

January 12, 2022

Mr. Travis O'Rourke
Municipality of Anchorage
Department of Property and Facility Management
3640 East Tudor Road, Warehouse No. 1
Anchorage, AK 99507

RE: GROUNDWATER MONITORING REPORT, 5701 NORTHWOOD DRIVE,
ANCHORAGE, ALASKA; ADEC FILE NO. 2100.38.536

Dear Mr. O'Rourke:

This letter report documents the July and October 2021 groundwater monitoring activities conducted at the Municipality of Anchorage (MOA) Northwood Maintenance Facility, located at 5701 Northwood Drive, Anchorage, Alaska. The site is an Alaska Department of Environmental Conservation (ADEC) contaminated site identified as "MOA Northwood Maintenance Facility Garage Bay 6". A vicinity map is included as Figure 1.

Our work was conducted in general accordance with our July 6, 2021 *Revised Work Plan for Groundwater Monitoring, 5701 Northwood Drive, Anchorage, Alaska; ADEC File No. 2100.38.536*, which was approved by Ms. Jessica Hall of the ADEC, in a letter dated July 8, 2021.

BACKGROUND

A dry well was removed from Garage Bay 6 of the Northwood Maintenance Facility in 2001. The facility is located within the boundaries of the closed International Airport Landfill (IAL). The on-site structure and former dry well are located on the leading edge of the closed landfill. Imported fill material was placed above the landfill and the structure and other site improvements were constructed. Based on institutional knowledge of groundwater monitoring conducted at IAL, the regional groundwater flow is towards the west/southwest. Connors Lake is located about 600 feet southwest of the former dry well. According to the Alaska Department of Natural Resources Well Log Tracking System (WELTS) database, the closest downgradient drinking water well is located about 2,700 feet southwest of the site. The database also lists several potential well locations in the vicinity of the site, but it is unlikely that the majority of these wells exist due to the location of the closed landfill and wetlands.

The dry well was connected to the building's floor drain system. The dry well consisted of a 4-foot diameter concrete pipe with an open bottom. A pipe in the wall of the dry well discharged to a drainage ditch west of the facility. Following removal of the dry well, the pipe no longer discharges to the drainage ditch. Soil samples collected from the dry well excavation contained concentrations of gasoline range organics (GRO) (maximum of 376 milligrams per kilogram [mg/kg]), diesel range organics (DRO) (maximum of 7,610 mg/kg), ethylbenzene (maximum of 0.315 mg/kg), xylenes (maximum of 5.58 mg/kg), cis-1,2-dichloroethene (maximum of 0.15 mg/kg), 1,2,4-trimethylbenzene (maximum of 30.2 mg/kg), 1,3,5-trimethylbenzene (maximum of 13.7 mg/kg), 1,2-dichlorobenzene (maximum of 48.7 mg/kg), 1,4-dichlorobenzene (maximum of 9.29 mg/kg), and naphthalene (maximum of 8.74 mg/kg) exceeding the current ADEC Method Two cleanup levels.

In December 2018, one soil boring (Boring B1) was advanced and one groundwater monitoring well (Monitoring Well B1MW) was installed adjacent to the former dry well. The approximate location of Boring B1/Well B1MW is shown on Figure 2. A soil sample collected from Boring B1 contained an estimated (J-flagged) concentration of DRO (12.8 mg/kg) less than the applicable ADEC Method Two cleanup level of 250 mg/kg. The soil sample also contained concentrations of residual range organics (RRO) (67.6 mg/kg) and 1,2-dichlorobenzene (0.0209 mg/kg) less than the ADEC Method Two cleanup levels of 10,000 mg/kg and 2.4 mg/kg, respectively. A groundwater sample collected from Well B1MW contained vinyl chloride (0.72 micrograms per liter [$\mu\text{g/L}$]) at a concentration exceeding the ADEC Table C cleanup level of 0.19 $\mu\text{g/L}$. The groundwater sample also contained 1,230 $\mu\text{g/L}$ DRO and 1,090 $\mu\text{g/L}$ RRO which are less than the ADEC Table C cleanup levels of 1,500 $\mu\text{g/L}$ and 1,100 $\mu\text{g/L}$, respectively. Benzene, toluene, xylenes, chloroethane, cis-1,2-dichloroethane, and dichlorodifluoromethane were also detected in the sample at concentrations less than the ADEC Table C cleanup levels.

FIELD ACTIVITIES

The field activities consisted of collecting analytical groundwater samples and managing investigation-derived waste (IDW). SGS North America Inc. (SGS) provided analytical testing of the groundwater samples. A site plan is included as Figure 2. Copies of field notes are included in Attachment 1. The groundwater sampling activities were conducted by Ms. Schylar Healy and Mr. Zach Thon of Shannon & Wilson. Ms. Healy and Mr. Thon are Qualified Environmental Professionals in accordance with 18 Alaska Administrative Code (AAC) 75.333.

Monitoring Well Sampling

Monitoring Well B1MW1 was sampled on July 9 and October 7, 2021. The non-disposable equipment that came into contact with groundwater was decontaminated prior to use with a non-phosphate detergent wash, a tap water rinse, and a distilled-water rinse. Prior to sampling, depth-to-water, product, and total well depth measurements were recorded using a dual phase product meter and electronic water level meter. Product was not encountered in the well.

During each event, the well was purged and sampled using a low-flow technique, with a submersible pump and disposable tubing. The submersible pump was placed within 2 feet of the surface of the groundwater column. The pump rate was adjusted with a goal of limiting the sustained water drawdown to a maximum of 0.5 foot (typical pump rate of 0.1 to 0.4 liter per minute).

During the purging process, field personnel monitored water quality parameters (temperature, specific conductivity, pH, and turbidity), purge volume, and drawdown at 3- to 5-minute intervals. The water quality instruments were calibrated prior to use, using the manufacturer's instructions. Stabilization criteria comprised of three successive readings of: temperature within 3 percent (minimum 0.2 degree Celsius), pH within 0.1-unit, specific conductivity within 3 percent, and turbidity within 10 percent or less than 10 Nephelometric Turbidity Units (NTU). Purging was considered complete when at least one well volume was removed, and the water quality parameters stabilized. A sheen was not observed on the purge water.

Analytical samples were collected by transferring water directly from the pump tubing into the laboratory supplied containers, which were the correct volumes and contain the proper preservatives, for analysis. The sample jars were filled in decreasing order of volatility. The results of the field measurements and purging data are presented in Table 1.

Investigation Derived Waste

IDW from this project consisted of purge water and decontamination water, which was containerized in a labeled, five-gallon bucket. Shannon & Wilson coordinated with US Ecology for offsite disposal/treatment of the IDW. The signed ADEC *Transport, Treatment & Disposal Approval Form for Contaminated Media* and a copy of the waste manifest are provided in Attachment 2.

LABORATORY ANALYSIS

During each sampling event one groundwater sample and one duplicate were submitted to the laboratory. The samples were analyzed for DRO by Alaska Method (AK) 102, RRO by AK 103, volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260D, and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270D SIM. For quality control purposes, during each sampling event a trip blank was submitted to the laboratory and analyzed for VOCs by EPA Method 8260D. The laboratory reports and completed ADEC Laboratory Data Review Checklists (LDRCs) are provided in Attachment 3. The analytical groundwater sample results are summarized in Tables 2A and 2B. A summary of historical groundwater sample results is included in Table 3.

DISCUSSION OF RESULTS

The analytical groundwater results were compared to the ADEC cleanup levels presented in the June 2021, 18 AAC 75 regulations. The applicable groundwater cleanup levels are established in Table C of 18 AAC 75.345.

July 2021 Samples

Vinyl chloride (0.381 µg/L) was measured in Sample B1MW at a concentration exceeding the ADEC Table C cleanup level of 0.19 µg/L. DRO, RRO, benzene, and naphthalene were measured at concentrations less than the ADEC cleanup levels. The remaining tested analytes were not detected in the duplicate groundwater sample set.

October 2021 Samples

Vinyl chloride (0.481 µg/L) was measured in Sample B1MW at a concentration exceeding the ADEC Table C cleanup level. DRO, RRO, benzene, and cis-1,2-dichloroethene were measured at concentrations less than the ADEC cleanup levels. The remaining tested analytes were not detected in the duplicate groundwater sample set.

Quality Assurance Samples

The project laboratory implements on-going quality assurance/quality control procedures to evaluate conformance to ADEC data quality objectives (DQOs). Internal laboratory controls to assess data quality 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 was not

met, the project laboratory provides a brief narrative concerning the problem in the case narrative of their laboratory reports (See Attachment 3).

The method blank associated with project Sample B1MW (July 2021 sampling event) contained estimated concentrations of fluorene (0.0171 J $\mu\text{g/L}$) and phenanthrene (0.0243 J $\mu\text{g/L}$) less than the LOQ. Samples are flagged "B" in Table 2A when the reported sample concentration is within 10 times the reported method blank concentration. Fluorene and phenanthrene were non-detect in Sample B1MW, therefore, the sample concentrations are reported as non-detect and flagging is not required. The method blank associated with project samples B1MW and B11MW (July sampling event) contained an estimated concentration of DRO (0.337 J $\mu\text{g/L}$) less than the LOQ. The concentrations of DRO detected in Samples B1MW (859 $\mu\text{g/L}$) and B11MW (1,020 $\mu\text{g/L}$) are within five times the reported method blank concentration, therefore, the sample concentrations are reported and flagged "B".

The method blank associated with Sample B1MW (October sampling event) contained estimated concentrations of 2-methylnaphthalene (0.0163 J $\mu\text{g/L}$) and phenanthrene (0.0214 J $\mu\text{g/L}$) less than the LOQ. The concentrations of 2-methylnaphthalene and phenanthrene detected in Sample B1MW and the method blank are reported at levels less than the LOQ, therefore, the sample concentrations are reported as non-detect at the LOQ and flagged "B".

The relative percent difference (RPD) between the project sample and associated duplicate results is a measure of precision affected by matrix heterogeneity, sampling technique, and laboratory analyses. The ADEC recommends an RPD of less than 50 percent for duplicate soil samples and 30 percent for duplicate groundwater samples. All of the RPDs are within the ADEC recommended DQO of 30 percent for groundwater for both sampling events.

Laboratory-prepared trip blank samples accompanied the project sample bottles from the laboratory to the site during sampling activities and back again to SGS. The trip blank from each sampling event did not contain detectable concentrations of VOCs.

Shannon & Wilson conducted a limited data assessment to review the laboratory's compliance with precision, accuracy, sensitivity, and completeness to the data quality objectives. Shannon & Wilson reviewed the SGS data deliverables and completed the ADEC's Laboratory Data Review Checklist for each data package, which is included in Attachment 3. No non-conformances that would adversely affect the data quality or usability of the data were noted, with the exceptions discussed above.

CONCLUSIONS/RECOMMENDATIONS

The groundwater samples collected during the July and October 2021 sampling events contained vinyl chloride concentrations exceeding the ADEC cleanup levels. Vinyl chloride concentrations have exceeded ADEC cleanup levels in all three sampling events, with the highest concentration detected in the December 2018 sampling event. DRO and RRO were detected in the groundwater samples collected during each sampling event at concentrations less than ADEC cleanup levels. We recommend continuing biannual groundwater sampling of Monitoring Well B1MW, to further evaluate contaminant concentration trends.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our client and their representatives in the study of this site. The findings we have presented in this report are based on the limited sampling and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's groundwater quality. As a result, the sampling and analyses performed is the basis for our professional judgment as to the environmental characteristics of this site, and in no way guarantees 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 for this site may need to be revised.

Shannon & Wilson has prepared the information in Attachment 4, "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our reports.

We appreciate this opportunity to be of service. Please call Dan P. McMahon or the undersigned at 907-561-2120 with questions or comments concerning the contents of this report.

Sincerely,

SHANNON & WILSON



Chris Pepe
Environmental Scientist

Enc. Tables 1, 2A, 2B, and 3; Figures 1 and 2; and Attachments 1, 2, 3, and 4

**TABLE 1
GROUNDWATER MONITORING WELL SAMPLE LOG**

	Monitoring Well	
	B1MW	B1MW
Water Level Measurement Data		
Date Water Level Measured	7/9/2021	10/7/2021
Time Water Level Measured	11:28	11:39
Measured Depth to Water (ft below TOC)	19.21	21.21
Sampling Data		
Date Sampled	7/9/2021	10/7/2021
Time Sampled	12:30	12:30
Measured Depth to Water (ft below TOC)	19.21	21.21
Total Depth of Well (ft below TOC)	27.60	27.60
Water Column in Well (ft)	8.39	6.39
Gallons per Foot	0.16	0.16
Water Column Volume (gallons)	1.34	1.02
Total Volume Pumped (gallons)	1.4	2.0
Sampling Method	Submersible Pump	Submersible Pump
Diameter of Well Casing	2-inch	2-inch
Water Quality Data		
Temperature (°C)	9.20	10.29
pH (Standard Units)	6.04	6.07
Specific Conductivity (µS/cm)	1,060	689
Turbidity, (NTU)	0.0	8.3
Remarks	Duplicate Sample B11MW	Duplicate Sample B11MW

Notes:

Water quality parameters were measured with Horiba/YSI 556 and turbidimeter water quality instruments.

