SHANNON & WILSON
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

March 26, 2020

Mr. Scott Benda
City of Valdez
300 Airport Road, Suite 201
Valdez, AK 99686

RE: RELEASE INVESTIGATION ACTIVITIES, 1009 WEST KLUTINA STREET, VALDEZ, ALASKA; ADEC FILE NO. 2264026.021 AND 2264.38.044

Dear Mr. Benda,

This letter presents the results of Shannon & Wilson's release investigation activities conducted at the Hermon Hutchins Elementary School (HHES) located at 1009 West Klutina Street in Valdez, Alaska.

BACKGROUND

As documented in our July 2018 *UST Closure and Cleanup Activities, Hermon Hutchens Elementary School, Valdez, Alaska, Facility Identification Number 320* report, one approximately 15,000-gallon underground storage tank (UST) and one approximately 1,000 gallon single-walled UST were removed from the site, in July 2017. The 15,000-gallon UST was located north of the generator building and was used to store fuel for the boilers and emergency generator at the school. The 1,000-gallon UST was located south of the Admin Building and was used to store heating fuel. A vicinity map showing the project site and surrounding area is included as Figure 1. The former locations of the 15,000-gallon and 1,000-gallon USTs are shown on Figure 2.

Petroleum-impacted soil was documented at each tank location during closure. Analytical soil samples collected following removal of the tanks, and over-excavation of impacted soil, indicated that impacted soil remained at each location. Approximately 195 cubic yards of petroleum-impacted soil was generated during removal of the tanks. The material was transported offsite and stockpiled in long-term storage cells at the Valdez Baler Facility.

In a letter dated April 11, 2019, Mr. Grant Lidren of the Alaska Department of Environmental Conservation (ADEC) requested that the extent of soil contamination at the site be determined. The project was conducted in material accordance with our July 24, 2019 *Revised Work Plan for Release Investigation Activities, 1009 West Klutina Street, Valdez, Alaska;*

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ADEC File NO. 2264.26.021 and 2264.38.044, which was approved by Mr. Grant Lidren of the ADEC via email on July 24, 2019.

The purpose of this project is to evaluate the extent of soil contamination in the vicinity of the two former tanks. In addition, groundwater samples were collected to evaluate whether the tank releases have impacted the site's groundwater.

FIELD ACTIVITIES

The field activities consisted of advancing three soil borings, installing three groundwater monitoring wells, collecting soil and groundwater samples, conducting a level-loop survey, and managing investigation-derived waste (IDW). GeoTek Alaska Inc., (GeoTek) provided the equipment and personnel to advance the borings and install the groundwater monitoring wells. Soil and groundwater samples were submitted to SGS North America, Inc. (SGS) for laboratory analysis. GeoTek and SGS were subcontracted to Shannon & Wilson. Field notes are included in Attachment 1 and site photographs are included in Attachment 2. It is noted that if there is a discrepancy between the field notes and the information presented in the report tables and boring logs, the tables and logs take precedence.

Soil Borings

Four days prior to advancing the soil borings, the utility locate center and the City of Valdez were contacted to mark buried utilities within the project area and identify potential conflicts such that the proposed boring locations could be adjusted, as necessary.

Three soil borings (Borings B1, B2, and B3) were advanced by GeoTek using a GeoProbe® direct-push drill rig (Photos 1 through 3). Boring B1 was advanced south of the former 1,000-gallon UST excavation, Boring B2 was advanced west of the generator building, and Boring B3 was advanced south/southwest of the former tanks and presumably upgradient of a proposed City of Valdez drinking water well. The boring locations are shown on Figure 2. Groundwater was encountered at approximately 19.5 to 20.6 feet below ground surface (bgs) during drilling. Boring logs are included in Attachment 3.

Soil samples were recovered on a continuous basis using 5-foot sampling sleeves to approximately 20 to 25 feet bgs. Up to two field screening samples were collected from each sampling sleeve based on sample recovery. Immediately following retrieval and opening of the sampling sleeves, soil samples for field screening and laboratory analysis were collected. The analytical sample jars for volatile analyses were collected first, followed by the field

screening sample, and finally the non-volatile analytical sample jars. A clean stainless-steel spoon was used to collect soil samples for field screening and laboratory analysis.

Each soil sample was visually described and "screened" for volatile organic compounds (VOCs) using a photoionization detector (PID) and ADEC-approved headspace screening techniques. The PID was calibrated before screening activities with 100 parts per million (ppm) isobutylene standard gas. The field screening samples were collected in re-sealable plastic bags, warmed to at least 40 degrees Fahrenheit, and tested within 60 minutes of collection. To screen, the sample was agitated for about 15 seconds, the seal of the bag was opened slightly, the instrument probe was inserted into the air space above the soil, and the bag held closed around the probe. The maximum ionization response as the PID draws vapor from the sample bag was recorded.

Two analytical soil samples were selected from each boring for laboratory analysis. The samples were collected from the interval just above the soil/water interface and from the sample interval with the highest PID reading. The analytical soil samples tested for volatile constituents were collected using methanol preservation. In accordance with the method, at least 25 grams of soil were quickly placed into a laboratory supplied 4-ounce jar that had been pre-weighed. Afterward, 25 milliliters of reagent grade methanol was added to submerge the soil. The methanol extracts the hydrocarbons from the soil at the time of sampling, thereby reducing the possible loss of volatile constituents prior to sample analysis. The samples were transferred to the appropriate laboratory-supplied jars using decontaminated stainless-steel spoons, and transferred to the laboratory in a cooler with ice packs using chain-of-custody procedures. Field screening results are summarized in Table 1

Each sample was analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101, diesel range organics (DRO) by AK 102, VOCs by Environmental Protection Agency (EPA) Method 8260C, and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270D selective ion method (SIM). For quality control purposes, one duplicate sample and one trip blank were submitted for analysis.

Monitoring Well Installation, Development, and Sampling

Borings B1, B2, and B3 were completed as Monitoring Wells MW1, MW2, and MW3, respectively (Photos 4 through 6). The monitoring wells were constructed of 2-inch nominal inside diameter schedule 40 polyvinyl chloride (PVC) pipe with threaded connections. The lower portion of each well consists of a 10-foot section of 0.010-inch slotted pre-pack well screen. Once groundwater was encountered, the borings were advanced an additional 5

feet to install the wells. A continuous 20-40 silica sand pack was used to backfill around the well screens to about 2 feet above the screened section. Hydrated bentonite chips were used to backfill above the filter pack to approximately 2.5 feet bgs. The monitoring wells were completed with flush mount protective casings that were embedded in pea gravel or asphalt to match the surrounding surface. Monitoring well construction details are included in Attachment 3.

The monitoring wells were developed on October 21 and 22, 2019. Prior to initiating the well development activities, water depth relative to the top of the well casings was measured with an electronic water level indicator. The monitoring wells were developed using alternating 5-minute cycles of surging and purging using a surge block and a submersible pump. Water quality parameters, including pH, temperature, oxidation-reduction potential (ORP), turbidity, and conductivity were collected to evaluate the effectiveness of the development process. Development was considered complete when water quality parameters stabilized (within 1 degree Celsius, 3% conductivity, 0.1 pH, and turbidity is less than 10 Nephelometric turbidity units [NTU] or within 10%), for three consecutive measurements. Well MW2 purged dry during development and was allowed to recovery to at least 80 percent of the pre-purge volume prior to purging again. Well MW2 purged dry once and development was considered completed after 3 hours of effort were expended. Approximately 50, 10, and 54 gallons were removed from Monitoring Wells MW1, MW2, and MW3, respectively. The final water quality parameters are listed in Table 2.

The wells were sampled following development once the water levels recharged to at least 80 percent of the original water volume. The water samples were obtained from the top 2 feet of the screened portions of the wells using a submersible pump with dedicated disposable tubing. Analytical samples were collected by transferring water directly from the pump tubing into the laboratory supplied containers.

Monitoring Well Survey

The vertical elevations of the groundwater monitoring wells were measured using a level loop vertical survey. Survey readings of the monitoring wells were taken relative to an arbitrary onsite benchmark to assess groundwater flow direction. The elevation survey of the monitoring wells was closed within an accuracy of 0.01 foot. Swing tie measurements were measured from the borings and monitoring wells to fixed locations to verify the horizontal locations.

Investigated Derived Waste Management

IDW consisted of soil cuttings generated during drilling and groundwater generated during well development and sampling activities. The IDW was containerized in labeled, 55-gallon drums and stored onsite for future disposal.

SUBSURFACE CONDITIONS

The soil at the site generally consisted of gray to brown, silt with varying amounts of sand and gravel. Boring logs are included in Attachment 3.

Groundwater was encountered between 19.5 and 20.6 feet bgs during drilling activities. On October 21, 2019 static groundwater was measured in Wells MW1, MW2, and MW3 at 19.56, 20.22, and 19.05 feet bgs, respectively. Based on October 21, 2019 depth-to-water measurements and the well survey, the approximately groundwater flow direction is to the southeast.

LABORATORY ANALYSES

Seven soil samples, including one duplicate, and four groundwater samples, including one duplicate were submitted to SGS for analytical testing, using chain-of-custody procedures. The samples were analyzed for GRO by Alaska Method (AK) 101, DRO by AK 102, VOCs by EPA Method 8260C, and PAHs by EPA Method 8270D SIM. A methanol soil trip blank and a water trip blank accompanied the samples and were analyzed for GRO by AK 101 and VOCs by EPA Method 8260C. The SGS laboratory reports and completed ADEC Laboratory Data Review Checklists are provided in Attachment 4.

DISCUSSION OF ANALYTICAL RESULTS

The analytical soil and groundwater results were compared to the ADEC cleanup levels presented in October 2018, 18 Alaska Administrative Code (AAC) 75 regulations. The applicable soil criteria consist of the most stringent ADEC Method Two cleanup levels listed in Tables B1 and B2 of 18 AAC 75.341, for "over 40-inch (precipitation) zone," and groundwater cleanup levels are established in Table C of 18 AAC 75.345. The analytical soil and groundwater sample results are summarized in Tables 3 and 4, respectively.

Soil Samples

The duplicate soil samples (B2S4/B2S14) contained concentrations of DRO (maximum of 363 mg/kg) exceeding than the ADEC Method Two cleanup level of 230 mg/kg. The remaining target analytes were either not detected or detected at concentrations less than the ADEC cleanup levels.

Groundwater Samples

Groundwater samples collected from Monitoring Wells MW1 and MW2 contained estimated concentrations of GRO (39.7 µg/L) and DRO (187 µg/L), respectively, which are both less than the ADEC cleanup levels of 2,200 µg/L GRO and 1,500 µg/L DRO. The remaining target analytes were not detected.

Quality Control

The project laboratory follows on-going quality assurance/quality control procedures to evaluate conformance to applicable ADEC data quality objectives (DQOs). Internal laboratory controls for this project include surrogates, method blanks, matrix spike/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD) to assess precision, accuracy, and matrix bias. If a DQO is not met, the project laboratory provides a brief narrative in the case narrative of their laboratory report (see Attachment 4).

One soil duplicate sample set (Samples B2S4 and B2S14) was collected to assess the precision of the sampling and analysis process using the calculated relative percent difference (RPD). The RPDs for GRO are not within the ADEC recommended DQOs of 50 percent for soil. The affected data are flagged "E" and considered estimated due to the RPD failure. The GRO samples results are less than 15 times the applicable ADEC cleanup level. Therefore, in our opinion, the RDP exceedance does not impact usability of the data for this project.

One methanol soil trip blank (Sample STB) and one water trip blank (Sample WTB) accompanied the sample jars and bottles, as appropriate, from the laboratory to the site during drilling and sampling activities and back again to SGS. An estimated concentration (J-flagged) of chloromethane was detected in the water trip blank. Each of the groundwater samples contained estimated concentrations of chloromethane. Therefore, the chloromethane concentrations are reported as non-detect at the LOQ and B-flagged in Table 4.

Shannon & Wilson conducted a limited data assessment to review the laboratory's compliance with precision, accuracy, sensitivity, and completeness to the DQOs. Shannon & Wilson reviewed the SGS data deliverables and completed an ADEC's Laboratory Data Review Checklist for each data package, which are included in Attachment 4. No non-conformances that would adversely affect the quality or usability of the data were noted, with the exceptions discussed above.

SUMMARY

The release investigation conducted at 1009 West Klutina Street consisted of advancing three soil borings, installing three groundwater monitoring wells, and collecting soil and groundwater samples. The soil samples collected from Boring B2 contained concentrations of DRO (maximum of 363 mg/kg) which slightly exceed the applicable ADEC cleanup level of 230 mg/kg. The remaining soil and groundwater samples did not contain concentrations of the tested analytes exceeding the applicable ADEC cleanup levels. Based on the 2017 and 2018 UST closure and cleanup activities, and the 2019 site characterization activities, petroleum-impacted soil remains in the vicinity of the former 1,000-gallon UST located at the Admin Building and the former 15,000-gallon UST located at the Generator Building. Based on the concentration of DRO identified in the samples collected from Boring B2 it appears that petroleum-impacted soil likely extends beneath the Generator Building. Based on the groundwater sample results, impacted groundwater is not present in the vicinity of the former tanks.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of the City of Valdez and its representatives in the study of this site. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. They should not be construed as definite conclusions regarding the site's soil or groundwater. It is possible that our tests missed higher levels of target contaminants, although our intention was to sample areas likely to be impacted and in accordance with our work plan. As a result, the sampling, analyses, and data interpretations can provide you with only our professional judgment as to the environmental characteristics of this site, and in no way guarantee that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has not, and will not, disclose the results of this study, except with your permission or as required by law.

Shannon & Wilson has prepared the documents in Attachment 5, "Important Information About Your Geotechnical/Environmental Report", to assist you and others in understanding the use and limitations of our report.

We appreciate the opportunity to be of service with the characterization of this site. Please contact the undersigned at (907) 561-2120 with questions or comments concerning this report.

Sincerely,

SHANNON & WILSON

Dan P. McMahon

Digitally signed by Dan P. McMahon
DN: cn=Dan P. McMahon, o=Shannon & Wilson, ou, email=dxm@shanwil.com, c=US
Date: 2020.04.13 10:01:16 -08'00'

Dan P. McMahon, PMP
Senior Associate

Enc.	Table 1	Sample Locations
	Table 2	Well Development and Sampling Log
	Table 3	Summary of Soil Analytical Results
	Table 4	Summary of Groundwater Analytical Results
	Figure 1	Vicinity Map
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	Attachment 1	Field Notes
	Attachment 2	Site Photographs
	Attachment 3	Boring Logs and Well Construction Details
	Attachment 4	Results of Analytical Testing by SGS North America, Inc. and ADEC Laboratory Data Review Checklists
	Attachment 5	Important Information About Your Geotechnical/Environmental Report

TABLE 1 - SAMPLE LOCATIONS

		Sample Number	Date	Sample Location See Figure 2 and Attachment 3	Depth (feet bgs or BTOC)	Headspace (ppm)^
Boring B1		B1S1	10/20/2019	Boring B1, Sample S1	0-2.5	1.2
		B1S2	10/20/2019	Boring B1, Sample S2	2.5-5	0.8
	*	B1S3	10/20/2019	Boring B1, Sample S3	5-7.5	0.8
		B1S4	10/20/2019	Boring B1, Sample S4	7.5-10	0.3
		B1S5	10/20/2019	Boring B1, Sample S5	10-12.5	0.3
		B1S6	10/20/2019	Boring B1, Sample S6	12.5-15	0.2
		B1S7	10/20/2019	Boring B1, Sample S7	15-17.5	0.7
	*	B1S8	10/20/2019	Boring B1, Sample S8	17.5-20	0.3
Boring B2		B2S1	10/20/2019	Boring B2, Sample S1	0-2.5	1.4
		B2S2	10/20/2019	Boring B2, Sample S2	2.5-5	1.7
		B2S3	10/20/2019	Boring B2, Sample S3	5-7.5	107
	*	B2S4	10/20/2019	Boring B2, Sample S4	7.5-10	160
	*	B2S14	10/20/2019	Duplicate of Sample B2S4	7.5-10	160
		B2S5	10/20/2019	Boring B2, Sample S5	10-12.5	0.7
		B2S6	10/20/2019	Boring B2, Sample S6	12.5-15	0.1
		B2S7	10/20/2019	Boring B2, Sample S7	15-20	0.0
	*	B2S8	10/20/2019	Boring B2, Sample S8	20-25	0.0
Boring B3		B3S1	10/21/2019	Boring B3, Sample S1	0-2.5	1.6
	*	B3S2	10/21/2019	Boring B3, Sample S2	2.5-5	2.2
		B3S3	10/21/2019	Boring B3, Sample S3	5-7.5	1.2
		B3S4	10/21/2019	Boring B3, Sample S4	7.5-10	1.6
		B3S5	10/21/2019	Boring B3, Sample S5	10-12.5	0.8
		B3S6	10/21/2019	Boring B3, Sample S6	12.5-15	0.6
		B3S7	10/21/2019	Boring B3, Sample S7	15-17.5	0.5
	*	B3S8	10/21/2019	Boring B3, Sample S8	17.5-20	0.3
Water Samples	*	MW1	10/22/2019	Monitoring Well MW1	19.56	-
	*	MW2	10/21/2019	Monitoring Well MW2	20.22	-
	*	MW12~	10/21/2019	Duplicate of Sample MW2	20.22	-
	*	MW3	10/22/2019	Monitoring Well MW3	19.05	-
Quality Control Samples	*	STB	10/20/2019	Soil Trip Blank	-	-
	*	WTB	10/21/2019	Water Trip Blank	-	-

NOTES:

* = Sample analyzed by the project laboratory (See Tables 3 and 4)

^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)

bgs = below ground surface

ppm = parts per million

BTOC = Below top of casing

TABLE 2 - WELL DEVELOPMENT AND SAMPLING LOG

		Monitoring Well Number		
		MW1	MW2	MW3
Development Data	Development Date	10/22/2019	10/21/2019	10/22/2019
	Measured Depth to Water (ft below TOC)^	19.56	20.22	19.05
	Total Depth of Well (ft below TOC)	23.75	24.55	24.18
	Water Column in Well (ft)	4.19	4.33	5.13
	Gallons per Foot	0.16	0.16	0.16
	Water Column Volume (gallons)	0.67	0.69	0.82
	Total Volume Pumped (gallons)	50	10	54
	Development Method	Surge block/ Submersible pump	Surge block/ Submersible pump	Surge block/ Submersible pump
Water Level Measurement Data	Date Water Level Measured	10/21/2019	10/21/2019	10/21/2019
	Time Water Level Measured	14:20	14:38	14:32
	Surveyed TOC Elevation (ft)	100.72	100.87	100.10
	Measured Depth to Water (ft below TOC)	19.56	20.22	19.05
	Water Level Elevation (ft)	81.16	80.65	81.05
Sampling Data	Date Sampled	10/22/2019	10/21/2019	10/22/2019
	Time Sampled	12:55	17:40	16:40
	Sampling Method	Submersible Pump	Submersible Pump	Submersible Pump
	Diameter of Well Casing	2-inch	2-inch	2-inch
	Temperature (°C)	8.41	8.43	8.33
	pH (Standard Units)	6.51	6.03	6.56
	Specific Conductivity (mS/cm)	0.140	0.168	0.137
	ORP (mV)	128	15	286
	Turbidity (NTU)	8.29	138.2	3.86
Remarks			Duplicate Sample MW12 Well Purged Dry	

Notes:
Water quality parameters were measured with a Horiba water quality instrument

^ = Depth to water measurement prior to development
TOC = Top of casing
ft = Feet
°C = Degrees Celsius
mV = Millivolts
NTU = Nephelometric Turbidity Unit
mS/cm = Millisiemens per Centimeter

TABLE 3 - SUMMARY OF SOIL ANALYTICAL RESULTS

Analytical Method	Analyte	ADEC Cleanup Level	Units	B1S3	B1S8	Primary B2S4	Duplicate B2S14	B2S8	B3S2	B3S8	Trip Blank STB
580B PID	PID Headspace Reading	-	ppm	0.8	0.3	160	160	0.0	2.2	0.3	-
AK 101	Gasoline Range Organics (GRO)	260	mg/kg	<1.65	<1.21	16.8 E	4.49 E	1.01 J	<2.27	<1.27	<1.26
AK 102	Diesel Range Organics (DRO)	230	mg/kg	<24.0 B	<21.1 B	363	299	<21.5 B	<23.4 B	<20.8 B	-
EPA 8260C (VOCs)	Benzene	0.022	mg/kg	<0.00825	<0.00605	<0.00665	<0.00590	<0.00815	<0.0114	<0.00640	<0.00630
	Toluene	6.7	mg/kg	<0.0164	<0.0121	0.0104 J	0.0156 J	<0.0163	0.0254 J	<0.0128	<0.0126
	Ethylbenzene	0.13	mg/kg	<0.0164	<0.0121	0.0112 J	0.0134 J	<0.0163	<0.0227	<0.0128	<0.0126
	Xylenes (Total)	1.5	mg/kg	<0.0484	<0.0494	0.107	0.122	<0.0489	<0.0680	<0.0383	<0.0378
	1,2,4-Trimethylbenzene	0.61	mg/kg	<0.0329	<0.0242	0.0566	0.0691	<0.0325	<0.0455	<0.0255	<0.0251
	1,3,5-Trimethylbenzene	0.66	mg/kg	<0.0164	<0.0121	<0.0133	0.0248	<0.0163	<0.0227	<0.0128	<0.0126
	Isopropylbenzene (Cumene)	5.6	mg/kg	<0.0164	<0.0121	0.00983 J	0.0111 J	<0.0163	<0.0227	<0.0128	<0.0126
	Naphthalene	0.038	mg/kg	<0.0164	<0.0121	0.0337	0.0278	<0.0163	<0.0227	<0.0128	<0.0126
	n-Propylbenzene	9.1	mg/kg	<0.0164	<0.0121	<0.0133	0.0125 J	<0.0163	<0.0227	<0.0128	<0.0126
	Other VOCs	Various	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
EPA 8270D SIM (PAHs)	1-Methylnaphthalene	0.41	mg/kg	<0.0148	<0.0133	<0.0133	0.0131 J	<0.0134	<0.0144	<0.0129	-
	2-Methylnaphthalene	1.3	mg/kg	<0.0148	<0.0133	<0.0133	0.0154 J	<0.0134	<0.0144	<0.0129	-
	Naphthalene	0.038	mg/kg	<0.0119	<0.0106	<0.0107	0.00636 J	<0.0108	<0.0116	<0.0104	-
	Other PAHs	Various	mg/kg	<0.0148	<0.0133	<0.0133	<0.0133	<0.0134	<0.0144	<0.0129	-

Notes: ADEC soil cleanup level is the most stringent ADEC Method Two standard listed in Table B1 or B2, 18 AAC 75 (October 2018), for the "over 40 inches (precipitation) zone"

Sample B2S14 is a field-duplicate of B2S4

ADEC = Alaska Department of Environmental Conservation
EPA = Environmental Protection Agency
mg/kg = Milligrams per kilogram
PAH = Polynuclear aromatic hydrocarbons
PID = Photoionization detector
ppm = Parts per million
VOC = Volatile organic compounds
<1.65 = Analyte not detected; laboratory limit of detection of 1.65 mg/kg
16.8 = Analyte detected
363 = Analyte detected above ADEC cleanup level
- = Not applicable or sample not tested for this analyte
B = Analyte concentration is potentially affected by method blank or trip blank contamination
E = Result is an estimate due to relative percent difference (RPD) failure
J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for details.
ND = Not detected

TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

				Monitoring Well				
					Primary	Duplicate		Trip Blank
Analytical Method	Analyte	Cleanup Level	Units	MW1	MW2	MW12	MW3	WTB
AK 101	Gasoline Range Organics (GRO)	2,200	µg/L	39.7 J	<50	<50	<50	<50
AK 102	Diesel Range Organics (DRO)	1,500	µg/L	<288	187 J	<300	<283	-
EPA 8260C (VOCs)	Benzene	4.6	µg/L	<0.200	<0.200	<0.200	<0.200	<0.200
	Toluene	1,100	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500
	Ethylbenzene	15	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500
	Xylenes (Total)	190	µg/L	<1.50	<1.50	<1.50	<1.50	<1.50
	Chloromethane	190	µg/L	<1.00 B	<1.00 B	<1.00 B	<1.00 B	0.580 J
	Other VOCs	Various	µg/L	ND	ND	ND	ND	ND
EPA 8270D SIM	Polynuclear Aromatic Hydrocarbons (PAHs)	Various	µg/L	ND	ND	ND	ND	-

NOTES:

ADEC groundwater cleanup levels listed in Table C, 18 AAC 75.345 (October 2018)

Sample MW12 is a field-duplicate of MW2

ADEC = Alaska Department of Environmental Conservation

EPA = Environmental Protection Agency

VOC = Volatile organic compounds

µg/L = Micrograms per liter

ND = Not detected

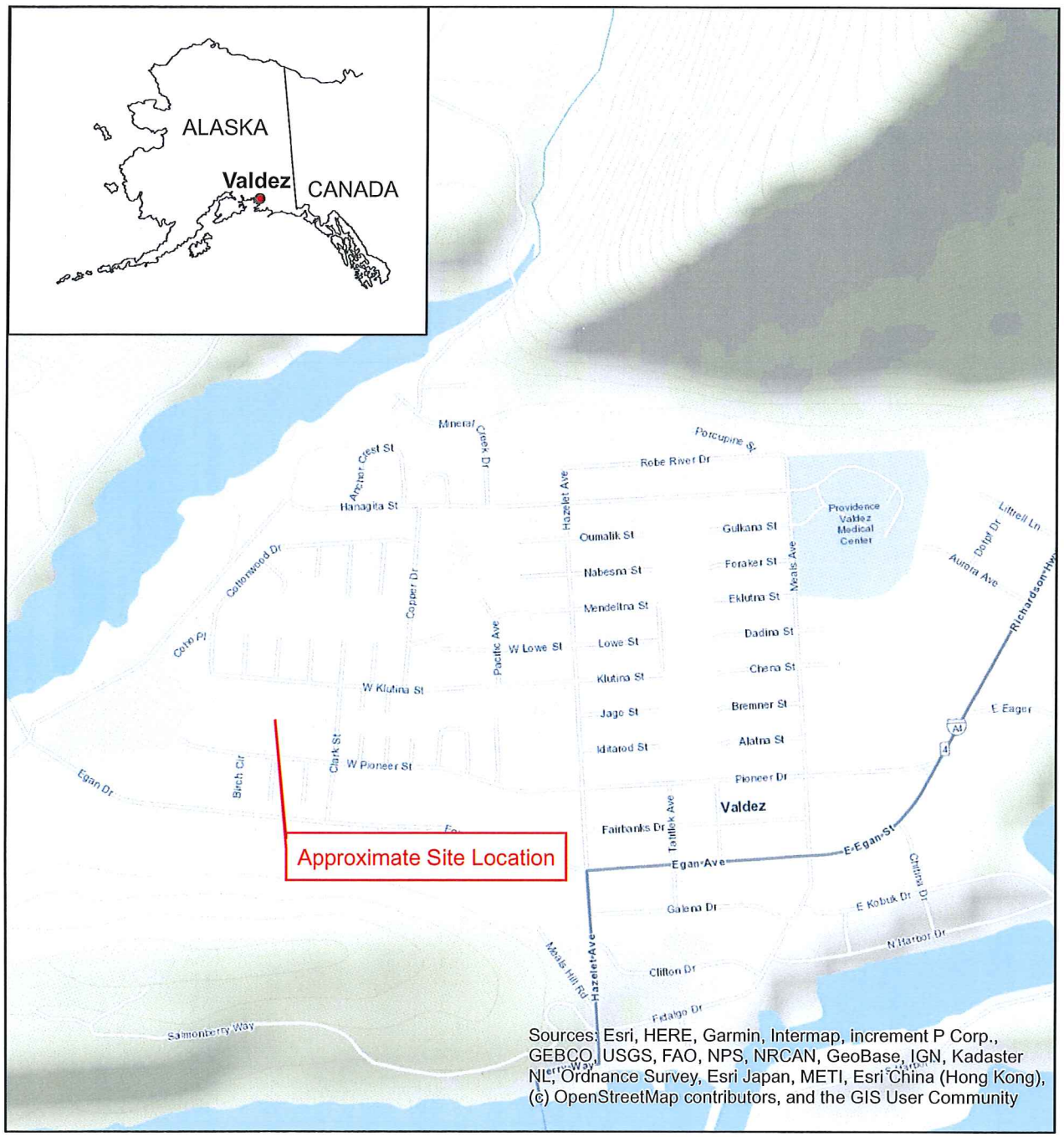
<288 = Analyte not detected; laboratory limit of detection of 288 µg/L

39.7 = Analyte detected

- = Sample not tested for this analyte

B = Analyte concentration is potentially affected by trip blank detection. See the LDRC for details.

J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details.



