 (surr)	111		86	( 54-113 )

### Batch Information

Analytical Batch: XMS12573

Analytical Method: 8270D SIM (PAH)

Instrument: Agilent GC 7890B/5977A SWA

Analyst: DSD

Prep Batch: XXX44676

Prep Method: SW3550C

Prep Date/Time: 04/26/2021 12:52

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

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 04/30/2021 3:28:42PM



### Matrix Spike Summary

Original Sample ID: 1211896005  
 MS Sample ID: 1607321 MS  
 MSD Sample ID: 1607322 MSD

Analysis Date: 04/26/2021 18:18  
 Analysis Date: 04/26/2021 18:39  
 Analysis Date: 04/26/2021 18:59  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1211896001, 1211896002, 1211896003, 1211896004, 1211896005, 1211896006, 1211896007, 1211896008

### 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	27.6U	124	96.4	78	124	93.5	76	43-111	3.00	(< 20 )
2-Methylnaphthalene	27.6U	124	95.4	77	124	93.1	75	39-114	2.50	(< 20 )
Acenaphthene	27.6U	124	97.1	79	124	93.3	76	44-111	4.00	(< 20 )
Acenaphthylene	27.6U	124	106	86	124	101	82	39-116	4.40	(< 20 )
Anthracene	27.6U	124	102	83	124	99.4	81	50-114	2.60	(< 20 )
Benzo(a)Anthracene	27.6U	124	89.0	72	124	85.7	69	54-122	3.70	(< 20 )
Benzo[a]pyrene	27.6U	124	108	88	124	104	84	50-125	4.20	(< 20 )
Benzo[b]Fluoranthene	27.6U	124	107	86	124	99.0	80	53-128	7.40	(< 20 )
Benzo[g,h,i]perylene	27.6U	124	98.7	80	124	96.0	78	49-127	2.70	(< 20 )
Benzo[k]fluoranthene	27.6U	124	102	83	124	103	84	56-123	0.94	(< 20 )
Chrysene	27.6U	124	102	83	124	98.7	80	57-118	3.50	(< 20 )
Dibenzo[a,h]anthracene	27.6U	124	104	84	124	100	81	50-129	3.20	(< 20 )
Fluoranthene	27.6U	124	106	86	124	102	83	55-119	3.70	(< 20 )
Fluorene	27.6U	124	101	82	124	96.5	78	47-114	4.70	(< 20 )
Indeno[1,2,3-c,d] pyrene	27.6U	124	106	86	124	103	83	49-130	2.80	(< 20 )
Naphthalene	22.1U	124	96.1	78	124	92.9	75	38-111	3.30	(< 20 )
Phenanthrene	27.6U	124	97.0	79	124	94.0	76	49-113	3.10	(< 20 )
Pyrene	27.6U	124	104	84	124	99.2	80	55-117	4.60	(< 20 )
<b>Surrogates</b>										
2-Methylnaphthalene-d10 (surr)		124	96.1	78	124	93.2	75	58-103	3.10	
Fluoranthene-d10 (surr)		124	104	85	124	100	81	54-113	4.10	

### Batch Information

Analytical Batch: XMS12573  
 Analytical Method: 8270D SIM (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: DSD  
 Analytical Date/Time: 4/26/2021 6:39:00PM

Prep Batch: XXX44676  
 Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml  
 Prep Date/Time: 4/26/2021 12:52:10PM  
 Prep Initial Wt./Vol.: 22.62g  
 Prep Extract Vol: 5.00mL

Print Date: 04/30/2021 3:28:44PM





e-Sample Receipt Form

SGS Workorder #:

1211896



1 2 1 1 8 9 6

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>	<b>Yes</b>	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<b>N/A</b> **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 @ 3.2 °C Therm. ID: D45
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		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.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g,200.8/6020B).
<b>Volatile / LL-Hg Requirements</b>		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	Sample 1B had little MeOH volume.Proceeded to do in-house and scheduled 2X analyses.
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	No	
<b>Note to Client:</b> 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>
1211896001-A	No Preservative Required	OK			
1211896001-B	2x Methanol field pres. 4 C	OK			
1211896002-A	No Preservative Required	OK			
1211896002-B	Methanol field pres. 4 C	OK			
1211896003-A	No Preservative Required	OK			
1211896003-B	Methanol field pres. 4 C	OK			
1211896004-A	No Preservative Required	OK			
1211896004-B	Methanol field pres. 4 C	OK			
1211896005-A	No Preservative Required	OK			
1211896005-B	Methanol field pres. 4 C	OK			
1211896006-A	No Preservative Required	OK			
1211896006-B	Methanol field pres. 4 C	OK			
1211896007-A	No Preservative Required	OK			
1211896007-B	Methanol field pres. 4 C	OK			
1211896008-A	No Preservative Required	OK			
1211896008-B	Methanol field pres. 4 C	OK			
1211896009-A	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.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

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.

QN - Insufficient sample quantity provided.

## Laboratory Data Review Checklist

Completed By:

Hannah Deeney

Title:

Junior Engineer

Date:

May 6, 2021

Consultant Firm:

Environmental Management Inc. (EMI)

Laboratory Name:

SGS Alaska

Laboratory Report Number:

1211896

Laboratory Report Date:

April 30, 2021

CS Site Name:

Hub of Alaska, Inc.

ADEC File Number:

240.26.008

Hazard Identification Number:

23554

1211896

Laboratory Report Date:

April 30, 2021

CS Site Name:

Hub of Alaska, Inc.

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

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

Yes  No  N/A  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  N/A  Comments:

Samples were not transferred to another laboratory

2. Chain of Custody (CoC)

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

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

One sample had low methanol level upon arrival at lab, additional methanol was added at laboratory and analyzed for 2x methanol.

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CS Site Name:

Hub of Alaska, Inc.

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

Yes  No  N/A  Comments:

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  N/A  Comments:

e. Data quality or usability affected?

Comments:

Data quality and usability not affected.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

PAH LOQs in samples 17875 B7-4 4-6 and 17875 B6-3 14-16 were elevated due to sample dilution. Samples were diluted due to matrix interference.

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

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

Comments:

Data quality and usability not affected.

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5. Samples Results

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

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

LOQs above the Cleanup Level include: PAH compounds; Naphthalene in samples 17875 B7-4 4-6, and 17875 B6-3 14-16 and VOCs: 1,2-Dibromoethane in all samples, 1,2-Dichloroethane in samples 17875 B6-5 6-8 and 17875 B6-3 14-16, and Methyl-t-butyl ether in sample 17875 B6-3 14-16, and Naphthalene in sample 17875 B2-5 10-12.5.

e. Data quality or usability affected?

Samples 17875 B7-4 4-6, and 17875 B6-3 14-16 had multiple analytes with elevated LOQs due to sample dilution and matrix interference. 1,2-Dibromoethane has a Cleanup Level of 0.24 ug/kg and the detection levels for these samples range from 0.737 ug/kg to 1.67 ug/kg, with elevated sample dilution/matrix interference LOQs of 3.15 ug/kg and 4.13 ug/kg. Naphthalene (VOC) had an elevated LOQ in 17875 B2-5 10-12.5 (41.8 ug/kg above the cleanup level of 38 ug/kg). Due to the matrix interference in some samples and detects in the remaining samples, these elevated LOQs will not impact the quality or usability of this data.

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Laboratory Report Date:

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CS Site Name:

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6. QC Samples

a. Method Blank

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

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

NA

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

Yes  No  N/A  Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

Data quality and usability not affected.

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  N/A  Comments:

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

Yes  No  N/A  Comments:

No metals or inorganics submitted.

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CS Site Name:

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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

Comments:

NA

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

Yes  No  N/A  Comments:

No samples affected.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

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CS Site Name:

Hub of Alaska, Inc.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  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  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes  No  N/A  Comments:

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- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

4-Bromofluorobenzene has elevated %R in both VOC and GRO analyses for sample 17875 B6-3 14-16. This sample was diluted due to matrix interference elevated surrogate %R is expected with sample dilution.

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

Yes  No  N/A  Comments:

- iv. Data quality or usability affected?

Comments:

Matrix interference and sample dilution elevate surrogate %R due to the sample, not the method or analysis. Data quality and usability is not affected.

e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes  No  N/A  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  N/A  Comments:

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

All results were less than the LOQ, but 1,2-Dibromoethane LOQ (1.0 ug/kg) in the Trip Blank, and all samples, was above Cleanup Level of 0.24 ug/kg.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

All samples had LOQ above Cleanup Level for 1,2-Dibromoethane.

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Laboratory Report Date:

April 30, 2021

CS Site Name:

Hub of Alaska, Inc.

v. Data quality or usability affected?

Comments:

Due to detections of other analytes and relatively low LOQs that are close to the detection level for 1,2-Dibromoethane in all samples, the LOQ above Cleanup Level in the Trip Blank will not affect data quality or usability.

f. Field Duplicate

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

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (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  N/A  Comments:

GRO, DRO, PAH compounds 1-Methylmaphthalene, 1-Methylnaphthalene, and VOCs 1,2,4-Trimethylbenzene, 1,2-Dibromoethane, 1,2-Dichloroethane, 1,3,5-Trimethylbenzene, Ethylbenzene, Isopropylbenzene, Methyl-t-butyl ether, Naphthalene, Toluene, Xylenes (total), sec-Butylbenzene all had RPDs above 50%.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The dilution of the duplicate sample in order to run the sample accounts for the discrepancies in the RPDs of the parent and duplicate sample. Data quality and usability is not affected.

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

Yes  No  N/A  Comments:

No equipment/decon blank was collected.

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i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

NA

iii. Data quality or usability affected?

Comments:

Data quality and usability not affected.

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

a. Defined and appropriate?

Yes  No  N/A  Comments:

## Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)  
206 East Fireweed Lane Suite 201  
Anchorage, AK 99503  
(907)272-9336

Report Number: **1211897**

Client Project: **Hub**

Dear Hannah Deeney,

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 Alexandra 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.



Alexandra Daniel  
2021.05.25 16:39:45 -08'00'

Alexandra Daniel  
Project Manager  
Alexandra.Daniel@sgs.com

Date

### Case Narrative

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

SGS Project: **1211897**

Project Name/Site: **Hub**

Project Contact: **Hannah Deeney**

Refer to sample receipt form for information on sample condition.

**17875 MW3 (1211897003) PS**

8270D SIM - PAH surrogate recovery for Fluoranthene-d10 does not meet QC criteria. Insufficient volume for re-extraction.

**17875 On-Site (1211897005) PS**

SVOC was analyzed by Eurofins Test America of Denver, CO.

**17875 MW31 (1211897006) PS**

8270D SIM - PAH surrogate recovery for 2-Methylnaphthalene-d10 and Fluoranthene-d10 do not meet QC criteria. Insufficient volume for re-extraction.

\*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: 05/25/2021 2:15:20PM

### Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
<b>EPA 524.2</b>				
1607510	LLQC for HBN 1818456 [VXX/3697	VMS20669	Chloroethane	BLC

#### 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.

## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. 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 & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. 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	Analytical 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
TNTC	Too Numerous To Count
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>
17875 MW1	1211897001	04/20/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 MW2	1211897002	04/20/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 MW3	1211897003	04/20/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 WTB	1211897004	04/20/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 On-Site	1211897005	04/21/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 MW31	1211897006	04/20/2021	04/23/2021	Water (Surface, Eff., Ground)
17875 DWTB	1211897007	04/21/2021	04/23/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W) FULL
EPA 524.2	Volatile Organics by 524.2 (DW)

### Detectable Results Summary

Client Sample ID: **17875 MW1**

Lab Sample ID: 1211897001

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	1.11	ug/L
2-Methylnaphthalene	1.26	ug/L
Acenaphthene	0.0660	ug/L
Naphthalene	1.02	ug/L

**Volatile GC/MS- Petroleum VOC Group**

1,2,4-Trimethylbenzene	3.35	ug/L
1,3,5-Trimethylbenzene	1.47	ug/L
Naphthalene	2.30	ug/L
o-Xylene	1.36	ug/L
P & M -Xylene	2.21	ug/L
Xylenes (total)	3.57	ug/L

Client Sample ID: **17875 MW2**

Lab Sample ID: 1211897002

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.05	mg/L

Client Sample ID: **17875 MW3**

Lab Sample ID: 1211897003

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	9.32	ug/L
2-Methylnaphthalene	10.9	ug/L
Acenaphthene	0.162	ug/L
Fluorene	0.308	ug/L
Naphthalene	52.4	ug/L
Phenanthrene	0.220	ug/L

**Semivolatile Organic Fuels**

Diesel Range Organics	5.19	mg/L
-----------------------	------	------

**Volatile Fuels**

Gasoline Range Organics	8.64	mg/L
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**Volatile GC/MS- Petroleum VOC Group**

1,2,4-Trimethylbenzene	122	ug/L
1,2-Dibromoethane	7.53	ug/L
1,2-Dichloroethane	27.1	ug/L
1,3,5-Trimethylbenzene	16.9	ug/L
Benzene	1470	ug/L
Ethylbenzene	275	ug/L
Isopropylbenzene (Cumene)	21.5	ug/L
Naphthalene	54.7	ug/L
o-Xylene	288	ug/L
P & M -Xylene	478	ug/L
sec-Butylbenzene	2.89	ug/L
Toluene	855	ug/L
Xylenes (total)	767	ug/L

### Detectable Results Summary

Client Sample ID: **17875 On-Site**

Lab Sample ID: 1211897005

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,2-Dichloroethane	0.970	ug/L
Benzene	13.1	ug/L
Chloromethane	2.17	ug/L
P & M -Xylene	2.64	ug/L
Toluene	2.08	ug/L
Xylenes (total)	2.64	ug/L

Client Sample ID: **17875 MW31**

Lab Sample ID: 1211897006

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	37.0	ug/L
2-Methylnaphthalene	46.5	ug/L
Acenaphthene	0.514	ug/L
Fluorene	1.27	ug/L
Naphthalene	134	ug/L
Phenanthrene	0.810	ug/L

**Semivolatile Organic Fuels**

Diesel Range Organics	6.55	mg/L
-----------------------	------	------

**Volatile Fuels**

Gasoline Range Organics	6.83	mg/L
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**Volatile GC/MS- Petroleum VOC Group**

1,2,4-Trimethylbenzene	105	ug/L
1,2-Dibromoethane	8.91	ug/L
1,2-Dichloroethane	32.7	ug/L
1,3,5-Trimethylbenzene	16.5	ug/L
Benzene	1570	ug/L
Ethylbenzene	280	ug/L
Isopropylbenzene (Cumene)	22.0	ug/L
Naphthalene	32.9	ug/L
o-Xylene	311	ug/L
P & M -Xylene	521	ug/L
sec-Butylbenzene	2.91	ug/L
Toluene	944	ug/L
Xylenes (total)	833	ug/L



Results of 17875 MW1

Client Sample ID: 17875 MW1  
Client Project ID: Hub  
Lab Sample ID: 1211897001  
Lab Project ID: 1211897

Collection Date: 04/20/21 12:45  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by Polynuclear Aromatics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	1.11	0.0595	0.0179	ug/L	1		04/27/21 16:01
2-Methylnaphthalene	1.26	0.0595	0.0179	ug/L	1		04/27/21 16:01
Acenaphthene	0.0660	0.0595	0.0179	ug/L	1		04/27/21 16:01
Acenaphthylene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Anthracene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Benzo(a)Anthracene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Benzo[a]pyrene	0.0238 U	0.0238	0.00738	ug/L	1		04/27/21 16:01
Benzo[b]Fluoranthene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Benzo[g,h,i]perylene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Benzo[k]fluoranthene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Chrysene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Dibenzo[a,h]anthracene	0.0238 U	0.0238	0.00738	ug/L	1		04/27/21 16:01
Fluoranthene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Fluorene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Indeno[1,2,3-c,d] pyrene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Naphthalene	1.02	0.119	0.0369	ug/L	1		04/27/21 16:01
Phenanthrene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
Pyrene	0.0595 U	0.0595	0.0179	ug/L	1		04/27/21 16:01
<b>Surrogates</b>							
2-Methylnaphthalene-d10 (surr)	52.4	42-86		%	1		04/27/21 16:01
Fluoranthene-d10 (surr)	62.2	50-97		%	1		04/27/21 16:01

Batch Information

Analytical Batch: XMS12577  
Analytical Method: 8270D SIM LV (PAH)  
Analyst: DSD  
Analytical Date/Time: 04/27/21 16:01  
Container ID: 1211897001-I

Prep Batch: XXX44677  
Prep Method: SW3535A  
Prep Date/Time: 04/26/21 13:30  
Prep Initial Wt./Vol.: 210 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:27PM



Results of **17875 MW1**

Client Sample ID: **17875 MW1**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897001  
Lab Project ID: 1211897

Collection Date: 04/20/21 12:45  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
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	0.652 U	0.652	0.196	mg/L	1		04/27/21 15:46
<b>Surrogates</b>							
5a Androstane (surr)	88.5	50-150		%	1		04/27/21 15:46

**Batch Information**

Analytical Batch: XFC15901  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 04/27/21 15:46  
Container ID: 1211897001-A

Prep Batch: XXX44679  
Prep Method: SW3520C  
Prep Date/Time: 04/26/21 16:04  
Prep Initial Wt./Vol.: 230 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:27PM



Results of **17875 MW1**

Client Sample ID: **17875 MW1**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897001  
Lab Project ID: 1211897

Collection Date: 04/20/21 12:45  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
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	0.100 U	0.100	0.0310	mg/L	1		04/26/21 19:08
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	86.7	50-150		%	1		04/26/21 19:08

Batch Information

Analytical Batch: VFC15555  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/26/21 19:08  
Container ID: 1211897001-C

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 04/26/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 MW1

Client Sample ID: 17875 MW1  
Client Project ID: Hub  
Lab Sample ID: 1211897001  
Lab Project ID: 1211897

Collection Date: 04/20/21 12:45  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by Volatile GC/MS- Petroleum VOC Group

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	3.35	1.00	0.310	ug/L	1		04/28/21 20:25
1,2-Dibromoethane	0.0750 U	0.0750	0.0180	ug/L	1		04/28/21 20:25
1,2-Dichloroethane	0.500 U	0.500	0.150	ug/L	1		04/28/21 20:25
1,3,5-Trimethylbenzene	1.47	1.00	0.310	ug/L	1		04/28/21 20:25
Benzene	0.400 U	0.400	0.120	ug/L	1		04/28/21 20:25
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
Isopropylbenzene (Cumene)	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
Methyl-t-butyl ether	10.0 U	10.0	3.10	ug/L	1		04/28/21 20:25
Naphthalene	2.30	1.00	0.310	ug/L	1		04/28/21 20:25
n-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
o-Xylene	1.36	1.00	0.310	ug/L	1		04/28/21 20:25
P & M -Xylene	2.21	2.00	0.620	ug/L	1		04/28/21 20:25
sec-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
tert-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
Toluene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:25
Xylenes (total)	3.57	3.00	1.00	ug/L	1		04/28/21 20:25
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		04/28/21 20:25
4-Bromofluorobenzene (surr)	102	85-114		%	1		04/28/21 20:25
Toluene-d8 (surr)	100	89-112		%	1		04/28/21 20:25

Batch Information

Analytical Batch: VMS20674  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/28/21 20:25  
Container ID: 1211897001-F

Prep Batch: VXX36983  
Prep Method: SW5030B  
Prep Date/Time: 04/28/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of 17875 MW2

Client Sample ID: 17875 MW2
Client Project ID: Hub
Lab Sample ID: 1211897002
Lab Project ID: 1211897

Collection Date: 04/20/21 14:15
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards with associated quality and detection data.

Batch Information

Analytical Batch: XMS12577
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 04/27/21 16:22
Container ID: 1211897002-G

Prep Batch: XXX44677
Prep Method: SW3535A
Prep Date/Time: 04/26/21 13:30
Prep Initial Wt./Vol.: 172 mL
Prep Extract Vol: 1 mL



Results of **17875 MW2**

Client Sample ID: **17875 MW2**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897002  
Lab Project ID: 1211897

Collection Date: 04/20/21 14:15  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
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	1.05	0.750	0.225	mg/L	1		04/27/21 15:56
<b>Surrogates</b>							
5a Androstane (surr)	91	50-150		%	1		04/27/21 15:56

**Batch Information**

Analytical Batch: XFC15901  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 04/27/21 15:56  
Container ID: 1211897002-H

Prep Batch: XXX44679  
Prep Method: SW3520C  
Prep Date/Time: 04/26/21 16:04  
Prep Initial Wt./Vol.: 200 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:27PM



Results of **17875 MW2**

Client Sample ID: **17875 MW2**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897002  
Lab Project ID: 1211897

Collection Date: 04/20/21 14:15  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
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	0.100 U	0.100	0.0310	mg/L	1		04/26/21 19:26
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	84	50-150		%	1		04/26/21 19:26

Batch Information

Analytical Batch: VFC15555  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/26/21 19:26  
Container ID: 1211897002-A

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 04/26/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



**Results of 17875 MW2**

Client Sample ID: **17875 MW2**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897002  
Lab Project ID: 1211897

Collection Date: 04/20/21 14:15  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS- Petroleum VOC Group**

<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	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
1,2-Dibromoethane	0.0750 U	0.0750	0.0180	ug/L	1		04/28/21 20:41
1,2-Dichloroethane	0.500 U	0.500	0.150	ug/L	1		04/28/21 20:41
1,3,5-Trimethylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
Benzene	0.400 U	0.400	0.120	ug/L	1		04/28/21 20:41
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
Isopropylbenzene (Cumene)	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
Methyl-t-butyl ether	10.0 U	10.0	3.10	ug/L	1		04/28/21 20:41
Naphthalene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
n-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
o-Xylene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		04/28/21 20:41
sec-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
tert-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
Toluene	1.00 U	1.00	0.310	ug/L	1		04/28/21 20:41
Xylenes (total)	3.00 U	3.00	1.00	ug/L	1		04/28/21 20:41
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		04/28/21 20:41
4-Bromofluorobenzene (surr)	103	85-114		%	1		04/28/21 20:41
Toluene-d8 (surr)	98.9	89-112		%	1		04/28/21 20:41

**Batch Information**

Analytical Batch: VMS20674  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/28/21 20:41  
Container ID: 1211897002-D

Prep Batch: VXX36983  
Prep Method: SW5030B  
Prep Date/Time: 04/28/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 MW3

Client Sample ID: 17875 MW3
Client Project ID: Hub
Lab Sample ID: 1211897003
Lab Project ID: 1211897

Collection Date: 04/20/21 18:30
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards with associated quality and detection data.