TOC = Top of casing

ft = Feet

SP = Submersible Pump

°C = Degrees Celsius

µS/cm = Microsiemens per Centimeter

NTU = Nephelometric Turbidity Units

TABLE 2A
JULY 2021 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level**	Well ID, Sample ID number, and Water Depth in Feet BTOC (See Table 1)		
			Monitoring Well		Trip Blank
			B1MW 19.21	B11MW~ 19.21	WTB -
Diesel Range Organics (DRO) - µg/L	AK 102	1,500	859 B	1,020 B	-
Residual Range Organics (RRO) - µg/L	AK 103	1,100	901	1,070	-
Volatile Organic Compounds (VOCs)					
Benzene - µg/L	EPA 8260D	4.6	0.660	-	<0.200
Toluene - µg/L	EPA 8260D	1,100	<0.500	-	<0.500
Ethylbenzene - µg/L	EPA 8260D	15	<0.500	-	<0.500
Xylenes (total) - µg/L	EPA 8260D	190	<1.50	-	<1.50
Vinyl chloride - µg/L	EPA 8260D	0.19	0.381	-	<0.0750
Other VOCs - µg/L	EPA 8260D	various	ND	-	ND
Polynuclear Aromatic Hydrocarbons (PAHs)					
Naphthalene - µg/L	EPA 8270D-SIM	1.7	0.0439 J	-	-
Other PAHs - µg/L	EPA 8270D SIM	various	ND	-	-

Notes:

- * = See Attachment 3 for compounds tested, methods, and laboratory reporting limits
- ** = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (June 2021)
- ^ = Sample ID number preceded by "101528-" on the chain of custody form.
- = Not applicable or sample not tested for this analyte
- ~ = Duplicate of Sample B1MW
- 901** = Analyte detected
- 0.381** = Reported concentration exceeds the ADEC cleanup level
- <0.500 = Analyte not detected; laboratory limit of detection of 0.500 mg/L
- µg/L = micrograms per liter
- BTOC = Below top of casing
- B = Compound detected in method blank at an estimated concentration and may potentially affect the sample result.
- ND = Analyte not detected

TABLE 2B
OCTOBER 2021 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level**	Well ID, Sample ID number, and Water Depth in Feet BTOC (See Table 1)		
			Monitoring Well		Trip Blank
			B1MW 21.21	B11MW~ 21.21	WTB -
Diesel Range Organics (DRO) - µg/L	AK 102	1,500	701	609	-
Residual Range Organics (RRO) - µg/L	AK 103	1,100	752	760	-
Volatile Organic Compounds (VOCs)					
Benzene - µg/L	EPA 8260D	4.6	0.921	-	<0.200
Toluene - µg/L	EPA 8260D	1,100	<0.500	-	<0.500
Ethylbenzene - µg/L	EPA 8260D	15	<0.500	-	<0.500
Xylenes (total) - µg/L	EPA 8260D	190	<1.50	-	<1.50
cis-1,2-Dichloroethene - µg/L	EPA 8260D	4.7	0.317 J	-	<0.500
Vinyl chloride - µg/L	EPA 8260D	0.19	0.418	-	<0.0750
Other VOCs - µg/L	EPA 8260D	various	ND	-	ND
Polynuclear Aromatic Hydrocarbons (PAHs)					
2-Methylnaphthalene - µg/L	EPA 8270D-SIM	36	<0.0481 B	-	-
Phenanthrene - µg/L	EPA 8270D-SIM	170	<0.0481 B	-	-
Other PAHs - µg/L	EPA 8270D SIM	various	ND	-	-

Notes:

* = See Attachment 3 for compounds tested, methods, and laboratory reporting limits

** = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (June 2021)

^ = Sample ID number preceded by "101528-" on the chain of custody form.

- = Not applicable or sample not tested for this analyte

~ = Duplicate of Sample B1MW

752 = Analyte detected**0.418** = Reported concentration exceeds the ADEC cleanup level

<0.500 = Analyte not detected; laboratory limit of detection of 0.500 mg/L

µg/L = micrograms per liter

BTOC = Below top of casing

B = Compound detected in method blank at an estimated concentration and may potentially affect the sample result.

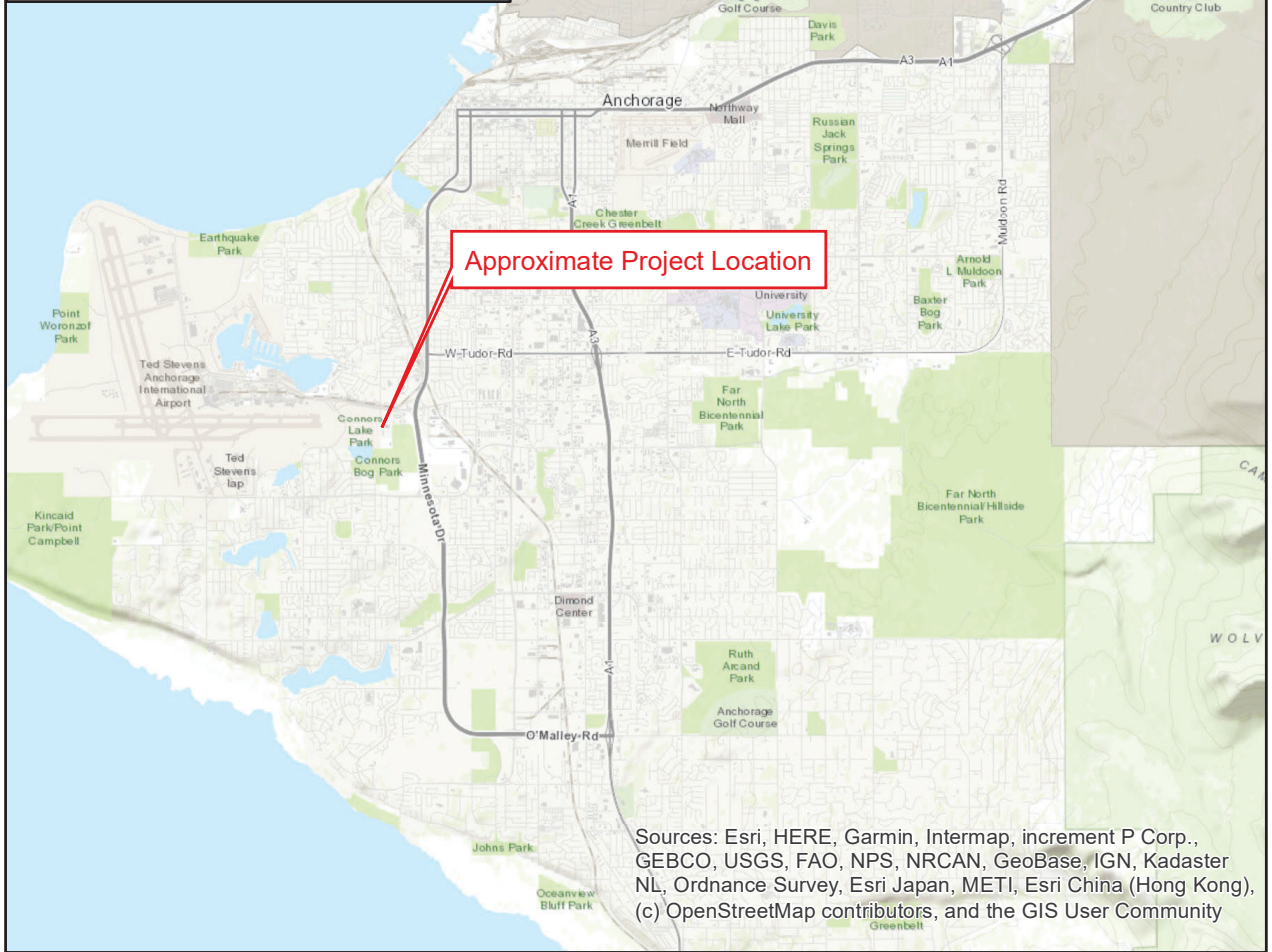
ND = Analyte not detected

**TABLE 3
HISTORICAL WATER ANALYTICAL RESULTS**

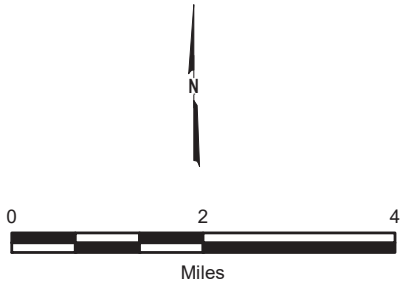
Monitoring Well	Date	Depth to Groundwater (feet BTOC)	Parameter Tested and ADEC Cleanup Level in µg/L*		
			DRO 1,500	RRO 2,200	Vinyl Chloride 0.19
B1MW	12/28/2018	22.28	1,230	1,090	0.720
B1MW~	7/9/2021	19.21	1,020 B	1,070	0.381
B1MW~	10/7/2021	21.21	701	760	0.418

Notes:

- * = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (June 2021)
- BTOC = Below top of casing
- ~ = Listed value based on highest concentration in duplicate sample set.
- µg/L = micrograms per liter
- 701** = Analyte detected at a concentration less than the applicable ADEC cleanup level.
- 0.418** = Reported concentration exceeds the ADEC cleanup level
- B = Analyte concentration potentially affected by compound detected in method blank.



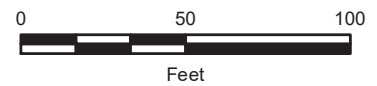
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



5701 Northwood Drive
Anchorage, Alaska

VICINITY MAP

January 2022 101528-002



LEGEND

B1/B1MW  Approximate location of Monitoring Well B1MW



5701 Northwood Drive Anchorage, Alaska	
SITE PLAN	
January 2022	101528-002
 SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS	FIG. 2

ATTACHMENT 1

FIELD NOTES



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Job No: 101528 Location: 5701 Northwood Weather: 55° Cloudy
 Well No.: B2MW
 Date: July 9, 2021 Time Started: 1120 Time Completed: 1330
 Develop Date: - Develop End Time: - (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:28 Date of Depth Measurement: July 9, 2021
 Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____
 Diameter of Casing: 2" Well Screen Interval: 18' - 23'
 Total Depth of Well Below MP: 27.00 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 19.21
 Water Column in Well: 8.39 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.10
 Gallons in Well: 1.3424 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: July 9, 2021 Time Started: 11:42 Time Completed: 1310
 Three Well Volumes: 4.0272 (Gallons in Well x 3)
 Gallons Purged: 1.35 Depth of Pump (generally 2 ft from bottom): ~20'
 Max. Drawdown (generally 0.3 ft): 0.01 Pump Rate: 0.2
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
1145	<0.1	0.1	19.21	0	9.07	950		5.66		0.0
1150	0.25	0.2	19.21	0	9.79	1090		5.79		0.0
1155	0.5	0.2	19.21	0	9.05	1090		5.55		0.0
1200	0.7	0.2	19.24	0	9.13	1080		5.81		0.0
1205	0.8	0.2	19.20	0	9.17	1080		5.89		0.0
1210	1.0	0.2	19.21	0	9.16	1060		5.02		0.0

SAMPLING DATA

Odor: Sulfur Color: Clear
 Sample Designation: 101528-B2MW Time / Date: 12:30 7/9/21
 QC Sample Designation: 101528-B2MW Time / Date: 14:30 7/9/21
 QA Sample Designation: _____ Time / Date: _____
 Evacuation Method: Submersible Pump / Other: Double Whale
 Sampling Method: Submersible Pump / Other: _____
 Water Quality Instruments Used/Manufacturer/Model Number Hanna + Turbidimeter
 Calibration Info (Time, Ranges, etc) Calibrated @ 9:40
 Remarks: _____