N

0 0.25 0.5

Miles

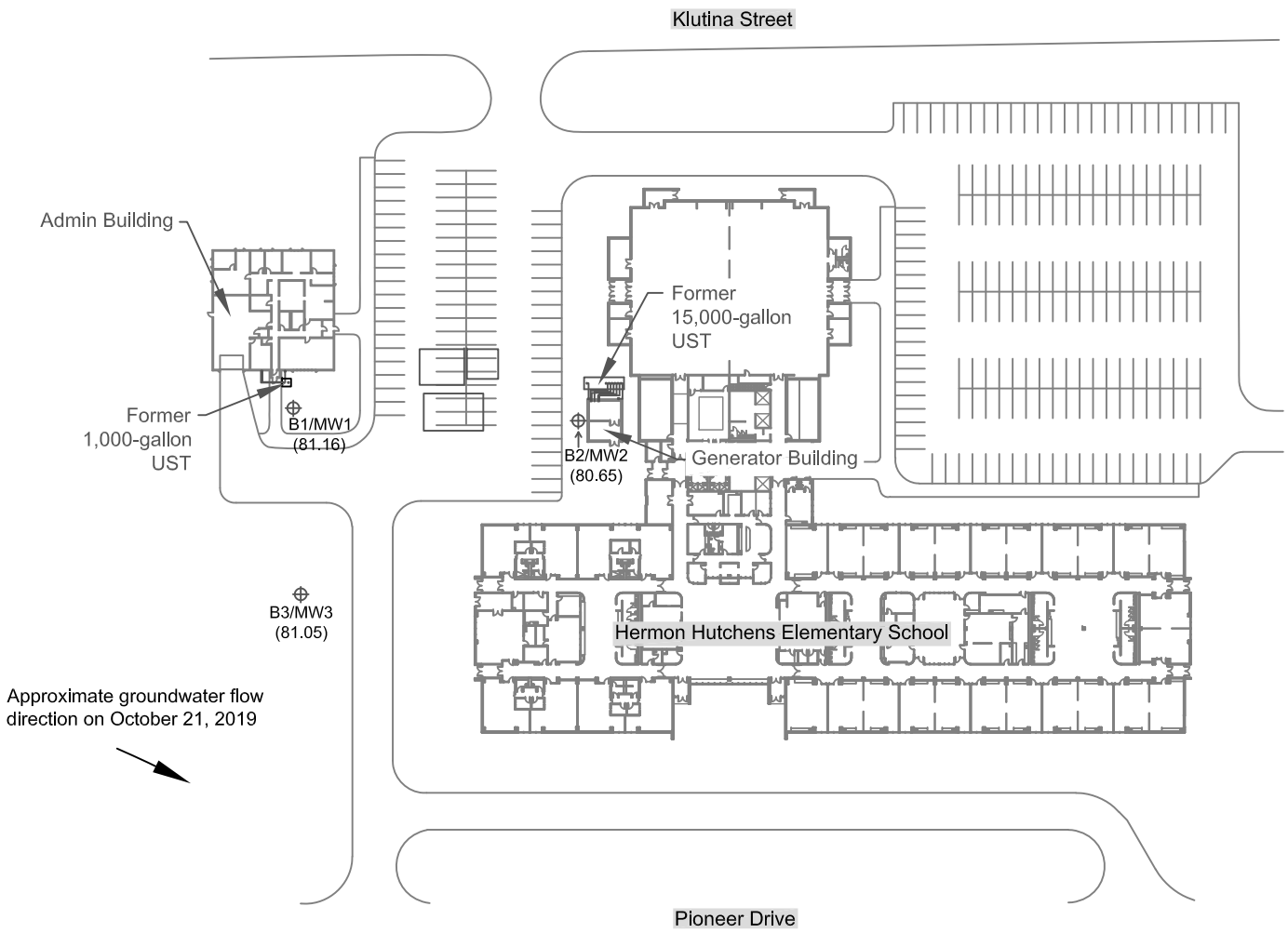
1009 West Klutina Street
Valdez, Alaska

VICINITY MAP

March 2020 103195-001

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 1



NOTES

1. Base drawing provided by RSA Engineering, Inc.

B1/MW1
(81.16)

Approximate location of Monitoring Well MW1, advanced by Shannon & Wilson on October 20, 2019. Approximate groundwater elevation based on October 21, 2019 water level measurments and October 22, 2019 well level-loop survey by Shannon & Wilson.

N

0 120 240

APPROXIMATE SCALE IN FEET

1009 West Klutina Street
Valdez, Alaska

SITE PLAN

March 2020

103195-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 2

Attachment 1

Field Notes

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: GeoTek Alaska
DRILL RIG EQUIPMENT: 6620DT
DRILLING METHOD: Direct push
HAMMER TYPE: — ROD TYPE/DIA.: —
HAMMER WEIGHT: — HAMMER DROP: —
CASING SIZE/TYPE: — HOLE SIZE: —

JOB NO: 103195-001 BORING NO: B1
JOB NAME: 1009 W. Klutina Street
LOGGED BY: AJV
LOCATION: 1009W Klutina St ELEV.:
START DATE: 10/20/19 END DATE: 10/20/19
WEATHER DURING DRILLING: overcast 30

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
1560	S1	0		1.6			1.2	G S F	Gray Silty Sand w/ Gravel SM; moist
10/20		2.5		Y					
1504	S2	2.5		1.6			0.8	G S F	Gray silt; moist
10/20		5		Y					
1508	S3	5		1.3			0.8	G S F	Gray silt; moist
10/20		7.5		Y					
1512	S4	7.5		1.3			0.3	G S F	Gray silty Sand; moist
10/20		10		Y					
1518	S5	10		1.4			0.3	G S F	Brown sand w/ Gravel; moist (SP)
10/20		12.5		Y					
1522	S6	12.5		1.4			0.2	G S F	Gray to brown Silt w/ sand; moist Silty sand (SM)
10/20		15		Y					
1527	S7	15		1.2			0.1	G S F	Same as above
10/20		17.5		Y					

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):
Water @ 20'

GROUNDWATER DATA

WATER DEPTH	TIME	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: SAMPLES: Attempted / Recovered
DRILL/SAMPLE hrs. STANDBY: hrs.
SETUP/CLEANUP: hrs. WELL INSTALL: hrs.
OTHER:

BORING: B1 SHEET 1 OF 2

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: Geotek Alaska
DRILL RIG EQUIPMENT: 6620 DT
DRILLING METHOD: Direct Push
HAMMER TYPE: — ROD TYPE/DIA.: —
HAMMER WEIGHT: — HAMMER DROP: —
CASING SIZE/TYPE: — HOLE SIZE: —

JOB NO: 103195-001 BORING NO: B1
JOB NAME: 1009 W. Klutina Street
LOGGED BY: ADV
LOCATION: 1009W Klutina St ELEV.:
START DATE: 10/20/19 END DATE: 10/20/19
WEATHER DURING DRILLING: overcast 30°

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
X 1533	S8	17.5		1.2			03	G	Gray silty sand w/ Gravel; moist
10/20		20		Y				S	
								F	water @ 20'
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):
Screen 15-25' bgs

GROUNDWATER DATA

WATER DEPTH	TIME,	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: _____ SAMPLES: _____ Attempted _____ Recovered
DRILL/SAMPLE _____ hrs. STANDBY: _____ hrs.
SETUP/CLEANUP: _____ hrs. WELL INSTALL: _____ hrs.
OTHER: _____

BORING: B1 SHEET 2 OF 2

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: GeoTek Alaska
DRILL RIG EQUIPMENT: 6620 DT
DRILLING METHOD: Direct push
HAMMER TYPE: – ROD TYPE/DIA.: –
HAMMER WEIGHT: – HAMMER DROP: –
CASING SIZE/TYPE: – HOLE SIZE: –

JOB NO: 103195-001 BORING NO: B2
JOB NAME: 1009 W. Klutina Street
LOGGED BY: ADV
LOCATION: 1009 W Klutina St ELEV.: –
START DATE: 10/20/19 END DATE: 10/20/19
WEATHER DURING DRILLING: overcast 29°

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
920	S1	0.2	–	2.5	–	–	1.4	G S F	Gray Sand w/ silt + gravel, moist Asphalt 0-0.2 Silty Sand SM
10/20		2.5		Y					
925	S2	2.5	–	2.5	–	–	1.7	G S F	Gray sand w/ silt + gravel, moist Silty Sand w/ gravel
10/20		5		Y					
932	S3	5	–	1.5			107	G S F	Grey to brown Sand w/ Gravel, moist Dup B2S13 1032
10/20		7.5		Y					
X 936	S4	7.5	–	1.5			160	G S F	Same as above Dup B2S14 1036
10/20		10		Y					
940	S5	10		1			0.7	G S F	Brown sand w/ gravel; moist
10/20		12.5		Y					
943	S6	12.5		1			0.1	G S F	Same as above
10/20		15		Y					
950	S7	15		2			0.0	G S F	same as above
10/20		20		Y					

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):
20.6 DTW in boring Setting screen ~~15.6~~ - 25.6

GROUNDWATER DATA

WATER DEPTH	TIME	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: _____ SAMPLES: _____ Attempted _____ Recovered
DRILL/SAMPLE _____ hrs. STANDBY: _____ hrs.
SETUP/CLEANUP: _____ hrs. WELL INSTALL: _____ hrs.
OTHER: _____

BORING: B2 SHEET 1 OF 2

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: GeoTek Alaska
DRILL RIG EQUIPMENT: 6620 AT
DRILLING METHOD: Direct push
HAMMER TYPE: – ROD TYPE/DIA.: –
HAMMER WEIGHT: – HAMMER DROP: –
CASING SIZE/TYPE: – HOLE SIZE: –

JOB NO: 103195-001 BORING NO: B2
JOB NAME: 1009 W. Klutina Street
LOGGED BY: ADV
LOCATION: 1009 W Klutina St ELEV.: –
START DATE: 10/20/19 END DATE: 10/20/19
WEATHER DURING DRILLING: Overcast 29°

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
X 1008	S8	20	–	2		–	0.0	G	Brown Gravel w/ sand; moist
10/26		25		4				S	
								F	water @ 20.5 - 21'
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):

GROUNDWATER DATA

WATER DEPTH	TIME	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: _____ SAMPLES: Attempted _____ Recovered

DRILL/SAMPLE _____ hrs. STANDBY: _____ hrs.

SETUP/CLEANUP: _____ hrs. WELL INSTALL: _____ hrs.

OTHER: _____

BORING: B2 SHEET 2 OF 2

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: GeoTek Alaska
DRILL RIG EQUIPMENT: 6620 DT
DRILLING METHOD: Direct Push
HAMMER TYPE: – ROD TYPE/DIA.: –
HAMMER WEIGHT: – HAMMER DROP: –
CASING SIZE/TYPE: – HOLE SIZE: –

JOB NO: 103195-001 BORING NO: B3
JOB NAME: 1009 W. Klutina Street
LOGGED BY: ADV
LOCATION: 1009 W Klutina St ELEV.: –
START DATE: 10/21/19 END DATE: 10/21/19
WEATHER DURING DRILLING: Overcast/Rain

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
835 / 10/21	S1	0.5 / 2.5	–	1.5 / Y			1.6	G S F	Gray silty sand w/ Gravel 0-0.5 Asphalt
* 839 / 10/21	S2	2.5 / 5		1.5 / Y			2.2	G S F	Gray silt
844 / 10/21	S3	5 / 7.5		1.7 / Y			1.2	G S F	Gray silty sand w/ gravel; moist
847 / 10/21	S4	7.5 / 10		1.7 / Y			1.6	G S F	Gray sand w/ gravel; moist; chips
853 / 10/21	S5	10 / 12.5		1.5 / Y			0.8	G S F	Gray Gravel w/ sand; moist; chips
857 / 10/21	S6	12.5 / 15		1.5 / Y			0.6	G S F	Same as above
902 / 10/21	S7	15 / 17.5		1.5 / Y			0.5	G S F	Gray sand w/ Gravel; moist

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):
Water @ 19.5' ~

GROUNDWATER DATA

WATER DEPTH	TIME	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: _____ SAMPLES: _____ Attempted _____ Recovered
DRILL/SAMPLE _____ hrs. STANDBY: _____ hrs.
SETUP/CLEANUP: _____ hrs. WELL INSTALL: _____ hrs.
OTHER: _____

BORING: B3 SHEET 1 OF 2

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIELD LOG OF BORING

DRILL COMPANY/DRILLER: GeoTek Alaska
DRILL RIG EQUIPMENT: 6620 DT
DRILLING METHOD: Direct Push
HAMMER TYPE: — ROD TYPE/DIA.: —
HAMMER WEIGHT: — HAMMER DROP: —
CASING SIZE/TYPE: — HOLE SIZE: —

JOB NO: 103195-001 BORING NO: B3
JOB NAME: 1009 W. Klutina Street
LOGGED BY: ADV
LOCATION: 1009 W Klutina St ELEV.: —
START DATE: 10/21/19 END DATE: 10/21/19
WEATHER DURING DRILLING: Overcast/Rain 32°

SAMPLE DATA

TIME / DATE	SAMP. NO. / TYPE	DEPTH FROM / TO	DRIVING RESISTANCE BLOWS / 6 INCH	L. REC. / Env. Sample (Y/N)	DRILL ACTION	CONTACTS / GROUNDWATER	PID	CONST. %	FIELD IDENTIFICATION [Density/consistency, color, Group Name (USCS); moisture; constituent properties (particle size, plasticity, etc.); organics; structure; other; unit name]
X 906	S8	17.5		1.5			0.3	G	Gray ~~Gravel w/ Sand~~ Moist
10/21		20		Y				S	Sand w/ Gravel
								F	water @ bottom 20
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	
								G	
								S	
								F	

SUMMARY FIELD LOG OF BORING

DEPTH FROM	DEPTH TO	USCS CLASSIF.	GENERALIZED SOIL DESCRIPTION FOR DRAFTED GINT LOG

COMMENTS (i.e. materials used, visitors, problems, etc.):

GROUNDWATER DATA

WATER DEPTH	TIME	DATE

SUMMARY OF TIME AND FOOTAGE

FOOTAGE DRILLED: ____ SAMPLES: ____ Attempted ____ Recovered
DRILL/SAMPLE ____ hrs. STANDBY: ____ hrs.
SETUP/CLEANUP: ____ hrs. WELL INSTALL: ____ hrs.
OTHER: ____

BORING: B3 SHEET 2 OF 2

Shannon & Wilson, Inc.

MONITORING WELL CONSTRUCTION DETAILS

Job No: 103195-001 Project: 1009 West Klutina Street Valdez, Alaska

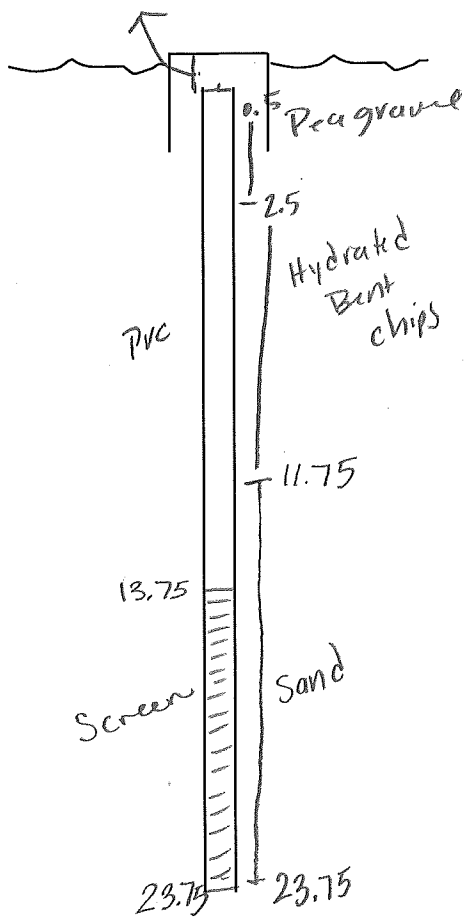
Weather: Overcast 33°

Well No.: B1 / MW1

Date: 10/20/19 Time Started: 1725 → 1950 Time Completed: 2100

Pulled @ 1755
rig stuck @ 1830

Top of PVC to gs = .4'



WELL DATA:

Pipe Type: PVC

Diameter: 2 inch

Total Depth (ft bgs): ~~25~~ ~~24.5~~ AW 23.75

Well Screen Interval (feet): 10

Top of Well Screen (ft bgs): 15 14.5

Slot size: 0.010-inch

Casing Connection: threaded

Depth below surface: _____ N/A ☐

Casing stickup: _____ N/A ☐

PACKING MATERIAL:

	Depth below ground surface: From	To
~~Soil Cuttings~~:	Flushmount	
Pea gravel ~~Sand (20-40)~~:	0.5	2.5
Bentonite chips:	2.5	11.75
Sand ~~(20-40)~~: 10-20	11.75	23.75

MONUMENT:

Flush Mount ☑ Post ☐

Monument height: _____ N/A ☐

Monument Diameter: _____ N/A ☐

LOCK:

Type: _____

Combination: _____

Length cutoff last section: _____

Remarks: _____

Time between installation/development: _____

Engineer or Geologist: ADV

Shannon & Wilson, Inc.

MONITORING WELL CONSTRUCTION DETAILS

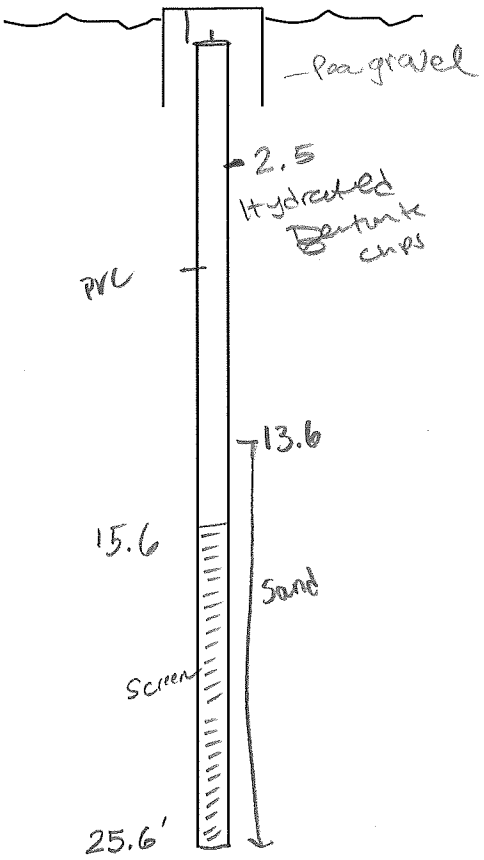
Job No: 103195-001 Project: 1009 West Klutina street Valdez, Alaska

Weather: Overcast 32°

Well No.: B2

Date: 10/20/2019 Time Started: 1125 Time Completed: 1330

Top of PVC to gs = 1.4



WELL DATA:

Pipe Type: PVC

Diameter: 2in PVC

Total Depth (ft bgs): 25.6'

Well Screen Interval (feet): 10

Top of Well Screen (ft bgs): 15.6'

Slot size: 0.010-inch

Casing Connection: threaded

Depth below surface: _____ N/A ☐

Casing stickup: _____ N/A ☐

PACKING MATERIAL:

	Depth below ground surface: From	To
~~Soil Cuttings~~:	Flushmount	
Pea gravel ~~Sand (20-40)~~:	0.5	2.5
Bentonite chips:	2.5	13.6
Sand (20-40):	13.6	25.6

MONUMENT:

Flush Mount ☑ Post ☐

Monument height: _____ N/A ☐

Monument Diameter: _____ N/A ☐

LOCK:

Type: _____

Combination: _____

Length cutoff last section: _____

Remarks: _____

Time between installation/development: _____

Engineer or Geologist: AJV

Shannon & Wilson, Inc.

MONITORING WELL CONSTRUCTION DETAILS

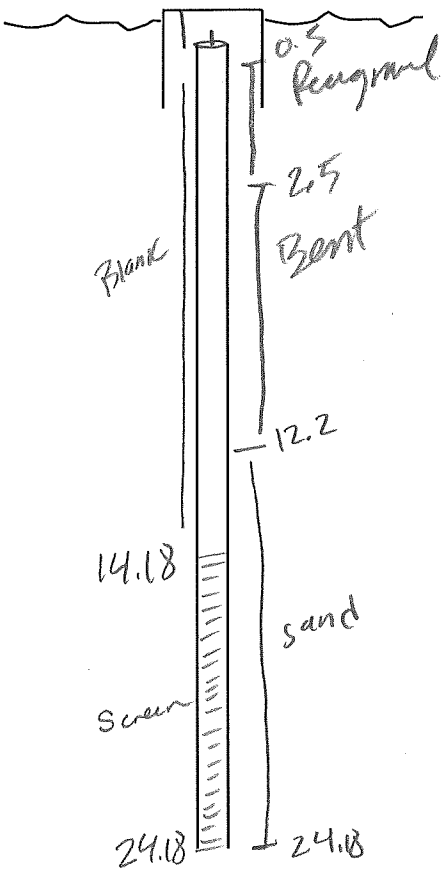
Job No: 103195-001 Project: 1009 West Klutina Street Valdez, Alaska

Weather: overcast 30°

Well No.: B3/MW3

Date: 10/21/2019 Time Started: 1025 Time Completed: 1215

Top of PVC to gs = 0.34



WELL DATA:

Pipe Type: PVC

Diameter: 2inch PVC

Total Depth (ft bgs): 24.18

Well Screen Interval (feet): 10

Top of Well Screen (ft bgs): 14.18

Slot size: 0.010 - inch prepack

Casing Connection: threaded

Depth below surface: 0.34 N/A ☐

Casing stickup: _____ N/A ☑

PACKING MATERIAL:

	Depth below ground surface: From	To
cement ~~Soil Cuttings:~~	0	0.5
Pea gravel ~~Sand (20-40):~~	0.5	2.5
Bentonite chips:	2.5	12.2
Sand ~~(20-40)~~: 10-20	12.2	24.18

MONUMENT:

Flush Mount ☑ Post ☐

Monument height: — N/A ☐

Monument Diameter: — N/A ☐

LOCK:

Type: —

Combination: —

Length cutoff last section: —

Remarks: —

Time between installation/development: _____

Engineer or Geologist: ADV

Shannon & Wilson, Inc.

WELL DEVELOPMENT LOG

Job No: 103195-001 Location: 1009W Klutina Street Weather: Partly Sunny 28°

Concern: Well No.: B1/MW1

Develop Date: 10/22/2019 Time Started: 935 Time Completed: 1325

PURGING DATA

Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other:

Time of Depth Measurement: 936

Diameter of Casing: 1" ☐ 2" ☑

Total Depth of Well Below MP: 23.75

Depth-to-Water (DTW) Below MP: 19.56

Water Column in Well: 4.19 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 0.6704 (Water Column in Well x Gallons per foot)

Three Well Volumes: 2.0112 (Gallons in Well x 3)

Gallons Purged: 50

PVC - gs = .4'

DEVELOPMENT DATA

Odor: none noted Color: none

Time:	Total Gallons:	Temp: (°C)	Sp. Cond.: (mS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (ntu)
10:00	3	9.22	0.159	7.15	9	1000
10:15	7	8.83	0.146	6.76	17	1000
10:30	11	8.64	0.144	6.63	36	1000
10:45	15	8.57	0.144	6.61	53	1000
11:00	19	8.49	0.143	6.60	60	1000
11:15	23	8.46	0.142	6.56	74	1000
11:30	27.5	8.44	0.142	6.55	97	1000
+4.5 Purged 11:45	32	8.47	0.142	6.55	100	181.8

Surging	Surging Time (minutes)	Gallons Purged	Purging Time (minutes)
1	5	3	5
2	5	4	5
3	5	4	5
4	5	4	5
5	5	4	5
6	5	4.5	5

Evacuation Method: Proactive Pump / Other: whale Surge Block: PVC

Remarks:

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

Shannon & Wilson, Inc.

WELL DEVELOPMENT LOG

Job No: _____ Location: _____ Weather: _____

Concern: _____ Well No.: B1/MW1

Date: _____ Time Started: _____ Time Completed: _____

DEVELOPMENT DATA CONTINUED

Purged	Time:	Gallons:	Temp: (°C)	Sp. Cond.: (mS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (ntu)	
+4.5	1200	36.5	8.34	0.141	6.52	144	68.74	
+4.5	1215	41.0	8.41	0.142	6.54	123	66.36	
	1230	45.5	8.41	0.140	6.51	128	12.81	
	1245	50.0					8.29	
	1255	3 hours	effort	+ well	@ least	80%		checked bf sample to make sure ↓10 ✓
	1255	sample	time					

Remarks: _____

Sampling Personnel: _____

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

Shannon & Wilson, Inc.

WELL DEVELOPMENT LOG

Job No: 103195-001 Location: 1009 W Klutina street Weather: overcast 30°

Concern: Well No.: B3/MW3

Develop Date: 10/22/2019 Time Started: 1330 Time Completed: 1738

3hours 1630

PURGING DATA

Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: Top of PVC Casing

Time of Depth Measurement: 9:33

Diameter of Casing: 1" ☐ 2" ☑

Total Depth of Well Below MP: 24.18

Depth-to-Water (DTW) Below MP: 19.11

Water Column in Well: 5.07 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 0.8112 (Water Column in Well x Gallons per foot)

Three Well Volumes: 2.4336 (Gallons in Well x 3)

Gallons Purged: 54

PVC - gs = 0.34'

DEVELOPMENT DATA

Odor: None noted Color:

Time:	Total Gallons:	Temp: (°C)	Sp. Cond.: (mS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (ntu)
1345	4.5	8.79	0.147	6.78	225	1000
1400	9.0	8.59	0.132	6.54	256	1000
1415	13.5	8.57	0.133	6.48	247	130.3
1430	18.0	8.49	0.133	6.48	242	336.7
1445	22.5	8.47	0.132	6.44	241	119.3
1500	27.0	8.39	0.131	6.44	247	72.20
1515	31.5	8.42	0.131	6.40	252	72.37
4.5 Purged 1530	36.0	8.40	0.130	6.39	255	118.20

Surging	Surging Time (minutes)	Gallons Purged	Purging Time (minutes)
1	5	4.5	5
2	5	4.5	5
3	5	4.5	5
4	5	4.5	5
5	5	4.5	5
6	5	4.5	5

Evacuation Method: Proactive Pump / Other: whale Surge Block: PVC

Remarks:

Sampling Personnel: AJV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

Shannon & Wilson, Inc.

WELL DEVELOPMENT LOG

Job No: 103195-001 Location: Weather: Overcast 30

Concern: Well No.: B3/MW3

Date: 10/22/2019 Time Started: 1330 Time Completed:

DEVELOPMENT DATA CONTINUED

Time:	Gallons:	Temp: (°C)	Sp. Cond.: (mS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (ntu)
1545	40.5	8.41	0.129	6.46	260	11.28
1600	45	8.37	0.129	6.39	270	4.04
1615	49.5	8.38	0.128	6.37	279	4.18
1630	54.0	8.33	0.137	6.56	286	3.86
1640	3 hours effort + 54/55 gallons + well @ 80% Volume					
↳ 1640	Sample time					

Remarks:

Sampling Personnel:

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

Shannon & Wilson, Inc.

