SUSITNA
ENVIRONMENTAL, LLC

8361 Petersburg Street – Anchorage, AK 99507 – 907.350.7952

May 30, 2024

Marshall Farris
Environmental Specialist
Hilcorp Alaska, LLC
3800 Centerpoint Drive, Ste. 1400
Anchorage, AK 99503
Marshall.Farris@hilcorp.com

Subject: 2023 Site Characterization and Groundwater Sampling Report, Beluga River Unit

Mr. Farris,

Susitna Environmental, LLC (Susitna) is pleased to submit the referenced report to Hilcorp Alaska LLC (Hilcorp) for site investigation work completed at Beluga River Unit. This report summarizes the site characterization and groundwater monitoring services conducted by Susitna in 2023.

If you have any questions or concerns, please contact me at (907) 350-7952 or m.mayer@susitna.com.

Thank you,

M. May

Melissa Mayer, Qualified Environmental Professional
Susitna Environmental, LLC

cc: Peter Campbell, ADEC
Angela Matz, USFWS
Sharon Yarawsky, BLM

Hilcorp Alaska, LLC

SITE CHARACTERIZATION AND GROUNDWATER SAMPLING REPORT
Beluga River Unit

Beluga River, Alaska

Prepared by

SUSITNA
ENVIRONMENTAL, LLC

May 2024

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Acronyms and Abbreviations

µg/L	micrograms per liter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ARCO	Atlantic Richfield Company
bgs	below ground surface
BRU	Beluga River Unit
BTEX	benzene, toluene, ethylbenzene, and total xylenes
btoc	below the top of casing
COC	contaminant of concern
CoC	chain-of-custody
cy	cubic yard(s)
DPS	direct push system
DQR	data quality review
DRO	diesel range organics
ENSR	ENSR Consulting Engineers, Inc
EPA	U.S. Environmental Protection Agency
EPH	extractable petroleum hydrocarbons
ft	feet/foot
gal	gallons
GeoTek	GeoTek Alaska Inc.
GRO	gasoline range organics
Hilcorp	Hilcorp Alaska, LLC
ID	identification
mg/kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
MTGW	migration to groundwater
OilRisk	OilRisk Consultants
PAH	polycyclic aromatic hydrocarbon
PAL	project action limit
PID	photoionization detector
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SGS	SGS Environmental
Susitna	Susitna Environmental, LLC
USGS	U.S. Geological Survey

VOC	volatile organic compound
Weston	Weston Solutions, Inc.

1 INTRODUCTION

This document has been prepared on behalf of Hilcorp Alaska, LLC (Hilcorp) by Susitna Environmental, LLC (Susitna). It summarizes the site characterization and groundwater monitoring results from the 2023 fieldwork conducted at four Hilcorp Beluga River Unit (BRU) sites in Beluga, Alaska (Figure 1 and Figure 2). Each site is listed as an active site in the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites Program Database and is listed below:

- Beluga River 221-23 – ADEC Hazard Identification (ID): 656 | ADEC File Number: 2337.38.026 | Status: Active (Figure 3)
- Beluga River 224-13 – ADEC Hazard ID: 989 | ADEC File Number: 2337.38.021 | Status: Active (Figure 4)
- Beluga River Abandoned Diesel Tank Farm – ADEC Hazard ID: 1000 | ADEC File Number: 2337.38.015 | Status: Active (Figure 5)
- Beluga River Pump Area Assessment – ADEC Hazard ID: 990 | ADEC File Number: 2337.38.031 | Status: Active (Figure 6)

Historical groundwater contamination has been documented at each of the above-listed sites. Groundwater monitoring was conducted in 2021 to assess the condition of the existing groundwater well network and the condition of contaminant plumes at each site, and additional groundwater samples were collected in 2022. This report summarizes the 2023 soil and groundwater monitoring results. Each site location is shown in Figure 2, and site-specific information is shown in Figures 3 through 6. Groundwater Monitoring Forms (Attachment A), Boring Logs (Attachment B), Field Notes (Attachment C), a Photographic Log (Attachment D), Monitoring Well Survey Data (Attachment E), Analytical Laboratory Reports (Attachment F) and ADEC Laboratory Data Review Checklists and Data Quality Memorandums (Attachment G) are provided at the end of this report.

2 FIELD WORK

Field activities occurred in October 2023. Qualified environmental professional field personnel were on-site at BRU to install groundwater wells & soil borings and to collect groundwater & soil samples. To meet project objectives, soil borings and soil samples were collected at 221-23 (L Pad), new wells were installed, and the new and existing monitoring wells were sampled at Beluga River 224-13 (M Pad), one boring was installed, and soil was sampled at the Abandoned Diesel Tank Farm (A Pad). An existing monitoring well was sampled at Beluga River Pump Area Assessment (E Pad). Fieldwork was performed under the ADEC-approved *Beluga River Unit Groundwater Sampling Work Plan* (Susitna, 2023).

Sections 2.1 through 2.4 describe general field procedures for monitoring well installation, groundwater monitoring, soil boring installation, soil sampling and boring/well survey. Details specific to fieldwork conducted at each site are presented in the site-specific report Sections 3.1 through 3.4.

2.1 MONITORING WELL INSTALLATION

In 2023, temporary monitoring wells were installed at 224-13 (M Pad) using a Geoprobe™ 6620DT direct-push hydraulic percussion drill rig. The temporary monitoring wells comprised ¾-inch diameter polyvinyl chloride (PVC) well casing. The wells were not developed after installation. However, groundwater was purged from the wells until the turbidity levels were significantly reduced. The temporary wells were installed outside the driving lanes as much as practicable.

The wells were surveyed using a level loop to determine groundwater surface elevation contours. This is described in more detail in Section 2.4, and survey data is provided in Attachment E. Figure 4 shows the locations of the two new temporary wells, and one (existing) permanent well at 224-13 and the calculated groundwater gradient.

2.2 GROUNDWATER MONITORING

Groundwater samples were collected from three monitoring wells at 224-13 and at one monitoring well at the Pump Area Assessment.

The temporary wells at 224-13 were sampled via a Geoprobe SP-16 groundwater sampler. This point-in-time groundwater sampler is a proprietary direct push system (DPS) tool that uses a protected-screen installation method and is advanced using a Geoprobe DPS drill rig.

Groundwater samples collected from the new temporary monitoring wells at 224-13 were collected using a peristaltic pump due to the ¾-inch diameter SP-16 sampler. All other groundwater samples were collected using a submersible pump. Depth to groundwater was measured from a marked measuring point on the top of each inner PVC well casing and documented on groundwater field forms before purging the well. Casing height is provided in the survey table in Attachment E. The field team purged each monitoring well per low-flow techniques outlined in the U.S Environmental Protection Agency (EPA) *Low Stress (low flow) Purging and Sampling Procedures for the Collection of Ground Water Samples from Monitoring Wells* published in 2017 (EPA, 2017) and the *ADEC Field Sampling Guidance* (ADEC, 2022a). All water quality parameters were recorded on Groundwater Sample Forms and are provided in Attachment A.

Groundwater samples were analyzed for site-specific analytes as described for each site in Section 3. Groundwater sample results were compared to ADEC 18 Alaska Administrative Code

(AAC) 75 Table C, Groundwater cleanup levels (ADEC, 2023), and are presented in Table 3. In this report, project-specific cleanup levels are called project action limits (PALs). Groundwater samples were submitted to SGS Environmental, LLC (SGS) in Anchorage, Alaska, under chain-of-custody (CoC) for laboratory analyses. In 2023, all development and purge water (approximately 11 gallons (gal)) was containerized in one 55-gal drum of purge water. Investigative-derived waste is discussed in Section 5. Groundwater monitoring forms are provided in Attachment A. Analytical results are presented by site in Section 3.

2.3 SOIL BORING INSTALLATION & SOIL SAMPLING

Four soil borings were installed at Beluga River 221-23, two soil borings were installed at 224-13 for groundwater monitoring, and one soil boring was installed at Beluga River Abandoned Diesel Tank Farm (A Pad). Boring logs are provided in Attachment B.

Soil borings were advanced using a track mounted Geoprobe™ hydraulic percussion drill rig operated by GeoTek Alaska Inc. (GeoTek). GeoTek advanced soil borings using direct push drilling technologies with the Macro-core soil sampling system. The soil cuttings were logged to identify soil types, field screening results and observations, and analytical sample collection data. The photoionization detector (PID) was used for field screening to detect the presence or absence of volatile hydrocarbon compounds in the soil. In 2023, two 5-gal buckets of soil cuttings were generated and staged at M Pad (224-13). Investigative-derived waste is discussed in Section 5.

Soil samples were analyzed for site-specific analytes as described for each site in Section 3. Soil sample results were compared to ADEC 18 AAC 75 Method Two migration to groundwater (MTGW) soil cleanup levels (ADEC, 2023) and are presented in Table 4. Project-specific cleanup levels are referred to as PALs in this report. Soil samples were submitted to SGS in Anchorage, Alaska, under CoC for laboratory analyses.

2.4 SURVEY OF SOIL BORINGS & MONITORING WELLS

A soil boring and monitoring well survey was performed for all the monitoring wells and borings installed. The temporary monitoring wells at 224-13 (M Pad) were surveyed to determine locations and groundwater gradients. A location survey was conducted at the soil borings at 221-23 (L Pad) and Abandoned Diesel Tank Farm (A Pad). An EOS Positioning Systems Arrow100 Submeter Global Navigation Satellite System receiver was used to perform the location survey for all features of interest. Differential leveling was performed at M Pad to determine temporary and permanent well elevations. One control point was established on the M Pad to control the differential leveling survey. The overall accuracy goals of the study for the monitoring wells were better than 1.0 feet (ft) for the X and Y (horizontal) coordinates and 0.01 ft for the Z coordinate (elevation). This accuracy was achieved for the monitoring well survey. The survey accuracy for other features of interest was sub-meter. Survey results are provided in Attachment E.

3 SITE SPECIFIC REPORTS

The following sections describe the four sites visited in 2023. Details about each site, including the history, fieldwork, results, and conclusions for each site, are described in Sections 3.1 to 3.4. A summary of scope, exceedances, and recommendations for the sites is shown in Table 1.

Table 1: Site Results and Recommendations Summary

Site	Scope of Work	PAL Exceedances	Recommendations
Beluga River 221-23 (L Pad)	• Four soil borings • Eight soil samples	No exceedances	Closure
Beluga River 224-13 (M Pad)	• Two temp wells • Four groundwater samples • One waste characterization soil sample	DRO and RRO in groundwater and DRO, VOCs, PAHs in soil in boring/temp well 224-13-4.	Install permanent wells at locations 224-13-3 and 224-13-4; add VOCs and PAHs as contaminants of concern based on soil results and monitor every three years.
Beluga River Abandoned Diesel Tank Farm (A Pad)	• One soil boring • One soil sample	No exceedances	Closure
Beluga River Pump Area Assessment (E Pad)	• One groundwater sample	DRO in groundwater	Monitor every three years

DRO = Diesel Range Organics VOC = Volatile Organic Compounds
RRO = Residual Range Organics PAH = Polycyclic Aromatic Hydrocarbons

3.1 BELUGA RIVER 221-23 (L PAD)

Well Beluga River 221-23 is located on L Pad (Figure 3), 2.6 miles northeast of the airstrip and 2.5 miles west of Beluga River at latitude 61°12’31.60” N and longitude 151°01’22.28” W. Currently, the well is out-of-production, and the gravel pad is used for materials storage to support activities throughout the BRU.

3.1.1 Summary of Previous Site Activities

In June 1989, diesel fuel was found seeping from the toe of the gravel pad along the east side near the dehydrator building contactor sump (ADEC Spill No. 1989-23-01-180-02). The sump was removed in July 1989. In June 1990, approximately 650 cubic yards (cy) of impacted soil were excavated and placed into a lined and bermed containment area along the northern edge of the pad (Former North Stockpile Site, ADEC File # 2337.38.026). Based on a review of historical imagery, the outline of the Former North Stockpile site is shown in an inset in Figure 3.

In 1991, in-situ bioremediation was implemented to treat impacted soils under the contactor building at the east end of the pad. Based on a sampling and analysis report, the system successfully remediated soils under the contactor building, and the system was shut off (ADEC, 2013b). *Beluga River Field, Atlantic Richfield Company (ARCO) Alaska, Inc. #90-23-01-151-01 Approval of Clean Closure for Former Contactor Sump BRU 221-23* was issued by ADEC on June 2, 1992 (ADEC, 1992). The Former North Stockpile was approved for land spreading on the Beluga Airstrip, stipulating that the soils below the stockpiles be assessed to determine if contamination migrated to underlying or adjacent soils (ADEC, 2013b).

Samples collected from the Former North Stockpile site in 1992 identified DRO concentrations up to 725 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons concentrations from 6.0 to 1,100 mg/kg between 0 and 2 ft below ground surface (bgs). Based on the 1992 soil sampling results, confirmation samples were collected from the Former North Stockpile site in 1993. Results detected DRO in soil from 4 to 5 ft bgs at concentrations between 161 and 3,600 mg/kg and DRO in groundwater between 400 and 2,500 micrograms per liter (µg/L). Results of the June 1993 sampling event indicate that DRO contamination exists in the area of the Former North Stockpile and is probably the result of past drilling or well workover activities in the 1970s and early 1980s (ARCO, 1994).

On 28 December 1995, ADEC issued *Beluga River 221-23 Contactor Sump Spill # 90-23-01-151-01 Site Closure*; however, this closure did not include the contamination encountered beneath the Former North Stockpile site (ADEC, 1995).

3.1.2 Soil Boring Installation & Soil Sampling

Four soil borings were installed around the wellhead location to investigate whether subsurface soil impacts exist on the pad. Two samples were collected from the locations of the highest PID readings from each boring. Eight primary samples, one duplicate, and one matrix spike/matrix spike duplicate (MS/MSD) were collected. Samples were analyzed for gasoline range organics (GRO), DRO/RRO, petroleum-VOCs, PAHs, and Resource Conservation and Recovery Act (RCRA) metals. No groundwater grab samples were collected since no staining or odor was noted. Table 2 outlines the soil boring and sample collection from the L Pad site.

Table 2: L Pad Soil Borings & Sample Collection

Soil Boring	Installation Depth	Groundwater Smear Zone Depth	Samples Collected (2023)	Notes
SB-01	15 ft bgs	14 to 15 ft bgs	5 to 7 ft bgs (LPAD-SB01-5.0-7.0) 14 to 15 ft bgs (LPAD-SB01-14.0-15.0)	No odor or staining was noted, and all PID readings were <1 ppm.

Soil Boring	Installation Depth	Groundwater Smear Zone Depth	Samples Collected (2023)	Notes
SB-02	15 ft bgs	13.5 to 15 ft bgs	9 to 9.5 ft bgs (LPAD-SB02-9.0-9.5) 13.5 to 15 ft bgs (LPAD-SB02-13.5-15.0)	No odor or staining was noted, and all PID readings were <1 ppm.
SB-03	15 ft bgs	13 to 15 ft bgs	5 to 7 ft bgs (LPAD-SB03-5.0-7.0) 13 to 15 ft bgs (LPAD-SB03-13.0-15.0)	No odor or staining was noted, and PID readings were <1.4 ppm.
SB-04	15 ft bgs	13 to 15 ft bgs	5 to 7 ft bgs (LPAD-SB04-5.0-7.0) 13 to 15 ft bgs (LPAD-SB04-13.0-15.0)	No odor or staining was noted, and PID readings were <1.1 ppm.

3.1.3 Results

Samples were analyzed for GRO, DRO/RRO, petroleum-VOCs, PAHs, and RCRA metals. Soil samples were collected from 5 to 13 ft bgs based on PID results in the soil borings. All analytes were below PALs. Arsenic was present in all L Pad borings within background concentrations but above PALs. Soil samples from the L pad also contained non-detect levels of 1,2-Dibromoethane and Naphthalene above PALs (“U” flagged). Analytical results are reported in Table 4 and Attachment F.

3.1.4 Conclusion and Recommendation

Limited contamination was discovered in the smear zone near the well at 221-23, and no impacts exist near the surface. No surface or near-surface contamination is present; therefore, no further action and site closure is recommended.

3.2 BELUGA RIVER 224-13 (M PAD)

Beluga River 224-13 is located on M Pad (Figure 4), approximately 3.25 miles northeast of the airstrip and approximately 0.85 miles west of Beluga River at latitude 61°21’26.03” N and longitude 150°99’18.70” W. This is an active producing pad. The access road and well pad were constructed in 1974, and surface facilities were completed in 1982.

3.2.1 Summary of Previous Site Activities

Before production commenced in 1983, tubing leaks were identified in the contactor sump, which required the replacement of the annular diesel heating system, which was replaced with a gas heat system (OilRisk Consultants [OilRisk], 2003). Although no spill documentation has been located, contamination at the former 224-13 contactor sump and the 224-13 diesel spill probably occurred before the installation of the gas heat system (OilRisk, 2003). ARCO reported the 224-

13 diesel spill to ADEC after assuming operatorship in 1986, and a 1987 memo mentions the operation of a diesel recovery trench (Bristol, 1996).

On May 24, 1990, the contactor sump at the dehydrator building was inspected, and several samples were collected at the toe of the pad north and west of the facility. In addition, samples were collected from the toe of the pad in an area south of the wellhead building. This location was identified as the site of an unreported diesel spill believed to have occurred in the early to mid-1980s. Results confirmed the presence of diesel in gravels at both locations (ARCO, 1991).

Subsequently, the contactor sump was removed, and approximately 100 to 200 cy of contaminated material was excavated from the north side of the well pad and adjacent wetland area. Six soil borings were advanced in 1990, and DRO was detected in multiple samples, with one location having a DRO result of 9,000 mg/kg (OilRisk, 2003). The contaminated material was stockpiled for remediation.

One monitoring well (224-13-2) was installed at the former contactor sump in August 2000, near where DRO was detected at 9,000 mg/kg. The well was screened from 4 to 14 ft bgs, and groundwater was encountered at approximately 7 ft bgs (OilRisk, 2003). A soil sample collected from 7 ft bgs contained a naphthalene concentration of 0.075 mg/kg, which at the time was below applicable cleanup levels but is above the current 2023 MTGW cleanup level of 0.038 mg/kg, which suggested adding naphthalene to the list of contaminants of concern (COC) for site characterization. A groundwater sample was not collected, and the groundwater flow direction was not determined. A surface water sample was collected from a pond adjacent to the contactor sump site in 2000; naphthalene, 1,2,3- and 1,2,4- trichlorobenzene, and methylene chloride were detected in the sample; only naphthalene was detected above the 2003 ADEC Table C cleanup level of 1.6 µg/L. Methylene chloride was detected in associated method blanks, and its presence was attributed to laboratory contamination (OilRisk, 2003).

Approximately 2,000 cy of contaminated soil were excavated from the south pad edge and adjacent wetland in 1990, and eight soil borings were drilled in 1991. The highest contaminant concentration in soil was 1,300 mg/kg DRO (depth unknown) and was located midway between the 224-13 wellhead and the heater building (OilRisk, 2003).

One monitoring well (224-13-1) was installed at the DRO exceedance location in August 2000. The well was screened from 3 to 13 ft bgs, and groundwater was encountered at approximately 6.5 ft bgs. A soil sample was collected from this location at 5 ft bgs, and DRO was detected (370 mg/kg) above the Method Two cleanup level for DRO (250 mg/kg); all other analytes were below ADEC MTGW cleanup levels. One groundwater sample was collected from monitoring well 224-13-1, and no analytes were detected above current Table C cleanup levels (Figure 4). In addition, one surface water sample was collected from a pond adjacent to the diesel spill, and no analytes

were detected except methylene chloride, which was attributed to laboratory contamination (OilRisk, 2003).

Only one well, 224-13-2, was located and sampled during the 2021 and 2022 sampling events. The well's GRO, DRO/RRO, benzene, toluene, ethylbenzene, total xylenes (BTEX), and PAHs concentrations were below cleanup levels during these events.

3.2.2 Monitoring Well Installation

Two temporary groundwater wells were installed at 224-13 (M Pad) to determine the groundwater flow gradient and direction. The groundwater wells were placed to triangulate the groundwater direction with the existing well 224-13-2 and were installed out of traffic lanes as much as possible. Well 224-13-3 was installed to a total depth of 13.32 ft bgs, with 5 ft of the screen and 1.7 ft stickup. Well 224-13-4 was installed to a total depth of 15.02 ft bgs, with a 5 ft screen and a 1.91 ft stickup. These two newly installed wells were not developed because they were temporary wells. The locations of the two temporary and one permanent wells and the calculated groundwater gradient are shown in Figure 4.

Permanent monitoring well 224-13-2 had a depth to groundwater of 7.25 ft below the top of the casing (btoc).

Temporary monitoring well 224-13-3 was installed southeast of the water supply well and had a depth to groundwater of 5.35 ft btoc. The first installation of well 224-13-3 experienced heaving and was redrilled nearby with success.

Temporary monitoring well 224-13-4 was installed at the eastern portion of the pad. The first location did not recharge during sampling, so it was reinstalled approximately 10 ft WSW of the original location. The new location could be sampled and had a depth to groundwater of 4.97 ft btoc. No odor or sheen was noted in any water from the wells; however, sheen and odor were observed within the soil cuttings between 7.5 and 8.5 ft bgs and 10 and 12 ft bgs in the boring for well 224-13-4. These cuttings were placed in a separate bucket and sampled for waste characterization, which is detailed in Section 5.

3.2.3 Groundwater Sampling

Three monitoring wells at 224-13 were sampled for GRO, DRO/RRO, BTEX, and PAHs. The permanent monitoring well 224-13-2 was sampled using a submersible pump. The new temporary wells were sampled using a peristaltic pump due to their smaller ¾ inch diameter.

3.2.4 Soil Boring Installation & Soil Sampling

Two soil borings were installed at M Pad to install the temporary monitoring wells. Soil logging and soil samples were not planned for these borings, but due to staining and odor discovered in boring SB02, one sample was collected (MPAD-SB02-7.5-8.5) for waste characterization.

3.2.5 Results

Groundwater and soil samples were collected and submitted to SGS for laboratory analysis. At 224-13 (M Pad), samples were submitted for GRO, DRO, RRO, BTEX, and PAHs analysis based on site-specific requirements.

The two newly installed temporary wells and the one existing permanent well at 224-13 were sampled for GRO, DRO/RRO, BTEX, and PAHs in 2023. Well 224-13-2 and temporary well 224-13-3 had all analytes in groundwater below PALs. Temporary well 224-13-4 contained DRO and RRO in groundwater above PALs. The DRO result was 2,270 µg/L which is above the PAL of 1,500 µg/L, and the RRO result was 1,720 µg/L which is above the PAL of 1,100 µg/L. In addition, one soil characterization sample collected from this boring at 7.5 to 8.5 ft bgs contained concentrations of DRO, 1,2,4- and 1,3,5-trimethylbenzene, naphthalene, and 1-methylnaphthalene above PALs. Analytical results are reported in Tables 3 and 4 and Attachment F.

3.2.6 Conclusions and Recommendations

Due to continued low levels of DRO and RRO above PALs in groundwater and VOCs and PAHs present in soil, it is recommended to convert 224-13-3 and 224-13-4 to permanent wells and to add VOCs and PAHs as COCs in groundwater. The existing well layout is adequate to address data quality objectives because data from a source-area well, a cross-gradient well, and a down-gradient well are captured. Additional wells are not recommended. Groundwater monitoring is recommended once every three years, starting in 2025, to monitor the potential migration of groundwater contaminants.

3.3 BELUGA RIVER ABANDONED DIESEL TANK FARM (A PAD)

Beluga River Abandoned Diesel Tank Farm is located on A Pad (Figure 5), one mile southwest of the airstrip at latitude 61°15’83.28” N and longitude 151°05’51.27” W. The site comprised two 44,000-gal aboveground storage tanks in a bermed impoundment area measuring approximately 50 by 80 ft (Weston Solutions, Inc. [Weston], 2013a). These tanks were taken out of service in 1988; however, it is unclear when they were removed from the site. The pad is in good condition and is used to store various equipment and supplies. There are no active production wells on this pad.

3.3.1 Summary of Previous Site Activities

In 1991, ARCO contracted ENSR Consulting Engineers, Inc. (ENSR) to conduct an initial subsurface assessment of the area. The evaluation involved installing 18 soil borings to a maximum depth of 16 ft bgs. Groundwater was encountered at a depth of approximately 13 ft bgs. Soil samples were analyzed for extractable petroleum hydrocarbons (EPH) and BTEX (Weston, 2013a).

Analytical results from this investigation indicated there may have been two sources of diesel impact on subsurface soils. One source appears to have been the dispenser lines immediately east of the tanks. The other is unknown but occurred roughly 30 ft north of the former tank farm impoundment. The extent of the above releases appears to cover approximately 6,000 square ft. EPH concentrations were analyzed in soil collected at the water table; the sample just east of the north tank had EPH concentrations of 2,000 mg/kg, and the sample at the southeast corner of the south tank had 1,300 mg/kg concentrations. Hydrocarbon impacts were detected in all soil borings collected within the tank impoundment area. EPH values at the water table ranged from 690 to 2,000 mg/kg within the impoundment and measured at 90 mg/kg at the eastern impoundment dike. EPH contamination of 270 mg/kg was found north of the tank impoundment (Weston, 2013a).

In 1993, ARCO submitted a work plan to verify earlier site assessment data, complete delineation of impacted soil and groundwater at the site and collect the data necessary to evaluate the feasibility of in situ bioremediation for future area treatment. ARCO proposed three rounds of sampling and analysis, including installing 12 monitoring wells. Soil and groundwater collected from these wells were to be analyzed for GRO, DRO, and BTEX. In addition, three soil samples were to be analyzed for total organic carbon, sieve analysis, microbial populations, total phosphate and ammonium, and pH. It is not known when these work plan activities were conducted. However, a letter dated 5 October 1994 from ARCO to ADEC's Mr. Don Fritz indicated that concentrations of DRO impact on subsurface soil were lower than reported by ENSR. A letter dated 21 June 1994 in the ConocoPhillips Alaska, Inc. file indicated DRO was detected up to 13,000 µg/L in groundwater below the tank farm. GRO and BTEX impacts were evident but below the cleanup criteria at the time (Weston, 2013a).

Three wells (ATF-3, ATF-8, and ATF-10) were sampled in June 2021 and May 2022. The 2021 and 2022 groundwater sample results were below PALs for all analytes. DRO concentrations had decreased significantly at this site compared with previous sampling event results (Susitna, 2023).

3.3.2 Soil Boring Installation & Soil Sampling

One soil boring was installed at the Abandoned Diesel Tank Farm (A Pad) to evaluate the presence of contaminated soil or groundwater. The soil boring was installed in the source area (southwest end of A Pad) to 15 ft bgs. The groundwater smear zone was present at 14 to 15 ft

bgs. No odor or staining was noted, and all PID readings were below one ppm. Samples were collected at 14.0 to 15.0 ft bgs (APAD-SB01-14.0-15.0). The boring location was backfilled with bentonite from 15 ft bgs to one ft bgs and native soil from one ft bgs to 0 ft bgs.

3.3.3 Results

One in-source boring was installed at the Abandoned Diesel Tank Farm (A Pad) to ensure no soil contamination remained. Boring APAD-SB01-14.0-15.0 was sampled for GRO, DRO, BTEX, and PAHs at 14 to 15 ft bgs; no analytes were detected above the PALs. Analytical results are reported in Table 4 and Attachment F.

3.3.4 Conclusion and Recommendation

No source soil contamination remains on the site, and no indication of groundwater contamination above PALs remains; therefore, no further action and site closure is recommended.

3.4 BELUGA RIVER PUMP AREA ASSESSMENT (E PAD)

The Beluga River Pump Area Assessment Site (also known as the Former Beluga River Fuel Pump Area) is located on E Pad (Figure 6), along the eastern side of Beluga Airstrip runway 18-36, at the BRU Office Building Pad and entrance to E Pad (Drill Site 212-35). The site is approximately 61°10’38.14” N latitude and 151°2’13.12” W longitude (Weston, 2013b). The Beluga River Pump Area Assessment Site is a set of former fuel (gasoline and diesel) dispenser pumps connected by pipelines to the former Fuel Tank Farm (the current location of the Heated Oil Storage Building) (Weston, 2013b).

3.4.1 Summary of Previous Site Activities

In 1991, the fuel lines were removed, and a limited excavation was conducted along with soil and groundwater characterization in October 1991 and January 1992. Groundwater was encountered at approximately 7.5 ft bgs (Weston, 2013b).

In 1992, an air sparging and vapor extraction system comprised 66 sparge wells, 32 vapor extraction wells, and 24 groundwater monitoring wells (FG-01 through FG-24). The system operated until 1998, and routine groundwater monitoring was conducted until 1999 (Weston, 2013b).

In 2005, groundwater samples were collected at ten existing wells, and one newly installed well (FG-25). Groundwater monitoring wells FG-03 and FG-08 defined DRO and benzene's impact on groundwater. Two groundwater plumes were previously identified at the site: one beginning near monitoring well FG-03 (western plume) and another in the vicinity of monitoring wells FG-24 and FG-25 (eastern plume) (Weston, 2013b).

In 2021, seven monitoring wells were sampled at the Pump Area Assessment (FG-3, FG-10, FG-14, FG-20, FG-21, FG-23, and FG-24), and in 2022, eight monitoring wells were sampled (previous list plus FG-25). In 2021, all seven monitoring wells sampled had detectable DRO concentrations below the PAL of 1,500 µg/L. In 2022, one well (FG-24) contained DRO above the PAL. Concentrations of all other analytes in all site monitoring wells were below applicable PALs. The 2021 DRO concentration in FG-24 (1,110 µg/L) was below the PAL of 1,500 µg/L, and the 2022 DRO concentration (3,120 µg/L) was above the PAL. These results were both below the 2005 result of 31,000 µg/L. Monitoring well FG-24 also exhibited detectable levels of GRO (45.3 µg/L in 2021 and 52.2 µg/L in 2022), but both concentrations are below the PAL of 2,200 µg/L (Susitna, 2023).

3.4.2 Groundwater Monitoring

The Beluga River Pump Area Assessment Site (known as the Former Beluga River Fuel Pump Area) is located on E Pad (Figure 6). Monitoring well FG-24 (duplicate sample ID FG-28) was sampled for DRO and PAHs. In 2023, the depth to groundwater was 16.26 ft btoc. The purged water did not have an odor or sheen.

3.4.3 Results

At the Beluga River Pump Area Assessment, groundwater samples were submitted for analysis of DRO and PAHs.

In 2023, the one well with remaining DRO concentrations above PAL was sampled for DRO and PAHs. In 2023, well FG-24 contained DRO at 2,380 (2,140 duplicate) µg/L, above the PAL of 1,100 µg/L. All PAHs were below PALs. Analytical results are reported in Table 3 and Attachment F.

3.4.4 Conclusions and Recommendations

It is recommended that well FG-24 be monitored every three years for DRO, starting in 2025.

4 QUALITY CONTROL SAMPLES

Analytical sampling included a collection of duplicate samples at a frequency of ten percent and MS/MSD samples at a frequency of twenty percent. For the soil samples (sample delivery group [SDG] 1235845), one primary/duplicate pair, LPAD-SB03-5.0-7.0/LPAD-SB05-5.0-7.0, was submitted as part of this data quality review (DQR). All primary/duplicate relative percent differences (RPDs) were within control limits.

For the groundwater samples (SDG 1235846), two primary/duplicate pairs, 224-13-5-101323/224-13-5-101323 and FG24-101223/FG28-101223 are part of this DQR. The 2-methylnaphthalene RPD (42%) exceeded the FG24-101223/FG28-101223 primary/duplicate pair

criteria. 2-Methylnaphthalene results in both samples were flagged “J” to indicate an indeterminate bias. Both results were below the ADEC Table C groundwater cleanup level, and data quality/usability is unaffected. All other primary/duplicate RPDs were within control limits.

5 INVESTIGATIVE DERIVED WASTE

Waste generated during this project included monitoring well purge water, soil cuttings, and trash, such as nitrile gloves and paper towels. Trash was disposed of as household waste.

During groundwater monitoring, 11 gals of purge water were purged. While analytical results were pending, one 55-gallon drum was used to containerize the purge water, which was staged at M Pad (224-13). Groundwater monitoring results were used for waste characterization; DRO and RRO were the only analytes above PALs.

Two 5-gal buckets of soil cuttings were generated and staged at M Pad (224-13).

In addition to the L pad boring sample results, a waste characterization sample was collected from the M pad to characterize the soil cuttings fully. The soil cutting sample was collected from the boring installation for temporary well 224-13-4 at 224-13 (M Pad), where sheen and odor were noted (7.5 to 8.5 ft bgs and 10 to 12 ft bgs). The soil results contained 1-methylnaphthalene, naphthalene, DRO, 1,2,4-Trimethylbenzene, 1,2-Dibromoethane (U flagged), and 1,3,5-Trimethylbenzene above PALs. Based on the results of the waste characterization, Hilcorp injected the water into the Class I Well BRU 232-9, and the soil will be disposed of appropriately by Hilcorp.

Arsenic was sampled for and detected in 2023 samples at Beluga River L Pad above the PAL of 0.2 mg/kg but at levels consistent with naturally occurring background levels published in the U.S. Geological Survey (USGS) Element Concentrations in Soil and Other Surficial Materials of Alaska (USGS, 1988). The USGS document reported arsenic was between 0 and 20 mg/kg. These values are based on three sampling sites located near Kenai (Site 095), Swanson River (Site 185), and Skilak Lake (Site 94).

6 DATA QUALITY ASSESSMENT

The data's precision, accuracy, sensitivity, representativeness, comparability, and completeness were evaluated by reviewing laboratory-supplied quality assurance/quality control (QA/QC) information and conducting independent QC checks on the data. The laboratory SDGs associated with this project were 1235845 (soil) and 1235846 (groundwater).

In general, the overall quality of the project data was acceptable. Quality control issues that required results to be qualified included blank contamination, surrogate and lab control spike

recoveries, MS/MSD RPDs, and field duplicate imprecision. No results were rejected, and qualified data are considered acceptable for use, with the limitations discussed within this QA report and as indicated with the appropriate qualifiers. Additional details on data quality are included in the Data Quality Assessment report in Attachment G. The ADEC laboratory data review checklist is also included in Attachment G.