Sampling Personnel: SAH

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23



LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 101528 Location: 5701 Northwood Weather: 44° overcast
 Well No.: BIMW
 Date: 10-7-21 Time Started: 11:35 Time Completed: 13:15
 Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:39 Date of Depth Measurement: 10-7-21
 Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: —
 Diameter of Casing: 2" Well Screen Interval: —
 Total Depth of Well Below MP: 27.60 Product Thickness, if noted: —
 Depth-to-Water (DTW) Below MP: 21.21
 Water Column in Well: 6.39 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 1.02 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10-7-21 Time Started: 11:50 Time Completed: 13:05
 Three Well Volumes: 3.07 (Gallons in Well x 3)
 Gallons Purged: 2.0 Depth of Pump (generally 2 ft from bottom): ~24'
 Max. Drawdown (generally 0.3 ft): 0.03 Pump Rate: —
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
11:55	0.3	0.2	21.24	0.03	8.79	699	↓	5.36	↓	10.52
12:00	0.6	0.2	21.24	0.03	9.24	696	↓	5.56	↓	10.50
12:05	0.9	0.2	21.24	0.03	9.78	692	↓	5.80	↓	10.28
12:10	1.2	0.2	21.24	0.03	10.02	690	↓	5.92	↓	9.11
12:15	1.5	0.2	21.24	0.03	10.14	690	↓	5.99	↓	8.77
12:20	1.7	0.2	21.24	0.03	10.22	689	↓	6.04	↓	8.12
12:25	2.0	0.2	21.24	0.03	10.29	689	↓	6.07	↓	8.25

SAMPLING DATA

Odor: Sulfur Color: Clear
 Sample Designation: 101528-BIMW Time / Date: 12:30 10-7-21
 QC Sample Designation: 101528-BIMW Time / Date: 13:00 10-7-21
 QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double Whale
 Sampling Method: Submersible Pump / Other: Double Whale

Water Quality Instruments Used/Manufacturer/Model Number YSI 556 + Micro TAP

Calibration Info (Time, Ranges, etc) 11:15 10-7-21

Remarks: IDW bucket stored on-site is full. Bring another for next sampling event.

Sampling Personnel: ZJT

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

ATTACHMENT 2
DISPOSAL DOCUMENTS



**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites and Prevention Preparedness and Response Programs**

Contaminated Media Transport and Treatment or Disposal Approval Form

DEC HAZARD/SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL		
25942	MOA Northwood Maintenance Facility Garage Bay 6		
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION			
5701 Northwood Drive, Anchorage, AK 99502			
CURRENT PHYSICAL LOCATION OF MEDIA		SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)	
5701 Northwood Drive, Anchorage, AK 99502		Former Dry Well	
CONTAMINANTS OF CONCERN		ESTIMATED VOLUME	DATE(S) GENERATED
DRO, RRO, VOCs, PAHs		1, 5-gallon bucket of water	July and October 2021
POST TREATMENT ANALYSIS REQUIRED (such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)			
NA			
COMMENTS OR OTHER IMPORTANT INFORMATION			
Purge water generated while sampling Monitoring Well B1MW. Water will be processed in a wastewater treatment unit at the NRC Alaska facility (2020 Viking Drive, Anchorage, AK 99501)			

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
US Ecology	2020 Viking Drive, Anchorage, Alaska 99501 / (907) 258-1558
RESPONSIBLE PARTY	ADDRESS/PHONE NUMBER
Municipality of Anchorage/ Travis O'Rourke	3640 East Tudor Road, Warehouse No. 1 / 907-350-2784
WASTE MANAGEMENT CO. / ORGANIZER	ADDRESS/PHONE NUMBER
US Ecology	2020 Viking Drive, Anchorage, Alaska 99501 / (907) 258-1558

*Note, disposal of polluted soil in a landfill requires prior approval from the landfill operator and ADEC Solid Waste Program.

Alec Rizzo

Name of the Person Requesting Approval (printed)

Alec Rizzo

Signature

Digitally signed by Alec Rizzo
Date: 2021.11.18 09:38:53 -09'00'

Environmental Staff/ Shannon & Wilson

Title/Association

11/18/21

Date

907-561-2120

Phone Number

-----DEC USE ONLY-----

Based on the information provided, ADEC approves transport of the above mentioned material. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight receipts of the loads transported and a post treatment analytical report, if disposed of at an approved treatment facility. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

Jessica Hall

DEC Project Manager Name (printed)

Jessica Hall

Signature

Digitally signed by Jessica Hall
Date: 2021.11.18 10:56:19 -09'00'

Environmental Project Specialist III

Project Manager Title

11/18/2021

Date



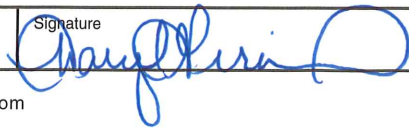
907-269-7553

Phone Number

NON-HAZARDOUS WASTE MANIFEST

172449-MA

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. <p style="text-align: center;">VSQG</p>	Manifest Document No. <p style="text-align: center;">172449A</p>	2. Page 1 of 1
3. Generator's Name and Mailing Address MUNICIPALITY OF ANCHORAGE - STREET MAINT 5701 NORTHWOOD DRIVE ANCHORAGE, AK 99517				
4. Generator's Phone ()				
5. Transporter 1 Company Name CLIENT DELIVERED		6. US EPA ID Number	A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number	B. Transporter 1 Phone	
9. Designated Facility Name and Site Address US ECOLOGY ALASKA LLC 2020 VIKING DRIVE ANCHORAGE, AK 99501		10. US EPA ID Number <p style="text-align: center;">AKR000004184</p>	C. State Transporter's ID	
			D. Transporter 2 Phone	
			E. State Facility's ID	
			F. Facility's Phone <p style="text-align: center;">907-258-1558</p>	
11. WASTE DESCRIPTION		Containers No. Type		13. Total Quantity
a. MATERIAL NOT REGULATED BY D.O.T.		1 1 DF		42
b.				
c.				
d.				
G. Additional Descriptions for Materials Listed Above		H. Handling Codes for Wastes Listed Above		
1) EA0301 PETROLEUM CONTAMINATED WATER (DF05)		D39801 D391601		
15. Special Handling Instructions and Additional Information Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name Alec Rizzo		Signature 	Date Month Day Year 11 18 21	
17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed/Typed Name Alec Rizzo		Signature 	Date Month Day Year 11 18 21	
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name		Signature	Date Month Day Year	
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.				
Printed/Typed Name Danyl Girard		Signature 	Date Month Day Year 11 19 21	

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY



CERTIFICATE OF DISPOSAL/RECYCLE

GENERATOR: MUNICIPALITY OF ANCHORAGE - STREET MAINT
5701 NORTHWOOD DRIVE
ANCHORAGE, AK 99517

DISPOSAL FACILITY: US ECOLOGY ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

EPA ID NUMBER: VSQG
MANIFEST/DOCUMENT #: 172449A
DATE OF DISPOSAL/RECYCLE: NOV-19-2021

<u>LINE</u>	<u>WASTE DESCRIPTION</u>	<u>CONTAINERS</u>	<u>TYPE</u>	<u>QUANTITY</u>	<u>UOM</u>
1	PETROLEUM CONTAMINATED WATER (DF05)	1	DF	42	P

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

PREPARED BY: Daryl Girard

SIGNATURE: [Signature]

DATE: NOV 19 2021

ATTACHMENT 3

RESULTS OF ANALYTICAL TESTING BY
SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA
AND
ADEC LABORATORY DATA REVIEW CHECKLISTS

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907)433-3223

Report Number: **1214128**

Client Project: **101528-002 5701 NorthwoodDrive**

Dear Dan McMahon,

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

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

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

Sincerely,
SGS North America Inc.



Justin Nelson
2021.07.29 14:22:22 -08'00'

Justin Nelson
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1214128**
Project Name/Site: **101528-002 5701 NorthwoodDrive**
Project Contact: **Dan McMahon**

Refer to sample receipt form for information on sample condition.

MB for HBN 1822789 [XXX/45210] (1624808) MB

AK102 - DRO is detect in the MB greater than one-half the LOQ, but less than the LOQ.

1214101019MSD (1622577) MSD

8270D SIM - PAH MS/MSD RPD for 2-methylnaphthalene does not meet QC criteria. This analyte was not detected above the LOQ in the parent sample.

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

Print Date: 07/29/2021 10:21:03AM

Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 DW Chemistry (Provisionally Certified as of 05/27/2021 for Mercury by EPA200.8, Nitrate as N by SM 4500NO3-F and VOCs by EPA 524.2) & Microbiology & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
101528-B1MW	1214128001	07/09/2021	07/09/2021	Water (Surface, Eff., Ground)
101528-B11MW	1214128002	07/09/2021	07/09/2021	Water (Surface, Eff., Ground)
101528-WTB	1214128003	07/09/2021	07/09/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
SW8260D	Volatile Organic Compounds (W) FULL

Print Date: 07/29/2021 10:21:07AM

Detectable Results Summary

Client Sample ID: **101528-B1MW**

Lab Sample ID: 1214128001

Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Naphthalene	0.0439J	ug/L
Diesel Range Organics	0.859	mg/L
Residual Range Organics	0.901	mg/L
Benzene	0.660	ug/L
Vinyl chloride	0.381	ug/L

Client Sample ID: **101528-B11MW**

Lab Sample ID: 1214128002

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.02	mg/L
Residual Range Organics	1.07	mg/L



Results of 101528-B1MW

Client Sample ID: 101528-B1MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1214128001
Lab Project ID: 1214128

Collection Date: 07/09/21 12:30
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

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

Batch Information

Analytical Batch: XMS12765
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 07/22/21 02:50
Container ID: 1214128001-C

Prep Batch: XXX45148
Prep Method: SW3535A
Prep Date/Time: 07/13/21 07:51
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL



Results of 101528-B1MW

Client Sample ID: 101528-B1MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1214128001
Lab Project ID: 1214128

Collection Date: 07/09/21 12:30
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC16015
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 07/22/21 18:04
Container ID: 1214128001-A
Prep Batch: XXX45210
Prep Method: SW3520C
Prep Date/Time: 07/21/21 18:36
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC16015
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 07/22/21 18:04
Container ID: 1214128001-A
Prep Batch: XXX45210
Prep Method: SW3520C
Prep Date/Time: 07/21/21 18:36
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of 101528-B1MW

Client Sample ID: **101528-B1MW**
 Client Project ID: **101528-002 5701 NorthwoodDrive**
 Lab Sample ID: 1214128001
 Lab Project ID: 1214128

Collection Date: 07/09/21 12:30
 Received Date: 07/09/21 14:46
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		07/21/21 19:04
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		07/21/21 19:04
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		07/21/21 19:04
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		07/21/21 19:04
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		07/21/21 19:04
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		07/21/21 19:04
Benzene	0.660	0.400	0.120	ug/L	1		07/21/21 19:04
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
Bromoform	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
Bromomethane	2.50 U	5.00	2.00	ug/L	1		07/21/21 19:04
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		07/21/21 19:04
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		07/21/21 19:04
Chloroethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 19:04



Results of 101528-B1MW

Client Sample ID: 101528-B1MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1214128001
Lab Project ID: 1214128

Collection Date: 07/09/21 12:30
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

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

Results of 101528-B1MW

Client Sample ID: **101528-B1MW**
Client Project ID: **101528-002 5701 NorthwoodDrive**
Lab Sample ID: 1214128001
Lab Project ID: 1214128

Collection Date: 07/09/21 12:30
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20951
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/21/21 19:04
Container ID: 1214128001-E

Prep Batch: VXX37469
Prep Method: SW5030B
Prep Date/Time: 07/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 101528-B11MW

Client Sample ID: 101528-B11MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1214128002
Lab Project ID: 1214128

Collection Date: 07/09/21 14:30
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC16015
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 07/22/21 18:14
Container ID: 1214128002-A
Prep Batch: XXX45210
Prep Method: SW3520C
Prep Date/Time: 07/21/21 18:36
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC16015
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 07/22/21 18:14
Container ID: 1214128002-A
Prep Batch: XXX45210
Prep Method: SW3520C
Prep Date/Time: 07/21/21 18:36
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL



Results of 101528-WTB

Client Sample ID: 101528-WTB
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1214128003
Lab Project ID: 1214128

Collection Date: 07/09/21 11:00
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

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



Results of 101528-WTB

Client Sample ID: **101528-WTB**
 Client Project ID: **101528-002 5701 NorthwoodDrive**
 Lab Sample ID: 1214128003
 Lab Project ID: 1214128