Batch Information

Analytical Batch: XMS12577
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 04/27/21 19:26
Container ID: 1211897003-E

Prep Batch: XXX44677
Prep Method: SW3535A
Prep Date/Time: 04/26/21 13:30
Prep Initial Wt./Vol.: 162 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12581
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 04/28/21 20:28
Container ID: 1211897003-E

Prep Batch: XXX44677
Prep Method: SW3535A
Prep Date/Time: 04/26/21 13:30
Prep Initial Wt./Vol.: 162 mL
Prep Extract Vol: 1 mL



Results of **17875 MW3**

Client Sample ID: **17875 MW3**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897003  
Lab Project ID: 1211897

Collection Date: 04/20/21 18:30  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Semivolatile Organic 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</u>	<u>Date Analyzed</u>
Diesel Range Organics	5.19		0.938	0.281	mg/L	1		04/27/21 16:06
<b>Surrogates</b>								
5a Androstane (surr)	85.5		50-150		%	1		04/27/21 16:06

**Batch Information**

Analytical Batch: XFC15901  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 04/27/21 16:06  
Container ID: 1211897003-A

Prep Batch: XXX44679  
Prep Method: SW3520C  
Prep Date/Time: 04/26/21 16:04  
Prep Initial Wt./Vol.: 160 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:27PM



Results of **17875 MW3**

Client Sample ID: **17875 MW3**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897003  
Lab Project ID: 1211897

Collection Date: 04/20/21 18:30  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
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	8.64	2.00	0.620	mg/L	20		04/27/21 15:17
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	93.6	50-150		%	20		04/27/21 15:17

Batch Information

Analytical Batch: VFC15557  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/27/21 15:17  
Container ID: 1211897003-B

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 04/26/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 MW3

Client Sample ID: 17875 MW3
Client Project ID: Hub
Lab Sample ID: 1211897003
Lab Project ID: 1211897

Collection Date: 04/20/21 18:30
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS- Petroleum VOC Group

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include various hydrocarbons like 1,2,4-Trimethylbenzene, Benzene, Toluene, and Surrogates.

Batch Information

Analytical Batch: VMS20674
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 04/28/21 16:56
Container ID: 1211897003-C

Prep Batch: VXX36983
Prep Method: SW5030B
Prep Date/Time: 04/28/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS20674
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 04/28/21 20:57
Container ID: 1211897003-C

Prep Batch: VXX36983
Prep Method: SW5030B
Prep Date/Time: 04/28/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **17875 WTB**

Client Sample ID: **17875 WTB**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897004  
Lab Project ID: 1211897

Collection Date: 04/20/21 09:48  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
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	0.100 U	0.100	0.0310	mg/L	1		04/26/21 20:02
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	89.9	50-150		%	1		04/26/21 20:02

Batch Information

Analytical Batch: VFC15555  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/26/21 20:02  
Container ID: 1211897004-A

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 04/26/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 WTB

Client Sample ID: 17875 WTB
Client Project ID: Hub
Lab Sample ID: 1211897004
Lab Project ID: 1211897

Collection Date: 04/20/21 09:48
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS- Petroleum VOC Group

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include 1,2,4-Trimethylbenzene, 1,2-Dibromoethane, 1,2-Dichloroethane, 1,3,5-Trimethylbenzene, Benzene, Ethylbenzene, Isopropylbenzene (Cumene), Methyl-t-butyl ether, Naphthalene, n-Butylbenzene, o-Xylene, P & M -Xylene, sec-Butylbenzene, tert-Butylbenzene, Toluene, Xylenes (total), and Surrogates (1,2-Dichloroethane-D4, 4-Bromofluorobenzene, Toluene-d8).

Batch Information

Analytical Batch: VMS20674
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 04/28/21 17:45
Container ID: 1211897004-B

Prep Batch: VXX36983
Prep Method: SW5030B
Prep Date/Time: 04/28/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 17875 On-Site

Client Sample ID: 17875 On-Site
Client Project ID: Hub
Lab Sample ID: 1211897005
Lab Project ID: 1211897

Collection Date: 04/21/21 09:45
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 05/25/2021 2:15:27PM



Results of 17875 On-Site

Client Sample ID: 17875 On-Site
Client Project ID: Hub
Lab Sample ID: 1211897005
Lab Project ID: 1211897

Collection Date: 04/21/21 09:45
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Dibromochloromethane, Ethylbenzene, etc., with their respective results and limits.

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists surrogate compounds like 1,2-Dichloroethane-D4 (surr), 4-Bromofluorobenzene (surr), and Toluene-d8 (surr).

Batch Information

Analytical Batch: VMS20669
Analytical Method: EPA 524.2
Analyst: JMG
Analytical Date/Time: 04/26/21 22:28
Container ID: 1211897005-A

Prep Batch: VXX36975
Prep Method: SW5030B
Prep Date/Time: 04/26/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 MW31

Client Sample ID: 17875 MW31
Client Project ID: Hub
Lab Sample ID: 1211897006
Lab Project ID: 1211897

Collection Date: 04/20/21 18:35
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

Batch Information

Analytical Batch: XMS12577
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 04/27/21 19:47
Container ID: 1211897006-F

Prep Batch: XXX44677
Prep Method: SW3535A
Prep Date/Time: 04/26/21 13:30
Prep Initial Wt./Vol.: 158 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12581
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 04/28/21 20:48
Container ID: 1211897006-F

Prep Batch: XXX44677
Prep Method: SW3535A
Prep Date/Time: 04/26/21 13:30
Prep Initial Wt./Vol.: 158 mL
Prep Extract Vol: 1 mL



Results of **17875 MW31**

Client Sample ID: **17875 MW31**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897006  
Lab Project ID: 1211897

Collection Date: 04/20/21 18:35  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
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	6.55	0.938	0.281	mg/L	1		04/27/21 16:16
<b>Surrogates</b>							
5a Androstane (surr)	81	50-150		%	1		04/27/21 16:16

**Batch Information**

Analytical Batch: XFC15901  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 04/27/21 16:16  
Container ID: 1211897006-A

Prep Batch: XXX44679  
Prep Method: SW3520C  
Prep Date/Time: 04/26/21 16:04  
Prep Initial Wt./Vol.: 160 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:27PM



Results of **17875 MW31**

Client Sample ID: **17875 MW31**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897006  
Lab Project ID: 1211897

Collection Date: 04/20/21 18:35  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
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	6.83	2.00	0.620	mg/L	20		04/26/21 20:20
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	92.9	50-150		%	20		04/26/21 20:20

**Batch Information**

Analytical Batch: VFC15555  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 04/26/21 20:20  
Container ID: 1211897006-B

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 04/26/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



**Results of 17875 MW31**

Client Sample ID: **17875 MW31**  
Client Project ID: **Hub**  
Lab Sample ID: 1211897006  
Lab Project ID: 1211897

Collection Date: 04/20/21 18:35  
Received Date: 04/23/21 16:45  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS- Petroleum VOC Group**

<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	105	1.00	0.310	ug/L	1		04/28/21 16:08
1,2-Dibromoethane	8.91	0.0750	0.0180	ug/L	1		04/28/21 16:08
1,2-Dichloroethane	32.7	0.500	0.150	ug/L	1		04/28/21 16:08
1,3,5-Trimethylbenzene	16.5	1.00	0.310	ug/L	1		04/28/21 16:08
Benzene	1570	8.00	2.40	ug/L	20		04/29/21 18:09
Ethylbenzene	280	20.0	6.20	ug/L	20		04/29/21 18:09
Isopropylbenzene (Cumene)	22.0	1.00	0.310	ug/L	1		04/28/21 16:08
Methyl-t-butyl ether	10.0 U	10.0	3.10	ug/L	1		04/28/21 16:08
Naphthalene	32.9	1.00	0.310	ug/L	1		04/28/21 16:08
n-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 16:08
o-Xylene	311	20.0	6.20	ug/L	20		04/29/21 18:09
P & M -Xylene	521	40.0	12.4	ug/L	20		04/29/21 18:09
sec-Butylbenzene	2.91	1.00	0.310	ug/L	1		04/28/21 16:08
tert-Butylbenzene	1.00 U	1.00	0.310	ug/L	1		04/28/21 16:08
Toluene	944	20.0	6.20	ug/L	20		04/29/21 18:09
Xylenes (total)	833	60.0	20.0	ug/L	20		04/29/21 18:09
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	96.5	81-118		%	1		04/28/21 16:08
4-Bromofluorobenzene (surr)	95.1	85-114		%	1		04/28/21 16:08
Toluene-d8 (surr)	101	89-112		%	1		04/28/21 16:08

**Batch Information**

Analytical Batch: VMS20674  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/28/21 16:08  
Container ID: 1211897006-D

Prep Batch: VXX36983  
Prep Method: SW5030B  
Prep Date/Time: 04/28/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Analytical Batch: VMS20677  
Analytical Method: SW8260D  
Analyst: JMG  
Analytical Date/Time: 04/29/21 18:09  
Container ID: 1211897006-D

Prep Batch: VXX36986  
Prep Method: SW5030B  
Prep Date/Time: 04/29/21 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM



Results of 17875 DWTB

Client Sample ID: 17875 DWTB
Client Project ID: Hub
Lab Sample ID: 1211897007
Lab Project ID: 1211897

Collection Date: 04/21/21 09:00
Received Date: 04/23/21 16:45
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 05/25/2021 2:15:27PM



### Results of 17875 DWTB

Client Sample ID: **17875 DWTB**  
 Client Project ID: **Hub**  
 Lab Sample ID: 1211897007  
 Lab Project ID: 1211897

Collection Date: 04/21/21 09:00  
 Received Date: 04/23/21 16:45  
 Matrix: Water (Surface, Eff., Ground)  
 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</u>	<u>Date Analyzed</u>
Dibromochloromethane	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Dibromomethane	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Dichlorodifluoromethane	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Ethylbenzene	0.500 U	0.500	0.200	ug/L	1	(<700)	04/26/21 20:56
Hexachlorobutadiene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Isopropylbenzene (Cumene)	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Methylene chloride	0.500 U	0.500	0.400	ug/L	1	(<5)	04/26/21 20:56
Methyl-t-butyl ether	1.00 U	1.00	0.310	ug/L	1		04/26/21 20:56
Naphthalene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
n-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
n-Propylbenzene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
o-Xylene	0.500 U	0.500	0.200	ug/L	1		04/26/21 20:56
P & M -Xylene	0.500 U	0.500	0.400	ug/L	1		04/26/21 20:56
sec-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Styrene	0.500 U	0.500	0.200	ug/L	1	(<100)	04/26/21 20:56
tert-Butylbenzene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Tetrachloroethene	0.500 U	0.500	0.150	ug/L	1	(<5)	04/26/21 20:56
Toluene	0.500 U	0.500	0.200	ug/L	1	(<1000)	04/26/21 20:56
Total Trihalomethanes	2.00 U	2.00	0.600	ug/L	1	(<80)	04/26/21 20:56
trans-1,2-Dichloroethene	0.500 U	0.500	0.200	ug/L	1	(<100)	04/26/21 20:56
trans-1,3-Dichloropropene	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Trichloroethene	0.500 U	0.500	0.200	ug/L	1	(<5)	04/26/21 20:56
Trichlorofluoromethane	1.00 U	1.00	0.250	ug/L	1		04/26/21 20:56
Vinyl chloride	0.400 U	0.400	0.200	ug/L	1	(<2)	04/26/21 20:56
Xylenes (total)	0.500 U	0.500	0.500	ug/L	1	(<10000)	04/26/21 20:56

### Surrogates

1,2-Dichloroethane-D4 (surr)	103	70-130		%	1		04/26/21 20:56
4-Bromofluorobenzene (surr)	102	70-130		%	1		04/26/21 20:56
Toluene-d8 (surr)	101	70-130		%	1		04/26/21 20:56

### Batch Information

Analytical Batch: VMS20669  
 Analytical Method: EPA 524.2  
 Analyst: JMG  
 Analytical Date/Time: 04/26/21 20:56  
 Container ID: 1211897007-A

Prep Batch: VXX36975  
 Prep Method: SW5030B  
 Prep Date/Time: 04/26/21 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:27PM

## Method Blank

Blank ID: MB for HBN 1818373 [VXX/36973]  
Blank Lab ID: 1607409

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211897001, 1211897002, 1211897003, 1211897004, 1211897006

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	90.7	50-150		%

## Batch Information

Analytical Batch: VFC15555  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: IJV  
Analytical Date/Time: 4/26/2021 10:00:00AM

Prep Batch: VXX36973  
Prep Method: SW5030B  
Prep Date/Time: 4/26/2021 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [VXX36973]  
 Blank Spike Lab ID: 1607417  
 Date Analyzed: 04/26/2021 10:53

Spike Duplicate ID: LCSD for HBN 1211897 [VXX36973]  
 Spike Duplicate Lab ID: 1607418  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211897001, 1211897002, 1211897003, 1211897004, 1211897006

### Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	1.01	101	1.00	1.02	102	( 60-120 )	1.10	(< 20 )
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	0.0500		90	0.0500		91	( 50-150 )	0.91	

### Batch Information

Analytical Batch: **VFC15555**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890A PID/FID**  
 Analyst: **IJV**

Prep Batch: **VXX36973**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **04/26/2021 06:00**  
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:33PM

## Method Blank

Blank ID: MB for HBN 1818456 [VXX/36975]

Blank Lab ID: 1607508

QC for Samples:

1211897005, 1211897007

Matrix: Drinking Water

## Results by EPA 524.2

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,1-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1,2,2-Tetrachloroethane	0.500U	1.00	0.250	ug/L
1,1,2-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1-Dichloroethane	0.500U	1.00	0.250	ug/L
1,1-Dichloroethene	0.250U	0.500	0.150	ug/L
1,1-Dichloropropene	0.500U	1.00	0.250	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.250	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.250	ug/L
1,2,4-Trichlorobenzene	0.250U	0.500	0.150	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.250	ug/L
1,2-Dibromo-3-chloropropane	1.00U	2.00	0.620	ug/L
1,2-Dibromoethane	0.500U	1.00	0.250	ug/L
1,2-Dichlorobenzene	0.250U	0.500	0.250	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.250U	0.500	0.200	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.150	ug/L
1,3-Dichlorobenzene	0.250U	0.500	0.150	ug/L
1,3-Dichloropropane	0.500U	1.00	0.250	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.250	ug/L
2-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Chlorotoluene	0.500U	1.00	0.250	ug/L
4-Isopropyltoluene	0.500U	1.00	0.250	ug/L
Benzene	0.250U	0.500	0.200	ug/L
Bromobenzene	0.500U	1.00	0.250	ug/L
Bromochloromethane	0.500U	1.00	0.250	ug/L
Bromodichloromethane	0.500U	1.00	0.250	ug/L
Bromoform	0.250U	0.500	0.250	ug/L
Bromomethane	1.00U	2.00	0.620	ug/L
Carbon tetrachloride	0.250U	0.500	0.150	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.250	ug/L
Chloromethane	1.00U	2.00	0.600	ug/L
cis-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
cis-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Dibromochloromethane	0.500U	1.00	0.250	ug/L

Print Date: 05/25/2021 2:15:36PM

## Method Blank

Blank ID: MB for HBN 1818456 [VXX/36975]

Blank Lab ID: 1607508

QC for Samples:

1211897005, 1211897007

Matrix: Drinking Water

## Results by EPA 524.2

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Dibromomethane	0.500U	1.00	0.250	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.250	ug/L
Ethylbenzene	0.250U	0.500	0.200	ug/L
Hexachlorobutadiene	0.500U	1.00	0.250	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.250	ug/L
Methylene chloride	0.250U	0.500	0.400	ug/L
Methyl-t-butyl ether	0.500U	1.00	0.310	ug/L
Naphthalene	0.500U	1.00	0.250	ug/L
n-Butylbenzene	0.500U	1.00	0.250	ug/L
n-Propylbenzene	0.500U	1.00	0.250	ug/L
o-Xylene	0.250U	0.500	0.200	ug/L
P & M -Xylene	0.250U	0.500	0.400	ug/L
sec-Butylbenzene	0.500U	1.00	0.250	ug/L
Styrene	0.250U	0.500	0.200	ug/L
tert-Butylbenzene	0.500U	1.00	0.250	ug/L
Tetrachloroethene	0.250U	0.500	0.150	ug/L
Toluene	0.250U	0.500	0.200	ug/L
trans-1,2-Dichloroethene	0.250U	0.500	0.200	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.250	ug/L
Trichloroethene	0.250U	0.500	0.200	ug/L
Trichlorofluoromethane	0.500U	1.00	0.250	ug/L
Vinyl chloride	0.200U	0.400	0.200	ug/L

## Surrogates

1,2-Dichloroethane-D4 (surr)	101	70-130	%
4-Bromofluorobenzene (surr)	105	70-130	%
Toluene-d8 (surr)	100	70-130	%

## Batch Information

Analytical Batch: VMS20669  
 Analytical Method: EPA 524.2  
 Instrument: VSA Agilent GC/MS 7890B/5977A  
 Analyst: JMG  
 Analytical Date/Time: 4/26/2021 11:18:00AM

Prep Batch: VXX36975  
 Prep Method: SW5030B  
 Prep Date/Time: 4/26/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [VXX36975]  
 Blank Spike Lab ID: 1607509  
 Date Analyzed: 04/26/2021 15:55

Spike Duplicate ID: LCSD for HBN 1211897  
 [VXX36975]  
 Spike Duplicate Lab ID: 1607511  
 Matrix: Drinking Water

QC for Samples: 1211897005, 1211897007

### Results by EPA 524.2

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.8	103	30	31.5	105	( 70-130 )	2.20	(< 30 )
1,1,1-Trichloroethane	30	31.9	106	30	32.8	109	( 70-130 )	2.70	(< 30 )
1,1,2,2-Tetrachloroethane	30	31.3	104	30	29.6	99	( 70-130 )	5.40	(< 30 )
1,1,2-Trichloroethane	30	30.6	102	30	30.7	102	( 70-130 )	0.16	(< 30 )
1,1-Dichloroethane	30	31.3	104	30	31.6	105	( 70-130 )	0.83	(< 30 )
1,1-Dichloroethene	30	32.1	107	30	32.3	108	( 70-130 )	0.59	(< 30 )
1,1-Dichloropropene	30	31.6	105	30	32.3	108	( 70-130 )	2.20	(< 30 )
1,2,3-Trichlorobenzene	30	32.2	107	30	31.7	106	( 70-130 )	1.50	(< 30 )
1,2,3-Trichloropropane	30	31.4	105	30	29.3	98	( 70-130 )	7.10	(< 30 )
1,2,4-Trichlorobenzene	30	31.9	106	30	32.0	107	( 70-130 )	0.19	(< 30 )
1,2,4-Trimethylbenzene	30	32.3	108	30	33.2	111	( 70-130 )	2.70	(< 30 )
1,2-Dibromo-3-chloropropane	30	32.7	109	30	29.8	99	( 70-130 )	9.00	(< 30 )
1,2-Dibromoethane	30	31.4	105	30	31.0	103	( 70-130 )	1.20	(< 30 )
1,2-Dichlorobenzene	30	30.7	102	30	31.1	104	( 70-130 )	1.40	(< 30 )
1,2-Dichloroethane	30	29.6	99	30	30.0	100	( 70-130 )	1.20	(< 30 )
1,2-Dichloropropane	30	31.9	106	30	32.3	108	( 70-130 )	1.20	(< 30 )
1,3,5-Trimethylbenzene	30	32.6	109	30	32.5	108	( 70-130 )	0.52	(< 30 )
1,3-Dichlorobenzene	30	31.4	105	30	31.6	105	( 70-130 )	0.76	(< 30 )
1,3-Dichloropropane	30	31.0	103	30	31.0	103	( 70-130 )	0.07	(< 30 )
1,4-Dichlorobenzene	30	31.2	104	30	32.0	107	( 70-130 )	2.40	(< 30 )
2,2-Dichloropropane	30	32.3	108	30	32.0	107	( 70-130 )	0.81	(< 30 )
2-Chlorotoluene	30	32.0	107	30	32.1	107	( 70-130 )	0.25	(< 30 )
4-Chlorotoluene	30	32.2	107	30	32.1	107	( 70-130 )	0.34	(< 30 )
4-Isopropyltoluene	30	32.9	110	30	33.3	111	( 70-130 )	1.50	(< 30 )
Benzene	30	30.9	103	30	31.5	105	( 70-130 )	1.90	(< 30 )
Bromobenzene	30	31.5	105	30	31.5	105	( 70-130 )	0.06	(< 30 )
Bromochloromethane	30	31.2	104	30	29.8	99	( 70-130 )	4.50	(< 30 )
Bromodichloromethane	30	31.8	106	30	33.0	110	( 70-130 )	3.80	(< 30 )
Bromoform	30	32.6	109	30	32.2	107	( 70-130 )	1.30	(< 30 )
Bromomethane	30	33.5	112	30	32.4	108	( 70-130 )	3.30	(< 30 )
Carbon tetrachloride	30	32.6	109	30	33.4	111	( 70-130 )	2.30	(< 30 )
Chlorobenzene	30	30.8	103	30	31.4	105	( 70-130 )	1.70	(< 30 )
Chloroethane	30	29.9	100	30	31.1	104	( 70-130 )	3.90	(< 30 )
Chloroform	30	30.4	101	30	30.7	102	( 70-130 )	0.92	(< 30 )

Print Date: 05/25/2021 2:15:38PM



**Blank Spike Summary**

Blank Spike ID: LCS for HBN 1211897 [VXX36975]  
 Blank Spike Lab ID: 1607509  
 Date Analyzed: 04/26/2021 15:55

Spike Duplicate ID: LCSD for HBN 1211897  
 [VXX36975]  
 Spike Duplicate Lab ID: 1607511  
 Matrix: Drinking Water

QC for Samples: 1211897005, 1211897007

**Results by EPA 524.2**

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Chloromethane	30	28.7	96	30	28.9	96	( 70-130 )	0.38	(< 30 )
cis-1,2-Dichloroethene	30	31.1	104	30	31.9	106	( 70-130 )	2.80	(< 30 )
cis-1,3-Dichloropropene	30	32.9	110	30	33.0	110	( 70-130 )	0.52	(< 30 )
Dibromochloromethane	30	32.0	107	30	32.9	110	( 70-130 )	2.50	(< 30 )
Dibromomethane	30	30.9	103	30	31.0	103	( 70-130 )	0.29	(< 30 )
Dichlorodifluoromethane	30	25.9	86	30	26.1	87	( 70-130 )	0.58	(< 30 )
Ethylbenzene	30	31.9	106	30	32.2	107	( 70-130 )	0.91	(< 30 )
Hexachlorobutadiene	30	32.4	108	30	32.7	109	( 70-130 )	1.10	(< 30 )
Isopropylbenzene (Cumene)	30	32.7	109	30	32.9	110	( 70-130 )	0.49	(< 30 )
Methylene chloride	30	31.2	104	30	30.3	101	( 70-130 )	3.20	(< 30 )
Methyl-t-butyl ether	45	46.1	102	45	44.9	100	( 70-130 )	2.60	(< 30 )
Naphthalene	30	33.4	111	30	31.2	104	( 70-130 )	6.90	(< 30 )
n-Butylbenzene	30	32.9	110	30	33.4	111	( 70-130 )	1.50	(< 30 )
n-Propylbenzene	30	32.8	109	30	32.7	109	( 70-130 )	0.28	(< 30 )
o-Xylene	30	31.3	104	30	31.8	106	( 70-130 )	1.60	(< 30 )
P & M -Xylene	60	64.6	108	60	65.3	109	( 70-130 )	1.10	(< 30 )
sec-Butylbenzene	30	33.0	110	30	33.0	110	( 70-130 )	0.00	(< 30 )
Styrene	30	31.8	106	30	32.1	107	( 70-130 )	0.88	(< 30 )
tert-Butylbenzene	30	32.7	109	30	33.0	110	( 70-130 )	0.82	(< 30 )
Tetrachloroethene	30	31.6	105	30	32.3	108	( 70-130 )	2.30	(< 30 )
Toluene	30	30.1	100	30	30.8	103	( 70-130 )	2.30	(< 30 )
trans-1,2-Dichloroethene	30	31.6	105	30	32.2	107	( 70-130 )	1.80	(< 30 )
trans-1,3-Dichloropropene	30	32.6	109	30	33.0	110	( 70-130 )	1.50	(< 30 )
Trichloroethene	30	31.2	104	30	32.6	109	( 70-130 )	4.40	(< 30 )
Trichlorofluoromethane	30	30.6	102	30	32.7	109	( 70-130 )	6.40	(< 30 )
Vinyl chloride	30	31.1	104	30	31.3	104	( 70-130 )	0.83	(< 30 )