WELL DEVELOPMENT LOG

Job No: 103195-001 Location: 1009 W. Klutina St. Weather: Rain 38°

Concern: Well No.: B2/MW2

Develop Date: 10/21/19 Time Started: 1435 Time Completed: 1839

PURGING DATA

Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other:

Time of Depth Measurement: 1438

Diameter of Casing: 1" ☐ 2" ☑

Total Depth of Well Below MP: 24.55

Depth-to-Water (DTW) Below MP: 20.22

Water Column in Well: 4.33 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 0.6928 (Water Column in Well x Gallons per foot)

Three Well Volumes: 2.07 (Gallons in Well x 3)

Gallons Purged: 10

PVC - gs - .44'

DEVELOPMENT DATA

Odor: none noted Color: Slight brown

Time:	Gallons:	Temp: (°C)	Sp. Cond.: (mS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (ntu)
1520	1	11.25	0.215	4.54	442	999.41
1545	2	9.33	0.249	5.99	35	200.6
1620	4	8.79	0.245	6.10	27	370.1
1650	6	8.74	0.221	6.18	16	449.5
1720	8	8.58	0.178	6.02	10	458.9
1735	10	8.43	0.168	6.03	15	138.2
→ 1740	Sample time					
1840	Deplicat MW2 Sample tim					

Checked DTW above 80% same time

Surging	Surging Time (minutes)	Gallons Purged	Purging Time (minutes)
1	5	1	5
2	5	+ 1	5
3	5	+ 2	5
4	5	+ 2	5
5	5	+ 2	5
6	5	+ 2	5

Well ran Dry allow for 80% recharge slower purge rate

Evacuation Method: Proactive Pump / Other: Whale Surge Block: PVC

~~Remarks: 3 hours after; tried to clean up tests after last sampling~~

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

10/22/2019

Table 1
Differential Leveling Survey Field Log Sheet and Instructions

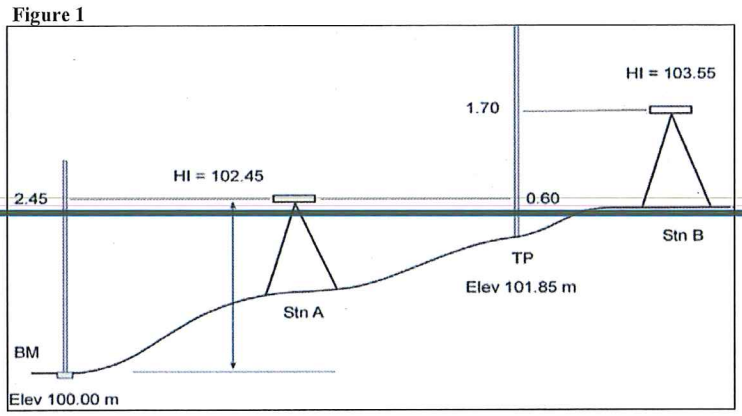
Station or Survey Point ID	Backsight (BS) (+)	Height of Instrument (HI)	Foresight (FS) (-)	Elevation	Comments
TBM	4.81	104.81		100.0	TBM
MW1			4.09	100.72	
MW 3			4.71	100.10	
~~TP1~~ MW2			3.94	100.87	
Benchmark					
TP2					
TBM	4.81		4.81		Final shot back on TBM to close the Loop.
Sum of TBM & TP FS and BS					

Example of Completed Survey

Station or Survey Point ID	Backsight BS (+)	Height of Instrument (HI)	Foresight (FS) (-)	Elevation	Comments
TBM	5.20	1422.04		1416.84	Temporary benchmark w elevation of 1416.84 feet
MW-5			1.40	1420.64	Monitoring well 5
MW-21			3.44	1418.60	
TP1	5.26	1421.46	5.84	1416.20	Instrument moved to new location
MW-23			2.72	1418.74	
MW-24			2.51	1418.95	
MW-22			4.48	1416.98	
MW-8			5.43	1416.03	
TP2	5.52	1421.81	5.17	1416.29	New instrument location to shoot back to TBM
TBM			4.98	1416.83	Final shot back on TBM to close the loop.
Sum of	15.98		15.99		**The Sum of the BS for the TBM and TPs should be within 0.01 of the Sum of the FS for the TBM and TP readings. The difference between these sums will also be equal to the difference between the original TBM and final TBM elevation.**

Figure 1 below shows an example of a traverse with one turning point. The traverse carries an elevation from a known benchmark (BM) to the top of a hill. From the first set-up (Stn A), a BS reading is taken to the BM (Elev. = 100.00). Suppose the rod reading is 2.45 meters: the HI @ Stn A is therefore 100.00 + 2.45= 102.45 m. Suppose you then take a FS to another point, and read 0.60 on the rod; the elevation of that point is HI-FS = 102.45-0.60 = 101.85 meters. If you move the instrument, you use that point to turn on, i.e. you move to the top of the hill and take a BS to the rod. The new HI is 101.85 + 1.70 = 103.55.

Figure 1



Instructions for Completing a Survey

* Make sure you have a site map
* An accurate survey must have two turning points.
* When tying in new wells to an existing survey, the TBM should not be a well and the survey must have at least one turning point.
* For small sites with few measuring points, the site should be resurveyed rather than tying in one or two additional wells (discuss with PM and cofirm time is available in budget).
* For large sites with many measuring points, covering a large area, additional wells should be tied in to existing survey.

FIELD ACTIVITIES DAILY LOG

Date 10/21-22/19
Sheet ___ of ___
Project No. 103195-001

Project Name: 1009 W. Klutnea Street
Field activity subject: DTW measurements
Description of daily activities and events:

	DTW	TD	Time/Date
B1/MW 1	19.56	23.75	1420 / 10/21/2019
B2/MW 2	20.22	24.55	1438 / 10/21/2019
B3/MW 3	19.05	24.18	1432 / 10/21/2019

	DTW	TD	Time/Date
B1/MW1	19.63	"	936 / 10/22/2019
B2/MW2	20.28	"	930 / 10/22/2019
B3/MW3	19.11	"	933 / 10/22/2019

Visitors on site:

Changes from plans/specifications and other special orders and important decisions:

Weather conditions:

Important telephone calls:

Personnel on site:

Signature: Date:

Attachment 2

Site Photographs

Photo 1: Looking east at the advancement of Boring B1. (October 20, 2019)

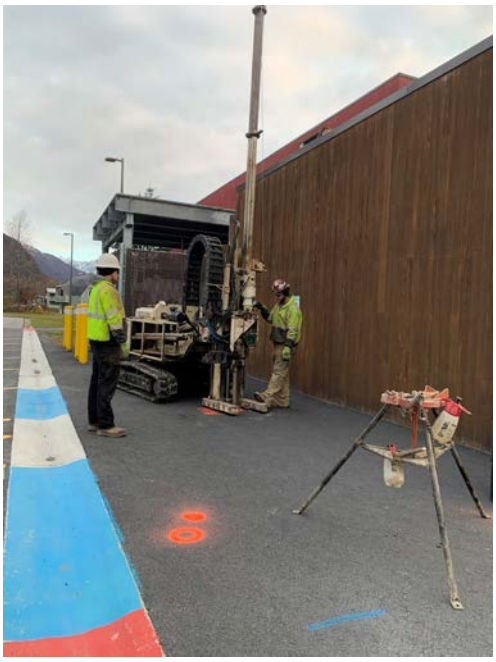


Photo 2: Looking northeast at the advancement of Boring B2. (October 20, 2019)

1009 West Klutina Street
Valdez, Alaska

PHOTOS 1 AND 2

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Photo 3: Looking east at the advancement of Boring B3. (October 21, 2019)

Photo 4: Looking north at Monitoring Well MW1. (October 20, 2019)

1009 West Klutina Street
Valdez, Alaska

PHOTOS 3 AND 4

March 2020 | 103195-001

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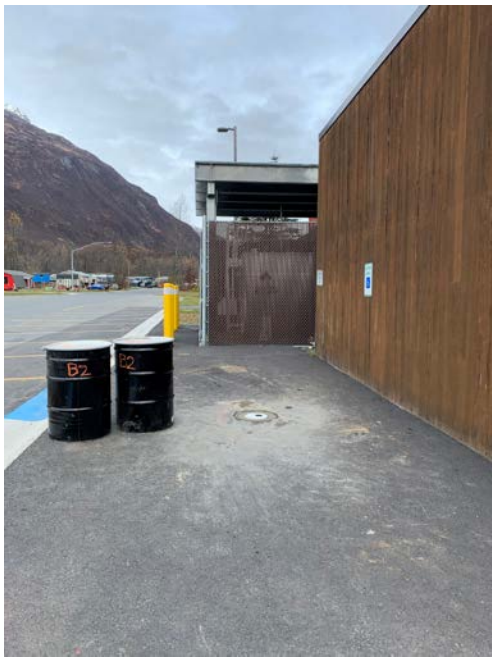

Photo 5: Looking north at Monitoring Well MW2.
(October 20, 2019)

Photo 6: Looking north at Monitoring Well MW3.
(October 21, 2019)

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Valdez, Alaska

PHOTOS 5 AND 6

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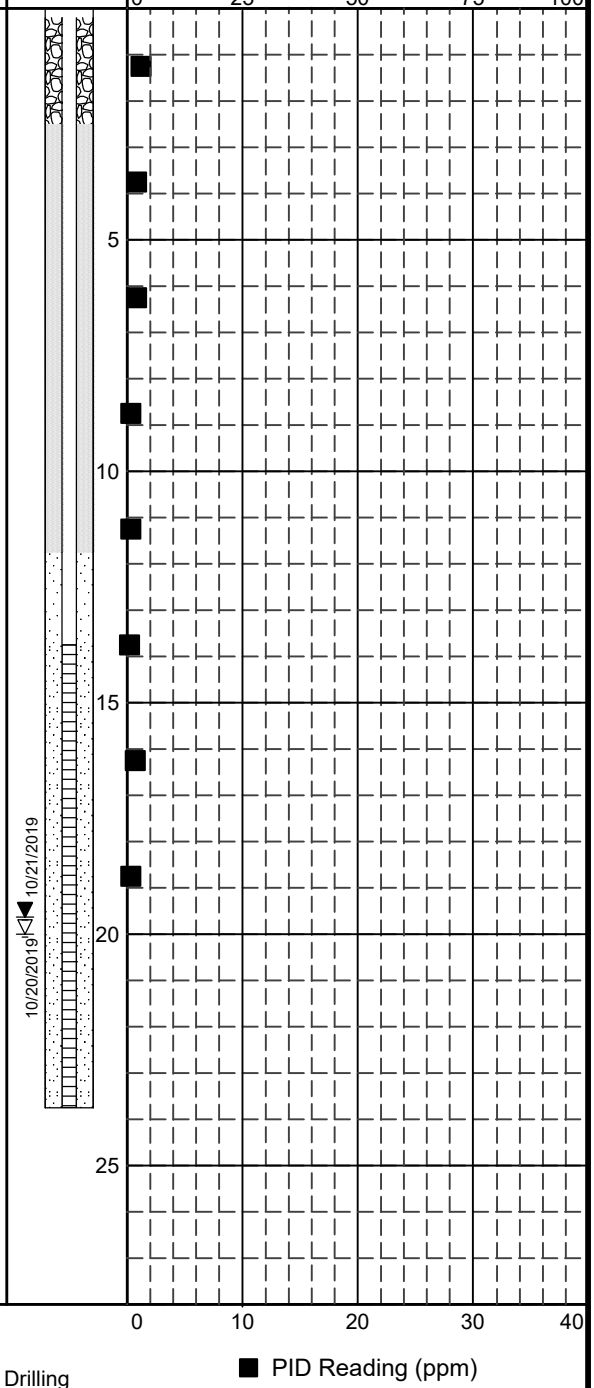
Attachment 3

Boring Logs and Well Construction Details

MATERIAL DESCRIPTION	Depth, Ft.
Gray, *Silty Sand with Gravel (SM)*; moist	2.5
Gray, *Silt (ML)* moist	7.5
Gray, *Silty Sand (SM)*; moist	10.0
Brown, *Sand with Gravel (SP)*; moist	12.5
Gray to Brown, *Silty Sand (SM)*; moist	17.5
Gray, *Silty Sand with Gravel (SM)*; moist	23.8
Bottom of Boring Boring Completed 2/6/19	



LEGEND

* Sample not recovered
Direct Push

Ground Water Level At Time Of Drilling
Static Water Level
Solid Casing, Sand Pack
Solid Casing and Annular Seal
Slotted Section, Filter Sand
Solid Casing, Cuttings Backfill

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials.
3. Water level, if indicated above, is for the date specified and may vary.
4. USC letter symbol based on visual classification.

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Valdez, Alaska

LOG OF BORING B1

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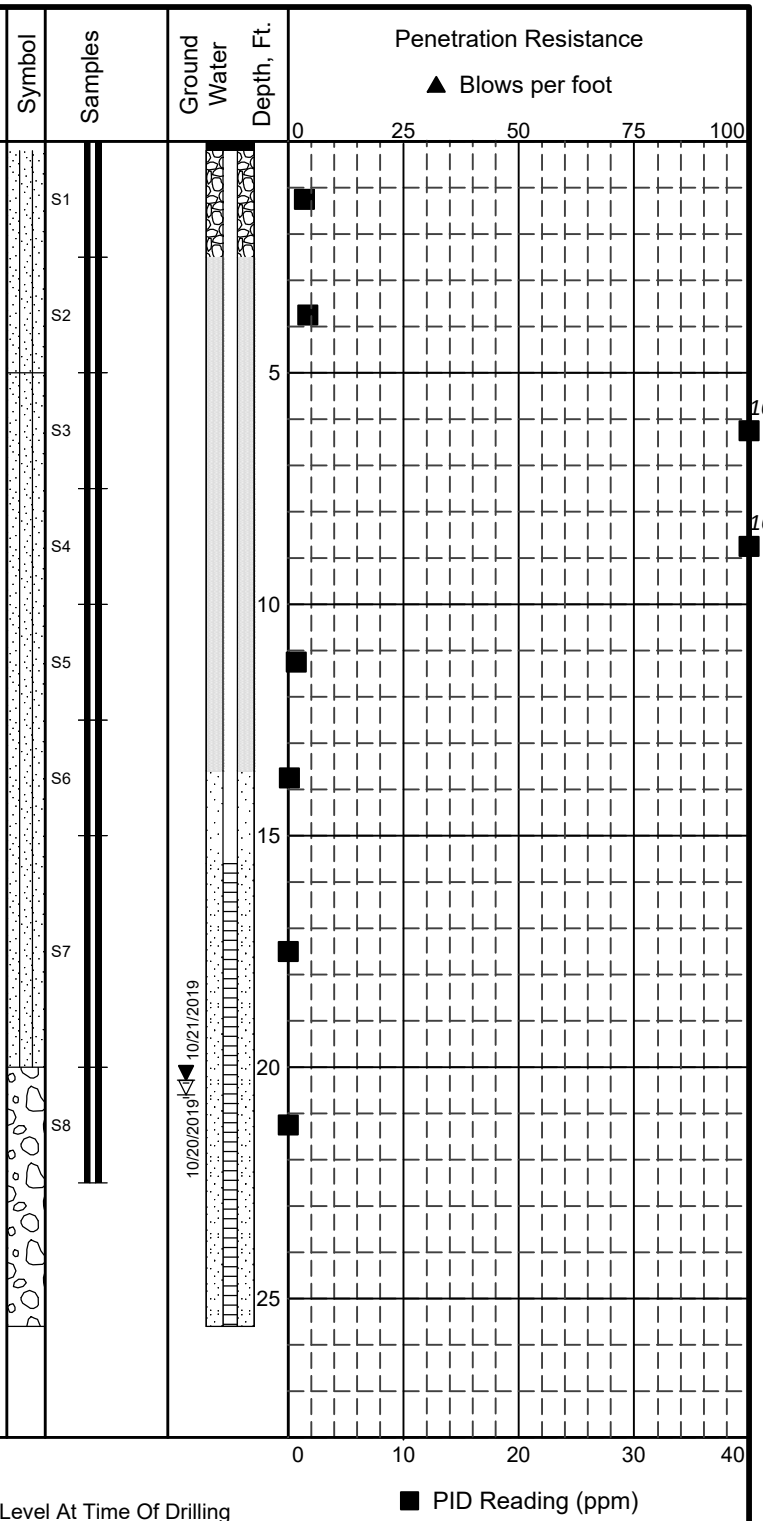
FIG. 3-1

ENVIRONMENTAL LOG GINT.GPJ S&W GEO1.GDT 3/26/20

REV 3 - Approved for Submittal

MATERIAL DESCRIPTION	Depth, Ft.
Gray, *Silty Sand with Gravel (SM)*; moist	
Gray to Brown, *Sand with Gravel (SP)*; moist	5.0
Brown, *Gravel with Sand (GP)*; moist	20.0
Bottom of Boring Boring Completed 2/6/19	25.6



LEGEND

* Sample not recovered
II Direct Push

Ground Water Level At Time Of Drilling
Static Water Level
Solid Casing, Sand Pack
Solid Casing and Annular Seal
Slotted Section, Filter Sand
Solid Casing, Cuttings Backfill

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials.
3. Water level, if indicated above, is for the date specified and may vary.
4. USC letter symbol based on visual classification.

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LOG OF BORING B2

March 2020 | 103195-001

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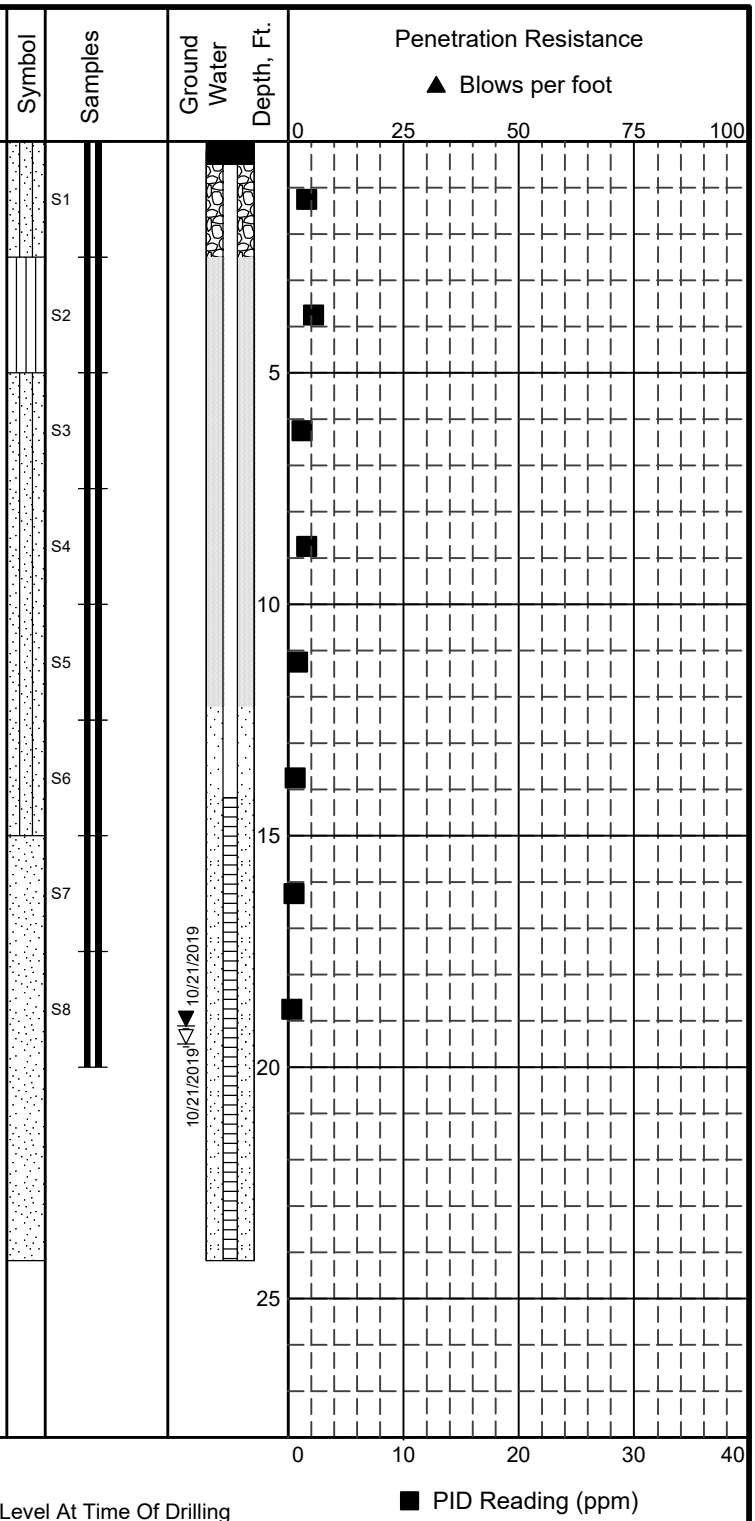
FIG. 3-2

MATERIAL DESCRIPTION	Depth, Ft.
Gray, *Silty Sand with Gravel (SM)*; moist	
Gray, *Silt (ML)* moist	2.5
Gray, *Silty Sand with Gravel (SM)*; moist	5.0
Gray, *Silty Sand (SM)*; moist to wet	15.0
Bottom of Boring Boring Completed 2/6/19	24.2



LEGEND

* Sample not recovered
Direct Push

Ground Water Level At Time Of Drilling
Static Water Level
Solid Casing, Sand Pack
Solid Casing and Annular Seal
Slotted Section, Filter Sand
Solid Casing, Cuttings Backfill

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials.
3. Water level, if indicated above, is for the date specified and may vary.
4. USC letter symbol based on visual classification.

1009 West Klutina Street
Valdez, Alaska

LOG OF BORING B3

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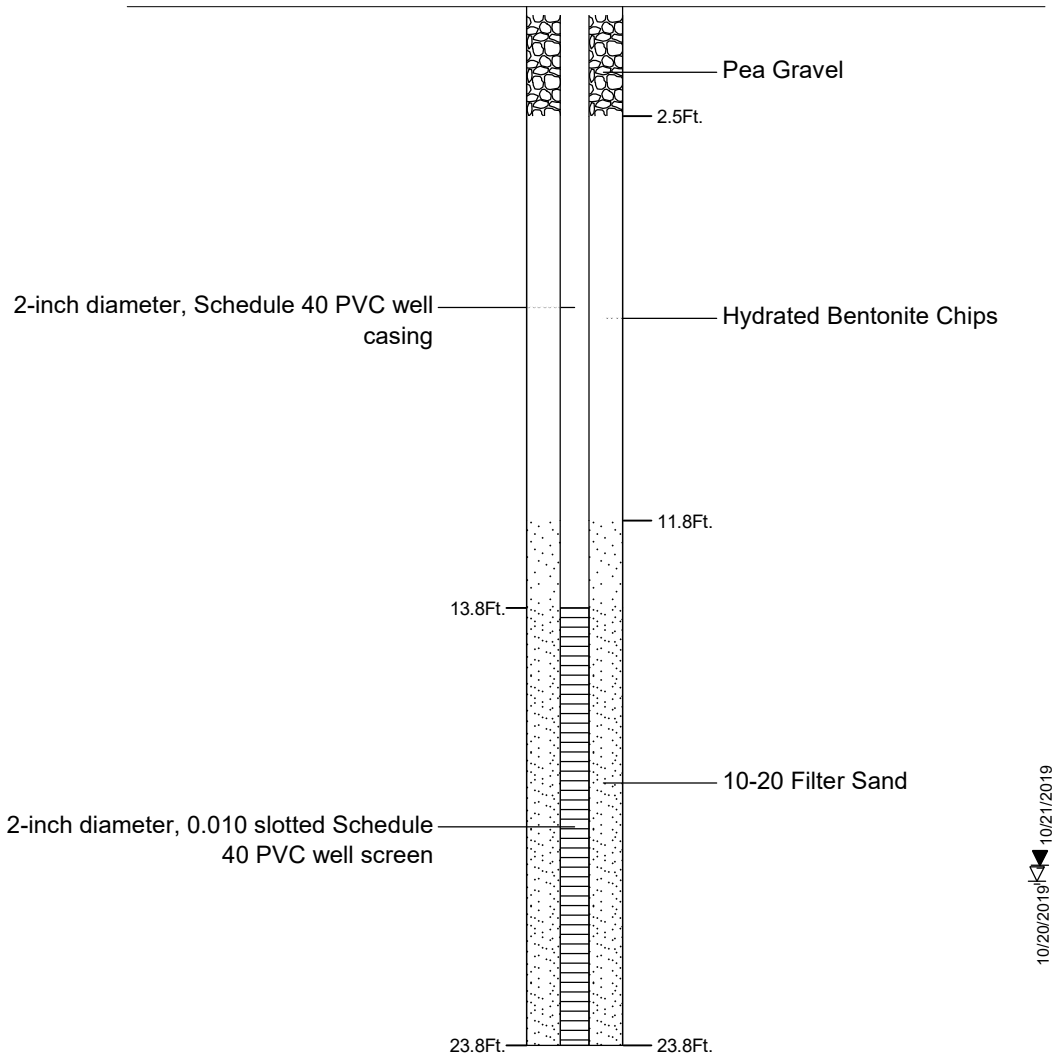
FIG. 3-3

Casing Description **Backfill Description**



LEGEND

▽ Groundwater Level ATD

▼ Static Groundwater Level

NOTE: All joints use threaded connections.

1009 West Klutina Street
Valdez, Alaska

MONITORING WELL MW1
CONSTRUCTION DETAIL

March 2020 103195-001

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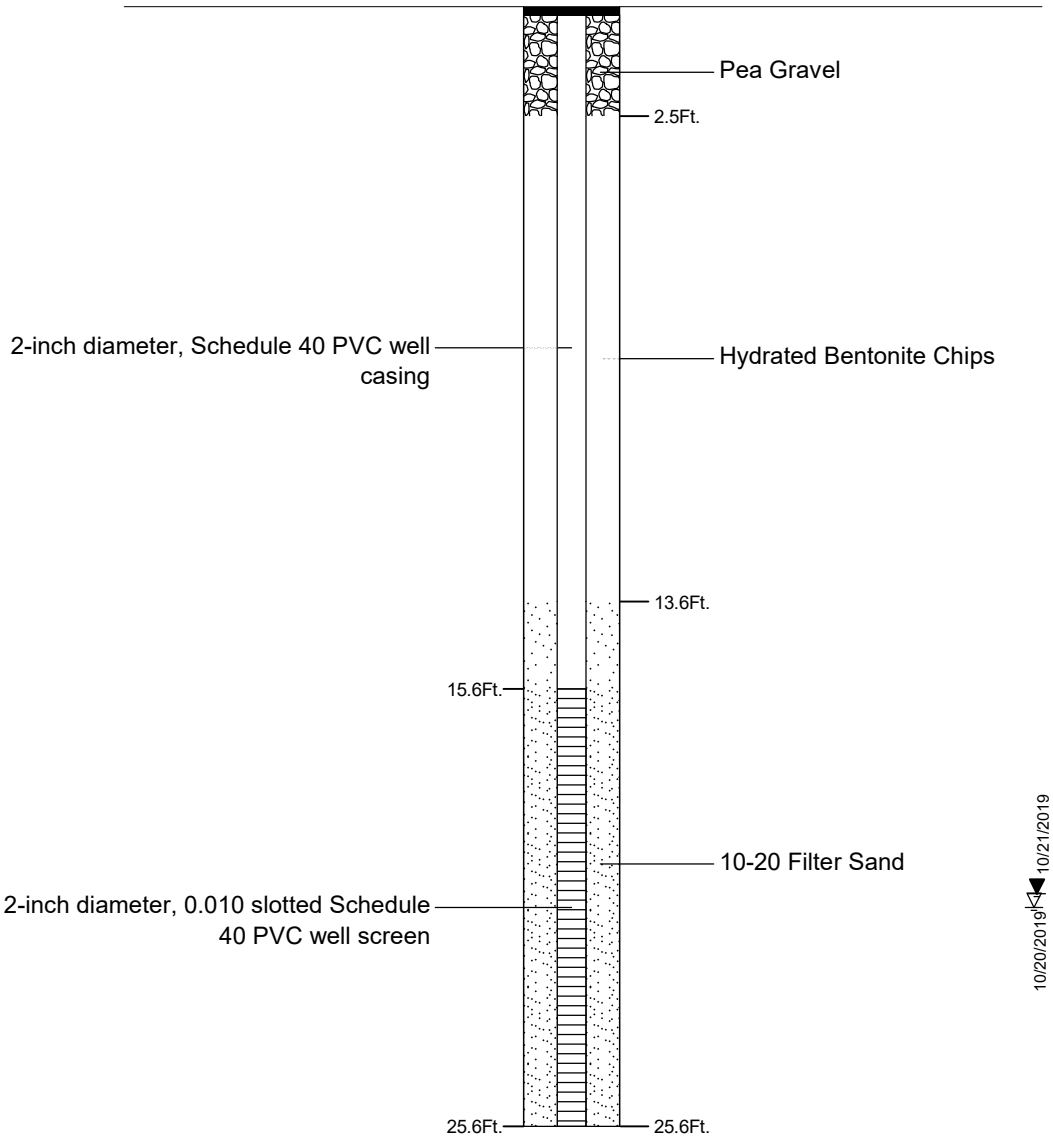
Fig. 3-4

Casing Description | **Backfill Description**



LEGEND

- ▽ Groundwater Level ATD
- ▼ Static Groundwater Level

NOTE: All joints use threaded connections.