Collection Date: 07/09/21 11:00
 Received Date: 07/09/21 14:46
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Chloromethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		07/21/21 16:37
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		07/21/21 16:37
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Freon-113	5.00 U	10.0	3.10	ug/L	1		07/21/21 16:37
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		07/21/21 16:37
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		07/21/21 16:37
Naphthalene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
o-Xylene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		07/21/21 16:37
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Styrene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Toluene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		07/21/21 16:37
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		07/21/21 16:37
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		07/21/21 16:37
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		07/21/21 16:37
Surrogates							
1,2-Dichloroethane-D4 (surr)	113	81-118		%	1		07/21/21 16:37
4-Bromofluorobenzene (surr)	97.9	85-114		%	1		07/21/21 16:37
Toluene-d8 (surr)	102	89-112		%	1		07/21/21 16:37



Results of 101528-WTB

Client Sample ID: **101528-WTB**
Client Project ID: **101528-002 5701 NorthwoodDrive**
Lab Sample ID: 1214128003
Lab Project ID: 1214128

Collection Date: 07/09/21 11:00
Received Date: 07/09/21 14:46
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20950
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 07/21/21 16:37
Container ID: 1214128003-A

Prep Batch: VXX37468
Prep Method: SW5030B
Prep Date/Time: 07/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1822803 [VXX/37468]

Blank Lab ID: 1624875

QC for Samples:

1214128003

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	2.00	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

Print Date: 07/29/2021 10:21:12AM

Method Blank

Blank ID: MB for HBN 1822803 [VXX/37468]

Blank Lab ID: 1624875

QC for Samples:

1214128003

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	5.00U	10.0	3.10	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)	108	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	102	89-112		%

Print Date: 07/29/2021 10:21:12AM



Method Blank

Blank ID: MB for HBN 1822803 [VXX/37468]
Blank Lab ID: 1624875

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1214128003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20950
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JMG
Analytical Date/Time: 7/21/2021 1:38:00PM

Prep Batch: VXX37468
Prep Method: SW5030B
Prep Date/Time: 7/21/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/29/2021 10:21:12AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37468]
 Blank Spike Lab ID: 1624876
 Date Analyzed: 07/21/2021 13:53

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37468]
 Spike Duplicate Lab ID: 1624877
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	28.6	95	30	28.4	95	(78-124)	0.67	(< 20)
1,1,1-Trichloroethane	30	26.8	89	30	26.8	89	(74-131)	0.10	(< 20)
1,1,2,2-Tetrachloroethane	30	29.1	97	30	29.4	98	(71-121)	1.10	(< 20)
1,1,2-Trichloroethane	30	29.1	97	30	28.8	96	(80-119)	1.20	(< 20)
1,1-Dichloroethane	30	27.0	90	30	26.8	89	(77-125)	0.88	(< 20)
1,1-Dichloroethene	30	28.4	95	30	28.3	94	(71-131)	0.49	(< 20)
1,1-Dichloropropene	30	27.0	90	30	27.1	90	(79-125)	0.16	(< 20)
1,2,3-Trichlorobenzene	30	30.1	100	30	30.8	103	(69-129)	2.40	(< 20)
1,2,3-Trichloropropane	30	29.0	97	30	29.4	98	(73-122)	1.50	(< 20)
1,2,4-Trichlorobenzene	30	30.0	100	30	30.5	102	(69-130)	1.50	(< 20)
1,2,4-Trimethylbenzene	30	28.9	96	30	29.3	98	(79-124)	1.40	(< 20)
1,2-Dibromo-3-chloropropane	30	28.2	94	30	28.1	94	(62-128)	0.25	(< 20)
1,2-Dibromoethane	30	29.3	98	30	29.2	97	(77-121)	0.18	(< 20)
1,2-Dichlorobenzene	30	29.0	97	30	29.1	97	(80-119)	0.32	(< 20)
1,2-Dichloroethane	30	27.7	92	30	27.4	91	(73-128)	1.10	(< 20)
1,2-Dichloropropane	30	27.8	93	30	27.8	93	(78-122)	0.29	(< 20)
1,3,5-Trimethylbenzene	30	28.9	96	30	29.5	98	(75-124)	2.00	(< 20)
1,3-Dichlorobenzene	30	28.7	96	30	28.9	96	(80-119)	0.60	(< 20)
1,3-Dichloropropane	30	29.0	97	30	28.8	96	(80-119)	0.49	(< 20)
1,4-Dichlorobenzene	30	28.5	95	30	29.0	97	(79-118)	1.90	(< 20)
2,2-Dichloropropane	30	25.9	86	30	26.0	87	(60-139)	0.39	(< 20)
2-Butanone (MEK)	90	93.1	103	90	92.1	102	(56-143)	1.10	(< 20)
2-Chlorotoluene	30	28.6	95	30	28.5	95	(79-122)	0.22	(< 20)
2-Hexanone	90	93.6	104	90	93.1	103	(57-139)	0.50	(< 20)
4-Chlorotoluene	30	28.8	96	30	28.9	96	(78-122)	0.40	(< 20)
4-Isopropyltoluene	30	29.4	98	30	30.1	100	(77-127)	2.50	(< 20)
4-Methyl-2-pentanone (MIBK)	90	88.1	98	90	86.8	96	(67-130)	1.50	(< 20)
Benzene	30	27.1	91	30	27.0	90	(79-120)	0.35	(< 20)
Bromobenzene	30	28.1	94	30	28.4	95	(80-120)	0.97	(< 20)
Bromochloromethane	30	27.8	93	30	27.7	92	(78-123)	0.31	(< 20)
Bromodichloromethane	30	27.7	92	30	27.6	92	(79-125)	0.33	(< 20)
Bromoform	30	28.6	95	30	28.0	94	(66-130)	1.80	(< 20)
Bromomethane	30	28.5	95	30	28.6	95	(53-141)	0.35	(< 20)
Carbon disulfide	45	43.0	96	45	42.4	94	(64-133)	1.50	(< 20)

Print Date: 07/29/2021 10:21:14AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37468]
 Blank Spike Lab ID: 1624876
 Date Analyzed: 07/21/2021 13:53

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37468]
 Spike Duplicate Lab ID: 1624877
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	26.4	88	30	26.9	90	(72-136)	1.90	(< 20)
Chlorobenzene	30	28.3	94	30	28.0	93	(82-118)	0.87	(< 20)
Chloroethane	30	29.6	99	30	27.9	93	(60-138)	5.70	(< 20)
Chloroform	30	27.2	91	30	27.1	90	(79-124)	0.21	(< 20)
Chloromethane	30	25.8	86	30	25.6	85	(50-139)	0.87	(< 20)
cis-1,2-Dichloroethene	30	27.0	90	30	26.8	89	(78-123)	0.53	(< 20)
cis-1,3-Dichloropropene	30	27.5	92	30	27.5	92	(75-124)	0.07	(< 20)
Dibromochloromethane	30	28.6	95	30	28.3	94	(74-126)	1.00	(< 20)
Dibromomethane	30	27.8	93	30	28.0	93	(79-123)	0.65	(< 20)
Dichlorodifluoromethane	30	27.6	92	30	27.4	91	(32-152)	0.46	(< 20)
Ethylbenzene	30	28.6	95	30	28.1	94	(79-121)	1.60	(< 20)
Freon-113	45	43.8	97	45	43.6	97	(70-136)	0.51	(< 20)
Hexachlorobutadiene	30	29.4	98	30	30.1	100	(66-134)	2.20	(< 20)
Isopropylbenzene (Cumene)	30	29.2	97	30	28.8	96	(72-131)	1.20	(< 20)
Methylene chloride	30	28.3	94	30	28.1	94	(74-124)	0.69	(< 20)
Methyl-t-butyl ether	45	42.1	94	45	41.9	93	(71-124)	0.38	(< 20)
Naphthalene	30	28.9	96	30	30.0	100	(61-128)	3.60	(< 20)
n-Butylbenzene	30	30.7	102	30	31.2	104	(75-128)	1.50	(< 20)
n-Propylbenzene	30	29.0	97	30	29.0	97	(76-126)	0.16	(< 20)
o-Xylene	30	28.2	94	30	27.9	93	(78-122)	1.20	(< 20)
P & M -Xylene	60	57.1	95	60	55.8	93	(80-121)	2.20	(< 20)
sec-Butylbenzene	30	29.7	99	30	30.3	101	(77-126)	1.90	(< 20)
Styrene	30	29.6	99	30	29.3	98	(78-123)	1.10	(< 20)
tert-Butylbenzene	30	28.2	94	30	29.0	97	(78-124)	2.80	(< 20)
Tetrachloroethene	30	27.6	92	30	27.6	92	(74-129)	0.06	(< 20)
Toluene	30	27.2	91	30	27.0	90	(80-121)	0.99	(< 20)
trans-1,2-Dichloroethene	30	27.1	90	30	26.9	90	(75-124)	0.76	(< 20)
trans-1,3-Dichloropropene	30	29.4	98	30	29.4	98	(73-127)	0.18	(< 20)
Trichloroethene	30	27.0	90	30	26.9	90	(79-123)	0.37	(< 20)
Trichlorofluoromethane	30	29.2	97	30	28.9	96	(65-141)	1.10	(< 20)
Vinyl acetate	30	29.1	97	30	28.8	96	(54-146)	0.85	(< 20)
Vinyl chloride	30	27.9	93	30	27.7	92	(58-137)	0.79	(< 20)
Xylenes (total)	90	85.3	95	90	83.7	93	(79-121)	1.90	(< 20)

Print Date: 07/29/2021 10:21:14AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37468]
 Blank Spike Lab ID: 1624876
 Date Analyzed: 07/21/2021 13:53

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37468]
 Spike Duplicate Lab ID: 1624877
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128003

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		103	30		102	(81-118)	1.60	
4-Bromofluorobenzene (surr)	30		98	30		99	(85-114)	0.90	
Toluene-d8 (surr)	30		103	30		103	(89-112)	0.09	

Batch Information

Analytical Batch: **VMS20950**
 Analytical Method: **SW8260D**
 Instrument: **VPA 780/5975 GC/MS**
 Analyst: **JMG**

Prep Batch: **VXX37468**
 Prep Method: **SW5030B**
 Prep Date/Time: **07/21/2021 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/29/2021 10:21:14AM



Method Blank

Blank ID: MB for HBN 1822812 [VXX/37469]

Matrix: Water (Surface, Eff., Ground)

Blank Lab ID: 1624913

QC for Samples:
1214128001

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	2.00	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

Print Date: 07/29/2021 10:21:17AM



Method Blank

Blank ID: MB for HBN 1822812 [VXX/37469]

Blank Lab ID: 1624913

QC for Samples:

1214128001

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	5.00U	10.0	3.10	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)	101	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	101	89-112		%

Print Date: 07/29/2021 10:21:17AM



Method Blank

Blank ID: MB for HBN 1822812 [VXX/37469]
Blank Lab ID: 1624913

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1214128001

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20951
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: JMG
Analytical Date/Time: 7/21/2021 1:37:00PM

Prep Batch: VXX37469
Prep Method: SW5030B
Prep Date/Time: 7/21/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/29/2021 10:21:17AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37469]
 Blank Spike Lab ID: 1624914
 Date Analyzed: 07/21/2021 13:51