**Surrogates**

1,2-Dichloroethane-D4 (surr)	30		97	30		99	( 70-130 )	1.90	
4-Bromofluorobenzene (surr)	30		100	30		100	( 70-130 )	0.40	
Toluene-d8 (surr)	30		100	30		100	( 70-130 )	0.13	

Print Date: 05/25/2021 2:15:38PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [VXX36975]  
Blank Spike Lab ID: 1607509  
Date Analyzed: 04/26/2021 15:55

Spike Duplicate ID: LCSD for HBN 1211897 [VXX36975]  
Spike Duplicate Lab ID: 1607511  
Matrix: Drinking Water

QC for Samples: 1211897005, 1211897007

### Results by EPA 524.2

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			

### Batch Information

Analytical Batch: **VMS20669**  
Analytical Method: **EPA 524.2**  
Instrument: **VSA Agilent GC/MS 7890B/5977A**  
Analyst: **JMG**

Prep Batch: **VXX36975**  
Prep Method: **SW5030B**  
Prep Date/Time: **04/26/2021 06:00**  
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:38PM

## Method Blank

Blank ID: MB for HBN 1818532 [VXX/36983]  
 Blank Lab ID: 1607741

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1211897001, 1211897002, 1211897003, 1211897004, 1211897006

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	96.6	85-114		%
Toluene-d8 (surr)	98.4	89-112		%

## Batch Information

Analytical Batch: VMS20674  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JMG  
 Analytical Date/Time: 4/28/2021 12:23:00PM

Prep Batch: VXX36983  
 Prep Method: SW5030B  
 Prep Date/Time: 4/28/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [VXX36983]  
 Blank Spike Lab ID: 1607742  
 Date Analyzed: 04/28/2021 12:39

Spike Duplicate ID: LCSD for HBN 1211897 [VXX36983]  
 Spike Duplicate Lab ID: 1607743  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211897001, 1211897002, 1211897003, 1211897004, 1211897006

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	30	31.2	104	30	31.0	103	( 79-124 )	0.64	(< 20 )
1,2-Dibromoethane	30	30.2	101	30	29.5	98	( 77-121 )	2.50	(< 20 )
1,2-Dichloroethane	30	28.1	94	30	28.2	94	( 73-128 )	0.32	(< 20 )
1,3,5-Trimethylbenzene	30	31.2	104	30	29.9	100	( 75-124 )	4.40	(< 20 )
Benzene	30	28.2	94	30	28.8	96	( 79-120 )	2.30	(< 20 )
Ethylbenzene	30	29.5	99	30	29.9	100	( 79-121 )	1.20	(< 20 )
Isopropylbenzene (Cumene)	30	29.2	97	30	30.1	100	( 72-131 )	3.10	(< 20 )
Methyl-t-butyl ether	45	43.6	97	45	43.0	96	( 71-124 )	1.40	(< 20 )
Naphthalene	30	30.5	102	30	28.2	94	( 61-128 )	7.80	(< 20 )
n-Butylbenzene	30	31.9	106	30	31.8	106	( 75-128 )	0.38	(< 20 )
o-Xylene	30	29.0	97	30	29.1	97	( 78-122 )	0.55	(< 20 )
P & M -Xylene	60	59.4	99	60	57.2	95	( 80-121 )	3.80	(< 20 )
sec-Butylbenzene	30	30.4	101	30	31.4	105	( 77-126 )	3.20	(< 20 )
tert-Butylbenzene	30	31.0	103	30	31.7	106	( 78-124 )	2.00	(< 20 )
Toluene	30	27.7	92	30	27.7	92	( 80-121 )	0.18	(< 20 )
Xylenes (total)	90	88.3	98	90	86.3	96	( 79-121 )	2.30	(< 20 )

## Surrogates

1,2-Dichloroethane-D4 (surr)	30		99	30		99	( 81-118 )	0.37	
4-Bromofluorobenzene (surr)	30		103	30		101	( 85-114 )	1.60	
Toluene-d8 (surr)	30		100	30		99	( 89-112 )	1.40	

## Batch Information

Analytical Batch: VMS20674  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JMG

Prep Batch: VXX36983  
 Prep Method: SW5030B  
 Prep Date/Time: 04/28/2021 06:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1818567 [VXX/36986]  
 Blank Lab ID: 1607875

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1211897006

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	99.2	89-112		%

## Batch Information

Analytical Batch: VMS20677  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JMG  
 Analytical Date/Time: 4/29/2021 2:21:00PM

Prep Batch: VXX36986  
 Prep Method: SW5030B  
 Prep Date/Time: 4/29/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



**Leaching Blank**

Blank ID: LB for HBN 1818211 [TCLP/11118]  
Blank Lab ID: 1607187

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211897006

**Results by SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	97.2	85-114		%
Toluene-d8 (surr)	97.4	89-112		%

**Batch Information**

Analytical Batch: VMS20677  
Analytical Method: SW8260D  
Instrument: VPA 780/5975 GC/MS  
Analyst: JMG  
Analytical Date/Time: 4/29/2021 8:01:00PM

Prep Batch: VXX36986  
Prep Method: SW5030B  
Prep Date/Time: 4/29/2021 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:46PM

## Leaching Blank

Blank ID: LB for HBN 1818522 [TCLP/11128]  
 Blank Lab ID: 1607710

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
 1211897006

## Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	99.2	85-114		%
Toluene-d8 (surr)	98	89-112		%

## Batch Information

Analytical Batch: VMS20677  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JMG  
 Analytical Date/Time: 4/29/2021 8:17:00PM

Prep Batch: VXX36986  
 Prep Method: SW5030B  
 Prep Date/Time: 4/29/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [VXX36986]  
 Blank Spike Lab ID: 1607876  
 Date Analyzed: 04/29/2021 14:37

Spike Duplicate ID: LCSD for HBN 1211897  
 [VXX36986]  
 Spike Duplicate Lab ID: 1607877  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211897006

### Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	29.5	98	30	30.2	101	( 79-120 )	2.30	(< 20 )
Ethylbenzene	30	29.5	98	30	31.5	105	( 79-121 )	6.30	(< 20 )
o-Xylene	30	29.8	99	30	30.7	102	( 78-122 )	2.90	(< 20 )
P & M -Xylene	60	57.9	97	60	62.1	104	( 80-121 )	7.00	(< 20 )
Toluene	30	28.0	93	30	29.0	97	( 80-121 )	3.50	(< 20 )
Xylenes (total)	90	87.7	97	90	92.8	103	( 79-121 )	5.60	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30		102	30		102	( 81-118 )	0.23	
4-Bromofluorobenzene (surr)	30		100	30		100	( 85-114 )	0.03	
Toluene-d8 (surr)	30		98	30		99	( 89-112 )	1.10	

### Batch Information

Analytical Batch: VMS20677  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JMG

Prep Batch: VXX36986  
 Prep Method: SW5030B  
 Prep Date/Time: 04/29/2021 06:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 05/25/2021 2:15:49PM

## Method Blank

Blank ID: MB for HBN 1818353 [XXX/44677]

Blank Lab ID: 1607323

QC for Samples:

1211897001, 1211897002, 1211897003, 1211897006

Matrix: Water (Surface, Eff., Ground)

## Results by 8270D SIM LV (PAH)

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0354J	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
<b>Surrogates</b>				
2-Methylnaphthalene-d10 (surr)	59.8	42-86		%
Fluoranthene-d10 (surr)	70.7	50-97		%

## Batch Information

Analytical Batch: XMS12577  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: DSD  
 Analytical Date/Time: 4/27/2021 11:55:00AM

Prep Batch: XXX44677  
 Prep Method: SW3535A  
 Prep Date/Time: 4/26/2021 1:30:05PM  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [XXX44677]  
 Blank Spike Lab ID: 1607324  
 Date Analyzed: 04/27/2021 12:16

Spike Duplicate ID: LCSD for HBN 1211897 [XXX44677]  
 Spike Duplicate Lab ID: 1607325  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211897001, 1211897002, 1211897003, 1211897006

### Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.13	57	2	1.11	56	( 41-115 )	1.80	(< 20 )
2-Methylnaphthalene	2	1.10	55	2	1.07	54	( 39-114 )	2.90	(< 20 )
Acenaphthene	2	1.26	63	2	1.18	59	( 48-114 )	6.00	(< 20 )
Acenaphthylene	2	1.22	61	2	1.18	59	( 35-121 )	3.80	(< 20 )
Anthracene	2	1.32	66	2	1.22	61	( 53-119 )	8.00	(< 20 )
Benzo(a)Anthracene	2	1.31	65	2	1.25	62	( 59-120 )	4.50	(< 20 )
Benzo[a]pyrene	2	1.35	68	2	1.33	66	( 53-120 )	1.70	(< 20 )
Benzo[b]Fluoranthene	2	1.34	67	2	1.34	67	( 53-126 )	0.26	(< 20 )
Benzo[g,h,i]perylene	2	1.50	75	2	1.44	72	( 44-128 )	4.00	(< 20 )
Benzo[k]fluoranthene	2	1.42	71	2	1.30	65	( 54-125 )	8.70	(< 20 )
Chrysene	2	1.36	68	2	1.30	65	( 57-120 )	4.70	(< 20 )
Dibenzo[a,h]anthracene	2	1.56	78	2	1.52	76	( 44-131 )	2.90	(< 20 )
Fluoranthene	2	1.30	65	2	1.20	60	( 58-120 )	7.50	(< 20 )
Fluorene	2	1.32	66	2	1.21	61	( 50-118 )	8.30	(< 20 )
Indeno[1,2,3-c,d] pyrene	2	1.52	76	2	1.46	73	( 48-130 )	3.70	(< 20 )
Naphthalene	2	1.10	55	2	1.06	53	( 43-114 )	3.30	(< 20 )
Phenanthrene	2	1.34	67	2	1.22	61	( 53-115 )	9.50	(< 20 )
Pyrene	2	1.30	65	2	1.20	60	( 53-121 )	8.00	(< 20 )
<b>Surrogates</b>									
2-Methylnaphthalene-d10 (surr)	2		53	2		54	( 42-86 )	0.59	
Fluoranthene-d10 (surr)	2		66	2		64	( 50-97 )	4.20	

### Batch Information

Analytical Batch: XMS12577  
 Analytical Method: 8270D SIM LV (PAH)  
 Instrument: Agilent GC 7890B/5977A SWA  
 Analyst: DSD

Prep Batch: XXX44677  
 Prep Method: SW3535A  
 Prep Date/Time: 04/26/2021 13:30  
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:53PM

## Method Blank

Blank ID: MB for HBN 1818360 [XXX/44679]  
Blank Lab ID: 1607337

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1211897001, 1211897002, 1211897003, 1211897006

## Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
<b>Surrogates</b>				
5a Androstane (surr)	88.8	60-120		%

## Batch Information

Analytical Batch: XFC15901  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: IVM  
Analytical Date/Time: 4/27/2021 2:36:00PM

Prep Batch: XXX44679  
Prep Method: SW3520C  
Prep Date/Time: 4/26/2021 4:04:42PM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:56PM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1211897 [XXX44679]  
 Blank Spike Lab ID: 1607338  
 Date Analyzed: 04/27/2021 14:46

Spike Duplicate ID: LCSD for HBN 1211897  
 [XXX44679]  
 Spike Duplicate Lab ID: 1607339  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1211897001, 1211897002, 1211897003, 1211897006

### Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	20.4	102	20	19.4	97	( 75-125 )	5.00	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	0.4		107	0.4		106	( 60-120 )	0.68	

### Batch Information

Analytical Batch: **XFC15901**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **IVM**

Prep Batch: **XXX44679**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **04/26/2021 16:04**  
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 05/25/2021 2:15:59PM



SGS North America Inc. CHAIN OF CUSTODY RECORD

1211897



ions Nationwide Maryland New York Indiana Kentucky www.us.sgs.com

PH# 366008 AD

CLIENT: EMI  
 CONTACT: Hannah Deeney  
 PHONE NO: 907-272-9336  
 PROJECT NAME: Hub  
 REPORTS TO: Hannah Deeney  
 INVOICE TO: EMI  
 PROJECT/PWSID/PERMIT#:   
 E-MAIL: hdeeney@emi-alaska.com  
 QUOTE #:   
 P.O. #: 17875

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page 1 of 1

Section 3

#	CONTAINER	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative							REMARKS/ LOC ID
			HCl	HCl	HCl	None	HCl	None		
			DRO - AK 102	GRO - AK 101	VOCs (Petro)	PAH-8270	VOC-524	SVOC-525		
1AJ	17875 MW1	Water	X	X	X	X				
2AH	17875 MW2	Water	X	X	X	X				Low volume
3AF	17875 MW3	Water	X	X	X	X				Low volume
4AC	17875 WTB	Water		X	X					
5AD	17875 on-site	Water					X	X		
6AF	17875 MW31	Water	X	X	X	X				low volume
7AC	17875 DWTB	Water					X			

Section 4 DOD Project? Yes No Data Deliverable Requirements: Level 2  
 Cooler ID: 1 of 1  
 Requested Turnaround Time and/or Special Instructions: Standard  
 Temp Blank °C: 5.9 °C  
 Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Relinquished By: (1) Hannah Deeney Date: 4/20/21 Time: 17:00 Received By: [Signature]  
 Relinquished By: (2) [Signature] Date: 4/23/21 Time: 4:47 Received By: [Signature]  
 Relinquished By: (3) [Signature] Date: [ ] Time: [ ] Received By: [Signature]  
 Relinquished By: (4) [Signature] Date: 4/23/21 Time: 16:45 Received For Laboratory By: [Signature]



e-Sample Receipt Form

SGS Workorder #:

1211897



1 2 1 1 8 9 7

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		
Were Custody Seals intact? Note # & location	N/A	Absent, HD
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
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 @ 5.9 °C Therm. ID: D45
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		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	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		
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	Did not receive all containers listed on COC for samples 17875 MW2 and 17875 MW31. Only logged containers that were received.
**Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
N/A ***Exemption permitted for metals (e.g,200.8/6020B).		
Were proper containers (type/mass/volume/preservative***)used?	Yes	
<b>Volatile / LL-Hg Requirements</b>		
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)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
<b>Note to Client:</b> 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>
1211897001-A	HCL to pH < 2	OK			
1211897001-B	HCL to pH < 2	OK			
1211897001-C	HCL to pH < 2	OK			
1211897001-D	HCL to pH < 2	OK			
1211897001-E	HCL to pH < 2	OK			
1211897001-F	HCL to pH < 2	OK			
1211897001-G	HCL to pH < 2	OK			
1211897001-H	HCL to pH < 2	OK			
1211897001-I	No Preservative Required	OK			
1211897001-J	No Preservative Required	OK			
1211897002-A	HCL to pH < 2	OK			
1211897002-B	HCL to pH < 2	OK			
1211897002-C	HCL to pH < 2	OK			
1211897002-D	HCL to pH < 2	OK			
1211897002-E	HCL to pH < 2	OK			
1211897002-F	HCL to pH < 2	OK			
1211897002-G	No Preservative Required	OK			
1211897002-H	No Preservative Required	OK			
1211897002-I	No Preservative Required	OK			
1211897003-A	HCL to pH < 2	OK			
1211897003-B	HCL to pH < 2	OK			
1211897003-C	HCL to pH < 2	OK			
1211897003-D	HCL to pH < 2	OK			
1211897003-E	No Preservative Required	OK			
1211897004-A	HCL to pH < 2	OK			
1211897004-B	HCL to pH < 2	OK			
1211897004-C	HCL to pH < 2	OK			
1211897005-A	No Preservative Required	OK			
1211897005-B	No Preservative Required	OK			
1211897005-C	No Preservative Required	OK			
1211897005-D	No Preservative Required	OK			
1211897006-A	HCL to pH < 2	OK			
1211897006-B	HCL to pH < 2	OK			
1211897006-C	HCL to pH < 2	OK			
1211897006-D	HCL to pH < 2	OK			
1211897006-E	HCL to pH < 2	OK			
1211897006-F	No Preservative Required	OK			
1211897007-A	No Preservative Required	OK			
1211897007-B	No Preservative Required	OK			
1211897007-C	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.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

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.

QN - Insufficient sample quantity provided.

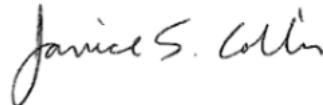
## ANALYTICAL REPORT

Eurofins TestAmerica, Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-147878-1  
Client Project/Site: SGS AK - 1211897

For:  
SGS North America, Inc  
200 W. Potter Drive  
Anchorage, Alaska 99518

Attn: Ms. Julie Shumway



Authorized for release by:  
5/13/2021 4:07:54 PM

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### LINKS

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*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Job ID: 280-147878-1**

**Laboratory: Eurofins TestAmerica, Denver**

## Narrative

### CASE NARRATIVE

**Client: SGS North America, Inc**

**Project: SGS AK - 1211897**

**Report Number: 280-147878-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The sample was received on 4/27/2021 9:25 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

### SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample 17875 On-Site (280-147878-1) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA Method 625. The samples were prepared on 04/28/2021 and analyzed on 05/12/2021.

The Method 625 surrogate recoveries Nitrobenzene-d5 were below control limits in the analysis of sample 17875 On-Site. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The Method 625 Method Blank exhibited a surrogate recovery of Nitrobenzene-d5 slightly below the lower control limit at 50% (control limits 52%-120%). All other surrogate recoveries were within QC control limits in the Method Blank. EPA surrogate guidelines for GC/MS SVOA is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. As sample analysis met these criteria, corrective action is deemed unnecessary.

The Method 625 LCS/LCSD exhibited recoveries of 1,2,4-Trichlorobenzene, 2-Chloronaphthalene and Hexachloroethane below the lower control limit. Because the 7-day holding time expired, re-extraction and reanalysis were not performed.

The method required MS/MSD could not be performed for Method 625 due to insufficient sample volume, however, a LCS/LCSD pair was analyzed to demonstrate method precision and accuracy.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Client Sample ID: 17875 On-Site**

**Lab Sample ID: 280-147878-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	1.1	J	11	0.61	ug/L	1		625	Total/NA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

# Method Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

Method	Method Description	Protocol	Laboratory
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL DEN
625	Liquid-Liquid Extraction	40CFR136A	TAL DEN

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



# Sample Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-147878-1	17875 On-Site	Water	04/21/21 09:45	04/27/21 09:25	

---

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Client Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Client Sample ID: 17875 On-Site**

**Date Collected: 04/21/21 09:45**

**Date Received: 04/27/21 09:25**

**Lab Sample ID: 280-147878-1**

**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	*-	11	0.65	ug/L		04/28/21 13:33	05/12/21 02:11	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		11	0.25	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,2'-Oxybis(1-chloropropane)	ND		11	0.31	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,4,6-Trichlorophenol	ND		22	0.32	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,4-Dichlorophenol	ND		11	0.70	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,4-Dimethylphenol	ND		11	0.64	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,4-Dinitrophenol	ND		66	11	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,4-Dinitrotoluene	ND		11	1.8	ug/L		04/28/21 13:33	05/12/21 02:11	1
2,6-Dinitrotoluene	ND		11	2.1	ug/L		04/28/21 13:33	05/12/21 02:11	1
2-Chloronaphthalene	ND	*-	11	0.28	ug/L		04/28/21 13:33	05/12/21 02:11	1
2-Chlorophenol	ND		11	2.2	ug/L		04/28/21 13:33	05/12/21 02:11	1
2-Methylphenol	ND		11	1.1	ug/L		04/28/21 13:33	05/12/21 02:11	1
2-Nitrophenol	ND		22	0.43	ug/L		04/28/21 13:33	05/12/21 02:11	1
3 & 4 Methylphenol	ND		11	0.27	ug/L		04/28/21 13:33	05/12/21 02:11	1
3,3'-Dichlorobenzidine	ND		55	2.2	ug/L		04/28/21 13:33	05/12/21 02:11	1
4,6-Dinitro-2-methylphenol	ND		66	4.4	ug/L		04/28/21 13:33	05/12/21 02:11	1
4-Bromophenyl phenyl ether	ND		11	0.47	ug/L		04/28/21 13:33	05/12/21 02:11	1
4-Chloro-3-methylphenol	ND		11	2.6	ug/L		04/28/21 13:33	05/12/21 02:11	1
4-Chlorophenyl phenyl ether	ND		11	1.8	ug/L		04/28/21 13:33	05/12/21 02:11	1
4-Nitrophenol	ND		55	1.3	ug/L		04/28/21 13:33	05/12/21 02:11	1
Acenaphthene	ND		11	0.31	ug/L		04/28/21 13:33	05/12/21 02:11	1
Acenaphthylene	ND		11	0.54	ug/L		04/28/21 13:33	05/12/21 02:11	1
Anthracene	ND		11	0.46	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzidine	ND		160	55	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzo[a]anthracene	ND		11	0.38	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzo[a]pyrene	ND		11	0.34	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzo[b]fluoranthene	ND		11	0.58	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzo[g,h,i]perylene	ND		11	0.55	ug/L		04/28/21 13:33	05/12/21 02:11	1
Benzo[k]fluoranthene	ND		11	0.50	ug/L		04/28/21 13:33	05/12/21 02:11	1
Bis(2-chloroethoxy)methane	ND		11	1.1	ug/L		04/28/21 13:33	05/12/21 02:11	1
Bis(2-chloroethyl)ether	ND		11	0.91	ug/L		04/28/21 13:33	05/12/21 02:11	1
<b>Bis(2-ethylhexyl) phthalate</b>	<b>1.1</b>	<b>J</b>	11	0.61	ug/L		04/28/21 13:33	05/12/21 02:11	1
Butyl benzyl phthalate	ND		11	1.1	ug/L		04/28/21 13:33	05/12/21 02:11	1
Chrysene	ND		11	0.59	ug/L		04/28/21 13:33	05/12/21 02:11	1
Dibenz(a,h)anthracene	ND		11	0.56	ug/L		04/28/21 13:33	05/12/21 02:11	1
Diethyl phthalate	ND		11	0.42	ug/L		04/28/21 13:33	05/12/21 02:11	1
Dimethyl phthalate	ND		11	0.23	ug/L		04/28/21 13:33	05/12/21 02:11	1
Di-n-butyl phthalate	ND		11	1.3	ug/L		04/28/21 13:33	05/12/21 02:11	1
Di-n-octyl phthalate	ND		11	0.38	ug/L		04/28/21 13:33	05/12/21 02:11	1
Fluoranthene	ND		11	0.22	ug/L		04/28/21 13:33	05/12/21 02:11	1
Fluorene	ND		11	0.34	ug/L		04/28/21 13:33	05/12/21 02:11	1
Hexachlorobenzene	ND		11	0.72	ug/L		04/28/21 13:33	05/12/21 02:11	1
Hexachlorobutadiene	ND		11	3.6	ug/L		04/28/21 13:33	05/12/21 02:11	1
Hexachlorocyclopentadiene	ND		55	3.4	ug/L		04/28/21 13:33	05/12/21 02:11	1
Hexachloroethane	ND	*-	11	1.1	ug/L		04/28/21 13:33	05/12/21 02:11	1
Indeno[1,2,3-cd]pyrene	ND		11	0.71	ug/L		04/28/21 13:33	05/12/21 02:11	1
Isophorone	ND		11	0.23	ug/L		04/28/21 13:33	05/12/21 02:11	1
Naphthalene	ND		11	0.32	ug/L		04/28/21 13:33	05/12/21 02:11	1
Nitrobenzene	ND		11	0.89	ug/L		04/28/21 13:33	05/12/21 02:11	1