1009 West Klutina Street
Valdez, Alaska

MONITORING WELL MW2
CONSTRUCTION DETAIL

March 2020 | 103195-001

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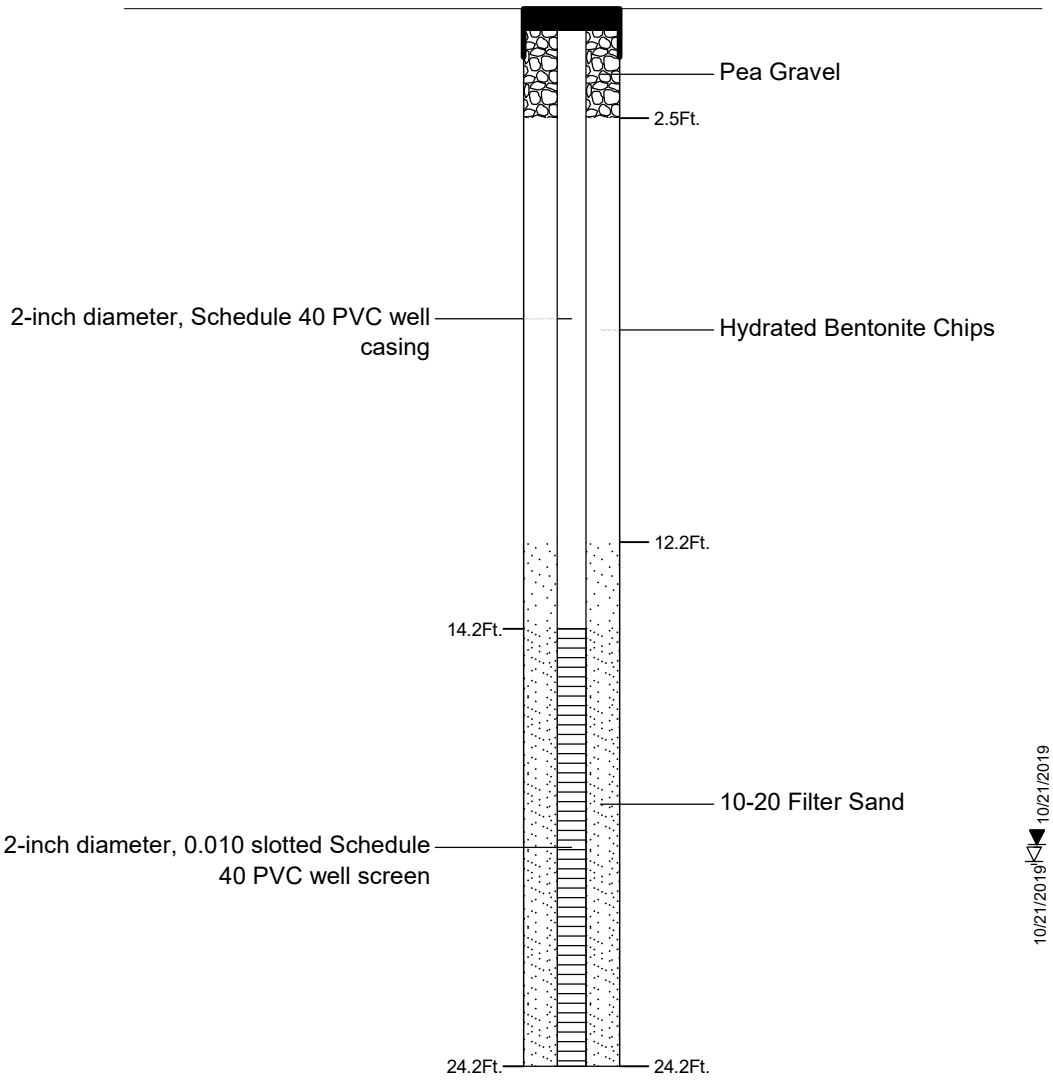
Fig. 3-5

Casing Description | **Backfill Description**



LEGEND

- ▽ Groundwater Level ATD
- ▼ Static Groundwater Level

NOTE: All joints use threaded connections.

1009 West Klutina Street
Valdez, Alaska

MONITORING WELL MW3
CONSTRUCTION DETAIL

March 2020 | 103195-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Fig. 3-6

Attachment 4

Results of Analytical Testing by SGS North America, Inc. and ADEC Laboritory Data Review Checklists

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
907-561-2120

Report Number: **1196400**

Client Project: **103195 1009 W.KlutinaSt Valdez**

Dear Alena Voigt,

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

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

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

Sincerely,
SGS North America Inc.

_____

Jillian Janssen Date
Project Manager
Jillian.Janssen@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
Member of SGS Group

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1196400**
Project Name/Site: **103195 1009 W.KlutinaSt Valdez**
Project Contact: **Alena Voigt**

Refer to sample receipt form for information on sample condition.

LCSD for HBN 1801540 [VXX/3514 (1540529) LCSD

8260C - LCS/LCSD RPD for chloroethane does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

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

Print Date: 10/30/2019 12:28:08PM

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, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 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
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
103195-MW1	1196400001	10/22/2019	10/23/2019	Water (Surface, Eff., Ground)
103195-MW2	1196400002	10/21/2019	10/23/2019	Water (Surface, Eff., Ground)
103195-MW3	1196400003	10/22/2019	10/23/2019	Water (Surface, Eff., Ground)
103195-MW12	1196400004	10/21/2019	10/23/2019	Water (Surface, Eff., Ground)
103195-WTB	1196400005	10/21/2019	10/23/2019	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS Liq/Liq ext. LV
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260C	Volatile Organic Compounds (W) FULL

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

Detectable Results Summary

Client Sample ID: **103195-MW1**
Lab Sample ID: 1196400001

Volatile Fuels
Volatile GC/MS

Parameter	Result	Units
Gasoline Range Organics	0.0397J	mg/L
Chloromethane	0.730J	ug/L

Client Sample ID: **103195-MW2**
Lab Sample ID: 1196400002

Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	0.187J	mg/L
Chloromethane	0.460J	ug/L

Client Sample ID: **103195-MW3**
Lab Sample ID: 1196400003

Volatile GC/MS

Parameter	Result	Units
Chloromethane	0.970J	ug/L

Client Sample ID: **103195-MW12**
Lab Sample ID: 1196400004

Volatile GC/MS

Parameter	Result	Units
Chloromethane	0.310J	ug/L

Client Sample ID: **103195-WTB**
Lab Sample ID: 1196400005

Volatile GC/MS

Parameter	Result	Units
Chloromethane	0.580J	ug/L
Methylene chloride	1.22J	ug/L

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

Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
2-Methylnaphthalene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Acenaphthene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Acenaphthylene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Benzo(a)Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Benzo[a]pyrene	0.00960	U	0.0192	0.00596	ug/L	1		10/27/19 20:37
Benzo[b]Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Benzo[g,h,i]perylene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Benzo[k]fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Chrysene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Dibenzo[a,h]anthracene	0.00960	U	0.0192	0.00596	ug/L	1		10/27/19 20:37
Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Fluorene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Indeno[1,2,3-c,d] pyrene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Naphthalene	0.0481	U	0.0962	0.0298	ug/L	1		10/27/19 20:37
Phenanthrene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Pyrene	0.0240	U	0.0481	0.0144	ug/L	1		10/27/19 20:37
Surrogates								
2-Methylnaphthalene-d10 (surr)	66.9		47-106		%	1		10/27/19 20:37
Fluoranthene-d10 (surr)	65.3		24-116		%	1		10/27/19 20:37

Batch Information

Analytical Batch: XMS11834
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/27/19 20:37
Container ID: 1196400001-C

Prep Batch: XXX42519
Prep Method: SW3520C
Prep Date/Time: 10/24/19 09:15
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.288	U	0.577	0.173	mg/L	1		10/29/19 02:03
Surrogates								
5a Androstane (surr)	98.1		50-150		%	1		10/29/19 02:03

Batch Information

Analytical Batch: XFC15448
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 02:03
Container ID: 1196400001-A

Prep Batch: XXX42518
Prep Method: SW3520C
Prep Date/Time: 10/24/19 08:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0397	J	0.100	0.0310	mg/L	1		10/25/19 15:51
Surrogates								
4-Bromofluorobenzene (surr)	76.2		50-150		%	1		10/25/19 15:51

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 15:51
Container ID: 1196400001-E

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/19 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:12
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/24/19 17:12
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
Benzene	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:12
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Bromomethane	2.50	U	5.00	1.50	ug/L	1		10/24/19 17:12
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12

Print Date: 10/30/2019 12:28:13PM

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Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Chloromethane	0.730	J	1.00	0.310	ug/L	1		10/24/19 17:12
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:12
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		10/24/19 17:12
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/24/19 17:12
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Styrene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Toluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:12
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:12
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/24/19 17:12
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/24/19 17:12
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		10/24/19 17:12
4-Bromofluorobenzene (surr)	97		85-114		%	1		10/24/19 17:12
Toluene-d8 (surr)	104		89-112		%	1		10/24/19 17:12

Print Date: 10/30/2019 12:28:13PM

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Results of **103195-MW1**

Client Sample ID: **103195-MW1**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400001
Lab Project ID: 1196400

Collection Date: 10/22/19 12:55
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 10/24/19 17:12
Container ID: 1196400001-H

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
2-Methylnaphthalene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Acenaphthene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Acenaphthylene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Anthracene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Benzo(a)Anthracene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Benzo[a]pyrene	0.0101	U	0.0202	0.00625	ug/L	1		10/27/19 20:58
Benzo[b]Fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Benzo[g,h,i]perylene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Benzo[k]fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Chrysene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Dibenzo[a,h]anthracene	0.0101	U	0.0202	0.00625	ug/L	1		10/27/19 20:58
Fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Fluorene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Indeno[1,2,3-c,d] pyrene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Naphthalene	0.0505	U	0.101	0.0313	ug/L	1		10/27/19 20:58
Phenanthrene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Pyrene	0.0252	U	0.0504	0.0151	ug/L	1		10/27/19 20:58
Surrogates								
2-Methylnaphthalene-d10 (surr)	58		47-106		%	1		10/27/19 20:58
Fluoranthene-d10 (surr)	57.4		24-116		%	1		10/27/19 20:58

Batch Information

Analytical Batch: XMS11834
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/27/19 20:58
Container ID: 1196400002-C

Prep Batch: XXX42519
Prep Method: SW3520C
Prep Date/Time: 10/24/19 09:15
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.187	J	0.577	0.173	mg/L	1		10/29/19 02:13
Surrogates								
5a Androstane (surr)	98.6		50-150		%	1		10/29/19 02:13

Batch Information

Analytical Batch: XFC15448
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 02:13
Container ID: 1196400002-A

Prep Batch: XXX42518
Prep Method: SW3520C
Prep Date/Time: 10/24/19 08:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		10/25/19 16:08
Surrogates								
4-Bromofluorobenzene (surr)	77.6		50-150		%	1		10/25/19 16:08

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 16:08
Container ID: 1196400002-E

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/19 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:27
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/24/19 17:27
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
Benzene	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:27
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Bromomethane	2.50	U	5.00	1.50	ug/L	1		10/24/19 17:27
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Chloromethane	0.460	J	1.00	0.310	ug/L	1		10/24/19 17:27
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:27
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		10/24/19 17:27
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/24/19 17:27
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Styrene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Toluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:27
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:27
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/24/19 17:27
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/24/19 17:27
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		10/24/19 17:27
4-Bromofluorobenzene (surr)	95.4		85-114		%	1		10/24/19 17:27
Toluene-d8 (surr)	103		89-112		%	1		10/24/19 17:27

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW2**

Client Sample ID: **103195-MW2**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400002
Lab Project ID: 1196400

Collection Date: 10/21/19 17:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 10/24/19 17:27
Container ID: 1196400002-H

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
2-Methylnaphthalene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Acenaphthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Acenaphthylene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Anthracene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Benzo(a)Anthracene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Benzo[a]pyrene	0.00980	U	0.0196	0.00608	ug/L	1		10/27/19 21:18
Benzo[b]Fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Benzo[g,h,i]perylene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Benzo[k]fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Chrysene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Dibenzo[a,h]anthracene	0.00980	U	0.0196	0.00608	ug/L	1		10/27/19 21:18
Fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Fluorene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Indeno[1,2,3-c,d] pyrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Naphthalene	0.0490	U	0.0980	0.0304	ug/L	1		10/27/19 21:18
Phenanthrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Pyrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:18
Surrogates								
2-Methylnaphthalene-d10 (surr)	69.8		47-106		%	1		10/27/19 21:18
Fluoranthene-d10 (surr)	66.4		24-116		%	1		10/27/19 21:18

Batch Information

Analytical Batch: XMS11834
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/27/19 21:18
Container ID: 1196400003-C

Prep Batch: XXX42519
Prep Method: SW3520C
Prep Date/Time: 10/24/19 09:15
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.283	U	0.566	0.170	mg/L	1		10/29/19 02:23
Surrogates								
5a Androstane (surr)	94.1		50-150		%	1		10/29/19 02:23

Batch Information

Analytical Batch: XFC15448
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 02:23
Container ID: 1196400003-A

Prep Batch: XXX42518
Prep Method: SW3520C
Prep Date/Time: 10/24/19 08:26
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		10/25/19 16:26
Surrogates								
4-Bromofluorobenzene (surr)	74.6		50-150		%	1		10/25/19 16:26

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 16:26
Container ID: 1196400003-E

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/19 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:42
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/24/19 17:42
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
Benzene	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:42
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Bromomethane	2.50	U	5.00	1.50	ug/L	1		10/24/19 17:42
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Chloromethane	0.970	J	1.00	0.310	ug/L	1		10/24/19 17:42
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:42
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		10/24/19 17:42
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/24/19 17:42
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Styrene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Toluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:42
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:42
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/24/19 17:42
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/24/19 17:42
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		10/24/19 17:42
4-Bromofluorobenzene (surr)	95.5		85-114		%	1		10/24/19 17:42
Toluene-d8 (surr)	103		89-112		%	1		10/24/19 17:42

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW3**

Client Sample ID: **103195-MW3**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400003
Lab Project ID: 1196400

Collection Date: 10/22/19 16:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 10/24/19 17:42
Container ID: 1196400003-H

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
2-Methylnaphthalene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Acenaphthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Acenaphthylene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Anthracene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Benzo(a)Anthracene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Benzo[a]pyrene	0.00980	U	0.0196	0.00608	ug/L	1		10/27/19 21:39
Benzo[b]Fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Benzo[g,h,i]perylene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Benzo[k]fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Chrysene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Dibenzo[a,h]anthracene	0.00980	U	0.0196	0.00608	ug/L	1		10/27/19 21:39
Fluoranthene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Fluorene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Indeno[1,2,3-c,d] pyrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Naphthalene	0.0490	U	0.0980	0.0304	ug/L	1		10/27/19 21:39
Phenanthrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Pyrene	0.0245	U	0.0490	0.0147	ug/L	1		10/27/19 21:39
Surrogates								
2-Methylnaphthalene-d10 (surr)	72.9		47-106		%	1		10/27/19 21:39
Fluoranthene-d10 (surr)	72.8		24-116		%	1		10/27/19 21:39

Batch Information

Analytical Batch: XMS11834
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 10/27/19 21:39
Container ID: 1196400004-C

Prep Batch: XXX42519
Prep Method: SW3520C
Prep Date/Time: 10/24/19 09:15
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.300	U	0.600	0.180	mg/L	1		10/29/19 02:32
Surrogates								
5a Androstane (surr)	104		50-150		%	1		10/29/19 02:32

Batch Information

Analytical Batch: XFC15448
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 02:32
Container ID: 1196400004-A

Prep Batch: XXX42518
Prep Method: SW3520C
Prep Date/Time: 10/24/19 08:26
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

J flagging is activated

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Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		10/25/19 16:44
Surrogates								
4-Bromofluorobenzene (surr)	77.2		50-150		%	1		10/25/19 16:44

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 16:44
Container ID: 1196400004-E

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/19 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:58
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/24/19 17:58
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
Benzene	0.200	U	0.400	0.120	ug/L	1		10/24/19 17:58
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Bromomethane	2.50	U	5.00	1.50	ug/L	1		10/24/19 17:58
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58

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Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Chloromethane	0.310	J	1.00	0.310	ug/L	1		10/24/19 17:58
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 17:58
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		10/24/19 17:58
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/24/19 17:58
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Styrene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Toluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 17:58
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/24/19 17:58
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/24/19 17:58
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/24/19 17:58
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		10/24/19 17:58
4-Bromofluorobenzene (surr)	94.6		85-114		%	1		10/24/19 17:58
Toluene-d8 (surr)	102		89-112		%	1		10/24/19 17:58

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-MW12**

Client Sample ID: **103195-MW12**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400004
Lab Project ID: 1196400

Collection Date: 10/21/19 18:40
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 10/24/19 17:58
Container ID: 1196400004-H

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **103195-WTB**

Client Sample ID: **103195-WTB**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400005
Lab Project ID: 1196400

Collection Date: 10/21/19 12:00
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		10/25/19 13:12
Surrogates								
4-Bromofluorobenzene (surr)	73.3		50-150		%	1		10/25/19 13:12

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 13:12
Container ID: 1196400005-A

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/19 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-WTB**

Client Sample ID: **103195-WTB**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400005
Lab Project ID: 1196400

Collection Date: 10/21/19 12:00
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/24/19 12:52
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/24/19 12:52
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
Benzene	0.200	U	0.400	0.120	ug/L	1		10/24/19 12:52
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Bromomethane	2.50	U	5.00	1.50	ug/L	1		10/24/19 12:52
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-WTB**

Client Sample ID: **103195-WTB**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400005
Lab Project ID: 1196400

Collection Date: 10/21/19 12:00
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Chloromethane	0.580	J	1.00	0.310	ug/L	1		10/24/19 12:52
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/24/19 12:52
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Methylene chloride	1.22	J	5.00	1.00	ug/L	1		10/24/19 12:52
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/24/19 12:52
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Styrene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Toluene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/24/19 12:52
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/24/19 12:52
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/24/19 12:52
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/24/19 12:52
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		10/24/19 12:52
4-Bromofluorobenzene (surr)	95.3		85-114		%	1		10/24/19 12:52
Toluene-d8 (surr)	106		89-112		%	1		10/24/19 12:52

Print Date: 10/30/2019 12:28:13PM

J flagging is activated

Results of **103195-WTB**

Client Sample ID: **103195-WTB**
Client Project ID: **103195 1009 W.KlutinaSt Valdez**
Lab Sample ID: 1196400005
Lab Project ID: 1196400

Collection Date: 10/21/19 12:00
Received Date: 10/23/19 14:32
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 10/24/19 12:52
Container ID: 1196400005-D

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1801540 [VXX/35148]
Blank Lab ID: 1540527

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1801540 [VXX/35148]
Blank Lab ID: 1540527

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	97	85-114		%
Toluene-d8 (surr)	103	89-112		%

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Method Blank

Blank ID: MB for HBN 1801540 [VXX/35148]
Blank Lab ID: 1540527

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS19606
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: CMC
Analytical Date/Time: 10/24/2019 11:05:00AM

Prep Batch: VXX35148
Prep Method: SW5030B
Prep Date/Time: 10/24/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:15PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [VXX35148]
Blank Spike Lab ID: 1540528
Date Analyzed: 10/24/2019 11:20

Spike Duplicate ID: LCSD for HBN 1196400 [VXX35148]
Spike Duplicate Lab ID: 1540529
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	33.4	111	30	33.4	111	(78-124)	0.05	(< 20)
1,1,1-Trichloroethane	30	31.6	105	30	31.5	105	(74-131)	0.11	(< 20)
1,1,2,2-Tetrachloroethane	30	28.1	94	30	28.5	95	(71-121)	1.50	(< 20)
1,1,2-Trichloroethane	30	31.3	104	30	31.3	104	(80-119)	0.26	(< 20)
1,1-Dichloroethane	30	30.0	100	30	29.6	99	(77-125)	1.20	(< 20)
1,1-Dichloroethene	30	29.9	100	30	30.1	100	(71-131)	0.61	(< 20)
1,1-Dichloropropene	30	30.5	102	30	30.3	101	(79-125)	0.81	(< 20)
1,2,3-Trichlorobenzene	30	30.5	102	30	31.4	105	(69-129)	3.10	(< 20)
1,2,3-Trichloropropane	30	29.3	98	30	29.2	98	(73-122)	0.28	(< 20)
1,2,4-Trichlorobenzene	30	29.8	99	30	30.2	101	(69-130)	1.40	(< 20)
1,2,4-Trimethylbenzene	30	27.4	91	30	27.4	91	(79-124)	0.04	(< 20)
1,2-Dibromo-3-chloropropane	30	29.0	97	30	29.2	98	(62-128)	0.97	(< 20)
1,2-Dibromoethane	30	30.6	102	30	30.7	102	(77-121)	0.51	(< 20)
1,2-Dichlorobenzene	30	30.2	101	30	30.5	102	(80-119)	0.87	(< 20)
1,2-Dichloroethane	30	30.3	101	30	30.2	101	(73-128)	0.54	(< 20)
1,2-Dichloropropane	30	29.8	99	30	29.6	99	(78-122)	0.81	(< 20)
1,3,5-Trimethylbenzene	30	27.4	91	30	27.1	90	(75-124)	1.00	(< 20)
1,3-Dichlorobenzene	30	30.9	103	30	30.8	103	(80-119)	0.46	(< 20)
1,3-Dichloropropane	30	31.4	105	30	31.4	105	(80-119)	0.12	(< 20)
1,4-Dichlorobenzene	30	30.7	102	30	30.9	103	(79-118)	0.78	(< 20)
2,2-Dichloropropane	30	29.1	97	30	29.1	97	(60-139)	0.02	(< 20)
2-Butanone (MEK)	90	107	119	90	107	119	(56-143)	0.35	(< 20)
2-Chlorotoluene	30	26.9	90	30	26.4	88	(79-122)	1.80	(< 20)
2-Hexanone	90	105	116	90	105	117	(57-139)	0.59	(< 20)
4-Chlorotoluene	30	27.2	91	30	27.2	91	(78-122)	0.17	(< 20)
4-Isopropyltoluene	30	29.4	98	30	29.8	99	(77-127)	1.50	(< 20)
4-Methyl-2-pentanone (MIBK)	90	91.2	101	90	90.9	101	(67-130)	0.34	(< 20)
Benzene	30	28.9	96	30	29.7	99	(79-120)	3.00	(< 20)
Bromobenzene	30	29.4	98	30	29.3	98	(80-120)	0.24	(< 20)
Bromochloromethane	30	29.7	99	30	29.5	98	(78-123)	0.83	(< 20)
Bromodichloromethane	30	32.5	108	30	32.1	107	(79-125)	1.40	(< 20)
Bromoform	30	37.3	124	30	37.2	124	(66-130)	0.25	(< 20)
Bromomethane	30	28.4	95	30	29.3	98	(53-141)	3.10	(< 20)
Carbon disulfide	45	43.6	97	45	44.2	98	(64-133)	1.40	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [VXX35148]
Blank Spike Lab ID: 1540528
Date Analyzed: 10/24/2019 11:20

Spike Duplicate ID: LCSD for HBN 1196400 [VXX35148]
Spike Duplicate Lab ID: 1540529
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	33.8	113	30	33.6	112	(72-136)	0.36	(< 20)
Chlorobenzene	30	28.8	96	30	28.7	96	(82-118)	0.56	(< 20)
Chloroethane	30	32.4	108	30	40.0	133	(60-138)	21.00	* (< 20)
Chloroform	30	31.0	103	30	30.7	102	(79-124)	0.71	(< 20)
Chloromethane	30	29.6	99	30	29.6	99	(50-139)	0.20	(< 20)
cis-1,2-Dichloroethene	30	29.1	97	30	28.9	96	(78-123)	0.56	(< 20)
cis-1,3-Dichloropropene	30	29.7	99	30	29.2	98	(75-124)	1.60	(< 20)
Dibromochloromethane	30	33.0	110	30	33.3	111	(74-126)	0.79	(< 20)
Dibromomethane	30	30.0	100	30	29.9	100	(79-123)	0.33	(< 20)
Dichlorodifluoromethane	30	30.4	101	30	30.5	102	(32-152)	0.58	(< 20)
Ethylbenzene	30	29.8	100	30	29.7	99	(79-121)	0.63	(< 20)
Freon-113	45	45.8	102	45	45.6	101	(70-136)	0.32	(< 20)
Hexachlorobutadiene	30	27.8	93	30	29.3	98	(66-134)	5.30	(< 20)
Isopropylbenzene (Cumene)	30	31.1	104	30	30.9	103	(72-131)	0.39	(< 20)
Methylene chloride	30	29.0	97	30	29.1	97	(74-124)	0.39	(< 20)
Methyl-t-butyl ether	45	46.3	103	45	46.1	102	(71-124)	0.59	(< 20)
Naphthalene	30	29.1	97	30	30.1	100	(61-128)	3.60	(< 20)
n-Butylbenzene	30	26.8	89	30	27.1	91	(75-128)	1.40	(< 20)
n-Propylbenzene	30	27.6	92	30	27.4	92	(76-126)	0.66	(< 20)
o-Xylene	30	29.7	99	30	29.3	98	(78-122)	1.30	(< 20)
P & M -Xylene	60	58.9	98	60	59.1	99	(80-121)	0.29	(< 20)
sec-Butylbenzene	30	27.4	91	30	27.5	92	(77-126)	0.32	(< 20)
Styrene	30	30.9	103	30	30.2	101	(78-123)	2.40	(< 20)
tert-Butylbenzene	30	29.6	99	30	29.2	97	(78-124)	1.30	(< 20)
Tetrachloroethene	30	30.6	102	30	30.7	102	(74-129)	0.36	(< 20)
Toluene	30	28.0	94	30	27.7	92	(80-121)	1.30	(< 20)
trans-1,2-Dichloroethene	30	29.4	98	30	29.7	99	(75-124)	0.83	(< 20)
trans-1,3-Dichloropropene	30	31.6	105	30	31.7	106	(73-127)	0.27	(< 20)
Trichloroethene	30	29.5	99	30	29.4	98	(79-123)	0.54	(< 20)
Trichlorofluoromethane	30	33.7	112	30	36.4	121	(65-141)	7.70	(< 20)
Vinyl acetate	30	34.8	116	30	34.7	116	(54-146)	0.21	(< 20)
Vinyl chloride	30	28.9	96	30	28.4	95	(58-137)	1.80	(< 20)
Xylenes (total)	90	88.6	98	90	88.4	98	(79-121)	0.23	(< 20)

Print Date: 10/30/2019 12:28:16PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [VXX35148]
Blank Spike Lab ID: 1540528
Date Analyzed: 10/24/2019 11:20

Spike Duplicate ID: LCSD for HBN 1196400 [VXX35148]
Spike Duplicate Lab ID: 1540529
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	106	106	30	106	106	(81-118)	0.52	
4-Bromofluorobenzene (surr)	30	89	89	30	89.4	89	(85-114)	0.37	
Toluene-d8 (surr)	30	102	102	30	103	103	(89-112)	1.00	

Batch Information

Analytical Batch: **VMS19606**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **CMC**

Prep Batch: **VXX35148**
Prep Method: **SW5030B**
Prep Date/Time: **10/24/2019 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 1801601 [VXX/35154]
Blank Lab ID: 1540815

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004, 1196400005

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	76.1	50-150		%

Batch Information

Analytical Batch: VFC15013
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/25/2019 11:19:00AM

Prep Batch: VXX35154
Prep Method: SW5030B
Prep Date/Time: 10/25/2019 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2019 12:28:18PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [VXX35154]
Blank Spike Lab ID: 1540816
Date Analyzed: 10/25/2019 11:55

Spike Duplicate ID: LCSD for HBN 1196400 [VXX35154]
Spike Duplicate Lab ID: 1540817
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004, 1196400005

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	0.937	94	1.00	0.957	96	(60-120)	2.10	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	83.7	84	0.0500	84.7	85	(50-150)	1.20	

Batch Information

Analytical Batch: **VFC15013**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX35154**
Prep Method: **SW5030B**
Prep Date/Time: **10/25/2019 08:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1801456 [XXX/42518]
Blank Lab ID: 1540072

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	88.7	60-120		%

Batch Information

Analytical Batch: XFC15442
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: CMS
Analytical Date/Time: 10/25/2019 10:47:00AM

Prep Batch: XXX42518
Prep Method: SW3520C
Prep Date/Time: 10/24/2019 8:26:49AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:21PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [XXX42518]
Blank Spike Lab ID: 1540073
Date Analyzed: 10/25/2019 11:26

Spike Duplicate ID: LCSD for HBN 1196400 [XXX42518]
Spike Duplicate Lab ID: 1540074
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004

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	19.8	99	20	19.6	98	(75-125)	1.10	(< 20)
Surrogates									
5a Androstane (surr)	0.4	100	100	0.4	99.7	100	(60-120)	0.54	

Batch Information

Analytical Batch: **XFC15442**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **CMS**

Prep Batch: **XXX42518**
Prep Method: **SW3520C**
Prep Date/Time: **10/24/2019 08:26**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1801460 [XXX/42519]
Blank Lab ID: 1540078

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1196400001, 1196400002, 1196400003, 1196400004

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

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	65.3	47-106		%
Fluoranthene-d10 (surr)	63.2	24-116		%

Batch Information

Analytical Batch: XMS11834
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 10/27/2019 7:35:00PM

Prep Batch: XXX42519
Prep Method: SW3520C
Prep Date/Time: 10/24/2019 9:15:56AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2019 12:28:25PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196400 [XXX42519]
Blank Spike Lab ID: 1540079
Date Analyzed: 10/27/2019 19:56

Spike Duplicate ID: LCSD for HBN 1196400 [XXX42519]
Spike Duplicate Lab ID: 1540080
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1196400001, 1196400002, 1196400003, 1196400004