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37469]
 Spike Duplicate Lab ID: 1624915
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	29.1	97	30	29.4	98	(78-124)	1.00	(< 20)
1,1,1-Trichloroethane	30	29.3	98	30	28.6	95	(74-131)	2.50	(< 20)
1,1,2,2-Tetrachloroethane	30	29.0	97	30	29.8	99	(71-121)	2.70	(< 20)
1,1,2-Trichloroethane	30	29.3	98	30	30.0	100	(80-119)	2.40	(< 20)
1,1-Dichloroethane	30	28.7	96	30	28.2	94	(77-125)	1.80	(< 20)
1,1-Dichloroethene	30	29.9	100	30	28.8	96	(71-131)	3.70	(< 20)
1,1-Dichloropropene	30	30.1	100	30	29.1	97	(79-125)	3.30	(< 20)
1,2,3-Trichlorobenzene	30	28.0	93	30	29.0	97	(69-129)	3.50	(< 20)
1,2,3-Trichloropropane	30	28.6	96	30	29.7	99	(73-122)	3.60	(< 20)
1,2,4-Trichlorobenzene	30	28.8	96	30	29.4	98	(69-130)	1.80	(< 20)
1,2,4-Trimethylbenzene	30	29.7	99	30	29.3	98	(79-124)	1.20	(< 20)
1,2-Dibromo-3-chloropropane	30	27.4	91	30	28.9	96	(62-128)	5.20	(< 20)
1,2-Dibromoethane	30	28.6	95	30	29.3	98	(77-121)	2.60	(< 20)
1,2-Dichlorobenzene	30	29.4	98	30	29.6	99	(80-119)	0.75	(< 20)
1,2-Dichloroethane	30	27.2	91	30	27.3	91	(73-128)	0.56	(< 20)
1,2-Dichloropropane	30	28.8	96	30	28.7	96	(78-122)	0.42	(< 20)
1,3,5-Trimethylbenzene	30	30.4	101	30	29.8	99	(75-124)	1.90	(< 20)
1,3-Dichlorobenzene	30	29.6	99	30	29.8	99	(80-119)	0.48	(< 20)
1,3-Dichloropropane	30	29.1	97	30	29.7	99	(80-119)	1.90	(< 20)
1,4-Dichlorobenzene	30	29.3	98	30	29.6	99	(79-118)	1.10	(< 20)
2,2-Dichloropropane	30	29.1	97	30	28.1	94	(60-139)	3.60	(< 20)
2-Butanone (MEK)	90	79.4	88	90	81.4	90	(56-143)	2.50	(< 20)
2-Chlorotoluene	30	30.0	100	30	29.6	99	(79-122)	1.40	(< 20)
2-Hexanone	90	81.5	91	90	84.8	94	(57-139)	4.00	(< 20)
4-Chlorotoluene	30	30.0	100	30	29.9	100	(78-122)	0.42	(< 20)
4-Isopropyltoluene	30	30.8	103	30	30.3	101	(77-127)	1.60	(< 20)
4-Methyl-2-pentanone (MIBK)	90	80.3	89	90	82.7	92	(67-130)	2.90	(< 20)
Benzene	30	28.9	97	30	28.1	94	(79-120)	3.00	(< 20)
Bromobenzene	30	29.6	99	30	29.5	98	(80-120)	0.39	(< 20)
Bromochloromethane	30	27.9	93	30	28.0	93	(78-123)	0.40	(< 20)
Bromodichloromethane	30	28.6	95	30	28.5	95	(79-125)	0.09	(< 20)
Bromoform	30	28.5	95	30	29.8	100	(66-130)	4.50	(< 20)
Bromomethane	30	27.9	93	30	28.8	96	(53-141)	3.00	(< 20)
Carbon disulfide	45	45.0	100	45	43.3	96	(64-133)	3.90	(< 20)

Print Date: 07/29/2021 10:21:18AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37469]
 Blank Spike Lab ID: 1624914
 Date Analyzed: 07/21/2021 13:51

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37469]
 Spike Duplicate Lab ID: 1624915
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	29.9	100	30	28.7	96	(72-136)	4.00	(< 20)
Chlorobenzene	30	28.8	96	30	28.6	95	(82-118)	0.74	(< 20)
Chloroethane	30	35.3	118	30	30.8	103	(60-138)	13.70	(< 20)
Chloroform	30	27.9	93	30	27.6	92	(79-124)	1.20	(< 20)
Chloromethane	30	27.9	93	30	27.5	92	(50-139)	1.50	(< 20)
cis-1,2-Dichloroethene	30	28.3	94	30	27.8	93	(78-123)	1.60	(< 20)
cis-1,3-Dichloropropene	30	28.5	95	30	28.7	96	(75-124)	0.59	(< 20)
Dibromochloromethane	30	29.0	97	30	29.7	99	(74-126)	2.40	(< 20)
Dibromomethane	30	27.9	93	30	28.3	94	(79-123)	1.60	(< 20)
Dichlorodifluoromethane	30	31.6	105	30	30.6	102	(32-152)	3.50	(< 20)
Ethylbenzene	30	29.3	98	30	28.9	96	(79-121)	1.40	(< 20)
Freon-113	45	46.0	102	45	44.3	99	(70-136)	3.70	(< 20)
Hexachlorobutadiene	30	30.9	103	30	30.1	100	(66-134)	2.60	(< 20)
Isopropylbenzene (Cumene)	30	29.9	100	30	29.6	99	(72-131)	1.10	(< 20)
Methylene chloride	30	28.5	95	30	28.7	96	(74-124)	0.62	(< 20)
Methyl-t-butyl ether	45	42.7	95	45	43.4	97	(71-124)	1.60	(< 20)
Naphthalene	30	26.4	88	30	28.1	94	(61-128)	6.30	(< 20)
n-Butylbenzene	30	31.6	105	30	31.2	104	(75-128)	1.40	(< 20)
n-Propylbenzene	30	30.9	103	30	30.1	100	(76-126)	2.50	(< 20)
o-Xylene	30	29.0	97	30	28.7	96	(78-122)	0.92	(< 20)
P & M -Xylene	60	58.0	97	60	57.1	95	(80-121)	1.60	(< 20)
sec-Butylbenzene	30	31.0	103	30	30.4	101	(77-126)	2.10	(< 20)
Styrene	30	29.2	98	30	29.2	97	(78-123)	0.11	(< 20)
tert-Butylbenzene	30	30.6	102	30	29.9	100	(78-124)	2.20	(< 20)
Tetrachloroethene	30	30.0	100	30	29.3	98	(74-129)	2.60	(< 20)
Toluene	30	28.6	95	30	28.3	94	(80-121)	1.00	(< 20)
trans-1,2-Dichloroethene	30	29.1	97	30	28.3	94	(75-124)	2.70	(< 20)
trans-1,3-Dichloropropene	30	29.3	98	30	30.0	100	(73-127)	2.30	(< 20)
Trichloroethene	30	29.2	97	30	28.4	95	(79-123)	2.80	(< 20)
Trichlorofluoromethane	30	30.7	102	30	29.1	97	(65-141)	5.30	(< 20)
Vinyl acetate	30	28.6	95	30	29.2	97	(54-146)	2.20	(< 20)
Vinyl chloride	30	29.3	98	30	28.3	94	(58-137)	3.40	(< 20)
Xylenes (total)	90	86.9	97	90	85.8	95	(79-121)	1.40	(< 20)

Print Date: 07/29/2021 10:21:18AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [VXX37469]
 Blank Spike Lab ID: 1624914
 Date Analyzed: 07/21/2021 13:51

Spike Duplicate ID: LCSD for HBN 1214128 [VXX37469]
 Spike Duplicate Lab ID: 1624915
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		99	30		99	(81-118)	0.04	
4-Bromofluorobenzene (surr)	30		101	30		101	(85-114)	0.11	
Toluene-d8 (surr)	30		100	30		101	(89-112)	0.65	

Batch Information

Analytical Batch: **VMS20951**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **JMG**

Prep Batch: **VXX37469**
 Prep Method: **SW5030B**
 Prep Date/Time: **07/21/2021 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/29/2021 10:21:18AM

Method Blank

Blank ID: MB for HBN 1822240 [XXX/45148]
 Blank Lab ID: 1622573

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214128001

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	0.0171J	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	0.0243J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	58.8	42-86		%
Fluoranthene-d10 (surr)	77.1	50-97		%

Batch Information

Analytical Batch: XMS12765
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW
 Analytical Date/Time: 7/21/2021 6:58:00PM

Prep Batch: XXX45148
 Prep Method: SW3535A
 Prep Date/Time: 7/13/2021 7:51:14AM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [XXX45148]
 Blank Spike Lab ID: 1622574
 Date Analyzed: 07/21/2021 19:19

Spike Duplicate ID: LCSD for HBN 1214128 [XXX45148]
 Spike Duplicate Lab ID: 1622575
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001

Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.42	71	2	1.54	77	(41-115)	8.20	(< 20)
2-Methylnaphthalene	2	1.39	69	2	1.59	79	(39-114)	13.30	(< 20)
Acenaphthene	2	1.58	79	2	1.76	88	(48-114)	10.70	(< 20)
Acenaphthylene	2	1.57	78	2	1.68	84	(35-121)	6.70	(< 20)
Anthracene	2	1.53	77	2	1.61	81	(53-119)	5.20	(< 20)
Benzo(a)Anthracene	2	1.52	76	2	1.60	80	(59-120)	4.80	(< 20)
Benzo[a]pyrene	2	1.61	81	2	1.69	85	(53-120)	4.50	(< 20)
Benzo[b]Fluoranthene	2	1.55	77	2	1.65	83	(53-126)	6.80	(< 20)
Benzo[g,h,i]perylene	2	1.78	89	2	1.82	91	(44-128)	2.00	(< 20)
Benzo[k]fluoranthene	2	1.79	90	2	1.83	92	(54-125)	2.20	(< 20)
Chrysene	2	1.67	84	2	1.73	87	(57-120)	3.70	(< 20)
Dibenzo[a,h]anthracene	2	1.74	87	2	1.81	91	(44-131)	3.80	(< 20)
Fluoranthene	2	1.56	78	2	1.66	83	(58-120)	6.10	(< 20)
Fluorene	2	1.66	83	2	1.75	87	(50-118)	4.90	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.73	86	2	1.79	90	(48-130)	3.60	(< 20)
Naphthalene	2	1.37	69	2	1.50	75	(43-114)	9.00	(< 20)
Phenanthrene	2	1.67	83	2	1.80	90	(53-115)	7.60	(< 20)
Pyrene	2	1.52	76	2	1.63	81	(53-121)	7.00	(< 20)

Surrogates

2-Methylnaphthalene-d10 (surr)	2		68	2		78	(42-86)	12.50	
Fluoranthene-d10 (surr)	2		85	2		92	(50-97)	7.00	

Batch Information

Analytical Batch: XMS12765
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW

Prep Batch: XXX45148
 Prep Method: SW3535A
 Prep Date/Time: 07/13/2021 07:51
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 07/29/2021 10:21:23AM

Matrix Spike Summary

Original Sample ID: 1214101019
 MS Sample ID: 1622576 MS
 MSD Sample ID: 1622577 MSD

Analysis Date: 07/21/2021 23:46
 Analysis Date: 07/22/2021 0:06
 Analysis Date: 07/22/2021 0:27
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001

Results by 8270D SIM LV (PAH)

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0255U	2.00	1.45	72	2.00	1.18	59	41-115	20.00	(< 20)
2-Methylnaphthalene	0.0255U	2.00	1.45	72	2.00	1.16	58	39-114	21.80	* (< 20)
Acenaphthene	0.0255U	2.00	1.56	78	2.00	1.31	65	48-114	17.20	(< 20)
Acenaphthylene	0.0255U	2.00	1.58	79	2.00	1.31	65	35-121	18.70	(< 20)
Anthracene	0.0255U	2.00	1.53	77	2.00	1.38	69	53-119	10.80	(< 20)
Benzo(a)Anthracene	0.0255U	2.00	1.56	78	2.00	1.61	80	59-120	2.90	(< 20)
Benzo(a)pyrene	0.0102U	2.00	1.65	83	2.00	1.65	83	53-120	0.06	(< 20)
Benzo(b)Fluoranthene	0.0255U	2.00	1.69	85	2.00	1.69	85	53-126	0.10	(< 20)
Benzo(g,h,i)perylene	0.0255U	2.00	1.78	89	2.00	1.79	89	44-128	0.68	(< 20)
Benzo(k)fluoranthene	0.0255U	2.00	1.7	85	2.00	1.76	88	54-125	3.40	(< 20)
Chrysene	0.0255U	2.00	1.72	86	2.00	1.69	85	57-120	1.60	(< 20)
Dibenzo(a,h)anthracene	0.0102U	2.00	1.73	87	2.00	1.79	89	44-131	3.10	(< 20)
Fluoranthene	0.0255U	2.00	1.54	77	2.00	1.56	78	58-120	1.20	(< 20)
Fluorene	0.0255U	2.00	1.61	80	2.00	1.44	72	50-118	11.00	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0255U	2.00	1.72	86	2.00	1.76	88	48-130	2.40	(< 20)
Naphthalene	0.0510U	2.00	1.46	73	2.00	1.19	59	43-114	20.30	* (< 20)
Phenanthrene	0.0255U	2.00	1.61	80	2.00	1.50	75	53-115	6.80	(< 20)
Pyrene	0.0255U	2.00	1.54	77	2.00	1.49	75	53-121	3.20	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.00	1.36	68	2.00	1.13	56	42-86	18.90	
Fluoranthene-d10 (surr)		2.00	1.68	84	2.00	1.66	83	50-97	1.10	

Batch Information

Analytical Batch: XMS12765
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW
 Analytical Date/Time: 7/22/2021 12:06:00AM

Prep Batch: XXX45148
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 7/13/2021 7:51:14AM
 Prep Initial Wt./Vol.: 250.00mL
 Prep Extract Vol: 1.00mL