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Figures

Tables

Attachment A Groundwater Monitoring Forms

Attachment B Boring Logs

Attachment C Field Notes

Attachment D Photographic Log

Attachment E Survey Data Table

Attachment F Analytical Laboratory Reports

Attachment G ADEC Laboratory Data Review Checklist and Data Quality Memorandums

Figures

Beluga River Unit
Area of Interest

Knik Arm
Fire Island
ANCHORAGE
Possession, Point
Turnagain Arm
TYONEK
GRANITE POINT TANK FARM (GPTF)
North Foreland
Trading Bay
TRADING BAY PRODUCTION FACILITY (TBPF)
West Foreland
MGS
East Foreland
KPL JCT
Kenai Spur Rd
NIKISKI
Swanson River Rd
Redoubt Bay
DRIFT RIVER TERMINAL
Christy Lee Loading Platform
Kalgin Island
KENAI
Kenai Spur Rd
Sterling Hwy
STERLING
SOLDOTNA
COOPER LANDING
Skilak Lake
Cook Inlet
Sterling Highway
Tustumena Lake
State Waters
Federal Waters
NINILCHIK
Oilwell Rd
ANCHOR POINT
East End Rd
HOMER
Kachemak Bay

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Legend

- Onshore Facilities
- Offshore Platforms
- State/Federal Boundary (3 Mile Limit)
- Oil and Gas Units Operated by HAK
- Oil and Gas Units - Other
- Major Roads

Alaska State Plane Zone 4 NAD 1983 (feet)

0 10 20 Kilometers

0 10 20 Miles

N

Hilcorp Alaska, LLC
3800 Centerpoint Drive, Suite 1400
Anchorage, AK 99503

Date Prepared:	Company Name:	Drawn By:
2/1/2024	Hilcorp Alaska, LLC.	NWC

LOCATION AND VICINITY

BELUGA RIVER UNIT, COOK INLET, ALASKA

Scale: @ 11x17 map size	Figure No:
1 in = 10 miles	1

Beluga River
Grants Beacon
BRWD-1 (DW-2)
N PAD
Beluga River 224-13 (M PAD)
Beluga River 221-23 (L Pad)
K PAD
J PAD
S013N010W
S013N009W
Beluga River
BELUGA RIVER UNIT
ENSTAR
I PAD
CEA
ALASKA PIPELINE COMPANY
H PAD
G PAD
Cottonwood Beach
F PAD
Beluga River Pump Area Assessment (E Pad)
Beluga River Tank Farm (P&S Yard)
BELUGA AIRSTRIP
Beluga Airport
D PAD
C PAD
KENAI PENINSULA BOROUGH
MATANUSKA SUSITNA BOROUGH
S013N010W
S012N010W
S013N009W
S012N010W
B PAD
Beluga River Abandoned Diesel Tank Farm (A PAD)
CENTRAL WASTE FACILITY
DW-1
Threemile Creek
Threemile Creek
Beluga
Viapan Lake

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Utqiagvik (Barrow)
Alaska
Nome
Fairbanks
Canada
Anchorage
Area of Detail

Legend

- Well Pads
- Regional_NAD83
- Beluga River Contaminated Sites
- Oil and Gas Units Operated by HAK

Alaska State Plane Zone 4 NAD 1983 (feet)

0 0.5 1 Kilometers

0 0.5 1 Miles

N

Hilcorp Alaska, LLC
3800 Centerpoint Drive, Suite 1400
Anchorage, AK 99503

Date Prepared:	Company Name:	Drawn By:
2/1/2024	Hilcorp Alaska, LLC.	NWC

SITE LOCATIONS

BELUGA RIVER UNIT, COOK INLET, ALASKA

Scale: @ 11x17 map size	Figure No:
1 in = 3,000 feet	2

151°1'28"W 151°1'26"W 151°1'24"W 151°1'22"W 151°1'20"W

61°12'33"N

61°12'32"N

61°12'31"N

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Closed Reserve Pit

Former North Stockpile

SB-03

SB-02

SB-04

BELUGA RIVER
221-23

Wellhead Building

SB-01

Beluga River 221-23
Haz ID: 656

Beluga River L PAD

Contactor Building

Inset - Former North Stockpile overlayed on 1991 Imagery

BELUGA RIVER
221-23

Beluga River 221-23
Haz ID: 656

Imagery Source: QSI 2017

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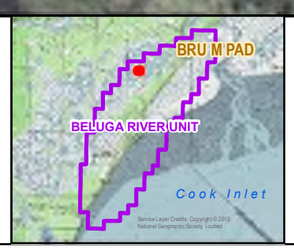
3800 Centerpoint Drive, Suite 1400
Anchorage, AK 99503



Legend

- Oil-Gas Surface Hole Location
- Soil Boring Location
- Active ADEC Contaminated Site
- Closed ADEC Contaminated Site
- Former North Stockpile
- Closed Reserve Pit

Alaska State Plane Zone 4 NAD 1983 (feet)

0 7.5 15 Meters

0 30 60 Feet

N

Date Prepared: 2/9/2024	Company Name: Hilcorp Alaska, LLC.	Drawn By: NWC

Boring Locations
Beluga River 221-23 (L Pad)

BELUGA RIVER UNIT, COOK INLET, ALASKA

Scale: @ 11x17 map size	Figure No:
1 in = 30 feet	3

150°59'38"W 150°59'36"W 150°59'34"W 150°59'32"W 150°59'30"W 150°59'28"W 150°59'26"W 150°59'24"W

61°12'46"N 61°12'45"N 61°12'44"N 61°12'43"N

224-13-2
87.5'

Beluga River 224-13
Haz ID: 989

87.75 88 88.25 88.5

BELUGA RIVER 224-13

Beluga River M PAD

88.62'

224-13-3
87.66'

MPAD-SB02-7.5-8.5 (soil sample results)	
Analyte	**2023**
DRO (mg/kg)	564 J+
1,2,4-Trimethylbenzene (mg/kg)	1.8 J
1,3,5-Trimethylbenzene (mg/kg)	1.01 J
Naphthalene (mg/kg)*	0.396
1-Methylnaphthalene (mg/kg)	0.71
*SW8260D method	

224-13-4 9 (groundwater sample results)	
Analyte	**2023**
DRO (µg/L)	2270
RRO (µg/L)	1720

Soil Cleanup Levels	
Analyte	
DRO (mg/kg)	**250**
1,2,4-Trimethylbenzene (mg/kg)	**0.61**
1,3,5-Trimethylbenzene (mg/kg)	**0.66**
Naphthalene (mg/kg)*	**0.038**
1-Methylnaphthalene (mg/kg)	**0.708**
18 AAC 75.341 Method Two Table B1/B2 Migration to Groundwater Soil Cleanup	

Groundwater Cleanup Levels	
Analyte	
DRO (µg/L)	**1500**
RRO (µg/L)	**1100**
18 AAC 75.345 Table C Groundwater Cleanup Levels	

Imagery Source: QSI 2017

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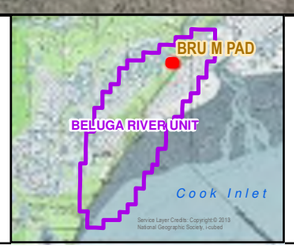
Anchorage, AK 99503



Legend

- Production Well Surface Hole Location
- Active ADEC Contaminated Site
- Water Supply Well Location
- Existing Monitoring Well Location
- Temporary Monitoring Well Location
- Groundwater Flow Direction
- Groundwater Elevation Contour (0.25 foot interval)

Note: Groundwater elevations measured 10/13/23.

Alaska State Plane Zone 4 NAD 1983 (feet)

0 10 20 Meters

0 50 100 Feet

N

Date Prepared: 2/9/2024	Company Name: Hilcorp Alaska, LLC.	Drawn By: NWC
Temporary Well Locations Beluga River 224-13 (M Pad)		
BELUGA RIVER UNIT, COOK INLET, ALASKA		
Scale: @ 11x17 map size 1 in = 50 feet	Figure No: 4	

151°3'44"W 151°3'42"W 151°3'40"W 151°3'38"W 151°3'36"W 151°3'34"W 151°3'32"W 151°3'30"W 151°3'28"W 151°3'26"W 151°3'24"W 151°3'22"W

61°9'25"N 61°9'24"N 61°9'23"N 61°9'22"N 61°9'21"N 61°9'20"N 61°9'19"N

BELUGA RIVER 244-4

Beluga River A PAD

Approximate Former Location of Diesel Tank Farm

Beluga River Abandoned Diesel Tank Farm Haz ID: 1000

SB-1

ATF-3

ATF-8

ATF-10

ATF-11

88'

87'

86'

85'

Imagery Source: QSI 2017

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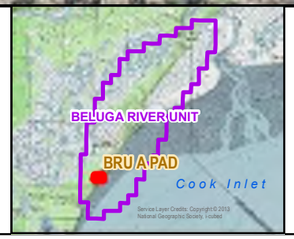
Anchorage, AK 99503



Legend

- Production Well Surface Hole Location
- Active ADEC Contaminated Site
- Monitoring Well
- Soil Boring Location
- Groundwater Elevation Contour (1 foot)
- Groundwater Flow Direction

Note:
Groundwater flow direction based on 2022 Beluga River Abandoned Diesel Tank Farm Monitoring Well Survey (Susitna 2023).

Alaska State Plane Zone 4 NAD 1983 (feet)

0 10 20 Meters

0 75 150 Feet

N

Date Prepared: 2/6/2024	Company Name: Hilcorp Alaska, LLC.	Drawn By: NWC

Boring Location
Beluga River Abandoned Diesel Tank Farm (A Pad)

BELUGA RIVER UNIT, COOK INLET, ALASKA

Scale: @ 11x17 map size	Figure No:
1 in = 75 feet	5

151°2'16"W 151°2'14"W 151°2'12"W 151°2'10"W 151°2'8"W 151°2'6"W 151°2'4"W 151°2'2"W 151°2'0"W 151°1'58"W 151°1'56"W 151°1'54"W 151°1'52"W 151°1'50"W 151°1'48"W 151°1'46"W 151°1'44"W

61°10'38"N 61°10'37"N 61°10'36"N 61°10'35"N 61°10'34"N 61°10'33"N 61°10'32"N 61°10'31"N

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FG-3
FG-14
FG-10
FG-21
FG-20
FG-23
FG-25

BELUGA RIVER 212-35T
Beluga River E PAD
BELUGA RIVER 212-35

102'
100'
98'
96'
94'
92'
90'
88'
86'
84'
82'
80'
78'

FG-24 (groundwater sample results)	
Analyte	2023
DRO (µg/L)	2380

Groundwater Cleanup Levels	
Analyte	
DRO (µg/L)	1500
18 AAC 75.345 Table C Groundwater Cleanup Levels	

Imagery Source: QSI 2017

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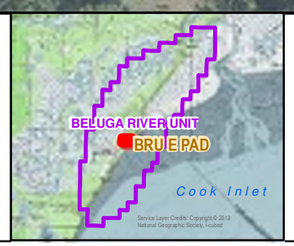
3800 Centerpoint Drive, Suite 1400
Anchorage, AK 99503



Legend

- Oil-Gas Surface Hole Location
- Water Supply Well Location
- Monitoring Well Usable
- Monitoring Well to be Sampled
- Groundwater Flow Direction
- Groundwater Elevation Contour (2ft)

Note:
Groundwater flow direction based on 2022 Beluga River Pump Area Assessment Monitoring Well Survey Measurements referenced to Above Mean Sea Level (Susitna 2023)

Alaska State Plane Zone 4 NAD 1983 (feet)

0 25 50 Meters

0 100 200 Feet

N

Date Prepared:	Company Name:	Drawn By:
2/9/2024	Hilcorp Alaska, LLC.	NWC

Groundwater Results
Beluga River Pump Area Assessment (E Pad)

BELUGA RIVER UNIT, COOK INLET, ALASKA

Scale: @ 11x17 map size	Figure No:
1 in = 103 feet	6

Tables

TABLE 3.
BELUGA RIVER UNIT GROUNDWATER SAMPLE ANALYTICAL RESULTS

				Sample ID	224-13-2-101223	224-13-3-101323	224-13-4-101323	224-13-5-101323	FG24-101223	FG28-101223	Trip Blank
				Lab Sample ID	1235846003	1235846004	1235846006	1235846005	1235846001	1235846002	1235846009
				SDG	1235846	1235846	1235846	1235846	1235846	1235846	1235846
				QC Type	Primary	Primary	MS/MSD	Dup of 224-13-3	Primary	Dup of FG24	TB
				Sample Date/Time	10/12/23 09:31	10/13/23 09:13	10/13/23 15:32	10/13/23 11:58	10/12/23 14:06	10/12/23 11:45	10/12/23 00:00
				Matrix	GW	GW	GW	GW	GW	GW	GW
Method	**Analyte**	**ADEC Cleanup Level[1]**	**Units**								
AK101	GRO	2200	ug/L		50 U	50 U	88.2 J	50 U	--	--	50 U
AK102	DRO	1500	ug/L		801	841	**2270**	720	**2380**	**2140**	--
AK103	RRO	1100	ug/L		983	982	**1720**	755	--	--	--
SW8260D	Benzene	4.6	ug/L		0.2 U	0.2 U	0.79	0.2 U	--	--	0.2 U
SW8260D	Ethylbenzene	15	ug/L		0.5 U	0.5 U	0.42 J	0.5 U	--	--	0.5 U
SW8260D	m,p-Xylenes	NA	ug/L		1 U	1 U	2.81	1 U	--	--	1 U
SW8260D	o-Xylene	NA	ug/L		0.5 U	0.5 U	1.94	0.5 U	--	--	0.5 U
SW8260D	Toluene	1100	ug/L		0.5 U	0.5 U	0.69 J	0.5 U	--	--	0.5 U
SW8260D	Xylenes	10000	ug/L		1.5 U	1.5 U	4.75	1.5 U	--	--	1.5 U
SW8270D SIM (PAH)	1-Methylnaphthalene	11	ug/L		0.0266 U	0.0764 B	0.358	0.0722 B	2.06	1.83	--
SW8270D SIM (PAH)	2-Methylnaphthalene	36	ug/L		0.0266 U	0.0792 B	0.372	0.0729 B	0.126 J, B	0.0821 J, B	--
SW8270D SIM (PAH)	Acenaphthene	530	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.279	0.317	--
SW8270D SIM (PAH)	Acenaphthylene	260	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0253 J	0.025 U	--
SW8270D SIM (PAH)	Anthracene	43	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Benzo[a]anthracene	0.30	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Benzo[a]pyrene	0.25	ug/L		0.0107 U	0.0111 U	0.0107 U	0.0111 U	0.0102 U	0.01 U	--
SW8270D SIM (PAH)	Benzo[b]fluoranthene	2.5	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Benzo[g,h,i]perylene	0.26	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Benzo[k]fluoranthene	0.80	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Chrysene	2.0	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Dibenzo[a,h]anthracene	0.25	ug/L		0.0107 U	0.0111 U	0.0107 U	0.0111 U	0.0102 U	0.01 U	--
SW8270D SIM (PAH)	Fluoranthene	260	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Fluorene	290	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.467	0.518	--
SW8270D SIM (PAH)	Indeno[1,2,3-cd]pyrene	0.19	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--
SW8270D SIM (PAH)	Naphthalene	1.7	ug/L		0.053 U	0.0905 J	0.595	0.0746 J	1.65	1.59	--
SW8270D SIM (PAH)	Phenanthrene	170	ug/L		0.0333 J, B	0.0555 U	0.053 U	0.0555 U	0.0476 J, B	0.0317 J, B	--
SW8270D SIM (PAH)	Pyrene	120	ug/L		0.0266 U	0.0278 U	0.0266 U	0.0278 U	0.0255 U	0.025 U	--

Notes:

[1] 18 AAC 75, Table C groundwater cleanup levels (ADEC 2023)

BOLD	Result exceeds the ADEC migration to groundwater cleanup level.
µg/L	micrograms per liter
B	estimated; analyte was detected in an associated blank
Dup	field duplicate
ID	identification
J	estimated; indeterminate bias
LOD	limit of detection
SDG	sample delivery group
SO	soil
U	not detected; value presented is the LOD

TABLE 4.
BELUGA RIVER UNIT SOIL SAMPLE ANALYTICAL RESULTS

				Sample ID	APAD-SB01-14.0-15.0	LPAD-SB01-5.0-7.0	LPAD-SB01-14.0-15.0	LPAD-SB02-9.0-9.5	LPAD-SB02-13.5-15.0	LPAD-SB03-5.0-7.0	LPAD-SB03-13.0-15.0	LPAD-SB04-5.0-7.0	LPAD-SB04-13.0-15.0	LPAD-SB05-5.0-7.0	MPAD-SB02-7.5-8.5	TRIP BLANK
				Lab Sample ID	1235845001	1235845002	1235845003	1235845004	1235845005	1235845008	1235845010	1235845011	1235845012	1235845009	1235845013	1235845014
				SDG	1235845	1235845	1235845	1235845	1235845	1235845	1235845	1235845	1235845	1235845	1235845	1235845
				QC Type	Primary	Primary	Primary	Primary	MS/MSD	Primary	Primary	Primary	Primary	Dup of LPAD-SB04-5.0-7.0	Primary	TB
				Sample Date/Time	10/12/23 16:55	10/13/23 09:30	10/13/23 09:35	10/13/23 10:20	10/13/23 10:15	10/13/23 11:00	10/13/23 11:10	10/13/23 11:40	10/13/23 11:45	10/13/23 11:05	10/13/23 15:00	10/12/23 12:00
				Matrix	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Method	**Analyte**	**ADEC Cleanup Level[1]**	**Units**													
AK101	GRO	300	mg/kg		1.79 J, B	2.14 J, B	2.28 J, B	4.21 J, B	4.06 J, B	1.57 J, B	1.47 J, B	1.62 J, B	1.3 J, B	1.17 J, B	18.8 J+	1.29 J
AK102	DRO	250	mg/kg		20.7 J, B	18.4 J, B	28.7 J+, B	123 J+	18.8 J, B	19.2 J, B	17.8 J, B	38.3 J+, B	19.9 J, B	18.8 J, B	**564 J+**	--
AK103	RRO	10000	mg/kg		--	57.5 U	150 J+	1510 J+	87.7 J	49.1 J	53.4 J	72 J	64.4 J	57 U	506 J+	--
SW6020B	Arsenic	0.2	mg/kg		--	**2.32**	**5.93**	**0.658 J**	**3.56**	**2.18**	**9.1**	**1.59**	**19.6**	**2.23**	--	--
SW6020B	Barium	2100	mg/kg		--	44.5	41.1	26	30.8	51.1	37.9	39.5	86.2	47.5	--	--
SW6020B	Cadmium	9.1	mg/kg		--	0.108 U	0.077 J	0.0908 J	0.186 J	0.0732 J	0.111 U	0.0855 J	0.0787 J	0.107 U	--	--
SW6020B	Chromium	100000	mg/kg		--	12.2	12.1	3.6	12	12.6	12.3	9.21	11.7	11.5	--	--
SW6020B	Lead	400	mg/kg		--	3.48	3.24	5.98	2.73	3.82	3	3.27	3.2	3.17	--	--
SW6020B	Mercury	0.36	mg/kg		--	0.108 U	0.109 U	0.14 U	0.112 U	0.107 U	0.111 U	0.111 U	0.109 U	0.107 U	--	--
SW6020B	Selenium	6.9	mg/kg		--	1.08 U	1.09 U	1.4 U	1.12 U	1.06 U	1.11 U	1.11 U	1.09 U	1.07 U	--	--
SW6020B	Silver	11	mg/kg		--	0.27 U	0.273 U	0.349 U	0.28 U	0.267 U	0.277 U	0.277 U	0.273 U	0.268 U	--	--
SW8260D	1,2,4-Trimethylbenzene	0.61	mg/kg		--	0.0655 U	0.0715 U	0.154 U	0.0865 U	0.0575 U	0.056 U	0.055 U	0.048 U	0.0485 U	**1.8 J**	0.05 U
SW8260D	1,2-Dibromoethane	0.00024	mg/kg		--	***0.000985 U***	***0.00107 U***	***0.00231 U***	***0.00129 U***	***0.00086 U***	***0.00084 U***	***0.00083 U***	***0.00072 U***	***0.00073 U***	***0.00084 U***	***0.000755 U***
SW8260D	1,2-Dichloroethane	0.0055	mg/kg		--	0.00131 U	0.00143 U	0.00308 U	0.00173 U	0.00115 U	0.00112 U	0.00111 U	0.00096 U	0.00097 U	0.00112 U	0.001 U
SW8260D	1,3,5-Trimethylbenzene	0.66	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	**1.01 J**	0.0126 U
SW8260D	Benzene	0.022	mg/kg		0.00505 U	0.0082 U	0.0089 U	0.0192 U	0.0108 U	0.0072 U	0.007 U	0.0069 U	0.006 U	0.00605 U	0.007 U	0.0063 U
SW8260D	Cumene	5.6	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.283	0.0126 U
SW8260D	Cyclohexane	77	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.0101 J	0.0126 U
SW8260D	Ethylbenzene	0.13	mg/kg		0.0101 U	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.0576	0.0126 U
SW8260D	m,p-Xylenes	NA	mg/kg		0.0202 U	0.0329 U	0.0356 U	0.077 U	0.0431 U	0.0287 U	0.0281 U	0.0276 U	0.024 U	0.0243 U	0.188	0.0251 U
SW8260D	MTBE	0.4	mg/kg		--	0.0655 U	0.0715 U	0.154 U	0.0865 U	0.0575 U	0.056 U	0.055 U	0.048 U	0.0485 U	0.056 U	0.05 U
SW8260D	Naphthalene	0.038	mg/kg		--	0.0164 U	0.0178 U	***0.0384 U***	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	**0.396**	0.0126 U
SW8260D	n-Butylbenzene	20	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.0139 U	0.0126 U
SW8260D	N-Hexane	130	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.0139 U	0.0126 U
SW8260D	o-Xylene	NA	mg/kg		0.0101 U	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.232	0.0126 U
SW8260D	Propylbenzene	9.1	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.546	0.0126 U
SW8260D	sec-Butylbenzene	28	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.127	0.0126 U
SW8260D	tert-Butylbenzene	11	mg/kg		--	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.014	0.0126 U
SW8260D	Toluene	6.7	mg/kg		0.0101 U	0.0164 U	0.0178 U	0.0384 U	0.0216 U	0.0144 U	0.014 U	0.0138 U	0.012 U	0.0122 U	0.0264 J	0.0126 U
SW8260D	Xylenes	1.5	mg/kg		0.0303 U	0.0493 U	0.0535 U	0.116 U	0.0645 U	0.043 U	0.042 U	0.0414 U	0.036 U	0.0364 U	0.42	0.0376 U
SW8270D SIM (PAH)	1-Methylnaphthalene	0.41	mg/kg		0.00715 J	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	**0.708**	--
SW8270D SIM (PAH)	2-Methylnaphthalene	1.3	mg/kg		0.00693 J	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.708	--
SW8270D SIM (PAH)	Acenaphthene	37	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Acenaphthylene	18	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.00928 J	--
SW8270D SIM (PAH)	Anthracene	390	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Benzo[a]anthracene	0.7	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Benzo[a]pyrene	1.5	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Benzo[b]fluoranthene	15	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Benzo[g,h,i]perylene	2300	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Benzo[k]fluoranthene	150	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Chrysene	600	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Dibenzo[a,h]anthracene	1.5	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Fluoranthene	590	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Fluorene	36	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0231 J	--
SW8270D SIM (PAH)	Indeno[1,2,3-cd]pyrene	15	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--
SW8270D SIM (PAH)	Naphthalene	0.038	mg/kg		0.00777 J	0.0116 U	0.0119 U	0.0143 U	0.0116 U	0.0114 U	0.0115 U	0.0119 U	0.0113 U	0.0114 U	**0.335**	--
SW8270D SIM (PAH)	Phenanthrene	39	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.00876 J	--
SW8270D SIM (PAH)	Pyrene	87	mg/kg		0.0134 U	0.0144 U	0.0148 U	0.0179 U	0.0144 U	0.0142 U	0.0144 U	0.0148 U	0.0141 U	0.0143 U	0.0143 U	--

Notes:
[1] 18 AAC 75, Tables B1 and B2 migration to groundwater and human health cleanup levels for the under 40-inch zone (ADEC 2023).

BOLD	Result exceeds the ADEC cleanup level.
Bold italics	ND result with LOD that exceeds the cleanup level.
B	estimated; analyte was detected in an associated blank
Dup	field duplicate
ID	identification
J / J+	estimated; bias indeterminate/high
LOD	limit of detection
mg/kg	milligrams per kilogram
SDG	sample delivery group
SO	soil
U	not detected; value presented is the LOD

Attachment A Groundwater Monitoring Forms

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: BRU CS Well ID: 224-13-2

Project Location: BRU M Pad Sample No.: 224-13-2-101223

Project Number: _____ Sampler(s): MM / CM

Date/Time: 10/12/2028 Weather: Snow ~35°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
0825	17.34 ☑ Meas. ☐ Hist.	7.25 Initial	10.09	1.64 x3 = 4.92 gal (9.29)

Water Level Measurement Method: ☑ Electric Tape ☐ Other: _____

Well Evacuation Method: ☐ Peristaltic Pump ☑ Submersible Pump ☐ Bailer ☐ Other: _____

Purge Rate: 0.49 L/min

Begin Purge: Time: 0903 (27 min) Total Volume Purged: 13.2 L

End Purge: Time: 0930 Well Volumes Purged: <1

Purge Water Disposed: ☑ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other: _____

7.25

17.34

Sample Collection Method & Analysis

Sample Type: ☑ Groundwater ☐ Surface Water ☐ Other: _____

Sample Time: 0931

Sample Collection Method: ☑ Pump Type: mini Monsoon Dedicated ☐ Y ☑ N ☐ Bailer ☐ Other: _____

Decon Procedure: ☐ N/A ☑ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.): orange w/ sulfur odor

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
3	40mL	☑ Glass ☐ Plastic	GRO HCl
2	250mL	☑ Glass ☐ Plastic	DRO/RRO HCl
3	40mL	☑ Glass ☐ Plastic	BTEX HCl
2	250mL	☑ Glass ☐ Plastic	PAHs none
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes: Pump set @ 8' btoc.
Final DTW = 7.28' btoc
Final TD = 17.39

no odor/sheen

Date: 10/12/23 Well ID: 224-13-2

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C) ✓	Cond (µS/cm) ✓	DO (mg/L)	pH ✓	OPR (mV) ✓	Color/ Turbidity
Requirements (must meet 4 or more)			+/- 2 °C	+/- 3%	+/- 10%	+/- 0.1	+/- 10 mV	+/- 10%
0910	7.31	1	8.05	51	4.98	5.26	116.2	81.7
0917	7.25	2.25	7.85	71	2.52	5.52	115.5	28.1
0922	7.25	3	7.79	77	2.37	5.60	113.7	20.0
0928	7.24	3.5	8.01	77	2.27	5.59	113.6	9.38

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: BRU PAA
Well ID: FG-24
Project Location: Beluga
Sample No.: FG24-101223
1145 FG28-101223 (dup)
Project Number:
Sampler(s): MM/MC
Date/Time: 10/12/23 1300
Weather: Overcast, ~32°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1309	25.05 ☒ Meas. ☐ Hist.	16.26 Initial	8.89	1.45 x 3 = 4.35 gal

Water Level Measurement Method: ☒ Electric Tape ☐ Other:
Well Evacuation Method: ☐ Peristaltic Pump ☒ Submersible Pump ☐ Bailer ☐ Other:
Purge Rate:
Begin Purge: Time: 1326 38min Total Volume Purged: 4 gal
End Purge: Time: 1404 Well Volumes Purged:
Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other:

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other:
Sample Time: 1406 / 1145 (dup)
Sample Collection Method: ☒ Pump Type: mini Monsoon Dedicated ☐ Y ☐ N ☐ Bailer ☐ Other:
Decon Procedure: ☐ N/A ☒ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:
Sample Description (color, turbidity, odor, sheen, etc.): Clear, no odor

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
4	250mL	☒ Glass ☐ Plastic	DRO (HCl) - dup
4	250mL	☒ Glass ☐ Plastic	PAHs - dup
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes: Pump set @ 16.5' btoc

Final DTW: 16.27
Final TD: 25.05

Date: 10/12/23 Well ID: FG-24

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C) +/- 2	Cond (µS/cm) +/- 3%	DO (mg/L) +/- 10%	pH +/- 0.1	OPR (mV) +/- 10mV	Color/ Turbidity +/- 10%
1333	16.28	1	6.08	76	1.98	5.54	123.4	22.4
1340	16.29	1.75	6.38	82	1.40	5.60	120.8	12.4
1345	16.27	2.5	6.18	83	1.12	5.60	117.5	8.33
1352	16.29	3	6.64	84	1.06	5.60	115.0	6.96
1402	16.28	4	6.22✓	86✓	1.14✓	5.61✓	112.0	6.65

Notes:

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: BRU 224-13 Well ID: 224-13-3

Project Location: M Pad Sample No.: 224-13-3-101323 0913
~~224-13-5-101323 1158 (dup)~~

Project Number: _____ Sampler(s): mm / CM

Date/Time: 10/13/23 Weather: overcast, no precip, 42°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
0831	15.02 ☐ Meas. ☐ Hist.	5.35 Initial	9.67	

Water Level Measurement Method: ☒ Electric Tape ☐ Other: _____

Well Evacuation Method: ☒ Peristaltic Pump ☐ Submersible Pump ☐ Bailer ☐ Other: _____

Purge Rate: _____

Begin Purge: Time: 0846 Total Volume Purged: 3 gallons

End Purge: Time: 0942 Well Volumes Purged: _____

Purge Water Disposed: ☒ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other: _____

Sample Collection Method & Analysis

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other: _____

Sample Time: 0913 / 1158 (dup)

Sample Collection Method: ☒ Pump Type: peri Dedicated ☐ Y ☐ N ☐ Bailer ☐ Other: _____

Decon Procedure: ☒ N/A ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.): _____

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
12	40 mL	☒ Glass ☐ Plastic	GRO/BTEX (dup)
4	250 mL	☒ Glass ☐ Plastic	DRO/RRO (HCl; dup)
4	250 mL	☒ Glass ☐ Plastic	PAHs (dup)
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes:

3/4" well no odor / sheen

Date: 10/13/23 Well ID: 224-13-3

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
Requirements (must meet 4 or more)			+/- 2 °C	+/- 3%	+/- 10%	+/- 0.1	+/- 10 mV	+/- 10%
0856	—	0.5	6.96	227	2.04	5.72	92.6	71.3
0904	—	1.2	7.09	190	1.40	5.78	85.6	25.9

Notes:

FDTW
5.3

TDW
15.03

SUSITNA ENVIRONMENTAL, LLC

Groundwater Sampling Record

Project Name: BRV 224-13 Well ID: 224-13-4

Project Location: M Pad Sample No.: 224-13-4-101323 MS/MSD

Project Number: _____ Sampler(s): mm/cm

Date/Time: 10/13/23 1055 Weather: Overcast, drizzle, 45°F

Water Level Measurements and Purge Data

Time	Depth of Well (TOC)	Depth to Water (TOC)	Feet of Water in Well	Gallons per Well Volume (2" dia. = 0.163 gal/ft, 4" dia.=0.653 gal/ft)
1116	~~[illegible]~~ 23' ☐ Meas. ☐ Hist.	~~[illegible]~~ 4.97 Initial	~~[illegible]~~ 7.35	

Water Level Measurement Method: ☑ Electric Tape ☐ Other: _____

Well Evacuation Method: ☑ Peristaltic Pump ☐ Submersible Pump ☐ Bailer ☐ Other: _____

Purge Rate: _____

Begin Purge: Time: ~~1124~~ 1514 Total Volume Purged: 1.5 gal

End Purge: Time: 1602 Well Volumes Purged: _____

Purge Water Disposed: ☑ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Liquabin ☐ Other: _____

Sample Collection Method & Analysis

Sample Type: ☑ Groundwater ☐ Surface Water ☐ Other: _____

Sample Time: 1532

Sample Collection Method: ☑ Pump Type: peri Dedicated ☐ Y ☐ N ☐ Bailer ☐ Other: _____

Decon Procedure: ☑ N/A ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Other:

Sample Description (color, turbidity, odor, sheen, etc.): _____

Sample Containers

Quantity	Size	Bottle Type	Laboratory Analysis
12	40mL	☑ Glass ☐ Plastic	GRO / BTEX
4	250mL	☑ Glass ☐ Plastic	DRO / RRO (HCl)
4	250mL	☑ Glass ☐ Plastic	PAHs
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	
		☐ Glass ☐ Plastic	

Notes: no odor / no sheen 3/4-inch well

Soil had sheen + odor @ 7.5-8.5' and from 10-12' bgs Collected a waste characterization soil sample

Date: 10/13/23 Well ID: 724-13-4

Well Evacuation / Field Parameters

Time	Depth to Water (TOC)	Volume (gallons)	Temp (°C)	Cond (µS/cm)	DO (mg/L)	pH	OPR (mV)	Color/ Turbidity
Requirements (must meet 4 or more)			+/- 2 °C	+/- 3%	+/- 10%	+/- 0.1	+/- 10 mV	+/- 10%
1526	—	0.75	8.54	302	4.40	6.26	64.2	Clear
1530		1.0	8.69	300	5.79	6.31	72.5	Clear

Notes:

Final DTW = 9.08

TD = 12.32

Attachment B Boring Logs

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name: BRU LPAD
Project/Contract Number:
Date: 10/13/23
Logged By: M. Leirer
Company: Susitna
Driller: Thomas
Company: GeoTek AK

Boring Location ID SB-01

Boring Start Time: 825
Boring Completion Time: 850
Total Depth: 15

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-2	0.0	0-5 Coarse grain sand; no gravel grey/orange (dry) * no odor/staining
2-4	0.0	
4-5	0.1	
5-7	0.4	5-9 · Coarse grain sand; no gravel (damp) * no odor/staining
7-9	0.1	9-10 wood present (no sand) → no PID
9-10	—	
10-12	0.6	10-11.5 Peat material (wet) (small lens of sand on top of peat)
12-14	0.6	11.5-14 Silt, brown (wet)
14-15	0.1	14-15 sand no gravel (wet) some*

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
~~22123-SB01~~	~~930~~	~~5-7~~	
LPAD-SB01	930	5-7 9:30	LPAD-SB01-5.0-7.0
LPAD-SB01	935	14-15 (smear) 9:35	LPAD-SB01-14.0-15.0