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	1.55	78	2	1.53	77	(41-115)	1.20	(< 20)
2-Methylnaphthalene	2	1.52	76	2	1.52	76	(39-114)	0.33	(< 20)
Acenaphthene	2	1.56	78	2	1.53	77	(48-114)	1.50	(< 20)
Acenaphthylene	2	1.63	81	2	1.61	81	(35-121)	1.00	(< 20)
Anthracene	2	1.70	85	2	1.66	83	(53-119)	2.40	(< 20)
Benzo(a)Anthracene	2	1.50	75	2	1.47	74	(59-120)	2.00	(< 20)
Benzo[a]pyrene	2	1.55	77	2	1.50	75	(53-120)	2.70	(< 20)
Benzo[b]Fluoranthene	2	1.54	77	2	1.53	77	(53-126)	0.88	(< 20)
Benzo[g,h,i]perylene	2	1.64	82	2	1.60	80	(44-128)	2.60	(< 20)
Benzo[k]fluoranthene	2	1.79	90	2	1.74	87	(54-125)	2.80	(< 20)
Chrysene	2	1.56	78	2	1.55	78	(57-120)	0.36	(< 20)
Dibenzo[a,h]anthracene	2	1.64	82	2	1.59	80	(44-131)	2.70	(< 20)
Fluoranthene	2	1.55	77	2	1.50	75	(58-120)	3.10	(< 20)
Fluorene	2	1.64	82	2	1.61	80	(50-118)	1.80	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.77	88	2	1.73	86	(48-130)	2.40	(< 20)
Naphthalene	2	1.54	77	2	1.52	76	(43-114)	1.30	(< 20)
Phenanthrene	2	1.55	77	2	1.50	75	(53-115)	2.70	(< 20)
Pyrene	2	1.60	80	2	1.61	80	(53-121)	0.28	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2	75.5	76	2	76.6	77	(47-106)	1.30	
Fluoranthene-d10 (surr)	2	75.1	75	2	73	73	(24-116)	2.80	

Batch Information

Analytical Batch: **XMS11834**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX42519**
Prep Method: **SW3520C**
Prep Date/Time: **10/24/2019 09:15**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

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

1196400

Profile: 343021 JKJ

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

400 N. 34th Street, Suite 100
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(206) 632-8020

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St. Louis, MO 63146-3564
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Fairbanks, AK 99709
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(503) 223-6147

1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Laboratory: SGS
Attn: Jillian

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	GRO/AK101	VOC/EPA 8260C	DRO/AK102	PAH/EPA 8270D SIM				Total Number of Containers	Remarks/Matrix
103195-MW1	1 AJ	1255	10/22/19		✓	✓	✓						10	Groundwater
103195-MW2	2 AJ	1740	10/21/19		✓	✓	✓						10	↓
103195-MW3	3 AJ	1640	10/22/19		✓	✓	✓						10	
103195-MW12	4 AJ	1840	10/21/19		✓	✓	✓						10	
103195-WTB	5 AF	1200	10/21/19			✓							1 box	Lab supplied TB

Project Information	
Project Number: 103195	
Project Name: 1009 W. Klutina St Valdez, AK	
Contact: ADV, JCT	
Ongoing Project? Yes ☑ No ☐	
Sampler: ADV	

Sample Receipt	
Total Number of Containers	
COC Seals/Intact? Y/N/NA	
Received Good Cond./Cold	
Delivery Method: (attach shipping bill, if any)	

Instructions
Requested Turnaround Time: STANDARD
Special Instructions:

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Alena Voigt Time: 1432	Signature: Time:	Signature: Time:
Printed Name: Alena Voigt Date: 10/23/19	Printed Name: Date:	Printed Name: Date:
Company: Shannon & Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time:	Signature: Time:	Signature: Time: 14:32
Printed Name: Date:	Printed Name: Date:	Printed Name: Michelle Albarran Date: 10·23·19
Company:	Company:	Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 34986

e-Sample Receipt Form

SGS Workorder #: **1196400**

1 1 9 6 4 0 0

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements	Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.4 °C Therm. ID: D45
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information	Yes	
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1196400001-A	HCL to pH < 2	OK			
1196400001-B	HCL to pH < 2	OK			
1196400001-C	No Preservative Required	OK			
1196400001-D	No Preservative Required	OK			
1196400001-E	HCL to pH < 2	OK			
1196400001-F	HCL to pH < 2	OK			
1196400001-G	HCL to pH < 2	OK			
1196400001-H	HCL to pH < 2	OK			
1196400001-I	HCL to pH < 2	OK			
1196400001-J	HCL to pH < 2	OK			
1196400002-A	HCL to pH < 2	OK			
1196400002-B	HCL to pH < 2	OK			
1196400002-C	No Preservative Required	OK			
1196400002-D	No Preservative Required	OK			
1196400002-E	HCL to pH < 2	OK			
1196400002-F	HCL to pH < 2	OK			
1196400002-G	HCL to pH < 2	OK			
1196400002-H	HCL to pH < 2	OK			
1196400002-I	HCL to pH < 2	OK			
1196400002-J	HCL to pH < 2	OK			
1196400003-A	HCL to pH < 2	OK			
1196400003-B	HCL to pH < 2	OK			
1196400003-C	No Preservative Required	OK			
1196400003-D	No Preservative Required	OK			
1196400003-E	HCL to pH < 2	OK			
1196400003-F	HCL to pH < 2	OK			
1196400003-G	HCL to pH < 2	OK			
1196400003-H	HCL to pH < 2	OK			
1196400003-I	HCL to pH < 2	OK			
1196400003-J	HCL to pH < 2	OK			
1196400004-A	HCL to pH < 2	OK			
1196400004-B	HCL to pH < 2	OK			
1196400004-C	No Preservative Required	OK			
1196400004-D	No Preservative Required	OK			
1196400004-E	HCL to pH < 2	OK			
1196400004-F	HCL to pH < 2	OK			
1196400004-G	HCL to pH < 2	OK			
1196400004-H	HCL to pH < 2	OK			
1196400004-I	HCL to pH < 2	OK			
1196400004-J	HCL to pH < 2	OK			
1196400005-A	HCL to pH < 2	OK			
1196400005-B	HCL to pH < 2	OK			
1196400005-C	HCL to pH < 2	OK			
1196400005-D	HCL to pH < 2	OK			
1196400005-E	HCL to pH < 2	OK			
1196400005-F	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.

LABORATORY DATA REVIEW CHECKLIST

Completed by: Alena Voigt
Title: Environmental Scientist
Date: March 2020

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1196400
Laboratory Report Date: 10/30/2019

Contaminated Site Name: Hermon Hutchens Elementary School UST 2 and Admin Bldg
ADEC File Number: 2264.26.021 and 2264.38.044
Hazard Identification Number: 25449/27076

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA**
Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
Yes / No / NA
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?
Yes / No / NA
Comments**:**

b. Correct analyses requested? **Yes / No / NA**
Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
Yes / No / NA
Comments: *The temperature blank had a temperature of 1.4°* C

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA**
Comments:

c. Sample condition documented - broken, leaking (MeOH), zero headspace (VOC vials)? **Yes / No / NA**
Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? **Yes / No / NA**
Comments: *No discrepancies were noted.*

e. Data quality or usability affected?
Comments: *Data quality/usability are considered unaffected; see above.*

4. Case Narrative

a. Present and understandable? **Yes / No / NA**
Comments:

b. Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA**
Comments:

- *LCS/LCSD RPD for chloroethane does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.*

c. Were corrective actions documented? **Yes / No / NA**
Comments:

d. What is the effect on data quality/usability, according to the case narrative?
Comments: *See above.*

5. Sample Results

a. Correct analyses performed/reported as requested on COC? **Yes / No / NA**
Comments:

b. All applicable holding times met? **Yes / No / NA**
Comments:

c. All soils reported on a dry weight basis? **Yes / No / NA**
Comments: *Soil samples were not included in this work order.*

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA**
Comments:

e. Data quality or usability affected?
Comments: *See above.*

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis, and 20 samples?
Yes / No / NA
Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
Yes / No / NA
Comments:

iii. If above LOQ or project specified objectives, what samples are affected?
Comments: *NA*

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes / No / NA
Comments:

v. Data quality or usability affected?
Comments: *See above.*

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

i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / NA**
Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA**
Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments:

iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from LCS/LCSD, and/or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *LCS/LCSD RPD for chloroethane does not meet QC criteria.*

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: *Each sample.*

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?
Yes / No / NA
Comments: *The analytes were not detected above the LOQ in the associated samples.*

vii. Data quality or usability affected?
Comments*: No, see above.*

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Note: Leave blank if not required for project

i. Organics - One MS/MSD reported per matrix, analysis, and 20 samples?
Yes / No / NA
Comments:

ii. Metals/Inorganics - One MS and one MSD reported per matrix, analysis and 20 samples? **Yes / No / NA**
Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments:

iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from MS/MSD, and/or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments:

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

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?
Yes / No / NA
Comments:

vii. Data quality or usability affected?
Comments:

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

i. Are surrogate/IDA recoveries reported for organic analyses - field, QC, and laboratory samples? **Yes / No / NA**
Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA**
Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

iv. Data quality or usability affected?
Comments: *See above.*

e. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.)

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? **Yes / No / NA**
Comments:

ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA**
Comments: *Only one cooler was used to transport the samples.*

iii. All results less than LOQ and project specified objectives? **Yes / No / NA**
Comments:

iv. If above LOQ or project specified DQOs, what samples are affected?
Comments:

v. Data quality or usability affected?
Comments: *See above.*

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No / NA
Comments: *Sample MW12 is the field duplicate of Sample MW2.*

ii. Were the field duplicates submitted blind to the lab? **Yes / No / NA**
Comments*:*

iii. Precision – All relative percent differences (RPDs) less than specified project objectives? (Recommended: 30% for water, 50% for soil) **Yes / No / NA**
Comments:

iv. Data quality or usability affected?
Comments: *See above.*

g. Decontamination or Equipment Blank (if not applicable, a comment stating why must be entered below)**.**
Yes / No / NA
Comments: A decontamination blank was not included in our ADEC-approved work plan.

i. All results less than LOQ and project specified objectives?
Yes / No / NA
Comments:

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

iii. Data quality or usability affected?
Comments:

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

a. Defined and appropriate? **Yes / No / NA**
Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
907-561-2120

Report Number: **1196401**

Client Project: **103195 - 1009 W. Klutina St**

Dear Alena Voigt,

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

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

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

Sincerely,
SGS North America Inc.

_____

Jillian Janssen Date
Project Manager
Jillian.Janssen@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
Member of SGS Group

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1196401**
Project Name/Site: **103195 - 1009 W. Klutina St**
Project Contact: **Alena Voigt**

Refer to sample receipt form for information on sample condition.

LCS for HBN 1801465 [XXX/42521 (1540103) LCS

AK102/103 - Surrogate recovery for 5a-androstane does not meet QC criteria, however samples are within criteria.

1196401001MS (1540151) MS

8270D SIM - PAH MS recovery for Indeno[1,2,3-c,d] pyrene, Dibenzo[a,h]anthracene and Benzo[g,h,i]perylene do not meet QC criteria. Refer to the LCS for accuracy requirements.

1196401005(1541819MS) (1541822) MS

8260C - MS recovery for bromomethane does not meet QC criteria. This analyte was not detected above the LOQ in the associated parent sample.

1196401001MSD (1540152) MSD

8270D SIM - PAH MSD recovery for several analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.
8270D SIM - PAH MS/MSD RPD for Indeno[1,2,3-c,d] pyrene does not meet QC criteria. Results for this analyte are considered estimated in the parent sample.

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

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

Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260C				
1196401005	103195-B2S14	VMS19609	Naphthalene	SP

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

Print Date: 11/06/2019 12:46:42PM

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, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 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
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
103195-B1S3	1196401001	10/20/2019	10/23/2019	Soil/Solid (dry weight)
103195-B1S8	1196401002	10/20/2019	10/23/2019	Soil/Solid (dry weight)
103195-B2S4	1196401003	10/20/2019	10/23/2019	Soil/Solid (dry weight)
103195-B2S8	1196401004	10/20/2019	10/23/2019	Soil/Solid (dry weight)
103195-B2S14	1196401005	10/20/2019	10/23/2019	Soil/Solid (dry weight)
103195-B3S2	1196401006	10/21/2019	10/23/2019	Soil/Solid (dry weight)
103195-B3S8	1196401007	10/21/2019	10/23/2019	Soil/Solid (dry weight)
103195-STB	1196401008	10/20/2019	10/23/2019	Soil/Solid (dry weight)

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Volatiles GC/MS
AK102	Diesel Range Organics (S)
AK101	Gasoline Range Organics (S)
SM21 2540G	Percent Solids SM2540G
SW8260C	VOC 8260 (S) Field Extracted

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

Detectable Results Summary

Client Sample ID: **103195-B1S3**
Lab Sample ID: 1196401001

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	9.05J	mg/Kg

Client Sample ID: **103195-B1S8**
Lab Sample ID: 1196401002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	8.53J	mg/Kg

Client Sample ID: **103195-B2S4**
Lab Sample ID: 1196401003

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	363	mg/Kg
Volatile Fuels	Gasoline Range Organics	16.8	mg/Kg
Volatile GC/MS	1,2,4-Trimethylbenzene	56.6	ug/Kg
	Ethylbenzene	11.2J	ug/Kg
	Isopropylbenzene (Cumene)	9.83J	ug/Kg
	Naphthalene	33.7	ug/Kg
	o-Xylene	46.0	ug/Kg
	P & M -Xylene	60.6	ug/Kg
	Toluene	10.4J	ug/Kg
	Xylenes (total)	107	ug/Kg

Client Sample ID: **103195-B2S8**
Lab Sample ID: 1196401004

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	9.09J	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.01J	mg/Kg
Volatile GC/MS	o-Xylene	14.0J	ug/Kg

Client Sample ID: **103195-B2S14**
Lab Sample ID: 1196401005

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	13.1J	ug/Kg
	2-Methylnaphthalene	15.4J	ug/Kg
	Naphthalene	6.36J	ug/Kg
Semivolatile Organic Fuels	Diesel Range Organics	299	mg/Kg
Volatile Fuels	Gasoline Range Organics	4.49	mg/Kg
Volatile GC/MS	1,2,4-Trimethylbenzene	69.1	ug/Kg
	1,3,5-Trimethylbenzene	24.8	ug/Kg
	Ethylbenzene	13.4J	ug/Kg
	Isopropylbenzene (Cumene)	11.1J	ug/Kg
	Naphthalene	27.8	ug/Kg
	n-Propylbenzene	12.5J	ug/Kg
	o-Xylene	53.1	ug/Kg
	P & M -Xylene	68.9	ug/Kg
	Toluene	15.6J	ug/Kg
	Xylenes (total)	122	ug/Kg

Client Sample ID: **103195-B3S2**
Lab Sample ID: 1196401006

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	12.4J	mg/Kg
Volatile GC/MS	Toluene	25.4J	ug/Kg

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Detectable Results Summary

Client Sample ID: **103195-B3S8**
Lab Sample ID: 1196401007

Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	7.13J	mg/Kg

Print Date: 11/06/2019 12:46:46PM

Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
2-Methylnaphthalene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Acenaphthene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Acenaphthylene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Anthracene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Benzo(a)Anthracene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Benzo[a]pyrene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Benzo[b]Fluoranthene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Benzo[g,h,i]perylene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Benzo[k]fluoranthene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Chrysene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Dibenzo[a,h]anthracene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Fluoranthene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Fluorene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Indeno[1,2,3-c,d] pyrene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Naphthalene	11.9	U	23.7	5.93	ug/Kg	1		11/05/19 19:29
Phenanthrene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Pyrene	14.8	U	29.6	7.41	ug/Kg	1		11/05/19 19:29
Surrogates								
2-Methylnaphthalene-d10 (surr)	74.7		58-103		%	1		11/05/19 19:29
Fluoranthene-d10 (surr)	75.1		54-113		%	1		11/05/19 19:29

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/05/19 19:29
Container ID: 1196401001-A

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/19 12:25
Prep Initial Wt./Vol.: 22.863 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	9.05	J	24.0	7.44	mg/Kg	1		10/29/19 04:11
Surrogates								
5a Androstane (surr)	89.6		50-150		%	1		10/29/19 04:11

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 04:11
Container ID: 1196401001-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.119 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.65	U	3.29	0.987	mg/Kg	1		10/26/19 00:04
Surrogates								
4-Bromofluorobenzene (surr)	80.9		50-150		%	1		10/26/19 00:04

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 00:04
Container ID: 1196401001-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:08
Prep Initial Wt./Vol.: 66.437 g
Prep Extract Vol: 36.293 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	13.2	U	26.3	8.16	ug/Kg	1		10/24/19 19:35
1,1,1-Trichloroethane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,1,2,2-Tetrachloroethane	1.31	U	2.63	0.816	ug/Kg	1		10/24/19 19:35
1,1,2-Trichloroethane	0.525	U	1.05	0.329	ug/Kg	1		10/24/19 19:35
1,1-Dichloroethane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,1-Dichloroethene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,1-Dichloropropene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,2,3-Trichlorobenzene	32.9	U	65.8	19.7	ug/Kg	1		10/24/19 19:35
1,2,3-Trichloropropane	0.660	U	1.32	0.408	ug/Kg	1		10/24/19 19:35
1,2,4-Trichlorobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,2,4-Trimethylbenzene	32.9	U	65.8	19.7	ug/Kg	1		10/24/19 19:35
1,2-Dibromo-3-chloropropane	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
1,2-Dibromoethane	0.660	U	1.32	0.408	ug/Kg	1		10/24/19 19:35
1,2-Dichlorobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,2-Dichloroethane	1.31	U	2.63	0.816	ug/Kg	1		10/24/19 19:35
1,2-Dichloropropane	6.60	U	13.2	4.08	ug/Kg	1		10/24/19 19:35
1,3,5-Trimethylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,3-Dichlorobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
1,3-Dichloropropane	6.60	U	13.2	4.08	ug/Kg	1		10/24/19 19:35
1,4-Dichlorobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
2,2-Dichloropropane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
2-Butanone (MEK)	165	U	329	103	ug/Kg	1		10/24/19 19:35
2-Chlorotoluene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
2-Hexanone	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
4-Chlorotoluene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
4-Isopropyltoluene	66.0	U	132	32.9	ug/Kg	1		10/24/19 19:35
4-Methyl-2-pentanone (MIBK)	165	U	329	103	ug/Kg	1		10/24/19 19:35
Acetone	165	U	329	103	ug/Kg	1		10/24/19 19:35
Benzene	8.25	U	16.5	5.13	ug/Kg	1		10/24/19 19:35
Bromobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Bromochloromethane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Bromodichloromethane	1.31	U	2.63	0.816	ug/Kg	1		10/24/19 19:35
Bromoform	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Bromomethane	13.2	U	26.3	8.16	ug/Kg	1		10/28/19 19:25
Carbon disulfide	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
Carbon tetrachloride	8.25	U	16.5	5.13	ug/Kg	1		10/24/19 19:35
Chlorobenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35

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Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	132	U	263	81.6	ug/Kg	1		10/24/19 19:35
Chloroform	1.31	U	2.63	0.816	ug/Kg	1		10/24/19 19:35
Chloromethane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
cis-1,2-Dichloroethene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
cis-1,3-Dichloropropene	8.25	U	16.5	5.13	ug/Kg	1		10/24/19 19:35
Dibromochloromethane	1.31	U	2.63	0.816	ug/Kg	1		10/24/19 19:35
Dibromomethane	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Dichlorodifluoromethane	32.9	U	65.8	19.7	ug/Kg	1		10/24/19 19:35
Ethylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Freon-113	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
Hexachlorobutadiene	13.2	U	26.3	8.16	ug/Kg	1		10/24/19 19:35
Isopropylbenzene (Cumene)	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Methylene chloride	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
Methyl-t-butyl ether	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
Naphthalene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
n-Butylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
n-Propylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
o-Xylene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
P & M -Xylene	32.9	U	65.8	19.7	ug/Kg	1		10/24/19 19:35
sec-Butylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Styrene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
tert-Butylbenzene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
Tetrachloroethene	8.25	U	16.5	5.13	ug/Kg	1		10/24/19 19:35
Toluene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
trans-1,2-Dichloroethene	16.4	U	32.9	10.3	ug/Kg	1		10/24/19 19:35
trans-1,3-Dichloropropene	8.25	U	16.5	5.13	ug/Kg	1		10/24/19 19:35
Trichloroethene	3.29	U	6.58	1.97	ug/Kg	1		10/24/19 19:35
Trichlorofluoromethane	32.9	U	65.8	19.7	ug/Kg	1		10/24/19 19:35
Vinyl acetate	66.0	U	132	40.8	ug/Kg	1		10/24/19 19:35
Vinyl chloride	0.525	U	1.05	0.329	ug/Kg	1		10/24/19 19:35
Xylenes (total)	49.4	U	98.7	30.0	ug/Kg	1		10/24/19 19:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		71-136		%	1		10/24/19 19:35
4-Bromofluorobenzene (surr)	105		55-151		%	1		10/24/19 19:35
Toluene-d8 (surr)	99.2		85-116		%	1		10/24/19 19:35

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B1S3**

Client Sample ID: **103195-B1S3**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401001
Lab Project ID: 1196401

Collection Date: 10/20/19 15:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):83.0
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19614
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/28/19 19:25
Container ID: 1196401001-B

Prep Batch: VXX35163
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:08
Prep Initial Wt./Vol.: 66.437 g
Prep Extract Vol: 36.293 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 19:35
Container ID: 1196401001-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:08
Prep Initial Wt./Vol.: 66.437 g
Prep Extract Vol: 36.293 mL

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Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
2-Methylnaphthalene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Acenaphthene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Acenaphthylene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Anthracene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Benzo(a)Anthracene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Benzo[a]pyrene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Benzo[b]Fluoranthene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Benzo[g,h,i]perylene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Benzo[k]fluoranthene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Chrysene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Dibenzo[a,h]anthracene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Fluoranthene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Fluorene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Indeno[1,2,3-c,d] pyrene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Naphthalene	10.6	U	21.2	5.29	ug/Kg	1		11/05/19 20:31
Phenanthrene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Pyrene	13.3	U	26.5	6.61	ug/Kg	1		11/05/19 20:31
Surrogates								
2-Methylnaphthalene-d10 (surr)	77.8		58-103		%	1		11/05/19 20:31
Fluoranthene-d10 (surr)	78.8		54-113		%	1		11/05/19 20:31

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/05/19 20:31
Container ID: 1196401002-A

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/19 12:25
Prep Initial Wt./Vol.: 22.692 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	8.53	J	21.1	6.55	mg/Kg	1		10/29/19 04:21
Surrogates								
5a Androstane (surr)	96.4		50-150		%	1		10/29/19 04:21

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 04:21
Container ID: 1196401002-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.295 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.21	U	2.42	0.726	mg/Kg	1		10/26/19 00:22
Surrogates								
4-Bromofluorobenzene (surr)	76.6		50-150		%	1		10/26/19 00:22

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 00:22
Container ID: 1196401002-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:33
Prep Initial Wt./Vol.: 63.995 g
Prep Extract Vol: 29.0227 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	9.70	U	19.4	6.00	ug/Kg	1		10/24/19 19:50
1,1,1-Trichloroethane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,1,2,2-Tetrachloroethane	0.970	U	1.94	0.600	ug/Kg	1		10/24/19 19:50
1,1,2-Trichloroethane	0.387	U	0.774	0.242	ug/Kg	1		10/24/19 19:50
1,1-Dichloroethane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,1-Dichloroethene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,1-Dichloropropene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,2,3-Trichlorobenzene	24.2	U	48.4	14.5	ug/Kg	1		10/24/19 19:50
1,2,3-Trichloropropane	0.484	U	0.968	0.300	ug/Kg	1		10/24/19 19:50
1,2,4-Trichlorobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,2,4-Trimethylbenzene	24.2	U	48.4	14.5	ug/Kg	1		10/24/19 19:50
1,2-Dibromo-3-chloropropane	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
1,2-Dibromoethane	0.484	U	0.968	0.300	ug/Kg	1		10/24/19 19:50
1,2-Dichlorobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,2-Dichloroethane	0.970	U	1.94	0.600	ug/Kg	1		10/24/19 19:50
1,2-Dichloropropane	4.84	U	9.68	3.00	ug/Kg	1		10/24/19 19:50
1,3,5-Trimethylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,3-Dichlorobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
1,3-Dichloropropane	4.84	U	9.68	3.00	ug/Kg	1		10/24/19 19:50
1,4-Dichlorobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
2,2-Dichloropropane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
2-Butanone (MEK)	121	U	242	75.5	ug/Kg	1		10/24/19 19:50
2-Chlorotoluene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
2-Hexanone	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
4-Chlorotoluene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
4-Isopropyltoluene	48.4	U	96.8	24.2	ug/Kg	1		10/24/19 19:50
4-Methyl-2-pentanone (MIBK)	121	U	242	75.5	ug/Kg	1		10/24/19 19:50
Acetone	121	U	242	75.5	ug/Kg	1		10/24/19 19:50
Benzene	6.05	U	12.1	3.77	ug/Kg	1		10/24/19 19:50
Bromobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Bromochloromethane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Bromodichloromethane	0.970	U	1.94	0.600	ug/Kg	1		10/24/19 19:50
Bromoform	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Bromomethane	9.70	U	19.4	6.00	ug/Kg	1		10/28/19 19:42
Carbon disulfide	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
Carbon tetrachloride	6.05	U	12.1	3.77	ug/Kg	1		10/24/19 19:50
Chlorobenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50

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Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	97.0	U	194	60.0	ug/Kg	1		10/24/19 19:50
Chloroform	0.970	U	1.94	0.600	ug/Kg	1		10/24/19 19:50
Chloromethane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
cis-1,2-Dichloroethene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
cis-1,3-Dichloropropene	6.05	U	12.1	3.77	ug/Kg	1		10/24/19 19:50
Dibromochloromethane	0.970	U	1.94	0.600	ug/Kg	1		10/24/19 19:50
Dibromomethane	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Dichlorodifluoromethane	24.2	U	48.4	14.5	ug/Kg	1		10/24/19 19:50
Ethylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Freon-113	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
Hexachlorobutadiene	9.70	U	19.4	6.00	ug/Kg	1		10/24/19 19:50
Isopropylbenzene (Cumene)	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Methylene chloride	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
Methyl-t-butyl ether	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
Naphthalene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
n-Butylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
n-Propylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
o-Xylene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
P & M -Xylene	24.2	U	48.4	14.5	ug/Kg	1		10/24/19 19:50
sec-Butylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Styrene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
tert-Butylbenzene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
Tetrachloroethene	6.05	U	12.1	3.77	ug/Kg	1		10/24/19 19:50
Toluene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
trans-1,2-Dichloroethene	12.1	U	24.2	7.55	ug/Kg	1		10/24/19 19:50
trans-1,3-Dichloropropene	6.05	U	12.1	3.77	ug/Kg	1		10/24/19 19:50
Trichloroethene	2.42	U	4.84	1.45	ug/Kg	1		10/24/19 19:50
Trichlorofluoromethane	24.2	U	48.4	14.5	ug/Kg	1		10/24/19 19:50
Vinyl acetate	48.4	U	96.8	30.0	ug/Kg	1		10/24/19 19:50
Vinyl chloride	0.387	U	0.774	0.242	ug/Kg	1		10/24/19 19:50
Xylenes (total)	36.3	U	72.6	22.1	ug/Kg	1		10/24/19 19:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		71-136		%	1		10/24/19 19:50
4-Bromofluorobenzene (surr)	96.1		55-151		%	1		10/24/19 19:50
Toluene-d8 (surr)	99.7		85-116		%	1		10/24/19 19:50

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Results of **103195-B1S8**

Client Sample ID: **103195-B1S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401002
Lab Project ID: 1196401

Collection Date: 10/20/19 15:33
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.7
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19614
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/28/19 19:42
Container ID: 1196401002-B

Prep Batch: VXX35163
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:33
Prep Initial Wt./Vol.: 63.995 g
Prep Extract Vol: 29.0227 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 19:50
Container ID: 1196401002-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 15:33
Prep Initial Wt./Vol.: 63.995 g
Prep Extract Vol: 29.0227 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
2-Methylnaphthalene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Acenaphthene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Acenaphthylene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Anthracene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Benzo(a)Anthracene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Benzo[a]pyrene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Benzo[b]Fluoranthene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Benzo[g,h,i]perylene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Benzo[k]fluoranthene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Chrysene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Dibenzo[a,h]anthracene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Fluoranthene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Fluorene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Indeno[1,2,3-c,d] pyrene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Naphthalene	10.7	U	21.3	5.32	ug/Kg	1		11/05/19 20:52
Phenanthrene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Pyrene	13.3	U	26.6	6.65	ug/Kg	1		11/05/19 20:52
Surrogates								
2-Methylnaphthalene-d10 (surr)	76.2		58-103		%	1		11/05/19 20:52
Fluoranthene-d10 (surr)	71.4		54-113		%	1		11/05/19 20:52

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/05/19 20:52
Container ID: 1196401003-A

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/19 12:25
Prep Initial Wt./Vol.: 22.525 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	363		21.0	6.50	mg/Kg	1		10/29/19 04:31
Surrogates								
5a Androstane (surr)	99.4		50-150		%	1		10/29/19 04:31