Print Date: 07/29/2021 10:21:24AM

Method Blank

Blank ID: MB for HBN 1822789 [XXX/45210]

Blank Lab ID: 1624808

QC for Samples:

1214128001, 1214128002

Matrix: Water (Surface, Eff., Ground)

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.337J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	87.8	60-120		%

Batch Information

Analytical Batch: XFC16015

Analytical Method: AK102

Instrument: Agilent 7890B R

Analyst: IVM

Analytical Date/Time: 7/22/2021 3:34:00PM

Prep Batch: XXX45210

Prep Method: SW3520C

Prep Date/Time: 7/21/2021 6:36:22PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [XXX45210]
 Blank Spike Lab ID: 1624809
 Date Analyzed: 07/22/2021 15:44

Spike Duplicate ID: LCSD for HBN 1214128
 [XXX45210]
 Spike Duplicate Lab ID: 1624810
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001, 1214128002

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Diesel Range Organics	20	19.1	96	20	20.2	101	(75-125)	5.40	(< 20)	
Surrogates										
5a Androstane (surr)	0.4		105	0.4		112	(60-120)	6.60		

Batch Information

Analytical Batch: **XFC16015**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45210**
 Prep Method: **SW3520C**
 Prep Date/Time: **07/21/2021 18:36**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 07/29/2021 10:21:28AM

Method Blank

Blank ID: MB for HBN 1822789 [XXX/45210]

Blank Lab ID: 1624808

QC for Samples:

1214128001, 1214128002

Matrix: Water (Surface, Eff., Ground)

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	97.3	60-120		%

Batch Information

Analytical Batch: XFC16015
 Analytical Method: AK103
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 7/22/2021 3:34:00PM

Prep Batch: XXX45210
 Prep Method: SW3520C
 Prep Date/Time: 7/21/2021 6:36:22PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Print Date: 07/29/2021 10:21:30AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214128 [XXX45210]
 Blank Spike Lab ID: 1624809
 Date Analyzed: 07/22/2021 15:44

Spike Duplicate ID: LCSD for HBN 1214128 [XXX45210]
 Spike Duplicate Lab ID: 1624810
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214128001, 1214128002

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Residual Range Organics	20	19.0	95	20	19.9	99	(60-120)	4.50	(< 20)	
Surrogates										
n-Triacontane-d62 (surr)	0.4		96	0.4		106	(60-120)	9.40		

Batch Information

Analytical Batch: **XFC16015**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45210**
 Prep Method: **SW3520C**
 Prep Date/Time: **07/21/2021 18:36**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

1214128

#36530020

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

CHA

RECORD

Page 1 of 1

Laboratory SGS
Attn: Justin Nelson

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

2705 Saint Andrews Loop, Suite A
Pasco, WA 99301-3378
(509) 946-6309

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

3990 Collins Way, Suite 100
Lake Oswego, OR 97035
(503) 223-6147

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

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

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRD / AK 102	DRD / AK 103	VOCs / EPA 8210C	PAHs / EPA 8210D	51M	Total Number of Containers	Remarks/Matrix
101528 - B1MW	JAG	12:30	7/9/21			X	X	X			7	Water
101528 - B11MW	2AB	14:30	↓			X					2	Water
101528 - NTB	3AC	11:00	↓				X				1 box	Trip Blank

Project Information	Sample Receipt
Project Number: <u>101528-002</u>	Total Number of Containers
Project Name: <u>5101 Northwood Drive</u>	COC Seals/Intact? Y/N/NA
Contact: <u>DYM SAH</u>	Received Good Cond./Cold
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Delivery Method:
Sampler: <u>SAH</u>	(attach shipping bill, if any)

Instructions
Requested Turnaround Time: <u>STANDARD</u>
Special Instructions:

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

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: <u>[Signature]</u> Time: <u>14:40</u>	Signature: _____ Time: _____	Signature: _____ Time: _____
Printed Name: <u>Schylar Healy</u> Date: <u>7/9/21</u>	Printed Name: _____ Date: _____	Printed Name: _____ Date: _____
Company: <u>Shannon + Wilson Inc.</u>	Company: _____	Company: _____
Received By: 1.	Received By: 2.	Received By: 3.
Signature: _____ Time: _____	Signature: _____ Time: _____	Signature: <u>[Signature]</u> Time: <u>14:46</u>
Printed Name: _____ Date: _____	Printed Name: _____ Date: _____	Printed Name: <u>Michelle Albarra</u> Date: <u>7/9/21</u>
Company: _____	Company: _____	Company: <u>SGS</u>



e-Sample Receipt Form

SGS Workorder #:

1214128

1214128

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					
Yes **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)?	No	Cooler ID:	1	@	8.7	°C Therm. ID: D65
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:
		Cooler ID:		@		°C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	Yes					
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)?	Yes					
**Note: If times differ <1hr, record details & login per COC.						
***Note: If sample information on containers differs from COC, SGS will default to COC information						
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes					
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A	***Exemption permitted for metals (e.g.200.8/6020A).			
Volatile / LL-Hg Requirements						
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes					
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1214128001-A	HCL to pH < 2	OK			
1214128001-B	HCL to pH < 2	OK			
1214128001-C	No Preservative Required	OK			
1214128001-D	No Preservative Required	OK			
1214128001-E	HCL to pH < 2	OK			
1214128001-F	HCL to pH < 2	OK			
1214128001-G	HCL to pH < 2	OK			
1214128002-A	HCL to pH < 2	OK			
1214128002-B	HCL to pH < 2	OK			
1214128003-A	HCL to pH < 2	OK			
1214128003-B	HCL to pH < 2	OK			
1214128003-C	HCL to pH < 2	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: Chris Pepe
Title: Environmental Scientist
Date: December 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1214128
Laboratory Report Date: 7/29/2021

Contaminated Site Name: 5701 Northwood Drive
ADEC File Number: 2100.38.536
Hazard Identification Number: 25942

(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 cooler temperature blank was received by the laboratory at 8.7° Celsius.*
- 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: *It is our opinion that the slight temperature exceedance does not affect the useability of the data because the samples were delivered to the laboratory within 2.5 hours from the collection of the samples.*

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: *The case narrative noted the following:*
- *AK102 – DRO is detect in the MB greater than one-half the LOQ, but less than the LOQ.*
 - *8270D SIM – PAH MS/MSD RPD for 2-methylnaphthalene does not meet QC criteria. This analyte was not detected above the LOQ in the parent sample.*
- c. Were all 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 LOQ for 1,2,3-trichloropropane are greater than the ADEC cleanup level.*
- e. Data quality or usability affected?
Comments: *There is a potential that the target analyte is present at concentrations greater than the ADEC cleanup level, but less than the LOQ.*

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: *The method blanks contained estimated concentrations of DRO (337 J µg/L), fluorene (0.0171 J µg/L), and phenanthrene (0.0243 J µg/L) less than the LOQs.*
- iii. If above LOQ or project specified objectives, what samples are affected?
Comments: *DRO: Samples BIMW and B11MW.
Phenanthrene and fluorene: Sample BIMW*

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

Yes / No / **NA**

Comments: *Samples are flagged "B" in Table 2A when the reported sample concentration is within 10x the reported method blank concentration. The concentrations of DRO detected in Samples B1MW (859 µg/L) and B11MW (1,020 µg/L) are within 5x the reported method blank concentration. The sample concentrations are reported and flagged "B" on Table 2A. Fluorene and phenanthrene were not detected in Sample B1MW, therefore, the sample concentrations are reported as non-detect and flagging is not required.*

- 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:

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

Comments: *See above.*

- 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: *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: *The RPD for 2-methylnaphthalene does not meet QC criteria.*

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

Comments: *Sample BIMW*

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

Yes / **No** / NA

Comments: *2-methylnaphthalene was not detected above the LOQ in Sample BIMW, therefore, flagging is not required.*

- vii. Data quality or usability affected?

Comments: *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: *No, 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: *No, see above.*

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No / NA
Comments: *Duplicate Sample B11MW (duplicate of BIMW) was submitted to the laboratory.*

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:

- g. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below).

Yes / **No** / NA

Comments: *A decontamination blank or equipment blank was not included in our ADEC-approved workplan.*

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

- 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)433-3223

Report Number: **1216680**

Client Project: **101528-002 5701 NorthwoodDrive**

Dear Dan McMahon,

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

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

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

Sincerely,
SGS North America Inc.



Justin Nelson
2021.10.20
15:17:01 -08'00'

Justin Nelson
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1216680**
Project Name/Site: **101528-002 5701 NorthwoodDrive**
Project Contact: **Dan McMahon**

Refer to sample receipt form for information on sample condition.

LCSD for HBN 1826750 [XXX/4569 (1640957) LCSD

8270D SIM - PAH LCS/LCSD RPDs for indeno[1,2,3-c,d]pyrene and dibenzo[a,h]anthracene do not meet QC criteria.
These analytes were not detected above the LOQ in 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: 10/20/2021 9:08:16AM

Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
8270D SIM LV (PAH)				
1640955	MB for HBN 1826750 [XXX/45697]	XMS12943	2-Methylnaphthalene	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: 10/20/2021 9:08:17AM

Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
101528-B1MW	1216680001	10/07/2021	10/07/2021	Water (Surface, Eff., Ground)
10528-B11MW	1216680002	10/07/2021	10/07/2021	Water (Surface, Eff., Ground)
101528-WTB	1216680003	10/07/2021	10/07/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
SW8260D	Volatile Organic Compounds (W) FULL

Print Date: 10/20/2021 9:08:20AM

Detectable Results Summary

Client Sample ID: **101528-B1MW**

Lab Sample ID: 1216680001

Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
2-Methylnaphthalene	0.0163J	ug/L
Phenanthrene	0.0228J	ug/L
Diesel Range Organics	0.701	mg/L
Residual Range Organics	0.752	mg/L
Benzene	0.921	ug/L
cis-1,2-Dichloroethene	0.317J	ug/L
Vinyl chloride	0.418	ug/L

Client Sample ID: **10528-B11MW**

Lab Sample ID: 1216680002

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.609	mg/L
Residual Range Organics	0.760	mg/L



Results of 101528-B1MW

Client Sample ID: 101528-B1MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1216680001
Lab Project ID: 1216680

Collection Date: 10/07/21 12:30
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

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

Batch Information

Analytical Batch: XMS12943
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 10/11/21 22:08
Container ID: 1216680001-C

Prep Batch: XXX45697
Prep Method: SW3535A
Prep Date/Time: 10/09/21 09:14
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of 101528-B1MW

Client Sample ID: 101528-B1MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1216680001
Lab Project ID: 1216680

Collection Date: 10/07/21 12:30
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.701, 0.588, 0.196, mg/L, 1, 10/13/21 22:16

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 86.5, 50-150, %, 1, 10/13/21 22:16

Batch Information

Analytical Batch: XFC16112
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 10/13/21 22:16
Container ID: 1216680001-A

Prep Batch: XXX45702
Prep Method: SW3520C
Prep Date/Time: 10/09/21 15:45
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.752, 0.490, 0.196, mg/L, 1, 10/13/21 22:16

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 85.3, 50-150, %, 1, 10/13/21 22:16

Batch Information

Analytical Batch: XFC16112
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 10/13/21 22:16
Container ID: 1216680001-A

Prep Batch: XXX45702
Prep Method: SW3520C
Prep Date/Time: 10/09/21 15:45
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



Results of 101528-B1MW

Client Sample ID: **101528-B1MW**
 Client Project ID: **101528-002 5701 NorthwoodDrive**
 Lab Sample ID: 1216680001
 Lab Project ID: 1216680

Collection Date: 10/07/21 12:30
 Received Date: 10/07/21 13:52
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/16/21 16:11
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/16/21 16:11
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		10/16/21 16:11
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Benzene	0.921	0.400	0.120	ug/L	1		10/16/21 16:11
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Bromomethane	3.00 U	6.00	3.00	ug/L	1		10/16/21 16:11
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11

Print Date: 10/20/2021 9:08:24AM

J flagging is activated



Results of 101528-B1MW

Client Sample ID: **101528-B1MW**
 Client Project ID: **101528-002 5701 NorthwoodDrive**
 Lab Sample ID: 1216680001
 Lab Project ID: 1216680

Collection Date: 10/07/21 12:30
 Received Date: 10/07/21 13:52
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
cis-1,2-Dichloroethene	0.317 J	1.00	0.310	ug/L	1		10/16/21 16:11
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 16:11
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Naphthalene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/16/21 16:11
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Styrene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Toluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 16:11
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/16/21 16:11
Vinyl chloride	0.418	0.150	0.0500	ug/L	1		10/16/21 16:11
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/16/21 16:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	81-118		%	1		10/16/21 16:11
4-Bromofluorobenzene (surr)	99.5	85-114		%	1		10/16/21 16:11
Toluene-d8 (surr)	99.3	89-112		%	1		10/16/21 16:11