Eurofins TestAmerica, Denver

# Client Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: 17875 On-Site**  
**Date Collected: 04/21/21 09:45**  
**Date Received: 04/27/21 09:25**

**Lab Sample ID: 280-147878-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodimethylamine	ND		11	0.32	ug/L		04/28/21 13:33	05/12/21 02:11	1
N-Nitrosodi-n-propylamine	ND		11	0.38	ug/L		04/28/21 13:33	05/12/21 02:11	1
N-Nitrosodiphenylamine	ND		11	0.48	ug/L		04/28/21 13:33	05/12/21 02:11	1
Pentachlorophenol	ND		66	22	ug/L		04/28/21 13:33	05/12/21 02:11	1
Phenanthrene	ND		11	0.28	ug/L		04/28/21 13:33	05/12/21 02:11	1
Phenol	ND		11	2.2	ug/L		04/28/21 13:33	05/12/21 02:11	1
Pyrene	ND		11	0.41	ug/L		04/28/21 13:33	05/12/21 02:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		16 - 147	04/28/21 13:33	05/12/21 02:11	1
2-Fluorobiphenyl	45		43 - 120	04/28/21 13:33	05/12/21 02:11	1
2-Fluorophenol	36		16 - 136	04/28/21 13:33	05/12/21 02:11	1
Nitrobenzene-d5	38	S1-	52 - 120	04/28/21 13:33	05/12/21 02:11	1
Phenol-d5	45		11 - 145	04/28/21 13:33	05/12/21 02:11	1
Terphenyl-d14	55		10 - 145	04/28/21 13:33	05/12/21 02:11	1

# Surrogate Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP	FBP	2FP	NBZ	PHL	TPHL
		(16-147)	(43-120)	(16-136)	(52-120)	(11-145)	(10-145)
280-147878-1	17875 On-Site	78	45	36	38 S1-	45	55
LCS 280-534177/2-A	Lab Control Sample	85	75	66	74	69	84
LCSD 280-534177/3-A	Lab Control Sample Dup	86	67	61	67	64	83
MB 280-534177/1-A	Method Blank	72	46	43	50 S1-	44	77

### Surrogate Legend

TBP = 2,4,6-Tribromophenol

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPHL = Terphenyl-d14

# QC Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-534177/1-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	ND		10	0.59	ug/L		04/28/21 13:33	05/12/21 01:08	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		10	0.23	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,2'-Oxybis(1-chloropropane)	ND		10	0.28	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,4,6-Trichlorophenol	ND		20	0.29	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,4-Dichlorophenol	ND		10	0.64	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,4-Dimethylphenol	ND		10	0.58	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,4-Dinitrophenol	ND		60	10	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,4-Dinitrotoluene	ND		10	1.7	ug/L		04/28/21 13:33	05/12/21 01:08	1
2,6-Dinitrotoluene	ND		10	1.9	ug/L		04/28/21 13:33	05/12/21 01:08	1
2-Chloronaphthalene	ND		10	0.26	ug/L		04/28/21 13:33	05/12/21 01:08	1
2-Chlorophenol	ND		10	2.0	ug/L		04/28/21 13:33	05/12/21 01:08	1
2-Methylphenol	ND		10	0.98	ug/L		04/28/21 13:33	05/12/21 01:08	1
2-Nitrophenol	ND		20	0.39	ug/L		04/28/21 13:33	05/12/21 01:08	1
3 & 4 Methylphenol	ND		10	0.25	ug/L		04/28/21 13:33	05/12/21 01:08	1
3,3'-Dichlorobenzidine	ND		50	2.0	ug/L		04/28/21 13:33	05/12/21 01:08	1
4,6-Dinitro-2-methylphenol	ND		60	4.0	ug/L		04/28/21 13:33	05/12/21 01:08	1
4-Bromophenyl phenyl ether	ND		10	0.43	ug/L		04/28/21 13:33	05/12/21 01:08	1
4-Chloro-3-methylphenol	ND		10	2.4	ug/L		04/28/21 13:33	05/12/21 01:08	1
4-Chlorophenyl phenyl ether	ND		10	1.7	ug/L		04/28/21 13:33	05/12/21 01:08	1
4-Nitrophenol	ND		50	1.2	ug/L		04/28/21 13:33	05/12/21 01:08	1
Acenaphthene	ND		10	0.28	ug/L		04/28/21 13:33	05/12/21 01:08	1
Acenaphthylene	ND		10	0.49	ug/L		04/28/21 13:33	05/12/21 01:08	1
Anthracene	ND		10	0.42	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzidine	ND		150	50	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzo[a]anthracene	ND		10	0.35	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzo[a]pyrene	ND		10	0.31	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzo[b]fluoranthene	ND		10	0.53	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzo[g,h,i]perylene	ND		10	0.50	ug/L		04/28/21 13:33	05/12/21 01:08	1
Benzo[k]fluoranthene	ND		10	0.46	ug/L		04/28/21 13:33	05/12/21 01:08	1
Bis(2-chloroethoxy)methane	ND		10	0.97	ug/L		04/28/21 13:33	05/12/21 01:08	1
Bis(2-chloroethyl)ether	ND		10	0.83	ug/L		04/28/21 13:33	05/12/21 01:08	1
Bis(2-ethylhexyl) phthalate	ND		10	0.56	ug/L		04/28/21 13:33	05/12/21 01:08	1
Butyl benzyl phthalate	ND		10	1.0	ug/L		04/28/21 13:33	05/12/21 01:08	1
Chrysene	ND		10	0.54	ug/L		04/28/21 13:33	05/12/21 01:08	1
Dibenz(a,h)anthracene	ND		10	0.51	ug/L		04/28/21 13:33	05/12/21 01:08	1
Diethyl phthalate	ND		10	0.38	ug/L		04/28/21 13:33	05/12/21 01:08	1
Dimethyl phthalate	ND		10	0.21	ug/L		04/28/21 13:33	05/12/21 01:08	1
Di-n-butyl phthalate	ND		10	1.2	ug/L		04/28/21 13:33	05/12/21 01:08	1
Di-n-octyl phthalate	ND		10	0.35	ug/L		04/28/21 13:33	05/12/21 01:08	1
Fluoranthene	ND		10	0.20	ug/L		04/28/21 13:33	05/12/21 01:08	1
Fluorene	ND		10	0.31	ug/L		04/28/21 13:33	05/12/21 01:08	1
Hexachlorobenzene	ND		10	0.66	ug/L		04/28/21 13:33	05/12/21 01:08	1
Hexachlorobutadiene	ND		10	3.3	ug/L		04/28/21 13:33	05/12/21 01:08	1
Hexachlorocyclopentadiene	ND		50	3.1	ug/L		04/28/21 13:33	05/12/21 01:08	1
Hexachloroethane	ND		10	0.98	ug/L		04/28/21 13:33	05/12/21 01:08	1
Indeno[1,2,3-cd]pyrene	ND		10	0.65	ug/L		04/28/21 13:33	05/12/21 01:08	1
Isophorone	ND		10	0.21	ug/L		04/28/21 13:33	05/12/21 01:08	1
Naphthalene	ND		10	0.29	ug/L		04/28/21 13:33	05/12/21 01:08	1

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 280-534177/1-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		10	0.81	ug/L		04/28/21 13:33	05/12/21 01:08	1
N-Nitrosodimethylamine	ND		10	0.29	ug/L		04/28/21 13:33	05/12/21 01:08	1
N-Nitrosodi-n-propylamine	ND		10	0.35	ug/L		04/28/21 13:33	05/12/21 01:08	1
N-Nitrosodiphenylamine	ND		10	0.44	ug/L		04/28/21 13:33	05/12/21 01:08	1
Pentachlorophenol	ND		60	20	ug/L		04/28/21 13:33	05/12/21 01:08	1
Phenanthrene	ND		10	0.26	ug/L		04/28/21 13:33	05/12/21 01:08	1
Phenol	ND		10	2.0	ug/L		04/28/21 13:33	05/12/21 01:08	1
Pyrene	ND		10	0.37	ug/L		04/28/21 13:33	05/12/21 01:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	72		16 - 147	04/28/21 13:33	05/12/21 01:08	1
2-Fluorobiphenyl	46		43 - 120	04/28/21 13:33	05/12/21 01:08	1
2-Fluorophenol	43		16 - 136	04/28/21 13:33	05/12/21 01:08	1
Nitrobenzene-d5	50	S1-	52 - 120	04/28/21 13:33	05/12/21 01:08	1
Phenol-d5	44		11 - 145	04/28/21 13:33	05/12/21 01:08	1
Terphenyl-d14	77		10 - 145	04/28/21 13:33	05/12/21 01:08	1

**Lab Sample ID: LCS 280-534177/2-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,2,4-Trichlorobenzene	80.0	40.9		ug/L		51	44 - 142
2,2'-Oxybis(1-chloropropane)	80.0	53.5		ug/L		67	36 - 166
2,4,6-Trichlorophenol	80.0	63.5		ug/L		79	37 - 144
2,4-Dichlorophenol	80.0	61.5		ug/L		77	39 - 135
2,4-Dimethylphenol	80.0	51.8		ug/L		65	32 - 119
2,4-Dinitrophenol	160	127		ug/L		80	10 - 191
2,4-Dinitrotoluene	80.0	66.1		ug/L		83	39 - 139
2,6-Dinitrotoluene	80.0	66.4		ug/L		83	50 - 158
2-Chloronaphthalene	80.0	54.8		ug/L		68	60 - 118
2-Chlorophenol	80.0	55.2		ug/L		69	23 - 134
2-Methylphenol	80.0	56.9		ug/L		71	51 - 108
2-Nitrophenol	80.0	62.2		ug/L		78	29 - 182
3,3'-Dichlorobenzidine	160	137		ug/L		85	10 - 262
4,6-Dinitro-2-methylphenol	160	130		ug/L		81	10 - 181
4-Bromophenyl phenyl ether	80.0	64.7		ug/L		81	53 - 127
4-Chloro-3-methylphenol	80.0	65.9		ug/L		82	22 - 147
4-Chlorophenyl phenyl ether	80.0	61.4		ug/L		77	25 - 158
4-Nitrophenol	160	133		ug/L		83	10 - 132
Acenaphthene	80.0	58.7		ug/L		73	47 - 145
Acenaphthylene	80.0	58.9		ug/L		74	33 - 145
Anthracene	80.0	61.4		ug/L		77	27 - 133
Benzidine	160	64.9	J	ug/L		41	5 - 65
Benzo[a]anthracene	80.0	63.9		ug/L		80	33 - 143
Benzo[a]pyrene	80.0	60.3		ug/L		75	17 - 163
Benzo[b]fluoranthene	80.0	66.8		ug/L		84	24 - 159
Benzo[g,h,i]perylene	80.0	57.9		ug/L		72	10 - 219

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 280-534177/2-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[k]fluoranthene	80.0	58.1		ug/L		73	11 - 162
Bis(2-chloroethoxy)methane	80.0	57.2		ug/L		71	33 - 184
Bis(2-chloroethyl)ether	80.0	54.1		ug/L		68	12 - 158
Bis(2-ethylhexyl) phthalate	80.0	72.3		ug/L		90	10 - 158
Butyl benzyl phthalate	80.0	70.1		ug/L		88	10 - 152
Chrysene	80.0	61.2		ug/L		76	17 - 168
Dibenz(a,h)anthracene	80.0	63.1		ug/L		79	10 - 227
Diethyl phthalate	80.0	65.3		ug/L		82	10 - 114
Dimethyl phthalate	80.0	64.6		ug/L		81	10 - 112
Di-n-butyl phthalate	80.0	65.3		ug/L		82	10 - 118
Di-n-octyl phthalate	80.0	72.9		ug/L		91	10 - 146
Fluoranthene	80.0	65.6		ug/L		82	26 - 137
Fluorene	80.0	60.9		ug/L		76	59 - 121
Hexachlorobenzene	80.0	62.7		ug/L		78	10 - 152
Hexachlorobutadiene	80.0	35.8		ug/L		45	24 - 116
Hexachlorocyclopentadiene	160	34.5	J	ug/L		22	10 - 68
Hexachloroethane	80.0	28.2	*-	ug/L		35	40 - 113
Indeno[1,2,3-cd]pyrene	80.0	67.7		ug/L		85	10 - 171
Isophorone	80.0	59.8		ug/L		75	21 - 196
Naphthalene	80.0	47.5		ug/L		59	21 - 133
Nitrobenzene	80.0	56.8		ug/L		71	35 - 180
N-Nitrosodimethylamine	80.0	48.7		ug/L		61	37 - 113
N-Nitrosodi-n-propylamine	80.0	58.2		ug/L		73	10 - 230
N-Nitrosodiphenylamine	80.0	61.7		ug/L		77	46 - 114
Pentachlorophenol	160	137		ug/L		85	14 - 176
Phenanthrene	80.0	60.5		ug/L		76	54 - 120
Phenol	80.0	53.1		ug/L		66	10 - 112
Pyrene	80.0	61.8		ug/L		77	55 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	85		16 - 147
2-Fluorobiphenyl	75		43 - 120
2-Fluorophenol	66		16 - 136
Nitrobenzene-d5	74		52 - 120
Phenol-d5	69		11 - 145
Terphenyl-d14	84		10 - 145

**Lab Sample ID: LCSD 280-534177/3-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	80.0	31.7	*-	ug/L		40	44 - 142	25	35
2,2'-Oxybis(1-chloropropane)	80.0	49.1		ug/L		61	36 - 166	8	30
2,4,6-Trichlorophenol	80.0	59.8		ug/L		75	37 - 144	6	30
2,4-Dichlorophenol	80.0	55.3		ug/L		69	39 - 135	11	30
2,4-Dimethylphenol	80.0	47.3		ug/L		59	32 - 119	9	35
2,4-Dinitrophenol	160	130		ug/L		81	10 - 191	2	61

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-534177/3-A

Matrix: Water

Analysis Batch: 535767

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 534177

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	RPD Limit
							Limits	RPD		
2,4-Dinitrotoluene	80.0	63.9		ug/L		80	39 - 139	3	35	
2,6-Dinitrotoluene	80.0	64.2		ug/L		80	50 - 158	3	30	
2-Chloronaphthalene	80.0	45.3	*-	ug/L		57	60 - 118	19	30	
2-Chlorophenol	80.0	51.2		ug/L		64	23 - 134	8	30	
2-Methylphenol	80.0	52.3		ug/L		65	51 - 108	8	35	
2-Nitrophenol	80.0	56.4		ug/L		70	29 - 182	10	30	
3,3'-Dichlorobenzidine	160	133		ug/L		83	10 - 262	3	50	
4,6-Dinitro-2-methylphenol	160	136		ug/L		85	10 - 181	4	55	
4-Bromophenyl phenyl ether	80.0	63.7		ug/L		80	53 - 127	2	34	
4-Chloro-3-methylphenol	80.0	61.5		ug/L		77	22 - 147	7	30	
4-Chlorophenyl phenyl ether	80.0	58.8		ug/L		73	25 - 158	4	30	
4-Nitrophenol	160	133		ug/L		83	10 - 132	0	42	
Acenaphthene	80.0	52.3		ug/L		65	47 - 145	12	30	
Acenaphthylene	80.0	52.5		ug/L		66	33 - 145	11	30	
Anthracene	80.0	61.7		ug/L		77	27 - 133	1	30	
Benzidine	160	67.6	J	ug/L		42	5 - 65	4	50	
Benzo[a]anthracene	80.0	63.4		ug/L		79	33 - 143	1	30	
Benzo[a]pyrene	80.0	59.0		ug/L		74	17 - 163	2	73	
Benzo[b]fluoranthene	80.0	66.5		ug/L		83	24 - 159	1	90	
Benzo[g,h,i]perylene	80.0	55.2		ug/L		69	10 - 219	5	64	
Benzo[k]fluoranthene	80.0	58.0		ug/L		73	11 - 162	0	50	
Bis(2-chloroethoxy)methane	80.0	52.2		ug/L		65	33 - 184	9	30	
Bis(2-chloroethyl)ether	80.0	49.9		ug/L		62	12 - 158	8	30	
Bis(2-ethylhexyl) phthalate	80.0	71.9		ug/L		90	10 - 158	1	30	
Butyl benzyl phthalate	80.0	69.1		ug/L		86	10 - 152	1	30	
Chrysene	80.0	60.3		ug/L		75	17 - 168	1	30	
Dibenz(a,h)anthracene	80.0	62.2		ug/L		78	10 - 227	2	78	
Diethyl phthalate	80.0	65.4		ug/L		82	10 - 114	0	30	
Dimethyl phthalate	80.0	62.3		ug/L		78	10 - 112	4	30	
Di-n-butyl phthalate	80.0	66.9		ug/L		84	10 - 118	2	30	
Di-n-octyl phthalate	80.0	72.3		ug/L		90	10 - 146	1	30	
Fluoranthene	80.0	66.0		ug/L		82	26 - 137	1	30	
Fluorene	80.0	57.9		ug/L		72	59 - 121	5	30	
Hexachlorobenzene	80.0	61.6		ug/L		77	10 - 152	2	30	
Hexachlorobutadiene	80.0	27.5		ug/L		34	24 - 116	26	41	
Hexachlorocyclopentadiene	160	16.9	J	ug/L		11	10 - 68	68	82	
Hexachloroethane	80.0	24.6	*-	ug/L		31	40 - 113	14	52	
Indeno[1,2,3-cd]pyrene	80.0	64.9		ug/L		81	10 - 171	4	73	
Isophorone	80.0	53.6		ug/L		67	21 - 196	11	30	
Naphthalene	80.0	38.8		ug/L		48	21 - 133	20	30	
Nitrobenzene	80.0	51.2		ug/L		64	35 - 180	10	30	
N-Nitrosodimethylamine	80.0	44.2		ug/L		55	37 - 113	10	30	
N-Nitrosodi-n-propylamine	80.0	54.5		ug/L		68	10 - 230	7	30	
N-Nitrosodiphenylamine	80.0	61.6		ug/L		77	46 - 114	0	50	
Pentachlorophenol	160	141		ug/L		88	14 - 176	3	30	
Phenanthrene	80.0	61.4		ug/L		77	54 - 120	1	30	
Phenol	80.0	49.1		ug/L		61	10 - 112	8	30	
Pyrene	80.0	60.3		ug/L		75	55 - 115	3	30	

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-534177/3-A

Matrix: Water

Analysis Batch: 535767

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 534177

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	86		16 - 147
2-Fluorobiphenyl	67		43 - 120
2-Fluorophenol	61		16 - 136
Nitrobenzene-d5	67		52 - 120
Phenol-d5	64		11 - 145
Terphenyl-d14	83		10 - 145

# QC Association Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## GC/MS Semi VOA

### Prep Batch: 534177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-147878-1	17875 On-Site	Total/NA	Water	625	
MB 280-534177/1-A	Method Blank	Total/NA	Water	625	
LCS 280-534177/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 280-534177/3-A	Lab Control Sample Dup	Total/NA	Water	625	

### Analysis Batch: 535767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-147878-1	17875 On-Site	Total/NA	Water	625	534177
MB 280-534177/1-A	Method Blank	Total/NA	Water	625	534177
LCS 280-534177/2-A	Lab Control Sample	Total/NA	Water	625	534177
LCSD 280-534177/3-A	Lab Control Sample Dup	Total/NA	Water	625	534177

# Lab Chronicle

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Client Sample ID: 17875 On-Site**

**Lab Sample ID: 280-147878-1**

**Date Collected: 04/21/21 09:45**

**Matrix: Water**

**Date Received: 04/27/21 09:25**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			912.5 mL	1 mL	534177	04/28/21 13:33	JDV	TAL DEN
Total/NA	Analysis	625		1			535767	05/12/21 02:11	AJE	TAL DEN

**Laboratory References:**

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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- 14

**SGS North America Inc.**  
**CHAIN OF CUSTODY RECORD**

Locations Nationwide  
 Alaska  
 Florida  
 New Jersey  
 Colorado  
 Texas  
 North Carolina  
 Virginia  
 Louisiana  
[www.us.sgs.com](http://www.us.sgs.com)



<b>CLIENT:</b> SGS North America Inc. - Alaska Division <b>CONTACT:</b> Julie Shumway (907) 562-2343 <b>PROJECT NAME:</b> 1211897 <b>REPORTS TO:</b> Julie Shumway <b>INVOICE TO:</b> SGS - Alaska <b>RESERVED for lab use</b>		<b>SGS Reference:</b> Eurofins <b>Additional Comments:</b> All soils report out in dry weight unless Preservative Used: NONE TYPE: C = COMP, G = GRAB, MI = Multi-Incremental Soils SVOC X MS MSD SGS lab # 1211897005 Location ID	
<b>PHONE NO:</b> (907) 562-2343 <b>PWSID#:</b> <b>NPDL#:</b> <b>E-MAIL:</b> Julie.Shumway@sgs.com <b>Env.Alaska.Reflab.Team@sgs.com</b> <b>QUOTE #:</b> <b>P.O. #:</b> 1211897	<b>DATE</b> mm/dd/yy 04/21/2021 <b>TIME</b> HHMM 09:45:00 <b>MATRIX/MATRIX CODE</b> Water	# C O N T A I N E R S 1 X	Data Deliverable Requirements: Level 2 w/ Excel EDD DOD Project? Yes NO Report to DL (J Flags)? Yes If J-Report as DL/LOD/LOQ. Cooler ID: Requested Turnaround Time and/or Special Instructions: Temp Blank °C: or Ambient [ ] Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Relinquished By: (1) *Julie Shumway* Received By: *[Signature]*  
 Relinquished By: (2) *[Signature]* Received By:  
 Relinquished By: (3) Received By:  
 Relinquished By: (4) Received For Laboratory By:

[X] 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.htm](http://www.sgs.com/terms_and_conditions.htm)  
 0.6 129 CF10.4  

 280-147878 Chain of Custody



# Login Sample Receipt Checklist

Client: SGS North America, Inc

Job Number: 280-147878-1

**Login Number: 147878**

**List Source: Eurofins TestAmerica, Denver**

**List Number: 1**

**Creator: Collins, Janice S**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## ANALYTICAL REPORT

Eurofins TestAmerica, Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Tel: (303)736-0100

Laboratory Job ID: 280-147878-1  
Client Project/Site: SGS AK - 1211897  
Revision: 1

For:  
SGS North America, Inc  
200 W. Potter Drive  
Anchorage, Alaska 99518

Attn: Ms. Julie Shumway



Authorized for release by:  
5/25/2021 3:18:39 PM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Definitions/Glossary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Qualifiers

### GC/MS Semi VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFI	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Job ID: 280-147878-1**

**Laboratory: Eurofins TestAmerica, Denver**

## Narrative

### CASE NARRATIVE

**Client: SGS North America, Inc**

**Project: SGS AK - 1211897**

**Report Number: 280-147878-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The sample was received on 4/27/2021 9:25 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

### SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample 17875 On-Site (280-147878-1) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA Method 625. The samples were prepared on 04/28/2021 and analyzed on 05/12/2021.