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name: BRU LPAD
Project/Contract Number:
Date: 10/13/23
Logged By: M. Leirer
Company: Susitna
Driller: Thomas
Company: GeoTek

Boring Location ID SB02

Boring Start Time: 900
Boring Completion Time: 1000
Total Depth: 15'

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-2	0.1	Coarse sand/no gravel dry
2-4	0.2	0-5 no odor or staining
4-5	0.2	grey orange
5-7	~~0.2~~	5-8 coarse sand/no gravel grey (dry)
7-9	0.8	8-9 · Peat material (dry)
9-10	0.9	9-9.5 silt (dry)/9.5-10 Peat * no odor/ staining
10-12	~~0.7~~	10-13.5 Peat material (damp to wet)
12-14	~~0.5~~	13.5-15 Sand w/some gravel coarse grey (wet) * no odor/ staining
14-15	0.9	

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
	1015	13.5-15.0	LPAD-SB02-13.5-15.0 (MS/D) 10:15
	1020	9.0-9.5	LPAD-SB02-9.0-9.5 10:20

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name: Beluga River LPAD
Project/Contract Number:
Date: 10/13/23
Logged By: M. Leirer
Company: Susitna
Driller: Thomas
Company: GeoTek

Boring Location ID SB03

Boring Start Time: 1030
Boring Completion Time: 1100
Total Depth: 15

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-2	0.0	0-5 coarse sand, no gravel (dry) gray/orange
2-4	0.0	
4-5	0.5	* no odor/staining
5-7	1.0	5-7 coarse sand/no gravel (dry)
7-9	1.4	7-9 Peat
9-10	0.9	9-9.5 silt (dry) * no odor/staining 9.5-10 Peat
10-12	0.9	10-13 Peat (dry)
12-14	0.5	13-15 Gray ~~gra~~ sand w/gravel (wet)
14-15		* no odor or staining
		* Did not sample peat as it can skew PRO results

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
LPAD-SB03-5.0-7.0	11:00		
LPAD-SB05-5.0-7.0	11:05	(DUP)	
LPAD-SB03-13.0-15.0	1110		

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name: Beluga River LPAD
Project/Contract Number:
Date: 10/13/23
Logged By: M. Leirer
Company: Susitna
Driller: Thomas
Company: GeoTek AK

Boring Location ID SB04

Boring Start Time: 1110
Boring Completion Time: 1150
Total Depth: 15

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-2	0.5	0-5 Coarse sand/no gravel (dry) grey/orange * no odor/sheen
2-4	0.7	
4-5	0.4	
5-7	1.1	5-7 coarse sand/no gravel (damp)
7-9	1.0	7-8 peat, 8-9 silt, 9-10 peat > dry no odor/sheen
9-10	0.7	
10-12	~~0.8~~	10-13 peat (dry)
12-14	~~0.5~~	13-15 coarse grey sand/some gravel (wet)
14-15	~~0.7~~	

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
LPAD	1140	LPAD-SB04-5.0-7.0	
	1145	LPAD-SB04-13.0-15.0	

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name: Beluga River A-PAD
Project/Contract Number:
Date: 10/12/23
Logged By: M. Leirer
Company: Susitna
Driller: Thomas
Company: GeoTek AK

Boring Location ID SB-01

Boring Start Time:
Boring Completion Time:
Total Depth: 15'

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-2 1 2	0.5	0-5 Coarse sand w/some gravel (med) (dry) no odor/staining Grey/light brown * Screened every 2' intervals
2-4 3	0.5	
4-5 4 5	0.5	
5-7 6	0.5	5-7 same as above (0-5)
7-9 7 8	0.3	7-10 Lg. coarse sand; large gravel oxidized; orange in color, (dry) no odor/staining
9-10 9 10	0.4	
10-12 11 12	0.5	10-15 same as interval from 7-10) dry
12-14 13	0.7	14-15 saturated
14-15 14 15	0.6	

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
APAD-SB01-1655		14-15'	smear zone
APAD-SB01-14.0-15.0 (1)	1655	14-15'	

Boring Log

SUSITNA ENVIRONMENTAL, LLC

Project Name:	Beluga River M Pad
Project/Contract Number:	
Date:	10/13/23
Logged By:	M. Mayer
Company:	Susitna
Driller:	Thomas
Company:	Geotek AK

Boring Location ID 224-13-4

Boring Start Time:	1340
Boring Completion Time:	1440
Total Depth:	15'

Depth Below Ground Surface (Feet)	Insitu PID Reading (ppm)	Lithology Notes
0-5'		Dry
5-10'		
7.5-8.5	279.6	7.5ft = wet, sheen + mod odor. Set well screen ~5.4 - 15.4' bgs
10-11.5	117.3	wet, sheen mod odor
10-15'		10-12' - silt layers 11.5' - product

Analytical Samples

Sample ID	Time	Depth Interval (feet bgs)	Analyses
mPAD-SB02-7.5-8.5	10/13/23	1500	GRO, ORO, RRO, PAH, VOC,

Attachment C Field Notes

16

5/17/22 Beluga GW Monitoring

0822 Set up at found well presumably well MOS-13. Ground to TOC Ref point 1.170'.

0930 N. Crone Departs Beluga River Unit for Kenai and then on to Anchorage.

1400 Return survey and Field gear. Download survey data.

1500 End of day

5/17/22

Nelson V. Crone

Scale: 1 square = _____

10/11/23 Beluga GW Monitoring

1300 Mobilizing to BRU from Anc - flight delayed due to tire repair.

1700 Arrive in BRU. ~~up~~ Unpack gear + prep for sampling.

1800 End of Day

M. Mayo
10/11/23

Scale: 1 square = _____

18 10/12/23 BRU GW Mont.

0600 HAK Morning Meeting
Susitna: MM, NC, CM, ML
- M, L+A Pads will be drilling and installing temp wells
  - 2 @ M Pad (temp wells)
  - 4 SBs @ L Pad

0700 Work permits, check in w/lead ops, prep for drilling/gw sampling.

0800 Arrive @ M-Pad

0840 Begin drilling SB for temp well 224-13-3 SE of water supply well. Using ML sleeves + containerizing soil in 5-gal buckets.
- GW @ 7-8' bgs; ~~setting well @ 20' bgs w/ 10' well screen.~~ ML
  * Heaving occured; well screen abandon location for now

MW 1130 ~~Drill well~~ Drill 224-13-3 again w/ ~~succ~~ success: Installed to 13.32' bgs; 5' well screen. see diagram →

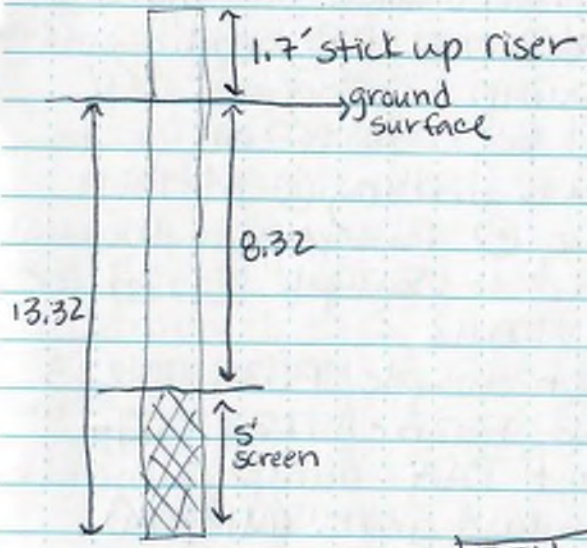
931 Collect GW sample 224-13-2-101223 for DRO/RRO, GRO/BTEX + PAHs

940 - Decon + pack up

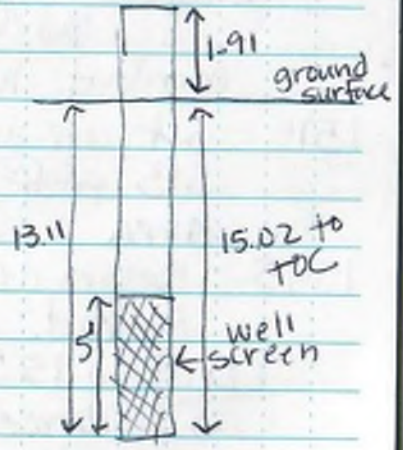
Scale: 1 square = _____

+Temp. Well Diagrams+ 10/12/23 19

224-13-3



224-13-4



Scale: 1 square = _____

Rite in the Rain

10/12/23 BRU-A PAD

1000 - Talk w/ GroTek - need to have ~~Geo~~ them send out more 5' well screens. RB sending more peri pump tubing as well

1018 - Head back to ~~fi~~ office to discuss drilling @ M-PAP

1300 - Arrive @ Pump Area Assessment Set up to sample FG24 for DRO & PAHs

1406 Collect sample FG24-101223 + DUP FG28-101223 dummy time 1145

1428 - Depart PAA - dump purge water + unload gear. (MM/CM)

1430 - Finish installing 224-13-4 ~~&~~ added 3 gallons of water to (potable) combat heaving. determine

1515 - Set up on A-PAD; ~~locate~~ SB ~~post~~ (w) location in source area.

1545 - Begin drilling SB-01 @ A-Pad.
- Drill to 15'; saturated from 14-15'
- no evidence of staining or odors

Scale: 1 square = _____

- screened soil every 2' w/ a PID (0.3-0.7)
- all results were ~~0.5 ppm~~ to 0.7

1655 - collect 1 soil sample from 13.5-15' bgs for GRO/BTEX, DRO/PAH
- containerized soil in 5-gal bucket
- Backfill boring w/ bentonite from 1' to 15' bgs & then the remaining 1' w/ native soil

1700 - Pack up, sample summary/management + daily report

1900 - End of day

Scale: 1 square = _____

Rite in the Rain

22 10/13/23 BRU - L PAD / M-PAD
Susitna ML/CM/NC/MM

0600 - HAK Daily Meeting
0700 - Work Permits / JSA
0745 - Arrive @ L PAD
NC marks out 4 SB locations around well Head Bldg
0815 - MM/CM arrive @ M Pad to sample well 224-13-3

0913 - Collect GW sample 224-13-3-101323 plus (Dup) 224-13-5-101323 (@ 1158) for GRO/BTEX/DRO/RRO/PAH

1055 - MM/CM set up to sample 224-13-4. Well did not recharge
1200 - STOP for lunch
1340 - Redrill 224-13-4 ~10' WSW (no boring log) of org. locale

*@1200 Complete installation of SBs @ L-PAD (see boring logs)

Scale: 1 square = _____

WELL 10/13/23
224-13-4 Details

- 0-5 dry
- 5-10 Wet @ 7.5' (sheen, mod odor)
  7.5-8.5 PID = 279.6
  10-11.5 = 117.3
- ~~10-15~~ 12-15 Wet, sheen, mod odor
  - 10-12 silt layers
  product @ 11.5'

1440 - Set well screen ~5.4-10.4 bgs

1532 - Collect GW sample 224-13-4-101323 w/ (MS/D)

1630 - Pack up + Prep to leave BRU

1730 - leave Beluga

Scale: 1 square = _____

Rite in the Rain

Attachment D Photographic Log

Photo 1, October 12, 2023 – Conducting groundwater monitoring at permanent well 224-13-2, looking southeast.

Photo 2, October 12, 2023 – Installing temporary groundwater monitoring well 224-13-4, looking southwest.

Photo 3, October 12, 2023 – Logging a soil core at Abandoned Diesel Tank Farm, looking southeast.

Photo 4, October 12, 2023 – Installing soil boring at Abandoned Diesel Tank Farm, looking southwest.

Photo 5, October 13, 2023 – Conducting groundwater sampling at 224-13-3, looking southeast.

Photo 6, October 13, 2023 – Temporary well 223-13-3 location with cone on top, looking northwest.

Photo 7, October 13, 2023 – Reinstalling temporary monitoring well 224-13-4, looking southeast.

Photo 8, October 13, 2023 – Conducting groundwater monitoring at temporary well 224-13-4, looking east.

Photo 9, October 13, 2023 – Installing soil boring at 221-23, looking southeast.

Photo 10, October 13, 2023: Waste staged at 224-13 (M Pad), looking southeast.

Photo 11, October 13, 2023 – Waste staged at 224-13 (M Pad) pending analysis, looking southwest.

Attachment E Survey Data Table

Beluga River Unit
2023 Survey Data Table

POINT ID	Latitude (WGS84)	Longitude (WGS84)	Top of Casing Elev (NAVD88)	Ground Elevation (NAVD88)	Casing Height	Depth to Water	Groundwater Elevation (NAVD88)	Date
ATF 3	61.15590893	-151.0592537	102.77	102.03	0.74	14.43	88.34	5/16/2022
ATF 8	61.15582680	-151.0587225	99.64	96.48	3.16	13.09	86.55	5/16/2022
ATF 10	61.15572219	-151.058078	99.76	97.07	2.69	15.76	84.00	5/16/2022
ATF 11	61.15569486	-151.0586339	99.23	95.87	3.36	13.85	85.38	5/16/2022
ATF X	61.15609545	-151.0584909	100.58	97.13	3.45	13.65	86.93	5/16/2022
ATF 6	61.15582683	-151.0593185	102.20	-	-	13.86	88.34	5/16/2022
FG 21	61.17643576	-151.0345212	99.59	-	-	-	-	5/16/2022
FG 14	61.17684809	-151.0343682	100.68	97.49	3.19	7.30	93.38	5/16/2022
FG 15	61.17688771	-151.0337052	97.41	-	-	-	-	5/16/2022
FG 03	61.17705020	-151.0370356	104.20	102.33	1.88	6.21	97.99	5/16/2022
FG 20	61.17631356	-151.0311239	93.58	91.48	2.10	12.20	81.38	5/16/2022
FG 24	61.17596000	-151.0305601	94.04	90.73	3.32	14.25	79.79	5/16/2022
FG 25	61.17529673	-151.0308395	92.07	89.68	2.39	14.10	77.97	5/16/2022
FG 23	61.17559314	-151.0314677	94.86	90.96	3.90	15.09	79.77	5/16/2022
FG 10	61.17654433	-151.0359970	92.92	92.09	0.83	3.65	89.27	5/16/2022
224-13-2	61.21277796	-150.9920010	94.75	92.18	2.57	7.29	87.46	5/16/2022
HOS 5	61.17592527	-151.0375155	113.03	110.49	2.54	9.07	103.96	5/17/2022
HOS 10	61.17577472	-151.0361703	106.87	105.70	1.17	5.55	101.32	5/17/2022
FG 24	61.17596000	-151.0305601	94.04	90.73	3.32	16.26	77.78	10/12/2023
SB-1 (A-PAD)	61.15604261	-151.0594286	-	104.92	-	-	-	10/12/2023
SB-1 (L-PAD)	61.20887549	-151.0235954	-	110.37	-	-	-	10/13/2023
SB-2 (L-PAD)	61.20892032	-151.0235398	-	105.45	-	-	-	10/13/2023
SB-3 (L-PAD)	61.20894467	-151.0236442	-	98.72	-	-	-	10/13/2023
SB-4 (L-PAD)	61.20890284	-151.0237020	-	104.17	-	-	-	10/13/2023
224-13-2	61.21277796	-150.9920010	94.75	92.19	2.56	7.25	87.50	10/13/2023
224-13-3	61.2123529	-150.9920903	93.01	91.39	1.62	5.35	87.66	10/13/2023
224-13-4	61.21267271	-150.9914892	93.59	91.80	1.79	4.97	88.62	10/13/2023

Note:

Latitude and a Longitude are in units of decimal degrees

Top of Casing, Depth to Water, and Groundwater Elevation are in units of feet.

Attachment F Analytical Laboratory Reports

Laboratory Report of Analysis

To: Hilcorp Alaska, LLC
2419 McKenzie Drive
Anchorage, AK 99517
(907)350-7952

Report Number: **1235845**

Client Project: **Beluga River Unit**

Dear Nelson Crone,

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 Justin 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.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

Case Narrative

SGS Client: **Hilcorp Alaska, LLC**
SGS Project: **1235845**
Project Name/Site: **Beluga River Unit**
Project Contact: **Nelson Crone**

Refer to sample receipt form for information on sample condition.

LPAD-SB01-14.0-15.0 (1235845003) PS

AK102/103 - LCSD recovery for DRO, RRO, 5a-androstane, and n-triacontane does not meet QC criteria.

LPAD-SB02-9.0-9.5 (1235845004) PS

AK102/103 - LCSD recovery for DRO, RRO, 5a-androstane, and n-triacontane does not meet QC criteria.

LPAD-SB02-1...(1235845005BMSD) (1235845007) BMSD

8260D - BMS/BMSD RPD for n-hexane does not meet QC criteria. This analyte was not detected above the LOQ in the associated PS.
6020B - Metals BMSD recovery for Barium does not meet QC criteria. The post digestion spike was successful.

LPAD-SB04-5.0-7.0 (1235845011) PS

AK102/103 - LCSD recovery for DRO, RRO, 5a-androstane, and n-triacontane does not meet QC criteria.

MPAD-SB02-7.5-8.5 (1235845013) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
AK102/103 - LCSD recovery for DRO, RRO, 5a-androstane, and n-triacontane does not meet QC criteria.

LCSD for HBN 1866350 [XXX/4890 (1742206) LCSD

AK102/103 - LCSD recovery for DRO/RRO does not meet QC criteria.
AK102/103 - Surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria.

MB for HBN 1866354 [MXX/36293] (1742225) MB

6020B - Metals - No MS/MSD in was included in this batch due to a laboratory error.

1236055014(1743800MS) (1743803) MS

6020B - Metals MS recoveries for Barium and Chromium do not meet QC criteria. The post digestion spike was successful.

1236055014(1743800MSD) (1743804) MSD

6020B - Metals MSD recoveries for Barium and Chromium do not meet QC criteria. The post digestion spike was successful.

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

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

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, indenmification 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.

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
APAD-SB01-14.0-15.0	1235845001	10/12/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB01-5.0-7.0	1235845002	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB01-14.0-15.0	1235845003	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB02-9.0-9.5	1235845004	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB02-13.5-15.0	1235845005	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB02-13...(1235845005BM	1235845006	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB02-1...(1235845005BMS	1235845007	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB03-5.0-7.0	1235845008	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB05-5.0-7.0	1235845009	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB03-13.0-15.0	1235845010	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB04-5.0-7.0	1235845011	10/13/2023	10/16/2023	Soil/Solid (dry weight)
LPAD-SB04-13.0-15.0	1235845012	10/13/2023	10/16/2023	Soil/Solid (dry weight)
MPAD-SB02-7.5-8.5	1235845013	10/13/2023	10/16/2023	Soil/Solid (dry weight)
TRIPBLANK	1235845014	10/12/2023	10/16/2023	Soil/Solid (dry weight)

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel Range Organics (S)
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
AK101	Gasoline Range Organics (S)
SW6020B	Metals by ICP-MS (S)
SM21 2540G	Percent Solids SM2540G
SW8260D	VOC 8260 (S) Field Extracted
SW8260D	Volatile Organic Compounds (S) FIELD EXT

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Detectable Results Summary

Client Sample ID: **APAD-SB01-14.0-15.0**
Lab Sample ID: 1235845001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	7.15J	ug/kg
	2-Methylnaphthalene	6.93J	ug/kg
	Naphthalene	7.77J	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	20.7J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.79J	mg/kg

Client Sample ID: **LPAD-SB01-5.0-7.0**
Lab Sample ID: 1235845002

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	2.32	mg/kg
	Barium	44.5	mg/kg
	Chromium	12.2	mg/kg
	Lead	3.48	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	18.4J	mg/kg
Volatile Fuels	Gasoline Range Organics	2.14J	mg/kg

Client Sample ID: **LPAD-SB01-14.0-15.0**
Lab Sample ID: 1235845003

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	5.93	mg/kg
	Barium	41.1	mg/kg
	Cadmium	0.0770J	mg/kg
	Chromium	12.1	mg/kg
	Lead	3.24	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	28.7	mg/kg
	Residual Range Organics	150	mg/kg
Volatile Fuels	Gasoline Range Organics	2.28J	mg/kg

Client Sample ID: **LPAD-SB02-9.0-9.5**
Lab Sample ID: 1235845004

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	0.658J	mg/kg
	Barium	26.0	mg/kg
	Cadmium	0.0908J	mg/kg
	Chromium	3.60	mg/kg
	Lead	5.98	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	123	mg/kg
	Residual Range Organics	1510	mg/kg
Volatile Fuels	Gasoline Range Organics	4.21J	mg/kg

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Detectable Results Summary

Client Sample ID: **LPAD-SB02-13.5-15.0**
Lab Sample ID: 1235845005

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	3.56	mg/kg
	Barium	30.8	mg/kg
	Cadmium	0.186J	mg/kg
	Chromium	12.0	mg/kg
	Lead	2.73	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	18.8J	mg/kg
	Residual Range Organics	87.7J	mg/kg
Volatile Fuels	Gasoline Range Organics	4.06J	mg/kg

Client Sample ID: **LPAD-SB03-5.0-7.0**
Lab Sample ID: 1235845008

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	2.18	mg/kg
	Barium	51.1	mg/kg
	Cadmium	0.0732J	mg/kg
	Chromium	12.6	mg/kg
	Lead	3.82	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	19.2J	mg/kg
	Residual Range Organics	49.1J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.57J	mg/kg

Client Sample ID: **LPAD-SB05-5.0-7.0**
Lab Sample ID: 1235845009

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	2.23	mg/kg
	Barium	47.5	mg/kg
	Chromium	11.5	mg/kg
	Lead	3.17	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	18.8J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.17J	mg/kg

Client Sample ID: **LPAD-SB03-13.0-15.0**
Lab Sample ID: 1235845010

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	9.10	mg/kg
	Barium	37.9	mg/kg
	Chromium	12.3	mg/kg
	Lead	3.00	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	17.8J	mg/kg
	Residual Range Organics	53.4J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.47J	mg/kg

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Detectable Results Summary

Client Sample ID: **LPAD-SB04-5.0-7.0**
Lab Sample ID: 1235845011

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	1.59	mg/kg
	Barium	39.5	mg/kg
	Cadmium	0.0855J	mg/kg
	Chromium	9.21	mg/kg
	Lead	3.27	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	38.3	mg/kg
	Residual Range Organics	72.0J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.62J	mg/kg

Client Sample ID: **LPAD-SB04-13.0-15.0**
Lab Sample ID: 1235845012

	Parameter	Result	Units
Metals by ICP/MS	Arsenic	19.6	mg/kg
	Barium	86.2	mg/kg
	Cadmium	0.0787J	mg/kg
	Chromium	11.7	mg/kg
	Lead	3.20	mg/kg
Semivolatile Organic Fuels	Diesel Range Organics	19.9J	mg/kg
	Residual Range Organics	64.4J	mg/kg
Volatile Fuels	Gasoline Range Organics	1.30J	mg/kg

Client Sample ID: **MPAD-SB02-7.5-8.5**
Lab Sample ID: 1235845013

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	708	ug/kg
	2-Methylnaphthalene	708	ug/kg
	Acenaphthylene	9.28J	ug/kg
	Fluorene	23.1J	ug/kg
	Naphthalene	335	ug/kg
	Phenanthrene	8.76J	ug/kg
Semivolatile Organic Fuels	Diesel Range Organics	564	mg/kg
	Residual Range Organics	506	mg/kg
Volatile Fuels	Gasoline Range Organics	18.8	mg/kg
Volatile GC/MS- Petroleum VOC Group	1,2,4-Trimethylbenzene	1800	ug/kg
	1,3,5-Trimethylbenzene	1010	ug/kg
	Cyclohexane	10.1J	ug/kg
	Ethylbenzene	57.6	ug/kg
	Isopropylbenzene (Cumene)	283	ug/kg
	Naphthalene	396	ug/kg
	n-Propylbenzene	546	ug/kg
	o-Xylene	232	ug/kg
	P & M -Xylene	188	ug/kg
	sec-Butylbenzene	127	ug/kg
	tert-Butylbenzene	14.0J	ug/kg
	Toluene	26.4J	ug/kg
	Xylenes (total)	420	ug/kg

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Detectable Results Summary

Client Sample ID: **TRIPBLANK**
Lab Sample ID: 1235845014

Volatile Fuels

Parameter	Result	Units
Gasoline Range Organics	1.29J	mg/kg

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Results of **APAD-SB01-14.0-15.0**

Client Sample ID: **APAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845001
Lab Project ID: 1235845

Collection Date: 10/12/23 16:55
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):92.3
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	7.15	J	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
2-Methylnaphthalene	6.93	J	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Acenaphthene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Acenaphthylene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Anthracene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Benzo(a)Anthracene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Benzo[a]pyrene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Benzo[b]Fluoranthene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Benzo[g,h,i]perylene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Benzo[k]fluoranthene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Chrysene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Dibenzo[a,h]anthracene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Fluoranthene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Fluorene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Indeno[1,2,3-c,d] pyrene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Naphthalene	7.77	J	21.5	5.38	10.8	ug/kg	1		10/30/23 15:13
Phenanthrene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Pyrene	13.4	U	26.9	6.72	13.4	ug/kg	1		10/30/23 15:13
Surrogates									
2-Methylnaphthalene-d10 (surr)	93.3		58-103			%	1		10/30/23 15:13
Fluoranthene-d10 (surr)	86.5		54-113			%	1		10/30/23 15:13

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 15:13
Container ID: 1235845001-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.672 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **APAD-SB01-14.0-15.0**

Client Sample ID: **APAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845001
Lab Project ID: 1235845

Collection Date: 10/12/23 16:55
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):92.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	20.7	J	21.5	9.68	10.8	mg/kg	1		10/28/23 11:26
Surrogates									
5a Androstane (surr)	91.3		50-150			%	1		10/28/23 11:26

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 11:26
Container ID: 1235845001-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.672 g
Prep Extract Vol: 5 mL

Results of **APAD-SB01-14.0-15.0**

Client Sample ID: **APAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845001
Lab Project ID: 1235845

Collection Date: 10/12/23 16:55
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):92.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.79	J	2.02	0.606	1.01	mg/kg	1		10/27/23 21:27
Surrogates									
4-Bromofluorobenzene (surr)	109		50-150			%	1		10/27/23 21:27

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 21:27
Container ID: 1235845001-B

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/12/23 16:55
Prep Initial Wt./Vol.: 84.593 g
Prep Extract Vol: 31.532 mL

Results of **APAD-SB01-14.0-15.0**

Client Sample ID: **APAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845001
Lab Project ID: 1235845

Collection Date: 10/12/23 16:55
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):92.3
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.05	U	10.1	3.15	5.05	ug/kg	1		10/24/23 17:52
Ethylbenzene	10.1	U	20.2	6.30	10.1	ug/kg	1		10/24/23 17:52
o-Xylene	10.1	U	20.2	6.30	10.1	ug/kg	1		10/24/23 17:52
P & M -Xylene	20.2	U	40.4	12.1	20.2	ug/kg	1		10/24/23 17:52
Toluene	10.1	U	20.2	6.30	10.1	ug/kg	1		10/24/23 17:52
Xylenes (total)	30.3	U	60.6	18.4	30.3	ug/kg	1		10/24/23 17:52
Surrogates									
1,2-Dichloroethane-D4 (surr)	93.6		71-136			%	1		10/24/23 17:52
4-Bromofluorobenzene (surr)	97.1		55-151			%	1		10/24/23 17:52
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 17:52

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 17:52
Container ID: 1235845001-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/12/23 16:55
Prep Initial Wt./Vol.: 84.593 g
Prep Extract Vol: 31.532 mL

Results of **LPAD-SB01-5.0-7.0**

Client Sample ID: **LPAD-SB01-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845002
Lab Project ID: 1235845

Collection Date: 10/13/23 09:30
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	2.32		1.08	0.334	0.540	mg/kg	10		10/25/23 18:03
Barium	44.5		0.324	0.101	0.162	mg/kg	10		10/25/23 18:03
Cadmium	0.108	U	0.216	0.0669	0.108	mg/kg	10		10/25/23 18:03
Chromium	12.2		1.08	0.334	0.540	mg/kg	10		10/25/23 18:03
Lead	3.48		0.216	0.0669	0.108	mg/kg	10		10/25/23 18:03
Mercury	0.108	U	0.216	0.0755	0.108	mg/kg	10		10/25/23 18:03
Selenium	1.08	U	2.16	0.669	1.08	mg/kg	10		10/25/23 18:03
Silver	0.270	U	0.539	0.162	0.270	mg/kg	10		10/25/23 18:03

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:03
Container ID: 1235845002-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.073 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB01-5.0-7.0**

Client Sample ID: **LPAD-SB01-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845002
Lab Project ID: 1235845

Collection Date: 10/13/23 09:30
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
2-Methylnaphthalene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Acenaphthene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Acenaphthylene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Anthracene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Benzo(a)Anthracene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Benzo[a]pyrene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Benzo[b]Fluoranthene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Benzo[g,h,i]perylene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Benzo[k]fluoranthene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Chrysene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Dibenzo[a,h]anthracene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Fluoranthene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Fluorene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Indeno[1,2,3-c,d] pyrene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Naphthalene	11.6	U	23.1	5.77	11.6	ug/kg	1		10/30/23 15:33
Phenanthrene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Pyrene	14.4	U	28.8	7.21	14.4	ug/kg	1		10/30/23 15:33
Surrogates									
2-Methylnaphthalene-d10 (surr)	92		58-103			%	1		10/30/23 15:33
Fluoranthene-d10 (surr)	76.6		54-113			%	1		10/30/23 15:33

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 15:33
Container ID: 1235845002-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.587 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB01-5.0-7.0**

Client Sample ID: **LPAD-SB01-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845002
Lab Project ID: 1235845

Collection Date: 10/13/23 09:30
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	18.4	J	23.1	10.4	11.6	mg/kg	1		10/28/23 11:39
Surrogates									
5a Androstane (surr)	89.8		50-150			%	1		10/28/23 11:39

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 11:39
Container ID: 1235845002-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.587 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	57.5	U	115	49.6	57.5	mg/kg	1		10/28/23 11:39
Surrogates									
n-Triacontane-d62 (surr)	92.7		50-150			%	1		10/28/23 11:39

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 11:39
Container ID: 1235845002-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.587 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB01-5.0-7.0**

Client Sample ID: **LPAD-SB01-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845002
Lab Project ID: 1235845

Collection Date: 10/13/23 09:30
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.14	J	3.29	0.986	1.65	mg/kg	1		10/27/23 21:46
Surrogates									
4-Bromofluorobenzene (surr)	105		50-150			%	1		10/27/23 21:46

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 21:46
Container ID: 1235845002-B

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/13/23 09:30
Prep Initial Wt./Vol.: 57.893 g
Prep Extract Vol: 32.8794 mL

Results of **LPAD-SB01-5.0-7.0**

Client Sample ID: **LPAD-SB01-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845002
Lab Project ID: 1235845

Collection Date: 10/13/23 09:30
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	65.5	U	131	39.4	65.5	ug/kg	1		10/24/23 18:08
1,2-Dibromoethane	0.985	U	1.97	0.986	0.985	ug/kg	1		10/24/23 18:08
1,2-Dichloroethane	1.31	U	2.63	0.920	1.31	ug/kg	1		10/24/23 18:08
1,3,5-Trimethylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Benzene	8.20	U	16.4	5.13	8.20	ug/kg	1		10/24/23 18:08
Cyclohexane	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Ethylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Isopropylbenzene (Cumene)	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Methyl-t-butyl ether	65.5	U	131	40.8	65.5	ug/kg	1		10/24/23 18:08
Naphthalene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
n-Butylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
n-hexane	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
n-Propylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
o-Xylene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
P & M -Xylene	32.9	U	65.7	19.7	32.9	ug/kg	1		10/24/23 18:08
sec-Butylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
tert-Butylbenzene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Toluene	16.4	U	32.9	10.3	16.4	ug/kg	1		10/24/23 18:08
Xylenes (total)	49.3	U	98.6	30.0	49.3	ug/kg	1		10/24/23 18:08
Surrogates									
1,2-Dichloroethane-D4 (surr)	93.2		71-136			%	1		10/24/23 18:08
4-Bromofluorobenzene (surr)	100		55-151			%	1		10/24/23 18:08
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 18:08

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 18:08
Container ID: 1235845002-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 09:30
Prep Initial Wt./Vol.: 57.893 g
Prep Extract Vol: 32.8794 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB01-14.0-15.0**

Client Sample ID: **LPAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845003
Lab Project ID: 1235845

Collection Date: 10/13/23 09:35
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	5.93		1.09	0.338	0.545	mg/kg	10		10/25/23 18:05
Barium	41.1		0.327	0.103	0.164	mg/kg	10		10/25/23 18:05
Cadmium	0.0770	J	0.218	0.0677	0.109	mg/kg	10		10/25/23 18:05
Chromium	12.1		1.09	0.338	0.545	mg/kg	10		10/25/23 18:05
Lead	3.24		0.218	0.0677	0.109	mg/kg	10		10/25/23 18:05
Mercury	0.109	U	0.218	0.0764	0.109	mg/kg	10		10/25/23 18:05
Selenium	1.09	U	2.18	0.677	1.09	mg/kg	10		10/25/23 18:05
Silver	0.273	U	0.546	0.164	0.273	mg/kg	10		10/25/23 18:05

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:05
Container ID: 1235845003-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.091 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB01-14.0-15.0**

Client Sample ID: **LPAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845003
Lab Project ID: 1235845

Collection Date: 10/13/23 09:35
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
2-Methylnaphthalene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Acenaphthene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Acenaphthylene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Anthracene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Benzo(a)Anthracene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Benzo[a]pyrene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Benzo[b]Fluoranthene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Benzo[g,h,i]perylene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Benzo[k]fluoranthene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Chrysene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Dibenzo[a,h]anthracene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Fluoranthene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Fluorene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Indeno[1,2,3-c,d] pyrene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Naphthalene	11.9	U	23.7	5.92	11.9	ug/kg	1		10/30/23 15:54
Phenanthrene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Pyrene	14.8	U	29.6	7.40	14.8	ug/kg	1		10/30/23 15:54
Surrogates									
2-Methylnaphthalene-d10 (surr)	87.4		58-103			%	1		10/30/23 15:54
Fluoranthene-d10 (surr)	83.4		54-113			%	1		10/30/23 15:54

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 15:54
Container ID: 1235845003-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.611 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB01-14.0-15.0**

Client Sample ID: **LPAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845003
Lab Project ID: 1235845