Results of 101528-B1MW

Client Sample ID: **101528-B1MW**
Client Project ID: **101528-002 5701 NorthwoodDrive**
Lab Sample ID: 1216680001
Lab Project ID: 1216680

Collection Date: 10/07/21 12:30
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21286
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 10/16/21 16:11
Container ID: 1216680001-E

Prep Batch: VXX38039
Prep Method: SW5030B
Prep Date/Time: 10/16/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 10528-B11MW

Client Sample ID: 10528-B11MW
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1216680002
Lab Project ID: 1216680

Collection Date: 10/07/21 13:00
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.609, 0.577, 0.192, mg/L, 1, 10/13/21 22:26

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 90.8, 50-150, %, 1, 10/13/21 22:26

Batch Information

Analytical Batch: XFC16112
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 10/13/21 22:26
Container ID: 1216680002-A

Prep Batch: XXX45702
Prep Method: SW3520C
Prep Date/Time: 10/09/21 15:45
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.760, 0.481, 0.192, mg/L, 1, 10/13/21 22:26

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 86.6, 50-150, %, 1, 10/13/21 22:26

Batch Information

Analytical Batch: XFC16112
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 10/13/21 22:26
Container ID: 1216680002-A

Prep Batch: XXX45702
Prep Method: SW3520C
Prep Date/Time: 10/09/21 15:45
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of 101528-WTB

Client Sample ID: **101528-WTB**
 Client Project ID: **101528-002 5701 NorthwoodDrive**
 Lab Sample ID: 1216680003
 Lab Project ID: 1216680

Collection Date: 10/07/21 09:00
 Received Date: 10/07/21 13:52
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/16/21 15:27
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/16/21 15:27
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/16/21 15:27
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		10/16/21 15:27
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/16/21 15:27
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/16/21 15:27
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/16/21 15:27
Benzene	0.200 U	0.400	0.120	ug/L	1		10/16/21 15:27
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
Bromomethane	3.00 U	6.00	3.00	ug/L	1		10/16/21 15:27
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/16/21 15:27
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/16/21 15:27
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/16/21 15:27

Print Date: 10/20/2021 9:08:24AM

J flagging is activated



Results of 101528-WTB

Client Sample ID: 101528-WTB
Client Project ID: 101528-002 5701 NorthwoodDrive
Lab Sample ID: 1216680003
Lab Project ID: 1216680

Collection Date: 10/07/21 09:00
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Chloroform, Chloromethane, etc., with their respective values and analysis dates.

Results of 101528-WTB

Client Sample ID: **101528-WTB**
Client Project ID: **101528-002 5701 NorthwoodDrive**
Lab Sample ID: 1216680003
Lab Project ID: 1216680

Collection Date: 10/07/21 09:00
Received Date: 10/07/21 13:52
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21286
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 10/16/21 15:27
Container ID: 1216680003-A

Prep Batch: VXX38039
Prep Method: SW5030B
Prep Date/Time: 10/16/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1827292 [VXX/38039]

Blank Lab ID: 1642870

QC for Samples:

1216680001, 1216680003

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	0.200	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	3.00U	6.00	3.00	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

Print Date: 10/20/2021 9:08:25AM



Method Blank

Blank ID: MB for HBN 1827292 [VXX/38039]

Blank Lab ID: 1642870

QC for Samples:

1216680001, 1216680003

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	5.00U	10.0	3.10	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)	100	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Print Date: 10/20/2021 9:08:25AM



Method Blank

Blank ID: MB for HBN 1827292 [VXX/38039]
Blank Lab ID: 1642870

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1216680001, 1216680003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS21286
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: JMG
Analytical Date/Time: 10/16/2021 1:36:00PM

Prep Batch: VXX38039
Prep Method: SW5030B
Prep Date/Time: 10/16/2021 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/20/2021 9:08:25AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [VXX38039]
 Blank Spike Lab ID: 1642871
 Date Analyzed: 10/16/2021 13:51

Spike Duplicate ID: LCSD for HBN 1216680 [VXX38039]
 Spike Duplicate Lab ID: 1642872
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001, 1216680003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.5	102	30	29.8	100	(78-124)	2.10	(< 20)
1,1,1-Trichloroethane	30	30.8	103	30	30.1	100	(74-131)	2.10	(< 20)
1,1,2,2-Tetrachloroethane	30	30.6	102	30	30.1	100	(71-121)	1.50	(< 20)
1,1,2-Trichloroethane	30	30.8	103	30	30.3	101	(80-119)	1.70	(< 20)
1,1-Dichloroethane	30	30.1	100	30	29.6	99	(77-125)	1.60	(< 20)
1,1-Dichloroethene	30	30.1	100	30	29.6	99	(71-131)	1.50	(< 20)
1,1-Dichloropropene	30	31.1	104	30	30.4	101	(79-125)	2.10	(< 20)
1,2,3-Trichlorobenzene	30	31.0	103	30	32.3	108	(69-129)	4.00	(< 20)
1,2,3-Trichloropropane	30	29.8	99	30	29.7	99	(73-122)	0.54	(< 20)
1,2,4-Trichlorobenzene	30	30.9	103	30	31.5	105	(69-130)	1.90	(< 20)
1,2,4-Trimethylbenzene	30	30.5	102	30	30.1	100	(79-124)	1.40	(< 20)
1,2-Dibromo-3-chloropropane	30	28.9	97	30	29.8	99	(62-128)	3.00	(< 20)
1,2-Dibromoethane	30	30.6	102	30	30.3	101	(77-121)	1.20	(< 20)
1,2-Dichlorobenzene	30	30.7	102	30	30.2	101	(80-119)	1.80	(< 20)
1,2-Dichloroethane	30	29.7	99	30	29.3	98	(73-128)	1.40	(< 20)
1,2-Dichloropropane	30	30.8	103	30	30.2	101	(78-122)	2.00	(< 20)
1,3,5-Trimethylbenzene	30	30.3	101	30	29.9	100	(75-124)	1.50	(< 20)
1,3-Dichlorobenzene	30	30.8	103	30	30.4	101	(80-119)	1.50	(< 20)
1,3-Dichloropropane	30	30.9	103	30	30.1	100	(80-119)	2.40	(< 20)
1,4-Dichlorobenzene	30	30.9	103	30	30.1	100	(79-118)	2.70	(< 20)
2,2-Dichloropropane	30	31.2	104	30	30.5	102	(60-139)	2.20	(< 20)
2-Butanone (MEK)	90	77.5	86	90	84.0	93	(56-143)	8.00	(< 20)
2-Chlorotoluene	30	29.9	100	30	29.2	98	(79-122)	2.10	(< 20)
2-Hexanone	90	85.8	95	90	87.9	98	(57-139)	2.40	(< 20)
4-Chlorotoluene	30	30.6	102	30	29.9	100	(78-122)	2.30	(< 20)
4-Isopropyltoluene	30	31.2	104	30	30.6	102	(77-127)	1.90	(< 20)
4-Methyl-2-pentanone (MIBK)	90	88.6	98	90	89.6	100	(67-130)	1.20	(< 20)
Benzene	30	30.8	103	30	29.9	100	(79-120)	3.00	(< 20)
Bromobenzene	30	30.8	103	30	30.0	100	(80-120)	2.60	(< 20)
Bromochloromethane	30	29.9	100	30	29.7	99	(78-123)	0.82	(< 20)
Bromodichloromethane	30	30.5	102	30	30.1	100	(79-125)	1.50	(< 20)
Bromoform	30	28.8	96	30	28.7	96	(66-130)	0.49	(< 20)
Bromomethane	30	28.3	95	30	28.4	95	(53-141)	0.26	(< 20)
Carbon disulfide	45	45.1	100	45	44.1	98	(64-133)	2.20	(< 20)

Print Date: 10/20/2021 9:08:28AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [VXX38039]
 Blank Spike Lab ID: 1642871
 Date Analyzed: 10/16/2021 13:51

Spike Duplicate ID: LCSD for HBN 1216680 [VXX38039]
 Spike Duplicate Lab ID: 1642872
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001, 1216680003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	30.8	103	30	30.1	100	(72-136)	2.10	(< 20)
Chlorobenzene	30	29.9	100	30	29.4	98	(82-118)	1.80	(< 20)
Chloroethane	30	29.0	97	30	28.7	96	(60-138)	0.95	(< 20)
Chloroform	30	28.5	95	30	28.0	93	(79-124)	1.50	(< 20)
Chloromethane	30	28.2	94	30	27.9	93	(50-139)	0.75	(< 20)
cis-1,2-Dichloroethene	30	30.1	100	30	29.8	99	(78-123)	1.20	(< 20)
cis-1,3-Dichloropropene	30	30.8	103	30	30.2	101	(75-124)	2.00	(< 20)
Dibromochloromethane	30	30.8	103	30	30.2	101	(74-126)	1.90	(< 20)
Dibromomethane	30	30.5	102	30	30.1	100	(79-123)	1.50	(< 20)
Dichlorodifluoromethane	30	27.9	93	30	27.4	91	(32-152)	2.00	(< 20)
Ethylbenzene	30	29.8	99	30	29.3	98	(79-121)	1.70	(< 20)
Freon-113	45	46.0	102	45	45.0	100	(70-136)	2.10	(< 20)
Hexachlorobutadiene	30	31.0	103	30	31.0	103	(66-134)	0.07	(< 20)
Isopropylbenzene (Cumene)	30	30.5	102	30	29.9	100	(72-131)	2.00	(< 20)
Methylene chloride	30	29.0	97	30	28.7	96	(74-124)	1.20	(< 20)
Methyl-t-butyl ether	45	45.1	100	45	44.7	99	(71-124)	0.91	(< 20)
Naphthalene	30	30.0	100	30	32.0	107	(61-128)	6.30	(< 20)
n-Butylbenzene	30	30.1	100	30	29.6	99	(75-128)	1.70	(< 20)
n-Propylbenzene	30	31.1	104	30	30.0	100	(76-126)	3.40	(< 20)
o-Xylene	30	29.9	100	30	29.3	98	(78-122)	2.20	(< 20)
P & M -Xylene	60	59.3	99	60	58.0	97	(80-121)	2.30	(< 20)
sec-Butylbenzene	30	31.2	104	30	30.3	101	(77-126)	2.90	(< 20)
Styrene	30	29.2	97	30	28.5	95	(78-123)	2.20	(< 20)
tert-Butylbenzene	30	30.9	103	30	30.2	101	(78-124)	2.60	(< 20)
Tetrachloroethene	30	31.3	104	30	30.7	102	(74-129)	2.10	(< 20)
Toluene	30	30.3	101	30	29.7	99	(80-121)	1.80	(< 20)
trans-1,2-Dichloroethene	30	30.5	102	30	30.0	100	(75-124)	1.70	(< 20)
trans-1,3-Dichloropropene	30	31.0	103	30	30.3	101	(73-127)	2.30	(< 20)
Trichloroethene	30	30.9	103	30	30.3	101	(79-123)	2.10	(< 20)
Trichlorofluoromethane	30	29.1	97	30	28.8	96	(65-141)	1.00	(< 20)
Vinyl acetate	30	30.0	100	30	29.8	100	(54-146)	0.69	(< 20)
Vinyl chloride	30	29.3	98	30	28.8	96	(58-137)	2.00	(< 20)
Xylenes (total)	90	89.2	99	90	87.2	97	(79-121)	2.30	(< 20)

Print Date: 10/20/2021 9:08:28AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [VXX38039]
 Blank Spike Lab ID: 1642871
 Date Analyzed: 10/16/2021 13:51

Spike Duplicate ID: LCSD for HBN 1216680 [VXX38039]
 Spike Duplicate Lab ID: 1642872
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001, 1216680003

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		98	30		98	(81-118)	0.19	
4-Bromofluorobenzene (surr)	30		100	30		99	(85-114)	1.10	
Toluene-d8 (surr)	30		100	30		100	(89-112)	0.02	

Batch Information

Analytical Batch: **VMS21286**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **JMG**

Prep Batch: **VXX38039**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/16/2021 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 10/20/2021 9:08:28AM



Method Blank

Blank ID: MB for HBN 1826750 [XXX/45697]
Blank Lab ID: 1640955

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1216680001

Results by 8270D SIM LV (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0163J	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	0.0214J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	59	42-86		%
Fluoranthene-d10 (surr)	69.2	50-97		%