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 04:31
Container ID: 1196401003-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.459 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	16.8		2.66	0.797	mg/Kg	1		10/26/19 00:39
Surrogates								
4-Bromofluorobenzene (surr)	132		50-150		%	1		10/26/19 00:39

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 00:39
Container ID: 1196401003-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 09:36
Prep Initial Wt./Vol.: 57.011 g
Prep Extract Vol: 28.4541 mL

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Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	10.7	U	21.3	6.59	ug/Kg	1		10/24/19 20:06
1,1,1-Trichloroethane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,1,2,2-Tetrachloroethane	1.06	U	2.13	0.659	ug/Kg	1		10/24/19 20:06
1,1,2-Trichloroethane	0.425	U	0.850	0.266	ug/Kg	1		10/24/19 20:06
1,1-Dichloroethane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,1-Dichloroethene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,1-Dichloropropene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,2,3-Trichlorobenzene	26.6	U	53.1	15.9	ug/Kg	1		10/24/19 20:06
1,2,3-Trichloropropane	0.530	U	1.06	0.329	ug/Kg	1		10/24/19 20:06
1,2,4-Trichlorobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,2,4-Trimethylbenzene	56.6		53.1	15.9	ug/Kg	1		10/24/19 20:06
1,2-Dibromo-3-chloropropane	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
1,2-Dibromoethane	0.530	U	1.06	0.329	ug/Kg	1		10/24/19 20:06
1,2-Dichlorobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,2-Dichloroethane	1.06	U	2.13	0.659	ug/Kg	1		10/24/19 20:06
1,2-Dichloropropane	5.30	U	10.6	3.29	ug/Kg	1		10/24/19 20:06
1,3,5-Trimethylbenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,3-Dichlorobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
1,3-Dichloropropane	5.30	U	10.6	3.29	ug/Kg	1		10/24/19 20:06
1,4-Dichlorobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
2,2-Dichloropropane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
2-Butanone (MEK)	133	U	266	82.9	ug/Kg	1		10/24/19 20:06
2-Chlorotoluene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
2-Hexanone	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
4-Chlorotoluene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
4-Isopropyltoluene	53.0	U	106	26.6	ug/Kg	1		10/24/19 20:06
4-Methyl-2-pentanone (MIBK)	133	U	266	82.9	ug/Kg	1		10/24/19 20:06
Acetone	133	U	266	82.9	ug/Kg	1		10/24/19 20:06
Benzene	6.65	U	13.3	4.14	ug/Kg	1		10/24/19 20:06
Bromobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Bromochloromethane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Bromodichloromethane	1.06	U	2.13	0.659	ug/Kg	1		10/24/19 20:06
Bromoform	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Bromomethane	10.7	U	21.3	6.59	ug/Kg	1		10/28/19 19:58
Carbon disulfide	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
Carbon tetrachloride	6.65	U	13.3	4.14	ug/Kg	1		10/24/19 20:06
Chlorobenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06

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Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	107	U	213	65.9	ug/Kg	1		10/24/19 20:06
Chloroform	1.06	U	2.13	0.659	ug/Kg	1		10/24/19 20:06
Chloromethane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
cis-1,2-Dichloroethene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
cis-1,3-Dichloropropene	6.65	U	13.3	4.14	ug/Kg	1		10/24/19 20:06
Dibromochloromethane	1.06	U	2.13	0.659	ug/Kg	1		10/24/19 20:06
Dibromomethane	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Dichlorodifluoromethane	26.6	U	53.1	15.9	ug/Kg	1		10/24/19 20:06
Ethylbenzene	11.2	J	26.6	8.29	ug/Kg	1		10/24/19 20:06
Freon-113	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
Hexachlorobutadiene	10.7	U	21.3	6.59	ug/Kg	1		10/24/19 20:06
Isopropylbenzene (Cumene)	9.83	J	26.6	8.29	ug/Kg	1		10/24/19 20:06
Methylene chloride	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
Methyl-t-butyl ether	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
Naphthalene	33.7		26.6	8.29	ug/Kg	1		10/24/19 20:06
n-Butylbenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
n-Propylbenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
o-Xylene	46.0		26.6	8.29	ug/Kg	1		10/24/19 20:06
P & M -Xylene	60.6		53.1	15.9	ug/Kg	1		10/24/19 20:06
sec-Butylbenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Styrene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
tert-Butylbenzene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
Tetrachloroethene	6.65	U	13.3	4.14	ug/Kg	1		10/24/19 20:06
Toluene	10.4	J	26.6	8.29	ug/Kg	1		10/24/19 20:06
trans-1,2-Dichloroethene	13.3	U	26.6	8.29	ug/Kg	1		10/24/19 20:06
trans-1,3-Dichloropropene	6.65	U	13.3	4.14	ug/Kg	1		10/24/19 20:06
Trichloroethene	2.65	U	5.31	1.59	ug/Kg	1		10/24/19 20:06
Trichlorofluoromethane	26.6	U	53.1	15.9	ug/Kg	1		10/24/19 20:06
Vinyl acetate	53.0	U	106	32.9	ug/Kg	1		10/24/19 20:06
Vinyl chloride	0.425	U	0.850	0.266	ug/Kg	1		10/24/19 20:06
Xylenes (total)	107		79.7	24.2	ug/Kg	1		10/24/19 20:06
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		71-136		%	1		10/24/19 20:06
4-Bromofluorobenzene (surr)	129		55-151		%	1		10/24/19 20:06
Toluene-d8 (surr)	98.4		85-116		%	1		10/24/19 20:06

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Results of **103195-B2S4**

Client Sample ID: **103195-B2S4**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401003
Lab Project ID: 1196401

Collection Date: 10/20/19 09:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.9
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19614
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/28/19 19:58
Container ID: 1196401003-B

Prep Batch: VXX35163
Prep Method: SW5035A
Prep Date/Time: 10/20/19 09:36
Prep Initial Wt./Vol.: 57.011 g
Prep Extract Vol: 28.4541 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 20:06
Container ID: 1196401003-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 09:36
Prep Initial Wt./Vol.: 57.011 g
Prep Extract Vol: 28.4541 mL

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Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
2-Methylnaphthalene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Acenaphthene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Acenaphthylene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Anthracene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Benzo(a)Anthracene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Benzo[a]pyrene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Benzo[b]Fluoranthene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Benzo[g,h,i]perylene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Benzo[k]fluoranthene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Chrysene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Dibenzo[a,h]anthracene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Fluoranthene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Fluorene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Indeno[1,2,3-c,d] pyrene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Naphthalene	10.8	U	21.5	5.37	ug/Kg	1		11/05/19 21:12
Phenanthrene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Pyrene	13.4	U	26.9	6.72	ug/Kg	1		11/05/19 21:12
Surrogates								
2-Methylnaphthalene-d10 (surr)	76		58-103		%	1		11/05/19 21:12
Fluoranthene-d10 (surr)	76		54-113		%	1		11/05/19 21:12

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/05/19 21:12
Container ID: 1196401004-A

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/19 12:25
Prep Initial Wt./Vol.: 22.703 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	9.09	J	21.5	6.66	mg/Kg	1		10/31/19 01:48
Surrogates								
5a Androstane (surr)	91.7		50-150		%	1		10/31/19 01:48

Batch Information

Analytical Batch: XFC15454
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/31/19 01:48
Container ID: 1196401004-A

Prep Batch: XXX42521
Prep Method: SW3550C
Prep Date/Time: 10/24/19 09:35
Prep Initial Wt./Vol.: 30.269 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.01	J	3.26	0.977	mg/Kg	1		10/26/19 00:57
Surrogates								
4-Bromofluorobenzene (surr)	81.7		50-150		%	1		10/26/19 00:57

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 00:57
Container ID: 1196401004-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:08
Prep Initial Wt./Vol.: 47.817 g
Prep Extract Vol: 28.7211 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	13.1	U	26.1	8.08	ug/Kg	1		10/24/19 20:21
1,1,1-Trichloroethane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,1,2,2-Tetrachloroethane	1.30	U	2.61	0.808	ug/Kg	1		10/24/19 20:21
1,1,2-Trichloroethane	0.520	U	1.04	0.326	ug/Kg	1		10/24/19 20:21
1,1-Dichloroethane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,1-Dichloroethene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,1-Dichloropropene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,2,3-Trichlorobenzene	32.5	U	65.1	19.5	ug/Kg	1		10/24/19 20:21
1,2,3-Trichloropropane	0.650	U	1.30	0.404	ug/Kg	1		10/24/19 20:21
1,2,4-Trichlorobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,2,4-Trimethylbenzene	32.5	U	65.1	19.5	ug/Kg	1		10/24/19 20:21
1,2-Dibromo-3-chloropropane	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
1,2-Dibromoethane	0.650	U	1.30	0.404	ug/Kg	1		10/24/19 20:21
1,2-Dichlorobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,2-Dichloroethane	1.30	U	2.61	0.808	ug/Kg	1		10/24/19 20:21
1,2-Dichloropropane	6.50	U	13.0	4.04	ug/Kg	1		10/24/19 20:21
1,3,5-Trimethylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,3-Dichlorobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
1,3-Dichloropropane	6.50	U	13.0	4.04	ug/Kg	1		10/24/19 20:21
1,4-Dichlorobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
2,2-Dichloropropane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
2-Butanone (MEK)	163	U	326	102	ug/Kg	1		10/24/19 20:21
2-Chlorotoluene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
2-Hexanone	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
4-Chlorotoluene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
4-Isopropyltoluene	65.0	U	130	32.6	ug/Kg	1		10/24/19 20:21
4-Methyl-2-pentanone (MIBK)	163	U	326	102	ug/Kg	1		10/24/19 20:21
Acetone	163	U	326	102	ug/Kg	1		10/24/19 20:21
Benzene	8.15	U	16.3	5.08	ug/Kg	1		10/24/19 20:21
Bromobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Bromochloromethane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Bromodichloromethane	1.30	U	2.61	0.808	ug/Kg	1		10/24/19 20:21
Bromoform	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Bromomethane	13.1	U	26.1	8.08	ug/Kg	1		10/31/19 15:25
Carbon disulfide	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
Carbon tetrachloride	8.15	U	16.3	5.08	ug/Kg	1		10/24/19 20:21
Chlorobenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21

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Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	131	U	261	80.8	ug/Kg	1		10/24/19 20:21
Chloroform	1.30	U	2.61	0.808	ug/Kg	1		10/24/19 20:21
Chloromethane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
cis-1,2-Dichloroethene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
cis-1,3-Dichloropropene	8.15	U	16.3	5.08	ug/Kg	1		10/24/19 20:21
Dibromochloromethane	1.30	U	2.61	0.808	ug/Kg	1		10/24/19 20:21
Dibromomethane	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Dichlorodifluoromethane	32.5	U	65.1	19.5	ug/Kg	1		10/24/19 20:21
Ethylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Freon-113	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
Hexachlorobutadiene	13.1	U	26.1	8.08	ug/Kg	1		10/24/19 20:21
Isopropylbenzene (Cumene)	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Methylene chloride	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
Methyl-t-butyl ether	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
Naphthalene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
n-Butylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
n-Propylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
o-Xylene	14.0	J	32.6	10.2	ug/Kg	1		10/24/19 20:21
P & M -Xylene	32.5	U	65.1	19.5	ug/Kg	1		10/24/19 20:21
sec-Butylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Styrene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
tert-Butylbenzene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
Tetrachloroethene	8.15	U	16.3	5.08	ug/Kg	1		10/24/19 20:21
Toluene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
trans-1,2-Dichloroethene	16.3	U	32.6	10.2	ug/Kg	1		10/24/19 20:21
trans-1,3-Dichloropropene	8.15	U	16.3	5.08	ug/Kg	1		10/24/19 20:21
Trichloroethene	3.25	U	6.51	1.95	ug/Kg	1		10/24/19 20:21
Trichlorofluoromethane	32.5	U	65.1	19.5	ug/Kg	1		10/24/19 20:21
Vinyl acetate	65.0	U	130	40.4	ug/Kg	1		10/24/19 20:21
Vinyl chloride	0.520	U	1.04	0.326	ug/Kg	1		10/24/19 20:21
Xylenes (total)	48.9	U	97.7	29.7	ug/Kg	1		10/24/19 20:21
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		71-136		%	1		10/24/19 20:21
4-Bromofluorobenzene (surr)	104		55-151		%	1		10/24/19 20:21
Toluene-d8 (surr)	101		85-116		%	1		10/24/19 20:21

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Results of **103195-B2S8**

Client Sample ID: **103195-B2S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401004
Lab Project ID: 1196401

Collection Date: 10/20/19 10:08
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):92.2
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/31/19 15:25
Container ID: 1196401004-B

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:08
Prep Initial Wt./Vol.: 47.817 g
Prep Extract Vol: 28.7211 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 20:21
Container ID: 1196401004-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:08
Prep Initial Wt./Vol.: 47.817 g
Prep Extract Vol: 28.7211 mL

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Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.1	J	26.5	6.63	ug/Kg	1		11/05/19 21:33
2-Methylnaphthalene	15.4	J	26.5	6.63	ug/Kg	1		11/05/19 21:33
Acenaphthene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Acenaphthylene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Anthracene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Benzo(a)Anthracene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Benzo[a]pyrene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Benzo[b]Fluoranthene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Benzo[g,h,i]perylene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Benzo[k]fluoranthene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Chrysene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Dibenzo[a,h]anthracene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Fluoranthene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Fluorene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Indeno[1,2,3-c,d] pyrene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Naphthalene	6.36	J	21.2	5.31	ug/Kg	1		11/05/19 21:33
Phenanthrene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Pyrene	13.3	U	26.5	6.63	ug/Kg	1		11/05/19 21:33
Surrogates								
2-Methylnaphthalene-d10 (surr)	78.3		58-103		%	1		11/05/19 21:33
Fluoranthene-d10 (surr)	71.7		54-113		%	1		11/05/19 21:33

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 11/05/19 21:33
Container ID: 1196401005-A

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/19 12:25
Prep Initial Wt./Vol.: 22.688 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	299		21.3	6.59	mg/Kg	1		10/29/19 05:00
Surrogates								
5a Androstane (surr)	98.6		50-150		%	1		10/29/19 05:00

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 05:00
Container ID: 1196401005-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.21 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	4.49		2.36	0.707	mg/Kg	1		10/26/19 01:14
Surrogates								
4-Bromofluorobenzene (surr)	98.1		50-150		%	1		10/26/19 01:14

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 01:14
Container ID: 1196401005-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:36
Prep Initial Wt./Vol.: 66.697 g
Prep Extract Vol: 29.3874 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	9.45	U	18.9	5.85	ug/Kg	1		10/24/19 20:37
1,1,1-Trichloroethane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,1,2,2-Tetrachloroethane	0.945	U	1.89	0.585	ug/Kg	1		10/24/19 20:37
1,1,2-Trichloroethane	0.378	U	0.755	0.236	ug/Kg	1		10/24/19 20:37
1,1-Dichloroethane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,1-Dichloroethene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,1-Dichloropropene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,2,3-Trichlorobenzene	23.6	U	47.2	14.1	ug/Kg	1		10/24/19 20:37
1,2,3-Trichloropropane	0.471	U	0.943	0.292	ug/Kg	1		10/24/19 20:37
1,2,4-Trichlorobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,2,4-Trimethylbenzene	69.1		47.2	14.1	ug/Kg	1		10/24/19 20:37
1,2-Dibromo-3-chloropropane	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
1,2-Dibromoethane	0.471	U	0.943	0.292	ug/Kg	1		10/24/19 20:37
1,2-Dichlorobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,2-Dichloroethane	0.945	U	1.89	0.585	ug/Kg	1		10/24/19 20:37
1,2-Dichloropropane	4.71	U	9.43	2.92	ug/Kg	1		10/24/19 20:37
1,3,5-Trimethylbenzene	24.8		23.6	7.36	ug/Kg	1		10/24/19 20:37
1,3-Dichlorobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
1,3-Dichloropropane	4.71	U	9.43	2.92	ug/Kg	1		10/24/19 20:37
1,4-Dichlorobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
2,2-Dichloropropane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
2-Butanone (MEK)	118	U	236	73.6	ug/Kg	1		10/24/19 20:37
2-Chlorotoluene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
2-Hexanone	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
4-Chlorotoluene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
4-Isopropyltoluene	47.1	U	94.3	23.6	ug/Kg	1		10/24/19 20:37
4-Methyl-2-pentanone (MIBK)	118	U	236	73.6	ug/Kg	1		10/24/19 20:37
Acetone	118	U	236	73.6	ug/Kg	1		10/24/19 20:37
Benzene	5.90	U	11.8	3.68	ug/Kg	1		10/24/19 20:37
Bromobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Bromochloromethane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Bromodichloromethane	0.945	U	1.89	0.585	ug/Kg	1		10/24/19 20:37
Bromoform	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Bromomethane	9.45	U	18.9	5.85	ug/Kg	1		10/31/19 15:10
Carbon disulfide	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
Carbon tetrachloride	5.90	U	11.8	3.68	ug/Kg	1		10/24/19 20:37
Chlorobenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37

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Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	94.5	U	189	58.5	ug/Kg	1		10/24/19 20:37
Chloroform	0.945	U	1.89	0.585	ug/Kg	1		10/24/19 20:37
Chloromethane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
cis-1,2-Dichloroethene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
cis-1,3-Dichloropropene	5.90	U	11.8	3.68	ug/Kg	1		10/24/19 20:37
Dibromochloromethane	0.945	U	1.89	0.585	ug/Kg	1		10/24/19 20:37
Dibromomethane	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Dichlorodifluoromethane	23.6	U	47.2	14.1	ug/Kg	1		10/24/19 20:37
Ethylbenzene	13.4	J	23.6	7.36	ug/Kg	1		10/24/19 20:37
Freon-113	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
Hexachlorobutadiene	9.45	U	18.9	5.85	ug/Kg	1		10/24/19 20:37
Isopropylbenzene (Cumene)	11.1	J	23.6	7.36	ug/Kg	1		10/24/19 20:37
Methylene chloride	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
Methyl-t-butyl ether	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
Naphthalene	27.8		23.6	7.36	ug/Kg	1		10/24/19 20:37
n-Butylbenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
n-Propylbenzene	12.5	J	23.6	7.36	ug/Kg	1		10/24/19 20:37
o-Xylene	53.1		23.6	7.36	ug/Kg	1		10/24/19 20:37
P & M -Xylene	68.9		47.2	14.1	ug/Kg	1		10/24/19 20:37
sec-Butylbenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Styrene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
tert-Butylbenzene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
Tetrachloroethene	5.90	U	11.8	3.68	ug/Kg	1		10/24/19 20:37
Toluene	15.6	J	23.6	7.36	ug/Kg	1		10/24/19 20:37
trans-1,2-Dichloroethene	11.8	U	23.6	7.36	ug/Kg	1		10/24/19 20:37
trans-1,3-Dichloropropene	5.90	U	11.8	3.68	ug/Kg	1		10/24/19 20:37
Trichloroethene	2.36	U	4.72	1.41	ug/Kg	1		10/24/19 20:37
Trichlorofluoromethane	23.6	U	47.2	14.1	ug/Kg	1		10/24/19 20:37
Vinyl acetate	47.1	U	94.3	29.2	ug/Kg	1		10/24/19 20:37
Vinyl chloride	0.378	U	0.755	0.236	ug/Kg	1		10/24/19 20:37
Xylenes (total)	122		70.7	21.5	ug/Kg	1		10/24/19 20:37
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.6		71-136		%	1		10/24/19 20:37
4-Bromofluorobenzene (surr)	115		55-151		%	1		10/24/19 20:37
Toluene-d8 (surr)	99.8		85-116		%	1		10/24/19 20:37

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Results of **103195-B2S14**

Client Sample ID: **103195-B2S14**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401005
Lab Project ID: 1196401

Collection Date: 10/20/19 10:36
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):93.4
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/31/19 15:10
Container ID: 1196401005-B

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:36
Prep Initial Wt./Vol.: 66.697 g
Prep Extract Vol: 29.3874 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 20:37
Container ID: 1196401005-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 10:36
Prep Initial Wt./Vol.: 66.697 g
Prep Extract Vol: 29.3874 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
2-Methylnaphthalene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Acenaphthene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Acenaphthylene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Anthracene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Benzo(a)Anthracene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Benzo[a]pyrene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Benzo[b]Fluoranthene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Benzo[g,h,i]perylene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Benzo[k]fluoranthene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Chrysene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Dibenzo[a,h]anthracene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Fluoranthene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Fluorene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Indeno[1,2,3-c,d] pyrene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Naphthalene	11.6	U	23.1	5.77	ug/Kg	1		10/31/19 17:47
Phenanthrene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Pyrene	14.4	U	28.8	7.21	ug/Kg	1		10/31/19 17:47
Surrogates								
2-Methylnaphthalene-d10 (surr)	79.9		58-103		%	1		10/31/19 17:47
Fluoranthene-d10 (surr)	82.2		54-113		%	1		10/31/19 17:47

Batch Information

Analytical Batch: XMS11841
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/31/19 17:47
Container ID: 1196401006-A

Prep Batch: XXX42536
Prep Method: SW3550C
Prep Date/Time: 10/29/19 12:25
Prep Initial Wt./Vol.: 22.933 g
Prep Extract Vol: 5 mL

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Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	12.4	J	23.4	7.24	mg/Kg	1		10/29/19 05:10
Surrogates								
5a Androstane (surr)	95.9		50-150		%	1		10/29/19 05:10

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 05:10
Container ID: 1196401006-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.182 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	2.27	U	4.54	1.36	mg/Kg	1		10/26/19 02:07
Surrogates								
4-Bromofluorobenzene (surr)	82.9		50-150		%	1		10/26/19 02:07

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 02:07
Container ID: 1196401006-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/21/19 08:39
Prep Initial Wt./Vol.: 40.065 g
Prep Extract Vol: 30.974 mL

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	18.1	U	36.3	11.3	ug/Kg	1		10/24/19 20:52
1,1,1-Trichloroethane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,1,2,2-Tetrachloroethane	1.81	U	3.63	1.13	ug/Kg	1		10/24/19 20:52
1,1,2-Trichloroethane	0.725	U	1.45	0.454	ug/Kg	1		10/24/19 20:52
1,1-Dichloroethane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,1-Dichloroethene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,1-Dichloropropene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,2,3-Trichlorobenzene	45.5	U	90.9	27.3	ug/Kg	1		10/24/19 20:52
1,2,3-Trichloropropane	0.910	U	1.82	0.563	ug/Kg	1		10/24/19 20:52
1,2,4-Trichlorobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,2,4-Trimethylbenzene	45.5	U	90.9	27.3	ug/Kg	1		10/24/19 20:52
1,2-Dibromo-3-chloropropane	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
1,2-Dibromoethane	0.910	U	1.82	0.563	ug/Kg	1		10/24/19 20:52
1,2-Dichlorobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,2-Dichloroethane	1.81	U	3.63	1.13	ug/Kg	1		10/24/19 20:52
1,2-Dichloropropane	9.10	U	18.2	5.63	ug/Kg	1		10/24/19 20:52
1,3,5-Trimethylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,3-Dichlorobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
1,3-Dichloropropane	9.10	U	18.2	5.63	ug/Kg	1		10/24/19 20:52
1,4-Dichlorobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
2,2-Dichloropropane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
2-Butanone (MEK)	227	U	454	142	ug/Kg	1		10/24/19 20:52
2-Chlorotoluene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
2-Hexanone	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
4-Chlorotoluene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
4-Isopropyltoluene	91.0	U	182	45.4	ug/Kg	1		10/24/19 20:52
4-Methyl-2-pentanone (MIBK)	227	U	454	142	ug/Kg	1		10/24/19 20:52
Acetone	227	U	454	142	ug/Kg	1		10/24/19 20:52
Benzene	11.4	U	22.7	7.09	ug/Kg	1		10/24/19 20:52
Bromobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Bromochloromethane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Bromodichloromethane	1.81	U	3.63	1.13	ug/Kg	1		10/24/19 20:52
Bromoform	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Bromomethane	18.1	U	36.3	11.3	ug/Kg	1		10/31/19 15:41
Carbon disulfide	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
Carbon tetrachloride	11.4	U	22.7	7.09	ug/Kg	1		10/24/19 20:52
Chlorobenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52

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Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	182	U	363	113	ug/Kg	1		10/24/19 20:52
Chloroform	1.81	U	3.63	1.13	ug/Kg	1		10/24/19 20:52
Chloromethane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
cis-1,2-Dichloroethene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
cis-1,3-Dichloropropene	11.4	U	22.7	7.09	ug/Kg	1		10/24/19 20:52
Dibromochloromethane	1.81	U	3.63	1.13	ug/Kg	1		10/24/19 20:52
Dibromomethane	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Dichlorodifluoromethane	45.5	U	90.9	27.3	ug/Kg	1		10/24/19 20:52
Ethylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Freon-113	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
Hexachlorobutadiene	18.1	U	36.3	11.3	ug/Kg	1		10/24/19 20:52
Isopropylbenzene (Cumene)	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Methylene chloride	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
Methyl-t-butyl ether	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
Naphthalene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
n-Butylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
n-Propylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
o-Xylene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
P & M -Xylene	45.5	U	90.9	27.3	ug/Kg	1		10/24/19 20:52
sec-Butylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Styrene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
tert-Butylbenzene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
Tetrachloroethene	11.4	U	22.7	7.09	ug/Kg	1		10/24/19 20:52
Toluene	25.4	J	45.4	14.2	ug/Kg	1		10/24/19 20:52
trans-1,2-Dichloroethene	22.7	U	45.4	14.2	ug/Kg	1		10/24/19 20:52
trans-1,3-Dichloropropene	11.4	U	22.7	7.09	ug/Kg	1		10/24/19 20:52
Trichloroethene	4.54	U	9.09	2.73	ug/Kg	1		10/24/19 20:52
Trichlorofluoromethane	45.5	U	90.9	27.3	ug/Kg	1		10/24/19 20:52
Vinyl acetate	91.0	U	182	56.3	ug/Kg	1		10/24/19 20:52
Vinyl chloride	0.725	U	1.45	0.454	ug/Kg	1		10/24/19 20:52
Xylenes (total)	68.0	U	136	41.4	ug/Kg	1		10/24/19 20:52
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.6		71-136		%	1		10/24/19 20:52
4-Bromofluorobenzene (surr)	103		55-151		%	1		10/24/19 20:52
Toluene-d8 (surr)	101		85-116		%	1		10/24/19 20:52

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B3S2**

Client Sample ID: **103195-B3S2**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401006
Lab Project ID: 1196401

Collection Date: 10/21/19 08:39
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):85.1
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/31/19 15:41
Container ID: 1196401006-B

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/21/19 08:39
Prep Initial Wt./Vol.: 40.065 g
Prep Extract Vol: 30.974 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 20:52
Container ID: 1196401006-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/21/19 08:39
Prep Initial Wt./Vol.: 40.065 g
Prep Extract Vol: 30.974 mL

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Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
2-Methylnaphthalene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Acenaphthene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Acenaphthylene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Anthracene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Benzo(a)Anthracene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Benzo[a]pyrene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Benzo[b]Fluoranthene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Benzo[g,h,i]perylene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Benzo[k]fluoranthene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Chrysene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Dibenzo[a,h]anthracene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Fluoranthene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Fluorene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Indeno[1,2,3-c,d] pyrene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Naphthalene	10.4	U	20.7	5.17	ug/Kg	1		10/31/19 18:08
Phenanthrene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Pyrene	12.9	U	25.8	6.46	ug/Kg	1		10/31/19 18:08
Surrogates								
2-Methylnaphthalene-d10 (surr)	78.1		58-103		%	1		10/31/19 18:08
Fluoranthene-d10 (surr)	75.5		54-113		%	1		10/31/19 18:08

Batch Information

Analytical Batch: XMS11841
Analytical Method: 8270D SIM (PAH)
Analyst: DSD
Analytical Date/Time: 10/31/19 18:08
Container ID: 1196401007-A

Prep Batch: XXX42536
Prep Method: SW3550C
Prep Date/Time: 10/29/19 12:25
Prep Initial Wt./Vol.: 22.857 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	7.13	J	20.8	6.45	mg/Kg	1		10/29/19 05:20
Surrogates								
5a Androstane (surr)	95.7		50-150		%	1		10/29/19 05:20

Batch Information

Analytical Batch: XFC15451
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/29/19 05:20
Container ID: 1196401007-A

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/19 12:09
Prep Initial Wt./Vol.: 30.264 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.27	U	2.55	0.765	mg/Kg	1		10/26/19 02:24
Surrogates								
4-Bromofluorobenzene (surr)	77.1		50-150		%	1		10/26/19 02:24

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/26/19 02:24
Container ID: 1196401007-B