The Method 625 surrogate recoveries Nitrobenzene-d5 were below control limits in the analysis of sample 17875 On-Site. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The Method 625 Method Blank exhibited a surrogate recovery of Nitrobenzene-d5 slightly below the lower control limit at 50% (control limits 52%-120%). All other surrogate recoveries were within QC control limits in the Method Blank. EPA surrogate guidelines for GC/MS SVOA is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater. As sample analysis met these criteria, corrective action is deemed unnecessary.

The Method 625 LCS/LCSD exhibited recoveries of 1,2,4-Trichlorobenzene, 2-Chloronaphthalene and Hexachloroethane below the lower control limit. Because the 7-day holding time expired, re-extraction and reanalysis were not performed.

The method required MS/MSD could not be performed for Method 625 due to insufficient sample volume, however, a LCS/LCSD pair was analyzed to demonstrate method precision and accuracy.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Client Sample ID: 17875 On-Site**

**Lab Sample ID: 280-147878-1**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	1.1	J	11	2.2	0.61	ug/L	1		625	Total/NA

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Denver

# Method Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

Method	Method Description	Protocol	Laboratory
625	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL DEN
625	Liquid-Liquid Extraction	40CFR136A	TAL DEN

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



# Sample Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
280-147878-1	17875 On-Site	Water	04/21/21 09:45	04/27/21 09:25	

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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Client Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Client Sample ID: 17875 On-Site**

**Date Collected: 04/21/21 09:45**

**Date Received: 04/27/21 09:25**

**Lab Sample ID: 280-147878-1**

**Matrix: Water**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	2.2	U Q	11	2.2	0.65	ug/L		05/12/21 02:11	1
1,2-Diphenylhydrazine(as Azobenzene)	0.55	U	11	0.55	0.25	ug/L		05/12/21 02:11	1
2,2'-Oxybis(1-chloropropane)	1.1	U	11	1.1	0.31	ug/L		05/12/21 02:11	1
2,4,6-Trichlorophenol	1.1	U	22	1.1	0.32	ug/L		05/12/21 02:11	1
2,4-Dichlorophenol	2.2	U	11	2.2	0.70	ug/L		05/12/21 02:11	1
2,4-Dimethylphenol	2.2	U	11	2.2	0.64	ug/L		05/12/21 02:11	1
2,4-Dinitrophenol	33	U	66	33	11	ug/L		05/12/21 02:11	1
2,4-Dinitrotoluene	4.8	U	11	4.8	1.8	ug/L		05/12/21 02:11	1
2,6-Dinitrotoluene	4.8	U M	11	4.8	2.1	ug/L		05/12/21 02:11	1
2-Chloronaphthalene	1.1	U Q	11	1.1	0.28	ug/L		05/12/21 02:11	1
2-Chlorophenol	4.8	U	11	4.8	2.2	ug/L		05/12/21 02:11	1
2-Methylphenol	2.2	U	11	2.2	1.1	ug/L		05/12/21 02:11	1
2-Nitrophenol	1.1	U	22	1.1	0.43	ug/L		05/12/21 02:11	1
3 & 4 Methylphenol	0.55	U	11	0.55	0.27	ug/L		05/12/21 02:11	1
3,3'-Dichlorobenzidine	4.8	U	55	4.8	2.2	ug/L		05/12/21 02:11	1
4,6-Dinitro-2-methylphenol	9.6	U	66	9.6	4.4	ug/L		05/12/21 02:11	1
4-Bromophenyl phenyl ether	1.1	U	11	1.1	0.47	ug/L		05/12/21 02:11	1
4-Chloro-3-methylphenol	5.5	U	11	5.5	2.6	ug/L		05/12/21 02:11	1
4-Chlorophenyl phenyl ether	4.8	U	11	4.8	1.8	ug/L		05/12/21 02:11	1
4-Nitrophenol	4.4	U	55	4.4	1.3	ug/L		05/12/21 02:11	1
Acenaphthene	1.1	U	11	1.1	0.31	ug/L		05/12/21 02:11	1
Acenaphthylene	1.1	U	11	1.1	0.54	ug/L		05/12/21 02:11	1
Anthracene	1.1	U	11	1.1	0.46	ug/L		05/12/21 02:11	1
Benzidine	110	U	110	110	55	ug/L		05/12/21 02:11	1
Benzo[a]anthracene	1.1	U	11	1.1	0.38	ug/L		05/12/21 02:11	1
Benzo[a]pyrene	1.1	U	11	1.1	0.34	ug/L		05/12/21 02:11	1
Benzo[b]fluoranthene	2.2	U	11	2.2	0.58	ug/L		05/12/21 02:11	1
Benzo[g,h,i]perylene	1.1	U	11	1.1	0.55	ug/L		05/12/21 02:11	1
Benzo[k]fluoranthene	1.1	U	11	1.1	0.50	ug/L		05/12/21 02:11	1
Bis(2-chloroethoxy)methane	2.2	U	11	2.2	1.1	ug/L		05/12/21 02:11	1
Bis(2-chloroethyl)ether	2.2	U	11	2.2	0.91	ug/L		05/12/21 02:11	1
<b>Bis(2-ethylhexyl) phthalate</b>	<b>1.1</b>	<b>J</b>	11	2.2	0.61	ug/L		05/12/21 02:11	1
Butyl benzyl phthalate	2.2	U	11	2.2	1.1	ug/L		05/12/21 02:11	1
Chrysene	2.2	U	11	2.2	0.59	ug/L		05/12/21 02:11	1
Dibenz(a,h)anthracene	2.2	U	11	2.2	0.56	ug/L		05/12/21 02:11	1
Diethyl phthalate	1.1	U	11	1.1	0.42	ug/L		05/12/21 02:11	1
Dimethyl phthalate	0.55	U	11	0.55	0.23	ug/L		05/12/21 02:11	1
Di-n-butyl phthalate	4.8	U	11	4.8	1.3	ug/L		05/12/21 02:11	1
Di-n-octyl phthalate	1.1	U M	11	1.1	0.38	ug/L		05/12/21 02:11	1
Fluoranthene	0.55	U	11	0.55	0.22	ug/L		05/12/21 02:11	1
Fluorene	1.1	U	11	1.1	0.34	ug/L		05/12/21 02:11	1
Hexachlorobenzene	2.2	U	11	2.2	0.72	ug/L		05/12/21 02:11	1
Hexachlorobutadiene	11	U	11	11	3.6	ug/L		05/12/21 02:11	1
Hexachlorocyclopentadiene	11	U	55	11	3.4	ug/L		05/12/21 02:11	1
Hexachloroethane	2.2	U Q	11	2.2	1.1	ug/L		05/12/21 02:11	1
Indeno[1,2,3-cd]pyrene	2.2	U	11	2.2	0.71	ug/L		05/12/21 02:11	1
Isophorone	0.55	U	11	0.55	0.23	ug/L		05/12/21 02:11	1
Naphthalene	1.1	U	11	1.1	0.32	ug/L		05/12/21 02:11	1
Nitrobenzene	2.2	U	11	2.2	0.89	ug/L		05/12/21 02:11	1

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# Client Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: 17875 On-Site**  
**Date Collected: 04/21/21 09:45**  
**Date Received: 04/27/21 09:25**

**Lab Sample ID: 280-147878-1**  
**Matrix: Water**

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
N-Nitrosodimethylamine	1.1	U M	11	1.1	0.32	ug/L		05/12/21 02:11	1
N-Nitrosodi-n-propylamine	1.1	U	11	1.1	0.38	ug/L		05/12/21 02:11	1
N-Nitrosodiphenylamine	1.1	U	11	1.1	0.48	ug/L		05/12/21 02:11	1
Pentachlorophenol	66	U	66	66	22	ug/L		05/12/21 02:11	1
Phenanthrene	1.1	U	11	1.1	0.28	ug/L		05/12/21 02:11	1
Phenol	4.8	U	11	4.8	2.2	ug/L		05/12/21 02:11	1
Pyrene	1.1	U	11	1.1	0.41	ug/L		05/12/21 02:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		16 - 147	04/28/21 13:33	05/12/21 02:11	1
2-Fluorobiphenyl	45		43 - 120	04/28/21 13:33	05/12/21 02:11	1
2-Fluorophenol	36		16 - 136	04/28/21 13:33	05/12/21 02:11	1
Nitrobenzene-d5	38	Q	52 - 120	04/28/21 13:33	05/12/21 02:11	1
Phenol-d5	45		11 - 145	04/28/21 13:33	05/12/21 02:11	1
Terphenyl-d14	55		10 - 145	04/28/21 13:33	05/12/21 02:11	1

# Surrogate Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP (16-147)	FBP (43-120)	2FP (16-136)	NBZ (52-120)	PHL (11-145)	TPHL (10-145)
280-147878-1	17875 On-Site	78	45	36	38 Q	45	55
LCS 280-534177/2-A	Lab Control Sample	85	75	66	74	69	84
LCSD 280-534177/3-A	Lab Control Sample Dup	86	67	61	67	64	83
MB 280-534177/1-A	Method Blank	72	46	43	50 Q	44	77

### Surrogate Legend

TBP = 2,4,6-Tribromophenol

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPHL = Terphenyl-d14

# QC Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-534177/1-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	MB	MB	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trichlorobenzene	2.0	U	10	2.0	0.59	ug/L		05/12/21 01:08	1
1,2-Diphenylhydrazine(as Azobenzene)	0.51	U	10	0.51	0.23	ug/L		05/12/21 01:08	1
2,2'-Oxybis(1-chloropropane)	1.0	U	10	1.0	0.28	ug/L		05/12/21 01:08	1
2,4,6-Trichlorophenol	1.0	U	20	1.0	0.29	ug/L		05/12/21 01:08	1
2,4-Dichlorophenol	2.0	U	10	2.0	0.64	ug/L		05/12/21 01:08	1
2,4-Dimethylphenol	2.0	U	10	2.0	0.58	ug/L		05/12/21 01:08	1
2,4-Dinitrophenol	30	U	60	30	10	ug/L		05/12/21 01:08	1
2,4-Dinitrotoluene	4.4	U	10	4.4	1.7	ug/L		05/12/21 01:08	1
2,6-Dinitrotoluene	4.4	U	10	4.4	1.9	ug/L		05/12/21 01:08	1
2-Chloronaphthalene	1.0	U	10	1.0	0.26	ug/L		05/12/21 01:08	1
2-Chlorophenol	4.4	U	10	4.4	2.0	ug/L		05/12/21 01:08	1
2-Methylphenol	2.0	U	10	2.0	0.98	ug/L		05/12/21 01:08	1
2-Nitrophenol	1.0	U	20	1.0	0.39	ug/L		05/12/21 01:08	1
3 & 4 Methylphenol	0.50	U	10	0.50	0.25	ug/L		05/12/21 01:08	1
3,3'-Dichlorobenzidine	4.4	U	50	4.4	2.0	ug/L		05/12/21 01:08	1
4,6-Dinitro-2-methylphenol	8.8	U	60	8.8	4.0	ug/L		05/12/21 01:08	1
4-Bromophenyl phenyl ether	1.0	U	10	1.0	0.43	ug/L		05/12/21 01:08	1
4-Chloro-3-methylphenol	5.0	U	10	5.0	2.4	ug/L		05/12/21 01:08	1
4-Chlorophenyl phenyl ether	4.4	U	10	4.4	1.7	ug/L		05/12/21 01:08	1
4-Nitrophenol	4.0	U	50	4.0	1.2	ug/L		05/12/21 01:08	1
Acenaphthene	1.0	U	10	1.0	0.28	ug/L		05/12/21 01:08	1
Acenaphthylene	1.0	U	10	1.0	0.49	ug/L		05/12/21 01:08	1
Anthracene	1.0	U	10	1.0	0.42	ug/L		05/12/21 01:08	1
Benzidine	100	U	100	100	50	ug/L		05/12/21 01:08	1
Benzo[a]anthracene	1.0	U	10	1.0	0.35	ug/L		05/12/21 01:08	1
Benzo[a]pyrene	1.0	U	10	1.0	0.31	ug/L		05/12/21 01:08	1
Benzo[b]fluoranthene	2.0	U	10	2.0	0.53	ug/L		05/12/21 01:08	1
Benzo[g,h,i]perylene	1.0	U	10	1.0	0.50	ug/L		05/12/21 01:08	1
Benzo[k]fluoranthene	1.0	U	10	1.0	0.46	ug/L		05/12/21 01:08	1
Bis(2-chloroethoxy)methane	2.0	U	10	2.0	0.97	ug/L		05/12/21 01:08	1
Bis(2-chloroethyl)ether	2.0	U	10	2.0	0.83	ug/L		05/12/21 01:08	1
Bis(2-ethylhexyl) phthalate	2.0	U M	10	2.0	0.56	ug/L		05/12/21 01:08	1
Butyl benzyl phthalate	2.0	U	10	2.0	1.0	ug/L		05/12/21 01:08	1
Chrysene	2.0	U	10	2.0	0.54	ug/L		05/12/21 01:08	1
Dibenz(a,h)anthracene	2.0	U	10	2.0	0.51	ug/L		05/12/21 01:08	1
Diethyl phthalate	1.0	U	10	1.0	0.38	ug/L		05/12/21 01:08	1
Dimethyl phthalate	0.50	U	10	0.50	0.21	ug/L		05/12/21 01:08	1
Di-n-butyl phthalate	4.4	U	10	4.4	1.2	ug/L		05/12/21 01:08	1
Di-n-octyl phthalate	1.0	U M	10	1.0	0.35	ug/L		05/12/21 01:08	1
Fluoranthene	0.50	U	10	0.50	0.20	ug/L		05/12/21 01:08	1
Fluorene	1.0	U	10	1.0	0.31	ug/L		05/12/21 01:08	1
Hexachlorobenzene	2.0	U	10	2.0	0.66	ug/L		05/12/21 01:08	1
Hexachlorobutadiene	10	U	10	10	3.3	ug/L		05/12/21 01:08	1
Hexachlorocyclopentadiene	10	U	50	10	3.1	ug/L		05/12/21 01:08	1
Hexachloroethane	2.0	U	10	2.0	0.98	ug/L		05/12/21 01:08	1
Indeno[1,2,3-cd]pyrene	2.0	U	10	2.0	0.65	ug/L		05/12/21 01:08	1
Isophorone	0.50	U	10	0.50	0.21	ug/L		05/12/21 01:08	1
Naphthalene	1.0	U	10	1.0	0.29	ug/L		05/12/21 01:08	1

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 280-534177/1-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	MB MB		LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
	Result	Qualifier							
Nitrobenzene	2.0	U	10	2.0	0.81	ug/L		05/12/21 01:08	1
N-Nitrosodimethylamine	1.0	U	10	1.0	0.29	ug/L		05/12/21 01:08	1
N-Nitrosodi-n-propylamine	1.0	U	10	1.0	0.35	ug/L		05/12/21 01:08	1
N-Nitrosodiphenylamine	1.0	U	10	1.0	0.44	ug/L		05/12/21 01:08	1
Pentachlorophenol	60	U	60	60	20	ug/L		05/12/21 01:08	1
Phenanthrene	1.0	U	10	1.0	0.26	ug/L		05/12/21 01:08	1
Phenol	4.4	U	10	4.4	2.0	ug/L		05/12/21 01:08	1
Pyrene	1.0	U	10	1.0	0.37	ug/L		05/12/21 01:08	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	72		16 - 147	04/28/21 13:33	05/12/21 01:08	1
2-Fluorobiphenyl	46		43 - 120	04/28/21 13:33	05/12/21 01:08	1
2-Fluorophenol	43		16 - 136	04/28/21 13:33	05/12/21 01:08	1
Nitrobenzene-d5	50	Q	52 - 120	04/28/21 13:33	05/12/21 01:08	1
Phenol-d5	44		11 - 145	04/28/21 13:33	05/12/21 01:08	1
Terphenyl-d14	77		10 - 145	04/28/21 13:33	05/12/21 01:08	1

**Lab Sample ID: LCS 280-534177/2-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,2'-Oxybis(1-chloropropane)	80.0	53.5		ug/L		67	36 - 166
2,4,6-Trichlorophenol	80.0	63.5		ug/L		79	37 - 144
2,4-Dichlorophenol	80.0	61.5		ug/L		77	39 - 135
2,4-Dimethylphenol	80.0	51.8		ug/L		65	32 - 119
2,4-Dinitrophenol	160	127		ug/L		80	10 - 191
2,4-Dinitrotoluene	80.0	66.1		ug/L		83	39 - 139
2,6-Dinitrotoluene	80.0	66.4		ug/L		83	50 - 158
2-Chloronaphthalene	80.0	54.8		ug/L		68	60 - 118
2-Chlorophenol	80.0	55.2		ug/L		69	23 - 134
2-Methylphenol	80.0	56.9		ug/L		71	51 - 108
2-Nitrophenol	80.0	62.2		ug/L		78	29 - 182
3,3'-Dichlorobenzidine	160	137		ug/L		85	10 - 262
4,6-Dinitro-2-methylphenol	160	130		ug/L		81	10 - 181
4-Bromophenyl phenyl ether	80.0	64.7		ug/L		81	53 - 127
4-Chloro-3-methylphenol	80.0	65.9		ug/L		82	22 - 147
4-Chlorophenyl phenyl ether	80.0	61.4		ug/L		77	25 - 158
4-Nitrophenol	160	133		ug/L		83	10 - 132
Acenaphthene	80.0	58.7		ug/L		73	47 - 145
Acenaphthylene	80.0	58.9		ug/L		74	33 - 145
Anthracene	80.0	61.4		ug/L		77	27 - 133
Benzidine	160	64.9	J	ug/L		41	5 - 65
Benzo[a]anthracene	80.0	63.9		ug/L		80	33 - 143
Benzo[a]pyrene	80.0	60.3		ug/L		75	17 - 163
Benzo[b]fluoranthene	80.0	66.8		ug/L		84	24 - 159
Benzo[g,h,i]perylene	80.0	57.9		ug/L		72	10 - 219

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 280-534177/2-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[k]fluoranthene	80.0	58.1		ug/L		73	11 - 162
Bis(2-chloroethoxy)methane	80.0	57.2		ug/L		71	33 - 184
Bis(2-chloroethyl)ether	80.0	54.1		ug/L		68	12 - 158
Bis(2-ethylhexyl) phthalate	80.0	72.3		ug/L		90	10 - 158
Butyl benzyl phthalate	80.0	70.1		ug/L		88	10 - 152
Chrysene	80.0	61.2		ug/L		76	17 - 168
Dibenz(a,h)anthracene	80.0	63.1		ug/L		79	10 - 227
Diethyl phthalate	80.0	65.3		ug/L		82	10 - 114
Dimethyl phthalate	80.0	64.6		ug/L		81	10 - 112
Di-n-butyl phthalate	80.0	65.3		ug/L		82	10 - 118
Di-n-octyl phthalate	80.0	72.9		ug/L		91	10 - 146
Fluoranthene	80.0	65.6		ug/L		82	26 - 137
Fluorene	80.0	60.9		ug/L		76	59 - 121
Hexachlorobenzene	80.0	62.7		ug/L		78	10 - 152
Hexachlorobutadiene	80.0	35.8		ug/L		45	24 - 116
Hexachlorocyclopentadiene	160	34.5	J	ug/L		22	10 - 68
Hexachloroethane	80.0	28.2	Q	ug/L		35	40 - 113
Indeno[1,2,3-cd]pyrene	80.0	67.7		ug/L		85	10 - 171
Isophorone	80.0	59.8		ug/L		75	21 - 196
Naphthalene	80.0	47.5		ug/L		59	21 - 133
Nitrobenzene	80.0	56.8		ug/L		71	35 - 180
N-Nitrosodimethylamine	80.0	48.7		ug/L		61	37 - 113
N-Nitrosodi-n-propylamine	80.0	58.2		ug/L		73	10 - 230
N-Nitrosodiphenylamine	80.0	61.7		ug/L		77	46 - 114
Pentachlorophenol	160	137		ug/L		85	14 - 176
Phenanthrene	80.0	60.5		ug/L		76	54 - 120
Phenol	80.0	53.1		ug/L		66	10 - 112
Pyrene	80.0	61.8		ug/L		77	55 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	85		16 - 147
2-Fluorobiphenyl	75		43 - 120
2-Fluorophenol	66		16 - 136
Nitrobenzene-d5	74		52 - 120
Phenol-d5	69		11 - 145
Terphenyl-d14	84		10 - 145

**Lab Sample ID: LCSD 280-534177/3-A**  
**Matrix: Water**  
**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 534177**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	80.0	31.7	Q	ug/L		40	44 - 142	25	35
2,2'-Oxybis(1-chloropropane)	80.0	49.1		ug/L		61	36 - 166	8	30
2,4,6-Trichlorophenol	80.0	59.8		ug/L		75	37 - 144	6	30
2,4-Dichlorophenol	80.0	55.3		ug/L		69	39 - 135	11	30
2,4-Dimethylphenol	80.0	47.3		ug/L		59	32 - 119	9	35
2,4-Dinitrophenol	160	130		ug/L		81	10 - 191	2	61

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
 Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 280-534177/3-A**

**Matrix: Water**

**Analysis Batch: 535767**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 534177**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	RPD Limit
							Limits	RPD		
2,4-Dinitrotoluene	80.0	63.9		ug/L		80	39 - 139	3	35	
2,6-Dinitrotoluene	80.0	64.2		ug/L		80	50 - 158	3	30	
2-Chloronaphthalene	80.0	45.3	Q	ug/L		57	60 - 118	19	30	
2-Chlorophenol	80.0	51.2		ug/L		64	23 - 134	8	30	
2-Methylphenol	80.0	52.3		ug/L		65	51 - 108	8	35	
2-Nitrophenol	80.0	56.4		ug/L		70	29 - 182	10	30	
3,3'-Dichlorobenzidine	160	133		ug/L		83	10 - 262	3	50	
4,6-Dinitro-2-methylphenol	160	136		ug/L		85	10 - 181	4	55	
4-Bromophenyl phenyl ether	80.0	63.7		ug/L		80	53 - 127	2	34	
4-Chloro-3-methylphenol	80.0	61.5		ug/L		77	22 - 147	7	30	
4-Chlorophenyl phenyl ether	80.0	58.8		ug/L		73	25 - 158	4	30	
4-Nitrophenol	160	133		ug/L		83	10 - 132	0	42	
Acenaphthene	80.0	52.3		ug/L		65	47 - 145	12	30	
Acenaphthylene	80.0	52.5		ug/L		66	33 - 145	11	30	
Anthracene	80.0	61.7		ug/L		77	27 - 133	1	30	
Benzidine	160	67.6	J	ug/L		42	5 - 65	4	50	
Benzo[a]anthracene	80.0	63.4		ug/L		79	33 - 143	1	30	
Benzo[a]pyrene	80.0	59.0		ug/L		74	17 - 163	2	73	
Benzo[b]fluoranthene	80.0	66.5		ug/L		83	24 - 159	1	90	
Benzo[g,h,i]perylene	80.0	55.2		ug/L		69	10 - 219	5	64	
Benzo[k]fluoranthene	80.0	58.0		ug/L		73	11 - 162	0	50	
Bis(2-chloroethoxy)methane	80.0	52.2		ug/L		65	33 - 184	9	30	
Bis(2-chloroethyl)ether	80.0	49.9		ug/L		62	12 - 158	8	30	
Bis(2-ethylhexyl) phthalate	80.0	71.9		ug/L		90	10 - 158	1	30	
Butyl benzyl phthalate	80.0	69.1		ug/L		86	10 - 152	1	30	
Chrysene	80.0	60.3		ug/L		75	17 - 168	1	30	
Dibenz(a,h)anthracene	80.0	62.2		ug/L		78	10 - 227	2	78	
Diethyl phthalate	80.0	65.4		ug/L		82	10 - 114	0	30	
Dimethyl phthalate	80.0	62.3		ug/L		78	10 - 112	4	30	
Di-n-butyl phthalate	80.0	66.9		ug/L		84	10 - 118	2	30	
Di-n-octyl phthalate	80.0	72.3		ug/L		90	10 - 146	1	30	
Fluoranthene	80.0	66.0		ug/L		82	26 - 137	1	30	
Fluorene	80.0	57.9		ug/L		72	59 - 121	5	30	
Hexachlorobenzene	80.0	61.6		ug/L		77	10 - 152	2	30	
Hexachlorobutadiene	80.0	27.5		ug/L		34	24 - 116	26	41	
Hexachlorocyclopentadiene	160	16.9	J	ug/L		11	10 - 68	68	82	
Hexachloroethane	80.0	24.6	Q	ug/L		31	40 - 113	14	52	
Indeno[1,2,3-cd]pyrene	80.0	64.9		ug/L		81	10 - 171	4	73	
Isophorone	80.0	53.6		ug/L		67	21 - 196	11	30	
Naphthalene	80.0	38.8		ug/L		48	21 - 133	20	30	
Nitrobenzene	80.0	51.2		ug/L		64	35 - 180	10	30	
N-Nitrosodimethylamine	80.0	44.2		ug/L		55	37 - 113	10	30	
N-Nitrosodi-n-propylamine	80.0	54.5		ug/L		68	10 - 230	7	30	
N-Nitrosodiphenylamine	80.0	61.6		ug/L		77	46 - 114	0	50	
Pentachlorophenol	160	141		ug/L		88	14 - 176	3	30	
Phenanthrene	80.0	61.4		ug/L		77	54 - 120	1	30	
Phenol	80.0	49.1		ug/L		61	10 - 112	8	30	
Pyrene	80.0	60.3		ug/L		75	55 - 115	3	30	

Eurofins TestAmerica, Denver

# QC Sample Results

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-534177/3-A

Matrix: Water

Analysis Batch: 535767

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 534177

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	86		16 - 147
2-Fluorobiphenyl	67		43 - 120
2-Fluorophenol	61		16 - 136
Nitrobenzene-d5	67		52 - 120
Phenol-d5	64		11 - 145
Terphenyl-d14	83		10 - 145

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# QC Association Summary

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

## GC/MS Semi VOA

### Prep Batch: 534177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-147878-1	17875 On-Site	Total/NA	Water	625	
MB 280-534177/1-A	Method Blank	Total/NA	Water	625	
LCS 280-534177/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 280-534177/3-A	Lab Control Sample Dup	Total/NA	Water	625	

### Analysis Batch: 535767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-147878-1	17875 On-Site	Total/NA	Water	625	534177
MB 280-534177/1-A	Method Blank	Total/NA	Water	625	534177
LCS 280-534177/2-A	Lab Control Sample	Total/NA	Water	625	534177
LCSD 280-534177/3-A	Lab Control Sample Dup	Total/NA	Water	625	534177

# Lab Chronicle

Client: SGS North America, Inc  
Project/Site: SGS AK - 1211897

Job ID: 280-147878-1

**Client Sample ID: 17875 On-Site**

**Lab Sample ID: 280-147878-1**

**Date Collected: 04/21/21 09:45**

**Matrix: Water**

**Date Received: 04/27/21 09:25**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			912.5 mL	1 mL	534177	04/28/21 13:33	JDV	TAL DEN
Total/NA	Analysis	625		1			535767	05/12/21 02:11	AJE	TAL DEN

**Laboratory References:**

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

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# Login Sample Receipt Checklist

Client: SGS North America, Inc

Job Number: 280-147878-1

**Login Number: 147878**

**List Source: Eurofins TestAmerica, Denver**

**List Number: 1**

**Creator: Collins, Janice S**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Laboratory Data Review Checklist**

Completed By:

Hannah Deeney

Title:

E.I.T.

Date:

June 30, 2021

Consultant Firm:

Environmental Management Inc. (EMI)

Laboratory Name:

SGS Alaska

Laboratory Report Number:

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

ADEC File Number:

240.26.008

Hazard Identification Number:

23554

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

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

Yes  No  N/A  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  N/A  Comments:

2. Chain of Custody (CoC)

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

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

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

Yes  No  N/A  Comments:

Several samples contained limited volume of sample

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  N/A  Comments:

Several samples contained limited volume of sample

e. Data quality or usability affected?

Comments:

Data quality and usability not affected.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

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

Comments:

No effect

1211897

Laboratory Report Date:

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CS Site Name:

Hub of Alaska, Inc.

5. Samples Results

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

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

Waters only

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

Yes  No  N/A  Comments:

e. Data quality or usability affected?

Not affected

6. QC Samples

a. Method Blank

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

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

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

Yes  No  N/A  Comments:

v. Data quality or usability affected?

Comments:

Not affected

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  N/A  Comments:

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

Yes  No  N/A  Comments:

Not analyzed

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

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

Comments:

Na

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

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Not affected

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

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Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

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  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

Fluoranthene-d10 had %R lower than the laboratory's acceptable limits (50-97%) in sample 17875 MW3 (29.5%) and in its duplicate 17875 MW31 (20.1%). 17875 MW31 also had low surrogate recovery for 2-Methylnaphthalene-d10 (acceptable range: 42-86%, actual %R: 39.7%)

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

Yes  No  N/A  Comments:

iv. Data quality or usability affected?

Comments:

Data quality not affected, both 17875 MW3 and 17875 MW31 contained limited volume of sample, so %R would be lower than acceptable limits after extraction. Insufficient volume of sample was available to complete a re-extraction.

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Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No  N/A  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  N/A  Comments:

iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

v. Data quality or usability affected?

Comments:

Not affected

f. Field Duplicate

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

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

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

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

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

Several analytes had an RPD greater than the recommended 30%: 1- and 2-Methylnaphthalene, Acenaphthalene, Fluorine, Naphthalene, and Phenanthrene.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data usability not affected, all analytes with RPD above 30% were all detected analytes, 1-Methylnaphthalene and 2-Methylnaphthalene did have a discrepancy above and below the Cleanup Level, but there are other analytes above cleanup level in these samples, so this is not the primary decision factor.

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

Yes  No  N/A  Comments:

Clean sampling supplies was used to collect each sample.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

iii. Data quality or usability affected?

Comments:

Na

1211897

Laboratory Report Date:

May 25, 2021

CS Site Name:

Hub of Alaska, Inc.

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

a. Defined and appropriate?

Yes  No  N/A

Comments:

## Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)  
206 East Fireweed Lane Suite 201  
Anchorage, AK 99503  
(907)272-9336

Report Number: **1213208**

Client Project: **17875 Landfarm Sampling**

Dear Hannah Deeney,

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 Alexandra 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.



Alexandra Daniel  
2021.06.29 11:36:39 -08'00'

Alexandra Daniel  
Project Manager  
Alexandra.Daniel@sgs.com

Date

### Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**  
SGS Project: **1213208**  
Project Name/Site: **17875 Landfarm Sampling**  
Project Contact: **Hannah Deeney**

Refer to sample receipt form for information on sample condition.

#### **Hub-LF-A1 (1213208001) PS**

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

\*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: 06/29/2021 10:23:28AM

### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. 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 05/27/2021 for Mercury by EPA200.8, Nitrate as N by SM 4500NO3-F and VOCs by EPA 524.2) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the

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	Analytical 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
TNTC	Too Numerous To Count
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>
Hub-LF-A1	1213208001	06/10/2021	06/11/2021	Soil/Solid (dry weight)
Hub-LF-C3	1213208002	06/10/2021	06/11/2021	Soil/Solid (dry weight)
Hub-LF-E2	1213208003	06/10/2021	06/11/2021	Soil/Solid (dry weight)
Hub-LF-E22	1213208004	06/10/2021	06/11/2021	Soil/Solid (dry weight)
Hub-LF-F2	1213208005	06/10/2021	06/11/2021	Soil/Solid (dry weight)
Trip Blank	1213208006	06/10/2021	06/11/2021	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
AK102	Diesel Range Organics (S)
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	VOC 8260 (S) Field Extracted

Print Date: 06/29/2021 10:23:32AM

### Detectable Results Summary

Client Sample ID: **Hub-LF-A1**

Lab Sample ID: 1213208001

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	99.0	mg/kg
Gasoline Range Organics	7.99	mg/kg
1,2,4-Trimethylbenzene	149	ug/kg
1,3,5-Trimethylbenzene	58.4	ug/kg
Benzene	38.4	ug/kg
Ethylbenzene	40.4	ug/kg
o-Xylene	28.4	ug/kg
P & M -Xylene	114	ug/kg
Toluene	47.0	ug/kg
Xylenes (total)	143	ug/kg

Client Sample ID: **Hub-LF-C3**

Lab Sample ID: 1213208002

**Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	117	mg/kg

Client Sample ID: **Hub-LF-E2**

Lab Sample ID: 1213208003

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	98.4	mg/kg
Gasoline Range Organics	2.76	mg/kg
Benzene	40.8	ug/kg
P & M -Xylene	66.2	ug/kg
Toluene	35.2	ug/kg
Xylenes (total)	84.9	ug/kg

Client Sample ID: **Hub-LF-E22**

Lab Sample ID: 1213208004

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	90.2	mg/kg
Gasoline Range Organics	3.81	mg/kg
Benzene	21.9	ug/kg
P & M -Xylene	73.3	ug/kg
Toluene	37.1	ug/kg
Xylenes (total)	94.0	ug/kg

Client Sample ID: **Hub-LF-F2**

Lab Sample ID: 1213208005

**Semivolatile Organic Fuels**

**Volatile Fuels**

**Volatile GC/MS- Petroleum VOC Group**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	93.2	mg/kg
Gasoline Range Organics	2.72	mg/kg
Benzene	13.7	ug/kg
Ethylbenzene	38.8	ug/kg
P & M -Xylene	85.5	ug/kg
Toluene	64.5	ug/kg
Xylenes (total)	102	ug/kg



**Results of Hub-LF-A1**

Client Sample ID: **Hub-LF-A1**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208001  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:15  
Received Date: 06/11/21 09:30  
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</u>	<u>Date Analyzed</u>
Diesel Range Organics	99.0	21.1	6.54	mg/kg	1		06/18/21 17:58
<b>Surrogates</b>							
5a Androstane (surr)	85.2	50-150		%	1		06/18/21 17:58

**Batch Information**

Analytical Batch: XFC15961  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/18/21 17:58  
Container ID: 1213208001-A

Prep Batch: XXX44993  
Prep Method: SW3550C  
Prep Date/Time: 06/18/21 08:23  
Prep Initial Wt./Vol.: 30.166 g  
Prep Extract Vol: 5 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-A1**

Client Sample ID: **Hub-LF-A1**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208001  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:15  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):94.3  
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</u>	<u>Date Analyzed</u>
Gasoline Range Organics	7.99		2.27	0.681	mg/kg	1		06/23/21 01:39
<b>Surrogates</b>								
4-Bromofluorobenzene (surr)	165	*	50-150		%	1		06/23/21 01:39

**Batch Information**

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/23/21 01:39  
Container ID: 1213208001-B

Prep Batch: VXX37279  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:15  
Prep Initial Wt./Vol.: 67.234 g  
Prep Extract Vol: 28.8076 mL

Print Date: 06/29/2021 10:23:34AM



### Results of Hub-LF-A1

Client Sample ID: **Hub-LF-A1**  
 Client Project ID: **17875 Landfarm Sampling**  
 Lab Sample ID: 1213208001  
 Lab Project ID: 1213208

Collection Date: 06/10/21 10:15  
 Received Date: 06/11/21 09:30  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):94.3  
 Location:

### Results by Volatile GC/MS- Petroleum VOC Group

<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	149	45.4	13.6	ug/kg	1		06/16/21 19:34
1,2-Dibromoethane	0.908 U	0.908	0.363	ug/kg	1		06/16/21 19:34
1,2-Dichloroethane	1.82 U	1.82	0.636	ug/kg	1		06/16/21 19:34
1,3,5-Trimethylbenzene	58.4	22.7	7.09	ug/kg	1		06/16/21 19:34
Benzene	38.4	11.4	3.54	ug/kg	1		06/16/21 19:34
Ethylbenzene	40.4	22.7	7.09	ug/kg	1		06/16/21 19:34
Isopropylbenzene (Cumene)	22.7 U	22.7	7.09	ug/kg	1		06/16/21 19:34
Methyl-t-butyl ether	90.8 U	90.8	28.2	ug/kg	1		06/16/21 19:34
Naphthalene	22.7 U	22.7	7.09	ug/kg	1		06/16/21 19:34
n-Butylbenzene	22.7 U	22.7	7.09	ug/kg	1		06/16/21 19:34
o-Xylene	28.4	22.7	7.09	ug/kg	1		06/16/21 19:34
P & M -Xylene	114	45.4	13.6	ug/kg	1		06/16/21 19:34
sec-Butylbenzene	22.7 U	22.7	7.09	ug/kg	1		06/16/21 19:34
tert-Butylbenzene	22.7 U	22.7	7.09	ug/kg	1		06/16/21 19:34
Toluene	47.0	22.7	7.09	ug/kg	1		06/16/21 19:34
Xylenes (total)	143	68.1	20.7	ug/kg	1		06/16/21 19:34
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	100	71-136		%	1		06/16/21 19:34
4-Bromofluorobenzene (surr)	95.2	55-151		%	1		06/16/21 19:34
Toluene-d8 (surr)	103	85-116		%	1		06/16/21 19:34

### Batch Information

Analytical Batch: VMS20821  
 Analytical Method: SW8260D  
 Analyst: S.S  
 Analytical Date/Time: 06/16/21 19:34  
 Container ID: 1213208001-B

Prep Batch: VXX37249  
 Prep Method: SW5035A  
 Prep Date/Time: 06/10/21 10:15  
 Prep Initial Wt./Vol.: 67.234 g  
 Prep Extract Vol: 28.8076 mL

## Results of Hub-LF-C3

Client Sample ID: **Hub-LF-C3**  
 Client Project ID: **17875 Landfarm Sampling**  
 Lab Sample ID: 1213208002  
 Lab Project ID: 1213208

Collection Date: 06/10/21 10:22  
 Received Date: 06/11/21 09:30  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):90.4  
 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</u>	<u>Date Analyzed</u>
Diesel Range Organics	117	21.8	6.76	mg/kg	1		06/18/21 18:08
<b>Surrogates</b>							
5a Androstane (surr)	90.5	50-150		%	1		06/18/21 18:08

## Batch Information

Analytical Batch: XFC15961  
 Analytical Method: AK102  
 Analyst: IVM  
 Analytical Date/Time: 06/18/21 18:08  
 Container ID: 1213208002-A

Prep Batch: XXX44993  
 Prep Method: SW3550C  
 Prep Date/Time: 06/18/21 08:23  
 Prep Initial Wt./Vol.: 30.413 g  
 Prep Extract Vol: 5 mL



**Results of Hub-LF-C3**

Client Sample ID: **Hub-LF-C3**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208002  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:22  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
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</u>	<u>Date Analyzed</u>
Gasoline Range Organics	3.06 U	3.06	0.918	mg/kg	1		06/23/21 01:57
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	130	50-150		%	1		06/23/21 01:57

**Batch Information**

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/23/21 01:57  
Container ID: 1213208002-B

Prep Batch: VXX37279  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:22  
Prep Initial Wt./Vol.: 54.566 g  
Prep Extract Vol: 30.2149 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-C3**

Client Sample ID: **Hub-LF-C3**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208002  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:22  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):90.4  
Location:

**Results by Volatile GC/MS- Petroleum VOC Group**

<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	61.2 U	61.2	18.4	ug/kg	1		06/16/21 19:51
1,2-Dibromoethane	1.22 U	1.22	0.490	ug/kg	1		06/16/21 19:51
1,2-Dichloroethane	2.45 U	2.45	0.857	ug/kg	1		06/16/21 19:51
1,3,5-Trimethylbenzene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
Benzene	15.3 U	15.3	4.78	ug/kg	1		06/16/21 19:51
Ethylbenzene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
Isopropylbenzene (Cumene)	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
Methyl-t-butyl ether	122 U	122	38.0	ug/kg	1		06/16/21 19:51
Naphthalene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
n-Butylbenzene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
o-Xylene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
P & M -Xylene	61.2 U	61.2	18.4	ug/kg	1		06/16/21 19:51
sec-Butylbenzene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
tert-Butylbenzene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
Toluene	30.6 U	30.6	9.55	ug/kg	1		06/16/21 19:51
Xylenes (total)	91.8 U	91.8	27.9	ug/kg	1		06/16/21 19:51
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	107	71-136		%	1		06/16/21 19:51
4-Bromofluorobenzene (surr)	87.6	55-151		%	1		06/16/21 19:51
Toluene-d8 (surr)	101	85-116		%	1		06/16/21 19:51

**Batch Information**

Analytical Batch: VMS20821  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/16/21 19:51  
Container ID: 1213208002-B

Prep Batch: VXX37249  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:22  
Prep Initial Wt./Vol.: 54.566 g  
Prep Extract Vol: 30.2149 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-E2**

Client Sample ID: **Hub-LF-E2**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208003  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:33  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.7  
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	98.4	21.4	6.62	mg/kg	1		06/18/21 18:18
<b>Surrogates</b>							
5a Androstane (surr)	83	50-150		%	1		06/18/21 18:18

**Batch Information**

Analytical Batch: XFC15961  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/18/21 18:18  
Container ID: 1213208003-A

Prep Batch: XXX44993  
Prep Method: SW3550C  
Prep Date/Time: 06/18/21 08:23  
Prep Initial Wt./Vol.: 30.317 g  
Prep Extract Vol: 5 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-E2**

Client Sample ID: **Hub-LF-E2**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208003  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:33  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):92.7  
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	2.76	2.53	0.760	mg/kg	1		06/23/21 02:15
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	138	50-150		%	1		06/23/21 02:15

**Batch Information**

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/23/21 02:15  
Container ID: 1213208003-B

Prep Batch: VXX37279  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:33  
Prep Initial Wt./Vol.: 63.099 g  
Prep Extract Vol: 29.6376 mL

Print Date: 06/29/2021 10:23:34AM



### Results of Hub-LF-E2

Client Sample ID: **Hub-LF-E2**  
 Client Project ID: **17875 Landfarm Sampling**  
 Lab Sample ID: 1213208003  
 Lab Project ID: 1213208

Collection Date: 06/10/21 10:33  
 Received Date: 06/11/21 09:30  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):92.7  
 Location:

### Results by Volatile GC/MS- Petroleum VOC Group

<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	50.7 U	50.7	15.2	ug/kg	1		06/16/21 20:07
1,2-Dibromoethane	1.01 U	1.01	0.406	ug/kg	1		06/16/21 20:07
1,2-Dichloroethane	2.03 U	2.03	0.710	ug/kg	1		06/16/21 20:07
1,3,5-Trimethylbenzene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
Benzene	40.8	12.7	3.95	ug/kg	1		06/16/21 20:07
Ethylbenzene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
Isopropylbenzene (Cumene)	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
Methyl-t-butyl ether	101 U	101	31.4	ug/kg	1		06/16/21 20:07
Naphthalene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
n-Butylbenzene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
o-Xylene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
P & M -Xylene	66.2	50.7	15.2	ug/kg	1		06/16/21 20:07
sec-Butylbenzene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
tert-Butylbenzene	25.3 U	25.3	7.91	ug/kg	1		06/16/21 20:07
Toluene	35.2	25.3	7.91	ug/kg	1		06/16/21 20:07
Xylenes (total)	84.9	76.0	23.1	ug/kg	1		06/16/21 20:07
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		06/16/21 20:07
4-Bromofluorobenzene (surr)	88.4	55-151		%	1		06/16/21 20:07
Toluene-d8 (surr)	101	85-116		%	1		06/16/21 20:07

### Batch Information

Analytical Batch: VMS20821  
 Analytical Method: SW8260D  
 Analyst: S.S  
 Analytical Date/Time: 06/16/21 20:07  
 Container ID: 1213208003-B

Prep Batch: VXX37249  
 Prep Method: SW5035A  
 Prep Date/Time: 06/10/21 10:33  
 Prep Initial Wt./Vol.: 63.099 g  
 Prep Extract Vol: 29.6376 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-E22**

Client Sample ID: **Hub-LF-E22**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208004  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:37  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.5  
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	90.2	21.1	6.53	mg/kg	1		06/18/21 18:28
<b>Surrogates</b>							
5a Androstane (surr)	80.3	50-150		%	1		06/18/21 18:28

**Batch Information**

Analytical Batch: XFC15961  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/18/21 18:28  
Container ID: 1213208004-A

Prep Batch: XXX44993  
Prep Method: SW3550C  
Prep Date/Time: 06/18/21 08:23  
Prep Initial Wt./Vol.: 30.47 g  
Prep Extract Vol: 5 mL

Print Date: 06/29/2021 10:23:34AM



Results of **Hub-LF-E22**

Client Sample ID: **Hub-LF-E22**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208004  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:37  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.5  
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	3.81	3.04	0.912	mg/kg	1		06/23/21 04:03
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	136	50-150		%	1		06/23/21 04:03

**Batch Information**

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/23/21 04:03  
Container ID: 1213208004-B

Prep Batch: VXX37280  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:37  
Prep Initial Wt./Vol.: 49.652 g  
Prep Extract Vol: 28.2317 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-E22**

Client Sample ID: **Hub-LF-E22**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208004  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:37  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):93.5  
Location:

**Results by Volatile GC/MS- Petroleum VOC Group**

<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	60.8 U	60.8	18.2	ug/kg	1		06/16/21 20:24
1,2-Dibromoethane	1.22 U	1.22	0.487	ug/kg	1		06/16/21 20:24
1,2-Dichloroethane	2.43 U	2.43	0.851	ug/kg	1		06/16/21 20:24
1,3,5-Trimethylbenzene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
Benzene	21.9	15.2	4.74	ug/kg	1		06/16/21 20:24
Ethylbenzene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
Isopropylbenzene (Cumene)	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
Methyl-t-butyl ether	122 U	122	37.7	ug/kg	1		06/16/21 20:24
Naphthalene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
n-Butylbenzene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
o-Xylene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
P & M -Xylene	73.3	60.8	18.2	ug/kg	1		06/16/21 20:24
sec-Butylbenzene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
tert-Butylbenzene	30.4 U	30.4	9.49	ug/kg	1		06/16/21 20:24
Toluene	37.1	30.4	9.49	ug/kg	1		06/16/21 20:24
Xylenes (total)	94.0	91.2	27.7	ug/kg	1		06/16/21 20:24
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	108	71-136		%	1		06/16/21 20:24
4-Bromofluorobenzene (surr)	94.7	55-151		%	1		06/16/21 20:24
Toluene-d8 (surr)	100	85-116		%	1		06/16/21 20:24

**Batch Information**

Analytical Batch: VMS20821  
Analytical Method: SW8260D  
Analyst: S.S  
Analytical Date/Time: 06/16/21 20:24  
Container ID: 1213208004-B

Prep Batch: VXX37249  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:37  
Prep Initial Wt./Vol.: 49.652 g  
Prep Extract Vol: 28.2317 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-F2**

Client Sample ID: **Hub-LF-F2**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208005  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:27  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.7  
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	93.2	22.6	7.00	mg/kg	1		06/18/21 18:39
<b>Surrogates</b>							
5a Androstane (surr)	83.5	50-150		%	1		06/18/21 18:39

**Batch Information**

Analytical Batch: XFC15961  
Analytical Method: AK102  
Analyst: IVM  
Analytical Date/Time: 06/18/21 18:39  
Container ID: 1213208005-A

Prep Batch: XXX44993  
Prep Method: SW3550C  
Prep Date/Time: 06/18/21 08:23  
Prep Initial Wt./Vol.: 30.298 g  
Prep Extract Vol: 5 mL

Print Date: 06/29/2021 10:23:34AM



**Results of Hub-LF-F2**

Client Sample ID: **Hub-LF-F2**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208005  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:27  
Received Date: 06/11/21 09:30  
Matrix: Soil/Solid (dry weight)  
Solids (%):87.7  
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	2.72	2.28	0.684	mg/kg	1		06/23/21 04:21
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	131	50-150		%	1		06/23/21 04:21

**Batch Information**

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/23/21 04:21  
Container ID: 1213208005-B

Prep Batch: VXX37280  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:27  
Prep Initial Wt./Vol.: 90.356 g  
Prep Extract Vol: 36.1298 mL

Print Date: 06/29/2021 10:23:34AM



Results of Hub-LF-F2

Client Sample ID: Hub-LF-F2
Client Project ID: 17875 Landfarm Sampling
Lab Sample ID: 1213208005
Lab Project ID: 1213208

Collection Date: 06/10/21 10:27
Received Date: 06/11/21 09:30
Matrix: Soil/Solid (dry weight)
Solids (%):87.7
Location:

Results by Volatile GC/MS- Petroleum VOC Group

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include various VOCs like 1,2,4-Trimethylbenzene, Benzene, Ethylbenzene, etc., and a Surrogates section.

Batch Information

Analytical Batch: VMS20826
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 06/17/21 22:15
Container ID: 1213208005-B

Prep Batch: VXX37255
Prep Method: SW5035A
Prep Date/Time: 06/10/21 10:27
Prep Initial Wt./Vol.: 90.356 g
Prep Extract Vol: 36.1298 mL



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
Client Project ID: **17875 Landfarm Sampling**  
Lab Sample ID: 1213208006  
Lab Project ID: 1213208

Collection Date: 06/10/21 10:15  
Received Date: 06/11/21 09:30  
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	2.52 U	2.52	0.757	mg/kg	1		06/22/21 19:36
<b>Surrogates</b>							
4-Bromofluorobenzene (surr)	98	50-150		%	1		06/22/21 19:36

### Batch Information

Analytical Batch: VFC15666  
Analytical Method: AK101  
Analyst: IJV  
Analytical Date/Time: 06/22/21 19:36  
Container ID: 1213208006-A

Prep Batch: VXX37279  
Prep Method: SW5035A  
Prep Date/Time: 06/10/21 10:15  
Prep Initial Wt./Vol.: 49.56 g  
Prep Extract Vol: 25 mL

Print Date: 06/29/2021 10:23:34AM



### Results of Trip Blank

Client Sample ID: **Trip Blank**  
 Client Project ID: **17875 Landfarm Sampling**  
 Lab Sample ID: 1213208006  
 Lab Project ID: 1213208

Collection Date: 06/10/21 10:15  
 Received Date: 06/11/21 09:30  
 Matrix: Soil/Solid (dry weight)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS- Petroleum VOC Group

<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	50.4 U	50.4	15.1	ug/kg	1		06/17/21 17:21
1,2-Dibromoethane	1.01 U	1.01	0.404	ug/kg	1		06/17/21 17:21
1,2-Dichloroethane	2.02 U	2.02	0.706	ug/kg	1		06/17/21 17:21
1,3,5-Trimethylbenzene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
Benzene	12.6 U	12.6	3.93	ug/kg	1		06/17/21 17:21
Ethylbenzene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
Isopropylbenzene (Cumene)	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
Methyl-t-butyl ether	101 U	101	31.3	ug/kg	1		06/17/21 17:21
Naphthalene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
n-Butylbenzene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
o-Xylene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
P & M -Xylene	50.4 U	50.4	15.1	ug/kg	1		06/17/21 17:21
sec-Butylbenzene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
tert-Butylbenzene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
Toluene	25.2 U	25.2	7.87	ug/kg	1		06/17/21 17:21
Xylenes (total)	75.7 U	75.7	23.0	ug/kg	1		06/17/21 17:21
<b>Surrogates</b>							
1,2-Dichloroethane-D4 (surr)	109	71-136		%	1		06/17/21 17:21
4-Bromofluorobenzene (surr)	88	55-151		%	1		06/17/21 17:21
Toluene-d8 (surr)	100	85-116		%	1		06/17/21 17:21

### Batch Information

Analytical Batch: VMS20825  
 Analytical Method: SW8260D  
 Analyst: S.S  
 Analytical Date/Time: 06/17/21 17:21  
 Container ID: 1213208006-A

Prep Batch: VXX37254  
 Prep Method: SW5035A  
 Prep Date/Time: 06/10/21 10:15  
 Prep Initial Wt./Vol.: 49.56 g  
 Prep Extract Vol: 25 mL



**Method Blank**

Blank ID: MB for HBN 1820958 [SPT/11300]  
Blank Lab ID: 1616875

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1213208001, 1213208002, 1213208003, 1213208004, 1213208005

**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: SPT11300  
Analytical Method: SM21 2540G  
Instrument:  
Analyst: TMM  
Analytical Date/Time: 6/16/2021 5:00:00PM

Print Date: 06/29/2021 10:23:36AM

## Duplicate Sample Summary

Original Sample ID: 1213329001

Duplicate Sample ID: 1616878

QC for Samples:

Analysis Date: 06/16/2021 17:00

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	82.6	82.3	%	0.37	(< 15 )

## Batch Information

Analytical Batch: SPT11300

Analytical Method: SM21 2540G

Instrument:

Analyst: TMM

Print Date: 06/29/2021 10:23:37AM

## Duplicate Sample Summary

Original Sample ID: 1213329003

Duplicate Sample ID: 1616879

QC for Samples:

1213208001, 1213208002, 1213208003, 1213208004, 1213208005

Analysis Date: 06/16/2021 17:00

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	74.5	74.5	%	0.08	(< 15 )

## Batch Information

Analytical Batch: SPT11300

Analytical Method: SM21 2540G

Instrument:

Analyst: TMM

Print Date: 06/29/2021 10:23:37AM

## Method Blank

Blank ID: MB for HBN 1820990 [VXX/37249]  
 Blank Lab ID: 1617031

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1213208001, 1213208002, 1213208003, 1213208004

## Results by SW8260D

<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
1,2-Dibromoethane	0.500U	1.00	0.400	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	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
Xylenes (total)	37.5U	75.0	22.8	ug/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	107	71-136		%
4-Bromofluorobenzene (surr)	95.7	55-151		%
Toluene-d8 (surr)	100	85-116		%

## Batch Information

Analytical Batch: VMS20821  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/16/2021 11:17:00AM

Prep Batch: VXX37249  
 Prep Method: SW5035A  
 Prep Date/Time: 6/16/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 50 g  
 Prep Extract Vol: 25 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [VXX37249]

Blank Spike Lab ID: 1617032

Date Analyzed: 06/16/2021 11:34

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208001, 1213208002, 1213208003, 1213208004

## Results by SW8260D

### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	774	103	(75-123)
1,2-Dibromoethane	750	842	112	(78-122)
1,2-Dichloroethane	750	674	90	(73-128)
1,3,5-Trimethylbenzene	750	791	105	(73-124)
Benzene	750	742	99	(77-121)
Ethylbenzene	750	717	96	(76-122)
Isopropylbenzene (Cumene)	750	760	101	(68-134)
Methyl-t-butyl ether	1130	1120	100	(73-125)
Naphthalene	750	804	107	(62-129)
n-Butylbenzene	750	787	105	(70-128)
o-Xylene	750	734	98	(77-123)
P & M -Xylene	1500	1440	96	(77-124)
sec-Butylbenzene	750	761	102	(73-126)
tert-Butylbenzene	750	762	102	(73-125)
Toluene	750	717	96	(77-121)
Xylenes (total)	2250	2170	97	(78-124)

### Surrogates

1,2-Dichloroethane-D4 (surr)	750	94	(71-136)
4-Bromofluorobenzene (surr)	750	94	(55-151)
Toluene-d8 (surr)	750	102	(85-116)

## Batch Information

Analytical Batch: VMS20821

Analytical Method: SW8260D

Instrument: VQA 7890/5975 GC/MS

Analyst: S.S

Prep Batch: VXX37249

Prep Method: SW5035A

Prep Date/Time: 06/16/2021 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: 1617033  
 MS Sample ID: 1617034 MS  
 MSD Sample ID: 1617035 MSD

Analysis Date: 06/16/2021 15:59  
 Analysis Date: 06/16/2021 13:31  
 Analysis Date: 06/16/2021 13:47  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1213208001, 1213208002, 1213208003, 1213208004

### Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	17.8U	534	530	99	534	526	98	75-123	0.78	(< 20)
1,2-Dibromoethane	0.356U	534	615	115	534	616	115	78-122	0.06	(< 20)
1,2-Dichloroethane	0.715U	534	491	92	534	491	92	73-128	0.04	(< 20)
1,3,5-Trimethylbenzene	8.90U	534	520	97	534	533	100	73-124	2.40	(< 20)
Benzene	4.46U	534	538	101	534	529	99	77-121	1.60	(< 20)
Ethylbenzene	8.90U	534	514	96	534	507	95	76-122	1.50	(< 20)
Isopropylbenzene (Cumene)	8.90U	534	536	100	534	531	99	68-134	1.00	(< 20)
Methyl-t-butyl ether	35.6U	802	813	101	802	809	101	73-125	0.46	(< 20)
Naphthalene	8.90U	534	574	107	534	584	109	62-129	1.80	(< 20)
n-Butylbenzene	8.90U	534	539	101	534	523	98	70-128	3.00	(< 20)
o-Xylene	8.90U	534	529	99	534	522	98	77-123	1.40	(< 20)
P & M -Xylene	17.8U	1070	1030	96	1070	1010	95	77-124	1.40	(< 20)
sec-Butylbenzene	8.90U	534	518	97	534	504	94	73-126	2.70	(< 20)
tert-Butylbenzene	8.90U	534	520	97	534	506	95	73-125	2.70	(< 20)
Toluene	8.90U	534	519	97	534	511	96	77-121	1.60	(< 20)
Xylenes (total)	26.7U	1600	1560	97	1600	1540	96	78-124	1.40	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		534	510	95	534	510	95	71-136	0.00	
4-Bromofluorobenzene (surr)		891	589	66	891	582	65	55-151	1.20	
Toluene-d8 (surr)		534	539	101	534	538	101	85-116	0.17	

### Batch Information

Analytical Batch: VMS20821  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/16/2021 1:31:00PM

Prep Batch: VXX37249  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 6/16/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 70.17g  
 Prep Extract Vol: 25.00mL

Print Date: 06/29/2021 10:23:44AM

## Method Blank

Blank ID: MB for HBN 1821027 [VXX/37254]  
 Blank Lab ID: 1617186

Matrix: Soil/Solid (dry weight)

QC for Samples:  
 1213208006

## Results by SW8260D

<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
1,2-Dibromoethane	0.500U	1.00	0.400	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	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
Xylenes (total)	37.5U	75.0	22.8	ug/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	109	71-136		%
4-Bromofluorobenzene (surr)	96.1	55-151		%
Toluene-d8 (surr)	101	85-116		%

## Batch Information

Analytical Batch: VMS20825  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/17/2021 11:49:00AM

Prep Batch: VXX37254  
 Prep Method: SW5035A  
 Prep Date/Time: 6/17/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 50 g  
 Prep Extract Vol: 25 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [VXX37254]

Blank Spike Lab ID: 1617187

Date Analyzed: 06/17/2021 12:05

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208006

### Results by SW8260D

#### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	742	99	( 75-123 )
1,2-Dibromoethane	750	821	110	( 78-122 )
1,2-Dichloroethane	750	664	89	( 73-128 )
1,3,5-Trimethylbenzene	750	760	101	( 73-124 )
Benzene	750	736	98	( 77-121 )
Ethylbenzene	750	704	94	( 76-122 )
Isopropylbenzene (Cumene)	750	729	97	( 68-134 )
Methyl-t-butyl ether	1130	1100	98	( 73-125 )
Naphthalene	750	759	101	( 62-129 )
n-Butylbenzene	750	730	97	( 70-128 )
o-Xylene	750	725	97	( 77-123 )
P & M -Xylene	1500	1400	93	( 77-124 )
sec-Butylbenzene	750	719	96	( 73-126 )
tert-Butylbenzene	750	730	97	( 73-125 )
Toluene	750	701	94	( 77-121 )
Xylenes (total)	2250	2120	94	( 78-124 )

#### Surrogates

1,2-Dichloroethane-D4 (surr)	750		94	( 71-136 )
4-Bromofluorobenzene (surr)	750		93	( 55-151 )
Toluene-d8 (surr)	750		101	( 85-116 )

### Batch Information

Analytical Batch: **VMS20825**  
 Analytical Method: **SW8260D**  
 Instrument: **VQA 7890/5975 GC/MS**  
 Analyst: **S.S**

Prep Batch: **VXX37254**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **06/17/2021 06:00**  
 Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL  
 Dupe Init Wt./Vol.: Extract Vol:

Print Date: 06/29/2021 10:23:48AM



### Matrix Spike Summary

Original Sample ID: 1617188  
 MS Sample ID: 1617189 MS  
 MSD Sample ID: 1617190 MSD

Analysis Date: 06/17/2021 17:38  
 Analysis Date: 06/17/2021 14:01  
 Analysis Date: 06/17/2021 14:17  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1213208006

### Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	11.1U	333	336	101	333	347	104	75-123	3.30	(< 20)
1,2-Dibromoethane	0.223U	333	379	114	333	377	113	78-122	0.35	(< 20)
1,2-Dichloroethane	0.445U	333	304	91	333	300	90	73-128	1.40	(< 20)
1,3,5-Trimethylbenzene	5.55U	333	342	103	333	338	101	73-124	1.30	(< 20)
Benzene	2.78U	333	333	100	333	329	99	77-121	1.40	(< 20)
Ethylbenzene	5.55U	333	322	97	333	320	96	76-122	0.59	(< 20)
Isopropylbenzene (Cumene)	5.55U	333	332	100	333	330	99	68-134	0.50	(< 20)
Methyl-t-butyl ether	22.3U	500	506	101	500	491	98	73-125	3.00	(< 20)
Naphthalene	5.55U	333	347	104	333	377	113	62-129	8.30	(< 20)
n-Butylbenzene	5.55U	333	325	98	333	335	100	70-128	3.00	(< 20)
o-Xylene	5.55U	333	331	99	333	328	98	77-123	0.98	(< 20)
P & M -Xylene	11.1U	667	638	96	667	636	95	77-124	0.37	(< 20)
sec-Butylbenzene	5.55U	333	320	96	333	330	99	73-126	3.00	(< 20)
tert-Butylbenzene	5.55U	333	324	97	333	337	101	73-125	4.00	(< 20)
Toluene	5.55U	333	322	97	333	318	96	77-121	1.10	(< 20)
Xylenes (total)	16.6U	1000	969	97	1000	964	96	78-124	0.57	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		333	314	94	333	312	94	71-136	0.71	
4-Bromofluorobenzene (surr)		556	368	66	556	382	69	55-151	3.60	
Toluene-d8 (surr)		333	340	102	333	340	102	85-116	0.13	

### Batch Information

Analytical Batch: VMS20825  
 Analytical Method: SW8260D  
 Instrument: VQA 7890/5975 GC/MS  
 Analyst: S.S  
 Analytical Date/Time: 6/17/2021 2:01:00PM

Prep Batch: VXX37254  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 6/17/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 112.49g  
 Prep Extract Vol: 25.00mL

Print Date: 06/29/2021 10:23:49AM



### Method Blank

Blank ID: MB for HBN 1821045 [VXX/37255]  
Blank Lab ID: 1617298

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1213208005

### Results by SW8260D

<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
1,2-Dibromoethane	0.500U	1.00	0.400	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	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
Xylenes (total)	37.5U	75.0	22.8	ug/kg
<b>Surrogates</b>				
1,2-Dichloroethane-D4 (surr)	97.9	71-136		%
4-Bromofluorobenzene (surr)	97.5	55-151		%
Toluene-d8 (surr)	101	85-116		%

### Batch Information

Analytical Batch: VMS20826  
Analytical Method: SW8260D  
Instrument: VRA Agilent GC/MS 7890B/5977A  
Analyst: S.S  
Analytical Date/Time: 6/17/2021 11:46:00AM

Prep Batch: VXX37255  
Prep Method: SW5035A  
Prep Date/Time: 6/17/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 06/29/2021 10:23:51AM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [VXX37255]

Blank Spike Lab ID: 1617299

Date Analyzed: 06/17/2021 12:01

Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208005

## Results by SW8260D

### Blank Spike (ug/kg)

Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	784	105	(75-123)
1,2-Dibromoethane	750	800	107	(78-122)
1,2-Dichloroethane	750	718	96	(73-128)
1,3,5-Trimethylbenzene	750	800	107	(73-124)
Benzene	750	785	105	(77-121)
Ethylbenzene	750	771	103	(76-122)
Isopropylbenzene (Cumene)	750	776	104	(68-134)
Methyl-t-butyl ether	1130	1120	100	(73-125)
Naphthalene	750	747	100	(62-129)
n-Butylbenzene	750	745	99	(70-128)
o-Xylene	750	781	104	(77-123)
P & M -Xylene	1500	1510	101	(77-124)
sec-Butylbenzene	750	744	99	(73-126)
tert-Butylbenzene	750	765	102	(73-125)
Toluene	750	771	103	(77-121)
Xylenes (total)	2250	2290	102	(78-124)

### Surrogates

1,2-Dichloroethane-D4 (surr)	750	97	(71-136)
4-Bromofluorobenzene (surr)	750	98	(55-151)
Toluene-d8 (surr)	750	102	(85-116)

## Batch Information

Analytical Batch: **VMS20826**  
 Analytical Method: **SW8260D**  
 Instrument: **VRA Agilent GC/MS 7890B/5977A**  
 Analyst: **S.S**

Prep Batch: **VXX37255**  
 Prep Method: **SW5035A**  
 Prep Date/Time: **06/17/2021 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: 1617300  
 MS Sample ID: 1617301 MS  
 MSD Sample ID: 1617302 MSD

Analysis Date: 06/17/2021 16:51  
 Analysis Date: 06/17/2021 14:01  
 Analysis Date: 06/17/2021 14:16  
 Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1213208005

## Results by SW8260D

Parameter	Sample	Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,2,4-Trimethylbenzene	24.8U	741	788	106	741	773	104	75-123	1.80	(< 20)
1,2-Dibromoethane	0.495U	741	808	109	741	787	106	78-122	2.60	(< 20)
1,2-Dichloroethane	0.990U	741	736	99	741	717	97	73-128	2.60	(< 20)
1,3,5-Trimethylbenzene	12.4U	741	786	106	741	760	102	73-124	3.40	(< 20)
Benzene	6.20U	741	777	105	741	755	102	77-121	2.90	(< 20)
Ethylbenzene	12.4U	741	762	103	741	742	100	76-122	2.70	(< 20)
Isopropylbenzene (Cumene)	12.4U	741	772	104	741	749	101	68-134	3.00	(< 20)
Methyl-t-butyl ether	49.5U	1110	1140	102	1110	1120	100	73-125	2.00	(< 20)
Naphthalene	8.91J	741	770	103	741	803	107	62-129	4.10	(< 20)
n-Butylbenzene	12.4U	741	720	97	741	721	97	70-128	0.14	(< 20)
o-Xylene	12.4U	741	773	104	741	745	101	77-123	3.60	(< 20)
P & M -Xylene	24.8U	1480	1480	100	1480	1430	97	77-124	3.40	(< 20)
sec-Butylbenzene	12.4U	741	737	100	741	730	99	73-126	0.98	(< 20)
tert-Butylbenzene	12.4U	741	764	103	741	732	99	73-125	4.30	(< 20)
Toluene	12.4U	741	767	103	741	736	99	77-121	4.10	(< 20)
Xylenes (total)	37.1U	2220	2260	101	2220	2180	98	78-124	3.50	(< 20)
<b>Surrogates</b>										
1,2-Dichloroethane-D4 (surr)		741	738	100	741	731	99	71-136	1.00	
4-Bromofluorobenzene (surr)		741	624	84	741	614	83	55-151	1.60	
Toluene-d8 (surr)		741	756	102	741	750	101	85-116	0.82	

## Batch Information

Analytical Batch: VMS20826  
 Analytical Method: SW8260D  
 Instrument: VRA Agilent GC/MS 7890B/5977A  
 Analyst: S.S  
 Analytical Date/Time: 6/17/2021 2:01:00PM

Prep Batch: VXX37255  
 Prep Method: Vol. Extraction SW8260 Field Extracted L  
 Prep Date/Time: 6/17/2021 6:00:00AM  
 Prep Initial Wt./Vol.: 84.31g  
 Prep Extract Vol: 41.75mL

## Method Blank

Blank ID: MB for HBN 1821217 [VXX/37279]  
Blank Lab ID: 1618055

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1213208001, 1213208002, 1213208003, 1213208006

## Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.965J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	106	50-150		%

## Batch Information

Analytical Batch: VFC15666  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: IJV  
Analytical Date/Time: 6/22/2021 3:06:00PM

Prep Batch: VXX37279  
Prep Method: SW5035A  
Prep Date/Time: 6/22/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [VXX37279]  
 Blank Spike Lab ID: 1618056  
 Date Analyzed: 06/22/2021 13:54

Spike Duplicate ID: LCSD for HBN 1213208 [VXX37279]  
 Spike Duplicate Lab ID: 1618057  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208001, 1213208002, 1213208003, 1213208006

### 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	12.9	103	12.5	14.5	116	( 60-120 )	11.60	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		86	1.25		113	( 50-150 )	27.40	
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### Batch Information

Analytical Batch: VFC15666  
 Analytical Method: AK101  
 Instrument: Agilent 7890A PID/FID  
 Analyst: IJV

Prep Batch: VXX37279  
 Prep Method: SW5035A  
 Prep Date/Time: 06/22/2021 06:00  
 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: 06/29/2021 10:23:59AM



### Method Blank

Blank ID: MB for HBN 1821220 [VXX/37280]

Blank Lab ID: 1618066

QC for Samples:

1213208004, 1213208005

Matrix: Soil/Solid (dry weight)

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.15J	2.50	0.750	mg/kg
<b>Surrogates</b>				
4-Bromofluorobenzene (surr)	105	50-150		%

### Batch Information

Analytical Batch: VFC15666  
Analytical Method: AK101  
Instrument: Agilent 7890A PID/FID  
Analyst: IJV  
Analytical Date/Time: 6/23/2021 3:27:00AM

Prep Batch: VXX37280  
Prep Method: SW5035A  
Prep Date/Time: 6/22/2021 6:00:00AM  
Prep Initial Wt./Vol.: 50 g  
Prep Extract Vol: 25 mL

Print Date: 06/29/2021 10:24:01AM



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [VXX37280]  
 Blank Spike Lab ID: 1618067  
 Date Analyzed: 06/23/2021 02:51

Spike Duplicate ID: LCSD for HBN 1213208 [VXX37280]  
 Spike Duplicate Lab ID: 1618068  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208004, 1213208005

### 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	14.3	115	12.5	14.2	114	( 60-120 )	0.77	(< 20 )

### Surrogates

4-Bromofluorobenzene (surr)	1.25		115	1.25		110	( 50-150 )	4.20	
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### Batch Information

Analytical Batch: VFC15666  
 Analytical Method: AK101  
 Instrument: Agilent 7890A PID/FID  
 Analyst: IJV

Prep Batch: VXX37280  
 Prep Method: SW5035A  
 Prep Date/Time: 06/22/2021 06:00  
 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: 06/29/2021 10:24:04AM

## Method Blank

Blank ID: MB for HBN 1821004 [XXX/44993]  
Blank Lab ID: 1617086

Matrix: Soil/Solid (dry weight)

QC for Samples:  
1213208001, 1213208002, 1213208003, 1213208004, 1213208005

## 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
<b>Surrogates</b>				
5a Androstane (surr)	76.6	60-120		%

## Batch Information

Analytical Batch: XFC15961  
Analytical Method: AK102  
Instrument: Agilent 7890B F  
Analyst: IVM  
Analytical Date/Time: 6/18/2021 3:55:00PM

Prep Batch: XXX44993  
Prep Method: SW3550C  
Prep Date/Time: 6/18/2021 8:23:03AM  
Prep Initial Wt./Vol.: 30 g  
Prep Extract Vol: 5 mL



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1213208 [XXX44993]  
 Blank Spike Lab ID: 1617087  
 Date Analyzed: 06/18/2021 16:05

Spike Duplicate ID: LCSD for HBN 1213208  
 [XXX44993]  
 Spike Duplicate Lab ID: 1617088  
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1213208001, 1213208002, 1213208003, 1213208004, 1213208005

### 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	667	584	88	667	598	90	( 75-125 )	2.30	(< 20 )	
<b>Surrogates</b>										
5a Androstane (surr)	16.7		83	16.7		85	( 60-120 )	1.70		

### Batch Information

Analytical Batch: **XFC15961**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B F**  
 Analyst: **IVM**

Prep Batch: **XXX44993**  
 Prep Method: **SW3550C**  
 Prep Date/Time: **06/18/2021 08:23**  
 Spike Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 667 mg/kg Extract Vol: 5 mL

Print Date: 06/29/2021 10:24:09AM



1213208



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Form with sections 1-5. Section 1: CLIENT: EMI; CONTACT: Hannah Deeney; PROJECT: 17875 Landfarm Sampling. Section 2: Table with columns for SAMPLE IDENTIFICATION, DATE, TIME, MATRIX/MATRIX CODE, CONTAINER TYPE, and ANALYTES (DRO- AK 102, GRO- AK 101, VOC). Section 3: Preservative. Section 4: Relinquished By: (1) Delaney Det 6/11/21 9:27. Section 5: Relinquished By: (4) 6/11/21 0930. Includes Chain of Custody Seal and Temperature recording.



e-Sample Receipt Form

SGS Workorder #:

1213208

1213208

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
<b>Chain of Custody / Temperature Requirements</b>		<input checked="" type="checkbox"/> Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input type="checkbox"/> N/A absent	
COC accompanied samples?	<input checked="" type="checkbox"/> Yes	
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/> N/A	
<input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes	Cooler ID: 1 @ 6.0 °C Therm. ID: D58
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
	<input type="checkbox"/>	Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	<input type="checkbox"/> N/A	
If <0°C, were sample containers ice free?	<input type="checkbox"/> N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
<b>Holding Time / Documentation / Sample Condition Requirements</b>		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	<input checked="" type="checkbox"/> Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/> Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	<input checked="" type="checkbox"/> Yes	
Were proper containers (type/mass/volume/preservative***) used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g.200.8/6020A).
<b>Volatile / LL-Hg Requirements</b>		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input checked="" type="checkbox"/> Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input type="checkbox"/> N/A	
Were all soil VOAs field extracted with MeOH+BFB?	<input checked="" type="checkbox"/> Yes	
<b>Note to Client:</b> 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>
1213208001-A	No Preservative Required	OK			
1213208001-B	Methanol field pres. 4 C	OK			
1213208002-A	No Preservative Required	OK			
1213208002-B	Methanol field pres. 4 C	OK			
1213208003-A	No Preservative Required	OK			
1213208003-B	Methanol field pres. 4 C	OK			
1213208004-A	No Preservative Required	OK			
1213208004-B	Methanol field pres. 4 C	OK			
1213208005-A	No Preservative Required	OK			
1213208005-B	Methanol field pres. 4 C	OK			
1213208006-A	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.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

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.

QN - Insufficient sample quantity provided.

**Laboratory Data Review Checklist**

Completed By:

Hannah Deeney

Title:

Junior Engineer

Date:

June 30, 2021

Consultant Firm:

Environmental Management Inc. (EMI)

Laboratory Name:

SGS Alaska

Laboratory Report Number:

1213208

Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

ADEC File Number:

240.26.008

Hazard Identification Number:

23554

1213208

Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

**Note: Any N/A or No box checked must have an explanation in the comments box.**

1. Laboratory

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

Yes  No  N/A  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  N/A  Comments:

Not transferred

2. Chain of Custody (CoC)

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

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

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

Yes  No  N/A  Comments:

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  N/A  Comments:

e. Data quality or usability affected?

Comments:

No effect

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

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

Comments:

No effect

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Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

5. Samples Results

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

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

1-Dibromoethane LOQs for all samples were between 0.908 ug/kg to 1.22 ug/kg, which is above Cleanup Level of 0.24 ug/kg. All samples were non-detect for 1-Dibromoethane.

e. Data quality or usability affected?

Not affected

6. QC Samples

a. Method Blank

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

Yes  No  N/A  Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes  No  N/A  Comments:

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Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

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

Yes  No  N/A  Comments:

v. Data quality or usability affected?

Comments:

Not affected

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  N/A  Comments:

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

Yes  No  N/A  Comments:

Metals/inorganics not sampled

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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CS Site Name:

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

Comments:

Na

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

Yes  No  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Not affected

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

**Note: Leave blank if not required for project**

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes  No  N/A  Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes  No  N/A  Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

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Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

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  N/A  Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes  No  N/A  Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes  No  N/A  Comments:

GRO surrogate; 4-Bromofluorobenzene %R was 165% (above the 50-150% acceptable limits) in sample *Hub-LF-A1*.

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

Yes  No  N/A  Comments:

iv. Data quality or usability affected?

Comments:

*Hub-LF-A1* had several detections including DRO, GRO, and several VOC compounds. This surrogate being slightly above laboratory limits does not affect data quality or usability due to the multiple other analytes detected in this sample.

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CS Site Name:

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e. Trip Blanks

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No  N/A  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  N/A  Comments:

- iii. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

- v. Data quality or usability affected?

Comments:

Not affected

f. Field Duplicate

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

Yes  No  N/A  Comments:

- ii. Submitted blind to lab?

Yes  No  N/A  Comments:

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Hub of Alaska, Inc.

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

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

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

RPD was 60% for VOC analyte: Benzene. All other analytes were less than the recommended 50%.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Benzene was detected above the cleanup level (22 ug/kg) in the parent sample *Hub-LF-E2* (40.8 ug/kg) and just below the cleanup level in the duplicate sample *Hub-LF-E22* (21.9 ug/kg). With the other benzene detects in the remaining samples and other analytes detected in the parent and duplicate samples, this discrepancy will not affect the data usability and quality.

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

Yes  No  N/A  Comments:

New sampling equipment was used for each sample. No decon/equipment blank was collected.

i. All results less than LOQ and project specified objectives?

Yes  No  N/A  Comments:

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Na

iii. Data quality or usability affected?

Comments:

Not affected.

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Laboratory Report Date:

June 29, 2021

CS Site Name:

Hub of Alaska, Inc.

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

a. Defined and appropriate?

Yes  No  N/A

Comments:

## **Appendix D**

### **Boring Logs**



**CLIENT** The Hub of Alaska, Inc  
**PROJECT NUMBER** 17875  
**DATE STARTED** 4/12/21 **COMPLETED** 4/12/21  
**DRILLING CONTRACTOR** Discovery Drilling  
**DRILLING METHOD** Geoprobe 7822  
**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall  
**NOTES** \_\_\_\_\_

**PROJECT NAME** The Hub Site Characterization  
**PROJECT LOCATION** Glennallen, Alaska  
**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches  
**GROUND WATER LEVELS:**  
 ∇ **AT TIME OF DRILLING** 12.00 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\NEMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5. DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B1-1		Brown/Gray gravel; Frozen	PID = 22.7
2.5	B1-2		Brown/Gray gravel; Frozen	PID = 7
5.0	B1-3		Brown/Gray gravel and sand; Wet/moist	PID = 29.5
6.0	B1-4		Brown/Gray sand; wet/moist	PID = 1070
7.5	B1-5		Brown/Gray sand; moist	PID = 236
9.5	B1-6		Brown sand; moist	PID = 16.6
10.0	B1-7		Dark Gray silt with sand; wet	PID = 27.1
12.5		∇		
12.5	B1-8		Dark Gray silt with sand; wet	PID = 308
15.0				

Bottom of borehole at 15.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NUMBER** 17875

**DATE STARTED** 4/12/21      **COMPLETED** 4/12/21

**DRILLING CONTRACTOR** Discovery Drilling

**DRILLING METHOD** Geoprobe 7822

**LOGGED BY** Hannah Deeney      **CHECKED BY** Shayla Marshall

**NOTES** \_\_\_\_\_

**PROJECT NAME** The Hub Site Characterization

**PROJECT LOCATION** Glennallen, Alaska

**GROUND ELEVATION** \_\_\_\_\_      **HOLE SIZE** 2 inches

**GROUND WATER LEVELS:**

    ▽ **AT TIME OF DRILLING** 10.00 ft

**AT END OF DRILLING** ---

**AFTER DRILLING** ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\NEMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5. DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B2-1		Brown sand with rocks; moist	PID = -1
2.5	B2-2		Brown sand with rocks; moist	PID = 1.6
5.0	B2-3		Dark Brown sandy silt, possible staining; moist	PID = 2.1
7.5	B2-4		Brown silt with rocks; wet	PID = 1.8
10.0	B2-5		Brown silt; wet	PID = 1.5
12.5	B2-6		Brown sand; moist	PID = 0.8
15.0				

Bottom of borehole at 15.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/12/21 **COMPLETED** 4/12/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

**AT TIME OF DRILLING** ---

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

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DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B3-1		Brown sand with rocks; moist	PID = 41.3
2.0				
	B3-2		Brown sand with rocks; moist	PID = 40
4.0				
	B3-3		Brown silty sand with gravel; moist	PID = 1693
6.0				
	B3-4		Brown silt with sand, staining between 7 and 8 ft; moist	PID = 391
8.0				
	B3-5		Brown silt with gravel; wet	PID = 243
10.0				

Bottom of borehole at 10.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/12/21 **COMPLETED** 4/12/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

**AT TIME OF DRILLING** ---

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\EMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5.DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B4-1		Gray sand with rocks; moist	PID = 223
	B4-2		Gray sand with rocks; moist	PID = -1
	B4-3		Fuel Odor; Gray sand with gravel; moist	PID = 1791
	B4-4		Brown silt; moist	PID = 264
	B4-5		Brown silt with some gravel; wet	PID = 368

Bottom of borehole at 10.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/13/21 **COMPLETED** 4/13/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

**AT TIME OF DRILLING** ---

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\EMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5. DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B5-1		Brown silty sand with rocks; moist	PID = 5.1
	B5-2		Reddish Brown gravel and rocks; moist	PID = 7.4
5	B5-3		Fuel Odor; Brown silty sand with some rocks; moist	PID = 1145
	B5-4		Fuel Odor; Dark Brown silt; moist	PID = 447
	B5-5		Fuel Odor; Brown silt; wet	PID = 469
10				

Bottom of borehole at 10.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/13/21 **COMPLETED** 4/13/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

**AT TIME OF DRILLING** ---

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

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DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B6-1		Brown sand with gravel and rocks; moist	PID = 2.5
	B6-2		Brown sand with gravel and rocks; moist	PID = 4.8
5	B6-3		Black and Brown silty sand with gravel; moist	PID = 113
	B6-4		Dark Brown silt, with staining; moist	PID = 39.5
	B6-5		Brown silt; frozen/moist	PID = 14.7
10			Bottom of borehole at 10.0 feet.	



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/13/21 **COMPLETED** 4/13/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

**AT TIME OF DRILLING** ---

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\EMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5. DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B7-1		Brown silty sand with rocks; moist	PID = 3.4
	B7-2		Brown silty sand with gravel and rocks; moist	PID = 2.7
	B7-3		Black and Brown sand with rocks, slight staining; moist	PID = 4.5
	B7-4		Dark Brown silt, with slight staining; frozen, ice in core	PID = 3.7
	B7-5		Dark Brown silt, with slight staining; frozen, ice in core	PID = 3.6

Bottom of borehole at 10.0 feet.



**CLIENT** The Hub of Alaska, Inc

**PROJECT NAME** The Hub Site Characterization

**PROJECT NUMBER** 17875

**PROJECT LOCATION** Glennallen, Alaska

**DATE STARTED** 4/13/21 **COMPLETED** 4/13/21

**GROUND ELEVATION** \_\_\_\_\_ **HOLE SIZE** 2 inches

**DRILLING CONTRACTOR** Discovery Drilling

**GROUND WATER LEVELS:**

**DRILLING METHOD** Geoprobe 7822

▽ **AT TIME OF DRILLING** 12.00 ft

**LOGGED BY** Hannah Deeney **CHECKED BY** Shayla Marshall

**AT END OF DRILLING** ---

**NOTES** \_\_\_\_\_

**AFTER DRILLING** ---

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DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B8-1		Brown silty sand with rocks; moist	PID = 0.4
	B8-2		Brown silty sand with rocks; moist	PID = 1.7
	B8-3		Dark Brown silty sand with rocks and silt; moist	PID = 1.9
	B8-4		Brown silt; frozen/moist	PID = 8.6
	B8-5		Brown silt; frozen/moist	PID = 18.4
	B8-6		Brown silt and rocks; wet	PID = 2.9
	B8-7		Brown sand; wet	PID = 2.3

Bottom of borehole at 15.0 feet.



**CLIENT** The Hub of Alaska, Inc      **PROJECT NAME** The Hub Site Characterization  
**PROJECT NUMBER** 17875      **PROJECT LOCATION** Glennallen, Alaska  
**DATE STARTED** 4/13/21      **COMPLETED** 4/13/21      **GROUND ELEVATION** \_\_\_\_\_      **HOLE SIZE** 2 inches  
**DRILLING CONTRACTOR** Discovery Drilling      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Geoprobe 7822      ∇ **AT TIME OF DRILLING** 16.00 ft  
**LOGGED BY** Hannah Deeney      **CHECKED BY** Shayla Marshall      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

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DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B9-1		Brown sand with rocks; moist	PID = 1.1
	B9-2		Brown sand with rocks; moist	PID = 1.9
	B9-3		Brown sand with some rocks; moist	PID = 0.3
	B9-4		Brown silt; moist	PID = 3.7
	B9-5		Light Brown silt; moist	PID = 2
	B9-6		Dark Brown silt; moist	PID = 3.3
	B9-7		Dark Brown silt; moist	PID = 0.9
	B9-8	∇	Brown sand with rocks; wet	PID = 9.2
	B9-9		Brown sand with rocks; wet	PID = 5.2

Bottom of borehole at 20.0 feet.



CLIENT The Hub of Alaska, Inc

PROJECT NAME The Hub Site Characterization

PROJECT NUMBER 17875

PROJECT LOCATION Glennallen, Alaska

DATE STARTED 4/13/21 COMPLETED 4/13/21

GROUND ELEVATION \_\_\_\_\_ HOLE SIZE 2 inches

DRILLING CONTRACTOR Discovery Drilling

GROUND WATER LEVELS:

DRILLING METHOD Geoprobe 7822

▽ AT TIME OF DRILLING 8.00 ft

LOGGED BY Hannah Deeney CHECKED BY Shayla Marshall

AT END OF DRILLING ---

NOTES \_\_\_\_\_

AFTER DRILLING ---

GENERAL.BH / TP / WELL - GINT STD US LAB.GDT - 7/6/21 13:41 - \\NEMISERVER\CONSULTING\CONSULTING PROJECTS\17875 THE HUB RELEASE INVESTIGATION\5. DRAWINGS\BORING LOGS\17875 HUB.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0				
	B10-1		Brown sand; moist	PID = 4.1
	B10-2		Brown sand; moist	PID = 4
	B10-3		Brown sand; wet	PID = 2.4
	B10-4		Brown silt and sand; wet	PID = 2.2
	B10-5		Brown sand with gravel; wet	PID = 5

Bottom of borehole at 10.0 feet.

## **Appendix E**

### **Conceptual Site Model**

# Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

**Site Name:**

**File Number:**

**Completed by:**

### Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

*General Instructions: Follow the italicized instructions in each section below.*

## 1. General Information:

**Sources** *(check potential sources at the site)*

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> USTs                          | <input type="checkbox"/> Vehicles                    |
| <input type="checkbox"/> ASTs                                     | <input type="checkbox"/> Landfills                   |
| <input checked="" type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers                |
| <input type="checkbox"/> Drums                                    | <input type="checkbox"/> Other: <input type="text"/> |

**Release Mechanisms** *(check potential release mechanisms at the site)*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Spills | <input type="checkbox"/> Direct discharge            |
| <input checked="" type="checkbox"/> Leaks  | <input type="checkbox"/> Burning                     |
|  | <input type="checkbox"/> Other: <input type="text"/> |

**Impacted Media** *(check potentially-impacted media at the site)*

- |   |  |
|---|--|
| <input type="checkbox"/> Surface soil (0-2 feet bgs*)             | <input checked="" type="checkbox"/> Groundwater      |
| <input checked="" type="checkbox"/> Subsurface soil (>2 feet bgs) | <input type="checkbox"/> Surface water               |
| <input type="checkbox"/> Air                                      | <input type="checkbox"/> Biota                       |
| <input type="checkbox"/> Sediment                                 | <input type="checkbox"/> Other: <input type="text"/> |

**Receptors** *(check receptors that could be affected by contamination at the site)*

- |  |  |
|--|--|
| <input type="checkbox"/> Residents (adult or child)                      | <input checked="" type="checkbox"/> Site visitor     |
| <input checked="" type="checkbox"/> Commercial or industrial worker      | <input type="checkbox"/> Trespasser                  |
| <input checked="" type="checkbox"/> Construction worker                  | <input type="checkbox"/> Recreational user           |
| <input type="checkbox"/> Subsistence harvester (i.e. gathers wild foods) | <input type="checkbox"/> Farmer                      |
| <input type="checkbox"/> Subsistence consumer (i.e. eats wild foods)     | <input type="checkbox"/> Other: <input type="text"/> |

\* bgs - below ground surface

**2. Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

*If the box is checked, label this pathway complete:*

Complete

Comments:

Maximum concentrations remaining in mg/kg: GRO (4,630), DRO (4,060), Benzene (52.7), Ethylbenzene (137), Toluene (369), total xylenes (656), 1,2,4-Trimethylbenzene (243), 1,2-Dichloroethane (0.832), 1,3,5-Trimethylbenzene (67.5), Isopropylbenzene (23.7), and Napthalene (50.1)

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Napthalene contamination is present at the site.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Benzene and Napthalene were detected in the on-site non-potable well.

## 2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).

*If both boxes are checked, label this pathway complete:*

Incomplete

Comments:

Tazlina River is located 2.13 miles south of the site and the Copper River is located 2.25 miles east of the site. Due to the distance, contaminants from the site are not expected to migrate to surface waters.

## 3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)

*If all of the boxes are checked, label this pathway complete:*

Incomplete

Comments:

The site is not expected to be used for hunting, fishing, or harvesting currently or in the future. The remaining contaminants are not bioaccumulative.

## c) Inhalation-

### 1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Are the contaminants in soil volatile (see Appendix D in the guidance document)?

*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene (Cumene), and 1,2-Dichloroethane contamination is within 15 feet below ground surface.

## 2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)



Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?



*If both boxes are checked, label this pathway complete:*

Complete

Comments:

Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Isopropylbenzene (Cumene), and 1,2-Dichloroethane contamination is within 30 feet from the existing site structure.

**3. Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

**Dermal Exposure to Contaminants in Groundwater and Surface Water**

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

*Check the box if further evaluation of this pathway is needed:*

Comments:

On-site potable well is used for toilet flushing only.

**Inhalation of Volatile Compounds in Tap Water**

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

*Check the box if further evaluation of this pathway is needed:*

Comments:

Not applicable. Water from on-site well not used beyond for toilet flushing purposes.

## Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM<sub>10</sub>). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

*Check the box if further evaluation of this pathway is needed:*

Comments:

Not applicable. Contamination is present in subsurface soils.

## Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

*Check the box if further evaluation of this pathway is needed:*

Comments:

Not applicable.

**4. Other Comments** *(Provide other comments as necessary to support the information provided in this form.)*

# HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: The Hub, Glennallen, Alaska

Completed By: Shayla Marshall

Date Completed: 1/31/2022

**Instructions:** Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

(1) Media	(2) Transport Mechanisms
<input type="checkbox"/> Surface Soil (0-2 ft bgs)	<input type="checkbox"/> Direct release to surface soil <i>check soil</i> <input type="checkbox"/> Migration to subsurface <i>check soil</i> <input type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Runoff or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Flow to surface water body <i>check surface water</i> <input type="checkbox"/> Flow to sediment <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Sedimentation <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct release to sediment <i>check sediment</i> <input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(3)  
Check all exposure media identified in (2).

Exposure Media

soil

groundwater

air

surface water

sediment

biota

(4)  
Check all pathways that could be complete. The pathways identified in this column must agree with Sections 2 and 3 of the Human Health CSM Scoping Form.

Exposure Pathway/Route

Incidental Soil Ingestion

Dermal Absorption of Contaminants from Soil

Inhalation of Fugitive Dust

Ingestion of Groundwater

Dermal Absorption of Contaminants in Groundwater

Inhalation of Volatile Compounds in Tap Water

Inhalation of Outdoor Air

Inhalation of Indoor Air

Inhalation of Fugitive Dust

Ingestion of Surface Water

Dermal Absorption of Contaminants in Surface Water

Inhalation of Volatile Compounds in Tap Water

Direct Contact with Sediment

Ingestion of Wild or Farmed Foods

(5)  
Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.

### Current & Future Receptors

	Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
<input checked="" type="checkbox"/> Incidental Soil Ingestion	C/F	C/F	F				
<input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil	C/F	C/F	F				
<input type="checkbox"/> Inhalation of Fugitive Dust							
<input checked="" type="checkbox"/> Ingestion of Groundwater	C/F	C/F	F				
<input type="checkbox"/> Dermal Absorption of Contaminants in Groundwater							
<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input checked="" type="checkbox"/> Inhalation of Outdoor Air	C/F	C/F	F				
<input checked="" type="checkbox"/> Inhalation of Indoor Air	C/F	C/F	F				
<input type="checkbox"/> Inhalation of Fugitive Dust							
<input type="checkbox"/> Ingestion of Surface Water							
<input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water							
<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input type="checkbox"/> Direct Contact with Sediment							
<input type="checkbox"/> Ingestion of Wild or Farmed Foods							