Batch Information

Analytical Batch: XMS12943
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: LAW
Analytical Date/Time: 10/11/2021 9:07:00PM

Prep Batch: XXX45697
Prep Method: SW3535A
Prep Date/Time: 10/9/2021 9:14:19AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/20/2021 9:08:30AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [XXX45697]
 Blank Spike Lab ID: 1640956
 Date Analyzed: 10/11/2021 21:27

Spike Duplicate ID: LCSD for HBN 1216680 [XXX45697]
 Spike Duplicate Lab ID: 1640957
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001

Results by 8270D SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.23	61	2	1.35	68	(41-115)	9.60	(< 20)
2-Methylnaphthalene	2	1.22	61	2	1.33	67	(39-114)	8.70	(< 20)
Acenaphthene	2	1.43	72	2	1.59	80	(48-114)	10.60	(< 20)
Acenaphthylene	2	1.46	73	2	1.65	82	(35-121)	11.90	(< 20)
Anthracene	2	1.60	80	2	1.73	87	(53-119)	7.80	(< 20)
Benzo(a)Anthracene	2	1.37	68	2	1.51	75	(59-120)	9.70	(< 20)
Benzo[a]pyrene	2	1.86	93	2	2.09	105	(53-120)	11.70	(< 20)
Benzo[b]Fluoranthene	2	1.72	86	2	1.81	91	(53-126)	5.50	(< 20)
Benzo[g,h,i]perylene	2	1.99	99	2	2.38	119	(44-128)	18.20	(< 20)
Benzo[k]fluoranthene	2	1.88	94	2	1.94	97	(54-125)	3.40	(< 20)
Chrysene	2	1.54	77	2	1.65	83	(57-120)	7.30	(< 20)
Dibenzo[a,h]anthracene	2	1.77	89	2	2.40	120	(44-131)	29.90	* (< 20)
Fluoranthene	2	1.45	73	2	1.51	76	(58-120)	4.20	(< 20)
Fluorene	2	1.55	78	2	1.73	86	(50-118)	10.70	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.71	86	2	2.33	117	(48-130)	30.80	* (< 20)
Naphthalene	2	1.19	59	2	1.32	66	(43-114)	10.80	(< 20)
Phenanthrene	2	1.58	79	2	1.73	87	(53-115)	9.00	(< 20)
Pyrene	2	1.46	73	2	1.54	77	(53-121)	5.40	(< 20)

Surrogates

2-Methylnaphthalene-d10 (surr)	2		55	2		63	(42-86)	13.50	
Fluoranthene-d10 (surr)	2		68	2		71	(50-97)	4.90	

Batch Information

Analytical Batch: XMS12943
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW

Prep Batch: XXX45697
 Prep Method: SW3535A
 Prep Date/Time: 10/09/2021 09:14
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL



Method Blank

Blank ID: MB for HBN 1826768 [XXX/45702]

Blank Lab ID: 1641067

QC for Samples:

1216680001, 1216680002

Matrix: Water (Surface, Eff., Ground)

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	99.5	60-120		%

Batch Information

Analytical Batch: XFC16112

Analytical Method: AK102

Instrument: Agilent 7890B R

Analyst: IVM

Analytical Date/Time: 10/13/2021 6:16:00PM

Prep Batch: XXX45702

Prep Method: SW3520C

Prep Date/Time: 10/9/2021 3:45:03PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 10/20/2021 9:08:35AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [XXX45702]
 Blank Spike Lab ID: 1641068
 Date Analyzed: 10/13/2021 18:26

Spike Duplicate ID: LCSD for HBN 1216680 [XXX45702]
 Spike Duplicate Lab ID: 1641069
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001, 1216680002

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	19.7	98	20	19.9	100	(75-125)	1.40	(< 20)

Surrogates

5a Androstane (surr)	0.4	106	0.4	110	(60-120)	3.00
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Batch Information

Analytical Batch: **XFC16112**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45702**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/09/2021 15:45**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1826768 [XXX/45702]

Blank Lab ID: 1641067

QC for Samples:

1216680001, 1216680002

Matrix: Water (Surface, Eff., Ground)

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.200	mg/L
Surrogates				
n-Triacontane-d62 (surr)	103	60-120		%

Batch Information

Analytical Batch: XFC16112

Analytical Method: AK103

Instrument: Agilent 7890B R

Analyst: IVM

Analytical Date/Time: 10/13/2021 6:16:00PM

Prep Batch: XXX45702

Prep Method: SW3520C

Prep Date/Time: 10/9/2021 3:45:03PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 10/20/2021 9:08:38AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1216680 [XXX45702]
 Blank Spike Lab ID: 1641068
 Date Analyzed: 10/13/2021 18:26

Spike Duplicate ID: LCSD for HBN 1216680 [XXX45702]
 Spike Duplicate Lab ID: 1641069
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216680001, 1216680002

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	19.3	97	20	19.7	99	(60-120)	1.90	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		90	0.4		97	(60-120)	7.80	

Batch Information

Analytical Batch: **XFC16112**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45702**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/09/2021 15:45**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Shannon & Wilson, Inc.
 5430 Fairbanks Street, Suite 3
 Anchorage, Alaska 99518
 (907) 561-2120
 Fax (206) 695-6777

SGS North America Inc.

1216680



DRO/RRO - AK102/103

VOCs - EPA 8260D

PAHs - EPA 8270D SIM

Date	Time	Sample ID	Total Containers	DRO/RRO - AK102/103	VOCs - EPA 8260D	PAHs - EPA 8270D SIM				
10-7-21	12:30	101528-B1MW	7	X	X	X				
10-7-21	13:00	101528-B11MW	2	X						
10-7-21	9:00	101528-WTB	1 BOX		X					

Relinquished By:		Relinquished By:		Project Information	
Signature: <i>[Signature]</i>	Signature:	Signature: <i>[Signature]</i>	Signature:	Project Number: 101528-002	
Print Name: <i>Zach T</i>	Print Name:	Print Name: <i>[Signature]</i>	Print Name:	Project Name: 5701 Northwood Drive	
Company: Shannon & Wilson, Inc.	Company:	Company: <i>SGS</i>	Company:	Contact: Dan McMahon	
Date: 10-7-21	Date:	Date: 10/7/21	Date:	Sampler: ZJT	
Time: 13:51	Time:	Time: 12:52	Time:	Special Instructions:	
Received By:		Received By:		Sample Receipt	
Signature: <i>[Signature]</i>	Signature:	Signature: <i>[Signature]</i>	Signature:	Shipped Via: Hand Delivered	
Print Name: <i>[Signature]</i>	Print Name:	Print Name: <i>Ryan Conlon</i>	Print Name:		
Company: Shannon & Wilson, Inc.	Company:	Company: <i>SGS</i>	Company:	Cooler Temperature Upon Arrival:	
Date: 10-7-21	Date:	Date: 10/7/21	Date:	Sample Matrix: Water	
Time: 13:51	Time:	Time: 12:52	Time:	10 Working DAY TAT	

AD Absent

2.7 D58

#36530070



SGS North America Inc.

200 W. Potter Dr., 3180 Peger Rd. Ste.
Anchorage, AK 99518 (ph) 190, Fairbanks, AK
907-562-2343, (fax) 907- 99709 (ph) 907-474-
561-5301 8656



Sample Kit Request

Client pickup Date: **10/1/2021** Time: **12:00**

Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)

Does a Profile exist in LIMS? If not, please send a request for new profile build.

Client Name: Shannon & Wilson Inc

Ordered By: Alec Rizzo

Email: AJR@shanwil.com

Project Name: 5701 Northwood Drive

Quote #: _____

Delivery Address: _____

Deliver to client: _____

Ship by/Air Carrier: _____

Airbill Number: _____

Date to ship by: _____

Notes: _____

Kit request taken by: JAN Date: September 30, 2021

Kit prepared by: EGH Date: 9/30/21

Kit (including lid tightness for pres'd bottles) checked by: LS Date: 9/30/21

Kit packed & shipped by: JB Date: 9/30/21

Filename: SKIT_Shannon & Wilson Inc_5701 Northwood Drive_2*Required Items

No.	Matrix	Analysis	Container Size & Type		Pres.	Bottle Lot #	Preservative Lot #	Hold Time	# QC Bottles	Total Bottles
2	Water	DRO/RRO	2 x 250 mL	Amber	HCl			14 d	0	4
1	Water	VOC	3 x 40 mL	VOA	HCl			14 d	0	3
1	Water	PAH	2 x 250 mL	Amber	None			7 d	0	2

Note: The first 10 Analysis and Preservative columns will auto-fill up to the capacity of the associated COC.

Additional Information		Notes for Kit Prep	Attention Client/Sampler:
Pack for Shipment via:	N/A		1. Do not rinse container, be aware of any acid preservative.
Temperature Blank:	Yes - Small (125 mL)		2. Fill container, but do not overfill (except volatiles).
Trip Blank:	Yes - Water (8260, AK101, 8021, 624)		3. Label the container with your sample ID and date/time of collection
Coolers:	Yes		4. Fill out the Chain of Custody.
Gel Ice:	Yes		5. Add frozen gel packs to your cooler and pack to prevent breakage.
Labels:	Yes		If you have any questions please contact your Project Manager.
Custody Seals:	Yes		
Paper Chain of Custody:	No - Electronic or Client will Provide COC		
Lot Number Tracking (Required for DOD):	No		



e-Sample Receipt Form

SGS Workorder #:

1216680

1216680

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	N/A	N/A Exemption permitted if sampler hand carries/delivers.
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
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.	Yes	Cooler ID: 1 @ 2.7 °C Therm. ID: D58
	N/A	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?	Yes	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		
Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g,200.8/6020B).
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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1216680001-A	HCL to pH < 2	OK			
1216680001-B	HCL to pH < 2	OK			
1216680001-C	No Preservative Required	OK			
1216680001-D	No Preservative Required	OK			
1216680001-E	HCL to pH < 2	OK			
1216680001-F	HCL to pH < 2	OK			
1216680001-G	HCL to pH < 2	OK			
1216680002-A	HCL to pH < 2	OK			
1216680002-B	HCL to pH < 2	OK			
1216680003-A	HCL to pH < 2	OK			
1216680003-B	HCL to pH < 2	OK			
1216680003-C	HCL to pH < 2	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: Chris Pepe
Title: Environmental Scientist
Date: December 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1216680
Laboratory Report Date: 10/20/2021

Contaminated Site Name: 5701 Northwood Drive
ADEC File Number: 2100.38.536
Hazard Identification Number: 25942

(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 cooler temperature blank was 2.7° Celsius.*

- 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: *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: *The case narrative noted the following:*

- *8270D SIM – PAH LCS/LCSD RPDs for ideno[1,2,3-c,d]pyrene and dibenzo[a,h]anthracene do not meet QC criteria. These analytes were not detected above the LOQ in associated samples.*

- c. Were all 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 LOQ for 1,2,3-trichloropropane are greater than the ADEC cleanup level.*

- e. Data quality or usability affected?

Comments: *There is a potential that the target analyte is present at concentrations greater than the ADEC cleanup level, but less than the LOQ.*

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: *The method blank associated with Sample BIMW contained estimated concentrations of 2-methylnaphthalene (0.0163 J µg/L) and phenanthrene (0.0214 J µg/L) less than the LOQ.*

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

Comments: *See above.*

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

Yes / No / **NA**

Comments: *Samples are flagged "B" in Table 2B when the reported sample concentration is within 10x the reported method blank concentration. Estimated concentrations of 2-methylnaphthalene and phenanthrene were detected in Sample BIMW and the method blank, therefore, the sample concentrations are 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:

- 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: *RPDs for indeno[1,2,3-c,d]pyrene and dibenzo[a,h]anthracene do not meet QC criteria.*

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

Comments: *Sample BIMW*

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

Comments: *Indeno[1,2,3-c,d]pyrene and dibenzo[a,h]anthracene were not detected above the LOQ in Sample BIMW, 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 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: *No, see above.*

- 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: *No, 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: *No, see above.*

f. Field Duplicate

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

Yes / No / NA

Comments: *Duplicate Sample B11MW (duplicate of BIMW) was submitted to the laboratory.*

- 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:

- g. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below).

Yes / **No** / NA

Comments: *A decontamination blank or equipment blank was not included in our ADEC-approved workplan.*

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

- a. Defined and appropriate? **Yes** / No / NA

Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

ATTACHMENT 4

IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL/ENVIRONMENTAL REPORT



Date: January 2022
To: 5701 Northwood Drive

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