Collection Date: 10/13/23 09:35
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	28.7		23.7	10.7	11.9	mg/kg	1		10/28/23 11:52
Surrogates									
5a Androstane (surr)	103		50-150			%	1		10/28/23 11:52

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 11:52
Container ID: 1235845003-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.611 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	150		118	50.9	59.0	mg/kg	1		10/28/23 11:52
Surrogates									
n-Triacontane-d62 (surr)	109		50-150			%	1		10/28/23 11:52

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 11:52
Container ID: 1235845003-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.611 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB01-14.0-15.0**

Client Sample ID: **LPAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845003
Lab Project ID: 1235845

Collection Date: 10/13/23 09:35
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.28	J	3.56	1.07	1.78	mg/kg	1		10/27/23 22:05
Surrogates									
4-Bromofluorobenzene (surr)	93.6		50-150			%	1		10/27/23 22:05

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 22:05
Container ID: 1235845003-B

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/13/23 09:35
Prep Initial Wt./Vol.: 57.011 g
Prep Extract Vol: 34.1257 mL

Results of **LPAD-SB01-14.0-15.0**

Client Sample ID: **LPAD-SB01-14.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845003
Lab Project ID: 1235845

Collection Date: 10/13/23 09:35
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.0
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	71.5	U	143	42.8	71.5	ug/kg	1		10/24/23 18:23
1,2-Dibromoethane	1.07	U	2.14	1.07	1.07	ug/kg	1		10/24/23 18:23
1,2-Dichloroethane	1.43	U	2.85	0.998	1.43	ug/kg	1		10/24/23 18:23
1,3,5-Trimethylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Benzene	8.90	U	17.8	5.56	8.90	ug/kg	1		10/24/23 18:23
Cyclohexane	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Ethylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Isopropylbenzene (Cumene)	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Methyl-t-butyl ether	71.5	U	143	44.2	71.5	ug/kg	1		10/24/23 18:23
Naphthalene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
n-Butylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
n-hexane	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
n-Propylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
o-Xylene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
P & M -Xylene	35.6	U	71.3	21.4	35.6	ug/kg	1		10/24/23 18:23
sec-Butylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
tert-Butylbenzene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Toluene	17.8	U	35.6	11.1	17.8	ug/kg	1		10/24/23 18:23
Xylenes (total)	53.5	U	107	32.5	53.5	ug/kg	1		10/24/23 18:23
Surrogates									
1,2-Dichloroethane-D4 (surr)	95		71-136			%	1		10/24/23 18:23
4-Bromofluorobenzene (surr)	92		55-151			%	1		10/24/23 18:23
Toluene-d8 (surr)	104		85-116			%	1		10/24/23 18:23

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 18:23
Container ID: 1235845003-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 09:35
Prep Initial Wt./Vol.: 57.011 g
Prep Extract Vol: 34.1257 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB02-9.0-9.5**

Client Sample ID: **LPAD-SB02-9.0-9.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845004
Lab Project ID: 1235845

Collection Date: 10/13/23 10:20
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):69.3
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	0.658	J	1.40	0.433	0.700	mg/kg	10		10/25/23 18:15
Barium	26.0		0.419	0.131	0.209	mg/kg	10		10/25/23 18:15
Cadmium	0.0908	J	0.279	0.0866	0.140	mg/kg	10		10/25/23 18:15
Chromium	3.60		1.40	0.433	0.700	mg/kg	10		10/25/23 18:15
Lead	5.98		0.279	0.0866	0.140	mg/kg	10		10/25/23 18:15
Mercury	0.140	U	0.279	0.0977	0.140	mg/kg	10		10/25/23 18:15
Selenium	1.40	U	2.79	0.866	1.40	mg/kg	10		10/30/23 20:56
Silver	0.349	U	0.698	0.209	0.349	mg/kg	10		10/25/23 18:15

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:15
Container ID: 1235845004-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.034 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 20:56
Container ID: 1235845004-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.034 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB02-9.0-9.5**

Client Sample ID: **LPAD-SB02-9.0-9.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845004
Lab Project ID: 1235845

Collection Date: 10/13/23 10:20
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):69.3
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
2-Methylnaphthalene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Acenaphthene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Acenaphthylene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Anthracene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Benzo(a)Anthracene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Benzo[a]pyrene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Benzo[b]Fluoranthene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Benzo[g,h,i]perylene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Benzo[k]fluoranthene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Chrysene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Dibenzo[a,h]anthracene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Fluoranthene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Fluorene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Indeno[1,2,3-c,d] pyrene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Naphthalene	14.3	U	28.6	7.15	14.3	ug/kg	1		10/30/23 16:14
Phenanthrene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Pyrene	17.9	U	35.8	8.94	17.9	ug/kg	1		10/30/23 16:14
Surrogates									
2-Methylnaphthalene-d10 (surr)	90.2		58-103			%	1		10/30/23 16:14
Fluoranthene-d10 (surr)	79.5		54-113			%	1		10/30/23 16:14

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 16:14
Container ID: 1235845004-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.707 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB02-9.0-9.5**

Client Sample ID: **LPAD-SB02-9.0-9.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845004
Lab Project ID: 1235845

Collection Date: 10/13/23 10:20
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):69.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	123		28.6	12.9	14.3	mg/kg	1		10/28/23 12:05
Surrogates									
5a Androstane (surr)	80.5		50-150			%	1		10/28/23 12:05

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 12:05
Container ID: 1235845004-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.707 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1510		143	61.5	71.5	mg/kg	1		10/28/23 12:05
Surrogates									
n-Triacontane-d62 (surr)	98.9		50-150			%	1		10/28/23 12:05

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 12:05
Container ID: 1235845004-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.707 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB02-9.0-9.5**

Client Sample ID: **LPAD-SB02-9.0-9.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845004
Lab Project ID: 1235845

Collection Date: 10/13/23 10:20
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):69.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.21	J	7.68	2.31	3.84	mg/kg	1		10/27/23 23:39
Surrogates									
4-Bromofluorobenzene (surr)	88.9		50-150			%	1		10/27/23 23:39

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 23:39
Container ID: 1235845004-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 10:20
Prep Initial Wt./Vol.: 33.016 g
Prep Extract Vol: 35.1458 mL

Results of **LPAD-SB02-9.0-9.5**

Client Sample ID: **LPAD-SB02-9.0-9.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845004
Lab Project ID: 1235845

Collection Date: 10/13/23 10:20
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):69.3
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	154	U	307	92.2	154	ug/kg	1		10/24/23 18:39
1,2-Dibromoethane	2.31	U	4.61	2.31	2.31	ug/kg	1		10/24/23 18:39
1,2-Dichloroethane	3.08	U	6.15	2.15	3.08	ug/kg	1		10/24/23 18:39
1,3,5-Trimethylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Benzene	19.2	U	38.4	12.0	19.2	ug/kg	1		10/24/23 18:39
Cyclohexane	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Ethylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Isopropylbenzene (Cumene)	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Methyl-t-butyl ether	154	U	307	95.3	154	ug/kg	1		10/24/23 18:39
Naphthalene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
n-Butylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
n-hexane	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
n-Propylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
o-Xylene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
P & M -Xylene	77.0	U	154	46.1	77.0	ug/kg	1		10/24/23 18:39
sec-Butylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
tert-Butylbenzene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Toluene	38.4	U	76.8	24.0	38.4	ug/kg	1		10/24/23 18:39
Xylenes (total)	116	U	231	70.1	116	ug/kg	1		10/24/23 18:39
Surrogates									
1,2-Dichloroethane-D4 (surr)	94.7		71-136			%	1		10/24/23 18:39
4-Bromofluorobenzene (surr)	89.8		55-151			%	1		10/24/23 18:39
Toluene-d8 (surr)	104		85-116			%	1		10/24/23 18:39

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 18:39
Container ID: 1235845004-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 10:20
Prep Initial Wt./Vol.: 33.016 g
Prep Extract Vol: 35.1458 mL

Results of **LPAD-SB02-13.5-15.0**

Client Sample ID: **LPAD-SB02-13.5-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845005
Lab Project ID: 1235845

Collection Date: 10/13/23 10:15
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):85.9
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	3.56		1.12	0.347	0.560	mg/kg	10		10/31/23 12:23
Barium	30.8		0.336	0.105	0.168	mg/kg	10		10/31/23 12:23
Cadmium	0.186	J	0.224	0.0694	0.112	mg/kg	10		10/31/23 12:23
Chromium	12.0		1.12	0.347	0.560	mg/kg	10		10/31/23 12:23
Lead	2.73		0.224	0.0694	0.112	mg/kg	10		10/31/23 12:23
Mercury	0.112	U	0.224	0.0783	0.112	mg/kg	10		10/31/23 12:23
Selenium	1.12	U	2.24	0.694	1.12	mg/kg	10		10/31/23 14:59
Silver	0.280	U	0.559	0.168	0.280	mg/kg	10		10/31/23 12:23

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/31/23 12:23
Container ID: 1235845005-A

Prep Batch: MXX36311
Prep Method: SW3050B
Prep Date/Time: 10/30/23 13:06
Prep Initial Wt./Vol.: 1.041 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12124
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/31/23 14:59
Container ID: 1235845005-A

Prep Batch: MXX36311
Prep Method: SW3050B
Prep Date/Time: 10/30/23 13:06
Prep Initial Wt./Vol.: 1.041 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB02-13.5-15.0**

Client Sample ID: **LPAD-SB02-13.5-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845005
Lab Project ID: 1235845

Collection Date: 10/13/23 10:15
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):85.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
2-Methylnaphthalene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Acenaphthene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Acenaphthylene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Anthracene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Benzo(a)Anthracene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Benzo[a]pyrene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Benzo[b]Fluoranthene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Benzo[g,h,i]perylene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Benzo[k]fluoranthene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Chrysene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Dibenzo[a,h]anthracene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Fluoranthene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Fluorene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Indeno[1,2,3-c,d] pyrene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Naphthalene	11.6	U	23.1	5.79	11.6	ug/kg	1		10/30/23 16:34
Phenanthrene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Pyrene	14.4	U	28.9	7.23	14.4	ug/kg	1		10/30/23 16:34
Surrogates									
2-Methylnaphthalene-d10 (surr)	91.1		58-103			%	1		10/30/23 16:34
Fluoranthene-d10 (surr)	84		54-113			%	1		10/30/23 16:34

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 16:34
Container ID: 1235845005-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.642 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB02-13.5-15.0**

Client Sample ID: **LPAD-SB02-13.5-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845005
Lab Project ID: 1235845

Collection Date: 10/13/23 10:15
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):85.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	18.8	J	23.1	10.4	11.6	mg/kg	1		10/28/23 12:18
Surrogates									
5a Androstane (surr)	96		50-150			%	1		10/28/23 12:18

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 12:18
Container ID: 1235845005-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.642 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	87.7	J	116	49.8	58.0	mg/kg	1		10/28/23 12:18
Surrogates									
n-Triacontane-d62 (surr)	100		50-150			%	1		10/28/23 12:18

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 12:18
Container ID: 1235845005-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.642 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB02-13.5-15.0**

Client Sample ID: **LPAD-SB02-13.5-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845005
Lab Project ID: 1235845

Collection Date: 10/13/23 10:15
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):85.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.06	J	4.32	1.29	2.16	mg/kg	1		10/27/23 19:54
Surrogates									
4-Bromofluorobenzene (surr)	105		50-150			%	1		10/27/23 19:54

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 19:54
Container ID: 1235845005-C

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/13/23 10:15
Prep Initial Wt./Vol.: 41.665 g
Prep Extract Vol: 30.8839 mL

Results of **LPAD-SB02-13.5-15.0**

Client Sample ID: **LPAD-SB02-13.5-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845005
Lab Project ID: 1235845

Collection Date: 10/13/23 10:15
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):85.9
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	86.5	U	173	51.8	86.5	ug/kg	1		10/24/23 17:21
1,2-Dibromoethane	1.29	U	2.59	1.29	1.29	ug/kg	1		10/24/23 17:21
1,2-Dichloroethane	1.73	U	3.45	1.21	1.73	ug/kg	1		10/24/23 17:21
1,3,5-Trimethylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Benzene	10.8	U	21.6	6.73	10.8	ug/kg	1		10/24/23 17:21
Cyclohexane	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Ethylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Isopropylbenzene (Cumene)	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Methyl-t-butyl ether	86.5	U	173	53.5	86.5	ug/kg	1		10/24/23 17:21
Naphthalene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
n-Butylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
n-hexane	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
n-Propylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
o-Xylene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
P & M -Xylene	43.1	U	86.3	25.9	43.1	ug/kg	1		10/24/23 17:21
sec-Butylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
tert-Butylbenzene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Toluene	21.6	U	43.2	13.5	21.6	ug/kg	1		10/24/23 17:21
Xylenes (total)	64.5	U	129	39.4	64.5	ug/kg	1		10/24/23 17:21
Surrogates									
1,2-Dichloroethane-D4 (surr)	94.2		71-136			%	1		10/24/23 17:21
4-Bromofluorobenzene (surr)	95.1		55-151			%	1		10/24/23 17:21
Toluene-d8 (surr)	103		85-116			%	1		10/24/23 17:21

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 17:21
Container ID: 1235845005-C

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 10:15
Prep Initial Wt./Vol.: 41.665 g
Prep Extract Vol: 30.8839 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB03-5.0-7.0**

Client Sample ID: **LPAD-SB03-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845008
Lab Project ID: 1235845

Collection Date: 10/13/23 11:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	2.18		1.07	0.330	0.535	mg/kg	10		10/25/23 18:18
Barium	51.1		0.320	0.100	0.160	mg/kg	10		10/25/23 18:18
Cadmium	0.0732	J	0.213	0.0660	0.107	mg/kg	10		10/25/23 18:18
Chromium	12.6		1.07	0.330	0.535	mg/kg	10		10/25/23 18:18
Lead	3.82		0.213	0.0660	0.107	mg/kg	10		10/25/23 18:18
Mercury	0.107	U	0.213	0.0746	0.107	mg/kg	10		10/25/23 18:18
Selenium	1.06	U	2.13	0.660	1.06	mg/kg	10		10/30/23 20:59
Silver	0.267	U	0.533	0.160	0.267	mg/kg	10		10/25/23 18:18

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:18
Container ID: 1235845008-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.087 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 20:59
Container ID: 1235845008-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.087 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB03-5.0-7.0**

Client Sample ID: **LPAD-SB03-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845008
Lab Project ID: 1235845

Collection Date: 10/13/23 11:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
2-Methylnaphthalene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Acenaphthene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Acenaphthylene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Anthracene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Benzo(a)Anthracene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Benzo[a]pyrene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Benzo[b]Fluoranthene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Benzo[g,h,i]perylene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Benzo[k]fluoranthene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Chrysene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Dibenzo[a,h]anthracene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Fluoranthene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Fluorene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Indeno[1,2,3-c,d] pyrene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Naphthalene	11.4	U	22.7	5.66	11.4	ug/kg	1		10/30/23 17:36
Phenanthrene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Pyrene	14.2	U	28.3	7.08	14.2	ug/kg	1		10/30/23 17:36
Surrogates									
2-Methylnaphthalene-d10 (surr)	89.3		58-103			%	1		10/30/23 17:36
Fluoranthene-d10 (surr)	85.6		54-113			%	1		10/30/23 17:36

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 17:36
Container ID: 1235845008-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.992 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB03-5.0-7.0**

Client Sample ID: **LPAD-SB03-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845008
Lab Project ID: 1235845

Collection Date: 10/13/23 11:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	19.2	J	22.7	10.2	11.4	mg/kg	1		10/28/23 12:57
Surrogates									
5a Androstane (surr)	95		50-150			%	1		10/28/23 12:57

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 12:57
Container ID: 1235845008-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.992 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	49.1	J	113	48.7	56.5	mg/kg	1		10/28/23 12:57
Surrogates									
n-Triacontane-d62 (surr)	98.1		50-150			%	1		10/28/23 12:57

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 12:57
Container ID: 1235845008-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.992 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB03-5.0-7.0**

Client Sample ID: **LPAD-SB03-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845008
Lab Project ID: 1235845

Collection Date: 10/13/23 11:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.57	J	2.87	0.861	1.44	mg/kg	1		10/27/23 23:57
Surrogates									
4-Bromofluorobenzene (surr)	95.6		50-150			%	1		10/27/23 23:57

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 23:57
Container ID: 1235845008-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:00
Prep Initial Wt./Vol.: 69.475 g
Prep Extract Vol: 34.4647 mL

Results of **LPAD-SB03-5.0-7.0**

Client Sample ID: **LPAD-SB03-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845008
Lab Project ID: 1235845

Collection Date: 10/13/23 11:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.4
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	57.5	U	115	34.5	57.5	ug/kg	1		10/24/23 18:54
1,2-Dibromoethane	0.860	U	1.72	0.861	0.860	ug/kg	1		10/24/23 18:54
1,2-Dichloroethane	1.15	U	2.30	0.804	1.15	ug/kg	1		10/24/23 18:54
1,3,5-Trimethylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Benzene	7.20	U	14.4	4.48	7.20	ug/kg	1		10/24/23 18:54
Cyclohexane	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Ethylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Isopropylbenzene (Cumene)	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Methyl-t-butyl ether	57.5	U	115	35.6	57.5	ug/kg	1		10/24/23 18:54
Naphthalene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
n-Butylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
n-hexane	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
n-Propylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
o-Xylene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
P & M -Xylene	28.7	U	57.4	17.2	28.7	ug/kg	1		10/24/23 18:54
sec-Butylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
tert-Butylbenzene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Toluene	14.4	U	28.7	8.96	14.4	ug/kg	1		10/24/23 18:54
Xylenes (total)	43.0	U	86.1	26.2	43.0	ug/kg	1		10/24/23 18:54
Surrogates									
1,2-Dichloroethane-D4 (surr)	101		71-136			%	1		10/24/23 18:54
4-Bromofluorobenzene (surr)	95.3		55-151			%	1		10/24/23 18:54
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 18:54

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 18:54
Container ID: 1235845008-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:00
Prep Initial Wt./Vol.: 69.475 g
Prep Extract Vol: 34.4647 mL

Results of **LPAD-SB05-5.0-7.0**

Client Sample ID: **LPAD-SB05-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845009
Lab Project ID: 1235845

Collection Date: 10/13/23 11:05
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	2.23		1.07	0.332	0.535	mg/kg	10		10/25/23 18:20
Barium	47.5		0.321	0.101	0.161	mg/kg	10		10/25/23 18:20
Cadmium	0.107	U	0.214	0.0663	0.107	mg/kg	10		10/25/23 18:20
Chromium	11.5		1.07	0.332	0.535	mg/kg	10		10/25/23 18:20
Lead	3.17		0.214	0.0663	0.107	mg/kg	10		10/25/23 18:20
Mercury	0.107	U	0.214	0.0749	0.107	mg/kg	10		10/25/23 18:20
Selenium	1.07	U	2.14	0.663	1.07	mg/kg	10		10/30/23 21:01
Silver	0.268	U	0.535	0.161	0.268	mg/kg	10		10/25/23 18:20

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:20
Container ID: 1235845009-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.077 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 21:01
Container ID: 1235845009-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.077 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB05-5.0-7.0**

Client Sample ID: **LPAD-SB05-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845009
Lab Project ID: 1235845

Collection Date: 10/13/23 11:05
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
2-Methylnaphthalene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Acenaphthene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Acenaphthylene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Benzo(a)Anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Benzo[a]pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Benzo[b]Fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Benzo[g,h,i]perylene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Benzo[k]fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Chrysene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Dibenzo[a,h]anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Fluorene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Indeno[1,2,3-c,d] pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Naphthalene	11.4	U	22.8	5.71	11.4	ug/kg	1		11/01/23 15:25
Phenanthrene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		11/01/23 15:25
Surrogates									
2-Methylnaphthalene-d10 (surr)	84.3		58-103			%	1		11/01/23 15:25
Fluoranthene-d10 (surr)	85.5		54-113			%	1		11/01/23 15:25

Batch Information

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 11/01/23 15:25
Container ID: 1235845009-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.7 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB05-5.0-7.0**

Client Sample ID: **LPAD-SB05-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845009
Lab Project ID: 1235845

Collection Date: 10/13/23 11:05
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	18.8	J	22.8	10.3	11.4	mg/kg	1		10/28/23 13:10
Surrogates									
5a Androstane (surr)	90.7		50-150			%	1		10/28/23 13:10

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 13:10
Container ID: 1235845009-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.7 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	57.0	U	114	49.1	57.0	mg/kg	1		10/28/23 13:10
Surrogates									
n-Triacontane-d62 (surr)	94		50-150			%	1		10/28/23 13:10

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 13:10
Container ID: 1235845009-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.7 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB05-5.0-7.0**

Client Sample ID: **LPAD-SB05-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845009
Lab Project ID: 1235845

Collection Date: 10/13/23 11:05
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.17	J	2.43	0.728	1.22	mg/kg	1		10/28/23 00:16
Surrogates									
4-Bromofluorobenzene (surr)	101		50-150			%	1		10/28/23 00:16

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/28/23 00:16
Container ID: 1235845009-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:05
Prep Initial Wt./Vol.: 86.515 g
Prep Extract Vol: 36.4481 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB05-5.0-7.0**

Client Sample ID: **LPAD-SB05-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845009
Lab Project ID: 1235845

Collection Date: 10/13/23 11:05
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.8
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	48.5	U	97.1	29.1	48.5	ug/kg	1		10/24/23 19:10
1,2-Dibromoethane	0.730	U	1.46	0.728	0.730	ug/kg	1		10/24/23 19:10
1,2-Dichloroethane	0.970	U	1.94	0.680	0.970	ug/kg	1		10/24/23 19:10
1,3,5-Trimethylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Benzene	6.05	U	12.1	3.79	6.05	ug/kg	1		10/24/23 19:10
Cyclohexane	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Ethylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Isopropylbenzene (Cumene)	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Methyl-t-butyl ether	48.5	U	97.1	30.1	48.5	ug/kg	1		10/24/23 19:10
Naphthalene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
n-Butylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
n-hexane	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
n-Propylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
o-Xylene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
P & M -Xylene	24.3	U	48.6	14.6	24.3	ug/kg	1		10/24/23 19:10
sec-Butylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
tert-Butylbenzene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Toluene	12.2	U	24.3	7.57	12.2	ug/kg	1		10/24/23 19:10
Xylenes (total)	36.4	U	72.8	22.1	36.4	ug/kg	1		10/24/23 19:10
Surrogates									
1,2-Dichloroethane-D4 (surr)	99.8		71-136			%	1		10/24/23 19:10
4-Bromofluorobenzene (surr)	96.5		55-151			%	1		10/24/23 19:10
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 19:10

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 19:10
Container ID: 1235845009-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:05
Prep Initial Wt./Vol.: 86.515 g
Prep Extract Vol: 36.4481 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB03-13.0-15.0**

Client Sample ID: **LPAD-SB03-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845010
Lab Project ID: 1235845

Collection Date: 10/13/23 11:10
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	9.10		1.11	0.343	0.555	mg/kg	10		10/25/23 18:23
Barium	37.9		0.332	0.104	0.166	mg/kg	10		10/25/23 18:23
Cadmium	0.111	U	0.221	0.0686	0.111	mg/kg	10		10/25/23 18:23
Chromium	12.3		1.11	0.343	0.555	mg/kg	10		10/25/23 18:23
Lead	3.00		0.221	0.0686	0.111	mg/kg	10		10/25/23 18:23
Mercury	0.111	U	0.221	0.0775	0.111	mg/kg	10		10/25/23 18:23
Selenium	1.11	U	2.21	0.686	1.11	mg/kg	10		10/30/23 21:04
Silver	0.277	U	0.554	0.166	0.277	mg/kg	10		10/25/23 18:23

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:23
Container ID: 1235845010-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.044 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 21:04
Container ID: 1235845010-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.044 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB03-13.0-15.0**

Client Sample ID: **LPAD-SB03-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845010
Lab Project ID: 1235845

Collection Date: 10/13/23 11:10
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
2-Methylnaphthalene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Acenaphthene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Acenaphthylene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Anthracene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Benzo(a)Anthracene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Benzo[a]pyrene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Benzo[b]Fluoranthene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Benzo[g,h,i]perylene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Benzo[k]fluoranthene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Chrysene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Dibenzo[a,h]anthracene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Fluoranthene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Fluorene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Indeno[1,2,3-c,d] pyrene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Naphthalene	11.5	U	23.0	5.76	11.5	ug/kg	1		11/01/23 15:41
Phenanthrene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Pyrene	14.4	U	28.8	7.20	14.4	ug/kg	1		11/01/23 15:41
Surrogates									
2-Methylnaphthalene-d10 (surr)	82.2		58-103			%	1		11/01/23 15:41
Fluoranthene-d10 (surr)	83.3		54-113			%	1		11/01/23 15:41

Batch Information

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 11/01/23 15:41
Container ID: 1235845010-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.583 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB03-13.0-15.0**

Client Sample ID: **LPAD-SB03-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845010
Lab Project ID: 1235845

Collection Date: 10/13/23 11:10
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	17.8	J	23.0	10.4	11.5	mg/kg	1		10/28/23 13:23
Surrogates									
5a Androstane (surr)	86.6		50-150			%	1		10/28/23 13:23

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 13:23
Container ID: 1235845010-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.583 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	53.4	J	115	49.5	57.5	mg/kg	1		10/28/23 13:23
Surrogates									
n-Triacontane-d62 (surr)	89.6		50-150			%	1		10/28/23 13:23

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 13:23
Container ID: 1235845010-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.583 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB03-13.0-15.0**

Client Sample ID: **LPAD-SB03-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845010
Lab Project ID: 1235845

Collection Date: 10/13/23 11:10
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.47	J	2.80	0.841	1.40	mg/kg	1		10/28/23 00:35
Surrogates									
4-Bromofluorobenzene (surr)	104		50-150			%	1		10/28/23 00:35

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/28/23 00:35
Container ID: 1235845010-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:10
Prep Initial Wt./Vol.: 71.357 g
Prep Extract Vol: 34.6247 mL

Results of **LPAD-SB03-13.0-15.0**

Client Sample ID: **LPAD-SB03-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845010
Lab Project ID: 1235845

Collection Date: 10/13/23 11:10
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	56.0	U	112	33.7	56.0	ug/kg	1		10/24/23 19:25
1,2-Dibromoethane	0.840	U	1.68	0.841	0.840	ug/kg	1		10/24/23 19:25
1,2-Dichloroethane	1.12	U	2.24	0.785	1.12	ug/kg	1		10/24/23 19:25
1,3,5-Trimethylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Benzene	7.00	U	14.0	4.37	7.00	ug/kg	1		10/24/23 19:25
Cyclohexane	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Ethylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Isopropylbenzene (Cumene)	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Methyl-t-butyl ether	56.0	U	112	34.8	56.0	ug/kg	1		10/24/23 19:25
Naphthalene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
n-Butylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
n-hexane	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
n-Propylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
o-Xylene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
P & M -Xylene	28.1	U	56.1	16.8	28.1	ug/kg	1		10/24/23 19:25
sec-Butylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
tert-Butylbenzene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Toluene	14.0	U	28.0	8.75	14.0	ug/kg	1		10/24/23 19:25
Xylenes (total)	42.0	U	84.1	25.6	42.0	ug/kg	1		10/24/23 19:25
Surrogates									
1,2-Dichloroethane-D4 (surr)	99.6		71-136			%	1		10/24/23 19:25
4-Bromofluorobenzene (surr)	97.8		55-151			%	1		10/24/23 19:25
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 19:25

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 19:25
Container ID: 1235845010-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:10
Prep Initial Wt./Vol.: 71.357 g
Prep Extract Vol: 34.6247 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB04-5.0-7.0**

Client Sample ID: **LPAD-SB04-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845011
Lab Project ID: 1235845

Collection Date: 10/13/23 11:40
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.3
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	1.59		1.11	0.343	0.555	mg/kg	10		10/25/23 18:26
Barium	39.5		0.332	0.104	0.166	mg/kg	10		10/25/23 18:26
Cadmium	0.0855	J	0.221	0.0686	0.111	mg/kg	10		10/25/23 18:26
Chromium	9.21		1.11	0.343	0.555	mg/kg	10		10/25/23 18:26
Lead	3.27		0.221	0.0686	0.111	mg/kg	10		10/25/23 18:26
Mercury	0.111	U	0.221	0.0775	0.111	mg/kg	10		10/25/23 18:26
Selenium	1.11	U	2.21	0.686	1.11	mg/kg	10		10/30/23 21:06
Silver	0.277	U	0.553	0.166	0.277	mg/kg	10		10/25/23 18:26

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:26
Container ID: 1235845011-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.072 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 21:06
Container ID: 1235845011-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.072 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB04-5.0-7.0**

Client Sample ID: **LPAD-SB04-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845011
Lab Project ID: 1235845

Collection Date: 10/13/23 11:40
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.3
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
2-Methylnaphthalene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Acenaphthene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Acenaphthylene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Anthracene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Benzo(a)Anthracene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Benzo[a]pyrene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Benzo[b]Fluoranthene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Benzo[g,h,i]perylene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Benzo[k]fluoranthene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Chrysene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Dibenzo[a,h]anthracene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Fluoranthene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Fluorene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Indeno[1,2,3-c,d] pyrene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Naphthalene	11.9	U	23.7	5.91	11.9	ug/kg	1		11/01/23 15:58
Phenanthrene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Pyrene	14.8	U	29.6	7.39	14.8	ug/kg	1		11/01/23 15:58
Surrogates									
2-Methylnaphthalene-d10 (surr)	86.3		58-103			%	1		11/01/23 15:58
Fluoranthene-d10 (surr)	88.2		54-113			%	1		11/01/23 15:58

Batch Information

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 11/01/23 15:58
Container ID: 1235845011-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.577 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB04-5.0-7.0**

Client Sample ID: **LPAD-SB04-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845011
Lab Project ID: 1235845

Collection Date: 10/13/23 11:40
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	38.3		23.7	10.6	11.9	mg/kg	1		10/28/23 13:35
Surrogates									
5a Androstane (surr)	93.8		50-150			%	1		10/28/23 13:35

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 13:35
Container ID: 1235845011-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.577 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	72.0	J	118	50.9	59.0	mg/kg	1		10/28/23 13:35
Surrogates									
n-Triacontane-d62 (surr)	96.2		50-150			%	1		10/28/23 13:35

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 13:35
Container ID: 1235845011-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.577 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB04-5.0-7.0**

Client Sample ID: **LPAD-SB04-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845011
Lab Project ID: 1235845

Collection Date: 10/13/23 11:40
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.62	J	2.76	0.828	1.38	mg/kg	1		10/28/23 00:54
Surrogates									
4-Bromofluorobenzene (surr)	102		50-150			%	1		10/28/23 00:54

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/28/23 00:54
Container ID: 1235845011-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:40
Prep Initial Wt./Vol.: 81.221 g
Prep Extract Vol: 37.7784 mL

Results of **LPAD-SB04-5.0-7.0**

Client Sample ID: **LPAD-SB04-5.0-7.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845011
Lab Project ID: 1235845

Collection Date: 10/13/23 11:40
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):84.3
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	55.0	U	110	33.1	55.0	ug/kg	1		10/24/23 19:41
1,2-Dibromoethane	0.830	U	1.66	0.828	0.830	ug/kg	1		10/24/23 19:41
1,2-Dichloroethane	1.11	U	2.21	0.773	1.11	ug/kg	1		10/24/23 19:41
1,3,5-Trimethylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Benzene	6.90	U	13.8	4.31	6.90	ug/kg	1		10/24/23 19:41
Cyclohexane	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Ethylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Isopropylbenzene (Cumene)	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Methyl-t-butyl ether	55.0	U	110	34.2	55.0	ug/kg	1		10/24/23 19:41
Naphthalene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
n-Butylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
n-hexane	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
n-Propylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
o-Xylene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
P & M -Xylene	27.6	U	55.2	16.6	27.6	ug/kg	1		10/24/23 19:41
sec-Butylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
tert-Butylbenzene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Toluene	13.8	U	27.6	8.61	13.8	ug/kg	1		10/24/23 19:41
Xylenes (total)	41.4	U	82.8	25.2	41.4	ug/kg	1		10/24/23 19:41
Surrogates									
1,2-Dichloroethane-D4 (surr)	102		71-136			%	1		10/24/23 19:41
4-Bromofluorobenzene (surr)	93.2		55-151			%	1		10/24/23 19:41
Toluene-d8 (surr)	102		85-116			%	1		10/24/23 19:41

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 19:41
Container ID: 1235845011-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:40
Prep Initial Wt./Vol.: 81.221 g
Prep Extract Vol: 37.7784 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB04-13.0-15.0**

Client Sample ID: **LPAD-SB04-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845012
Lab Project ID: 1235845

Collection Date: 10/13/23 11:45
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):88.8
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Arsenic	19.6		1.09	0.339	0.545	mg/kg	10		10/25/23 18:28
Barium	86.2		0.328	0.103	0.164	mg/kg	10		10/25/23 18:28
Cadmium	0.0787	J	0.218	0.0677	0.109	mg/kg	10		10/25/23 18:28
Chromium	11.7		1.09	0.339	0.545	mg/kg	10		10/25/23 18:28
Lead	3.20		0.218	0.0677	0.109	mg/kg	10		10/25/23 18:28
Mercury	0.109	U	0.218	0.0764	0.109	mg/kg	10		10/25/23 18:28
Selenium	1.09	U	2.18	0.677	1.09	mg/kg	10		10/30/23 21:09
Silver	0.273	U	0.546	0.164	0.273	mg/kg	10		10/25/23 18:28

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/25/23 18:28
Container ID: 1235845012-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.031 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12122
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/30/23 21:09
Container ID: 1235845012-A

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/23 12:52
Prep Initial Wt./Vol.: 1.031 g
Prep Extract Vol: 50 mL

Results of **LPAD-SB04-13.0-15.0**

Client Sample ID: **LPAD-SB04-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845012
Lab Project ID: 1235845