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/21/19 09:06
Prep Initial Wt./Vol.: 56.936 g
Prep Extract Vol: 27.6839 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	10.2	U	20.4	6.33	ug/Kg	1		10/24/19 21:08
1,1,1-Trichloroethane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,1,2,2-Tetrachloroethane	1.02	U	2.04	0.633	ug/Kg	1		10/24/19 21:08
1,1,2-Trichloroethane	0.408	U	0.816	0.255	ug/Kg	1		10/24/19 21:08
1,1-Dichloroethane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,1-Dichloroethene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,1-Dichloropropene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,2,3-Trichlorobenzene	25.5	U	51.0	15.3	ug/Kg	1		10/24/19 21:08
1,2,3-Trichloropropane	0.510	U	1.02	0.316	ug/Kg	1		10/24/19 21:08
1,2,4-Trichlorobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,2,4-Trimethylbenzene	25.5	U	51.0	15.3	ug/Kg	1		10/24/19 21:08
1,2-Dibromo-3-chloropropane	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
1,2-Dibromoethane	0.510	U	1.02	0.316	ug/Kg	1		10/24/19 21:08
1,2-Dichlorobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,2-Dichloroethane	1.02	U	2.04	0.633	ug/Kg	1		10/24/19 21:08
1,2-Dichloropropane	5.10	U	10.2	3.16	ug/Kg	1		10/24/19 21:08
1,3,5-Trimethylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,3-Dichlorobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
1,3-Dichloropropane	5.10	U	10.2	3.16	ug/Kg	1		10/24/19 21:08
1,4-Dichlorobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
2,2-Dichloropropane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
2-Butanone (MEK)	128	U	255	79.6	ug/Kg	1		10/24/19 21:08
2-Chlorotoluene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
2-Hexanone	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
4-Chlorotoluene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
4-Isopropyltoluene	51.0	U	102	25.5	ug/Kg	1		10/24/19 21:08
4-Methyl-2-pentanone (MIBK)	128	U	255	79.6	ug/Kg	1		10/24/19 21:08
Acetone	128	U	255	79.6	ug/Kg	1		10/24/19 21:08
Benzene	6.40	U	12.8	3.98	ug/Kg	1		10/24/19 21:08
Bromobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Bromochloromethane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Bromodichloromethane	1.02	U	2.04	0.633	ug/Kg	1		10/24/19 21:08
Bromoform	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Bromomethane	10.2	U	20.4	6.33	ug/Kg	1		10/31/19 15:56
Carbon disulfide	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
Carbon tetrachloride	6.40	U	12.8	3.98	ug/Kg	1		10/24/19 21:08
Chlorobenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08

Print Date: 11/06/2019 12:46:46PM

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Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	102	U	204	63.3	ug/Kg	1		10/24/19 21:08
Chloroform	1.02	U	2.04	0.633	ug/Kg	1		10/24/19 21:08
Chloromethane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
cis-1,2-Dichloroethene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
cis-1,3-Dichloropropene	6.40	U	12.8	3.98	ug/Kg	1		10/24/19 21:08
Dibromochloromethane	1.02	U	2.04	0.633	ug/Kg	1		10/24/19 21:08
Dibromomethane	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Dichlorodifluoromethane	25.5	U	51.0	15.3	ug/Kg	1		10/24/19 21:08
Ethylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Freon-113	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
Hexachlorobutadiene	10.2	U	20.4	6.33	ug/Kg	1		10/24/19 21:08
Isopropylbenzene (Cumene)	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Methylene chloride	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
Methyl-t-butyl ether	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
Naphthalene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
n-Butylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
n-Propylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
o-Xylene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
P & M -Xylene	25.5	U	51.0	15.3	ug/Kg	1		10/24/19 21:08
sec-Butylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Styrene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
tert-Butylbenzene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
Tetrachloroethene	6.40	U	12.8	3.98	ug/Kg	1		10/24/19 21:08
Toluene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
trans-1,2-Dichloroethene	12.8	U	25.5	7.96	ug/Kg	1		10/24/19 21:08
trans-1,3-Dichloropropene	6.40	U	12.8	3.98	ug/Kg	1		10/24/19 21:08
Trichloroethene	2.55	U	5.10	1.53	ug/Kg	1		10/24/19 21:08
Trichlorofluoromethane	25.5	U	51.0	15.3	ug/Kg	1		10/24/19 21:08
Vinyl acetate	51.0	U	102	31.6	ug/Kg	1		10/24/19 21:08
Vinyl chloride	0.408	U	0.816	0.255	ug/Kg	1		10/24/19 21:08
Xylenes (total)	38.3	U	76.5	23.3	ug/Kg	1		10/24/19 21:08
Surrogates								
1,2-Dichloroethane-D4 (surr)	99		71-136		%	1		10/24/19 21:08
4-Bromofluorobenzene (surr)	99		55-151		%	1		10/24/19 21:08
Toluene-d8 (surr)	100		85-116		%	1		10/24/19 21:08

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-B3S8**

Client Sample ID: **103195-B3S8**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401007
Lab Project ID: 1196401

Collection Date: 10/21/19 09:06
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):95.3
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/31/19 15:56
Container ID: 1196401007-B

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/21/19 09:06
Prep Initial Wt./Vol.: 56.936 g
Prep Extract Vol: 27.6839 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 21:08
Container ID: 1196401007-B

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/21/19 09:06
Prep Initial Wt./Vol.: 56.936 g
Prep Extract Vol: 27.6839 mL

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Results of **103195-STB**

Client Sample ID: **103195-STB**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401008
Lab Project ID: 1196401

Collection Date: 10/20/19 08:00
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	1.26	U	2.52	0.755	mg/Kg	1		10/25/19 22:37
Surrogates								
4-Bromofluorobenzene (surr)	80.2		50-150		%	1		10/25/19 22:37

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/25/19 22:37
Container ID: 1196401008-A

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/20/19 08:00
Prep Initial Wt./Vol.: 49.687 g
Prep Extract Vol: 25 mL

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-STB**

Client Sample ID: **103195-STB**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401008
Lab Project ID: 1196401

Collection Date: 10/20/19 08:00
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	10.1	U	20.1	6.24	ug/Kg	1		10/24/19 16:46
1,1,1-Trichloroethane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,1,2,2-Tetrachloroethane	1.00	U	2.01	0.624	ug/Kg	1		10/24/19 16:46
1,1,2-Trichloroethane	0.403	U	0.805	0.252	ug/Kg	1		10/24/19 16:46
1,1-Dichloroethane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,1-Dichloroethene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,1-Dichloropropene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,2,3-Trichlorobenzene	25.1	U	50.3	15.1	ug/Kg	1		10/24/19 16:46
1,2,3-Trichloropropane	0.505	U	1.01	0.312	ug/Kg	1		10/24/19 16:46
1,2,4-Trichlorobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,2,4-Trimethylbenzene	25.1	U	50.3	15.1	ug/Kg	1		10/24/19 16:46
1,2-Dibromo-3-chloropropane	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
1,2-Dibromoethane	0.505	U	1.01	0.312	ug/Kg	1		10/24/19 16:46
1,2-Dichlorobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,2-Dichloroethane	1.00	U	2.01	0.624	ug/Kg	1		10/24/19 16:46
1,2-Dichloropropane	5.05	U	10.1	3.12	ug/Kg	1		10/24/19 16:46
1,3,5-Trimethylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,3-Dichlorobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
1,3-Dichloropropane	5.05	U	10.1	3.12	ug/Kg	1		10/24/19 16:46
1,4-Dichlorobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
2,2-Dichloropropane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
2-Butanone (MEK)	126	U	252	78.5	ug/Kg	1		10/24/19 16:46
2-Chlorotoluene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
2-Hexanone	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
4-Chlorotoluene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
4-Isopropyltoluene	50.5	U	101	25.2	ug/Kg	1		10/24/19 16:46
4-Methyl-2-pentanone (MIBK)	126	U	252	78.5	ug/Kg	1		10/24/19 16:46
Acetone	126	U	252	78.5	ug/Kg	1		10/24/19 16:46
Benzene	6.30	U	12.6	3.92	ug/Kg	1		10/24/19 16:46
Bromobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Bromochloromethane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Bromodichloromethane	1.00	U	2.01	0.624	ug/Kg	1		10/24/19 16:46
Bromoform	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Bromomethane	10.1	U	20.1	6.24	ug/Kg	1		10/31/19 14:23
Carbon disulfide	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
Carbon tetrachloride	6.30	U	12.6	3.92	ug/Kg	1		10/24/19 16:46
Chlorobenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-STB**

Client Sample ID: **103195-STB**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401008
Lab Project ID: 1196401

Collection Date: 10/20/19 08:00
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroethane	101	U	201	62.4	ug/Kg	1		10/24/19 16:46
Chloroform	1.00	U	2.01	0.624	ug/Kg	1		10/24/19 16:46
Chloromethane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
cis-1,2-Dichloroethene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
cis-1,3-Dichloropropene	6.30	U	12.6	3.92	ug/Kg	1		10/24/19 16:46
Dibromochloromethane	1.00	U	2.01	0.624	ug/Kg	1		10/24/19 16:46
Dibromomethane	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Dichlorodifluoromethane	25.1	U	50.3	15.1	ug/Kg	1		10/24/19 16:46
Ethylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Freon-113	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
Hexachlorobutadiene	10.1	U	20.1	6.24	ug/Kg	1		10/24/19 16:46
Isopropylbenzene (Cumene)	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Methylene chloride	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
Methyl-t-butyl ether	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
Naphthalene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
n-Butylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
n-Propylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
o-Xylene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
P & M -Xylene	25.1	U	50.3	15.1	ug/Kg	1		10/24/19 16:46
sec-Butylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Styrene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
tert-Butylbenzene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
Tetrachloroethene	6.30	U	12.6	3.92	ug/Kg	1		10/24/19 16:46
Toluene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
trans-1,2-Dichloroethene	12.6	U	25.2	7.85	ug/Kg	1		10/24/19 16:46
trans-1,3-Dichloropropene	6.30	U	12.6	3.92	ug/Kg	1		10/24/19 16:46
Trichloroethene	2.52	U	5.03	1.51	ug/Kg	1		10/24/19 16:46
Trichlorofluoromethane	25.1	U	50.3	15.1	ug/Kg	1		10/24/19 16:46
Vinyl acetate	50.5	U	101	31.2	ug/Kg	1		10/24/19 16:46
Vinyl chloride	0.403	U	0.805	0.252	ug/Kg	1		10/24/19 16:46
Xylenes (total)	37.8	U	75.5	22.9	ug/Kg	1		10/24/19 16:46
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.7		71-136		%	1		10/24/19 16:46
4-Bromofluorobenzene (surr)	105		55-151		%	1		10/24/19 16:46
Toluene-d8 (surr)	99.8		85-116		%	1		10/24/19 16:46

Print Date: 11/06/2019 12:46:46PM

J flagging is activated

Results of **103195-STB**

Client Sample ID: **103195-STB**
Client Project ID: **103195 - 1009 W. Klutina St**
Lab Sample ID: 1196401008
Lab Project ID: 1196401

Collection Date: 10/20/19 08:00
Received Date: 10/23/19 14:32
Matrix: Soil/Solid (dry weight)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/31/19 14:23
Container ID: 1196401008-A

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/20/19 08:00
Prep Initial Wt./Vol.: 49.687 g
Prep Extract Vol: 25 mL

Analytical Batch: VMS19609
Analytical Method: SW8260C
Analyst: KAJ
Analytical Date/Time: 10/24/19 16:46
Container ID: 1196401008-A

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/20/19 08:00
Prep Initial Wt./Vol.: 49.687 g
Prep Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1801506 [SPT/10921]
Blank Lab ID: 1540340

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT10921
Analytical Method: SM21 2540G
Instrument:
Analyst: MER
Analytical Date/Time: 10/24/2019 4:23:00PM

Print Date: 11/06/2019 12:46:49PM

Duplicate Sample Summary

Original Sample ID: 1196401001
Duplicate Sample ID: 1540341

Analysis Date: 10/24/2019 16:23
Matrix: Soil/Solid (dry weight)

QC for Samples:

1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	83.0	83.2	%	0.25	(< 15)

Batch Information

Analytical Batch: SPT10921
Analytical Method: SM21 2540G
Instrument:
Analyst: MER

Print Date: 11/06/2019 12:46:50PM

Duplicate Sample Summary

Original Sample ID: 1196401007
Duplicate Sample ID: 1540342

Analysis Date: 10/24/2019 16:23
Matrix: Soil/Solid (dry weight)

QC for Samples:

1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	95.3	95.6	%	0.38	(< 15)

Batch Information

Analytical Batch: SPT10921
Analytical Method: SM21 2540G
Instrument:
Analyst: MER

Print Date: 11/06/2019 12:46:50PM

Method Blank

Blank ID: MB for HBN 1801589 [VXX/35151]
Blank Lab ID: 1540793

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	10.0U	20.0	6.20	ug/Kg
1,1,1-Trichloroethane	12.5U	25.0	7.80	ug/Kg
1,1,2,2-Tetrachloroethane	1.00U	2.00	0.620	ug/Kg
1,1,2-Trichloroethane	0.400U	0.800	0.250	ug/Kg
1,1-Dichloroethane	12.5U	25.0	7.80	ug/Kg
1,1-Dichloroethene	12.5U	25.0	7.80	ug/Kg
1,1-Dichloropropene	12.5U	25.0	7.80	ug/Kg
1,2,3-Trichlorobenzene	25.0U	50.0	15.0	ug/Kg
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/Kg
1,2,4-Trichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2,4-Trimethylbenzene	25.0U	50.0	15.0	ug/Kg
1,2-Dibromo-3-chloropropane	50.0U	100	31.0	ug/Kg
1,2-Dibromoethane	0.500U	1.00	0.310	ug/Kg
1,2-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,2-Dichloroethane	1.00U	2.00	0.620	ug/Kg
1,2-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,3,5-Trimethylbenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
1,3-Dichloropropane	5.00U	10.0	3.10	ug/Kg
1,4-Dichlorobenzene	12.5U	25.0	7.80	ug/Kg
2,2-Dichloropropane	12.5U	25.0	7.80	ug/Kg
2-Butanone (MEK)	125U	250	78.0	ug/Kg
2-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
2-Hexanone	50.0U	100	31.0	ug/Kg
4-Chlorotoluene	12.5U	25.0	7.80	ug/Kg
4-Isopropyltoluene	50.0U	100	25.0	ug/Kg
4-Methyl-2-pentanone (MIBK)	125U	250	78.0	ug/Kg
Acetone	125U	250	78.0	ug/Kg
Benzene	6.25U	12.5	3.90	ug/Kg
Bromobenzene	12.5U	25.0	7.80	ug/Kg
Bromochloromethane	12.5U	25.0	7.80	ug/Kg
Bromodichloromethane	1.00U	2.00	0.620	ug/Kg
Bromoform	12.5U	25.0	7.80	ug/Kg
Carbon disulfide	50.0U	100	31.0	ug/Kg
Carbon tetrachloride	6.25U	12.5	3.90	ug/Kg
Chlorobenzene	12.5U	25.0	7.80	ug/Kg
Chloroethane	100U	200	62.0	ug/Kg
Chloroform	1.00U	2.00	0.620	ug/Kg

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Method Blank

Blank ID: MB for HBN 1801589 [VXX/35151]
Blank Lab ID: 1540793

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	12.5U	25.0	7.80	ug/Kg
cis-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
cis-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Dibromochloromethane	1.00U	2.00	0.620	ug/Kg
Dibromomethane	12.5U	25.0	7.80	ug/Kg
Dichlorodifluoromethane	25.0U	50.0	15.0	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
Freon-113	50.0U	100	31.0	ug/Kg
Hexachlorobutadiene	10.0U	20.0	6.20	ug/Kg
Isopropylbenzene (Cumene)	12.5U	25.0	7.80	ug/Kg
Methylene chloride	50.0U	100	31.0	ug/Kg
Methyl-t-butyl ether	50.0U	100	31.0	ug/Kg
Naphthalene	12.5U	25.0	7.80	ug/Kg
n-Butylbenzene	12.5U	25.0	7.80	ug/Kg
n-Propylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
sec-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Styrene	12.5U	25.0	7.80	ug/Kg
tert-Butylbenzene	12.5U	25.0	7.80	ug/Kg
Tetrachloroethene	6.25U	12.5	3.90	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
trans-1,2-Dichloroethene	12.5U	25.0	7.80	ug/Kg
trans-1,3-Dichloropropene	6.25U	12.5	3.90	ug/Kg
Trichloroethene	2.50U	5.00	1.50	ug/Kg
Trichlorofluoromethane	25.0U	50.0	15.0	ug/Kg
Vinyl acetate	50.0U	100	31.0	ug/Kg
Vinyl chloride	0.400U	0.800	0.250	ug/Kg
Xylenes (total)	37.5U	75.0	22.8	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	71-136		%
4-Bromofluorobenzene (surr)	101	55-151		%
Toluene-d8 (surr)	98.1	85-116		%

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Method Blank

Blank ID: MB for HBN 1801589 [VXX/35151]
Blank Lab ID: 1540793

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS19609
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/24/2019 1:36:00PM

Prep Batch: VXX35151
Prep Method: SW5035A
Prep Date/Time: 10/24/2019 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/06/2019 12:46:52PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35151]
Blank Spike Lab ID: 1540794
Date Analyzed: 10/24/2019 13:51

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
1,1,1,2-Tetrachloroethane	750	836	112	(78-125)
1,1,1-Trichloroethane	750	782	104	(73-130)
1,1,2,2-Tetrachloroethane	750	793	106	(70-124)
1,1,2-Trichloroethane	750	759	101	(78-121)
1,1-Dichloroethane	750	823	110	(76-125)
1,1-Dichloroethene	750	775	103	(70-131)
1,1-Dichloropropene	750	860	115	(76-125)
1,2,3-Trichlorobenzene	750	834	111	(66-130)
1,2,3-Trichloropropane	750	766	102	(73-125)
1,2,4-Trichlorobenzene	750	844	113	(67-129)
1,2,4-Trimethylbenzene	750	847	113	(75-123)
1,2-Dibromo-3-chloropropane	750	825	110	(61-132)
1,2-Dibromoethane	750	817	109	(78-122)
1,2-Dichlorobenzene	750	810	108	(78-121)
1,2-Dichloroethane	750	745	99	(73-128)
1,2-Dichloropropane	750	813	108	(76-123)
1,3,5-Trimethylbenzene	750	816	109	(73-124)
1,3-Dichlorobenzene	750	806	108	(77-121)
1,3-Dichloropropane	750	800	107	(77-121)
1,4-Dichlorobenzene	750	799	107	(75-120)
2,2-Dichloropropane	750	886	118	(67-133)
2-Butanone (MEK)	2250	2290	102	(51-148)
2-Chlorotoluene	750	823	110	(75-122)
2-Hexanone	2250	2430	108	(53-145)
4-Chlorotoluene	750	842	112	(72-124)
4-Isopropyltoluene	750	779	104	(73-127)
4-Methyl-2-pentanone (MIBK)	2250	2370	105	(65-135)
Acetone	2250	2230	99	(36-164)
Benzene	750	823	110	(77-121)
Bromobenzene	750	801	107	(78-121)
Bromochloromethane	750	730	97	(78-125)
Bromodichloromethane	750	780	104	(75-127)
Bromoform	750	793	106	(67-132)
Carbon disulfide	1130	1170	104	(63-132)

Print Date: 11/06/2019 12:46:55PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35151]
Blank Spike Lab ID: 1540794
Date Analyzed: 10/24/2019 13:51

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
Carbon tetrachloride	750	797	106	(70-135)
Chlorobenzene	750	820	109	(79-120)
Chloroethane	750	824	110	(59-139)
Chloroform	750	778	104	(78-123)
Chloromethane	750	941	125	(50-136)
cis-1,2-Dichloroethene	750	810	108	(77-123)
cis-1,3-Dichloropropene	750	780	104	(74-126)
Dibromochloromethane	750	780	104	(74-126)
Dibromomethane	750	794	106	(78-125)
Dichlorodifluoromethane	750	894	119	(29-149)
Ethylbenzene	750	859	115	(76-122)
Freon-113	1130	1190	105	(66-136)
Hexachlorobutadiene	750	784	105	(61-135)
Isopropylbenzene (Cumene)	750	782	104	(68-134)
Methylene chloride	750	796	106	(70-128)
Methyl-t-butyl ether	1130	1150	103	(73-125)
Naphthalene	750	854	114	(62-129)
n-Butylbenzene	750	781	104	(70-128)
n-Propylbenzene	750	843	112	(73-125)
o-Xylene	750	835	111	(77-123)
P & M -Xylene	1500	1670	111	(77-124)
sec-Butylbenzene	750	761	101	(73-126)
Styrene	750	798	106	(76-124)
tert-Butylbenzene	750	769	103	(73-125)
Tetrachloroethene	750	760	101	(73-128)
Toluene	750	772	103	(77-121)
trans-1,2-Dichloroethene	750	799	107	(74-125)
trans-1,3-Dichloropropene	750	774	103	(71-130)
Trichloroethene	750	865	115	(77-123)
Trichlorofluoromethane	750	840	112	(62-140)
Vinyl acetate	750	810	108	(50-151)
Vinyl chloride	750	799	107	(56-135)
Xylenes (total)	2250	2500	111	(78-124)

Print Date: 11/06/2019 12:46:55PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35151]
Blank Spike Lab ID: 1540794
Date Analyzed: 10/24/2019 13:51

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

Parameter	Spike	Blank Spike (%) Result	Rec (%)	CL
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	99.2	99	(71-136)
4-Bromofluorobenzene (surr)	750	97.9	98	(55-151)
Toluene-d8 (surr)	750	101	101	(85-116)

Batch Information

Analytical Batch: **VMS19609**
Analytical Method: **SW8260C**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **KAJ**

Prep Batch: **VXX35151**
Prep Method: **SW5035A**
Prep Date/Time: **10/24/2019 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: 1541617 — Analysis Date: 10/24/2019 17:01
MS Sample ID: 1540795 MS — Analysis Date: 10/24/2019 14:57
MSD Sample ID: 1540796 MSD — Analysis Date: 10/24/2019 15:13
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	13.7U	1020	1130	111	1020	1180	115	78-125	4.10	(< 20)
1,1,1-Trichloroethane	17.1U	1020	1070	105	1020	1070	104	73-130	0.38	(< 20)
1,1,2,2-Tetrachloroethane	1.37U	1020	1070	105	1020	1090	107	70-124	1.90	(< 20)
1,1,2-Trichloroethane	0.545U	1020	1010	99	1020	1080	106	78-121	6.50	(< 20)
1,1-Dichloroethane	17.1U	1020	1100	108	1020	1130	110	76-125	2.40	(< 20)
1,1-Dichloroethene	17.1U	1020	1150	112	1020	1080	106	70-131	6.00	(< 20)
1,1-Dichloropropene	17.1U	1020	1190	116	1020	1180	116	76-125	0.40	(< 20)
1,2,3-Trichlorobenzene	34.1U	1020	962	94	1020	1140	112	66-130	17.00	(< 20)
1,2,3-Trichloropropane	0.680U	1020	1030	101	1020	1060	104	73-125	2.80	(< 20)
1,2,4-Trichlorobenzene	17.1U	1020	1070	105	1020	1180	115	67-129	9.30	(< 20)
1,2,4-Trimethylbenzene	34.1U	1020	1170	115	1020	1170	114	75-123	0.47	(< 20)
1,2-Dibromo-3-chloropropane	68.0U	1020	1040	102	1020	1130	111	61-132	8.00	(< 20)
1,2-Dibromoethane	0.680U	1020	1080	106	1020	1150	112	78-122	6.00	(< 20)
1,2-Dichlorobenzene	17.1U	1020	1100	108	1020	1140	112	78-121	3.60	(< 20)
1,2-Dichloroethane	1.37U	1020	990	97	1020	1020	100	73-128	3.20	(< 20)
1,2-Dichloropropane	6.80U	1020	1090	107	1020	1120	109	76-123	2.00	(< 20)
1,3,5-Trimethylbenzene	17.1U	1020	1160	113	1020	1130	110	73-124	2.40	(< 20)
1,3-Dichlorobenzene	17.1U	1020	1180	116	1020	1120	109	77-121	5.40	(< 20)
1,3-Dichloropropane	6.80U	1020	1060	103	1020	1130	111	77-121	7.00	(< 20)
1,4-Dichlorobenzene	17.1U	1020	1130	110	1020	1150	112	75-120	1.50	(< 20)
2,2-Dichloropropane	17.1U	1020	1290	126	1020	1280	125	67-133	0.53	(< 20)
2-Butanone (MEK)	171U	3070	2880	94	3070	3130	102	51-148	8.40	(< 20)
2-Chlorotoluene	17.1U	1020	1190	117	1020	1160	114	75-122	2.30	(< 20)
2-Hexanone	68.0U	3070	3090	101	3070	3370	110	53-145	8.70	(< 20)
4-Chlorotoluene	17.1U	1020	1150	113	1020	1160	114	72-124	1.10	(< 20)
4-Isopropyltoluene	68.0U	1020	1070	104	1020	1070	105	73-127	0.32	(< 20)
4-Methyl-2-pentanone (MIBK)	171U	3070	3060	100	3070	3340	109	65-135	8.80	(< 20)
Acetone	171U	3070	2970	97	3070	3050	100	36-164	2.70	(< 20)
Benzene	8.50U	1020	1100	108	1020	1130	110	77-121	2.40	(< 20)
Bromobenzene	17.1U	1020	1140	112	1020	1130	110	78-121	1.20	(< 20)
Bromochloromethane	17.1U	1020	1020	99	1020	1020	100	78-125	0.50	(< 20)
Bromodichloromethane	1.37U	1020	1060	104	1020	1090	106	75-127	2.10	(< 20)
Bromoform	17.1U	1020	1060	103	1020	1120	110	67-132	5.90	(< 20)
Carbon disulfide	68.0U	1530	1820	119	1530	1670	109	63-132	8.80	(< 20)
Carbon tetrachloride	8.50U	1020	1100	108	1020	1100	107	70-135	0.46	(< 20)
Chlorobenzene	17.1U	1020	1110	108	1020	1150	112	79-120	3.90	(< 20)
Chloroethane	137U	1020	1100	107	1020	1010	99	59-139	8.00	(< 20)

Print Date: 11/06/2019 12:46:56PM

Matrix Spike Summary

Original Sample ID: 1541617 — Analysis Date: 10/24/2019 17:01
MS Sample ID: 1540795 MS — Analysis Date: 10/24/2019 14:57
MSD Sample ID: 1540796 MSD — Analysis Date: 10/24/2019 15:13
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloroform	1.37U	1020	1040	102	1020	1070	104	78-123	2.20	(< 20)
Chloromethane	17.1U	1020	1250	122	1020	1230	120	50-136	1.50	(< 20)
cis-1,2-Dichloroethene	17.1U	1020	1090	106	1020	1120	109	77-123	2.50	(< 20)
cis-1,3-Dichloropropene	8.50U	1020	1070	104	1020	1100	107	74-126	2.70	(< 20)
Dibromochloromethane	1.37U	1020	1050	103	1020	1100	108	74-126	4.90	(< 20)
Dibromomethane	17.1U	1020	1060	103	1020	1100	107	78-125	3.90	(< 20)
Dichlorodifluoromethane	34.1U	1020	1390	136	1020	1290	126	29-149	7.20	(< 20)
Ethylbenzene	17.1U	1020	1150	113	1020	1190	116	76-122	3.20	(< 20)
Freon-113	68.0U	1530	1790	117	1530	1700	111	66-136	5.00	(< 20)
Hexachlorobutadiene	13.7U	1020	1170	114	1020	1140	112	61-135	2.20	(< 20)
Isopropylbenzene (Cumene)	17.1U	1020	1040	102	1020	1080	105	68-134	3.70	(< 20)
Methylene chloride	68.0U	1020	1060	104	1020	1100	108	70-128	3.60	(< 20)
Methyl-t-butyl ether	68.0U	1530	1490	97	1530	1580	103	73-125	6.00	(< 20)
Naphthalene	17.1U	1020	1020	100	1020	1190	116	62-129	15.40	(< 20)
n-Butylbenzene	17.1U	1020	1070	105	1020	1100	107	70-128	2.10	(< 20)
n-Propylbenzene	17.1U	1020	1190	116	1020	1160	114	73-125	2.20	(< 20)
o-Xylene	17.1U	1020	1130	110	1020	1170	114	77-123	3.40	(< 20)
P & M -Xylene	34.1U	2040	2240	110	2040	2360	115	77-124	5.00	(< 20)
sec-Butylbenzene	17.1U	1020	1070	104	1020	1040	102	73-126	2.50	(< 20)
Styrene	17.1U	1020	1110	108	1020	1130	110	76-124	1.70	(< 20)
tert-Butylbenzene	17.1U	1020	1080	106	1020	1060	104	73-125	2.30	(< 20)
Tetrachloroethene	8.50U	1020	1000	98	1020	1080	105	73-128	7.20	(< 20)
Toluene	17.1U	1020	1040	102	1020	1070	105	77-121	2.50	(< 20)
trans-1,2-Dichloroethene	17.1U	1020	1270	124	1020	1240	121	74-125	2.50	(< 20)
trans-1,3-Dichloropropene	8.50U	1020	1060	103	1020	1100	108	71-130	4.00	(< 20)
Trichloroethene	3.41U	1020	1190	116	1020	1200	118	77-123	1.00	(< 20)
Trichlorofluoromethane	34.1U	1020	1210	118	1020	1090	107	62-140	9.90	(< 20)
Vinyl acetate	68.0U	1020	1070	105	1020	1130	111	50-151	5.60	(< 20)
Vinyl chloride	0.545U	1020	1110	109	1020	1060	104	56-135	4.50	(< 20)
Xylenes (total)	51.0U	3070	3370	110	3070	3520	115	78-124	4.50	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1020	974	95	1020	1000	98	71-136	3.00	
4-Bromofluorobenzene (surr)		1700	1390	81	1700	1320	78	55-151	4.80	
Toluene-d8 (surr)		1020	1020	100	1020	1030	101	85-116	0.46	