Collection Date: 10/13/23 11:45
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):88.8
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
2-Methylnaphthalene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Acenaphthene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Acenaphthylene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Anthracene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Benzo(a)Anthracene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Benzo[a]pyrene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Benzo[b]Fluoranthene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Benzo[g,h,i]perylene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Benzo[k]fluoranthene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Chrysene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Dibenzo[a,h]anthracene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Fluoranthene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Fluorene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Indeno[1,2,3-c,d] pyrene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Naphthalene	11.3	U	22.5	5.62	11.3	ug/kg	1		11/01/23 16:14
Phenanthrene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Pyrene	14.1	U	28.1	7.02	14.1	ug/kg	1		11/01/23 16:14
Surrogates									
2-Methylnaphthalene-d10 (surr)	83.2		58-103			%	1		11/01/23 16:14
Fluoranthene-d10 (surr)	83.7		54-113			%	1		11/01/23 16:14

Batch Information

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 11/01/23 16:14
Container ID: 1235845012-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.542 g
Prep Extract Vol: 5 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **LPAD-SB04-13.0-15.0**

Client Sample ID: **LPAD-SB04-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845012
Lab Project ID: 1235845

Collection Date: 10/13/23 11:45
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):88.8
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	19.9	J	22.5	10.1	11.3	mg/kg	1		10/28/23 13:48
Surrogates									
5a Androstane (surr)	89.9		50-150			%	1		10/28/23 13:48

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 13:48
Container ID: 1235845012-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.542 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	64.4	J	112	48.3	56.0	mg/kg	1		10/28/23 13:48
Surrogates									
n-Triacontane-d62 (surr)	92.9		50-150			%	1		10/28/23 13:48

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 13:48
Container ID: 1235845012-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.542 g
Prep Extract Vol: 5 mL

Results of **LPAD-SB04-13.0-15.0**

Client Sample ID: **LPAD-SB04-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845012
Lab Project ID: 1235845

Collection Date: 10/13/23 11:45
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):88.8
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.30	J	2.40	0.719	1.20	mg/kg	1		10/28/23 01:31
Surrogates									
4-Bromofluorobenzene (surr)	81.2		50-150			%	1		10/28/23 01:31

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/28/23 01:31
Container ID: 1235845012-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:45
Prep Initial Wt./Vol.: 79.564 g
Prep Extract Vol: 33.8935 mL

Results of **LPAD-SB04-13.0-15.0**

Client Sample ID: **LPAD-SB04-13.0-15.0**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845012
Lab Project ID: 1235845

Collection Date: 10/13/23 11:45
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):88.8
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	48.0	U	95.9	28.8	48.0	ug/kg	1		10/24/23 19:56
1,2-Dibromoethane	0.720	U	1.44	0.719	0.720	ug/kg	1		10/24/23 19:56
1,2-Dichloroethane	0.960	U	1.92	0.671	0.960	ug/kg	1		10/24/23 19:56
1,3,5-Trimethylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Benzene	6.00	U	12.0	3.74	6.00	ug/kg	1		10/24/23 19:56
Cyclohexane	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Ethylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Isopropylbenzene (Cumene)	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Methyl-t-butyl ether	48.0	U	95.9	29.7	48.0	ug/kg	1		10/24/23 19:56
Naphthalene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
n-Butylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
n-hexane	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
n-Propylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
o-Xylene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
P & M -Xylene	24.0	U	48.0	14.4	24.0	ug/kg	1		10/24/23 19:56
sec-Butylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
tert-Butylbenzene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Toluene	12.0	U	24.0	7.48	12.0	ug/kg	1		10/24/23 19:56
Xylenes (total)	36.0	U	71.9	21.9	36.0	ug/kg	1		10/24/23 19:56
Surrogates									
1,2-Dichloroethane-D4 (surr)	101		71-136			%	1		10/24/23 19:56
4-Bromofluorobenzene (surr)	77.6		55-151			%	1		10/24/23 19:56
Toluene-d8 (surr)	101		85-116			%	1		10/24/23 19:56

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 19:56
Container ID: 1235845012-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 11:45
Prep Initial Wt./Vol.: 79.564 g
Prep Extract Vol: 33.8935 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **MPAD-SB02-7.5-8.5**

Client Sample ID: **MPAD-SB02-7.5-8.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845013
Lab Project ID: 1235845

Collection Date: 10/13/23 15:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	708		143	35.7	71.5	ug/kg	5		11/01/23 21:37
2-Methylnaphthalene	708		143	35.7	71.5	ug/kg	5		11/01/23 21:37
Acenaphthene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Acenaphthylene	9.28	J	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Benzo(a)Anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Benzo[a]pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Benzo[b]Fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Benzo[g,h,i]perylene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Benzo[k]fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Chrysene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Dibenzo[a,h]anthracene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Fluoranthene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Fluorene	23.1	J	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Indeno[1,2,3-c,d] pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Naphthalene	335		22.9	5.71	11.4	ug/kg	1		10/30/23 19:18
Phenanthrene	8.76	J	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Pyrene	14.3	U	28.6	7.14	14.3	ug/kg	1		10/30/23 19:18
Surrogates									
2-Methylnaphthalene-d10 (surr)	100		58-103			%	1		10/30/23 19:18
Fluoranthene-d10 (surr)	81.5		54-113			%	1		10/30/23 19:18

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 10/30/23 19:18
Container ID: 1235845013-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.762 g
Prep Extract Vol: 5 mL

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Analyst: HMW
Analytical Date/Time: 11/01/23 21:37
Container ID: 1235845013-A

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:50
Prep Initial Wt./Vol.: 22.762 g
Prep Extract Vol: 5 mL

Results of **MPAD-SB02-7.5-8.5**

Client Sample ID: **MPAD-SB02-7.5-8.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845013
Lab Project ID: 1235845

Collection Date: 10/13/23 15:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	564		22.9	10.3	11.4	mg/kg	1		10/28/23 14:01
Surrogates									
5a Androstane (surr)	92.8		50-150			%	1		10/28/23 14:01

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/28/23 14:01
Container ID: 1235845013-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.762 g
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	506		114	49.1	57.0	mg/kg	1		10/28/23 14:01
Surrogates									
n-Triacontane-d62 (surr)	98.6		50-150			%	1		10/28/23 14:01

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/28/23 14:01
Container ID: 1235845013-A

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/23 09:45
Prep Initial Wt./Vol.: 22.762 g
Prep Extract Vol: 5 mL

Results of **MPAD-SB02-7.5-8.5**

Client Sample ID: **MPAD-SB02-7.5-8.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845013
Lab Project ID: 1235845

Collection Date: 10/13/23 15:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	18.8		2.79	0.838	1.40	mg/kg	1		10/28/23 01:50
Surrogates									
4-Bromofluorobenzene (surr)	223	*	50-150			%	1		10/28/23 01:50

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/28/23 01:50
Container ID: 1235845013-B

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/13/23 15:00
Prep Initial Wt./Vol.: 71.699 g
Prep Extract Vol: 34.6698 mL

Results of **MPAD-SB02-7.5-8.5**

Client Sample ID: **MPAD-SB02-7.5-8.5**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845013
Lab Project ID: 1235845

Collection Date: 10/13/23 15:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):86.5
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	1800		112	33.5	56.0	ug/kg	1		10/24/23 20:12
1,2-Dibromoethane	0.840	U	1.68	0.838	0.840	ug/kg	1		10/24/23 20:12
1,2-Dichloroethane	1.12	U	2.24	0.782	1.12	ug/kg	1		10/24/23 20:12
1,3,5-Trimethylbenzene	1010		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Benzene	7.00	U	14.0	4.36	7.00	ug/kg	1		10/24/23 20:12
Cyclohexane	10.1	J	27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Ethylbenzene	57.6		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Isopropylbenzene (Cumene)	283		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Methyl-t-butyl ether	56.0	U	112	34.7	56.0	ug/kg	1		10/24/23 20:12
Naphthalene	396		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
n-Butylbenzene	13.9	U	27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
n-hexane	13.9	U	27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
n-Propylbenzene	546		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
o-Xylene	232		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
P & M -Xylene	188		55.9	16.8	27.9	ug/kg	1		10/24/23 20:12
sec-Butylbenzene	127		27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
tert-Butylbenzene	14.0	J	27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Toluene	26.4	J	27.9	8.72	13.9	ug/kg	1		10/24/23 20:12
Xylenes (total)	420		83.8	25.5	41.9	ug/kg	1		10/24/23 20:12
Surrogates									
1,2-Dichloroethane-D4 (surr)	105		71-136			%	1		10/24/23 20:12
4-Bromofluorobenzene (surr)	91.9		55-151			%	1		10/24/23 20:12
Toluene-d8 (surr)	99.9		85-116			%	1		10/24/23 20:12

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 20:12
Container ID: 1235845013-B

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/13/23 15:00
Prep Initial Wt./Vol.: 71.699 g
Prep Extract Vol: 34.6698 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Results of **TRIPBLANK**

Client Sample ID: **TRIPBLANK**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845014
Lab Project ID: 1235845

Collection Date: 10/12/23 12:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.29	J	2.51	0.753	1.26	mg/kg	1		10/27/23 14:53
Surrogates									
4-Bromofluorobenzene (surr)	99.3		50-150			%	1		10/27/23 14:53

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/27/23 14:53
Container ID: 1235845014-A

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/12/23 12:00
Prep Initial Wt./Vol.: 49.797 g
Prep Extract Vol: 25 mL

Results of **TRIPBLANK**

Client Sample ID: **TRIPBLANK**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235845014
Lab Project ID: 1235845

Collection Date: 10/12/23 12:00
Received Date: 10/16/23 14:03
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

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

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	50.0	U	100	30.1	50.0	ug/kg	1		10/24/23 16:50
1,2-Dibromoethane	0.755	U	1.51	0.753	0.755	ug/kg	1		10/24/23 16:50
1,2-Dichloroethane	1.00	U	2.01	0.703	1.00	ug/kg	1		10/24/23 16:50
1,3,5-Trimethylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Benzene	6.30	U	12.6	3.92	6.30	ug/kg	1		10/24/23 16:50
Cyclohexane	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Ethylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Isopropylbenzene (Cumene)	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Methyl-t-butyl ether	50.0	U	100	31.1	50.0	ug/kg	1		10/24/23 16:50
Naphthalene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
n-Butylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
n-hexane	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
n-Propylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
o-Xylene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
P & M -Xylene	25.1	U	50.2	15.1	25.1	ug/kg	1		10/24/23 16:50
sec-Butylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
tert-Butylbenzene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Toluene	12.6	U	25.1	7.83	12.6	ug/kg	1		10/24/23 16:50
Xylenes (total)	37.6	U	75.3	22.9	37.6	ug/kg	1		10/24/23 16:50
Surrogates									
1,2-Dichloroethane-D4 (surr)	94.7		71-136			%	1		10/24/23 16:50
4-Bromofluorobenzene (surr)	96		55-151			%	1		10/24/23 16:50
Toluene-d8 (surr)	103		85-116			%	1		10/24/23 16:50

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Analyst: S.S
Analytical Date/Time: 10/24/23 16:50
Container ID: 1235845014-A

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/12/23 12:00
Prep Initial Wt./Vol.: 49.797 g
Prep Extract Vol: 25 mL

Print Date: 11/03/2023 10:59:10AM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1866354 [MXX/36293]
Blank Lab ID: 1742225

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845002, 1235845003, 1235845004, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012

Results by **SW6020B**

Parameter	Results	LOQ/CL	DL	LOD	Units
Arsenic	0.500U	1.00	0.310	0.500	mg/kg
Barium	0.150U	0.300	0.0940	0.150	mg/kg
Cadmium	0.100U	0.200	0.0620	0.100	mg/kg
Chromium	0.500U	1.00	0.310	0.500	mg/kg
Lead	0.100U	0.200	0.0620	0.100	mg/kg
Mercury	0.100U	0.200	0.0700	0.100	mg/kg
Selenium	1.00U	2.00	0.620	1.00	mg/kg
Silver	0.250U	0.500	0.150	0.250	mg/kg

Batch Information

Analytical Batch: MMS12113
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/25/2023 5:45:35PM

Prep Batch: MXX36293
Prep Method: SW3050B
Prep Date/Time: 10/22/2023 12:52:00PM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

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200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [MXX36293]
Blank Spike Lab ID: 1742226
Date Analyzed: 10/25/2023 17:48

Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845002, 1235845003, 1235845004, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012

Results by **SW6020B**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Arsenic	50	48.1	96	(82-118)
Barium	50	47.7	96	(86-116)
Cadmium	5	5.06	101	(84-116)
Chromium	20	21.0	105	(83-119)
Lead	50	46.1	92	(84-118)
Mercury	0.5	0.454	91	(74-126)
Selenium	50	47.4	95	(80-119)
Silver	5	4.83	97	(83-118)

Batch Information

Analytical Batch: **MMS12113**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX36293**
Prep Method: **SW3050B**
Prep Date/Time: **10/22/2023 12:52**
Spike Init Wt./Vol.: 50 mg/kg Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

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Method Blank

Blank ID: MB for HBN 1866775 [MXX/36311]
Blank Lab ID: 1743794

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845005

Results by **SW6020B**

Parameter	Results	LOQ/CL	DL	LOD	Units
Arsenic	0.500U	1.00	0.310	0.500	mg/kg
Barium	0.150U	0.300	0.0940	0.150	mg/kg
Cadmium	0.100U	0.200	0.0620	0.100	mg/kg
Chromium	0.500U	1.00	0.310	0.500	mg/kg
Lead	0.100U	0.200	0.0620	0.100	mg/kg
Mercury	0.100U	0.200	0.0700	0.100	mg/kg
Selenium	1.00U	2.00	0.620	1.00	mg/kg
Silver	0.250U	0.500	0.150	0.250	mg/kg

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 12:03:00PM

Prep Batch: MXX36311
Prep Method: SW3050B
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

Analytical Batch: MMS12124
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 2:40:08PM

Prep Batch: MXX36311
Prep Method: SW3050B
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [MXX36311]
Blank Spike Lab ID: 1743795
Date Analyzed: 10/31/2023 12:06

Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845005

Results by **SW6020B**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Arsenic	50	44.4	89	(82-118)
Barium	50	49.7	100	(86-116)
Cadmium	5	4.95	99	(84-116)
Chromium	20	19.3	96	(83-119)
Lead	50	47.7	95	(84-118)
Mercury	0.5	0.451	90	(74-126)
Selenium	50	56.4	113	(80-119)
Silver	5	4.96	99	(83-118)

Batch Information

Analytical Batch: **MMS12123**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX36311**
Prep Method: **SW3050B**
Prep Date/Time: **10/30/2023 13:06**
Spike Init Wt./Vol.: 50 mg/kg Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

Analytical Batch: **MMS12124**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX36311**
Prep Method: **SW3050B**
Prep Date/Time: **10/30/2023 13:06**
Spike Init Wt./Vol.: 50 mg/kg Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

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t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1743800
MS Sample ID: 1743803 MS
MSD Sample ID: 1743804 MSD

QC for Samples: 1235845005

Analysis Date: 10/31/2023 12:09
Analysis Date: 10/31/2023 12:11
Analysis Date: 10/31/2023 12:13
Matrix: Solid/Soil (Wet Weight)

Results by **SW6020B**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Arsenic	2.94	49.2	49.5	95	47.9	46.5	91	82-118	6.28	(< 20)
Barium	1960	49.2	2030	161 *	47.9	2190	496 *	86-116	7.51	(< 20)
Cadmium	0.313	4.92	5.52	106	4.79	4.98	97	84-116	10.30	(< 20)
Chromium	37.3	19.7	62.6	129 *	19.2	55.1	93	83-119	12.70	(< 20)
Lead	11.7	49.2	60.6	100	47.9	56.4	93	84-118	7.13	(< 20)
Mercury	0.0910U	0.492	.482	98	0.479	0.467	97	74-126	3.20	(< 20)
Selenium	0.910U	49.2	51.4	105	47.9	52.5	109	80-119	2.12	(< 20)
Silver	0.227U	4.92	5.22	106	4.79	4.71	98	83-118	10.30	(< 20)

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 12:11:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.02g
Prep Extract Vol: 50.00mL

Analytical Batch: MMS12124
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 2:47:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.02g
Prep Extract Vol: 50.00mL

Bench Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1743796 BND
MSD Sample ID:

QC for Samples: 1235845005

Analysis Date: 10/31/2023 12:23
Analysis Date: 10/31/2023 12:35
Analysis Date:
Matrix: Soil/Solid (dry weight)

Results by **SW6020B**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Barium	30.8	279	299	96				75-125		

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 12:35:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.04g
Prep Extract Vol: 50.00mL

Print Date: 11/03/2023 10:59:26AM

Bench Spike Summary

Original Sample ID: 1743800
MS Sample ID: 1743801 BND
MSD Sample ID:

Analysis Date: 10/31/2023 12:48
Analysis Date: 10/31/2023 12:55
Analysis Date:
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1235845005

Results by **SW6020B**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Barium	1960	1140	3210	111				75-125		
Chromium	37.3	114	142	92				75-125		

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 12:16:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.10g
Prep Extract Vol: 50.00mL

Print Date: 11/03/2023 10:59:26AM

Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/31/2023 12:23
Analysis Date: 10/31/2023 12:25
Analysis Date: 10/31/2023 12:33
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **SW6020B**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Arsenic	3.56	57.5	52.5	85	56.1	54.8	91	82-118	4.34	(< 20)
Barium	30.8	57.5	95.2	112	56.1	96.9	118 *	86-116	1.72	(< 20)
Cadmium	0.186J	5.75	5.69	96	5.61	6.05	105	84-116	6.10	(< 20)
Chromium	12.0	22.9	33.3	92	22.5	31.7	88	83-119	4.83	(< 20)
Lead	2.73	57.5	52.7	87	56.1	57.3	97	84-118	8.23	(< 20)
Mercury	0.112U	0.575	0.531	92	0.561	0.565	101	74-126	6.28	(< 20)
Selenium	1.12U	57.5	61.9	108	56.1	63.6	113	80-119	2.49	(< 20)
Silver	0.280U	5.75	5.63	98	5.61	5.86	104	83-118	3.91	(< 20)

Batch Information

Analytical Batch: MMS12123
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 12:25:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.01g
Prep Extract Vol: 50.00mL

Analytical Batch: MMS12124
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/31/2023 3:09:00PM

Prep Batch: MXX36311
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/30/2023 1:06:44PM
Prep Initial Wt./Vol.: 1.01g
Prep Extract Vol: 50.00mL

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Method Blank

Blank ID: MB for HBN 1866334 [SPT/11946]
Blank Lab ID: 1742146

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	LOD	Units
Total Solids	99.9				%

Batch Information

Analytical Batch: SPT11946
Analytical Method: SM21 2540G
Instrument:
Analyst: APS
Analytical Date/Time: 10/19/2023 9:38:00PM

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Duplicate Sample Summary

Original Sample ID: 1235800012
Duplicate Sample ID: 1742148

Analysis Date: 10/19/2023 21:38
Matrix: Soil/Solid (dry weight)

QC for Samples:

1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	84.5	84.1	%	0.42	(< 15)

Batch Information

Analytical Batch: SPT11946
Analytical Method: SM21 2540G
Instrument:
Analyst: APS

Print Date: 11/03/2023 10:59:29AM

Method Blank

Blank ID: MB for HBN 1866477 [VXX/40683]
Blank Lab ID: 1742686

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013, 1235845014

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	LOD	Units
1,2,4-Trimethylbenzene	50.0U	100	30.0	50.0	ug/kg
1,2-Dibromoethane	0.750U	1.50	0.750	0.750	ug/kg
1,2-Dichloroethane	1.00U	2.00	0.700	1.00	ug/kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	12.5	ug/kg
Benzene	6.25U	12.5	3.90	6.25	ug/kg
Cyclohexane	12.5U	25.0	7.80	12.5	ug/kg
Ethylbenzene	12.5U	25.0	7.80	12.5	ug/kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	12.5	ug/kg
Methyl-t-butyl ether	50.0U	100	31.0	50.0	ug/kg
Naphthalene	12.5U	25.0	7.80	12.5	ug/kg
n-Butylbenzene	12.5U	25.0	7.80	12.5	ug/kg
n-hexane	12.5U	25.0	7.80	12.5	ug/kg
n-Propylbenzene	12.5U	25.0	7.80	12.5	ug/kg
o-Xylene	12.5U	25.0	7.80	12.5	ug/kg
P & M -Xylene	25.0U	50.0	15.0	25.0	ug/kg
sec-Butylbenzene	12.5U	25.0	7.80	12.5	ug/kg
tert-Butylbenzene	12.5U	25.0	7.80	12.5	ug/kg
Toluene	12.5U	25.0	7.80	12.5	ug/kg
Xylenes (total)	37.5U	75.0	22.8	37.5	ug/kg
Surrogates					
1,2-Dichloroethane-D4 (surr)	93.4	71-136		0	%
4-Bromofluorobenzene (surr)	94.7	55-151		0	%
Toluene-d8 (surr)	102	85-116		0	%

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: S.S
Analytical Date/Time: 10/24/2023 12:59:00PM

Prep Batch: VXX40683
Prep Method: SW5035A
Prep Date/Time: 10/24/2023 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [VXX40683]
Blank Spike Lab ID: 1742687
Date Analyzed: 10/24/2023 13:15

Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013, 1235845014

Results by **SW8260D**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
1,2,4-Trimethylbenzene	750	752	100	(75-123)
1,2-Dibromoethane	750	760	101	(78-122)
1,2-Dichloroethane	750	623	83	(73-128)
1,3,5-Trimethylbenzene	750	729	97	(73-124)
Benzene	750	754	101	(77-121)
Cyclohexane	750	744	99	(70-130)
Ethylbenzene	750	749	100	(76-122)
Isopropylbenzene (Cumene)	750	741	99	(68-134)
Methyl-t-butyl ether	1130	1030	91	(73-125)
Naphthalene	750	783	104	(62-129)
n-Butylbenzene	750	746	100	(70-128)
n-hexane	750	753	100	(70-130)
n-Propylbenzene	750	750	100	(73-125)
o-Xylene	750	759	101	(77-123)
P & M -Xylene	1500	1510	101	(77-124)
sec-Butylbenzene	750	747	100	(73-126)
tert-Butylbenzene	750	728	97	(73-125)
Toluene	750	760	101	(77-121)
Xylenes (total)	2250	2270	101	(78-124)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750		85	(71-136)
4-Bromofluorobenzene (surr)	750		93	(55-151)
Toluene-d8 (surr)	750		102	(85-116)

Batch Information

Analytical Batch: **VMS22916**
Analytical Method: **SW8260D**
Instrument: **VQA 7890/5975 GC/MS**
Analyst: **S.S**

Prep Batch: **VXX40683**
Prep Method: **SW5035A**
Prep Date/Time: **10/24/2023 06:00**
Spike Init Wt./Vol.: 750 ug/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1742691
MS Sample ID: 1742692 MS
MSD Sample ID: 1742693 MSD

Analysis Date: 10/24/2023 17:21
Analysis Date: 10/24/2023 15:32
Analysis Date: 10/24/2023 15:48
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013, 1235845014

Results by **SW8260D**

		Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	74.0U	1120	1190	106	1120	1110	99	75-123	6.80	(< 20)
1,2-Dibromoethane	1.11U	1120	1190	106	1120	1120	100	78-122	6.20	(< 20)
1,2-Dichloroethane	1.48U	1120	964	86	1120	895	80	73-128	7.40	(< 20)
1,3,5-Trimethylbenzene	18.6U	1120	1150	103	1120	1080	97	73-124	6.50	(< 20)
Benzene	9.25U	1120	1170	105	1120	1080	97	77-121	7.60	(< 20)
Ethylbenzene	18.6U	1120	1200	107	1120	1100	98	76-122	8.70	(< 20)
Isopropylbenzene (Cumene)	18.6U	1120	1200	108	1120	1100	98	68-134	9.00	(< 20)
Methyl-t-butyl ether	74.0U	1670	1630	97	1670	1520	91	73-125	7.00	(< 20)
Naphthalene	18.6U	1120	1270	114	1120	1210	108	62-129	4.60	(< 20)
n-Butylbenzene	18.6U	1120	1180	106	1120	1090	98	70-128	7.60	(< 20)
n-Propylbenzene	18.6U	1120	1200	107	1120	1110	100	73-125	7.40	(< 20)
o-Xylene	18.6U	1120	1200	107	1120	1100	99	77-123	8.30	(< 20)
P & M -Xylene	37.0U	2230	2400	108	2230	2220	99	77-124	8.00	(< 20)
sec-Butylbenzene	18.6U	1120	1190	107	1120	1100	99	73-126	7.70	(< 20)
tert-Butylbenzene	18.6U	1120	1150	103	1120	1070	96	73-125	7.40	(< 20)
Toluene	18.6U	1120	1200	107	1120	1100	99	77-121	8.30	(< 20)
Xylenes (total)	55.5U	3350	3600	107	3350	3320	99	78-124	8.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1120	948	85	1120	946	85	71-136	0.18	
4-Bromofluorobenzene (surr)		1500	1380	92	1500	1380	92	55-151	0.37	
Toluene-d8 (surr)		1120	1140	102	1120	1140	102	85-116	0.31	

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: S.S
Analytical Date/Time: 10/24/2023 3:32:00PM

Prep Batch: VXX40683
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/24/2023 6:00:00AM
Prep Initial Wt./Vol.: 41.67g
Prep Extract Vol: 30.88mL

Print Date: 11/03/2023 10:59:37AM

Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/24/2023 17:21
Analysis Date: 10/24/2023 15:32
Analysis Date: 10/24/2023 15:48
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **SW8260D**

		Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	86.5U	1304	1385	106	1304	1292	99	75-123	6.80	(< 20)
1,2-Dibromoethane	1.29U	1304	1385	106	1304	1304	100	78-122	6.20	(< 20)
1,2-Dichloroethane	1.73U	1304	1122	86	1304	1042	80	73-128	7.40	(< 20)
1,3,5-Trimethylbenzene	21.6U	1304	1339	103	1304	1257	97	73-124	6.50	(< 20)
Benzene	10.8U	1304	1362	105	1304	1257	97	77-121	7.60	(< 20)
Cyclohexane	21.6U	1304	1444	111	1304	1327	102	70-130	8.40	(< 20)
Ethylbenzene	21.6U	1304	1397	107	1304	1281	98	76-122	8.70	(< 20)
Isopropylbenzene (Cumene)	21.6U	1304	1397	108	1304	1281	98	68-134	9.00	(< 20)
Methyl-t-butyl ether	86.5U	1944	1898	97	1944	1769	91	73-125	7.00	(< 20)
Naphthalene	21.6U	1304	1478	114	1304	1409	108	62-129	4.60	(< 20)
n-Butylbenzene	21.6U	1304	1374	106	1304	1269	98	70-128	7.60	(< 20)
n-hexane	21.6U	1304	1513	116	1304	1199	93	70-130	22.50 *	(< 20)
n-Propylbenzene	21.6U	1304	1397	107	1304	1292	100	73-125	7.40	(< 20)
o-Xylene	21.6U	1304	1397	107	1304	1281	99	77-123	8.30	(< 20)
P & M -Xylene	43.1U	2596	2794	108	2596	2584	99	77-124	8.00	(< 20)
sec-Butylbenzene	21.6U	1304	1385	107	1304	1281	99	73-126	7.70	(< 20)
tert-Butylbenzene	21.6U	1304	1339	103	1304	1246	96	73-125	7.40	(< 20)
Toluene	21.6U	1304	1397	107	1304	1281	99	77-121	8.30	(< 20)
Xylenes (total)	64.5U	3900	4191	107	3900	3865	99	78-124	8.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1304	1104	85	1304	1101	85	71-136	0.18	
4-Bromofluorobenzene (surr)		1746	1607	92	1746	1607	92	55-151	0.37	
Toluene-d8 (surr)		1304	1327	102	1304	1327	102	85-116	0.31	

Batch Information

Analytical Batch: VMS22916
Analytical Method: SW8260D
Instrument: VQA 7890/5975 GC/MS
Analyst: S.S
Analytical Date/Time: 10/24/2023 3:32:00PM

Prep Batch: VXX40683
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/13/2023 10:15:00AM
Prep Initial Wt./Vol.: 41.67g
Prep Extract Vol: 30.88mL

Print Date: 11/03/2023 10:59:37AM

Method Blank

Blank ID: MB for HBN 1866750 [VXX/40707]
Blank Lab ID: 1743661

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845005, 1235845014

Results by **AK101**

Parameter	Results	LOQ/CL	DL	LOD	Units
Gasoline Range Organics	1.48J	2.50	0.750	1.25	mg/kg
Surrogates					
4-Bromofluorobenzene (surr)	91.4	50-150		0	%

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CWD
Analytical Date/Time: 10/27/2023 1:22:00PM

Prep Batch: VXX40707
Prep Method: SW5035A
Prep Date/Time: 10/27/2023 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [VXX40707]
Blank Spike Lab ID: 1743662
Date Analyzed: 10/27/2023 12:45

Spike Duplicate ID: LCSD for HBN 1235845 [VXX40707]
Spike Duplicate Lab ID: 1743663
Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845005, 1235845014

Results by **AK101**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	12.2	97	12.5	12.1	97	(60-120)	0.68	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25		90	1.25		92	(50-150)	2.00	

Batch Information

Analytical Batch: **VFC16669**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CWD**

Prep Batch: **VXX40707**
Prep Method: **SW5035A**
Prep Date/Time: **10/27/2023 06:00**
Spike Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/27/2023 19:54
Analysis Date: 10/27/2023 20:12
Analysis Date: 10/27/2023 20:31
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **AK101**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	4.06J	21.5	25.1	98	21.5	25.5	100	60-120	1.30	(< 20)
Surrogates										
4-Bromofluorobenzene (surr)		1.75	1.92	110	1.75	1.91	109	50-150	0.63	

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CWD
Analytical Date/Time: 10/27/2023 8:12:00PM

Prep Batch: VXX40707
Prep Method: AK101 Extraction (S)
Prep Date/Time: 10/13/2023 10:15:00AM
Prep Initial Wt./Vol.: 41.67g
Prep Extract Vol: 30.88mL

Print Date: 11/03/2023 10:59:43AM

Method Blank

Blank ID: MB for HBN 1866751 [VXX/40708]
Blank Lab ID: 1743664

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845004, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK101**

Parameter	Results	LOQ/CL	DL	LOD	Units
Gasoline Range Organics	1.43J	2.50	0.750	1.25	mg/kg
Surrogates					
4-Bromofluorobenzene (surr)	87.7	50-150		0	%

Batch Information

Analytical Batch: VFC16669
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CWD
Analytical Date/Time: 10/27/2023 11:20:00PM

Prep Batch: VXX40708
Prep Method: SW5035A
Prep Date/Time: 10/27/2023 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [VXX40708]
Blank Spike Lab ID: 1743665
Date Analyzed: 10/27/2023 22:42

Spike Duplicate ID: LCSD for HBN 1235845 [VXX40708]
Spike Duplicate Lab ID: 1743666
Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845004, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK101**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	12.5	13.4	107	12.5	11.8	94	(60-120)	13.00	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25		89	1.25		90	(50-150)	0.89	

Batch Information

Analytical Batch: **VFC16669**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CWD**

Prep Batch: **VXX40708**
Prep Method: **SW5035A**
Prep Date/Time: **10/27/2023 06:00**
Spike Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 1.25 mg/kg Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1866350 [XXX/48904]
Blank Lab ID: 1742204

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK102**

Parameter	Results	LOQ/CL	DL	LOD	Units
Diesel Range Organics	9.11J	20.0	9.00	10.0	mg/kg
Surrogates					
5a Androstane (surr)	103	60-120		0	%

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/28/2023 9:17:00AM

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/2023 9:45:45AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [XXX48904]
Blank Spike Lab ID: 1742205
Date Analyzed: 10/28/2023 09:30

Spike Duplicate ID: LCSD for HBN 1235845 [XXX48904]
Spike Duplicate Lab ID: 1742206
Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK102**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	1110	1270	114	1110	1470	132	* (75-125)	14.60	(< 20)
Surrogates									
5a Androstane (surr)	22.2		112	22.2		127	* (60-120)	12.30	

Batch Information

Analytical Batch: **XFC16718**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **T.L**

Prep Batch: **XXX48904**
Prep Method: **SW3550C**
Prep Date/Time: **10/22/2023 09:45**
Spike Init Wt./Vol.: 22.2 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 22.2 mg/kg Extract Vol: 5 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/28/2023 12:18
Analysis Date: 10/28/2023 12:31
Analysis Date: 10/28/2023 12:44
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **AK102**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	18.8J	1281	1455	113	1292	1478	113	60-140	1.70	(< 50)
Surrogates										
5a Androstane (surr)		25.5	27.2	107	25.8	27.7	108	50-150	1.80	

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/28/2023 12:31:00PM

Prep Batch: XXX48904
Prep Method: Sonication Extraction Soil AK102
Prep Date/Time: 10/22/2023 9:45:45AM
Prep Initial Wt./Vol.: 22.83g
Prep Extract Vol: 5.00mL

Print Date: 11/03/2023 10:59:54AM

Method Blank

Blank ID: MB for HBN 1866350 [XXX/48904]
Blank Lab ID: 1742204

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK103**

Parameter	Results	LOQ/CL	DL	LOD	Units
Residual Range Organics	50.0U	100	43.0	50.0	mg/kg
Surrogates					
n-Triacontane-d62 (surr)	109	60-120		0	%

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/28/2023 9:17:00AM

Prep Batch: XXX48904
Prep Method: SW3550C
Prep Date/Time: 10/22/2023 9:45:45AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [XXX48904]
Blank Spike Lab ID: 1742205
Date Analyzed: 10/28/2023 09:30

Spike Duplicate ID: LCSD for HBN 1235845 [XXX48904]
Spike Duplicate Lab ID: 1742206
Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **AK103**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	1110	1250	112	1110	1450	130	* (60-120)	14.80	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	22.2		109	22.2		128	* (60-120)	15.70	

Batch Information

Analytical Batch: **XFC16718**
Analytical Method: **AK103**
Instrument: **Agilent 7890B R**
Analyst: **T.L**

Prep Batch: **XXX48904**
Prep Method: **SW3550C**
Prep Date/Time: **10/22/2023 09:45**
Spike Init Wt./Vol.: 22.2 mg/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 22.2 mg/kg Extract Vol: 5 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/28/2023 12:18
Analysis Date: 10/28/2023 12:31
Analysis Date: 10/28/2023 12:44
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **AK103**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	87.7J	1281	1502	110	1292	1548	113	60-140	3.30	(< 50)
Surrogates										
n-Triacontane-d62 (surr)		25.5	26.7	105	25.8	28.5	111	50-150	6.60	

Batch Information

Analytical Batch: XFC16718
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/28/2023 12:31:00PM

Prep Batch: XXX48904
Prep Method: Sonication Extraction Soil AK102
Prep Date/Time: 10/22/2023 9:45:45AM
Prep Initial Wt./Vol.: 22.83g
Prep Extract Vol: 5.00mL

Print Date: 11/03/2023 11:00:00AM

Method Blank

Blank ID: MB for HBN 1866351 [XXX/48905]
Blank Lab ID: 1742207

Matrix: Soil/Solid (dry weight)

QC for Samples:
1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	LOD	Units
1-Methylnaphthalene	12.5U	25.0	6.25	12.5	ug/kg
2-Methylnaphthalene	12.5U	25.0	6.25	12.5	ug/kg
Acenaphthene	12.5U	25.0	6.25	12.5	ug/kg
Acenaphthylene	12.5U	25.0	6.25	12.5	ug/kg
Anthracene	12.5U	25.0	6.25	12.5	ug/kg
Benzo(a)Anthracene	12.5U	25.0	6.25	12.5	ug/kg
Benzo[a]pyrene	12.5U	25.0	6.25	12.5	ug/kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	12.5	ug/kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	12.5	ug/kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	12.5	ug/kg
Chrysene	12.5U	25.0	6.25	12.5	ug/kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	12.5	ug/kg
Fluoranthene	12.5U	25.0	6.25	12.5	ug/kg
Fluorene	12.5U	25.0	6.25	12.5	ug/kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	12.5	ug/kg
Naphthalene	10.0U	20.0	5.00	10.0	ug/kg
Phenanthrene	12.5U	25.0	6.25	12.5	ug/kg
Pyrene	12.5U	25.0	6.25	12.5	ug/kg
Surrogates					
2-Methylnaphthalene-d10 (surr)	90.6	58-103		0	%
Fluoranthene-d10 (surr)	93.3	54-113		0	%

Batch Information

Analytical Batch: XMS14059
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent 8890 GC/MS SYA
Analyst: HMW
Analytical Date/Time: 11/1/2023 2:53:00PM

Prep Batch: XXX48905
Prep Method: SW3550C
Prep Date/Time: 10/22/2023 9:50:56AM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235845 [XXX48905]
Blank Spike Lab ID: 1742208
Date Analyzed: 11/01/2023 15:09

Matrix: Soil/Solid (dry weight)

QC for Samples: 1235845001, 1235845002, 1235845003, 1235845004, 1235845005, 1235845008, 1235845009, 1235845010, 1235845011, 1235845012, 1235845013

Results by **8270D SIM (PAH)**

	Blank Spike (ug/kg)			
Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	97.7	88	(43-111)
2-Methylnaphthalene	111	103	93	(39-114)
Acenaphthene	111	107	96	(44-111)
Acenaphthylene	111	93.9	85	(39-116)
Anthracene	111	102	92	(50-114)
Benzo(a)Anthracene	111	110	99	(54-122)
Benzo[a]pyrene	111	120	108	(50-125)
Benzo[b]Fluoranthene	111	132	118	(53-128)
Benzo[g,h,i]perylene	111	126	114	(49-127)
Benzo[k]fluoranthene	111	119	107	(56-123)
Chrysene	111	114	103	(57-118)
Dibenzo[a,h]anthracene	111	120	108	(50-129)
Fluoranthene	111	108	97	(55-119)
Fluorene	111	104	94	(47-114)
Indeno[1,2,3-c,d] pyrene	111	126	114	(49-130)
Naphthalene	111	94.7	85	(38-111)
Phenanthrene	111	112	101	(49-113)
Pyrene	111	111	100	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	111		90	(58-103)
Fluoranthene-d10 (surr)	111		94	(54-113)

Batch Information

Analytical Batch: **XMS14059**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent 8890 GC/MS SYA**
Analyst: **HMW**

Prep Batch: **XXX48905**
Prep Method: **SW3550C**
Prep Date/Time: **10/22/2023 09:50**
Spike Init Wt./Vol.: 111 ug/kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Billable Matrix Spike Summary

Original Sample ID: 1235845005
MS Sample ID: 1235845006 BMS
MSD Sample ID: 1235845007 BMSD

Analysis Date: 10/30/2023 16:34
Analysis Date: 10/30/2023 16:55
Analysis Date: 10/30/2023 17:15
Matrix: Soil/Solid (dry weight)

QC for Samples:

Results by **8270D SIM (PAH)**

		Matrix Spike (ug/kg)			Spike Duplicate (ug/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	14.4U	128	111	87	129	123	96	43-111	10.90	(< 20)
2-Methylnaphthalene	14.4U	128	112	87	129	123	96	39-114	10.20	(< 20)
Acenaphthene	14.4U	128	116	90	129	126	97	44-111	8.00	(< 20)
Acenaphthylene	14.4U	128	109	85	129	118	91	39-116	7.70	(< 20)
Anthracene	14.4U	128	113	88	129	127	98	50-114	11.10	(< 20)
Benzo(a)Anthracene	14.4U	128	112	88	129	126	97	54-122	11.20	(< 20)
Benzo[a]pyrene	14.4U	128	112	87	129	123	95	50-125	9.50	(< 20)
Benzo[b]Fluoranthene	14.4U	128	122	95	129	127	98	53-128	3.80	(< 20)
Benzo[g,h,i]perylene	14.4U	128	116	91	129	128	99	49-127	9.00	(< 20)
Benzo[k]fluoranthene	14.4U	128	115	90	129	134	103	56-123	14.40	(< 20)
Chrysene	14.4U	128	114	89	129	125	97	57-118	9.50	(< 20)
Dibenzo[a,h]anthracene	14.4U	128	118	92	129	129	100	50-129	9.20	(< 20)
Fluoranthene	14.4U	128	118	91	129	121	94	55-119	3.30	(< 20)
Fluorene	14.4U	128	110	86	129	123	96	47-114	11.40	(< 20)
Indeno[1,2,3-c,d] pyrene	14.4U	128	119	92	129	130	101	49-130	9.30	(< 20)
Naphthalene	11.6U	128	108	85	129	118	91	38-111	7.90	(< 20)
Phenanthrene	14.4U	128	118	92	129	127	98	49-113	7.30	(< 20)
Pyrene	14.4U	128	116	91	129	126	97	55-117	7.90	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		128	118	92	129	126	98	58-103	7.10	
Fluoranthene-d10 (surr)		128	114	89	129	118	91	54-113	2.90	

Batch Information

Analytical Batch: XMS14052
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: HMW
Analytical Date/Time: 10/30/2023 4:55:00PM

Prep Batch: XXX48905
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 10/22/2023 9:50:56AM
Prep Initial Wt./Vol.: 22.69g
Prep Extract Vol: 5.00mL

Print Date: 11/03/2023 11:00:06AM

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Profile #: 364160 Int.: JM

Page 1 of 1

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

Section 1

CLIENT:	Hilcorp co Susitna		
CONTACT:	Melissa Mayer	PHONE #:	907-350-7952
PROJECT NAME:	Beluga River Unit	Project/Permit Number:	
		NPDL Number(DOD):	
REPORTS TO:	Melissa Mayer m.mayer@susitna.com	E-MAIL:	m.mayer@susitna.com
INVOICE TO:	Hilcorp Alaska Amy Peloza	QUOTE #:	235-02468.15.10.28
		P.O. #:	G/L 60005000

Section 3 — Preservative

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Sample Type (Comp / Grab / MI)	Analysis* DRO/RRO, PAH, RCRA (None)	GRO/PVOC (MeOH)	AK102/103 DRO/RRO (HCl)	AK101 GRO (HCl)	8260 BTEX (HCl)	8270 SIM PAH (None)	AK102 DRO (HCl)	DRO/RRO, PAH (None)			REMARKS/LOG ID
1B	APAD-SB01-14.0-15.0	10/12/2023	1655	S	1	Grab				X	X						
1A	APAD-SB01-14.0-15.0	10/12/2023	1655	S	1	Grab						X	X				
2B	LPAD-SB01-5.0-7.0	10/13/2023	930	S	1	Grab		X									
2A	LPAD-SB01-5.0-7.0	10/13/2023	930	S	1	Grab	X										
3B	LPAD-SB01-14.0-15.0	10/13/2023	935	S	1	Grab		X									
3A	LPAD-SB01-14.0-15.0	10/13/2023	935	S	1	Grab	X										
4B	LPAD-SB02-9.0-9.5	10/13/2023	1020	S	1	Grab		X									
4A	LPAD-SB02-9.0-9.5	10/13/2023	1020	S	1	Grab	X										
5CD	LPAD-SB02-13.5-15.0	10/13/2023	1015	S	2	Grab		X									MS/D 6CD 7CD
5MS	LPAD-SB02-13.5-15.0	10/13/2023	1015	S	2	Grab	X										MS/D 6AB 7AB
6B	LPAD-SB03-5.0-7.0	10/13/2023	1100	S	1	Grab		X									
6A	LPAD-SB03-5.0-7.0	10/13/2023	1100	S	1	Grab	X										
9B	LPAD-SB05-5.0-7.0	10/13/2023	1105	S	1	Grab		X									
9A	LPAD-SB05-5.0-7.0	10/13/2023	1105	S	1	Grab	X										
10B	LPAD-SB03-13.0-15.0	10/13/2023	1110	S	1	Grab		X									
10A	LPAD-SB03-13.0-15.0	10/13/2023	1110	S	1	Grab	X										
11B	LPAD-SB04-5.0-7.0	10/13/2023	1140	S	1	Grab		X									
11A	LPAD-SB04-5.0-7.0	10/13/2023	1140	S	1	Grab	X										
12B	LPAD-SB04-13.0-15.0	10/13/2023	1145	S	1	Grab		X									
12A	LPAD-SB04-13.0-15.0	10/13/2023	1145	S	1	Grab	X										
13B	MPAD-SB02-7.5-8.5	10/13/2023	1500	S	1	Grab		X									
13A	MPAD-SB02-7.5-8.5	10/13/2023	1500	S	1	Grab								X			
14A	TRIPBLANK	10/12/2023	1200	TB	1	TB		X									

NOTE: "The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Comments:

Section 4

DOD Project? YES NO X

Date Deliverables Requested

DataView Level 4 | SEDD ERPIMS | EQUIS Other:

Turnaround Time Requested

[redacted]

Rush

Requested Rush Report Date:

SGS Sample Receipt (Lab Use Only)

Delivery Method: (Client) Commercial

Did each cooler have a corresponding COC? (Yes) No

Chain of Custody Seal Condition: (INTACT) BROKEN ABSENT

COC Seal Location(s):

Section 5

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Melissa Mayer	10/16/2023	1300	
	10/16/23	1403	

Laboratory Use Only

Cooler ID	Temperature (°C)	Therm. ID
1. 1	-0.1	D65
2.		
3.		

If more than three coolers are received, or for documentation of non-compliant coolers, use form FS-0029.

Note: If temp. is outside 0-6° and samples were not taken <8 hours ago OR are waste samples, Client or PM should initial here or attach an email change order to proceed with analysis. If ice is present, note on form F102B.

Initials:

http://www.sgs.com/terms-and-conditions

123845

SGS

1235845

SAMPLE RECEIPT FORM

Project Manager Completion				
Was all necessary information recorded on the COC upon receipt? (temperature, COC seals, etc.?)	Yes	No	N/A	
Was temperature between 0-6° C?	Yes	No	N/A	If "No", are the samples either exempt* or sampled <8 hours prior to receipt?
Were all analyses received within holding time*?	Yes	No	N/A	
Was a method specified for each analysis, where applicable? If no, please note correct methods.	Yes	No	N/A	
Are compound lists specified, where applicable? For project specific or special compound lists please note correct analysis code.	Yes	No	N/A	
If rush was requested by the client, was the requested TAT approved?	Yes	No	N/A	If "NO", what is the approved TAT?
If SEDD Deliverables are required, were Location ID's and an NPDL Number provided?	Yes	No	N/A	*If "NO", contact client for information.*
Sample Login Completion				
Do ID's on sample containers match COC?	Yes	No	N/A	
If provided on containers, do dates/times collected match COC?	Yes	No	N/A	Note: If times differ <1 hr., record details below and login per COC.
Were all sample containers received in good condition?	Yes	No	N/A	
Were proper containers (type/mass/volume/preservative) received for all samples? **See form F-083 "Sample Guide"*	Yes	No	N/A	*Note: If 200.8/6020 Total Metals are received unpreserved, preserve and note HNO3 lot here: If 200.8/6020 Dissolved Metals are received unpreserved, log in for LABFILTER and do not preserve. For all non-metals methods, inform Project Manager.*
Were Trip Blanks (VOC, GRO, Low-Level Hg, etc.) received with samples, where applicable*?	Yes	No	N/A	
Were all VOA vials free of headspace >6mm?	Yes	No	N/A	
Were all soil VOA samples received field extracted with Methanol?	Yes	No	N/A	
Did all soil VOA samples have an accompanying unpreserved container for % solids?	Yes	No	N/A	
If special handling is required, were containers labelled appropriately? e.g. MI/ISM, foreign soils, lab filter, Ref Lab, limited volume	Yes	No	N/A	
For Rush/Short Holding time, was the lab notified?	Yes	No	N/A	
For any question answered "NO", was the Project Manager notified?	Yes	No	N/A	PM Initials:
Was Peer Review of sample numbering/labelling completed?	Yes	No	N/A	Reviewer Initials: HGS
Additional Notes/Clarification where Applicable, including resolution of "No" answers when a change order is not attached:				

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1235845001-A	No Preservative Required	OK			
1235845001-B	Methanol field pres. 4 C	OK			
1235845002-A	No Preservative Required	OK			
1235845002-B	Methanol field pres. 4 C	OK			
1235845003-A	No Preservative Required	OK			
1235845003-B	Methanol field pres. 4 C	OK			
1235845004-A	No Preservative Required	OK			
1235845004-B	Methanol field pres. 4 C	OK			
1235845005-A	No Preservative Required	OK			
1235845005-B	No Preservative Required	OK			
1235845005-C	Methanol field pres. 4 C	OK			
1235845005-D	No Preservative Required	OK			
1235845006-A	No Preservative Required	OK			
1235845006-B	No Preservative Required	OK			
1235845006-C	Methanol field pres. 4 C	OK			
1235845006-D	No Preservative Required	OK			
1235845007-A	No Preservative Required	OK			
1235845007-B	No Preservative Required	OK			
1235845007-C	Methanol field pres. 4 C	OK			
1235845007-D	No Preservative Required	OK			
1235845008-A	No Preservative Required	OK			
1235845008-B	Methanol field pres. 4 C	OK			
1235845009-A	No Preservative Required	OK			
1235845009-B	Methanol field pres. 4 C	OK			
1235845010-A	No Preservative Required	OK			
1235845010-B	Methanol field pres. 4 C	OK			
1235845011-A	No Preservative Required	OK			
1235845011-B	Methanol field pres. 4 C	OK			
1235845012-A	No Preservative Required	OK			
1235845012-B	Methanol field pres. 4 C	OK			
1235845013-A	No Preservative Required	OK			
1235845013-B	Methanol field pres. 4 C	OK			
1235845014-A	Methanol field pres. 4 C	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
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 Report of Analysis

To: Hilcorp Alaska, LLC
2419 McKenzie Drive
Anchorage, AK 99517
(907)350-7952

Report Number: **1235846**

Client Project: **Beluga River Unit**

Dear Nelson Crone,

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 Justin 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.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

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

Case Narrative

SGS Client: **Hilcorp Alaska, LLC**
SGS Project: **1235846**
Project Name/Site: **Beluga River Unit**
Project Contact: **Nelson Crone**

Refer to sample receipt form for information on sample condition.

FG24-101223 (1235846001) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

FG28-101223 (1235846002) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

224-13-2-101223 (1235846003) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

224-13-3-101323 (1235846004) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

224-13-5-101323 (1235846005) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

224-13-4-101323 (1235846006) PS

AK102/103 - MB surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. Sample was re-extracted outside of hold-time and results confirmed. In-hold data is reported.

LCSD for HBN 1866301 [VXX/4066 (1742053) LCSD

8260D - LCSD surrogate recovery for toluene-d8 does not meet QC criteria. Surrogate meets QC criteria in all other instrument and batch QC.

MB for HBN 1866309 [XXX/48897] (1742079) MB

AK102/103 - Surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria.

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

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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, indenmification 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.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
FG24-101223	1235846001	10/12/2023	10/16/2023	Water (Surface, Eff., Ground)
FG28-101223	1235846002	10/12/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-2-101223	1235846003	10/12/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-3-101323	1235846004	10/13/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-5-101323	1235846005	10/13/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-4-101323	1235846006	10/13/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-4-101323(1235846006BM	1235846007	10/13/2023	10/16/2023	Water (Surface, Eff., Ground)
224-13-4-10...(1235846006BMSD	1235846008	10/13/2023	10/16/2023	Water (Surface, Eff., Ground)
Trip Blank	1235846009	10/12/2023	10/16/2023	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO Low Volume (W)
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)

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Detectable Results Summary

Client Sample ID: **FG24-101223**
Lab Sample ID: 1235846001

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	2.06	ug/L
	2-Methylnaphthalene	0.126	ug/L
	Acenaphthene	0.279	ug/L
	Acenaphthylene	0.0253J	ug/L
	Fluorene	0.467	ug/L
	Naphthalene	1.65	ug/L
	Phenanthrene	0.0476J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.38	mg/L

Client Sample ID: **FG28-101223**
Lab Sample ID: 1235846002

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	1.83	ug/L
	2-Methylnaphthalene	0.0821	ug/L
	Acenaphthene	0.317	ug/L
	Fluorene	0.518	ug/L
	Naphthalene	1.59	ug/L
	Phenanthrene	0.0317J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.14	mg/L

Client Sample ID: **224-13-2-101223**
Lab Sample ID: 1235846003

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	Phenanthrene	0.0333J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.801	mg/L
	Residual Range Organics	0.983	mg/L

Client Sample ID: **224-13-3-101323**
Lab Sample ID: 1235846004

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.0764	ug/L
	2-Methylnaphthalene	0.0792	ug/L
	Naphthalene	0.0905J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.841	mg/L
	Residual Range Organics	0.982	mg/L

Client Sample ID: **224-13-5-101323**
Lab Sample ID: 1235846005

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.0722	ug/L
	2-Methylnaphthalene	0.0729	ug/L
	Naphthalene	0.0746J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.720	mg/L
	Residual Range Organics	0.755	mg/L

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Detectable Results Summary

Client Sample ID: **224-13-4-101323**
Lab Sample ID: 1235846006

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.358	ug/L
	2-Methylnaphthalene	0.372	ug/L
	Naphthalene	0.595	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.27	mg/L
	Residual Range Organics	1.72	mg/L
Volatile Fuels	Gasoline Range Organics	0.0882J	mg/L
Volatile GC/MS	Benzene	0.790	ug/L
	Ethylbenzene	0.420J	ug/L
	o-Xylene	1.94	ug/L
	P & M -Xylene	2.81	ug/L
	Toluene	0.690J	ug/L
	Xylenes (total)	4.75	ug/L

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Results of **FG24-101223**

Client Sample ID: **FG24-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846001
Lab Project ID: 1235846

Collection Date: 10/12/23 14:06
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	2.06		0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
2-Methylnaphthalene	0.126		0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Acenaphthene	0.279		0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Acenaphthylene	0.0253	J	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Anthracene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Benzo(a)Anthracene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Benzo[a]pyrene	0.0102	U	0.0204	0.00633	0.0102	ug/L	1		10/28/23 01:03
Benzo[b]Fluoranthene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Benzo[g,h,i]perylene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Benzo[k]fluoranthene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Chrysene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Dibenzo[a,h]anthracene	0.0102	U	0.0204	0.00633	0.0102	ug/L	1		10/28/23 01:03
Fluoranthene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Fluorene	0.467		0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Indeno[1,2,3-c,d] pyrene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Naphthalene	1.65		0.102	0.0316	0.0510	ug/L	1		10/28/23 01:03
Phenanthrene	0.0476	J	0.102	0.0316	0.0510	ug/L	1		10/28/23 01:03
Pyrene	0.0255	U	0.0510	0.0153	0.0255	ug/L	1		10/28/23 01:03
Surrogates									
2-Methylnaphthalene-d10 (surr)	41.5		38-100			%	1		10/28/23 01:03
Fluoranthene-d10 (surr)	68.7		30-111			%	1		10/28/23 01:03

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 01:03
Container ID: 1235846001-C

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

J flagging is activated

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Results of **FG24-101223**

Client Sample ID: **FG24-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846001
Lab Project ID: 1235846

Collection Date: 10/12/23 14:06
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.38		0.600	0.200	0.300	mg/L	1		10/26/23 19:01
Surrogates									
5a Androstane (surr)	74.5		50-150			%	1		10/26/23 19:01

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 19:01
Container ID: 1235846001-A

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **FG28-101223**

Client Sample ID: **FG28-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846002
Lab Project ID: 1235846

Collection Date: 10/12/23 11:45
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	1.83		0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
2-Methylnaphthalene	0.0821		0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Acenaphthene	0.317		0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Acenaphthylene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Anthracene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Benzo(a)Anthracene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Benzo[a]pyrene	0.0100	U	0.0200	0.00620	0.0100	ug/L	1		10/28/23 01:19
Benzo[b]Fluoranthene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Benzo[g,h,i]perylene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Benzo[k]fluoranthene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Chrysene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Dibenzo[a,h]anthracene	0.0100	U	0.0200	0.00620	0.0100	ug/L	1		10/28/23 01:19
Fluoranthene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Fluorene	0.518		0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Indeno[1,2,3-c,d] pyrene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Naphthalene	1.59		0.100	0.0310	0.0500	ug/L	1		10/28/23 01:19
Phenanthrene	0.0317	J	0.100	0.0310	0.0500	ug/L	1		10/28/23 01:19
Pyrene	0.0250	U	0.0500	0.0150	0.0250	ug/L	1		10/28/23 01:19
Surrogates									
2-Methylnaphthalene-d10 (surr)	42.5		38-100			%	1		10/28/23 01:19
Fluoranthene-d10 (surr)	73.6		30-111			%	1		10/28/23 01:19

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 01:19
Container ID: 1235846002-C

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **FG28-101223**

Client Sample ID: **FG28-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846002
Lab Project ID: 1235846

Collection Date: 10/12/23 11:45
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.14		0.600	0.200	0.300	mg/L	1		10/26/23 19:13
Surrogates									
5a Androstane (surr)	79.5		50-150			%	1		10/26/23 19:13

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 19:13
Container ID: 1235846002-A

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **224-13-2-101223**

Client Sample ID: **224-13-2-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846003
Lab Project ID: 1235846

Collection Date: 10/12/23 09:31
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
2-Methylnaphthalene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Acenaphthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Acenaphthylene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Anthracene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Benzo(a)Anthracene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Benzo[a]pyrene	0.0107	U	0.0213	0.00660	0.0107	ug/L	1		10/28/23 01:35
Benzo[b]Fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Benzo[g,h,i]perylene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Benzo[k]fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Chrysene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Dibenzo[a,h]anthracene	0.0107	U	0.0213	0.00660	0.0107	ug/L	1		10/28/23 01:35
Fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Fluorene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Indeno[1,2,3-c,d] pyrene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Naphthalene	0.0530	U	0.106	0.0330	0.0530	ug/L	1		10/28/23 01:35
Phenanthrene	0.0333	J	0.106	0.0330	0.0530	ug/L	1		10/28/23 01:35
Pyrene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 01:35
Surrogates									
2-Methylnaphthalene-d10 (surr)	62.8		38-100			%	1		10/28/23 01:35
Fluoranthene-d10 (surr)	70.2		30-111			%	1		10/28/23 01:35

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 01:35
Container ID: 1235846003-I

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **224-13-2-101223**

Client Sample ID: **224-13-2-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846003
Lab Project ID: 1235846

Collection Date: 10/12/23 09:31
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.801		0.682	0.227	0.341	mg/L	1		10/26/23 19:26
Surrogates									
5a Androstane (surr)	77.5		50-150			%	1		10/26/23 19:26

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 19:26
Container ID: 1235846003-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 220 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.983		0.568	0.227	0.284	mg/L	1		10/26/23 19:26
Surrogates									
n-Triacontane-d62 (surr)	98.1		50-150			%	1		10/26/23 19:26

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/26/23 19:26
Container ID: 1235846003-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 220 mL
Prep Extract Vol: 1 mL

Results of **224-13-2-101223**

Client Sample ID: **224-13-2-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846003
Lab Project ID: 1235846

Collection Date: 10/12/23 09:31
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	0.0500	mg/L	1		10/21/23 06:25
Surrogates									
4-Bromofluorobenzene (surr)	91		50-150			%	1		10/21/23 06:25

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/21/23 06:25
Container ID: 1235846003-A

Prep Batch: VXX40673
Prep Method: SW5030B
Prep Date/Time: 10/20/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **224-13-2-101223**

Client Sample ID: **224-13-2-101223**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846003
Lab Project ID: 1235846

Collection Date: 10/12/23 09:31
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200	U	0.400	0.120	0.200	ug/L	1		10/19/23 21:33
Ethylbenzene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 21:33
o-Xylene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 21:33
P & M -Xylene	1.00	U	2.00	0.620	1.00	ug/L	1		10/19/23 21:33
Toluene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 21:33
Xylenes (total)	1.50	U	3.00	1.00	1.50	ug/L	1		10/19/23 21:33
Surrogates									
1,2-Dichloroethane-D4 (surr)	105		81-118			%	1		10/19/23 21:33
4-Bromofluorobenzene (surr)	97.9		85-114			%	1		10/19/23 21:33
Toluene-d8 (surr)	100		89-112			%	1		10/19/23 21:33

Batch Information

Analytical Batch: VMS22911
Analytical Method: SW8260D
Analyst: JY
Analytical Date/Time: 10/19/23 21:33
Container ID: 1235846003-D

Prep Batch: VXX40662
Prep Method: SW5030B
Prep Date/Time: 10/19/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **224-13-3-101323**

Client Sample ID: **224-13-3-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846004
Lab Project ID: 1235846

Collection Date: 10/13/23 09:13
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0764		0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
2-Methylnaphthalene	0.0792		0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Acenaphthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Acenaphthylene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Anthracene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Benzo(a)Anthracene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Benzo[a]pyrene	0.0111	U	0.0222	0.00689	0.0111	ug/L	1		10/28/23 01:51
Benzo[b]Fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Benzo[g,h,i]perylene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Benzo[k]fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Chrysene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Dibenzo[a,h]anthracene	0.0111	U	0.0222	0.00689	0.0111	ug/L	1		10/28/23 01:51
Fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Fluorene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Indeno[1,2,3-c,d] pyrene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Naphthalene	0.0905	J	0.111	0.0344	0.0555	ug/L	1		10/28/23 01:51
Phenanthrene	0.0555	U	0.111	0.0344	0.0555	ug/L	1		10/28/23 01:51
Pyrene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 01:51
Surrogates									
2-Methylnaphthalene-d10 (surr)	70.5		38-100			%	1		10/28/23 01:51
Fluoranthene-d10 (surr)	78.9		30-111			%	1		10/28/23 01:51

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 01:51
Container ID: 1235846004-I

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **224-13-3-101323**

Client Sample ID: **224-13-3-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846004
Lab Project ID: 1235846

Collection Date: 10/13/23 09:13
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.841		0.652	0.217	0.326	mg/L	1		10/26/23 19:38
Surrogates									
5a Androstane (surr)	80.6		50-150			%	1		10/26/23 19:38

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 19:38
Container ID: 1235846004-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.982		0.543	0.217	0.272	mg/L	1		10/26/23 19:38
Surrogates									
n-Triacontane-d62 (surr)	103		50-150			%	1		10/26/23 19:38

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/26/23 19:38
Container ID: 1235846004-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Results of **224-13-3-101323**

Client Sample ID: **224-13-3-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846004
Lab Project ID: 1235846

Collection Date: 10/13/23 09:13
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	0.0500	mg/L	1		10/21/23 06:44
Surrogates									
4-Bromofluorobenzene (surr)	93.8		50-150			%	1		10/21/23 06:44

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/21/23 06:44
Container ID: 1235846004-D

Prep Batch: VXX40673
Prep Method: SW5030B
Prep Date/Time: 10/20/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **224-13-3-101323**

Client Sample ID: **224-13-3-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846004
Lab Project ID: 1235846

Collection Date: 10/13/23 09:13
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200	U	0.400	0.120	0.200	ug/L	1		10/23/23 23:01
Ethylbenzene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:01
o-Xylene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:01
P & M -Xylene	1.00	U	2.00	0.620	1.00	ug/L	1		10/23/23 23:01
Toluene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:01
Xylenes (total)	1.50	U	3.00	1.00	1.50	ug/L	1		10/23/23 23:01
Surrogates									
1,2-Dichloroethane-D4 (surr)	104		81-118			%	1		10/23/23 23:01
4-Bromofluorobenzene (surr)	101		85-114			%	1		10/23/23 23:01
Toluene-d8 (surr)	96.2		89-112			%	1		10/23/23 23:01

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Analyst: JY
Analytical Date/Time: 10/23/23 23:01
Container ID: 1235846004-F

Prep Batch: VXX40691
Prep Method: SW5030B
Prep Date/Time: 10/23/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **224-13-5-101323**

Client Sample ID: **224-13-5-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846005
Lab Project ID: 1235846

Collection Date: 10/13/23 11:58
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0722		0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
2-Methylnaphthalene	0.0729		0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Acenaphthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Acenaphthylene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Anthracene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Benzo(a)Anthracene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Benzo[a]pyrene	0.0111	U	0.0222	0.00689	0.0111	ug/L	1		10/28/23 02:07
Benzo[b]Fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Benzo[g,h,i]perylene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Benzo[k]fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Chrysene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Dibenzo[a,h]anthracene	0.0111	U	0.0222	0.00689	0.0111	ug/L	1		10/28/23 02:07
Fluoranthene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Fluorene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Indeno[1,2,3-c,d] pyrene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Naphthalene	0.0746	J	0.111	0.0344	0.0555	ug/L	1		10/28/23 02:07
Phenanthrene	0.0555	U	0.111	0.0344	0.0555	ug/L	1		10/28/23 02:07
Pyrene	0.0278	U	0.0556	0.0167	0.0278	ug/L	1		10/28/23 02:07
Surrogates									
2-Methylnaphthalene-d10 (surr)	59.2		38-100			%	1		10/28/23 02:07
Fluoranthene-d10 (surr)	77.7		30-111			%	1		10/28/23 02:07

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 02:07
Container ID: 1235846005-I

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **224-13-5-101323**

Client Sample ID: **224-13-5-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846005
Lab Project ID: 1235846

Collection Date: 10/13/23 11:58
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.720		0.652	0.217	0.326	mg/L	1		10/26/23 19:50
Surrogates									
5a Androstane (surr)	78.6		50-150			%	1		10/26/23 19:50

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 19:50
Container ID: 1235846005-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.755		0.543	0.217	0.272	mg/L	1		10/26/23 19:50
Surrogates									
n-Triacontane-d62 (surr)	106		50-150			%	1		10/26/23 19:50

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/26/23 19:50
Container ID: 1235846005-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 230 mL
Prep Extract Vol: 1 mL

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Results of **224-13-5-101323**

Client Sample ID: **224-13-5-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846005
Lab Project ID: 1235846

Collection Date: 10/13/23 11:58
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	0.0500	mg/L	1		10/21/23 07:02
Surrogates									
4-Bromofluorobenzene (surr)	94.8		50-150			%	1		10/21/23 07:02

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/21/23 07:02
Container ID: 1235846005-B

Prep Batch: VXX40673
Prep Method: SW5030B
Prep Date/Time: 10/20/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **224-13-5-101323**

Client Sample ID: **224-13-5-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846005
Lab Project ID: 1235846

Collection Date: 10/13/23 11:58
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200	U	0.400	0.120	0.200	ug/L	1		10/23/23 23:16
Ethylbenzene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:16
o-Xylene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:16
P & M -Xylene	1.00	U	2.00	0.620	1.00	ug/L	1		10/23/23 23:16
Toluene	0.500	U	1.00	0.310	0.500	ug/L	1		10/23/23 23:16
Xylenes (total)	1.50	U	3.00	1.00	1.50	ug/L	1		10/23/23 23:16
Surrogates									
1,2-Dichloroethane-D4 (surr)	102		81-118			%	1		10/23/23 23:16
4-Bromofluorobenzene (surr)	101		85-114			%	1		10/23/23 23:16
Toluene-d8 (surr)	97.3		89-112			%	1		10/23/23 23:16

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Analyst: JY
Analytical Date/Time: 10/23/23 23:16
Container ID: 1235846005-E

Prep Batch: VXX40691
Prep Method: SW5030B
Prep Date/Time: 10/23/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

J flagging is activated

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Results of **224-13-4-101323**

Client Sample ID: **224-13-4-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846006
Lab Project ID: 1235846

Collection Date: 10/13/23 15:32
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.358		0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
2-Methylnaphthalene	0.372		0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Acenaphthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Acenaphthylene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Anthracene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Benzo(a)Anthracene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Benzo[a]pyrene	0.0107	U	0.0213	0.00660	0.0107	ug/L	1		10/28/23 02:23
Benzo[b]Fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Benzo[g,h,i]perylene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Benzo[k]fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Chrysene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Dibenzo[a,h]anthracene	0.0107	U	0.0213	0.00660	0.0107	ug/L	1		10/28/23 02:23
Fluoranthene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Fluorene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Indeno[1,2,3-c,d] pyrene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Naphthalene	0.595		0.106	0.0330	0.0530	ug/L	1		10/28/23 02:23
Phenanthrene	0.0530	U	0.106	0.0330	0.0530	ug/L	1		10/28/23 02:23
Pyrene	0.0266	U	0.0532	0.0160	0.0266	ug/L	1		10/28/23 02:23
Surrogates									
2-Methylnaphthalene-d10 (surr)	54.8		38-100			%	1		10/28/23 02:23
Fluoranthene-d10 (surr)	76		30-111			%	1		10/28/23 02:23

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Analyst: HMW
Analytical Date/Time: 10/28/23 02:23
Container ID: 1235846006-I

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/23 10:00
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **224-13-4-101323**

Client Sample ID: **224-13-4-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846006
Lab Project ID: 1235846

Collection Date: 10/13/23 15:32
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.27		0.625	0.208	0.313	mg/L	1		10/26/23 20:03
Surrogates									
5a Androstane (surr)	85.7		50-150			%	1		10/26/23 20:03

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Analyst: T.L
Analytical Date/Time: 10/26/23 20:03
Container ID: 1235846006-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.72		0.521	0.208	0.261	mg/L	1		10/26/23 20:03
Surrogates									
n-Triacontane-d62 (surr)	100		50-150			%	1		10/26/23 20:03

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Analyst: T.L
Analytical Date/Time: 10/26/23 20:03
Container ID: 1235846006-G

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/23 16:25
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

J flagging is activated

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Results of **224-13-4-101323**

Client Sample ID: **224-13-4-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846006
Lab Project ID: 1235846

Collection Date: 10/13/23 15:32
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0882	J	0.100	0.0450	0.0500	mg/L	1		10/21/23 00:54
Surrogates									
4-Bromofluorobenzene (surr)	104		50-150			%	1		10/21/23 00:54

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/21/23 00:54
Container ID: 1235846006-A

Prep Batch: VXX40672
Prep Method: SW5030B
Prep Date/Time: 10/20/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

J flagging is activated

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Results of **224-13-4-101323**

Client Sample ID: **224-13-4-101323**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846006
Lab Project ID: 1235846

Collection Date: 10/13/23 15:32
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.790		0.400	0.120	0.200	ug/L	1		10/23/23 23:30
Ethylbenzene	0.420	J	1.00	0.310	0.500	ug/L	1		10/23/23 23:30
o-Xylene	1.94		1.00	0.310	0.500	ug/L	1		10/23/23 23:30
P & M -Xylene	2.81		2.00	0.620	1.00	ug/L	1		10/23/23 23:30
Toluene	0.690	J	1.00	0.310	0.500	ug/L	1		10/23/23 23:30
Xylenes (total)	4.75		3.00	1.00	1.50	ug/L	1		10/23/23 23:30
Surrogates									
1,2-Dichloroethane-D4 (surr)	99.1		81-118			%	1		10/23/23 23:30
4-Bromofluorobenzene (surr)	101		85-114			%	1		10/23/23 23:30
Toluene-d8 (surr)	97.4		89-112			%	1		10/23/23 23:30

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Analyst: JY
Analytical Date/Time: 10/23/23 23:30
Container ID: 1235846006-E

Prep Batch: VXX40691
Prep Method: SW5030B
Prep Date/Time: 10/23/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/15/2023 10:31:58AM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846009
Lab Project ID: 1235846

Collection Date: 10/12/23 00:00
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	0.0500	mg/L	1		10/20/23 22:46
Surrogates									
4-Bromofluorobenzene (surr)	90.5		50-150			%	1		10/20/23 22:46

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Analyst: CWD
Analytical Date/Time: 10/20/23 22:46
Container ID: 1235846009-A

Prep Batch: VXX40672
Prep Method: SW5030B
Prep Date/Time: 10/20/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Beluga River Unit**
Lab Sample ID: 1235846009
Lab Project ID: 1235846

Collection Date: 10/12/23 00:00
Received Date: 10/16/23 14:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200	U	0.400	0.120	0.200	ug/L	1		10/19/23 18:00
Ethylbenzene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 18:00
o-Xylene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 18:00
P & M -Xylene	1.00	U	2.00	0.620	1.00	ug/L	1		10/19/23 18:00
Toluene	0.500	U	1.00	0.310	0.500	ug/L	1		10/19/23 18:00
Xylenes (total)	1.50	U	3.00	1.00	1.50	ug/L	1		10/19/23 18:00
Surrogates									
1,2-Dichloroethane-D4 (surr)	100		81-118			%	1		10/19/23 18:00
4-Bromofluorobenzene (surr)	105		85-114			%	1		10/19/23 18:00
Toluene-d8 (surr)	95.4		89-112			%	1		10/19/23 18:00

Batch Information

Analytical Batch: VMS22911
Analytical Method: SW8260D
Analyst: JY
Analytical Date/Time: 10/19/23 18:00
Container ID: 1235846009-B

Prep Batch: VXX40662
Prep Method: SW5030B
Prep Date/Time: 10/19/23 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1866301 [VXX/40662]
Blank Lab ID: 1742051

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846003, 1235846009

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	LOD	Units
Benzene	0.200U	0.400	0.120	0.200	ug/L
Ethylbenzene	0.500U	1.00	0.310	0.500	ug/L
o-Xylene	0.500U	1.00	0.310	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.620	1.00	ug/L
Toluene	0.500U	1.00	0.310	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.00	1.50	ug/L
Surrogates					
1,2-Dichloroethane-D4 (surr)	97.8	81-118		0	%
4-Bromofluorobenzene (surr)	104	85-114		0	%
Toluene-d8 (surr)	93.9	89-112		0	%

Batch Information

Analytical Batch: VMS22911
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: JY
Analytical Date/Time: 10/19/2023 1:26:00PM

Prep Batch: VXX40662
Prep Method: SW5030B
Prep Date/Time: 10/19/2023 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [VXX40662]
Blank Spike Lab ID: 1742052
Date Analyzed: 10/19/2023 13:41

Spike Duplicate ID: LCSD for HBN 1235846 [VXX40662]
Spike Duplicate Lab ID: 1742053
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846003, 1235846009

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.8	103	30	30.2	101	(79-120)	2.10	(< 20)
Ethylbenzene	30	32.4	108	30	31.7	106	(79-121)	2.20	(< 20)
o-Xylene	30	32.4	108	30	30.4	101	(78-122)	6.30	(< 20)
P & M -Xylene	60	63.2	105	60	61.3	102	(80-121)	3.10	(< 20)
Toluene	30	28.2	94	30	25.1	84	(80-121)	11.60	(< 20)
Xylenes (total)	90	95.6	106	90	91.7	102	(79-121)	4.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		92	30		94	(81-118)	1.50	
4-Bromofluorobenzene (surr)	30		114	30		103	(85-114)	10.40	
Toluene-d8 (surr)	30		92	30		84	* (89-112)	9.00	

Batch Information

Analytical Batch: **VMS22911**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **JY**

Prep Batch: **VXX40662**
Prep Method: **SW5030B**
Prep Date/Time: **10/19/2023 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1866370 [VXX/40672]
Blank Lab ID: 1742292

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846006, 1235846009

Results by **AK101**

Parameter	Results	LOQ/CL	DL	LOD	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	0.0500	mg/L
Surrogates					
4-Bromofluorobenzene (surr)	83.8	50-150		0	%

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: CWD
Analytical Date/Time: 10/20/2023 2:20:00PM

Prep Batch: VXX40672
Prep Method: SW5030B
Prep Date/Time: 10/20/2023 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [VXX40672]
Blank Spike Lab ID: 1742293
Date Analyzed: 10/20/2023 14:56

Spike Duplicate ID: LCSD for HBN 1235846 [VXX40672]
Spike Duplicate Lab ID: 1742294
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846006, 1235846009

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.966	97	1.00	1.00	100	(60-120)	3.50	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		93	0.0500		97	(50-150)	4.20	

Batch Information

Analytical Batch: **VFC16660**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **CWD**

Prep Batch: **VXX40672**
Prep Method: **SW5030B**
Prep Date/Time: **10/20/2023 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235846006
MS Sample ID: 1235846007 BMS
MSD Sample ID: 1235846008 BMSD

Analysis Date: 10/21/2023 0:54
Analysis Date: 10/21/2023 1:13
Analysis Date: 10/21/2023 1:31
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK101**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	0.0882J	1.00	1.03	95	1.00	1.05	96	60-120	1.10	(< 20)
Surrogates										
4-Bromofluorobenzene (surr)		0.0500	0.0533	107	0.0500	0.0529	106	50-150	0.68	

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: CWD
Analytical Date/Time: 10/21/2023 1:13:00AM

Prep Batch: VXX40672
Prep Method: Volatile Fuels Extraction (W)
Prep Date/Time: 10/20/2023 6:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 11/15/2023 10:32:12AM

Method Blank

Blank ID: MB for HBN 1866371 [VXX/40673]
Blank Lab ID: 1742295

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846003, 1235846004, 1235846005

Results by **AK101**

Parameter	Results	LOQ/CL	DL	LOD	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	0.0500	mg/L
Surrogates					
4-Bromofluorobenzene (surr)	90.7	50-150		0	%

Batch Information

Analytical Batch: VFC16660
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: CWD
Analytical Date/Time: 10/20/2023 11:22:00PM

Prep Batch: VXX40673
Prep Method: SW5030B
Prep Date/Time: 10/20/2023 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/15/2023 10:32:14AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [VXX40673]
Blank Spike Lab ID: 1742296
Date Analyzed: 10/21/2023 05:31

Spike Duplicate ID: LCSD for HBN 1235846 [VXX40673]
Spike Duplicate Lab ID: 1742297
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846003, 1235846004, 1235846005

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.968	97	1.00	0.938	94	(60-120)	3.10	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		98	0.0500		95	(50-150)	2.90	

Batch Information

Analytical Batch: **VFC16660**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **CWD**

Prep Batch: **VXX40673**
Prep Method: **SW5030B**
Prep Date/Time: **10/20/2023 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1866523 [VXX/40691]
Blank Lab ID: 1742870

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846004, 1235846005, 1235846006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	LOD	Units
Benzene	0.200U	0.400	0.120	0.200	ug/L
Ethylbenzene	0.500U	1.00	0.310	0.500	ug/L
o-Xylene	0.500U	1.00	0.310	0.500	ug/L
P & M -Xylene	1.00U	2.00	0.620	1.00	ug/L
Toluene	0.500U	1.00	0.310	0.500	ug/L
Xylenes (total)	1.50U	3.00	1.00	1.50	ug/L
Surrogates					
1,2-Dichloroethane-D4 (surr)	102	81-118		0	%
4-Bromofluorobenzene (surr)	103	85-114		0	%
Toluene-d8 (surr)	97.2	89-112		0	%

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JY
Analytical Date/Time: 10/23/2023 3:53:00PM

Prep Batch: VXX40691
Prep Method: SW5030B
Prep Date/Time: 10/23/2023 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Leaching Blank

Blank ID: LB for HBN 1866289 [TCLP/12741
Blank Lab ID: 1742008

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846004, 1235846005, 1235846006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	LOD	Units
Benzene	10.0U	20.0	6.00	10.0	ug/L
Surrogates					
1,2-Dichloroethane-D4 (surr)	99.9	81-118		0	%
4-Bromofluorobenzene (surr)	101	85-114		0	%
Toluene-d8 (surr)	97.7	89-112		0	%

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JY
Analytical Date/Time: 10/23/2023 11:45:00PM

Prep Batch: VXX40691
Prep Method: SW5030B
Prep Date/Time: 10/23/2023 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [VXX40691]
Blank Spike Lab ID: 1742871
Date Analyzed: 10/23/2023 16:08

Spike Duplicate ID: LCSD for HBN 1235846 [VXX40691]
Spike Duplicate Lab ID: 1742872
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846004, 1235846005, 1235846006

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.5	102	30	30.3	101	(79-120)	0.53	(< 20)
Ethylbenzene	30	29.0	97	30	29.1	97	(79-121)	0.28	(< 20)
o-Xylene	30	29.2	97	30	29.0	97	(78-122)	0.45	(< 20)
P & M -Xylene	60	58.0	97	60	58.1	97	(80-121)	0.19	(< 20)
Toluene	30	29.1	97	30	28.8	96	(80-121)	0.93	(< 20)
Xylenes (total)	90	87.1	97	90	87.1	97	(79-121)	0.02	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		96	30		95	(81-118)	1.20	
4-Bromofluorobenzene (surr)	30		100	30		101	(85-114)	0.69	
Toluene-d8 (surr)	30		100	30		99	(89-112)	0.07	

Batch Information

Analytical Batch: **VMS22922**
Analytical Method: **SW8260D**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **JY**

Prep Batch: **VXX40691**
Prep Method: **SW5030B**
Prep Date/Time: **10/23/2023 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235846006
MS Sample ID: 1235846007 BMS
MSD Sample ID: 1235846008 BMSD

Analysis Date: 10/23/2023 23:30
Analysis Date: 10/24/2023 0:29
Analysis Date: 10/24/2023 0:44
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260D**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.790	30.0	32.2	105	30.0	31.9	104	79-120	0.75	(< 20)
Ethylbenzene	0.420J	30.0	29.9	98	30.0	29.4	97	79-121	1.80	(< 20)
o-Xylene	1.94	30.0	31.7	99	30.0	31.0	97	78-122	2.30	(< 20)
P & M -Xylene	2.81	60.0	61.4	98	60.0	61.1	97	80-121	0.56	(< 20)
Toluene	0.690J	30.0	30.6	100	30.0	30.1	98	80-121	1.70	(< 20)
Xylenes (total)	4.75	90.0	93.1	98	90.0	92.0	97	79-121	1.10	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	28	93	30.0	27.6	92	81-118	1.60	
4-Bromofluorobenzene (surr)		30.0	30.5	102	30.0	30.8	103	85-114	1.20	
Toluene-d8 (surr)		30.0	29.9	100	30.0	29.9	100	89-112	0.00	

Batch Information

Analytical Batch: VMS22922
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JY
Analytical Date/Time: 10/24/2023 12:29:00AM

Prep Batch: VXX40691
Prep Method: Volatiles Extraction 8240/8260
Prep Date/Time: 10/23/2023 6:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 11/15/2023 10:32:26AM

Method Blank

Blank ID: MB for HBN 1866196 [XXX/48878]
Blank Lab ID: 1741491

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

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

Parameter	Results	LOQ/CL	DL	LOD	Units
1-Methylnaphthalene	0.0154J	0.0500	0.0150	0.0250	ug/L
2-Methylnaphthalene	0.0273J	0.0500	0.0150	0.0250	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	0.0250	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	0.0250	ug/L
Anthracene	0.0250U	0.0500	0.0150	0.0250	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	0.0250	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	0.0100	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	0.0250	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	0.0250	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	0.0250	ug/L
Chrysene	0.0250U	0.0500	0.0150	0.0250	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	0.0100	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	0.0250	ug/L
Fluorene	0.0250U	0.0500	0.0150	0.0250	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	0.0250	ug/L
Naphthalene	0.0500U	0.100	0.0310	0.0500	ug/L
Phenanthrene	0.0469J	0.100	0.0310	0.0500	ug/L
Pyrene	0.0250U	0.0500	0.0150	0.0250	ug/L
Surrogates					
2-Methylnaphthalene-d10 (surr)	63.2	38-100		0	%
Fluoranthene-d10 (surr)	81.6	30-111		0	%

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent 8890 GC/MS SYA
Analyst: HMW
Analytical Date/Time: 10/27/2023 10:54:00PM

Prep Batch: XXX48878
Prep Method: SW3535A
Prep Date/Time: 10/18/2023 10:00:00AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [XXX48878]
Blank Spike Lab ID: 1741492
Date Analyzed: 10/27/2023 23:10

Spike Duplicate ID: LCSD for HBN 1235846 [XXX48878]
Spike Duplicate Lab ID: 1741493
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

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

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	2	1.52	76	2	1.31	65	(41-115)	14.80	(< 20)
2-Methylnaphthalene	2	1.67	83	2	1.36	68	(39-114)	19.90	(< 20)
Acenaphthene	2	1.79	89	2	1.67	83	(48-114)	6.90	(< 20)
Acenaphthylene	2	1.72	86	2	1.65	82	(35-121)	4.20	(< 20)
Anthracene	2	1.70	85	2	1.58	79	(53-119)	7.40	(< 20)
Benzo(a)Anthracene	2	1.72	86	2	1.69	85	(59-120)	1.70	(< 20)
Benzo[a]pyrene	2	1.89	95	2	1.88	94	(53-120)	0.67	(< 20)
Benzo[b]Fluoranthene	2	1.97	99	2	1.97	99	(53-126)	0.19	(< 20)
Benzo[g,h,i]perylene	2	1.99	100	2	2.00	100	(44-128)	0.54	(< 20)
Benzo[k]fluoranthene	2	1.95	98	2	1.92	96	(54-125)	1.90	(< 20)
Chrysene	2	1.77	88	2	1.81	91	(57-120)	2.30	(< 20)
Dibenzo[a,h]anthracene	2	1.85	92	2	1.87	94	(44-131)	1.50	(< 20)
Fluoranthene	2	1.80	90	2	1.78	89	(58-120)	0.63	(< 20)
Fluorene	2	1.79	90	2	1.70	85	(50-118)	5.10	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.97	99	2	1.95	98	(48-130)	0.78	(< 20)
Naphthalene	2	1.60	80	2	1.33	67	(43-114)	18.50	(< 20)
Phenanthrene	2	1.89	94	2	1.87	93	(53-115)	1.10	(< 20)
Pyrene	2	1.83	91	2	1.84	92	(53-121)	0.67	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		71	2		62	(38-100)	13.30	
Fluoranthene-d10 (surr)	2		81	2		82	(30-111)	0.44	

Batch Information

Analytical Batch: **XMS14050**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **Agilent 8890 GC/MS SYA**
Analyst: **HMW**

Prep Batch: **XXX48878**
Prep Method: **SW3535A**
Prep Date/Time: **10/18/2023 10:00**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235846006
MS Sample ID: 1235846007 BMS
MSD Sample ID: 1235846008 BMSD

Analysis Date: 10/28/2023 2:23
Analysis Date: 10/28/2023 2:39
Analysis Date: 10/28/2023 2:55
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

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

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.358	2.13	1.79	68	2.04	1.81	71	41-115	0.70	(< 20)
2-Methylnaphthalene	0.372	2.13	1.9	72	2.04	1.91	76	39-114	0.51	(< 20)
Acenaphthene	0.0266U	2.13	1.68	79	2.04	1.65	81	48-114	1.60	(< 20)
Acenaphthylene	0.0266U	2.13	1.62	76	2.04	1.57	77	35-121	3.00	(< 20)
Anthracene	0.0266U	2.13	1.6	75	2.04	1.57	77	53-119	2.00	(< 20)
Benzo(a)Anthracene	0.0266U	2.13	1.83	86	2.04	1.69	83	59-120	8.20	(< 20)
Benzo[a]pyrene	0.0107U	2.13	1.89	89	2.04	1.70	83	53-120	10.60	(< 20)
Benzo[b]Fluoranthene	0.0266U	2.13	1.91	90	2.04	1.69	83	53-126	12.20	(< 20)
Benzo[g,h,i]perylene	0.0266U	2.13	1.73	81	2.04	1.58	77	44-128	9.00	(< 20)
Benzo[k]fluoranthene	0.0266U	2.13	2.04	96	2.04	1.86	91	54-125	9.10	(< 20)
Chrysene	0.0266U	2.13	1.83	86	2.04	1.62	80	57-120	12.20	(< 20)
Dibenzo[a,h]anthracene	0.0107U	2.13	1.76	83	2.04	1.62	79	44-131	8.10	(< 20)
Fluoranthene	0.0266U	2.13	1.83	86	2.04	1.70	83	58-120	7.20	(< 20)
Fluorene	0.0266U	2.13	1.73	81	2.04	1.68	83	50-118	2.50	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0266U	2.13	1.78	84	2.04	1.63	80	48-130	8.70	(< 20)
Naphthalene	0.595	2.13	2.17	74	2.04	2.10	74	43-114	3.20	(< 20)
Phenanthrene	0.0530U	2.13	1.86	88	2.04	1.81	89	53-115	2.80	(< 20)
Pyrene	0.0266U	2.13	1.9	89	2.04	1.76	86	53-121	7.50	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.13	1.34	63	2.04	1.35	66	38-100	0.80	
Fluoranthene-d10 (surr)		2.13	1.69	79	2.04	1.57	77	30-111	7.30	

Batch Information

Analytical Batch: XMS14050
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent 8890 GC/MS SYA
Analyst: HMW
Analytical Date/Time: 10/28/2023 2:39:00AM

Prep Batch: XXX48878
Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
Prep Date/Time: 10/18/2023 10:00:00AM
Prep Initial Wt./Vol.: 235.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/15/2023 10:32:32AM

Method Blank

Blank ID: MB for HBN 1866309 [XXX/48897]
Blank Lab ID: 1742079

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

Results by **AK102**

Parameter	Results	LOQ/CL	DL	LOD	Units
Diesel Range Organics	0.300U	0.600	0.200	0.300	mg/L
Surrogates					
5a Androstane (surr)	11.3*	60-120		0	%

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/26/2023 5:22:00PM

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/2023 4:25:00PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:32:34AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [XXX48897]
Blank Spike Lab ID: 1742080
Date Analyzed: 10/26/2023 17:34

Spike Duplicate ID: LCSD for HBN 1235846 [XXX48897]
Spike Duplicate Lab ID: 1742081
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	22.3	112	20	21.4	107	(75-125)	4.20	(< 20)
Surrogates									
5a Androstane (surr)	0.4		107	0.4		109	(60-120)	1.60	

Batch Information

Analytical Batch: **XFC16715**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **T.L**

Prep Batch: **XXX48897**
Prep Method: **SW3520C**
Prep Date/Time: **10/20/2023 16:25**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235846006
MS Sample ID: 1235846007 BMS
MSD Sample ID: 1235846008 BMSD

Analysis Date: 10/26/2023 20:03
Analysis Date: 10/26/2023 20:15
Analysis Date: 10/26/2023 20:27
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK102**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	2.27	21.7	22.7	94	21.7	25.8	108	75-125	12.80	(< 30)
Surrogates										
5a Androstane (surr)		0.435	.458	105	0.435	0.470	108	50-150	2.40	

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/26/2023 8:15:00PM

Prep Batch: XXX48897
Prep Method: Cnt. Liq/Liq Ext. for AK102/3 Low Vol
Prep Date/Time: 10/20/2023 4:25:00PM
Prep Initial Wt./Vol.: 230.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/15/2023 10:32:39AM

Method Blank

Blank ID: MB for HBN 1866309 [XXX/48897]
Blank Lab ID: 1742079

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

Results by **AK103**

Parameter	Results	LOQ/CL	DL	LOD	Units
Residual Range Organics	0.250U	0.500	0.200	0.250	mg/L
Surrogates					
n-Triacontane-d62 (surr)	18.1*	60-120		0	%

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/26/2023 5:22:00PM

Prep Batch: XXX48897
Prep Method: SW3520C
Prep Date/Time: 10/20/2023 4:25:00PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/15/2023 10:32:41AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1235846 [XXX48897]
Blank Spike Lab ID: 1742080
Date Analyzed: 10/26/2023 17:34

Spike Duplicate ID: LCSD for HBN 1235846 [XXX48897]
Spike Duplicate Lab ID: 1742081
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1235846001, 1235846002, 1235846003, 1235846004, 1235846005, 1235846006

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	22.1	111	20	21.6	108	(60-120)	2.60	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		106	0.4		109	(60-120)	3.20	

Batch Information

Analytical Batch: **XFC16715**
Analytical Method: **AK103**
Instrument: **Agilent 7890B R**
Analyst: **T.L**

Prep Batch: **XXX48897**
Prep Method: **SW3520C**
Prep Date/Time: **10/20/2023 16:25**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

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Billable Matrix Spike Summary

Original Sample ID: 1235846006
MS Sample ID: 1235846007 BMS
MSD Sample ID: 1235846008 BMSD

Analysis Date: 10/26/2023 20:03
Analysis Date: 10/26/2023 20:15
Analysis Date: 10/26/2023 20:27
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **AK103**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	1.72	21.7	24.7	106	21.7	24.8	106	60-140	0.73	(< 30)
Surrogates										
n-Triacontane-d62 (surr)		0.435	.452	104	0.435	0.449	103	50-150	0.70	

Batch Information

Analytical Batch: XFC16715
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: T.L
Analytical Date/Time: 10/26/2023 8:15:00PM

Prep Batch: XXX48897
Prep Method: Cnt. Liq/Liq Ext. for AK102/3 Low Vol
Prep Date/Time: 10/20/2023 4:25:00PM
Prep Initial Wt./Vol.: 230.00mL
Prep Extract Vol: 1.00mL

Print Date: 11/15/2023 10:32:45AM

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1235846

Profile #: 364160 Int.: JL

Page 1 of 1

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

Section 1

CLIENT:	Hilcorp co Susitna		
CONTACT:	Melissa Mayer	PHONE #:	907-350-7952
PROJECT NAME:	Beluga River Unit	Project/Permit Number:	
		NPDL Number(DOD):	
REPORTS TO:	Melissa Mayer m.mayer@susitna.com	E-MAIL:	m.mayer@susitna.com
INVOICE TO:	Hilcorp Alaska Amy Peloza	QUOTE #:	235-02460,15.10.28
		P.O. #:	G/L 60005000

Section 2

Section 3 — Preservative: None | MeOH | HCl | HCl | HCl | None | HCl

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Sample Type: Comp / Grab / MI	Analysis*: DRO/RRO, PAH, RCRA	GRO/BTEX/PVOC	AK102/103 DRO/RRO	AK101 GRO	8260 BTEX	8270 SIM PAH	AK102 DRO				REMARKS/LOC ID
1AB	FG24-101223 a	10/12/2023	1406	W	2	Grab							X				
1CD	FG24-101223 b	10/12/2023	1406	W	2	Grab						X					
2AB	FG28-101223 c	10/12/2023	1145	W	2	Grab							X				
2CD	FG28-101223 d	10/12/2023	1145	W	2	Grab						X					
3AF	224-13-2-101223 e	10/12/2023	931	W	6	Grab				X	X						
3GH	224-13-2-101223 f	10/12/2023	931	W	2	Grab			X								
3IJ	224-13-2-101223 g	10/12/2023	931	W	2	Grab						X					
4AF	224-13-3-101323 h	10/13/2023	913	W	6	Grab				X	X						
4GH	224-13-3-101323 i	10/13/2023	913	W	2	Grab			X								
4IJ	224-13-3-101323 j	10/13/2023	913	W	2	Grab						X					
5AF	224-13-5-101323 k	10/13/2023	1158	W	6	Grab				X	X						
5GH	224-13-5-101323 l	10/13/2023	1158	W	2	Grab			X								
5IJ	224-13-5-101323 m	10/13/2023	1158	W	2	Grab						X					
6AF	224-13-4-101323 n	10/13/2023	1532	W	12	Grab				X	X						MS/MSD 7AC 8AC
6GH	224-13-4-101323 o	10/13/2023	1532	W	4	Grab			X								MS/MSD 7D 8D
6IJ	224-13-4-101323 p	10/13/2023	1532	W	4	Grab						X					MS/MSD 7E 8E

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Comments: 9AC TRIP BLANK dpl

Section 4

DOD Project? YES NO X

Data Deliverables Requested

DataView SEDD EQUIS

Level 4 ERPIMS Other:_____

Turnaround Time Requested

[redacted]

Rush

Requested Rush Report Date:_____

SGS Sample Receipt (Lab Use Only)

Delivery Method: Client Commercial

Did each cooler have a corresponding COC? Yes No

Chain of Custody Seal Condition: INTACT BROKEN ABSENT

COC Seal Location(s): 2F

Section 5

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	Cooler ID	Temperature (°C)	Therm. ID
1. Melissa Mayer	10/16/2023	1300		1. (	1.9	D31
				2.		
				3.		
	10/16/23	1403				

If more than three coolers are received, or for documentation of non-compliant coolers, use form FS-0029.

Note: If temp. is outside 0-6° and samples were not taken <8 hours ago OR are waste samples, Client or PM should initial here or attach an email change order to proceed with analysis. If ice is present, note on form F102B.

Initials:_____

Laboratory Use Only

1235846

SGS

SAMPLE RECEIPT FORM

Project Manager Completion				
Was all necessary information recorded on the COC upon receipt? (temperature, COC seals, etc.?)	Yes	No	N/A	
Was temperature between 0-6° C?	Yes	No	N/A	If "No", are the samples either exempt* or sampled <8 hours prior to receipt?
Were all analyses received within holding time*?	Yes	No	N/A	
Was a method specified for each analysis, where applicable? If no, please note correct methods.	Yes	No	N/A	
Are compound lists specified, where applicable? For project specific or special compound lists please note correct analysis code.	Yes	No	N/A	
If rush was requested by the client, was the requested TAT approved?	Yes	No	N/A	If "NO", what is the approved TAT?
If SEDD Deliverables are required, were Location ID's and an NPDL Number provided?	Yes	No	N/A	*If "NO", contact client for information.*
Sample Login Completion				
Do ID's on sample containers match COC?	Yes	No	N/A	
If provided on containers, do dates/times collected match COC?	Yes	No	N/A	Note: If times differ <1 hr., record details below and login per COC.
Were all sample containers received in good condition?	Yes	No	N/A	
Were proper containers (type/mass/volume/preservative) received for all samples? **See form F-083 "Sample Guide"*	Yes	No	N/A	*Note: If 200.8/6020 Total Metals are received unpreserved, preserve and note HNO3 lot here: If 200.8/6020 Dissolved Metals are received unpreserved, log in for LABFILTER and do not preserve. For all non-metals methods, inform Project Manager.* Limited Vol. for MS/MSD
Were Trip Blanks (VOC, GRO, Low-Level Hg, etc.) received with samples, where applicable*?	Yes	No	N/A	
Were all VOA vials free of headspace >6mm?	Yes	No	N/A	
Were all soil VOA samples received field extracted with Methanol?	Yes	No	N/A	
Did all soil VOA samples have an accompanying unpreserved container for % solids?	Yes	No	N/A	
If special handling is required, were containers labelled appropriately? e.g. MI/ISM, foreign soils, lab filter, Ref Lab, limited volume	Yes	No	N/A	Limited Volume, SPIKE
For Rush/Short Holding time, was the lab notified?	Yes	No	N/A	
For any question answered "NO", was the Project Manager notified?	Yes	No	N/A	PM Initials:
Was Peer Review of sample numbering/labelling completed?	Yes	No	N/A	Reviewer Initials: HGS
Additional Notes/Clarification where Applicable, including resolution of "No" answers when a change order is not attached:				

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1235846001-A	HCL to pH < 2	OK	1235846007-B	HCL to pH < 2	OK
1235846001-B	HCL to pH < 2	OK	1235846007-C	HCL to pH < 2	OK
1235846001-C	HCL to pH < 2	OK	1235846007-D	HCL to pH < 2	OK
1235846001-D	HCL to pH < 2	OK	1235846007-E	No Preservative Required	OK
1235846002-A	HCL to pH < 2	OK	1235846008-A	HCL to pH < 2	OK
1235846002-B	HCL to pH < 2	OK	1235846008-B	HCL to pH < 2	OK
1235846002-C	HCL to pH < 2	OK	1235846008-C	HCL to pH < 2	OK
1235846002-D	HCL to pH < 2	OK	1235846008-D	HCL to pH < 2	OK
1235846003-A	HCL to pH < 2	OK	1235846008-E	No Preservative Required	OK
1235846003-B	HCL to pH < 2	OK	1235846009-A	HCL to pH < 2	OK
1235846003-C	HCL to pH < 2	OK	1235846009-B	HCL to pH < 2	OK
1235846003-D	HCL to pH < 2	OK	1235846009-C	HCL to pH < 2	OK
1235846003-E	HCL to pH < 2	OK			
1235846003-F	HCL to pH < 2	OK			
1235846003-G	HCL to pH < 2	OK			
1235846003-H	HCL to pH < 2	OK			
1235846003-I	No Preservative Required	OK			
1235846003-J	No Preservative Required	OK			
1235846004-A	HCL to pH < 2	OK			
1235846004-B	HCL to pH < 2	OK			
1235846004-C	HCL to pH < 2	OK			
1235846004-D	HCL to pH < 2	OK			
1235846004-E	HCL to pH < 2	OK			
1235846004-F	HCL to pH < 2	OK			
1235846004-G	HCL to pH < 2	OK			
1235846004-H	HCL to pH < 2	OK			
1235846004-I	No Preservative Required	OK			
1235846004-J	No Preservative Required	OK			
1235846005-A	HCL to pH < 2	OK			
1235846005-B	HCL to pH < 2	OK			
1235846005-C	HCL to pH < 2	OK			
1235846005-D	HCL to pH < 2	OK			
1235846005-E	HCL to pH < 2	OK			
1235846005-F	HCL to pH < 2	OK			
1235846005-G	HCL to pH < 2	OK			
1235846005-H	HCL to pH < 2	OK			
1235846005-I	No Preservative Required	OK			
1235846005-J	No Preservative Required	OK			
1235846006-A	HCL to pH < 2	OK			
1235846006-B	HCL to pH < 2	OK			
1235846006-C	HCL to pH < 2	OK			
1235846006-D	HCL to pH < 2	OK			
1235846006-E	HCL to pH < 2	OK			
1235846006-F	HCL to pH < 2	OK			
1235846006-G	HCL to pH < 2	OK			
1235846006-H	HCL to pH < 2	OK			
1235846006-I	No Preservative Required	OK			
1235846006-J	No Preservative Required	OK			
1235846007-A	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
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.

Attachment G ADEC Laboratory Data Review Checklist and Data Quality Memorandums

February 3, 2024

Ms. Melissa Mayer
Susitna Environmental, LLC
8361 Petersburg Street
Anchorage, AK 99507

Subject: Hilcorp Alaska, LLC – 2023 Beluga River Unit Soil Characterization and Groundwater Sampling Quality Assurance Review, SDGs 1235845, and 1235846.

Ms. Mayer,

Attached is the quality assurance review of the laboratory data from soil and groundwater samples collected during field activities at several sites at the Beluga River Unit in October 2023.

In general, the overall quality of the project data was acceptable. Quality control issues that required results to be qualified included blank contamination, surrogate and LCS recoveries, MS/MSD RPDs, and field duplicate imprecision. No results were rejected and qualified data are considered acceptable for use, with the limitations discussed within this QA report and as indicated with the appropriate qualifiers.

If you have questions, please do not hesitate to let me know.

Sincerely,

Kelly Carson
Senior Chemist
ARS Aleut Remediation, LLC

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TABLE OF CONTENTS

TABLES

ATTACHMENTS

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
%	percent
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
Aleut	ARS Aleut Remediation
BRU	Beluga River Unit
CoC	chain-of-custody
DL	detection limit
DRO	diesel range organics
DQO	data quality objective
DQR	data quality report
EPA	U.S. Environmental Protection Agency
GRO	gasoline range organics
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
MB	method blank
MS	matrix spike
MSD	matrix spike duplicate
ND	non-detect
QA	quality assurance
QC	quality control
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SGS	SGS North America, Inc. in Anchorage, AK
TB	trip blank

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1. INTRODUCTION

This data quality report (DQR) summarizes the findings of the validation of laboratory data collected during soil characterization and groundwater monitoring at multiple sites at the Beluga River Unit (BRU), Tyonek, Alaska, in October 2023. ARS Aleut Remediation (Aleut) reviewed and validated these data for compliance with quality assurance (QA)/quality control (QC) measures implemented to fulfill quality objectives (DQOs) in the Beluga River Unit 2023 Site Characterization and Groundwater Sampling Work Plan, herein referred to as the Work Plan (Susitna Environmental 2023).

This DQR includes the following supporting documentation:

- Attachment 1: Sample summary
- Attachment 2: Alaska Department of Environmental Conservation (ADEC) Laboratory Data Review Checklists

2. DATA VALIDATION PROCEDURES

The Stage 2A data validation was performed by an experienced chemist independent of the analytical laboratory and included a completeness check of the electronic data to verify that data packages and electronic files included all the requested information. Project data were reviewed on an analytical-batch basis by assessing QC samples and associated field sample results. Laboratory reporting and data validation were consistent with the ADEC Technical Memorandum Guidelines for Data Reporting (ADEC 2022).

Analytical results outside QC parameters are discussed in Section 3.0 and in the associated ADEC Laboratory Data Review Checklist completed for each sample delivery group (SDG) (Attachment 2). Analytical DQOs were considered met when the quality of the sample data met precision, accuracy, representativeness, completeness, comparability, and sensitivity requirements. Laboratory data were evaluated using the QC criteria in the Work Plan, the ADEC Guidelines for Data Reporting (ADEC 2022), specific method guidance, and laboratory control limits for precision and accuracy.

The following information was reviewed as part of the Stage 2A data validation:

- Sample handling and chain-of-custody (CoC)
- Sample preservation and holding time compliance
- Field QC samples, including trip blanks (TBs) and field duplicates
- Sample reporting limits, including limits of detection (LOD) and limits of quantitation (LOQ), compared to project requirements
- Method blanks (MBs)

- Laboratory control sample (LCS) and LCS duplicate (LCSD) recoveries
- Surrogate spike recoveries
- Matrix spike (MS) and MS duplicate (MSD) recoveries
- Precision, including relative percent difference (RPD) values for duplicate analyses
- Laboratory case narrative and laboratory qualifiers

The data validation identified results requiring qualification based on the definitions provided in Table 1.

Table 1 Validation Qualifiers

QUALIFIER	DESCRIPTION
U	Analyte was not detected and the value shown is the LOD.
UJ	Analyte was not detected and the LOD is an estimated value due to a QC failure.
J (±)	Analyte result is considered an estimated value biased high/low/indeterminate.
B	Analyte result is considered a high estimated value due to contamination present in an associated blank (e.g., MB or TB).
H	Analyte result is considered an estimated value, biased low, due to a holding time exceedance.
R	Analyte result is rejected and considered not usable.

Notes:
For definitions, see the Acronyms and Abbreviations section.

Qualification was not required in the following circumstances:

- Analyte was detected in the associated blank, with no detection in the associated sample(s).
- MS/MSD or LCS/LCSD recoveries exceeded upper control limits with no detection in the associated sample(s).
- Surrogate recovery exceeded the upper control limit and there were no detections for associated analytes in the sample.
- Surrogate or MS recoveries outside QC limits, and the sample was diluted by a factor of 5 or greater.
- MS recoveries outside QC limits, and the concentration of spike added was less than the parent sample concentration.

Data were considered for rejection if any of the following occurred:

- LCS recovery is less than 10 percent (%), and the associated sample result is non-detect (ND).

- The result is ND and missed holding time greater than two times the method-specified holding time.
- Surrogate recovery is less than 10 %, and the associated sample result is ND (dilution factor less than 5).

3. DATA QUALITY REVIEW AND ASSESSMENT

SGS North America, Inc. (SGS) in Anchorage, Alaska, was the primary laboratory for this project and held current ADEC laboratory approval and U.S. Department of Defense Environmental Laboratory Accreditation Program certifications for all requested methods at the time of analysis. Samples were prepared and analyzed in accordance with the analytical methods in Test Methods for Evaluating Solid Waste SW-846 (U.S. Environmental Protection Agency [EPA] 2020); ADEC Underground Storage Tanks Procedures Manual (ADEC 2017); and laboratory standard operating procedures.

The following sections summarize the findings of the data validation, including non-conformances of data that required results to be qualified. Qualified results are considered estimated, and whenever possible, the direction of potential bias was assigned, and effects, if any, on usability are discussed therein. Results that were not qualified are considered valid and usable based on the QA/QC criteria that were reviewed.

3.1 Field Sampling Quality Control

Ten primary soil samples, one soil field duplicate sample, four primary groundwater samples, two groundwater field duplicate samples, and two trip blanks were shipped to Anchorage and delivered to SGS for analysis. Table 2 summarizes the numbers of samples, QC samples, and analytical methods for the project.

Table 2 Field Quality Control Sample Summary

ANALYTICAL METHOD	MATRIX	PRIMARY SAMPLES	FIELD DUPLICATES	MS/MSD	TRIP BLANK
AK 101 GRO	SO	10	1	1	1
AK102 DRO	SO	10	1	1	--
AK103 RRO	SO	9	1	1	--
SW8260D	SO	10	1	1	1
SW8270D-SIM PAH	SO	10	1	1	--
SW6020B	SO	8	1	1	--
AK 101 GRO	GW	3	1	1	1
AK102 DRO	GW	4	2	1	--
AK103 RRO	GW	3	1	1	--

Table 3 Field Quality Control Sample Summary

ANALYTICAL METHOD	MATRIX	PRIMARY SAMPLES	FIELD DUPLICATES	MS/MSD	TRIP BLANK
SW8260D	GW	3	1	1	1
SW8270D-SIM PAH	GW	4	2	1	--

Notes:
For definitions, see the Acronyms and Abbreviations section.

3.2 Sample Condition Upon Receipt

The laboratory cooler receipt form, submitted CoC form, and report case narrative were reviewed to assess sample documentation and handling procedures that may affect the integrity of the samples and the quality of the resulting data. The CoC was appropriately signed and dated by field and laboratory personnel. All samples were received intact and chilled with gel ice.

The temperature blank for Cooler 1, associated with SDG 1235845, was -0.1 degrees Celsius (°C); however, the laboratory noted that no samples were frozen. All other coolers associated with this DQR were within the required temperature range of 0 to 6 °C. Custody seals were noted as intact upon arrival by SGS.

3.3 Holding Time Compliance

All samples were extracted and analyzed within method-specified holding times.

3.4 Precision

Precision was assessed by evaluating the RPD between LCS/LCSD, MS/MSD, and primary/duplicate samples.

3.4.1 Field Duplicate Precision

For the soil samples (SDG 1235845), one primary/duplicate pair was submitted, LPAD-SB03-5.0-7.0/ LPAD-SB05-5.0-7.0, as part of this DQR. All primary/duplicate RPDs were within control limits.

For the groundwater samples (SDG 1235846), two primary/duplicate pairs, 224-13-5-101323/224-13-5-101323 and FG24-101223/FG28-101223, are part of this DQR. The 2-methylnaphthalene RPD (42%) exceeded the criteria for the FG24-101223/FG28-101223 primary/duplicate pair. 2-Methylnaphthalene results in both samples were flagged “J” to indicate an indeterminate bias. Both results were below the ADEC Table C groundwater cleanup level, and data quality/usability is unaffected. All other primary/duplicate RPDs were within control limits.

3.4.2 Laboratory Control Sample Duplicate

All LCS/LCSD RPDs were within control limits.

3.4.3 Matrix Spike Duplicate

For SDG 1235845, one MS/MSD was submitted, based on sample LPAD-SB02-13.5-15.0 for 10 primary samples. The MS/MSD RPD for n-hexane (22.5%) exceeded the criterion of 20% in the sample; the parent sample result was ND and qualification was not required. All other MS/MSD RPDs were within control limits.

For SDG 1235846, one MS/MSD was submitted, based on sample 224-13-4-101323 for four primary samples. All MS/MSD RPDs were within control limits.

Data quality and usability are unaffected.

3.5 Accuracy

Accuracy was assessed by reviewing blank results, LCS/LCSD recoveries, MS/MSD recoveries, and surrogate recoveries.

3.5.1 Blank Sample Analysis

For SDG 1235846, 1-methylnaphthalene, 2-methylnaphthalene, and phenanthrene were detected in the method blank for SW8270D-SIM prep batch XXX48878, associated with this DQR. For SDG 1235845, Gasoline range organics (GRO) were detected in the method blanks for AK101 prep batches VXX40707 and VXX40708; diesel range organics (DRO) were detected in the method blank for AK102 prep batch XXX48904. All method blank detections were below the LOQ.

Detected results in the following associated samples were within 10 times the amount found in the method blank and were qualified as estimated “B”: 1-Methylnaphthalene in samples 224-13-3-101323 and 224-13-5-101323; 2-Methylnaphthalene in samples 224-13-3-101323, 224-13-5-101323, FG24-101223, and FG28-101223; Phenanthrene in samples 224-13-2-101223, FG24-101223, and FG28-101223; GRO in samples APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0; DRO, APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0.

These blank detections had no impact on data quality or usability. The concentration of the target analytes in all project samples was below the ADEC cleanup levels.

3.5.2 Laboratory Control Sample Recoveries

For SDG 1235845, the recoveries of DRO (132%) exceeded the upper control limit of 125%.; the recoveries of residual range organics (RRO) (130%) exceeded the upper control limit of 120%. DRO results for samples AK102: LPAD-SB05-5.0-7.0, LPAD-SB04-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB03-13.0-15.0, LPAD-SB02-13.5-15.0, LPAD-SB01-5.0-7.0, LPAD-SB01-14.0-15.0, and APAD-SB01-14.0-15.0, and RRO results for samples LPAD-SB04-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB03-13.0-15.0, and LPAD-SB02-13.5-15.0 were qualified J+. The LCS recovery exceedances had no impact on data quality or usability. J+ qualification indicates a potential high bias, and all affected results were below project screening levels.

All other LCS and LCSD recoveries were within control limits.

3.5.3 Matrix Spike Recoveries

All recoveries for MS/MSD prepared and analyzed from project samples were within control limits. Data quality and usability are unaffected.

3.5.4 Surrogate Recoveries

For SDG 1235845, the recoveries of 1-Bromo-4-fluorobenzene (223%) for method AK101 were above the upper control limit (150%) for sample MPAD-SB02-7.5-8.5. GRO results for MPAD-SB02-7.5-8.5 were qualified J+. The surrogate recovery exceedance had no impact on data quality or usability. J+ qualification indicates a potential high bias, and all affected results were below project screening levels.

All other surrogate recoveries were within control limits. Data quality and usability are unaffected.

3.5.5 Trip Blanks

GRO was detected in the trip blank associated with SDG 1235846. GRO in the following samples were less than 10x the amounts found in the trip blank and were qualified as estimated, “B”, for potential high bias: APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0. Data quality and usability are unaffected, as all affected samples had GRO concentrations well below the ADEC cleanup levels.

3.6 Representativeness

Representativeness is a qualitative parameter used to assess whether sample results are representative of true site conditions. Representativeness relative to analytical measurements is influenced primarily by the application of consistent sampling and analytical methodology.

Samples were collected following established procedures, and samples were analyzed using standard methods. Project samples are considered to be representative of true site conditions.

3.7 Comparability

Comparability is a qualitative indicator of the confidence with which one dataset can be compared to another. Project data set comparability is considered acceptable based on the following:

- Project samples were analyzed using standard methods, and results were reported in standard units in accordance with the Work Plan and consistent with prior sampling events.
- Laboratory analyses were performed in accordance with the analytical methods and laboratory QA/QC procedures. The same laboratory was used as in prior sampling events.

3.8 Completeness

Completeness is a measure of the amount of valid data obtained compared with the amount that was expected to be obtained under correct, normal conditions. No results were rejected or were otherwise determined to be unusable as qualified. Completeness for sample results from this site was calculated at 100%. The calculated completeness meets the minimum goal of 85% in ADEC's Underground Storage Tank Procedures Manual (ADEC 2017) and is considered acceptable for this project.

3.9 Sensitivity

Sensitivity describes the lowest concentration that the analytical method can reliably quantify and is evaluated by verifying that detected results and sample reporting limits meet the regulatory criteria. SGS reported ND results at the LOD and detected results below the LOQ and greater than or equal to the detection limit (DL), which are flagged as estimated ("J").

For ND groundwater results, the LOD was compared to the 18 AAC 75 Table C groundwater cleanup level (ADEC 2024). For ND soil results, the LOD was compared to the 18 Alaska Administrative Code (AAC) 75, Table B1 human health and Table B2 most conservative of ingestion and inhalation cleanup levels for the under 40-inch zone (ADEC 2024) and 18 AAC 75, Tables B1 and B2 migration to groundwater cleanup levels (ADEC 2024) to determine if the sensitivity was adequate to meet the DQOs. For SDG 1235845, the LOD for 1,2-dibromoethane was greater than ADEC migration to groundwater cleanup levels for all soil samples due to limitations in the sensitivity of the analytical method. The sensitivity requirements for ADEC human health cleanup levels for the under 10-inch zone were achieved.

The LOD for naphthalene exceeded 18 AAC 75, Tables B1 and B2 migration to groundwater cleanup levels (ADEC 2024) cleanup levels for sample LPAD-SB02-9.0-9.5, likely due to matrix

interference. However, naphthalene was also assessed via SW8270D-SIM. Sensitivity requirements were achieved, and the result was also ND.

4. OVERALL DATA QUALITY AND USABILITY ASSESSMENT

In general, the overall quality of the project data was acceptable. No data were rejected, and completeness met project objectives. All project data are considered acceptable for use within the limitations discussed within this DQR and as indicated by any validation qualifiers that were applied to the results.

5. REFERENCES

ADEC (Alaska Department of Environmental Conservation). 2023 (October). Oil and Other Hazardous Substances Pollution Control. 18 AAC 75.

ADEC. 2022 (August). Guidelines for Data Reporting. Technical Memorandum 22-001.

ADEC. 2017 (March). Underground Storage Tanks Procedures Manual. Division of Spill Prevention and Response. Contaminated Sites Program.

EPA (U.S. Environmental Protection Agency) 2020 (June). Test Methods for Evaluating Solid Waste. SW846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), Update VI (2018), and Update VII (2020).

Susitna Environmental. 2023 (September). Beluga River Unit 2023-2024 Site Characterization and Groundwater Sampling Work Plan.

ATTACHMENT 1
SAMPLE SUMMARY

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ATTACHMENT 1 - SAMPLE SUMMARY

2023 BELUGA RIVER UNIT SOIL CHARACTERIZATION AND GROUNDWATER SAMPLING

Site	LocationID	COCSampleID	Collection Date	Collect Time	Matrix	QCType	Qty	Cont. Vol.	Container Type	Preservative	Analytical Method Requested	TAT	Sample Depth (ft bgs)	Lab	SDG
ADTF	SB01	APAD-SB01-14.0-15.0	10/12/2023	1655	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (BTEX)	STD	14.0-15.0	SGS	1235845
ADTF	SB01	APAD-SB01-14.0-15.0	10/12/2023	1655	SO		1	4 oz	amber glass jar	0-6°C	AK102, SW8270D SIM	STD	14.0-15.0	SGS	1235845
221-23	SB01	LPAD-SB01-5.0-7.0	10/13/2023	0930	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	5.0-7.0	SGS	1235845
221-23	SB01	LPAD-SB01-5.0-7.0	10/13/2023	0930	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	5.0-7.0	SGS	1235845
221-23	SB01	LPAD-SB01-14.0-15.0	10/13/2023	0935	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	14.0-15-0	SGS	1235845
221-23	SB01	LPAD-SB01-14.0-15.0	10/13/2023	0935	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	14.0-15-0	SGS	1235845
221-23	SB02	LPAD-SB02-9.0-9.5	10/13/2023	1020	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	9.0-9.5	SGS	1235845
221-23	SB02	LPAD-SB02-9.0-9.5	10/13/2023	1020	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	9.0-9.5	SGS	1235845
221-23	SB02	LPAD-SB02-13.5-15.0	10/13/2023	1015	SO	MS/MSD	2	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	13.5-15.0	SGS	1235845
221-23	SB02	LPAD-SB02-13.5-15.0	10/13/2023	1015	SO	MS/MSD	2	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	13.5-15.0	SGS	1235845
221-23	SB03	LPAD-SB03-5.0-7.0	10/13/2023	1100	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	5.0-7.0	SGS	1235845
221-23	SB03	LPAD-SB03-5.0-7.0	10/13/2023	1100	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	5.0-7.0	SGS	1235845
221-23	SB03	LPAD-SB03-13.0-15.0	10/13/2023	1110	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	13.0-15.0	SGS	1235845
221-23	SB03	LPAD-SB03-13.0-15.0	10/13/2023	1110	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	13.0-15.0	SGS	1235845
221-23	SB04	LPAD-SB04-5.0-7.0	10/13/2023	1140	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	5.0-7.0	SGS	1235845
221-23	SB04	LPAD-SB04-5.0-7.0	10/13/2023	1140	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	5.0-7.0	SGS	1235845
221-23	SB04	LPAD-SB04-13.0-15.0	10/13/2023	1145	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	13.0-15.0	SGS	1235845
221-23	SB04	LPAD-SB04-13.0-15.0	10/13/2023	1145	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	13.0-15.0	SGS	1235845
221-23	SB03	LPAD-SB05-5.0-7.0	10/13/2023	1105	SO	DUP	1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	5.0-7.0	SGS	1235845
221-23	SB03	LPAD-SB05-5.0-7.0	10/13/2023	1105	SO	DUP	1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM, RCRA metals	STD	5.0-7.0	SGS	1235845
224-13	SB02	MPAD-SB02-7.5-8.5	10/13/2023	1500	SO		1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	7.5-8.5	SGS	1235845
224-13	SB02	MPAD-SB02-7.5-8.5	10/13/2023	1500	SO		1	4 oz	amber glass jar	0-6°C	AK102/AK103, SW8270D SIM	STD	7.5-8.5	SGS	1235845
--	--	TRIP BLANK	10/12/2023	1200	SO	TB	1	4 oz	amber glass jar w/septa	MeOH, 0-6°C	AK101, SW8260D (Petroleum VOCs)	STD	--	SGS	1235845
Pump Area Assess.	FG-24	FG24-101223	10/12/2023	1406	GW		2	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102	STD		SGS	1235846
Pump Area Assess.	FG-24	FG24-101223	10/12/2023	1406	GW		2	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
Pump Area Assess.	FG-24	FG28-101223	10/12/2023	1145	GW	DUP	2	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102	STD		SGS	1235846
Pump Area Assess.	FG-24	FG28-101223	10/12/2023	1145	GW	DUP	2	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
224-13	224-13-2	224-13-2-101223	10/12/2023	0931	GW		6	40-ml	VOA vial	HCl to pH<2, 0-6°C	AK101, SW8260D (BTEX)	STD		SGS	1235846
224-13	224-13-2	224-13-2-101223	10/12/2023	0931	GW		2	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102/AK103	STD		SGS	1235846
224-13	224-13-2	224-13-2-101223	10/12/2023	0931	GW		2	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
224-13	224-13-3	224-13-3-101323	10/13/2023	0913	GW		6	40-ml	VOA vial	HCl to pH<2, 0-6°C	AK101, SW8260D (BTEX)	STD		SGS	1235846
224-13	224-13-3	224-13-3-101323	10/13/2023	0913	GW		2	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102/AK103	STD		SGS	1235846
224-13	224-13-3	224-13-3-101323	10/13/2023	0913	GW		2	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
224-13	224-13-3	224-13-5-101323	10/13/2023	1158	GW	DUP	6	40-ml	VOA vial	HCl to pH<2, 0-6°C	AK101, SW8260D (BTEX)	STD		SGS	1235846
224-13	224-13-3	224-13-5-101323	10/13/2023	1158	GW	DUP	2	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102/AK103	STD		SGS	1235846
224-13	224-13-3	224-13-5-101323	10/13/2023	1158	GW	DUP	2	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
224-13	224-13-4	224-13-4-101323	10/13/2023	1532	GW	MS/MSD	12	40-ml	VOA vial	HCl to pH<2, 0-6°C	AK101, SW8260D (BTEX)	STD		SGS	1235846
224-13	224-13-4	224-13-4-101323	10/13/2023	1532	GW	MS/MSD	4	250 mL	amber glass jar	HCl to pH<2, 0-6°C	AK102/AK103	STD		SGS	1235846
224-13	224-13-4	224-13-4-101323	10/13/2023	1532	GW	MS/MSD	4	250 mL	amber glass jar	0-6°C	SW8270D SIM	STD		SGS	1235846
--	224-13-4	TRIP BLANK	10/12/2023	1200	GW	TB	3	40-ml	VOA vial	HCl to pH<2, 0-6°C	AK101, SW8260D (BTEX)	STD		SGS	1235846

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ATTACHMENT 2
ADEC LABORATORY DATA REVIEW CHECKLISTS

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ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Jordan M. Couture	**CS Site Name:**	Beluga River Unit 221-23 / Beluga River Abandoned Diesel Tank Farm	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	2337.38.026 / 2337.38.015	**Lab Report No.:**	1235845
Consulting Firm:	ARS Aleut Remediation	**Hazard ID No.:**	656 / 1000	**Lab Report Date:**	11/03/23

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

1. Laboratory

a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?
Yes ☒ No ☐ N/A ☐
Comments: All samples were analyzed by SGS North America, Inc. in Anchorage, AK.

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
Yes ☐ No ☐ N/A ☒
Comments: All samples were analyzed by SGS North America, Inc. in Anchorage, AK

2. Chain of Custody (CoC)

a. Is the CoC information completed, signed, and dated (including released/received by)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Were the correct analyses requested?
Yes ☒ No ☐ N/A ☐
Analyses requested: AK102 (DRO), AK103 RRO, 8270 SIM PAH, RCRA Metals, AK101 GRO, and 8260 Petro-VOCs.
Comments: Click or tap here to enter text.

3. Laboratory Sample Receipt Documentation

a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
Yes ☐ No ☒ N/A ☐
Cooler temperature(s): Click or tap here to enter text.
Sample temperature(s): Cooler #1: -0.1 ° C
Comments: Although the temperature blank temperature was outside of the criterion, SGS noted that all samples were received in good condition.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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, canister not holding a vacuum, etc.?
Yes ☐ No ☐ N/A ☒
Comments: All samples were received in good condition.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability was unaffected.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☒ No ☐ N/A ☐
Comments: : QC issues identified in the case narrative are discussed in the relevant sections of this checklist

c. Were all the corrective actions documented?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

d. What is the effect on data quality/usability according to the case narrative?
Comments: No systemic effects on data quality were noted in the case narrative. The lab noted the following in the case narrative:

Additional effects on data quality and usability are discussed in the relevant sections of this checklist.

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☐ No ☐ N/A ☐
Comments: SW8260D: Due to method limitation, the LODs for 1,2-Dibromoethane were greater than ADEC migration to groundwater cleanup standards in all samples; the LOD for naphthalene exceeded ADEC migration to groundwater cleanup standards in sample LPAD-SB02-9.0-9.5.

e. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☐
Comments: Data quality or usability is minimally affected. In samples LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, LPAD-SB05-5.0-7.0, and MPAD-SB02-7.5-8.5 it cannot be determined with certainty whether 1,2-dibromoethane is absent at concentrations below the cleanup level.
It cannot be determined with certainty whether naphthalene in sample LPAD-SB02-9.0-9.5 is absent at concentrations below the cleanup level; however, naphthalene was also non-detect when analyzed via SW8270D-SIM PAH, where sensitivity requirements were met.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: No target analytes were detected above the LOQ or RL in the method blanks. However, the following analytes were detected in the method blank at concentrations greater than or equal to the DL and below the LOQ

Prep Batch	Method	Analyte
VXX40708	AK101	GRO
VXX40707	AK101	GRO
XXX48904	AK102	DRO

iii. If above LoQ or RL, what samples are affected?
Comments: No target analytes were detected above the LOQ or RL in the method blanks. The following samples had detections within 10 times the method blank and were qualified as estimated, “B”:
- AK101: APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0.
- AK102: APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0, LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: Affected results were qualified “B”. Qualification was not required for results that were more than 10 times the amount found in the method blank.

v. Data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability was unaffected. Blank detection indicated a potential high bias, and all affected results were below the project cleanup levels.

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

i. Organics – Are 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: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are 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: AK102: The recoveries of DRO (132%) exceeded the upper control limit of 125% (batch XXX48904). AK103 The recoveries of RRO (130%) exceeded the upper control limit of 120% (batch XXX48904).

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the 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: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: AK102: LPAD-SB05-5.0-7.0, LPAD-SB04-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB03-13.0-15.0, LPAD-SB02-13.5-15.0, LPAD-SB01-5.0-7.0, LPAD-SB01-14.0-15.0, and APAD-SB01-14.0-15.0.
AK103: LPAD-SB04-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB03-13.0-15.0, and LPAD-SB02-13.5-15.0.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: Detect results in the following samples were flagged "J+" due to LCSD recoveries greater than the criterion. AK102: LPAD-SB05-5.0-7.0, LPAD-SB04-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB03-13.0-15.0, LPAD-SB02-13.5-15.0, LPAD-SB01-5.0-7.0, LPAD-SB01-14.0-15.0, and APAD-SB01-14.0-15.0.

AK103: LPAD-SB01-14.0-15.0, TLPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and MPAD-SB02-7.5-8.5. Non-detect results did not require a data flag.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☐
Comments: Data quality or usability is unaffected. Samples flagged "J+" indicate a potential high bias, and all affected results were below project screening levels. Samples with detect results greater than the LOD but less than the LOQ were flagged “J” to

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: One MS/MSD, based on parent sample LPAD-SB02-13.5-15.0, was submitted for nine project samples as part of this SDG. MS/MSD samples were reported from non-project samples for batch QC; these samples were not evaluated.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: One MS/MSD, based on parent sample LPAD-SB02-13.5-15.0, was submitted for 10 project samples as part of this SDG. An MS/MSD set was reported from a non-project sample for batch QC; this MS/MSD set was not evaluated.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☐ No ☒ N/A ☐
Comments: For the non-project sample based MS/MSD 1236055014(1743800MS)/ 1236055014(1743800MSD), metals MS recoveries for Barium and Chromium do not meet QC criteria. The post digestion spike was successful.

iv. Precision – Are 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: SW8260D: The MS/MSD RPD for n-hexane (22.5) exceeded the criterion of 20%.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: LPAD-SB02-13.5-15.0

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: SW6020B: Parent sample and MS/MSD samples were diluted by a factor greater than 5; therefore, qualification was not required. SW8260D: The parent sample result for N-hexane was non-detect, and qualification was not required.

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Qualification was not required, and data quality or usability is unaffected.

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: Click or tap here to enter text.

ii. Accuracy – Are 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: For LCSD for HBN 1866350 [XXX/4890 the AK102/103 - Surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria.
AK101: Recoveries of 1-Bromo-4-fluorobenzene (223%) were above the upper control limit (150%) for sample MPAD-SB02-7.5-8.5.

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: Qaulification was not required for surrogate recovery failures associated with non-project samples.
AK101:GRO results for MPAD-SB02-7.5-8.5 were flagged J+.

iv. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☐

Comments: Data quality or usability is unaffected. All results flagged “J+“ were either significantly above or below the ADEC migration to groundwater screening levels.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: No target analytes were detected above the LOQ or RL in the trip blank. However, the GRO was detected in the trip blank at concentrations greater than or equal to the DL and below the LOQ.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: No target analytes were detected above the LOQ or RL in the trip blank. However, the GRO was detected in the trip blank at concentrations greater than or equal to the DL and below the LOQ.

iii. If above LoQ or RL, what samples are affected?
Comments: No target analytes were detected above the LOQ or RL in the trip blank. The following samples had detections within 10 times the trip blank. AK101: APAD-SB01-14.0-15.0, LPAD-SB01-14.0-15.0,LPAD-SB01-5.0-7.0, LPAD-SB02-13.5-15.0, LPAD-SB02-9.0-9.5, LPAD-SB03-13.0-15.0, LPAD-SB03-5.0-7.0, LPAD-SB04-13.0-15.0, LPAD-SB04-5.0-7.0, and LPAD-SB05-5.0-7.0. No flag was required for sample MPAD-SB02-7.5-8.5 as the GRO results were greater than 10 times the trip blank concentration.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability was unaffected. Blank detection indicated a potential high bias, and all affected results were below the project cleanup levels.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: One primary/duplicate pair LPAD-SB03-5.0-7.0/ LPAD-SB05-5.0-7.0 was submitted for 10 parent samples are as part of this SDG.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water or air, 50% soil)

$$RPD\ (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| X\ 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☒ N/A ☐
Comments: Equipment blanks were not collected or submitted with this SDG.

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not collected or submitted with this SDG.

iii. If above LoQ or RL, specify what samples are affected.
Comments: Equipment blanks were not collected or submitted with this SDG.

iv. Are data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected. Strict adherence to standard operating procedures mitigated the risk of cross-contamination.

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

a. Are they defined and appropriate?
Yes ☐ No ☐ N/A ☒
Comments: There were no additional laboratory-specific qualifiers applied.

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ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Jordan M. Couture	**CS Site Name:**	Beluga River Pump Area Assessment (E Pad) / Beluga River 221-23	**Lab Name:**	SGS
Title:	Chemist	**ADEC File No.:**	2337.38.031 / 2337.38.021	**Lab Report No.:**	1235846
Consulting Firm:	ARS Aleut Remediation	**Hazard ID No.:**	990 / 989	**Lab Report Date:**	11/15/23

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: All samples were analyzed by SGS North America, Inc. in Anchorage, AK.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: All samples were analyzed by SGS North America, Inc. in Anchorage, AK.

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: 8270D SIM LV (PAH), AK102, SW8260D (BTEX), AK101, and AK103.
   Comments: Click or tap here to enter text.

3. Laboratory Sample Receipt Documentation

a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
Yes ☒ No ☐ N/A ☐
Cooler temperature(s): Click or tap here to enter text.
Sample temperature(s): Cooler #1: 1.9 ° C
Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: All samples were received in good condition.

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, canister not holding a vacuum, etc.?
Yes ☒ No ☐ N/A ☐
Comments: All samples were received in good condition.

e. Is the data quality or usability affected?
Yes ☒ No ☐ N/A ☐
Comments: Data quality or usability is unaffected.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☒ No ☐ N/A ☐
Comments: QC issues identified in the case narrative are discussed in the relevant sections of this checklist

c. Were all the corrective actions documented?
Yes ☒ No ☐ N/A ☐
Comments: No corrective actions were required as part of this SDG.

d. What is the effect on data quality/usability according to the case narrative?
Comments: No systemic effects on data quality were noted in the case narrative. Additional effects on data quality and usability are discussed in the relevant sections of this checklist.

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: No soil samples were submitted or analyzed in this SDG.

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: No target analytes were detected above the LOQ or RL in the method blanks. However, the following analytes were detected in the method blank at concentrations greater than or equal to the DL and below the LOQ.

Prep Batch	Method	Analyte
XXX48878	8270D SIM LV (PAH)	1-Methylnaphthalene
XXX48878	8270D SIM LV (PAH)	2-Methylnaphthalene

XXX48878	8270D SIM LV (PAH)	Phenanthrene

iii. If above LoQ or RL, what samples are affected?
Comments: No target analytes were detected above the LOQ or RL in the method blanks. The following samples had detections within 10 times the method blank: 224-13-2-101223, 224-13-3-101323, 224-13-5-101323, FG24-101223, and FG28-101223.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☒ No ☐ N/A ☐
Comments: Detected results within 10 times the method blank concentration were qualified as estimated, "B", for potential high bias. 8270D SIM LV (PAH): 1-Methylnaphthalene in samples 224-13-3-101323 and 224-13-5-101323. 2-Methylnaphthalene in samples 224-13-3-101323, 224-13-5-101323, FG24-101223, and FG28-101223. Phenanthrene in samples 224-13-2-101223, FG24-101223, and FG28-101223.

v. Data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability was unaffected. Blank detection indicated a potential high bias, and all affected results were below the project cleanup levels.

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

i. Organics – Are 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: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☐ No ☐ N/A ☒
Comments: No metal/inorganic samples were submitted as part of this SDG.

iii. Accuracy – Are 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: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the 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: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Not applicable

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Not applicable.

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected. All QC criteria were met.

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☐ No ☐ N/A ☒
Comments: No metal/inorganic samples were submitted as part of this SDG.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are 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: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Not applicable.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: Not applicable.

vii. Is the data quality or usability affected?
Yes ☐ No ☐ N/A ☐
Comments: Data quality or usability is unaffected. All QC criteria were met.

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: Click or tap here to enter text.

ii. Accuracy – Are 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: For all AK102/103 samples, the method blank surrogate recoveries for 5a-androstane and n-triacontane do not meet QC criteria. The samples were re-extracted outside of hold-time, the results were confirmed, and the in-hold data was reported.
SW8260D: For LCSD for HBN 1866196 [XXX/4887 the surrogate recovery for toluene-d8 does not meet QC criteria. The surrogate meets QC criteria in all other instruments and batch QC

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: Data flags are not required for non-project samples.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: Not applicable.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Data quality or usability is unaffected. All QC criteria were met.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Two primary/duplicate pairs, 224-13-3-101323/224-13-5-101323 and FG24-101223/FG28-101223, were submitted for four primary samples as part of this SDG.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water or air, 50% soil)

$$RPD\ (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| X\ 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐
Comments: The 2-Methylnaphthalene RPD (42%) exceeded the criteria in the FG24-101223/FG28-101223 primary/duplicate pair.

iv. Is the data quality or usability affected? (Explain)

Yes ☐ No ☐ N/A ☐
Comments: 2-Methylnaphthalene results in samples FG24-101223/FG28-101223 were flagged "J" to indicate an indeterminate bias. Both results were below the ADEC Table C groundwater cleanup level, and data quality/usability is unaffected.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☐ N/A ☐
Comments: Equipment blanks were not collected or submitted with this SDG.

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Equipment blanks were not collected or submitted with this SDG.

iii. If above LoQ or RL, specify what samples are affected.
Comments: Equipment blanks were not collected or submitted with this SDG.

iv. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Data quality or usability is unaffected.

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

a. Are they defined and appropriate?
Yes ☐ No ☐ N/A ☒
Comments: There were no additional laboratory-specific qualifiers applied.