Print Date: 11/06/2019 12:46:56PM

Matrix Spike Summary

Original Sample ID: 1541617
MS Sample ID: 1540795 MS
MSD Sample ID: 1540796 MSD

Analysis Date:
Analysis Date: 10/24/2019 14:57
Analysis Date: 10/24/2019 15:13
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)				
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS19609
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/24/2019 2:57:00PM

Prep Batch: VXX35151
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/24/2019 6:00:00AM
Prep Initial Wt./Vol.: 36.68g
Prep Extract Vol: 25.00mL

Print Date: 11/06/2019 12:46:56PM

Method Blank

Blank ID: MB for HBN 1801598 [VXX/35153]
Blank Lab ID: 1540807

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	90.3	50-150		%

Batch Information

Analytical Batch: VFC15012
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/25/2019 10:01:00PM

Prep Batch: VXX35153
Prep Method: SW5035A
Prep Date/Time: 10/25/2019 8:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/06/2019 12:46:57PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35153]
Blank Spike Lab ID: 1540808
Date Analyzed: 10/25/2019 20:51

Spike Duplicate ID: LCSD for HBN 1196401 [VXX35153]
Spike Duplicate Lab ID: 1540809
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

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	98	12.5	14.8	118	(60-120)	18.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	1.25	85.7	86	1.25	91.1	91	(50-150)	6.10	

Batch Information

Analytical Batch: **VFC15012**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ST**

Prep Batch: **VXX35153**
Prep Method: **SW5035A**
Prep Date/Time: **10/25/2019 08:00**
Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Print Date: 11/06/2019 12:46:59PM

Method Blank

Blank ID: MB for HBN 1801657 [VXX/35163]
Blank Lab ID: 1541057

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Bromomethane	10.0U	20.0	6.20	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	71-136		%
4-Bromofluorobenzene (surr)	97.4	55-151		%
Toluene-d8 (surr)	105	85-116		%

Batch Information

Analytical Batch: VMS19614
Analytical Method: SW8260C
Instrument: VQA 7890/5975 GC/MS
Analyst: KAJ
Analytical Date/Time: 10/28/2019 12:24:00PM

Prep Batch: VXX35163
Prep Method: SW5035A
Prep Date/Time: 10/28/2019 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/06/2019 12:47:02PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35163]
Blank Spike Lab ID: 1541058
Date Analyzed: 10/28/2019 12:40

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003

Results by **SW8260C**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
Bromomethane	750	830	111	(53-143)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	93.3	93	(71-136)
4-Bromofluorobenzene (surr)	750	100	100	(55-151)
Toluene-d8 (surr)	750	103	103	(85-116)

Batch Information

Analytical Batch: **VMS19614**
Analytical Method: **SW8260C**
Instrument: **VQA 7890/5975 GC/MS**
Analyst: **KAJ**

Prep Batch: **VXX35163**
Prep Method: **SW5035A**
Prep Date/Time: **10/28/2019 06:00**
Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/06/2019 12:47:03PM

Method Blank

Blank ID: MB for HBN 1801807 [VXX/35177]
Blank Lab ID: 1541820

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Bromomethane	10.0U	20.0	6.20	ug/Kg
Surrogates				
1,2-Dichloroethane-D4 (surr)	84.5	71-136		%
4-Bromofluorobenzene (surr)	102	55-151		%
Toluene-d8 (surr)	98.5	85-116		%

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/31/2019 9:19:00AM

Prep Batch: VXX35177
Prep Method: SW5035A
Prep Date/Time: 10/31/2019 6:00:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 11/06/2019 12:47:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [VXX35177]
Blank Spike Lab ID: 1541821
Date Analyzed: 10/31/2019 12:32

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
Bromomethane	750	1070	143	(53-143)
Surrogates				
1,2-Dichloroethane-D4 (surr)	750	94.2	94	(71-136)
4-Bromofluorobenzene (surr)	750	105	105	(55-151)
Toluene-d8 (surr)	750	99	99	(85-116)

Batch Information

Analytical Batch: **VMS19623**
Analytical Method: **SW8260C**
Instrument: **VRA Agilent GC/MS 7890B/5977A**
Analyst: **KAJ**

Prep Batch: **VXX35177**
Prep Method: **SW5035A**
Prep Date/Time: **10/31/2019 06:00**
Spike Init Wt./Vol.: 750 ug/Kg Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/06/2019 12:47:07PM

Matrix Spike Summary

Original Sample ID: 1541819 — Analysis Date: 10/31/2019 15:10
MS Sample ID: 1541822 MS — Analysis Date: 10/31/2019 13:06
MSD Sample ID: 1541823 MSD — Analysis Date: 10/31/2019 13:22
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1196401004, 1196401005, 1196401006, 1196401007, 1196401008

Results by **SW8260C**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Bromomethane	7.50U	562	824	147 *	562	733	130	53-143	11.60	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		562	522	93	562	532	95	71-136	1.90	
4-Bromofluorobenzene (surr)		937	909	97	937	879	94	55-151	3.40	
Toluene-d8 (surr)		562	562	100	562	559	99	85-116	0.50	

Batch Information

Analytical Batch: VMS19623
Analytical Method: SW8260C
Instrument: VRA Agilent GC/MS 7890B/5977A
Analyst: KAJ
Analytical Date/Time: 10/31/2019 1:06:00PM

Prep Batch: VXX35177
Prep Method: Vol. Extraction SW8260 Field Extracted L
Prep Date/Time: 10/31/2019 6:00:00AM
Prep Initial Wt./Vol.: 66.70g
Prep Extract Vol: 25.00mL

Print Date: 11/06/2019 12:47:09PM

Method Blank

Blank ID: MB for HBN 1801465 [XXX/42521]
Blank Lab ID: 1540102

QC for Samples:
1196401004

Matrix: Soil/Solid (dry weight)

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	6.79J	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	106	60-120		%

Batch Information

Analytical Batch: XFC15454
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 10/30/2019 6:16:00PM

Prep Batch: XXX42521
Prep Method: SW3550C
Prep Date/Time: 10/24/2019 9:35:43AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:47:10PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [XXX42521]
Blank Spike Lab ID: 1540103
Date Analyzed: 10/30/2019 18:46

Spike Duplicate ID: LCSD for HBN 1196401 [XXX42521]
Spike Duplicate Lab ID: 1540104
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401004

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	833	876	105	833	794	95	(75-125)	9.80	(< 20)
Surrogates									
5a Androstane (surr)	16.7	121	121 *	16.7	110	110	(60-120)	9.60	

Batch Information

Analytical Batch: **XFC15454**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX42521**
Prep Method: **SW3550C**
Prep Date/Time: **10/24/2019 09:35**
Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1801475 [XXX/42522]
Blank Lab ID: 1540149

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401004, 1196401005

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
Acenaphthene	12.5U	25.0	6.25	ug/Kg
Acenaphthylene	12.5U	25.0	6.25	ug/Kg
Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/Kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/Kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/Kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/Kg
Chrysene	12.5U	25.0	6.25	ug/Kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/Kg
Fluoranthene	12.5U	25.0	6.25	ug/Kg
Fluorene	12.5U	25.0	6.25	ug/Kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/Kg
Naphthalene	10.0U	20.0	5.00	ug/Kg
Phenanthrene	12.5U	25.0	6.25	ug/Kg
Pyrene	12.5U	25.0	6.25	ug/Kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	80.2	58-103		%
Fluoranthene-d10 (surr)	86	54-113		%

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 11/5/2019 1:39:00PM

Prep Batch: XXX42522
Prep Method: SW3550C
Prep Date/Time: 10/24/2019 12:25:06PM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:47:14PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [XXX42522]
Blank Spike Lab ID: 1540150
Date Analyzed: 11/05/2019 14:00

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005

Results by **8270D SIM (PAH)**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	93.2	84	(43-111)
2-Methylnaphthalene	111	91.3	82	(39-114)
Acenaphthene	111	93.5	84	(44-111)
Acenaphthylene	111	95.7	86	(39-116)
Anthracene	111	90.8	82	(50-114)
Benzo(a)Anthracene	111	92.4	83	(54-122)
Benzo[a]pyrene	111	88.0	79	(50-125)
Benzo[b]Fluoranthene	111	92.2	83	(53-128)
Benzo[g,h,i]perylene	111	91.8	83	(49-127)
Benzo[k]fluoranthene	111	94.6	85	(56-123)
Chrysene	111	95.7	86	(57-118)
Dibenzo[a,h]anthracene	111	92.3	83	(50-129)
Fluoranthene	111	99.9	90	(55-119)
Fluorene	111	93.7	84	(47-114)
Indeno[1,2,3-c,d] pyrene	111	98.4	89	(49-130)
Naphthalene	111	92.7	84	(38-111)
Phenanthrene	111	93.2	84	(49-113)
Pyrene	111	103	93	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	111	79.9	80	(58-103)
Fluoranthene-d10 (surr)	111	84.8	85	(54-113)

Batch Information

Analytical Batch: **XMS11846**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **DSD**

Prep Batch: **XXX42522**
Prep Method: **SW3550C**
Prep Date/Time: **10/24/2019 12:25**
Spike Init Wt./Vol.: 111 ug/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/06/2019 12:47:15PM

Matrix Spike Summary

Original Sample ID: 1196401001
MS Sample ID: 1540151 MS
MSD Sample ID: 1540152 MSD

Analysis Date: 11/05/2019 19:29
Analysis Date: 11/05/2019 19:50
Analysis Date: 11/05/2019 20:11
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401004, 1196401005

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	14.8U	134	105	79		134	103	78		43-111	1.40		(< 20)
2-Methylnaphthalene	14.8U	134	104	78		134	102	76		39-114	2.50		(< 20)
Acenaphthene	14.8U	134	105	79		134	102	76		44-111	3.20		(< 20)
Acenaphthylene	14.8U	134	110	83		134	109	82		39-116	0.88		(< 20)
Anthracene	14.8U	134	99.3	74		134	91.3	69		50-114	8.40		(< 20)
Benzo(a)Anthracene	14.8U	134	88.0	66		134	77.2	58		54-122	13.00		(< 20)
Benzo[a]pyrene	14.8U	134	73.3	55		134	60.6	46	*	50-125	18.90		(< 20)
Benzo[b]Fluoranthene	14.8U	134	79.6	60		134	67.6	51	*	53-128	16.40		(< 20)
Benzo[g,h,i]perylene	14.8U	134	54.5	41	*	134	45.5	34	*	49-127	17.80		(< 20)
Benzo[k]fluoranthene	14.8U	134	79.8	60		134	67.5	51	*	56-123	16.80		(< 20)
Chrysene	14.8U	134	88.1	66		134	77.3	58		57-118	13.00		(< 20)
Dibenzo[a,h]anthracene	14.8U	134	60.1	45	*	134	48.3	36	*	50-129	21.70	*	(< 20)
Fluoranthene	14.8U	134	100	75		134	92.7	70		55-119	7.60		(< 20)
Fluorene	14.8U	134	105	78		134	103	77		47-114	1.70		(< 20)
Indeno[1,2,3-c,d] pyrene	14.8U	134	60.6	45	*	134	50.1	38	*	49-130	18.90		(< 20)
Naphthalene	11.9U	134	105	78		134	103	77		38-111	1.80		(< 20)
Phenanthrene	14.8U	134	99.6	75		134	93.7	70		49-113	6.20		(< 20)
Pyrene	14.8U	134	104	78		134	94.0	71		55-117	10.10		(< 20)
Surrogates													
2-Methylnaphthalene-d10 (surr)		134	103	77		134	101	76		58-103	1.20		
Fluoranthene-d10 (surr)		134	106	79		134	104	78		54-113	1.60		

Batch Information

Analytical Batch: XMS11846
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: DSD
Analytical Date/Time: 11/5/2019 7:50:00PM

Prep Batch: XXX42522
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 10/24/2019 12:25:06PM
Prep Initial Wt./Vol.: 22.55g
Prep Extract Vol: 5.00mL

Print Date: 11/06/2019 12:47:16PM

Method Blank

Blank ID: MB for HBN 1801525 [XXX/42526]
Blank Lab ID: 1540401

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401001, 1196401002, 1196401003, 1196401005, 1196401006, 1196401007

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	6.95J	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	101	60-120		%

Batch Information

Analytical Batch: XFC15460
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 10/31/2019 11:27:00AM

Prep Batch: XXX42526
Prep Method: SW3550C
Prep Date/Time: 10/25/2019 12:09:53PM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:47:17PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [XXX42526]
Blank Spike Lab ID: 1540402
Date Analyzed: 10/29/2019 03:02

Spike Duplicate ID: LCSD for HBN 1196401 [XXX42526]
Spike Duplicate Lab ID: 1540403
Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401001, 1196401002, 1196401003, 1196401005, 1196401006, 1196401007

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	833	811	97	833	823	99	(75-125)	1.50	(< 20)
Surrogates									
5a Androstane (surr)	16.7	110	110	16.7	111	111	(60-120)	0.68	

Batch Information

Analytical Batch: **XFC15451**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX42526**
Prep Method: **SW3550C**
Prep Date/Time: **10/25/2019 12:09**
Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

Print Date: 11/06/2019 12:47:19PM

Method Blank

Blank ID: MB for HBN 1801638 [XXX/42536]
Blank Lab ID: 1540989

Matrix: Soil/Solid (dry weight)

QC for Samples:
1196401006, 1196401007

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
2-Methylnaphthalene	12.5U	25.0	6.25	ug/Kg
Acenaphthene	12.5U	25.0	6.25	ug/Kg
Acenaphthylene	12.5U	25.0	6.25	ug/Kg
Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo(a)Anthracene	12.5U	25.0	6.25	ug/Kg
Benzo[a]pyrene	12.5U	25.0	6.25	ug/Kg
Benzo[b]Fluoranthene	12.5U	25.0	6.25	ug/Kg
Benzo[g,h,i]perylene	12.5U	25.0	6.25	ug/Kg
Benzo[k]fluoranthene	12.5U	25.0	6.25	ug/Kg
Chrysene	12.5U	25.0	6.25	ug/Kg
Dibenzo[a,h]anthracene	12.5U	25.0	6.25	ug/Kg
Fluoranthene	12.5U	25.0	6.25	ug/Kg
Fluorene	12.5U	25.0	6.25	ug/Kg
Indeno[1,2,3-c,d] pyrene	12.5U	25.0	6.25	ug/Kg
Naphthalene	10.0U	20.0	5.00	ug/Kg
Phenanthrene	12.5U	25.0	6.25	ug/Kg
Pyrene	12.5U	25.0	6.25	ug/Kg
Surrogates				
2-Methylnaphthalene-d10 (surr)	86.2	58-103		%
Fluoranthene-d10 (surr)	90.4	54-113		%

Batch Information

Analytical Batch: XMS11841
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 10/31/2019 2:42:00PM

Prep Batch: XXX42536
Prep Method: SW3550C
Prep Date/Time: 10/29/2019 12:25:17PM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

Print Date: 11/06/2019 12:47:20PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1196401 [XXX42536]
Blank Spike Lab ID: 1540990
Date Analyzed: 10/31/2019 15:03

Matrix: Soil/Solid (dry weight)

QC for Samples: 1196401006, 1196401007

Results by **8270D SIM (PAH)**

	Blank Spike (ug/Kg)			
Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	111	95.7	86	(43-111)
2-Methylnaphthalene	111	95.8	86	(39-114)
Acenaphthene	111	93.6	84	(44-111)
Acenaphthylene	111	96.2	87	(39-116)
Anthracene	111	90.8	82	(50-114)
Benzo(a)Anthracene	111	94.5	85	(54-122)
Benzo[a]pyrene	111	90.3	81	(50-125)
Benzo[b]Fluoranthene	111	98.1	88	(53-128)
Benzo[g,h,i]perylene	111	92.6	83	(49-127)
Benzo[k]fluoranthene	111	95.6	86	(56-123)
Chrysene	111	97.2	88	(57-118)
Dibenzo[a,h]anthracene	111	94.8	85	(50-129)
Fluoranthene	111	99.5	90	(55-119)
Fluorene	111	96.8	87	(47-114)
Indeno[1,2,3-c,d] pyrene	111	100	90	(49-130)
Naphthalene	111	95.1	86	(38-111)
Phenanthrene	111	90.8	82	(49-113)
Pyrene	111	103	93	(55-117)
Surrogates				
2-Methylnaphthalene-d10 (surr)	111	88.1	88	(58-103)
Fluoranthene-d10 (surr)	111	88.3	88	(54-113)

Batch Information

Analytical Batch: **XMS11841**
Analytical Method: **8270D SIM (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX42536**
Prep Method: **SW3550C**
Prep Date/Time: **10/29/2019 12:25**
Spike Init Wt./Vol.: 111 ug/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/06/2019 12:47:22PM

Matrix Spike Summary

Original Sample ID: 1196440001
MS Sample ID: 1540991 MS
MSD Sample ID: 1540992 MSD

QC for Samples: 1196401006, 1196401007

Analysis Date: 10/31/2019 16:25
Analysis Date: 10/31/2019 16:45
Analysis Date: 10/31/2019 17:06
Matrix: Soil/Solid (dry weight)

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	27.3U	121	123	102	123	121	98	43-111	1.80	(< 20)
2-Methylnaphthalene	34.7	121	140	87	123	135	82	39-114	3.00	(< 20)
Acenaphthene	27.3U	121	101	84	123	99.3	81	44-111	1.80	(< 20)
Acenaphthylene	27.3U	121	107	89	123	104	85	39-116	2.70	(< 20)
Anthracene	27.3U	121	103	85	123	100	82	50-114	2.30	(< 20)
Benzo(a)Anthracene	27.3U	121	99.4	82	123	99.1	81	54-122	0.34	(< 20)
Benzo[a]pyrene	27.3U	121	98.0	81	123	99.2	81	50-125	1.20	(< 20)
Benzo[b]Fluoranthene	27.3U	121	104	86	123	104	85	53-128	0.48	(< 20)
Benzo[g,h,i]perylene	27.3U	121	101	83	123	100	82	49-127	0.40	(< 20)
Benzo[k]fluoranthene	27.3U	121	98.9	82	123	99.4	81	56-123	0.58	(< 20)
Chrysene	27.3U	121	101	84	123	101	82	57-118	0.34	(< 20)
Dibenzo[a,h]anthracene	27.3U	121	102	85	123	102	83	50-129	0.31	(< 20)
Fluoranthene	27.3U	121	102	84	123	102	83	55-119	0.07	(< 20)
Fluorene	27.3U	121	114	95	123	113	92	47-114	0.79	(< 20)
Indeno[1,2,3-c,d] pyrene	27.3U	121	107	88	123	107	87	49-130	0.12	(< 20)
Naphthalene	46.2	121	150	86	123	144	80	38-111	4.00	(< 20)
Phenanthrene	27.3U	121	104	86	123	101	83	49-113	2.00	(< 20)
Pyrene	27.3U	121	108	89	123	108	88	55-117	0.06	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		121	102	85	123	99.4	81	58-103	2.80	
Fluoranthene-d10 (surr)		121	101	83	123	99.8	81	54-113	0.69	

Batch Information

Analytical Batch: XMS11841
Analytical Method: 8270D SIM (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 10/31/2019 4:45:00PM

Prep Batch: XXX42536
Prep Method: Sonication Extr Soil 8270 PAH SIM 5ml
Prep Date/Time: 10/29/2019 12:25:17PM
Prep Initial Wt./Vol.: 22.95g
Prep Extract Vol: 5.00mL

Print Date: 11/06/2019 12:47:23PM

1196401

Profile: 343021 JKJ

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(303) 825-3800

CUSTODY RECORD

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Laboratory: SGS
Attn: Jillian

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	GRO/AK101	VOC/EPA 8260C	DRO/AK102	PAH/EPA 8270D SIM					Total Number of Containers	Remarks/Matrix
103195-B1S3	(1) AB	1508	10/20/19		✓	✓	✓							2	Soil
103195-B1S8	(2) AB	1533	10/20/19		✓	✓	✓								
103195-B2S4	(3) AB	936	10/20/19		✓	✓	✓								
103195-B2S8	(4) AB	1008	10/20/19		✓	✓	✓								
103195-B2S14	(5) AB	1036	10/20/19		✓	✓	✓								
103195-B3S2	(6) AB	839	10/21/19		✓	✓	✓								
103195-B3S8	(7) AB	906	10/21/19		✓	✓	✓								
103195-STB	(8) A	0800	10/20/19			✓								1	lab supplied TB

Project Information	Sample Receipt
Project Number: 10395	Total Number of Containers
Project Name: 1009 W. Klutina St Valdez, AK	COC Seals/Intact? Y/N/NA
Contact: ADV, JCT	Received Good Cond./Cold
Ongoing Project? Yes ☑ No ☐	Delivery Method:
Sampler: ADV	(attach shipping bill, if any)

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Alena Voigt Time: 1431	Signature: Time:	Signature: Time:
Printed Name: Alena Voigt Date: 10/23/19	Printed Name: Date:	Printed Name: Date:
Company: Shannon + Wilson	Company:	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time:	Signature: Time:	Signature: Time: 14:32 MA
Printed Name: Date:	Printed Name: Date:	Printed Name: Michelle Alarcon Date: 10·23·19
Company:	Company:	Company: SGS HD/Alaska 101 DS9

Instructions
Requested Turnaround Time: STANDARD
Special Instructions:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

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No. 34985

e-Sample Receipt Form

SGS Workorder #: **1196401**

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.1 °C Therm. ID: D59
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC. ***Note: If sample information on containers differs from COC, SGS will default to COC information	Yes	
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
		N/A ***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	Yes	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

F102b_SRFm_20190325

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1196401001-A	No Preservative Required	OK			
1196401001-B	Methanol field pres. 4 C	OK			
1196401002-A	No Preservative Required	OK			
1196401002-B	Methanol field pres. 4 C	OK			
1196401003-A	No Preservative Required	OK			
1196401003-B	Methanol field pres. 4 C	OK			
1196401004-A	No Preservative Required	OK			
1196401004-B	Methanol field pres. 4 C	OK			
1196401005-A	No Preservative Required	OK			
1196401005-B	Methanol field pres. 4 C	OK			
1196401006-A	No Preservative Required	OK			
1196401006-B	Methanol field pres. 4 C	OK			
1196401007-A	No Preservative Required	OK			
1196401007-B	Methanol field pres. 4 C	OK			
1196401008-A	Methanol field pres. 4 C	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

LABORATORY DATA REVIEW CHECKLIST

Completed by: Alena Voigt
Title: Environmental Scientist
Date: March 2020

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1196401
Laboratory Report Date: 11/6/2019

Contaminated Site Name: Hermon Hutchens Elementary School UST 2 and Admin Bldg
ADEC File Number: 2264.26.021 and 2264.38.044
Hazard Identification Number: 25449/27076

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA**
Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
Yes / No / NA
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?
Yes / No / NA
Comments**:**

b. Correct analyses requested? **Yes / No / NA**
Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
Yes / No / NA
Comments: *The temperature blank had a temperature of 1.1°* C

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA**
Comments:

c. Sample condition documented - broken, leaking (MeOH), zero headspace (VOC vials)? **Yes / No / NA**
Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? **Yes / No / NA**
Comments: *No discrepancies were noted.*

e. Data quality or usability affected?
Comments: *Data quality/usability are considered unaffected; see above.*

4. <u>Case Narrative</u>

a. Present and understandable? **Yes / No / NA**
Comments:

b. Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA**
Comments: *The case narrative noted the following:*

- *Method AK102/103 – Surrogate recovery for 5a-androstane does not meet QC criteria, however samples are within criteria.*
- *Method 8270D SIM – PAH MS recovery for Indeno[1,2,3-c,d]pyrene, Dibenzo[a,h]anthracene and Benzo[g,h,i]perylene do not meet QC criteria. Refer to the LCS for accuracy requirements.*
- *Method 8260C – MS recovery for bromomethane does not meet the QC criteria. This analyte was not detected above the LOQ in the associated parent sample.*
- *Method 8270D SIM – PAH MSD recovery for several analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.*
- *Method 8270D SIM – PAH MS/MSD RPD for Indeno[1,2,3-c,d]pyrene does not meet QC criteria. Results for this analyte are considered estimated in the parent sample.*

c. Were corrective actions documented? **Yes / No / NA**
Comments:

d. What is the effect on data quality/usability, according to the case narrative?
Comments: *See above.*

5. Sample Results

a. Correct analyses performed/reported as requested on COC? **Yes / No / NA**
Comments:

b. All applicable holding times met? **Yes / No / NA**
Comments:

c. All soils reported on a dry weight basis? **Yes / No / NA**
Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA**
Comments*: The LOQs for 1,2,3-trichloropropane and 1,2-dibromoethane are greater than the ADEC cleanup levels.*

e. Data quality or usability affected?
Comments: *There is a potential that these target analytes are present at concentrations in the associated samples greater than the ADEC cleanup levels, but less than the LOQs; however, theses analytes were not detected at estimated concentrations in the project samples.*

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis, and 20 samples?
Yes / No / NA
Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?
Yes / No / NA
Comments: *Although less than the LOQs, estimated concentrations of DRO (6.79 mg/kg and 6.95 mg/kg) were detected in the method blanks.*

iii. If above LOQ or project specified objectives, what samples are affected?
Comments: *All project samples.*

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes / No / NA
Comments: *When the reported sample concentration is within 10 times the reported blank concentration, the project samples are flagged "B". If both the sample concentration and method blank concentrations are reported at levels less than the LOQ, the sample concentration is reported as non-detect at the LOQ and flagged "B".*

v. Data quality or usability affected?
Comments: *See above.*

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

i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / NA**
Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA**
Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *AK 102/103 - LCS recovery for 5a-androstane does not meet QC criteria.*

iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from LCS/LCSD, and/or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: *Each sample.*

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *The associated samples were within criteria, therefore flagging is not required.*

vii. Data quality or usability affected?
Comments*: No, see above.*

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Note: Leave blank if not required for project

i. Organics - One MS/MSD reported per matrix, analysis, and 20 samples?
Yes / No / NA
Comments:

ii. Metals/Inorganics - One MS and one MSD reported per matrix, analysis and 20 samples? **Yes / No / NA**
Comments:

iii. Accuracy – All percent recoveries (%R) reported and *w*ithin method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *See 4.b.*

iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from MS/MSD, and/or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *See 4.b.*

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: *B1S3 and B2S14.*

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *The analytes were not detected in the parent samples or the LCS was used for accuracy requirements.*

vii. Data quality or usability affected?
Comments*: No, see above.*

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 / NA**
Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA**
Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

iv. Data quality or usability affected?
Comments: *See above.*

e. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.)

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? **Yes / No / NA**
Comments:

ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA**
Comments: *Only one cooler was used to transport the samples.*

iii. All results less than LOQ and project specified objectives? **Yes / No / NA**
Comments*:*

iv. If above LOQ or project specified DQOs, what samples are affected?
Comments:

v. Data quality or usability affected?
Comments: *See above.*

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No / NA
Comments: *Sample B2S14 is the field duplicate of Sample B2S4.*

ii. Were the field duplicates submitted blind to the lab? **Yes / No / NA**
Comments*:*

iii. Precision – All relative percent differences (RPDs) less than specified project objectives? (Recommended: 30% for water, 50% for soil) **Yes / No / NA**
Comments: *The GRO RPD is outside the QC criteria of 50% in the duplicate sample set.*

iv. Data quality or usability affected?
Comments: *Although the RPD for GRO is greater than the specific DQO of 50%, neither sample result contained GRO concentrations greater than the ADEC cleanup level and the data is considered useable for this project. Sample results are flagged "E" in Table 3.*

g. Decontamination or Equipment Blank (if not applicable, a comment stating why must be entered below)**.**
Yes / No / NA
Comments:

i. All results less than LOQ and project specified objectives?
Yes / No / NA
Comments:

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

iii. Data quality or usability affected?
Comments:

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

a. Defined and appropriate? **Yes / No / NA**
Comments: *A key is provided on Page 4 of the SGS Laboratory Report.*

Attachment 5

Important Information About Your Geotechnical/Environmental Report

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland